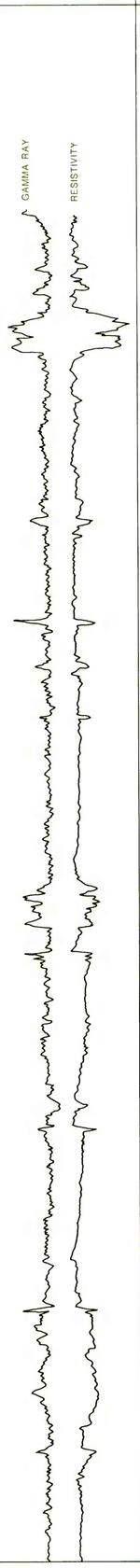
COMPOSITE COLUMNAR SECTION

SYSTEM	SERIES	GROUP	FORMATION	MEMBER	COAL BED NAME
PENNSYLVANIAN	DESMOINESIAN	KREBS	SAVANNA		Rowe (L. Witteville)
					Local
			McALESTER	KEOTA SAND	
				TAMAHA SAND	Local
					U. McAlester (Stigler rider)
					Stigler (L. McAlester)
				CAMERON SAND	
				WARNER-LEQUIRE SAND	Local
				McCURTAIN SHALE	
					Hartshorne
			HARTSHORNE	HARTSHORNE SAND	
			ATOKA		
		ATOKAN			
		MORROWAN			

TYPICAL INDUCTION–GAMMA RAY LOG RESPONSE



LITHOLOGIC DESCRIPTION

1. Sandstone, gray, hard, fine-grained, inter-bedded with shale.
2. Shale, gray, silty near top.
3. Shale, largely carbonaceous (horizon of Cavanal Coal).
4. Shale.
5. Sandstone, gray, hard, fine-grained, slabby to massive lenticular.
6. Shale, gray.
7. Sandstone, tan, medium-grained, well indurated, thick-bedded at base grading vertically into thinner beds, thin local coal near top.
8. Shale, black, numerous small siderite (ironstone) concretions, occasionally sandy.
9. Coal zone consisting of a well-developed underclay, a thin coal 0.1 to 0.3 feet thick, capped by a fragmental algal limestone 0.1 to 0.6 feet thick, and carbonaceous shale with siderite bands.
10. Shale, black, extremely abundant carbonized plant fragments and leaf impressions along bedding planes.
11. Coal, bright, medium to coarsely banded, underlain by well-developed underclay.
12. Sandstone, greenish-gray, weathers tan, fine to medium-grained, thin to thick bedded.
13. Shale, dark blue to gray, silty.
14. Sandstone, silty, hard, fine-grained, blocky with occasional massive beds.
15. Shale, argillaceous, buff to greenish, concretions not generally abundant.
16. Shale, dark gray to black, slabby, silty, with abundant unfossiliferous, clay ironstone concretions.
17. Coal.
18. Sandstone, brown to light gray, mostly shale toward the top of the formation.
19. Shale, dark olive-gray to black, silty.

The above lithologic descriptions were derived from core data and from publications covering the area within the quadrangle. In the absence of detailed information, generalized regional descriptions were used.

SCALE
Meters Feet
0 0
10
20
30 100
40
50
60 200

EXPLANATION

(5) JONES OIL CORPORATION Pacer Unit #1 (1958) NE NW Sec. 35
GL 646
ST 3.2(est.)
950.3
SS
LH-CNI
TD 10,518

- Index Number
- Petroleum Company Name
- Well name and number (date logged)
- Well or measured section location
- Altitude, in feet, at top of drill hole or measured section. When estimated, (est.), when no altitude, NA
- No record of lithology
- Coal bed, showing estimated thickness in feet based on well log interpretation
- Rock interval
- Break in rock interval showing thickness in feet not plotted
- SS - Hartshorne Sandstone (geologic reference datum - Formation top selected because of proximity of Hartshorne to well)
- * Indicates suite of well logs insufficient to verify coal occurrence
- CNI (Coal Not Indicated) - Formation density log indicates absence of a particular Coal seam
- Column shown truncated to TD in deep oil and gas well
- Total depth from ground level in feet
- When TD not recorded - NR

(22) USGS FILES SW SW Sec. 28
GL 398 (est.)
B(0.9)
UH M(5.5/2.6)
LH M(4.8/?)
TD NR

- Index number of composite time section coal test hole, or outcrop measured section. USGS files source indicates non-proprietary information from files in USGS office
- Bone: Coal showing thickness in feet
- NR - Coal thickness not recorded
- Coal interbedded with rock. Bone or mixed rock and coal, total coal thickness/rock (including bone) thickness in feet
- Rock interval, thickness estimated (where lines dashed) as data not available. No record of lithology.
- Mixed Coal and rock interval thickness (precise coal or rock thickness not reported)

(7) KNECHTEL (1948) Plate I, Table II SE NW Sec. 35
GL NA
SE 2.9

- Index number of line measured section
- Reference source and date of publication
- Column left open at ends when measured section continues into rock units
- NOTE: Thickness reported to tenth of feet only when resolution of data permitted

RO Rowe Coal
L Local (unnamed) coal bed
SE Secor Coal
UM Upper McAlester (Stigler rider) coal
ST Stigler (Lower McAlester) coal
UH Upper Hartshorne Coal
LH Lower Hartshorne Coal
H Hartshorne Coal

COAL BED SYMBOLS AND DATUM

T. 9 N., R. 20 E.

(28) USGS FILES Bore Hole #5 (1960) NE SE Sec. 10
GL 570 (est.)

(26) USGS FILES Bore Hole #6 (1968) C NE Sec. 2
GL 458 (est.)
200.0

(27) USGS FILES Bore Hole #4 (1968) SW SE Sec. 9
GL 612 (est.)
ST 0.8
TD 220.0

UM 0.2
ST M(1.6/0.1)
TD 299.0

ST 1.6
TD 473.5
DATUM

SCALE
Meters Feet
0 0
5 20
10 40
15 60
20 80

T. 10 N., R. 19 E.
(unpublished measurements by Sierra Coal Corporation)

(1) KARVELOT (1968) p. 93 Bore Hole #1 SE SE Sec. 1
GL NA
ST 2.0
TD NR

(2) KARVELOT (1968) p. 93 Bore Hole #4 Cen. of Sec. 12
GL NA
ST 1.8
TD NR

(3) KARVELOT (1968) p. 93 Bore Hole #3 C-E-L Sec. 12
GL NA
ST 2.2
TD NR

(11) KARVELOT (1968) p. 93 Bore Hole #5 SW NE Sec. 13
GL NA
ST 1.8
TD NR

T. 10 N., R. 20 E.

(10) OAKES & KNECHTEL (1948) p. 99 Prospect Measured Sec. 1 NW NW Sec. 13
GL NA
L 1.0+

Note: Local Coal in the Warner Sandstone refer to Composite Columnar Section

FEDERAL COAL RESOURCE OCCURRENCE MAP OF THE STIGLER WEST 7.5 MINUTE QUADRANGLE, HASKELL AND MUSKOGEE COUNTIES, OKLAHOMA

BY GEOLOGICAL SERVICES OF TULSA, INC., AND B. T. BRADY, USGS

COMPILED IN 1980

PLATE 3

SHEET 1 OF 3

COAL DATA SHEET

This sheet intended for land use planning purposes only.