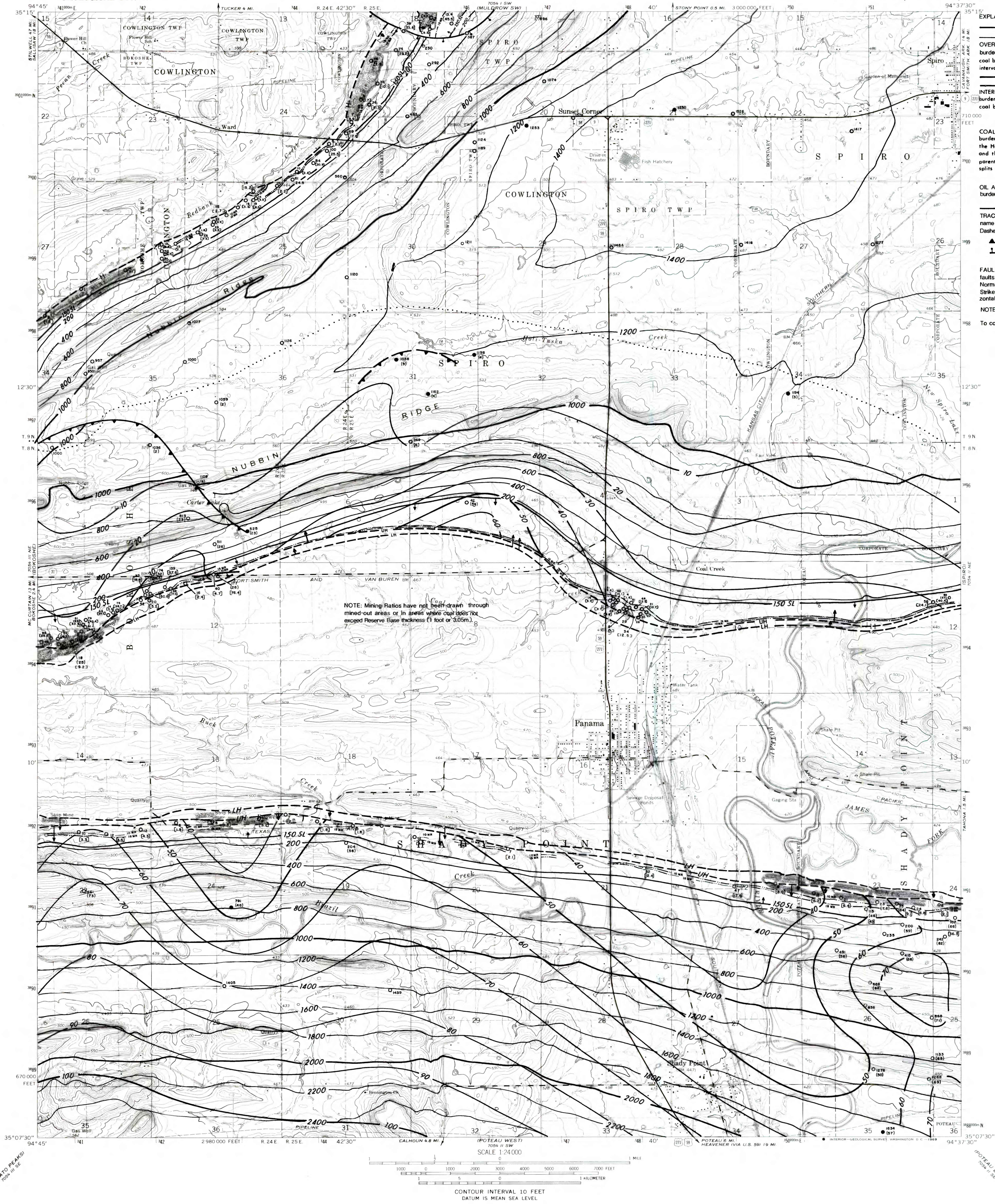


UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

PANAMA QUADRANGLE  
OKLAHOMA—LE FLORE CO.  
7.5 MINUTE SERIES (TOPOGRAPHIC)



**EXPLANATION**

1000  
800  
OVERBURDEN ISOPACHS—Showing thickness of overburden, in feet, from the surface to top of the Hartshorne coal bed (or Upper Hartshorne where split). Isopach interval 200 feet (61.0 m).

50  
40  
INTERBURDEN ISOPACHS—Showing thickness of interburden, in feet, between the Upper and Lower Hartshorne coal beds. Isopach interval 10 feet (3.05 m).

○ (85)  
○ (83.5)  
COAL TEST MEASUREMENT—Showing thickness of overburden, in feet (upper number), from the surface to top of the Hartshorne coal bed (or Upper Hartshorne where split) and thickness of interburden, in feet (lower number in parentheses) between the Upper and Lower Hartshorne splits of the Hartshorne coal bed. Mining ratio in brackets.

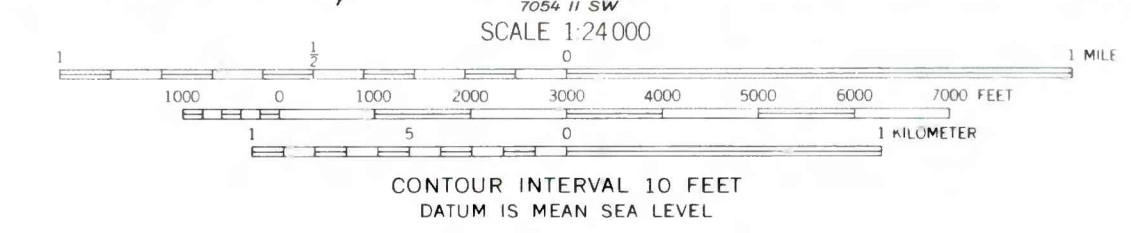
● (78)  
● (44)  
OIL AND GAS TEST HOLE—Showing thickness of overburden and thickness of interburden as outlined above.

↑ LH  
TRACE OF COAL BED OUTCROP—Showing symbol of name of coal bed. Arrow points toward coal-bearing area. Dashed where inferred by present authors.

— — — — —  
FAULT—Dashed where approximately located. Thrust faults have sawteeth on upthrown or overthrust side. Normal faults have bar and ball on downthrown side. Strike-slip faults have arrows showing relative horizontal movement.

NOTE: Thickness rounded to nearest foot.  
To convert feet to meters, multiply feet by 0.3048.

NOTE: Mining Ratios have not been drawn through mined-out areas or in areas where coal beds not exceed Reserve Base thickness (1 foot or 30.5 cm).



**FEDERAL COAL RESOURCE OCCURRENCE MAP OF THE PANAMA  
7.5-MINUTE QUADRANGLE, LEFLORE COUNTY, OKLAHOMA**

BY GEOLOGICAL SERVICES OF TULSA, INC., B. T. BRADY, USGS, AND J. L. QUERRY, BLM

PLATE 6  
INTERBURDEN ISOPACH AND OVERBURDEN SPLITS OF THE HARTSHORNE COAL BED AND OVERBURDEN ISOPACH AND MINING RATIO MAP OF THE HARTSHORNE COAL BED AND UPPER SPLIT

This report was prepared under contract to the U.S. Geological Survey, and has not been edited for conformity with Geological Survey editorial standards or stratigraphic nomenclature. Opinions expressed herein do not necessarily represent those of the Geological Survey.

COMPILED IN 1980  
This map intended for land-use planning purposes only