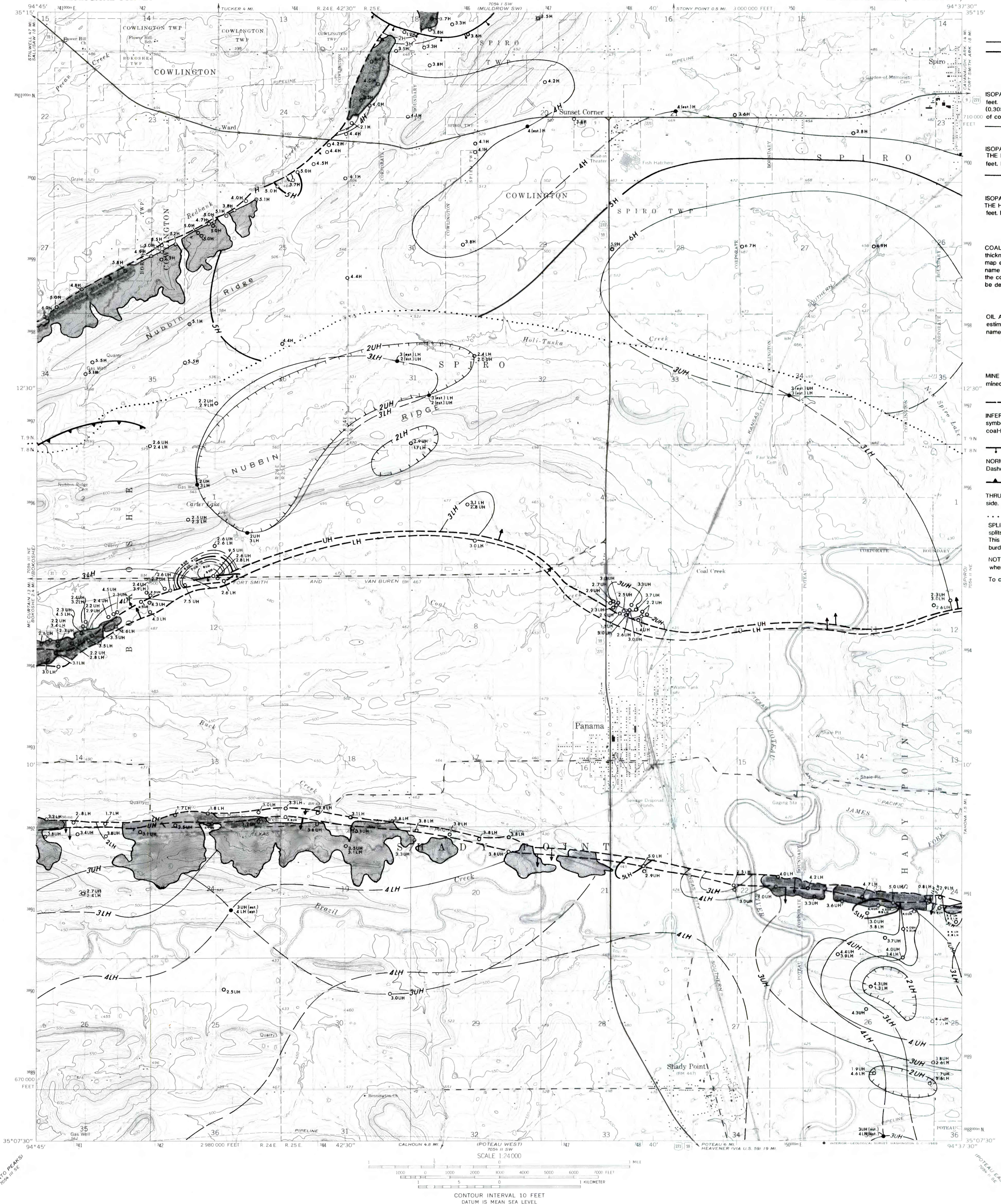


UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

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



- EXPLANATION**
- ISOPACH—Showing thickness of Hartshorne coal, in feet. Dashed where inferred. Isopach interval 1 foot (0.305m). Hachures indicate an area of local thinning of coal bed.
  - ISOPACHS OF THE UPPER HARTSHORNE SPLIT OF THE HARTSHORNE COAL BED—Showing thickness in feet. Isopach interval 1 foot (0.305m).
  - ISOPACH OF THE LOWER HARTSHORNE SPLIT OF THE HARTSHORNE COAL BED—Showing thickness in feet. Isopach interval 1 foot (0.305m).
  - COAL TEST MEASUREMENT—Showing measured thickness of coal, in feet, in areas where the structure map exhibited dip less than 25° and the symbol of name of coal bed. Drill holes which do not intersect the coal or from which a coal thickness could not be determined are not shown.
  - OIL AND GAS TEST HOLE—Showing thickness of coal estimated from well logs, in feet, and the symbol of name of coal bed.
  - MINE WORKINGS AND STRIPPED AREAS—Showing mined-out areas. Boundaries are approximately located.
  - INFERRED TRACE OF COAL BED OUTCROP—Showing symbol of name of coal bed. Arrow points toward coal-bearing area.
  - NORMAL FAULT—Bar and ball on downthrown side. Dashed where approximately located.
  - THRUST FAULT—Sawtooth on upthrown or overthrust side. Dashed where approximately located.
  - SPLIT LINE—Line along which the Hartshorne coal bed splits into the Upper and Lower Hartshorne coal beds. This line corresponds to the 1 foot (0.305m) interburden isopach.
- NOTE: Thickness reported to tenths of feet only when resolution of data permitted.  
To convert feet to meters, multiply feet by 0.3048.

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 4  
ISOPACH MAP OF THE  
HARTSHORNE COAL BED AND  
UPPER AND LOWER SPLITS

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