

GEOLOGIC MAP OF THE PANOLA 7.5' QUADRANGLE LATIMER COUNTY, OKLAHOMA

Neil H. Suneson and Charles A. Ferguson Digitized by Jacob Hernandez, 2014

CORRELATION OF MAP UNITS Units North of Choctaw Fault Units South of Choctaw Fault

Qa ALLUVIUM (QUATERNARY)—Gravel, sand, silt, and clay on flood plains of present TERRACE DEPOSITS (QUATERNARY)—Subangular to subrounded cobbles, gravel, sand, and silt, forming a veneer, generally about 4-10 ft thick, on the

UNITS PRESENT NORTH OF CHOCTAW FAULT

surfaces of terraces that stand about 40-50 ft above the beds of present-day

BOGGY FORMATION (PENNSYLVANIAN)—Predominantly sandy, silty, gray to olive-gray to grayish-black shales and siltstones (Pb) with scarp-forming sandstones. At base is the Bluejacket Sandstone Member (Pbbj), 170-260 ft thick. Numbered units (Pb2, Pb3, Pb4) are mappable, scarp-forming, yellowishbrown sandstones. A 30-ft-thick, grayish-green shale unit occurs about 60 ft below the top unit of the Bluejacket Sandstone. Based on projections, a thin stringer of coal (Secor?) may be present in the shale unit just above the Bluejacket Sandstone. Thin unmappable sandstone lenses are present in the shale units. Top of formation eroded. Thickness: 700-800 ft

SAVANNA FORMATION (PENNSYLVANIAN)—Predominantly brown to olive-gray to dark gray shales (Psv) with several mappable brown, fine-grained sandstone units (Psv1, Psv2, Psv3, Psv4, Psv5, Psv6, Psv7). Psv1 and Psv2, over most of the area, are split into two units separated by shale; in the northeastern part of the quadrangle, Psv1 and Psv2 are not mappable as separate units, and are designated Psv1 and Psv2, undifferentiated. Psv3 in places contains two shale units separating the main sandstone into three units (Psv3a, PsvSb, and Psv3c). Psv4 is a single unit that appears to merge with Psv3 in the northeastern part of the quadrangle, where the units are mapped as Psv3 and Psv4, undifferentiated. Psv5 is a difficult-to-map group of sandstone units of variable thickness separated by shales that wedge out at several localities. Psv6 is split into two units separated by shale in the northwestern part of the quadrangle, but in the north-central part it is represented only by a thick, single sandstone unit. Similarly, Psv7 is split into three units separated by shale in the northwestern part of the quadrangle, but is represented by only a thin, single sandstone unit in the north-central part. Most shales include thin,

unmappable sandstone beds. Thickness: 1,500-2,000 ft

McALESTER FORMATION (PENNSYLVANIAN)—Predominantly dark-gray to black, blocky shales containing abundant ironstone concretions. McCurtain Shale Member (Pmm), at the base, is approximately 960 ft thick. A discontinuous, brown, shaly, thin, unnamed sandstone unit (Pmmu) lies approximately in the middle of the McCurtain Shale Member. The Warner Sandstone Member (Pmw), overlies the McCurtain Shale Member. It is a resistant, brown, fine-grained, ridge-forming sandstone of variable thickness, and locally is split into upper and lower sandstones separated by shale. Three named, brown, fine-grained, thin-bedded sandstone units occur in the shale (Pm) above the Warner Sandstone Member: Cameron Sandstone Member (Pmc), Tamaha Sandstone Member (Pmt), and Keota Sandstone Member (Pmk). A fourth sandstone (Pml), which may be correlatable with the Lequire Sandstone Member, occurs in a limited area in sees. 1 and 2, T. 5 N., R. 20 E., in the shale interval between the Warner Sandstone Member and the Cameron Sandstone Member. Unexposed McAlester and Upper McAlester coal beds (Pmmc) occur in the shale interval between the Cameron Sandstone Member and the Tamaha Sandstone Member. Thickness: 2,000-2,400 ft

HARTSHORNE FORMATION (PENNSYLVANIAN)—Brown to very light-gray, very ine-grained, ripple-marked, bioturbated, thin-bedded to massive sandstone nterbedded with silty gray shale (Ph). Contains the Lower and Upper Hartshorne coal beds (Phh). Thickness: Approximately 300 ft

ATOKA FORMATION (PENNSYLVANIAN)—Predominantly silty, brown to gray to gravish-black, noncalcareous shale (Pa) with discontinuous, ridge-forming, brown, ine-grained sandstones (Pass). Approximately 1,200 ft of upper part exposed north of the Choctaw fault

UNITS PRESENT SOUTH OF CHOCTAW FAULT ATOKA FORMATION (PENNSYLVANIAN)—Predominantly poorly exposed olive-

gray (5Y3/2) to grayish-olive (10Y4/2), slightly silty, noncalcareous, poorly laminated shale and mudstone. Contains thin beds of laminated siltstone and thicker beds of sandstone. Lower shale (Pal) mapped separately. Sandstone is light olive-gray (5Y5/2) and grayish-orange (5Y7/2) where fresh, and grayish-orange (10YR7/4) where weathered. Mostly fine-grained, rarely medium-grained, poorly to moderately sorted, noncalcareous, and composed of about 95% quartz, 3% feldspar and lithic fragments, and conspicuous white mica parallel to laminations. Individual beds vary from several centimeters to several meters thick and average about 60 cm. Amalgamated beds common. Thicker beds are generally massive (corresponding to Ta of Bouma turbidite sequence) to parallel laminated (Tb); thinner beds commonly are ripple cross-laminated (Tc). Sole marks (flute, groove, and load casts, trace fossils) at base of sandstone beds locally common. Dish-and-pillar structures and ripple marks typical of some beds. Contains local concentrations of plant debris and organic matter on bedding planes. Maximum thickness of tower part approximately 3800 ft (1150 m) south of Choctaw fault

LOWER ATOKA SHALE (PENNSYLVANIAN)—Poorly exposed, olive-gray (5Y3/2) to grayish-olive (10Y4/2), noncalcareous, poorly laminated shale and mudstone with thin siltstone beds. Locally mapped separately from Atoka Formation (Pa). Maximum thickness approximately 1000 ft (300 m) south of Choctaw fault

SPIRO SANDSTONE MEMBER (INFORMAL) OF WAPANUCKA FORMATION PENNSYLVANIAN)—Well-exposed, light-brown (5Y5/6) to very pale-orange 10YR8/2) or pale-yellowish-orange (10YR8/6), mostly well-sorted, porous, mediumgrained, stratified quartz arenite. Quartzose, mostly noncalcareous, locally with abundant trace fossils (Asterosoma) and fragments and molds of crinoids, corals, brachtopods, calamites, and other plants. Beds typically 2 cm to 1 m thick, amalgamated, and mostly parallel-stratified, but locally planar-tabular crossstratified. Rarely spicular. Granule sandstone beds with abundant shale clasts rare. Weathers to very vuggy appearance. Forms ridge and dip slope throughout area. Mostly overlies but locally interfingers with Wapanucka Formation (Pw). Maximum thickness approximately 500 ft (150 m) south of Choctaw fault

WAPANUCKA FORMATION (PENNSYLVANIAN)—Predominantly poorly- to moderately well-exposed, medium-gray (N5) to medium-dark-gray (N4), wavybedded, sparsely fossiliferous (crinoids, brachtopods, gastropods, corals) mtcrtte and parallel- to rarely cross-stratified packstone and bioclastic limestone. Locally slightly spicular. Micrite locally nodular, slightly petroliferous odor; packstone locally sandy. In southeastern corner of quadrangle, includes thin, poorly exposed shale similar to that in Atoka Formation (Pa) that locally contains sandstone olistoliths. Limestone mostly underlying but locally interfingering with Spiro sandstone member (informal). Maximum thickness approximately 300 ft (100 m) south of Choctaw fault

LIST OF WELLS SPUDDED BEFORE JANUARY 1, 1988 1. Samson Resources Co. 1 RothBaum, Spud 11/8/82, TD 15,300'

2. Tenneco Oil Co. 1-18, Jankowsky, Spud 12/13/81, TD 14,920' 3. Leben Drilling Inc. 1-18 Jankowsky, Spud 12/25/69, TD 10,950' 4. Leben Drilling Inc. 1-17 Parsons, Spud 6/9/69, TD 10,300' 5. Shell Oil Co. 1-16 Parsons, Spud 11-21-65, TD 10,340' 6. Dyco Petroleum Corp. 1 Parson, Spud 10/7/75, TD 10,325' 7. Texas Oil & Gas Corp. 1 Parsons A, Spud 1/18/80, TD 9,449' 8. Texas Oil & Gas Corp. 1-WL Parsons A, Spud 1/6/80, TD 626' 9. Shell Oil Co. 1-15 Foster, Spud 9/27/65, TD 9,150' 10. Amoco Production Co. 2 Garrett Unit, Spud 5/29/86, TD 10,635' 11. Midwest Oil Corp. 1 Garrett, Spud 5/19/64, TD 9,970' 12. Amoco Production Co. 2 Gardener Unit, Spud 1/28/86, TD 9,706' 13. Midwest Oil Corp. 1 Gardener, Spud 7/25/62, TD 13,941' 14. Amoco Production Corp. 2 White Unit, Spud 4/2/86, TD 13,250' 15. Samson Resources Co. 1 Golightly, Spud 4/11/82, TD 13,870' 16. Tenneco Oil Co. 1-19 Cecil, Spud 9/14/81, TD 14,230' 17. Tenneco Oil Co. 1-20 Swart, Spud 4/9/82, TD 14,112' 18. PITCO 1-21 Joel, Spud 4/11/79, TD 9,695' 19. Shell Oil Co. 1-21 Jankowsky, Spud 8/25/64, TD 14,460' 20. Dyco Petroleum Corp. 1 Music, Spud 10/7/74, TD 9,500' 1. Midwest Oil Corp. 1 Sorrells, Spud 11/6/62, TD 13,811' 22. PITCO 1-24 Young & Cooper, Spud 6/13/78, TD 9,500' 23. Humble Oil & Refining Co. 1 Foster Jr. Unit, Spud 2/3/66, TD 8,450' 24. Mustang 1-19 Foster Exxon, Spud 9/29/74, TD 12,800' 25. Tenneco Oil Co. 1-30 Pierce, Spud 11/5/80, TD 14,600' 26. Tenneco Oil Co. 1-29 Pierce, Spud 8/21/82, TD 13,650' 27. Donald C. Slawson 1-27 PJ, Spud 12/23/81, TD 14,381' 28. Mustang Production Co. 1-26 Young & Cooper, Spud 2/1/81, TD 13,892' 29. Whitmar Exploration Co. 1-30 McCreery, Spud 10/15/81, TD 14,218' 30. Leede Oil & Gas Inc. 1 Wilburton Mtn., Spud 6/23/79, TD 14,731' 31. Mobil Oil Co. 1 Pete Parks Unit, Spud 9/1/63, TD 13,243' 32. Mustang Production Co. 1-33 Parks, Spud 8/17/80, TD 13.977' 33. Sunset International Petroleum 1 Fisherman, Spud 6/7/69, TD 13,200' 34. Mustang Production Co. 1-34 Metcalf, Spud 10/5/80, TD 12,866' 35. Mustang Production Co. 1-35 Foster, Spud 2/28/80, TD 12,871' 36. Mustang Production Co. 1-36 Austin, Spud 2/17/80, TD 12,750' 37. Samson Resources Co. 1 Austin Unit, Spud 3/4/82, TD 8,256' 38. Pan American Petroleum Corp. 1 Melone Unit, Spud 8/1/64, TD 13,362' 39. Tenneco Oil Co. 1-1 Scharff, Spud 12/5/84, TD 12,470' 40. Fortuna Energy Corp. 1-6 Lively, Spud 5/6/84, TD 12,281' 41. Donald C. Slawson 1-5 McKee, Spud 2/23/87, TD 12,416' 42. Unit Drilling & Exploration Co. 1 Maxey, Spud 1/25/83, TD 12,283' 43. Dyco Petroleum Corp. 1 Gentry, Spud 5/30/77, TD 7,671' 44. Unit Drilling & Exploration Co. 1 Hawthorne, Spud 12/11/81, TD 11,720 45. Mustang Production Co. 1 -3 Cash Mitchell, Spud 5/8/83, TD 11,577' 46. Mustang Production Co. 1-3 Cathey, Spud 1/10/78, TD 14,343' 47. Mustang Production Co. 1-2 Booth, Spud 2/23/79, TD 12, 853' 48. Mustang Production Co. 1-2 Adams, Spud 12/15/83, TD 12,359 49. Gulf Oil Corp. 1-1 W. C. Booth-State, Spud 11/12/79, TD 13,424' 50. Donald C. Slawson 1-1 Foster, Spud 9/30/83, TD 13,420' 51. Williford Energy Co. 1-12 Otho Enis, Spud 4/20/84, TD 12,350' 52. Williford 1-7 Butzer, Spud 5/12/83, TD 12,890' 53. Unit Drilling & Exploration Co. 1 Cox, Spud 2/11/83, TD 12,400' 54. Dyco Petroleum Corp. 1 Golightly, Spud 10/24/75, TD 12,388'

55. Unit Drilling & Exploration CO. 1 Golightly, Spud 7/18/82, TD 12,205' 56. Austin Production Co. 1-10 Colvard, Spud 1/17/83, TD 12,000'

57. Austin Production Co. 1-11 Robinson, Spud 1/12/85, TD 12,350'

59. Donald C. Slawson 1-12 Abbott, Spud 10/1/84, TD 12,328'

60. Tenneco Oil Co. 1-13 Heitner, Spud 2/14/84, TD 13,000'

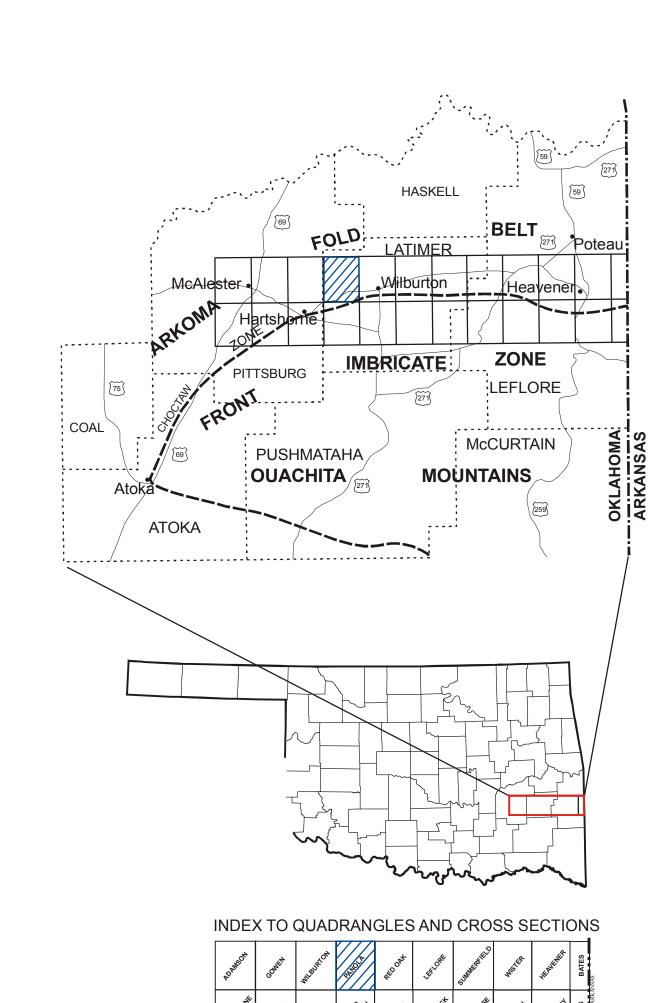
64. Bert Wheeler 1 H. T. Jennings, Spud 7/21/59, TD 9,761'

58. Mustang Production Co. 1-11 Robinson, Spud 6/14/81, TD 14,017'

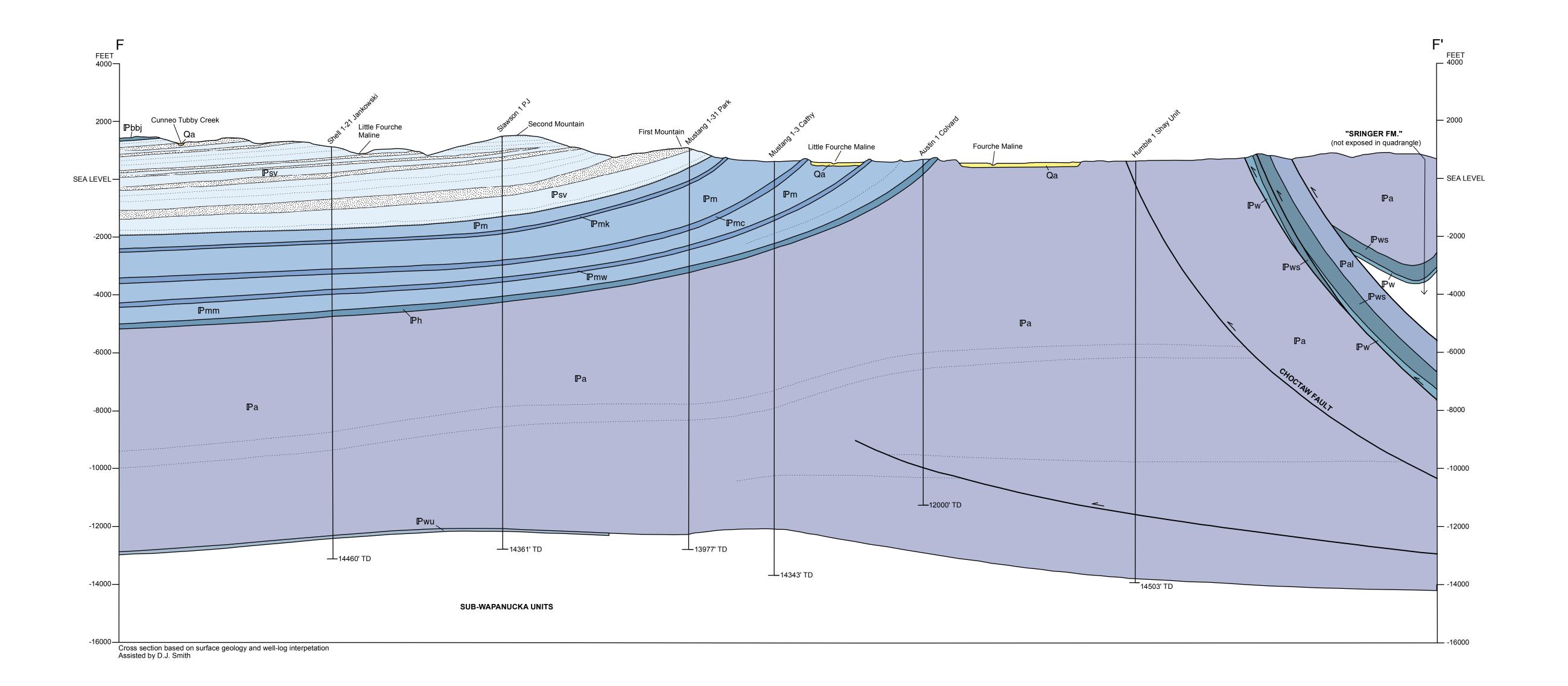
61. Unit Drilling & Exploration Co. 1 Harding, Spud 8/22/83, TD 13,550'

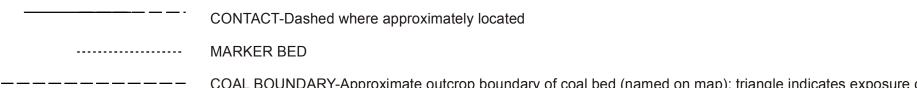
65. Pan American Petroleum Corp. 1 J. A. Johnson Estate , Spud 7/1/67, TD 12,187'

62. Edwin L. Cox 1 Shay, Spud 11/14/77, TD 7,250' 63. Humble Oil & Refining Co. 1 Shay Unit, Spud 2/14/66, TD 14,503'









————————— COAL BOUNDARY-Approximate outcrop boundary of coal bed (named on map); triangle indicates exposure of coal THRUST FAULT-Sawteeth on upper plate; dashed where approximately located; dotted where concealed; queried where FAULT-Arrows show relative horizontal movement; dashed where approximately located; dotted where concealed; queried

FAULT-Dashed where inferred; dotted where concealed; U, upthrown side; D, downthrown side

SYNCLINE-Showing troughline; arrow shows direction of plunge; dashed where approximately located; dotted where OVERTURNED ANTICLINE-Arrows show direction of dip of limbs; dashed where approximately located; dotted where

ANTICLINE-Showing crestline; arrow shows direction of plunge; dashed where approximately located; dotted where

STRIKE AND DIP OF BEDS

₇₀ Strike and dip of beds, facing direction unknown south of Choctaw fault

- + Strike and dip of beds, upright
- 570 Strike and dip of beds, overturned
- Vertical beds, facing direction unknown
- ⁴⁷⁰ Vertical beds, ball indicates top of beds
- OIL AND GAS WELLS Status unknown as of January 1,1988
- Dry hole, abandoned
- Gas well

····· MARKER BED