

CORRELATION OF MAP UNITS

	<table><tr><td>Qa</td><td rowspan="2">Qls</td></tr><tr><td>Qao</td></tr></table>	Qa	Qls	Qao	} QUATERNARY
Qa	Qls				
Qao					
	<table><tr><td>Pfa</td><td rowspan="3">} PENNSYLVANIAN</td></tr><tr><td>Pjv</td></tr><tr><td>Pjl</td></tr></table>	Pfa	} PENNSYLVANIAN	Pjv	Pjl
Pfa	} PENNSYLVANIAN				
Pjv					
Pjl					
Pws					

DESCRIPTION OF UNITS

Qa ALLUVIUM (QUATERNARY)—Unconsolidated silt, sand, and gravel of present stream channels

Qao OLDER ALLUVIUM (QUATERNARY)—Unconsolidated silt, sand, and gravel above present level of stream channels

Qls LANDSLIDE DEBRIS (QUATERNARY)

Pfa ATOKA FORMATION (PENNSYLVANIAN)—Predominantly poorly exposed olive-gray (5Y7/2) to grayish-olive (10Y7/2), slightly silty, noncalcareous, poorly laminated shale and mudstone. Contains thin beds of laminated siltstone and thicker beds of sandstone. Laminated siliceous shale near base of formation in southern part of area. Sandstone is light olive gray (5Y6/2) 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 80% quartz, 2% feldspar and little fragments, and conspicuous white mica parallel to laminations. Individual beds vary from several centimeters to several meters thick and average about 60 cm. Anisagminated beds common, forming resistant ridges and dip slopes easily identifiable on aerial photographs; some of these marker beds are mapped. Thicker beds are generally massive (corresponding to Ta of Bosma turbidite sequence) to parallel laminated (Tb); thinner beds commonly are ripple cross-laminated (Tc). Sole marks (flute grooves, and load casts, trace fossils) at base of sandstone beds locally common. Dish-and-pillar structures and ripple marks typical of some beds. Unifoliated except for lowermost sandstone beds immediately above Johns Valley Formation that contain molds of bryozoans, brachiopods, crinoids, and rare corals; local concentrations of plant debris on bedding planes throughout the formation. Maximum thickness approximately 11,500 ft (3,500 m) south of Choctaw fault.

Pws SPIRO SANDSTONE MEMBER (INFORMAL) OF WAPANUCKA FORMATION (PENNSYLVANIAN)—Well-exposed, light-brown (5Y5/6) to very pale-orange (10YR6/2) or pale-yellowish-orange (10YR6/4), mostly well-sorted, porous, medium-grained, stratified quartzic arenite. Quartzose, mostly noncalcareous. Beds typically 2 cm to 1 m thick, amalgamated, and mostly parallel-stratified, but locally planar-tabular cross-stratified. Weathers to very waxy appearance. Forms ridge and dip slope. Maximum thickness approximately 300 ft (90 m) south of Choctaw fault.

Pjv JOHNS VALLEY FORMATION (PENNSYLVANIAN)—Predominantly poorly exposed, medium-dark-gray (N4) to pale-brown (5Y5/2), mostly noncalcareous, poorly laminated, slightly silty shale and mudstone. Contains thin beds of noncalcareous laminated siltstone and thin to medium-bedded sandstone. Sandstones mostly light brown (5Y6/4) to grayish orange (10YR7/4), varying from fine to coarse-grained, with rare granule conglomerates, rarely calcareous or feld, and massive to parallel- or ripple cross-laminated. Sole marks and dish-and-pillar structure typical of some beds. Some sandstone marker beds mapped. Shale locally contains slightly to well-rounded pebbles, cobbles, and boulders of chert and a wide variety of limestone lithologies (wedges to blocky, granular and packstone). Other lithologies within the shale include large masses of platy to very fissile, hard, grayish-black (N6) shale with calcareous concretions, phosphatic nodules, and disseminated pyrite. Limestone clasts have been correlated with lower and middle Paleozoic limestone units exposed to the north and west; chert clasts may be Woodford Formation (Devonian); and many black shale masses may correlate with the Carney Formation (Mississippian). Maximum thickness approximately 2,800 ft (850 m) south of Choctaw fault.

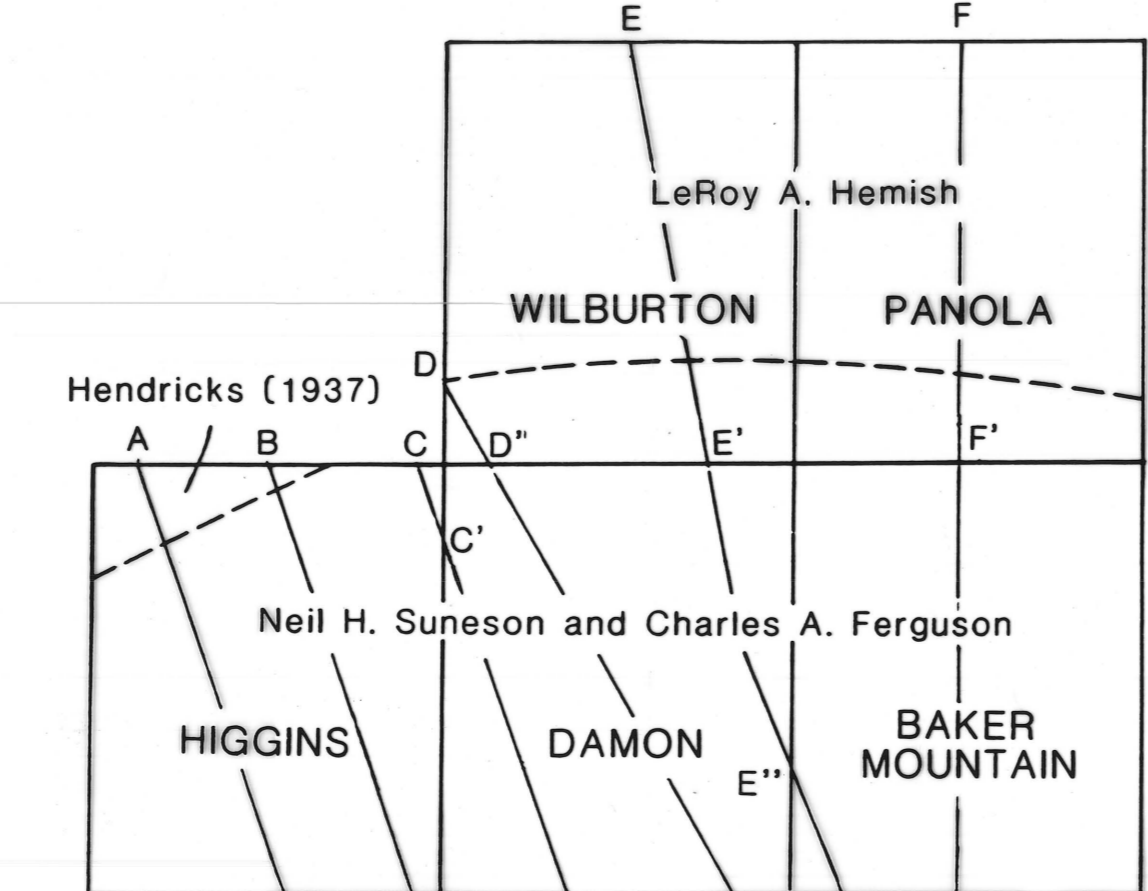
Pjf JACKFORK GROUP, UNDIFFERENTIATED (PENNSYLVANIAN)—Predominantly well-exposed, grayish-orange (10YR7/4), yellowish-gray (5Y7/2) to dusky-yellow (5Y6/4), fine to medium-grained, quartzose, noncalcareous, and massive or slightly graded to poorly stratified sandstone, with variable amounts of interbedded, poorly exposed medium-gray (N6) to olive-gray (5Y3/2) shale and mudstone. Locally contains many thick-bedded (1-10 m), massive sandstone beds in amalgamated or shale-poor sequences locally tens of meters thick. Sole marks, dish-and-pillar structures, ripple marks, and mud-rip-up clasts typical of some beds. Locally sparsely fossiliferous (molds of crinoids and brachiopods), or with abundant impressions of plant debris on bedding planes. Sandstone marker beds mapped locally. Sandstones commonly highly fractural. Shale and mudstone contain thin, laminated siltstone layers and locally weather to "pencil" structure. Correlates with Game Refuge and Wesley Formations of other workers. Maximum thickness approximately 1,100 ft (350 m) south of Choctaw fault.

SYMBOLS

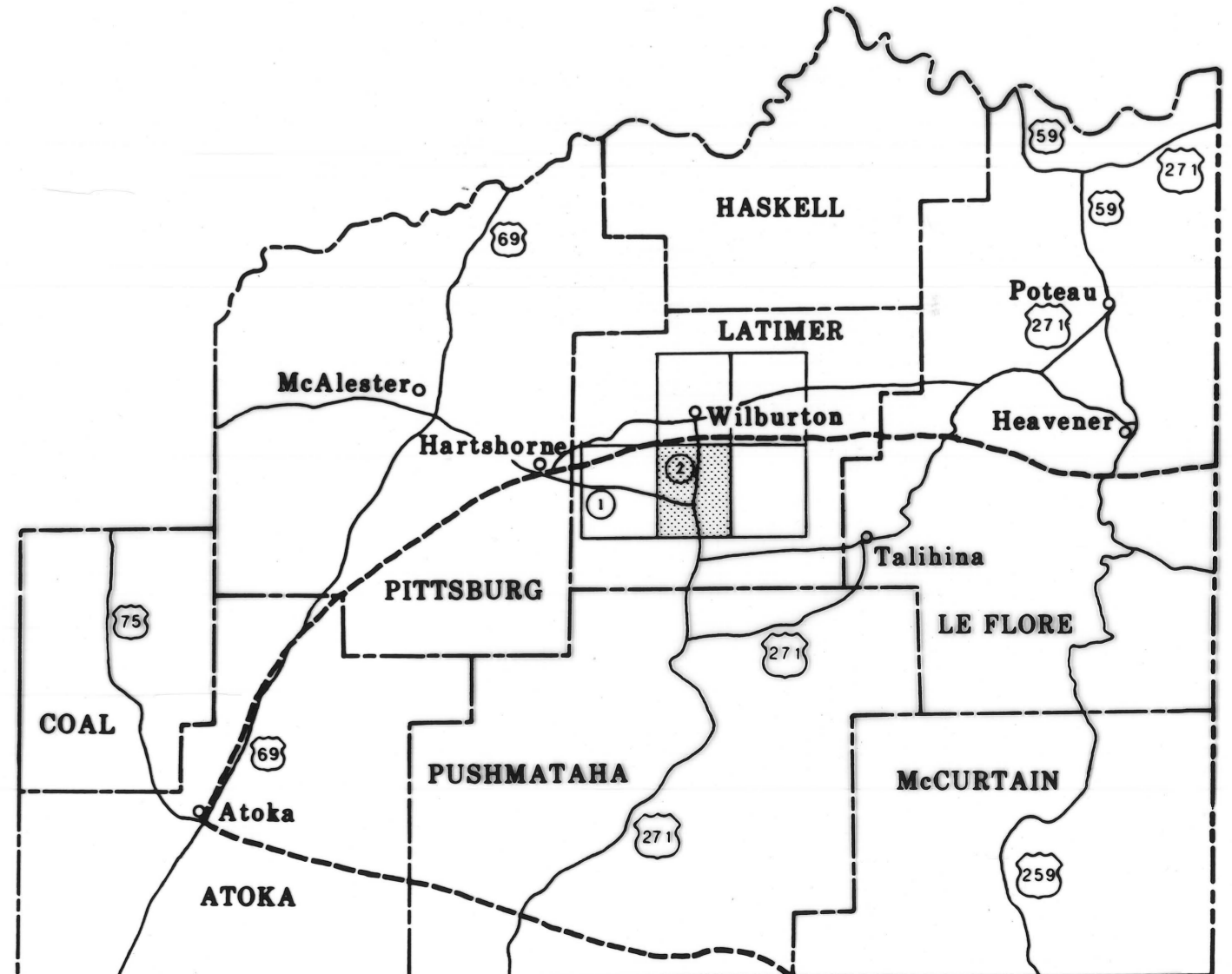
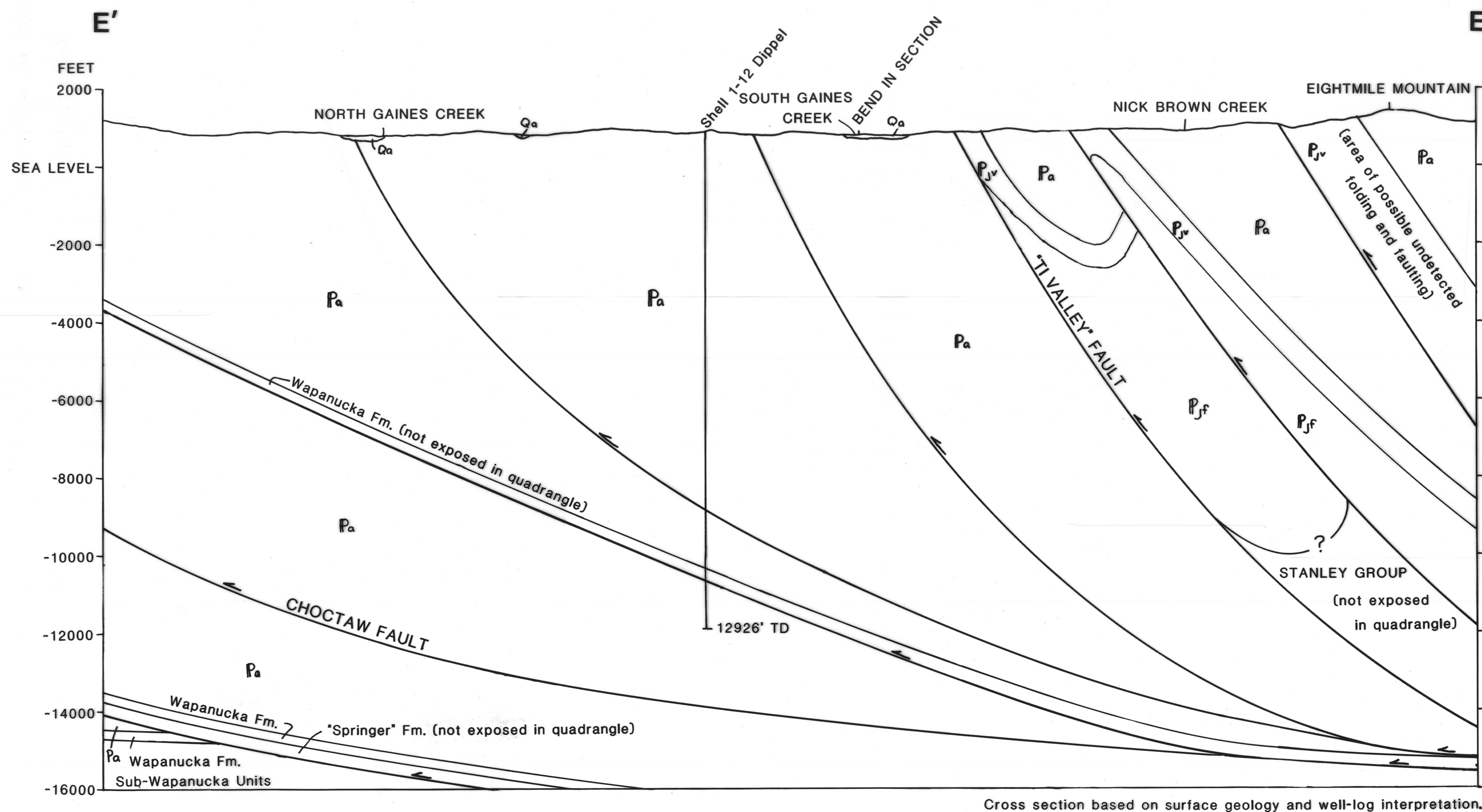
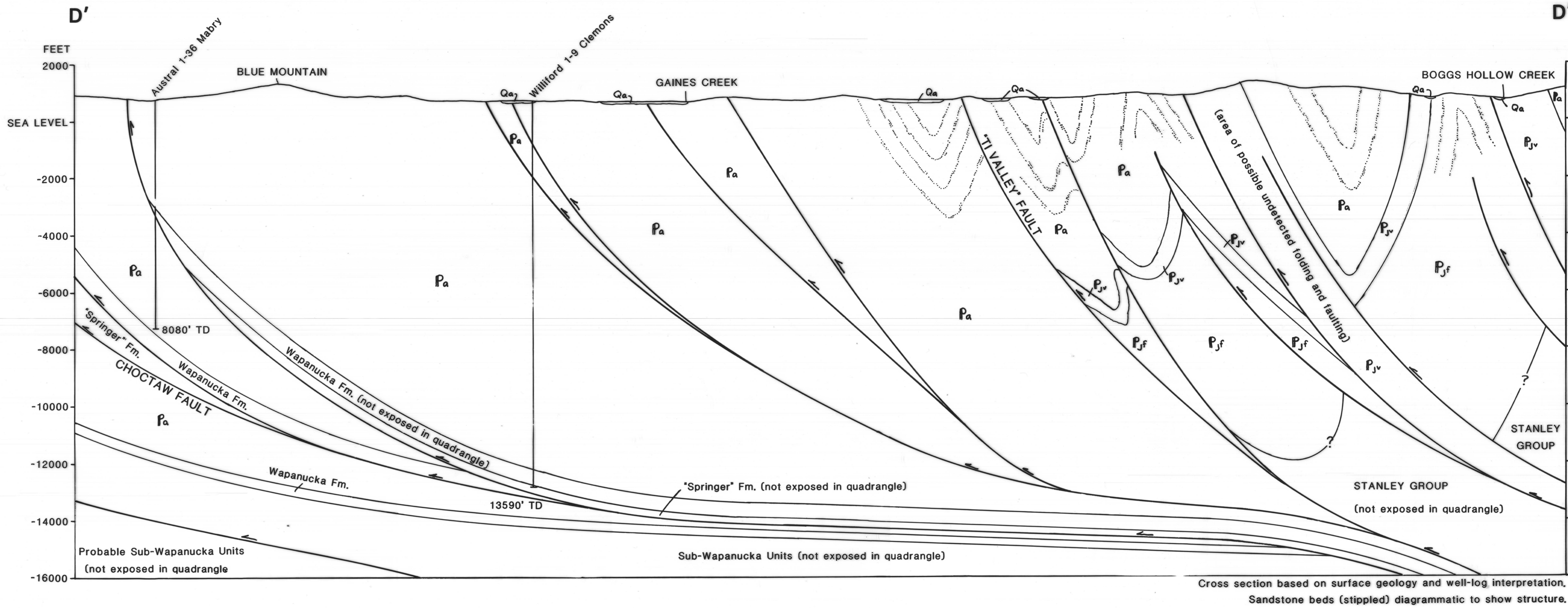
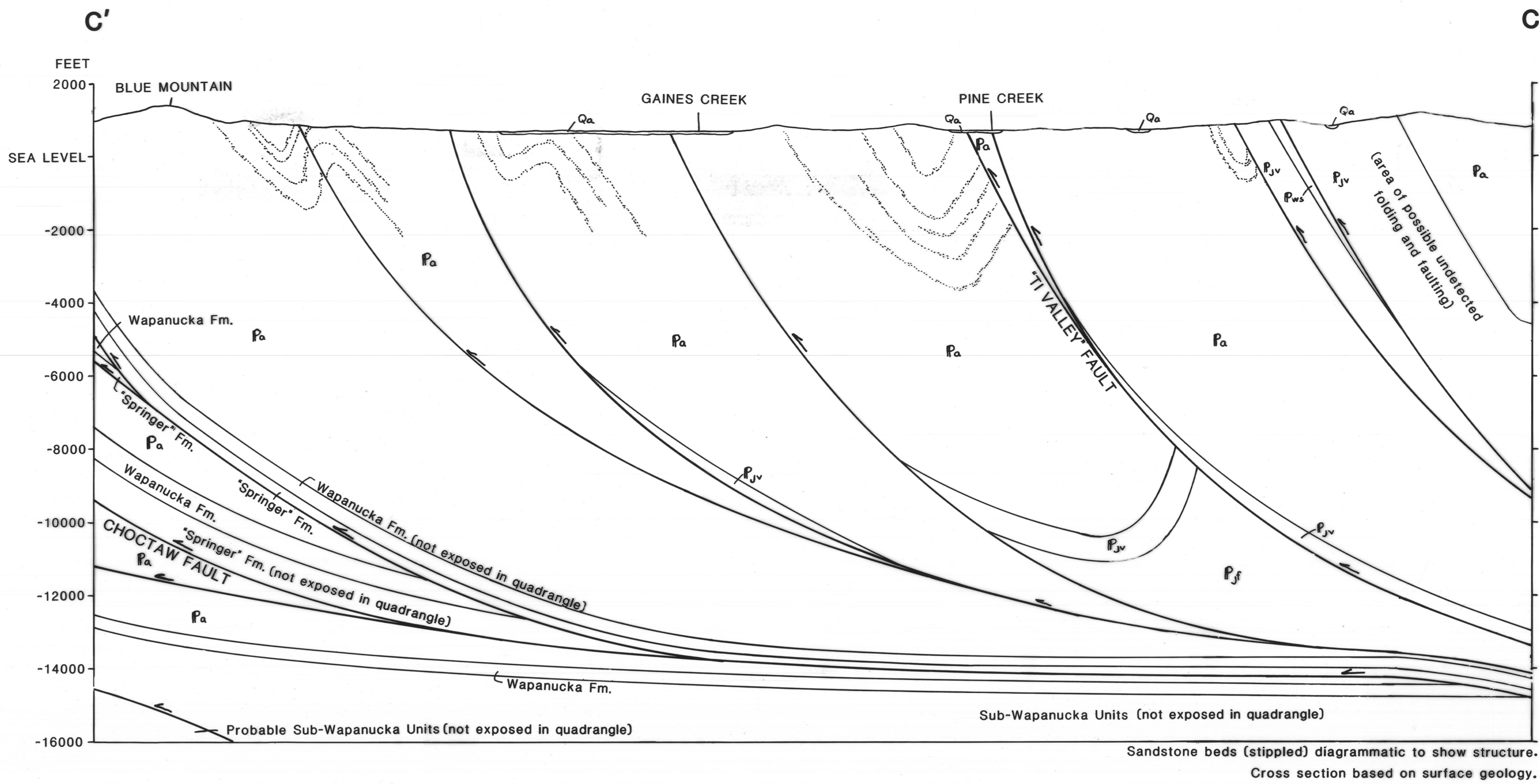
- CONTACT—Dashed where approximately located
- MARKER BED
- THRUST FAULT—Sawtooth on upper plate; dashed where approximately located; dotted where concealed
- FAULT—Arrows show relative horizontal movement; dashed where approximately located; dotted where concealed
- ANTICLINE—Showing crestline; dashed where approximately located; dotted where concealed
- OVERTURNED ANTICLINE—Arrows show direction of dip of limbs; dashed where approximately located; dotted where concealed
- SYNCLINE—Showing troughline; arrow shows direction and amount of plunge where known; dashed where approximately located; dotted where concealed
- OVERTURNED SYNCLINE—Arrows show direction of dip of limbs; dashed where approximately located; dotted where concealed
- MINOR ANTICLINE—Arrow shows direction and amount of plunge
- MINOR SYNCLINE—Arrow shows direction and amount of plunge
- STRIKE AND DIP OF BEDS
 - Leader to location of measurement
 - Strike and dip of beds, facing direction unknown
 - Vertical beds, facing direction unknown
 - Strike and dip of beds, upright
 - Vertical beds, ball indicates top of beds
 - Strike and dip of beds, overturned
 - Horizontal beds
- OIL AND GAS WELLS
 - Leader to location
 - Dry hole, abandoned

LIST OF WELLS

- Anderson 29-1 VFW, Spud 1/17/82, TD 8,297
- Austral 1-38 Mabry, Spud 5/24/87, TD 8,087
- Eberly and Meade 1-33 Evans, Spud 3/27/79, TD 7,678
- Hayes 1 Bennett, Spud 5/25/81, TD 3,065
- Willford 1-8 Clemens, Spud 10/29/82, TD 13,597
- Whitehead 1-B Sepler, Comp. 1/10/41, TD 1,065
- Whitehead 1-A Sepler, Comp. 3/11/46, TD 1,067
- Shell 1-12 Dippel, Spud 5/12/86, TD 12,882
- Perkins 1 Spanish War Veterans, Spud 2/15/66, TD 967



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