

GEOLOGIC MAP OF THE TALIHINA QUADRANGLE, LATIMER AND LE FLORE COUNTIES, OKLAHOMA

Neil H. Suneson and Charles A. Ferguson

DESCRIPTION OF UNITS

Qf ARTIFICIAL FILL (QUATERNARY)—Artificial fill mapped only in large dams

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

ATOKA FORMATION (PENNSYLVANIAN)—Predominantly poorly exposed olive-gray (5Y3/2), olive-black (5Y2/1), to brownish-black (5YR2/1), slightly silty, noncalcareous, poorly laminated shale and mudstone. Locally fissile, weathers to "flakey" appearance. Very rarely contains limonite or and mudstone. Locally fissile, weathers to "flakey" appearance. Very rarely contains limonite or calcite pods or concretions, exhibits "pencil" structure, or is calcareous. Contains thin beds of laminated siltstone and thicker beds of sandstone. Sandstone typically is light-olive-gray (5Y5/2 to 5Y6/1) to yellowish-gray (5Y7/2) where fresh and grayish-orange (10YR7/4) where weathered. Mostly fine-grained and silty, very rarely medium-grained or bimodal with medium-sized grains supported in a fine-grained matrix, poorly to moderately sorted, and noncalcareous. Generally composed of about 95% quartz, 2-5% feldspar and rock fragments, and conspicuous white mica parallel to laminations; quartz rarely less than 80% or greater than 98%. Individual beds vary from several centimeters to several meters thick and average about 60 cm. Amalgamated beds common, forming resistant ridges and dip slopes easily identifiable on aerial photographs; some of these marker beds are mapped. Thicker beds are generally unstratified (corresponding to Ta of Bourna sequence) to parallel-laminated (Tb): thinner beds commonly are ripple cross-laminated Bouma sequence) to parallel-laminated (Tb); thinner beds commonly are ripple cross-laminated (Tc). Some beds exhibit low-angle, moderate- to long-wavelength, undulatory stratification.

Contorted bedding and dish-and-pillar structures typical of some beds. Sole marks (flute, groove, and load casts, trace fossils) at base of sandstone beds locally common. Tops of sandstone beds typically grade upwards to siltstone; ripples rare. Unfossiliferous except for local concentrations of plant debris on bedding planes throughout the formation and lowermost sandstone beds immediately above Johns Valley Formation that contain poorly preserved molds of brachiopods. Porosity typically is very low except where medium-grained, fossiliferous, and/or moderately sorted.

Maximum thickness at least 6800 ft (2100 m), possibly as much as 11,750 ft (3600 m) south of

Pws SPIRO SANDSTONE MEMBER (INFORMAL) OF WAPANUCKA FORMATION (PENNSYLVANIAN)—Well-exposed, pinkish-gray (5YR8/1) to very pale orange (10YR8/2) or pale-yellowish-orange (10YR8/6), mostly well-sorted, porous, medium-grained, stratified quartz arenite. Quartzose, mostly noncalcareous, locally with trace fossils and fragments and molds of crinoids. Beds typically 2 cm to 1 m thick, amalgamated, and mostly parallel-stratified, but locally planartabular cross-stratified. Ripples present on tops of some beds. Shale clasts rare. Weathers to very vuggy appearance. Locally includes thin beds composed entirely of fossil fragments and poorly exposed gray micrite. Exposed only in northwestern corner of quadrangle. Maximum thickness approximately 1000 ft (300 m) south of Choctaw fault

Choctaw fault; top not exposed

JOHNS VALLEY FORMATION (PENNSYLVANAIAN)—Predominantly poorly exposed, pale-brown (5Y5/2) to moderate-yellowish-brown (10YR5/4), mostly noncalcareous, poorly laminated, slightly silty shale and mudstone. Some beds fissile, weather to "flakey" appearance. Other beds contorted, appear pervasively sheared. "Pencil" structure locally developed. 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 fetid, and massive to parallel- or ripple cross-laminated. Composed of as much as 15% feldspar, 5% rock fragments, minor mica, and the remainder quartz. Sole marks and dish-and-pillar structures typical of some beds. Some sandstone marker beds mapped. Shale locally contains angular to rounded pebbles, cobbles, and boulders of chert and a wide variety of limestone rock types (micrites to bioclastic grainstones and packstones). Other rock types within the shale include large masses of platy to very fissile, hard, grayish-black (N2) 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 Caney Formation (Mississippian). Maximum thickness approximately 3400 ft (1050 m) south of Choctaw fault

Psp "SPRINGER" FORMATION (PENNSYLVANIAN)—Poorly exposed, olive-black (5Y2/1) to light-olive-brown (5Y5/6), fissile, locally slightly silty, calcareous and noncalcareous shale with very minor interbedded laminated siltstone. Locally contains 5-cm to 25-cm, ellipsoidal, limonitized siderite(?) concretions with long axes parallel to bedding. Typically shows slight "pencil" structure. Exposed only in northwestern corner of quadrangle. Approximately 350 ft (100 m) maximum exposed in quadrangle south of Choctaw fault; base not exposed

Pifu JACKFORK GROUP, UPPER PART (PENNSYLVANIAN)—Predominantly well-exposed, yellowishgray (5Y7/2) to light-olive-brown (5Y5/6), fine- to medium-grained, quartzose, noncalcareous sandstone. Beds typically amalgamated and unstratified to stratified; ripple marks locally abundant. Sole marks are rare. Typically fractured and weathered to large, angular blocks. May correlate with Game Refuge Formation of other workers. Maximum thickness 2600 ft (800 m) south of Choctaw

PifI JACKFORK GROUP, LOWER PART (PENNSYLVANIAN)—Predominantly well-exposed, yellowishgray (5Y7/2) to light-olive-gray (5Y6/1), mostly fine-grained to rarely medium-grained, quartzose, noncalcareous sandstone and thin, poorly exposed shale and mudstone. Locally contains many thick-bedded (1-10 m) sandstone beds in amalgamated or shale-poor sequences locally tens of meters thick. Individual beds unstratified to poorly parallel-stratified. Locally sparsely fossiliferous (molds of brachiopods) or with abundant impressions of plant debris on bedding planes. Sandstone marker beds mapped locally. Sandstones commonly highly fractured and typically weathered to vuggy or platy appearance. May correlate with Wildhorse Mountain Formation of other workers. Exposed only in southwestern part of quadrangle. Maximum thickness approximately 2300 ft (700 m) south of Windingstair fault

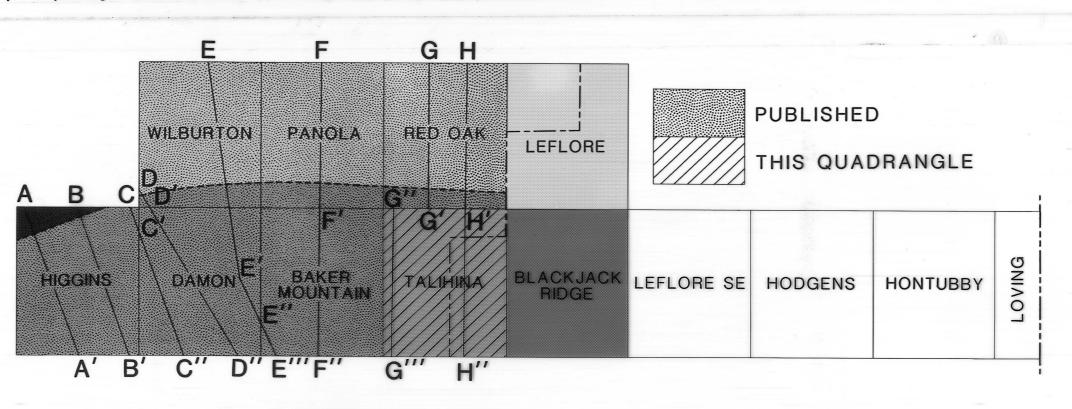
Ms STANLEY GROUP (MISSISSIPPIAN)—Predominantly poorly exposed, light-olive-gray (5Y5/2) to olive-gray (5Y4/1), fissile, noncalcareous shale and thin siltstones with discoidal siltstone and sandstone masses and rare limonite concretions. Shale commonly appears sheared and/or contorted; "pencil" structure typical. Shale weathers to "flakey" appearance. Siltstones rarely show cone-in-cone structure. Includes medium-dark-gray (N4) to dusky-yellow (5Y6/4), hard, welllaminated, siliceous shale and siltstone with uncommon radiolaria and very light-colored tuffaceous(?) shale. Unit also contains sandstone beds that average about 50 cm thick, varying from 5 cm to amalgamated beds as much as 10 m thick. Sandstone typically is light-olive-gray (5Y5/2), olive-gray (5Y4/1), to medium-dark-gray (N4), fine-grained, unstratified to parallel- or crossstratified, and calcareous or noncalcareous. Some individual beds show slight normal grading; stratified, and calcareous or noncalcareous. Some individual beds show slight normal grading, others contain medium-sized, rounded, frosted quartz or chert grains supported in a fine-grained matrix. Feldspar constitutes as much as 15% and rock fragments 10% of sandstone. Sorting is generally poor; sandstone beds typically silty and contain abundant intergranular mud. Stratification locally is contorted and sandstone beds pinch, swell, and occur as concordant to slightly discordant pods and lenses in the shale. Organic material and plant debris is disseminated throughout the sandstone and locally concentrated on bedding planes. Shale rip-up clasts and sandstone dikes locally abundant. Bases of sandstone beds typically planar, but sole marks (load, groove, and flute casts, trace fossils) locally present. Porosity typically very low. Widely exposed only in southern part of quadrangle. Maximum thickness approximately 2900 ft (875 m) south of Windingstair fault

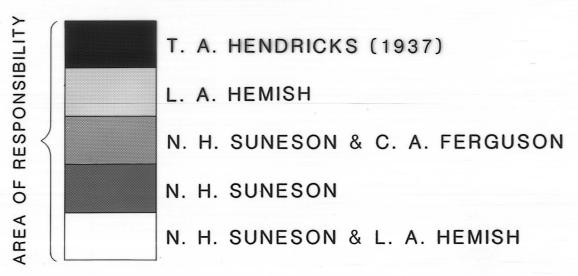
Oklahoma Geologic Quadrangle OGQ-7
Geologic Map of the Talihina 7.5' Quadrangle CORRELATION OF MAP UNITS PENNSYLVANIAN Psp — CONTACT—Dashed where approximately located

THRUST FAULT—Sawteeth on upper plate; dashed where approximately located; dotted where concealed; queried where questionable FAULT—Arrows show relative horizontal movement; dashed where approximately located; dotted where ANTICLINE—Showing crestline; dashed where approximately located; dotted where concealed ? SYNCLINE—Showing troughline; dashed where approximately located; dotted where concealed; queried STRIKE AND DIP OF BEDS

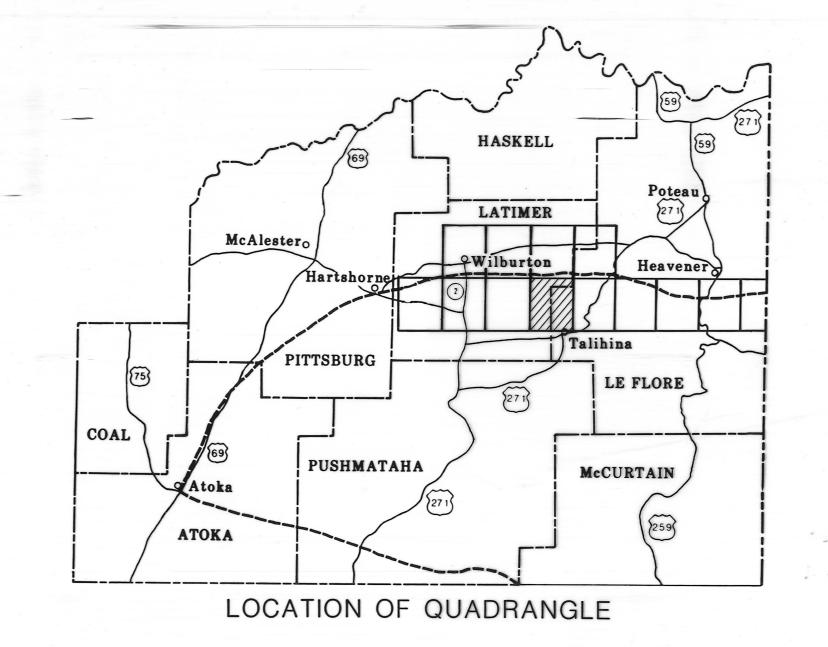
Leader to location of measurement Strike and dip of beds, facing direction unknown Vertical beds, facing direction unknown Strike and dip of beds, upright Vertical beds, ball indicates top of beds Strike and beds of beds, overturned OIL AND GAS WELLS (Spudded before January 1, 1990)

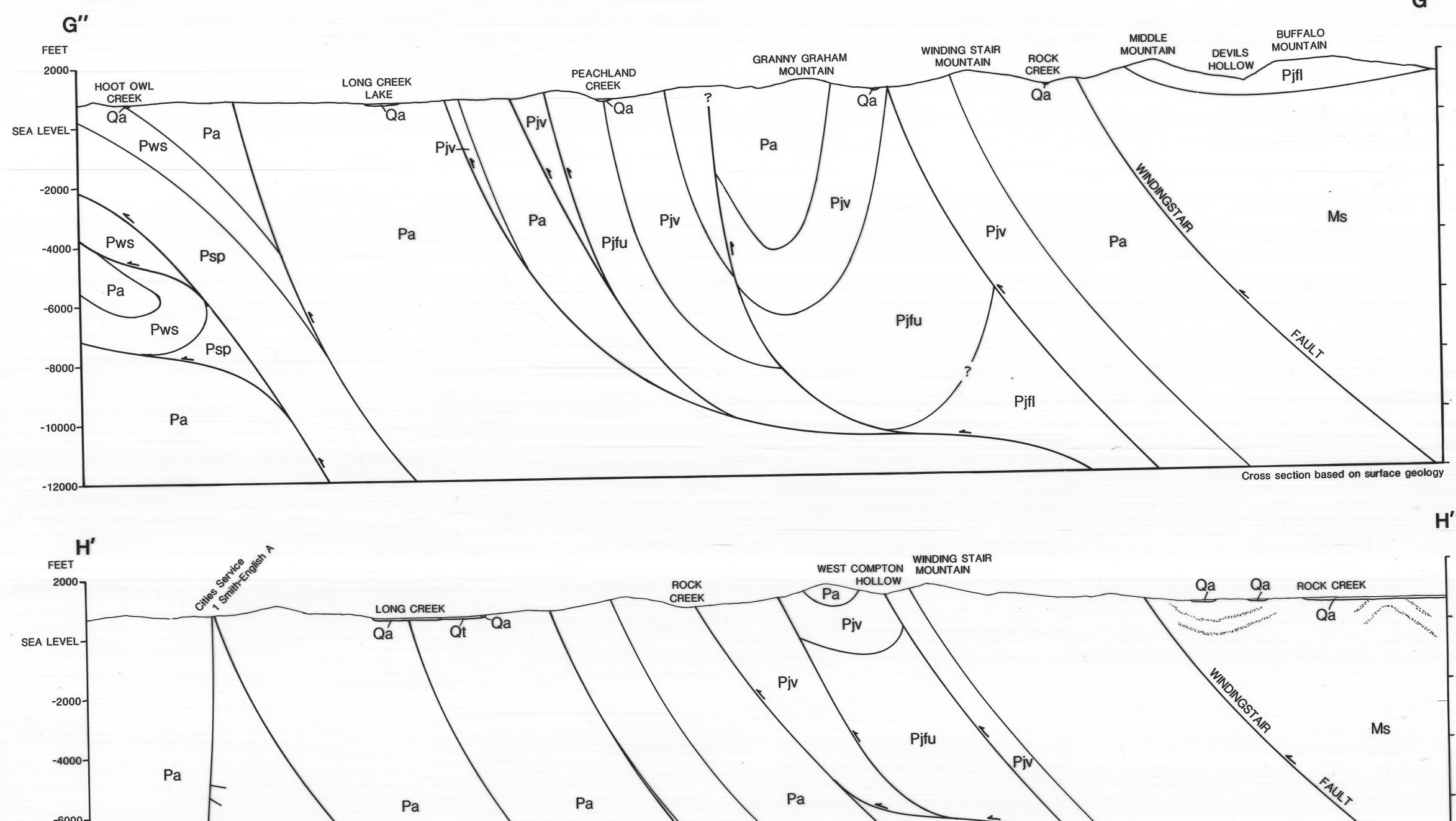
Cities Service 1 Smith-English A, Spud 10/20/83, TD 14,902'
 Select 1 Warren, Spud 3/13/85, TD 225'

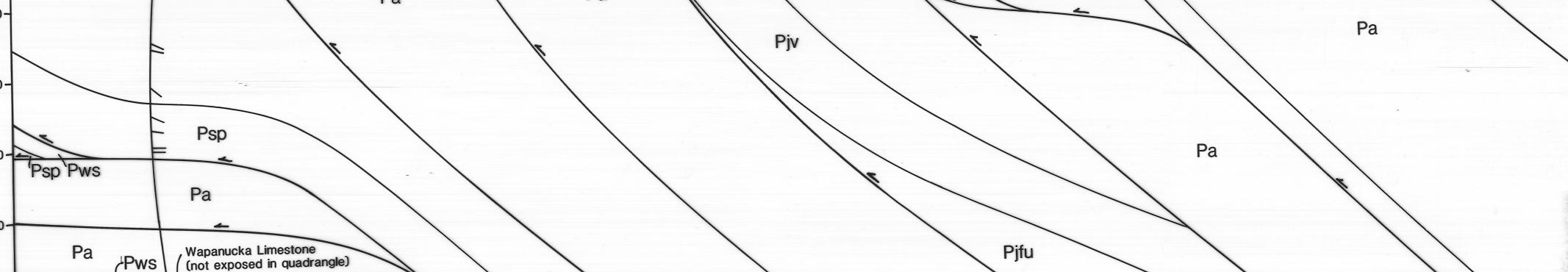




INDEX TO QUADRANGLES, CROSS SECTIONS, AND AREA OF RESPONSIBILITY







Cross section based on surface geology and well-log interpretation.