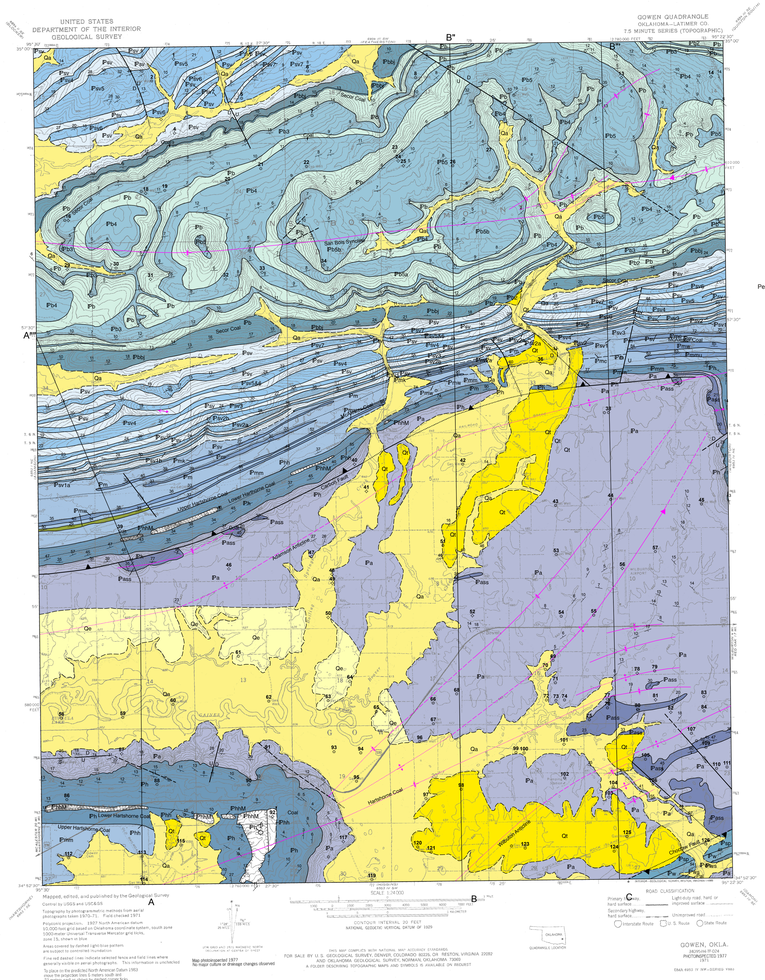


GEOLOGIC MAP OF THE GOWEN 7.5' QUADRANGLE LATIMER COUNTY, OKLAHOMA

By
Leroy A. Hemish

Digitized by Jacob Hernandez, 2014

Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography by photogrammetric methods from aerial photographs taken 1971. Field checked 1971

Projection and tics: 1927 North American datum
10,000-foot grid based on Oklahoma coordinate system, south zone
1,000-meter Universal Transverse Mercator grid ticks, zone 15, shown in blue

Red tint indicates recently surveyed or revised right-of-way portions are subject to corrected classification

Fine red dashed lines indicate selected fence and field lines where generally visible on aerial photographs. This information is unchecked

To place on the predicted North American Datum 1983 move the projection lines 5 meters south and 22 meters east as shown by dashed corner ticks

Map photorevised 1977
No major culture or drainage changes observed

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS

FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
AND OKLAHOMA GEOLOGICAL SURVEY, NORMAN, OKLAHOMA 73069
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

DASHED LINES INDICATE 10-FOOT CONTOURS

SCALE 1:24 000
1 0 1 MILE
1 0 1 KILOMETER

ROAD CLASSIFICATION
Primary highway, hard surface
Secondary highway, hard surface
Light-duty road, hard or improved surface
Unimproved road
Interstate Route
U. S. Route
State Route

OKLAHOMA
QUADRANGLE LOCATION

GOWEN, OKLA.
SE/4 OKLAHOMA 15 QUAD
PHOTOINSPECTED 1977
DMA 6323 IV SW—SERIES V881

CORRELATION OF MAP UNITS

Quaternary	Qs	Qs
	Qe	Qe
	Qt	Qt
Units North of Choctaw Fault	Pb,	Pb,
	Pb	Pb
	Pb,	Pb,
	Pb	Pb
	Pb,	Pb,
	Psv	Psv
	Pb	Pb
	Pbq	Pbq
	Psv	Psv
	Psv,	Psv,
	Pm	Pm
	Psv	Psv
	Psv,	Psv,
	Psv	Psv
	Psv,	Psv,
	Psv	Psv
	Psv,	Psv,
	Pa	Pa
	Pmk	Pmk
	Pmmc	Pmmc
	Pm	Pm
	Pmw	Pmw
	Pmmu	Pmmu
	Phh	Phh
	Pa	Pass
Units South of Choctaw Fault	Pa	Pa
	Pas	Pal
	Pw	Pw
	Pso	Pso

Pennsylvanian

DESCRIPTION OF UNITS

ALLUVIUM (QUATERNARY)–Gravel, sand, silt, and clay on flood plains of present-day streams.

EOLIAN DEPOSITS (QUATERNARY)–Very fine-grained, moderate-reddish-orange (10R6/6) to moderate-yellowish-brown (10YR5/4), noncalcareous sand and silt, generally from a few inches to about 4 ft thick, in a belt about 0.5 mi wide on the north and northeast sides of the flood plain of Gaines Creek.

TERRACE DEPOSITS (QUATERNARY)–Subangular to subrounded cobbles, gravel, sand, and silt, forming a veneer, generally about 4-10 ft thick, on the surfaces of terraces that stand about 15-50 ft above the beds of present-day streams.

UNITS PRESENT NORTH OF CHOCTAW FAULT

BOGEY FORMATION (PENNSYLVANIAN)–Predominantly sandy, silty, grayish-black (N2) to olive-gray (5Y4/1) to dark-yellowish-brown (10YR4/2) shales and siltstones (Pb) with several mappable, scarp-forming, fine- to very fine-grained sandstones (Pbb, Pb2, Pb3, Pb4, Pb5). At base is the Bluejacket Sandstone Member (Pbs), mostly moderate-yellowish-brown (10YR5/4) to grayish-orange (10YR7/4), fine- to very fine-grained, locally medium-grained, dirty, yellowish-brown (10YR4/2), very fine-grained, noncalcareous sandstones with abundant sedimentary structures such as ripples, cross-stratification, sole marks, and soft-sediment-deformation features. Pb2 is discontinuous or thin-bedded and crossbedded on the south flank of the Sans Bois syncline, and for a distance of about 4 mi to the east of the Choctaw Creek fault on the north flank of the syncline. Pb5 is split into lower and upper mappable units (Pbs4, Pb5b) separated by shales and thin coals. The Spiro coal bed (Pbq) is present in the shales of Pb5b in the Sans Bois syncline and (or) is present in the shale unit just above the Bluejacket Sandstone. A thin, unnamed coal bed occurs in the lower part of Pb4 in sec. 18, T. 6 N., R. 1 E. Thin, unmappable sandstone lenses are present in the shale units. Top of formation eroded. Thickness 700-900 ft.

SAVANNA FORMATION (PENNSYLVANIAN)–Predominantly pale-yellowish-brown (10YR6/2) to olive-gray (5Y3/2) to medium-dark-gray (N4) shales (Psv) with several mappable moderate-brown (5YR4/4) to grayish-orange (10YR7/4) to moderate-reddish-brown (10R4/6), fine- to very fine-grained, noncalcareous sandstone units (Psv1, Psv2, Psv3, Psv4, Psv5, Psv6). At base is the Spiro Sandstone Member (Psv1), a mappable, cliff-forming unit that is commonly thick-bedded, marked and in places contain abundant soft-sediment deformation features. Sole marks (trace fossils, brush and prod marks; flute, groove, and load casts) at the base of some sandstone beds are locally common. Psv1 marks the base of the formation on the south flank of the Sans Bois syncline except for places near the central part of the map where the sandstone is either absent, covered, or too thin to be mappable. Psv1–Psv7 are all mapped as single units, but may locally be subdivided. Psv7 is the uppermost unit in the Savanna. Psv1–Psv7 are mappable sandstone units separated by shale beds. Most shales include thin, unmappable sandstone units. Thickness 1,400-1,800 ft.

MOULESTER FORMATION (PENNSYLVANIAN)–Predominantly dark-gray (N3) to black (N1), blocky shales containing abundant ironstone concretions. McCurtain Shale Member (Pmm) at the base is approximately 660 ft thick. A discontinuous pale-yellowish-brown (10YR6/2), shaky, thin, unnamed sandstone unit (Pmmu) lies approximately in the middle of the McCurtain Shale Member near the eastern edge of the map. The Warner Sandstone Member (Pmw) overlies the McCurtain Shale Member. It is a resistant, moderate-reddish-brown (10R4/6) to grayish-orange (10YR7/4), fine-grained, noncalcareous, locally cross-bedded sandstone unit that is approximately 100 ft thick. Exposed in the area west of Boiling Springs Creek, it is split into a lower and an upper unit separated by shale. Two named, moderate-brown (5YR5/4), fine-grained, thin-bedded sandstone units occur in the shale (Pm) above the Warner Sandstone Member: Cameron Sandstone Member (Pmc) and Kenta Sandstone Member (Pmk). Unexposed McAlester and Upper McAlester coal beds (Pmmc) occur in the shale interval between the Cameron Sandstone Member and the Kenta Sandstone Member. Thickness 2,000-2,200 ft.

HARTSHORNE FORMATION (PENNSYLVANIAN)–Grayish-orange (10YR7/4) to moderate-reddish-orange (10R6/6) to very light-gray (N8), very fine-grained, ripple-marked, bioturbated, thin-bedded to massive sandstone interbedded with silty, medium-gray (N5) shale. Contains the Lower and Upper Hartshorne coals (Phh). Surface-mined areas designated (PHhM). Thickness approximately 250-300 ft.

ATOKA FORMATION (PENNSYLVANIAN)–Predominantly silty, medium-dark-gray (N4) to olive-black (5Y2/1), noncalcareous shale (Pa) containing a few thin, lenticular, very fine-grained, dirty, yellowish-brown, ledge-forming, moderate-yellowish-brown (10YR5/4) to dark-yellowish-orange (10YR6/6), very fine-grained, dirty, molluscan sandstone (Pass) containing plant fragments and trace fossils. Approximately 1,200 ft of upper part exposed north of the Choctaw fault. Total thickness in subsurface in Sans Bois Mountains: approximately 6,000-8,000 ft.

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 yellowish-gray (5Y7/2), very fine grained, noncalcareous, and composed of about 95% quartz. Upper shale (Pa) contains sandstone (Pass) in moderately exposed, noncalcareous, and composed of about 95% quartz. 2% feldspar and lithic fragments, and conspicuous white mica parallel to laminations. Individual beds vary from several inches to several feet thick and average about 2 ft. Thicker beds are generally massive (corresponding to Tb 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, brush and prod marks) are locally common at the base of sandstone beds. Sandstone beds are commonly lenticular. Unbioturbated except for local concentrations of plant debris on bedding planes. Stratigraphic position of Atoka Formation exposed immediately south of trace of Choctaw fault unknown. Approximately 640 ft exposed in southeastern part of quadrangle.

LOWER ATOKA SHALE (PENNSYLVANIAN)–Poorly exposed. In adjacent area to the southwest is olive-gray (5Y3/2) to grayish-olive (10Y4/2), noncalcareous, poorly laminated shale and mudstone with thin sandstone beds. Locally mapped separately from Atoka Formation (Pa). Mostly covered with alluvium (Qa). Maximum thickness approximately 1,000 ft south of Choctaw fault in adjoining Higgins 7.5-minute quadrangle.

SPIRO SANDSTONE MEMBER (INFORMAL) OF WAPANUCKA FORMATION (PENNSYLVANIAN-MIANI)–Well-exposed, light-brown (5YR5/6) to very pale-orange (10YR8/2), mostly well-sorted, porous, medium-grained, stratified quartz arenite. Quartzose, mostly noncalcareous, locally with abundant trace fossils (Scolithus) and ripple marks. Forms prominent, cliff-forming outcrops. Thickness 0-60 ft. Lithologically similar to limestone beds similar to those in the Wapanucka Formation (Pw). Maximum thickness approximately 350 ft south of Choctaw Fault.

WAPANUCKA FORMATION (PENNSYLVANIAN)–Predominantly poorly to moderately well-exposed, medium-gray (N5) to medium-dark-gray (N4), wavy-bedded, sparsely fossiliferous (crinoids, brachiopods, gastropods, corals) micrite and parakite- to rarely cross-stratified packstone and bioclastic limestone. Locally slightly spicular. Micrite locally nodular, slightly petroliferous odor; packstone locally sandy. Mostly underlying, but locally interfingering with Spiro sandstone member (informal). Maximum thickness approximately 300 ft south of Choctaw fault.

"SPRINGER" FORMATION (PENNSYLVANIAN)–Unexposed, dark-gray (N3) to olive-gray (5Y4/1), locally slightly silty, thinly calcareous shale with lesser amounts of interbedded laminated siltstone. Siltstone beds locally contain abundant macrofossils (gastropods, brachiopods, nautiloids). West of mapped area unit contains phosphatic(?) concretions, interbedded siderite concretions, and local traces of pyrite. Maximum thickness approximately 650 ft south of Choctaw fault.

SYMBOLS

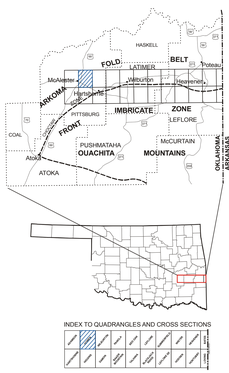
- CONTACT - Dashed where approximately located
- COAL BOUNDARY - Approximate outcrop boundary of coal bed (named on map); triangle indicates exposure of coal
- THRUST FAULT - Sawteeth on upper plate; dashed where approximately located; dotted where concealed
- FAULT - Arrows show relative horizontal movement; dashed where approximately located; dotted where concealed
- FAULT - Dashed where inferred; dotted where concealed; U, upthrown side; D, downthrown side
- ANTICLINE - Showing crestline; arrow shows direction of plunge; dashed where approximately located; dotted where concealed
- SYNCLINE - Showing troughline; arrow shows direction of plunge; dashed where approximately located; dotted where concealed
- MINOR ANTICLINE - Showing plunge
- MINOR SYNCLINE - Showing plunge

STRIKE AND DIP OF BEDS

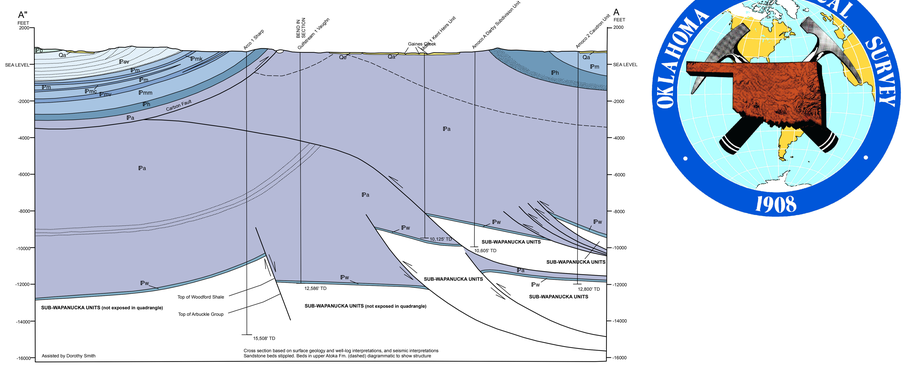
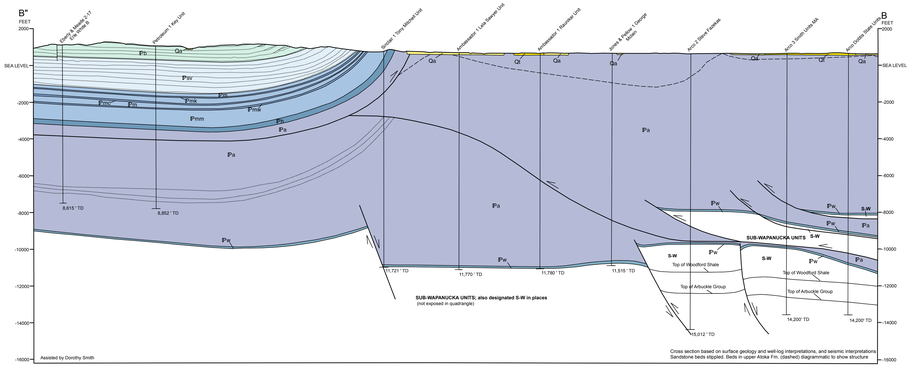
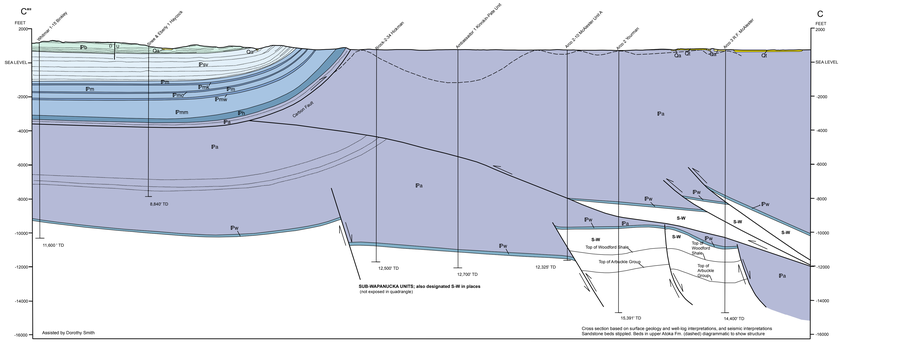
- Strike and dip of beds, upright
- Strike and dip of beds, overturned
- Vertical beds, facing direction unknown
- Vertical beds, ball indicates top of beds
- Horizontal beds

OIL AND GAS WELLS (Drilling as of June 1,1991)

- Dry hole, abandoned
- Gas well



INDEX TO QUADRANGLES AND CROSS SECTIONS

LIST OF WELLS SPUDDED BEFORE JUNE 1, 1991

MAP NO.	OPERATOR	LEASE	SPUD DATE	TOTAL DEPTH (FT)
1	Jackass Flats Oil & Gas Co.	6 White	9/21/79	Unknown
2	Skelly Oil Co.	1 White K	11/16/66	7,500
2	Farmers Energy Corp. (work over)	1 White K	1/18/81	7,500
3	Oxley Petroleum Co.	1 Marilyn	12/20/70	7,442
4	Texas Oil & Gas Corp.	1 White H	1/28/80	7,500
5	Skelly Oil Co.	1 White F	7/25/66	9,982
6	Mobil Oil Corp.	1 Frank Glenn B	6/22/67	7,500
7	Mobil Oil Corp.	2 Frank Glenn E Unit	11/4/89	8,249
8	Mobil Oil Corp.	1 Erie White B	3/27/67	8,335
9	Eberly & Meade, Inc.	2-17 Erie White B	5/30/90	8,615
10	Samson Resources Co.	1-16 Julia	6/14/86	8,750
11	Mobil Oil Corp.	1 Doremus	4/19/68	8,903
12	Whitmar Exploration Co.	1-15 Binkley	12/7/82	11,600
13	Shell Oil Co.	1-15 Doremus	6/11/66	8,900
14	Unknown	Unknown	Unknown	Unknown
15	Snee & Eberly	A1-22 Erie White	12/15/74	8,200
16	Snee & Eberly	1-22 Erie White	11/79/74	4,153
17	Skelly Oil Co.	1-A White N	1/18/67	8,150
18	Skelly Oil Co.	1 White N	1/8/67	517
19	Getty Oil Co.	2 White N	3/28/81	8,196
19	Eberly Oil Co. (work over)	2 White N	3/28/81	8,196
20	Amax Petroleum Corp.	1 Parker	1/14/67	8,512
20	Samson Resources Co. (work over)	1 Parker	1/14/67	8,512
21	Samson Resources Co.	1 Pine Lake	2/24/89	8,250
22	Samson Resources Co. (Shell Oil Co.	1-19 Jankowsky	1/13/68	8,570
23	Unknown	Unknown	Unknown	Unknown
24	Ferguson Oil Co., Inc.	1 Key	9/25/74	8,840
25	Harper Oil Co.	1 Key	2/6/68	8,822
26	Petroleum, Inc.	1 Key Unit	11/11/76	8,852
27	Oxley Petroleum Co.	1 Hemphill	4/29/91	Incomplete
28	Snee & Eberly	1 Haycock	8/26/77	8,840
29	BTA Oil Producers	7807 IV-P Adamson	12/10/78	8,126
30	Samson Resources Co.	1-26 Cirar	10/21/77	8,500
31	Amax Petroleum Corp.	1 Cirar	7/12/67	8,703
32	Sinclair Oil & Gas Co.	1 Grace Cirar Unit	7/14/68	8,500
33	Sunset International Petroleum Corp.	1 Cirar	12/26/68	8,562
34	Atlantic Richfield Co.	1 Conway Unit	5/2/76	8,048
35	Sinclair Oil & Gas Co.	1 R. H. Mitchell Unit	11/5/63	8,150
36	Sinclair Oil & Gas Co.	1 R. H. Lowry	11/5/63	11,646
37	Brock Hydrocarbons, Inc.	2-34 Hickman	11/28/80	12,500
38	Brock Hydrocarbons, Inc.	1-34 Billy Hickman	12/1/79	7,494
39	ARCO Oil & Gas Co.	1 Sharp	8/9/88	15,508
40	Brock Hydrocarbons, Inc.	1-6 Boddy	5/27/81	12,475
41	Ambassador Oil Corp.	1 Chaudoin Unit	3/30/63	12,075
42	Ambassador Oil Corp.	1 Lela Sawyer Unit	8/9/62	11,770
43	Ambassador Oil Corp.	1 Edgar S. Woods Unit	2/3/62	11,808
44	Ambassador Oil Corp.	1 Kinnikin-Pate Unit	6/10/61	12,700
45	Ambassador Oil Corp.	1 Davis Unit	4/18/62	11,845
46	Gulfstream Petroleum Corp.	1 Vaughn	8/22/78	12,589
47	Sinclair Oil & Gas Co.	1 Gardner Unit	3/8/63	12,746
48	P & F Petroleum Co.	1 Hunt	Unknown	8,600
49	Unknown	Unknown	Unknown	3,220
50	Petroleum, Inc.	1 Ferguson Unit	10/12/79	10,000
51	Ambassador Oil Corp.	1 Raunikar Unit	12/8/62	11,780
52	Jones & Pellow Oil Co.	1 George McClain	3/29/74	11,515
53	Ambassador Oil Corp.	1 Topping-State Unit	9/20/62	11,863
54	JMC Exploration, Inc.	2 Topping-State	4/15/90	11,900
55	ARCO Oil & Gas Co.	2-10 McAlester A Unit	12/16/87	12,325
55	ARCO Oil & Gas Co. (work over)	2 McAlester A Unit	12/7/89	12,325
56	Unknown	Unknown	Unknown	Unknown
57	Ambassador Oil Corp.	1 RF McAlester A Unit	7/4/62	11,954
58	Samson Resources Co.	1 Kent Unit	8/18/77	9,125
59	Arkoma Production Co.	B-1 Kent Heirs	12/27/81	9,135
60	Mobil Oil Corp.	1 Kent Heirs Unit	3/26/66	10,125
61	ARCO Oil & Gas Co.	2 Dunagan A	10/22/88	10,810
62	Sinclair Oil & Gas Co.	1 Dunagan A Unit	9/28/63	8,534
63	Ambassador Oil Corp.	1 Bud Hampton Unit	2/18/63	9,128
64	Unknown	Unknown	Unknown	Unknown
65	ARCO Oil & Gas Co.	2 Bud Hampton	7/14/89	14,660
66	Ambassador Oil Corp.	1 Fazekas Unit	11/19/62	8,944
67	Unknown	Unknown	Unknown	Unknown
68	ARCO Oil & Gas Co.	2 Steve Fazekas	8/31/87	15,012
69	ARCO Oil & Gas Co.	2 G. L. Kilpatrick	2/28/88	11,964
70	ARCO Oil & Gas Co.	3 G. L. Kilpatrick	7/30/88	11,200
70	ARCO Oil & Gas Co. (work over)	3 G. L. Kilpatrick	7/30/88	11,200
71	Unknown	Unknown	Unknown	1,849
72	Unknown	Unknown	Unknown	Unknown
73	Ambassador Oil Corp.	1 Kilpatrick Unit	7/16/62	8,758
74	Unknown	Unknown	Unknown	Unknown
75	Limestone Oil & Gas Co.	1 Nettie McCurray	5/12/27	4,038
76	Unknown	Unknown	Unknown	Unknown
77	ARCO Oil & Gas Co.	3 Yourman	3/26/88	11,250
77	ARCO Oil & Gas Co. (work over)	3 Yourman	3/14/89	11,250
78	Unknown	Unknown	Unknown	4,020
79	ARCO Oil & Gas Co.	2 Yourman	2/8/87	15,391
79	ARCO Oil & Gas Co. (work over)	2 Yourman	3/9/88	15,391
80	Ambassador Oil Corp.	1 Yourman Unit	5/7/62	8,920
81	Clark & Co.	1 Wilson	10/31/36	6,515
82	Unknown	Unknown	Unknown	6,515
83	Samson Resources Co.	2 Costillow	7/26/85	12,440
84	Samson Resources Co.	4 Costillow	5/28/90	9,800
85	Mobil Oil Co.	1 Goldie Sivil Unit	10/25/65	9,322
86	Samson Resources Co.	1 Sams	3/10/86	10,550
87	Mobil Oil Co.	2 Darby Subdiv. Unit	7/11/87	10,605
87	Amoco Production Co. (work over)	A Darby Subdiv. Unit	7/11/87	10,605
88	Mobil Oil Co.	1 Darby Subdiv. Unit	1/10/65	10,100
89	JMC Exploration	3 Darby	6/16/90	11,290
90	Marathon Oil Co.	1 Fabbro Unit	7/9/64	9,225
91	Marathon Oil Co.	2 Fabbro Unit	2/24/87	11,608
91	Marathon Oil Co. (work over)	2 Fabbro Unit	2/24/87	11,608
92	Marathon Oil Co.	3 Fabbro Unit	5/24/90	14,500
93	ARCO Oil & Gas Co.	3 Bennett-State	1/30/89	11,756
94	ARCO Oil & Gas Co.	2 Bennett-State	6/21/88	14,500
94	ARCO Oil & Gas Co. (work over)	2 Bennett-State	6/21/88	14,500
95	Sinclair Oil & Gas Co.	1 Bennett-State Unit	12/14/63	9,060
96	Ambassador Oil Corp.	1 Smith Unit	5/6/62	8,703
97	ARCO Oil & Gas Co.	2 Smith Unit MA	8/29/85	12,613
97	ARCO Oil & Gas Co. (work over)	2 Smith Unit MA	8/29/85	12,613
98	ARCO Oil & Gas Co.	3 Smith Unit MA	2/27/89	14,200
99	ARCO Oil & Gas Co.	2 Paschall	6/19/88	14,278
99	ARCO Oil & Gas Co. (work over)	2 Paschall	6/19/88	14,278
100	ARCO Oil & Gas Co.	3 Paschall	12/1/88	11,550
101	Unknown	Unknown	Unknown	2,763
102	Ambassador Oil Corp.	1 Paschall Unit	12/13/61	8,522
103	ARCO Oil & Gas Co.	2 R. F. McAlester	12/28/85	7,585
104	ARCO Oil & Gas Co.	2K R. F. McAlester	8/4/86	11,162
105	Ambassador Oil Corp.	1 R. F. McAlester	2/27/61	9,343
106	ARCO Oil & Gas Co.	3 R. F. McAlester	11/12/88	14,400
107	Unknown	Unknown	Unknown	Unknown
108	Anadarko Petroleum Corp.	4-23 Williams A	8/16/89	11,675
109	Ambassador Oil Corp.	1 W. M. Williams Unit	9/21/60	9,704
110	Anadarko Petroleum Corp.	3-23 Williams A	9/24/89	15,000
110	Anadarko Petro. Corp. (work over)	3-23 Williams A	9/24/89	15,000
111	Anadarko Petroleum Corp.	2-23 Williams A	7/24/89	15,254
112	Sinclair Oil & Gas Co.	1 Adkins Unit	10/4/65	9,200
113	Sinclair Prairie Oil Co.	1 Claudon Unit	12/8/55	12,260
114	Pan American Petroleum Corp.	1 Claudon Unit	2/8/65	9,890
115	JMC Exploration	3 Claudon	9/28/90	11,050
116	Sinclair Oil & Gas Co.	1 J. L. Henley Unit	10/9/64	10,125
117	ARCO Oil & Gas Co.	3 Jessie Bennett MA	9/26/89	14,530
118	ARCO Oil & Gas Co.	2 Jessie Bennett	11/86	11,188
118	ARCO Oil & Gas Co. (work over)	2 Jessie Bennett MA	3/29/89	13,598
119	Sinclair Oil & Gas Co.	1 Jessie Bennett	2/16/64	9,221
120	Ambassador Oil Corp.	1 Dobbs-State Unit	6/23/62	8,895
121	ARCO Oil & Gas Co.	2 Dobbs-St. Unit MA	1/2/90	14,200
122	Ambassador Oil Corp.	1 State C Unit	7/16/62	9,106
123	ARCO Oil & Gas Co.	2 State C	6/19/89	14,100
124	ARCO Oil & Gas Co.	2 E. V. Enis	10/14/90	14,100
125	Sinclair Oil & Gas Co.	1 E. V. Enis Unit	4/2/63	9,845
126	Sinclair Oil & Gas Co.	1 Watts-Jones Unit	11/16/63	10,407