COMPUTER-ASSISTED MAPPING OF "CHEROKEE" SANDSTONE TRENDS, BY REFERENCE TO SPONTANEOUS POTENTIAL CURVES, IN PARTS OF CREEK, LINCOLN, AND PAYNE COUNTIES, OKLAHOMA

By

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CHAPTER 1

INTRODUCTION

Location of the Study Area and General Statement

The study area is located on the Central Oklahoma Platform (Figure 1), west and south of the Cushing anticline. The area is in portions of Payne, Lincoln and Creek counties, Oklahoma and is composed of approximately 171 square miles (109,000 acres). It comprises five townships: Townships 15 and 16 North, Range 6 and 7 East and Township 17 North, Range 6 East (Figure 2). The town of Stroud is in the southwestern portion of the area and Interstate Highway 44 (Turner Turnpike) crosses diagonally from northeastward across the southern portion.

This area has been of interest for oil and gas producers for almost a century. Several uncommonly productive oil and gas fields are within the area (Figure 3 and Table 1). Discovery of the Cushing field in 1912 was the major impetus for exploration and production. Development of the area - although subdued compared to the past - continues to this day (Figure 4, 5, 6). Oil and gas production has been reported from eighteen different zones, ranging in age from Cambro-Ordovician to upper-Pennsylvanian. Cumulative production to date is more than 438 million barrels of oil and nearly 54 billion cubic feet of gas according to IHS Energy (formerly PI/Dwights). However, the amounts, however, probably are higher since much of the early production was not reported.

Although there are many producing zones, the stratigraphic interval of interest is known as the “Cherokee Group” of Desmoinesian age, which is composed of marker-

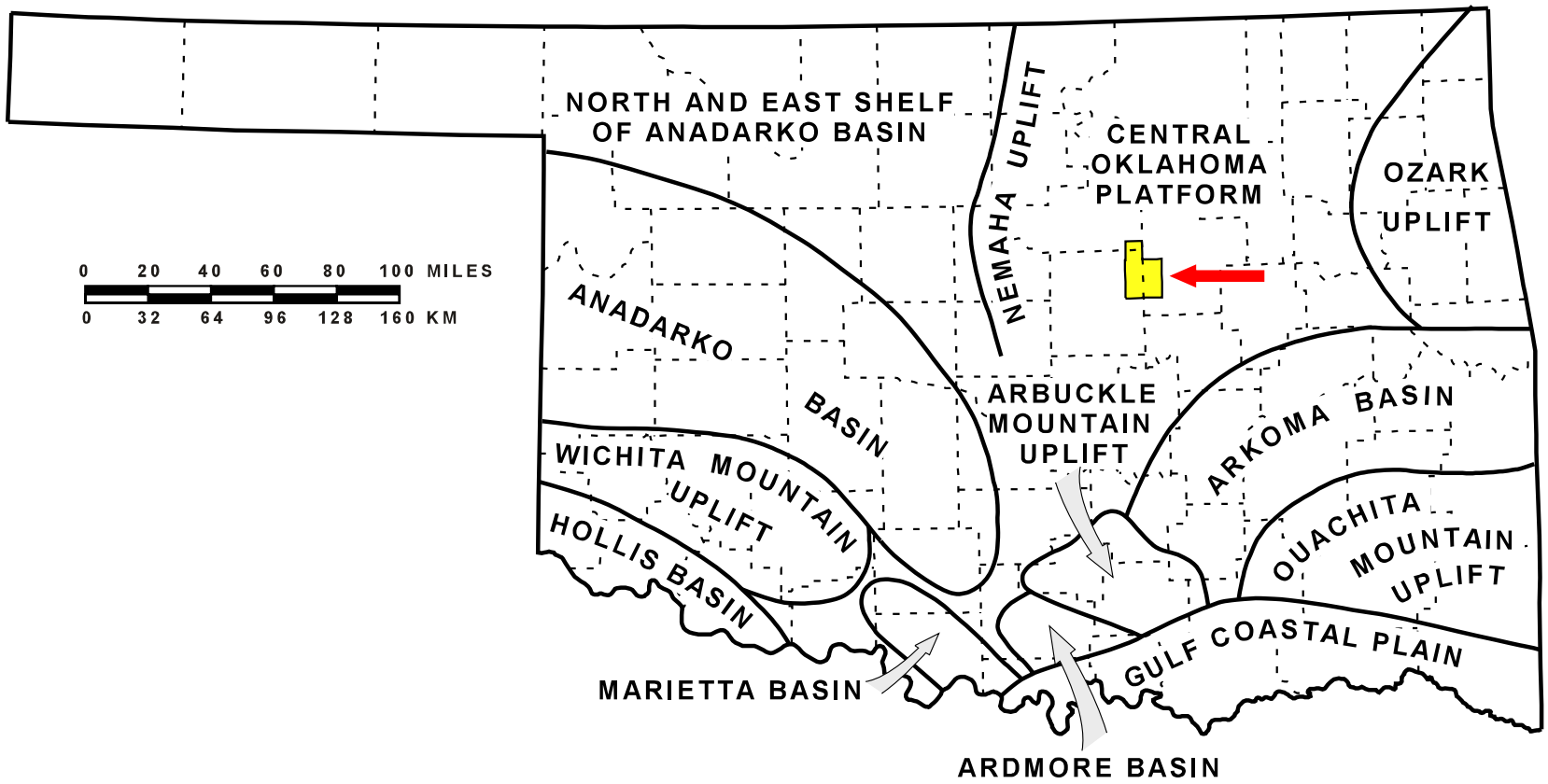


Figure 1. Major geologic provinces of Oklahoma (modified from Moore, 1999).

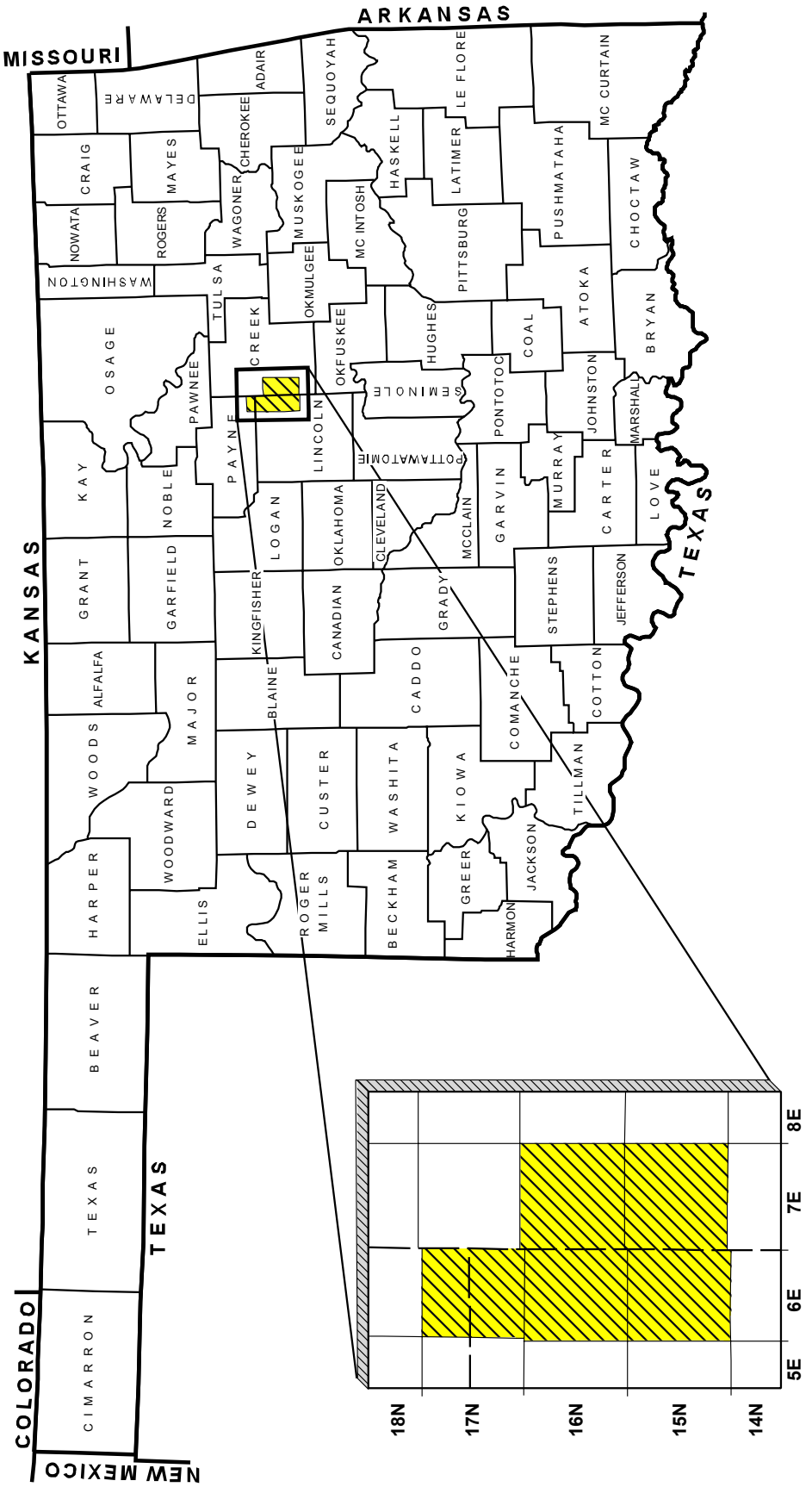


Figure 2. Boundaries of study area.

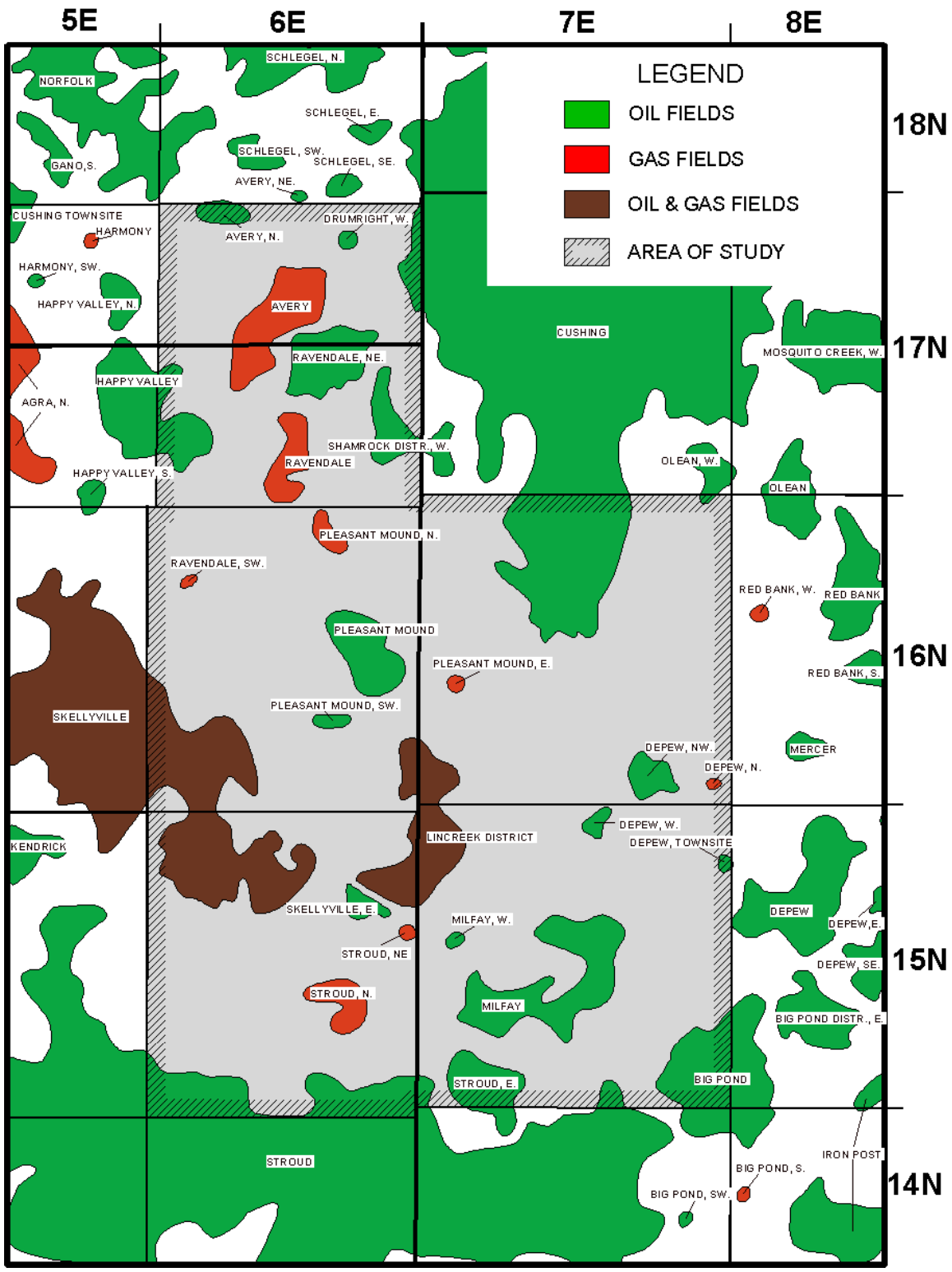
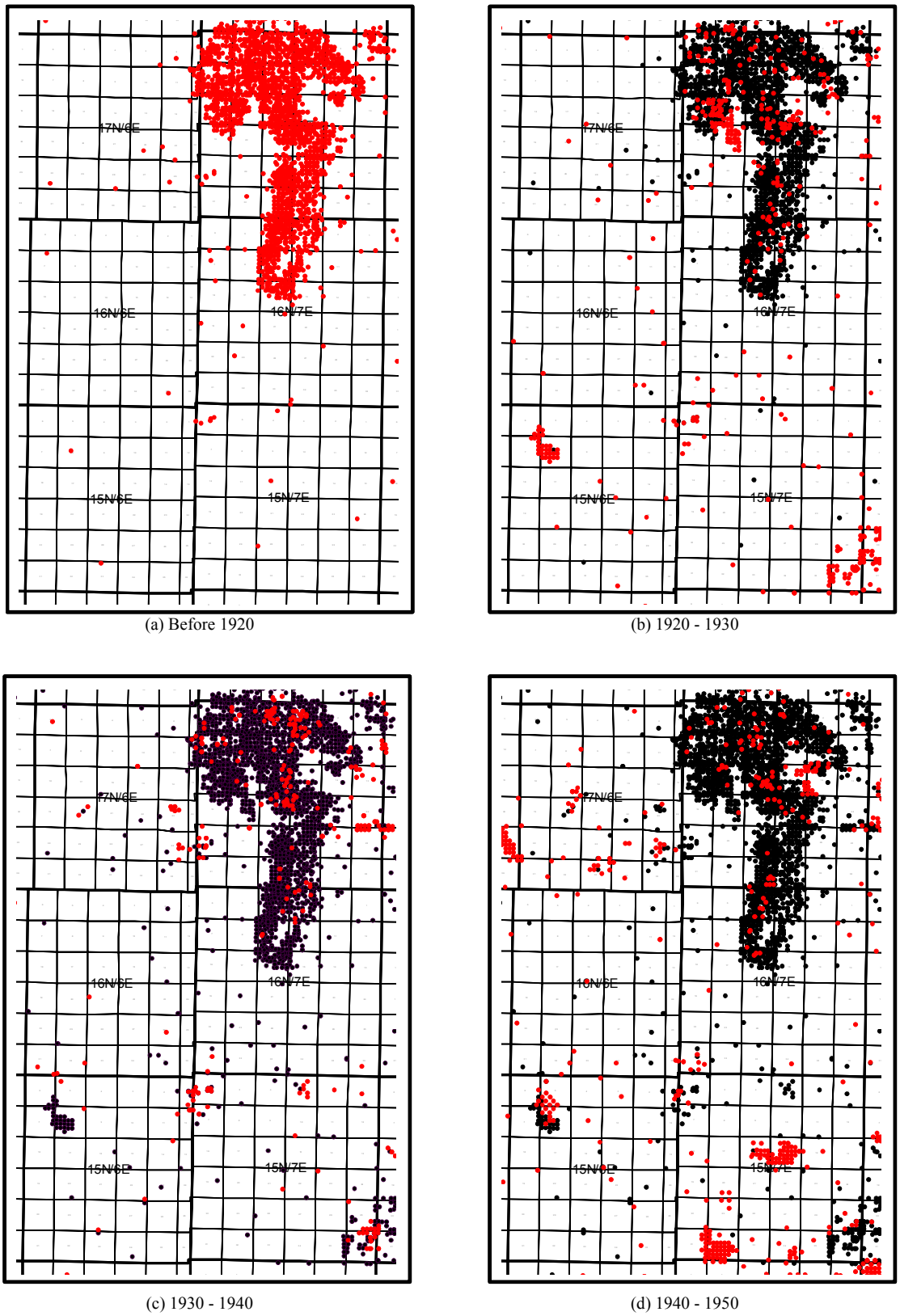


Figure 3. Oil and gas fields within the study area. (Modified from Burchfield, 1989.)

FIELD NAME	CUMULATIVE PRODUCTION		PRODUCING ZONES	DISCOVERY WELL					
	OIL (BBL)	GAS (MMCF)		OPERATOR	WELL NAME	LOCATION	INITIAL PROD.	PROD. FORMATION	COMPLETED
AVERY	82,555	2,666	PRUE, DUTCHER, MISS., RED FORK, OSWEGO	R.L. KEMP, ET AL	1 MEYER	NW SE SE 17-17N-6E		PRUE	10/1939
BIG POND	4,107,383	48,020	CLEVELAND, PRUE, SKINNER, BARTLESVILLE, DUTCHER,WILCOX						1924
CUSHING	515,378,060	75,412	LAYTON, CLEVELAND,OSWEGO, PRUE, SKINNER, RED FORK, BARTLESVILLE, WILCOX, ARBUCKLE	C.B. SHAFFER	WHEELER	31-18N-7E	IPF=400 BOPD	WHEELER (OSWEGO)	3/10/1912
DEPEW, N.		3,097	PRUE	WAGGONER DRILLING	1 SMITH	NW NE SE 36-16N-7E	IPF=824 MCFGPD	PRUE	4/25/1969
DEPEW, NW.	640,847	398,229	PRUE	GULF OIL CORP.	1 LASHLEY	NW SW NE 35-16N-7E			1/7/1954
DEPEW, TOWNSITE	NA	NA	SKINNER, DUTCHER, RED FORK, CLEVELAND, WILCOX, VIOLA	F.G. HUBBELL & R.H. SIEGFRIED	1 SHANNON	SE NE NE 12-15N-7E			6/2/1954
DEPEW, W.	293,612	60	WILCOX, BOOCH						1924
DRUMRIGHT, W.	681,879	NA	OSAGE LAYTON, LAYTON, PRUE, MISS., RED FORK	THOMAS E. BERRY	1 SORRELS	SE NW SE 3-17N-6E	IP=120 BOPD, 6 BW	LAYTON	7/20/1965
HAPPY VALLEY	2,202,870	1,134	BARTLESVILLE, RED FORK, PRUE, SKINNER, VILOLA, WILCOX, OSWEGO	FOSTER DRILLING	1 DEACON	NE NE SW 25-17N-5E	IPP=45 BOPD	BARTLESVILLE SD.	2/3/1949
LINCREEK DISTRICT	9,698	7,955	CLEVELAND, BARTLESVILLE, MISS., WILCOX						1923
MILFAY	4,777,208	4,435	WILCOX, SKINNER, PRUE, BARTLESVILLE, CLEVELAND	DEEP ROCK OIL CORP.	1 MEADORS	SE NW NE 16-15N-7E			11/9/1941
MILFAY, W.	1,662	20	SKINNER	D & L OIL CO.	1 FORRENDA WOODS	NW NE SE 18-15N-7E			3/5/1954
PLEASANT MOUND	970,600	2,111	CLEVELAND, PRUE, MISS., BURGESS, SKINNER, BARTLESVILLE	NADEL & GUSSMAN	1 TETERS	NE NE SW 14-16N-6E			9/5/1956
PLEASANT MOUND, E.	6,701	1,157	BARTLESVILLE, PRUE, MISS., WILCOX	KWB OIL	1 SELLERS	SE NW SE 19-16N-7E	IPF=7 BOPD, 250 MCFGPD	WILCOX	3/15/1978
PLEASANT MOUND, N.	11,350	4,792	BARTLESVILLE, MISS, RED FORK, OSWEGO, WILCOX	A.B. STILL	1 PEDERSON	SW SW NE 3-16N-6E	IPP=10 BOPD, 15 BW, 75 MCFGPD	MISS. & VIOLA	7/8/1977
PLEASANT MOUND, SW.	4,040	127	BURGESS, MISS., RED FORK(?)	WIL-McOIL	1 CONGER	NE NE NW 27-16N-6E	IPF=996 MCFGPD	RED FORK	1/14/1978
RAVENDALE	56,306	3,333	RED FORK, BARTLESVILLE	R.L. KEMP & L.B. JACKSON	1 E.S. WAGONER	NE NE NE 33-17N-6E			5/28/1946
RAVENDALE, NE	1,437,841	508		FLYNN OIL CO.	1 FAIRES	NW NW NE 22-17N-6E			4/10/1955
RAVENDALE, SW.	1,774	375		NADEL & GUSSMAN	1 VON DEYLEN	NE NE SE 7-16N-6E			12/11/1956
SHAMROCK DISTRICT, W. (INCLUDES SHAMROCK W)	223,838	2,200		DEEP ROCK OIL CORP.	1 ANNA MATTHEWS	SE SW NE 26-17N-6E			10/20/1932
SKELLYVILLE	4,589,779	39,849		INDEPENDENT OIL & GAS	1 ERP (URP?)	SE NE SE 6-15N-6E	IPF = 150 BPD	DUCTCHER SD	10/1924
SKELLYVILLE, E.	765,434	1,107		GEORGE O. FOLK	1 EMRICH	NW NW SW 11-15N-6E			8/28/1958
STROUD	79,605,101	70,396	BARTLESVILLE,	UNION PETROLEUM & SUPPLY		SE 2-14N-6E		WILCOX SD.	9/1/1923
STROUD, E.	2,554,028	823	PRUE, WILCOX	SHELL OIL CO.	1 LINIHAN	NE SE NE 31-15N-7E			
STROUD, N.	15,089	4,797	PRUE, MISS., SKINNER, BARTLESVILLE	ROSS OIL CO.	1 BAILEY	SE SE SE 22-15N-6E			7/7/1937
STROUD, NE.		266	DUTCHER, BARTLESVILLE, SKINNER	NED BIFFLE	1 A.T. ENGLISH	SE NW NW 13-15N-6E	IP=2500 MCFGPD	PRUE	10/20/1951

Table 1. Oil and gas fields, production data and dates of discovery.



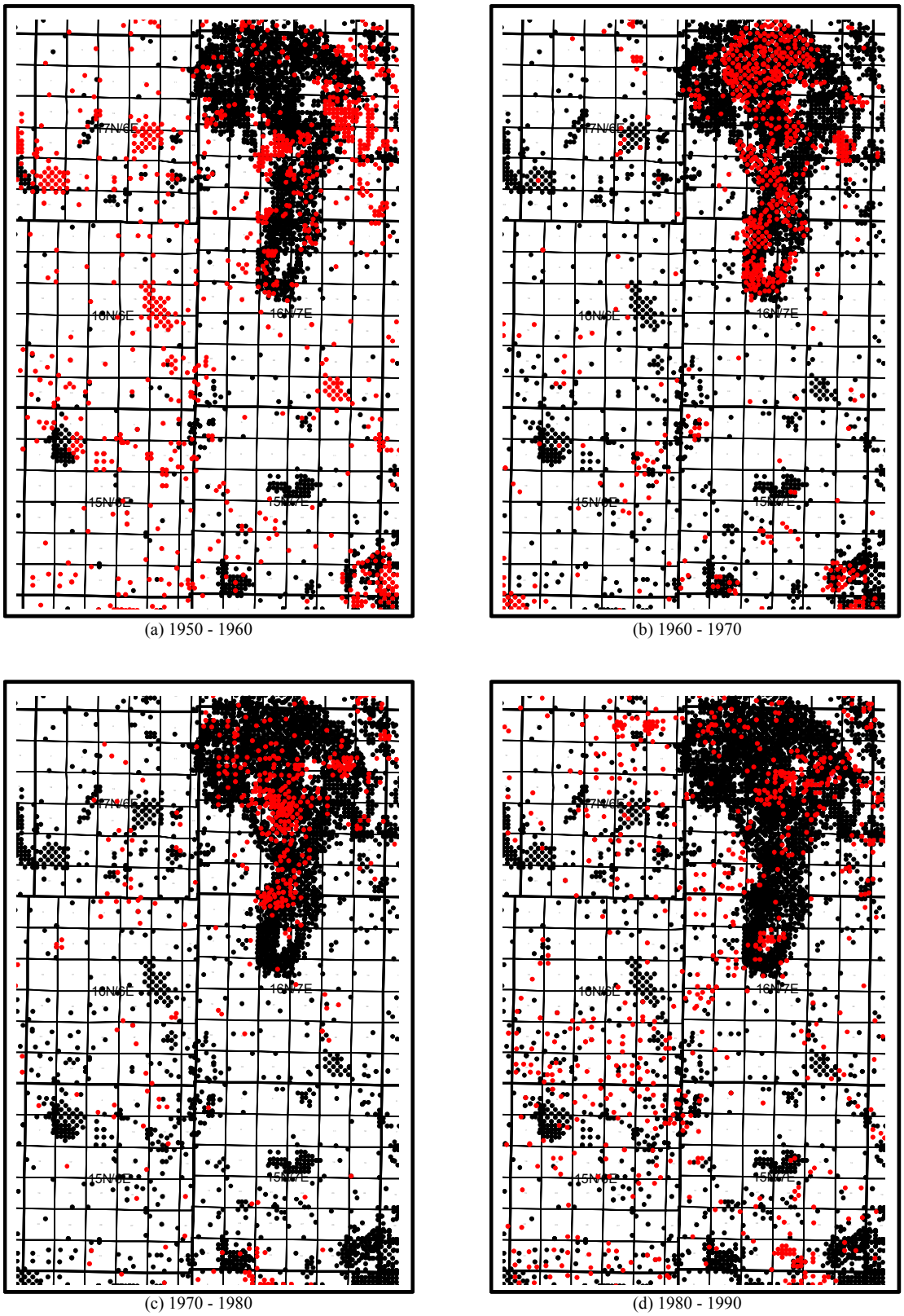
(a) Before 1920

(b) 1920 - 1930

(c) 1930 - 1940

(d) 1940 - 1950

Figure 4. Well completions by decade from before 1920 to 1950. Black dots are previously completed wells; red dots show wells completed in the decade indicated (data from IHS Energy, 2004).



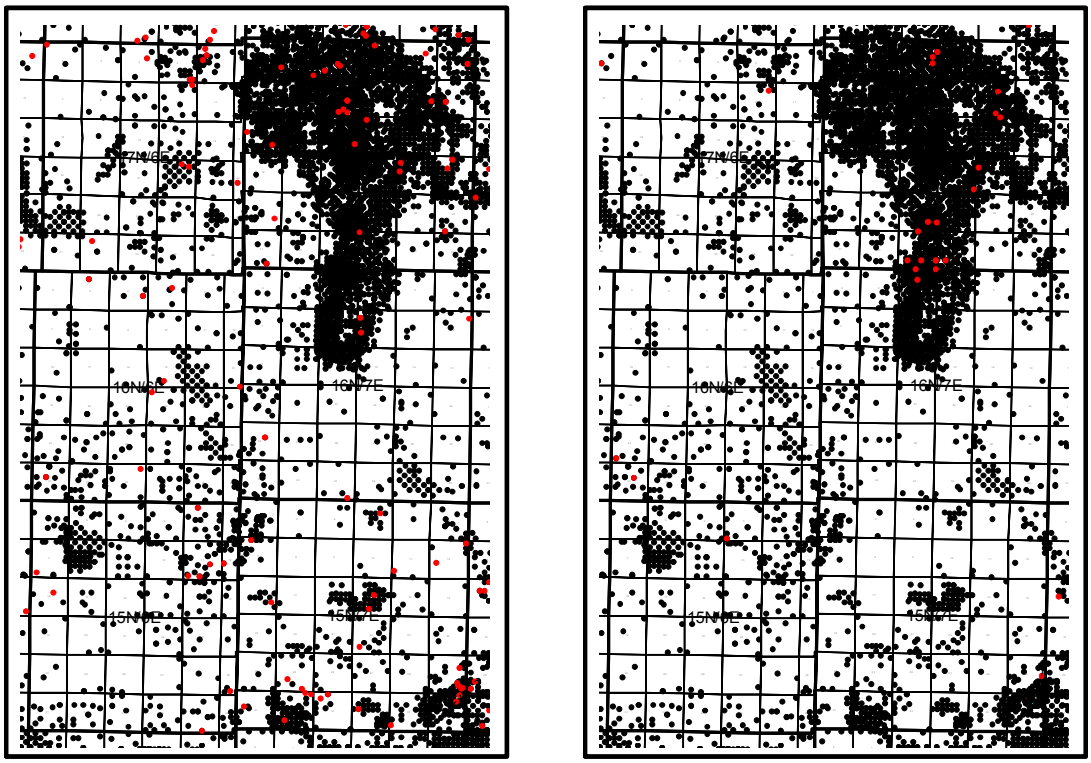
(a) 1950 - 1960

(b) 1960 - 1970

(c) 1970 - 1980

(d) 1980 - 1990

Figure 5. Well completions by decade from 1970 to 1990. Black dots are previously completed wells; red dots show wells completed in the decade indicated (data from IHS Energy, 2004).



(a) 1990 - 2000 (b) 2000 - Present

Figure 6. Well completions by decade from 1990 to present. Black dots are previously completed wells; red dots show wells completed in the decade indicated (data from IHS Energy, 2004).

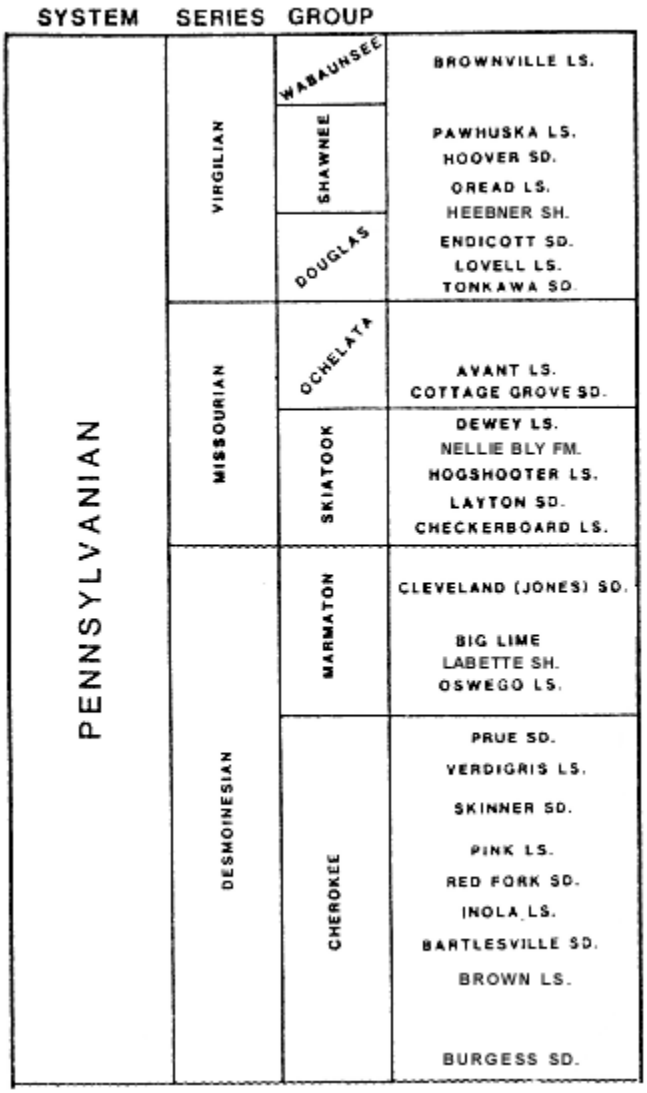


Figure 7. Pennsylvanian stratigraphy (modified from Bauernfeind, 1980). In the study area, Pennsylvanian strata are underlain by Mississippian rocks except across the crestal portions of the Cushing Anticline.

beds of thin limestone and coals, of shales, and of sandstones (Figure 7). The sandstones are the primary producing reservoir rocks for the area. In descending order these rocks are the Prue Sandstone, the Upper and Lower Skinner Sandstones, the Red Fork Sandstone, and the Bartlesville Sandstone (Figure 8). These are informal names of subsurface rock-stratigraphic units, which have been used historically by the petroleum industry. To avoid confusion, the informal subsurface names were applied throughout the study.

Purpose of Study

Exploration for oil and gas often requires that decisions and information be provided in a short amount of time, or in some cases, hastily. This is especially true in the development of established oil and gas fields. Precise correlation of individual sandstone rock-stratigraphic units often is prohibitive, due to time constraints. This is further complicated in "old" field areas where the quality of data is inferior as compared to data available at the present time. The purpose of this endeavor was to address some of these problems. Perhaps the purpose can be described best if it is phrased as a question: Can trends of "Cherokee" sandstones be mapped effectively, for petroleum exploration, if (a) sandstones are defined relative to the spontaneous potential curve only, if (b) sandstones are mapped by aggregate thickness, and if (c) sandstones are mapped by Geographix software?

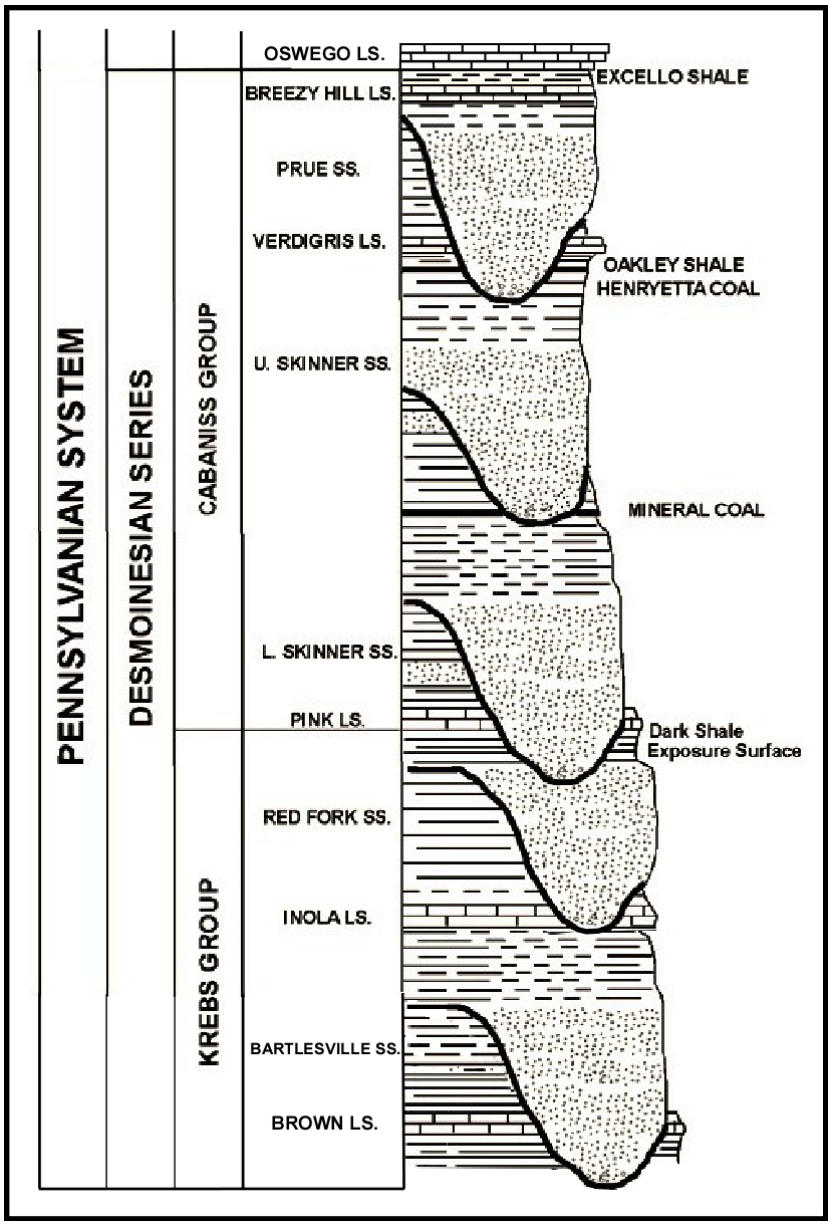


Figure 8. Generalized subsurface stratigraphy of the Desmoinesian Group, showing prominent marker beds and Bartlesville, Red Fork, Skinner, and Prue sandstones (modified from Puckette, 2003).

Previous Investigations

In-depth studies of the geology and more precisely, the Desmoinesian rocks, in north-central Oklahoma have been ongoing for quite a long time. Whereas some of these are comprehensive studies of the subsurface, others are restricted to specific stratigraphic intervals. Accounts on the Pennsylvanian System in Oklahoma can be found in Branson (1961) , Moore (1979), and Rascoe (1962). Division of the Desmoinesian Series into Krebs and Cabiness Groups was done by Oakes (1953).

Aspects of the petroleum geology in the region of the study area and nearby have been described throughout the years. Exploration for and development of petroleum in Pennsylvanian sandstones of Oklahoma was written about by Chenoweth (1979), Rascoe (1983), and Visher and others (1971). The petroleum geology of Creek County was documented by Merritt and McDonald (1926) and Jordan (1959). The petroleum geology of Lincoln County was set out by Radler (1930) and the petroleum geology of Payne County was reported on by Koschmann (1928) and Shelton, et al. (1985). Petroleum geology, stratigraphy, and depositional environments of Desmoinesian sandstones have been described by Andrews et al. (1996, 1997), Cole (1968), Graves (1955), Hanke (1967), Joseph (1987), Mason (1982), Moore (1999), and Puckette (2003).

A multitude of references could have been listed but those shown above were deemed sufficient for this study. Denigration of the other works is neither intended nor implied by their omission.

CHAPTER 2

METHODS OF INVESTIGATION

Acquisition of Data

Data were obtained for this study from wireline logs, scout tickets, Oklahoma Corporation Commission Reports (mainly completion reports), the National Well Index, Herndon maps, Mid-continent Lease maps, and electronic well data from IHS Energy (PI/Dwight's). These materials were used to define the locations of wells in the area. A base map was constructed by using data from IHS Energy in the computer program Geographix. Locations of wells were then compared to those shown on the Herndon maps, as well as on the Mid-continent lease maps, to isolate discrepancies. If a well was shown on only one or two of the three maps, then scout cards, OCC completion reports, or the National Well Index was used to corroborate that well's existence and/or location. In some instances, wells were shown in one of the data sources but not on one of the maps. In this case, the well was added to the base map, but only if it could be verified by more than one source.

Approximately 900 small-scale electric logs, induction-electric logs and induction logs (vertical scale of 1 inch equals 100 feet) were obtained and copied from the Oklahoma Well Log Library in Tulsa, Oklahoma. In a few cases, the only log available was one with a vertical scale of 2.5 inches equals 100 feet; which such logs were copied, reduced and used. The scale for the logs was chosen to keep the reproduction time and costs to a minimum, as well as to speed up correlations. Logs were chosen not only for the scale availability but also because commonly, only electric logs are available for the

"older" wells. Therefore, "old" as well as more modern logs could be correlated by use of similar measurements and graphic displays, spontaneous potential curves, and resistivity curves of various kinds.

A grid of thirteen stratigraphic cross-sections was constructed, to aid in correlating strata shown on the logs (Figure 9). Most of thee cross-sections were divided into two or three sections, so as to be of manageable size when printed. These cross-sections are included as Plate I through Plate XIII. The grid consisted of seven east-to-west cross-sections and six north-to-south cross-sections (Figure 9). A density of one well per section was used in construction of the cross-sections. The well chosen for a section was the deepest well with an available log. If a log of a deep well was not available for that section then the log of a nearby well was chosen. However, this rule was "bent" for the long north-south cross-sections of H-H', I-I' and J-J' (Plates VIII, IX, and X). Extra wells were added to these long cross-sections, primarily because of their length to aid in correlation.

Correlation of Logs

Each of the approximately 900 logs was correlated with a nearby well or wells. Although the interval of interest is the Desmoinesian Series, all logs were correlated from total depth through the Dewey Limestone (Figure 5). This was done to help evaluate structural geology and its relative effect through the stratigraphic column. For standard control, the first logs were correlated to published type logs as well as to some shown in other publications.

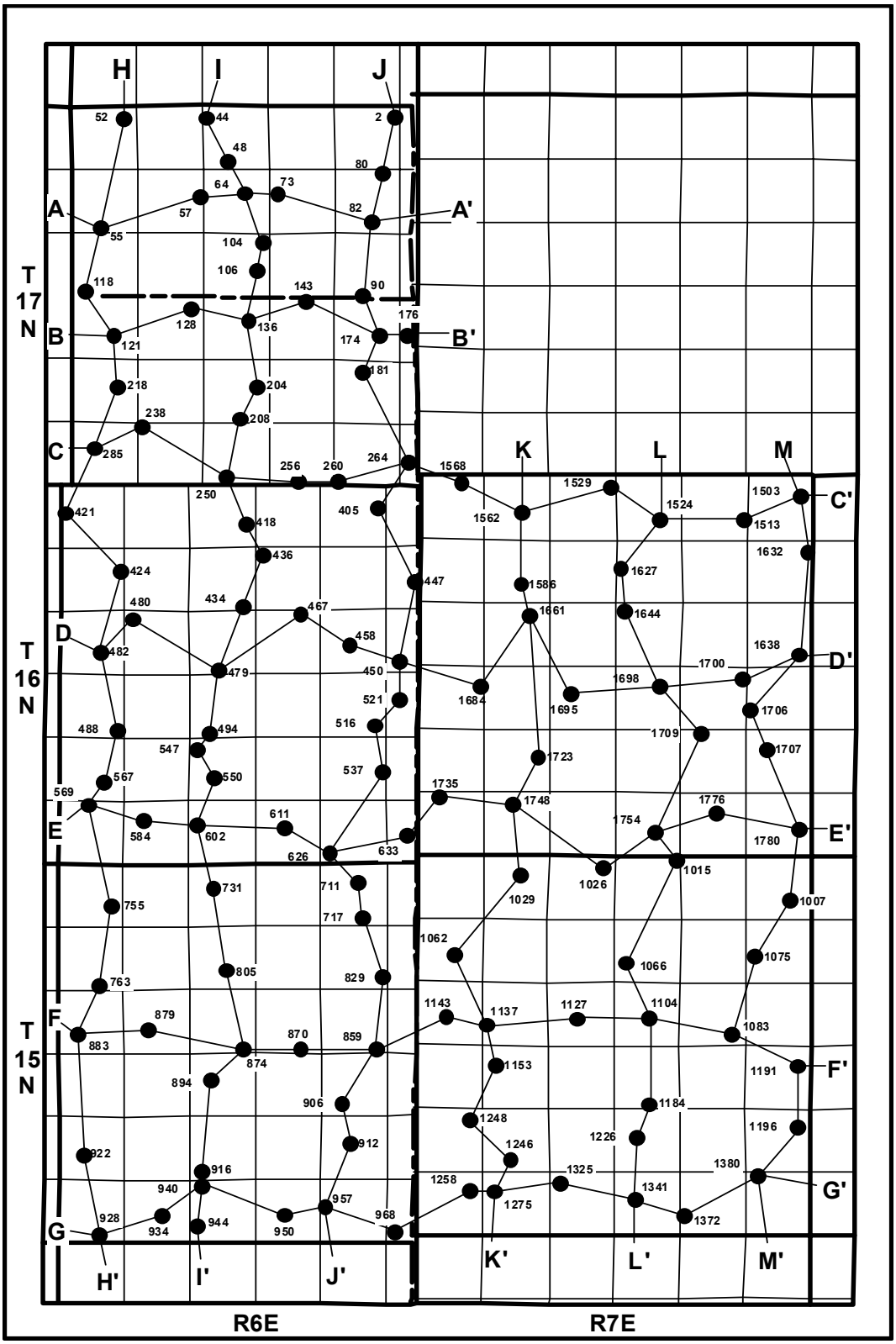


Figure 9. Index map showing lines of cross-sections

Thus, each log was correlated with the following marker beds, in descending order: Dewey Limestone, Hogshooter Limestone, Checkerboard Limestone, Big Lime, Oswego Limestone, Verdigris Limestone, Pink Limestone, Inola Limestone, Brown Limestone, Mississippi Lime, Woodford Shale, Hunton Limestone, Sylvan Shale, Viola Limestone, Wilcox Sandstone, McLish Sandstone and Arbuckle Limestone (Figures 7,8,9). Examples of these marker-bed correlations are shown in Plates I through XXVI.

Definition of Sandstones for the Purpose of Mapping

After the marker beds were defined, description of the "Cherokee" sandstones was addressed. The Bartlesville Sandstone interval is defined as that set of strata that is below the Inola Limestone and above the Brown Limestone (Figures 7,8). The Red Fork Sandstone interval is between the Pink Limestone above and the Inola Limestone below (Figures 7, 8). The Skinner Sandstone interval is between the Verdigris Limestone and the Pink Limestone, but it is divided into the Upper Skinner Sandstone interval and the Lower Skinner Sandstone interval by reference to the Mineral Coal (Figure 8). The Prue Sandstone interval is below the Oswego Limestone and above the Verdigris Limestone (Figure 8). At some localities, these definitions are not quite accurate because during deposition of channel-fill deposits, the lower marker-beds were eroded completely. At most localities, the boundary-markers are present.

Sandstone thickness was estimated by using the Spontaneous Potential (SP) curves. Any negative deflection greater than 20 millivolts from the shale base line was

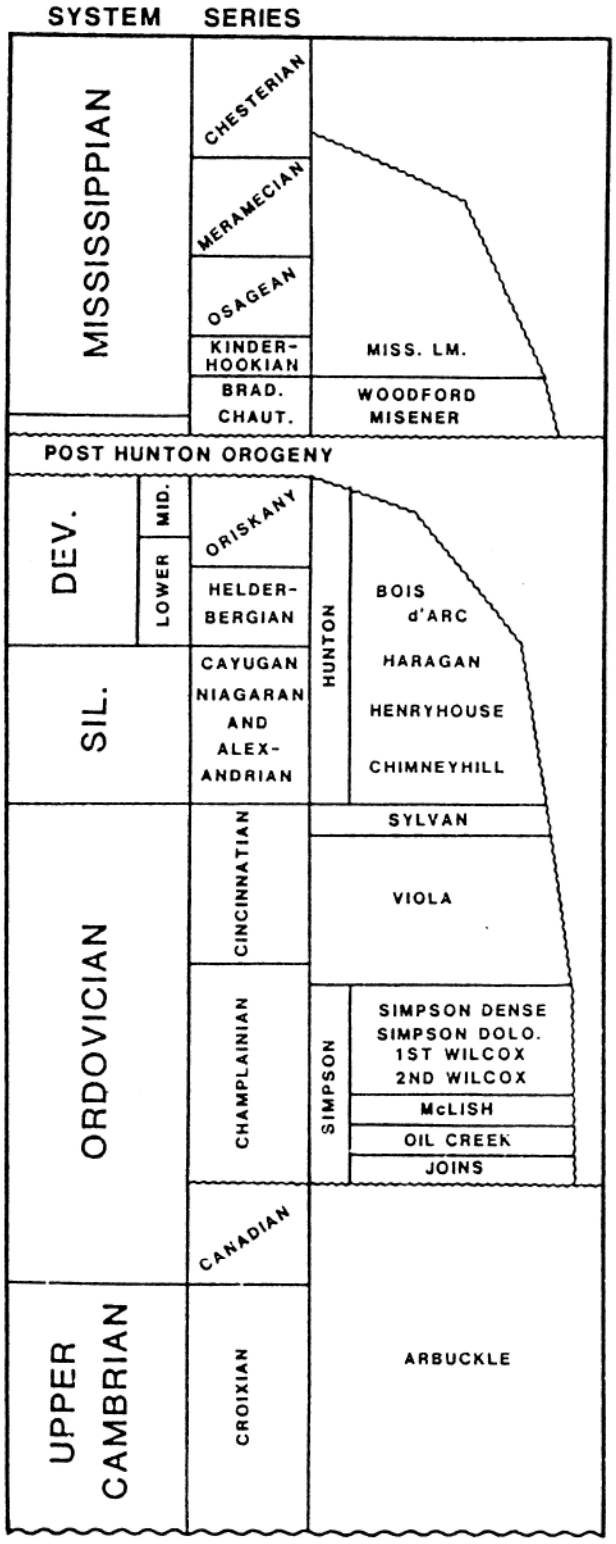


Figure 10. General stratigraphy of pre-Pennsylvanian rocks of the study area (modified from Bauernfeind, 1980).

defined provisionally as being the log signature of sandstone. The top and base of the sandstone were defined by reference to the inflection points of the SP curve. Depths of the top and base were recorded in the database. In some cases, the sandstone is composed of several discrete beds, separated by thin shales; these sequences were mapped as "sand packages": only depths of the top of the uppermost bed and the base of the lowermost bed were recorded in an effort to simplify the process and make the mapping of sandstone-thickness efficient.

Compilation of the Database

A Microsoft® Excel spreadsheet was compiled for all wells with logs. All measurements of tops and bases of marker beds and sandstones were entered directly from the logs, in order to minimize data-entry errors. Thicknesses of sandstones were calculated within the spreadsheet to determine the sandstone thickness. Data from the spreadsheet and imported into the database in Geographix, which is an integrated program created for Windows-based desktop computers by Landmark Graphics Corporation. The spreadsheet was used to construct structural cross-sections and maps.

CHAPTER 3

STRUCTURAL GEOLOGIC SETTING

Regional Tectonic Provinces

The area of investigation is located on the Central Oklahoma Platform - which is known also as the "Cherokee" Platform, the Northern Oklahoma Platform, and the Chautauqua Platform. To the west of the platform is the Nemaha Ridge, to the east is the Ozark Uplift, and the Arkoma Basin is to the southeast (Figure 1).

Cherokee rocks of the platform dip regionally to the west-southwest at 25 to 100 feet per mile.

West of the platform is the Nemaha ridge, (Figure 1), which formed during the Wichita orogeny. It is a north-trending zone of faulted, uplifted features that extend from Nebraska to the Oklahoma City Uplift (Bauernfeind, 1980 and Mason, 1982). Relatively shallow crystalline Precambrian rocks make up the axial formation of the ridge. At some localities along the axis of the ridge in Kansas and Oklahoma, Desmoinesian rocks directly lie on Precambrian rocks.

East of the Central Oklahoma Platform is the Ozark Uplift, which extends through portions of northeastern Oklahoma, southeastern Kansas, and southwestern Missouri. In this large positive element, rocks that range in age from Precambrian to middle Pennsylvanian crop out at the surface.

The Arkoma Basin is southeast of the platform. It is an extension of the Ouachita geosyncline with more than 20,000 feet of Pennsylvanian sediments. This basin was

formed during the Late Paleozoic Ouachita Orogeny with folding and faulting continuing until the middle Pennsylvanian.

Local Structural Geologic Features

The local structural geology is depicted in thirteen structural cross-sections (Plates XIV – XXVI) and five structural contour maps (Plates XXVII – XXXI). The structural cross-sections and structural contour maps were constructed by using the computer program of Geographix. The adaptive fitting method was used for construction of the structural contour maps. Stratigraphic surfaces of which the structural contour maps were made are: top of the Viola Limestone, top of e Mississippian rocks (the pre-Pennsylvanian unconformity), top of the Inola Limestone, base of Oswego Limestone, and the top of the Checkerboard Limestone. These were chosen to give a representation of the structural geology below and above the Desmoinesian section.

The structural maps reveal mostly homoclinal dip to the south-southwest at approximately 100 feet per mile, and the structural cross-sections show the thickening of the stratigraphic intervals to the south. Two large and distinct structural features, the Cushing Anticline and the Wilzetta Fault, are recognizable as well as several smaller, local features across the study area.

The southern nose of the Cushing Anticline is easily recognizable on the structural contour maps (Plates XIV – XXVI) in the northern half of T16N, R7E. The trace of the Wilzetta Fault is evident on these maps as well. A syncline with an associated anticline to its west runs diagonally from approximately Section 35, T15N,

R6E to Section 2, T16N, R7E. The western edge of this syncline (eastern side of anticline) is the approximate trace of the Wilzetta Fault (see especially Plates). The east-west structural cross-sections of C-C', D-D', E-E', F-F', and G-G' (Plates XVI – XX) and the north-south cross sections of J-J', K-K', and L-L' (Plates XXIII – XXV) also reveal the location of this fault.

In addition to the anticline associated with the Wilzetta Fault, significant anticlines are in several locations of the study area: an anticlinal nose is in primarily Sections 25 and 26 of Township 17N, R6E. Other anticlines are in Sections 15 and 16, T15N, R7E.

CHAPTER 4

STRATIGRAPHY

General Statement

Rocks penetrated by drilling within the study area range in age from Cambrian to Pennsylvanian. Rock-stratigraphic units range from the Arbuckle Group of Cambrian age at depth to the Vanoss Group of Pennsylvanian age at the surface (Figures 7 and 10). Of course, the stratigraphic sequence is incomplete; therefore, rock-stratigraphic units are described below in order of deeper-to-shallower.

Cambro- Ordovician Rocks

Arbuckle Group

Within the study area, rocks of the Arbuckle group are the oldest penetrated by drilling. Only the upper portion of the Arbuckle was penetrated by; therefore an accurate estimate of total thickness cannot be made. The Arbuckle has been described as being off-white to tan, sucrosic dolomite with interbedded off-white to buff, dense limestone and green shale (Ferguson, 1962).

Middle Ordovician Rocks

Simpson Group

The Simpson Group commonly is divided into five formations. In ascending order these are: Joins, Oil Creek, McLish, Tulip Creek, and Bromide. Rocks believed to be equivalent to the Oil Creek, McLish and Tulip Creek are referred to by some geologists as the "Tyner zone" (Shelton et al., 1985). The Bromide formation was the only one positively identified in this study. The Tulip Creek Formation appears to have been truncated within the study area; thus the Bromide is unconformable on the McLish Formation.

The Bromide Formation is divided into five units in the subsurface. In ascending stratigraphic order these are the: Second Wilcox Sand (also referred to as Second Bromide Sand), the Marshall Zone, the First Wilcox Sand (also referred to as First Bromide Sand), the Simpson Dolomite, and the Simpson Dense. In this study, only depths of top of the Second Wilcox Sand, the First Wilcox Sand, and the top of the Simpson Dense were recorded.

The Second Wilcox is a white to buff, medium to fine-grained, friable sandstone cemented by calcite. Grains are rounded and frosted (Bauernfeind, 1980). At most localities within the study area, a thin zone of coarse, well-rounded quartz grains is at the top of this unit. This zone is most likely the coarse local facies of the Second Wilcox Sand that is often misidentified as the First Wilcox Sand (Cronenwett, 1958). In the present study, this zone was recorded was recorded as the "Wilcox Marker".

The Marshall Zone separates the two Wilcox Sands. It is composed of interbedded thin strata of dolomite, limy sandstone and green shale. On the average, the Marshall Zone is 15 feet in thick.

Overlying the Marshall zone is the First Wilcox Sand. It is composed predominantly of medium to fine grained, subangular, frosted quartz grains with sparse well-rounded, coarse quartz grains. The sandstone is calcareous or dolomitic. Thin beds of green shale are found within the unit as well (Bauernfeind, 1980).

The First Wilcox Sand is overlain by the Simpson Dolomite and by the Simpson Dense (Figure 10). These strata are dense, brown limestone with interbedded dolomite. The dolomitic portion, known as the Simpson Dolomite, is brown and granular, and it grades upward into tan and gray limestone known as the Simpson Dense (Ferguson, 1962 and Bauernfeind, 1980).

Viola Limestone

The Simpson Dense is overlain by the Viola Limestone. The Viola Limestone is an off-white to pinkish gray to gray, coarsely crystalline limestone (Bauernfeind, 1980). In the study area, average thickness of the Viola is approximately 50 feet, but it was eroded from the Cushing anticline. In some distant localities, the Viola Limestone is divisible into two formations: the Fernvale and the Viola. In 1983, the Viola was redefined by Amsden as the Viola Group consisting of the Viola Springs Formation and the overlying Welling Formation ("Fernvale" equivalent). In this study, the term Viola Limestone was used mainly in keeping with standard nomenclature of subsurface geology.

Sylvan Shale

In the study area, the youngest rock-stratigraphic unit of Ordovician age is the Sylvan Shale. It overlies the Viola Limestone conformably. The Sylvan Shale is light green to gray, pyritic shale that is dolomitic and blocky. The upper surface of the Sylvan was eroded during the post-Devonian orogeny. Thickness of the Sylvan ranges from 0 feet over the Cushing Anticline to slightly more than 90 feet in the southwestern portion of the study area.

Silurian and Devonian Rocks

Hunton Group

The Silurian-Devonian Hunton Group overlies the Sylvan Shale conformably. The Hunton Group can be divisible into four formations. In ascending order these are: the Chimneyhill, the Henryhouse, the Haragan, and the Bois d'Arc. In north-central Oklahoma, the Hunton Group comprises the Chimney Hill and the Henryhouse formations (Kochik, 1976). For the purpose of this study, these formations were not differentiated; the term Hunton Group or the informal subsurface-geologic name "Hunton Lime" is used. The Hunton is off-white to gray, coarsely crystalline limestone that commonly is dolomitic; the upper part is cherty and finely crystalline (Bauernfeind, 1980). Because of post-Hunton erosion, the Hunton Group is only present in the southwestern portion of the study area (Figure 11).

Devonian and Mississippian Rocks

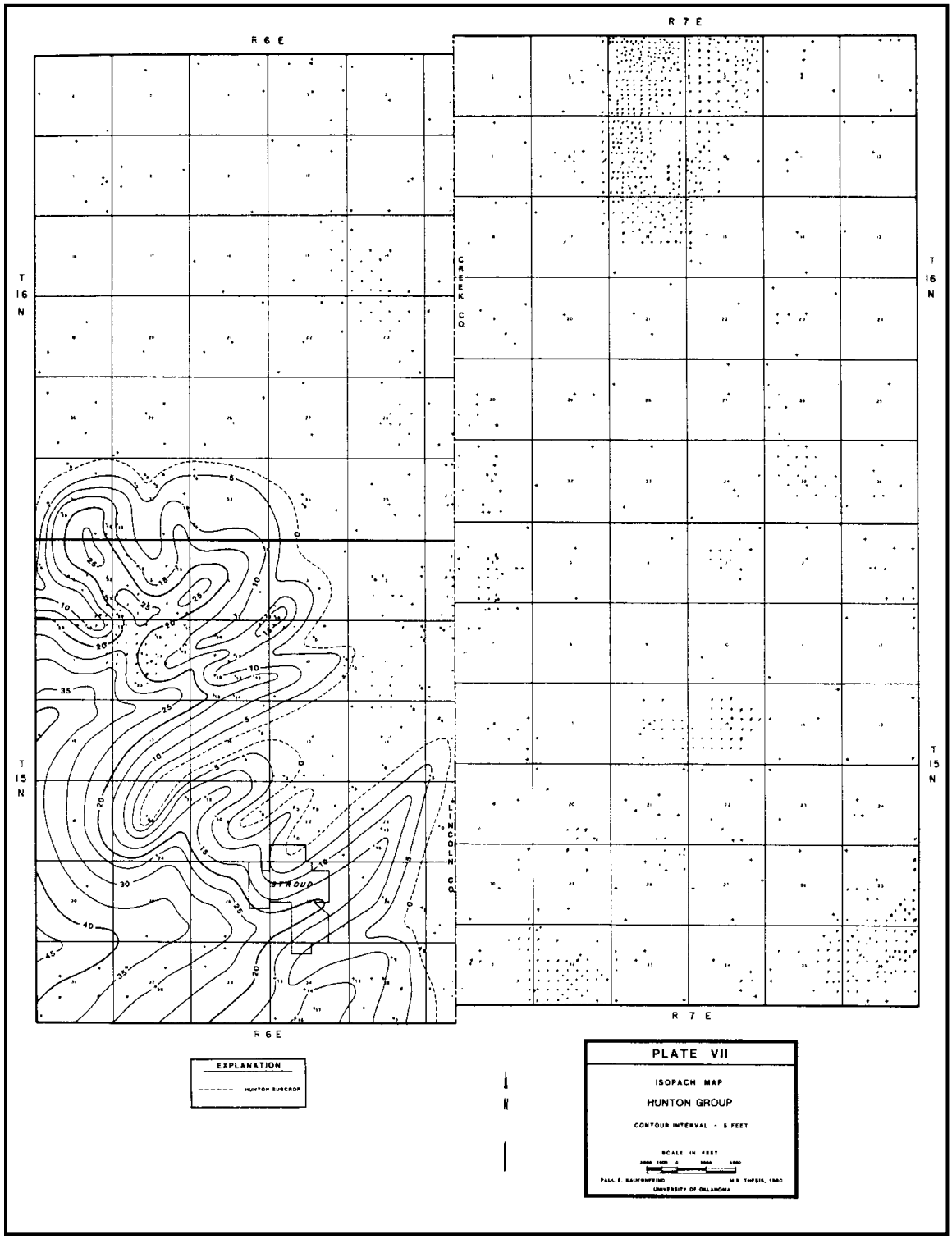


Figure 11. Isopach map of Hunton Group illustrating where the Hunton Group is present within the study area (from Bauernfeind, 1980).

Misener Sandstone

The Devonian Misener Sandstone was deposited upon rocks eroded after deposition of the Hunton Group. From place to place in the study area, the Misener overlies rocks of the Hunton Group, the Sylvan Shale and the Viola Limestone. The Misener varies greatly in thickness.

Woodford Shale

The Woodford Shale (Chattanooga Shale) is conformable upon the Misener Sandstone but is unconformable upon the Hunton Group and the Sylvan Shale. The Woodford is hard, organic, dark-brown to black, sporaceous, pyritic shale that is partly siliceous and phosphatic (Shelton, 1985; Ferguson, 1962; Mason, 1982). The Woodford thickens generally southwestward, as do all the underlying units. Its thickness ranges from zero feet over the Cushing Anticline to approximately 30 feet in the southwestern portion of the study.

Mississippi Lime

Mississippian strata are bounded above by Pennsylvanian rocks and below by the Woodford Shale. An unconformity separates the Mississippian strata from the overlying Pennsylvanian rocks. Informal rock-stratigraphic units within the Mississippian section are mappable across the area. However, the entire sequence commonly is regarded as just one entity known as the "Mississippi Lime." This entity comprises a series of interbedded calcareous shales and argillaceous and siliceous limestones. Locally, the uppermost part of the Mississippian is cherty and porous. This zone is locally called the

"Mississippi Chat" or just "Chat." The Mississippi Lime ranges from zero feet across the Cushing Anticline to more than 400 feet thick in the eastern portion of the study, on the down-thrown side of Wilzetta fault.

Pennsylvanian Rocks

A prominent angular unconformity separates the top of the Mississippian rocks and the base of the Pennsylvanian rocks. In the study area, Pennsylvanian strata directly above the unconformity are of the Desmoinesian Series. The Desmoinesian is overlain successively by the rocks of the Missourian Series and Virgilian Series; strata that crop out in the study are Virgilian. The Pennsylvanian System consists of interbedded limestones, sandstones, and shales. In contrast to older units, the Pennsylvanian beds show general thickening eastward and southeastward.

Desmoinesian Series in the Study Area: General Description

The Desmoinesian Series is comprised of two groups, the Krebs below and the Cabaniss above (Figures 7, 8). The Krebs and Cabiness are also informally known as the "Cherokee Group." The "Cherokee Group" consists of interbedded shales, lenticular sandstones, limestones and a few coal beds.

In the study area, the so-called "Burgess Sandstone" is the oldest Pennsylvanian rock-stratigraphic unit. In fact, within the study area the lowermost sandstone unit locally is called "Booch," "Burgess," "Dutcher," "Tucker," or "Unconformity Sand." For

the purpose of this study, any sandstone between the top of the Mississippian rocks and the base of the Brown Limestone (Figures 7, 8) was designated in correlations as Burgess Sandstone (for example, see Plate XIIIb).

The Brown Limestone is composed of thin beds of dense, finely crystalline brown limestone interstratified with gray, blocky shale (Jordan, 1959; Ferguson, 1962). The Bartlesville Sandstone genetic interval of beds is bounded below by the Brown Limestone and above by the Inola Limestone (Figures 7, 8). This sequence of strata can be described generally as lenticular sandstone bodies within a predominantly shale section.

The Inola Limestone overlies the Bartlesville Sandstone interval. The Inola generally is about 10 feet thick. It is a zone of thin, interbedded strata of shale and limestone or shaly limestone (Mason, 1982).

The Red Fork Sandstone genetic interval of beds is bounded below by the Inola Limestone and above by the Pink Limestone (Figures 7, 8). In lithic composition, the Red Fork interval is similar to the Bartlesville interval.

The Skinner Sandstone genetic interval is underlain by the Pink Limestone and overlain by the Verdigris Limestone (Figures 7, 8). The Pink Limestone is an easily traceable, persistent bed that is a reliable lithologic time-marker across the study area. The limestone is gray, finely crystalline, fossiliferous, and it contains pink calcite crystals (Hanke, 1967).

In the study area, the Skinner zone is divided informally into an upper and lower interval by the Mineral (Morris) coal or by the marker-bed called the "Senora lime." The Lower Skinner interval lies below the Mineral coal and above the Pink Limestone. The

Upper Skinner interval is between the Verdigris Limestone and the Mineral coal (Figure 8).

The Verdigris Limestone is tan to gray, fine to medium crystalline, and fossiliferous. It ranges from 5 to 10 feet in thickness.

Above the Verdigris is the Prue Sandstone genetic interval of strata. It is overlain by the Oswego Limestone of the Marmaton Group (Figures 7, 8). The Prue is a tan to gray, fine to medium-grained, micaceous sandstone (Cole, 1956; Hanke, 1967).

In major respects the four genetic intervals of clastic rocks – the Bartlesville, Red Fork, Skinner and Prue – are similar. They record episodes of regression of the Desmoinesian seas.

Above the Desmoinesian Series is the Marmaton Group (Figure 7). The Marmaton Group is represented in the study area by the Oswego Limestone, the Labette Shale, the Big Lime and the Cleveland Sandstone interval (Figure 7).

On wireline logs in the study area, the Oswego Limestone is recognizable straightaway north of the southernmost sections of Township 16 North, where it is thin and indistinctive. The Oswego is light tan to gray, dense to finely crystalline and fossiliferous, and it is interbedded with gray shales. On the crestal parts of the Cushing Anticline, the Oswego Limestone is known as the "Wheeler sand" and is one of the major producing zones in that oilfield.

CHAPTER 5

DISTRIBUTION OF CHEROKEE SANDSTONES

Bartlesville Sandstone

Within the area of study, aggregate thickness of the Bartlesville Sandstone ranges from 6 to 188 feet (Appendix A). In general, the Bartlesville is thickest in the southeastern part of the study area (Plate XXXIV).

Mapping of the Bartlesville showed several "belts" of sand (Plate XXXIV). They are oriented primarily north-northeastward: east to west components are secondary (Plate XXXIV). These "belt" trends appear to reflect the fluvial-deltaic origin of the Bartlesville Sandstone described by Shelton (1985) and numerous other workers.

A trend extends primarily northward along the eastern boundary of the study area. Southward into T15N, R7E, the sandstone thickens to the maximum in the study area. Secondary branches extend east-to-west from this "belt" as well as another north-south trend paralleling it.

Three thinner northeastward-trending "belts" extend from the Cushing Anticline in T16N, R7E approximately down the middle of the study area. One of these extends throughout the length of the study area.

A northwestward sand trend is located in the southwestern corner of the study area, it extends primarily from Section 18, T15N, R6E to Section 33, T15N, R6E, at which place it is oriented in an easterly direction (Plate XXXIV).

A wide, moderately thick east-west trend is in the southernmost sections of T17N, R6E; two "belts" associated with it strike northeastward.. A "belt" that trends primarily northeast-southwest crosses through the middle and along the west side of T16N, R6E (Plate XXXIV).

Red Fork Sandstone

Aggregate thickness of the Red Fork Sandstone ranges from 4 to 77 feet. The thickest sand is approximately in the middle of T17N, R6E.

The isopach map of the total thickness of the Red Fork delineates sandstone "belts" with primary trends being northeasterly and northwesterly (Plate XXXIII). These "belts" suggest a fluvial depositional setting of the sandstone.

Thick sand in T17N, R6E is the terminal part of a "belt" that trends southeast ward across T16N, R6E. Perhaps it connects to belts of sandstone that trend northwestward from Section 31, T16N, R7E into T15N, R7E (Plate XXXIII).

A northeast-southwest trend seems to cross from the east side of the Cushing Anticline (Section 3, T16N, R7E) through the middle of the study area to the southern line of T16N, R6E. Several northwest-southeast trends branch from this into T15N, R6E. In the southwestern corner of the study area, a belt trends from Section 30 to Section 34 of T15N, RR6E (Plate XXXIII).

Prue Sandstone

Aggregate thickness of the Prue Sandstone in the study area is from 4 to 158 feet (Plate XXXII).

The Prue Sandstone isopach map (Plate XXXII) reflects widespread distribution of sand "belts," or perhaps channels. These "belts" trend primarily north-northeasterly with a trend that is oriented more eastward located along the southern boundary of the study area. These "belts" or channels of the Prue Sandstone, like the Cherokee sandstones discussed above, suggest a fluvial origin.

Multiple northeasterly trending channels traverse T16N, R6E and T17N, RR6E (Plate XXXII). A northeast-southwest trend extends from the eastern side of the Cushing Anticline nose in T16N, R7E diagonally across that township into T15N, R6E. A separate "belt" trends more northerly along the eastern side of T16N, R7E.

In the southern portion of the study area, is a "belt" that is oriented in an easterly trend. Associated with it are several northeast-trending channels in the southeastern corner of the study area.

CHAPTER 6

EVALUATION OF THE METHODS OF MAPPING

Structural Geologic Maps

The structural geologic maps used for this study were contoured using the mapping program, Geographix (Plates XXVII – XXXI). The computer did an adequate job at contouring but was perhaps not as accurate as to what could have been done by hand. Some small, structural anomalies that the software interprets mathematically are not realistic nor do they conform to intuitive recognition of structural geologic patterns. Such mathematical artifacts can easily be mended manually.

Quality of the structural contour maps is dependant on the amount of data available and the dispersion of it. The map constructed of the top of the Viola Limestone (Plate XXXI) is not very reliable because of small amounts of data dispersed across the study area. However, even if contoured by hand, this map would not be significantly different, because the data are sparse and control points are scattered widely.

Prue, Red Fork, and Bartlesville Isopach Maps

An attempt was made to let the computer contour the isopach maps of the "Cherokee" sandstones. This was quickly found to be an unsatisfactory method. Reasons for rejection of the method were as follows: (1) The computer could not "decide" whether a well which was not drilled through a sandstone should be included in a "sand trend" or

not, (2) The computer could not deduce that in wells where total depth is within a sandstone, the sandstone is thicker than the amount penetrated. The computer has no experiential knowledge and therefore no ability to infer environments of deposition. Therefore the computer cannot configure a map according to a resident model of environments of deposition.

Isopach maps of the Prue, Red Fork, and Bartlesville Sandstones (Plates XXXII to XXXIV, respectively) show evidence of fluvial origin for each. Sediment supply probably was from northerly or northeasterly directions. Many of these sand "belts" extend across anticlines and synclines in the study area, a fact suggesting that these structural features either were not present during episodes of deposition, or they were formed, or being formed, but not of much influence as to alter the regional patterns of deposition in a wholesale manner.

The structural element that affected these sands most significantly was the Wilzetta Fault. This is most evident by reference to the Bartlesville isopach map (Plate XXXIV). The sand "belt" that extends from the Cushing Anticline diagonally across the middle of the study area follows the trace of the Wilzetta Fault almost exactly. The trend where sandstone is thicker is on the downthrown side of this fault. A similar trend of thick sandstone in association with the Wilzetta Fault trace is shown by the Prue isopach map (Plate XXXII). Sand trends depicted on the Red Fork isopach map (Plate XXXIII) seem not to be in direct association with the Wilzetta Fault but there is a trend that follows nearby for a short distance – namely in sections 17 and 19, T16N, R7E; sections 24,26, 34, and 35, T16N, R6E.

The isopach maps show that oil-and-gas traps are associated with structural geology in the sense that oil fields tend to be located near the margins of the sand trends and not in localities where sandstone is relatively thick. For example, compare Plates XXVIII, XXIX, and XXX with Plates XXXII, XXXIII, and XXXIV. Of course, locally, stratigraphic conditions favorable for entrapment are coincident with and compounded by positive structural elements. For example, see the following localities on Plates XXVIII and XXXII: sections 35 and 36, T15N, R7E; section 35, T16N, R7E; sections 25 and 26, T16N, R6E.

This implication that certain environments of these sands have to be present as well as having a structural element limits the exploration potential in the area for the "Cherokee" sandstones. In this endeavor, the aggregate thickness will tell where the sands are but will not identify stratigraphic details that are needed for definitive reasons for production.

CHAPTER 7

CONCLUSIONS

As expressed, the purpose of this study was to address this question: Can trends of "Cherokee" sandstones be mapped effectively for petroleum exploration, if (a) sandstones are defined relative to the spontaneous potential (SP) curve only, if (b) sandstones are mapped by aggregate thickness, and if (c) sandstones are mapped by Geographix software. Evidence described in the preceding text leads to the following conclusions.

Trends of "Cherokee" sandstones can be mapped effectively by using only the spontaneous potential (SP) curves and mapping aggregate thickness of sandstone. Isopach maps of the Prue, Red Fork, and Bartlesville Sandstones (Plates XXXII – XXXIV) do show sandstone-distribution trends, and they show the trends in detail enough to provide assistance in deciding where exploration should be concentrated.

In the authors' opinion, the use of Geographix software to contour the sandstones is not as effective a method as would be desired. The merit of this software is in preparing the maps for contouring - such as posting of data. Additional data can be added quickly and efficiently by use of this software. Although not optimally useful for contouring isopach maps, the software is useful for constructing structural contour maps. The structural contour maps are certainly adequate for first-approximations. For example, general positions of anticlinal and synclinal axis, and fault trends can be identified quickly from these maps. Suspected locations of fault traces can be evaluated straightforwardly by using the program to produce structural geologic cross-sections.

The overall answer to the three-part question set out in the "Purpose of Study," has been answered as "yes." In the study area, "Cherokee" sandstones can be mapped effectively for petroleum exploration by use of the three criteria set forth above. However, the effectiveness is limited to a first-approximation for distribution and configuration of reservoirs. General parameters for entrapment of petroleum can be delineated by using maps developed by methods described above. Geographix software is invaluable, especially for production of useful documents quickly. Isopach maps of the types shown reveal trends and thicknesses of sandstones effectively. Cross sections and structural contour maps of the kinds and scales illustrated here identify structural elements effectively. Together, these documents permit concentration of mapping in tracts where reservoirs and traps seem to be coincident.

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APPENDICES

APPENDIX A

DATABASE

VITA

James Frank Hopper

Candidate for the Degree of

Master of Science

THESIS: COMPUTER-ASSISTED MAPPING OF "CHEROKEE" SANDSTONE TRENDS, BY REFERENCE TO SPONTANEOUS POTENTIAL CURVES, IN PARTS OF CREEK, LINCOLN, AND PAYNE COUNTIES, OKLAHOMA

Major Field: Geology

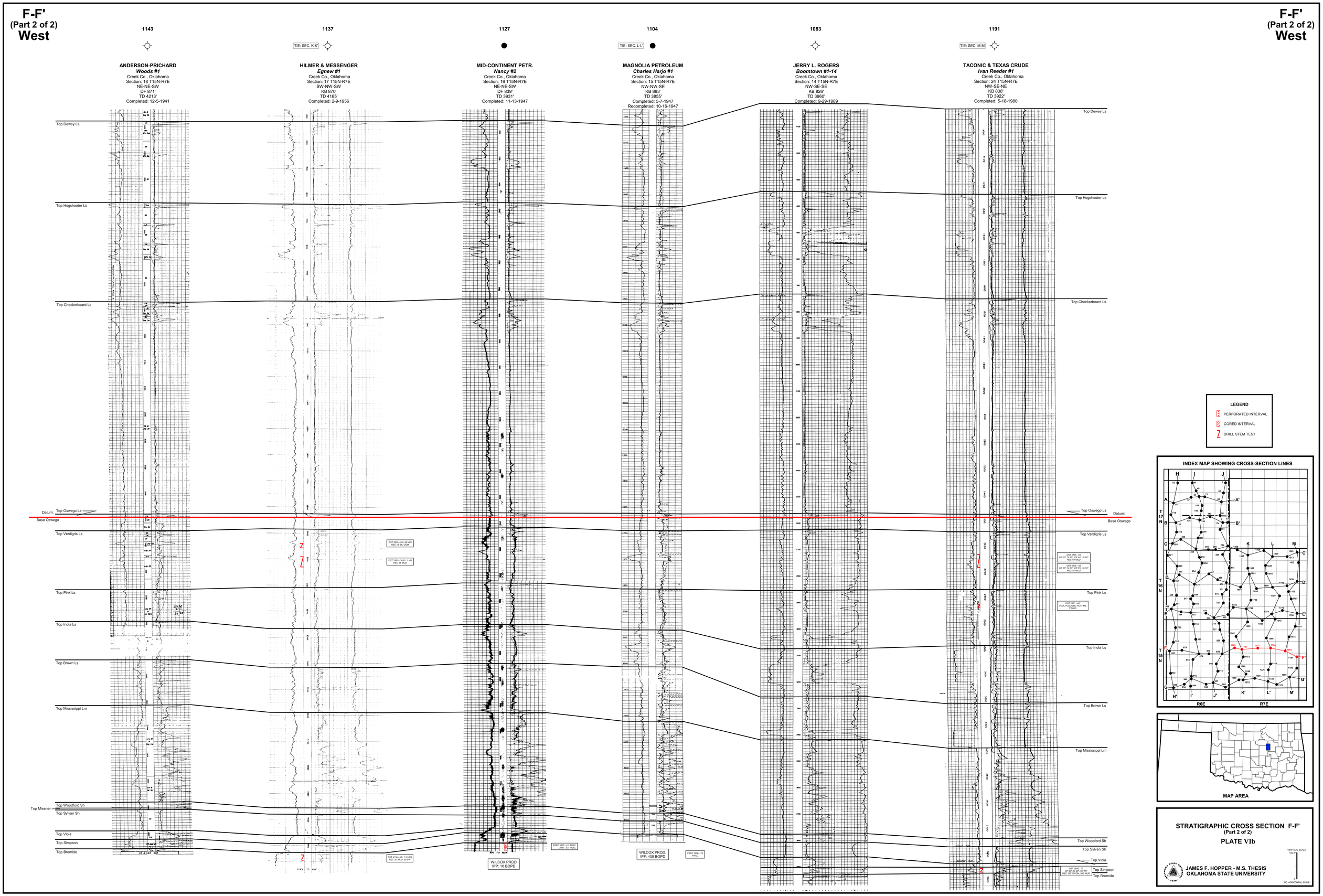
Biographical:

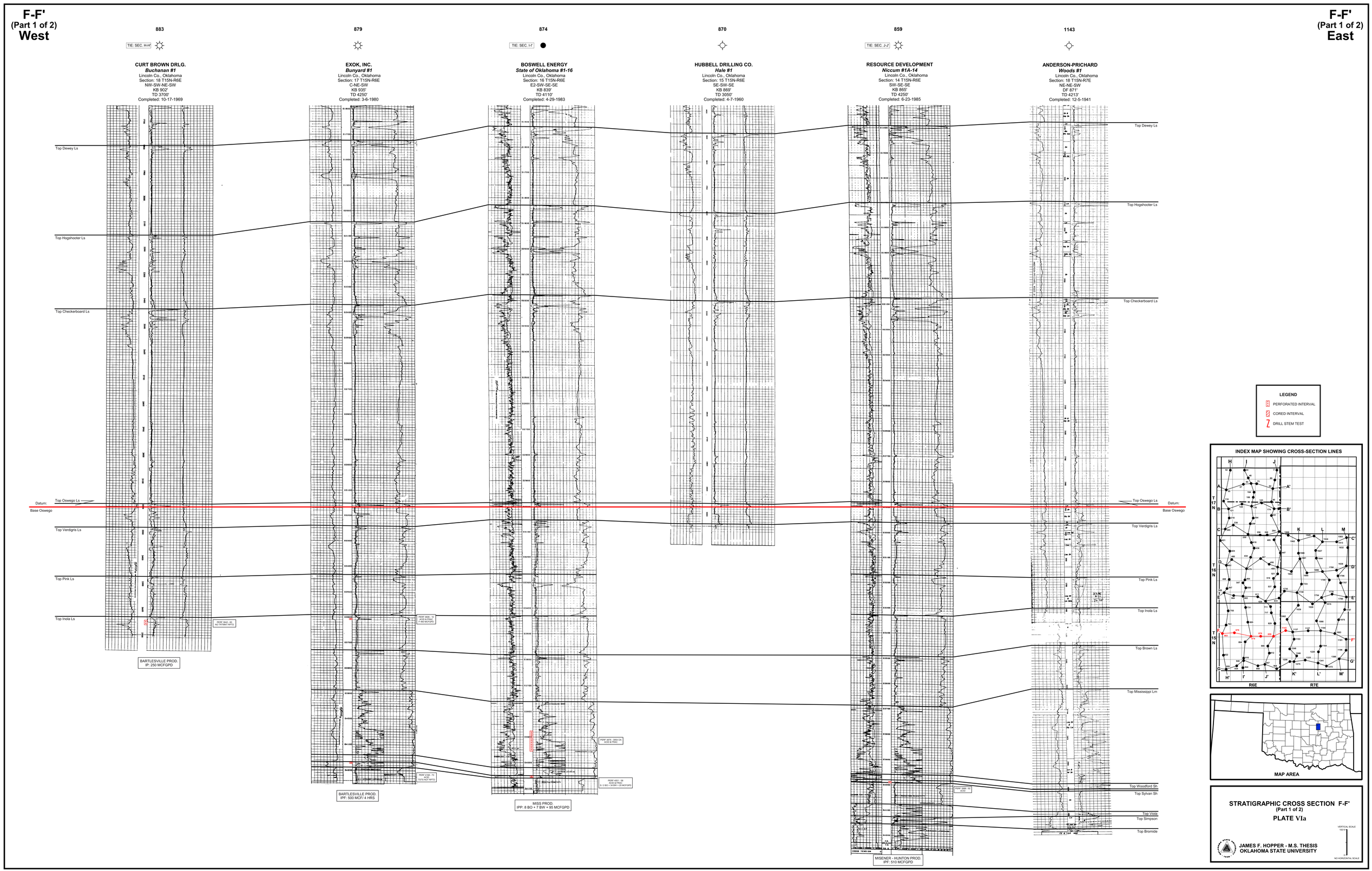
Personal Data: Born in Tulsa, Oklahoma on August 18, 1960, the son of Thomas Roy and JoAnn Hopper.

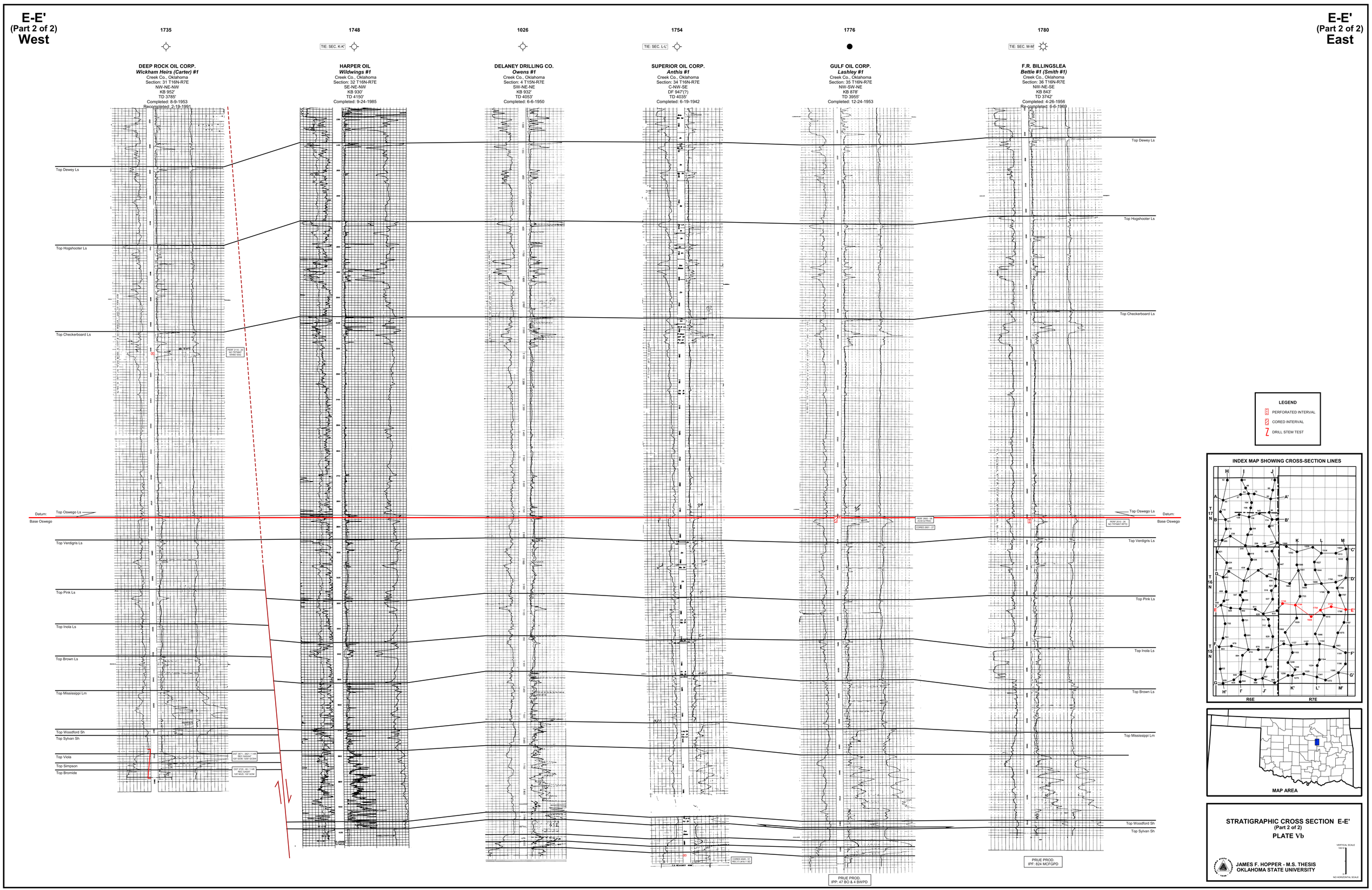
Education: Graduated from Nathan Hale High School, Tulsa, Oklahoma in May, 1978; received Bachelor of Science degree in Geology from Oklahoma State University, Stillwater, Oklahoma in December, 1982. Completed the requirements for the Master of Science Degree with a major in Geology at Oklahoma State University in December, 2005.

Experience: Employed by Thomas N. Berry and Company as a production clerk; Union Oil of California as a summer geology intern; Roderick W. Tillman, consultant, as an associate geologist; MASERA Corporation as geological assistant; HS Resources as a geological technician; Questar Exploration and Production as an associate geologist, 1998 to present.

Professional Memberships: American Association of Petroleum Geologists, Tulsa Geological Society.


F-F'
(Part 2 of 2)
West
1143
1137
1127
1104
1083
1191
TIE: SEC. K-K'
TIE: SEC. L-L'
TIE: SEC. M-M'
ANDERSON-PRICHARD
Woods #1
Creek Co., Oklahoma
Section: 18 T15N-R7E
NE-NE-SW
DF 871'
TD 4213'
Completed: 12-5-1941
HILMER & MESSENGER
Egnew #1
Creek Co., Oklahoma
Section: 17 T15N-R7E
SW-NW-SW
KB 870'
TD 4165'
Completed: 2-9-1956
MID-CONTINENT PETR.
Nancy #2
Creek Co., Oklahoma
Section: 16 T15N-R7E
NE-NE-SW
DF 839'
TD 3931'
Completed: 11-13-1947
MAGNOLIA PETROLEUM
Charles Harjo #1
Creek Co., Oklahoma
Section: 15 T15N-R7E
NW-NW-SE
KB 893'
TD 3855'
Completed: 5-7-1947
Recompleted: 10-16-1947
JERRY L. ROGERS
Boomtown #1-14
Creek Co., Oklahoma
Section: 14 T15N-R7E
NW-SE-SE
KB 826'
TD 3960'
Completed: 9-29-1989
TACONIC & TEXAS CRUDE
Ivan Reeder #1
Creek Co., Oklahoma
Section: 24 T15N-R7E
NW-SE-NE
KB 838'
TD 3922'
Completed: 5-18-1980
Top Dewey Ls
Top Hogshooter Ls
Top Checkerboard Ls
Datum:
Top Oswego Ls
Base Oswego
Top Verdigris Ls
Top Pink Ls
Top Inola Ls
Top Brown Ls
Top Mississippi Lm
Top Woodford Sh
Top Misener
Top Sylvan Sh
Top Viola
Top Simpson
Top Bromide
WILCOX PROD
IPP: 10 BOPD
WILCOX PROD.
IPF: 408 BOPD
LEGEND
PERFORATED INTERVAL
CORED INTERVAL
DRILL STEM TEST
INDEX MAP SHOWING CROSS-SECTION LINES
T 17 N
T 16 N
T 15 N
R6E
R7E
MAP AREA
STRATIGRAPHIC CROSS SECTION F-F'
(Part 2 of 2)
PLATE VIb
JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY
VERTICAL SCALE
100 ft
0
NO HORIZONTAL SCALE


F-F'
(Part 1 of 2)
West
F-F'
(Part 1 of 2)
East
883
879
874
870
859
1143
TIE: SEC. H-H'
TIE: SEC. I-I'
TIE: SEC. J-J'
CURT BROWN DRLG.
Buchanan #1
Lincoln Co., Oklahoma
Section: 18 T15N-R6E
NW-SW-NE-SW
KB 902'
TD 3700'
Completed: 10-17-1969
EXOK, INC.
Bunyard #1
Lincoln Co., Oklahoma
Section: 17 T15N-R6E
C-NE-SW
KB 935'
TD 4250'
Completed: 3-6-1980
BOSWELL ENERGY
State of Oklahoma #1-16
Lincoln Co., Oklahoma
Section: 16 T15N-R6E
E2-SW-SE-SE
KB 839'
TD 4110'
Completed: 4-29-1983
HUBBELL DRILLING CO.
Hale #1
Lincoln Co., Oklahoma
Section: 15 T15N-R6E
SE-SW-SE
KB 869'
TD 3050'
Completed: 4-7-1960
RESOURCE DEVELOPMENT
Niccum #1A-14
Lincoln Co., Oklahoma
Section: 14 T15N-R6E
SW-SE-SE
KB 865'
TD 4250'
Completed: 6-23-1985
ANDERSON-PRICHARD
Woods #1
Lincoln Co., Oklahoma
Section: 18 T15N-R7E
NE-NE-SW
DF 871'
TD 4213'
Completed: 12-5-1941
Top Dewey Ls
Top Hogshooter Ls
Top Checkerboard Ls
Top Oswego Ls
Datum:
Base Oswego
Top Verdigris Ls
Top Pink Ls
Top Inola Ls
Top Brown Ls
Top Mississippi Lm
Top Woodford Sh
Top Sylvan Sh
Top Viola
Top Simpson
Top Bromide
BARTLESVILLE PROD.
IP: 250 MCFGPD
BARTLESVILLE PROD.
IPF: 500 MCF/ 4 HRS
MISS PROD.
IPP: 8 BO + 7 BW + 95 MCFGPD
MISENER - HUNTON PROD.
IPF: 510 MCFGPD
LEGEND
PERFORATED INTERVAL
CORED INTERVAL
DRILL STEM TEST
INDEX MAP SHOWING CROSS-SECTION LINES
R6E
R7E
MAP AREA
STRATIGRAPHIC CROSS SECTION F-F'
(Part 1 of 2)
PLATE VIa
JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY


E-E'
(Part 2 of 2)
West
E-E'
(Part 2 of 2)
East
1735
1748
1026
1754
1776
1780
TIE: SEC. K-K'
TIE: SEC. L-L'
TIE: SEC. M-M'
DEEP ROCK OIL CORP.
Wickham Heirs (Carter) #1
Creek Co., Oklahoma
Section: 31 T16N-R7E
NW-NE-NW
KB 952'
TD 3785'
Completed: 8-9-1953
Recompleted: 2-19-1991
HARPER OIL
Wildwings #1
Creek Co., Oklahoma
Section: 32 T16N-R7E
SE-NE-NW
KB 930'
TD 4150'
Completed: 9-24-1985
DELANEY DRILLING CO.
Owens #1
Creek Co., Oklahoma
Section: 4 T15N-R7E
SW-NE-NE
KB 932'
TD 4053'
Completed: 6-6-1950
SUPERIOR OIL CORP.
Anthis #1
Creek Co., Oklahoma
Section: 34 T16N-R7E
C-NW-SE
DF 947'(?)
TD 4035'
Completed: 6-19-1942
GULF OIL CORP.
Lashley #1
Creek Co., Oklahoma
Section: 35 T16N-R7E
NW-SW-NE
KB 878'
TD 3955'
Completed: 12-24-1953
F.R. BILLINGSLEA
Bettie #1 (Smith #1)
Creek Co., Oklahoma
Section: 36 T16N-R7E
NW-NE-SE
KB 843'
TD 3742'
Completed: 4-26-1956
Re-completed: 6-6-1969
Top Dewey Ls
Top Hogshooter Ls
Top Checkerboard Ls
Top Oswego Ls
Datum:
Base Oswego
Top Verdigris Ls
Top Pink Ls
Top Inola Ls
Top Brown Ls
Top Mississippi Lm
Top Woodford Sh
Top Sylvan Sh
Top Viola
Top Simpson
Top Bromide
PRUE PROD.
IPP: 47 BO & 4 BWPD
PRUE PROD.
IPP: 824 MCFGPD
LEGEND
PERFORATED INTERVAL
CORED INTERVAL
DRILL STEM TEST
INDEX MAP SHOWING CROSS-SECTION LINES
R6E
R7E
MAP AREA
STRATIGRAPHIC CROSS SECTION E-E'
(Part 2 of 2)
PLATE Vb
JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY
VERTICAL SCALE
100 ft
NO HORIZONTAL SCALE

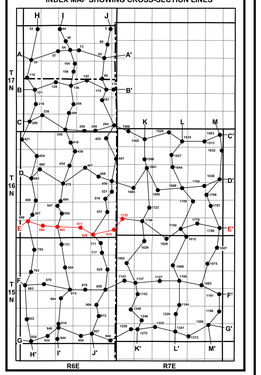
E-E'
(Part 1 of 2)
West

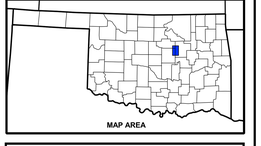
E-E'
(Part 1 of 2)
East

569	584	602	611	626	633	1735
TIE: SEC. H-H'		TIE: SEC. I-I'		TIE: SEC. J-J'		
HERNDON DRLG. CO. (TOTO) *Terry #1* Lincoln Co., Oklahoma Section: 31 T16N-R6E NE-NE-NW KB 977' TD 4211' Completed: 7-29-1952 Re-completed: 1-15-1959	**SERVICE DRILLING CO.** *Black #2* Lincoln Co., Oklahoma Section: 32 T16N-R6E NW-SE-NW KB 1052' TD 4306' Completed: 4-9-1953	**FCD OIL CORP.** *Gantry #1* Lincoln Co., Oklahoma Section: 33 T16N-R6E C-SW-NW KB 984.5' TD 4200' Completed: 5-3-1981	**WILLIAM A. NORTON** *Coward #1* Lincoln Co., Oklahoma Section: 34 T16N-R6E SE-SE-NW KB 903' TD 3968' Completed: 6-16-1955	**ATTEBERRY ENGINEERING** *Baker #1* Lincoln Co., Oklahoma Section: 35 T16N-R6E N2-SW-SW KB 952' TD 3930' Completed: 7-1-1985	**ROYAL OIL & GAS** *School land (Sontag) #1* Lincoln Co., Oklahoma Section: 36 T16N-R6E NW-NE-SW KB 902.5' TD 3785' Completed: 3-8-1956 Re-completed: 11-19-1964	**DEEP ROCK OIL CO.** *Wickham Heirs (Carter) #1* Creek Co., Oklahoma Section: 31 T16N-R7E NW-NE-NW KB 952' TD 3785' Completed: 8-8-1953 Re-completed: 2-18-1991
Top Osage Layton						Top Osage Layton
Top Dewey Ls						Top Dewey Ls
Top Hogshooter Ls						Top Hogshooter Ls
Top Checkerboard Ls						Top Checkerboard Ls
Datum: Top Oswego Ls Base Oswego						Datum: Top Oswego Ls Base Oswego
Top Verdigris Ls						Top Verdigris Ls
Top Pink Ls						Top Pink Ls
Top Inola Ls						Top Inola Ls
Top Brown Ls						Top Brown Ls
Top Mississippi Lm						Top Mississippi Lm
Top Woodford Sh						Top Woodford Sh
Top Sylvan Sh						Top Sylvan Sh
Top Viola						Top Viola
Top Simpson						Top Simpson
Top Bromide						Top Bromide
SKINNER PROD.		MISS & HUNTON PROD. (Commingled) IPP: 10 BO + 50 BW & 130 MCFGPD		PRUE, MISS., & SIMPSON PROD. (Commingled) IPF: 10 BO + 21 BW & 211 MCFGPD	WILCOX SD. PROD. IPF: 42 BOPD	

LEGEND
- PERFORATED INTERVAL
- CORED INTERVAL
- DRILL STEM TEST

INDEX MAP SHOWING CROSS-SECTION LINES





STRATIGRAPHIC CROSS SECTION E-E'
(PART 1 OF 2)
PLATE Va

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

VERTICAL SCALE
100 ft
0
NO HORIZONTAL SCALE

I-I'
(Part 3 of 3)
North

I-I'
(Part 3 of 3)
South

602	731	805	874	894	916	940	944
TIE: SEC. E-E'			TIE: SEC. F-F'			TIE: SEC. G-G'	
FCD OIL CORP. ***Gentry #1-33*** Lincoln Co., Oklahoma Section: 33 T16N-R6E C-SW-NW KB 984.5' TD 4200' Completed: 5-3-1981	**FUNK EXPLORATION** ***Pogue #1*** Lincoln Co., Oklahoma Section: 4 T15N-R6E C-SE-NW KB 974' TD 4212' Completed: 12-19-1980	**GENE GOFF** ***Griebel #1*** Lincoln Co., Oklahoma Section: 9 T15N-R6E SW-NW-SE KB 890' TD 4212' Completed: 1-7-1954	**BOSWELL ENERGY** ***State of Oklahoma #1-16*** Lincoln Co., Oklahoma Section: 16 T15N-R6E E2-SW-SE-SE KB 839' TD 4110' Completed: 4-29-1983	**FAIN-PORTER & CONTINENTAL OIL** ***Rogers #1*** Lincoln Co., Oklahoma Section: 21 T15N-R6E SW-SE-NW KB 931' TD 4341' Completed: 12-22-1944	**ROBERT GORDON OIL** ***Reide #28-1*** Lincoln Co., Oklahoma Section: 28 T15N-R6E E2-SW-SW KB 928' TD 4622' Completed: 7-29-1983	**FLOYD G. HUBBELL** ***Lippert #1*** Lincoln Co., Oklahoma Section: 33 T15N-R6E NE-NW-NW KB 938.5' TD 3752' Completed: 11-26-1954	**BARBOUR ENERGY CORP.** ***Ethridge #1*** Lincoln Co., Oklahoma Section: 33 T15N-R6E C-SE-SW KB 882' TD 3680' Completed: 10-3-1979

Datum: Base Oswego

Top Osage Layton
Top Dewey Ls
Top Hogshooter Ls
Top Checkerboard Ls
Top Oswego Ls
Top Verdigris Ls
Top Pink Ls
Top Inola Ls
Top Brown Ls
Top Mississippi Lm
Top Woodford Sh
Top Misener
Top Sylvan Sh
Top Viola
Top Simpson
Top Wilcox

MISS & HUNTON PROD. (Commingled)
IPP: 10 BOPD + 50 BW & 130 MCFGPD

HUNTON PROD.
IPP: 10 BOPD + 8 BW & 50 MCFGPD

HUNTON PROD.
IPP: 124 BOPD

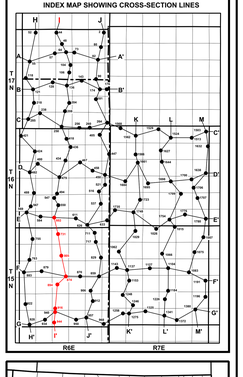
MISS PROD.
IPP: 8 BO + 7 BW + 95 MCFGPD

SKINNER PROD.
IPP: 150 MCFGPD + 1 BO + 10 BW/24 HRS

PRUE PROD.
IPP: 250 MCFGPD + 25 BO/24 HRS

LEGEND
- PERFORATED INTERVAL
- CORED INTERVAL
- DRILL STEM TEST

INDEX MAP SHOWING CROSS-SECTION LINES



STRATIGRAPHIC CROSS SECTION I-I'
(Part 3 of 3)
PLATE IXc

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

VERTICAL SCALE
100 ft

NO HORIZONTAL SCALE

I-I'
(Part 2 of 3)
North

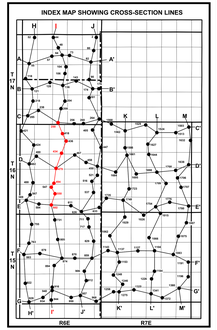
I-I'
(Part 2 of 3)
South

250	418	436	434	479	494	547	550	602
TIE: SEC. C-C'				TIE: SEC. D-D'				TIE: SEC. E-E'
BARUCH-FOSTER CORP. ***Wolff #1*** Lincoln Co., Oklahoma Section: 33 T17N-R8E C-NE-SE KB 946' TD 3512' Completed: 10-24-1978	**BARUCH-FOSTER CORP.** ***Robert Brock #1*** Lincoln Co., Oklahoma Section: 4 T16N-R8E C-NE-SE KB 973' TD 3710' Completed: 4-20-1980	**RESOURCE DEV.** ***Titus #1-10*** Lincoln Co., Oklahoma Section: 10 T16N-R6E NW-NW KB 979' TD 4000' Completed: 7-8-1985	**R.L. KEMP-WHAN-HOWARD** ***Bay D. Canes #1*** Lincoln Co., Oklahoma Section: 9 T16N-R6E SW-SE-SE KB 1060.5' TD 3638' Completed: 9-23-1954	**FLEET, ET AL** ***State #1*** Lincoln Co., Oklahoma Section: 16 T16N-R6E SE-SE-SW DF 1023' TD 4029' Completed: 4-20-1945	**SOUTHLAND OIL** ***Sill #21-1*** Lincoln Co., Oklahoma Section: 21 T16N-R6E SW-SE-SW KB 988' TD 4070' Completed: 8-25-1982	**FCD OIL CORP.** ***Sill #1-28*** Lincoln Co., Oklahoma Section: 28 T16N-R6E S2-NW-NW KB 966.5' TD 4050' Completed: 6-26-1982	**RESOURCE DEV.** ***Sill #1-28*** Lincoln Co., Oklahoma Section: 28 T16N-R6E NE-SW KB 951' TD 3800' Completed: 3-16-1985	**FCD OIL CORP.** ***Gentry #1-33*** Lincoln Co., Oklahoma Section: 33 T16N-R6E C-SW-NW KB 984.5' TD 4200' Completed: 5-3-1981
Top Osage Layton								Top Osage Layton
Top Dewey Ls								Top Dewey Ls
Top Hogshooter Ls								Top Hogshooter Ls
Top Checkerboard Ls								Top Checkerboard Ls
Top Oswego Ls								Top Oswego Ls
Datum: Base Oswego								Datum: Base Oswego
Top Verdigris Ls								Top Verdigris Ls
Top Pink Ls								Top Pink Ls
Top Inola Ls								Top Inola Ls
Top Brown Ls								Top Brown Ls
Top Mississippi Lm								Top Mississippi Lm
	Top Woodford Sh	Top Woodford Sh		Top Woodford Sh		Top Woodford Sh		Top Woodford Sh
	Top Sylvan Sh	Top Sylvan Sh		Top Sylvan Sh		Top Sylvan Sh		Top Sylvan Sh
	Top Viola	Top Viola		Top Viola		Top Viola		Top Viola
		Top Simpson		Top Simpson		Top Simpson		Top Simpson
		Top Wilcox		Top Wilcox				Top Wilcox
		Top Tulip Creek						
								Top Mosner
RED FORK PROD. IPF: 570 MCFGPD	MISS. PROD. IPP: 20 BO + 40 BW & 70 MCFGPD RECOMPLETION: OSWEGO PROD. IPP: 1 BO, 18 MCFGPD + 5 BWPD MISS. PROD. IPP: 2 MCFGPD, 1 BWPD (To Cunningham)	MISS. PROD. IPF: 15 BOPD + 450 MCFGPD				PRUE PROD. IPF: 1000 MCFGPD + 20 BW RED FORK PROD. IPF: 260 MCFGPD + 2 BWPD	RED FORK PROD. IPF: 260 MCFGPD MISS. PROD IPF: 155 BOPD + 1233 MCFGPD RECOMPLETION PRUE PROD. IPP: 17 MCFGPD + 2 BWPD	MISS & HUNTON PROD. (Cunningham) IPP: 10 BO + 50 BW & 130 MCFGPD

LEGEND

- PERFORATED INTERVAL
- CORED INTERVAL
- DRILL STEM TEST

INDEX MAP SHOWING CROSS-SECTION LINES



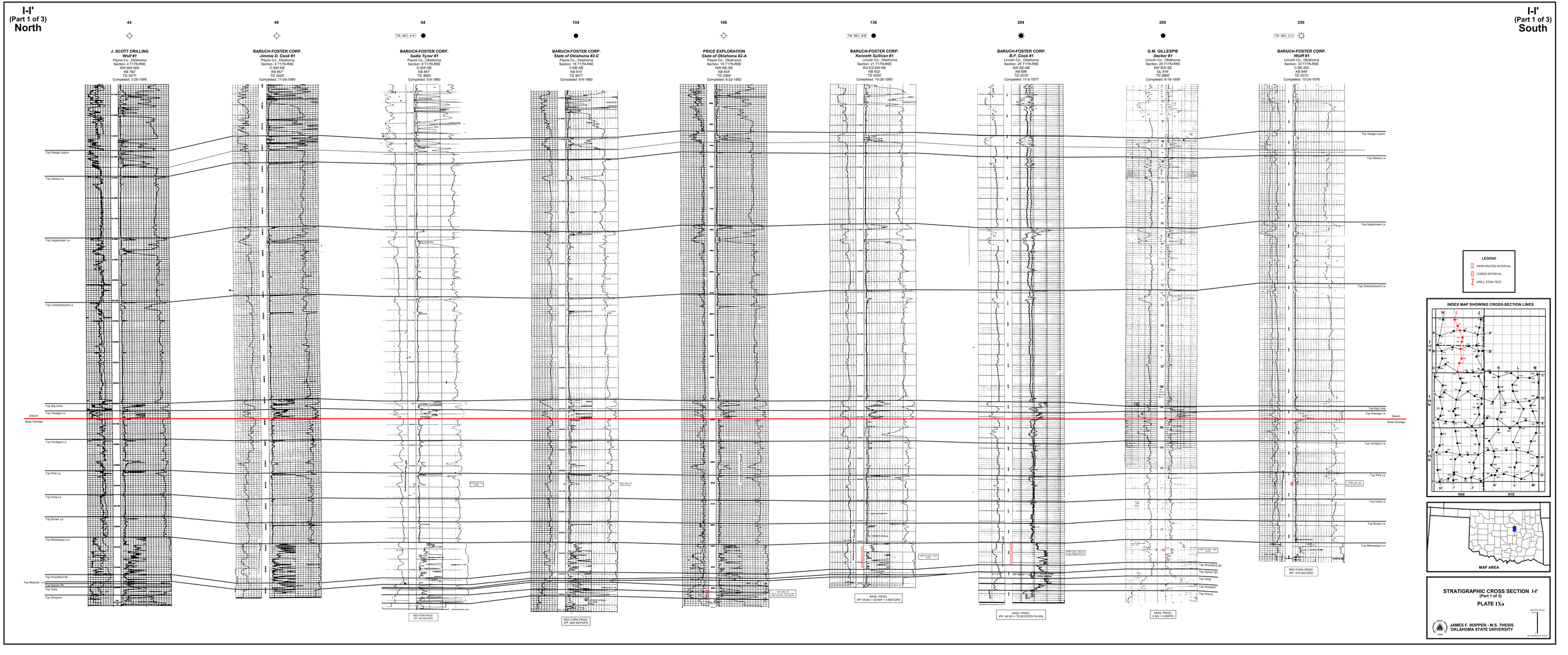
STRATIGRAPHIC CROSS SECTION I-I'
(Part 2 of 3)

PLATE IXb

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

VERTICAL SCALE
1" = 50'

NO HORIZONTAL SCALE


I-I'
(Part 1 of 3)
North
I-I'
(Part 1 of 3)
South
44
J. SCOTT DRILLING
Wolf #1
Payne Co., Oklahoma
Section: 4 T17N-R6E
SW-NW-NW
KB 782'
TD 3577'
Completed: 3-28-1989
48
BARUCH-FOSTER CORP.
Jimmie D. Cook #1
Payne Co., Oklahoma
Section: 4 T17N-R6E
C-SW-NE
KB 857'
TD 3626'
Completed: 11-29-1980
64
TIE: SEC. A-A'
BARUCH-FOSTER CORP.
Sadie Tyner #1
Payne Co., Oklahoma
Section: 9 T17N-R6E
C-SW-NE
KB 857'
TD 3685'
Completed: 5-9-1980
104
BARUCH-FOSTER CORP.
State of Oklahoma #2-C
Payne Co., Oklahoma
Section: 16 T17N-R6E
C-NE-NE
KB 910'
TD 3677'
Completed: 6-9-1980
106
PRICE EXPLORATION
State of Oklahoma #2-A
Payne Co., Oklahoma
Section: 16 T17N-R6E
NW-NE-SE
KB 834'
TD 3569'
Completed: 6-22-1982
136
TIE: SEC. B-B'
BARUCH-FOSTER CORP.
Kenneth Sullivan #1
Lincoln Co., Oklahoma
Section: 21 T17N-R6E
W2-E2-SW-NE
KB 832'
TD 3500'
Completed: 10-29-1980
204
BARUCH-FOSTER CORP.
B.F. Cook #1
Lincoln Co., Oklahoma
Section: 28 T17N-R6E
SW-SE-NE
KB 898'
TD 3518'
Completed: 11-5-1977
208
G.M. GILLESPIE
Decker #1
Lincoln Co., Oklahoma
Section: 28 T17N-R6E
SW-SW-SE
GL 918'
TD 3660'
Completed: 8-19-1959
250
TIE: SEC. C-C'
BARUCH-FOSTER CORP.
Wolff #1
Lincoln Co., Oklahoma
Section: 33 T17N-R6E
C-SE-SW
KB 948'
TD 3512'
Completed: 10-24-1978
Top Osage Layton
Top Dewey Ls
Top Hogshooter Ls
Top Checkerboard Ls
Top Big Lime
Top Oswego Ls
Datum:
Base Oswego
Top Verdigris Ls
Top Pink Ls
Top Inola Ls
Top Brown Ls
Top Mississippi Lm
Top Woodford Sh
Top Misener
Top Sylvan Sh
Top Viola
Top Simpson
Top Wilcox
RED FORK PROD.
IPF: 250 MCFGPD
RED FORK PROD.
IPF: 600 MCFGPD
MISS. PROD.
IPF: 38 BO + 50 BW + 4 MCFGPD
MISS. PROD.
IPF: 48 BO + 75 MCFGPD/16 HRS
MISS. PROD.
6 BO + 5 BWPD
RED FORK PROD.
IPF: 570 MCFGPD
LEGEND
PERFORATED INTERVAL
CORED INTERVAL
DRILL STEM TEST
INDEX MAP SHOWING CROSS-SECTION LINES
R6E
R7E
MAP AREA
STRATIGRAPHIC CROSS SECTION I-I'
(Part 1 of 3)
PLATE IXa
JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY
VERTICAL SCALE
NO HORIZONTAL SCALE

D-D'
(Part 2 of 2)
West

D-D'
(Part 2 of 2)
East

1684	1661	1695	1698	1700	1638
TIE: SEC. K-K'	TIE: SEC. K-K'	TIE: SEC. L-L'	TIE: SEC. L-L'	TIE: SEC. M-M'	TIE: SEC. M-M'
MID-CONTINENT PETR. ***Estate Land #1*** Lincoln Co., Oklahoma Section: 19 T16N-R7E NE-SE-NE KB 904' TD 3923' Completed: 12-13-1949	**BERRY OPERATING CO.** ***Diehl-Blackstock #1*** Creek Co., Oklahoma Section: 17 T16N-R7E SE-NW-NE KB 866.7' TD 3140' Completed: 1-19-1979	**WILCOX OIL CO.** ***Fixico #1*** Creek Co., Oklahoma Section: 20 T16N-R7E SW-SE-NW KB 875' TD 3514' Completed: 12-4-1951	**RUSSEL COBB, JR.** ***Mahan #1*** Creek Co., Oklahoma Section: 22 T16N-R7E NE-SW-NE KB 936' TD 3982' Completed: 9-12-1950 Re-completed: 4-30-1959	**HUBBELL DRLG. CO.** ***Busby-Canada #1*** Creek Co., Oklahoma Section: 23 T16N-R7E SE-NE-NE KB 861' TD 3845' Completed: 9-6-1956	**LINDY PETROLEUM CO.** ***L.R. Simpson #1*** Creek Co., Oklahoma Section: 13 T16N-R7E NW-SE-SE KB 942' TD 3845' Completed: 12-3-1981

Top Osage Layton
Top Dewey Ls
Top Hogshooter Ls
Top Checkerboard Ls
Datum: Top Oswego Ls
Base Oswego
Top Verdigris Ls
Top Pink Ls
Top Inola Ls
Top Brown Ls
Top Mississippi Lm
Top Woodford Sh
Top Sylvan Sh
Top Viola
Top Simpson
Top Bromide
Top McLish
Top Arbuckle
Top Burgess SS

PERF 4A/2004 - 64
SWB/2 HRS
SAND/CLOAD
PPD:28 BO/ 24 HRS, PPD WTR

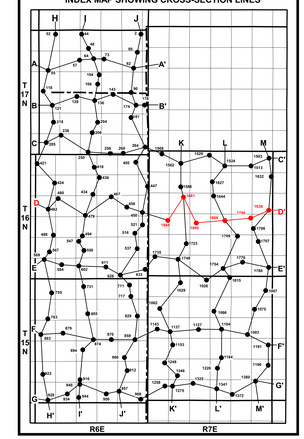
CORED 2700 - 10
REC: SHDY SH

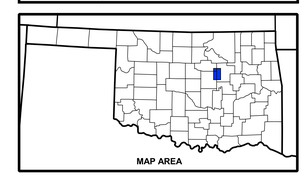
DST 3479 - 92 / 30 MIN
REC: 37 MUD

LEGEND

- PERFORATED INTERVAL
- CORED INTERVAL
- DRILL STEM TEST

INDEX MAP SHOWING CROSS-SECTION LINES





MAP AREA

STRATIGRAPHIC CROSS SECTION D-D'
(Part 2 of 2)
PLATE IVb

VERTICAL SCALE
100' / IN.

NO HORIZONTAL SCALE

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

D-D'
(Part 1 of 2)
West

D-D'
(Part 1 of 2)
West

482	480	479	467	458	450	1684
TIE: SEC. H-H'		TIE: SEC. I-I'			TIE: SEC. J-J'	

RESOURCE DEV.
Vickery #2-18
Lincoln Co., Oklahoma
Section: 18 T16N-R6E
C-NW-SE
KB 976'
TD 4100'
Completed: 1-27-1987

McGRIFF EXPLORATION
Cora #1-17
Lincoln Co., Oklahoma
Section: 17 T16N-R6E
C-NW-NW
DF 1025'
TD 3815'
Completed: 3-13-1986

FLEET-HUBBELL
State Schooland #1
Lincoln Co., Oklahoma
Section: 16 T16N-R6E
SE-SE-SW
DF 1025'
TD 4028'
Completed: 4-20-1945

KETCHUM OIL (HUBBELL)
Clinkenbeard #1
Lincoln Co., Oklahoma
Section: 15 T16N-R6E
NE-NW-NE
KB 1002'
TD 3749'
Completed: 9-18-1958
Re-completed: 7-26-1968

NADEL & GUSSMAN
Alice Teters #1
Lincoln Co., Oklahoma
Section: 14 T16N-R6E
NE-NE-SW
KB 932.5'
TD 3210'
Completed: 9-27-1956

HUBBELL DRILLING CO.
Wheeland #1
Lincoln Co., Oklahoma
Section: 13 T16N-R6E
NE-SW-SW
KB 956'
TD 3572'
Completed: 12-8-1952

MID-CONTINENT PETR.
Estate Land #1
Lincoln Co., Oklahoma
Section: 19 T16N-R7E
NE-SE-NE
KB 904'
TD 3923'
Completed: 12-13-1949

Top Osage Layton
Top Dewey Ls
Top Hogshooter Ls
Top Checkerboard Ls
Top Oswego Ls
Top Verdigris Ls
Top Pink Ls
Top Inola Ls
Top Brown Ls
Top Mississippi Lm
Top Woodford Sh
Top Sylvan Sh
Top Viola
Top Simpson
Top Bromide
Top McLish
Top Arbuckle

Datum: Base Oswego

PERF 3000' - 40 ACID

PERF 4048 - 58 OA
FTS 26 BO

HUNTON PROD.
IPP: 22 MCFGPD + 1 BW

PERF 3074 - 88 OA
ACID & FRAC

PRUE PROD.
IPP: 225 MCFGPD

DST - WILCOX
REC 990'TF

CLEVELAND PROD.
IPP: 42 BO + 500 MCFGPD

DST 2132 - 45 / 1-45
GTS 3255 MCFGD

DST 2140 - 72 / 1-45
REC 61 WCT GCM

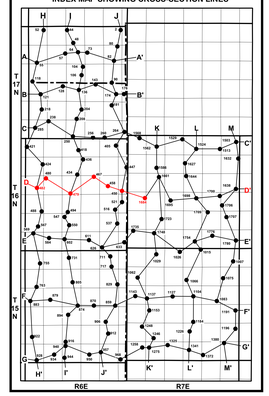
DST 3005-3025
REC 20 MCF

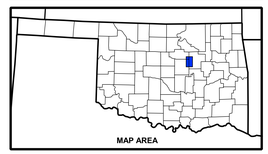
DST 3005-3025
REC 60 MCF

LEGEND

- PERFORATED INTERVAL
- CORED INTERVAL
- DRILL STEM TEST

INDEX MAP SHOWING CROSS-SECTION LINES



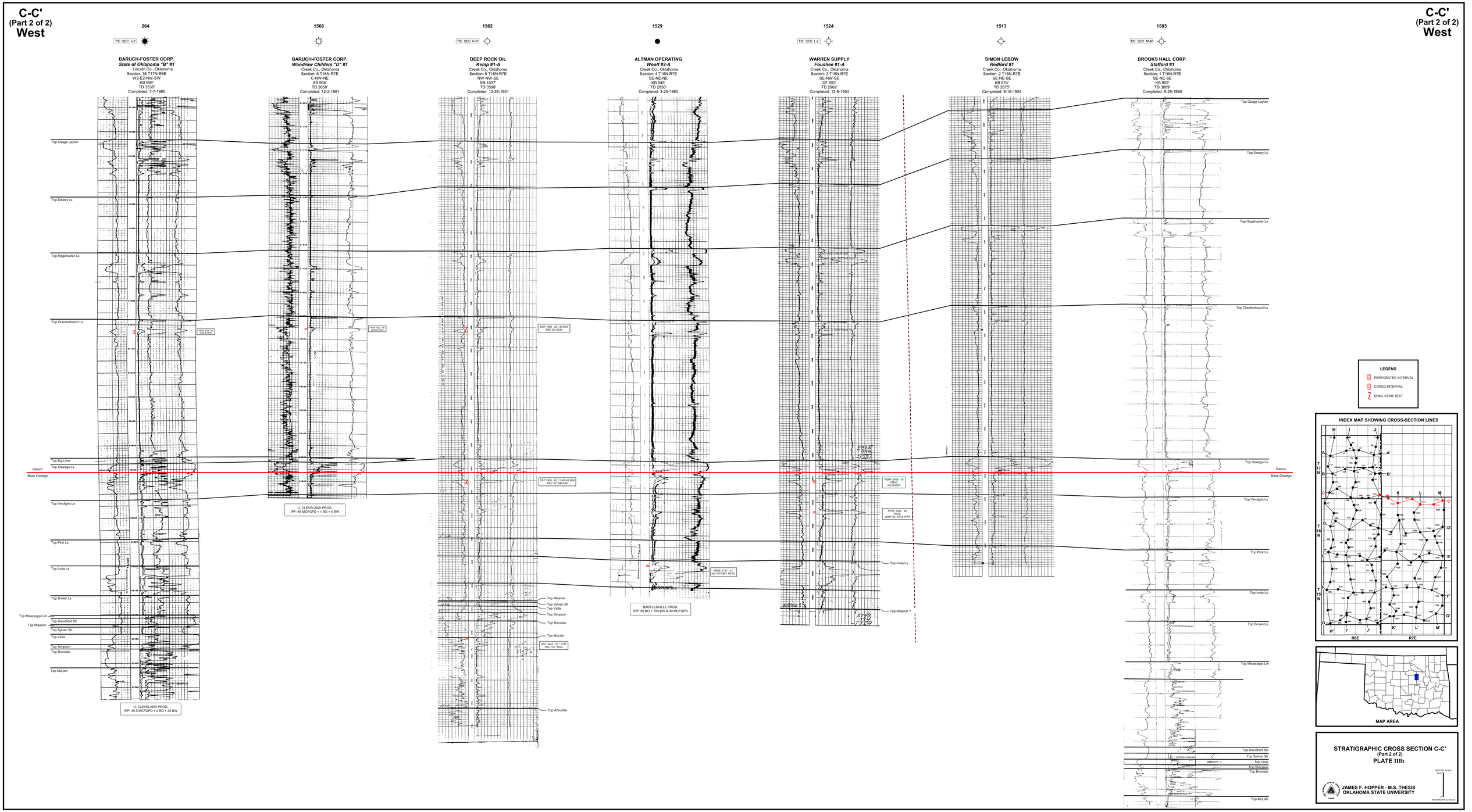


STRATIGRAPHIC CROSS SECTION D-D'
(Part 1 of 2)
PLATE IVa

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

VERTICAL SCALE
100 ft

NO HORIZONTAL SCALE


C-C'
(Part 2 of 2)
West
264
TIE: SEC. J-J'
BARUCH-FOSTER CORP.
State of Oklahoma "B" #1
Lincoln Co., Oklahoma
Section: 36 T17N-R6E
W2-E2-NW-SW
KB 998'
TD 3538'
Completed: 7-7-1980
1568
BARUCH-FOSTER CORP.
Woodrow Childers "D" #1
Creek Co., Oklahoma
Section: 6 T16N-R7E
C-NW-NE
KB 964'
TD 2658'
Completed: 12-2-1981
1562
TIE: SEC. K-K'
DEEP ROCK OIL
Kemp #1-A
Creek Co., Oklahoma
Section: 5 T16N-R7E
NW-NW-SE
KB 1037'
TD 3598'
Completed: 12-26-1951
1529
ALTMAN OPERATING
Woolf #2-A
Creek Co., Oklahoma
Section: 4 T16N-R7E
SE-NE-NE
KB 945'
TD 2830'
Completed: 3-25-1980
1524
TIE: SEC. L-L'
WARREN SUPPLY
Foushee #1-A
Creek Co., Oklahoma
Section: 3 T16N-R7E
SE-NW-SE
DF 993'
TD 2962'
Completed: 12-9-1954
1513
SIMON LEBOW
Redford #1
Creek Co., Oklahoma
Section: 2 T16N-R7E
SE-NE-SE
KB 874'
TD 2875'
Completed: 9-16-1954
1503
TIE: SEC. M-M'
BROOKS HALL CORP.
Stafford #1
Creek Co., Oklahoma
Section: 1 T16N-R7E
SE-NE-SE
KB 959'
TD 3869'
Completed: 8-29-1980
Top Osage Layton
Top Dewey Ls
Top Hogshooter Ls
Top Checkerboard Ls
Top Big Lime
Top Oswego Ls
Datum:
Base Oswego
Top Verdigris Ls
Top Pink Ls
Top Inola Ls
Top Brown Ls
Top Mississippi Lm
Top Woodford Sh
Top Misener
Top Sylvan Sh
Top Viola
Top Simpson
Top Bromide
Top McLish
U. CLEVELAND PROD.
IPP: 30.5 MCFGPD + 2 BO + 20 BW
U. CLEVELAND PROD.
IPP: 66 MCFGPD + 1 BO + 5 BW
DST 1900 - 20 / 33 MIN
REC 30' GCM
DST 2550 - 45 / 1 HR 45 MIN
REC 30' O&GCM
DST 3222 - 27 / 1 HR
REC 10' MUD
Top Misener
Top Sylvan Sh
Top Viola
Top Simpson
Top Bromide
Top McLish
Top Arbuckle
BARTLESVILLE PROD.
IPP: 50 BO + 150 BW & 40 MCFGPD
PERF 2727 - 31
NO TRTMNT RPTD
PERF 2458 - 16
FRAC
NO SHOW
PERF 2540 - 46
FRAC
VERY SLI SO & WTR
Top Inola Ls
Top Misener ?
LEGEND
PERFORATED INTERVAL
CORED INTERVAL
DRILL STEM TEST
INDEX MAP SHOWING CROSS-SECTION LINES
R6E
R7E
MAP AREA
STRATIGRAPHIC CROSS SECTION C-C'
(Part 2 of 2)
PLATE IIIb
JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY
VERTICAL SCALE
100 ft
NO HORIZONTAL SCALE

C-C'
(Part 1 of 2)
West

C-C'
(Part 1 of 2)
West

285	238	250	256	260	264
TIE: SEC. H-H'		TIE: SEC. I-I'			TIE: SEC. J-J'
OLSON OIL CO. ***Schreiber #3*** Lincoln Co., Oklahoma Section: 31 T17N-R6E SW-SE-NW KB 832.5' TD 3425' Completed: 7-26-1956 Recompleted: 8-18-1959	**KEMP & GILLESPIE** ***J.H. Robinson #1*** Lincoln Co., Oklahoma Section: 32 T17N-R6E NW-NW-NW KB 905' TD 3870' Completed: 5-26-1949	**BARUCH-FOSTER CORP.** ***Wolff #1*** Lincoln Co., Oklahoma Section: 33 T17N-R6E SE-SW KB 946' TD 3512' Completed: 10-24-1978	**D & L OIL CO. (WIL-McOil)** ***Halstead #1*** Lincoln Co., Oklahoma Section: 34 T17N-R6E SE-SE-SW KB 923.5' TD 3573' Completed: 11-9-1955 Recompleted: 10-10-1978	**ARTHUR FINSTON** ***Givens #1*** Lincoln Co., Oklahoma Section: 35 T17N-R6E SW-SW-SW KB 959' TD 2808' Completed: 4-17-1957	**BARUCH-FOSTER CORP.** ***State of Oklahoma "B" #1*** Lincoln Co., Oklahoma Section: 36 T17N-R6E W2-E2-NW-SW KB 998' TD 3536' Completed: 7-7-1980

Top Osage Layton
Top Dewey Ls
Top Hogshooter Ls
Top Checkerboard Ls
Top Big Lime
Top Oswego Ls
Datum:
Base Oswego
Top Verdigris Ls
Top Pink Ls
Top Inola Ls
Top Brown Ls
Top Mississippi Lm
Top Woodford Sh
Top Misener
Top Sylvan Sh
Top Viola
Top Simpson
Top Bromide
Top McLish

PERF 2952-62
ACID FRAC
REC: CRWF
GA. 1540 MCFGD

PRUE PROD.
GA. 1540 MCFGPD

PERF 3142 - 58
NO TSTIMAT WPTD

RED FORK PROD.
IPF: 570 MCFGPD

DST 3709-63F 40 MIN
REC: 10' VERY SLI OCDM

PERF 3048 - 54
ACID, FRAC

DST 3047-070 1.5 HR
REC: 60' SLI GCM

DST 3048-63 1.5 HR
REC: 152' VERY SLI GCM
60' SW/ES

RED FORK PROD.
IPF: 350 MCFG/ 6 HRS

DST 2003 - 50 1.5 HRS
REC: 60' SLI OC SALTY MUD

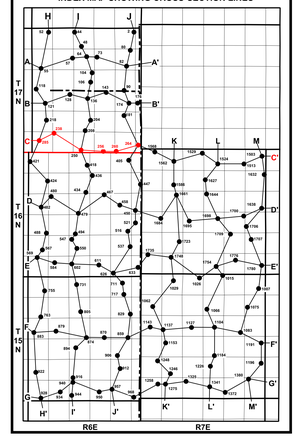
PERF 2024 - 38
ACID, FRAC

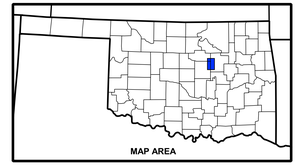
U. CLEVELAND PROD.
IPP: 30.5 MCFGPD + 2 BO + 20 BW

LEGEND

- PERFORATED INTERVAL
- CORED INTERVAL
- DRILL STEM TEST

INDEX MAP SHOWING CROSS-SECTION LINES





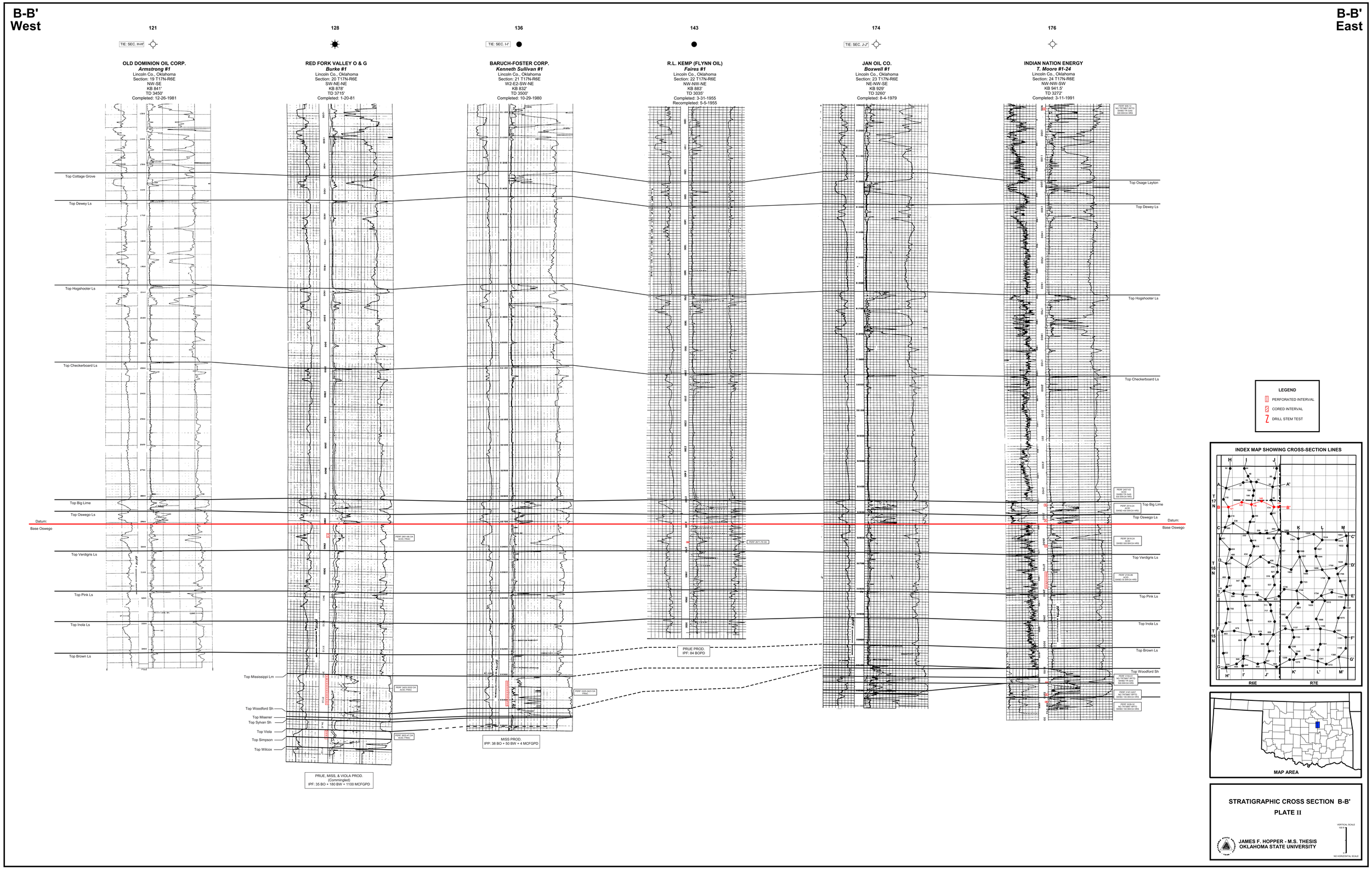
MAP AREA

STRATIGRAPHIC CROSS SECTION C-C'
(Part 1 of 2)
PLATE IIIa

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

VERTICAL SCALE
1000'

NO HORIZONTAL SCALE


B-B'
West
B-B'
East
121
128
136
143
174
176
TIE: SEC. H-H'
TIE: SEC. I-I'
TIE: SEC. J-J'
OLD DOMINION OIL CORP.
Armstrong #1
Lincoln Co., Oklahoma
Section: 19 T17N-R6E
NW-SE
KB 841'
TD 3450'
Completed: 12-26-1981
RED FORK VALLEY O & G
Burke #1
Lincoln Co., Oklahoma
Section: 20 T17N-R6E
SW-NE-NE
KB 878'
TD 3715'
Completed: 1-20-81
BARUCH-FOSTER CORP.
Kenneth Sullivan #1
Lincoln Co., Oklahoma
Section: 21 T17N-R6E
W2-E2-SW-NE
KB 832'
TD 3500'
Completed: 10-29-1980
R.L. KEMP (FLYNN OIL)
Faires #1
Lincoln Co., Oklahoma
Section: 22 T17N-R6E
NW-NW-NE
KB 883'
TD 3035'
Completed: 3-31-1955
Recompleted: 5-5-1955
JAN OIL CO.
Boxwell #1
Lincoln Co., Oklahoma
Section: 23 T17N-R6E
NE-NW-SE
KB 929'
TD 3260'
Completed: 8-4-1979
INDIAN NATION ENERGY
T. Moore #1-24
Lincoln Co., Oklahoma
Section: 24 T17N-R6E
NW-NW-SW
KB 941.5'
TD 3272'
Completed: 3-11-1991
Top Cottage Grove
Top Dewey Ls
Top Hogshooter Ls
Top Checkerboard Ls
Top Big Lime
Top Oswego Ls
Datum:
Base Oswego
Top Verdigris Ls
Top Pink Ls
Top Inola Ls
Top Brown Ls
Top Mississippi Lm
Top Woodford Sh
Top Misener
Top Sylvan Sh
Top Viola
Top Simpson
Top Wilcox
PRUE, MISS, & VIOLA PROD.
(Commingled)
IPF: 35 BO + 180 BW + 1100 MCFGPD
MISS PROD.
IPP: 38 BO + 50 BW + 4 MCFGPD
PRUE PROD.
IPF: 84 BOPD
Top Osage Layton
Top Woodford Sh
LEGEND
PERFORATED INTERVAL
CORED INTERVAL
DRILL STEM TEST
INDEX MAP SHOWING CROSS-SECTION LINES
R6E
R7E
MAP AREA
STRATIGRAPHIC CROSS SECTION B-B'
PLATE II
JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

A-A' West

A-A' East

55	57	64	73	82
TIE: SEC. H-H'		TIE: SEC. I-I'		TIE: SEC. J-J'
FOSTER DRLG. CO. ***Griffith #1*** Payne Co., Oklahoma Section: 7 T17N-R6E SE-SE-NW KB 837' TD 3364' Completed: 3-14-1950	**R.E. DIRICKSON** ***Gibbs #1*** Payne Co., Oklahoma Section: 8 T17N-R6E SE-SE-NE KB 837' TD 3405' Completed: 1-23-1950	**BARUCH-FOSTER CORP.** ***Sadie Tyner #1*** Payne Co., Oklahoma Section: 9 T17N-R6E SW-NE KB 857' TD 3685' Completed: 5-9-1980	**BARUCH-FOSTER CORP.** ***Charles Crane Heirs #1*** Payne Co., Oklahoma Section: 10 T17N-R6E SW-NE KB 898' TD 3570' Completed: 11-12-1981	**COOPER SHIELDS** ***Tommy Moore #1*** Payne Co., Oklahoma Section: 11 T17N-R6E NW-SW-SE KB 951' TD 3235' Completed: 11-16-1985

Top Cottage Grove

Top Dewey Ls

Top Hogshooter Ls

Top Checkerboard Ls

Top Big Lime

Top Oswego Ls

Datum:
Base Oswego

Top Verdigris Ls

Top Pink Ls

Top Inola Ls

Top Brown Ls

Top Sylvan Sh

DST 2021-92 / 10 MIN
REC 35' SLI OCM

CORED 2843-59
REC 2.0' BD, ODOR
& LIME, 3' SH

PERF 3083 - 92
FRAC

PERF 3303 - 3417
ACID & FRAC

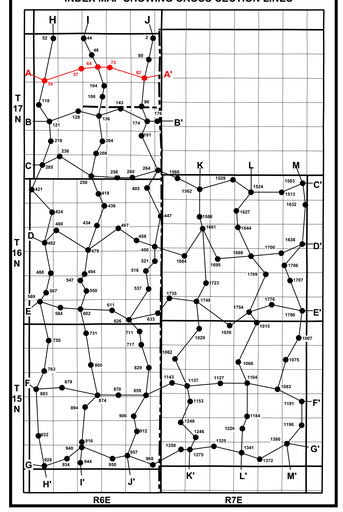
RED FORK PROD.
IPF: 250 MCFGPD

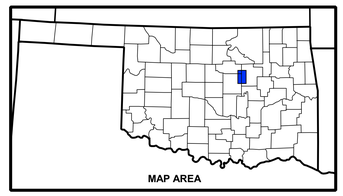
MISSISSIPPIAN PROD.
IPF: 2.5 BO + 71 BW

LEGEND

- PERFORATED INTERVAL
- CORED INTERVAL
- Z DRILL STEM TEST

INDEX MAP SHOWING CROSS-SECTION LINES





STRATIGRAPHIC CROSS SECTION A-A'

PLATE I

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

VERTICAL SCALE
100 ft

NO HORIZONTAL SCALE

G-G'
(Part 1 of 2)
West

G-G'
(Part 1 of 2)
East

928 | 934 | 940 | 950 | 957 | 968 | 1258

TIE: SEC. H-H' | TIE: SEC. I-I' | TIE: SEC. J-J'

STRIKER DRILLING CO.
Cory #1
Lincoln Co., Oklahoma
Section: 31 T15N-R6E
C-SW-SE
KB 928'
TD 4508'
Completed: 12-6-1982

HARVEY McELREATH
Turnbull #1
Lincoln Co., Oklahoma
Section: 32 T15N-R6E
NW-NW-SE
KB 850'
TD 4565'
Completed: 5-6-1954
Re-completed: 12-24-1959

HUBBELL DRILLING CO.
Lippert #1
Lincoln Co., Oklahoma
Section: 33 T15N-R6E
NE-NW-NW
KB 938.5'
TD 3752'
Completed: 11-26-1954

McELREATH & HARVEY
Walter Creiss #2-C
Lincoln Co., Oklahoma
Section: 34 T15N-R6E
NE-NE-SW
KB 872'
TD 4495'
Completed: 6-25-1953

MOHAWK DRILLING
Henin #1
Lincoln Co., Oklahoma
Section: 35 T15N-R6E
SW-SW-NW
KB 866'
TD 4294'
Completed: 11-13-1951

M & M RESOURCES
Artie #1
Lincoln Co., Oklahoma
Section: 36 T15N-R6E
N2-SW-SW
GL 863'
TD 4250'
Completed: 3-24-1982

SHELL OIL CO.
Linihan #4
Creek Co., Oklahoma
Section: 31 T15N-R7E
NW-SE-NE
DF 908'
TD 3720'
Completed: 7-4-1941

Top Dewey Ls
Top Hogshooter Ls
Top Checkerboard Ls

Datum: Top Oswego Ls
Base Oswego

Top Verdigris Ls
Top Pink Ls
Top Inola Ls
Top Brown Ls
Top MississippianLm
Top Woodford Sh
Top Misener - Hunton
Top Sylvan Sh
Top Viola
Top Simpson

PRUE PROD.
IPF PRUE 20 BOPD

PRUE PROD.

PRUE PROD.
IPF: 350 MCFGPD + 21 BO & 3 BW

WILCOX PROD.
IP: 44 BOPD

LEGEND

- PERFORATED INTERVAL
- CORED INTERVAL
- DRILL STEM TEST

INDEX MAP SHOWING CROSS-SECTION LINES

R6E | R7E | T17N | T16N | T15N

MAP AREA

STRATIGRAPHIC CROSS SECTION G-G'
(Part 1 of 2)

PLATE VIIa

VERTICAL SCALE
NO HORIZONTAL SCALE

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

17N/6E

17N/7E

16N/6E

16N/7E

15N/6E

15N/7E

Red Fork Sandstone Completion

Log available
No sandstone present

Log available
Sandstone data

Total thickness of Red Fork
AB = Sandstone absent
NDE = Well not deep enough to penetrate interval
TD = Well TD'd within the sandstone interval

2000 0 2000 4000 6000 8000 10000 ft

Red Fork Isopach

Contour Interval = 25 feet

Plate XXXIII

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

17N/6E

17N/7E

16N/6E

16N/7E

15N/6E

15N/7E

Prue Sandstone Completion

Log available
No sandstone present

Log available
Sandstone data

Total thickness of Prue Sandstone
AB = Sandstone absent
NDE = Well not deep enough to penetrate interval
TD = Well TD'd within the sandstone interval

2000 0 2000 4000 6000 8000 10000 ft

Prue Isopach

Contour Interval = 25 feet

Plate XXXII

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

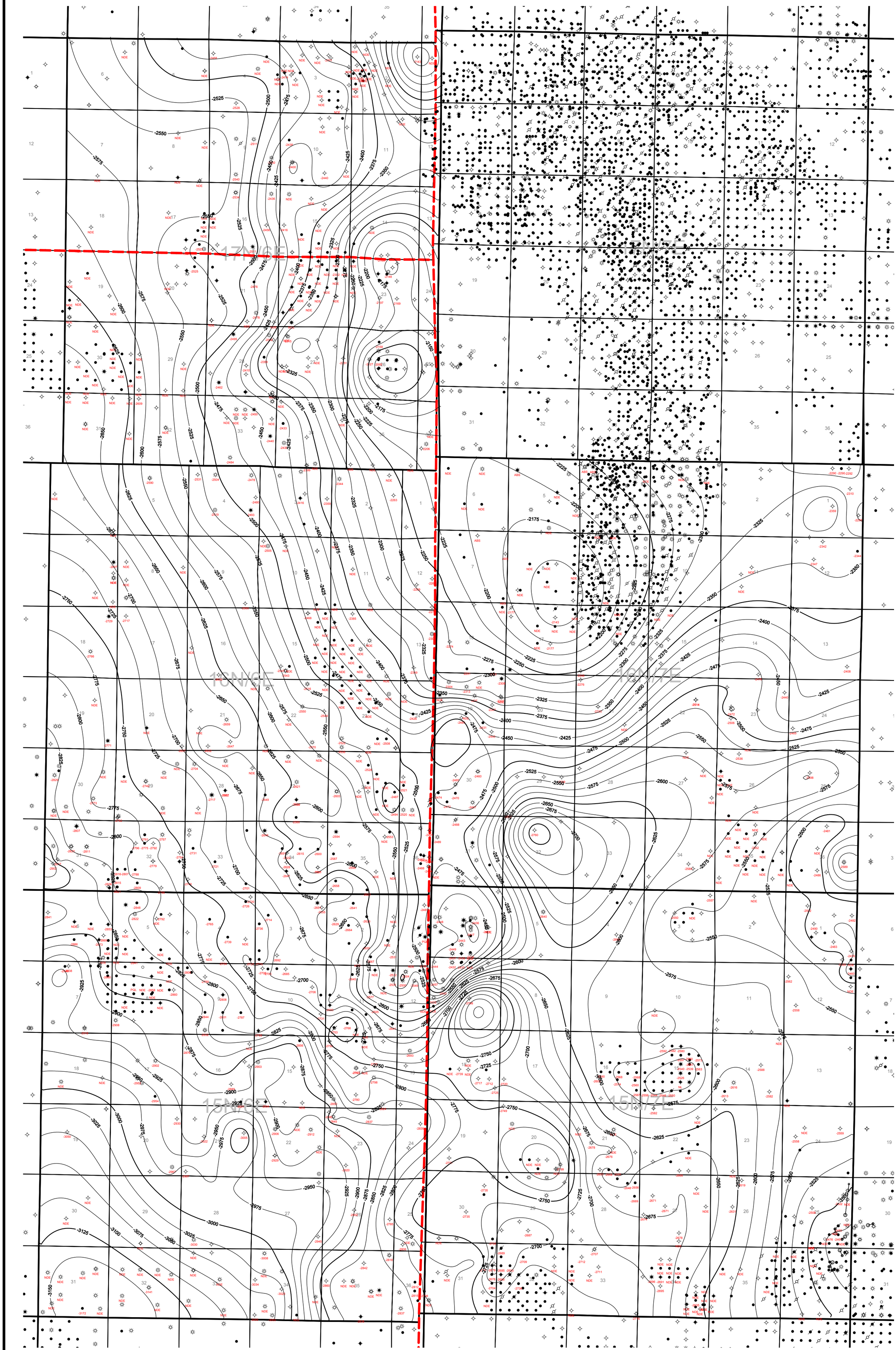
Top Viola Limestone Structure Map

Contour Interval = 25 feet

Plate XXXI

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

2000 0 2000 4000 6000 8000 10000 ft



2000 0 2000 4000 6000 8000 10000 ft

Top Mississippian Structure Map

Contour Interval = 25 feet

Plate XXX

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

17N/6E

17N/7E

16N/6E

16N/7E

15N/6E

15N/7E

2000 0 2000 4000 6000 8000 10000 ft

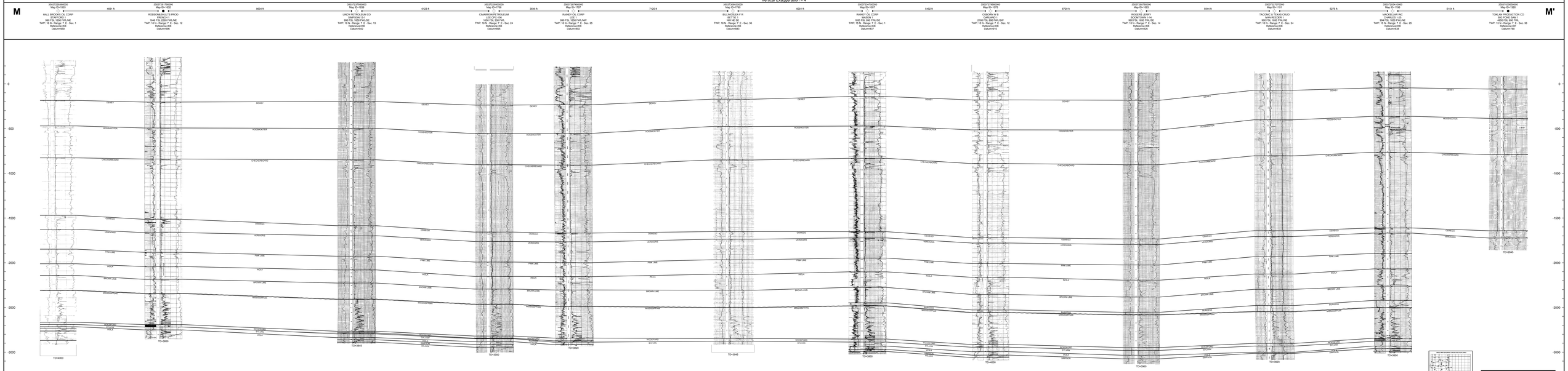
Base Oswego Lm Structure Map

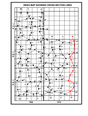
Contour Interval = 25 feet

Plate XXVIII

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

Structural Cross Section "M-M'"
Proportionally Spaced
Datum = Sea Level
Horizontal Scale = 1 in per 800 ft; Vertical Scale = 1 in per 200 ft
Vertical Exaggeration = 4





STRUCTURAL CROSS SECTION M-M'

PLATE XXVI

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

Structural Cross Section "L-L'" : Proportionally Spaced
Datum = 0 ft Subsea
Horizontal Scale = 1 in per 800 ft; Vertical Scale = 1 in per 200 ft
Vertical Exaggeration = 4

L

3500700131000000
Map ID=1524
WARREN SUPPLY
FOUSHEE 1A
SW SW NW
TWP: 16 N - Range: 7 E - Sec. 3
Reference=OF
Datum=954

4429 ft

3500707298900000
Map ID=1527
BERAUCO INC
WILLIAMS NORA A 24
NW NW NW NW SW
TWP: 16 N - Range: 7 E - Sec. 10
Reference=KB
Datum=974

3896 ft

3500707140900000
Map ID=1544
PENTECO CORP
STILL 71
1980 FSL & 660 FWL,NW
TWP: 16 N - Range: 7 E - Sec. 15
Reference=KB
Datum=947

6950 ft

3500700280900000
Map ID=1568
MID CONTINENT
MAHON 1
990 FSL & 990 FWL,NE
TWP: 16 N - Range: 7 E - Sec. 22
Reference=KB
Datum=936

5163 ft

3500712030900000
Map ID=1709
R H OPERATING CO
WALINDA
2630 FSL & 330 FWL,NW
TWP: 16 N - Range: 7 E - Sec. 28
Reference=GR
Datum=892

9018 ft

3500700480900000
Map ID=1754
SUPERIOR OIL CO STAL
ANTHES
660 FSL & 660 FWL,SE
TWP: 16 N - Range: 7 E - Sec. 34
Reference=ES
Datum=947

2851 ft

3500717310000000
Map ID=1013
PALMER OIL COMPANY
FEARS 1
1980 FSL & 660 FEL
TWP: 15 N - Range: 7 E - Sec. 3
Reference=KB
Datum=881

9500 ft

3500712020700000
Map ID=1094
BRWN CRT DRL CO
FRANCE 1
330 FSL & 330 FWL
TWP: 15 N - Range: 7 E - Sec. 10
Reference=DL
Datum=845

5051 ft

3500703490900000
Map ID=1104
MAGNOLIA PET CO
HAROLD CHAS
23 FSL & 330 FWL,SE
TWP: 15 N - Range: 7 E - Sec. 15
Reference=KB
Datum=893

7266 ft

3500709270000000
Map ID=1174
CARTER&FRANCIS, COMPNY
FRENCH FF 1
330 FSL & 330 FWL,SE
TWP: 15 N - Range: 7 E - Sec. 22
Reference=KB
Datum=905

2839 ft

3500729960000000
Map ID=1229
NORMAN VENTURES INC
CHURCH 1
330 FSL & 330 FWL,NW
TWP: 15 N - Range: 7 E - Sec. 27
Reference=KB
Datum=857

5299 ft

3500709510000000
Map ID=1241
SUN OIL COMPANY
ABRAHAM 1
330 FSL & 330 FWL,NW
TWP: 15 N - Range: 7 E - Sec. 34
Reference=KB
Datum=838

L'

0
-500
-1000
-1500
-2000
-2500
-3000

DEWEY
HOGSHOOTER
CHECKERBOARD
OSWEGO
VERDIGRIS
PINK LIME
RICKLY
BROWN LIME
MISSISSIPPIAN
HUNTON
SYLVAN
VIOLA
SIMPSON

MILLER FAULT

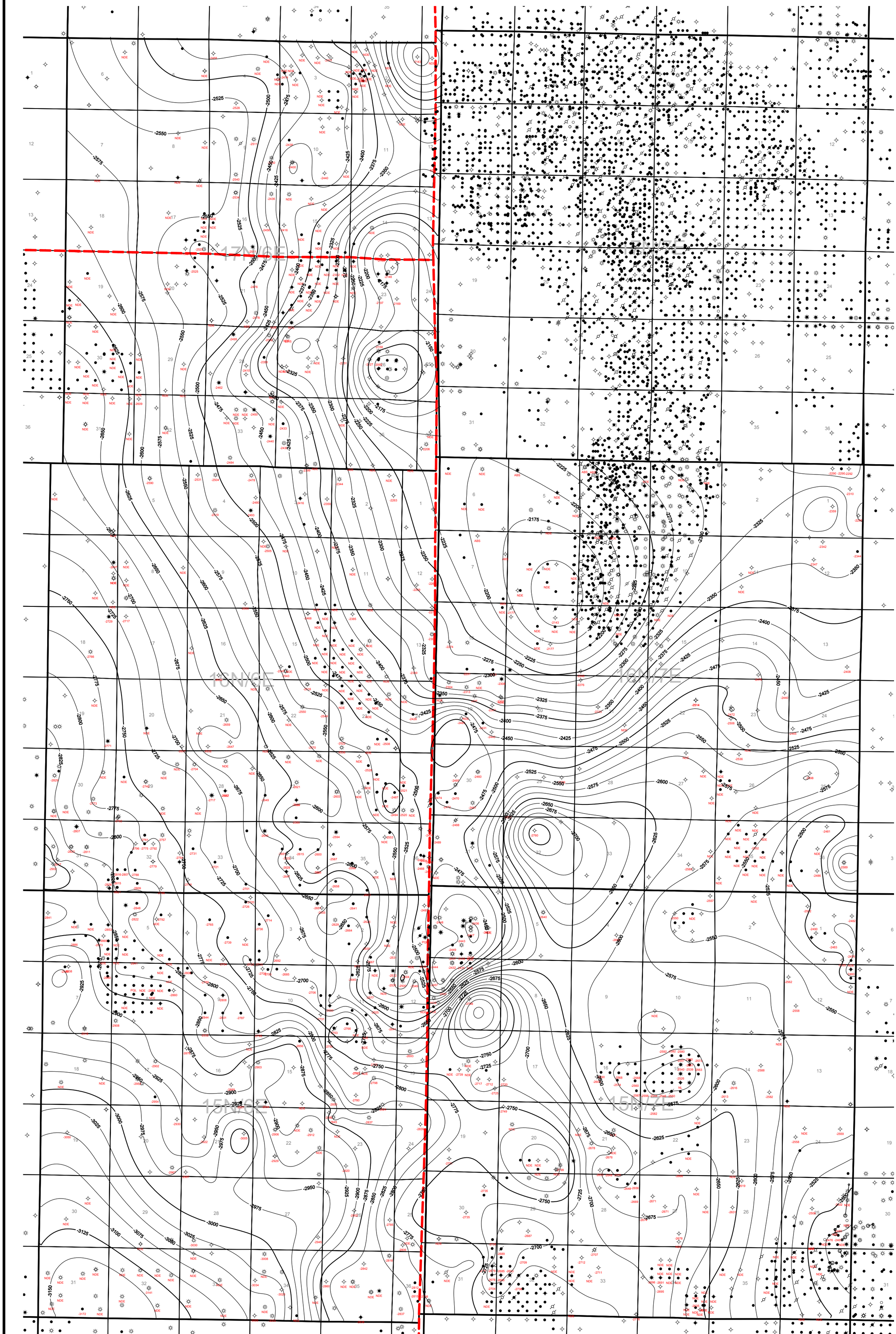
TD=3962
TD=3936
TD=3960
TD=3345
TD=3958
TD=4036
TD=4113
TD=3340
TD=3966
TD=4054
TD=4075
TD=4074

STRUCTURAL CROSS SECTION L-L'

PLATE XXV

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

INDEX MAP SHOWING CROSS SECTION LINE



2000 0 2000 4000 6000 8000 10000 ft

Top Mississippian Structure Map

Contour Interval = 25 feet

Plate XXIX

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

Structural Cross Section "K-K" : Proportionally Spaced
Datum = 0 ft Subsea
Horizontal Scale = 1 in per 800 ft; Vertical Scale = 1 in per 200 ft
Vertical Exaggeration = 4

K

3503709970000
Map: CI=1900
DEEP ROCK OIL CO
KENPY 1-A
2310 FNL & 2310 FWLSE
TWP: 16 N - Range: 7 E - Sec. 5
Reference=KB
Datum=1037

6010 ft

3503709963000
Map: CI=1996
TEXAS COMPANY
FINLEY EUGENE 1
660 FNL & 660 FWLNW
TWP: 16 N - Range: 7 E - Sec. 8
Reference=KB
Datum=980

2756 ft

3503702150000
Map: CI=1900
BERRY OPRTNG CO
DEHLIB,ACKESTOCK 1
660 FNL & 660 FWLNW
TWP: 16 N - Range: 7 E - Sec. 17
Reference=KB
Datum=997

11900 ft

3503700270000
Map: CI=1900
SQUIRREL DRLG CORP
CHEATHAM W L 1
660 FNL & 660 FWLNW
TWP: 16 N - Range: 7 E - Sec. 29
Reference=KB
Datum=995

4432 ft

3503707220000
Map: CI=1700
HARPER OIL COMPANY
WILDRINGS
1650 FNL & 2310 FWLNW
TWP: 16 N - Range: 7 E - Sec. 32
Reference=KB
Datum=950

9121 ft

3503700450000
Map: CI=1900
SELLERS O. N
LEGUS JONES HEIRS 1
660 FNL & 660 FWLNW
TWP: 15 N - Range: 7 E - Sec. 5
Reference=KB
Datum=940

8477 ft

3503703840000
Map: CI=1900
WIL MC OIL CORP
MCGILL 1
2310 FNL & 2310 FELSE
TWP: 15 N - Range: 7 E - Sec. 7
Reference=KB
Datum=897

6534 ft

3503703610000
Map: CI=1120
HILMER & MESSENGER
EDNEW 1
990 FNL & 990 FWLSW
TWP: 15 N - Range: 7 E - Sec. 17
Reference=KB
Datum=870

3390 ft

3503703470000
Map: CI=1100
HILMER & MESSENGER
STAERS 2
990 FNL & 990 FWLNW
TWP: 15 N - Range: 7 E - Sec. 20
Reference=KB
Datum=851

5046 ft

3503703960000
Map: CI=1044
SCHENKEN-OHN OIL CRP
MCVEY 1
1650 FNL & 330 FWLNE
TWP: 15 N - Range: 7 E - Sec. 30
Reference=KB
Datum=856

4675 ft

3503700760000
Map: CI=1036
MELCO DRLJOCO YN-HRN
DAVID GEORGE 1
660 FNL & 660 FWLNW
TWP: 15 N - Range: 7 E - Sec. 29
Reference=KB
Datum=798

2940 ft

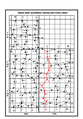
3503701870000
Map: CI=1270
BROWN, MAURICE L CO
STROUD WILCOX 1
1650 FNL & 330 FWLNE
TWP: 15 N - Range: 7 E - Sec. 32
Reference=KB
Datum=849

K'

0
-500
-1000
-1500
-2000
-2500
-3000
-3500

DEVIEY
HOGSHOOTER
CHECKERBOARD
GRANITE
VIOLA
BROWN LIME
MISSISSIPPIAN
WILCOX
SYCAMORE
WILZETTA FAULT

TD=2940
TD=3140
TD=3984
TD=4150
TD=4121
TD=4165
TD=3014
TD=4161
TD=4048
TD=4134



STRUCTURAL CROSS SECTION K-K'

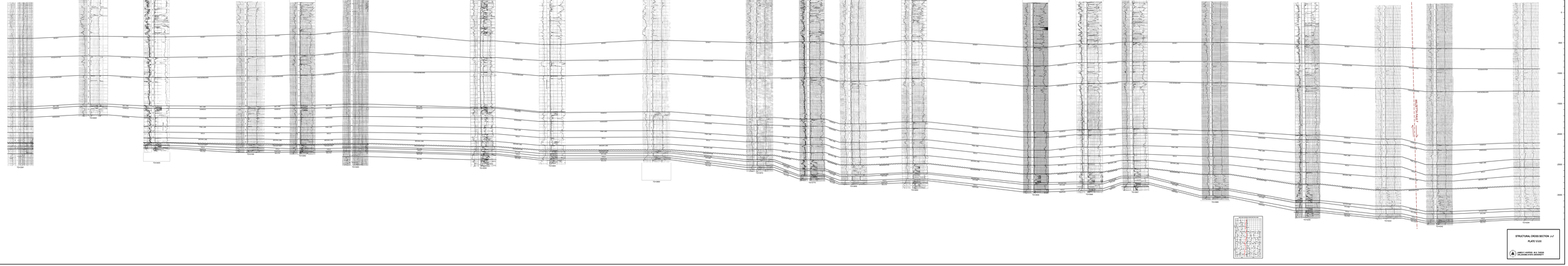
PLATE XXIV

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

Structural Cross Section 1'=2" - Proportionately Spaced
Datum = 0 ft Subsea
Horizontal Scale = 1 in per 800 ft, Vertical Scale = 1 in per 200 ft
Vertical Exaggeration = 4

J

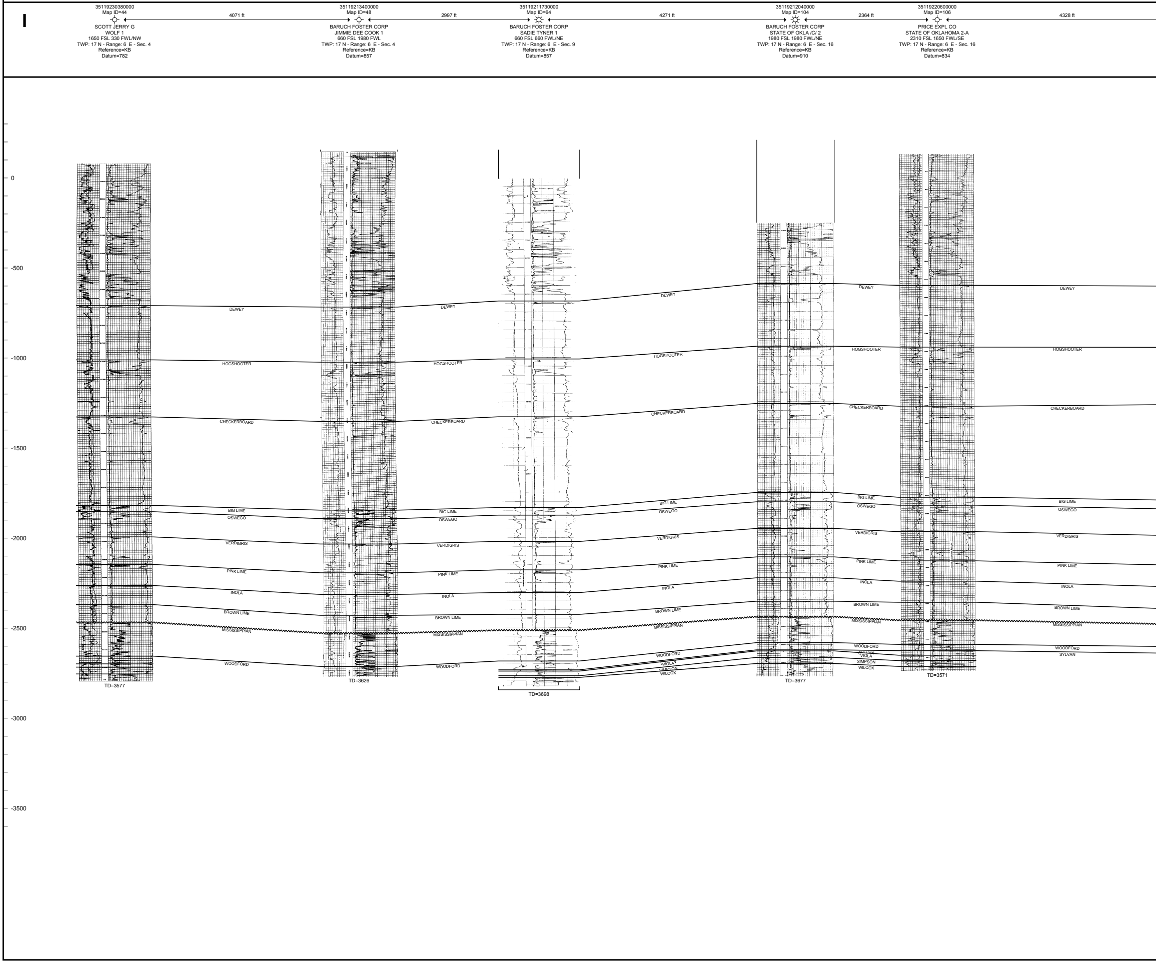
J'

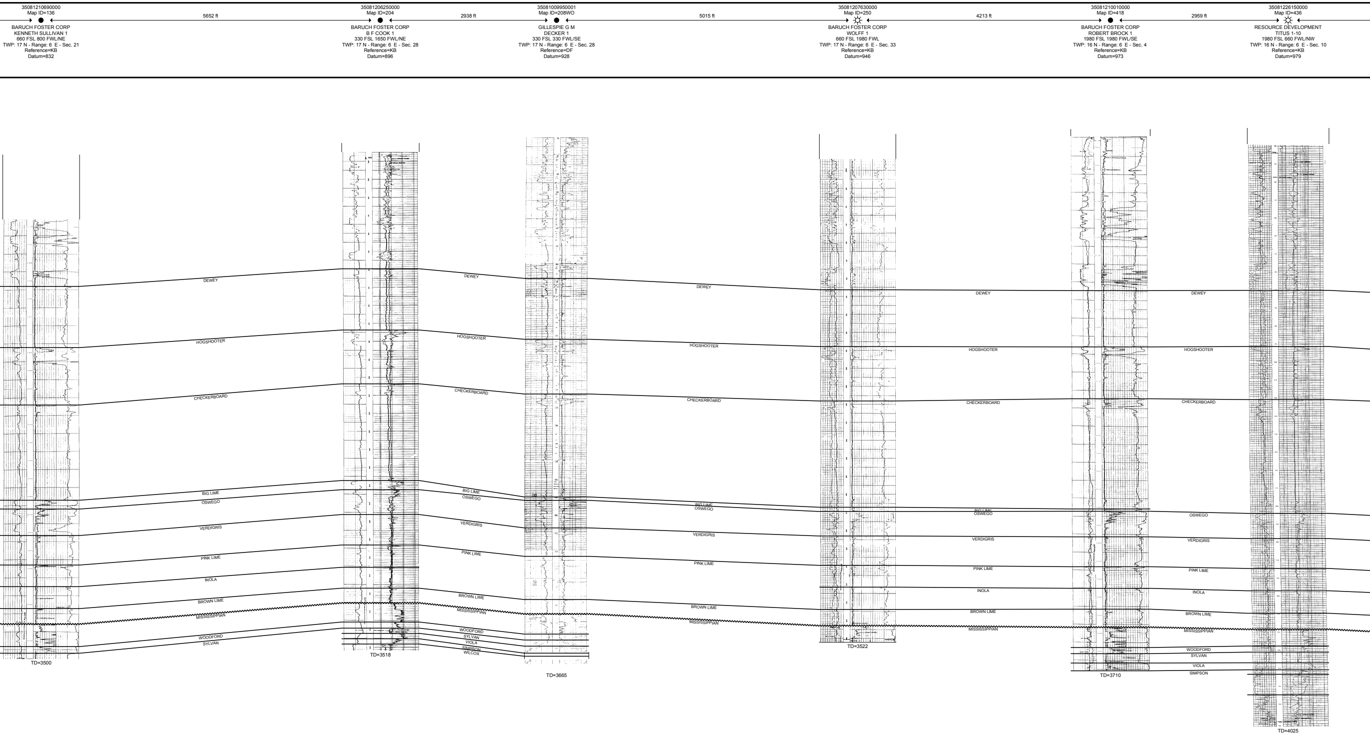


STRUCTURAL CROSS SECTION J-J'

PLATE XXIII

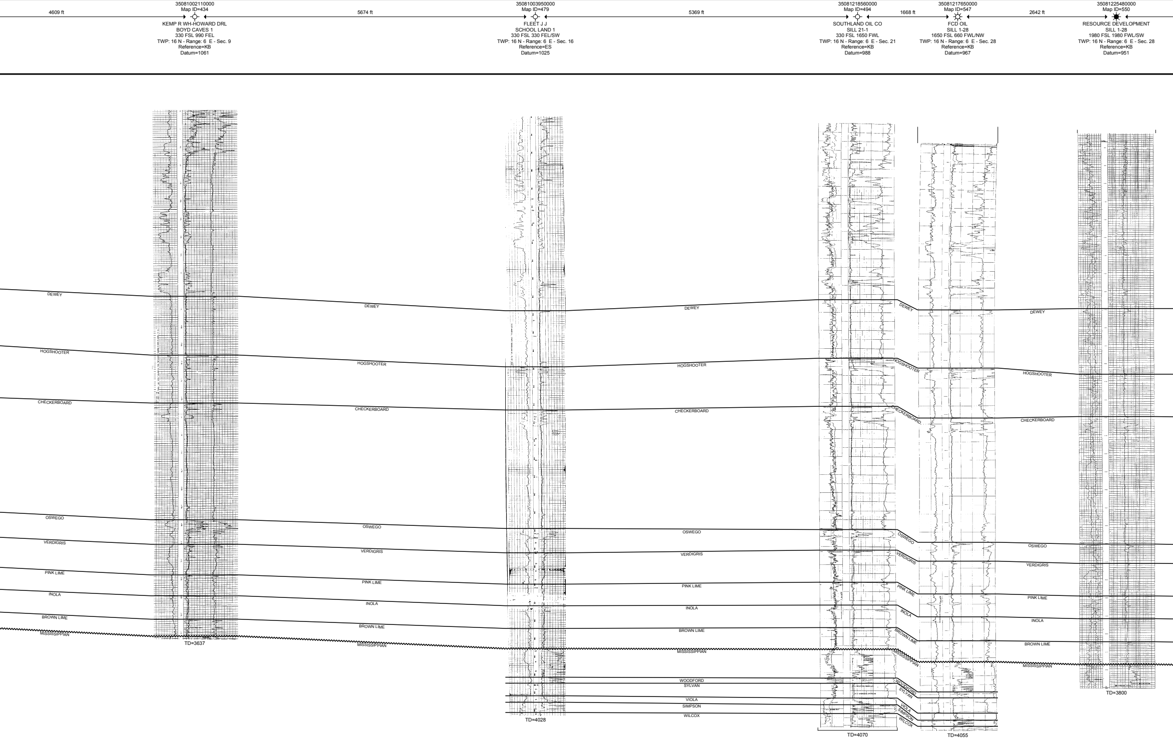
ABBEY HOPPE M.S. THESIS
OKLAHOMA STATE UNIVERSITY

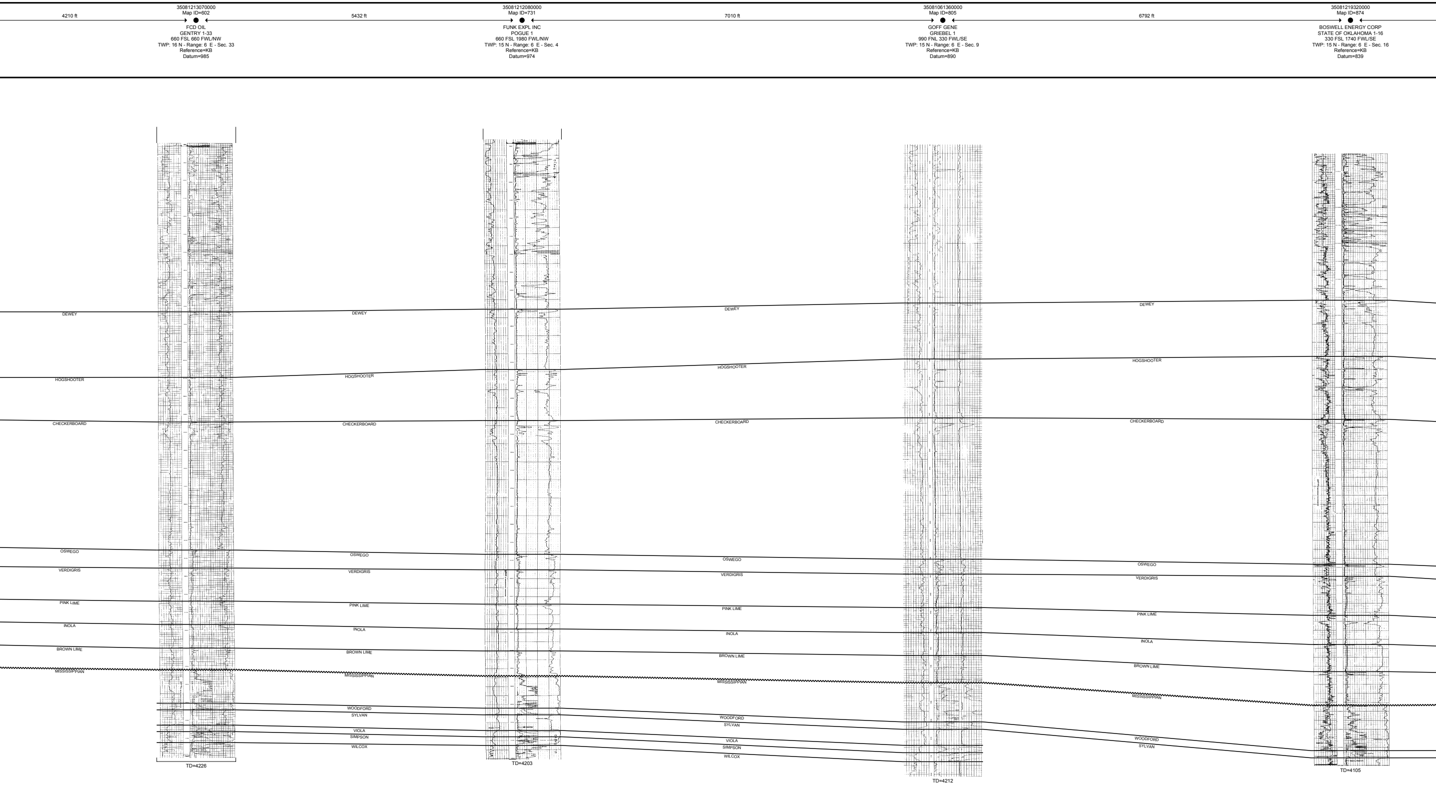

I
35119230380000
Map ID=44
SCOTT JERRY G
WOLF 1
1650 FSL 330 FWL/NW
TWP: 17 N - Range: 6 E - Sec. 4
Reference=KB
Datum=782
4071 ft
35119213400000
Map ID=48
BARUCH FOSTER CORP
JIMMIE DEE COOK 1
660 FSL 1980 FWL
TWP: 17 N - Range: 6 E - Sec. 4
Reference=KB
Datum=857
2997 ft
35119211730000
Map ID=64
BARUCH FOSTER CORP
SADIE TYNER 1
660 FSL 660 FWL/NE
TWP: 17 N - Range: 6 E - Sec. 9
Reference=KB
Datum=857
4271 ft
35119212040000
Map ID=104
BARUCH FOSTER CORP
STATE OF OKLA /C/ 2
1980 FSL 1980 FWL/NE
TWP: 17 N - Range: 6 E - Sec. 16
Reference=KB
Datum=910
2364 ft
35119220600000
Map ID=106
PRICE EXPL CO
STATE OF OKLAHOMA 2-A
2310 FSL 1650 FWL/SE
TWP: 17 N - Range: 6 E - Sec. 16
Reference=KB
Datum=834
4328 ft
0
-500
-1000
-1500
-2000
-2500
-3000
-3500
DEWEY
HOGSHOOTER
CHECKERBOARD
BIG LIME
OSWEGO
VERDIGRIS
PINK LIME
INOLA
BROWN LIME
MISSISSIPPIAN
WOODFORD
SYLVAN
VIOLA
SIMPSON
WILCOX
TD=3577
TD=3626
TD=3698
TD=3677
TD=3571


35081210690000
Map ID=136
BARUCH FOSTER CORP
KENNETH SULLIVAN 1
660 FSL 800 FWL/NE
TWP: 17 N - Range: 6 E - Sec. 21
Reference=KB
Datum=832
5652 ft
35081206250000
Map ID=204
BARUCH FOSTER CORP
B F COOK 1
330 FSL 1650 FWL/NE
TWP: 17 N - Range: 6 E - Sec. 28
Reference=KB
Datum=896
2938 ft
35081009950001
Map ID=208WO
GILLESPIE G M
DECKER 1
330 FSL 330 FWL/SE
TWP: 17 N - Range: 6 E - Sec. 28
Reference=DF
Datum=928
5015 ft
35081207630000
Map ID=250
BARUCH FOSTER CORP
WOLFF 1
660 FSL 1980 FWL
TWP: 17 N - Range: 6 E - Sec. 33
Reference=KB
Datum=946
4213 ft
35081210010000
Map ID=418
BARUCH FOSTER CORP
ROBERT BROCK 1
1980 FSL 1980 FWL/SE
TWP: 16 N - Range: 6 E - Sec. 4
Reference=KB
Datum=973
2959 ft
35081226150000
Map ID=436
RESOURCE DEVELOPMENT
TITUS 1-10
1980 FSL 660 FWL/NW
TWP: 16 N - Range: 6 E - Sec. 10
Reference=KB
Datum=979
DEWEY
HOGSHOOTER
CHECKERBOARD
BIG LIME
OSWEGO
VERDIGRIS
PINK LIME
INOLA
BROWN LIME
MISSISSIPPIAN
WOODFORD
SYLVAN
VIOLA
SIMPSON
WILCOX
TD=3500
TD=3518
TD=3665
TD=3522
TD=3710
TD=4025

Structural Cross Section A-A'

Proportionally Spaced
Datum = Sea Level
Horizontal Scale = 1 in per 800 ft; Vertical Scale = 1 in per 200 ft
Vertical Exaggeration = 4


4609 ft
35081002110000
Map ID=434
KEMP R WH-HOWARD DRL
BOYD CAVES 1
330 FSL 990 FEL
TWP: 16 N - Range: 6 E - Sec. 9
Reference=KB
Datum=1061
5674 ft
35081003950000
Map ID=479
FLEET J J
SCHOOL LAND 1
330 FSL 330 FEL/SW
TWP: 16 N - Range: 6 E - Sec. 16
Reference=ES
Datum=1025
5369 ft
35081218560000
Map ID=494
SOUTHLAND OIL CO
SILL 21-1
330 FSL 1650 FWL
TWP: 16 N - Range: 6 E - Sec. 21
Reference=KB
Datum=988
1668 ft
35081217650000
Map ID=547
FCD OIL
SILL 1-28
1650 FSL 660 FWL/NW
TWP: 16 N - Range: 6 E - Sec. 28
Reference=KB
Datum=967
2642 ft
35081225480000
Map ID=550
RESOURCE DEVELOPMENT
SILL 1-28
1980 FSL 1980 FWL/SW
TWP: 16 N - Range: 6 E - Sec. 28
Reference=KB
Datum=951
DEWEY
HOGSHOOTER
CHECKERBOARD
OSWEGO
VERDIGRIS
PINK LIME
INOLA
BROWN LIME
MISSISSIPPIAN
WOODFORD
SYLVAN
VIOLA
SIMPSON
WILCOX
TD=3637
TD=4028
TD=4070
TD=4055
TD=3800


4210 ft
35081213070000
Map ID=602
FCD OIL
GENTRY 1-33
660 FSL 660 FWL/NW
TWP: 16 N - Range: 6 E - Sec. 33
Reference=KB
Datum=985
5432 ft
35081212080000
Map ID=731
FUNK EXPL INC
POGUE 1
660 FSL 1980 FWL/NW
TWP: 15 N - Range: 6 E - Sec. 4
Reference=KB
Datum=974
7010 ft
35081061360000
Map ID=805
GOFF GENE
GRIEBEL 1
990 FNL 330 FWL/SE
TWP: 15 N - Range: 6 E - Sec. 9
Reference=KB
Datum=890
6792 ft
35081219320000
Map ID=874
BOSWELL ENERGY CORP
STATE OF OKLAHOMA 1-16
330 FSL 1740 FWL/SE
TWP: 15 N - Range: 6 E - Sec. 16
Reference=KB
Datum=839
DEWEY
HOGSHOOTER
CHECKERBOARD
OSWEGO
VERDIGRIS
PINK LIME
INOLA
BROWN LIME
MISSISSIPPIAN
DEWEY
HOGSHOOTER
CHECKERBOARD
OSWEGO
VERDIGRIS
PINK LIME
INOLA
BROWN LIME
MISSISSIPPIAN
WOODFORD
SYLVAN
VIOLA
SIMPSON
WILCOX
DEWEY
HOGSHOOTER
CHECKERBOARD
OSWEGO
VERDIGRIS
PINK LIME
INOLA
BROWN LIME
MISSISSIPPIAN
WOODFORD
SYLVAN
VIOLA
SIMPSON
WILCOX
DEWEY
HOGSHOOTER
CHECKERBOARD
OSWEGO
VERDIGRIS
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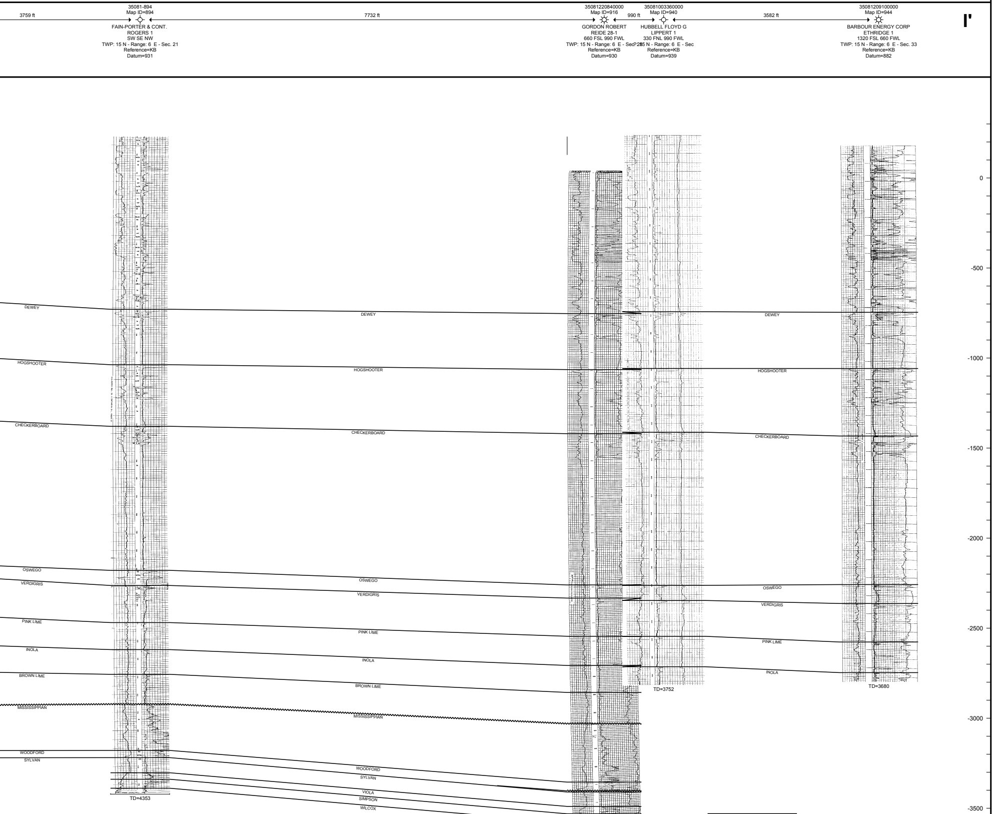
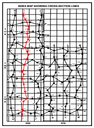
MISSISSIPPIAN
WOODFORD
SYLVAN
TD=4226
TD=4203
TD=4212
TD=4105

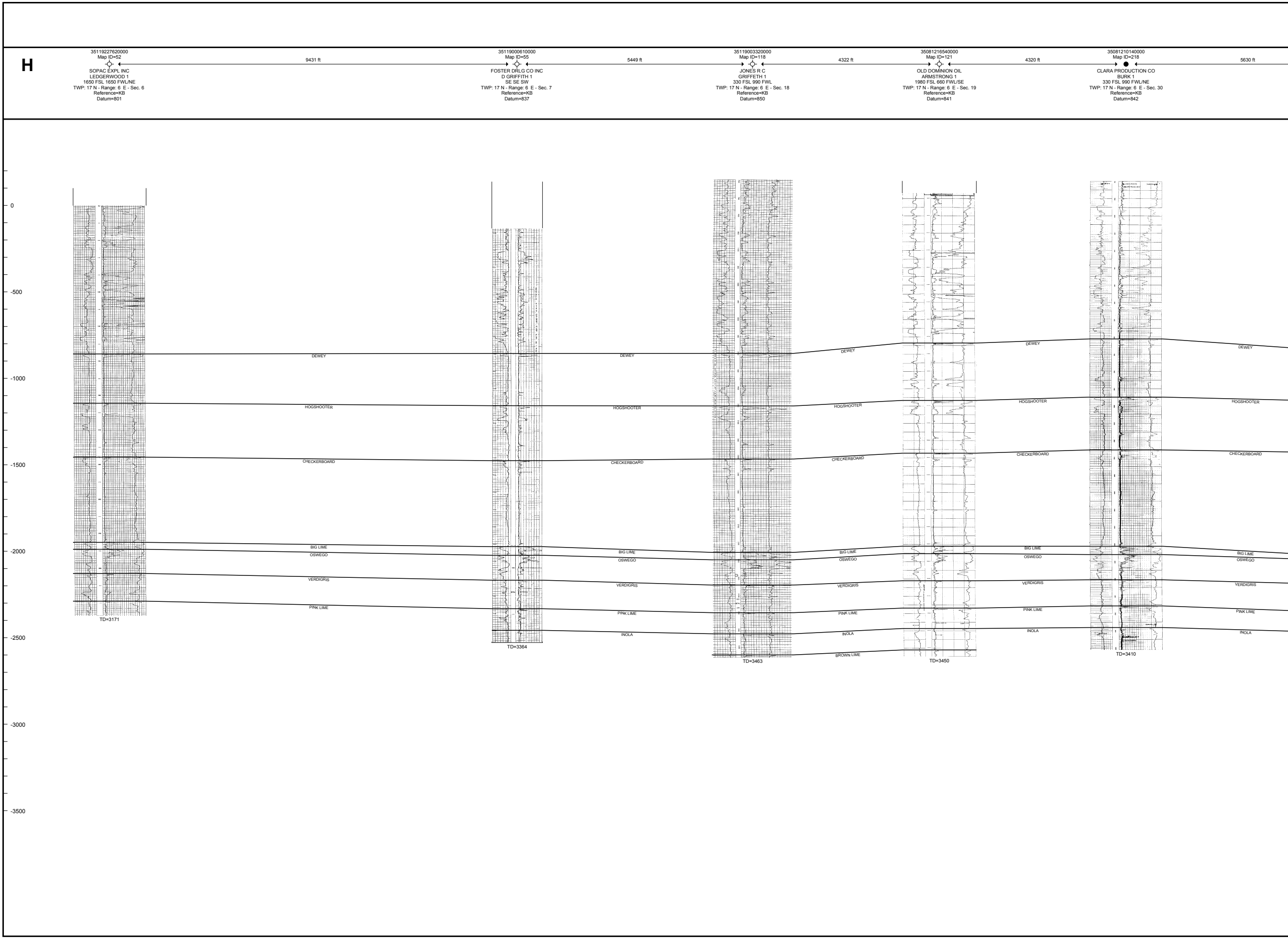

3759 ft
35081-894
Map ID=894
FAIN-PORTER & CONT.
ROGERS 1
SW SE NW
TWP: 15 N - Range: 6 E - Sec. 21
Reference=KB
Datum=931
7732 ft
35081220840000
Map ID=916
GORDON ROBERT
REIDE 28-1
660 FSL 990 FWL
TWP: 15 N - Range: 6 E - Sec. 28
Reference=KB
Datum=930
990 ft
35081003360000
Map ID=940
HUBBELL FLOYD G
LIPPERT 1
330 FNL 990 FWL
TWP: 15 N - Range: 6 E - Sec
Reference=KB
Datum=939
3582 ft
35081209100000
Map ID=944
BARBOUR ENERGY CORP
ETHRIDGE 1
1320 FSL 660 FWL
TWP: 15 N - Range: 6 E - Sec. 33
Reference=KB
Datum=882
I'
0
-500
-1000
-1500
-2000
-2500
-3000
-3500
DEWEY
HOGSHOOTER
CHECKERBOARD
OSWEGO
VERDIGRIS
PINK LIME
INOLA
BROWN LIME
MISSISSIPPIAN
WOODFORD
SYLVAN
VIOLA
SIMPSON
WILCOX
TD=4353
TD=4626
TD=3752
TD=3680


INDEX MAP SHOWING CROSS-SECTION LINES

STRUCTURAL CROSS SECTION I-I'

PLATE XXII

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY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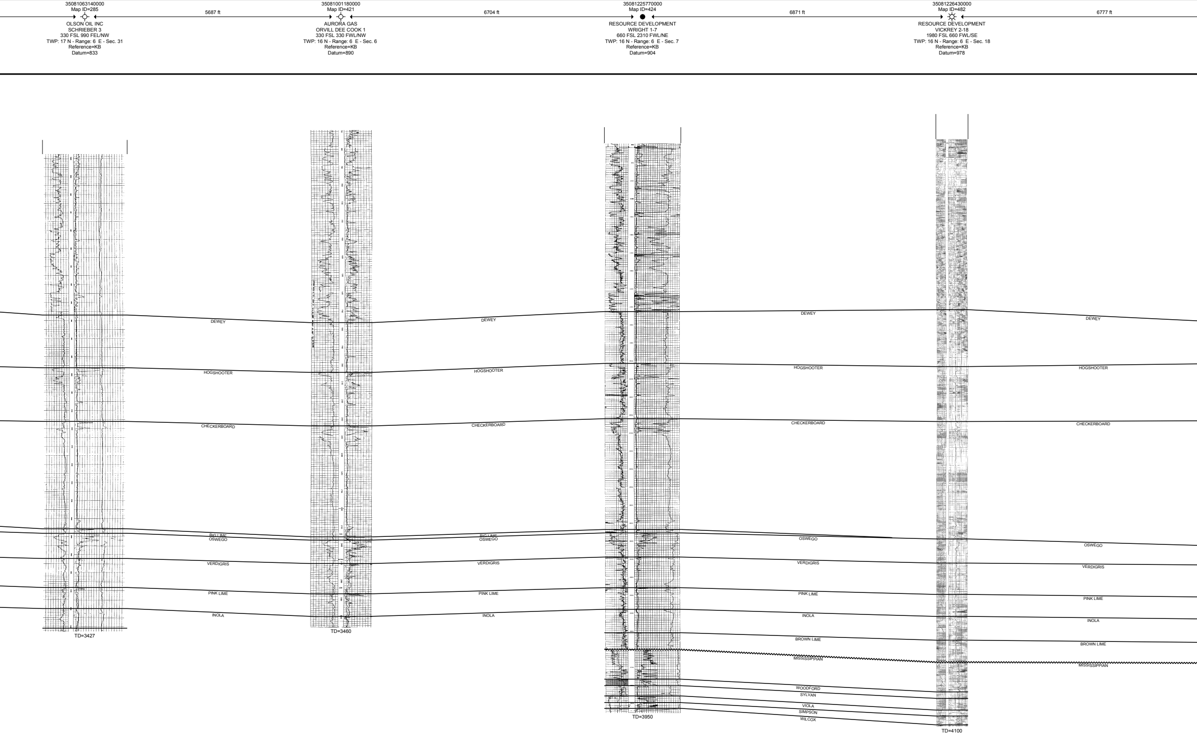
SOPAC EXPL INC
LEDGERWOOD 1
1650 FSL 1650 FWL/NE
TWP: 17 N - Range: 6 E - Sec. 6
Reference=KB
Datum=801
9431 ft
35119000610000
Map ID=55
FOSTER DRLG CO INC
D GRIFFITH 1
SE SE SW
TWP: 17 N - Range: 6 E - Sec. 7
Reference=KB
Datum=837
5449 ft
35119003320000
Map ID=118
JONES R C
GRIFFETH 1
330 FSL 990 FWL
TWP: 17 N - Range: 6 E - Sec. 18
Reference=KB
Datum=850
4322 ft
35081216540000
Map ID=121
OLD DOMINION OIL
ARMSTRONG 1
1980 FSL 660 FWL/SE
TWP: 17 N - Range: 6 E - Sec. 19
Reference=KB
Datum=841
4320 ft
35081210140000
Map ID=218
CLARA PRODUCTION CO
BURK 1
330 FSL 990 FWL/NE
TWP: 17 N - Range: 6 E - Sec. 30
Reference=KB
Datum=842
5630 ft
0
-500
-1000
-1500
-2000
-2500
-3000
-3500
DEWEY
HOGSHOOTER
CHECKERBOARD
BIG LIME
OSWEGO
VERDIGRIS
PINK LIME
INOLA
BROWN LIME
TD=3171
TD=3364
TD=3463
TD=3450
TD=3410

Structural Cross Section A-A'

Proportionally Spaced
Datum = Sea Level
Horizontal Scale = 1 in per 800 ft; Vertical Scale = 1 in per 200 ft
Vertical Exaggeration = 4


35081063140000
Map ID=285
OLSON OIL INC
SCHRIEBER 3
330 FSL 990 FEL/NW
TWP: 17 N - Range: 6 E - Sec. 31
Reference=KB
Datum=833
5687 ft
35081001180000
Map ID=421
AURORA GAS
ORVILL DEE COOK 1
330 FSL 330 FWL/NW
TWP: 16 N - Range: 6 E - Sec. 6
Reference=KB
Datum=890
6704 ft
35081225770000
Map ID=424
RESOURCE DEVELOPMENT
WRIGHT 1-7
660 FSL 2310 FWL/NE
TWP: 16 N - Range: 6 E - Sec. 7
Reference=KB
Datum=904
6871 ft
35081226430000
Map ID=482
RESOURCE DEVELOPMENT
VICKREY 2-18
1980 FSL 660 FWL/SE
TWP: 16 N - Range: 6 E - Sec. 18
Reference=KB
Datum=978
6777 ft
DEWEY
HOGSHOOTER
CHECKERBOARD
BIG LIME
OSWEGO
VERDIGRIS
PINK LIME
INOLA
BROWN LIME
MISSISSIPPIAN
WOODFORD
SYLVAN
VIOLA
SIMPSON
WILCOX
TD=3427
TD=3460
TD=3950
TD=4100

35081225680000
Map ID=488
RESOURCE DEVELOPMENT
TRAWICK 1-19
660 FSL 1980 FWL/SE
TWP: 16 N - Range: 6 E - Sec. 19
Reference=KB
Datum=980

4430 ft

35081028820000
Map ID=567
TOTO GAS CO
MURPHY 1
1650 FSL 990 FWL/SE
TWP: 16 N - Range: 6 E - Sec. 30
Reference=KB
Datum=997

2410 ft

35081004480000
Map ID=569
HERNDON DRLG CO
TERRY 1
2310 FSL 2310 FWL/NW
TWP: 16 N - Range: 6 E - Sec. 31
Reference=KB
Datum=977

8625 ft

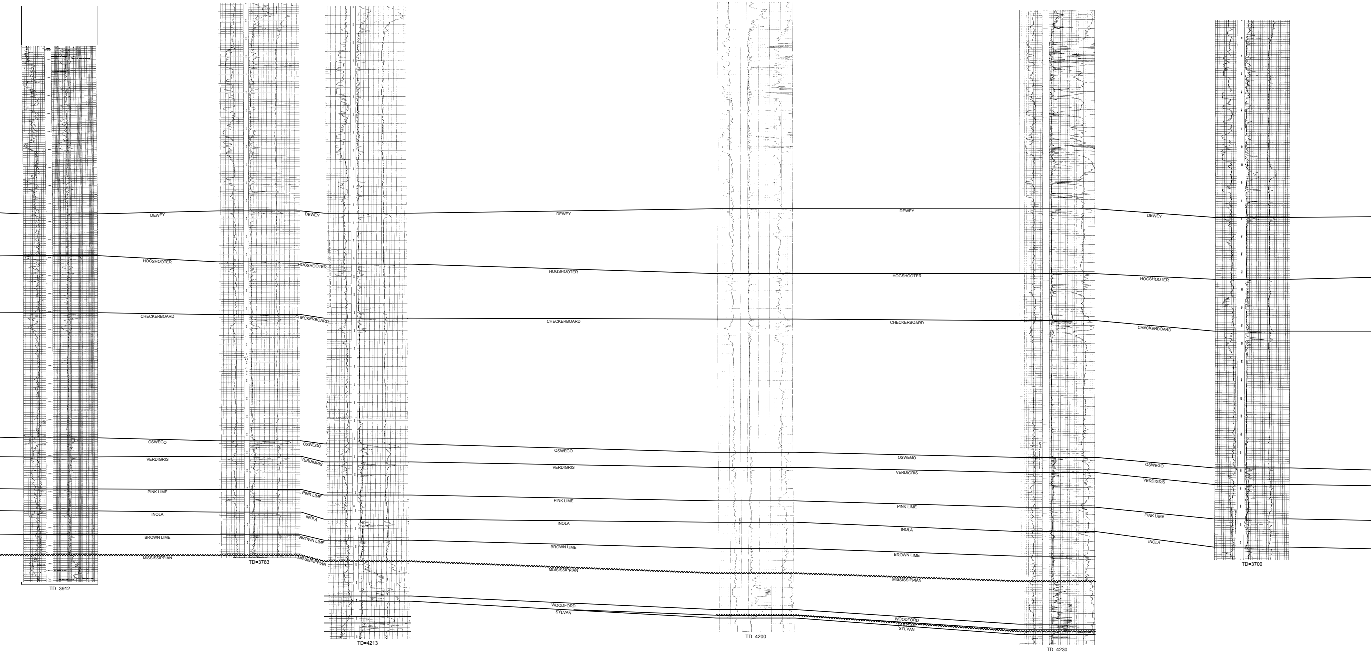
35081222560000
Map ID=755
SUN EXPL & PROD CO
EARP MARY 5
1663 FSL 1650 FWL/SE
TWP: 15 N - Range: 6 E - Sec. 6
Reference=KB
Datum=999

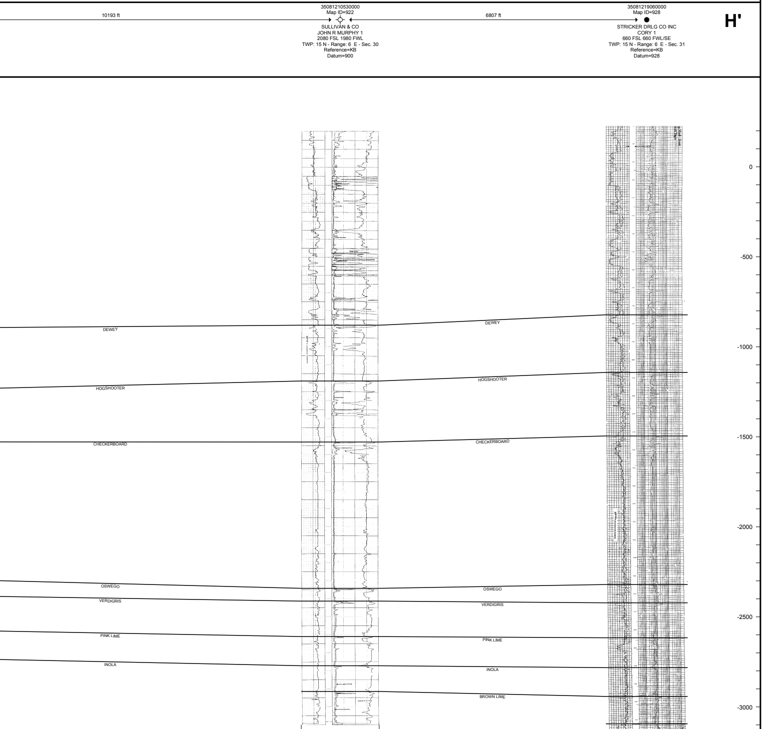
6694 ft

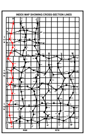
35081221440000
Map ID=763
P R D J COCKRUM ENTR
COCKRUM 7-1A
350 FSL 662 FWL/SE
TWP: 15 N - Range: 6 E - Sec. 7
Reference=KB
Datum=956

4337 ft

35081201570000
Map ID=883
BRWN CRT DRL CO
BUCHANON 1
1670 FSL 1480 FWL
TWP: 15 N - Range: 6 E - Sec. 18
Reference=KB
Datum=902


DEWEY
HOGSHOOTER
CHECKERBOARD
OSWEGO
VERDIGRIS
PINK LIME
INOLA
BROWN LIME
MISSISSIPPIAN
WOODFORD
SYLVAN
TD=3912
TD=3783
TD=4213
TD=4200
TD=4230
TD=3700


H'
10193 ft
35081210530000
Map ID=922
SULLIVAN & CO
JOHN R MURPHY 1
2080 FSL 1980 FWL
TWP: 15 N - Range: 6 E - Sec. 30
Reference=KB
Datum=900
6807 ft
35081219060000
Map ID=928
STRICKER DRLG CO INC
CORY 1
660 FSL 660 FWL/SE
TWP: 15 N - Range: 6 E - Sec. 31
Reference=KB
Datum=928
DEWEY
HOGSHOOTER
CHECKERBOARD
OSWEGO
VERDIGRIS
PINK LIME
INOLA
BROWN LIME
TD=4040
TD=4508
0
-500
-1000
-1500
-2000
-2500
-3000
-3500


INDEX MAP SHOWING CROSS-SECTION LINES

STRUCTURAL CROSS SECTION H-H'

PLATE XXI

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

Structural Cross Section A-A'
Proportionally Spaced
Datum = Sea Level
Horizontal Scale = 1 in per 800 ft; Vertical Scale = 1 in per 200 ft
Vertical Exaggeration = 4

G

3508121060000
Map ID=508
STROCKER DRILG CO INC
CORY 1
660 FSL 660 FWLSE
TWP: 15 N - Range: 6 E - Sec: 31
Reference=KB
Datum=928

5160 ft

3508101332400000
Map ID=534
HARVEY MCELREATH EST
TURNBULL 5
330 FNL 330 FWLSE
TWP: 15 N - Range: 6 E - Sec: 32
Reference=DF
Datum=853

4205 ft

3508100332900000
Map ID=460
HUBBELL FLOYD G
LIPPERT 1
330 FSL 330 FWL
TWP: 15 N - Range: 6 E - Sec: 33
Reference=KB
Datum=839

7078 ft

3508100063710000
Map ID=950
MCELREATH HARVEY&NGNR
WALTER CREESE C 2
660 FSL 660 FWL
TWP: 15 N - Range: 6 E - Sec: 34
Reference=KB
Datum=872

3375 ft

3508100037400000
Map ID=957
BIFFLE N E
HENN 1
330 FNL 330 FWLNW
TWP: 15 N - Range: 6 E - Sec: 35
Reference=KB
Datum=860

5927 ft

3508121060000
Map ID=968
M M RESOURCES INC
ARTIE 1
990 FNL 330 FWL
TWP: 15 N - Range: 6 E - Sec: 36
Reference=GR
Datum=863

6924 ft

3503705870000
Map ID=1259
SHELL OIL CO
LINHAM M A 4
660 FSL 660 FWLNE
TWP: 15 N - Range: 7 E - Sec: 31
Reference=DF
Datum=928

1995 ft

3503723870000
Map ID=1275
BROWN MAURICE L CO
STROUD-WILCOX 1
330 FSL 330 FWLNW
TWP: 15 N - Range: 7 E - Sec: 32
Reference=KB
Datum=846

5374 ft

3503728040000
Map ID=1335
HAWATHA EXPL CO
WHITMORE 1
1700 FSL 1700 FELNW
TWP: 15 N - Range: 7 E - Sec: 33
Reference=KB
Datum=817

6058 ft

3503700012000
Map ID=1341
SUN OIL COMPANY
ABRAHAM 1
330 FNL 330 FWLNW
TWP: 15 N - Range: 7 E - Sec: 34
Reference=KB
Datum=839

4198 ft

3503700043000
Map ID=1372
ANCHOR PETROLEUM
WILKINSON 1
1650 FNL 1650 FELSW
TWP: 15 N - Range: 7 E - Sec: 35
Reference=DF
Datum=804

6826 ft

3503703045600
Map ID=1350
TOKLAN PRODUCTION CO
BIG POND SAM 1
660 FSL 660 FWLSE
TWP: 15 N - Range: 7 E - Sec: 36
Reference=DF
Datum=799

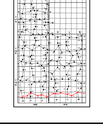
G'

0
-500
-1000
-1500
-2000
-2500
-3000
-3500

DEWEY
HOGSHOOTER
CHEROKEE/BOARD
OSWEGO
VERDIGRIS
PINK LIME
RED FORK
BROWN LIME
MISSISSIPPIAN
WOODFORD
SYLVAN
VIOLA
SIMPSON

WILZETTA FAULT ?

TD=4608
TD=3985
TD=3752
TD=4488
TD=4294
TD=4250
TD=4163
TD=4134
TD=4110
TD=4074
TD=2656
TD=2645



STRUCTURAL CROSS SECTION G-G'

PLATE XX

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

Structural Cross Section A-A'
Proportionally Spaced
Datum = Sea Level
Horizontal Scale = 1 in per 800 ft; Vertical Scale = 1 in per 200 ft
Vertical Exaggeration = 4

E

35081004480000
May Oil Co
1
HERNDON DRLG CO
TENRY 1
2310 FSL 2310 FWL NW
TWP: 18 N RGE: 7 E Sec: 31
Reference=KB
Datum=977

4588 ft

35081028710000
Map Oil Co
1
SERVICE DRILLING CO
BLACK 2
990 FSL 1650 FWL NW
TWP: 18 N RGE: 7 E Sec: 32
Reference=KB
Datum=1052

4269 ft

35081013070000
Map Oil Co
1
FCO OIL
GENTRY 1-33
660 FSL 660 FWL NW
TWP: 18 N RGE: 7 E Sec: 33
Reference=KB
Datum=985

6562 ft

35081004020000
Map Oil Co
1
NORTON WM A
CONNARD 1
330 FSL 330 FWL NW
TWP: 18 N RGE: 7 E Sec: 34
Reference=KB
Datum=907

4191 ft

35081026100000
Map Oil Co
1
ATTEBERRY ENG
BAKER 1-35
990 FSL 660 FWL SW
TWP: 18 N RGE: 7 E Sec: 35
Reference=KB
Datum=952

6463 ft

35081026860000
Map Oil Co
1
ROYAL OIL & GAS CORP
SONTAG 1
2310 FSL 1650 FWL SW
TWP: 18 N RGE: 7 E Sec: 36
Reference=KB
Datum=903

4176 ft

35037013980000
Map Oil Co
1
DEEP ROCK OIL CO
WICKHAM HEIRS 1
2310 FSL 1650 FWL NW
TWP: 18 N RGE: 8 E Sec: 31
Reference=KB
Datum=952

5523 ft

35037072200000
Map Oil Co
1
HARPER OIL COMPANY
WILDWINGS 1-32
1650 FSL 2310 FWL NW
TWP: 18 N RGE: 8 E Sec: 32
Reference=KB
Datum=930

8976 ft

35037030050000
Map Oil Co
1
DELANEY W A JR
OWENS 1
1980 FNL 990 FEL NE
TWP: 18 N RGE: 8 E Sec: 4
Reference=KB
Datum=932

5201 ft

35037004950000
Map Oil Co
1
SUPERIOR OIL CO ETAL
ANTHIS 1
660 FNL 660 FWL NE
TWP: 18 N RGE: 8 E Sec: 34
Reference=KB
Datum=947

5255 ft

35037019900000
Map Oil Co
1
GULF OIL CORP
T LLADSLEY 1
990 FSL 330 FWL NE
TWP: 18 N RGE: 8 E Sec: 35
Reference=KB
Datum=878

6766 ft

35037004020000
Map Oil Co
1
BILLINGSLEA F R
SETTE 1
NW NE
TWP: 18 N RGE: 8 E Sec: 36
Reference=KB
Datum=843

E'

0
-500
-1000
-1500
-2000
-2500
-3000

DEWEY
HOGSHOOTER
CHECKERBOARD
OSWEGO
VERDIGRIS
PINK LIME
RED FORK
BROWN LIME
MISSISSIPPIAN
WOODFORD
SYLVAN
VIOLA
SIMPSON
SILICIC

WILZETTA FAULT

TD=4213
TD=4306
TD=4226
TD=3968
TD=3930
TD=3795
TD=3921
TD=4150
TD=4053
TD=4090
TD=3955
TD=3845

STRUCTURAL CROSS SECTION E-E'

PLATE XVIII

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

Structural Cross Section A-A'
Proportionally Spaced
Datum = Sea Level
Horizontal Scale = 1 in per 800 ft; Vertical Scale = 1 in per 200 ft
Vertical Exaggeration = 4

D

3741 ft — 35087120640000 — Map ID=46 — 1 — RESOURCE DEVELOPMENT — HOOKEY 2-18 — 1980 FSL & 1980 FWE — TWP: 18 N - Range: 8 E - Sec: 18 — ReferenceKB: — Datum=978

8167 ft — 35087120660000 — Map ID=45 — 2 — MORRY EXPL./CRAIG — CORA 1-17 — 1980 FNL & 1980 FWL — TWP: 18 N - Range: 8 E - Sec: 17 — ReferenceKB: — Datum=940

8080 ft — 35087120700000 — Map ID=44 — 3 — FLEET J J — SCHOOL LAND 1 — 1980 FNL & 1980 FEL — TWP: 18 N - Range: 8 E - Sec: 16 — ReferenceKB: — Datum=1025

4709 ft — 35087120720001 — Map ID=43 — 4 — HUMBLE OIL & REFG CO — CLIMENTSKOSKI 1 — NE NW NE — TWP: 18 N - Range: 8 E - Sec: 15 — ReferenceKB: — Datum=1002

6187 ft — 35087120760000 — Map ID=42 — 5 — NADEL & SUSSMAN — ALICE TETEDS 3 — 1980 FNL & 1980 FEL — TWP: 18 N - Range: 8 E - Sec: 14 — ReferenceKB: — Datum=933

6664 ft — 35087120810000 — Map ID=41 — 6 — HUMBLE OIL & REFG CO — WHEELAND 1 — 1980 FNL & 1980 FEL — TWP: 18 N - Range: 8 E - Sec: 13 — ReferenceKB: — Datum=898

7142 ft — 35087120840000 — Map ID=40 — 7 — MID CONTINENT — ESTATE LAND CO 1 — 1980 FNL & 1980 FEL — TWP: 18 N - Range: 8 E - Sec: 19 — ReferenceKB: — Datum=954

7365 ft — 35027201160000 — Map ID=39 — 8 — BERRY OPERTING CO — DIEHL-BLACKSTOCK 1 — 1980 FNL & 1980 FEL — TWP: 18 N - Range: 7 E - Sec: 17 — ReferenceKB: — Datum=887

7297 ft — 35027020640000 — Map ID=38 — 9 — WILCOX OIL COMP — FOXCO 1 — 330 FNL & 330 FWE — TWP: 18 N - Range: 7 E - Sec: 21 — ReferenceKB: — Datum=875

6837 ft — 35027020620001 — Map ID=37 — 10 — MAHON — 990 FNL & 990 FWL — TWP: 18 N - Range: 7 E - Sec: 22 — ReferenceKB: — Datum=836

5038 ft — 35027020600000 — Map ID=36 — 11 — HUMBLE OIL & REFG CO — CANADA-BUSBY 1 — 1980 FNL & 1980 FEL — TWP: 18 N - Range: 7 E - Sec: 23 — ReferenceKB: — Datum=887

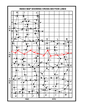
— 35027071790000 — Map ID=1100 — 12 — LINDY PETROLEUM CO — SIMPSON 13-2 — 990 FNL & 1980 FEL — TWP: 18 N - Range: 7 E - Sec: 13 — ReferenceKB: — Datum=842

D'

0
-500
-1000
-1500
-2000
-2500
-3000

TD=4100 TD=3818 TD=4028 TD=3748 TD=3210 TD=3972 TD=3903 TD=3140 TD=3814 TD=3982 TD=3845 TD=3940

WILCOX FAULT ZONE



STRUCTURAL CROSS SECTION D-D'

PLATE V-VI

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

Structural Cross Section A-A'
Proportionally Spaced
Datum = Sea Level
Horizontal Scale = 1 in per 800 ft; Vertical Scale = 1 in per 200 ft
Vertical Exaggeration = 4

C

3508108314000
Map ID=236
OLSON OIL INC
OLSON #1-31
330 FSL 990 FELNW
TWP: 17 N - Range: 8 E - Sec. 31
Elevation=1423
Datum=823

4397 ft

3508103234000
Map ID=238
KEMP & GILLESPIE
KEMP #1-32
NW NW NW
TWP: 17 N - Range: 8 E - Sec. 32
Elevation=1402
Datum=802

8090 ft

3508102764000
Map ID=250
BARUCH FOSTER CORP
#1 HOLLIS
660 FSL 1980 FWL
TWP: 17 N - Range: 8 E - Sec. 33
Elevation=1386
Datum=846

5735 ft

3508100972000
Map ID=256
D & L OIL COMPANY
#1 HOLLIS A
330 FSL 2310 FWL
TWP: 17 N - Range: 8 E - Sec. 34
Elevation=1424
Datum=824

3266 ft

3508100910000
Map ID=260
FINSTON A
#1 HOLLIS A
330 FSL 330 FWL
TWP: 17 N - Range: 8 E - Sec. 35
Elevation=1459
Datum=859

5840 ft

3508121702000
Map ID=264
BARUCH FOSTER CORP
#1 HOLLIS 36
1980 FSL 990 FWL
TWP: 17 N - Range: 8 E - Sec. 36
Elevation=1466
Datum=866

4573 ft

3503723440000
Map ID=1568
BARUCH FOSTER CORP
#1 HOLLIS 6 UNIT
1980 FSL 660 FWL NE
TWP: 16 N - Range: 8 E - Sec. 6
Elevation=1464
Datum=864

5552 ft

3503706657000
Map ID=1562
DEEP ROCK OIL CO
#1 HOLLIS
2310 FSL 330 FWL NE
TWP: 16 N - Range: 8 E - Sec. 5
Elevation=1527
Datum=1027

7445 ft

3503722420000
Map ID=1529
ALTMAN OPERATING
#1 HOLLIS 4
1650 FSL 2310 FWL NE
TWP: 16 N - Range: 7 E - Sec. 4
Elevation=1466
Datum=940

4810 ft

3503706131000
Map ID=1524
WARREN SUPPLY
#1 HOLLIS 3
SE NW SE
TWP: 16 N - Range: 7 E - Sec. 3
Elevation=1474
Datum=894

8721 ft

3503705700000
Map ID=1513
SIMON & LEBOW
#1 HOLLIS 2
990 FNL 330 FEL SE
TWP: 16 N - Range: 7 E - Sec. 2
Elevation=1452
Datum=852

5021 ft

3503702283000
Map ID=1503
HALL BROOKS OIL CORP
#1 HOLLIS 1
660 FSL 1650 FWL NE
TWP: 16 N - Range: 7 E - Sec. 1
Elevation=1469
Datum=869

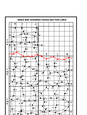
C'

0
-500
-1000
-1500
-2000
-2500
-3000

DEWEY
HOGSHOOTER
CHECKERBOARD
GRANITE WASH
OSAGE
VERDIGRIS
PINK LIME
INOLA
BROWN LIME
MISSISSIPPIAN

TD=3427
TD=3870
TD=3522
TD=3575
TD=3606
TD=3535
TD=3569
TD=2839
TD=2962
TD=2676
TD=4000

WILZETTA FAULT



STRUCTURAL CROSS SECTION C-C'

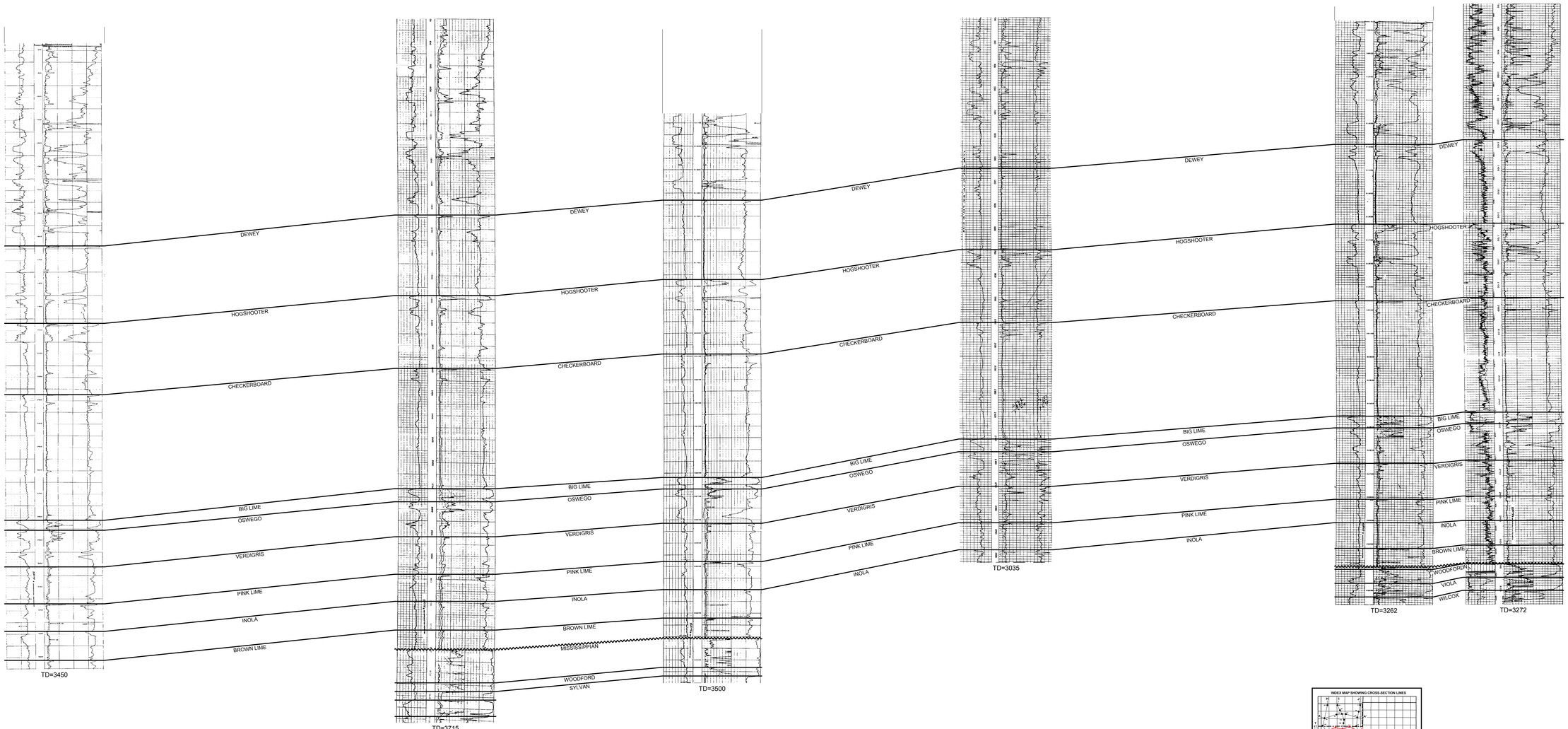
PLATE XVI

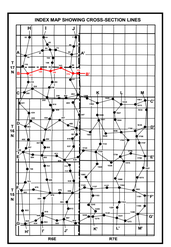
JAMES P. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

Structural Cross Section A-A'
Proportionally Spaced
Datum = Sea Level
Horizontal Scale = 1 in per 800 ft; Vertical Scale = 1 in per 200 ft
Vertical Exaggeration = 4

B — **B'**

35081216540000	6699 ft	35081211910000	4572 ft	35081210690000	5039 ft	35081008790000	6481 ft	35081208790000	2215 ft	35081230610000
Map ID=121		Map ID=128		Map ID=136		Map ID=143		Map ID=174		Map ID=176
OLD DOMINION OIL ARMSTRONG 1 1980 FSL 660 FWL/SE TWP: 17 N - Range: 6 E - Sec. 19 Reference=KB Datum=841		WILSON RICHMOND H BURKE 1 1650 FSL 1650 FWL/NE TWP: 17 N - Range: 6 E - Sec. 20 Reference=KB Datum=878		BARUCH FOSTER CORP KENNETH SULLIVAN 1 660 FSL 800 FWL/NE TWP: 17 N - Range: 6 E - Sec. 21 Reference=KB Datum=832		KEMP ROY L FAIRES 1 330 FNL 330 FWL/NE TWP: 17 N - Range: 6 E - Sec. 22 Reference=KB Datum=883		JAN OIL COMPANY BOXWELL 1 2310 FSL 990 FWL/SE TWP: 17 N - Range: 6 E - Sec. 23 Reference=KB Datum=929		INDIAN NATION ENR CO MOORE T 1-24 2310 FSL 610 FWL/SW TWP: 17 N - Range: 6 E - Sec. 24 Reference=KB Datum=942





STRUCTURAL CROSS SECTION B-B'

PLATE XV

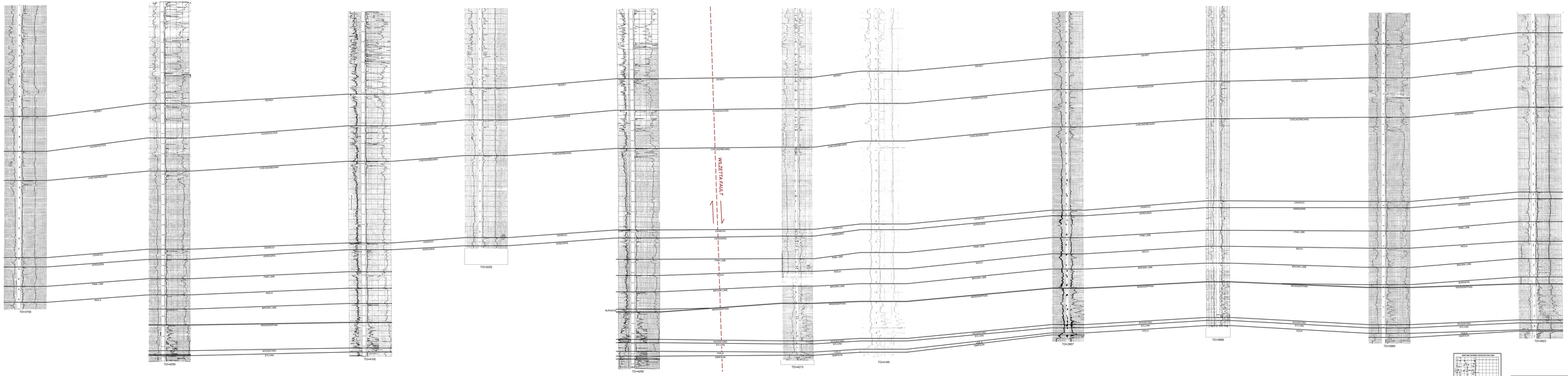
JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

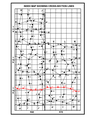
Structural Cross Section A-A'

Proportionally Spaced
Datum = Sea Level
Horizontal Scale = 1 in per 800 ft; Vertical Scale = 1 in per 200 ft
Vertical Exaggeration = 4

F

F'





STRUCTURAL CROSS SECTION F-F'

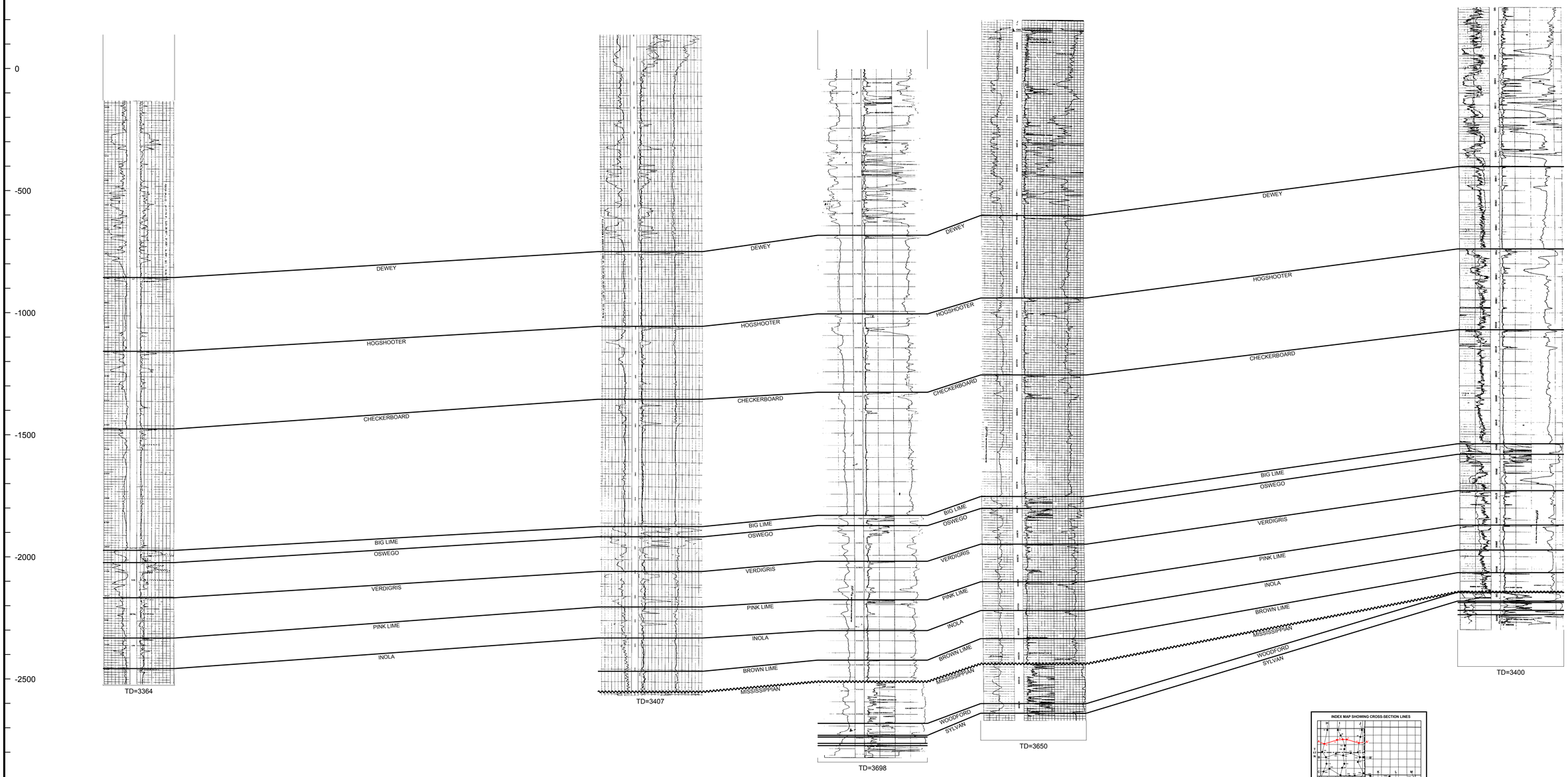
PLATE XIX

JAMES F. HOPPER - M.S. THESIS
CALHOUN STATE UNIVERSITY

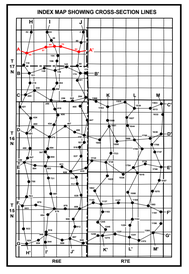
Structural Cross Section A-A'
Proportionally Spaced
Datum = Sea Level
Horizontal Scale = 1 in per 800 ft; Vertical Scale = 1 in per 200 ft
Vertical Exaggeration = 4

A — **A'**

35119000610000	8383 ft	35119000620000	3641 ft	35119211730000	2637 ft	351192123200000	7813 ft	35119227170000
Map ID=55		Map ID=57		Map ID=64		Map ID=73		Map ID=82
FOSTER DRLG CO INC D GRIFFITH 1 SE SE SW TWP: 17 N - Range: 6 E - Sec. 7 Reference=KB Datum=837		DIRICKSON R E GIBBS 1 330 FSL 330 FEL/NE TWP: 17 N - Range: 6 E - Sec. 8 Reference=KB Datum=837		BARUCH FOSTER CORP SADIE TYNER 1 660 FSL 660 FWL/NE TWP: 17 N - Range: 6 E - Sec. 9 Reference=KB Datum=857		BARUCH FOSTER CORP CHARLES CRANE HEIRS 1 660 FSL 660 FWL/NW TWP: 17 N - Range: 6 E - Sec. 10 Reference=KB Datum=898		COOPER SHIELDS MOORE TOMMY 1 990 FSL 330 FWL/SE TWP: 17 N - Range: 6 E - Sec. 11 Reference=KB Datum=951



INDEX MAP SHOWING CROSS-SECTION LINES



STRUCTURAL CROSS SECTION A-A'

PLATE XIV

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

M-M'
(Part 2 of 2)
North

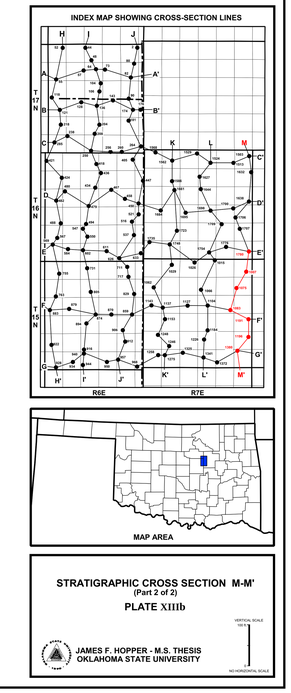
M-M'
(Part 2 of 2)
South

1780	1007	1075	1083	1191	1196	1380
TIE: SEC. E-E'			TIE: SEC. F-F'	TIE: SEC. F-F'		TIE: SEC. G-G'
F.R. BILLINGSLEA ***Bettie #1 (Smith #1)*** Creek Co., Oklahoma Section: 36 T16N-R7E NW-NE-SE KB 843' TD 374Z' Completed: 4-26-1956 Re-completed: 6-6-1969	**RAINEY OIL CO.** ***Mason #1*** Creek Co., Oklahoma Section: 1 T15N-R7E SE-NW-SE KB 837' TD 3860' Completed: 7-22-1981	**W.B. OSBORN** ***Garland #1*** Creek Co., Oklahoma Section: 12 T15N-R7E NE-NW-SW KB 910' TD 4000' Completed: 6-25-1990	**JERRY L. ROGERS** ***Boomtown #1*** Creek Co., Oklahoma Section: 14 T15N-R7E NW-SE-SE KB 828' TD 3960' Completed: 9-29-1989	**TACONIC & TEXAS CRUDE** ***Ivan Reeder #1*** Creek Co., Oklahoma Section: 24 T15N-R7E NW-SE-NE KB 838' TD 3922' Completed: 5-18-1980	**GRAND PROD. CO.** ***Charles #1-25*** Creek Co., Oklahoma Section: 25 T15N-R7E N2-SE-NE KB 838' TD 3873' Completed: 3-30-1992	**TOKLAN PROD. CO.** ***Sam Bigpond #1*** Creek Co., Oklahoma Section: 36 T15N-R7E NE-NW-NW DF 778' TD 2642' Completed: 9-4-1951

Top Osage Layton
Top Dewey Ls
Top Hogshooter Ls
Top Checkerboard Ls
Datum: Base Oswego
Top Oswego Ls
Top Verdigris Ls
Top Pink Ls
Top Inola Ls
Top Brown Ls
Top Mississippi Lm
Top Woodford Sh
Top Misener
Top Sylvan Sh
Top "Burgess"
Top Viola
Top Simpson
Top Wilcox

PRUE PROD.
IPF: 824 MCFGPD

SKINNER PROD.
IPF: 74 BOPD



STRATIGRAPHIC CROSS SECTION M-M'
(Part 2 of 2)
PLATE XIIIb

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

VERTICAL SCALE
100 ft
NO HORIZONTAL SCALE

M-M'
(Part 1 of 2)
North

M-M'
(Part 1 of 2)
South

1503	1632	1638	1706	1707	1780
TIE: SEC. C-C'		TIE: SEC. D-D'			TIE: SEC. E-E'
BROOKS HALL CORP.	**ROBSON & SHULTS PROD.**	**LINDY PETROLEUM**	**CIMARRON PETROLEUM**	**RAINEY OIL**	**F.R. BILLINGSLEA**
Stafford #1	***French #1***	***Simpson #13-1***	***Lee #1***	***Lee #1***	***Bettie #1 (Smith #1)***
Creek Co., Oklahoma	Creek Co., Oklahoma	Creek Co., Oklahoma	Creek Co., Oklahoma	Creek Co., Oklahoma	Creek Co., Oklahoma
Section: 1 T16N-R7E	Section: 12 T16N-R7E	Section: 13 T16N-R7E	Section: 24 T16N-R7E	Section: 25 T16N-R7E	Section: 36 T16N-R7E
NW-SE-NE	SE-NE-NE	NW-SE-SE	SW-NW-SW	NW-SE-NW	NW-NE-SE
KB 959'	KB 996'	KB 942'	KB 895'	KB 892'	KB 843'
TD 3869'	TD 3850'	TD 3845'	TD 3900'	TD 3820'	TD 3742'
Completed: 8-29-1980	Completed: 8-14-1990	Completed: 12-3-1981	Completed: 10-31-1980	Completed: 1-24-1985	Completed: 4-26-1956 Re-completed: 6-6-1969

Top Osage Layton
Top Dewey Ls
Top Hogshooter Ls
Top Checkerboard Ls
Top Oswego Ls
Datum: Base Oswego
Top Verdigris Ls
Top Pink Ls
Top Inola Ls
Top Brown Ls
Top Mississippi Lm
Top Woodford Sh
Top Sylvan Sh
Top Viola
Top Simpson
Top Wilcox
Top McLish
Top Bromide

PERF 1948 - 54 W/125 B.PERC.

JONES PROD.
IPP, 1 BOPD + 3 BW

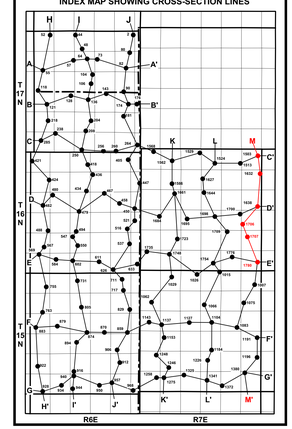
PERF 2310 - 26 W/1 TET/HOLE W/FG

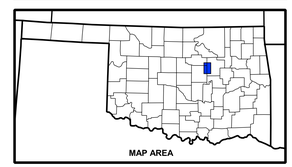
PRUE PROD.
IPF: 824 MCFGPD

LEGEND

- PERFORATED INTERVAL
- CORED INTERVAL
- DRILL STEM TEST

INDEX MAP SHOWING CROSS-SECTION LINES





MAP AREA

STRATIGRAPHIC CROSS SECTION M-M'
(Part 1 of 2)

PLATE XIIIa

VERTICAL SCALE
100 ft

NO HORIZONTAL SCALE

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

L-L'
(Part 2 of 2)
North

1754	1015	1066	1104	1184	1226	1341
TIE: SEC. E-E'			TIE: SEC. F-F'			TIE: SEC. G-G'
SUPERIOR OIL CORP. ***Anthis #1*** Creek Co., Oklahoma Section: 31 T16N-R7E C-NW-SE GL 947' TD 4035' Completed: 6-19-1942	**PALMER OIL CORP.** ***Fears #1*** Creek Co., Oklahoma Section: 3 T15N-R7E NE-NE-NE KB 981' TD 4023' Completed: 2-24-1953	**FLOYD G. HUBBELL** ***Parks #1*** Creek Co., Oklahoma Section: 10 T15N-R7E SE-NW-SW KB 847' TD 3340' Completed: 4-6-1967	**MAGNOLIA PETROLEUM** ***Harjo #1*** Creek Co., Oklahoma Section: 15 T15N-R7E NW-NW-SE KB 893' TD 3855' Completed: 10-16-1947	**CARTER & MANDEL** ***Franchot #1*** Creek Co., Oklahoma Section: 22 T15N-R7E SW-SW-SE KB 804.5' TD 4054' Completed: 3-3-1960	**NORMAN VENTURES** ***Church #1*** Creek Co., Oklahoma Section: 27 T15N-R7E SW-SE-NW KB 807' TD 4075' Completed: 11-24-1984	**SUN OIL** ***Abraham (Deeba) #1*** Creek Co., Oklahoma Section: 34 T15N-R7E SW-SE-NW KB 839' TD 3600' Completed: 4-7-1949 Re-completed: 7-5-1983

Datum: Base Oswego

Top Oswego Ls
Top Verdigris Ls
Top Pink Ls
Top Inola Ls
Top Brown Ls
Top Mississippi Lm
Top Woodford Sh
Top Sylvan Sh
Top Viola
Top Simpson
Top Bromide
Top Dewey Ls
Top Hogshooter Ls
Top Checkerboard Ls
Top Wilcox

DST 1066 - 2013 = 43 MIN
REC 80' SLI OCM

DST 4039 - 80' = 1 HR
REC 5' SLI OCM

DST 4048 - 55' = 1 HR
REC 50' SLI OSM

DST 4050 - 71' = 45 MIN
REC 70' SLI OMCW

DST 4051 - 71' = 1 HR
REC 1310 OMCW

WILCOX PROD.
IPF: 408 BOPD

PERF 2600 - 70
FRAC

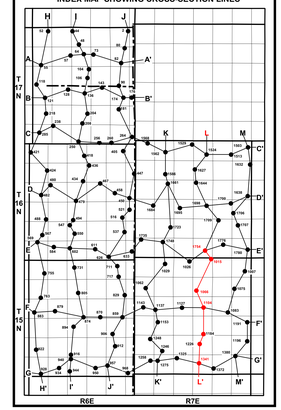
PERF 7K 2677 - 96
PERF 7K 2640 - 2720
ACID & FRAC

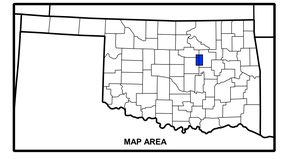
PRUE PROD.
IPF: 26 BOPD + 39 BW

LEGEND

- PERFORATED INTERVAL
- CORED INTERVAL
- DRILL STEM TEST

INDEX MAP SHOWING CROSS-SECTION LINES





MAP AREA

STRATIGRAPHIC CROSS SECTION L-L'
(Part 2 of 2)
PLATE XIIb

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

VERTICAL SCALE
1" = 100'

NO HORIZONTAL SCALE

L-L'
(Part 2 of 2)
South

L-L'
(Part 1 of 2)
North

L-L'
(Part 1 of 2)
South

1524	1627	1644	1698	1709	1754
TIE: SEC. C-C'			TIE: SEC. D-D'		TIE: SEC. E-E'
WARREN SUPPLY ***Foushee #1-A*** Creek Co., Oklahoma Section: 3 T16N-R7E SE-NW-SE KB 994' TD 2962' Completed: 12-9-1954	**BEREXCO, INC.** ***Nora Williams #24-A*** Creek Co., Oklahoma Section: 10 T16N-R7E SW-SW-NW KB 914' TD 3000' Completed: 1-20-1988	**PENTECO CORP.** ***Still #P-1*** Creek Co., Oklahoma Section: 15 T16N-R7E C-NW-NW KB 947' TD 2840' Completed: 3-17-1986	**RUSSELL COBB, JR.** ***Mahan #1*** Creek Co., Oklahoma Section: 22 T16N-R7E NE-SW-NE KB 936' TD 3982' Completed: 4-30-1959	**R.H. OPERATING** ***Malinka #1*** Creek Co., Oklahoma Section: 26 T16N-R7E NW-NE-NW GL 892' TD 3975' Completed: 12-17-1980	**SUPERIOR OIL CORP.** ***Anthis #1*** Creek Co., Oklahoma Section: 34 T16N-R7E C-NW-SE GL 947' TD 4035' Completed: 6-19-1942

Datum: Base Oswego

Top Osage Layton
Top Dewey Ls
Top Hogshooter Ls
Top Checkerboard Ls
Top Oswego Ls
Top Verdigris Ls
Top Pink Ls
Top Inola Ls
Top Brown Ls
Top Mississippi Lm
Top Woodford Sh
Top Misener
Top Sylvan Sh
Top Viola
Top Simpson
Top Wilcox

PERF 2408 - 18
FRAC
NO SHOW

PERF 2540 - 46
FRAC
VERY SLI SO & WTR

PERF 2716 - 24
ACID & FRAC

BARTLESVILLE PROD.
IPP: 51 BOPD + 15 MCFGPD + 30 BW

PERF 2400 -50
ACID
IPP 2 BOPD + 100 MCFD
RWD CHT

PERF 2700 - 09
ACID & FRAC

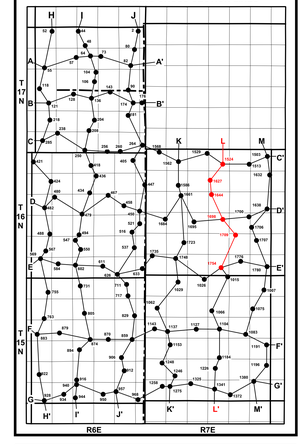
RED FORK PROD.
IPP: 4 BO + 100 MCFGPD & 50 BWPD

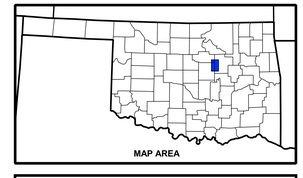
CORED 2700 - 16'
REC 8NOV 8N

LEGEND

- PERFORATED INTERVAL
- CORED INTERVAL
- DRILL STEM TEST

INDEX MAP SHOWING CROSS-SECTION LINES





STRATIGRAPHIC CROSS SECTION L-L'
(Part 1 of 2)
PLATE XIIa

VERTICAL SCALE
100 ft

NO HORIZONTAL SCALE

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

K-K'
(Part 2 of 2)
North

K-K'
(Part 2 of 2)
South

1029	1062	1137	1153	1248	1246	1275
		TIE: SEC. F-F'				TIE: SEC. G-G'

O.N. SELLERS
Legus Jones Heirs #1
Creek Co., Oklahoma
Section: 5 T15N-R7E
NW-SW-NE
KB 867'
TD 4835'
Completed: 1-29-1959

WIL-McOIL CORP.
McGill #1
Creek Co., Oklahoma
Section: 7 T15N-R7E
NW-SW-SE
KB 867'
TD 4835'
Completed: 12-1-1981

HILMER & MESSENGER
Egnew #1
Creek Co., Oklahoma
Section: 17 T15N-R7E
SW-NW-SW
KB 870'
TD 4165'
Completed: 2-9-1956

HILMER & MESSENGER
Stiner #2
Creek Co., Oklahoma
Section: 20 T15N-R7E
NE-SW-NW
KB 851'
TD 3014'
Completed: 10-28-1954

SCHERMERHORN OIL
McVoy #1
Creek Co., Oklahoma
Section: 30 T15N-R7E
NE-NW-NE
KB 856'
TD 4161'
Completed: 12-19-1963

MELCO DRLG. & J. VARN
David George #1
Creek Co., Oklahoma
Section: 29 T15N-R7E
NE-SE-SW
KB 788'
TD 4045'
Completed: 8-22-1957

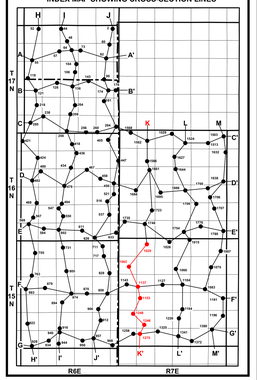
MAURICE L. BROWN
Wilcox #1
Creek Co., Oklahoma
Section: 32 T15N-R7E
NW-NE-SW-NW
KB 848'
TD 4134'
Completed: 9-15-1982

Top Dewey Ls
Top Hogshooter Ls
Top Checkerboard Ls
Datum: Base Oswego
Top Oswego Ls
Top Verdigris Ls
Top Pink Ls
Top Inola Ls
Top Brown Ls
Top Mississippian
Top Mississippi Lm
Top Woodford Sh
Top Sylvan Sh
Top Viola
Top Simpson
Top Wilcox

PRUE & SKINNER PROD.
(Commingled)
IPF: 932 MCFGPD

WILCOX PROD.
IPF: 3 BO + 800 BW

INDEX MAP SHOWING CROSS-SECTION LINES



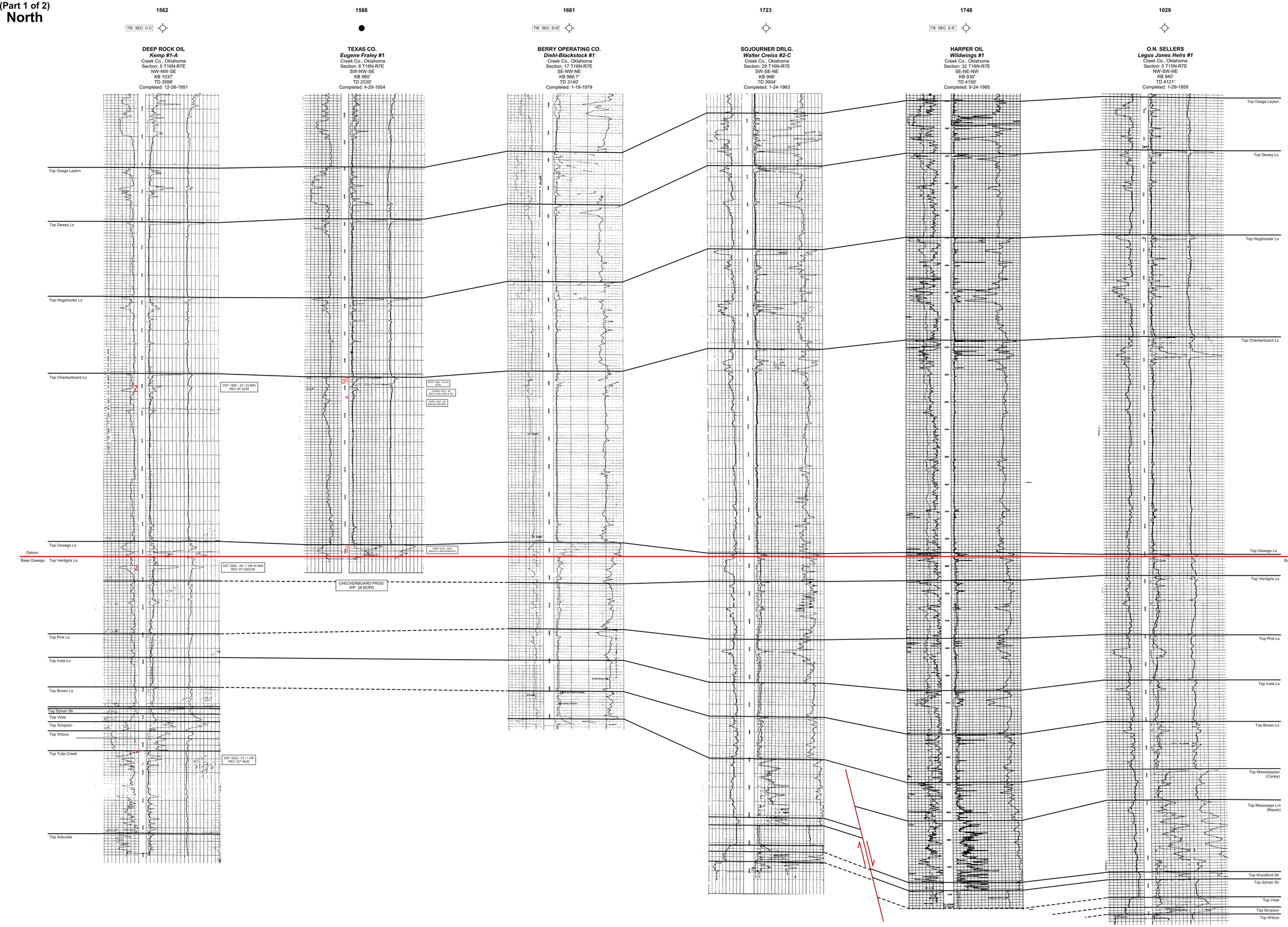
STRATIGRAPHIC CROSS SECTION K-K'
(Part 2 of 2)
PLATE XIb

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

VERTICAL SCALE
1000'
NO HORIZONTAL SCALE

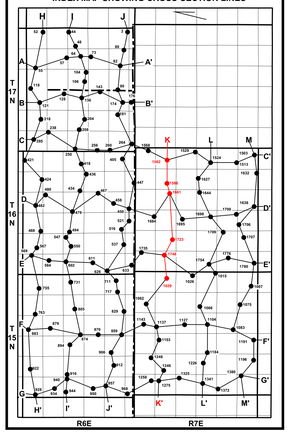
K-K'
(Part 1 of 2)
North

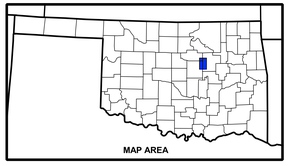
K-K'
(Part 1 of 2)
South



LEGEND
PERFORATED INTERVAL
CORED INTERVAL
DRILL STEM TEST

INDEX MAP SHOWING CROSS-SECTION LINES




MAP AREA

STRATIGRAPHIC CROSS SECTION K-K'
(Part 1 of 2)
PLATE XIa

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

VERTICAL SCALE
100 ft
0
NO HORIZONTAL SCALE

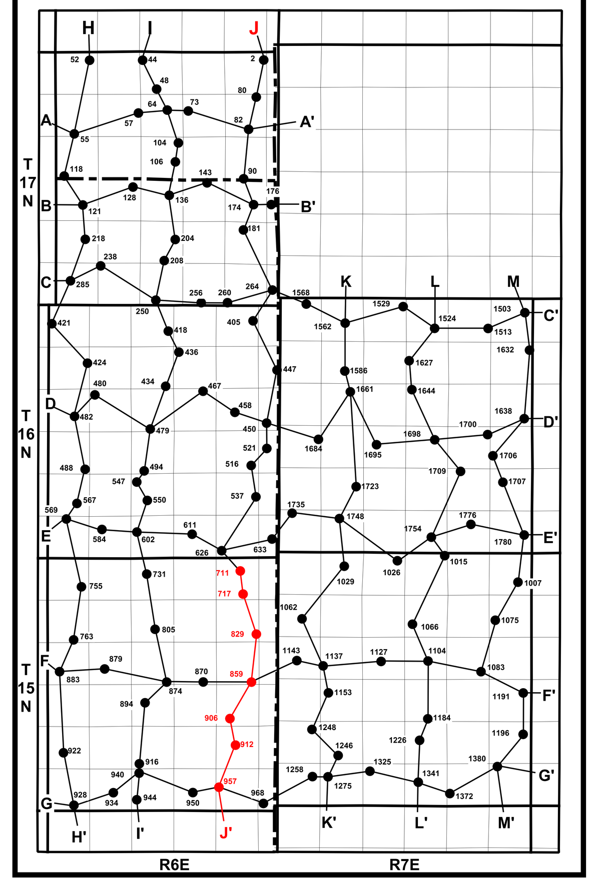
J-J' (Part 3 of 3) North

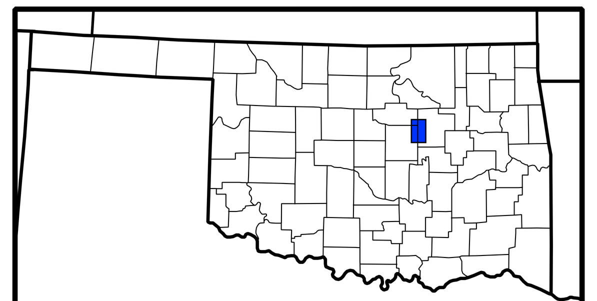
J-J' (Part 3 of 3) South

LEGEND

- PERFORATED INTERVAL
- CORED INTERVAL
- DRILL STEM TEST

INDEX MAP SHOWING CROSS-SECTION LINES





MAP AREA

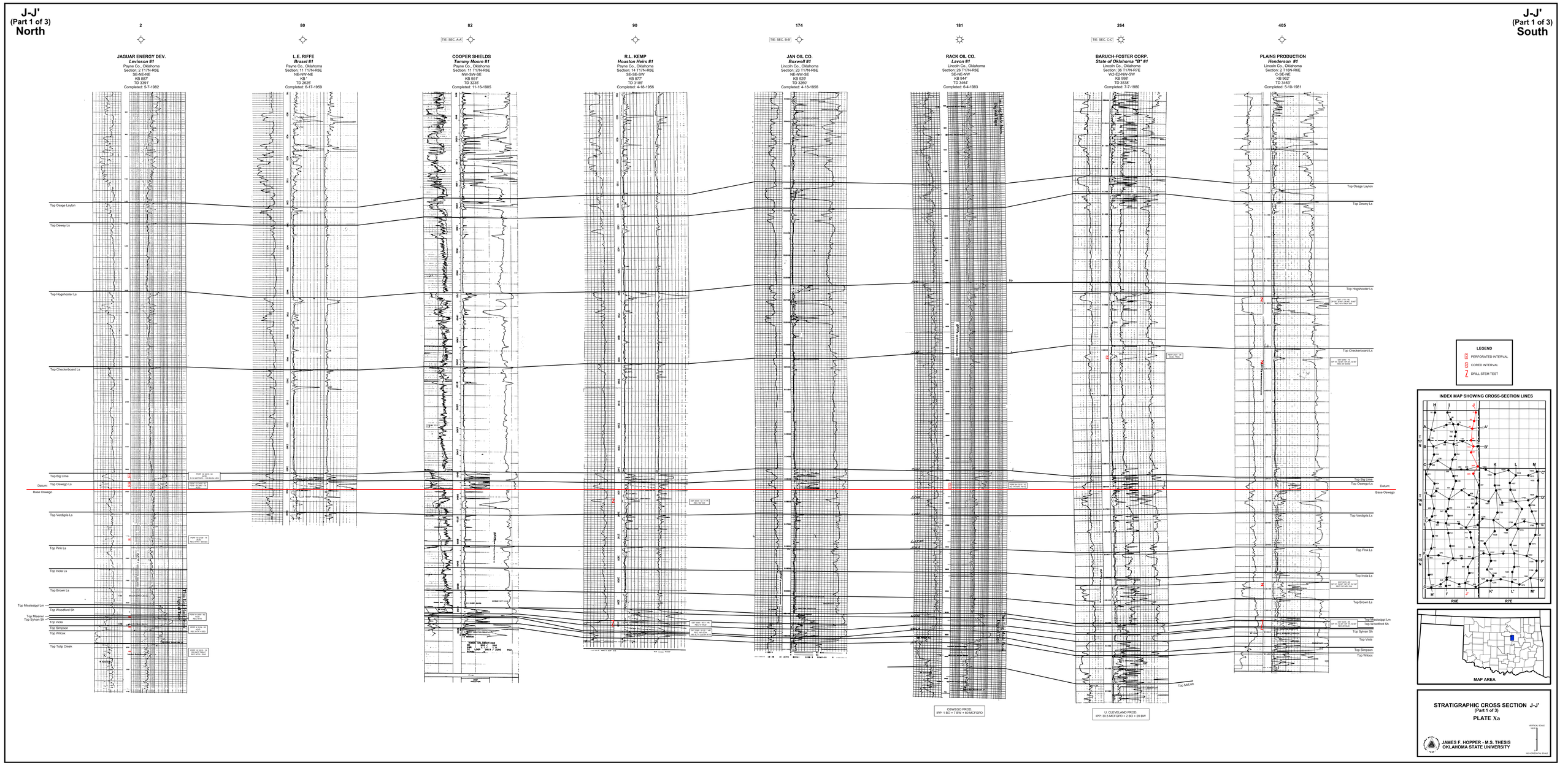
STRATIGRAPHIC CROSS SECTION J-J'
(Part 3 of 3)

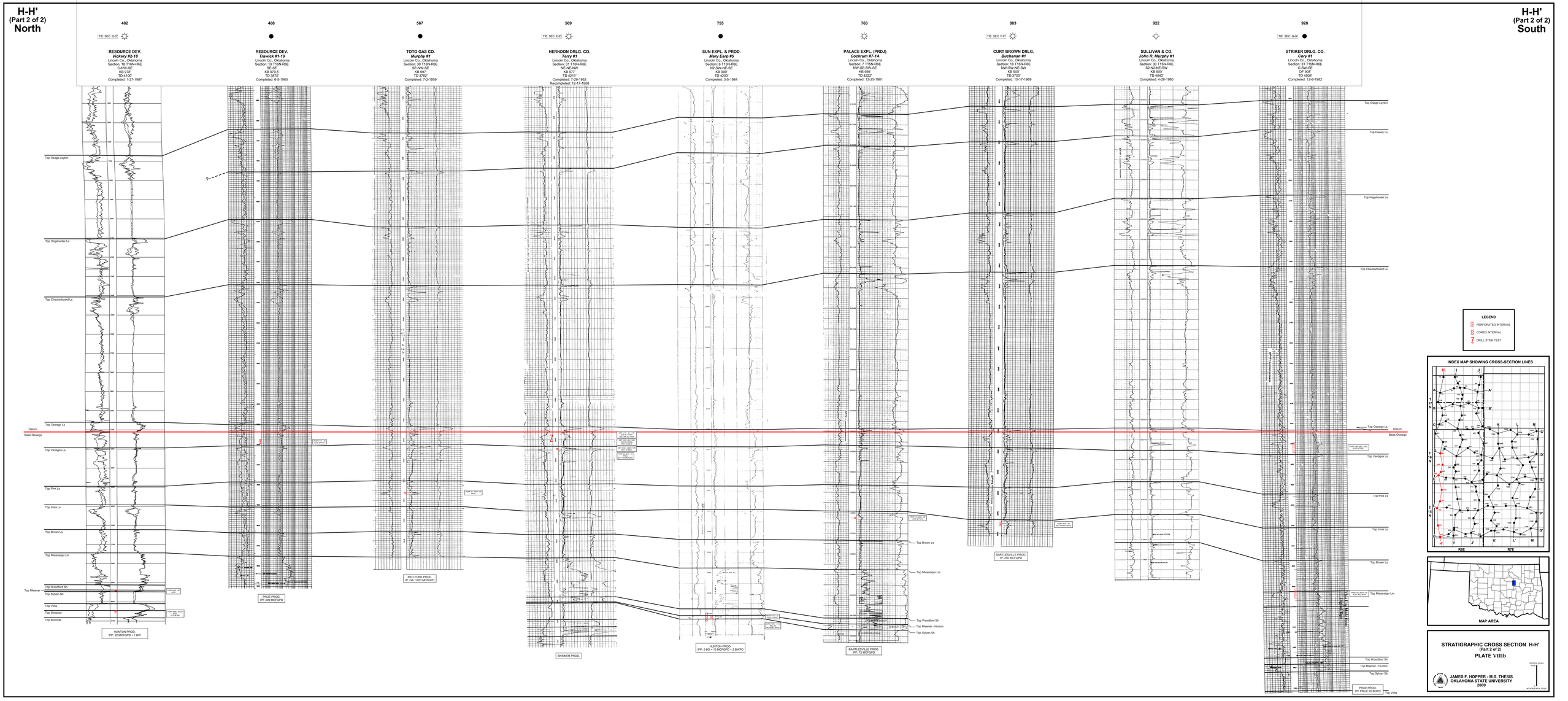
PLATE Xc

VERTICAL SCALE
100 ft.
0
NO HORIZONTAL SCALE

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

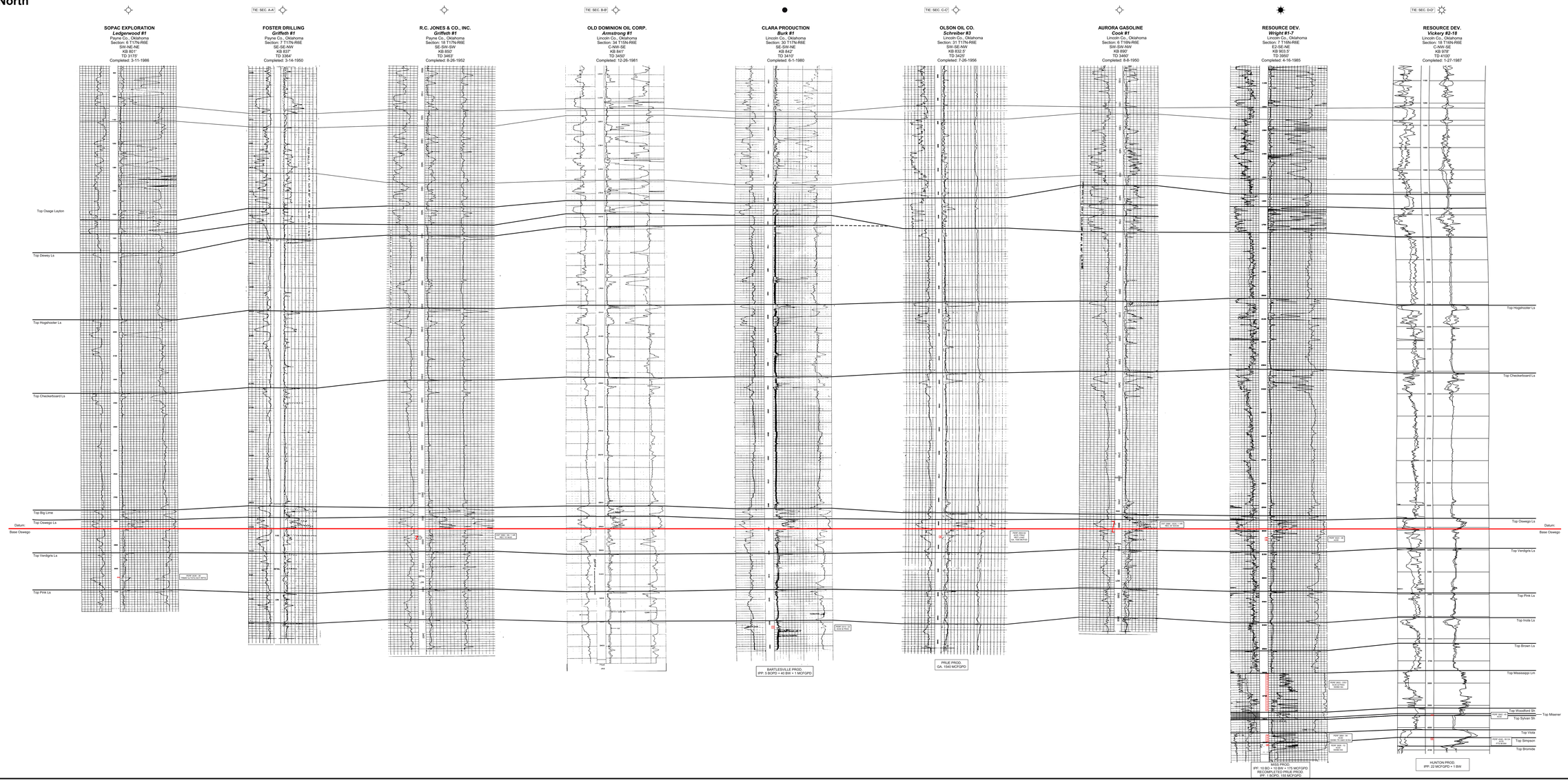
J-J'
(Part 2 of 3)
North
J-J'
(Part 2 of 3)
South
405
PLAINS PRODUCTION
Henderson #1
Lincoln Co., Oklahoma
Section: 2 T16N-R6E
C-SE-NE
KB 962'
TD 3463'
Completed: 5-10-1981
447
KETCHUM OIL CO.
Langley-B #1
Lincoln Co., Oklahoma
Section: 12 T16N-R6E
NE-NE-SW
KB 908'
TD 3355'
Completed: 5-2-1957
450
TIE: SEC. D-D'
HUBBELL DRILLING CO.
Wheeland #1
Lincoln Co., Oklahoma
Section: 13 T16N-R6E
NE-SW-SW
KB 956'
TD 3572'
Completed: 12-9-1952
521
C.W. SMITH & ASSOC.
Prewitt #1
Lincoln Co., Oklahoma
Section: 24 T16N-R6E
SE-SW-NW
KB 999'
TD 3775'
Completed: 8-29-1983
516
GENO OIL & GAS
Prewitt #1-A
Lincoln Co., Oklahoma
Section: 23 T16N-R6E
NW-SE-SE
KB 1018'
TD 3855'
Completed: 11-9-1979
537
CANAMCO RESOURCES
Kinnamon #1-26
Lincoln Co., Oklahoma
Section: 26 T16N-R6E
NE-NE-SE
KB 953'
TD 3850'
Completed: 12-29-1981
626
TIE: SEC. E-E'
ATTEBERRY ENGINEERING
Baker #1
Lincoln Co., Oklahoma
Section: 35 T16N-R6E
N2-SW-SW
KB 952'
TD 3930'
Completed: 7-1-1985
711
MID-CONTINENT PETR.
Sontag #1
Lincoln Co., Oklahoma
Section: 2 T15N-R6E
NW-SW-NE
KB 978'
TD 3946'
Completed: 4-30-1982
Top Osage Layton
Top Dewey Ls
Top Hogshooter Ls
Top Checkerboard Ls
Top Big Lime
Top Oswego Ls
Datum:
Base Oswego
Top Verdigris Ls
Top Pink Ls
Top Inola Ls
Top Brown Ls
Top Mississippi Lm
Top Woodford Sh
Top Misener
Top Sylvan Sh
Top Viola
Top Simpson
Top Wilcox
DST 1776 - 90
OP 30", SI 60", OP 45", SI 45"
REC 1410' MDY SW
DST 2063 - 75
OP 15", SI 60", OP 45", SI 95"
REC 25' SOCM
DST 3075 - 85
OP 15", SI 65", OP 30", SI 100"
REC 745' MDY SW
DST 3245 - 88
OP 15", SI 45", OP 15", SI 60"
REC 25' MUD
DST 2617 - 27 / 1 HR
REC 15' O&GCM
PERF 24/ 3220 - 24
SWBD N.S.
DST 3340 - 45 / 1 HR
GAS / 1 HR
REC 60' OCM
DST 3343 - 50 / 2 HRS
REC 90' OCM
PERF 60/ 3338 - 48
SWBD N.S.
ACID; SWBD 1.5 BO & 8 BSW/12 HRS
DST 3495-3515
REC 35' MUD
PERF 2806 - 16
ACID & FRAC
PRUE PROD.
IPP: 8 BO + 42 BW, GAS TSTM/24 HRS
PERF 13/ 2218 - 24
FRAC
CLEVELAND PROD.
IPP: 12 BO + 200 BW & 60 MCFGPD/24 HRS
PERF 2778 - 88
ACID & FRAC
PERF 3317 - 3350
ACID & FRAC
PRUE PROD.
IPF: 21 BO + 30 BW & 48 MCFGPD
BURGESS PROD.
IPF: 200 MCFGPD, NO WTR
CORED 2840 - 80
REC SH W/SD INCLUSIONS
PERF 2940 - 3002
ACID & FRAC
PERF 3597 - 3741
ACID & FRAC
PERF 3867 - 3882
ACID & FRAC
PRUE, MISS., & SIMPSON PROD.
(Commingled)
IPF: 10 BO + 21 BW & 211 MCFGPD
PERF 3606 - 15
ACID & FRAC
PERF 3662 - 3765 OA
ACID & FRAC
BURGESS(?) & MISS. PROD.
(Commingled)
IPP: 19 BO + 20 BW & 50 MCFGPD
LEGEND
PERFORATED INTERVAL
CORED INTERVAL
DRILL STEM TEST
INDEX MAP SHOWING CROSS-SECTION LINES
R6E
R7E
MAP AREA
STRATIGRAPHIC CROSS SECTION J-J'
(Part 2 of 3)
PLATE Xb
JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY
VERTICAL SCALE
100 ft.
0
NO HORIZONTAL SCALE


J-J'
(Part 1 of 3)
North
J-J'
(Part 1 of 3)
South
2
80
82
90
174
181
264
405
TIE: SEC. A-A'
TIE: SEC. B-B'
TIE: SEC. C-C'
JAGUAR ENERGY DEV.
Levinson #1
Payne Co., Oklahoma
Section: 2 T17N-R6E
SE-NE-NE
KB 887'
TD 3391'
Completed: 5-7-1982
L.E. RIFFE
Brasel #1
Payne Co., Oklahoma
Section: 11 T17N-R6E
NE-NW-NE
KB
TD 2625'
Completed: 6-17-1959
COOPER SHIELDS
Tommy Moore #1
Payne Co., Oklahoma
Section: 11 T17N-R6E
NW-SW-SE
KB 951'
TD 3235'
Completed: 11-16-1985
R.L. KEMP
Houston Heirs #1
Payne Co., Oklahoma
Section: 14 T17N-R6E
SE-SE-SW
KB 877'
TD 3185'
Completed: 4-18-1956
JAN OIL CO.
Boxwell #1
Lincoln Co., Oklahoma
Section: 23 T17N-R6E
NE-NW-SE
KB 929'
TD 3200'
Completed: 4-18-1956
RACK OIL CO.
Lavon #1
Lincoln Co., Oklahoma
Section: 26 T17N-R6E
SE-NE-NW
KB 944'
TD 3464'
Completed: 6-4-1983
BARUCH-FOSTER CORP.
State of Oklahoma "B" #1
Lincoln Co., Oklahoma
Section: 36 T17N-R7E
W2-E2-NW-SW
KB 998'
TD 3538'
Completed: 7-7-1980
PLAINS PRODUCTION
Henderson #1
Lincoln Co., Oklahoma
Section: 2 T16N-R6E
C-SE-NE
KB 962'
TD 3463'
Completed: 5-10-1981
Top Osage Layton
Top Dewey Ls
Top Hogshooter Ls
Top Checkerboard Ls
Top Big Lime
Top Oswego Ls
Datum:
Base Oswego
Top Verdigris Ls
Top Pink Ls
Top Inola Ls
Top Brown Ls
Top Mississippi Lm
Top Woodford Sh
Top Misener
Top Sylvan Sh
Top Viola
Top Simpson
Top Wilcox
Top Tulip Creek
Top McLish
OSWEGO PROD.
IPP: 1 BO + 7 BW + 80 MCFGPD
U. CLEVELAND PROD.
IPP: 30.5 MCFGPD + 2 BO + 20 BW
LEGEND
PERFORATED INTERVAL
CORED INTERVAL
DRILL STEM TEST
INDEX MAP SHOWING CROSS-SECTION LINES
R6E
R7E
MAP AREA
STRATIGRAPHIC CROSS SECTION J-J'
(Part 1 of 3)
PLATE Xa
JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY
VERTICAL SCALE
100 ft
NO HORIZONTAL SCALE


H-H'
(Part 2 of 2)
North
H-H'
(Part 2 of 2)
South
482
TIE: SEC. D-D'
RESOURCE DEV.
Vickery #2-18
Lincoln Co., Oklahoma
Section: 18 T16N-R6E
C-NW-SE
KB 978'
TD 4100'
Completed: 1-27-1987
488
RESOURCE DEV.
Trawick #1-19
Lincoln Co., Oklahoma
Section: 19 T16N-R6E
SE-SE
KB 979.5'
TD 3875'
Completed: 6-5-1985
567
TOTO GAS CO.
Murphy #1
Lincoln Co., Oklahoma
Section: 30 T16N-R6E
SE-NW-SE
KB 997'
TD 3782'
Completed: 7-2-1959
569
TIE: SEC. E-E'
HERNDON DRLG. CO.
Terry #1
Lincoln Co., Oklahoma
Section: 31 T16N-R6E
NE-NE-NW
KB 977'
TD 4211'
Completed: 7-29-1952
Recompleted: 12-17-1958
755
SUN EXPL. & PROD.
Mary Earp #5
Lincoln Co., Oklahoma
Section: 6 T15N-R6E
NO-SW-NE-SE
KB 999'
TD 4200'
Completed: 3-5-1984
763
PALACE EXPL. (PRDJ)
Cockrum #7-1A
Lincoln Co., Oklahoma
Section: 7 T15N-R6E
NW-SE-SW-SE
KB 956'
TD 4222'
Completed: 12-25-1981
883
TIE: SEC. F-F'
CURT BROWN DRLG.
Buchanan #1
Lincoln Co., Oklahoma
Section: 18 T15N-R6E
NW-SW-NE-SW
KB 900'
TD 3700'
Completed: 10-17-1969
922
SULLIVAN & CO.
John R. Murphy #1
Lincoln Co., Oklahoma
Section: 30 T15N-R6E
S2-NO-NE-SW
KB 900'
TD 4040'
Completed: 4-28-1980
928
TIE: SEC. G-G'
STRIKER DRLG. CO.
Cory #1
Lincoln Co., Oklahoma
Section: 31 T15N-R6E
C-SW-SE
DF 908'
TD 4508'
Completed: 12-6-1982
Top Osage Layton
Top Hogshooter Ls
Top Checkerboard Ls
Top Oswego Ls
Datum:
Base Oswego
Top Verdigris Ls
Top Pink Ls
Top Inola Ls
Top Brown Ls
Top Mississippi Lm
Top Woodford Sh
Top Miserner
Top Sylvan Sh
Top Viola
Top Simpson
Top Bromide
HUNTON PROD.
IPP: 22 MCFGPD + 1 BW
PRUE PROD.
IPP 499 MCFGPD
RED FORK PROD.
IP: GA. 1200 MCFGPD
SKINNER PROD.
HUNTON PROD.
IPP: 5 BO + 10 MCFGPD + 2 BWPD
BARTLESVILLE PROD.
IPP: 72 MCFGPD
BARTLESVILLE PROD.
IP: 250 MCFGPD
Top Mississippi Lm
Top Woodford Sh
Top Miserner - Hunton
Top Sylvan Sh
PRUE PROD.
IPP PRUE 20 BOPD
Top Viola
LEGEND
PERFORATED INTERVAL
CORED INTERVAL
DRILL STEM TEST
INDEX MAP SHOWING CROSS-SECTION LINES
R6E
R7E
MAP AREA
STRATIGRAPHIC CROSS SECTION H-H'
(Part 2 of 2)
PLATE VIIIb
JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY
2000
VERTICAL SCALE
NO HORIZONTAL SCALE

H-H'
(Part 1 of 2)
North

H-H'
(Part 1 of 2)
South



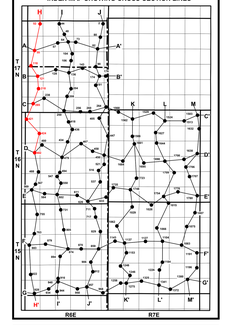
LEGEND

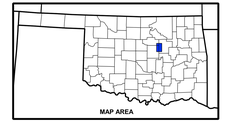
PERFORATED INTERVAL

CORED INTERVAL

DRILL STEM TEST

INDEX MAP SHOWING CROSS-SECTION LINES





STRATIGRAPHIC CROSS SECTION H-H'
(Part 1 of 2)
PLATE VIIIa

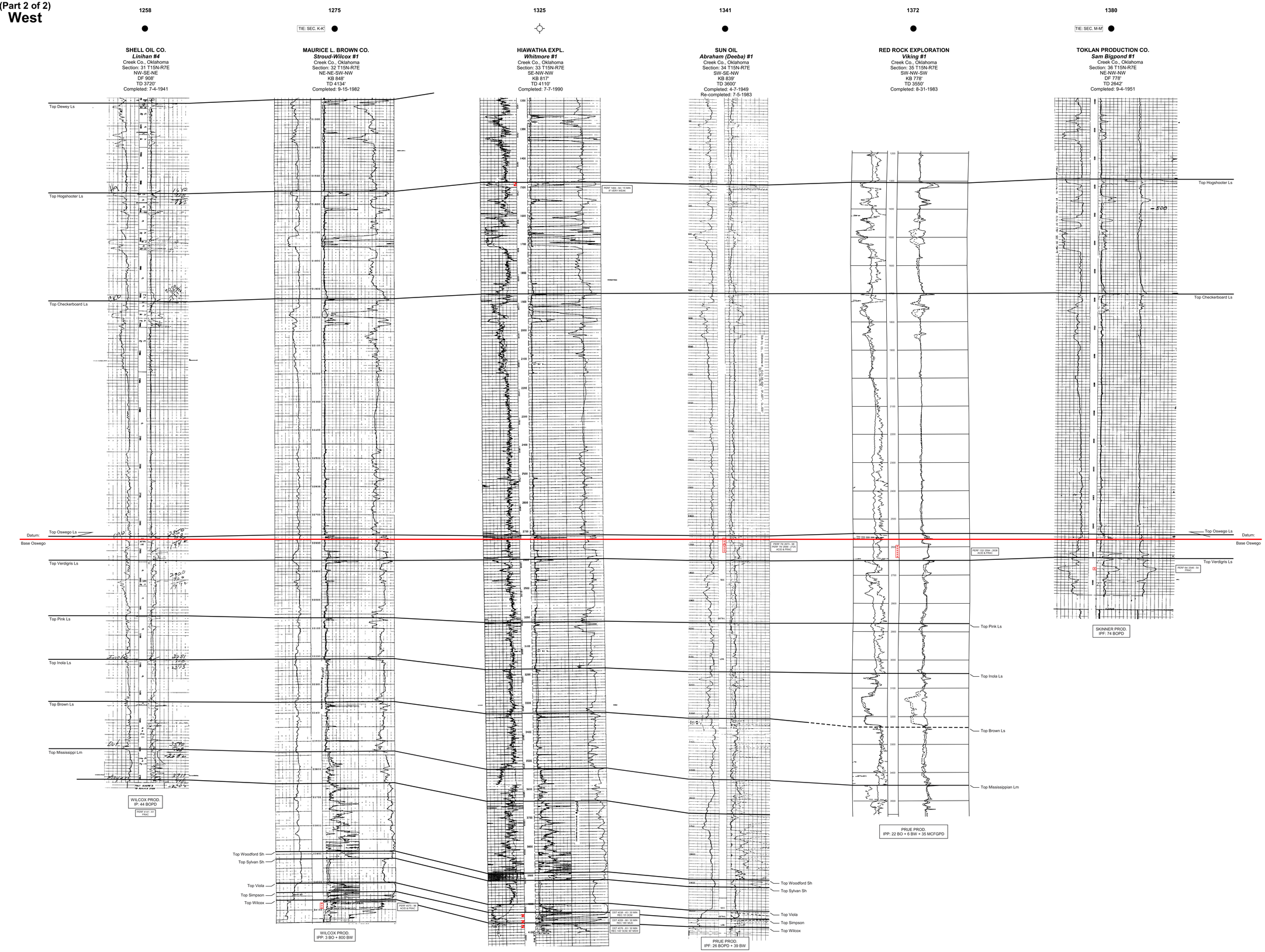
JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

VERTICAL SCALE
100 ft

NO HORIZONTAL SCALE

G-G'
(Part 2 of 2)
West

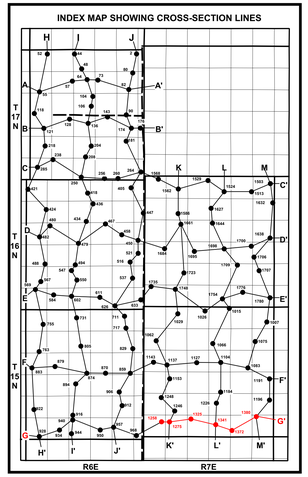
G-G'
(Part 2 of 2)
East

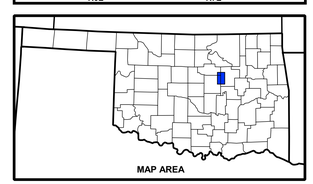


LEGEND

- PERFORATED INTERVAL
- CORED INTERVAL
- DRILL STEM TEST

INDEX MAP SHOWING CROSS-SECTION LINES





STRATIGRAPHIC CROSS SECTION G-G'
(Part 2 of 2)

PLATE VIIb

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY

VERTICAL SCALE
100 ft
NO HORIZONTAL SCALE

17N/6E

17N/7E

16N/6E

16N/7E

15N/6E

15N/7E

Bartlesville Sandstone Completion

Log available
No sandstone present

Log available
Sandstone data

Total thickness of Bartlesville
AB = Sandstone absent
NDE = Well not deep enough to penetrate interval
TD = Well TD'd within the sandstone interval

2000 0 2000 4000 6000 8000 10000 ft

Bartlesville Sandstone Isopach

Contour Interval = 25 feet

Plate XXXIV

JAMES F. HOPPER - M.S. THESIS
OKLAHOMA STATE UNIVERSITY