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# **Correlation of Hunton Electric Logs to Hunton Cores and Samples**

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**“Hunton Play in Oklahoma  
(Including Northeast Texas Panhandle)”**

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OKLAHOMA GEOLOGICAL SURVEY  
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29	T	8	N	R 8	E ne se sw	264	s	1980	403
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10	T	9	N	R 21	E ne ne sw	148	s	1980	240, 241
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26	T	9	N	R 26	E nw ne	140	s	1980	228
16	T	10	N	R 6	E sw nw ne	58	s	1980	97, 98
3	T	10	N	R 7	E nw nw se	147	s	1980	238, 239
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3	T	10	N	R 21	E sw nw	22	s	1980	37, 38, 39, 40
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29	T	10	N	R 27	E ne ne sw	182	s	1980	290
8	T	11	N	R 6	E se se sw	25	c	1975	43, 44
34	T	11	N	R 6	E ne ne ne	2	s	1980	2, 3
10	T	11	N	R 7	E ne nw sw	221	s	1980	339, 340
5	T	11	N	R 10	E se sw sw	53	s	1980	90, 91
31	T	11	N	R 10	E ne nw se	62	s	1980	104, 105
7	T	11	N	R 15	E nw se	223	s	1980	342
17	T	11	N	R 16	E se nw se	30	s	1980	50, 51
17	T	11	N	R 17	E s/2 se ne	95	s	1980	160
31	T	11	N	R 19	E se se nw	66	s	1980	109, 110, 111, 112
17	T	11	N	R 24	E se nw	203	s	1980	312
23	T	11	N	R 24	E se se nw se	7	s	1980	13
9	T	12	N	R 4	E nw ne se	199	c	1993	309
10	T	12	N	R 5	E s/2 ne nw	175	c	1980	281
34	T	12	N	R 5	E sw se sw	193	s	1980	301, 302
11	T	12	N	R 6	E ne se nw	151	s	1980	245, 246
32	T	12	N	R 6	E se nw nw	245	s	1980	377, 378
6	T	12	N	R 16	E nw nw ne	99	s	1980	171, 172
14	T	12	N	R 16	E se se nw	155	s	1980	252
2	T	12	N	R 18	E se nw se	275	s	1980	416, 417
36	T	12	N	R 22	E se sw	242	s	1980	371, 372, 373, 374
8	T	12	N	R 24	E sw ne	51	s	1980	83, 84, 85, 86
19	T	12	N	R 25	E ne ne sw	45	s	1980	75, 76
5	T	13	N	R 5	E se ne ne	143	s	1980	232, 233
13	T	13	N	R 5	E ne sw sw	284	s	1980	430, 431
32	T	13	N	R 10	E sw nw ne	82	s	1980	135, 136
18	T	13	N	R 18	E sw sw ne	262	s	1965	400
29	T	13	N	R 20	E nw nw	191	s	1980	298, 299
20	T	13	N	R 21	E se se ne	189	c	1980	296
1	T	13	N	R 23	E nw sw sw	205	s	1980	314, 315
14	T	13	N	R 23	E ne ne se	59	c	1980	99, 100
14	T	13	N	R 23	E ne ne se	60	c	1980	101, 102
13	T	13	N	R 24	E se se se	36	s	1980	60, 61, 62
15	T	13	N	R 25	E sw sw ne	170	s	1980	273, 274, 275
8	T	14	N	R 17	E sw sw sw	10	s	1980	18, 19
2	T	14	N	R 23	E se nw ne	188	c	1980	296

# Index of Core and Sample Wells by Location

Sec	Township			Range			Location	Plat #	Core or Sample	Source	Page Number
4	T	14	N	R	24	E	sw se sw	187	c	1980	296
24	T	3	N	R	3	W	w/2 sw ne	194	c	1993	303
26	T	3	N	R	3	W	sw ne	29	s	1993	49
35	T	3	N	R	3	W	nw sw nw	111	c	1993	190
19	T	3	N	R	7	W	w/2 w/2 nw	94	s	1993	159
5	T	3	N	R	10	W	se sw	220	s	1975	336, 337, 338
19	T	3	N	R	23	W	ne ne se	130	c	1975	216, 217
19	T	3	N	R	23	W	ne ne se	132	c	1993	219
27	T	5	N	R	3	W	sw se	116	c	1975	197, 198
12	T	5	N	R	5	W	se ne	165	c	1975	264, 265
14	T	5	N	R	5	W	ne se	52	c	1975	87, 88, 89
18	T	5	N	R	8	W	sw ne se	42	s	1975	69
10	T	5	N	R	12	W	nw nw	43	s	1975	70, 71, 72
20	T	6	N	R	3	W	se sw ne	68	c	1975	114, 115, 116
29	T	6	N	R	3	W	nw ne	233	c	1975	359, 360
15	T	6	N	R	13	W	nw ne	88	s	1975	144, 145, 146, 147
14	T	6	N	R	15	W	Stratigraphic Test	200	c	1975	310
22	T	6	N	R	15	W	Stratigraphic Test	201	c	1975	310
18	T	6	N	R	16	W	sw sw ne	84	s	1975	138
30	T	7	N	R	13	W	nw sw	258	c	1975	394, 395, 396
2	T	7	N	R	17	W	se	276	s	1993	418, 419, 420
9	T	8	N	R	2	W	nw sw sw	157	c	1975	254, 255
36	T	8	N	R	18	W	sw sw nw	98	s	1975	164, 165, 166, 167, 168, 169, 170
9	T	9	N	R	7	W	nw	190	c	1993	297
21	T	9	N	R	11	W	ne	49	s	1975	81
4	T	9	N	R	12	W	nw nw se	4	s	1975	6, 7, 8, 9
35	T	9	N	R	17	W	sw	266	s	1975	405
31	T	9	N	R	21	W	sw sw	244	s	1975	376
16	T	10	N	R	4	W	se se sw	167	c	1993	268, 269
21	T	10	N	R	4	W	ne ne	225	s	1993	344, 345
16	T	10	N	R	9	W	se sw	229	s	1975	351, 352, 353
27	T	10	N	R	19	W	se	218	s	1975	332, 333
28	T	10	N	R	22	W	se	8	s	1975	14, 15, 16
19	T	10	N	R	24	W	ne se	150	s	1993	243, 244
24	T	10	N	R	25	W	ne nw se	227	s	1993	348, 349
20	T	10	N	R	26	W	se	92	s	1975	153
23	T	10	N	R	26	W	sw	251	s	1993	385
28	T	10	N	R	26	W	ne	1	s & c	1993	1
31	T	10	N	R	26	W	w/2 w/2 ne	96	c	1993	161, 162
19	T	11	N	R	5	W	sw sw	122	c	1975	205
27	T	11	N	R	5	W	sw sw	55	c	1993	93, 94
25	T	11	N	R	6	W	ne nw	17	c	1993	31
8	T	11	N	R	7	W	sw	177	s	1993	283
12	T	11	N	R	11	W	sw nw ne	241	c	1993	370
29	T	11	N	R	25	W		90	s	1975	150, 151
33	T	11	N	R	25	W	n/2 n/ sw ne	34	s	1975	57, 58
3	T	12	N	R	2	W	sw ne	231	c	1975	356
5	T	12	N	R	2	W	nw sw nw	283	c	1975	429
8	T	12	N	R	2	W	nw nw sw	121	c	1975	203, 204
28	T	12	N	R	2	W	sw ne nw	27	c	1975	46, 47
27	T	12	N	R	14	W	nw nw sw se	113	s	1975	192
20	T	13	N	R	4	W	se se	248	c	1975	381, 382
5	T	13	N	R	6	W	se	21	c	1980	36
20	T	13	N	R	6	W	sw ne	202	c	1993	311

# Index of Core and Sample Wells by Location

Sec	Township			Range		Location		Plat #	Core or Sample	Source	Page Number
17	T	13	N	R	11	W	sw se	279	c	1975	424
35	T	13	N	R	16	W	sw ne	184	s	1993	292
21	T	13	N	R	18	W	ne	15	s	1975	27, 28
9	T	13	N	R	25	W	1320' FSL & 1320' FWL	195	s	1975	304, 305
2	T	14	N	R	4	W	se sw	118	c	1975	200
30	T	14	N	R	6	W	w/4 e/4 sw se	32	c	1980	54
1	T	14	N	R	16	W	ne ne ne	119	c	1975	201
4	T	14	N	R	17	W	ne sw ne	281	s	1993	426
4	T	14	N	R	22	W	se nw	228	s	1975	350
21	T	14	N	R	24	W	nw nw se nw	164	s	1975	263
27	T	14	N	R	24	W	sw sw ne nw	28	s	1975	48
33	T	14	N	R	26	W	e/2 e/2 nw	160	s	1975	258, 259
33	T	14	N	R	26	W	e/2 e/2 nw	161	s	1993	258, 259
8	T	15	N	R	5	W	ne sw	257	c	1975	392, 393
11	T	15	N	R	5	W	nw se	273	c	1975	414
14	T	15	N	R	5	W	n/2 nw	54	c	1975	92
14	T	15	N	R	6	W	ne ne	72	c	1975	122
15	T	15	N	R	6	W	ne ne	20	c	1975	35
25	T	15	N	R	6	W	ne se	208	c	1975	319
14	T	15	N	R	15	W	se nw	123	c	1993	206
14	T	15	N	R	15	W	se nw	124	c	1975	207, 208, 209, 210
3	T	15	N	R	16	W	sw nw	83	c	1975	137
15	T	15	N	R	16	W	se nw	40	c	1975	66, 67
21	T	15	N	R	16	W	200' s c ne	134	c	1975	222
26	T	15	N	R	16	W	e/2 e/2 nw	236	c	1975	364
6	T	15	N	R	18	W	se nw ne	224	c	1975	343
35	T	15	N	R	19	W	ne sw	106	s	1993	183
36	T	15	N	R	21	W	nw se nw	198	c	1993	308
8	T	15	N	R	22	W	nw ne se nw	261	s	1975	399
14	T	15	N	R	24	W	ne sw nw	144	s	1975	234
34	T	16	N	R	7	W	nw se	196	c	1975	306
2	T	16	N	R	8	W	nw sw	67	c	1975	113
16	T	16	N	R	10	W	se	280	c	1993	425
23	T	16	N	R	10	W	se sw	235	c	1993	363
17	T	16	N	R	21	W	e/2 e/2 w/2 se	110	s	1975	189
7	T	17	N	R	4	W	ne sw	23	c	1975	41
36	T	17	N	R	5	W	se ne	125	c	1975	211
13	T	17	N	R	6	W	ne se	80	c	1993	132
21	T	17	N	R	6	W	sw ne	87	c	1975	142, 143
1	T	17	N	R	7	W	s/2 n/2 ne nw	169	c	1975	272
22	T	17	N	R	8	W	sw ne sw	86	c	1993	141
34	T	17	N	R	8	W	se se	253	c	1975	388
24	T	17	N	R	18	W	ne sw ne	117	c	1993	199
16	T	18	N	R	7	W	ne nw	243	c	1975	375
21	T	18	N	R	7	W	ne	246	c	1975	379
4	T	18	N	R	9	W	ne ne	65	c	1975	108
25	T	18	N	R	19	W	e/2 sw ne	174	c	1993	280
12	T	19	N	R	8	W	se ne	254	c	1975	389
17	T	19	N	R	9	W	se ne sw	168	c	1975	270, 271
18	T	19	N	R	9	W	ne sw	217	c	1975	331
26	T	19	N	R	9	W	se sw	47	c	1975	78, 79
35	T	19	N	R	9	W	se nw	19	c	1975	34
13	T	19	N	R	10	W	nw se	216	c	1975	330
15	T	19	N	R	10	W	se sw ne	63	c	1975	106

# Index of Core and Sample Wells by Location

Sec	Township			Range	Location	Plat #	Core or Sample	Source	Page Number
24	T	19	N	R 10	W w/2 nw nw	139	c	1975	227
24	T	19	N	R 11	W se nw	158	c	1975	256
4	T	19	N	R 18	W sw	192	c	1993	300
1	T	19	N	R 24	W se nw	105	s	1993	181, 182
6	T	19	N	R 24	W ne	107	c	1975	184
21	T	20	N	R 9	W ne ne	77	c	1975	128
4	T	20	N	R 10	W sw ne	126	c	1975	212
11	T	20	N	R 10	W s/2 nw	76	c	1975	127
29	T	20	N	R 23	W ne sw	207	s	1993	318
35	T	20	N	R 23	W sw ne	104	c	1993	180
27	T	20	N	R 25	W se nw	186	s	1993	295
22	T	21	N	R 2	W nw ne	278	c	1975	423
3	T	21	N	R 14	W sw ne	137	c	1975	225
12	T	22	N	R 12	W e/2 ne nw	222	c	1975	341
26	T	22	N	R 12	W se nw	272	c	1975	413
27	T	22	N	R 12	W nw	238	c	1975	366
28	T	22	N	R 12	W sw ne	239	c	1975	367
34	T	22	N	R 12	W nw	185	c	1975	293, 294
3	T	22	N	R 13	W nw se	73	s	1993	123, 124
34	T	22	N	R 14	W se ne sw	138	c	1975	226
14	T	22	N	R 15	W n/2 s/2 sw ne	74	c	1975	125
32	T	22	N	R 19	W e/4 nw	247	c	1975	380
4	T	22	N	R 24	W sw ne	50	c	1975	82
19	T	23	N	R 13	W sw se	172	c	1993	277
29	T	23	N	R 13	W ne ne se	260	s	1993	397, 398
30	T	23	N	R 13	W nw se	61	c	1993	103
7	T	23	N	R 14	W sw ne	171	s	1993	276
31	T	23	N	R 14	W ne sw	128	c	1993	214
34	T	23	N	R 14	W sw sw se	136	c	1975	224
14	T	23	N	R 15	W se nw	78	c	1993	129
21	T	23	N	R 18	W ne sw	115	c	1975	195, 196
23	T	23	N	R 18	W sw ne sw	12	c	1975	22
35	T	24	N	R 21	W sw ne	75	c	1980	126
33	T	25	N	R 6	W nw se	31	c	1975	52, 53
33	T	25	N	R 6	W n/2 sw nw	212	c	1975	325, 326
31	T	25	N	R 14	W se sw	234	c	1975	361, 362
25	T	25	N	R 18	W sw ne	269	c	1993	410
20	T	25	N	R 21	W sw ne	149	c	1975	242
21	T	26	N	R 11	W s/2 ne	46	c	1975	77
26	T	26	N	R 11	W se sw ne	112	c	1975	191
3	T	26	N	R 21	W nw nw	5	c	1975	10
21	T	27	N	R 15	W w/2 nw	24	c	1975	42
24	T	27	N	R 21	W ne	127	c	1975	213
25	T	1	S	R 17	W se sw sw	153	s	1993	249
32	T	3	S	R 2	W w/2 ne	214	s	1993	328
25	T	5	S	R 2	W sw se nw	250	c	1993	384
28	T	5	S	R 2	W se sw	285	c	1975	432
29	T	5	S	R 2	W se se	180	c	1975	287, 288
33	T	5	S	R 2	W nw ne	91	c	1975	152
33	T	5	S	R 2	W nw se	256	c	1975	391
17	T	5	S	R 3	W se sw sw	249	c	1993	383
10	T	6	N	R 32	W (AK) 1420' FSL & 1980' FWL	41	s	1980	68
4	T	6	N	R 32	W (AK) 1477' FEL & 1446' FSL	64	s	1980	107
34	T	7	N	R 32	W (AK) nw se	97	s	1980	163

# Index of Core and Sample Wells by Location

Sec	Township			Range	Location	Plat #	Core or Sample	Source	Page Number
36	T	7	N	R	32 W (Ak) se	267	s & c	1980	406, 407
9	Blk A-5, H&GN Survey, Wheeler County, TX				1320' FSL & 1320' FWL	9	s	1975	17
5	B & B Survey, Hemphill County, TX				1320 FNL & FEL	26	s	1993	45
53	Blk. A-6, H&GN Survey, Gray County, TX				1050' FSL & 1000' FWL	81	c	1975	133, 134
5	Blk 2, I&GN survey, Roberts County, TX					100	c	1993	173
20	Blk., S. M. Lindsay survey, Wheeler County, TX				1867' FSL & 773' FEL	129	s	1993	215
20	Blk. A-7, H&GN Survey, Wheeler County, TX				sw	152	s	1993	247, 248
80	Blk. M-1, H&GN Survey, Wheeler County, TX				1980' FSL & EL	156	c & s	1975	253
570	Blk. 43, H&TC Survey, Ochiltree County, TX					162	c	1975	260
135	Blk. C, G&M Survey, Roberts County, TX					163	c	1993	261, 262
21	Blk. M1, H&GN survey, Hemphill county, TX				1867' FNL & FWL	176	s	1993	282
23	Blk. 42, H&TC Survey, Hemphill County, TX				1980' FSL & FEL	213	c	1993	327
6	J. Poitevent Survey, Wheeler County, TX				1980' FNL & 660' FWL	263	c	1975	401, 402
25	Blk. A1, H&GN Survey, Hemphill County, TX				2300' FNL & 2200' FWL	265	s	1993	404
25	Blk. A-4, H&GN Survey, Wheeler County, TX				2470' FNL & 1980' FWL	268	c	1975	408, 409
2	Blk. E, T&NO Survey, Wheeler County, TX				1324' FSL & 1328' FEL	274	s	1993	415

## Introduction

From 1955 to 1985, Dr. Thomas W. Amsden studied the Late Ordovician-Devonian in Oklahoma. He wrote and published many articles concerning the biostratigraphy and lithostratigraphy of the Hunton Group. Four of those publications contained 285 detailed core or sample descriptions from wells drilled in Oklahoma, Arkansas and the Texas Panhandle. The purpose of this open file report is to combine those descriptions into one publication. Each core or sample well contains the original description along with any subsequent review or modification to that description. The gamma ray curve for the Hunton Group is also included for each core or sample well, if available. If the gamma ray curve is not available, then an attempt was made to obtain a gamma ray curve from an offset well that should represent the section of the core or sample well.

The following are the four references in which the core or sample description were obtained along with Dr. Amsden's original introduction to those core or sample descriptions.

Kurt Rottmann

- 1) **Amsden, T. W.; and Rowland, T. L., 1965, Silurian stratigraphy of northeastern Oklahoma: Oklahoma Geological Survey Bulletin 105, 174 p., 20 pls.**

Rock cuttings of Silurian and Lower Devonian strata were studied from seventeen wells in Sequoyah, northwestern Haskell, McIntosh, and southeastern Muskogee Counties (text-fig. 3). The geographic location of each well is given in the introductory remarks accompanying the sample descriptions. The wells are assigned letters A through Q, as follows:

- A T. Jack Foster, 1 Mabee  
Sec. 15, T. 13 N., R. 25 E.  
Sequoyah County
- B W. B. Cleary, 1 Burke  
Sec. 13, T. 13 N., R. 24 E.  
Sequoyah County
- C T. L. Gober, 1 Ready  
Sec. 1, T. 13 N., R. 23 E.  
Sequoyah County
- D Lohman-Johnson Drilling  
Company, 2 Cook  
Sec. 8, T. 12 N., R. 24 E.  
Sequoyah County

- E Bruce Harris, 1 Cheek  
Sec. 19, T. 12 N., R. 25 E.  
Sequoyah County
- F Wheeler et al., 1 Snow  
Sec. 36, T. 12 N., R. 22 E.  
Sequoyah County
- G Indian Territory Illuminating  
Oil Company, 1 Blake  
Sec. 3, T. 10 N., R. 21 E.  
Haskell County
- H United States Smelting Refining  
and Mining Company, 1 Padgett  
Sec. 29, T. 13 N., R. 20 E.  
Muskogee County
- I Midco Oil Corporation, 1 Dunagan  
Sec. 31, T. 11 N., R. 19 E.  
Muskogee County
- J Bridgeview Coal Company,  
1 Williamson  
Sec. 2, T. 12 N., R. 18 E.  
McIntosh County
- K J. S. Wise, 1 Walker  
Sec. 18, T. 13 N., R. 18 E.  
Muskogee County
- L Ed Pauley, 1 Bennett  
Sec. 18, T. 10 N., R. 18 E.  
McIntosh County
- M Carter Oil Company, 1 Graham  
Sec. 3, T. 9 N., R. 16 E.  
McIntosh County
- N Bell Oil and Gas Company, 1 Grant  
Sec. 17, T. 11 N., R. 17 E.  
McIntosh County
- O Western Oil and Gas Company,  
1 Brandon  
Sec. 17, T. 11 N., R. 16 E.  
McIntosh County
- P Superior Oil Company, 1 Lackey  
Sec. 14, T. 12 N., R. 16 E.  
McIntosh County
- Q W. T. Campbell, 1 Haggard  
Sec. 6, T. 12 N., R. 16 E.  
McIntosh County

Numerous wells penetrating the Silurian and Lower Devonian strata have been drilled in this area, but only those with the best sample quality were chosen for investigation. Wells were omitted in which samples were mislabeled, critical intervals were missing, or cavings from the upper part of the hole masked the intervals of study.

This study is based primarily on a microscopic examination of well cuttings, including some thin sections prepared from selected rock chips. The examination was exclusively concerned with the lithologic character of the cuttings and thin sections, no taxonomic faunal data of any kind being utilized. The investigation was supplemented by the use of electric logs, which are available for all except wells B, C, G, I, L, and K (a radioactivity log was obtained for well K). Selected wells are graphically illustrated on text-figure 15, and photomicrographs of some thin sections are on plate XVIII.

Dipmeter surveys are not available for the wells studied, and therefore



only the apparent thickness of the Silurian and Lower Devonian units is given. For the most part the surface strata have a dip of 10 degrees or less, although steeper dips are developed locally. To what extent these local structures influence the determination of the subsurface thicknesses of the Silurian and Devonian rocks is uncertain. We are, however, inclined to think this effect is negligible because the thicknesses determined in the wells are comparable to those found at the surface and in the diamond cores.

*Correlation.*—The major lithostratigraphic units recognized at the surface exposures and in the diamond cores are also recognized with reasonable certainty in the well cuttings; these include the Chattanooga Shale, Sallisaw Formation, Frisco Formation, Marble City and Barber Members of the Quarry Mountain Formation, Tenkiller Formation, Blackgum Formation (including the Pettit Oölite Member), and the Sylvan Shale. It should be emphasized that this correlation is based upon an examination of well cuttings and thin sections prepared from well cuttings, supplemented by electric logs. Except for the Chattanooga and Sylvan Shales, these lithostratigraphic divisions cannot be distinguished solely upon the basis of electric logs.

*Determination of dolomite and insoluble-residue contents.*—The dolomite content of the samples was determined by the following method: the carbonate rock was treated with a 50-percent solution of formic acid and the dolomite visually estimated according to the following reactions:

- (1) dolomite — no reaction to weak reaction.
- (2) calcitic dolomite — reacts strongly but the rock does not break down.
- (3) dolomitic limestone — reacts strongly and the rock breaks down, leaving a substantial residue of dolomite crystals.
- (4) limestone — reacts strongly and the rock breaks down, leaving at most a small residue of dolomite crystals.

We estimate that the division between (4) limestone and (3) dolomitic limestone (text-fig. 4) falls at about 10 percent  $MgCO_3$ , and this is the basis for the limestone-dolomite distribution shown in text-figure 15.

The acid insolubles were determined by digesting the rock in a 20-percent solution of HCl and visually estimating the percentage of residue. If no percentage is noted in a description, little or no residue was left.

In using this report it should be kept in mind that the carbonate data given for the rotary and cable-tool wells represent a different degree of precision from that given for the diamond cores. The  $CaCO_3$ ,  $MgCO_3$ , and acid-insoluble contents of the latter were determined by chemical analyses, whereas in the well cuttings these have been determined solely by visual estimation.

Twenty-two thin sections of rock cuttings were prepared from the following wells of the units and at the depths indicated:

- 2) Amsden, T. W., 1975, *Hunton Group (Late Ordovician, Silurian, and Early Devonian) in the Anadarko basin of Oklahoma: Oklahoma Geological Survey Bulletin 121, 214 p., 15 pls.*

The Appendix includes the following sections: part I, Core Descriptions; part II, Sample Descriptions; part III, Chemical Analyses; part IV, Porosity and Permeability Tests. All wells cited are alphabetized by farm name, and all are located on panel 1, map A, and panels 5 and 6.

### Part I—Core Descriptions

Cores from 125 wells are described in this section. Almost all of these wells cored some part of the Hunton Group, although a few are included which cut only the Misener Sandstone. Most wells are on the shallow, peripheral margin of the basin (panel 1, map A; panels 5, 6). The deepest cored wells are in Custer County, with the Hunton cores generally at a depth of -12,000 feet to -14,000 feet; no cores are known below -15,000 feet (panel 5). With only a few exceptions, the cores were chemically analyzed in the chemical laboratory of the Oklahoma Geological Survey; these data are given in the section on Chemical Analyses (part III), and only summary information is included here. A number of porosity-permeability tests were made (see part IV of Appendix), and many thin sections were prepared, some of which are illustrated on plates 1-15. The repository is given for each core; unless otherwise stated, all thin sections and fossils are in the collections of the Oklahoma Geological Survey.

For each well the basic data include location, elevation, total depth (TD), and production information (Hunton only). The depth of formation tops is generally cited for the Woodford Shale, Hunton Group, and Sylvan Shale, and the source is given as follows: well-completion cards (CC), mechanical logs (GR logs), and cores (core).

The Hunton Group is divided into formations (wherever possible), and a brief lithologic and biostratigraphic description is given for each stratigraphic division recognized.

### Part II—Sample Descriptions

Hunton samples from 27 deep wells are described in the following pages. These samples are from the deep part of the Anadarko basin, mostly below the -15,000-foot Hunton structure contour, and from shallow fault blocks between the Wichita uplift and the deep basin. No biostratigraphic information has been obtained from the samples, and the investigation is concerned exclusively with the lithologic and lithostratigraphic character of the rocks. The samples were examined with a binocular microscope, supplemented by a petrographic examination of several hundred thin sections, most of which were stained with Alizarin Red-S to facilitate the distinction between calcite and dolomite. Using this method, it is possible to make a reasonable estimate of the dolomite present, and I have tried to distinguish three categories: (1) limestone (less than 10 percent  $MgCO_3$ ), (2) dolomitic limestone—calcitic dolomite, and (3) crystalline dolomite (approximately 28 percent or more  $MgCO_3$ ). The crystalline-dolomite texture is especially useful, as an examination of numerous thin sections of carbonate rocks that have been chemically analyzed shows this texture to be developed almost invariably in dolomites with 28 to 29 percent or more  $MgCO_3$  (see Silurian Dolomite section in main text). It is, of course, not possible to correlate precisely the visual estimates based on sample studies with the chemical analyses obtained from cores, and, accordingly, these data are kept separate on the lithofacies maps.

The sample descriptions are brief, as the main goal is to summarize those characters that are most useful in the present lithofacies investigation. These include (1) degree of dolomitization; (2) textural characteristics, such as organo-detrital, marlstone, etc.; (3) quantity and nature of the silt-size insoluble detritus; and (4) other features,

such as chert.

The thicknesses cited are taken from the drilling records, and it is assumed that variations in dip and (or) faulting have not introduced any significant errors. Where there is a discrepancy between the sample-log and the mechanical-log tops for the Woodford-Hunton and Hunton-Sylvan contacts, the latter has been used. Generally the data from these two sources are in reasonable agreement, although a few wells do appear to have a significant sample lag. However, all lithostratigraphic divisions within the Hunton Group have been determined from the samples.

All thin sections are in the collections of the Oklahoma Geological Survey, and the repository of the samples is noted for each well.

**3) Amsden, T. W., 1980, Hunton Group (Late Ordovician, Silurian, and Early Devonian) in the Arkoma basin of Oklahoma: Oklahoma Geological Survey Bulletin 129, 136 p., 12 pls.**

Cores from 13 wells and samples from 90 wells are described in this section. These wells are alphabetized by farm name and are shown on panels 1-4. Electric logs were examined for all wells (where available), but the principal study was by means of thin sections, supplemented in some cases by staining with Alizarin Red-S and chemical analyses. The Woodford-Hunton, Hunton-Sylvan, and Sylvan-Welling contacts are commonly well defined on the electric logs, and the tops for these units are taken from the logs unless otherwise noted. However, formation and member divisions within the Hunton are based on the samples and are so indicated (sample depth). Two of the cores described in the Appendix (1-5 Biller and 1 Brooks "B") are from wells in the Anadarko Basin and lie west of the area covered in this report. They are included because they provide information on the Frisco-Silurian boundary. Ten of the other cored wells are from eastern Oklahoma, and one, the 1 Western Coal & Mining Co., is from the Bonanza Gas Field in western Arkansas.

Most of the subsurface lithostratigraphic information provided in this report was obtained from samples from 90 wells. The samples were examined from the Woodford Shale through the Hunton Group, Sylvan Shale, and into the Welling Formation. The initial

examination was with a binocular microscope, but the basic data for the carbonate strata were obtained from approximately 800 thin sections prepared from the samples. I believe this method provides maximum lithostratigraphic information, although it does not furnish any biostratigraphic data that can be utilized in correlation.

Formation tops were obtained from the well-completion cards (CC); from mechanical logs, mostly spontaneous-potential logs (SP) and gamma-ray logs (GR); and from a study of cores and samples. The lithologic descriptions are based entirely on a study of the cores and samples, primarily by means of thin sections. Supplemental information is from chemical analyses prepared by David Foster, chemical laboratory, Oklahoma Geological Survey (OGS). The strata are assigned to formations where possible, and included is a brief lithologic summary. Biostratigraphic information is provided (where available) for the cored strata.

- 4) Amsden, T W., 1993, Appendix, Summary of Wells in the Anadarko basin: Oklahoma Geological Survey Map GM-34, 20 p., 2 pls.

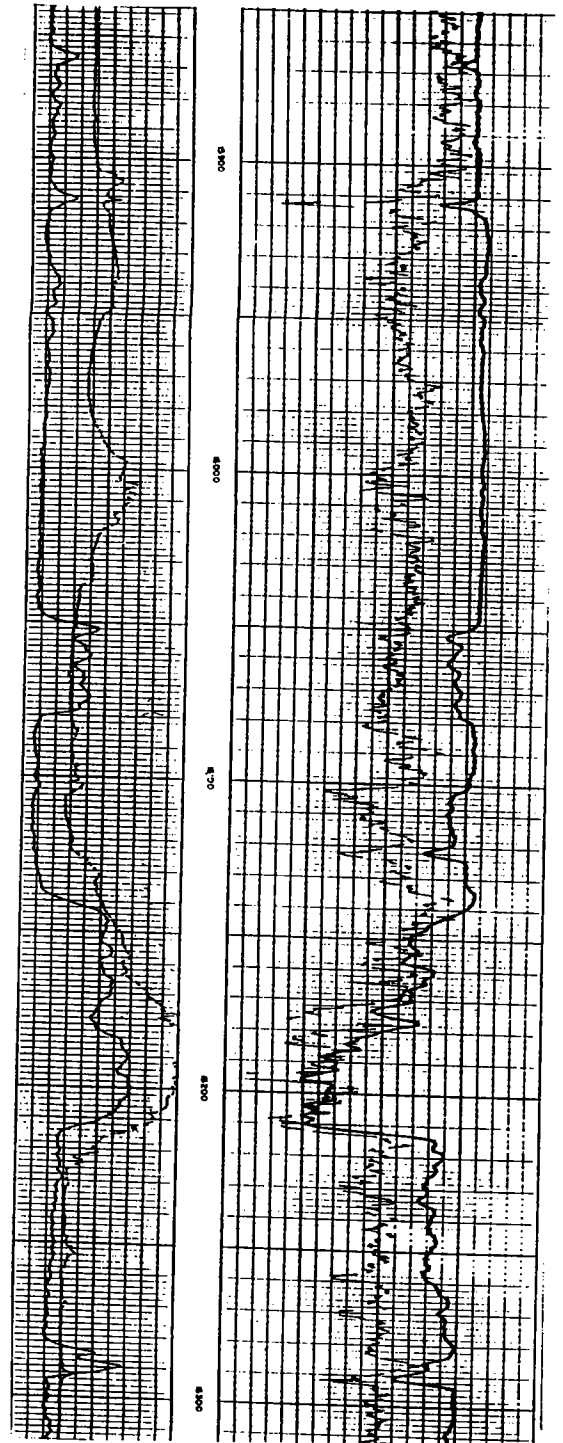
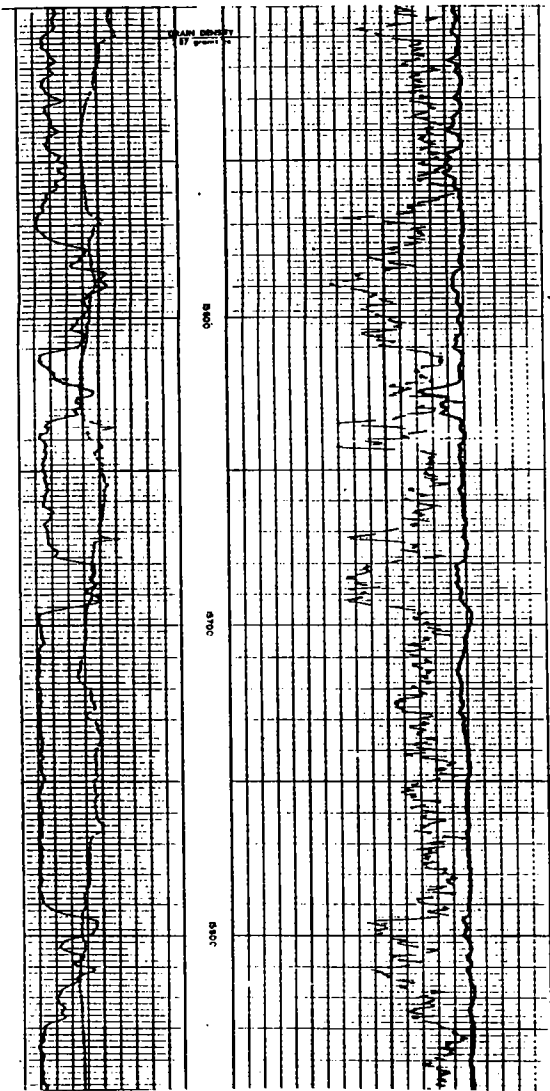
#### WELL SUMMARY

The following wells provided core and/or sample data for the PRE-WOODFORD SUBCROP MAP and STRATIGRAPHIC SECTIONS; they are alphabetized by farm name. Brief drilling statistics are provided for each well, along with a summary of the pertinent geological information. References to earlier publications are cited where appropriate.

For each well the basic data are location, elevation, total depth/formation, and completion date. The elevation is listed as ground level (GL), derrick floor (DF), and/or kelly bushing (KB); (unk) indicates that the specific source for the elevation (GL, DF, or KB) is unknown. If the total depth (TD) is not available (Na), the total tool usage (Ttu) is used. If the completion date is not available, then a plugging date (P) or drilling finished (df) will follow the date. The sources for the basic data in the well summary are previous reports (Amsden, 1960,1975,1980; Amsden and Barrick, 1988) and the Oklahoma Geological Survey's Natural Resources Information System (NRIS) Well-Completion File.

**HELMERICH & PAYNE INC. 1 ADKERSON** — C NE¼ sec. 28, T10N, R26W, Beckham County, Oklahoma; elevation GL 2,104 ft, DF 2,128 ft; TD 18,700 ft (Arbuckle?); completion 11/5/76.

Cored Hunton (includes Keel Oolite and upper Sylvan Shale; 16,100–16,140 ft); Hunton core and samples examined by Amsden, 1978. Hunton basal oolite heavily dolomitized (34–38% MgCO<sub>3</sub>). Samples examined from 15,580 ft (Pennsylvanian?) to TD (Arbuckle); 39 thin sections; lower samples (17,300–18,700 ft) contaminated?



GREENBRIAR 1 ALDRIDGE—NE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec.  
34, T. 11 N., R. 6 E., Seminole County, Oklahoma;  
elev. 900' DF (895' GL); TD 4550' (Ordovician); compl.  
6/23/52, D&A. Tops: Woodford 4111' (-3211') (SP  
log), Misener 4137' (-3237) (sample depth), Hunton  
4150' (-3250') (sample depth), Sylvan 4320' (-3420')  
(sample depth), Welling 4410' (-3410') (sample  
depth); Hunton thickness 170'. Samples examined  
from 4070' to 4430', good quality; 18 thin sections;  
samples, Oklahoma Well Sample Service, Shawnee,  
Oklahoma.

The upper 40' of the Hunton is an organo-detrital  
crinoid-bryozoan sparite with no detrital quartz or  
dolomite. This is similar to the uppermost Hunton  
beds in the 1 Boley (see this report and Amsden,  
1975b, p. 36, 81) and is here referred to the Frisco  
Formation. Underlying this formation is dolomitized  
pink crinoidal limestone, here referred to the Chim-  
neyhill Subgroup (?Clarita Formation). The lower-  
most beds are glauconitic dolomite (?Cochrane-  
?Blackgum beds). No oolite observed in this section.

*Woodford (Chattanooga) Shale* 4111'-4150' (SP log)  
4111'-4142' Black shale.

4142'-4165' (sample depths) Misener Sandstone.

Quartz sandstone with subangular to rounded  
quartz grains to 1.5 mm; minor carbonate cement.

*Hunton Group* 4150' (SP log)-4314' (sample depth)

4150'-4165' No samples.

4165'-4205' (sample depths) Lower Devonian;  
Frisco Formation. Organo-detrital crinoid-  
bryozoan sparite with no observed dolomite or  
quartz.

4205'-4314' (sample depths) Silurian; ?Chimney-  
hill Subgroup.

4205'-4310' (sample depths) ?Clarita Forma-  
tion. Moderately to heavily dolomitized pink  
crinoidal micrite grading into porous crystalline  
dolomite. The upper part (4210'-4255') is, for  
the most part, only moderately dolomitized; the  
lower part (4255'-4310') is more heavily dolomi-  
tized and includes considerable amounts of  
porous crystalline dolomite. The entire interval  
shows very little detrital quartz. Parts with  
considerable bryozoan debris along with the crin-  
oids.

4310'-4320' (sample depths) ?Cochrane  
(?Blackgum) Formation. Glauconitic dolomite  
with a few corroded crinoids; some pyrite, chert.

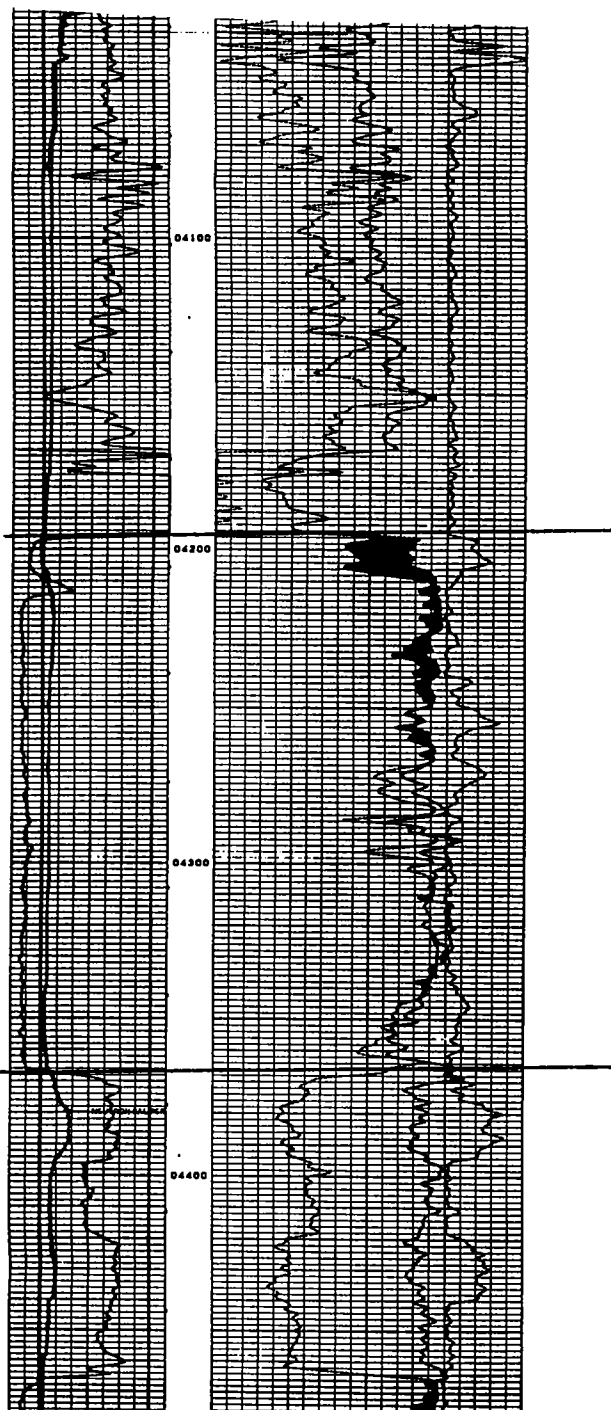
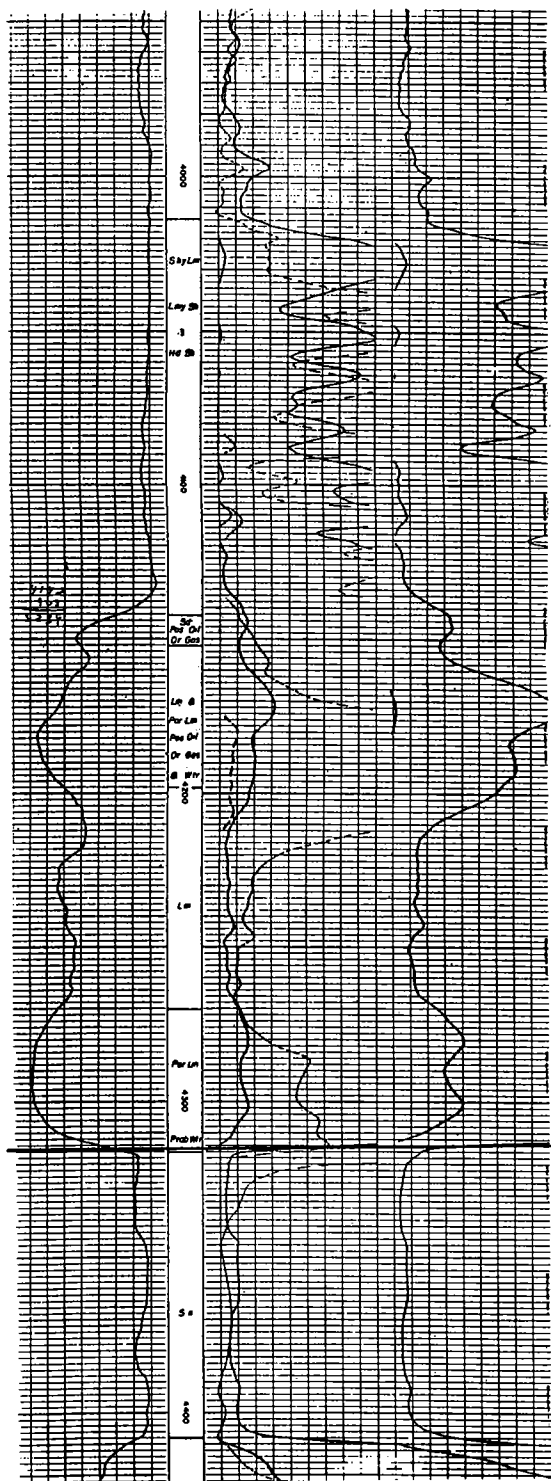
*Sylvan Shale* 4320'-4410' (sample depths)

*Welling Formation* 4410' (sample depth)

4420' (thin section) Organo-detrital limestone.

Greenbriar  
1 Aldridge  
NE NE NE  
sec. 34 T. 11 N., R. 6 E.  
Seminole County, Oklahoma  
KB 900'

Sullivan & Company  
1 Aldridge  
SW NE  
sec. 34 T. 11 N., R. 6 E.  
Seminole County, Oklahoma  
KB 936'



FRIDON PETROLEUM CO. (STEPHENS) 1 AMBRIS-  
TER—SE<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> sec. 7, T. 8 N., R. 10 E.,  
Hughes County, Oklahoma; elev. 834' DF (828' GL);  
TD 4452' (Ordovician); compl. 5/26/51, D&A. Tops:  
Woodford 4080' (-3246') (SP log), Hunton 4119'  
(-3285') (SP log), Sylvan 4248' (-3413') (SP log),  
Welling 4340' (-3506') (sample depth); Hunton  
thickness 129'. Samples examined from 4100' to  
4350', excellent quality; 7 thin sections; samples,  
Oklahoma Well Sample Service, Shawnee, Oklaho-  
ma.

The upper 15' of the Hunton is a crinoidal bryozoan sparite with no dolomite. This structure is provisionally referred to as the Frisco Formation on the basis of its stratigraphic position and lithology (cf. 1 Scott and 1 Hall). The underlying Hunton beds are moderately to heavily dolomitized pink crinoidal limestone with very little detrital quartz. The Hunton beds are here referred to the Chimneyhill Subgroup.

*Woodford (Chattanooga) Shale* 4080'-4119' (SP log)  
No Misener Sandstone observed.

*Hunton Group* 4119'-4248' (SP log)

4119' (SP log) -4135' (sample depth) Lower De-  
vonian; Frisco Limestone.

Light-gray organo-detrital crinoidal-bryozoan sparite. No quartz or dolomite observed.

4135' (sample depth) -4248' (SP log) Silurian;  
Chimneyhill Subgroup. Moderately to heavily do-  
lomitized pink crinoidal micrite with some sparite;  
includes byozoans along with some ostracodes,  
trilobites, and brachiopods. No detrital quartz ob-  
served.

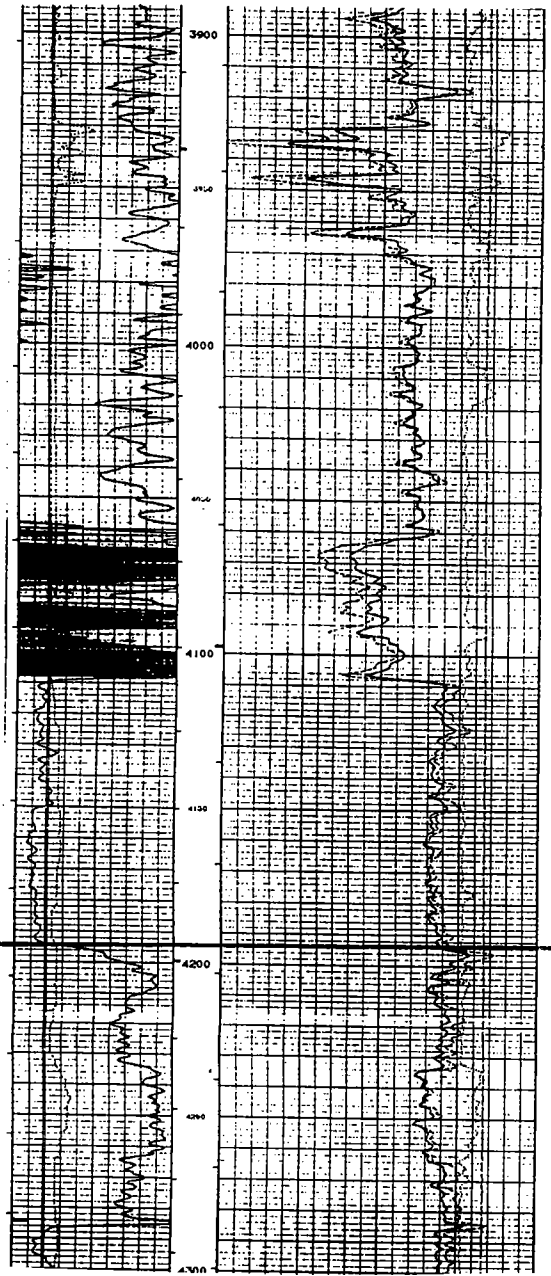
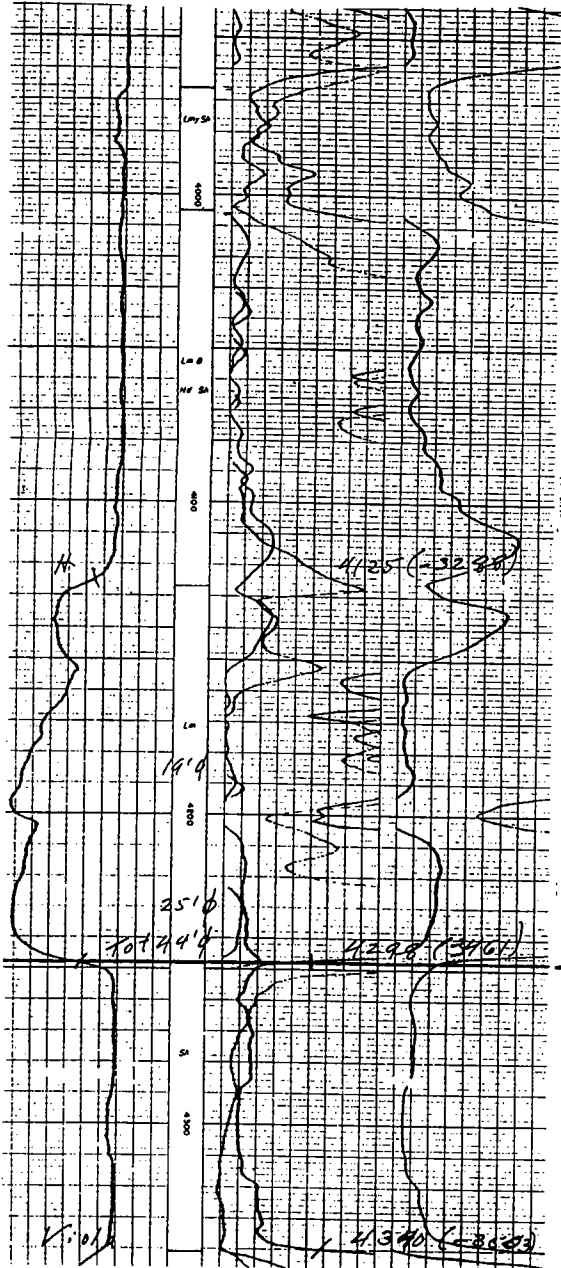
*Sylvan Shale* 4248' (SP log) -4340' (sample depth)

*Welling Formation* 4340' (sample depth)



Tridon Petroleum Co.  
 1 Ambrister  
 SE SE NW  
 Sec 7 T. 8 N., R. 10 E.  
 Hughes County, Oklahoma  
 KB 834'

W. M. Energy Corp.  
 1 Osborn  
 SW NE NW  
 sec. 7 T. 8 N., R. 10 E.  
 Hughes County, Oklahoma  
 KB 811'



OWELL, HOLLOWAY, & HOWELL 1 ANADARKO BASIN--  
NW¼NW¼SE¼ sec. 4, T. 9 N., R. 12 W., Caddo  
County, Oklahoma; elev. 1547'; TD 21,021'  
(Viola); compl. 10/8/56, D&A. Tops: Woodford  
19,385' (-17,838'), Hunton 19,520' (-17,973'),  
Sylvan 20,210' (-18,663'); Hunton thickness  
690'. Cuttings examined 19,450' (Woodford) to  
20,450' (Viola); borrowed from Oklahoma Well  
Sample Service, Shawnee, Oklahoma; good-  
quality samples; 14 thin sections prepared,  
stained with Alizarin Red-S.

The Hunton is essentially a limestone sequence resembling that of the Arbuckle Mountains region except that no recognizable Chimneyhill is present, the marlstone lithostratigraphic unit resting directly on the Sylvan Shale. The limestones carry some scattered euhedral dolomite crystals, becoming moderately abundant in the lower 200'; however, no crystalline dolomite is present, and in all probability the MgCO<sub>3</sub> content in no place exceeds 15% and the average must be 10% or less. Much silt-size angular quartz detritus is present in the marlstone, and this is probably accompanied by fine silt- and clay-size detritus; the quartz detritus appears to be comparable in amount to that of the Arbuckle Mountains sections. The dolomite crystals and quartz detritus are about the same size, mostly 0.05 mm or less. The lithologic sequence in the 1 Anadarko Basin is similar to that in the Lone Star 1 Baden and other deep wells in having an upper, light-gray organo-detrital limestone sequence underlain by a marlstone section (this is excluding the upper detrital carbonates, here assigned to the Misener). However, in the 1 Baden and other deep wells there is a light-colored organo-detrital limestone section at the base (Chimneyhill Subgroup), which is not recognizable in the 1 Anadarko Basin.

Woodford Shale 19,390'-19,520'

Dark shale.

Hunton Group 19,520'-20,210'

19,520'-19,780' ?Frisco Formation and (or)

?Fittstown Member, Bois d'Arc Formation.

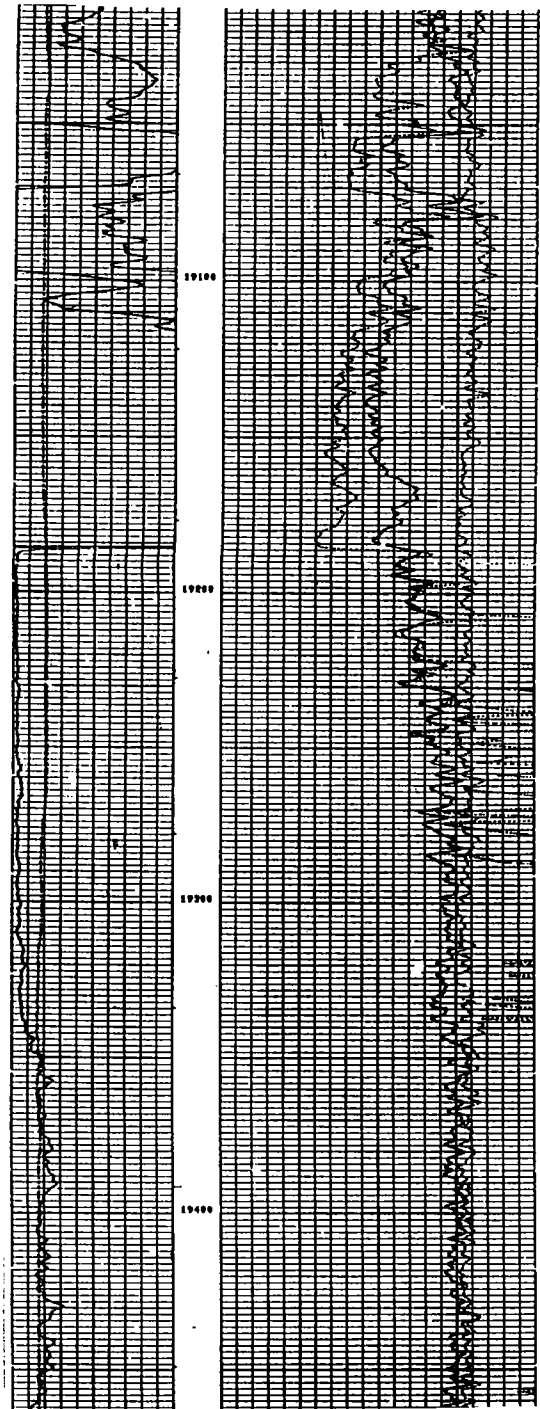
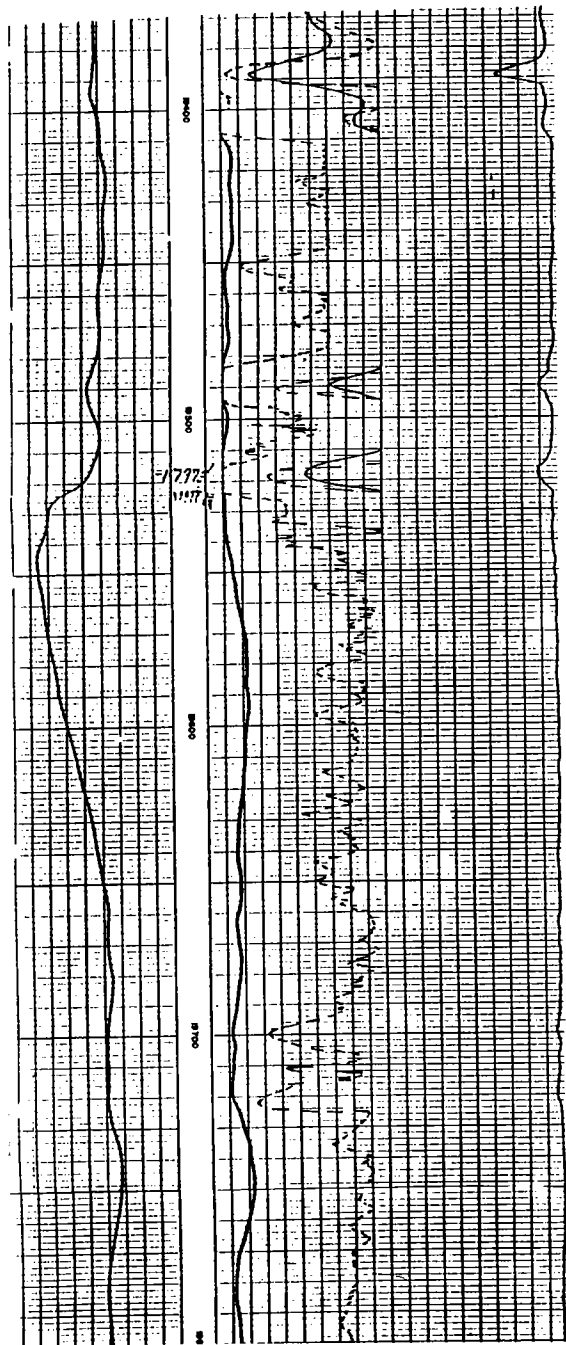
Light-gray organo-detrital limestone with very little quartz detritus or dolomite.

Fossils with much shelly debris, including several bryozoans, and many pelmatozoan plates.

19,780'-20,210' ?Henryhouse and (or) Haragan Formation. Dark-gray marlstone. Matrix is finely divided calcite with clay- and silt-size insoluble detritus. Euhedral crystals of dolomite are scattered through matrix; dolomite crystals and quartz detritus have a similar size range, with a few up to 0.10 mm, but most about 0.05 mm or less. This unit is similar to marlstones in Arbuckle Mountains-Criner Hills.

Howell, Holloway, & Howell  
1 Anadarko Basin  
NW NW SE  
Sec 4 T. 9 N., R. 12 W.  
Caddo County, Oklahoma  
KB 1547'

Helmerich & Payne, Inc.  
1 Phifer  
sec. 24 T. 10 N., R. 13 W.  
Caddo County, Oklahoma  
KB 1461'



Howell, Holloway, & Howell  
1 Anadarko Basin  
NW NW SE  
Sec 4 T. 9 N., R. 12 W.  
Caddo County, Oklahoma  
KB 1547'

**Continued**

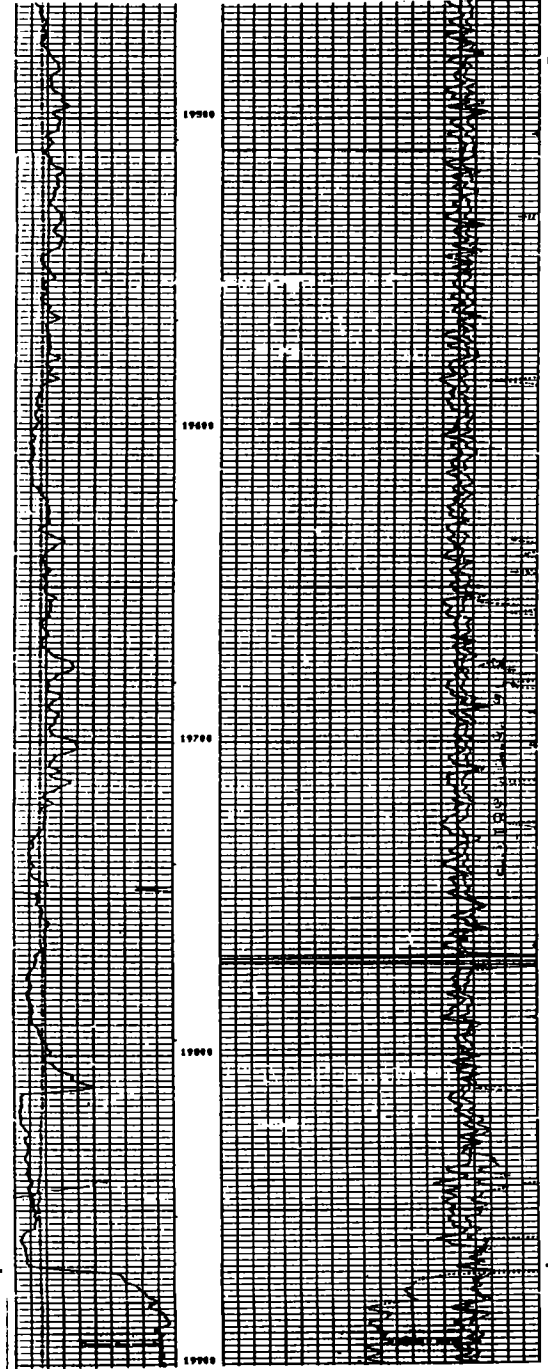
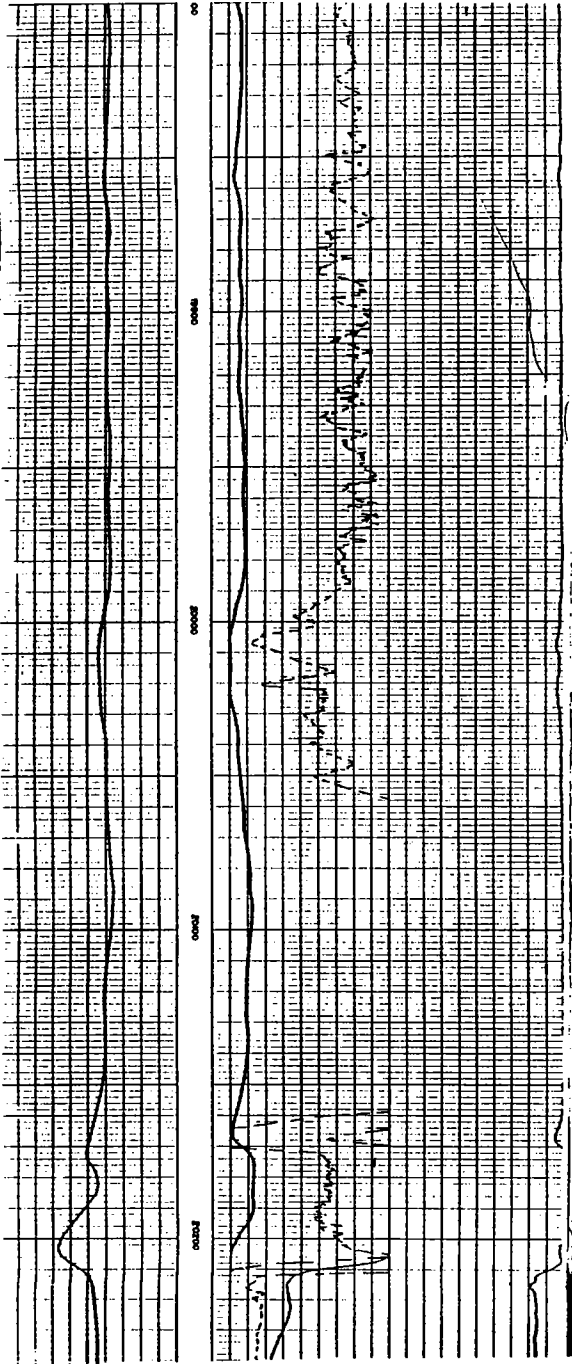
Lower 190' is similar to upper part, but with some increase in quantity of quartz detritus and dolomite; quantity of dolomite in some samples is considerable, although it never approaches a crystalline texture. Some mica is present.

Sylvan Shale 20,210'-20,420'

Dark shale.

Viola Limestone

Organo-detrital limestone with very little quartz or dolomite.

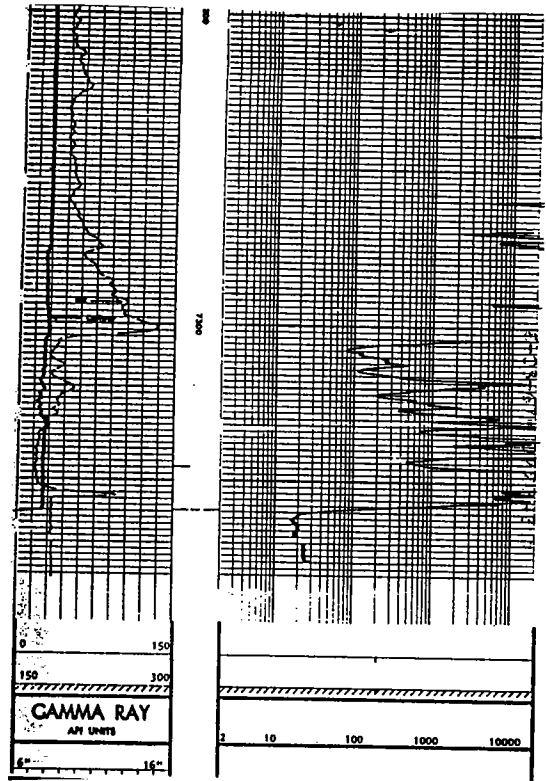


COX 1-A ANNIS--C NW $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 3, T. 26 N.,  
 R. 21 W., Harper County, Oklahoma; elev.  
 1791'; TD 7365' (Hunton); compl. 9/1/67,  
 D&A. Tops: Hunton 7296' (-5505') (core).  
 Cored 7269'-7365' (Hunton 7296'-7365'); 3  
 thin sections; chemical analyses; OU Core  
 Library.

Woodford Shale

Hunton Group 7296'-7365' (TD)

- ?Silurian; ?Chimneyhill Subgroup. no diagnostic fossils observed; tentatively assigned to Chimneyhill on basis of lithology and stratigraphic position (near truncated margin of Hunton; see panel 6).
- 7269'-7304' Gray crystalline dolomite with much chert. Very little detrital quartz; no fossils observed. Some visible porosity.
- 7304'-7322' Gray crystalline dolomite with very little detrital quartz; no fossils observed; some visible porosity. 7269'-7322' averages 25.36% MgCO<sub>3</sub>.
- 7322'-7365' (TD) Pinkish-gray organo-detrital limestone; minor shelly debris, mostly crinoidal material. Very little detrital quartz. Patches of crystalline dolomite, but this interval is mostly low-magnesium limestone (average MgCO<sub>3</sub> 2.30%).



RIDDLE ET AL. 1 ATTERBERRY (FEE)—sec. 11, T. 3 N., R. 5 E., Pontotoc County, Oklahoma; cored 3932'-3937' (all Hunton); chemical analyses, OU Core Library (no other information available). (Amsden, 1975b, p. 79.)

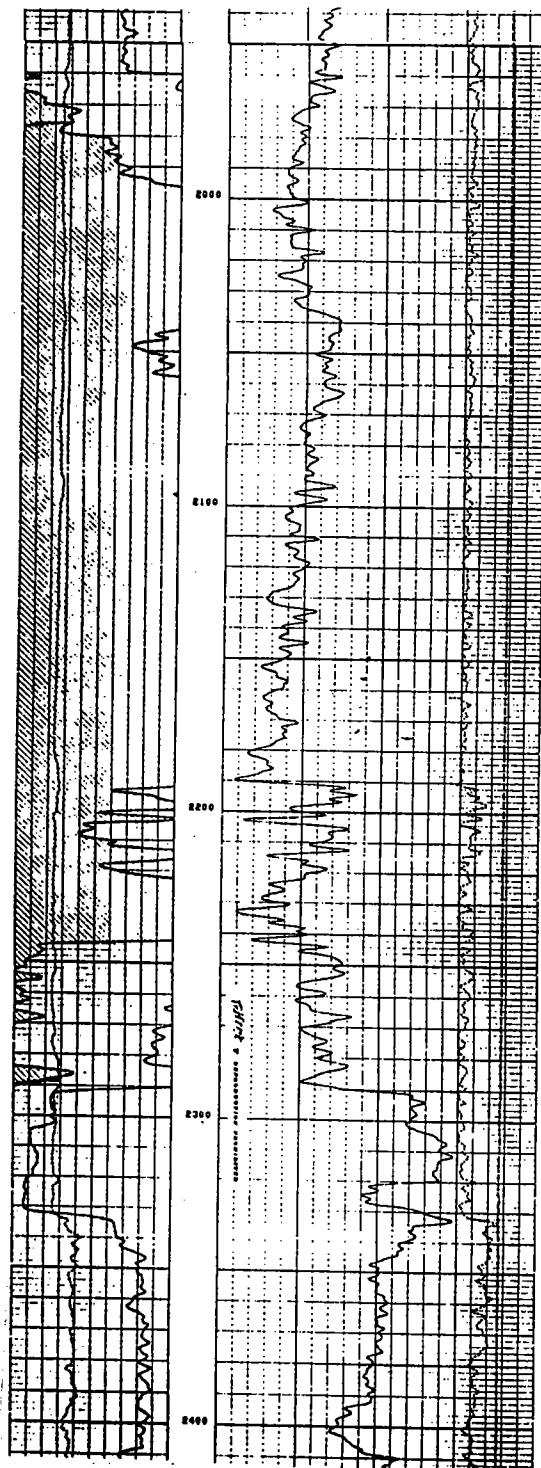
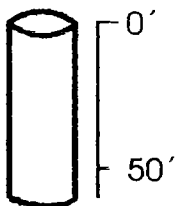
*Hunton Group* 3932'-3937' (core) Lower Devonian; Haragan Formation.

3932'-3937' Gray fossiliferous dolomitic marlstone; averages 19.35% MgCO<sub>3</sub>, 18.69% HCl-acid insolubles. Brachiopods: *Coelospira virginia*, *Atrypina hami*, *Levenea* sp., *Atrypa* sp.

Riddle ET AL  
1 Atterberry (Fee)  
Sec. 11, T. 3 N., R. 5 E.  
Pontotoc County, Oklahoma  
elev. unknown

Oklahoma Petroleum  
1 Lee  
W/2 SE  
Sec. 9, T. 3 N., R. 5 E.  
Pontotoc County, Oklahoma  
elev. 1013'

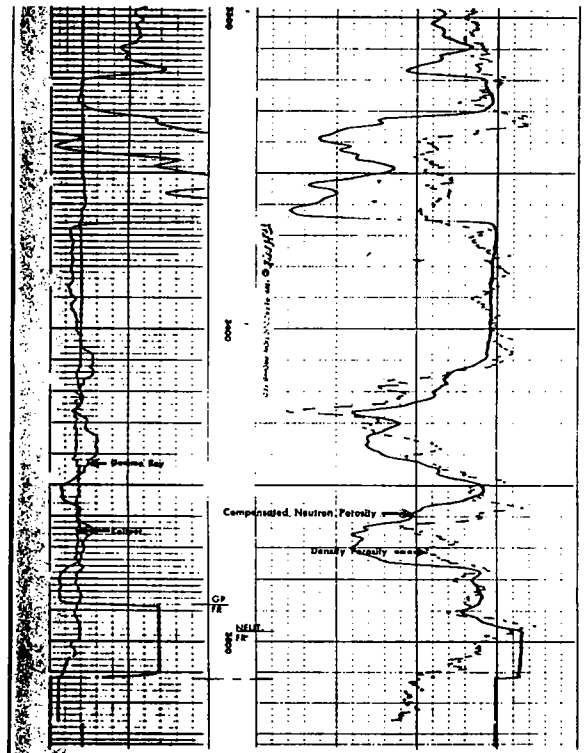
Log not  
available





STEPHENS 1 B & F RANCH—SE<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub>  
 sec. 23, T. 11 N., R 24 E., Sequoyah County, Oklaho-  
 ma; elev. 731' DF; TD 3575'; compl. 11/34/76,  
 Hunton gas production reported. Tops: Hunton 3416'  
 (-2685') (CC); no other tops available at the time  
 this report was prepared.

I have not examined the samples from this well and  
 have no information other than that reported on the  
 well-completion card. The card states that the upper  
 2' of the Hunton was perforated. See remarks in  
 text, Frisco Formation, Frisco Oil and Gas Production.



LONE STAR 1 BADEN--C SE $\frac{1}{2}$  sec. 28, T. 10 N., R. 22 W., Beckham County, Oklahoma; elev. 1953'; TD 30,050' (Viola); compl. 1972, no Hunton production reported. Tops: Woodford-Misener? contact 28,450' (-26,497'), Hunton 28,610' (-26,657'), Sylvan 29,760' (-27,807'), Viola 29,970' (-28,017'); Hunton thickness 1,150' (1,310' incl. Misener). Samples examined from 28,400' (Woodford) to 30,050' (TD; Viola); good quality; 26 thin sections prepared; samples borrowed from Lone Star.

The upper calcareous siltstone and shale lying just beneath the Woodford Shale (28,450'-28,610') is tentatively referred to the Misener, and the Hunton is defined to include the strata from 28,610' to the Sylvan Shale at 29,760'. Described in this manner, the Hunton rocks have a close resemblance in lithologic character and lithostratigraphic sequence to the Hunton Group in the Arbuckle Mountains and Criner Hills, the principal difference being thickness, with the 1 Baden totaling 1,150' (assuming no structural anomaly) as opposed to about 450' maximum in the outcrop area. The basal Hunton strata (29,580'-29,760') that rest directly on the Sylvan Shale consist of bioclastic limestones (including an oolite at the base) similar to the Chimneyhill Subgroup of the outcrop area; this is overlain by a marlstone sequence similar to that of the Haragan-Henryhouse (28,730'-29,580'), and this in turn is overlain by a biosparite resembling the Bois d'Arc (Fittstown Member)-Frisco Formations (28,610'-28,740') of the Arbuckles. The dolomite content is low in most parts of this section, being in the form of scattered dolomite crystals that at no place grade into a crystalline dolomite; the MgCO<sub>3</sub> content is probably everywhere less than 20%, and for the section as a whole I estimate less than 10%. There is no faunal evidence bearing on the age of these strata, although the lithostratigraphic sequence when compared to the Arbuckle Mountains suggests that the upper biosparites represent Early Devonian (see panel 10, sections C-C').

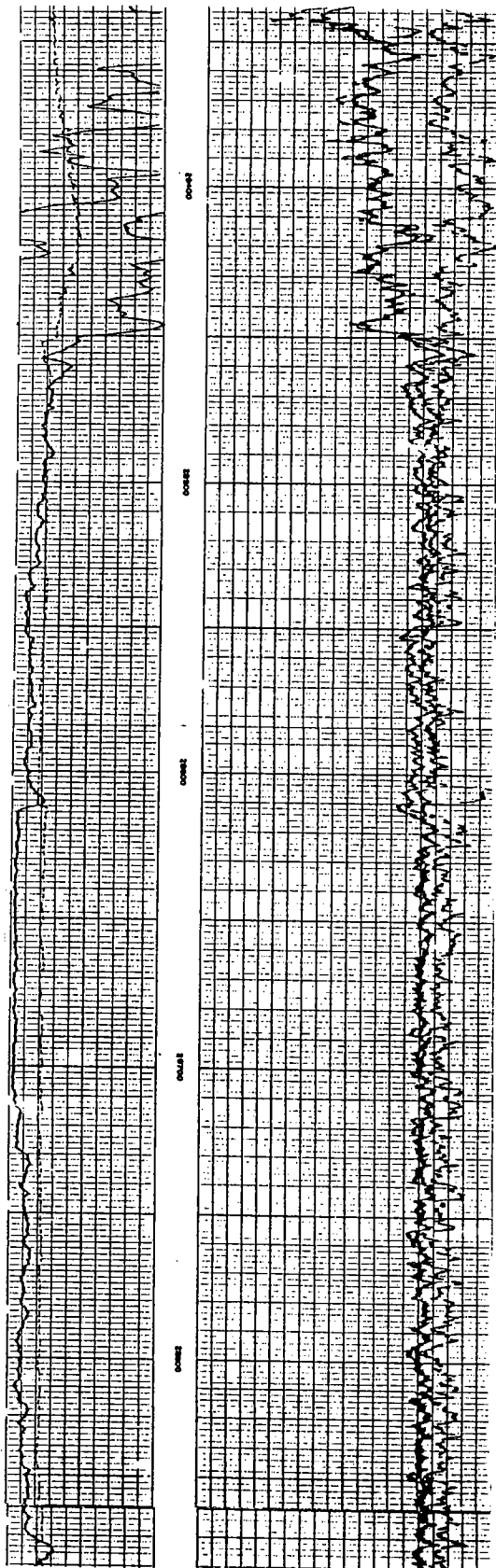
Woodford Shale

Misener? Sandstone 28,450'-28,610'

Dark-gray fine-grained, silty dolomite? Many dolomite crystals, in places grading into crystalline dolomite. Scattered angular, silt-size quartz grains and some mica. Little or no fossil debris.

Hunton Group 28,610'-29,760'

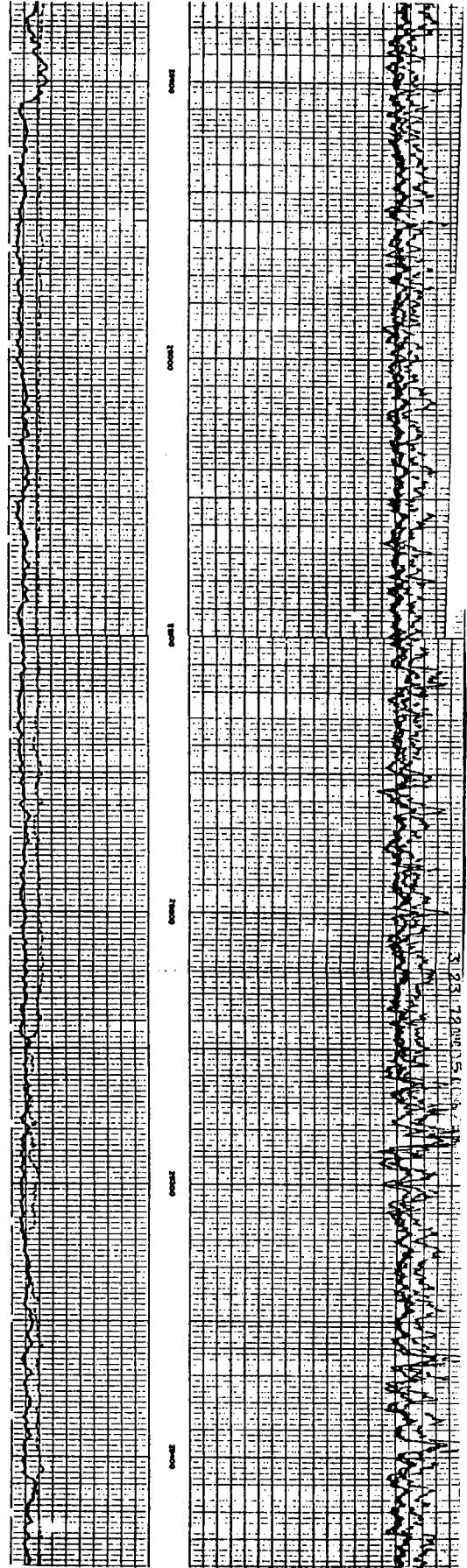
28,610'-28,740' ?Frisco Formation and (or) Fittstown Member, Bois d'Arc Formation. Light-gray organo-detrital limestone; shelly debris and pelmatozoan plates, mostly with spar cement. Very little dolomite. Some solution and recrystallization.



Lone Star  
1 Baden  
C SE  
Sec. 28, T. 10 N., R. 22 W.  
Beckham County, Oklahoma  
KB 1953'

Continued

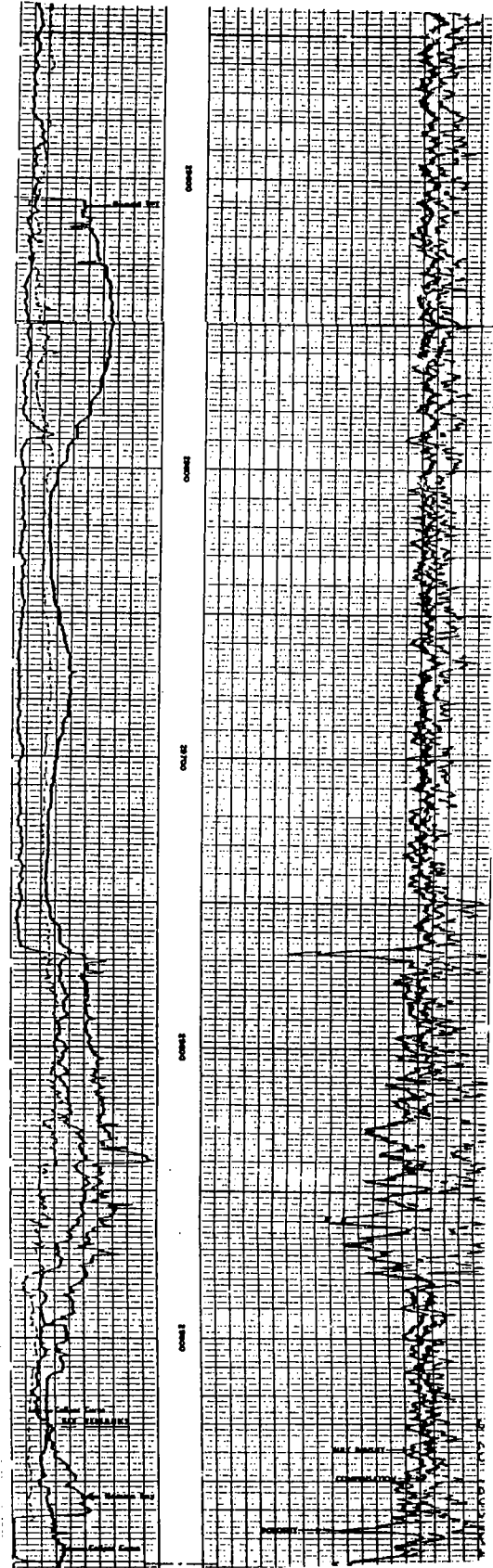
28,740'-29,580' ?Haragan and (or) Henryhouse  
Formation. Dark-gray marlstone with much  
silt-size, angular quartz detritus and some  
mica. Scattered fossils, including shelly  
debris and pelmatozoan plates; in places  
with numerous ostracodes. Scattered dolo-  
mite crystals, none approaching a crystal-  
line dolomite.



Lone Star  
1 Baden  
C SE  
Sec. 28, T. 10 N., R. 22 W.  
Beckham County, Oklahoma  
KB 1953'

Continued

29,580'-29,760' ?Chimneyhill Subgroup.  
Light-gray to pinkish-gray organo-detrital  
biosparite. Ostracodes, trilobites, and  
other shelly material along with many pel-  
matozoan plates. Only minor dolomite and  
very little quartz detritus. Basal 10'  
oolitic, ooids having both concentric and  
radial structure (?Keel Formation).  
Sylvan Shale 29,760'-29,970'  
Viola Limestone 29,970'-30,050' (TD)  
Dark biosparite with very little quartz or  
dolomite.



✓ PHILLIPS PETROLEUM CO. 1-A BAILEY — 1,320 ft FSL & 1,320 ft FWL, Sec. 9, Blk. A-5, H&GN Survey, Wheeler County, Texas; elevation 2,830 ft (unk); TD 13,863 ft; completion 1/19/72.

Well samples examined basal Woodford, Hunton, upper Sylvan. Described in Amsden (1975, p. 107). *Illustrated on PLATE 2, STRATIGRAPHIC SECTIONS D-D' and D-D''.*

PHILLIPS 1-A BAILEY--1320' FSL & 1320' FWL sec. 9, Blk. A-5, H&GN Survey, Wheeler County, Texas; elev. 2830'; TD 13,863'; compl. 1/19/72; Woodford-Hunton contact 11,990'; Hunton-Sylvan contact 12,310'; Hunton thickness 318'. Well samples borrowed from Phillips, examined from basal Woodford beds through Hunton and into Sylvan; sample quality good. Seven thin sections prepared, stained with Alizarin Red-S.

Hunton rocks in this well are similar to those in the nearby Phillips 1-C Lee (see panel 10, stratigraphic section B-B') although slightly thinner. The upper limestone in the 1-A Bailey is a low-magnesium stone like that in the 1-C Lee, with which it is probably at least in part correlative. The basal oolite, which is well developed in the 1-C Lee, was not observed in the 1-A Bailey. On the basis of lithostratigraphic similarity and thickness I provisionally assign all of the Hunton rocks in the 1-A Bailey to the Silurian; I correlated the upper part with the *Kirkidium* biofacies (illustrated, panel 10, C-C').

Woodford Shale

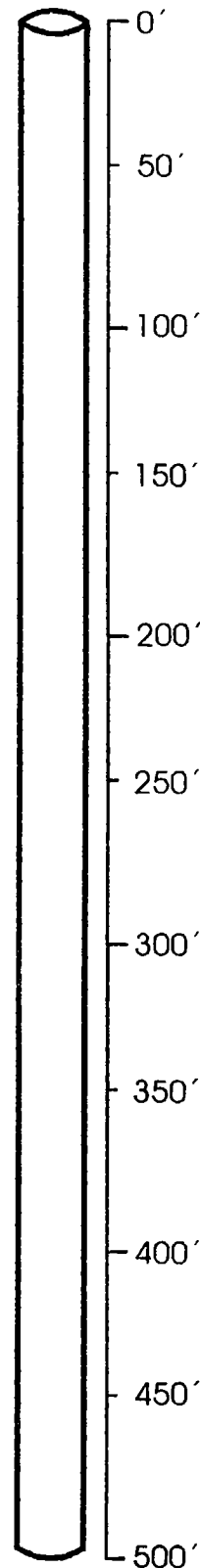
Hunton Group

11,990'-12,190' ?Silurian; ?*Kirkidium* biofacies, at least in part. Light-gray to pinkish-gray organo-detrital limestone; partly micrite, partly spar cement. This is a very low-magnesium limestone with almost no dolomite; also very low in detrital quartz.

12,190'-12,310' ?Chimneyhill Subgroup. Gray crystalline dolomite with very little detrital quartz. Considerable light-colored chert, at least in part fossiliferous.

Sylvan Shale

Log not available



GRAVES 1-A BARTHOLET—SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 8, T. 14 N., R. 17 E., Muskogee County, Oklahoma; elev. unknown; TD 3044' (Ordovician); compl. 10/4/66, no Hunton production reported. Tops: Hunton 2640' (sample depth), Sylvan 2655' (sample depth), Welling 2695' (sample depth), Fite 2695' (sample depth); Hunton thickness 15'. Samples examined from 2550' to 2730', satisfactory quality; 8 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma. This well drilled as W. D. Grant and completed 11/18/43; it was taken over by Bartholet for final completion 10/4/66.

This well includes only 15' of Hunton strata, here assigned to the Chimneyhill Subgroup (?Blackgum Formation) on the basis of stratigraphic position, lithology, and thickness. It is weakly to heavily dolomitized.

*Woodford (Chattanooga) Shale*

*Hunton Group* 2640'-2655' (sample depths)  
2640'-2655' (sample depths) Silurian; Chimneyhill Subgroup, ?Blackgum Formation. The upper 5' is weakly dolomitized glauconitic crinoidal micrite with chert; very little detrital quartz. The basal 10' is porous crystalline dolomite with some chert. No detrital quartz observed.

*Sylvan Shale* 2655'-2695' (sample depths)

*Welling Formation* 2695'-2700' (sample depths)  
2695'-2700' (thin section) Organo-detrital pelmatozoan sparite with some pellet limestone as below; no detrital quartz observed.

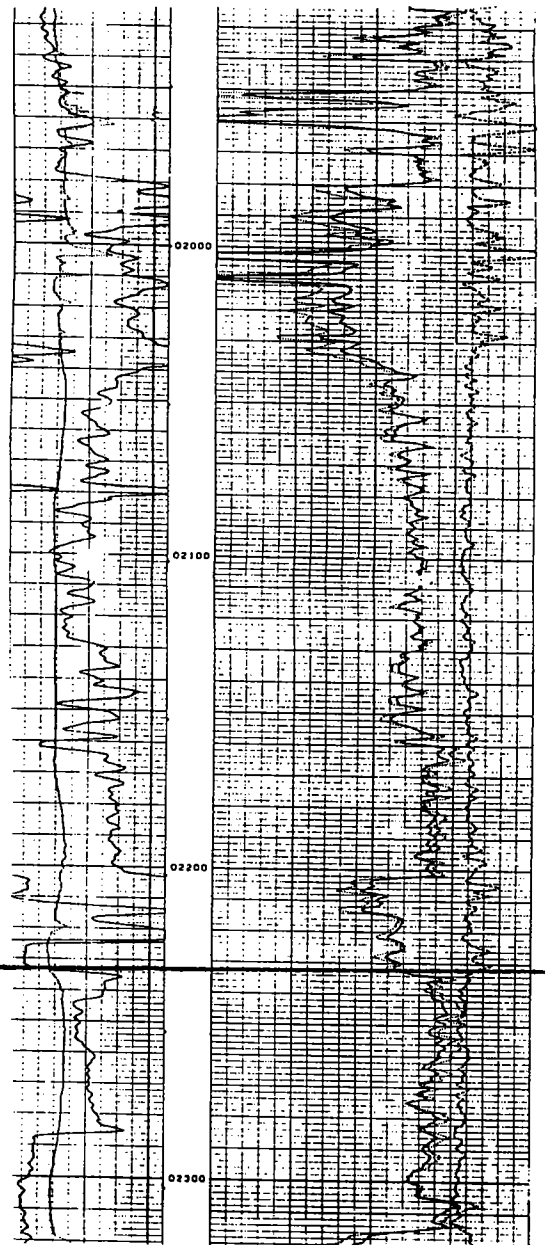
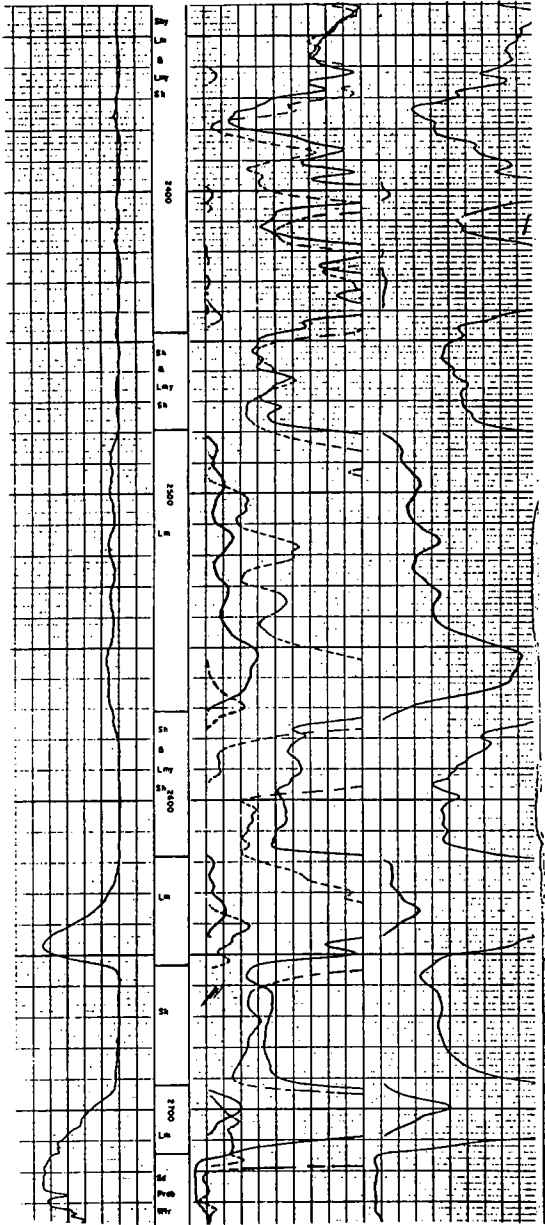
*Fite Limestone* 2695' (sample depth)

2700'-2705' (thin section) Pellet limestone with some spar cement, and dense ?algal limestone.

2710'-2715' (thin section) Crystalline dolomite with angular to subrounded detrital quartz grains to 0.5 mm.

W. B Grant  
1 Bartholet  
SW SW SW  
Sec 8 T. 14 N., R. 17 E.  
Muskogee County, Oklahoma  
KB 572'

Baruch-Foster Corp.  
1 Bishop  
SW SE NW  
Sec 6 T. 14 N., R. 17 E.  
Muskogee County, Oklahoma  
KB 652'



GOODNIGHT 1 BARTON—SE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> sec. 13, T. 7 N., R. 4 E., Pottawatomie County, Oklahoma; elev. 910' DF; TD 4133' (Simpson); compl. unknown, Hunton production reported (perforated 3574'-3594', 3753'-3763'). Tops: Hunton 3580' (-2660') (sample depth), Sylvan 3800' (-2890') (sample depth), Welling 3890' (-2980') (sample depth), Bromide 3910' (-3000') (sample depth); Hunton thickness 220'. Samples examined from 3530' to 3930'; inferior-quality samples with considerable contamination; 16 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

Although there is some sample contamination, a reasonably clear lithostratigraphic Hunton sequence can be established. The uppermost strata are organo-detrital ?limestones (?Lower Devonian; ?Frisco and/or ?Fittstown), underlain by marlstone (?Lower Devonian, ?Upper Silurian, ?Haragan and/or ?Henryhouse Formation) and with a basal pink crinoidal section (Silurian; Chimneyhill Subgroup). The Chimneyhill is relatively thin (60') compared to that present in the 3 Richardson (120') about 4 miles to the west. The cause of this apparent thinning is unknown. Hunton rocks in the 1 Barton are almost entirely low-magnesium limestones, whereas the lower part of the Hunton in the 3 Richardson is moderately to heavily dolomitized.

*Woodford (Chattanooga) Shale*

No Misener Sandstone observed.

*Hunton Group 3580'-3800'* (sample depths)

3580'-3600' (sample depths) ?Lower Devonian; ?Frisco Formation, ?Fittstown Member; Bois d'Arc Formation. Organo-detrital grain-supported sparite with minor micrite cement. Little or no detrital quartz or dolomite.

3600'-3740' (sample depths) Silurian; Lower Devonian; ?Henryhouse-Haragan Formations undifferentiated. Fossiliferous marlstone; crinoids, ostracodes, and other shelly debris. Scattered sub-angular detrital quartz grains, rarely exceeding 0.1 mm. Only scattered crystals of dolomite.

3740'-3800' (sample depths) Silurian; Chimneyhill Subgroup. No glauconitic limestone or oolite observed. Pink crinoidal micrite with minor spar. In addition to crinoid plates, there are ostracodes, bryozoans, and other shelly debris. Only weakly dolomitic; very little detrital quartz.

*Sylvan Shale 3800'-3890'* (sample depths)

*Welling Formation 3890'-3910'* (sample depths)

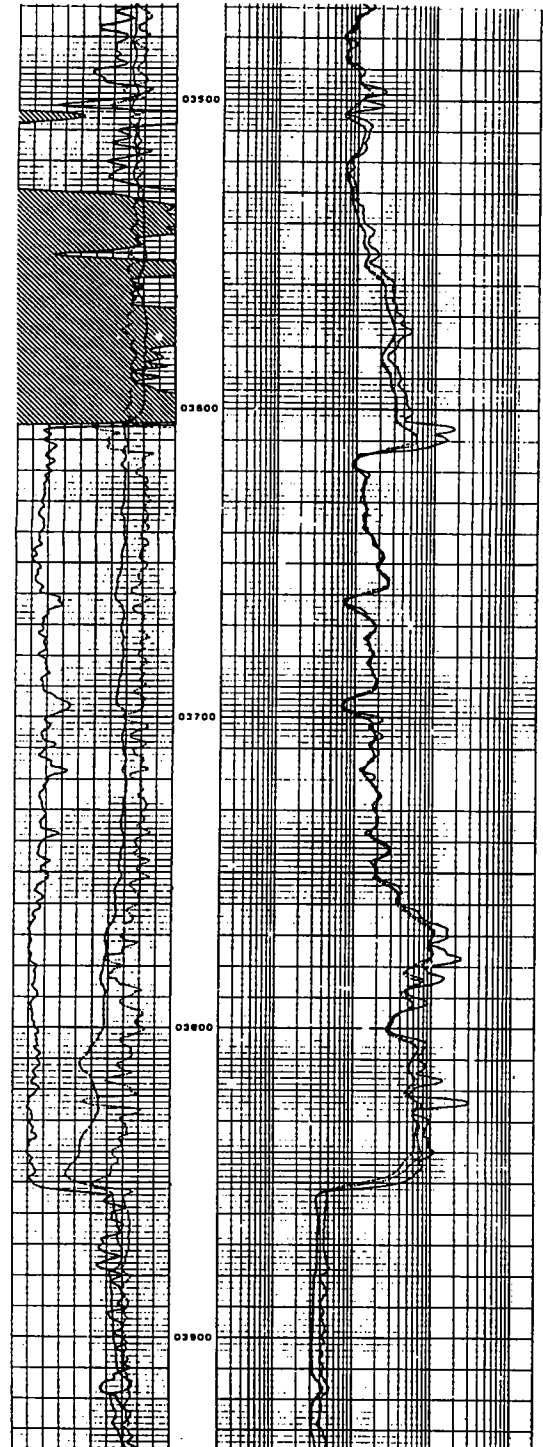
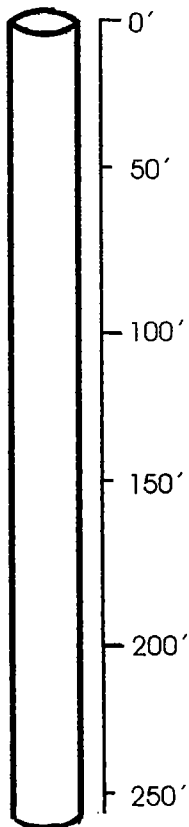
3895'-3900' (thin section) Organo-detrital sparite and micrite; no detrital quartz or dolomite observed.



Goodnight  
1 Barton  
SE NE NW  
Sec 13 T. 7 N., R. 4 E.  
Pottawatomie County, Oklahoma  
KB 910'

Anthony G. Sharp  
2 Hope  
SE SE NE  
Sec 13 T. 7 N., R. 4 E.  
Pottawatomie County, Oklahoma  
KB 907'

Log not  
available



JONES 1 BARTOW--C SW $\frac{1}{4}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 23, T. 23 N.,  
 R. 18 W., Woodward County, Oklahoma; elev.  
 1999'; TD 9155' (Sylvan); compl. 10/11/68,  
 D&A. Tops: Woodford (CC) 8818' (-6819'),  
 Hunton (CC) 8844' (-6845'), Sylvan (CC) 9128'  
 (-7129'); Hunton thickness 284'. Cored 8852'-  
 8907' (all Hunton); 2 thin sections, chemical  
 analyses; OU Core Library.

Cored 8,852-8,907 ft (all Hunton). Described in Amsden  
 (1975, p. 79). The 1 Bartow cored the upper 52 ft of Hunton  
 strata comprising heavily dolomitized (9 samples average  
 36.5% MgCO<sub>3</sub>) skeletal carbonate with many corals, stro-  
 matoporoids, algae?, tetracorals, tabulates, crinoids, ostra-  
 codes, bryozoans, etc.; samples from the underlying Hun-  
 ton beds (9 thin sections) show a moderately to heavily  
 dolomitized fossiliferous limestone. *Illustrated on* PLATE 2,  
 STRATIGRAPHIC SECTION B-B'.

Woodford Shale 8818'-8844'

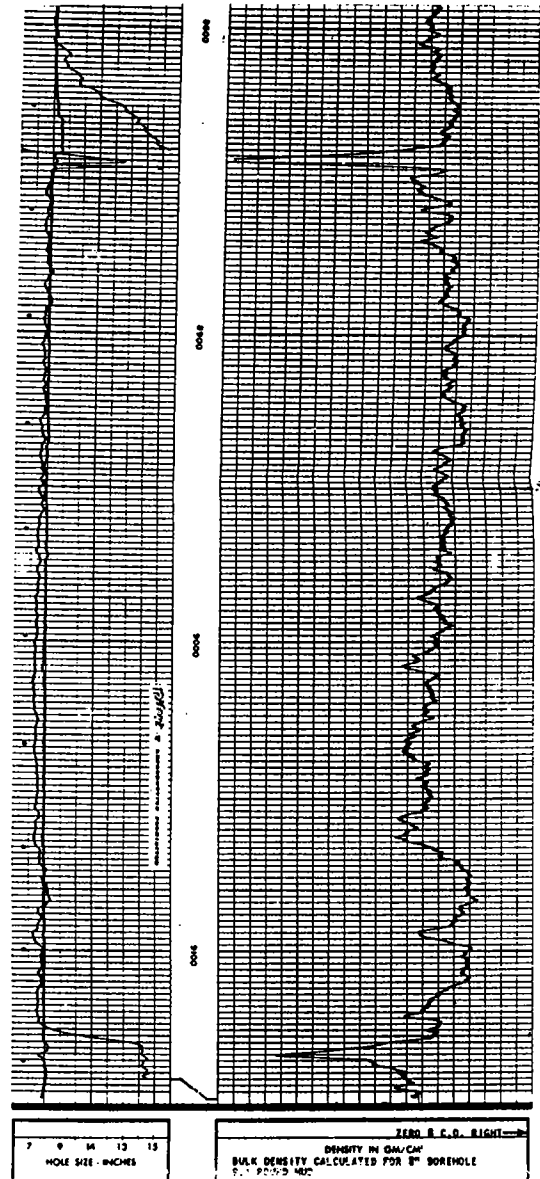
Hunton Group 8844'-9128'

?Silurian; ?Kirkidium biofacies. No diagnostic  
 fossils observed; tentatively assigned to  
 Kirkidium biofacies on basis of lithologic  
 character, stratigraphic position, and  
 thickness with respect to other wells in  
 this area; see panel 10, section A-A'.

8852'-8907' Gray crystalline dolomite with  
 nodules of vitreous chert. Minor insoluble  
 detritus. Poorly preserved brachiopod  
 (?pentamerid) at 8868'.

8907'-9128' No core.

Sylvan Shale 9128'



AMERICAN 4-A BAYNE--C SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 16, T. 5 N.,  
R. 6 E., Pontotoc County, Oklahoma; elev. 962';  
TD 2808' (Sylvan); compl. 8/10/70, Hunton  
production (perforated 2720'-2745', 2785'-  
2795'). Tops: Woodford (CC) 2379' (-1417'),  
Hunton (CC) 2606' (-1640'), Sylvan (CC) 2795'  
(-1833'); Hunton thickness 193'. Cored 2687'-  
2745.5' (all Hunton); 2 thin sections;  
chemical analysis; OU Core Library.

Woodford Shale 2379'-2602'

Hunton Group 2602'-2795'

Silurian; Henryhouse Formation. Fossils,  
trilobites: Dalmanites rutellum at 2688'  
2712' (identified by K. S. W. Campbell).  
2686'-2737' Greenish-gray marlstone with  
scattered fossils. Silt-size subangular  
quartz detritus (average insolubles 23.60%)  
and minor scattered dolomite crystals  
(average MgCO<sub>3</sub> 8.95%).  
?Chimneyhill Subgroup. No diagnostic fossils  
observed, assigned on basis of lithology  
and stratigraphic position.  
2737'-2745' Pinkish-gray organo-detrital  
limestone with micrite and sparite cement.  
Very little detrital quartz (average insol-  
ubles 6.20%) and a few irregular bodies of  
dolomite (average MgCO<sub>3</sub> 5.20%).  
2745'-2795' No core; samples not studied.  
Sylvan Shale 2795'

AMERICAN 4-A BAYNE--C SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 16, T.  
5 N., R. 6 E., Pontotoc County, Oklahoma; elev. 962';  
TD 2808' (Sylvan); compl. 8/10/70, Hunton produc-  
tion (perforated 2720'-2745', 2785'-2795'). Tops:  
Woodford 2379' (-1417') (CC), Hunton 2602'  
(-1640') (CC), Sylvan 2795' (-1833') (CC); Hunton  
thickness 193'. Cored 2687'-2745.5' (all Hunton); 2  
thin sections; chemical analyses, OU Core Library.  
(Amsden, 1975b, p. 79.)

Woodford (Chattanooga) Shale 2379'-2602' (CC)

Hunton Group 2602'-2795' (CC)

2602'-2686' No core; samples not studied.

2686'-2737' (core) Silurian; Henryhouse Forma-  
tion. Greenish-gray marlstone with scattered fos-  
sils. Silt-size subangular quartz detritus (average  
HCl-acid insolubles 23.06%) and minor scattered  
dolomite crystals (average MgCO<sub>3</sub> 8.95%). Trilobite  
Dalmanites rutellum at 2688' and 2712', identified  
by K. S. W. Campbell.

2737'-2745' (core) ?Chimneyhill Subgroup. Pink-  
ish-gray organo-detrital limestone with micrite  
and spar cement. Very little detrital quartz (HCl-  
acid insolubles average 6.20%) and a few irregular  
areas of dolomite (MgCO<sub>3</sub> averages 5.20%). No  
identifiable fossils seen.

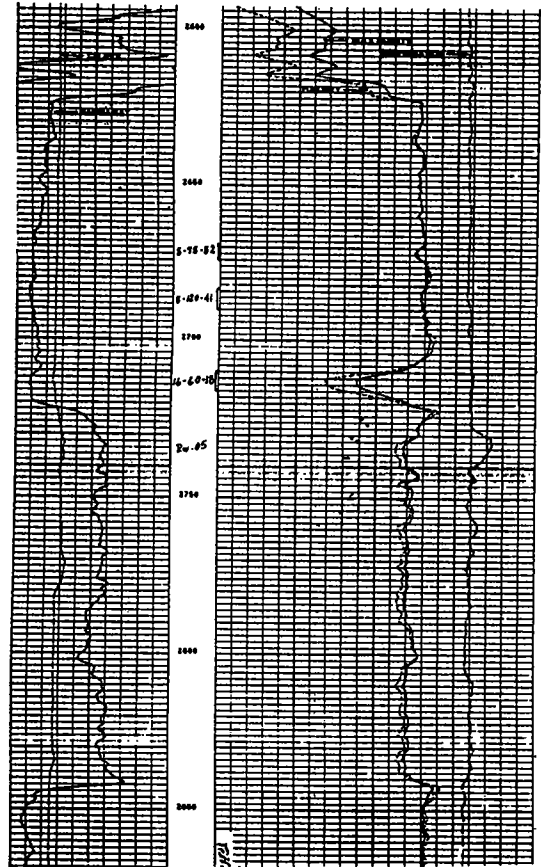
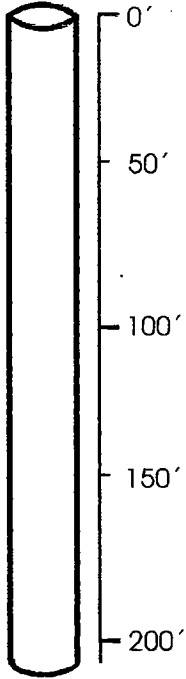
2745'-2795' No core; samples not studied.

Sylvan Shale 2795' (CC)

American  
4-A Bayne  
SE SW  
Sec. 16 T. 5 N., R. 6 E.  
Pontotoc County, Oklahoma  
KB 962'

Americana Petroleum Corp.  
D-11 Bayne  
NE SW SW  
Sec. 16 T. 5 N., R. 6 E.  
Pontotoc County, Oklahoma  
KB 965'

Log not  
available



LOUIS KAHAN, ET AL. 6 BEAN—N<sup>1</sup>/<sub>2</sub>N<sup>1</sup>/<sub>2</sub>NW<sup>1</sup>/<sub>4</sub> sec. 11, T. 8 N., R. 5 E., Seminole County, Oklahoma; elev. 969'; TD 4345' (Wilcox); compl. 3/11/65, Hunton production (perforated 4013'-4056'). Tops: Woodford 3893' (-2924') (CC), Hunton 4006' (-3037') (CC), Sylvan 4053' (-3084') (CC), Welling 4136' (-3167') (core); Hunton thickness 47'. Cored 4011'-4052' (all Hunton); 6 thin sections; chemical analyses, OU Core Library. (Amsden, 1975b, p. 80, 119.)

Note that the glauconitic and dolomitic strata of the Hunton in this well occupy approximately the same stratigraphic position as the relatively low-magnesium pelmatozoan limestones of the 1 Tiger. No formation designation is attempted in either well.

*Woodford (Chattanooga) Shale* 3893'-4006' (CC)

*Hunton Group* 4006'-4053' (CC)

4006'-4053' (CC) Silurian; Chimneyhill Subgroup. No diagnostic fossils observed; assigned on basis of lithology and stratigraphic position.

4006'-4011' No core; samples not studied.

4011'-4028' (core) Glauconitic and dolomitic limestone with very little quartz; fossiliferous. Average MgCO<sub>3</sub>, 18.34%, HCl-acid insolubles 8.68%.

4028'-4052' (core) Glauconitic organo-detrital limestone. Average MgCO<sub>3</sub>, 6.9%, HCl-acid insolubles 1.80%.

4052'-4053' No core; samples not studied.

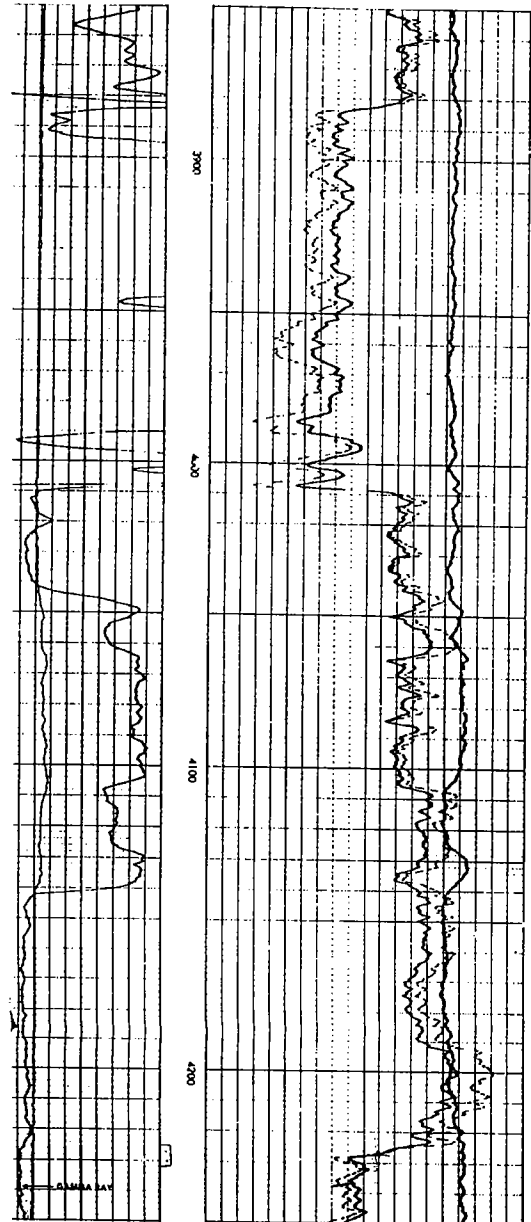
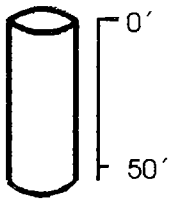
*Sylvan Shale* 4053'-4136' (CC)

*Welling Formation* 4136' (core)

Louis Kahan  
6 Bean  
N/2 N/2 NW  
Sec. 11 T. 8 N., R. 5 E.  
Seminole County, Oklahoma  
KB 969'

S & K Oil Co.  
7 Mose Bean  
Sec. 11 T. 8 N., R. 5 E.  
Seminole County, Oklahoma  
KB 956'

Log not  
available

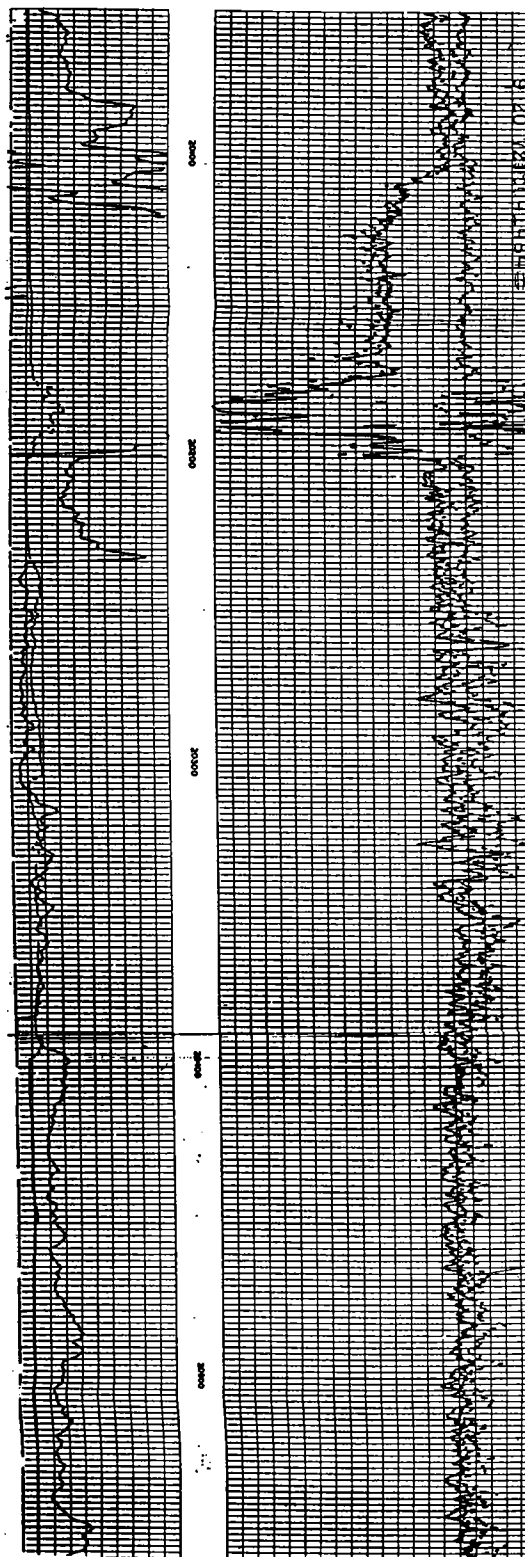


ARKLA 1 BEAUCHAMP--C NE¼ sec. 21, T. 13 N., R. 18 W., Custer County, Oklahoma; elev. 1745'; TD 20,898'; compl. 9/1/72, perforated Hunton 20,262'-20,317', no Hunton production reported. Hunton-Woodford contact (GR log) at 20,232' (-18,487'), and Sylvan-Hunton contact (GR log) at 20,782' (-19,037'). Note: samples show Sylvan top at about 20,850', difference presumably due to sample lag (GR log tops used); Hunton thickness 550'. I examined samples from lower part of Woodford through Hunton and Sylvan to bottom (last sample 20,893'-20,898'); 18 thin sections stained with Alizarin Red-S were prepared. Samples borrowed from Oklahoma Well Sample Service, Shawnee, Oklahoma.

The Hunton rocks are largely in a limestone and dolomitic-limestone facies. There is some crystalline dolomite in the upper part of the Hunton, but mostly it is organo-detrital limestone and marlstone with scattered dolomite crystals; almost all the fossil debris retains its original texture. The upper 170' (to a depth of 20,400') is organo-detrital limestone grading downward into crystalline dolomite with only minor quartz detritus. Below this is marlstone with scattered fossils, most of which has a substantial quantity of subangular to angular quartz (to about 0.05 mm) and some mica; dolomite crystals are scattered through this section in varying degrees of concentration, and the rock only rarely if ever approaches a crystalline dolomite. Most of the marlstone is probably a dolomitic limestone, only rarely grading into calcareous dolomite. The marlstone extends down to within 50' or so of the Sylvan Shale, where it is probably replaced by a biosparite with some chert; the thin sections in this lower part are generally of poor quality except for the basal beds, which contain excellent oolites (Keel Formation). This lower portion almost certainly includes some Chimneyhill equivalents, although its exact boundary with the overlying marlstone is not well defined (in part because of sample lag).

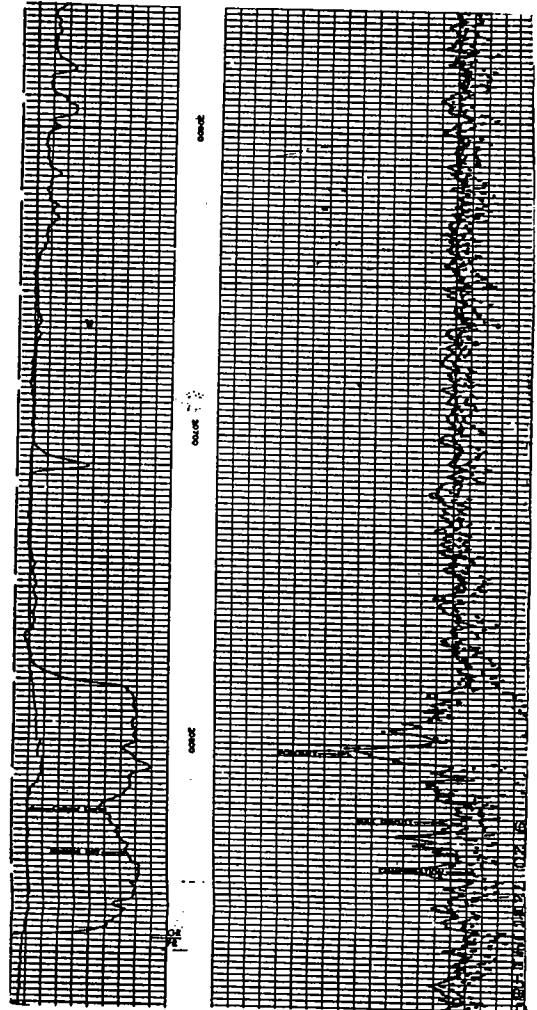
Woodford Shale

- Hunton Group 20,232'-20,782' (GR log)
- 20,232'-20,330' Light-gray bioclastic limestone; upper part with very little dolomite, lower part moderately dolomitic. Some detrital quartz to 0.05 mm.
  - 20,330'-20,400' Mostly crystalline dolomite; minor dolomitic bioclastic limestone; only minor detrital quartz.
  - 20,400'-20,750'? (base in question because of sample lag). Dark-gray marlstone with much angular silt-size detrital quartz. Scattered fossils. This unit contains scattered dolomite crystals, in places quite abundant, but none appears to be in the crystalline-dolomite facies.



The Beauchamp differs from the cored wells to the north (1 Frans, 1 Sharp-Hunt Unit, 1 Horton, 1-1 Hoffman), where at least the upper 100' to 150' of the Hunton is almost completely crystalline dolomite, mostly averaging over 30% MgCO<sub>3</sub> (see part I of Appendix). In contrast, the upper 60' to 70' of the 1 Beauchamp appears to be mostly low-magnesium limestone, underlain by dolomitic limestone and crystalline dolomite. The age of this upper part is uncertain; it could correlate with the upper part of the Hunton in Custer County, in which case it is probably at least in part Silurian, or it could correlate with the upper organo-detrital limestones in the south and east, in which case it may be Lower Devonian. The age of the marlstone is also uncertain, but the lower bioclastic limestones and oolites are almost certainly at least in part correlative with Chimneyhill strata.

20,750'?-20,782' (GR log) ?Chimneyhill Subgroup. Biosparite with much chert and oolites (?Keel Formation). Oolites well developed, mostly set in spar cement. Very little dolomite. Poor sample quality.  
Sylvan Shale 20,782'





PURE 1 BEAUMAN UNIT—NE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 29, T. 9 N., R. 16 E., Pittsburg County, Oklahoma; elev. 571' DF (562' GL); TD 5430' (Simpson); compl. 12/24/58, no Hunton production reported (Cromwell gas production). Tops: Woodford 4989' (-4418') (SP log), Hunton 5017' (-4446') (SP log), Sylvan 5165' (-4594') (SP log), Welling 5224' (-4653') (SP log), Fite 5245' (-4674') (sample depth); Hunton thickness 148'. Samples examined from 4990' to 5620', excellent quality (note: core chips from 5320' to 5430', Simpson Group); 14 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The samples give a reasonably well-defined lithostratigraphic sequence of Woodford Shale, Misener Sandstone, Sallisaw Formation, Chimneyhill Subgroup, Sylvan Shale, and Viola Limestone. For a discussion on the distinction between Misener (Sylamore) and Sallisaw, see section on Sallisaw Formation in text. The Chimneyhill is provisionally divided into the Quarry Mountain-Tenkiller-Blackgum Formations. See discussion under Chimneyhill Subgroup in text. Silurian strata are moderately to heavily dolomitized throughout, although there is only a small amount of crystalline dolomite present. Silurian strata are 135' thick.

*Woodford (Chattanooga) Shale* 4989'-5017' (SP log)  
Approximately 10' of Misener Sandstone present at base.

*Hunton Group* 5017'-5165' (SP log)

5017' (SP log) -5030' (sample depth) Lower Devonian; Sallisaw Formation. Mostly crystalline dolomite with much fine (generally less than 0.1 mm), angular to subangular quartz detritus. Much chert with scattered detrital quartz grains and euhedral dolomite crystals; latter about same size as quartz grains.

5030'-5180' (sample depths) Silurian; Chimneyhill Subgroup. Assigned to Chimneyhill on the basis of stratigraphic position and lithology.

5030'-5150' (sample depths) ?Quarry Mountain Formation. Mostly strongly dolomitized organo-detrital limestone with many bryozoans and pelmatozoan plates; some crystalline dolomite. Very little detrital quartz. Minor chert throughout this interval.

5150'-5170' (sample depths) ?Tenkiller Formation. Dolomitic pink crinoidal sparite-micrite. Dolomite abundant throughout, commonly replacing much of the matrix. Ostracodes abundant in some beds. Very little detrital quartz observed.

5170'-5180' (sample depths) ?Blackgum Formation. Strongly dolomitized organo-detrital limestone; some glauconite and chert are present. Very little detrital quartz observed; no oolites observed.

*Sylvan Shale* 5165'-5224' (SP log)

*Welling Formation* 5224' (SP log) -5245' (sample depth)

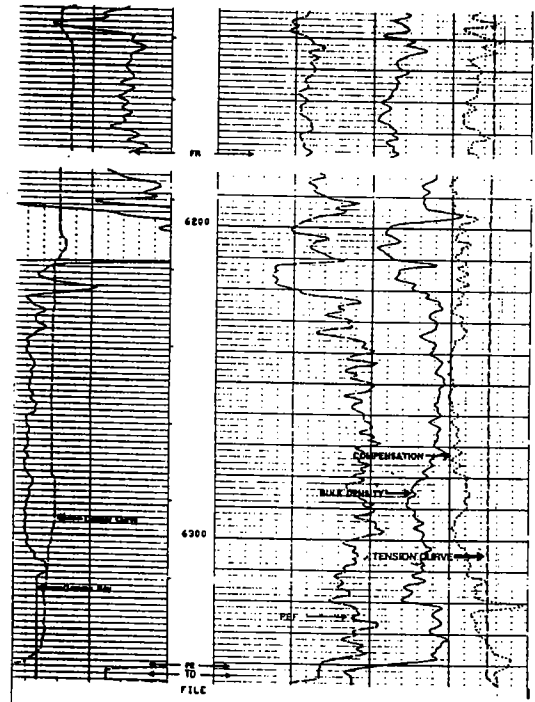
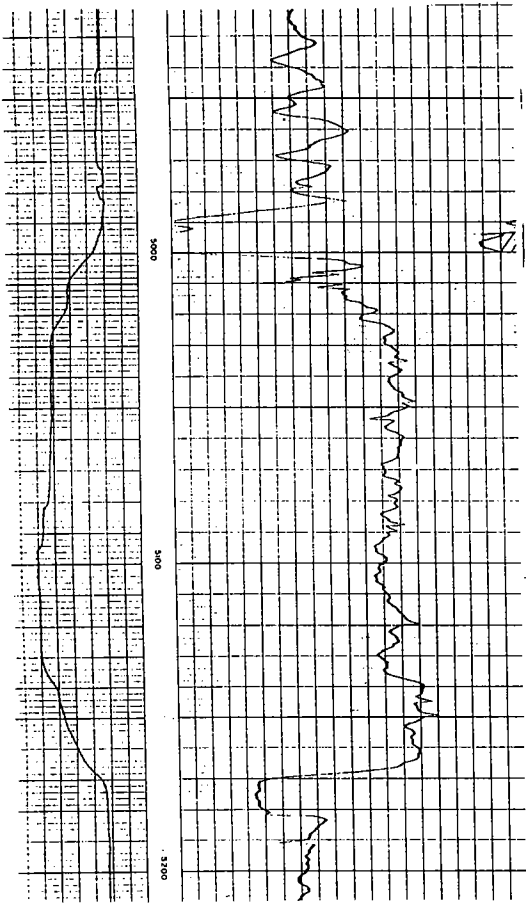
5230'-5240' (thin section) Organo-detrital sparite with much crinoidal material; no detrital quartz and minor dolomite.

*Fite Limestone* 5245' (sample depth)

5225'-5260' (thin section) Mostly dense ?algal and pellet limestone with chert. Some dolomite and much well-rounded detrital quartz to 0.5 mm.

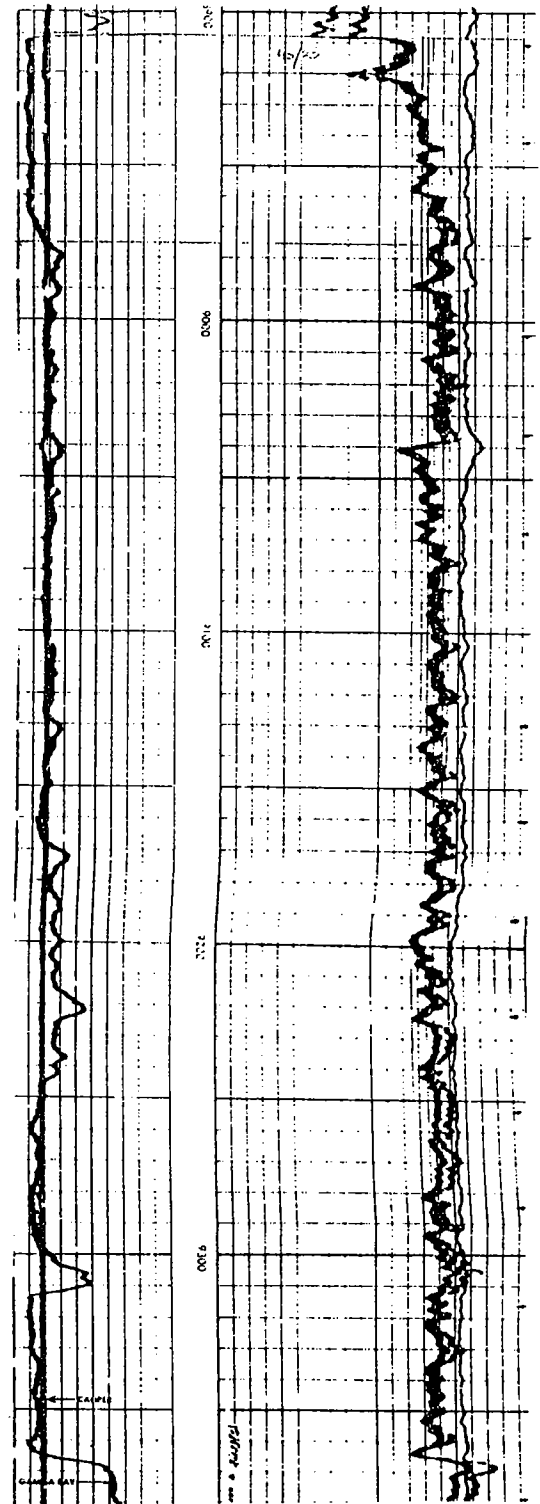
Pure  
1 Beauman Unit  
NE NE SW  
Sec. 29 T. 9 N., R. 16 E.  
Pittsburg County, Oklahoma  
KB 571'

Bill O. Address  
2-35 Searcy  
C NE  
Sec. 35 T. 9 N., R. 16 E.  
Pittsburg County, Oklahoma  
KB 698'



**WILSHIRE OIL CO. OF TEXAS 1 EDWARD BEJECK —**  
NE¼NW¼ sec. 25, T11N, R6W, Canadian County, Okla-  
homa; elevation GL 1,329 ft, DF 1,341 ft; TD 9,403 ft; com-  
pletion (Na), 10/13/78 (P).

Cored 8,894–8,853 ft (Woodford–Hunton). William  
Morgan (personal communication, 1981) reported the core  
penetrated the Frisco Formation.



**WELL L**  
**Ed Pauley, 1 Bennett**

This well is in C SE $\frac{1}{4}$  NE $\frac{1}{4}$  sec. 18, T. 10 N., R. 18 E., McIntosh County, about 9 miles northeast of Eufaula (text-figs. 3, 15). The well was drilled in 1951 with cable tools, and the collar elevation is 669 feet. An electric log was not run. Cuttings were examined from 4,000 to 4,100 feet in erratic intervals, and the sample quality is excellent. Frezon (1962, pls. I, II) assigned these rocks to the St. Clair undifferentiated upon the basis of sample examination. Lower Devonian rocks are absent in this well (text-figs. 3, 15). Silurian rocks are 46 feet thick (4,028-4,074 feet; text-fig. 3) and consist of only the Tenkiller Formation and Blackgum Formation. Individual thickness of each unit is uncertain because both the Tenkiller and Blackgum are present in sample 4,047-4,055. Sylvan Shale was encountered in sample 4,074-4,085. One thin section was prepared of the Tenkiller Formation from sample 4,028-4,035.

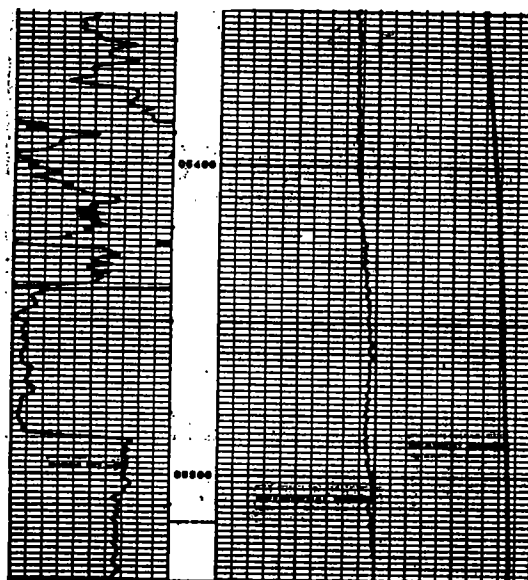
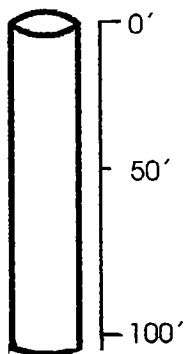
<i>Depth (feet)</i>	<i>Thickness (feet)</i>	
4,000-4,028	28	<b>CHATTANOOGA FORMATION:</b> Black and brown pyritic shale.  <b>TENKILLER FORMATION:</b> Gray to dark-gray pyritic limestone; some orange crinoidal material; light-gray to clear, opaque to semiopaque chert. Thickness uncertain, as Tenkiller is present with Blackgum in sample 4,047-4,055. Thin section (L-1) was prepared from sample 4,028-4,035.
4,028-4,035	7	Limestone, gray to dark-gray, pyritic; some orange crinoidal material, 5% residue. Thin section (L-1) was prepared from this interval.
4,035-4,047	12	Limestone, as above; chert, light-gray to clear, opaque to semiopaque, 5%.
4,047-4,055	8	Limestone, as above, 35-40%; limestone, dark-gray, dolomitic, glauconitic, 20%; dolomite, light-gray to gray, fine-crystalline, 25%; chert, gray, opaque, 15% (Blackgum).  <b>BLACKGUM FORMATION:</b> Dark-gray glauconitic dolomitic limestone; gray to dark-gray fine-crystalline glauconitic calcitic dolomite; dark-gray to gray to clear, opaque to semiopaque chert. Thickness uncertain, as it is present with Tenkiller in sample 4,047-4,055.
4,055-4,065	10	Limestone, dark-gray, dolomitic, glauconitic, 35%; dolomite, light-gray to gray, fine-crystalline, 40%; chert, gray to dark-gray to clear, opaque to semiopaque, 20-25%.
4,065-4,074	9	Dolomite, light-gray to gray, calcitic, fine-crystalline, glauconitic, 55%; chert, dark-gray to gray to clear, opaque to semiopaque, 45%; trace of brown fine-crystalline dolomite.
4,074-4,100	26	<b>SYLVAN FORMATION:</b> Thickness not determined, as the samples were studied only to 4,100 feet. Gray to gray-green shale.

Pauley  
1 Bennett  
SE NE  
Sec. 18 T. 10 N., R. 18 E.  
McIntosh County, Oklahoma  
KB 669'

Cities Service Oil and Gas Corp.  
A-1 Mamm  
1815' FWL & 1875' FSL  
Sec. 19 T. 10 N., R. 18 E.  
McIntosh County, Oklahoma  
KB 665'

PAULEY 1 BENNETT—C SE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec. 18, T. 10 N., R. 18 E., McIntosh County, Oklahoma; elev. 669'; compl. 1951. Tops: Hunton 4028' (-3359') (sample depth), Sylvan 4074' (-3405') (sample depth); Hunton thickness 46'. Samples examined from 4000' to 4100'; 1 thin section. Well described by T. L. Rowland (see Amsden and Rowland, 1965, p. 149-150).

Log not available



CALVERT 1 BERTIE--C SE 1/4 NW 1/4 sec. 35, T. 19 N.,  
 R. 9 W., Kingfisher County, Oklahoma; elev.  
 1115'; TD 8675' (Viola); compl. 5/9/63, Hunton  
 production (perforated 8578'-8592', 8604'-  
 8626'). Tops: Woodford (CC) 8318' (-7203'),  
 Hunton (core) 8333' (-7218'), Sylvan (CC)  
 8639' (-7524'); Hunton thickness 306'. Cored  
 8296'-8398', 8515'-8616' (Woodford-Hunton);  
 11 thin sections; chemical analyses (Hunton  
 portion only); OU Core Library. Porosity-  
 permeability tests P10-A, P10-B, P10-C, P10-D.

Woodford Shale 8318'-8333'

Hunton Group 8333'-8639'

8333'-8398' Silurian; Kirkidium biofacies.

Upper 10 feet is gray crystalline dolomite  
 (35.58% MgCO<sub>3</sub>, 5.04% HCl insolubles);  
 remainder of interval is fossiliferous  
 dolomitic limestone with considerable  
 insoluble detritus. Entire interval aver-  
 ages 22.83% MgCO<sub>3</sub> and 16.05% HCl insolubles.  
 Thin section illustrated, pl. 10, fig. 1;  
 pl. 11, fig. 2a (depth 8351'). Specimens  
 of Kirkidium sp. common, observed from 8339'  
 to 8390'; Strophonella loeblichii Amsden  
 8352'-8355'; Halysites sp. and favositid  
 corals at 8379'-8383'.

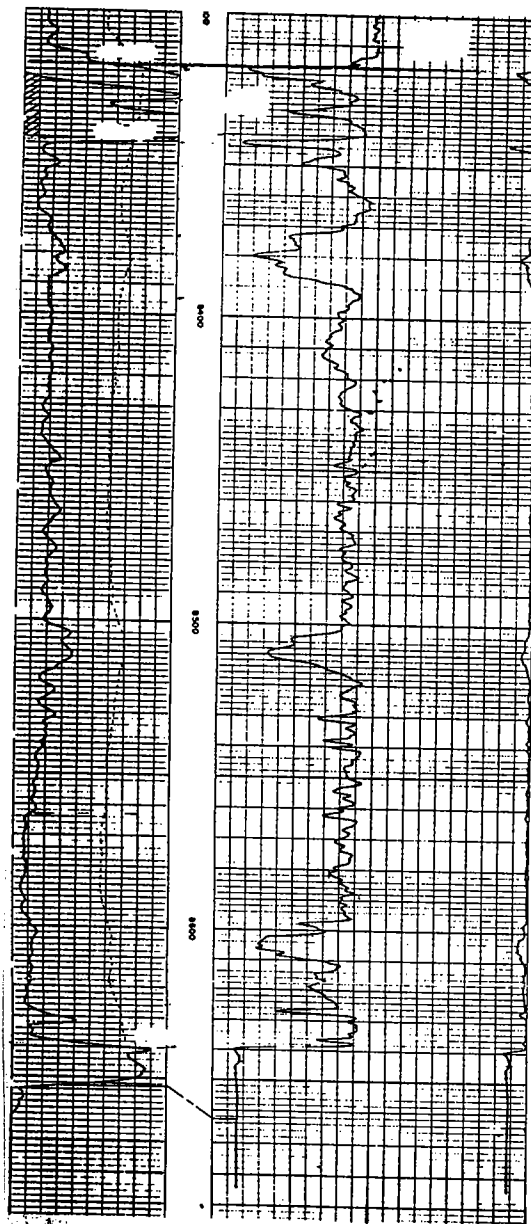
8398'-8515' No core.

8515'-8558' ?Chimneyhill Subgroup. Dolomitic  
 biomicrite with some shelly debris and much  
 crinoidal material, some plates being pink;  
 considerable insoluble detritus (average  
 MgCO<sub>3</sub> 13.89%, HCl insolubles 12.30%). No  
 diagnostic fossils observed; assigned to  
 Chimneyhill on basis of lithology and  
 stratigraphic position.

8558'-8616' ?Chimneyhill Subgroup. Gray  
 crystalline dolomite with fossils preserved  
 as molds or in spar (average MgCO<sub>3</sub> 38.38%,  
 HCl insolubles 3.41%). Good porosity:  
 P10-B, 6.08%; P10-C, 7.6%; P10-D, 16.66%.  
 No diagnostic fossils observed; assigned to  
 Chimneyhill on basis of stratigraphic  
 position.

8616'-8639' No core.

Sylvan Shale 8639'



JONES & PELLOW 1 BEST--C NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 15, T. 15 N.,  
 R. 6 W., Kingfisher County, Oklahoma; elev.  
 1185'; TD 8139' (Sylvan); compl. 5/9/69; no  
 Hunton production reported (perforated 7990'-  
 7994'). Tops: Woodford (CC) 7762' (-6577'),  
 Hunton (CC) 7826' (-6641'), Sylvan (CC) 8120'  
 (-6935'); Hunton thickness 294'. Cored 7960'-  
 8015' (all Hunton); 4 thin sections; chemical  
 analyses; OU Core Library.

Woodford Shale 7762'-7826'

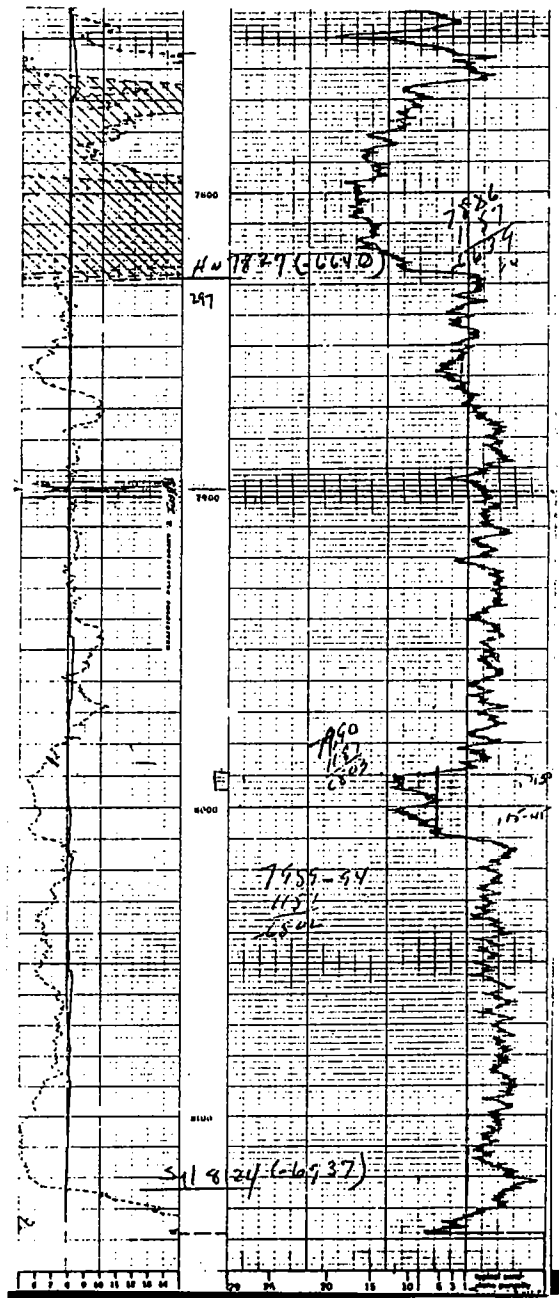
Hunton Group 7826'-8120'

7826'-7960' No core.

7960'-8015' ?Silurian. Dolomitic, fossilif-  
 erous limestone with much crinoidal material;  
 mostly micrite cement; some sparite. Dolo-  
 omite content variable, averaging 23.16%  
 MgCO<sub>3</sub>; HCl insolubles variable, averaging  
 9.15%. A few beds grade into crystalline  
 dolomite, but mostly rock is dolomitic lime-  
 stone with euhedral crystals of dolomite  
 scattered through matrix and retaining  
 microstructure of shelly and pelmatozoan  
 debris. A few incomplete brachiopods  
 collected at 8012', but no diagnostic fossils  
 observed; cored interval, and in fact the  
 entire Hunton, is tentatively referred to  
 Silurian on basis of thickness and strati-  
 graphic position. Compare this section to  
 Jones & Pellow 1 Farrell, Gulf 1 Triplett,  
 and Kirkpatrick 1 Cronkite, which did  
 yield identifiable Silurian fossils.

8015'-8120' No core.

Sylvan Shale 8120'



TENNECO 1-5 BILLER—C SE $\frac{1}{4}$  sec. 5, T. 13 N., R. 6 W., Canadian County, Oklahoma; elev. 1245' KB; TD 9030' (Ordovician); compl. unknown, Hunton oil production reported. Tops: Woodford 8508' (-7263'), Hunton 8598' (-7353') (core), Sylvan 8900' (-7655') (GR log); Hunton thickness 302'. Cored 8590'-8676' (Woodford-Hunton); 17 thin sections; chemical analyses, OU Core Library. Now shown on maps.

This is an interesting well that cored the basal Woodford (with some Misener Sandstone), 14' of Frisco and 64' of the *Kirkidium* (Henryhouse Formation) biofacies. The Frisco-*Kirkidium* boundary is a knife-sharp contact (pl. 9, figs. 3, 4) separating the light-gray low-magnesium low-insoluble organo-detrital limestones of the Frisco Formation (pl. 10, figs. 2, 3) from the dark dolomite and silty limestones of the *Kirkidium* biofacies (pl. 10, figs. 4, 5). Four spot samples of Frisco were analyzed and average 0.69% MgCO<sub>3</sub> and 0.71% HCl-acid insolubles. In contrast, 4 spot samples from the upper 22' of the *Kirkidium* biofacies average 7.28% MgCO<sub>3</sub> and 10.83% HCl-acid insolubles (see chemical analyses in table that follows). Mr. David Campbell, Tenneco Oil Co., kindly provided porosity data from this core, which shows an abrupt decline in porosity at this

contact. The 14 porosity tests from the Frisco range from 1.1% to 3.6%, averaging 2.54%. The 10 porosity tests from the upper 10 feet of the *Kirkidium* biofacies range from 0.7% to 2.1%, averaging 1.30%. Some of the porosity appears to result from incomplete cementation (Amsden, 1975b, p. 74). There is also considerable fracture porosity, with the cracks probably enlarged by solution (pl. 10, fig. 1).

The Frisco Formation is an organo-detrital limestone throughout, but most of the identifiable brachiopods came from a depth of 8600' to 8602'. Specimens of *Kirkidium* were observed at 8613', where they are associated with halysitid corals. The specimens were found at least as deep as 8667', where they occur in a bed of oolites (see Amsden, 1975b, p. 32).

The Frisco-*Kirkidium* biofacies relationship in this well is similar to that in the Phillips 1 Brooks "B" (this report, pl. 9, figs. 1, 2, Appendix) and the Gulf 1 Streeter (Amsden, 1975b, p. 100, text-figs. 19, 41, pl. 15). The distribution of Frisco in my pre-Woodford geologic map (Amsden, 1975b, panel 9) needs to be extended west to take in the area of the 1-5 Biller and 1 Brooks.

The analyses in the following table of spot samples were prepared by Mr. David Foster in the chemical laboratory of the Oklahoma Geological Survey.

**Woodford (Chattanooga) Shale 8508'-8598'**

8508'-8590' Black shale.

8590'-8598' (core) Dark shale with some Misener Sandstone; conodonts present in latter.

**Hunton Group 8598'-8900' (core)**

8598'-8612' (core) Lower Devonian; Frisco Formation. Light-gray organo-detrital biosparite; much shelly debris including brachiopods, bryozoans, colonial corals. This is a low-magnesium, low-insoluble, grain-supported limestone; see chemical analyses and pl. 9, figs. 3, 4; pl. 10, figs. 1, 2. Brachiopods from 8600' to 8602' include *Leptostrophia magnifica?*, *Costispirifer* sp., *Rhipidomella*, cf. *R. musculosa*, and large terebratuloid brachiopods. Contact with underlying *Kirkidium* biofacies sharply defined.

8612'-8676' (core) Silurian; *Kirkidium* biofacies.

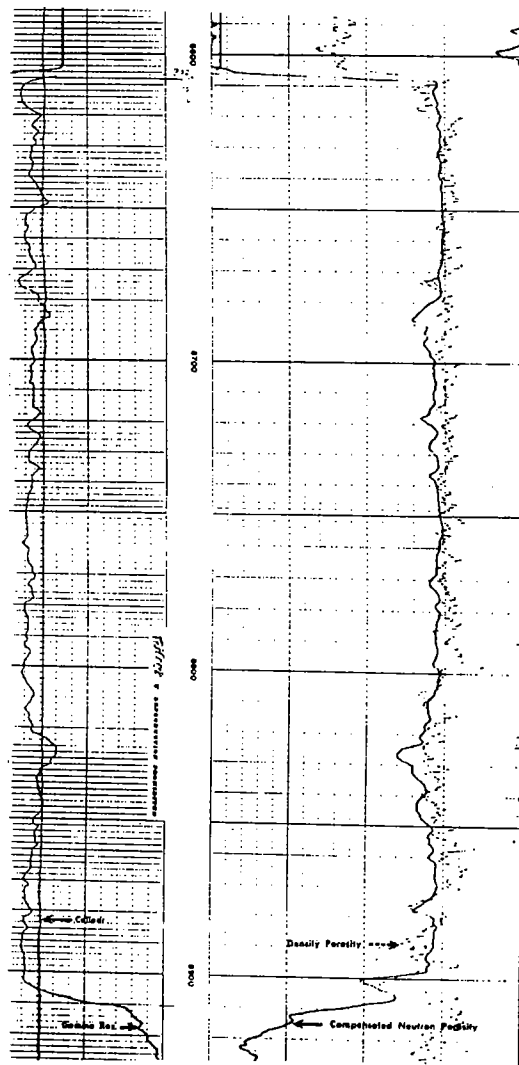
8612'-8667' (core) *Kirkidium* biofacies. Dark-gray to medium-gray dolomitic and silty micrite; much silt-size quartz detritus in upper part. The MgCO<sub>3</sub> in this interval averages 5.31%, and the HCl-acid insolubles average 7.57%. However, the dolomite decreases downward from 9.64% to 1.80% MgCO<sub>3</sub>, and the HCl-acid insolubles from 14.92% to 2.50% (see analyses in preceding table). *Kirkidium* sp. observed throughout this interval.

8667'-8672' (core) Mainly a crinoidal sparite with a 6" bed of oolites near the top. For the most part, this is a low-magnesium, low-insoluble limestone. Specimens of *Kirkidium* sp. in the upper oolite; none observed below this. Contact with overlying and underlying units not sharply marked.

8672'-8676' (core) Gray to greenish-gray silty and weakly dolomitic micrite. This is mainly a crinoidal micrite. 1 spot sample analyzed 5.23% MgCO<sub>3</sub> and 11.43% HCl-acid insolubles (see analyses in preceding table). No specimens of *Kirkidium* observed in this interval.

8676'-8900' No core, samples not examined.

Sylvan Shale 8900' (GR log)





**WELL G**

Indian Territory Illuminating Oil Company, 1 Blake

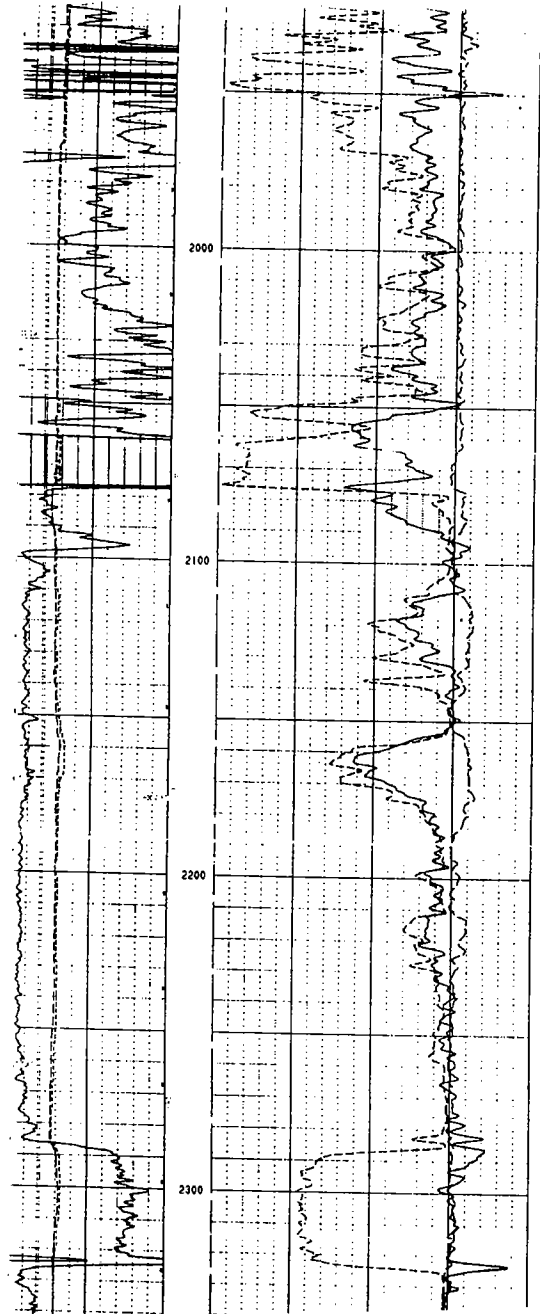
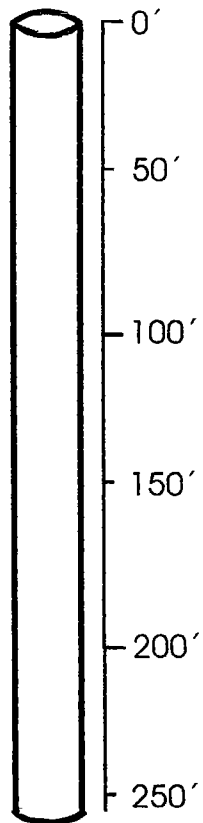
This well is in C SW $\frac{1}{4}$  NW $\frac{1}{4}$  sec. 3, T. 10 N., R. 21 E., Haskell County, about 15 miles south of the Lake Tenkiller dam (text-figs. 3, 15). The well was drilled in 1930 with cable tools, and the collar elevation is 760 feet. An electric log was not run. Cuttings were examined from 2,175 to 2,424 feet in erratic intervals, and the samples are excellent. Samples were missing from 2,192 to 2,196 feet. Frezon (1962, pls. I, II), upon the basis of sample examination, recognized the Sallisaw Formation and assigned the remaining rocks to the St. Clair undifferentiated. Lower Devonian rocks consist of the Sallisaw Formation 24 feet thick (2,185-2,209); the Frisco Formation is either missing or too thin to detect in the cuttings. Silurian rocks are approximately 205? feet thick (2,209-2,414? feet; text-fig. 3) and comprise five units: Quarry Mountain Formation 171? feet (2,209-2,380?), Marble City-Barber undifferentiated 171? feet (2,209-2,380?; thickness uncertain as Marble City-Barber and Tenkiller are present in sample 2,379-2,386), Tenkiller Formation, Blackgum Formation, and Pettit Oölite, 35 feet (2,380?-2,414; individual thickness of each unit uncertain as Marble City-Barber and Tenkiller are present in sample 2,379-2,386, and Blackgum is mixed with Sylvan in sample 2,407-2,417). The Marble City-Barber sequence is undifferentiated because the Barber is poorly defined. The upper part (2,209-2,248) is composed largely of dolomite, whereas the lower part consists of limestone and dolomitic limestone. A zone of highly dolomitic limestone is present from 2,364-2,380? feet. This may possibly represent the Barber. The Sylvan Shale was encountered in sample 2,407-2,417. Two thin sections were prepared from the following intervals: Marble City-Barber sequence, 2,324-2,334, and Tenkiller Formation, 2,398-2,402.

<i>Depth (feet)</i>	<i>Thickness (feet)</i>	
2,174-2,185	11	CHATTANOOGA FORMATION: Black and brown pyritic shale. SALLISAW FORMATION: 24 feet (2,185-2,209). Light-gray glauconitic fine-crystalline calcitic dolomite; dark-gray dolomitic limestone; clear white opaque arenaceous chert.
2,185-2,188	3	Dolomite, calcitic, arenaceous, light-gray, fine-crystalline; in part glauconitic; 10-15% residue; chert, clear, white, arenaceous, 50%.
2,188-2,190	2	Dolomite, as above, 40%; chert, as above, 60%.
2,190-2,192	2	Dolomite, as above, 30%; chert, as above, 70%.
2,192-2,196	4	Sample missing.
2,196-2,204	8	Chert, white, clear, arenaceous, opaque, 90%; dolomite, as above, 10%.
2,204-2,209	5	Dolomite, calcitic, arenaceous, glauconitic, fine-crystalline, light-gray, 10-15% residue; limestone, dark-gray, dolomitic, arenaceous, 5-10% residue, 25%; chert, as above, 10-15%.

Indian Territory Illuminating Oil Co.  
1 Blake  
SW NW  
Sec. 3, T. 10 N., R. 21 E.  
Haskell County, Oklahoma  
KB 760'

HVA Operating Co.  
1 Palmer  
W/2 W/2 NE NE  
Sec. 3, T. 10 N., R. 21 E.  
Haskell County, Oklahoma  
KB 643?'

**Log not  
available**



QUARRY MOUNTAIN FORMATION: 171? feet (2,209-2,380?; thickness uncertain as Marble City and Barber are present with Tenkiller in sample 2,379-2,386).

*Marble City Member-Barber Member undifferentiated*: 171? feet (2,209-2,380?; thickness uncertain as Marble City and Barber are present with Tenkiller in sample 2,379-2,386). Marble City-Barber sequence is undifferentiated because the Barber is poorly defined. Off-white to white pinkish crinoidal limestone; in part dolomitic; light-gray fine-crystalline dolomite; in part calcitic.

2,209-2,214	5	Dolomite, light-gray, fine-crystalline; in part calcitic.
2,214-2,220	6	Dolomite, as above; limestone, dolomitic, off-white, some crinoidal, 30%.
2,220-2,248	28	Dolomite, light-gray, fine-crystalline; in part calcitic.
2,248-2,256	8	Limestone, dolomitic, white to off-white, some pink crinoidal.
2,256-2,264	8	Dolomite, calcitic, fine-crystalline, light-gray; limestone, as above, 45-50%.
2,264-2,268	4	Dolomite, as above; limestone, as above, 5%.
2,268-2,275	7	Limestone, off-white to white, some pink crinoidal, dolomitic; dolomite, as above, 30-35%.
2,275-2,278	3	Limestone, as above, 50%; dolomite, as above, 50%.
2,278-2,289	11	Limestone, as above, abundant pink crinoidal, 75%; dolomite, as above, 25%.
2,289-2,334	45	Limestone, off-white to white to pinkish; abundant pink crinoidal debris; in part slightly dolomitic; thin section (G-1) 2,324-2,334.
2,334-2,352	18	Limestone, as above, except dolomitic.
2,352-2,364	12	Limestone, as above, except only in part dolomitic.
2,364-2,379	15	Limestone, highly dolomitic, off-white to white; dolomite, calcitic, gray, fine-crystalline, 2-3%.
2,379-2,386	7	Limestone, as above, 50%; dolomite, as above, 5%; limestone, off-white to gray to light-gray, in part dolomitic, abundant orange crinoidal debris, some with pyrite and glauconite, 45% (Tenkiller).

- 2,386-2,402 16 **TENKILLER FORMATION:** Off-white to light-gray to gray, dark-gray, tan, pink limestone with abundant orange crinoidal material; in part dolomitic and pyritic; extremely glauconitic in sample 2,392-2,398. Thickness uncertain, as Tenkiller is present with Marble City-Barber in sample 2,379-2,386. Thin section (G-2) was prepared from sample interval 2,398-2,402.
- 2,402-2,407 5 **BLACKGUM FORMATION:** Light-gray fine-crystalline glauconitic dolomite; gray opaque to clear chert; off-white glauconitic dolomitic limestone, 10%; brown to tan fine-crystalline argillaceous dolomite. Thickness uncertain, as it is present with Sylvan in sample 2,407-2,417.
- 2,407-2,417 10 *Pettit Oölite:* Thickness uncertain, as only a few pieces of gray to dark-gray oölite found, mixed with Blackgum dolomite and chert as described above. Sample 2,407-2,417 contains approximately 15% gray to gray-green shale.
- 2,417-2,424 7 **SYLVAN FORMATION:** Thickness not determined as the samples were studied only to 2,424 feet. Gray to gray-green shale.

KIRKPATRICK 1 BLEVINS UNIT--C NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 7,  
 T. 17 N., R. 4 W., Logan County, Oklahoma;  
 elev. 1152'; TD 7090' (Sylvan); compl. 2/21/67,  
 no Hunton production reported (perforated  
 6989'-7008', 7032'-7039'). Tops: no Woodford  
 top reported, Hunton (CC) 6987' (-5835'),  
 Sylvan (core) 7039' (-5887'); Hunton thickness  
 53'. Cored 6993'-7043' (Hunton-Sylvan); 6  
 thin sections; chemical analyses; OU Core  
 Library.

This well located near truncated margin of  
 Hunton, and only Chimneyhill Subgroup is pre-  
 served, upper *Kirkidium* beds having been  
 removed by pre-Woodford erosion.

Cored the lower Chimneyhill Subgroup and the upper  
 part of the Sylvan Shale, here strongly calcareous. The upper  
 part of the Blevins core yields specimens of Wenlockian  
 age trilobites; the lower part has *Stricklandia protriplesiana*  
 (late Llandoveryan) overlying the Keel Oolite; the core ends  
 in the Sylvan Shale, here strongly calcareous. Described in  
 Amsden (1975, p. 80; 1980, p. 38-39, text fig. 14; pls. 7,8). Il-  
 lustrated on PLATE 1, STRATIGRAPHIC SECTION A-A'.

Woodford Shale ?

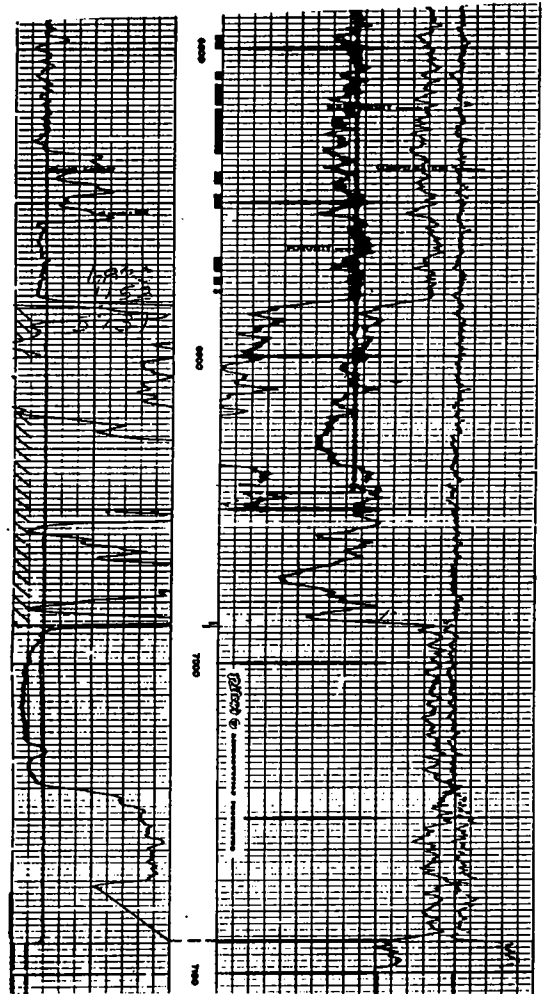
Hunton Group 6987'-7039'

6987'-6993' No core.

6993'-7022' Silurian; Chimneyhill Subgroup,  
 Clarita Formation. Gray to pinkish-gray  
 biomicrite with many pink crinoid plates;  
 minor spar cement. Insoluble detritus is  
 low (average HCl insolubles 3.90%), and only  
 minor euhedral crystals of dolomite scat-  
 tered through matrix (average MgCO<sub>3</sub> 3.03%).  
 This is typical Clarita lithology, and  
 trilobites from 6094' and 6010' are reported  
 by K. S. W. Campbell to be Clarita types  
 (personal communication). Also a few  
 brachiopods at 6095', including a  
 strophodontid. Contact with underlying  
 unit is not well defined.

7022'-7039' Cochrane Formation. Light-gray  
 organo-detrital limestone with glauconite.  
 Mainly spar matrix, some micrite. Scattered  
 euhedral crystals of dolomite (10.47% MgCO<sub>3</sub>)  
 and considerable insoluble detritus (HCl  
 insolubles 12.65%). Some recrystallization.  
 Lower few inches with scattered oolites  
 (?Keel Formation); Hunton-Sylvan contact  
 cored and well shown. This interval is  
 assigned to Cochrane on basis of lithology  
 and stratigraphic position.

Sylvan Shale 7039'



CALVERT MID-AMERICA 2 BLOYD--W $\frac{1}{2}$ NW $\frac{1}{4}$  sec. 21,  
 T. 27 N., R. 15 W., Woods County, Oklahoma;  
 elev. 1570'; TD 6290' (Sylvan); compl. 3/29/68,  
 Hunton production (perforated 6237'-6241').  
 Tops: Woodford (CC) 6156' (-4586'), Hunton  
 (core) 6208' (-4638'), Sylvan 6240' (-4670');  
 Hunton thickness 32'. Cored 6189'-6244'  
 (Woodford, Hunton, Sylvan); 4 thin sections;  
 chemical analyses; OU Core Library. Porosity-  
 permeability test P11-A at 6211', 8.9%  
 porosity, 13.37% permeability.

This well is located in western dolomite  
 facies, very near truncated margin of Hunton;  
 only Chimneyhill strata preserved, the  
Kirkidium biofacies having been removed by  
 pre-Woodford erosion.

Cored 55 ft of lower Woodford-Hunton-upper Sylvan.  
 Described in Amsden (1975, p. 81); 8 thin sections. Reex-  
 amined, 1985; MgCO<sub>3</sub>, HCl insoluble analyses. *Illustrated*  
 on PLATE 1, STRATIGRAPHIC SECTION A-A'.

Woodford Shale 6156'-6208'

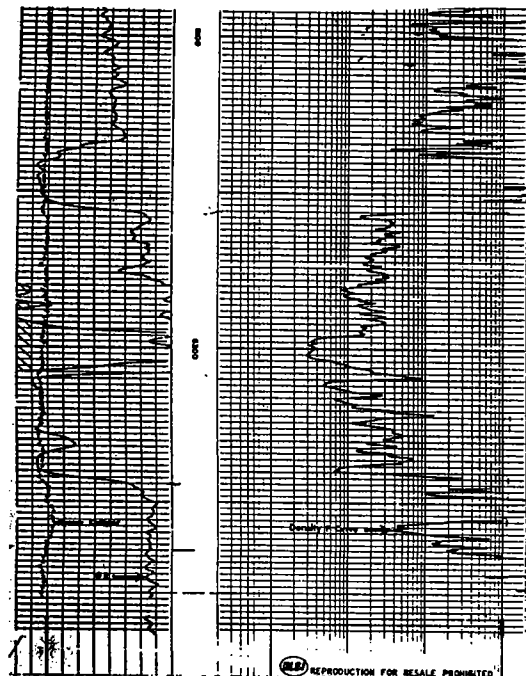
Hunton Group 6208'-6240'

6208'-6232' Silurian; Chimneyhill Subgroup,  
 Cochrane Formation. Gray crystalline  
 dolomite with numerous fossils, especially  
 crinoids (MgCO<sub>3</sub> 33.58%). Considerable  
 visible porosity, both in hand specimen and  
 thin section; much appears to be result of  
 fossil dissolution (P11-A, 8.9% porosity).  
 Specimen of Triplesia alata? at 6211';  
 interval assigned to Cochrane Formation on  
 basis of this fossil and its stratigraphic  
 position.

6232'-6238' Cochrane Formation. Pink  
 crinoidal biosparite with only minor dolo-  
 mite (MgCO<sub>3</sub> 9.57%; HCl insolubles 7.58%).

6238'-6240' ?Keel Formation. Gray crystalline  
 dolomite with 40.42% MgCO<sub>3</sub> and 0.26% insol-  
 ubles. This may be dolomitized oolite, but  
 dolomitization has obscured texture.

Sylvan Shale 6240'



SHELL 1 BOLEY—SE $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 8, T. 11 N., R. 6 E., Pottawatomie County, Oklahoma; elev. 995'; TD 4748' (Ordovician); compl. 5/17/38, D&A. Tops: Misener 4320' (-3325') (sample depth), Hunton 4353' (-3368') (core), Sylvan 4508' (-3513') (core); Hunton thickness 155'. Core (4353'-4373'; 4495'-4508') and samples examined from 4300' to 4508'; 10 thin sections prepared from well samples and 11 from the core; core, OU Core Library; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

Hunton strata were cored 4353'-4373' (Frisco Formation), 4443'-4459' (Chimneyhill Subgroup), 4495'-4508' (Chimneyhill Subgroup, Keel Formation and Sylvan Shale). Additional information is given in Amsden (1975b, p. 19, 69, 72, 81; text-fig. 36).

The 1 Boley is significant because the upper part of the Hunton core yields Frisco brachiopods (Amsden, 1975b, p. 81). The Frisco strata are organo-detrital crinoid-bryozoan sparites with very little dolomites and rest directly on dolomitized pink crinoidal limestones. These lower strata are low in quartz detritus and are provisionally referred to the Chimneyhill Subgroup on the basis of lithologic character and stratigraphic position. Thus the Frisco represents an erosional remnant separated from the Frisco Formation lying to the west and southwest (Amsden, 1975b, panel 9; panel 4, this report) and to the east (panel 4, this report). In the 1 Boley, pre-Frisco erosion has removed earlier Devonian strata (Helderbergian) and probably all of the Upper Silurian Henryhouse-*Kirkidium* beds. This allowed the formation to rest directly on the Chimneyhill Subgroup (undifferentiated; no Cochrane-Blackgum type of lithology present). In the Arbuckle Mountain region the Frisco strata rest on the Lower Devonian Helderbergian strata (Bois d'Arc Formation) and in central Oklahoma on the Upper Silurian *Kirkidium* beds (Amsden, 1975b, panel 10; text-fig. 17, this report). In the eastern Oklahoma outcrops the Frisco rests on the Quarry Mountain Formation.

The Keel-Sylvan contact was cored, with the Keel consisting of a few inches of heavily dolomitized, scattered oolites, and the Sylvan a greenish-gray argillaceous dolomite. The basal 2" of the Keel was analyzed as follows: CaCO<sub>3</sub> 62.56%, MgCO<sub>3</sub> 32.57%, HCl-acid insolubles 3.24%. The upper 2" of the Sylvan was analyzed as follows: CaCO<sub>3</sub> 47.32%, MgCO<sub>3</sub> 30.84%, HCl-acid insolubles 20.23%.

Woodford (Chattanooga) Shale

4320'-4353' (sample depths) Misener Sandstone.

Calcareous dolomite with much angular to subangular quartz detritus to 0.5 mm.

Hunton Group 4353'-4508' (core)

4353'-4390' (core) Lower Devonian; Frisco Formation. Organo-detrital crinoid-bryozoan sparite; much shelly debris including brachiopods. No dolomite or quartz observed. The cored portion (4353'-4373') yields Frisco (Deerparkian) brachiopods (Amsden, 1975b, p. 81).

4390'-4508' (core) Silurian; Chimneyhill Subgroup.

4390'-4495' (sample depths) Moderately to heavily dolomitized pink crinoidal sparite; much shelly debris with parts having a substantial amount of bryozoan material. Very little quartz observed. The cored portion (4353'-4495') has

SHELL 1 BOLEY--SE $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 8, T. 11 N.,

R. 6 E., Pottawatomie County, Oklahoma; elev. 995'; TD 4748' (Ordovician); compl. 5/17/38, D&A. Tops: ?Misener (CC) 4347' (-3352'), Hunton (CC) 4353' (-3358'), Sylvan (core) 4508' (-3513'); Hunton thickness 155'. Cored 4353'-4373' (Hunton), 4495'-4508' (Hunton-Sylvan); 11 thin sections; no chemical analysis.

This well, which cored 18' of Frisco, is located on what appears to be an outlier of Frisco, separated from main body of Lower Devonian by pre-Woodford erosion (see panel 9). Frisco is almost totally devoid of dolomite, but Silurian is moderately to completely dolomitized.

?Misener Sandstone 4347'-4353'

Hunton Group 4353'-4508'

4353'-4373' Lower Devonian; Frisco Formation.

Light-gray biosparite with very little dolomite and very little quartz detritus. Much crinoidal material and fragmented shelly debris, including considerable quantity of bryozoan material. Some visible porosity in thin section, mostly occupying center of hollow fossils and matrix surrounding fossils. Brachiopods from this interval include *Rensselaeria* sp., *R. elongata*, ?*Costispirifer* sp., *Anoplia nucleata*. Assigned to Frisco on basis of these fossils, stratigraphic position, and lithology (typical Frisco lithology). Rau and Ackley (1939, p. 230) illustrate a brachiopod from 1 Boley core which they assign to Misener but which I believe represents Frisco; core preserved at OU Core Library includes no Misener, and illustrated fossil is suggestive of a Frisco spiriferid brachiopod (see also Amsden and Klapper, 1972, p. 2325-2326).

4443'-4459' Silurian; ?Chimneyhill Subgroup.

Pink crinoidal limestone, heavily dolomitized in places. Limestone is crinoid-rich biosparite and micrite and also includes much shelly debris. Strongly dolomitized areas have been replaced by light-gray crystalline dolomite. Parts resemble laminated carbonate in sediment-filled cavities present in Tenkiller Formation of eastern Oklahoma (Amsden and Rowland, 1965, p. 37, pls. 8-11). Very little detrital quartz. No diagnostic fossils observed, and this unit assigned to Chimneyhill on basis of lithologic character and stratigraphic position.

4495'-4505' Chimneyhill Subgroup. Strongly dolomitized, fossiliferous limestone.

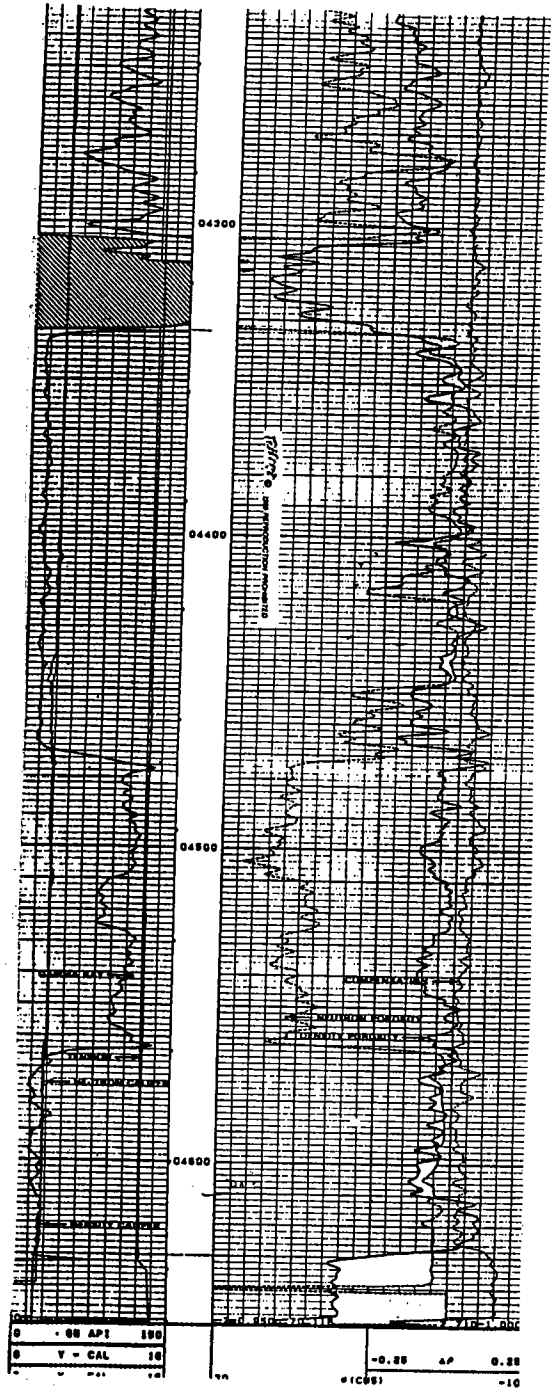
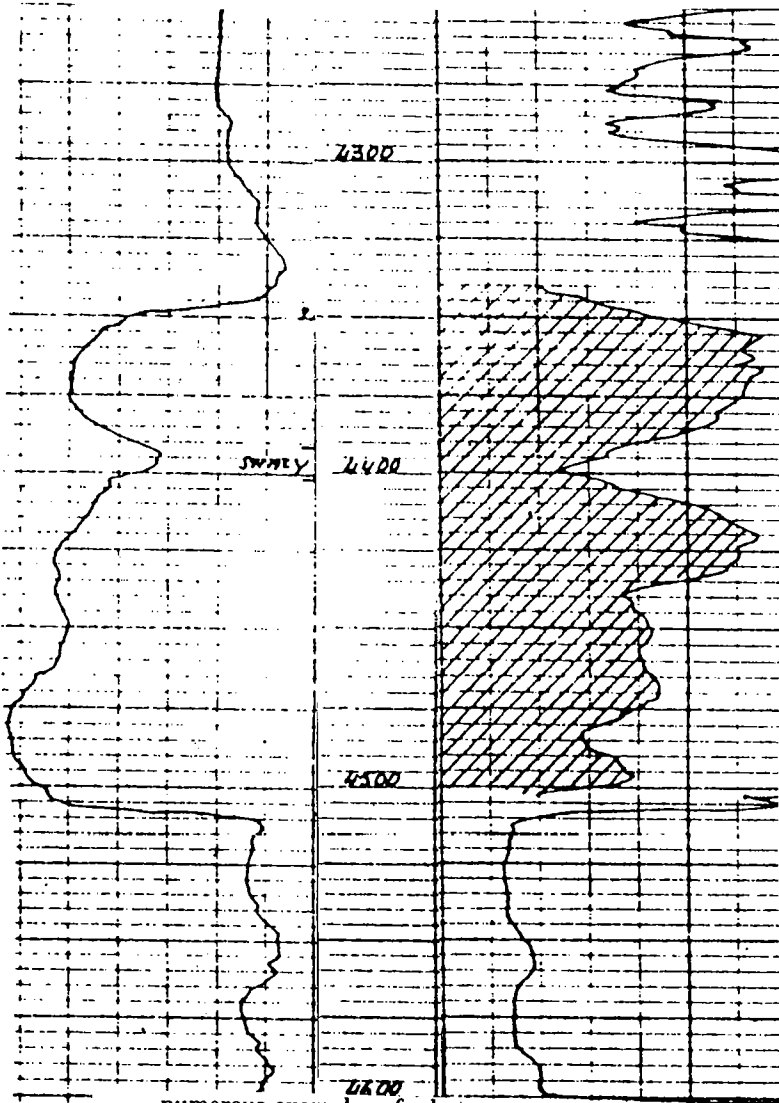
Only minor quartz detritus.

4505'-4508' Keel Formation. Dolomitized oolite; almost entirely crystalline dolomite. Contact with Sylvan exposed. Some visible solution cavities.

Sylvan Shale 4508'

Shell  
 1 Boley  
 SE SE SW  
 Sec. 8, T. 11 N., R. 6 E.  
 Pottawatomie County, Oklahoma  
 elev. 995'

Jerry Scott Drilling Company, Inc.  
 2-4 Benham  
 NW SE NW  
 Sec. 4, T. 11 N., R. 6 E.  
 Pottawatomie County, Oklahoma  
 elev 967'



numerous examples of what appear to be sediment-filled cavities similar to those present at the outcrop in eastern Oklahoma (Amsden and Rowland, 1965, p. 36-39). The dolomitization appears to become more intense in deeper samples. 4465'-4495' includes considerable amounts of porous crystalline dolomite.

4495'-4508' (core) Keel Formation. Dolomitized oolites set in spar. The ooids are preserved entirely in crystalline dolomite and are set in dolospar (pl. 11, fig. 8). The oolite-Sylvan Shale contact was cored and appears as a sharp lithologic boundary (a thin section spans this contact).

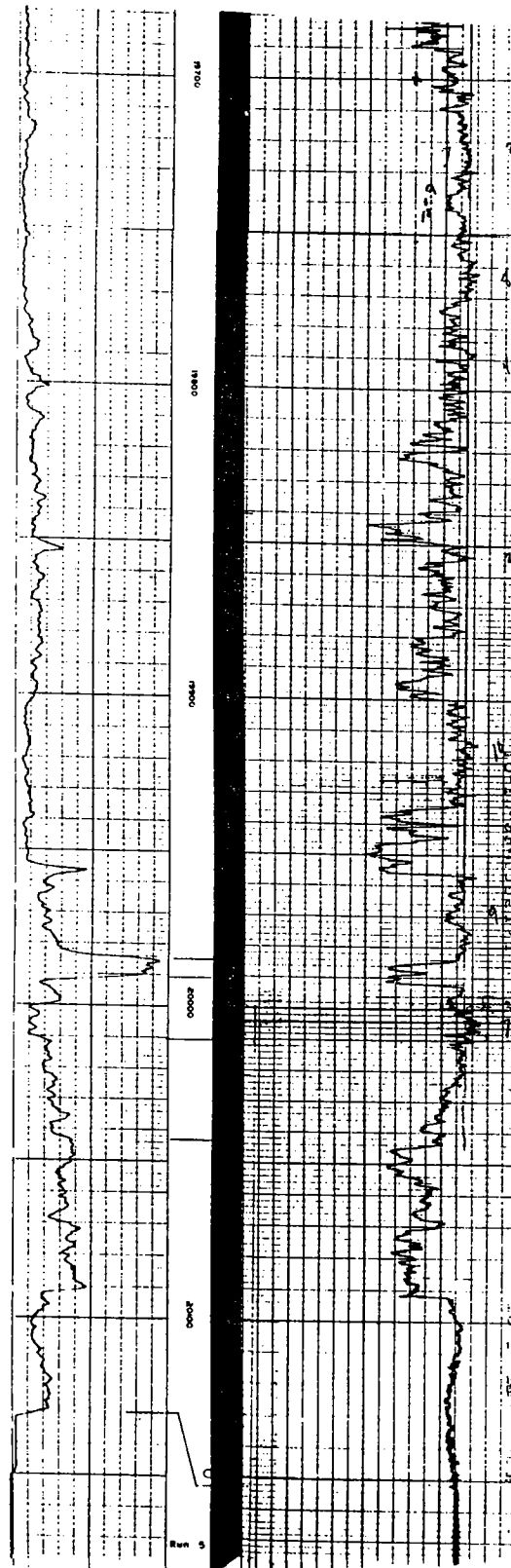
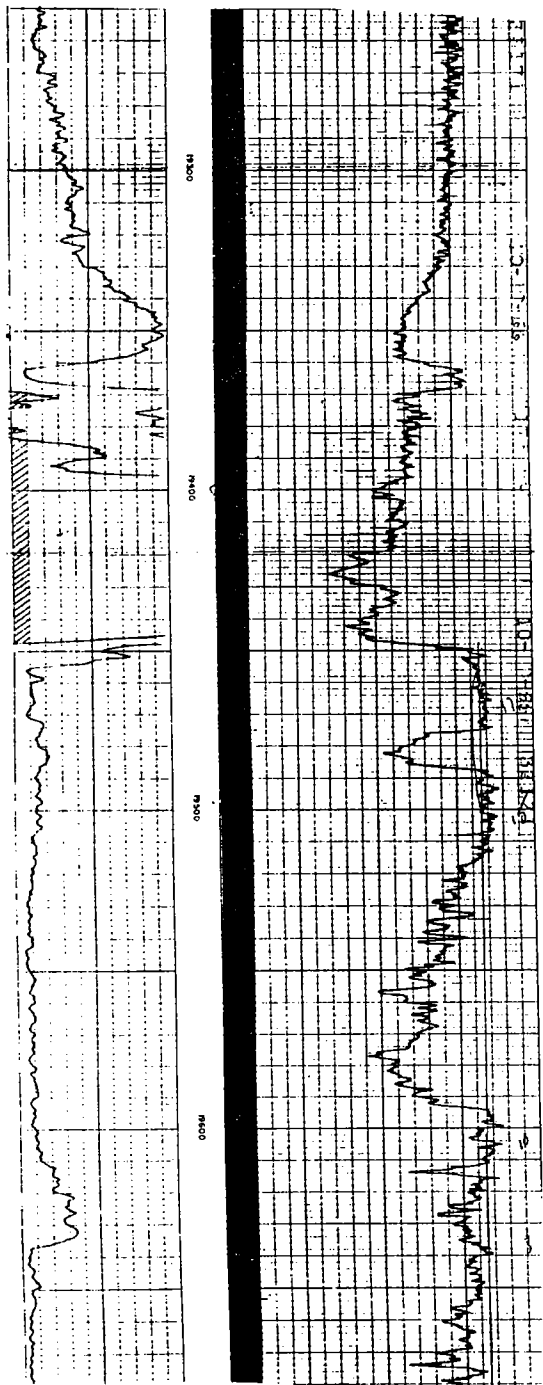
*Sylvan Shale* 4508' (core)

The upper 4" or 5" of Sylvan was cored and is a light-green calcareous shale.



**PHILLIPS PETROLEUM CO. 1-C BOWERS** — 1,320 ft FNL and FEL, sec. 5, B&B Survey, Hemphill County, Texas; elevation GL 2,499 ft, KB 2,521 ft; TD 20,150 ft (?Viola); completion 9/27/66.

Samples examined by Amsden, 1979; Amarillo Sample, Amarillo, Texas. 24 thin sections; last samples 20,150 ft Viola? Tops; Hunton 19,460 ft; Sylvan 19,990 ft; Viola 20,090 ft. The lower part of the Hunton-Sylvan-Viola sequence (19,950–20,100 ft) not well defined in the sample sequence. Illustrated on PLATE 2, STRATIGRAPHIC SECTION D-D'.



JONES & PELLOW 1 BOYD--SW $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 28,  
T. 12 N., R. 2 W., Oklahoma County, Okla-  
homa; elev. 1175'; TD 6582' (Hunton); compl.  
4/11/69, Hunton production reported (per-  
forated 6500'-6524'). Tops: Woodford (CC)  
6468' (-5293'); Hunton (core) 6487' (-5312');  
95' Hunton drilled to TD. Cored 6475'-6533'  
(Woodford-Hunton); 4 thin sections; chemical  
analyses; OU Core Library.

This core penetrates 46' of Frisco; see  
panel 10, section A-A'.

Woodford Shale 6468'-6487'

Hunton Group 6487'-6582' (TD)

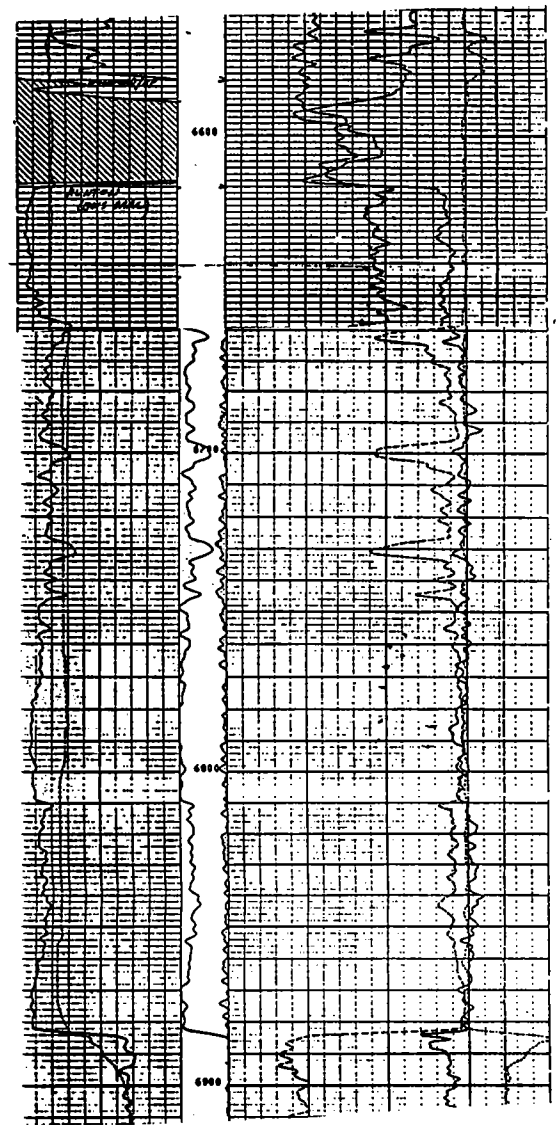
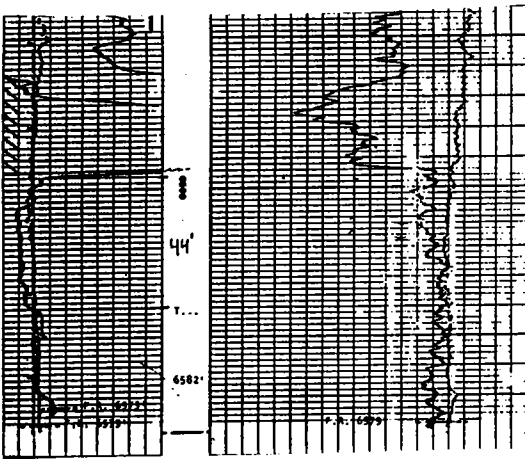
6487'-6533' Lower Devonian; Frisco Formation.

Light-gray to pinkish-gray organo-detrital  
limestone. Much crinoidal debris along  
with shelly material including many  
bryozoan fragments. Very low in insolubles  
and dolomite (averages 0.77% MgCO<sub>3</sub> and  
1.09% HCl insolubles). Some glauconite  
present as fillings of fossils and along  
seams. Some visible porosity in thin  
sections (pl. 7, figs. 3a, 3b; see also  
pl. 1, figs. 2a, 2b, and pl. 2, fig. 4,  
for other illustrations of Frisco from  
1 Boyd). Frisco brachiopods throughout  
interval, including large terebratuloids,  
Costispirifer arenosus, Acrospirifer sp.  
Assigned to Frisco on basis of these  
fossils; also, this is typical Frisco  
lithology.

6533'-6582' (TD) No core.

Jones and Pellow  
1 Boyd  
SW NE NW  
Sec. 28, T. 12 N., R. 2 W.  
Oklahoma County, Oklahoma  
KB 1175'

1-19 Lynch  
SW SE NE  
Sec. 19, T. 12 N., R. 2 W.  
Oklahoma County, Oklahoma  
KB 1248'



TENNECO 1-27 BRADSHAW--SW $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 27, T. 14 N., R. 24 W., Roger Mills County, Oklahoma; elev. 2164'; TD 21,700' (Sylvan Shale); compl. 7/11/73, Morrow production. Tops: Hunton 21,031' (-18,867') (CC), Sylvan 21,635' (-19,471') (samples); Hunton thickness 604'. Samples examined from 21,200' to 21,635' (missing from 20,600' to 21,200'); good quality; 12 thin sections prepared, stained with Alizarin Red-S.

The Hunton in this well resembles the Inexco 1 Lovett, about a mile to the northwest. The upper part of the Hunton examined (21,200'-21,490') is a low-magnesium limestone or marlstone resembling this part of the 1 Lovett, although the 1-27 Bradshaw has somewhat more detrital quartz and somewhat less fossil debris; the lower Hunton in both wells is crystalline dolomite (see panel 10, section C-C').

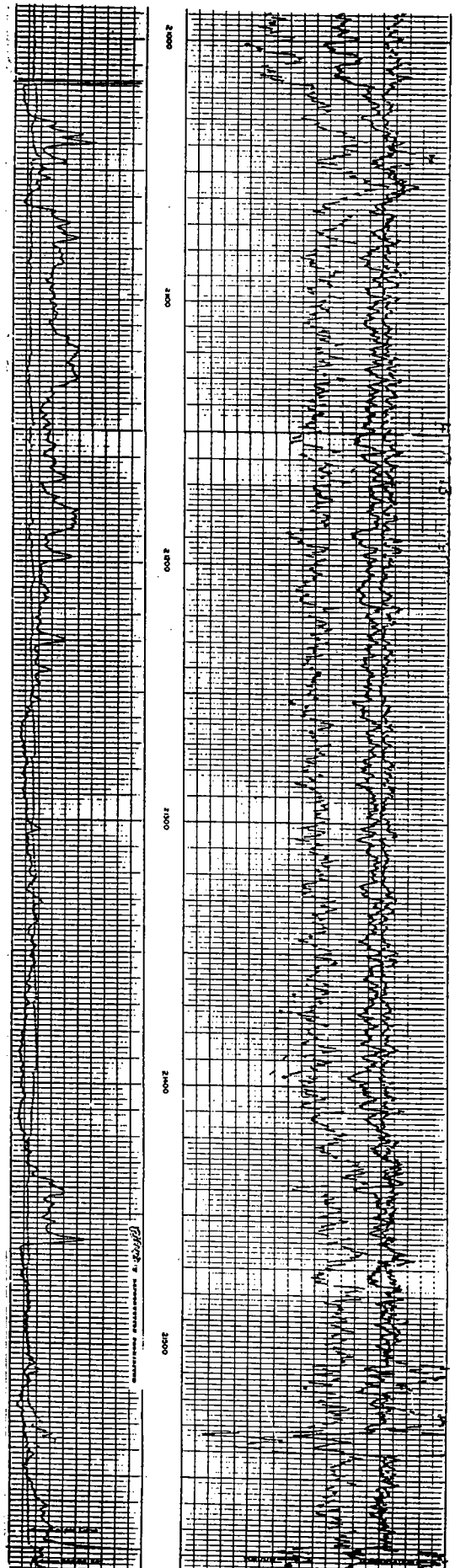
Woodford Shale (samples lost)

Hunton Group 21,031'-21,635' (no samples to 21,200')

21,200'-21,490' ?Kirkidium biofacies in part. Medium to dark-gray moderately to weakly dolomitic limestone, mostly with substantial quantities of detrital quartz, angular to well rounded. Much micrite cement; in considerable part this rock has a marlstone texture.

21,490'-21,635' ?Chimneyhill Subgroup in part. Gray crystalline dolomite with much chert. Some silicification and some detrital quartz.

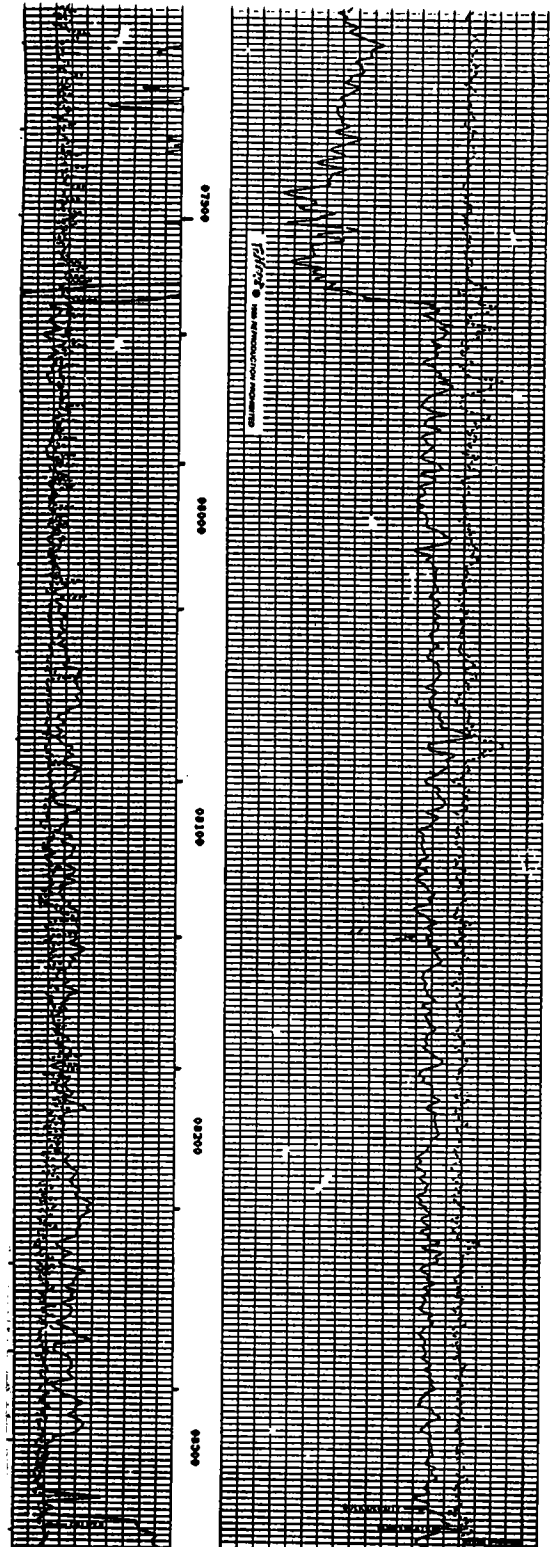
Sylvan Shale 21,635'-21,700' TD



**ANADARKO PRODUCTION CO. 2-26-A BRADSHAW**  
— SW¼NE¼ sec. 26, T3N, R3W, Garvin County, Okla-  
homa; elevation GL 1,111 ft, DF 1,120 ft; TD 8,420 ft (Syl-  
van); completion 9/12/84.

Tops (samples) Hunton 7,930 ft, Sylan 8,340 ft. Cored interval from 7,950 to 8,000 ft (Oklahoma Geological Survey Core and Sample Library). Crinoidal-skeletal grainstone with marly partings; partly silicified and with chert; glauconite; many brachiopods in certain layers, cannot be removed from the matrix except in fragments; probably represents Haragan-Bois d'Arc interval.

Samples examined from 8,000 to 8,370 ft; 9 thin sections prepared. 8,000–8,150 ft interbedded skeletal grainstone and marlstone; 8,150–8,310 ft fossiliferous marlstone, becoming increasing silty in lower part; Haragan-Henryhouse 8,310–8,340 ft crinoidal grainstone; Chimneyhill Subgroup 8,310 ft; Sylan Shale 8,340 ft. (All Hunton Formation data provisional.) *Illustrated on PLATE 1, STRATIGRAPHIC SECTION A-A'.*



**WELL O**

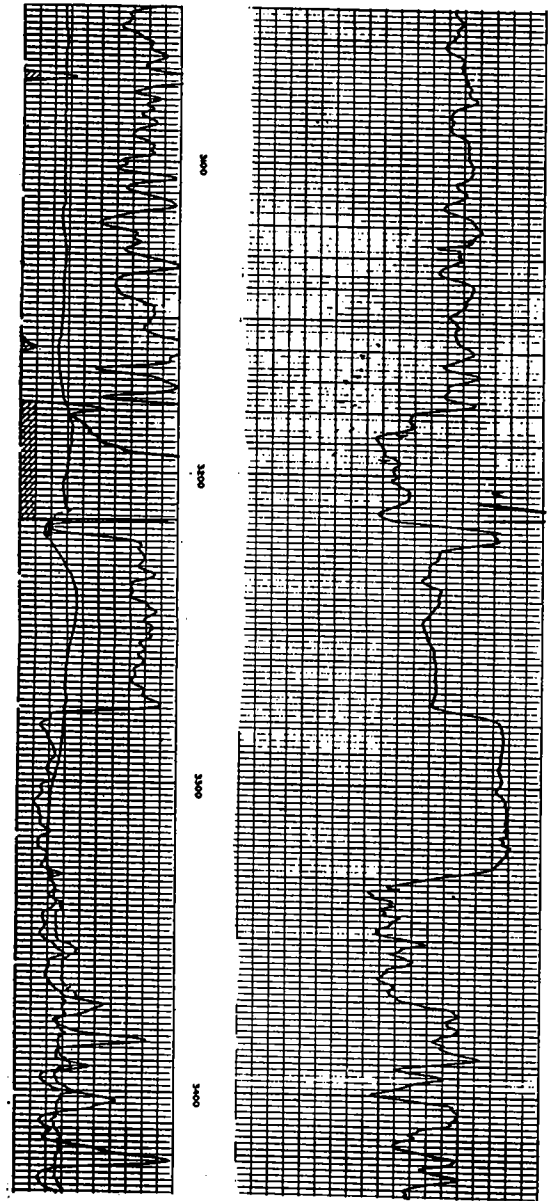
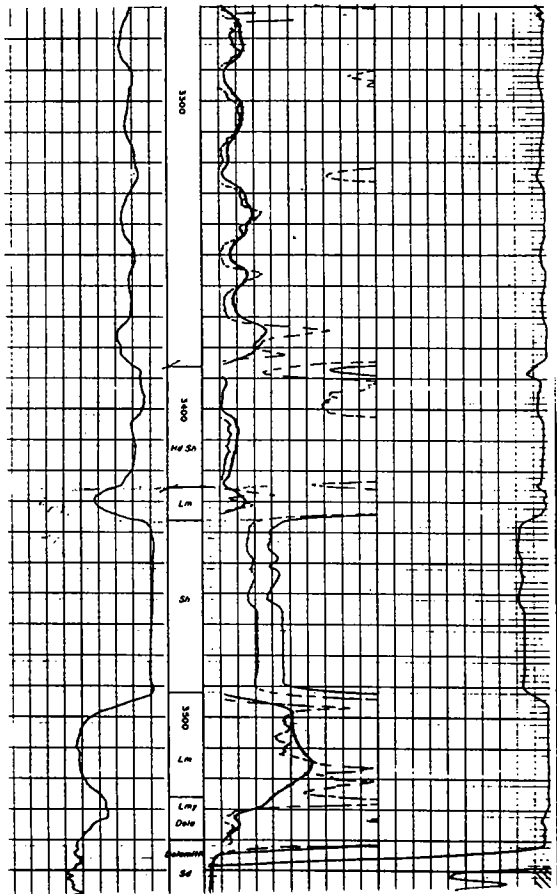
Western Oil and Gas Company, 1 Brandon

This well is in SE $\frac{1}{4}$  NW $\frac{1}{4}$  SE $\frac{1}{4}$  sec. 17, T. 11 N., R. 16 E., McIntosh County, about 10 miles north of Eufaula (text-fig. 3). The well was drilled in 1959 with rotary tools, and the collar elevation is 639.5 feet. Cuttings were studied from 3,450 to 3,490 feet in intervals of 10 feet, and the sample quality is good. Lower Devonian rocks are absent in this well (text-fig. 3). Silurian rocks are 20 feet thick (3,460-3,480 feet; text-fig. 3) and consist of only the Blackgum Formation. This thickness is taken from the samples. The electric log suggests a Blackgum thickness of 11? feet (3,425-3,436). This discrepancy may be attributed to sample lag or mislabeling of the sample containers. The Sylvan Shale was encountered in sample 3,480-3,490, but the electric log suggests the top may be at 3,436.

<i>Depth (feet)</i>	<i>Thickness (feet)</i>	
3,050-3,060	10	CHATTANOOGA FORMATION: Black and brown pyritic shale.
		BLACKGUM FORMATION: 20 feet sample thickness (3,460-3,480), 11? feet electric-log thickness (3,425-3,436). Top of the Blackgum estimated on the electric log at 3,425 feet but the samples suggest the top at 3,460 feet. Blackgum-Sylvan contact estimated on the electric log at 3,436 but the samples suggest the contact at 3,480 feet. Gray to dark-gray dolomitic glauconitic limestone; clear to gray opaque chert; light-gray fine-crystalline dolomite.
3,460-3,470	10	Limestone, gray to dark-gray, dolomitic; 5-8% residue; chert, clear to gray, opaque, 5-10%.
3,470-3,480	10	Limestone, gray to dark-gray, dolomitic, glauconitic; 5-8% residue; chert, dark-gray, gray, clear, opaque, 30-35%; trace light-gray fine-crystalline dolomite.
3,480-3,490	10	SYLVAN FORMATION: Thickness not determined, as the samples were studied only to 3,490 feet. The electric log suggests the top of the Sylvan at 3,436 feet but samples suggest the top at 3,480 feet. Gray to gray-green shale.

Western Oil and Gas Co.  
1 Brandon  
SE NW SE  
Sec. 17, T. 11 N., R. 16 E.  
McIntosh County, Oklahoma  
KB 645'

Tenneco Oil Co.  
1 Cassie Mims Unit  
SE NW  
Sec. 7, T. 11 N., R. 16 E.  
McIntosh County, Oklahoma  
KB 645'



AMERADA 1 BRECKENRIDGE--C NW $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 33,  
T. 25 N., R. 6 W., Grant County, Oklahoma;  
elev. 1081'; TD 6313' (Viola); compl. 6/26/64,  
Misener production. Tops: Woodford (CC)  
6220' (-5139'), Misener (core) 6250' (-5169'),  
Sylvan 6271' (-5190'). Cored 6250'-6274'  
(Misener-Sylvan); 3 thin sections; chemical  
analyses; OU Core Library.

This well is a short distance north of Hunton  
zero isopach. It is described and illus-  
trated in Amsden and Klapper (1972, p. 2327-  
2330), and early Late Devonian (Frasnian)  
conodonts are listed.

Cored 25 ft of the Misener and the Sylvan Shale. De-  
scribed in Amsden and Klapper (1972, p. 2327-2330). Dr.  
Gilbert Klapper (University of Iowa) reports Late Devo-  
nian (Frasnian) conodonts from the Breckenridge core.

Woodford Shale 6220'-6250'

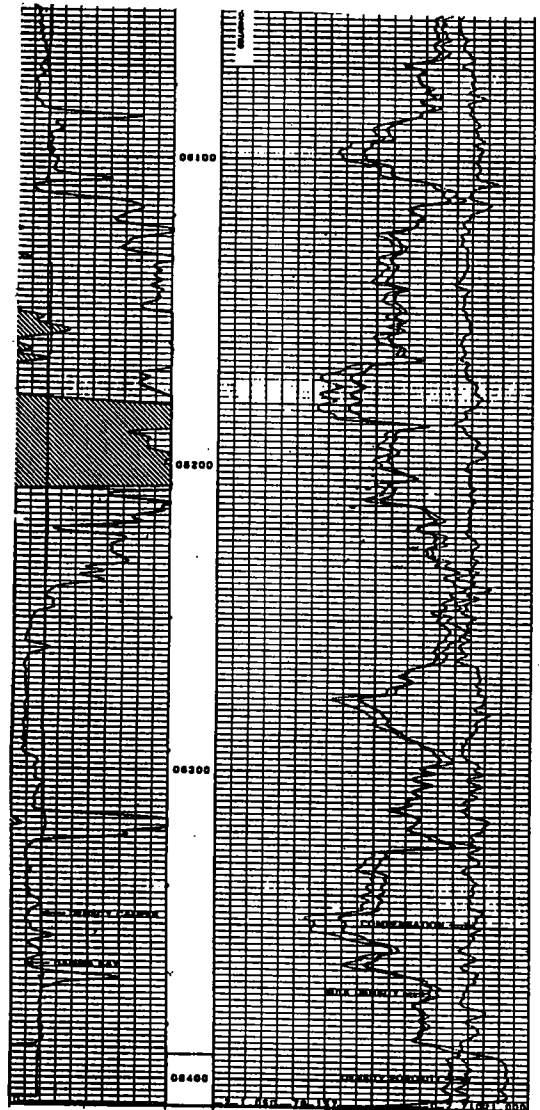
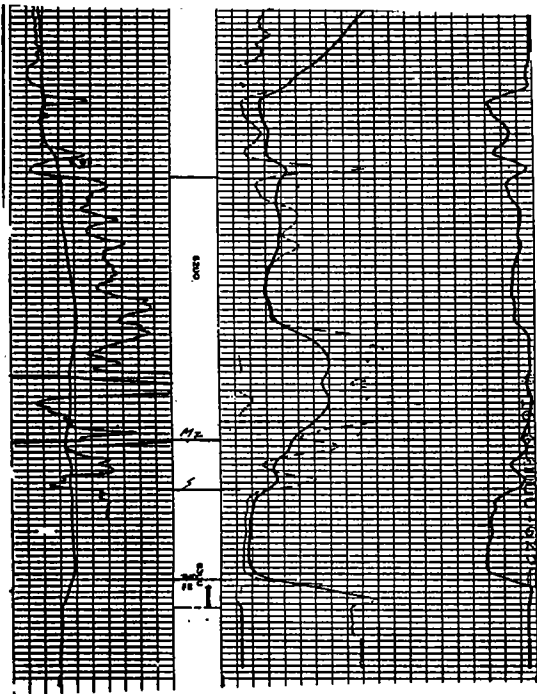
Misener Sandstone 6250'-6271'

6250'-6271' Upper Devonian. Dolomitic  
quartz sandstone with linguloid brachiopods  
and conodonts. HCl insolubles, mainly  
silt and sand-size quartz detritus, range  
from 65% to 90%; quantity of dolomite varies  
greatly, and in places rock probably grades  
into sandy crystalline dolomite. Conodonts  
indicate a Late Devonian (Frasnian) age.



Amerada Petroleum Corp.  
1 W. E. Breckenridge  
NW SE  
Sec. 33, T. 25 N., R. 6 W.  
Grant County, Oklahoma  
KB 1080'

Sundance Energy Corp.  
1 Zaloudek  
NW SW NE  
Sec. 28, T. 25 N., R. 6 W.  
Grant County, Oklahoma  
KB 1092'



PHILLIPS 1 BROOKS "B"—W<sup>1</sup>/<sub>4</sub>E<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec. 30, T. 14 N., R. 6 W., Canadian County, Oklahoma; elev. 1243' KB; TD 9120' (Ordovician); compl. unknown, Hunton gas production reported. Tops: Woodford 8657' (-7414') (CC), Hunton 8705' (-7462') (CC), Sylvan 9057' (-7814') (CC); Hunton thickness 352'. Cored 8710'-8792', 9000'-9042', all Hunton; 3 thin sections; OU Core Library.

This well (not shown on maps) cored the upper part of the Hunton, starting just below the Woodford-Hunton contact, penetrating most of the Frisco Formation and continuing 60' into the *Kirkidium* biofacies. It also cored 40' of lower Hunton, the base of the core being about 15' above the Hunton-Sylvan contact. This lower portion cuts into a part of the Clarita and Cochrane Formations. The Frisco is entirely a low-magnesium organo-detrital limestone, and the Silurian rocks are only moderately dolomitized. The *Kirkidium*-bearing strata are grain-supported organo-detrital limestones with some silt-size angular quartz debris (insoluble residues less than 10%). They include much crinoidal debris along with numerous *Kirkidium* shells and some halysitid corals. The Silurian part of the Hunton is approximately 290' thick and is probably a reasonably complete section. The Hunton lithostratigraphic and biostratigraphic sequence is similar to that in the 1 Streeter (Amsden, 1975b, p. 100), and the Frisco-*Kirkidium* biofacies-lithofacies relationship is nearly identical. The Frisco-*Kirkidium* section is also similar to that present in the Tenneco 1-5 Biller (Appendix). In all 3 wells the Frisco-*Kirkidium* biofacies (=Henryhouse) contact, where there is close biostratigraphic control, is sharply defined (Amsden, 1975b, pl. 15; this report, pl. 9). No Helderbergian-age strata are present.

Dr. James Barrick and Dr. Gilbert Klapper, The University of Iowa, recovered the following conodonts from this core at a depth of 9016': *Dapsilodus obliquicostatus*, *Panderodus unicosatus*, *Decoriconus fragilis*, *Walliserodus* sp. They state that this indicates an age equivalent to the Clarita or younger Silurian strata.

**Woodford Shale 8657'-8705' (CC)**

8657'-8705' No core.

8710'-8770' (core) Lower Devonian; Frisco Formation. Light-gray organo-detrital limestone; low in dolomite and low in HCl-acid insolubles. Fossils recovered at 8737', 8746', and 8764' include large snails, bryozoans, and brachiopods; specimen of *Costelloirostra peculiaris* (Conrad) recovered at 8764'. Lower contact sharply defined.

8770'-8792' (core) Upper Silurian; *Kirkidium* biofacies. Dark- to medium-gray organo-detrital limestone, weakly to moderately dolomitized; some silt-size angular quartz detritus. Three specimens tested for insoluble residues: 7.55%, 7.89%, 3.88%, averaging 6.44%. Contact with the overlying Frisco sharply defined (pl. 9, figs. 1, 2). Compare to the Frisco-*Kirkidium* contact in the Gulf 1 Streeter (Amsden, 1975b, p. 100, pl. 15).

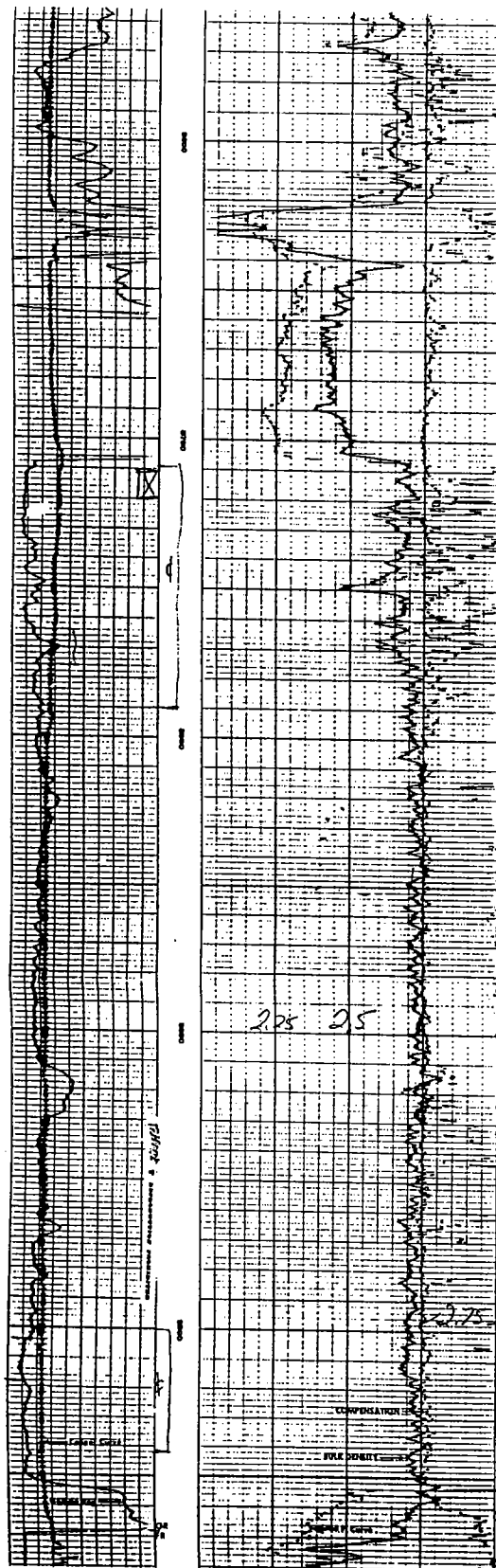
8792'-9000' No core, samples not studied.

9000'-9033' (core) Silurian; Chimneyhill Subgroup, Clarita Formation. Pink crinoidal limestone with minor irregular dolomitized areas. Conodonts recovered at 9016' (see above).

9033'-9042' (core) Silurian; ?Cochrane Formation. Dark glauconitic limestone with much chert; lower 1' to 2' dolomite.

9042'-9057' No core, samples not studied.

**Sylvan Shale 9057' (CC)**



EARLSBORO (HALL-JONES) 1 BROTTON—  
SW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 20, T. 9 N., R. 15 E., McIntosh  
County, Oklahoma; elev. 700' KB (693' GL); TD 5085'  
(Sylvan); compl. 1/18/63, Cromwell-Pitkin-Hunton  
production reported, Hunton perforated 4919'-4973',  
Sallisaw-Chimneyhill. Tops: Misener 4900' (-4200')  
(sample depth), Hunton 4913' (-4213') (SP log),  
Sylvan 5049' (-4349') (SP log); Hunton thickness  
136'. Samples examined from 4850' to 5085', poor  
quality with considerable contamination from above;  
8 thin sections; 9 stained with Alizarin Red-S; sam-  
ples, Oklahoma Well Sample Service, Shawnee, Ok-  
lahoma.

Hunton strata are assigned to the Sallisaw Formation  
and the Chimneyhill Subgroup. This well also in-  
cludes Misener Sandstone. For a discussion on the  
distinction between the Misener and the Sallisaw  
lithologies, see Sallisaw Formation in text. Chimney-  
hill strata are provisionally assigned to the Quarry  
Mountain-Tenkiller-Blackgum Formations. See dis-  
cussion under Chimneyhill Subgroup in text; also  
see descriptions of 1 Follansbee, 1 Graham, and 1  
Dunagan.

Hunton production, judging from the perforated in-  
terval, is from the Sallisaw and upper Chimneyhill  
beds.

*Woodford (Chattanooga) Shale*

4900' (sample depth)-4913' (SP log) Misener Sand-  
stone. Quartz sandstone; well-rounded grains with  
crystal overgrowths ranging up to 1 mm.

*Hunton Group 4913'-5049' (SP log)*

4913' (SP log)-4940' (sample depth) Devonian;  
Sallisaw Formation. Dolomite with angular to sub-  
angular quartz grains up to 0.2 mm. Chert with  
scattered detrital quartz and euhedral dolomite  
crystals. Typical Sallisaw lithology. (See discussion  
in text under Sallisaw Formation).

4940'-5049' (sample depths) Silurian; Chimney-  
hill Subgroup.

4940'-4975' (sample depths) ?Quarry Moun-  
tain Formation. Limestone mixed with much  
dark shale; poor samples.

4975'-5020' (sample depths) ?Quarry Moun-  
tain Formation. Weakly to strongly dolomitized  
organo-detrital crinoidal sparite with some  
porous crystalline dolomite. Some chert in lower  
part.

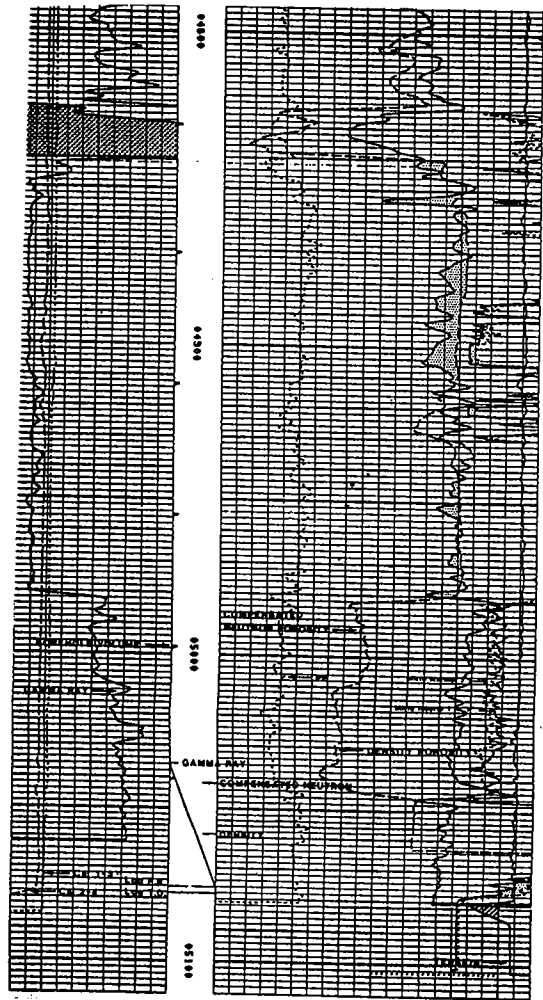
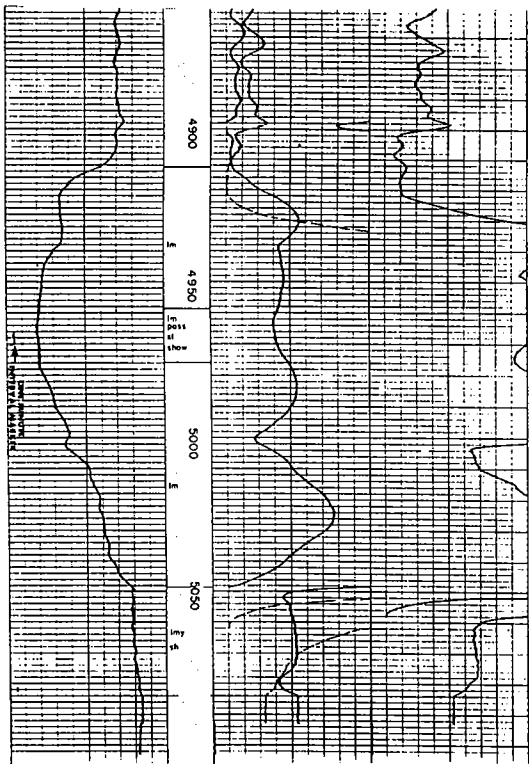
5020'-5050' (sample depths) ?Tenkiller Forma-  
tion. Pink crinoidal micrite with minor spar;  
includes a rich shelly fauna with only moderate  
bryozoan debris. Weakly to moderately dolomi-  
tized; very little detrital quartz. Some chert.

5050'-5060' (sample depths) ?Blackgum Forma-  
tion. Weakly to moderately dolomitized crinoidal  
micrite and sparite. Minor detrital quartz; minor  
chert.

*Sylvan Shale 5049' (SP log)*

Earlsboro Oil and Gas  
 1 Brotten  
 SW NW SW  
 Sec. 20, T. 9 N., R. 15 E.  
 McIntosh County, Oklahoma  
 KB 700'

Sonat Exploration Co.  
 2 Kimberling  
 660' FNL & 660' FEL  
 Sec. 19, T. 9 N., R. 15 E.  
 McIntosh County, Oklahoma  
 KB 620'



UNION OF CALIFORNIA 1-33 BRUNER--N $\frac{1}{2}$ N $\frac{1}{2}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$   
 sec. 33, T. 11 N., R. 25 W., Beckham County,  
 Oklahoma; elev. 2090'; TD 24,548' (?Hunton);  
 compl. 4/8/72, Hunton production. This well  
 penetrated 483' of Hunton, Woodford-Hunton  
 contact being at 24,065' (-21,975'), and total  
 depth at 24,548' (in Hunton).

This well was drilled initially to a depth of 24,136', where the drill twisted off; samples were collected from this interval, including about 40' of Hunton; these samples appear to be good, and information bearing on the Hunton lithology is believed to be reliable (3 thin sections prepared). At a depth of 24,136' the well was whipstocked and drilled on to the total depth. The samples from this part are extremely poor and consist in large part of "mica" and other material introduced into the hole, with only a few pieces of rock (11 thin sections prepared). The samples above the whipstocked portion consist of organo-detrital sparite with very little dolomite or detrital quartz; fossils include both pelmatozoan debris and shelly material including brachiopods and bryozoans. Below the whipstock the rock fragments are mainly of three types: (1) an organo-detrital limestone; (2) a peculiar, mottled limestone that may be a recrystallized organo-detrital limestone or perhaps at least in part an algal limestone (this type has not been observed heretofore in any of the Hunton rocks, surface or subsurface); (3) crystalline dolomite. In view of the very sparse representation of rock fragments, and the mixture of rock types including the unusual mottled limestone, it seems best to regard this interval as of questionable lithologic affinities (the presence of crystalline dolomite suggests that this well lies within the dolomite province). Samples borrowed from Oklahoma Well Sample Service, Shawnee, Oklahoma, and Union of California. In 1972 (Oklahoma Geology Notes, p. 91) this was reported as the world's deepest producing well.

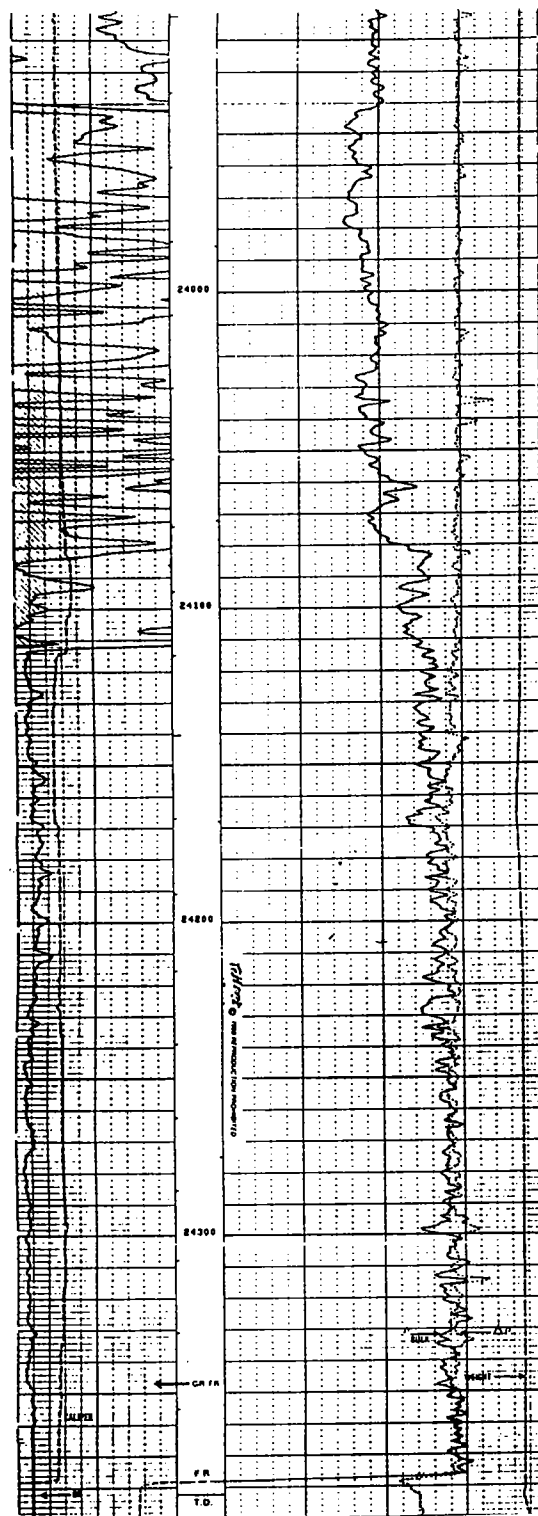
See description of the Union of California 1 Goode, located about a mile northeast of the 1-33 Bruner.

Woodford Shale to 24,065'

Dark shale.

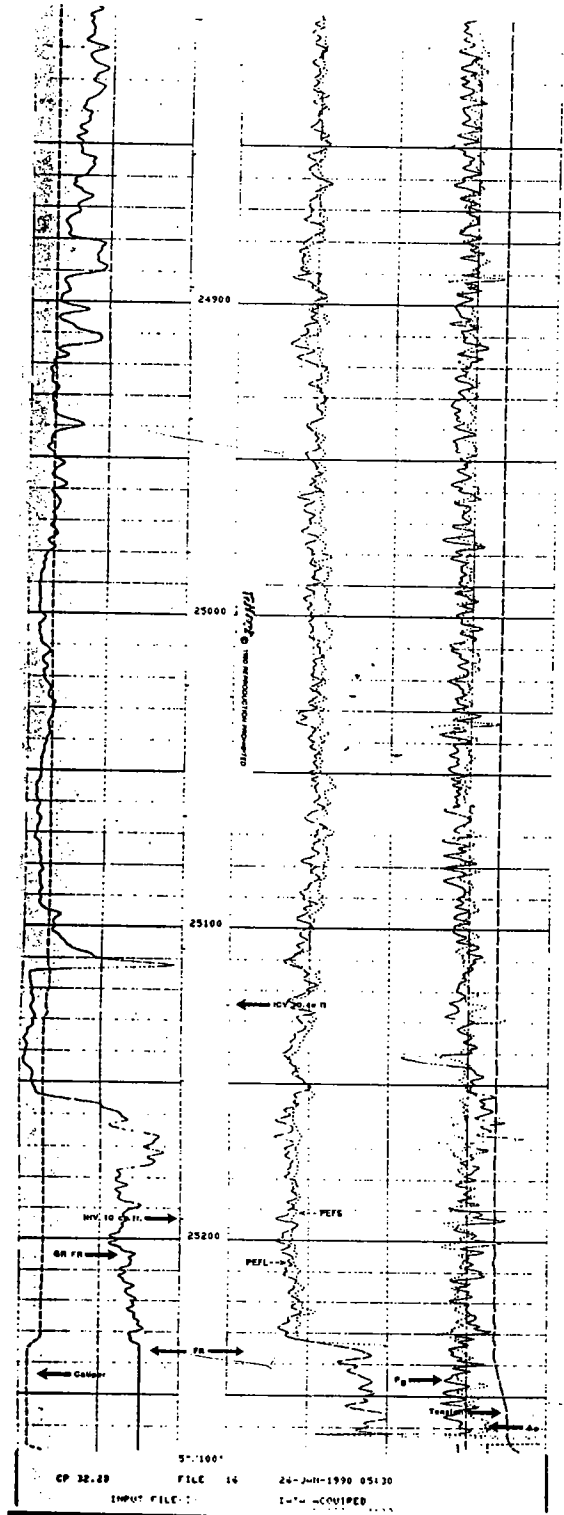
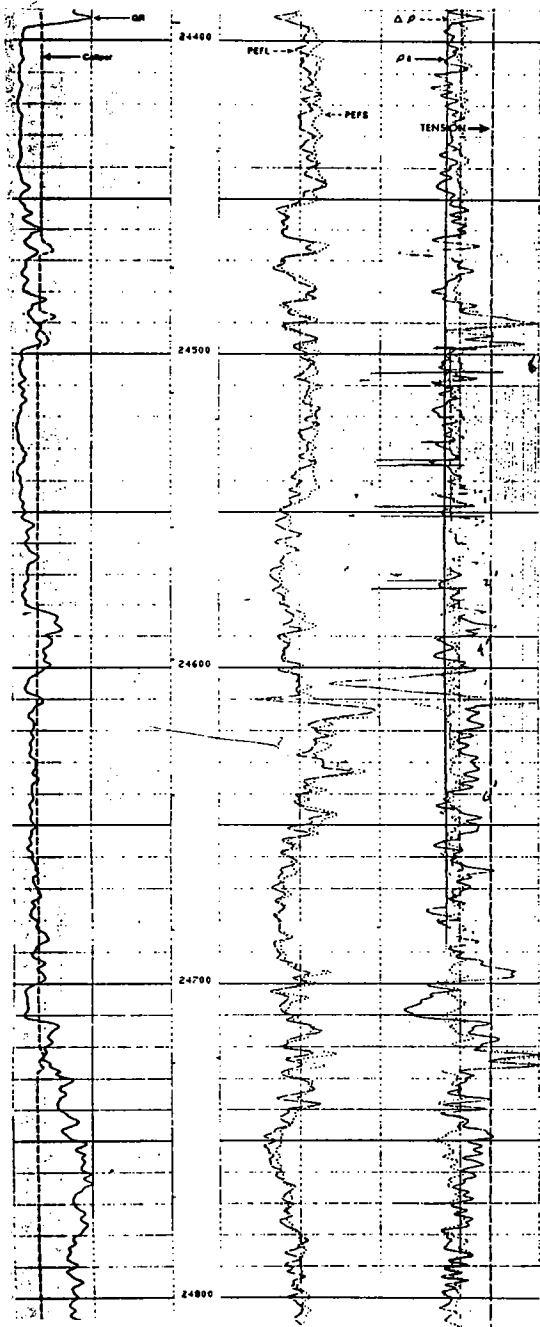
Hunton Group 24,065'-24,548' TD

24,065'-24,130' Light-gray organo-detrital limestone with very little detrital quartz or dolomite.



The lithology and stratigraphic position of these strata are similar to those in the upper part of the 1 Baden and other deep wells to the east, the strata here being assigned with question to the Lower Devonian; however, these limestone beds in the 1-33 Bruner could represent undolomitized Kirkidium beds, similar to those found in the Phillips 1-C Lee.

24,130'-24,547' Poor-quality samples.



CALVERT-MID AMERICA 1 BUNDY—NE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> SW<sup>1</sup>/<sub>4</sub> sec. 36, T. 9 N., R. 21 E., Haskell County, Oklahoma; elev. 485'; TD 5662' (?Sylvan); compl. unknown; no Hunton production reported. Tops: Woodford 5370' (-4885') (CC), Hunton 5430' (-4945') (CC), Sylvan 5562' (-5077') (SP log); Hunton thickness 132'. Samples examined from 5100' to 5600', much sample lag, and only the sample at 5600' may include Sylvan. Samples missing from 5600' to TD, considerable sample contamination, considerable sample lag; 9 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The Hunton strata are assigned to the Chimneyhill Subgroup on the basis of lithologic characteristics and stratigraphic position. The Quarry Mountain, Tenkiller, and Blackgum Formations are tentatively recognized. Most of the Chimneyhill strata are moderately to heavily dolomitized crinoidal limestones.

**Woodford (Chattanooga) Shale 5370'-5430' (CC)**

Approximately 10' of Misener-Sylamore Sandstone at the base: angular to rounded quartz grains to 1 1/2 mm (could include some Sallisaw Formation).

**Hunton Group 5430'-5562' (CC)**

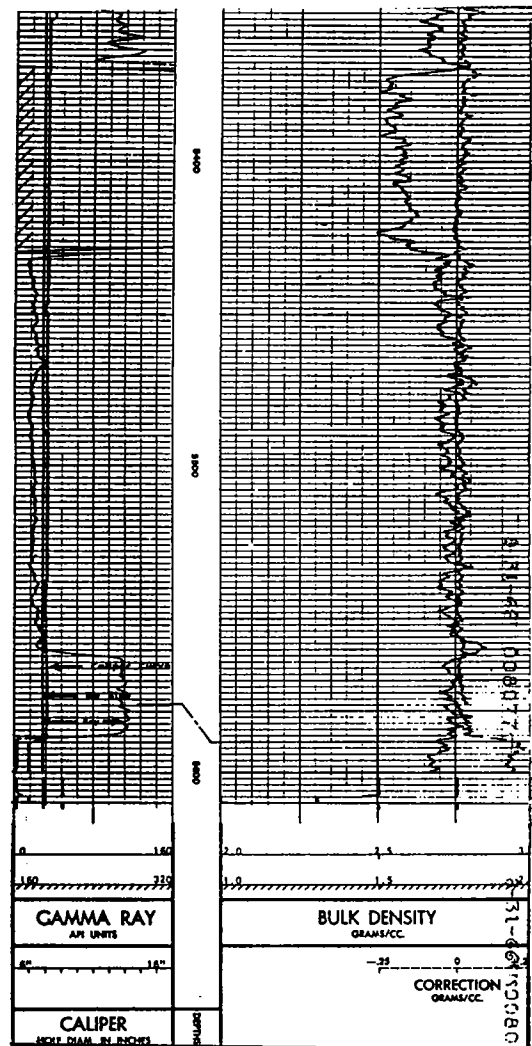
5430'-5562' (CC) Silurian; Chimneyhill Subgroup.

5430' (CC)-5550' (sample depth) ?Quarry Mountain Formation. Moderately to heavily dolomitized crinoidal limestone; some crystalline dolomite. No detrital quartz observed.

5550'-5575' (sample depths) ?Tenkiller Formation. Weakly to heavily dolomitized pink crinoidal micrite; ostracodes and other shelly fossils, but very few bryozoans. Very little detrital quartz.

5575'-5600' (sample depths) ?Blackgum Formation. Moderately to heavily dolomitized, glauconitic crinoidal micrite; some bryozoans present. Last sample has some angular quartz detritus to 1 mm.

**Sylvan Shale 5562' (SP log)**



## WELL B

W. B. Cleary, 1 Burke

This well is in SE $\frac{1}{4}$  SE $\frac{1}{4}$  SE $\frac{1}{4}$  sec. 13, T. 13 N., R. 24 E., Sequoyah County, about 7 miles east of Marble City (text-fig. 3). The well was drilled with rotary tools in 1959. An electric log was not run and the collar elevation is not available. Cuttings were studied from 510 to 790 feet in intervals of 10 feet, and the sample quality is good. Lower Devonian rocks are approximately 60? feet thick (520-580) and consist of the Sallisaw Formation 50? feet (520?-570; exact thickness is uncertain as sample 520-530 contains both Sylamore and Sallisaw) and Frisco Formation 10 feet (570-580). Silurian rocks are 190 feet thick (580-770 feet; text-fig. 3) and comprise five units: Quarry Mountain Formation 170 feet (580-750), Marble City Member 110 feet (580-690) and Barber Member 60 feet (690-750), Tenkiller Formation, Blackgum Formation, and Pettit Oölite 20? feet (750-770?; exact thickness is uncertain as Blackgum, Pettit, and Sylvan are present in sample 770-780). One thin section was prepared from the Blackgum Formation in sample interval 770-780.

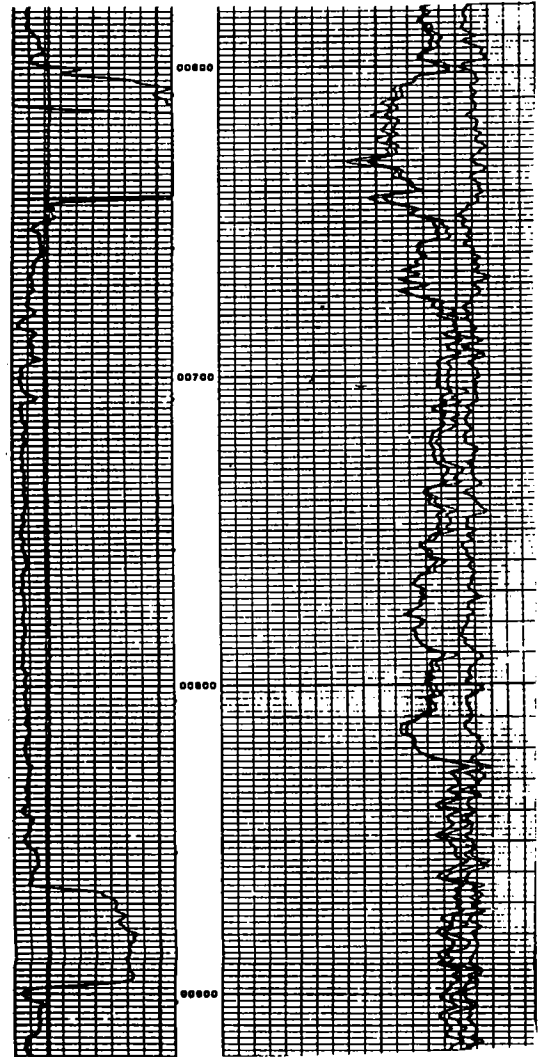
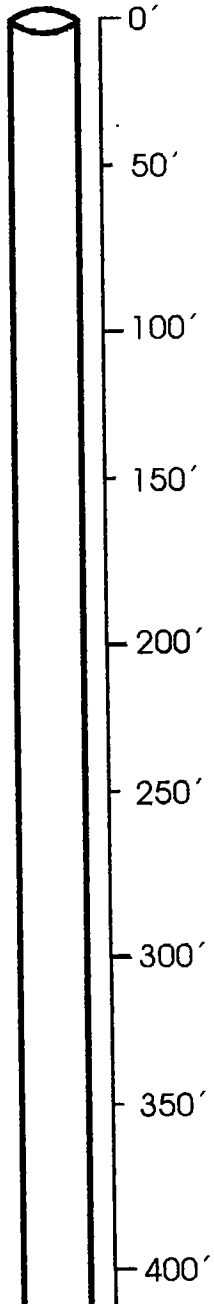
Depth (feet)	Thickness (feet)	
		<b>CHATTANOOGA FORMATION:</b>
510-520	10	Shale, black, brown, pyritic. <i>Sylamore Sandstone:</i> Coarse-grained subangular to subrounded unconsolidated sand. Thickness uncertain, as Sylamore is present with Sallisaw in sample 520-530.
		<b>SALLISAW FORMATION:</b> 50? feet (520-570). Exact thickness uncertain, as Sallisaw and Sylamore are present in sample 520-530. Tan to light-gray arenaceous glauconitic dolomitic limestone; light-gray to off-white fine-crystalline arenaceous calcitic dolomite; gray to white arenaceous opaque chert.
520-530	10	Sand, coarse-grained, subangular to subrounded, unconsolidated, 50%; limestone, dolomitic, glauconitic, arenaceous, light-tan to tan to gray; 10-15% residue consisting of quartz and glauconite.
530-540	10	Limestone as above; chert, gray, opaque, 10-15%.
540-550	10	Dolomite, calcitic, arenaceous, light-gray, glauconitic, fine-crystalline; 10-15% residue consisting of quartz and glauconite; chert, white, arenaceous, gray, opaque, 40-50%.
550-560	10	Dolomite as above; chert as above, 10-15%.
560-570	10	Dolomite, calcitic, arenaceous, light-gray to off-white, glauconitic, fine-crystalline; 10-15% residue consisting of quartz and glauconite; chert, white, arenaceous, gray, opaque, 80-85%.
570-580	10	<b>FRISCO FORMATION:</b> 10 feet (570-580). Light-gray to off-white fossiliferous limestone; abundant crinoid and other skeletal debris. <b>QUARRY MOUNTAIN FORMATION:</b> 170 feet (580-750). <i>Marble City Member:</i> 110 feet (580-690). Off-white to white to pink crinoidal limestone, in part dolo-



W. B. Cleary  
1 Burke  
SE SE SE  
Sec. 13, T. 13 N., R. 24 E.  
Sequoyah County, Oklahoma  
KB ?'

Cimmaron Exploration Corp.  
177-1 CPC Crawford  
SE NW  
Sec. 19, T. 13 N., R. 24 E.  
Sequoyah County, Oklahoma  
KB 897'

Log not  
available



W. B. Cleary  
 1 Burke  
 SE SE SE  
 Sec. 13, T. 13 N., R. 24 E.  
 Sequoyah County, Oklahoma  
 KB ?

continued

<i>Depth (feet)</i>	<i>Thickness (feet)</i>	
		mitic; light-gray to gray fine-crystalline dolomite, in part calcitic.
580-590	10	Dolomite, light-gray, fine-crystalline.
590-600	10	Dolomite as above; limestone, off-white to pink, crinoidal, 10-15%.
600-610	10	Limestone, off-white to white to pink, crinoidal; abundant pink crinoidal material; dolomite, as above, 20-25%.
610-630	20	Limestone, off-white to white, pink, crinoidal; abundant crinoidal debris.
630-690	60	Limestone as above, except in part dolomitic and less pink crinoidal; dolomite, calcitic, white to light-gray, medium- to fine-crystalline, 5-10%. <i>Barber Member: 60 feet (690-750). Light-gray fine- to medium-crystalline dolomite.</i>
690-700	10	Dolomite, medium- to fine-crystalline, gray to light-gray; limestone, as above, 5-10%.
700-710	10	Dolomite, as above.
710-720	10	Dolomite, as above; limestone, as above, 25%.
720-730	10	Dolomite, as above; limestone, as above, 35%.
730-750	20	Dolomite, gray, fine-crystalline.
750-760	10	<b>TENKILLER FORMATION:</b> Off-white to light-gray to pink dark-gray crinoidal pyritic limestone; in part dolomitic and abundant orange crinoidal material. Thickness uncertain, as Tenkiller and Blackgum are present in sample 760-770. <b>BLACKGUM FORMATION:</b>
760-770	10	Light-gray fine-crystalline glauconitic dolomite; tan to brown fine-crystalline glauconitic dolomite; gray pyritic limestone; gray opaque chert. Thickness uncertain, as sample interval 760-770 contains 20% Tenkiller limestone; 75% Blackgum dolomite; 5% Blackgum chert.
770-780	10	<i>Pettit Oölite:</i> Gray to dark-gray oölite; very few pieces found. Some rounded silicified oölite? present. A thin section of this oölite? was prepared (B-1). This material resembles the fractured and silicified oölite found at Ch2. Thickness uncertain as sample interval 770-780 contains 20% Blackgum dolomite, 20% Blackgum chert, 60% Sylvan shale.
780-790	10	<b>SYLVAN FORMATION:</b> Thickness not determined, as the samples were only studied to 790 feet. Sylvan was first encountered in sample 770-780. Gray-green to green shale. Sample interval 780-790 contains only Sylvan shale.

SINCLAIR 3 BURRIS—SW $\frac{1}{4}$ /NE $\frac{1}{4}$ /NW $\frac{1}{4}$  sec. 27, T. 2 N., R. 7 E., Pontotoc County, Oklahoma; elev. 706'; TD 4295' (Ordovician, Simpson); compl. 12/5/51, Chimneyhill production reported (perf. 3684'–3690'). Tops: Woodford 3234' (–2528') (CC), Hunton 3390' (–2684') (CC), Sylvan 3692' (–2986') (GR log), "Fervale" (?Welling) Formation 3825' (–3119') (sample depth); Hunton thickness 302'. Samples examined from 3270' to 3870', good quality; 17 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The Hunton sequence comprises an upper organo-detrital limestone (Frisco), a mixed marlstone-organo-detrital section (?Fittstown Member, Bois d'Arc Formation), a marlstone section (Henryhouse-Haragan undifferentiated), and a basal organo-detrital limestone (Chimneyhill Subgroup). The latter includes recognizable Clarita, Cochrane, and Keel stratigraphic units. This sequence, all low-magnesium limestone, is most similar to the section in the northeastern part of the Arbuckle outcrop area, the Lawrence Uplift south to old Hunton townsite (see Amsden, 1960, Appendix). Oil production (Fitts Field) is reported from the lower organo-detrital Chimneyhill strata.

Woodford (Chattanooga) Shale 3234'–3390' (CC)

No Misener Sandstone recognized.

Hunton Group 3390'–3692' (CC).

3390' (CC)–3430' (sample depth). Lower Devonian; Frisco Formation (may include some Fittstown Member, Bois d'Arc Formation). Organo-detrital sparite with some micrite; mostly pelmatozoans and bryozoans. Debris appears much broken up in places and with evidence of solution. Almost no quartz or dolomite observed.

3430'–3500' (sample depths) ?Fittstown Member, Bois d'Arc Formation. Mixture of marlstone and organo-detrital limestone. Marlstone with much fine subangular quartz detritus and some scattered dolomite crystals. Fossils varied, including bryozoans, crinoids, brachiopods, trilobites, and ostracodes.

3500'–3660' (sample depths) Silurian–Lower Devonian; Henryhouse-Haragan Formations undifferentiated (possibly includes some Cravatt Member, Bois d'Arc Formation, although no chert was observed). Sparingly fossiliferous marlstone; fossils mainly pelmatozoan plates and ostracodes. Considerable fine (to 0.1 mm) subangular quartz detritus. Scattered dolomite crystals; rock is a low-magnesium limestone (estimated less than 10% MgCO<sub>3</sub>).

3660' (sample depth)–3692' (GR log) Silurian; Chimneyhill Subgroup.

3660'–3680' (sample depths) Clarita Formation. Pink crinoidal sparite and micrite. Fossils include pelmatozoan plates, snails, ostracodes, trilobites, brachiopods, and bryozoans as common elements. Very little detrital quartz or dolomite.

3680'–3690' (sample depths) Cochrane Formation. Glauconitic crinoidal micrite-sparite; chert. Very little dolomite or detrital quartz.

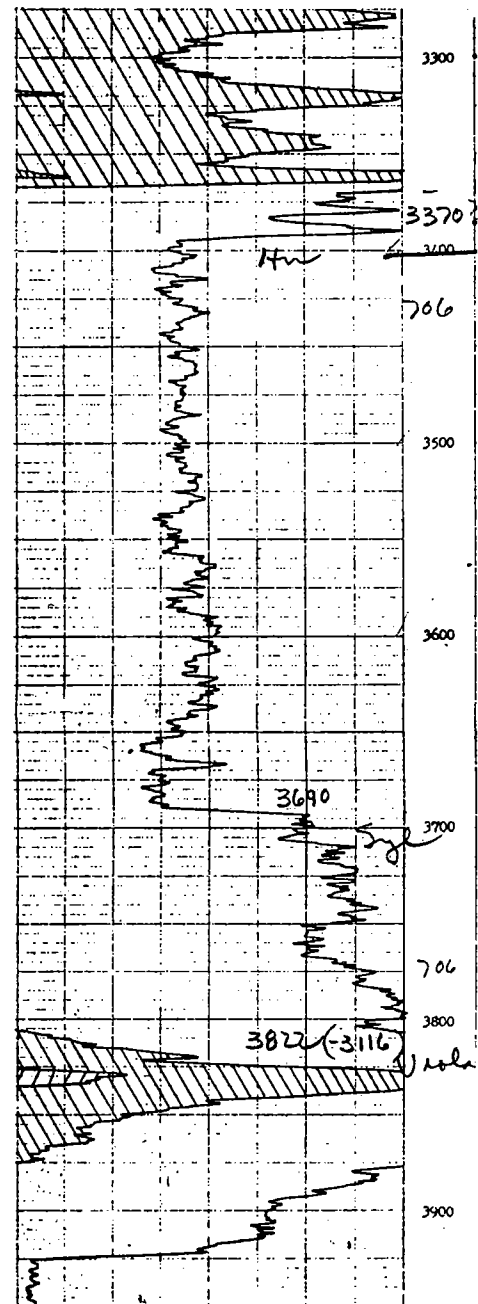
3690'–3700' (sample depths) Keel Formation. Fossiliferous oolite, mainly with spar cement. Ooids with both radial and concentric structures; fossil nuclei. Very little dolomite or detrital quartz.

Sylvan Shale 3692' (GR log)–3825' (sample depth)

"Fervale" Limestone 3825' (sample depth)

3830'–3835' (thin section) Welling Formation. Organo-detrital sparite with no observed detrital quartz or dolomite.

3850'–3855' (thin section) Same, but with well-rounded detrital quartz grains to 0.3 mm.



**MOBIL 1 BURRIS UNIT**—C SW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec. 15, T. 7 N., R. 19 E., Haskell County, Oklahoma; elev. 907' KB; TD 7871' (Viola); compl. 12/4/64, D&A. Tops: Hunton 7755' (-6848') (CC), Sylvan 7778' (-6861') (CC), Welling 7815' (-6908') (sample depth); Hunton thickness 23'. Samples examined from 7700' to 7870'; cored 7749'-7808', not examined; no samples 7815'-7850'; 1 thin section, OGS; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

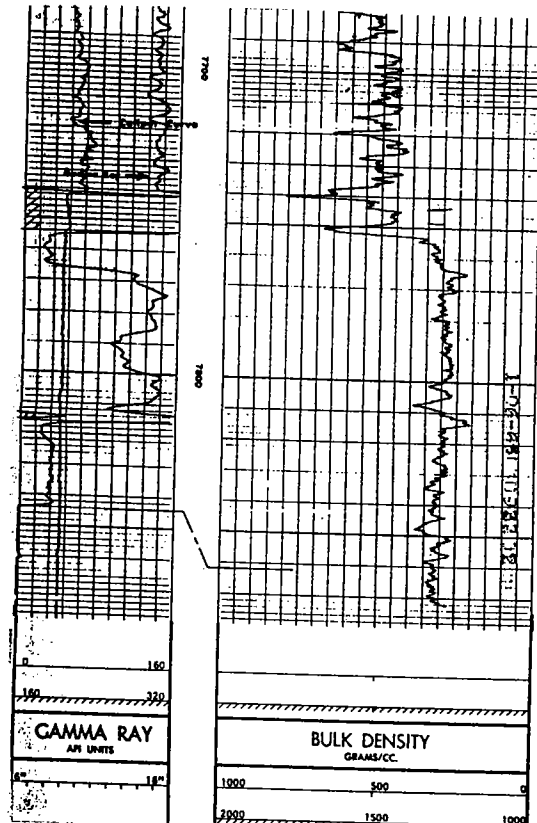
Hunton strata are assigned to the Blackgum Formation on the basis of stratigraphic position and lithologic character. These rocks are only moderately dolomitized. Hunton strata are thin, and this well is probably near the southern truncated margin of the group.

*Woodford (Chattanooga) Shale*  
*Hunton Group 7755'-7778' (CC)*

Silurian; Chimneyhill Subgroup; ?Blackgum Formation. Weakly to moderately dolomitized organo-detrital micrite with glauconite. Very little detrital quartz observed.

*Sylvan Shale 7778'-7815' (CC)*

*Welling Formation 7815'-7871' (TD) (sample depths)*  
 Organo-detrital limestone.



**ARKLA EXPLORATION 1-13 CARR ESTATE—1650'**

FSL and 1650' FEL sec. 13, T. 2 S., R. 10 E., Atoka County, Oklahoma; elev. 679' KB (653' GL); TD 12,095' (Ordovician); compl. 6/21/77, D&A. Tops: Hunton 8200' (-7521) (sample depth), Sylvan 8440' (-7761') (sample depth), Welling 8550' (-7871') (sample depth); Hunton thickness 240'. Samples examined from 8060' to 9200', excellent quality; 42 thin sections (17 Hunton); samples, OU Core Library.

The Hunton sequence consists of an upper marlstone (Henryhouse and/or Haragan Formation) and a lower organo-detrital limestone (Chimneyhill Subgroup). The strata are low-magnesium limestones throughout and appear to be typical in all respects of those in the eastern outcrops of the Arbuckle Mountains. The Sylvan Shale is about 110' thick and is underlain by Welling ("Fernvale") organo-detrital limestone.

*Woodford (Chattanooga) Shale*

No Misener Sandstone observed.

*Hunton Group 8200'-8440'* (sample depths)

8200'-8400' (sample depths) ?Lower Devonian-  
?Silurian; Henryhouse and (or) Haragan Formation. Marlstone with scattered fossils; organic material includes pelmatozoan plates, trilobites, ostracodes, bryozoans, and brachiopods; concentration varies, but in general fairly sparse. Scattered, fine (less than 0.1 mm) angular to subangular detrital quartz and very little dolomite. Minor silicification in upper part.

8400'-8440' (sample depths) Silurian; Chimneyhill Subgroup.

8400'-8430' (sample depths) Clarita Formation. Light-pinkish-gray organo-detrital limestone. Abundant orange-pink pelmatozoan plates and numerous ostracodes, trilobites, and other shelly debris. Very little dolomite and very little detrital quartz.

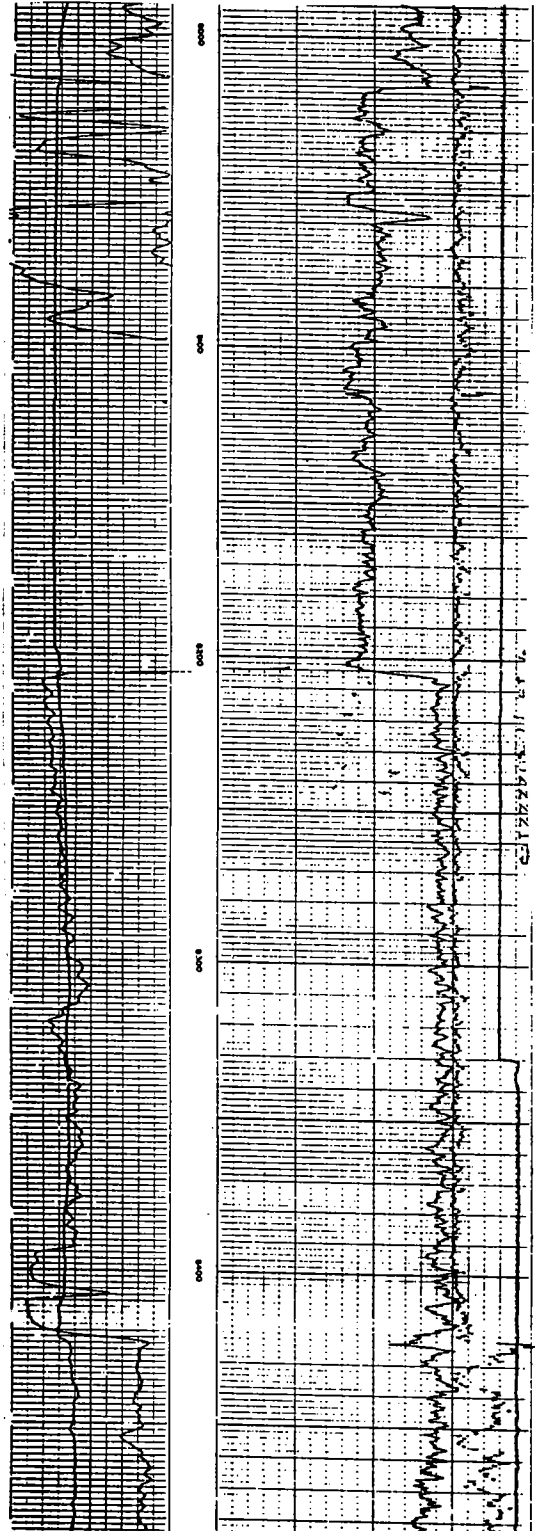
8430'-8440' (sample depths) Cochrane Formation. Organo-detrital limestone with glauconite; some chert present. Scattered dolomite crystals and minor detrital quartz.

*Sylvan Shale 8440'-8550'* (sample depths)

Upper 10' or so is a greenish-gray shale, underlain by dark-gray shale.

*Welling Formation 8550'-8660'* (sample depths)

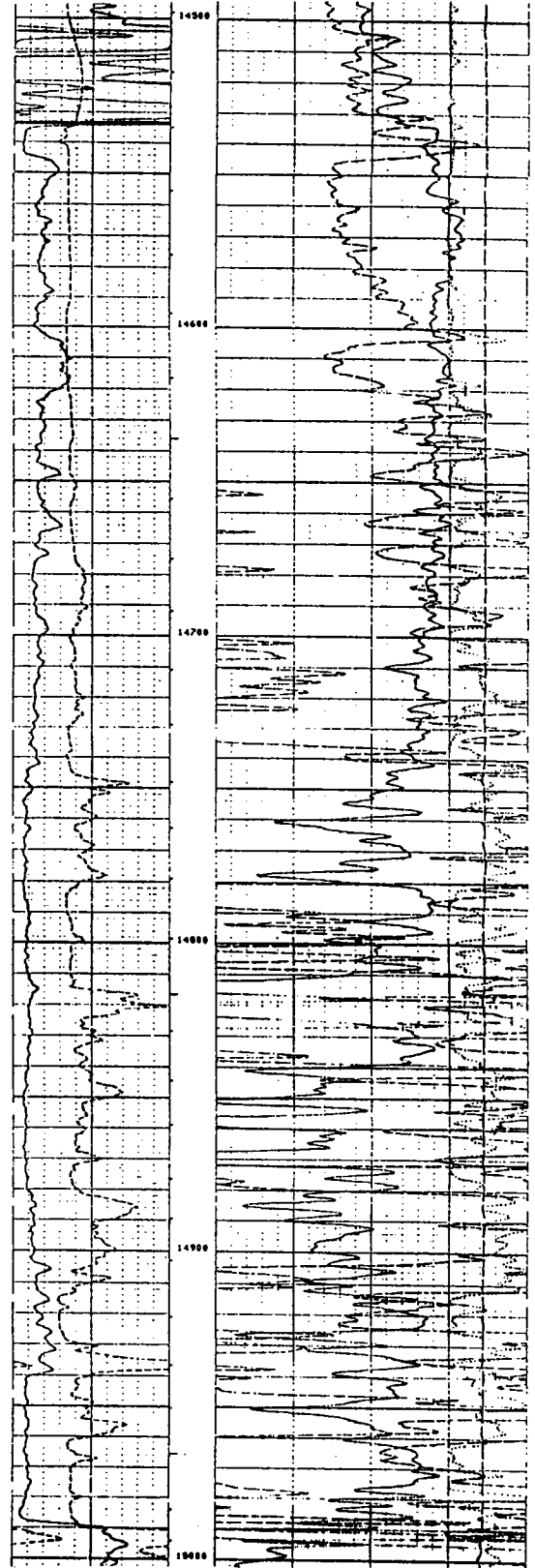
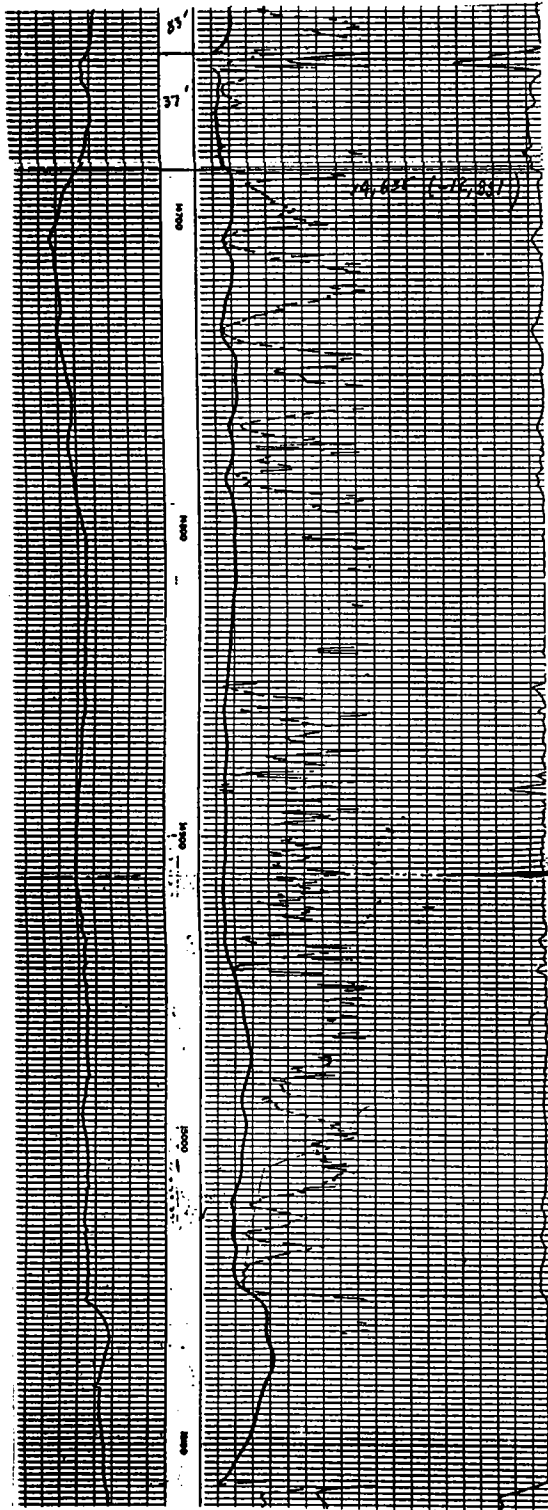
Organo-detrital sparite with minor micrite. Pelmatozoans abundant, generally accompanied by other shelly debris. Very little dolomite. Upper 50' or so with little or no detrital quartz. Lower part with sparse to common well-rounded detrital quartz grains to 0.8 mm.



MOBIL 1 CARTER--SE<sup>1</sup>/<sub>4</sub>NW<sup>4</sup> sec. 15, T. 15 N.,  
R. 16 W., Custer County, Oklahoma; elev.  
1802'; TD 15,165' (Hunton); compl. 2/25/60,  
Hunton production (perforated 14,690'-14,771',  
14,792'-14,880', 14,900'-14,980'). Tops:  
Woodford (CC) 14,572' (-12,770'), Hunton (CC)  
14,682' (-12,880'); 483' of Hunton rocks  
penetrated to TD. Core chips 14,696'-  
14,749'; no thin sections or chemical  
analyses; OU Core Library.  
Woodford Shale 14,572'-14,682'  
Hunton Group 14,682'-15,165' (TD)  
14,682'-14,696' ?Silurian. No core.  
Assigned to Silurian on basis of strati-  
graphic position and relationship to nearby  
wells supplying Silurian fossils. (See  
Sunray DX 1 Frans; Mobil 1 Horton, Mobil 1  
Sharp-Hunt Unit; panel 1, map A; panel 10,  
section B-B'.)  
14,696'-14,749' Gray calcitic dolomite and  
dolomitic limestone.  
14,749'-15,165 (TD) No core.

Magnolia Petroleum Corp.  
1 Louise R. Carter  
SE NW  
Sec. 15, T. 15 N., R. 16 W.  
Custer County, Oklahoma  
KB 1804'

Gadsko, Inc.  
1-14 Porter  
W/2 SW SW  
Sec. 14, T. 15 N., R. 16 W.  
Custer County, Oklahoma  
KB 1768'



SHELL 1-10 CARTER—1420' FSL and 1980' FWL  
 sec. 10, T. 6 N., R. 32 W., Sebastian County, Arkansas;  
 elev. 586' DF (571' GL); TD 8300' (Ordovician); compl.  
 15/6/64, no Hunton production reported. Tops: Hun-  
 ton (?Penters Chert = Sallisaw Formation) 8049'  
 (-7463') (Arkansas Geological Commission), Cason  
 (=Sylvan) 8230' (-7644') (sample depth), ?Viola  
 8263' (-7677') (Arkansas Geological Commission);  
 Hunton thickness 182'. This well air drilled to 8130';  
 samples studied from 8130' to 8300' (TD). Reasonable  
 quality; 8 thin sections; samples, Arkansas Geological  
 Commission, Little Rock, Arkansas.

This well was air drilled to 8130', and the samples  
 above this point are too fine for study. According  
 to the completion report of the Arkansas Geological  
 Commission, the Penters Chert (=Sallisaw Forma-  
 tion) is present, its top being at 8049'. The Commis-  
 sion also reported the Penters-Hunton contact (Salli-  
 saw-?Chimneyhill contact, this report) at 8075'. I  
 examined the Hunton strata from 8130' to the Sylvan  
 contact at 8220'. The samples are entirely crystalline  
 dolomite, in part porous, and very strongly dolomi-  
 tized crinoidal carbonates with sparse, widely scat-  
 tered subangular detrital quartz up to 0.2 mm. This  
 part of the Hunton is assigned to the Chimneyhill  
 Subgroup on the basis of lithology and stratigraphic  
 position (see discussion under Shell 1 Western Coal  
 & Mining Co. well). The Arkansas completion report  
 gives the top of the Viola at 8263'. However, the  
 samples in the interval from 8260' to 8300' (last  
 sample) are almost entirely dark shale. At 8300' the  
 driller circulated for 120 minutes, and the samples  
 are almost all dark shale with only a piece or two  
 of dolomite.

*Woodford (Chattanooga) Shale*

*Hunton Group* 8049' (CC) -8230' (sample depth)  
 8049'-8075' (CC) ?Lower Devonian; ?Penters  
 Chert (=Sallisaw Formation). Information from  
 Arkansas Geological Commission.

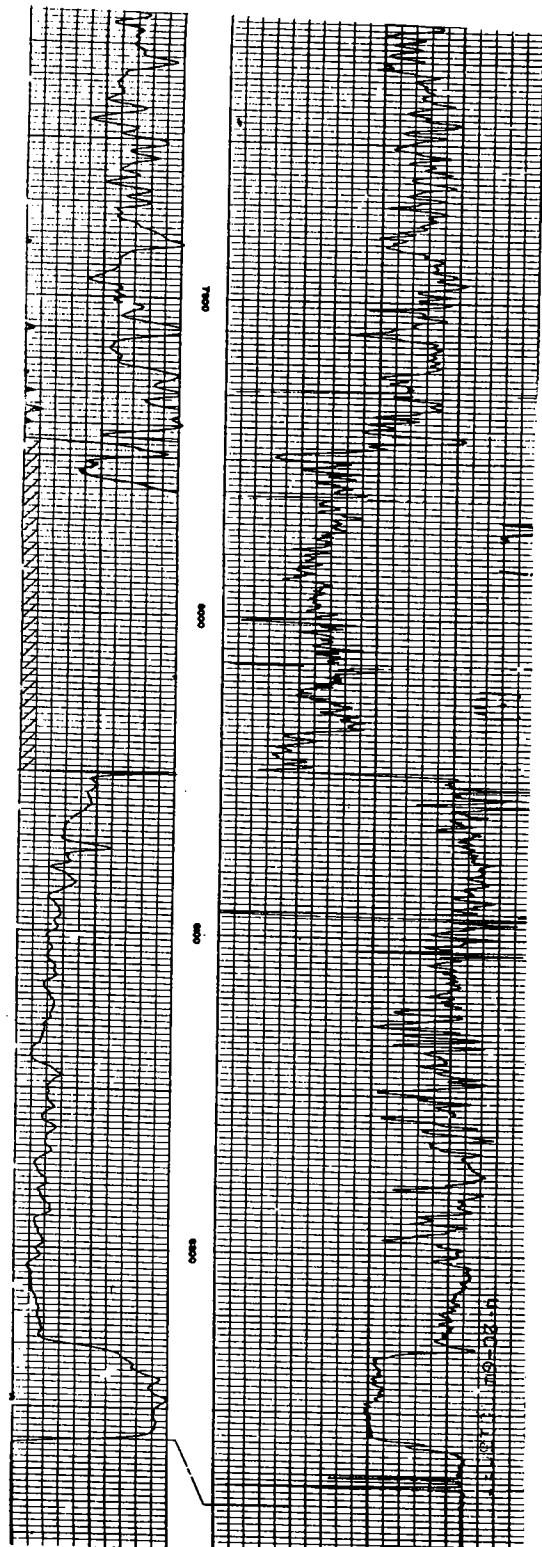
8075' (CC) -8230' (sample depth) ?Silurian;  
 ?Chimneyhill Subgroup. Largely crystalline dolo-  
 omite, parts having good visible porosity, with some  
 very heavily dolomitized crinoidal carbonate. In  
 the latter the only fossils remaining are corroded  
 crinoid plates. Includes sparse, widely scattered  
 subangular detrital quartz to 0.2 mm. In part the  
 angularity is due to corrosion of the quartz grains  
 by the dolomite. No chert observed. 8 thin sections.

*Cason Shale (=Sylvan Shale)* 8230' (sample depth)  
 -8263' (CC)

Dark shale.

?*Viola Limestone* 8263' (CC)

8230'-8300' (sample depths) Almost entirely dark  
 shale with only a few pieces of dolomite present.





MOBIL 1-A CEMENT (Ordovician test)--SW $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$   
 sec. 18, T. 5 N., R. 8 W., Grady County, Okla-  
 homa; elev. 1337'; TD 20,330' (Bromide);  
 compl. 9/26/69, D&A. Tops: Woodford-?Mise-  
 ner 17,894' (CC; some sample lag) (-16,557'),  
 ?Misener-Hunton 17,950' (samples) (-16,613'),  
 Hunton-Sylvan 18,388' (CC) (-17,051'); Hunton  
 thickness 438'. Examined samples from lower  
 part of Woodford through Hunton (samples skip  
 from 18,080' to 18,250') into Sylvan; sample  
 quality in upper part of Hunton is poor, most-  
 ly very fine and mixed with much mica; from  
 18,300' into Sylvan quality improves; 12 thin  
 sections prepared, stained with Alizarin  
 Red-S.

The stratigraphic sequence is fairly well de-  
 fined in spite of the poor samples in the  
 upper part and the sample skip. The upper  
 Hunton, just beneath the Woodford, is a  
 dark calcareous siltstone, here tentatively  
 referred to the Misener Sandstone. This is  
 underlain by marlstone, followed by a light-  
 gray organo-detrital limestone tentatively re-  
 ferred to the Chimneyhill Subgroup. The dolo-  
 omite content is low throughout, and the Hunton  
 appears to be a part of the Arbuckle Mountains  
 limestone facies.

Woodford Shale

?Misener Sandstone 17,894'-17,950'

Dark calcareous siltstone with some chert.

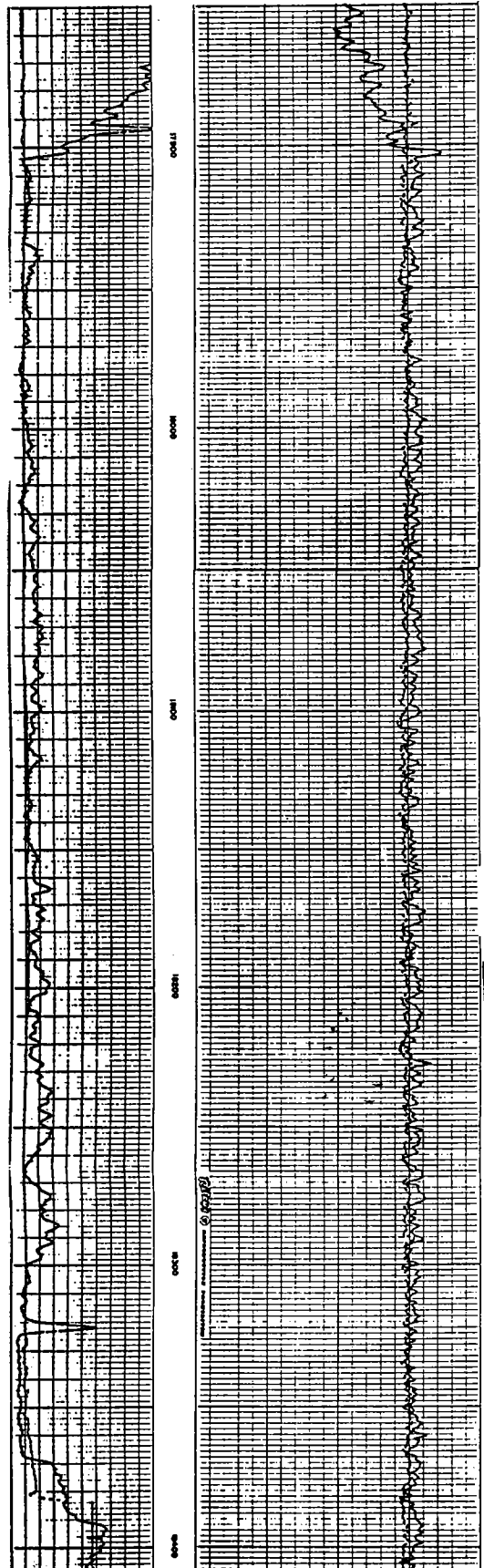
Hunton Group 17,950'-18,388' (sample skip  
 18,080'-18,250')

17,950'-18,340' Dark-gray fossiliferous  
 marlstone with much silt-size quartz detri-  
 tus; very little dolomite. Age of this  
 rock is undetermined biostratigraphically,  
 but its lithology and stratigraphic posi-  
 tion suggest correlation with Haragan and  
 (or) Henryhouse Formation.

18,340'-18,388' ?Chimneyhill Subgroup.

Light-gray organo-detrital limestone with  
 some chert; very little dolomite or detri-  
 tal quartz.

Sylvan Shale 18,388'



CITIES SERVICE 1 CHALEPAH--NW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> sec. 10, T.  
5 N., R. 12 W., Caddo County, Oklahoma; elev.  
1385'; TD 7200' (Ordovician); compl. 4/18/50,  
D&A. Tops: Woodford-?Misener 4940'  
(-3555'), ?Misener-Hunton 5010' (-3625'), Syl-  
van 5710' (-4325'); Hunton thickness 700'.  
Examined samples from lower Woodford, through  
Hunton and into Sylvan Shale; 17 thin sections  
stained with Alizarin Red-S; samples, OU Core  
Library.

This well is located in one of the fault  
blocks between the Wichita Mountains uplift  
and the deep part of the Anadarko basin. It  
is a low-magnesium limestone throughout and  
clearly a part of the Arbuckle Mountains lime-  
stone lithofacies. The sequence is typical  
for this area, and for the Arbuckles, con-  
sisting of an upper organo-detrital lime-  
stone (uppermost strata assigned to the  
?Misener), a middle marlstone, and a lower  
organo-detrital limestone with an oolite just  
above the Sylvan Shale (see panel 10, section  
C-C').

Woodford Shale 4290'-4940'

?Misener Sandstone 4940'-5010'

Fine, silty calcareous dolomite with some  
chert.

Hunton Group 5010'-5710'

5010'-5180' ?Frisco Limestone and (or)

?Fittstown Member, Bois d'Arc Formation.

Weakly to moderately dolomitic biosparite,  
becoming biomicritic and with increasing  
quartz detritus in lower part; some chert.

Appears to grade into underlying marlstone;  
this is suggestive of Fittstown-Haragan re-  
lationship in Arbuckle Mountains-Criner  
Hills outcrop area.

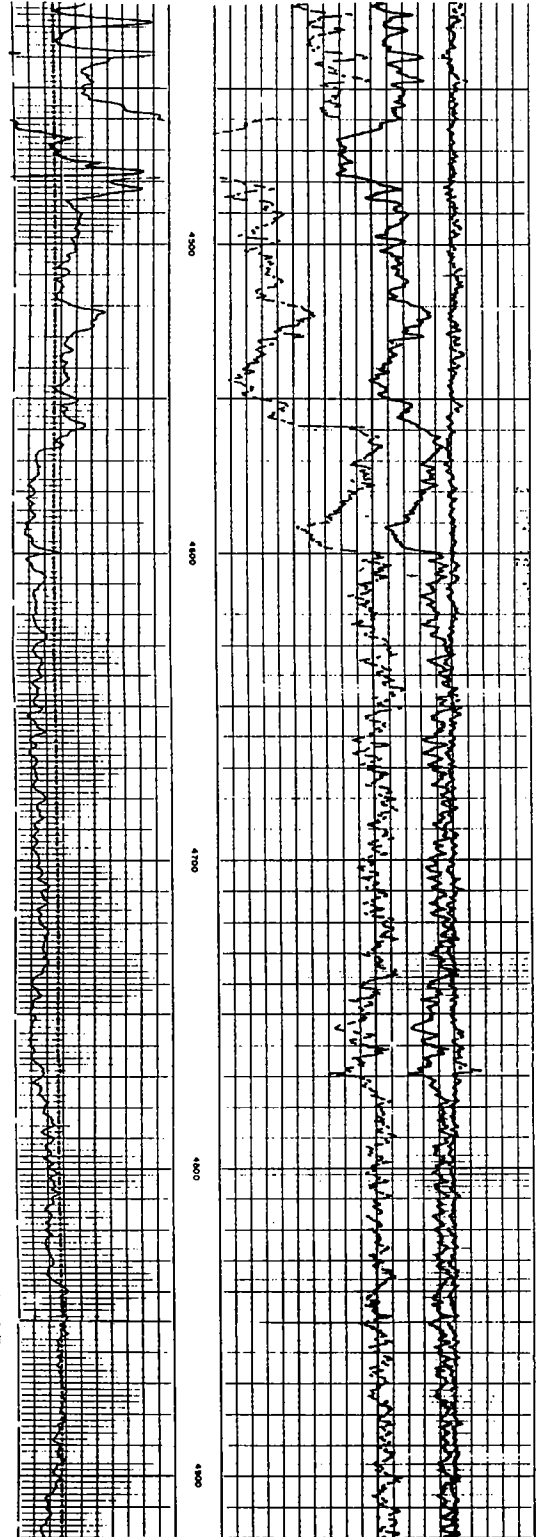
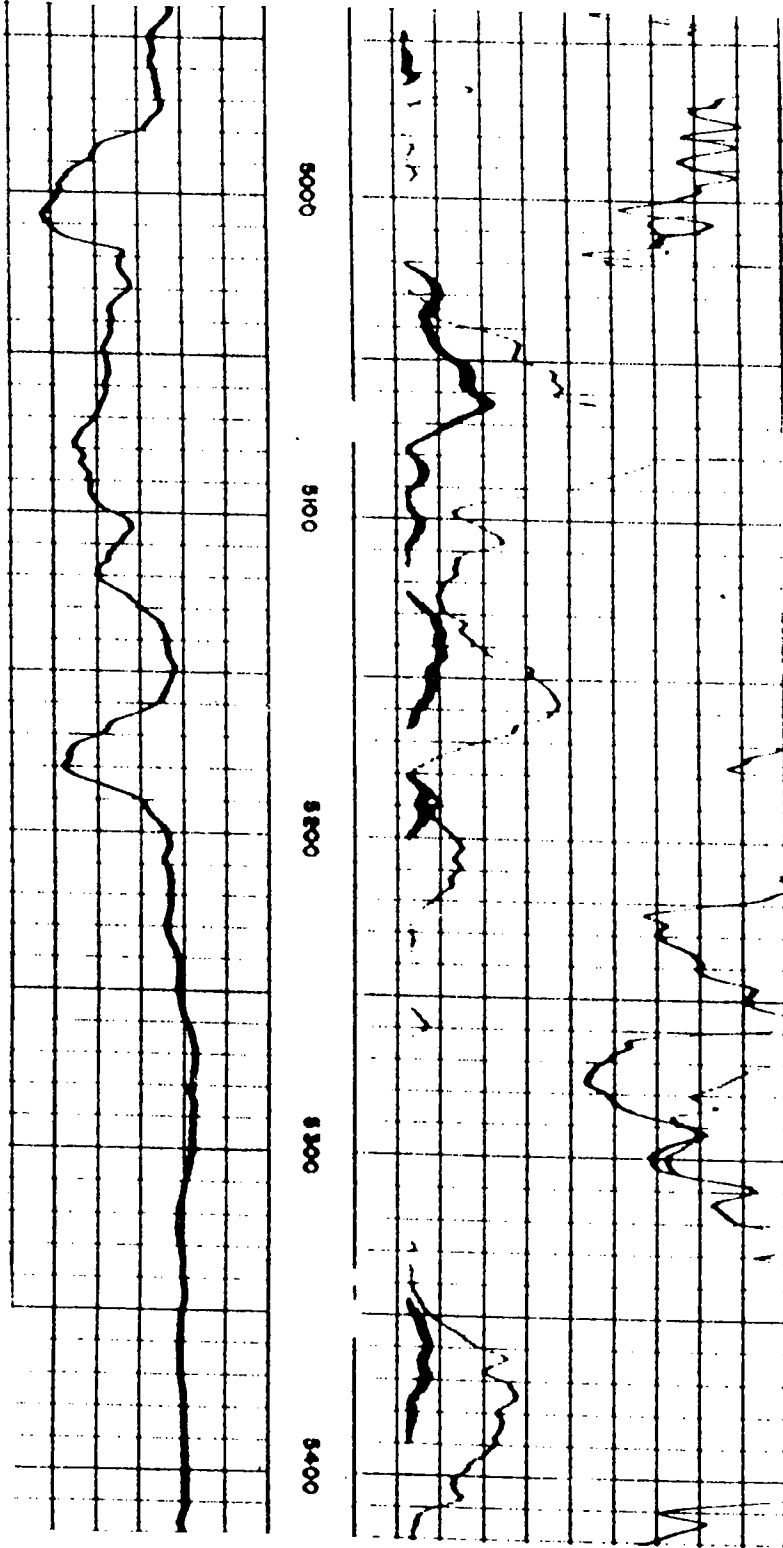
5180'-5640' ?Haragan and (or) ?Henryhouse  
Formation. Typical fossiliferous marlstone  
lithology with very little dolomite. In  
lower 160' red beds are common; these have  
substantial fossil content but also a sig-  
nificantly increased quantity of angular to  
subangular quartz debris. Lithology and  
stratigraphic position similar to that of  
Henryhouse-Haragan marlstone in outcrop.

5640'-5710' ?Chimneyhill Subgroup. Light-  
gray biomicrite; low in detrital quartz and  
in dolomite crystals. Fossil content is  
higher and detrital quartz content lower  
than in overlying marlstone (resembles  
micritic facies of Clarita Formation).  
Basal 10' of samples has many pieces of  
oolite, fossiliferous and with spar cement.  
Very low dolomite content (Keel Formation).  
Stratigraphic position and lithology are  
like those of Chimneyhill Subgroup.

Sylvan Shale 5710'

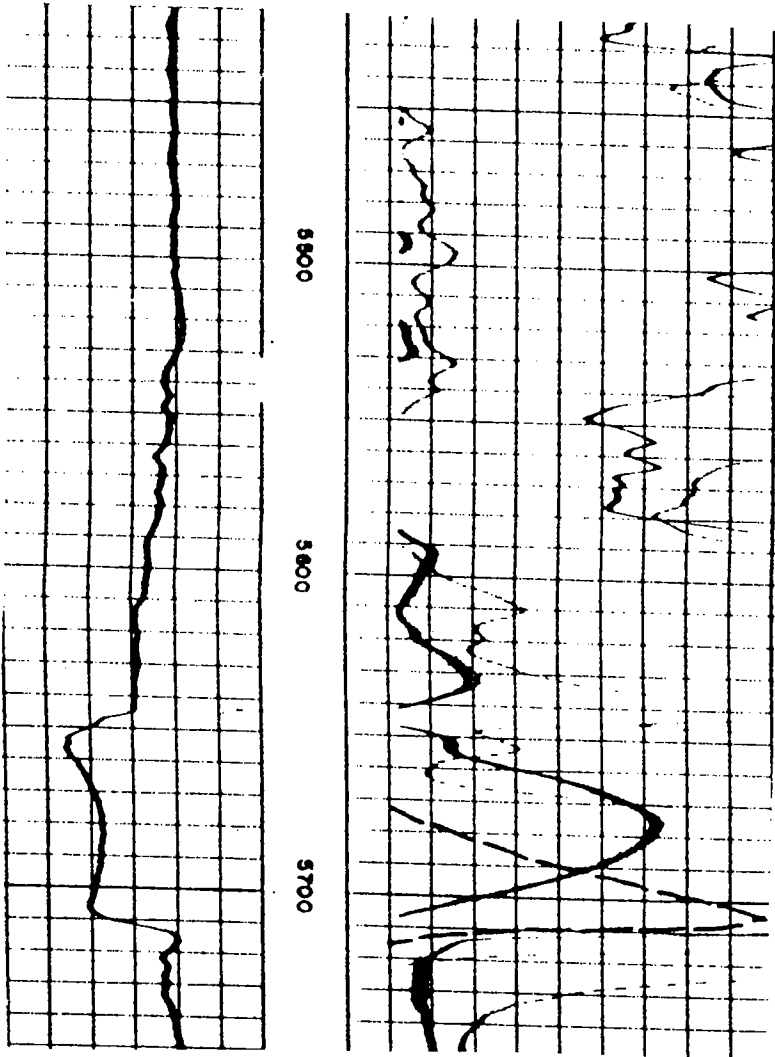
Cities Service  
1 Chalepah  
NW NW  
Sec. 10, T. 5 N., R. 12 W.  
Caddo County, Oklahoma  
KB 1385'

Samedan Oil Corp.  
1 Hadzons  
SW NE SE  
Sec. 10, T. 5 N., R. 12 W.  
Caddo County, Oklahoma  
KB 1364'



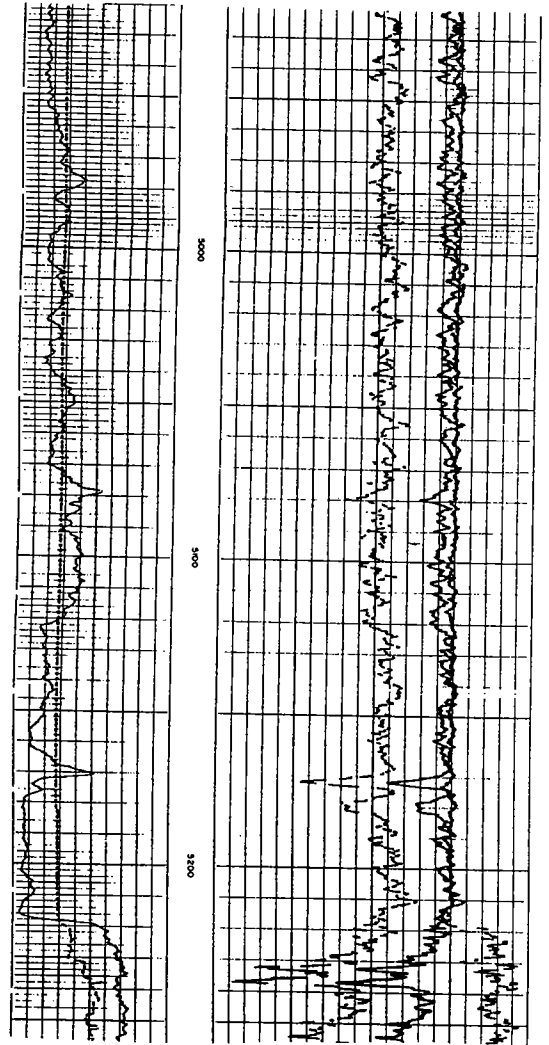
Cities Service  
1 Chalepah  
NW NW  
Sec. 10, T. 5 N., R. 12 W.  
Caddo County, Oklahoma  
KB 1385'

continued



Samedan Oil Corp.  
1 Hadzons  
SW NE SE  
Sec. 10, T. 5 N., R. 12 W.  
Caddo County, Oklahoma  
KB 1364'

continued



AMBASSADOR 1 CHAPMAN—SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 9, T. 8 N., R. 9 E., Hughes County, Oklahoma; elev. 757'; TD 4311' (Ordovician; Simpson); compl. 12/5/57, D&A. Tops: Woodford 3938' (-3181') (SP log), Hunton 3972' (-3215') (sample depth), Sylvan 4124' (-3367') (sample depth), Welling 4195' (-3438') (sample depth); Hunton thickness 152'. Samples examined from 3910' to 4230', good quality; 15 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

There is a stratigraphic problem concerned with the samples in this well. The upper part of the Hunton Group, 3972'-4010', is an organo-detrital sparite with little or no detrital quartz or dolomite. This appears to be a part of the body of Frisco Limestone extending from the 1 Boley to the 1 Armbrister and the 1 Scott (panel 4). Beneath the Frisco are beds of carbonate (4010'-4030') including much dolomite and relatively coarse subangular quartz detritus (and some glauconite), whose stratigraphic relationships are uncertain. These strata, assuming they do not represent sample mixing, are not recognized elsewhere in this region. They may represent (1) cavings from the Misener above, (2) sedimentary infiltration from the overlying Misener along fissures and cavities, or (3) an unusually sandy facies of the Henryhouse-Haragan marlstone or of the Chimneyhill Subgroup. The latter seems the most reasonable explanation, as some beds are typically pink crinoidal limestone with irregular areas of dolomitization including some quartz detritus (although not as coarse or abundant in the strata in question). The underlying strata assigned to the Chimneyhill Subgroup appear to be typical, although no basal glauconitic beds are recognized.

*Woodford Shale* 3938'-3972' (SP log)

A thin zone of Misener Sandstone at the base.

*Hunton Group* 3972' (SP log) -4124' (sample depth)

3972' (SP log) -4010' (sample depth) ?Lower Devonian; ?Frisco Formation. Organo-detrital sparite with many crinoids, bryozoans, and other shelly fossils. No detrital quartz or dolomite observed.

4010'-4030' (sample depths) ?Silurian; ?Chimneyhill Subgroup. Fossiliferous carbonate with much crystalline dolomite and much subangular detrital quartz grains to over 1 mm in diameter.

4030'-4124' (sample depths) Silurian; Chimneyhill Subgroup. Pink crinoidal micrite and sparite with bryozoans, ostracodes, trilobites, and other shelly fossils.

4030'-4045' A pink crinoidal micrite with very little dolomite or detrital quartz.

4045'-4124' Weakly to heavily dolomitized pink crinoidal micrite with very little quartz.

*Sylvan Shale* 4124'-4195' (sample depths)

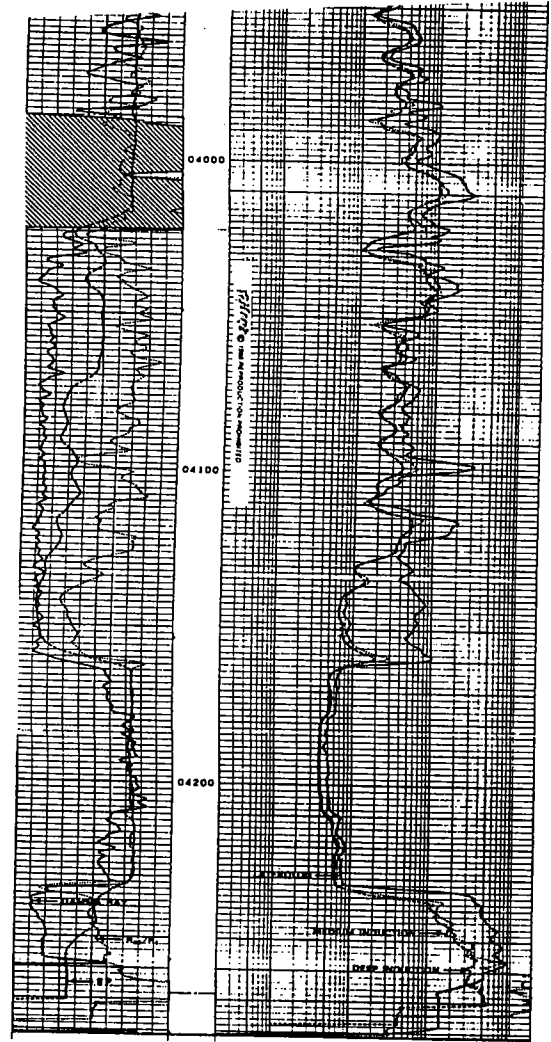
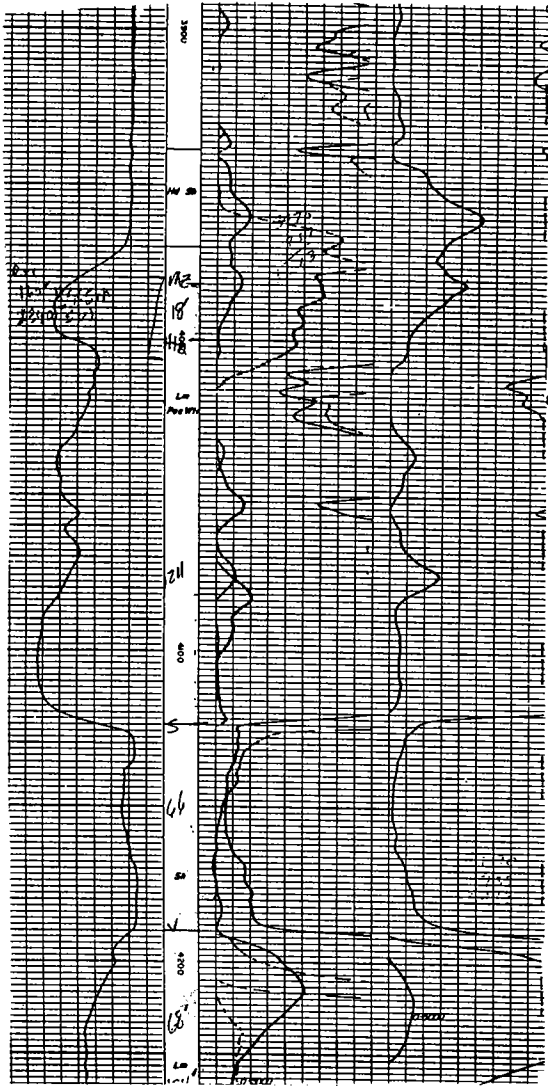
*Welling Formation* 4195' (sample depth)

4198' (thin section) Organo-detrital sparite with minor micrite; much pelmatozoan material. No detrital quartz or dolomite observed.

4225'-4230' (thin section) Same as above but with well-rounded detrital quartz grains to 0.5 mm (pl. 11, fig. 4).

Ambassador Oil  
 1 Chapman  
 SW SW SW  
 Sec. 9, T. 8 N., R. 9 E.  
 Hughes County, Oklahoma  
 KB 757'

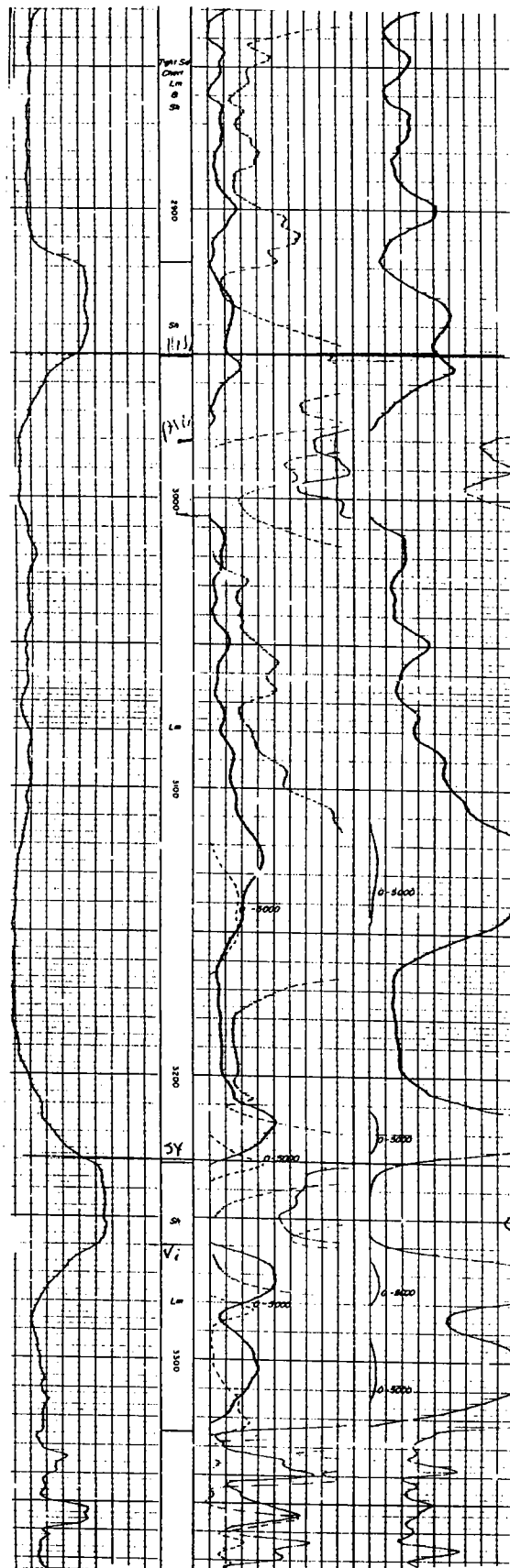
Harry H. Diamond  
 1 McGeeley  
 SE SE SE  
 Sec. 8, T. 8 N., R. 9 E.  
 Hughes County, Oklahoma  
 KB 812'



**Bruce Harris, 1 Cheek**

This well is in NE¼ NE¼ SW¼ sec. 19, T. 12 N., R. 25 E., Sequoyah County, about 10 miles southeast of Marble City (text-fig. 3). The well was drilled with rotary tools in 1958, and the collar elevation is 586.5 feet. Cuttings were examined from 2,940 to 3,240 feet in intervals of 5 feet, and the sample quality is fair. England (1961, pl. III) assigned Henryhouse and Chimneyhill to this well upon the basis of electric logs. Lower Devonian rocks are 75 feet thick (2,945-3,020) and consist of the Sallisaw Formation 60 feet (2,945-3,005) and Frisco Formation 15 feet (3,005-3,020). Silurian rocks are 210 feet thick (3,020-3,230 feet; text-fig. 3) and comprise five units: Quarry Mountain Formation 183? feet (3,020-3,203?), Marble City Member 135 feet (3,020-3,155) and Barber Member 48? feet (3,155-3,203?); the approximate Barber-Tenkiller contact was estimated from the electric log as both units appear in sample 3,200-3,205), Tenkiller Formation, Blackgum Formation, and Pettit Oolite 27? feet (3,203?-3,230; approximate top of the Tenkiller was estimated from the electric log and individual thicknesses of Tenkiller and Blackgum are uncertain as both appear in sample 3,220-3,225). The upper portion of the Marble City Member (3,020-3,040; 3,055-3,070) contains a substantial amount of dolomite. The Sylvan Shale was encountered in sample 3,230-3,235. Three thin sections were prepared from the following intervals: Sallisaw Formation, 2,970-2,975; Frisco Formation, 3,010-3,015 feet; Barber Member, 3,185-3,190 feet. Photomicrographs of these thin sections are on plate XVIII, figures 1, 2, 4.

Depth (feet)	Thickness (feet)	Description
2,940-2,945	5	<b>CHATTANOOGA FORMATION:</b> Black and brown pyritic shale.
		<b>SALLISAW FORMATION:</b> 60 feet (2,945-3,005). Fine- to medium-crystalline gray to dark-gray to gray arenaceous glauconitic dolomitic limestone; clear translucent to semitranslucent white arenaceous chert. Thin section (E-1) 2,970-2,975 (pl. XVIII, fig. 1).
2,945-2,950	5	Dolomite, arenaceous, gray to dark-gray, medium- to fine-crystalline, glauconitic; 15-20% residue consisting of quartz and glauconite; chert, clear, translucent to semitranslucent, 30-35%.
2,950-2,955	5	Limestone, dolomitic, arenaceous, glauconitic, gray to light-gray; 10% residue consisting of quartz and glauconite; chert, as above, 10%, some gray opaque.
2,955-2,960	5	Dolomite, calcitic, arenaceous, white, fine-crystalline; 5% residue consisting of quartz and glauconite; chert, arenaceous, white; some with dolomite rhombs and glauconite, 55%.
2,960-2,965	5	Sandstone, dolomitic, glauconitic, gray to light-gray, medium- to fine-grained; chert, as above, 10%.
2,965-2,970	5	Dolomite, calcitic, arenaceous, glauconitic, fine-crystalline, gray to light-gray; 10% residue consisting of quartz and glauconite; chert, as above, 15%.
2,970-2,975	5	Dolomite, as above; 15% residue consisting of quartz and glauconite; chert, white, opaque, arenaceous; some with dolomite rhombs, 55%; thin section (E-1) (pl. XVIII, fig. 1).
2,975-2,980	5	Limestone, dolomitic, arenaceous, gray; 10% quartz residue; chert, as above, 50%.
2,980-2,995	15	Chert, white, arenaceous; some with dolomite rhombs, some calcitic.
2,995-3,000	5	Limestone, dolomitic, arenaceous, glauconitic, light-gray; 10% quartz residue; chert, as above, 35-40%.
3,000-3,005	5	Limestone, as above; chert, as above, 30%.
3,005-3,020	15	<b>FRISCO FORMATION:</b> 15 feet (3,005-3,020). Fossiliferous, off-white to light-gray limestone; some glauconitic. Thin section (E-2) 3,010-3,015 feet (pl. XVIII, fig. 2).
		<b>QUARRY MOUNTAIN FORMATION:</b> 183? feet (3,020-3,203?); Barber-Tenkiller contact estimated from the electric log, as both are present in sample 3,200-3,205).

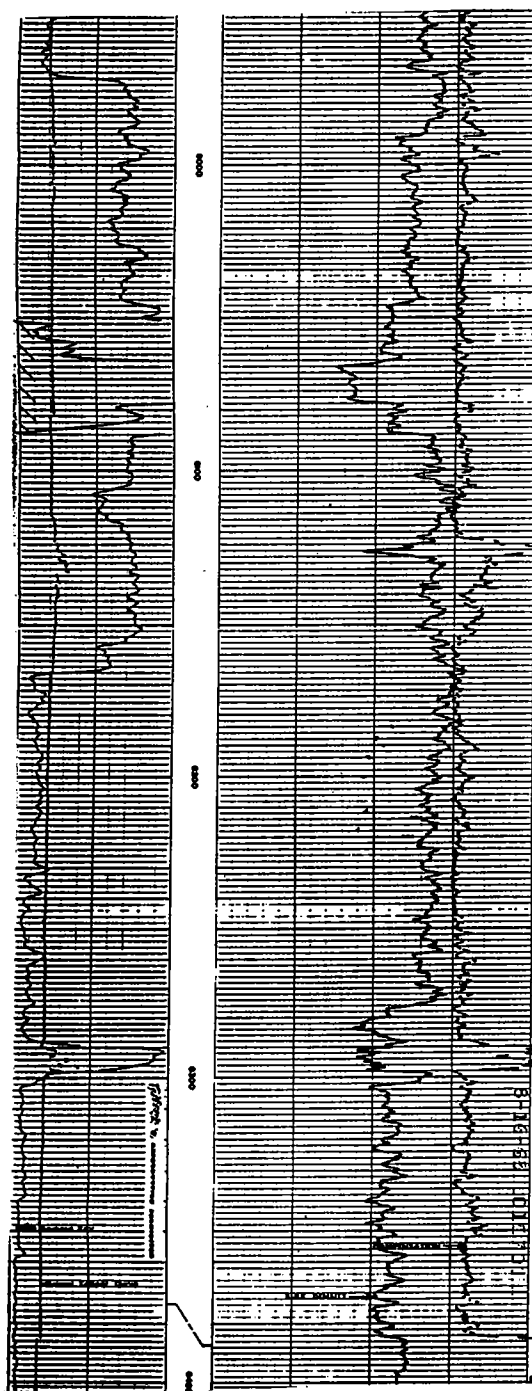


		<i>Marble City Member: 135 feet (3,020-3,155). Off-white to pink crinoidal limestone; in part dolomitic; light-gray fine-crystalline dolomite, in part calcitic.</i>
3,020-3,025	5	Dolomite, light-gray to gray, fine-crystalline; in part slightly calcitic.
3,025-3,030	5	Dolomite, light-gray to gray to dark-gray, medium-to fine-crystalline; slight trace of limestone.
3,030-3,040	10	Dolomite, as above, in part more calcitic; limestone, off-white, 5%.
3,040-3,045	5	Limestone, off-white to white; some pink crinoidal material; dolomite, as above, 10%.
3,045-3,050	5	Limestone, as above; more pink crinoidal material; some gray limestone; dolomite, as above, 5%.
3,050-3,055	5	Limestone, as above; dolomite, as above, 5%.
3,055-3,070	15	Dolomite, light-gray to gray, fine-crystalline; limestone, as above, 5%.
3,070-3,075	5	Limestone, dolomitic, off-white to white; some pink crinoidal material; dolomite, as above, 15%.
3,075-3,090	15	Dolomite, light-gray to gray, fine-crystalline; slight trace of limestone, as above.
3,090-3,095	5	Limestone, dolomitic, off-white to white; some pink crinoidal material; dolomite, as above, 40%.
3,095-3,110	15	Limestone, as above, except no dolomitic limestone; trace of dolomite, as above.
3,110-3,150	40	Limestone, off-white to white to pale-pink; abundant pink crinoidal material; in part dolomitic; slight trace of dolomite as above; some white chalky limestone.
3,150-3,155	5	Limestone, as above, except dolomitic; limestone, white chalky, 35%.
		<i>Barber Member: 48? feet (3,155-3,203?; top of the Tenkiller estimated from the electric log, as both Tenkiller and Barber are present in sample 3,200-3,205). Light-gray to off-white medium- to fine-crystalline dolomite; in part calcitic. Thin section (E-3) 3,185-3,190 feet (pl. XVIII, fig. 4).</i>
3,155-3,160	5	Dolomite, light-gray to off-white to white, medium-to fine-crystalline; in part calcitic; limestone, as above, 15-20%.
3,160-3,200	40	Dolomite, light-gray to off-white to white, medium-to fine-crystalline; in part calcitic in samples, 3,185-3,195 only.
3,200-3,205	5	Dolomite, as above, 85%; limestone, as described below, 15%.
3,205-3,225	20	<b>TENKILLER FORMATION:</b> Limestone, light-gray to gray, off-white; abundant orange crinoidal material, in part dolomitic; pyrite abundant. Exact thickness uncertain, as the top was estimated from the electric log and both Tenkiller (40%) and Blackgum (60%) are present in sample 3,220-3,225.
		<b>BLACKGUM FORMATION:</b>
3,225-3,230	5	Gray to dark-gray glauconitic limestone; in part dolomitic; off-white opaque chert; trace of brown to tan fine-crystalline dolomite. Exact thickness uncertain, as both Tenkiller and Blackgum are present in sample 3,220-3,225. Sample 3,220-3,225 contains 40% Tenkiller and 60% Blackgum.
		<i>Petit Oölite:</i> One piece of gray Petit Oölite found mixed with gray to dark-gray glauconitic limestone; in part dolomitic; off-white opaque chert, 15%; trace of brown to tan fine-crystalline dolomite; some limestones contain large rounded quartz grains or silicified oölite.
3,230-3,240	10	<b>SYLVAN FORMATION:</b> Thickness not determined, as samples were studied only to 3,240 feet. Gray-green to green shale first encountered in sample 3,230-3,235. Sample 3,235-3,240 contains only Sylvan shale.



HUBER 1 CHEROKEE METHODIST CHURCH--C S $\frac{1}{2}$ NE $\frac{1}{4}$   
 sec. 21, T. 26 N., R. 11 W., Alfalfa County,  
 Oklahoma; elev. 1198'; TD 6280' (Wilcox);  
 compl. 9/20/68, D&A. Tops: Woodford 6049'  
 (-4851'), Hunton (core; only 2" thick)  
 6088' (-4890'), Sylvan 6088 $\frac{1}{2}$ ' (-4890 $\frac{1}{2}$ ').  
 Cored 6081'-6115' (Woodford-Hunton-Sylvan);  
 1 thin section; no chemical analyses; OU  
 Core Library.

Woodford Shale 6049'-6088'  
Hunton Group 6088'  
 6088' Silurian; Chimneyhill Subgroup; Keel  
 Formation. Approximately 2" of core  
 between Woodford Shale and Sylvan Shale.  
 Silicified, fossiliferous oolite.  
Sylvan Shale 6088 $\frac{1}{2}$ '



ATLANTIC 1 CHOATE--C SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 26, T. 19 N.,  
R. 9 W., Kingfisher County, Oklahoma; elev.  
1110'; TD 8660' (Sylvan); compl. 6/15/49,  
D&A. Tops: Woodford (CC) 8304' (-7194'),  
Hunton (CC) 8315' (-7205'), Sylvan (CC)  
8630' (-7520'); Hunton thickness 315'. Cored  
8316'-8389' (Hunton); 2 thin sections;  
chemical analyses; OU Core Library.

Woodford Shale 8304'-8315'

Hunton Group 8315'-8630'

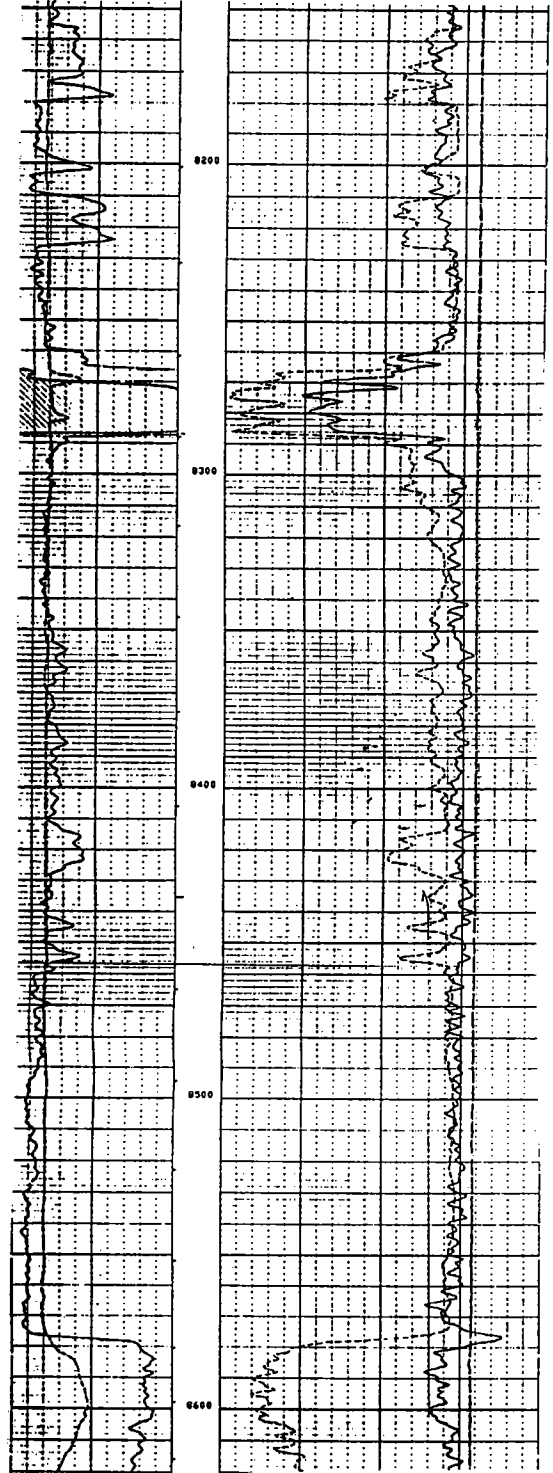
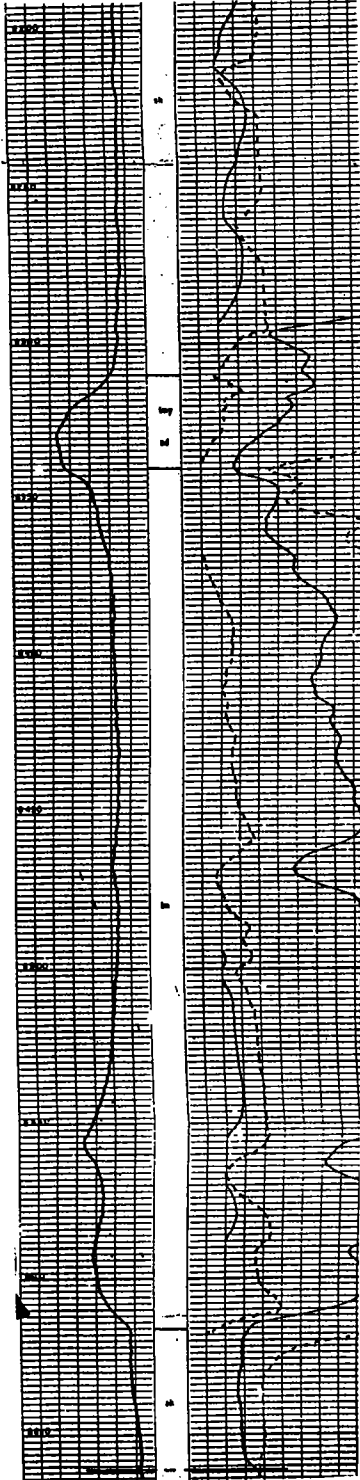
8316'-8389' Silurian; Kirkidium biofacies  
(no Woodford in top of core). Medium-gray  
dolomitic and fossiliferous marlstone;  
upper part (8316'-8368') averages 21.90%  
MgCO<sub>3</sub> and 18.66% HCl insolubles, and lower  
part (8368'-8389') averages 6.48% MgCO<sub>3</sub>  
and 17.13% insolubles. Much subangular to  
angular silt-size detrital quartz and  
euhedral dolomite crystals of about same  
size. Thin section (6347'), pl. 6, fig. 3.  
Specimens of Kirkidium sp. at 8321', 8347',  
8365'; Halysites at 8347'.

8389'-8630' No core.

Sylvan Shale 8630'

Atlantic Refining Co.  
1 Choate Unit  
SE SW  
Sec. 26, T. 19 N., R. 9 W.  
Kingfisher County, Oklahoma  
KB 1121'

Exxon Company, U.S.A.  
3 RD Wilson  
NE NE  
Sec. 26, T. 19 N., R. 9 W.  
Kingfisher County, Oklahoma  
KB 1153'



SIGNAL 1 CITY OF ARDMORE--1755' FNL and 860' FEL sec. 4, T. 5 S., R. 2 E., Carter County, Oklahoma; elev. 843' GL; TD 20,183' (?Schlumberger log); compl. 1973, production?. Woodford-Misener contact 17,490' (-16,647'), Misener-Hunton contact 17,590' (-16,747'), Hunton-Sylvan contact 17,620' (-16,777') (from samples and Schlumberger log); Hunton thickness 30'. I examined cuttings from 17,230' to 18,100' (top of Woodford through Hunton, Sylvan, and into Viola); 14 thin sections prepared, stained with Alizarin Red-S. Cuttings borrowed from Jack Cagle, Ardmore, Oklahoma.

This well, located between Criner Hills and Arbuckle Mountains outcrop areas (panel 1, map A), is in an area where Hunton rocks have been thinned by pre-Woodford erosion, leaving only Chimneyhill; it is not far west of truncated margin of Hunton. Hunton strata in this well are represented entirely by Chimneyhill Subgroup with Keel oolite at its base; these are low-magnesium limestones, typical in all respects of strata exposed in outcrop area.

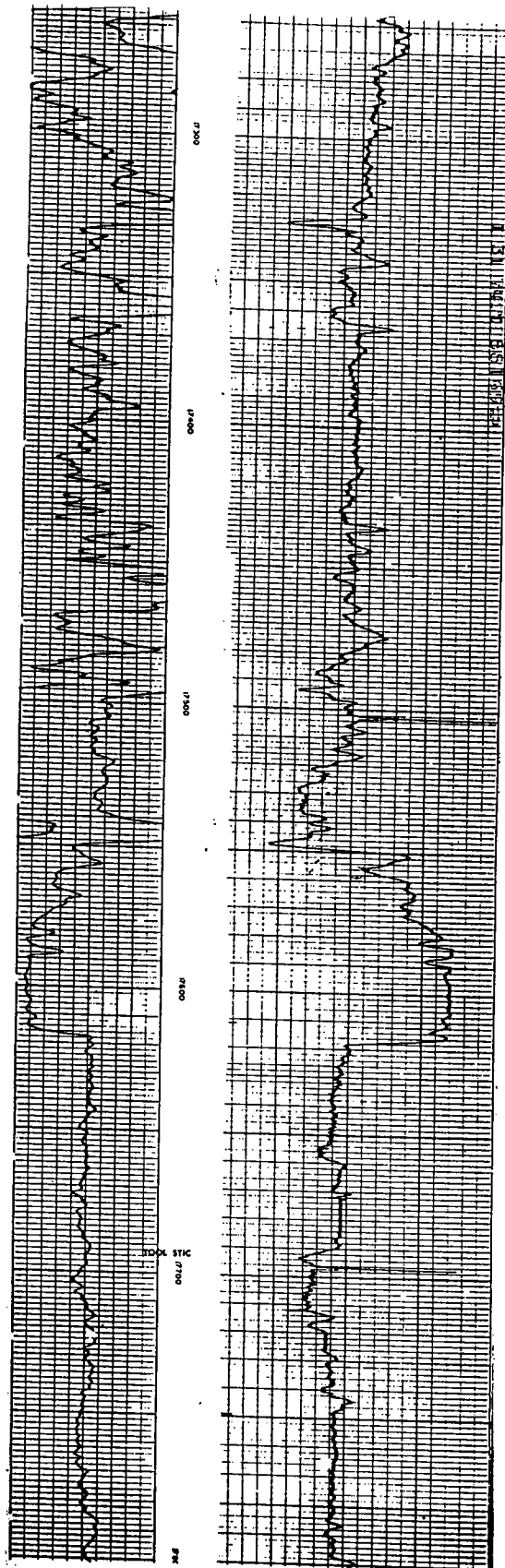
Woodford Shale 17,250'-17,490'  
Black shale.

Misener Sandstone 17,490'-17,590'  
Dark-gray dolomitic siltstone and silty dolomite; angular quartz-silt grains; dolomite crystals appear worn (?detrital dolomite). Much chert, which appears to be in considerable part silicified siltstone with angular quartz detritus similar in size and form to that present in dolomite.

Hunton Group 17,590'-17,620'  
Chimneyhill Subgroup. Light-gray organo-detrital limestone with much oolite (Keel Formation); very little quartz detritus and only moderate scattered dolomite crystals. Oolite is cemented with spar; typical radial and concentric ooids, very little detrital quartz or dolomite. Section probably consists of an upper organo-detrital limestone and an underlying oolite.

Sylvan Shale 17,620'-17,910'  
Gray shale.

Viola Limestone 17,910'- (examined to 18,100')  
Impure organo-detrital limestone with chert.



ARKLA 1-21 CLANCY ESTATE--C NE $\frac{1}{4}$  sec. 21, T. 9 N., R. 11 W., Caddo County, Oklahoma; elev. 1445'; TD 19,623' (Viola); compl. 12/17/72, Springer production. Tops: Hunton 18,700' (-17,255') (CC), Sylvan 19,270' (-17,825'), Viola 19,450' (-18,005'). Samples examined from Woodford through Hunton, Sylvan, and in- to Viola; 13 thin sections, stained with Alizarin Red-S.

The Hunton rocks are in the Arbuckle Mountains limestone lithofacies, generally with only scattered dolomite crystals moderately concentrated in a few beds. The lithostratigraphic sequence consists of an upper organo-detrital limestone (?Lower Devonian), a middle marlstone unit (?Haragan and/or ?Henryhouse Formation), and a lower organo-detrital limestone (Chimneyhill Subgroup), with a well-developed basal oolite (Keel Formation). However, the lithologic distinction between the upper limestone and the underlying marlstone is not as sharply marked as in the nearby 1 Anadarko Basin, as the upper limestone has a substantial amount of detrital quartz.

Woodford Shale

Hunton Group 18,700'-19,270'

18,700'-18,850' ?Frisco Formation and (or) ?Fittstown Member, Bois d'Arc Formation.

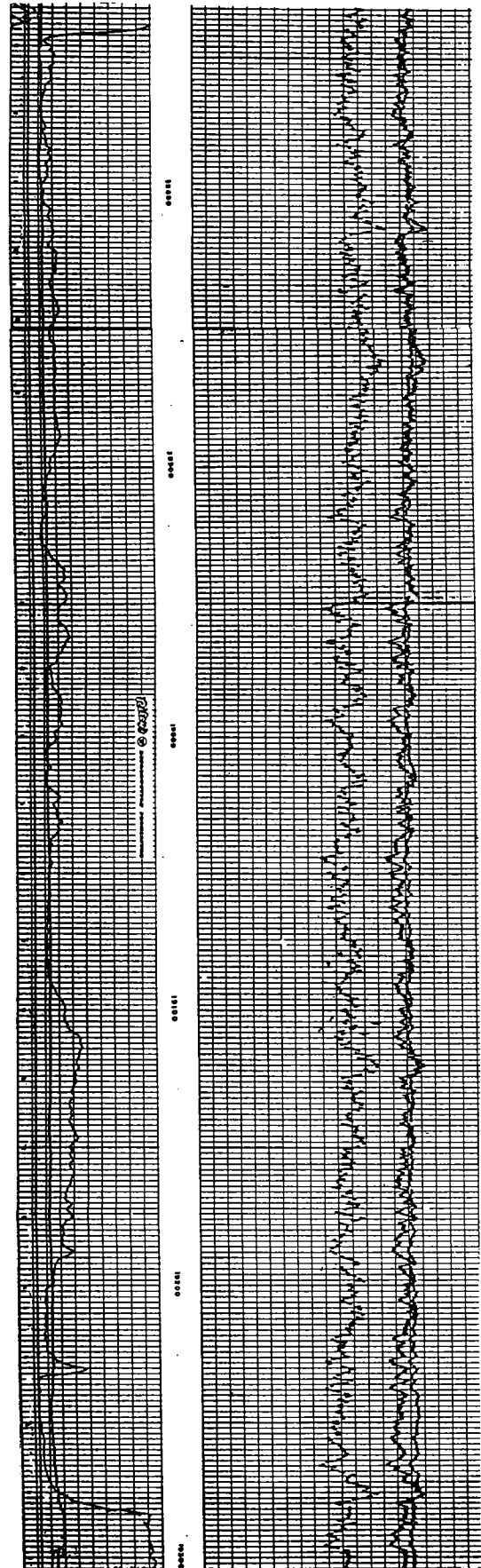
Biosparite with considerable angular quartz detritus; scattered dolomite crystals, in places moderately abundant. Contact with underlying unit not sharply defined.

18,850'-19,170' ?Haragan and (or) ?Henryhouse Formation. Medium- to dark-gray marlstone; matrix of finely divided (partly finely crystalline) limestone with much angular quartz detritus and some scattered dolomite crystals. Some fossils, including ostracodes and bryozoans.

19,170'-19,270' Chimneyhill Subgroup. Light-gray biomicrite with minor detrital quartz and some dolomite in lower part. Lower 10' with well-formed oolites set in spar matrix (Keel Formation).

Sylvan Shale 19,270'-19,450'

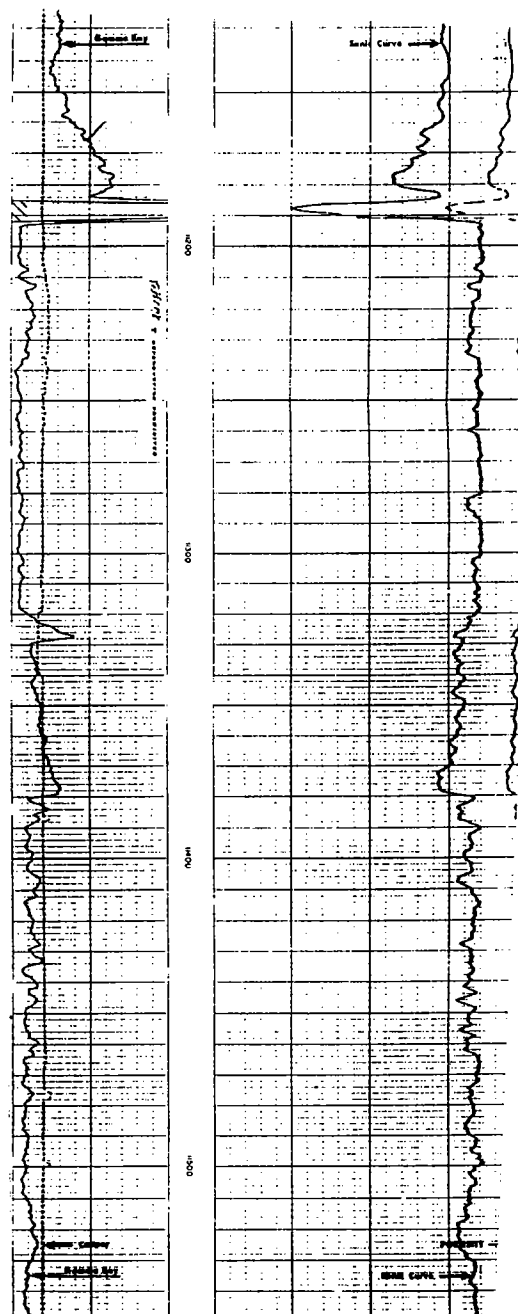
Viola Limestone 19,450'



GETTY 1-B COFFMAN--C SW $\frac{1}{2}$ NE $\frac{1}{4}$  sec. 4, T. 22 N.,  
 R. 24 W., Ellis County, Oklahoma; elev. 2324';  
 TD 11,586' (Viola); compl. 12/1/67, D&A.  
 Tops: Woodford (CC) 11,186' (-8862'), Hunton  
 11,192' (-8868'), Sylvan 11,370' (-9046');  
 Hunton thickness 178'. Cored 11,122'-11,172',  
 11,201'-11,251' (latter all Hunton); 5 thin  
 sections; chemical analyses; porosity-  
 permeability test (P13-A); OU Core Library.

Amsden (1975, p. 82) reported specimens of *Pentameroides* sp. and ?*Kirkidium* sp. from the core. A restudy of this core confirms the presence of *Pentameroides* sp. but not *Kirkidium*, and accordingly the cored portion is removed from the *Kirkidium* biofacies (Ludlovian-Pridolian) and placed in the Chimneyhill Subgroup (Cochrane correlative; late Llandoverian). See Amsden (in Amsden and Barrick, 1988, p. 41, 47). Illustrated on PLATE 2, STRATIGRAPHIC SECTION C-C'.

- Woodford Shale 11,186'-11,192'  
 Hunton Group 11,192'-11,370'  
 11,192'-11,201' ?Silurian; ?*Kirkidium* bio-  
 facies. No core.  
 11,201'-11,210' Silurian; ?*Kirkidium* bio-  
 facies. Pale-gray organo-detrital lime-  
 stone; many corals, all fossils much broken  
 up. Very little dolomite (1.84% MgCO<sub>3</sub>) and  
 very little insoluble detritus (2.08%).  
 No *Kirkidium* observed in this interval;  
 mostly corals, solitary and colonial,  
 including *Halysites* sp. in lower 2'.  
 11,210'-11,251' Silurian; ?*Kirkidium* bio-  
 facies. Pale-gray organo-detrital lime-  
 stone like above. Averages 1.56% MgCO<sub>3</sub>  
 and 3.76% insolubles. Sample P13-A,  
 11,236', 0.30% porosity, 0.00 permeability.  
 Thin section illustrated, pl. 10, figs. 2a,  
 2b, 2c. This interval includes numerous  
 specimens of large pentamerid brachiopods;  
 probably two genera, *Kirkidium* and  
*Pentameroides* (specimens much fragmented).  
 Also corals, including *Entelophyllum* sp.  
 (identified by Dr. P. K. Sutherland).  
 Crinoidal debris common.  
 11,251'-11,370' No core.  
 Sylvan Shale 11,370'



## WELL D

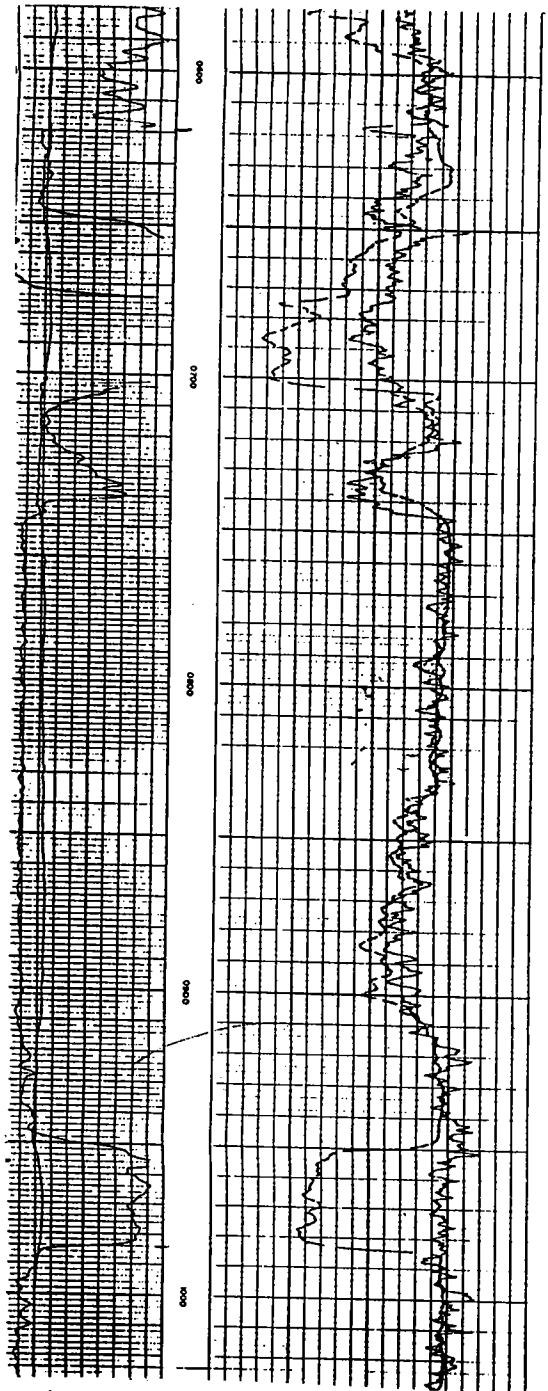
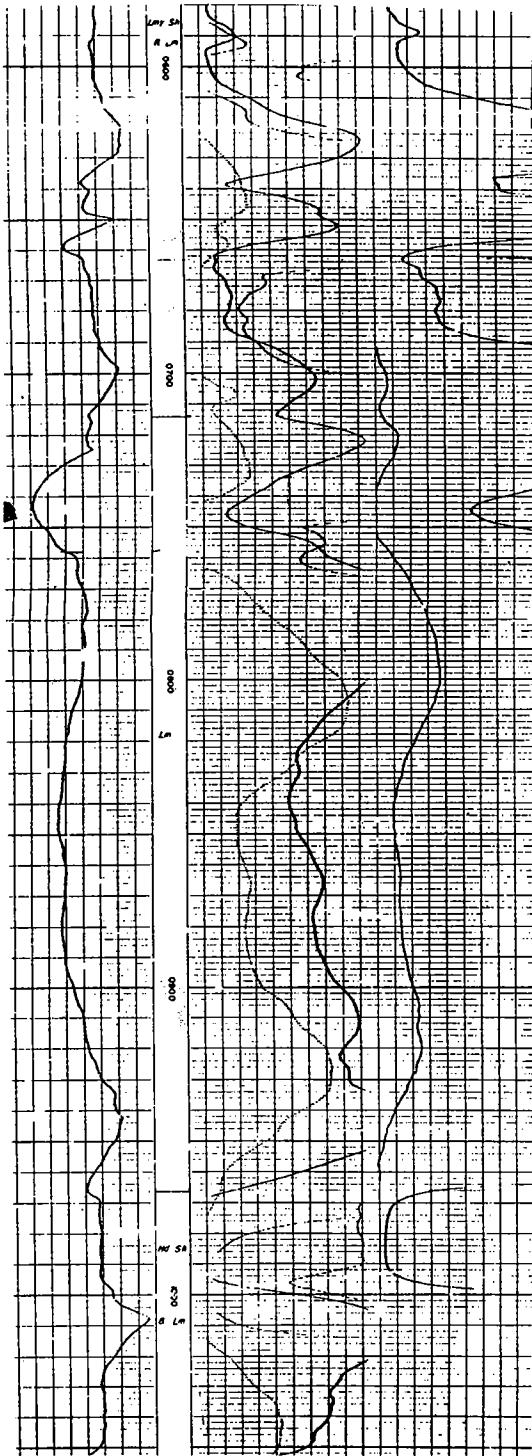
Lohman-Johnson, 2 Cook

This well is in C SW $\frac{1}{4}$  NE $\frac{1}{4}$  sec. 8, T. 12 N., R. 24 E., Sequoyah County, about 5 miles southeast of Marble City (text-figs. 3, 15). The well was drilled in 1949 with rotary tools, and the collar elevation is 640 feet. Cuttings were studied from 750 to 980 feet in intervals of 5 feet, and the sample quality is good. Upon the basis of the electric log, White (1956, pl. III; 1958, pl. III) assigned the Penters-upper Hunton to the section recognized as the Sallisaw in this well and the remaining section to the St. Clair-lower Hunton undifferentiated. The top of the Sallisaw Formation was estimated from the electric log, as the samples were missing from 0 to 750 feet. Lower Devonian rocks are approximately 40? feet thick (715?-755) and consist of the Sallisaw Formation 40? feet (715?-755; top estimated from the electric log) and Frisco Formation (thickness uncertain, as it is present with Marble City in sample 755-760). Silurian rocks are approximately 215 feet thick (755?-970 feet; text-fig. 3) and comprise five units: Quarry Mountain Formation 172? feet (755?-927?), Marble City Member 160? feet (755?-915; exact thickness uncertain, as Frisco and Marble City are present in sample 755-760) and Barber Member 12? feet (915-927?; exact thickness uncertain, as Barber and Tenkiller are present in sample 925-930 and the contact can only be estimated on the electric log), Tenkiller Formation 28? feet (927?-955; thickness uncertain, as Barber and Tenkiller are present in sample interval 925-930), Blackgum Formation 15 feet (955-970), and Pettit Oölite (thickness uncertain, as it is present with Blackgum in sample 965-970). Sylvan Shale was encountered in sample 970-975. One thin section was prepared of the Tenkiller Formation from sample interval 940-945 (pl. XVIII, fig. 6).

<i>Depth (feet)</i>	<i>Thickness (feet)</i>	
750-755	5	<b>SALLISAW FORMATION:</b> 40? feet (715?-755; top estimated from the electric log). Only 5 feet of Sallisaw was examined, as the samples were missing from 0 to 750 feet. Gray to dark-gray fine-crystalline arenaceous dolomite, 15-20%; residue consisting of quartz grains, 35-40%; white arenaceous opaque chert, 60-65%.  <b>FRISCO FORMATION:</b> Thickness uncertain, as it is present with Marble City in sample interval 755-760. Light-gray to dark-gray fossiliferous limestone.  <b>QUARRY MOUNTAIN FORMATION:</b> 172? feet (755?-927?; exact thickness uncertain, as Frisco and Marble City are present in sample 755-760; Barber and Tenkiller are mixed in sample 925-930.  <i>Marble City Member:</i> 160? feet (755?-915; exact thickness uncertain as explained above). Off-white to pink crinoidal limestone; in part dolomitic; gray to light-gray fine-crystalline calcitic dolomite.

Lohmann-Johnson Drig Co.  
2 Cook  
SW NE  
Sec. 8, T. 12 N., R. 24 E.  
Sequoyah County, Oklahoma  
KB 640'

Cimarron Petroleum Ex.  
1 Holmes  
Sec. 9, T. 12 N., R. 24 E.  
Sequoyah County, Oklahoma  
KB 943'





755-760	5	Limestone, light-gray to dark-gray, fossiliferous, 10% Frisco; limestone, off-white to pink, crinoidal; abundant crinoidal debris.
760-765	5	Dolomite, calcitic, light-gray to gray, fine-crystalline; limestone, as above, 15-20%.
765-770	5	Limestone, off-white to pink, crinoidal; abundant pink crinoidal material; dolomite, as above, 5%.
770-775	5	Limestone, dolomitic, off-white to pink, crinoidal; abundant pink crinoidal material.
775-810	35	Limestone, off-white to pink, crinoidal; in part dolomitic; abundant pink crinoidal material.
810-820	10	Limestone, off-white to white; in part dolomitic; abundant pink crinoidal material; limestone, white, chalky, 1-2% residue, 20%.
820-830	10	Limestone, as above except more dolomitic; no white chalky limestone present.
830-840	10	Limestone, dolomitic, white to off-white; limestone, white, chalky, 1-3% residue, 20%.
840-850	10	Limestone, as above, except some pink crinoidal; no white chalky limestone.
850-860	10	Limestone, white to off-white, in part slightly dolomitic; some pink crinoidal material.
860-870	10	Limestone, as above, except more dolomitic.
870-875	5	Limestone, as above, except dolomitic content lower.
875-880	5	Limestone, as above, except more dolomitic.
880-910	30	Limestone, off-white to white, in part slightly dolomitic; abundant pink crinoidal material.
910-915	5	Limestone, as above, except more dolomitic. <i>Barber Member: 12? feet (915-927?; thickness uncertain, as Barber and Tenkiller are present in sample 925-930). Gray fine-crystalline calcitic dolomite.</i>
915-920	5	Dolomite, calcitic, gray, fine-crystalline; limestone, as above, 20%; limestone, dolomitic, gray to tannish, 10%, probably cavings from up the hole.
920-925	5	Dolomite, as above.
925-930	5	Dolomite, as above, 75%; limestone, gray to pinkish; in part dolomitic; some orange crinoidal material, 25% Tenkiller.

930-955	25	<b>TENKILLER FORMATION:</b> Gray to pink crinoidal limestone; in part dolomitic; abundant orange crinoidal material. Thickness uncertain as sample 925-930 contains both Barber and Tenkiller as described above. Thin section (D-1) was prepared from sample interval 940-945 (pl. XVIII; fig. 6).
		<b>BLACKGUM FORMATION:</b> 15 feet (955-970).
955-965	10	Light-gray fine-crystalline glauconitic calcitic dolomite; brown to tan argillaceous fine-crystalline dolomite, 3-5% residue; clear white to gray opaque chert; gray glauconitic limestone.
965-970	5	<i>Pettit Oölite:</i> Gray, dark-gray oölite. Thickness uncertain, as sample interval 965-970 contains a few pieces of oölite mixed with brown to tan fine-crystalline argillaceous dolomite, 15%; light-gray fine-crystalline glauconitic calcitic dolomite, 75%; gray to white clear opaque chert, 15%; all from the Blackgum Formation.
970-980	10	<b>SYLVAN FORMATION:</b> Thickness not determined, as samples were examined only to 980 feet. Sylvan encountered in sample 970-975 and consists of gray-green to green shale.

GULF 1 COSTELLO--C NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 14, T. 5 N.,  
R. 5 W., Grady County, Oklahoma; elev. 1029';  
TD 12,775' (Simpson); completed 10/21/54, no  
Hunton production reported. Tops: Woodford  
(CC) 10,180' (-9151'), Hunton (CC) 10,415'  
(-9386'), Sylvan (CC) 10,800' (-9771');  
Hunton thickness 385'. Cored 10,433'-10,558'  
(all Hunton); no thin sections; chemical  
analyses; OU Core Library.

Woodford Shale 10,180'-10,415'

Hunton Group 10,415'-10,800'

10,415'-10,433' No core. Probably all Lower  
Devonian.

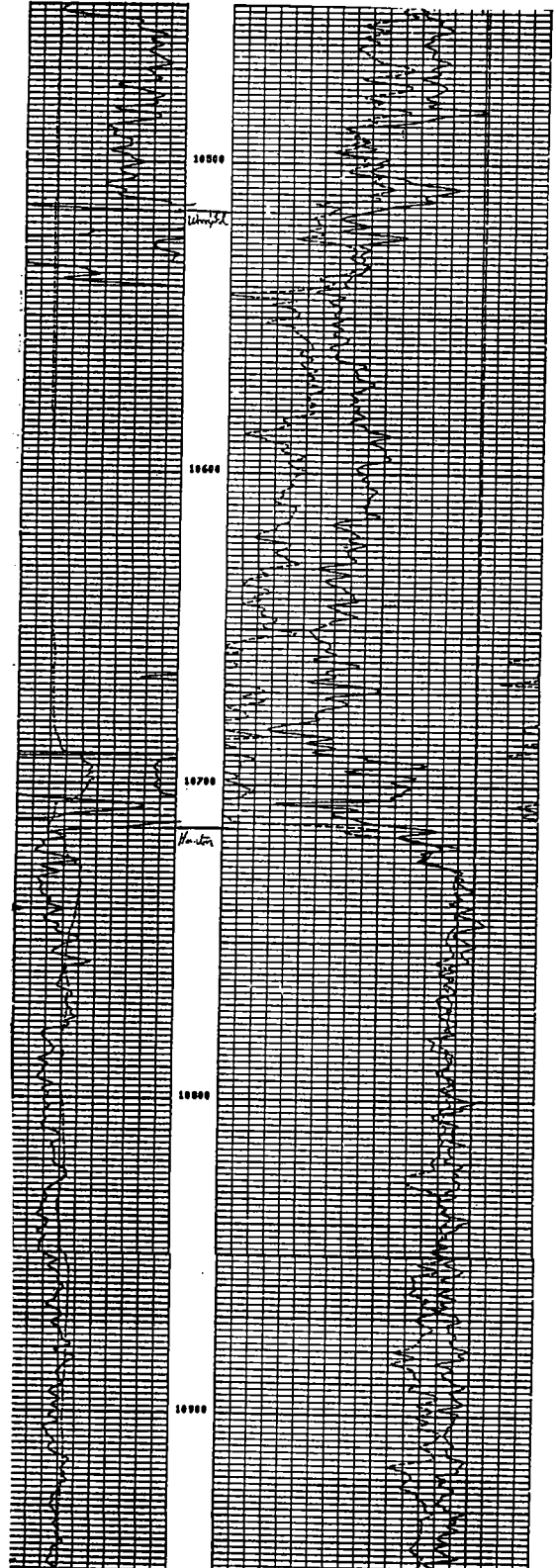
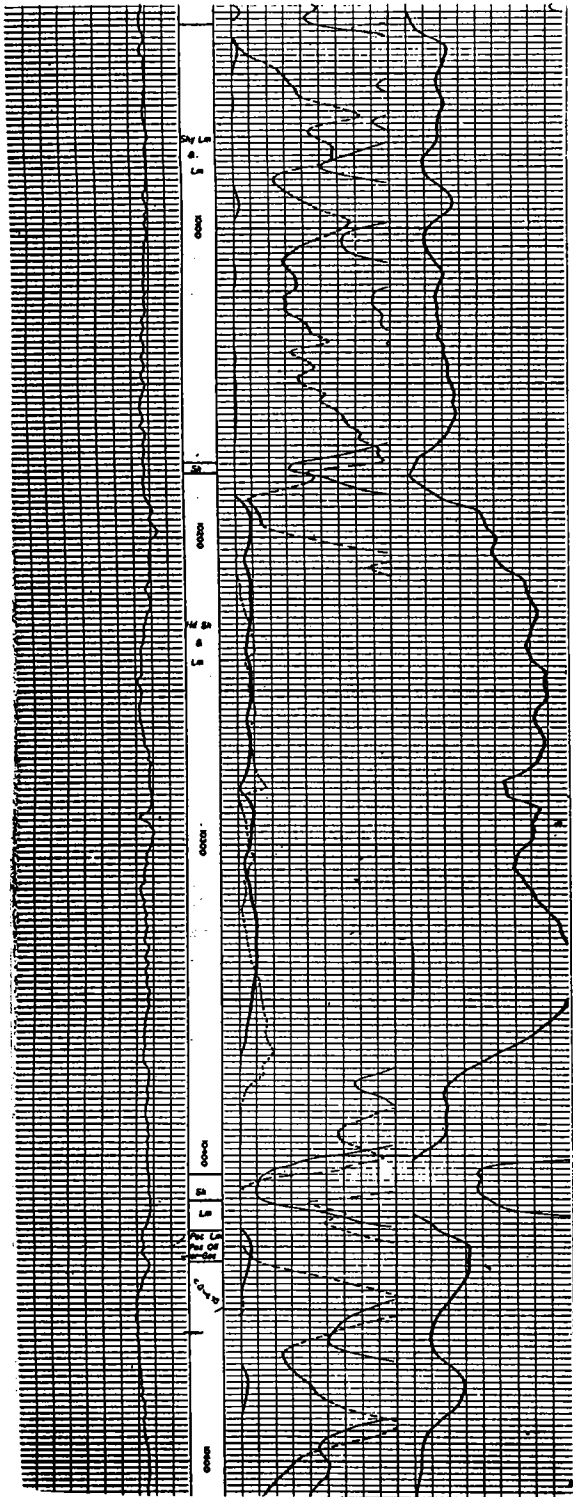
10,433'-10,558' Lower Devonian; Haragan-Bois  
d'Arc Formations. Medium-gray fossilifer-  
ous marlstone; MgCO<sub>3</sub> averages 7.56%, HCl  
insolubles average 15.49%. This core  
furnished a few pelecypods, bryozoans, and  
trilobites, and following brachiopods:  
Obturamentella sp., Strophonella sp.,  
Leptostrophia sp., Levenea subcarinata  
pumilis?, Dalejina sp., Meristella atoka?,  
Gypidula sp., Sphaerirhynchia sp. This  
brachiopod fauna is similar to that of  
Haragan-Bois d'Arc at outcrop.

10,558'-10,800' No core.

Sylvan Shale 10,800'

Gulf Oil Co.  
J Costello  
NE SE  
Sec. 14, T. 5 N., R. 5 W.  
Grady County, Oklahoma  
KB 1029'

Andover Oil Co.  
2 Welch  
SW SW NW  
Sec. 14, T. 5 N., R. 5 W.  
Grady County, Oklahoma  
KB 1027'

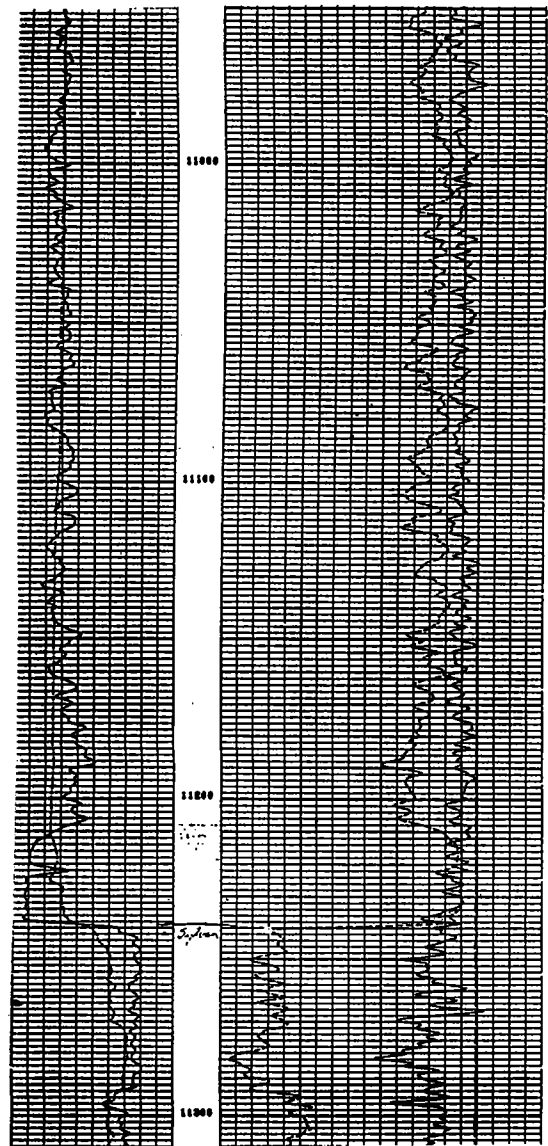
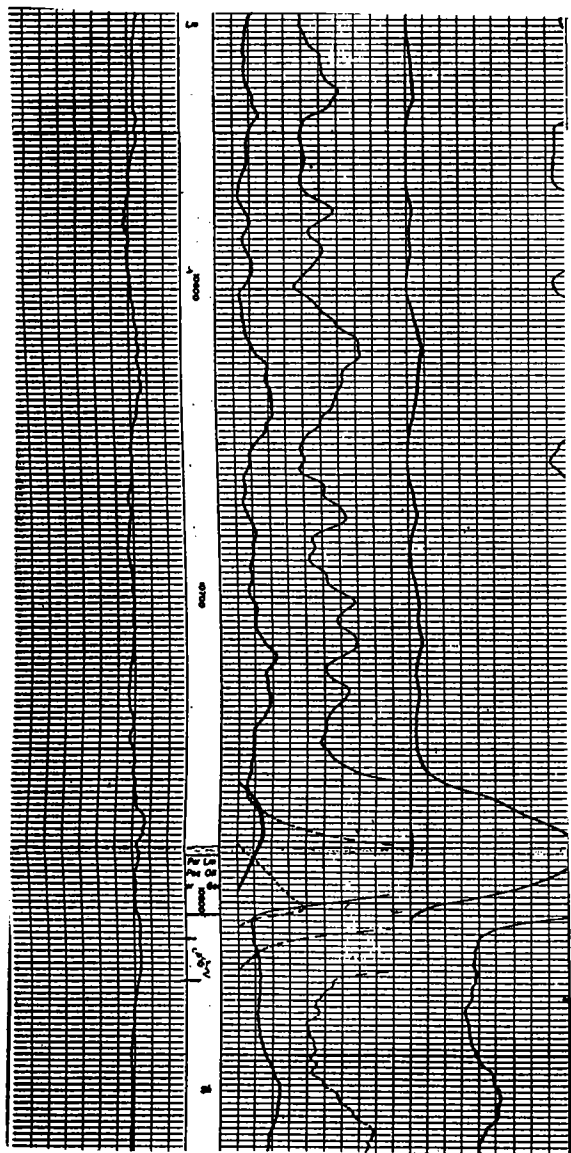


Gulf Oil Co.  
1 Costello  
NE SE  
Sec. 14, T. 5 N., R. 5 W.  
Grady County, Oklahoma  
KB 1029'

continued

Andover Oil Co.  
2 Welch  
SW SW NW  
Sec. 14, T. 5 N., R. 5 W.  
Grady County, Oklahoma  
KB 1027'

continued



CARTER & MANDELL (?TEXAS) 1 COWAN—  
SE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 5, T. 11 N., R. 10 E., Okfuskee  
County, Oklahoma; elev. 819'; TD 3884' (Ordovician);  
?compl. 7/11/40, D&A. Tops: Hunton 3640' (-2831')  
(sample depth), Sylvan 3790' (-2981') (sample  
depth), Welling 3832' (-3013') (sample depth); Hun-  
ton thickness 150'. Examined samples and core chips  
from 3600' to 3860'; consist of large samples and  
core chips; 10 thin sections; samples, Oklahoma Well  
Sample Service, Shawnee, Oklahoma.

The samples from this well agree very well with  
the data given on the completion card (CC) but differ  
in one respect from the SP log of the Texas 1 Cowan  
in the SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 5, T. 11 N., R. 10 E.  
(note difference in legal description). The Hunton  
top and Viola top on the SP log fit very well with  
the sample tops and the CC tops, but the Sylvan  
top on the SP log is clearly at 3740', not 3790'. This  
could be due to sample lag (but note that the other  
tops agree), or it could be another well.

There is no recognizable marlstone in this well; the  
entire Hunton is represented by moderately to heavily  
dolomitized organo-detrital carbonate (including  
some porous crystalline dolomite). There is no well-  
defined lithostratigraphic break in the Hunton, and  
the entire section is tentatively referred to the Chim-  
neyhill on the basis of stratigraphic position.

*Woodford (Chattanooga) Shale*

Misener Sandstone at the base.

*Hunton Group 3640'-3790' (sample depths)*

See discussion above. Silurian; Chimneyhill Sub-  
group. Core chips from 3646' to 3662' include pink  
crinoidal micrite and sparite with numerous ostra-  
codes. The remainder of the samples and chips  
consists of moderately to heavily dolomitized cri-  
noidal sparite and micrite, including some porous  
crystalline dolomite. There is little to no detrital  
quartz in any of the samples. No chert observed.

*Sylvan Shale 3790'-3832' (sample depths)*

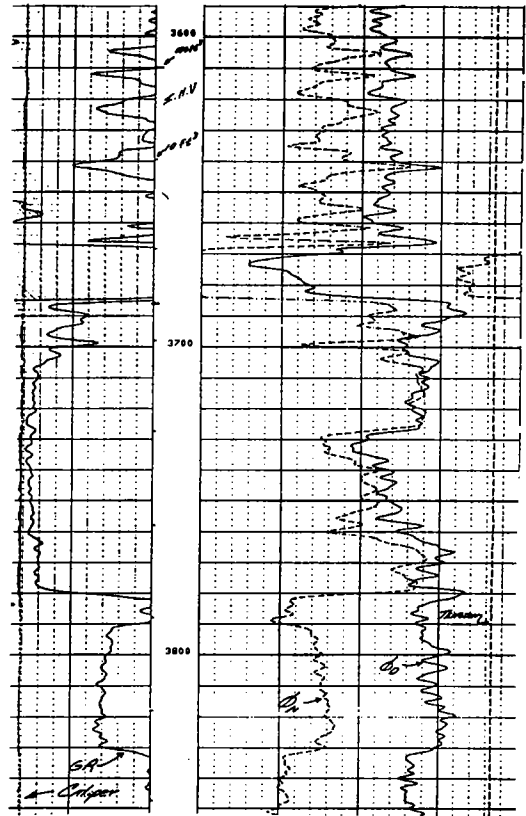
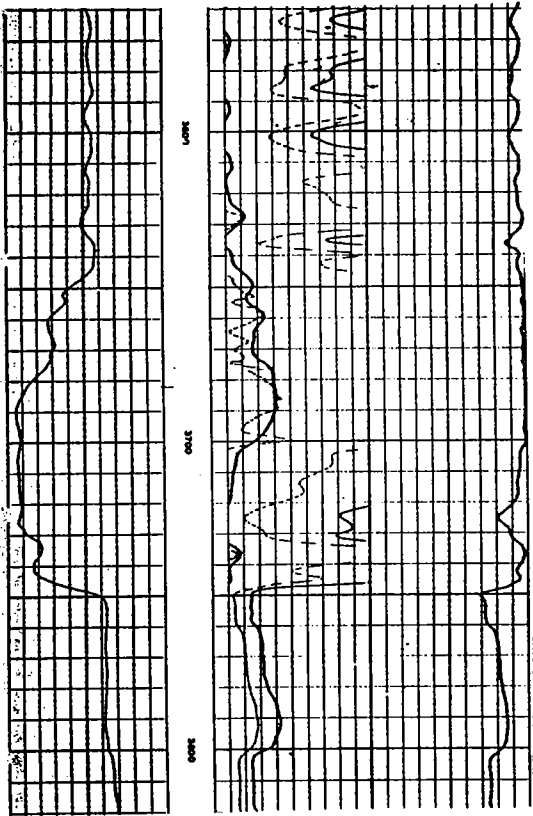
*Welling Formation 3832' (sample depth)*

3840'-3845' (thin section) Organo-detrital sparite  
with many pelmatozoan plates; no detrital quartz  
and only minor dolomite observed.

3855'-3860' (thin section) Same as above but with  
rounded quartz grains to 0.3 mm and 1 piece of  
pellet limestone (probably Bromide Formation).

Carter & Mandel  
1 Cowan  
SE SW SW  
Sec. 5, T. 11 N., R. 10 E.  
Okfuskee County, Oklahoma  
KB 821'

Oklahoma Management Corp.  
1 Whittington  
NE SW SE  
Sec. 5, T. 11 N., R. 10 E.  
Okfuskee County, Oklahoma  
KB 842'



KIRKPATRICK 1 CRONKITE--C N<sub>2</sub>W<sub>4</sub> sec. 14, T. 15 N.,  
 R. 5 W., Kingfisher County, Oklahoma; elev.  
 1102'; TD 7900' (Simpson); compl. 8/5/70,  
 Hunton production (perforated 7108'-7114',  
 7094'-7097'). Tops: Woodford (CC) 7043'  
 (-5941'), Hunton (CC) 7097' (-5995'), Sylvan  
 (CC) 7370' (-6268'); Hunton thickness 273'.  
 Cored 7098'-7136' (all Hunton); 4 thin sec-  
 tions; chemical analyses; OU Core Library;  
 1 porosity-permeability test, P19-A.

This well drilled by Pickens to 7146' (2/24/67),  
 deepened by Kirkpatrick to 7900'.

Woodford Shale 7043'-7907'

Hunton Group 7097'-7370'

7097'-7098' No core.

7098'-7108' Lower Devonian; ?Emsian  
 (?=Sallisaw Formation). Fossiliferous, dolo-  
 mitic limestone; 19.51% MgCO<sub>3</sub> and 9.43% HCl  
 insolubles. Few if any oolites. At 7099'  
 numerous specimens of a spondylium-bearing  
 terebratuloid, probably Amphigenia sp.;  
 also specimens of Amphigenia? sp. and  
Leptocoelia sp. at 7102'.

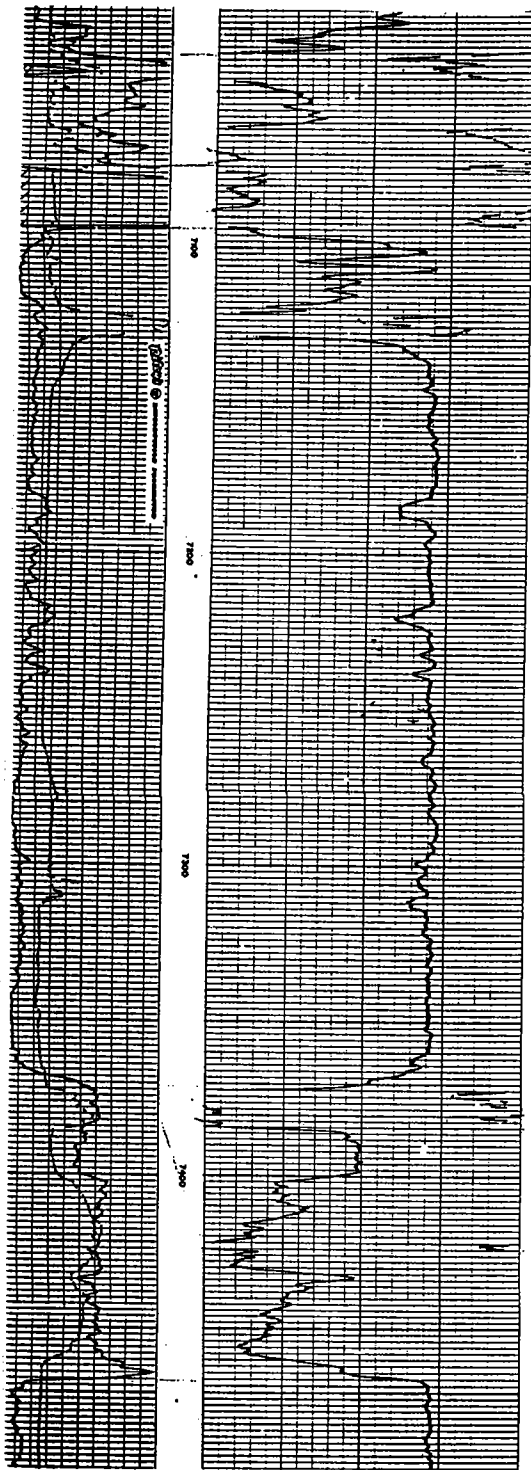
7109'-7118' Fossiliferous, oolitic limestone;  
 very little dolomite (1.69% MgCO<sub>3</sub>, 6.42%  
 HCl insolubles). Oolitic matrix mostly spar;  
 parts with much crystalline quartz, probably  
 largely silicification. Sample P19-A at  
 7109' tested 2.15% porosity. Brachiopods  
 from 7110'-7114', 7118' include Eodevonaria  
 sp., Protoleptostrophia? cf. P. blainvillei,  
Leptocoelia sp., Anoplia cf. A.  
nucleata, Schellwienella? sp., and Atrypa  
 sp. On basis of these fossils, this  
 interval and overlying unit are assigned  
 to late Early Devonian (?Emsian).

7118'-7120' Like unit below, but yielding a  
 few specimens of Leptocoelia sp. Assigned  
 to late Early Devonian on basis of these  
 brachiopods.

7120'-7136' Fossiliferous dolomitic lime-  
 stone with substantial insoluble detritus;  
 average MgCO<sub>3</sub> 25.90%, HCl insolubles 18.38%.  
 No diagnostic fossils observed, and age of  
 this interval is uncertain; tentatively  
 assigned to Lower Devonian.

7136'-7370' No core.

Sylvan Shale 7370'





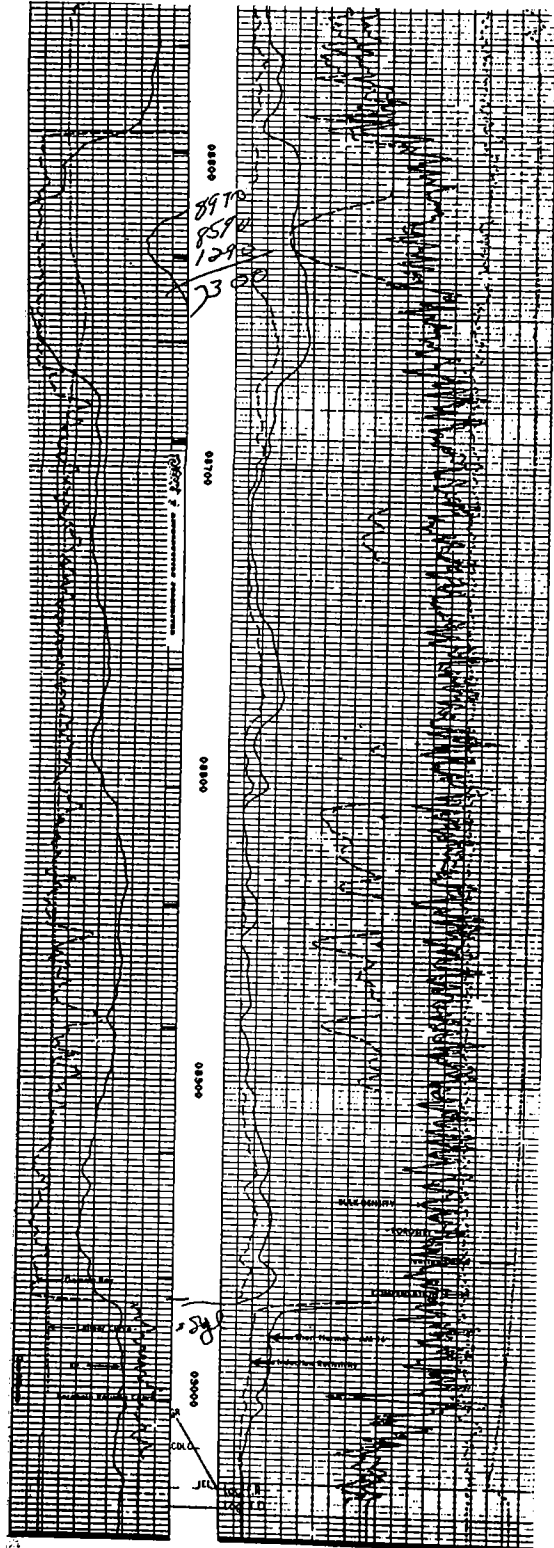
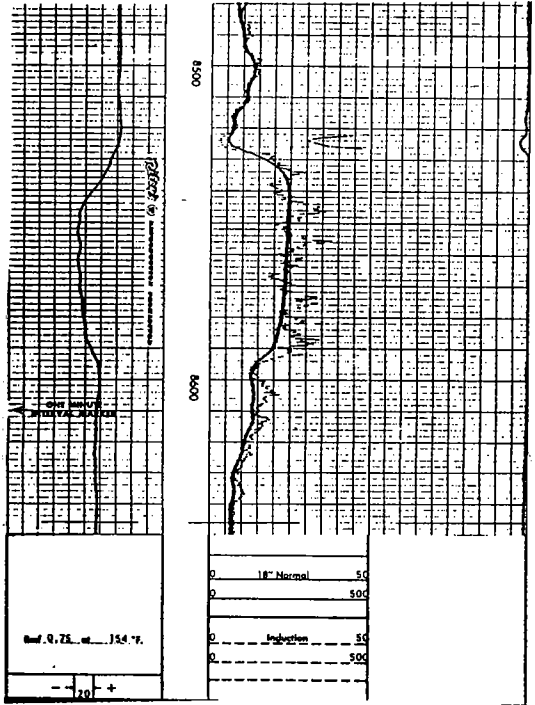
**APEXCO INC. 2 CURTIS** — C SW¼SW¼ sec. 27, T11N, R5W, Canadian County, Oklahoma; elevation GL 1,320 ft, DF 1,328 ft; TD 8,657 ft (Hunton); completion 9/1/73.

Cored 8,523–8,602 ft (Hunton). The upper part of the core (8,523–8,591 ft) is a low magnesium (average 0.81% MgCO<sub>3</sub>), low HCl insolubles (average 1.0% HCl insolubles), skeletal limestone with numerous corals, brachiopods (including thick-shelled large species) and snails, all suggestive of the Frisco Limestone. The lower part of the core (8,591 ft to end of core) is provisionally correlated with the Fittshugh Member of the Bois d'Arc Formation on the basis of the brachiopods *Obturamentella wadei?* and *Howellella* sp.; there is also a fairly abrupt change in texture at 8,591 ft to a more marly lithofacies, and the HCl residues increase to ~5%.

This core is located at the OGS Core and Sample Library; 19 thin sections prepared; 19 spot samples analyzed for HCl residues and MgCO<sub>3</sub>. Examined by Amsden, 1978.

Apexeco  
 2 Curtis  
 SW SW  
 Sec. 27, T. 11 N., R. 5 W.  
 Canadian County, Oklahoma  
 KB 1328'

Long Royalty  
 2 Jacobs  
 NW SE  
 Sec. 28, T. 11 N., R. 5 W.  
 Canadian County, Oklahoma  
 KB 1291'



SUNRAY DX 1 DAVIS--NW $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 17, T. 5. N.,  
R. 8 E., Hughes County, Oklahoma; elev. 772';  
TD 4120' (Simpson); compl. 11/22/62, no  
Hunton production reported. Tops: Woodford  
(CC) 3660' (-2888'), Hunton (CC) 3817'  
(-3045'), Sylvan (CC) 3844' (-3072'); Hunton  
thickness 27'. Cored 3818'-3842' (all  
Hunton); 6 thin sections; chemical analyses;  
OU Core Library.

Woodford Shale 3660'-3817'

Hunton Group 3817'-3844'

3817'-3818' No core.

3818'-3830 $\frac{1}{2}$ ' Silurian; Cochrane Formation.

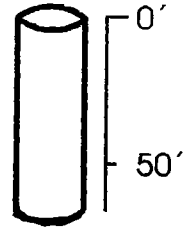
Cherty, organo-detrital limestone, parts  
with substantial glauconite. Dolomite  
content variable, averaging 6.36% MgCO<sub>3</sub>.  
Insoluble content is high (average HCl  
insolubles 25.52%, but part of this is  
silicification and part is glauconite.  
Stromatolite at 3824'. Assigned to  
Cochrane on basis of lithology and strati-  
graphic position.

3830 $\frac{1}{2}$ '-3842' Keel Formation. Oolitic and  
fossiliferous limestone with minor dolomite;  
MgCO<sub>3</sub> averages 6.05%, HCl insolubles 4.46%.  
Some of oolites appear deformed. Numerous  
specimens of Brevilamulella thebesensis  
(Savage) at 3835'. Assigned to Keel on  
basis of these fossils, lithology, and  
stratigraphic position.

3842'-3844' No core.

Sylvan Shale 3844'

Log not  
available



SUNRAY-DX 1 C. DAVIS—NW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 17, T. 5 N., R. 8 E., Pontotoc County, Oklahoma; elev. 772'; TD 4120' (Simpson); compl. 11/22/62, no Hunton production reported. Tops: Woodford 3660' (-2888') (CC), Hunton 3817' (-3045') (CC), Sylvan 3844' (-3072') (CC), Welling 3950' (-3178') (sample depth); Hunton thickness 27'. Cored 3818'-3842' (all Hunton); 6 thin sections; chemical analyses; OU Core Library (described, Amsden, 1975b, p. 83).

*Woodford (Chattanooga) Shale* 3660'-3817' (CC)

*Hunton Group* 3817'-3844' (CC)

3817'-3818' No core; samples not studied.

3818'-3830.5' (core) Silurian; Cochrane Formation. Cherty organo-detrital limestone, parts with substantial glauconite. Dolomite content variable, averaging 6.36% MgCO<sub>3</sub>. The insoluble content is high, average HCl-acid insolubles 25.52%, but part of this is silicification and part is glauconite. Stromatolite at 3824'. Assigned to Cochrane on basis of lithology and stratigraphic position.

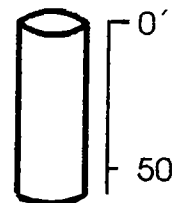
3830.5'-3842' (core) Keel Formation. Oolitic and fossiliferous limestone with minor dolomite: MgCO<sub>3</sub> averages 6.05%, HCl-acid insolubles 4.46%. Some of the oolites appear deformed. Numerous specimens of *Brevilamulella thebesensis* at 3835'. Assigned to Keel on the basis of these fossils, lithology, and stratigraphic position.

3842'-3844' No core; samples not studied.

*Sylvan Shale* 3844'-3950' (CC)

*Welling Formation* 3950' (sample depth)

Log not available



BLACKWOOD & NICHOLS 1 M. DAVIS—  
SW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec. 16, T. 10 N., R. 6 E., Seminole  
County, Oklahoma; elev. 943' DF (936' GL); TD 4679'  
(Ordovician); compl. 8/24/53, D&A. Tops: Hunton  
4250' (-3307') (SP log), Sylvan 4420' (-3477') (SP  
log), Welling 4515' (-3572') (sample depth); Hunton  
thickness 170'. Samples examined from 4200' to  
4550', good quality; 12 thin sections; samples, Okla-  
homa Well Sample Service, Shawnee, Oklahoma.

The upper 60' of the Hunton is organo-detrital lime-  
stone with almost no dolomite or quartz and is here  
assigned to the Frisco Formation (cf. Shell 1 Boley).  
This rests on weakly to strongly dolomitized pink  
crinoidal micrite, which is assigned to the Chimney-  
hill Subgroup on the basis of lithology and strati-  
graphic position. This could include equivalents of  
the *Kirkidium* biofacies in the upper part.

*Woodford (Chattanooga) Shale*

Misener Sandstone; about 10' of chert and quartz  
sandstone at the base of the Woodford sequence.

*Hunton Group 4250'-4420'* (SP log)

4250'-4330' (sample depths) Lower Devonian;  
Frisco Formation. Organo-detrital crinoid-  
bryozoan sparite with minor micrite cement. The  
uppermost sample shows a few grains of rounded  
detrital quartz, which is almost certainly infiltra-  
tion from the overlying Misener Sandstone; other  
than this, no quartz observed. Almost entirely free  
of dolomite.

4330'-4420' (sample depths) Silurian; Chimney-  
hill Subgroup.

4330'-4340' (sample depths) Almost entirely  
porous crystalline dolomite; a few corroded pink  
crinoid plates. No detrital quartz observed.

4340'-4425' (sample depths) Weakly to heavily  
dolomitized pink crinoidal micrite with only a  
few bryozoans. A few widely scattered fine (to  
0.1 mm) subangular quartz grains.

4425'-4440' (sample depths) Porous crystalline  
dolomite.

*Sylvan Shale 4420'* (SP log)-4515' (sample depth)

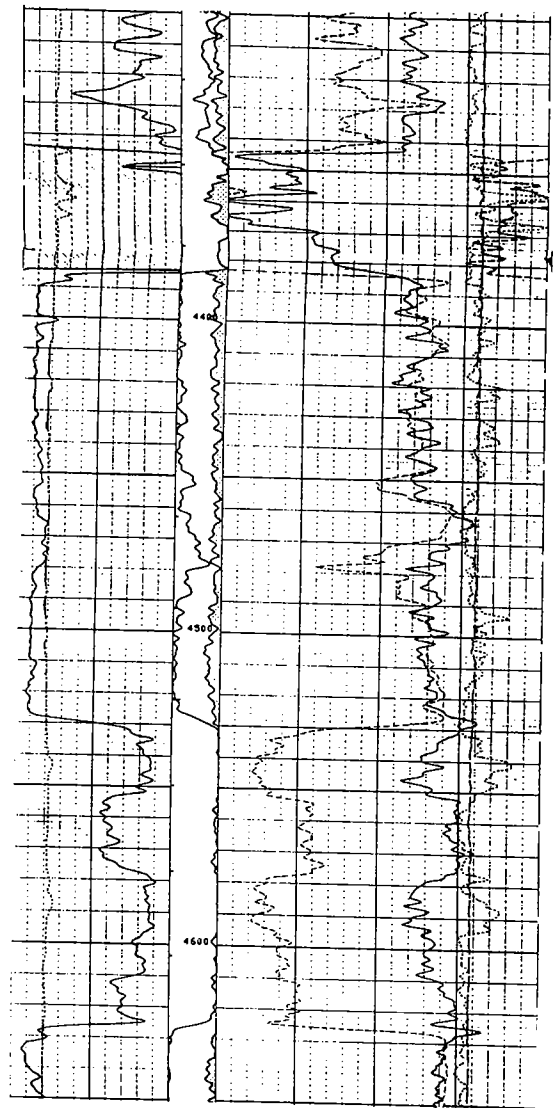
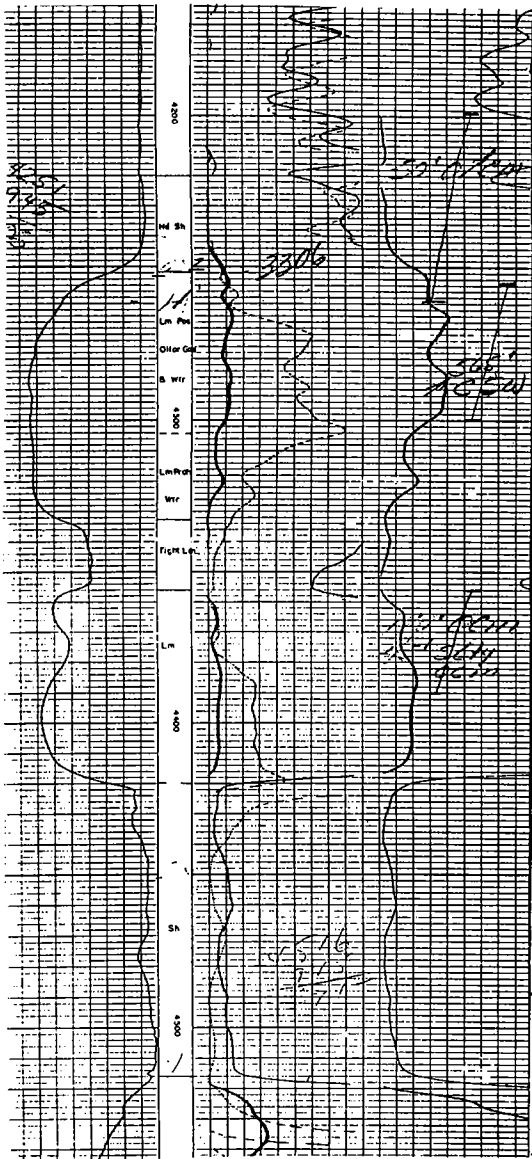
*Welling Formation 4515'* (sample depth)

4520'-4530' (thin section) Crinoidal sparite with  
minor micrite cement; no quartz or dolomite ob-  
served.

4540'-4550' (thin section) Like above, but with  
a few scattered rounded quartz grains and a few  
dolomite crystals.

Blackwood & Nichols  
1 Mont Davis  
SW NW NE  
Sec. 16, T. 10 N., R. 6 E.  
Seminole County, Oklahoma  
KB 945'

Wenexco, Inc.  
1-16 Reynolds  
SE SW SW  
Sec. 16, T. 10 N., R. 6 E.  
Seminole County, Oklahoma  
KB 947'

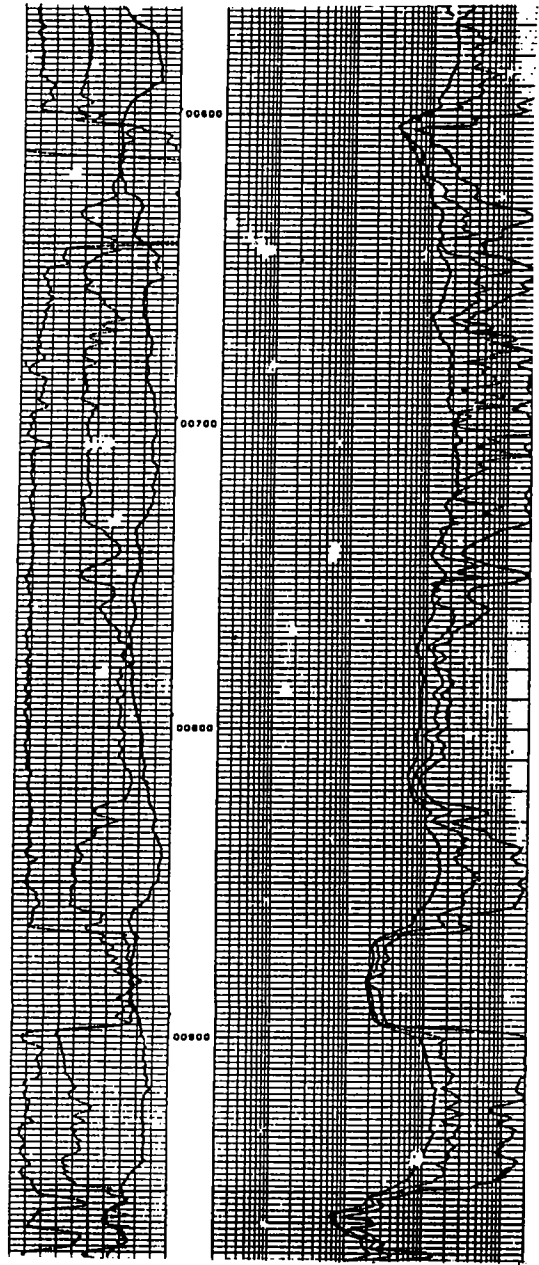
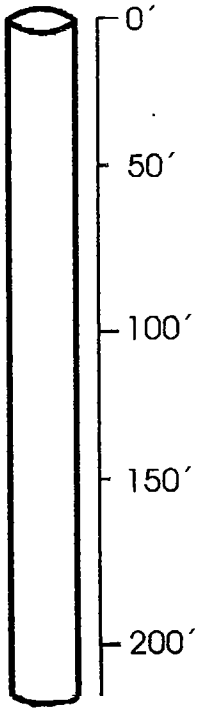


ST. CLAIR LIME CO. DIAMOND CORE HOLE SCL  
1—NE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec. 14, T. 13 N., R. 23 E., Sequoyah County, Oklahoma; compl. 1953. This core starts in the Sylamore Sandstone Member of the Chattanooga Formation. It cuts the top of the Hunton Group at 4.8' and extends down into the Hunton for a distance of 100'. It bottoms in the Barber Member, Quarry Mountain Formation, Chimneyhill Subgroup. A lithostratigraphic description and chemical analyses are given in Amsden and Rowland (1965, p. 113-115, 163, 166).

St. Clair Lime Co.  
1 Diamond Core Hole SCL  
NE NE SE  
Sec. 14, T. 13 N., R. 23 E.  
Sequoyah County, Oklahoma  
elev. Not reported

Cimarron Petroleum Corp.  
1-177 CPC Crawford  
SE NW  
Sec. 19, T. 13 N., R. 23 E.  
Sequoyah County, Oklahoma  
elev. 897'

Log not  
available



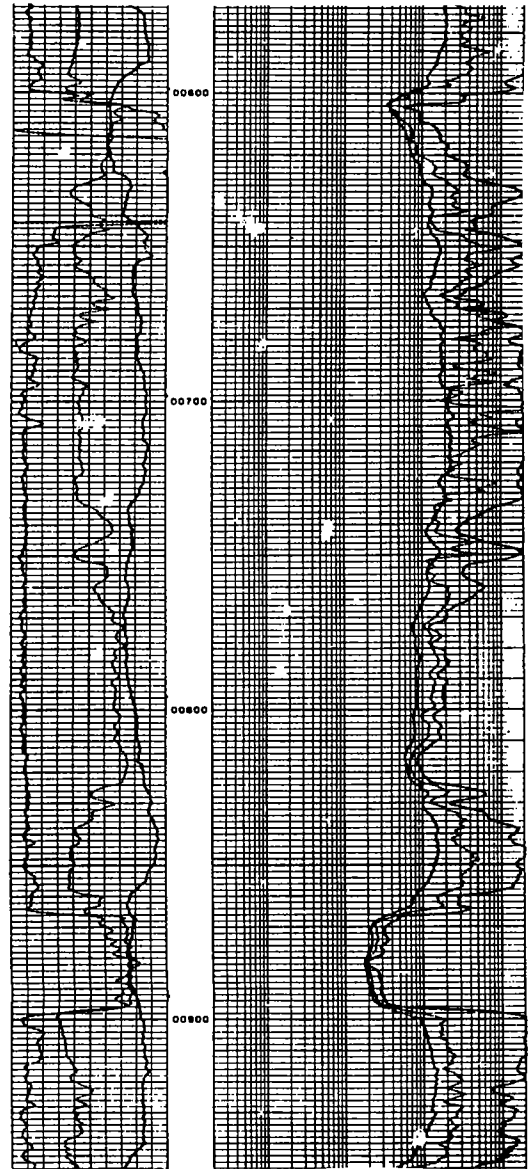
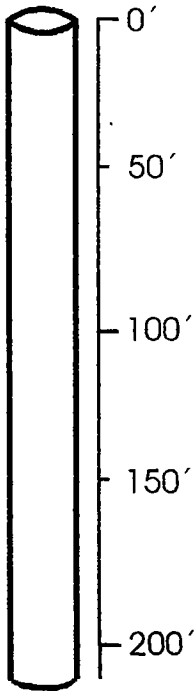


ST. CLAIR LIME CO. DIAMOND CORE HOLE SCL  
2—NE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec. 14, T. 13 N., R. 23 E., Se-  
quoyah County, Oklahoma; compl. 1960. This core  
starts in the Hunton Group (Barber Member, Quarry  
Mountain Formation, Chimneyhill Subgroup) and  
extends into the top of the Sylvan Shale (at 97.25').  
A lithostratigraphic description and chemical anal-  
yses of this core are given in Amsden and Rowland  
(1965, p. 115-119, 163, 166).

St. Clair Lime Co.  
2 Diamond Core Hole SCL  
NE NE SE  
Sec. 14, T. 13 N., R. 23 E.  
Sequoyah County, Oklahoma  
elev. Not reported'

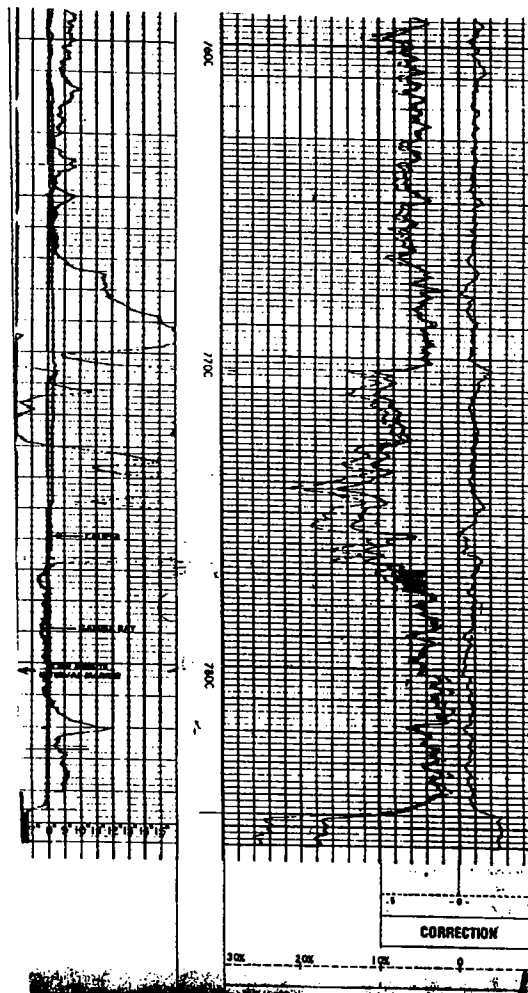
Cimarron Petroleum Corp.  
1-177 CPC Crawford  
SE NW  
Sec. 19, T. 13 N., R. 23 E.  
Sequoyah County, Oklahoma  
elev. 897'

Log not  
available



NFC PETROLEUM CORP. 6 DIETZ — C NW¼SE¼ sec. 30, T23N, R13W; Woods County, Oklahoma; elevation GL 1,421 ft; TD 7,850 ft (Hunton); completion 7/27/78.

Cored 36 ft of lower Woodford-Hunton strata. Core examined, 1985; 5 thin sections and 5 samples analyzed for MgCO<sub>3</sub> and HCl-insoluble residues. Hunton strata are moderately to heavily dolomitized skeletal grainstones and marlstones; questionable representative of the brachiopod *Placotriplexia?* sp. at 7,755 ft (Chimneyhill) (Wenlockian). Dr. James E. Barrick (Texas Tech University) reports *Walliserodus* sp. and other conodonts from this core.



**KRUMME 1 DIFFENBACH**—NE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec. 31, T. 11 N., R. 10 E., Okfuskee County, Oklahoma; elev. 842' DF (837' GL); TD 3958' (Ordovician); compl. 11/3/56, no Hunton production reported. Tops: Misener 3684' (-2844') (sample depth), Hunton 3692' (-2852') (sample depth), Sylvan 3792' (-2952') (sample depth), Welling 3879' (-3038') (sample depth); Hunton thickness 100'. Samples examined from 3600' to 3900', good quality; 11 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

This well includes about 10' of well-defined Misener Sandstone. The top is underlain by pelmatozoan sparite and micrite and is here referred to the Chimneyhill Subgroup. The Chimneyhill ranges from almost no dolomite to heavily dolomitized limestone and in a few places crystalline dolomite. No glauconite observed, but the basal 20' is pelmatozoan micrite with chert, which resembles some of the glauconite-bearing beds in this area.

*Woodford (Chattanooga) Shale*

3684'-3692' (sample depths) Misener Sandstone.

*Hunton Group* 3692'-3792' (sample depths)

3692'-3705' (sample depths) Silurian; Chimneyhill Subgroup. Pelmatozoan micrite with some spar; some bryozoans, ostracodes, trilobites, and brachiopods. Only minor dolomite and very little quartz.

3705'-3770' (sample depths) Weakly to moderately dolomitized pelmatozoan micrite and sparite with very little quartz.

3770'-3780' (sample depths) Porous crystalline dolomite mixed with heavily dolomitized porous pelmatozoan sparite. Very little quartz.

3780'-3792' (sample depths) Crinoidal micrite with much broken shelly debris, undolomitized to moderately dolomitized. Fossiliferous chert. No glauconite observed.

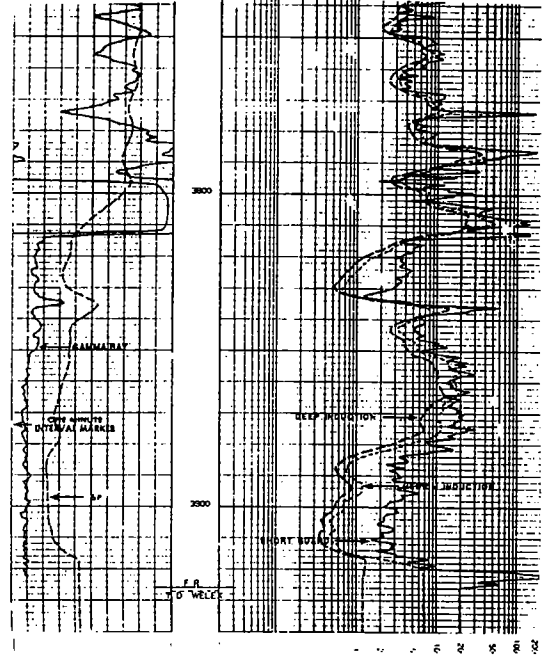
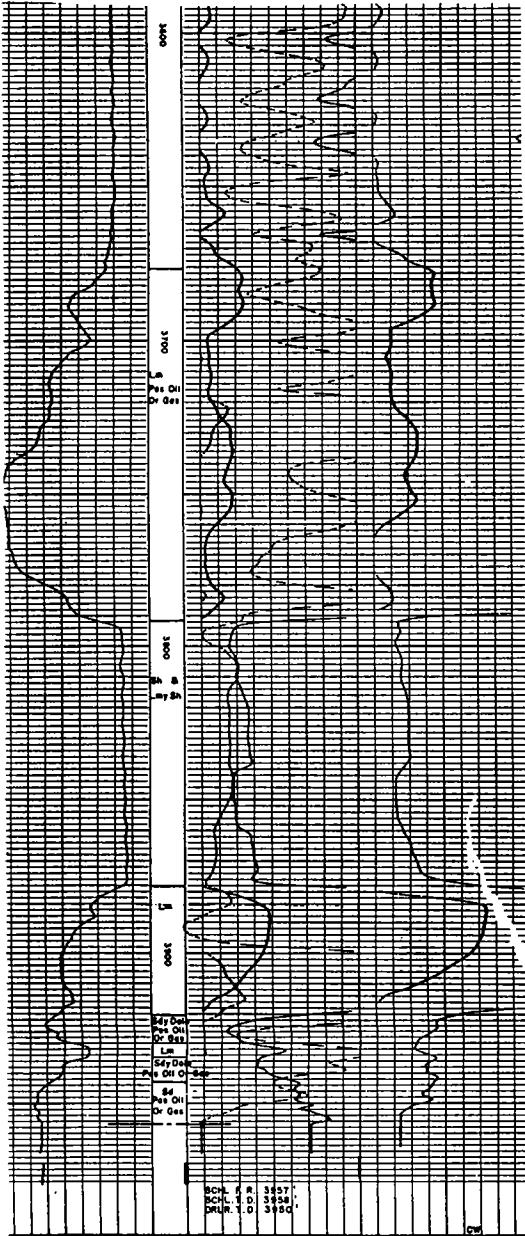
*Sylvan Shale* 3792'-3878' (sample depths)

*Welling Formation* 3878' (sample depths)

3880'-3890' (thin section) Organo-detrital sparite with a few pieces of rounded detrital quartz; very little dolomite.

Krumme Oil Company  
 1 Diffenbach  
 NE NW SE  
 Sec. 31, T. 11 N., R. 10 E.  
 Okfuskee County, Oklahoma  
 DF 837'

Quad Oil Company  
 1 Casey  
 SE SE SW  
 Sec. 28, T. 11 N., R. 10 E.  
 Okfuskee County, Oklahoma  
 DF 792'



SOUTHWESTERN EXPLORATION CONSULTANTS, INC.  
 DIFFENBACH NO. 1

ELEV'S 8440'  
 8044'

SHELL 1-15 DILL--SE $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 15, T. 19 N.,  
 R. 10 W., Blaine County, Oklahoma; elev.  
 1213'; TD 8960' (Hunton); compl. 5/6/65, D&A.  
 Tops: Woodford (CC) 8512' (-7299'), Hunton  
 (core) 8531' (-7318'); Hunton thickness 429'  
 to TD. Cored 8517'-8577' (Woodford-Hunton);  
 17 thin sections; chemical analyses; 3  
 porosity-permeability tests (P21-A, B, C);  
 OU Core Library.

Woodford Shale 8512'-8531'

Black shale with 3" of sandstone just above  
 Woodford-Hunton contact (Misener Sandstone).

Hunton Group 8531'-8960' (TD)

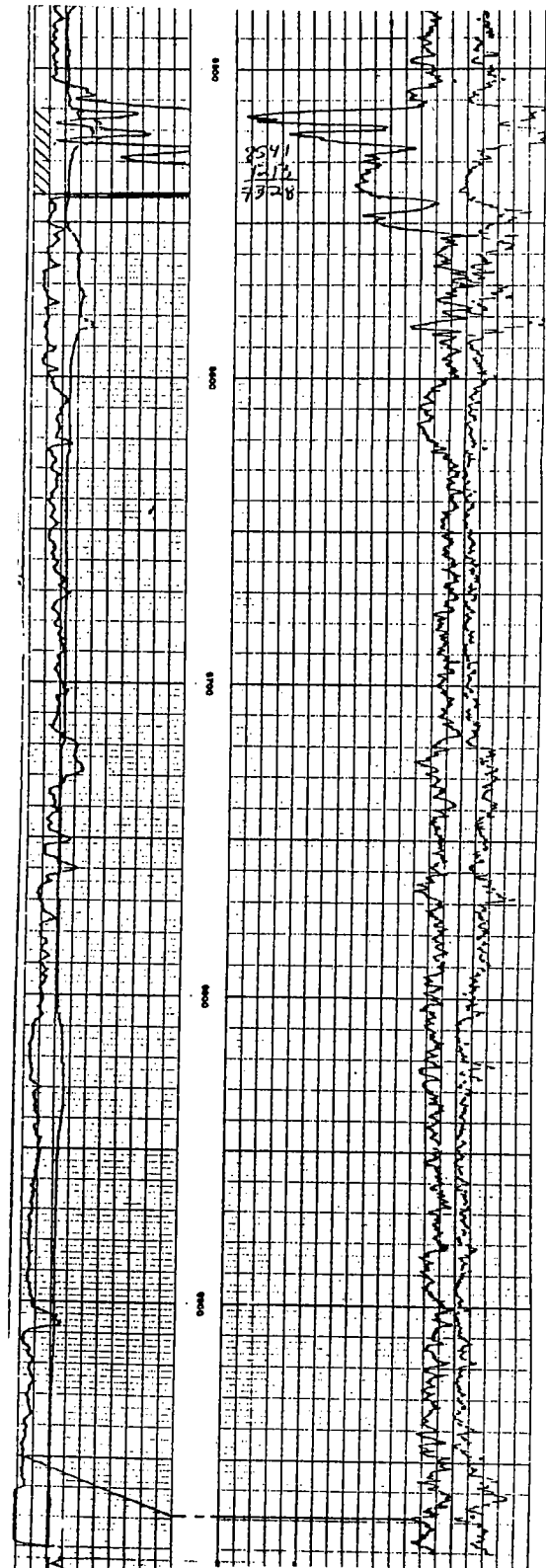
8531'-8542' Silurian; Kirkidium biofacies.

Strongly dolomitized oolite; individual  
 ooids preserved in crystalline dolomite,  
 much of matrix is void. Excellent porosity:  
 P21-A 16.07%, P21-B 16.87%. Insoluble  
 residues low, mostly about 1.46%; MgCO<sub>3</sub>  
 averages 39.20%. This interval fossilifer-  
 ous with specimens of Kirkidium common;  
 mostly preserved as internal and external  
 molds.

8542'-8569' Kirkidium biofacies. Light-gray  
 crystalline dolomite; MgCO<sub>3</sub> averages 36.53%,  
 HCl insolubles 8.76%. Much of this rock  
 is Kirkidium coquina (some recognizable  
 pelmatozoan plates) with fossils preserved  
 mostly in spar, a few as molds (pl. 3, fig.  
 6). Spar may be either calcspar or dolo-  
 spar, with calcspar commonly filling  
 posterior, thicker part of shale and dolo-  
 spar thinner parts. Kirkidium sp. through-  
 out interval. Porosity generally low;  
 P21-C 0.45% porosity.

8569'-8577' Crystalline dolomite like above;  
 no Kirkidium observed.

8577'-8960' (TD) No core.



SHELL 1-4 DOUGLAS—1477' FEL and 1446' FSL  
 sec 4, T. 6 N., R. 32 W., Sebastian County, Arkansas;  
 elev. 615' KB (597' GL); TD 8227' (Cason = Sylvan  
 Shale); compl. 10/2/64, no Hunton production  
 reported (Hale production reported). Tops: Woodford  
 (Chattanooga) 7950' (-7335') (GR log), Hunton (may  
 include Penters Chert = Sallisaw Formation) 8046'  
 (-7431') (GR log), Cason (=Sylvan) 8220' (-7605')  
 (sample depth); Hunton thickness 174'. This well air  
 drilled to a depth of 8060'; satisfactory samples,  
 8060'-8070'; mixed samples 8070'-8110', satisfactory  
 samples 8110'-8220' (last sample); 8 thin sections;  
 samples, Arkansas Geological Commission, Little  
 Rock, Arkansas.

There is only 1 satisfactory sample (8060'-8070') in  
 the upper 60' of the Hunton Group, making it difficult  
 to verify the presence or absence of the Penters Chert  
 (=Sallisaw Formation). However, the 8060'-8070'  
 sample is entirely crystalline dolomite, which shows  
 no detrital quartz, suggesting that from here down  
 the Hunton is entirely Chimneyhill Subgroup. On  
 the other hand, the gamma-ray log of this interval  
 has a moderately strong high and suggests the presence  
 of some sand and (or) shale. The Penters Chert  
 is known to be present in the Bonanza Field; see  
 Shell 1 Western Coal & Mining Co. well.

All the Hunton examined is strongly dolomitized and  
 is tentatively referred to the Chimneyhill Subgroup  
 on the basis of lithology and stratigraphic position.  
 See discussion of Shell 1 Western Coal & Mining  
 Co., Shell 1-34 Grober, Shell 1-10 Carter.

Woodford (Chattanooga) Shale 7950'-8046' (GR log)

Hunton Group 8046' (GR log)-8220' (sample depth)

8046' (GR log)-8060' (sample depth) Air drilled.

?Penters Chert (=Sallisaw Formation).

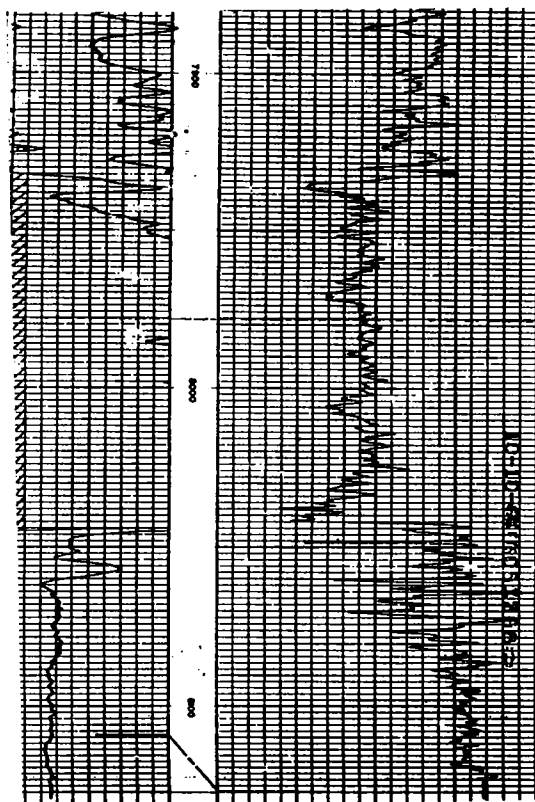
8060'-8220' (sample depths) ?Silurian; ?Chimneyhill Subgroup.

8060'-8070' (sample depths) Mostly porous crystalline dolomite with minor heavily dolomitized crinoidal limestone. No chert or detrital quartz observed.

8070'-8110' (sample depths) Samples mixed and not used. See discussion above.

8110'-8220' (sample depths) Mostly crystalline dolomite with some very heavily dolomitized crinoidal carbonate. Some of the dolomite appears porous, and some of the holes have a linear arrangement, suggesting fracture control. No detrital quartz observed.

Cason Shale (Sylvan Shale) 8220' (sample depth)



PAN AMERICAN 1 DROKE UNIT--C NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 4, T. 18 N., R. 9 W., Kingfisher County, Oklahoma; elev. 1124'; TD 8940' (Sylvan); compl. 6/26/64, no Hunton production reported. Tops: Woodford ?, Hunton (core) 8473' (-7349'), Sylvan (CC) 8916' (-7792'); Hunton thickness 443'. Cored 8177'-8611'; this well obviously cored deeper, as I have examined fossils from a piece of core at 8878'. No thin sections or chemical analyses; core presumably at Pan American.

I have examined only a few fossils from this core, most of my information being supplied by Prof. Gilbert Klapper (letter, 8/21/67).

Woodford Shale Top not reported.

Hunton Group 8473'-8916' (Gilbert Klapper, letter, 8/21/67).

8474' Lower Devonian. Specimen of terebratuloid brachiopod, possibly representative of Rensselaerina. I have examined this shell but no other part of core.

Since Kirkidium specimens are reported to start at 8484', Devonian cannot exceed 11'.

8484'-8574' Silurian; Kirkidium biofacies. Klapper (letter, 8/21/67) reported Kirkidium as ranging through this interval. I have examined a specimen of core at 8566'-8569' which has Coelospira saffordi, a common species in Henryhouse Formation (see Amsden, 1958a, p. 113, text-fig. 28).

8874'-8878' No information available.

8878' Chimneyhill Subgroup, Cochrane Formation. Glauconitic limestone with specimens of Microcardinalia protriplesiana (Amsden, 1966, p. 1010).

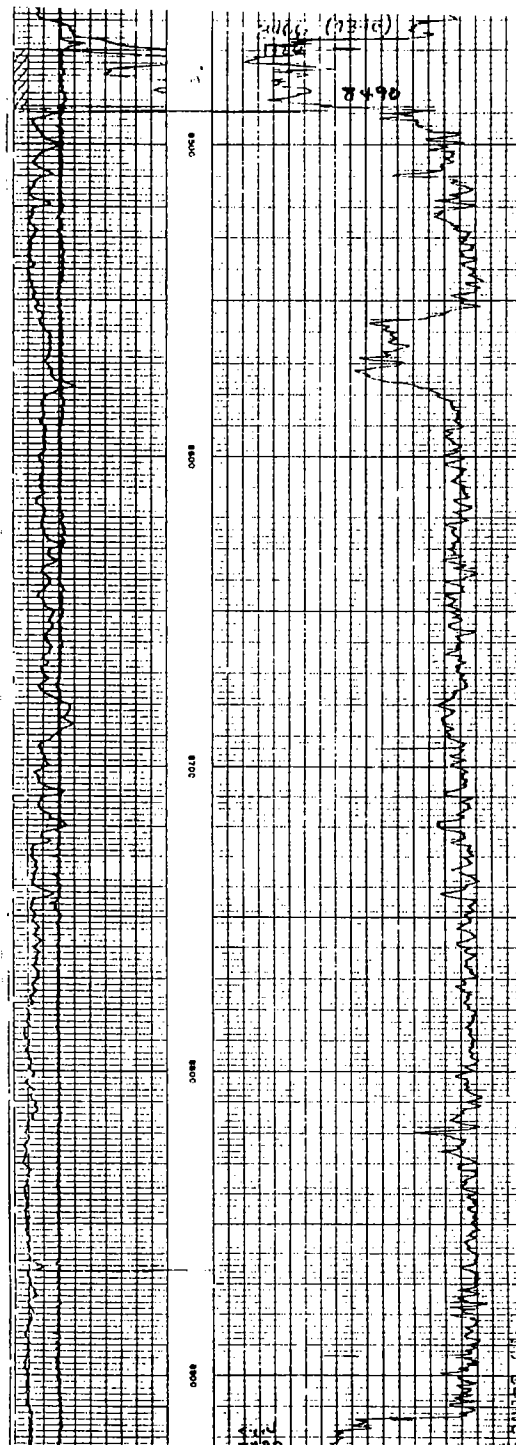
No information to Sylvan Shale.

Sylvan Shale 8916'

**PAN AMERICAN PETROLEUM CORP. 1 DROKE UNIT** — NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 4, T18N, R9W, Kingfisher County, Oklahoma; elevation GL (Na), DF 1,127 ft; TD 8,926 ft (Sylvan); completion 5/30/64.

Core was briefly discussed by Amsden (1975, p. 84) based on information supplied by Dr. Gilbert Klapper (University of Iowa). In 1980, I studied the Droke core, collected fossils, and had 30 thin sections prepared. The 1 Droke is a key core which cuts the entire Hunton from the Woodford Shale to the Sylvan Shale. Of particular importance is the presence of a number of key conodont and brachiopod species which permits Silurian–Early Devonian strata in the subsurface of north-central Oklahoma to be correlated

with considerable precision to the sequence in the Arbuckle Mountains–Criner Hills of south-central Oklahoma. The 1 Droke conodonts have been studied by Klapper and Dr. James E. Barrick (Texas Tech University); I am indebted to them for making the conodont data available to me. The conodont species are plotted on PLATE 1, STRATIGRAPHIC SECTION A–A' and can be compared with the same zones described in Barrick and Klapper (1976, p. 62–65). The brachiopod Stricklandia protriplesiana biozone is discussed in Amsden and Barrick (1988) and the Kirkidium biofacies is discussed in the present report; Navispira saffordi is discussed in Amsden (1983, p. 1253).





MIDCO 1 DUNAGAN—SE<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec. 31, T. 11 N., R. 19 E., Muskogee County, Oklahoma; elev. 810'; compl. 1938; production unknown. Tops: Hunton 2320' (-1510') (sample depth), Sylvan 2500' (-1690') (sample depth), Welling 2546' (-1736') (sample depth); Hunton thickness 180'. Hunton samples were described by T. L. Rowland, who had 3 thin sections prepared (Amsden and Rowland, 1965, p. 145-147). In 1976 I examined the samples from 2300' to 2570' and had an additional 21 thin sections prepared. The description that follows does not differ in any significant respect to that given by T. L. Rowland. Sample quality is good; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma. See also Frezon (1962, pl. 2).

In this well the dolomite content of the Quarry Mountain Formation is substantially reduced over that in the outcrop area. Only 17' of "Barber" is recognized, whereas that member is about 50' thick at the type locality (and at OGS core hole 3). (See panel 4.) The Quarry Mountain Formation, Tenkiller Formation, Blackgum Formation, and Pettit Oolite are reasonably well defined.

*Woodford (Chattanooga) Shale*

Some Sylamore Sandstone; may be included in the Sallisaw Formation.

*Hunton Group 2320'-2500'* (sample depths)

2320'-2327' (sample depths) Lower Devonian; Sallisaw Formation. Light-gray to tan sandy (quartz) dolomite-dolomitic sandstone and sandy (quartz) chert. Most of the detrital quartz is in angular to subangular grains ranging up to 0.5 mm. There are also chips of quartz sandstone composed of well-rounded detrital quartz with quartz overgrowths ranging up to 15 mm. The latter may represent Sylamore Sandstone (see discussion of Sallisaw Formation in text).

2327'-2500' (sample depths) Silurian; Chimney-hill Subgroup.

2327'-2471' (sample depths) Quarry Mountain Formation. Light-gray organo-detrital limestone, in part with pink crinoid plates, becoming dolomitic in the lower part. The limestones are composed in large part of pelmatozoan plates set in a finely crystalline matrix (?recrystallized); little or no detrital quartz present.

2327'-2405' (sample depths) Pale-gray crinoidal limestone with very little dolomite.

2405'-2454' (sample depths) Crinoidal limestone as above, but with moderate dolomitization of the matrix.

2454'-2471' (sample depths) Heavily dolomitized crinoidal limestone with the matrix largely replaced by crystalline dolomite, only the crinoids left as corroded remnants (Barber Member).

2471'-2486' (sample depths) Tenkiller Formation. Gray to pinkish-gray organo-detrital limestone. Many orange-pink crinoid plates, together with much other organic debris, including many ostracodes, set in a micrite matrix. Very little detrital quartz or dolomite.

2486'-2494' (sample depths) Blackgum Formation. Gray organo-detrital limestone with glauconite; chert. Mostly pelmatozoan plates, many with an orange-pink color set in a micrite matrix, partly dolomitic.

2494'-2500' (sample depths) Pettit oolite. Gray to dark-gray silicified and nonsilicified oolite with some glauconitic dolomite and opaque chert.

*Sylvan Shale 2500'-2546'* (sample depths)

Greenish-gray to gray shale.

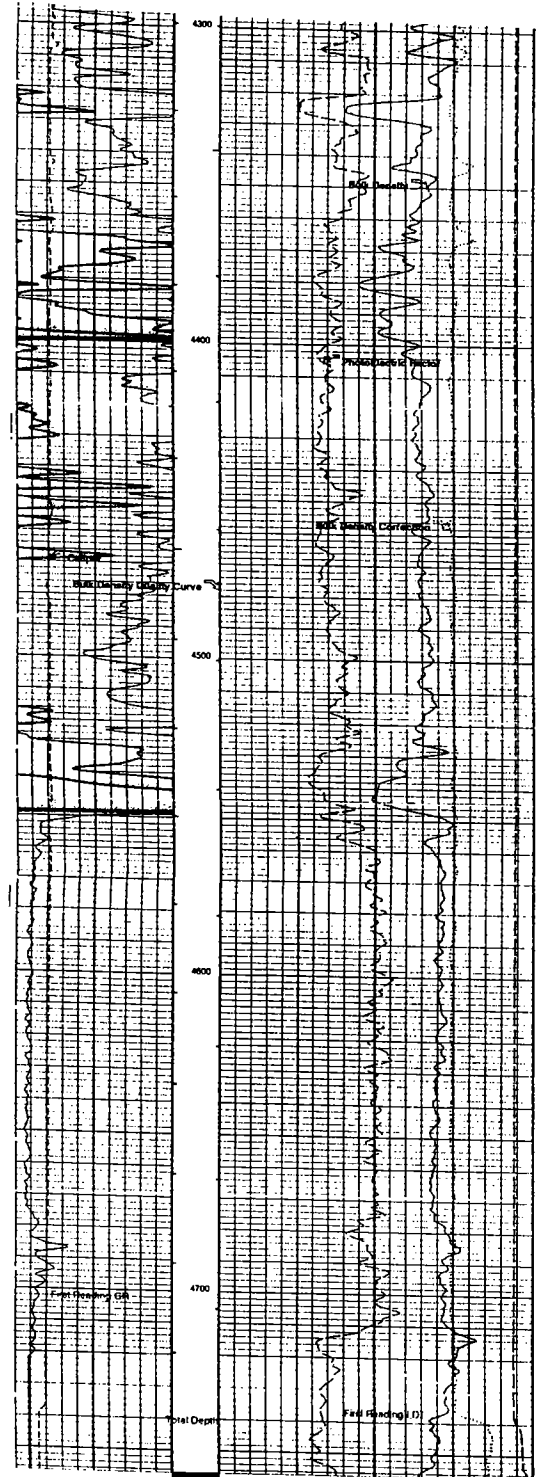
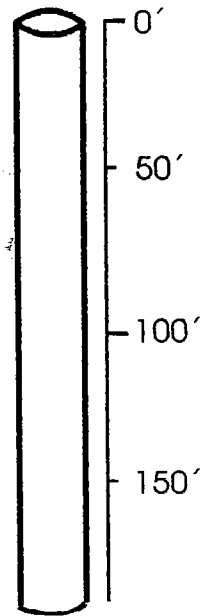
*Welling Formation 2546'* (sample depth)

2546'-2556' and 2561'-2568' (thin sections) Organo-detrital limestone, mostly with micrite cement; no detrital quartz observed and very little dolomite.

Midco Oil Company  
1 Dunagan  
SE SE NE  
Sec. 31, T. 11 N., R. 19 E.  
Muskogee County, Oklahoma  
DF 810'

Ensign Oil & GAS  
1 Reed  
1735' FNL & 1992' FEL  
Sec. 9, T. 10 N., R. 19 E.  
Okfuskee County, Oklahoma  
DF 967'

Log not available



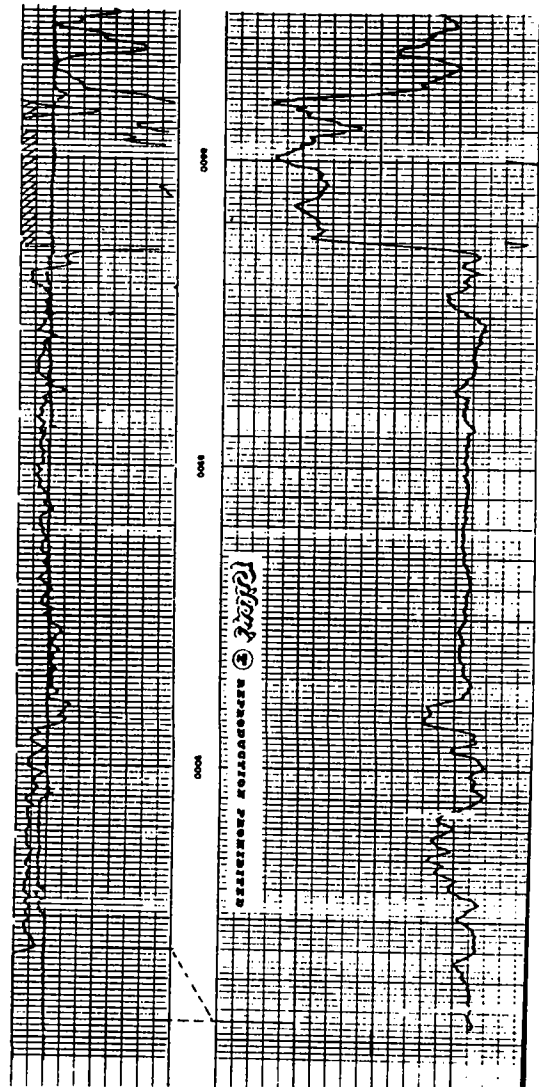
WELL I  
Midco Oil Corporation, 1 Dunagan

This well is in SE $\frac{1}{4}$  SE $\frac{1}{4}$  NE $\frac{1}{4}$  sec. 31, T. 11 N., R. 19 E., Muskogee County, about 9 miles northeast of Eufaula (text-figs. 3, 15). The well was drilled in 1938 with cable tools, and the collar elevation is 810 feet. An electric log was not run. Cuttings were examined from 2,315 to 2,504 feet in erratic intervals, and the sample quality is good. Frezon (1961, pls. I, II), upon the basis of sample examination, recognized the Sallisaw Formation and assigned the remaining rocks to the St. Clair undifferentiated. Lower Devonian rocks consist of the Sallisaw Formation 5 feet thick (2,322-2,327); the Frisco Formation is absent or too thin to detect in the well cuttings. Silurian rocks are 173 feet thick (2,327-2,500 feet; text-fig. 3) and comprise five units: Quarry Mountain Formation 144? feet (2,327-2,471?), Marble City Member 133 feet (2,327-2,460) and Barber Member 11? feet (2,460-2,471?; thickness uncertain as Barber and Tenkiller are mixed in sample 2,467-2,471), Tenkiller Formation, Blackgum Formation, and Pettit Oölite 29? feet (2,471-2,500; thickness of each unit uncertain as Barber and Tenkiller are mixed in sample 2,467-2,471, Tenkiller and Blackgum are mixed in sample 2,479-2,486, Blackgum and Pettit in sample 2,494-2,500). The Sylvan Shale was encountered in sample 2,500-2,504. Three thin sections were prepared from the following intervals: Sallisaw Formation, 2,324-2,325; Barber Member, 2,460-2,467; Pettit Oölite, 2,494-2,500.

Depth (feet)	Thickness (feet)	
2,315-2,322	7	CHATTANOOGA FORMATION: Black and brown pyritic shale. Trace of Sallisaw chert and dolomite in sample 2,320-2,322.  SALLISAW FORMATION: 5 feet (2,322-2,327). Light-gray to tan fine-crystalline arenaceous dolomite; clear white arenaceous chert. Thin section (I-1) was prepared from sample 2,324-2,325.
2,322-2,324	2	Dolomite, arenaceous, light-gray to tan, fine-crystalline; 10-15% residue; chert, clear, white, arenaceous, opaque, 20-25%.
2,324-2,325	1	Dolomite, as above, 20-25%; chert, as above, 75-80%; thin section (I-1) was prepared from this interval.
2,325-2,327	2	Dolomite, as above, 40%; chert as above, 60%.  QUARRY MOUNTAIN FORMATION: 144? feet (2,327-2,471?; thickness uncertain, as Barber and Tenkiller are mixed in sample 2,467-2,471).  <i>Marble City Member</i> : 133 feet (2,327-2,460). Off-white to white to pink crinoidal limestone; in part dolomitic; light-gray fine-crystalline dolomite; in part calcitic.
2,327-2,331	4	Limestone, slightly dolomitic, off-white to white, abundant pink crinoidal.
2,331-2,340	9	Limestone, dolomitic, off-white to white, abundant pink crinoidal.
2,340-2,345	5	Limestone, as above, only in part dolomitic.
2,345-2,366	21	Limestone, off-white to white, abundant pink crinoidal; in part slightly dolomitic.

2,366-2,372	6	Limestone, as above, except more dolomitic.
2,372-2,390	18	Limestone, off-white to white, abundant pink crinoidal; in part slightly dolomitic.
2,390-2,433	43	Limestone, off-white to white; in part slightly dolomitic; some pink crinoidal material.
2,433-2,447	14	Limestone, dolomitic, off-white to white; some pink crinoidal material.
2,447-2,454	7	Limestone as above; dolomite, gray to light-gray, calcitic, fine-crystalline, 5-10%.
2,454-2,460	6	Limestone, as above; dolomite, as above, 15-20%. <i>Barber Member:</i> 11? feet (2,460-2,471?; thickness uncertain as Barber and Tenkiller are present in sample 2,467-2,471). Light-gray to gray fine-crystalline calcitic dolomite. Thin section (I-2) was prepared from sample 2,460-2,467.
2,460-2,467	7	Dolomite, light-gray to gray, fine-crystalline, calcitic; thin section (I-2) was prepared from this interval.
2,467-2,471	4	Dolomite, as above; 15-20% Tenkiller, as described below.
2,471-2,486	15	<b>TENKILLER FORMATION:</b> Gray to light-gray pinkish tan limestone; abundant orange crinoidal and pyritic material; in part dolomitic; abundant greenish pyritic material; 3-4% residue. Thickness uncertain, as sample interval 2,479-2,486 contains 5-10% Blackgum limestone, as described below.
		<b>BLACKGUM FORMATION:</b>
2,486-2,494	8	Dark-gray glauconitic limestone; light-gray fine-crystalline glauconitic dolomite; brown to dark-brown fine-crystalline argillaceous dolomite; gray to dark-gray opaque chert. Thickness uncertain, as it appears with Tenkiller in sample 2,479-2,486. Sample 2,486-2,494 contains only dark-gray glauconitic limestone, with a trace of light-gray fine-crystalline glauconitic dolomite.
2,494-2,500	6	<i>Pettit Oölite:</i> Gray to dark-gray silicified and non-silicified oölite mixed with light-gray fine-crystalline glauconitic dolomite; gray to dark-gray opaque chert, 15%; brown to dark-brown fine-crystalline argillaceous dolomite, 5-10% residue, 15%; thin section (I-3) was prepared from this interval.
2,500-2,504	4	<b>SYLVAN FORMATION:</b> Thickness not determined as the samples were studied only to 2,504 feet. Green to gray-green shale.

TEXACO 1 DURSCHER--C NW $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 2, T. 16 N.,  
 R. 8 W., Kingfisher County, Oklahoma; elev.  
 1171'; TD 9086' (Hunton); compl. 8/23/56, no  
 Hunton production reported. Tops: Woodford  
 (CC) 8788' (-7617'), Hunton (CC) 8830'  
 (-7659'), 256' of Hunton penetrated to TD;  
 cored 8993'-9004' (all Hunton); 1 thin sec-  
 tion; no chemical analyses; OU Core Library.  
Woodford Shale 8788'-8830'  
Hunton Group 8830'-9086' (TD)  
 8830'-8993' No core.  
 8993'-9004' ?Silurian; ?Chimneyhill Subgroup.  
 Greenish-gray strongly dolomitized, fossil-  
 iferous limestone. No crystalline dolomite  
 texture, but matrix with substantial euhed-  
 ral crystals of dolomite which corrode  
 fossil boundaries; fossils, mainly pelmato-  
 zoan plates, retain their original micro-  
 texture. Assigned to Chimneyhill on basis  
 of lithology and stratigraphic position.  
 9004'-9086' (TD) No core.



GULF 1 DYER--SE $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 20, T. 6 N.,  
R. 3 W., McClain County, Oklahoma; elev.  
1194'; TD 11,134' (Oil Creek); compl. 6/14/56,  
Hunton and Bromide production (perforated  
8905'-8907', 8955'-8997'). Tops: Hunton  
(CC) 8969'? (-7775'?), Sylvan (core) 9334'  
(-8140'), Viola (CC) 9453' (-8259'); Hunton  
thickness 363'; cored 8996'-9061', 9220'-  
9335'; 4 thin sections; no chemical analyses;  
OU Core Library.

This core was studied by Amsden and Rowland  
in 1967; subsequently it was re-boxed and  
core sequence mixed. Data given below taken  
from 1967 examination, plus electric-log data  
given on completion card.

Woodford Shale? (Woodford-Hunton contact  
placed at 8969' on basis of electric-log  
data supplied in completion card; see  
discussion above).

Hunton Group 8969'?-9332'

8969'-8996' No core (this is certainly  
Devonian; presumably all carbonate strata  
including Bois d'Arc and possibly some  
Frisco; see discussion above).

8996'-9037' Lower Devonian; Bois d'Arc  
Formation, Fittstown Member. Medium-gray  
to pinkish-gray biosparite grading downward  
into fossiliferous marlstone. Biosparite  
is low in insoluble detritus and dolomite,  
whereas marlstone has much detrital quartz  
and considerable euhedral crystals of  
dolomite. Some chert present. Upper 10'  
carries Helderbergian conodonts (Gilbert  
Klapper, letter, 8/21/67); brachiopods  
include Howellella cycloptera, Ortho-  
strophia? sp., Leptaena acuticuspidata?,  
Dalejina oblata?. Assigned to Fittstown  
Member of Bois d'Arc Formation on basis of  
lithology and fossils.

9037'-9042' No core.

9042'-9061' Lower Devonian; Haragan Forma-  
tion. Gray fossiliferous marlstone with  
substantial euhedral crystals of dolomite;  
much silt-size angular quartz detritus.  
Levenea sp. at 9057'-9058'. Assigned to  
Haragan Formation on basis of brachiopods  
and lithologic character.

9061'-9220' No core.

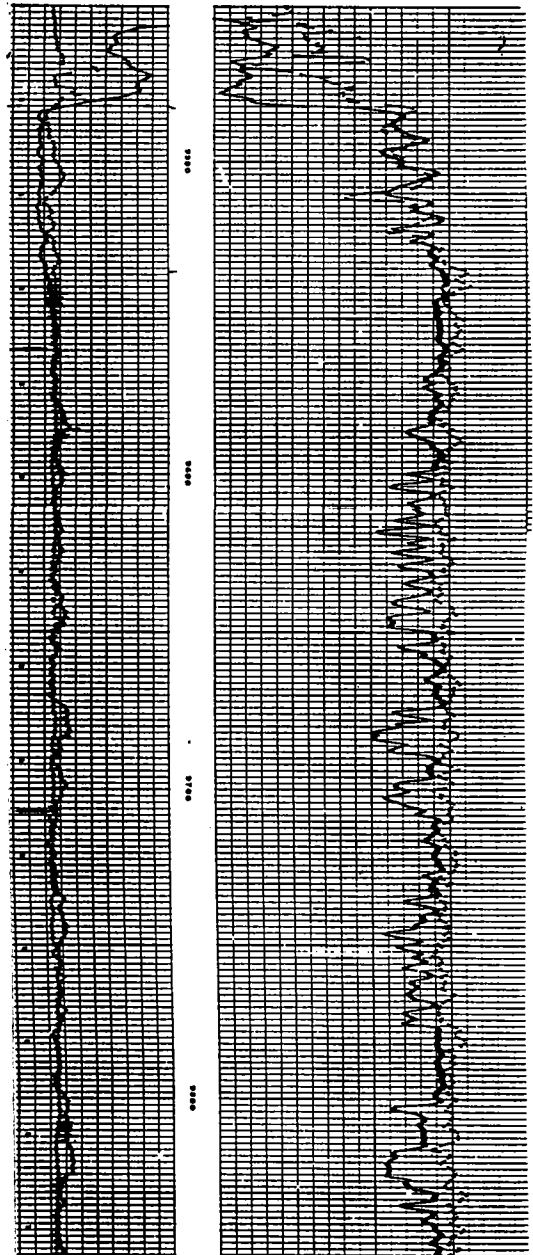
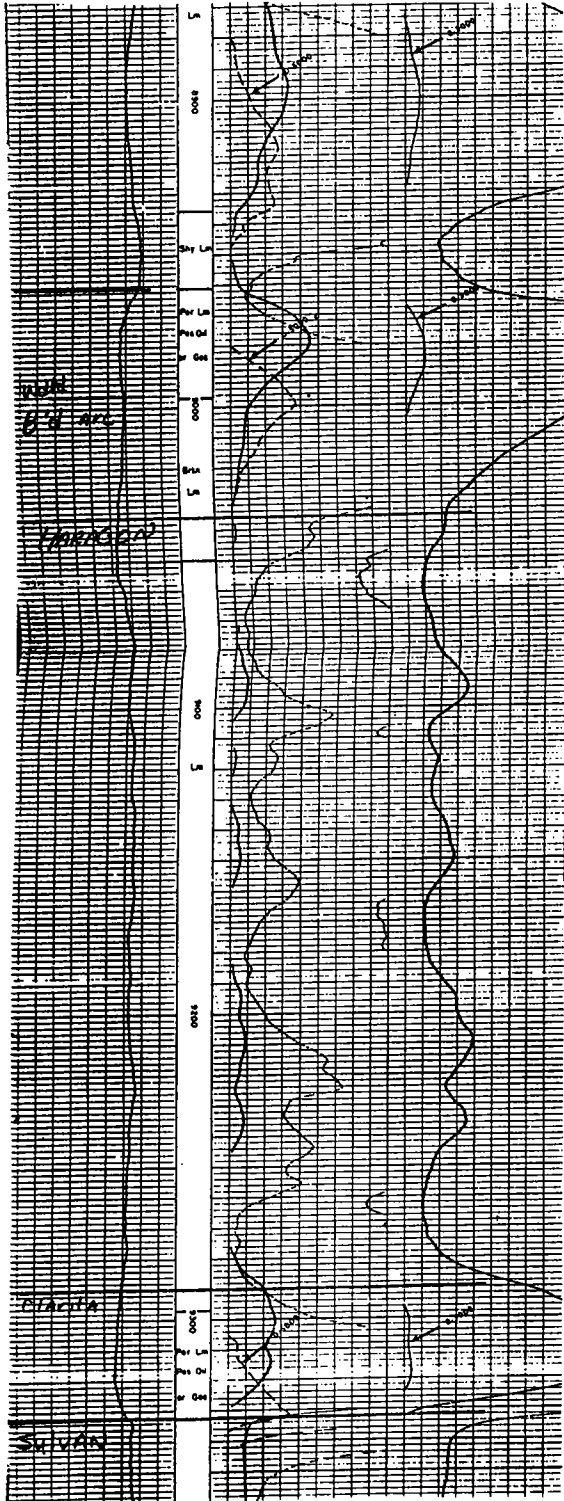
9220'-9290' Lower Devonian and (or) Silurian;  
Haragan and (or) Henryhouse. Gray fossil-  
iferous and dolomitic marlstone. No fossils  
observed; lithology and stratigraphic posi-  
tion indicate part of Henryhouse-Haragan  
sequence.

9290'-9334' Silurian; Chimneyhill Subgroup.  
Light-gray to pinkish-gray biomicrite,  
becoming glauconitic downward. Clarita-  
type conodonts reported by Gilbert Klapper  
at 9305'; assigned to Chimneyhill on basis  
of fossils, lithology, and stratigraphic  
position.

Sylvan Shale 9334'

Gulf Oil Company  
1 Dyer  
SE SW NE  
Sec. 20, T. 6 N., R. 3 W.  
McClain County, Oklahoma  
elev. 1194'

Gulf Oil Company  
2 Whinney Unit  
NW/4  
Sec. 20, T. 6 N., R. 3 W.  
McClain County, Oklahoma  
elev. 1197'

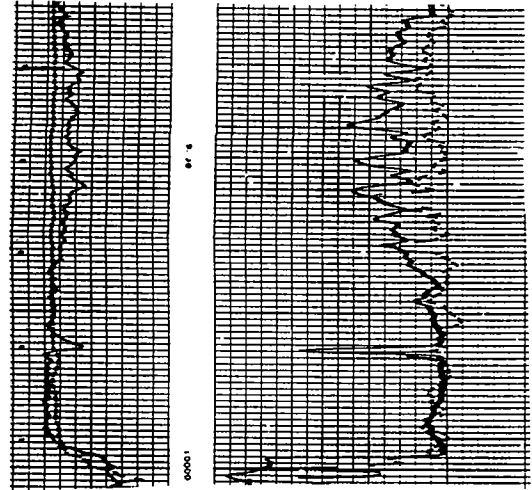


Gulf Oil Company  
1 Dyer  
SE SW NE  
Sec. 20, T. 6 N., R. 3 W.  
McClain County, Oklahoma  
elev. 1194'

**continued**

Gulf Oil Company  
2 Whinney Unit  
NW/4  
Sec. 20, T. 6 N., R. 3 W.  
McClain County, Oklahoma  
elev. 1197'

**continued**





CALVERT FUNDS 1 DYER—C SW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec. 35, T. 10 N., R. 23 E., Haskell County, Oklahoma; elev. 554' GL; TD 6652' (Sylvan); compl. 2/18/69, D&A. Tops: Woodford 6356' (-5781') (GR log), Hunton 6410' (-5845') (GR log), Sylvan 6633' (-6068') (GR log); Hunton thickness 223'. Samples examined from 6370' (Woodford) to 6652' (TD), good quality; 11 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The interval from 6410' to 6420' comprises limestone and chert with subangular detrital quartz. It is tentatively assigned to the Sallisaw Formation, although it could be in part or entirely Sylamore; see discussion below and under Sallisaw Formation in the text. The underlying Hunton beds are moderately to very heavily dolomitized organo-detrital limestones, including considerable amounts of porous crystalline dolomite. These strata are assigned to the Chimneyhill Subgroup on the basis of stratigraphic position, thickness, and lithology. No Tenkiller or Blackgum type of lithology was recognized.

*Woodford (Chattanooga) Shale* 6356'-6410'  
(GR log)

*Hunton Group* 6410'-6633' (GR log)

6410' (GR log)-6420' (sample depth) ?Lower Devonian; ?Sallisaw Formation. Limestone, in part dolomitic, and chert with fine (to 0.1 mm) subangular detrital quartz; could be Sylamore, but the detritus is finer and more angular than is common with that formation. This interval includes some organo-detrital limestone with no quartz or dolomite.

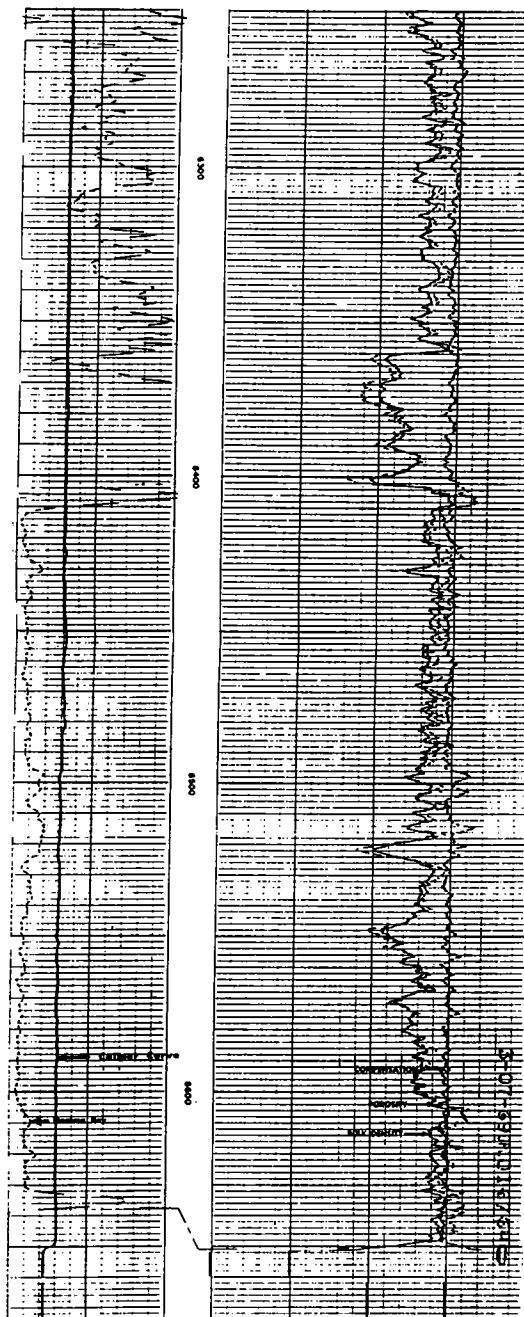
6420'-6633' (sample depths) Silurian; Chimneyhill Subgroup.

6420'-6480' (sample depths) Organo-detrital limestone (some finely crystalline, ?recrystallized) matrix, which is moderately to heavily dolomitized; dolomite, which is confined to matrix, corrodes but does not replace the fossil clasts. The fossils are mainly pelmatozoans and bryozoans but include some ostracodes and others.

6480'-6570' (sample depths) This interval includes much crystalline porous dolomite; there is also some heavily dolomitized pelmatozoan-bryozoan organo-detrital limestone. No detrital quartz observed.

6570'-6633' (sample depths) This is mostly heavily dolomitized pelmatozoan limestone, with minor porous crystalline dolomite. No detrital quartz observed.

*Sylvan Shale* 6633' (GR log)



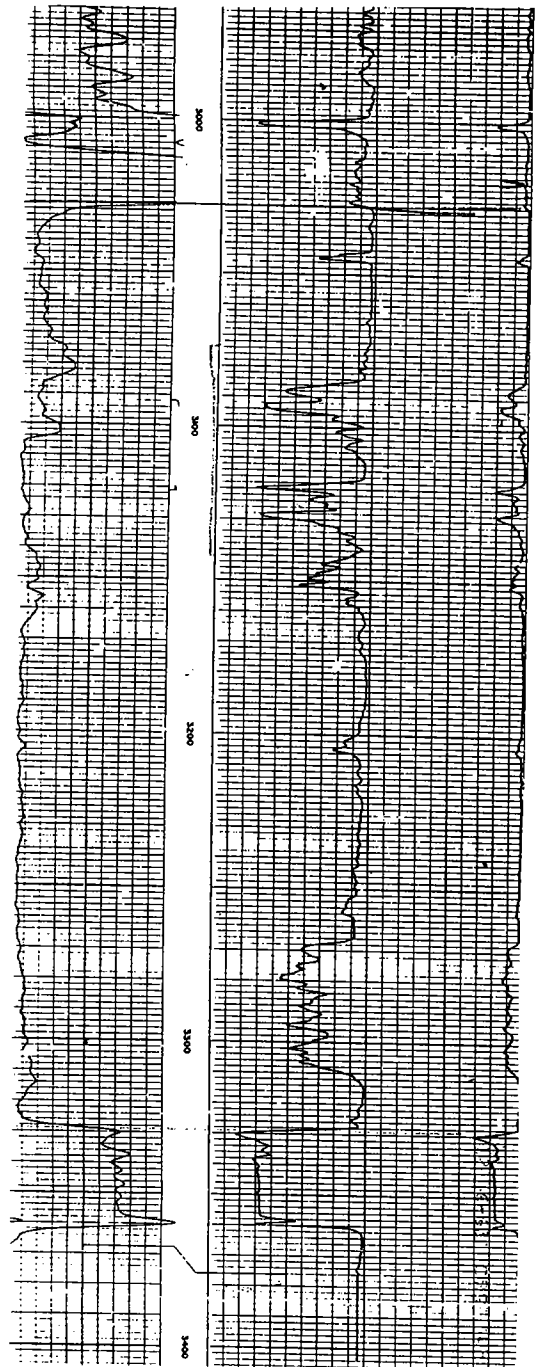
HUBER 1 FARGO—SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 4, T. 10 N., R. 24 E., Sequoyah County, Oklahoma; elev. 495' KB (481' GL); TD 3381' (Ordovician; Viola); compl. 12/4/63, D&A. Tops: Woodford 3010' (-2515') (GR log), Hunton 3080' (-2585') (GR log), Sylvan 3330' (-2833') (GR log), Welling 3360' (-2867') (GR log); Hunton thickness 250'. Both samples and core examined for this well as follows: samples 3010'-3090'; core 3090'-3108'; samples 3108'-3118'; sample skip 3118'-3140'; samples 3140'-3170'; sample skip 3190'-3240'; last samples 3240'-3385'. 12 thin sections from the core and 21 thin sections from the samples; hand specimens of core and sample thin sections stained with Alizarin Red-S. Core, OU Core Library; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The calcareous quartz sandstone directly beneath the Woodford black shale, provisionally assigned to the Misener (Sylamore), is underlain by dolomitic sandstone, provisionally assigned to the Sallisaw Formation. The distinction between these two units, which is difficult to maintain on the basis of subsurface data, is discussed more fully in the text. It is here drawn between the upper sandstone (?Misener), which is composed mostly of well-rounded quartz grains ranging up to 0.5 mm in diameter, and the lower sandstone (Sallisaw), which is composed of slightly finer (to 0.1 or 0.2 mm) more angular quartz. Both units have much chert. The cored portion includes the lower part of the Sallisaw Formation and an underlying organo-detrital limestone, with very little dolomite or quartz, assigned to the Frisco Formation. This unit includes large terebratuloid brachiopods (large punctate shells, at least in part exfoliated) and shells provisionally referred to *Acrospirifer murchisoni* (large costate spiriferoids that are exfoliated so they do not show fine ornamentation, if such were originally present). On the basis of these fossils, as well as lithology, this unit appears reasonably assigned to the Frisco Limestone.

The Frisco is underlain by heavily dolomitized organo-detrital limestones and porous crystalline dolomites. These are assigned to the Chimneyhill Subgroup on the basis of stratigraphic position and lithology (based entirely on samples; cored portion includes only lower Sallisaw and Frisco).

*Woodford (Chattanooga) Shale* 3010'-3080' (GR log)  
3028'-3080' (GR log) Misener Sandstone (Sylamore). Mostly dolomitic to calcitic quartz sandstone; subrounded to rounded quartz grains to 0.5 mm; much chert. This may be in part, perhaps entirely, Sallisaw.

*Hunton Group* 3080'-3330' (GR log)  
3080' (GR log)-3102' (core) Lower Devonian; Sallisaw Formation. Dolomitic light-gray "brecciated" chert and dark-gray dolomitic sandstone. The sandstone is composed almost entirely of crystalline dolomite and angular to subangular detrital quartz to about 0.2 mm; the quartz has been partly "corroded" and replaced by the dolomite. The quartz and dolomite are roughly equal, and the rock probably grades back and forth between sandy dolomite and dolomitic sandstone. The lower 2' lacks chert, and the basal 2'' has inarticulate brachiopods.



3102'-3109' (core) Frisco Limestone. Organo-detrital micrite and sparite with little or no detrital quartz or dolomite. The dominant fossils are pelmatozoan plates, but most thin sections show much bryozoan debris. Large brachiopods and snails are also common. The fossils in this rock show some breakage, although not as much as is common for the Frisco. They also exhibit considerable solution, with the contacts between adjoining fossils commonly a solution seam. The rock does not show much visible porosity. The presence of large terebratuloid brachiopods and large costate spirifers, such as *?Acrospirifer purchisoni*, indicates the Frisco, and the lithologic characteristics are fully compatible with such an assignment.

3109'-3340' (sample depths) Silurian; Chimney-hill Subgroup.

3109'-3320' (sample depths) Quarry Mountain Formation. This formation assignment is based on stratigraphic position and lithology.

3109'-3175' (sample depths) Mostly porous crystalline dolomite with some heavily dolomitized crinoidal limestone. No detrital quartz observed.

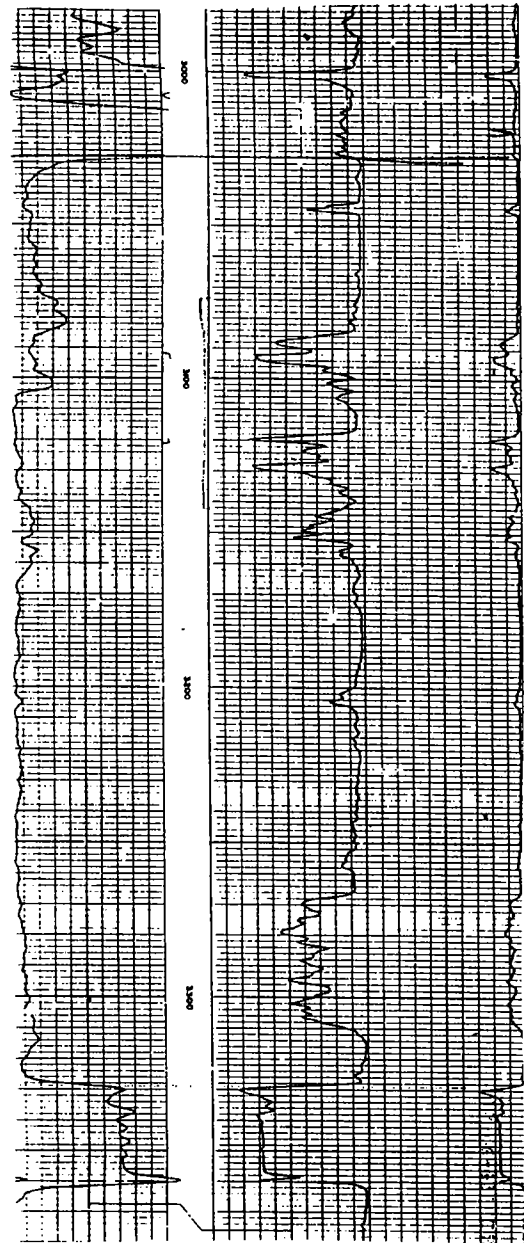
3175'-3275' (sample depths) Moderately to heavily dolomitized crinoidal limestone. Some bryozoans and other fossils present. No quartz observed.

3275'-3320' (sample depths) Mostly porous crystalline dolomite. No detrital quartz observed.

3320'-3335' (sample depths) Tenkiller Formation. Weakly to moderately dolomitized pink crinoidal limestone; many ostracodes. No detrital quartz observed. The lithology and stratigraphic position indicate an approximate correlation with the Tenkiller Formation. The contact with the overlying heavily dolomitized crinoidal limestone is probably not stratigraphically significant; see discussion in text.

3335'-3340' (sample depths) Blackgum Formation. Weakly dolomitic limestone with much glauconite. Some detrital quartz.

*Sylvan Shale* 3330'-3360' (GR log)



**HUMBLE 1 FARMERS FLAG UNIT—**  
 SW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec. 3, T. 8 N., R. 23 E., Le Flore County, Oklahoma; elev. 737' KB (724' GL); TD 6746' (Simpson, Ordovician); compl. 9/3/64, no Hunton production reported. Tops: Woodford 6250' (-5513') (GR log), Hunton 6348' (-5611') (core), Sylvan 6440' (-5703') (sample depth), Welling 6472' (-5735') (GR log); Hunton thickness 92'. This well studied as follows: samples 6320'-6348', core 6348'-6396', samples 6396'-6510'; 15 thin sections prepared from core (not stained), selected parts of cut core stained with Alizarin Red-S; 5 thin sections prepared from samples, stained with Alizarin Red-S. Core, OU Core Library; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The cored portion extends from just beneath the Woodford-Hunton contact down to 6396'. No diagnostic megafossils were observed, but Dr. James Barrick and Dr. Gilbert Klapper (The University of Iowa) examined parts of the core for conodonts and provided the results shown in the following table:

HUMBLE 1 FARMERS FLAG UNIT			
Depth (ft)	Grams dissolved	Specimen type	Number of specimens
6348	625	<i>Panderodus unicostatus</i>	7
		<i>Walliserodus</i> sp.	3
6353	955	<i>Panderodus unicostatus</i>	7
		<i>Ozarkodina excavata</i> (Pa.)	1
6364	1260	<i>Panderodus unicostatus</i>	4
		<i>Walliserodus</i> sp.	3
		<i>Dapsilodus obliquicostatus</i>	1
6369	770	<i>Panderodus unicostatus</i>	14
		<i>Walliserodus</i> sp.	5
		<i>Dapsilodus obliquicostatus</i>	3
		Ramiform elements (indet.)	2

The presence of *Dapsilodus obliquicostatus* in the lower 2 samples (6364'-6369') indicates that the samples probably are equivalent to the Marble City Formation or younger Silurian strata. However, isolated specimens of *D. obliquicostatus* are known high in the type Tenkiller, where they are associated with *Panderodus celloni*. The element of *Ozarkodina excavata* suggests a Marble City or younger Silurian position for the sample at 6353'. The species is known to range into the Lower Devonian outside Oklahoma. (Barrick and Klapper, letter, May 18, 1976.)

The foregoing conodont data, combined with the thickness, stratigraphic position, and lithology, strongly suggest that at least the upper 20' of the Hunton is correlative with the Marble City Member of the Quarry Mountain Formation. On the basis of lithologic character, the basal pink crinoidal beds are assigned to the Tenkiller Formation. No Black-gum strata or Pettit oolite are recognized.

The upper 12' of the Hunton is heavily dolomitized (27.40% MgCO<sub>3</sub>), and the entire cored interval averages 14.54% MgCO<sub>3</sub>, as shown in the analyses in the following table prepared by Mr. David Foster, chemical laboratory, Oklahoma Geological Survey.

The part of the Hunton represented by samples is estimated to have about the same magnesium content as the lower 36' of the core. The insoluble detritus is very low throughout the Hunton.

*Woodford (Chattanooga) Shale* 6250'-6348' (GR log)  
 No Misener Sandstone observed.

*Hunton Group* 6348'-6440' (core)

6348'-6440' Silurian; Chimneyhill Subgroup (6348'-6396' core depths; 6396'-6440' sample depths).

6348'-6430' (core) Quarry Mountain Formation (base uncertain).

6348'-6360' (core) Heavily dolomitized organo-detrital limestone ranging into crystalline dolomite. Crinoids make up most of the recognizable organic material; fossils generally retain their microtexture, with only a few replaced by spar. Conodonts present; those from 6364' to 6369' are similar to those from the Marble City Formation. Very low in detrital quartz. Not much visible porosity. MgCO<sub>3</sub> 27.40%, HCl-acid insolubles 1.99%.

6360'-6382' (core) Light-gray organo-detrital micrite and sparite; fossils dominated by crinoidal material; includes much shelly debris including a number of brachiopods, bryozoans, ostracodes, and others. This rock is weakly to moderately dolomitized, the dolomite appearing as widely scattered dolomite crystals in the matrix; in some beds they are concentrated into small areas of fairly solid dolomite. MgCO<sub>3</sub> averages 8.14%, HCl-acid insolubles average 0.56%.

6382'-6396' (core) Heavily dolomitized organo-detrital limestone; fossil debris mainly crinoid plates. This is moderately to heavily dolomitized (not as much dolomite as in the 6348'-6330' interval above); some of the matrix is crystalline dolomite. Little or no detrital quartz. MgCO<sub>3</sub> 13.62%, HCl-acid insolubles 0.51%.

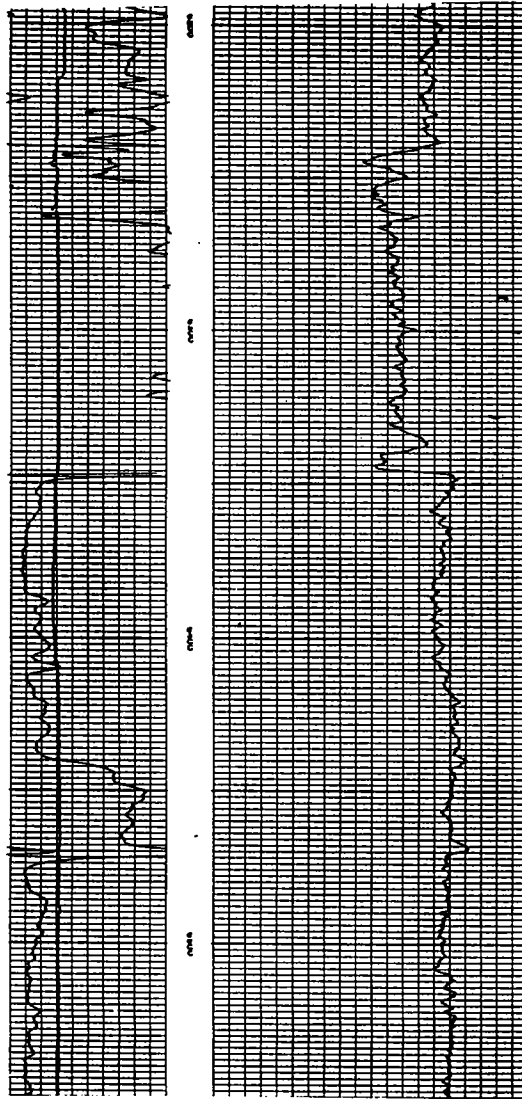
6396'-6430' (sample depths) Moderately to heavily dolomitized crinoidal limestone with little or no quartz. Similar to that present in the lower 36' of the cored interval.

6430'-6440' (sample depths) ?Tenkiller Formation. Moderately to heavily dolomitized pink crinoidal micrite; numerous ostracodes and bryozoans also present. No glauconitic or oolitic beds observed.

*Sylvan Shale* 6440' (sample depth) -6472' (GR log)

*Welling Formation* 6472' (sample depth)

6500'-6510' (sample depth) (thin section) Organo-detrital sparite and micrite with a few scattered dolomite crystals; no detrital quartz observed.



HUMBLE 1 FARMERS FLAG UNIT CORE

Interval (ft)	Field number	Lab number	Percentage of total rock			
			CaCO <sub>3</sub>	MgCO <sub>3</sub>	Insoluble residue	Recovery
6348-6360	1	12,869	71.60	27.40	1.99	100.99
6360-6370	2	12,870	91.61	8.43	0.67	100.71
6370-6382	3	12,871	92.24	7.84	0.44	100.52
6382-6396	4	12,872	85.83	13.83	0.51	99.96
Weighted Average			85.08	14.54	0.90	

JONES & PELLOW 1 FARRELL--C NE $\frac{1}{2}$ NE $\frac{1}{2}$  sec. 14,  
 T. 15 N., R. 6 W., Kingfisher County, Okla-  
 homa; elev. 1188'; TD 7798' (Hunton); compl.  
 9/27/66, Hunton production reported (perfo-  
 rated 7755'-7785', 7907'-7918'). Tops:  
 Woodford (CC) 7691' (-6503'), Hunton (CC)  
 7752' (-6564'); 46' of Hunton to TD; cored  
 7770'-7823' (Hunton); 5 thin sections; chem-  
 ical analyses; two porosity tests, P14-A,  
 P14-B.

Woodford Shale 7691'-7752'

Hunton Group 7752'-7798' (TD)

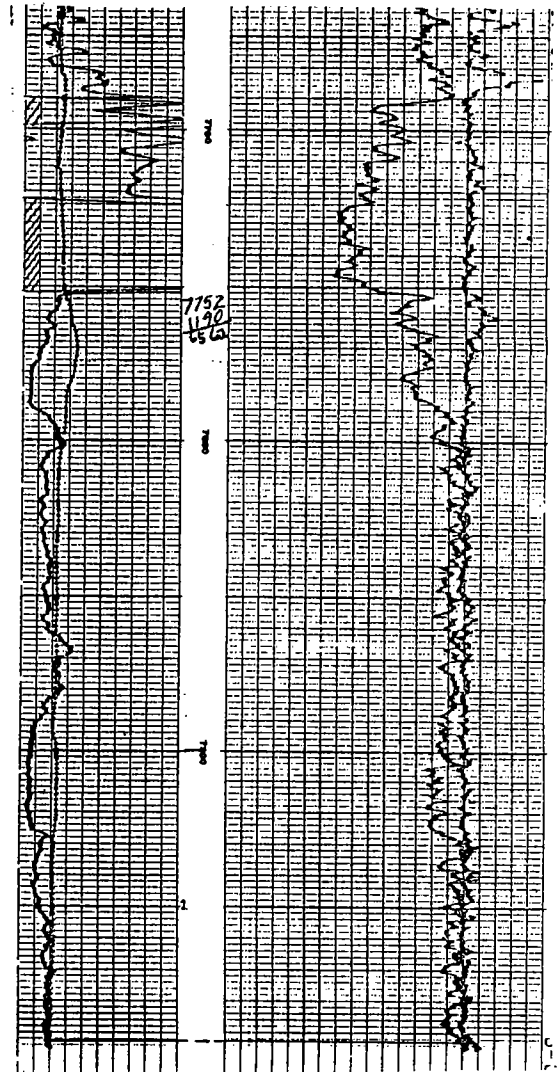
7752'-7770' No core. This interval may  
 include some Lower Devonian.

7770'-7778' Silurian; Kirkidium biofacies.  
 Gray dolomitic and fossiliferous limestone  
 with considerable silt-size subangular  
 quartz detritus. Specimen tested for  
 porosity analyzed 30.48% MgCO<sub>3</sub> and 10.04%  
 HCl insolubles; this is strongly dolomi-  
 tized rock, although it is not crystalline  
 dolomite and at least some of fossils  
 retain their original microtexture.

7780'-7794' Kirkidium biofacies. Mostly  
 fossiliferous oolite with spar matrix; very  
 low in dolomite and in insolubles (MgCO<sub>3</sub>  
 averages 1.74%, insolubles 0.98%). One  
 porosity test, P14-B, 0.35% (bed of organo-  
 detrital limestone). Specimens of Kirkidium  
 collected from overlying and underlying  
 units, none from this interval.

7794'-7823' Kirkidium biofacies. Gray dolo-  
 mitic and fossiliferous limestone with con-  
 siderable detrital quartz (MgCO<sub>3</sub> averages  
 14.70%, insolubles 13.83%). Parts of this  
 rock have substantial organic debris and  
 grade into organic-detrital limestone; in  
 part it appears to have mud-supported fabric  
 of marlstone. Numerous specimens of  
Kirkidium from this interval, deepest from  
 bed at 7812'. Illustration of Kirkidium,  
 pl. 10, fig. 4; photomicrographs pl. 11,  
 figs. 3a, 3b.

7823'-7798' (TD) No core.

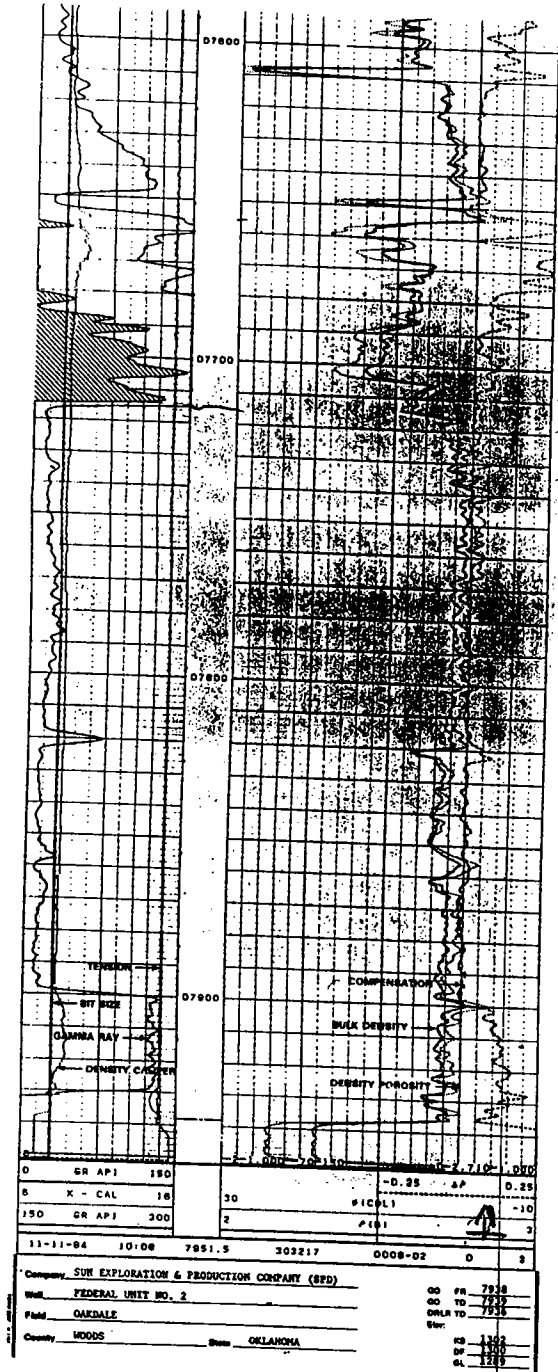


**AMERADA PETROLEUM CORP. 1 FEDERAL** — NW¼  
SE¼ sec. 3, T22N, R13W, Woods County, Oklahoma; ele-  
vation GL (Na), DF 1,302 ft; TD 8,441 ft; completion (Na),  
1/16/51 (P).

Samples examined by Amsden, 1976; 11 thin sections.  
*Illustrated on* PLATE 1, STRATIGRAPHIC SECTION A-A'.

Amerada Petroleum  
 1 Federal  
 NW SE  
 Sec. 3, T. 22 N., R. 13 W.  
 Woods County, Oklahoma  
 elev. 1302'

Sun Exploration & Production  
 2 Federal Unit  
 C NE  
 Sec. 3, T. 22 N., R. 13 W.  
 Woods County, Oklahoma  
 elev. 1302'





ASPEN 1-A FEDERAL--N $\frac{1}{2}$ S $\frac{1}{2}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 14, T. 22 N.,  
 R. 15 W., Major County, Oklahoma; elev. 1588';  
 TD 8818' (Sylvan); compl. 3/29/68, D&A. Tops:  
 Woodford (CC) 8368' (-6780'), Hunton (core)  
 8454' (-6866'), Sylvan (CC) 8809' (-7221');  
 Hunton thickness 335'. Cored 8445'-8537'  
 (basal Woodford-Hunton); 3 thin sections;  
 chemical analyses; OU Core Library.

Nearest cored well yielding Kirkidium is 1-A  
 Jordan Unit, about 8 miles to southeast (see  
 panel 10, section A-A').

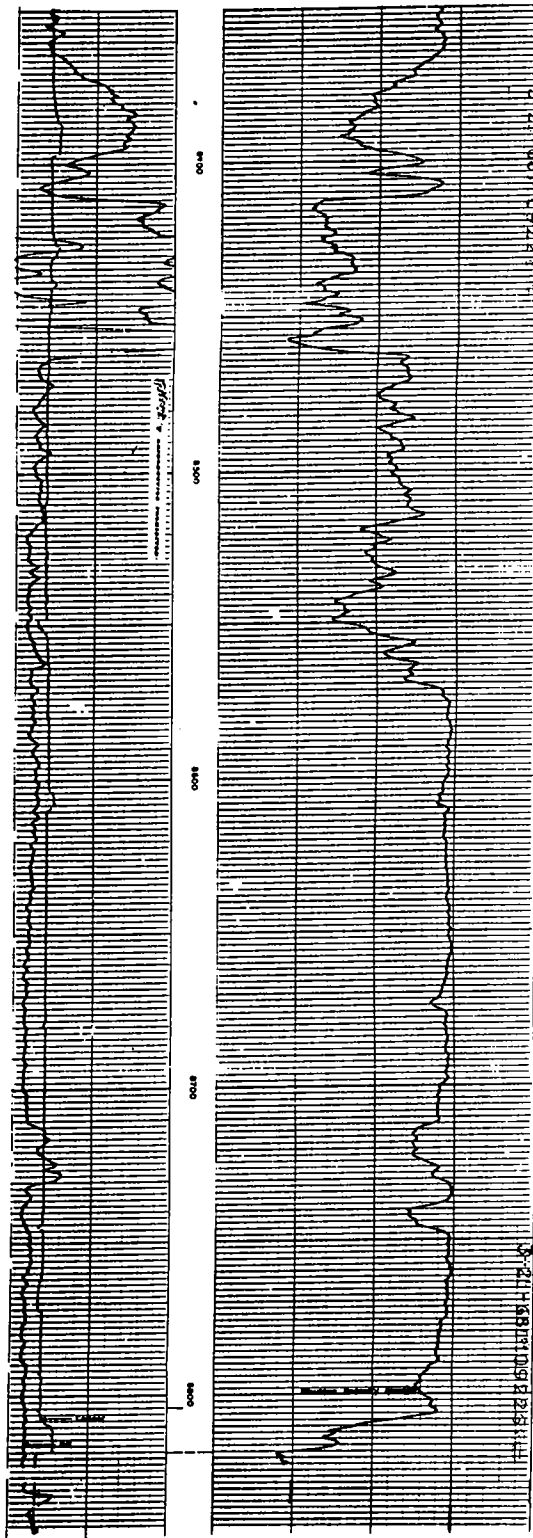
Woodford Shale 8368'-8454'

Cored 8445'-8454'

Hunton Group 8454'-8809'

8454'-8537' ?Silurian; ?Kirkidium biofacies.

Gray crystalline dolomite with nodules of  
 light-colored vitreous chert. Few fossils  
 present, mostly poorly preserved in spar;  
 silicified tetracoral fragment at 8462'.  
 Low in detrital quartz; probably much of  
 insolubles represent silicification (chert).  
 Average MgCO<sub>3</sub> 36.80%, insolubles 5.54%.  
 Tentatively assigned to Silurian, Kirkidium  
 biofacies, on basis of lithology and  
 stratigraphic position.



**MACKELLAR 1 FERGUSON**—C SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 35, T. 24 N., R. 21 W., Woodward County, Oklahoma; elev. 2030' KB; TD 10,406' (Ordovician); compl. 8/30/66; D&A. Tops: Hunton 9738' (-7708') (core), Sylvan ?9769' (-7739') (core), Viola ?9821 (-7791') (core); Hunton thickness 31' (?). Cored 9738'-9844'; 12 thin sections; OU Core Library.

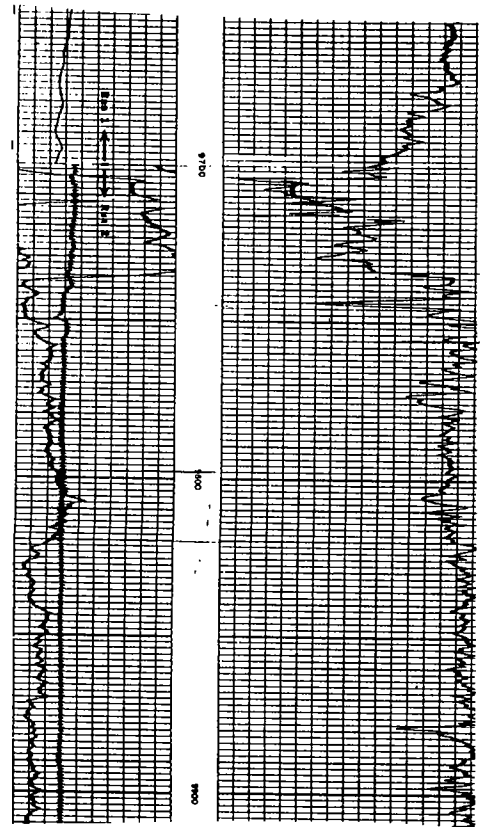
A columnar section of this core is illustrated in text-fig. 15, and it is discussed in the section on the Ordovician-Silurian boundary in the text. Gilbert Klapper and James Barrick, The University of Iowa, report the following conodont fauna from 9742' to 9744':

<i>Dapsilodus obliquicostatus</i>	1 specimen
<i>Panderodus unicostatus</i>	1
<i>P. recurvatus</i>	1
<i>Walliserodus</i> sp.	1
<i>Distomodus</i> sp. indet.	1

According to these authors, this indicates an age equivalent to the lower part of the Clarita Formation (Prices Falls Member to lowermost Fitzhugh Member).

Chemical analyses of spot samples from the core are given as follows:

MACKELLAR 1 FERGUSON				
Percentage of total rock				
depth (ft)	CaCO <sub>3</sub>	MgCO <sub>3</sub>	Insoluble residue	Recovery
9744	97.18	0.46	0.10	97.74
9749	99.36	0.36	0.33	100.05
9759	59.52	39.90	2.41	101.83
9769	43.45	24.21	29.15	96.81
9770	46.75	28.19	22.37	97.31
9772	50.67	30.64	17.99	99.30
9774	47.45	29.66	19.68	96.79
9775	57.63	5.28	35.58	98.49
9776	46.46	22.30	30.18	98.94
9792	48.58	17.20	32.44	98.22
9797	51.47	13.43	33.56	98.46
9804	59.51	5.46	33.50	98.47
9810	51.98	12.45	33.66	98.09
9817	61.03	15.26	21.60	97.89



**ALCO OIL AND GAS CORP. 1 FERGUSON** — C SW $\frac{1}{4}$  NE $\frac{1}{4}$  sec. 35, T24N, R21W, Woodward County, Oklahoma; elevation GL (Na), DF (Na), KB 2,030 ft; TD 7,897 ft (Ordovician); completion (Na), 11/12/66 (P).

This well was originally drilled by Alco Oil and Gas Corp.; completion 11/12/65. Elevations for GL, DF, or KB were not recorded; TD 7,897 ft. The well has been reworked on two separate occasions: (1) MacKellar Drilling Co. 1 Phillip Ferguson; elevation KB 2,030 ft; top of Hunton 9,753 ft; TD 10,406 ft; completion 8/30/66. (2) P. C. Ferguson 2 Ferguson; completion 12/17/77. Recorded elevations are the same as for the MacKellar record.

Hunton strata in the 1 Ferguson are thin, comprising only 35 ft of lower Chimneyhill beds. Almost the entire Hunton was cored, and the core extended into the underlying Sylvan beds (here strongly calcareous) for a distance of 65 ft. *Illustrated on* PLATE 2, STRATIGRAPHIC SECTION C-C', and in greater detail in Amsden (1980, p. 38-41, text-fig. 15, and p. 82).

Dr. James E. Barrick (Texas Tech University) reports *Dapsilodus obliquicostatus*, *Distomodus* sp., and other conodonts (see Amsden, 1980, text-fig. 15) which indicate a Late Llandoveryan C age ranging into the basal beds of the *ranuliformis* Zone of the Clarita Formation (Prices Falls Member to lower Fitzhugh Member).

TENNECO 1-11 FISHER UNIT--C S<sub>1</sub>2NW<sub>4</sub> sec. 11,  
 T. 20 N., R. 10 W., Major County, Oklahoma;  
 elev. 1154'; TD 8364' (Sylvan); compl. 7/8/70,  
 Hunton production reported (perforated 8172'-  
 8177'). Tops: Woodford (core) 8079' (-6925'),  
 Misener (core) 8127' (-6973'), Hunton (core)  
 8129' (-6975'), Sylvan (CC) 8315' (-7161');  
 Hunton thickness 186'. Cored 8124'-8177'  
 (Woodford, ?Misener, Hunton); 4 thin sections;  
 chemical analyses; 3 porosity tests (P3-A,  
 P3-B, P3-C); OU Core Library.

This well is located about 3 miles southeast of  
 Midwest 1 Hughes Unit, which cored Kirkidium  
 biofacies.

Woodford Shale 8079'-8127'

Misener Sandstone 8127'-8129'

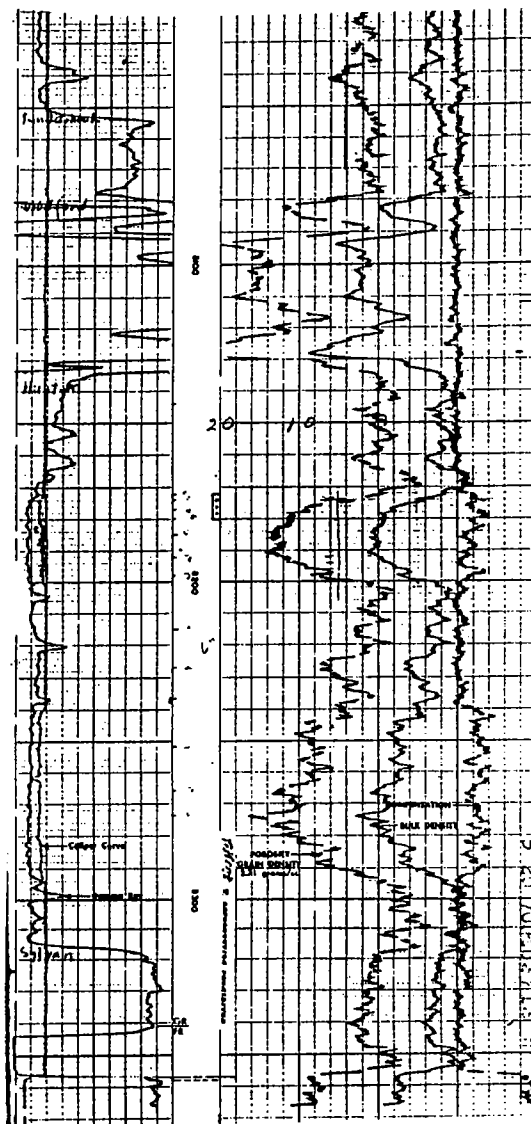
Dolomitic limestone with much silt-size  
 angular to subangular quartz detritus;  
 42.62% insoluble detritus and 22.62% MgCO<sub>3</sub>.

Hunton Group 8129'-8315'

8129'-8177' ?Silurian; ?Kirkidium biofacies.

Upper 30 feet of this interval is dolomitic,  
 fossiliferous marlstone with about 20% to  
 30% insoluble detritus and 12% to 18% MgCO<sub>3</sub>.  
 Lower 18 feet is crystalline dolomite (33%  
 to 40% MgCO<sub>3</sub>) with much reduced insoluble  
 detritus (2% to 7% insolubles); this inter-  
 val is porous, with most of pores being  
 produced by dissolution of fossils, mainly  
 crinoid plates. Three porosity tests: P3-A  
 (8136'), P3-B (8157'), and P3-C (8174');  
 first two are in marlstone lithology and  
 have very low porosity (0.10%), whereas  
 last one is in crystalline dolomite and  
 shows excellent porosity (12.9%). No diag-  
 nostic fossils observed, and this interval  
 assigned to Silurian on basis of lithology  
 and stratigraphic position (cf. Midwest 1  
 Hughes Unit).

Sylvan Shale 8139'-8315'



TENNECO 1 LUCY FISHER--NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 21. T. 20 N.,  
 R. 9 W., Major County, Oklahoma; elev. 1232';  
 TD 8290' (Sylvan); compl. 1/31/67, D&A. Tops:  
 Woodford (CC) 192'; cored 8088'-8131' (Hunton);  
 3 thin sections; chemical analyses; OU Core  
 Library.

Woodford Shale 8025'-8080'

Hunton Group 8080'-8272'

8080'-8088' No core.

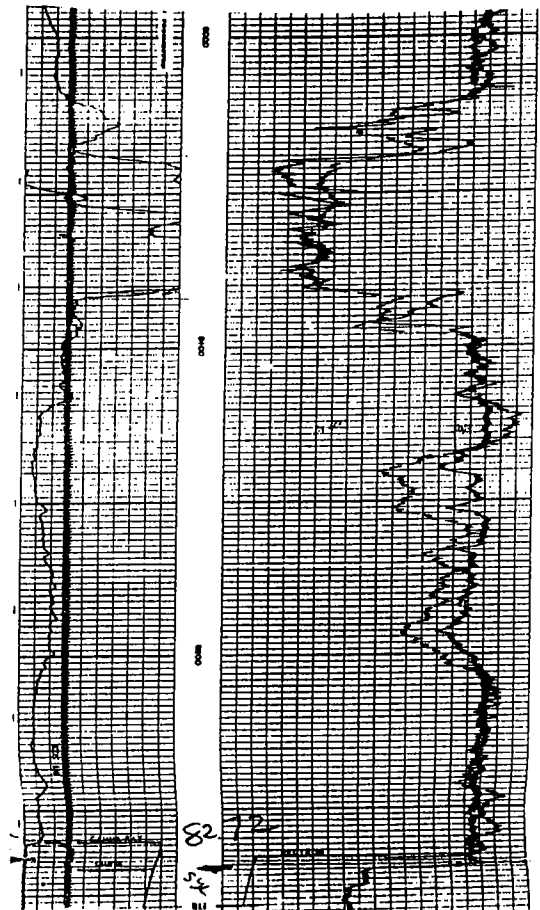
8088'-8116' Silurian; ?Kirkidium biofacies.

Gray moderately dolomitic marlstone with  
 chert nodules. Silt-size subangular quartz  
 detritus and mica common (HCl insolubles  
 average 23.15%; some of these insolubles  
 probably represent chert). Dolomite present  
 as euhedral crystals scattered through matrix  
 (MgCO<sub>3</sub> averages 13.02%). Fossils common,  
 including shelly debris as well as crinoidal  
 material; fair number of ostracodes and  
 bryozoans. Halysites present at 8100';  
 assigned to Silurian on basis of Halysites,  
 lithology, and stratigraphic position.

8116'-8131' Silurian. Medium-gray organo-  
 detrital limestone, partly with micrite,  
 partly with spar cement. Insoluble detritus  
 and dolomite low (HCl insolubles average  
 8.4%, MgCO<sub>3</sub> 4.20%). Fairly sharp break  
 between this unit and overlying one; this  
 could represent Chimneyhill Subgroup, although  
 it would make that subgroup unusually thick  
 (over 150'). No diagnostic fossils observed.

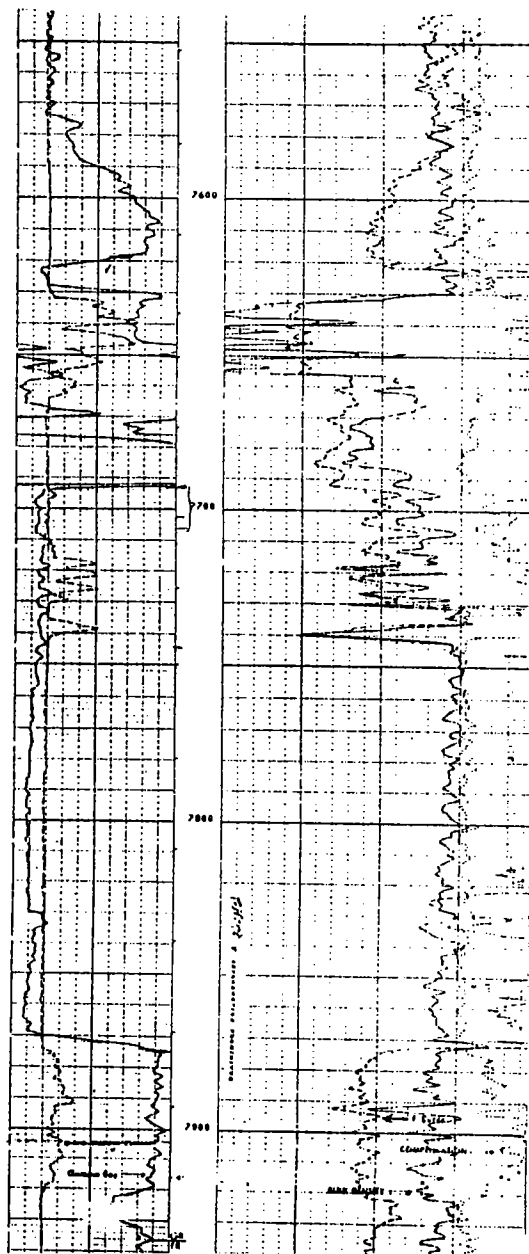
8131'-8272' No core.

Sylvan Shale 8272'



**CRESLENN OIL CO. 1 LEE FLOYD — C SE¼NW¼ sec. 14, T23N, R15W, Woods County, Oklahoma; elevation GL 1,408 ft, DF 1,424 ft; TD (Na), Ttu 7,960 ft; completion (Na), 1/23/78 (P).**

Cored 58 ft of Hunton strata starting 71 ft below the Woodford; 12 thin sections, HCl, MgCO<sub>3</sub> analyses. Dr. James E. Barrick (Texas Tech University) reports conodonts indicating a Wenlockian or younger age at 7,778 ft. *Illustrated on* PLATE 1, STRATIGRAPHIC SECTION A-A'.



SOUTHERN UNION 1 FOLLANSBEE—

SW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 18, T. 9 N., R. 15 E., McIntosh County, Oklahoma; elev. 660'; TD 5461' (Arbuckle); compl. 3/15/56, Cromwell and Hunton production reported (perforated 4826'-4872'; Chimneyhill Subgroup, probably including some basal Sallisaw beds). Tops: Woodford 4792' (-4132') (CC), Hunton 4808' (-4148') (CC), Sylvan 4935' (-4275') (CC), Welling 5000' (-4340') (sample depth); Hunton thickness 127'. Samples examined from 4720' to 5120', good quality; 10 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

Hunton strata include fairly typical Sallisaw beds (see discussion of Sallisaw Formation) underlain by strata here referred to the Chimneyhill Subgroup on the basis of lithology and stratigraphic position. Lithologically, the Chimneyhill strata can be subdivided into the Quarry Mountain, Tenkiller, and Blackgum Formations. This is about the most westerly well in which these units can be recognized with reasonable certainty. (See also descriptions of the 1 Brotton, 1 Beauman, 1 Graham, and 1 Dunagan.) Most of the Silurian strata are only weakly to moderately dolomitized, although there is some crystalline dolomite in the 4880'-4890' interval.

*Woodford (Chattanooga) Shale* 4792'-4808' (CC)

The basal part of the Woodford includes some Misener quartz and sandstone.

*Hunton Group* 4808'-4935' (CC)

4808' (CC) -4830 (sample depth) Lower Devonian; Sallisaw Formation. Crystalline dolomite with much subangular to subrounded detrital quartz up to 0.2 mm. Some chert with euhedral crystals of dolomite and detrital quartz.

4830'-4880' (sample depths) ?Quarry Mountain Formation. Organo-detrital crinoidal sparite with only minor dolomite and very little detrital quartz.

4880'-4900' (sample depths) Crystalline dolomite and heavily dolomitized crinoidal limestone with little or no detrital quartz.

4900'-4930' (sample depths) ?Tenkiller Formation. Pink crinoidal micrite with very little dolomite and very little detrital quartz.

4930'-4940' (sample depths) ?Blackgum Formation. Moderately to heavily dolomitized glauconitic crinoidal limestone with much shelly debris, including bryozoans. Very little detrital quartz. Some chert.

*Sylvan Shale* 4935' (CC) -5000' (sample depth)

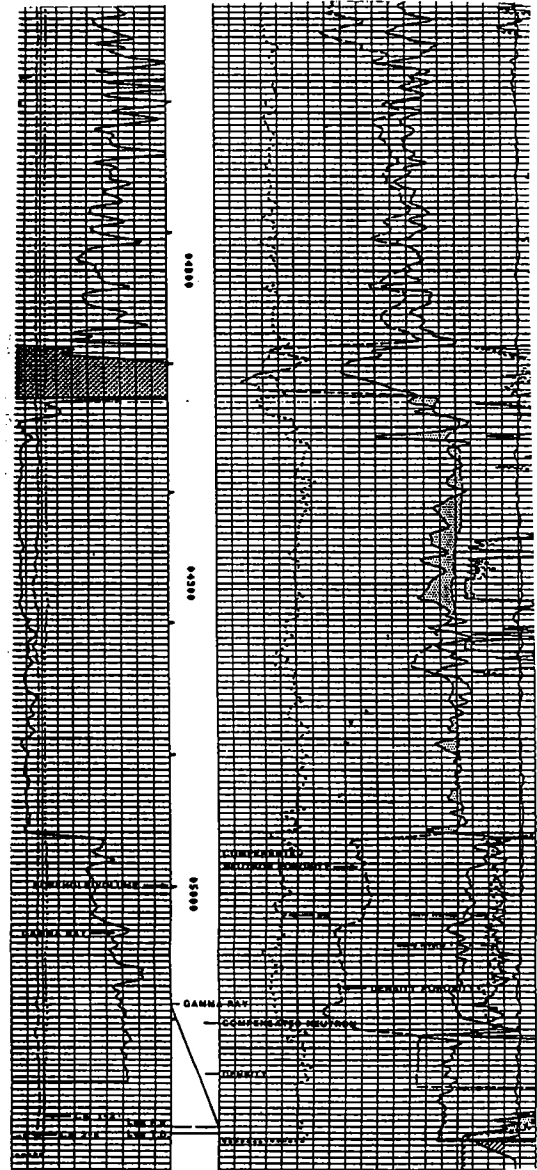
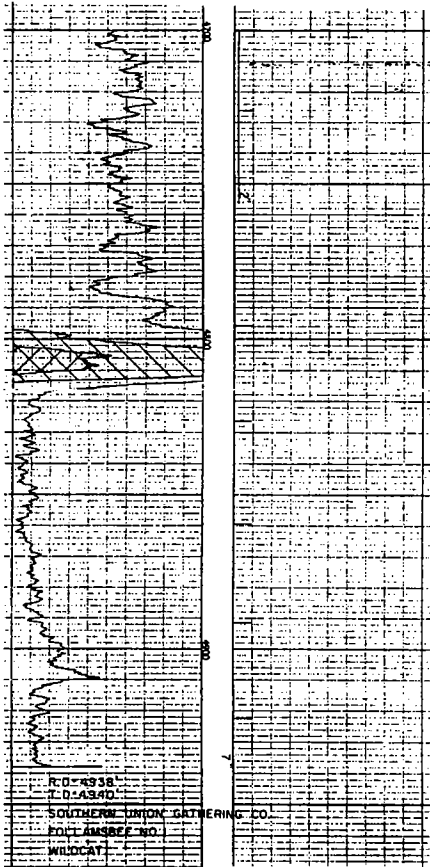
Gray shale.

*Welling Formation* 5000' (sample depth)

5000'-5005' (thin section) Organo-detrital sparite and micrite; no detrital quartz observed and only traces of dolomite.

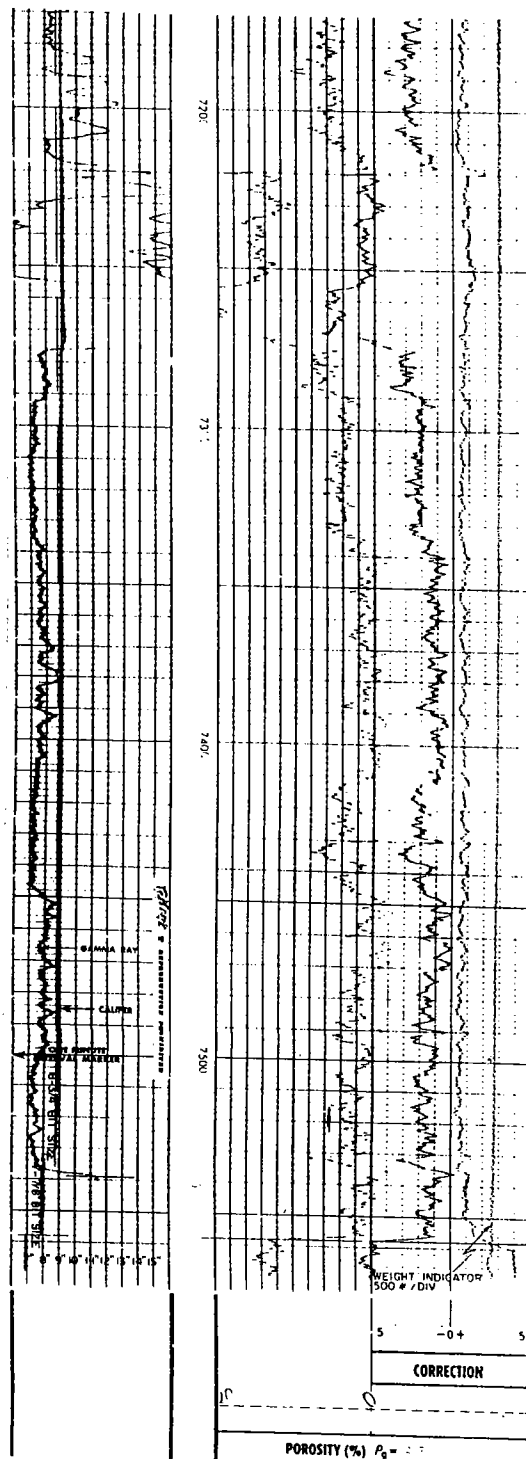
Southern Union  
 1 Follansbee  
 SW NW SW  
 Sec. 18, T. 9 N., R. 15 E.  
 McIntosh County, Oklahoma  
 elev. 660'

Sumat Exploration Company  
 2 Kimberling  
 SW NW SW  
 Sec. 19, T. 9 N., R. 15 E.  
 McIntosh County, Oklahoma  
 elev. 620'



TEXACO INC. 2-C C. E. FOSTER — C NE¼SE¼ sec. 13,  
 T17N, R6W, Kingfisher County, Oklahoma; elevation GL  
 1,064 ft, DF 1,074; TD 7,565 ft (Sylvan); completion 12/25/74.

Studied by Amsden, 1985; 25 thin sections and spot  
 analyses for CaCO<sub>3</sub>, MgCO<sub>3</sub>; HCl insolubles. *Illustrated*  
 on PLATE 1, STRATIGRAPHIC SECTION A-A'.



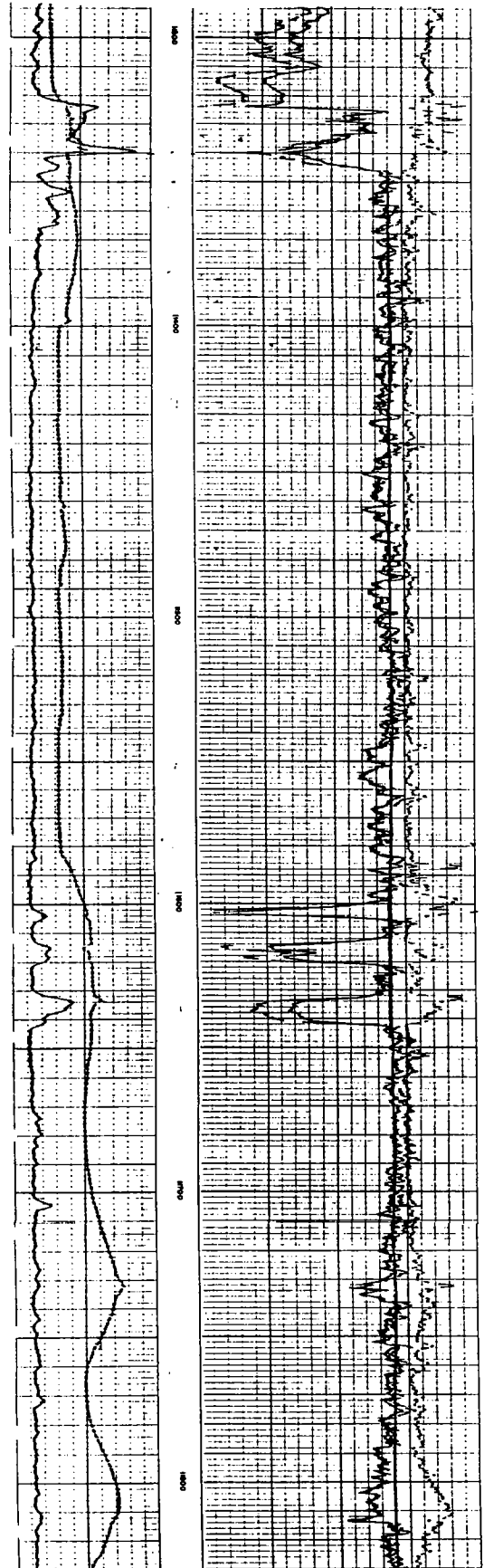


PHILLIPS 1-D FRANKLIN--1050' FSL & 1000' FWL sec. 53, Blk. A-6, H&GN Survey, Gray County, Texas; elev. 2838'; TD 13,594' (Ordovician); compl. 8/12/72, D&A? Tops: Hunton 11,350' (-8512') (no Woodford present; Hunton overlain by Pennsylvanian); Sylvan 12,110' (-9272'); Hunton thickness 760'; cored 11,457'-12,036' (all Hunton); 10 thin sections; no chemical analyses; Phillips Petroleum Company, Bartlesville, Oklahoma (probably to be discarded).

On March 27, 1974, I examined this core at the Phillips core-storage plant in Bartlesville. Mr. Don Dalrymple, Phillips' carbonate petrologist, was with me and provided information based on thin sections which he had prepared and studied; I also had 10 thin sections prepared in addition to numerous peels of the Microcardinalia protriplesiana. Mr. Dalrymple also provided me with a drilling-company record of this well, including the porosity tests made about every foot (apparently no chemical analyses are available). Based on my own observations, and including the data from Dalrymple, this entire core is a low-magnesium, organo-detrital limestone with very little insolubles. I am sure the entire core would average well under 5% MgCO<sub>3</sub>, and, although there are a few shaly partings, on the whole it probably has less than 5% insoluble detritus. It has a uniformly low porosity, with almost all the tests showing less than 1% porosity.

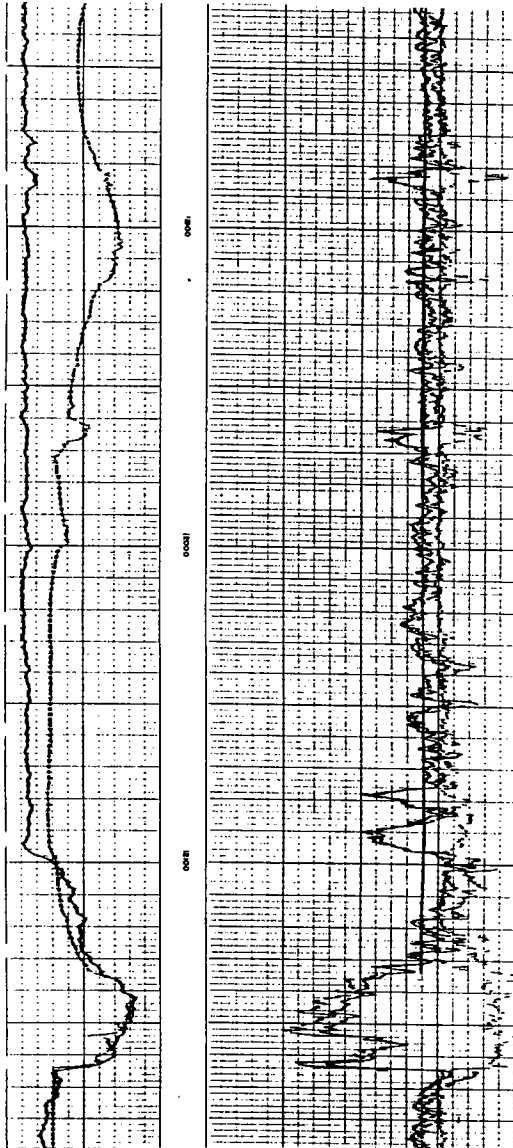
The only diagnostic fossils observed are in a well-developed bed of brachiopods at a depth of 11,930'-11,932'. These shells show some disarticulation and breakage but also include several well-preserved articulated shells (the anterior end is generally absent owing to solution along a stylolite seam). Two sets of serial sections show excellent internal structure, and these shells can be reliably referred to Microcardinalia protriplesiana Amsden. Stricklandids with this internal structure are confined to late Llandoveryan strata insofar as known, and these strata would appear to be reasonably correlated with the Cochrane Formation of the Arbuckle Mountains region and the Blackgum Formation of eastern Oklahoma (Amsden, 1966, p. 1010; 1971b, p. 145). This clearly shows that the Cochrane Formation, and a considerable part of the Chimneyhill strata, are represented by a limestone lithofacies in the 1-D Franklin.

I also borrowed the well samples from the Amarillo Sample Cut and Library. These show that the Hunton strata above the cored interval are in a low-magnesium-limestone lithofacies and that Hunton rocks are overlain by the cherts and clastics here referred to the Pennsylvanian. The lower 50 feet of the Hunton strata just above the Sylvan Shale



Phillips  
 1D Franklin  
 1050' FSL & 1000' FWL  
 Sec. 53, Blk. A-6, H&GN Survey,  
 Gray County, Texas  
 KB 2854'

Continued



include considerable dolomite including crystalline dolomite, this being the only bed with any appreciable dolomite in the entire group.

Pennsylvanian strata?

Well samples examined from 11,200'-11,350'. Basal samples include some conglomeratic sandstone with white, chalky chert; most of this interval is a white, chalky chert.

Hunton Group 11,350'-12,110'

11,350'-11,457' ?Silurian; ?Devonian. Well samples. Light-gray to pinkish-gray low-magnesium limestone with some chert.

11,457'-11,930' Core. Light-gray to pinkish-gray organo-detrital limestone with some chert. Thin sections in upper part (3 sections, 11,460'-11,466') show a limestone rich in pelmatozoan plates and bryozoan debris. Largely spar cement; some beds have irregular areas of spar, suggesting solution and filling. This interval, as well as underlying cored interval, is rich in bryozoans and pelmatozoans, and in this respect resembles Quarry Mountain biofacies of eastern Oklahoma. Moreover, there are substantial areas with irregular bodies of spar, again similar to spar-filled cavities of Quarry Mountain and Tenkiller Formations (Amsden and Rowland, 1965, p. 36-37, 50, pls. 8, 9, 10, 11, 15). I am presently making a more detailed study of lithofacies and biofacies of Silurian rocks in Oklahoma and adjacent states and will include 1-D Franklin in this investigation.

11,930'-12,036' Silurian; Chimneyhill Subgroup; Cochrane Formation. Cored interval. Light-gray to pinkish-gray organo-detrital limestone, as above; much shelly debris in upper few feet. Upper 2 feet includes specimens of Microcardinalia protiplesiana Amsden, and on basis of this brachiopod entire interval is referred to Cochrane Formation.

12,036'-12,050' Well samples. Dolomitic limestone and calcareous dolomite with light-colored chert (1 thin section).

12,050'-12,110' Well samples. Gray crystalline dolomite with much white chert; 12,100' to 12,110' may include dolomitized oolites (4 thin sections).

Sylvan Shale 12,110'

GIBRALTAR 1 FRANKS—SW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec. 32, T. 13 N., R. 10 E., Okfuskee County, Oklahoma; elev. 827'; TD 3663' (Ordovician); compl. unknown, no Hunton production reported. Tops: ?Misener 3490' (-2663') (sample depth), Hunton 3520' (-2663') (sample depth), Sylvan 3530' (-2703') (sample depth), Welling 3610' (-2783') (sample depth), Fite 3625' (-2798') (sample depth); Hunton thickness 10'. Samples examined from 3400' to 3666' (TD); considerable mixing of samples; 6 thin sections, OGS; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The samples just beneath the Woodford dark shale include much subangular quartz silt and are provisionally referred to the Misener. However, these include some moderately fossiliferous marlstone, which is relatively low in silt content and could represent Hunton strata. The sample just above the Sylvan (3520'-3530') is typical pink crinoidal micrite and is assigned to the Chimneyhill Subgroup. It has very little dolomite.

*Woodford (Chattanooga) Shale*

3490'-3520' (sample depths) Misener Sandstone.

Carbonate with some crystalline dolomite and much subangular silt-size (to 0.5 mm) quartz detritus; some micrite with scattered fossils and widely distributed fine quartz silt.

*Hunton Group* 3520'-3530' (sample depths)

Silurian; Chimneyhill Subgroup. Pink crinoidal micrite with ostracodes and bryozoans; very little quartz detritus and very little dolomite.

*Sylvan Shale* 3530'-3610' (sample depths)

Shale; upper 20' greenish gray, lower part medium gray.

*Welling Formation* 3610'-3625' (sample depths)

3610'-3620' (thin section) Organo-detrital sparite; no detrital quartz or dolomite observed; minor chert.

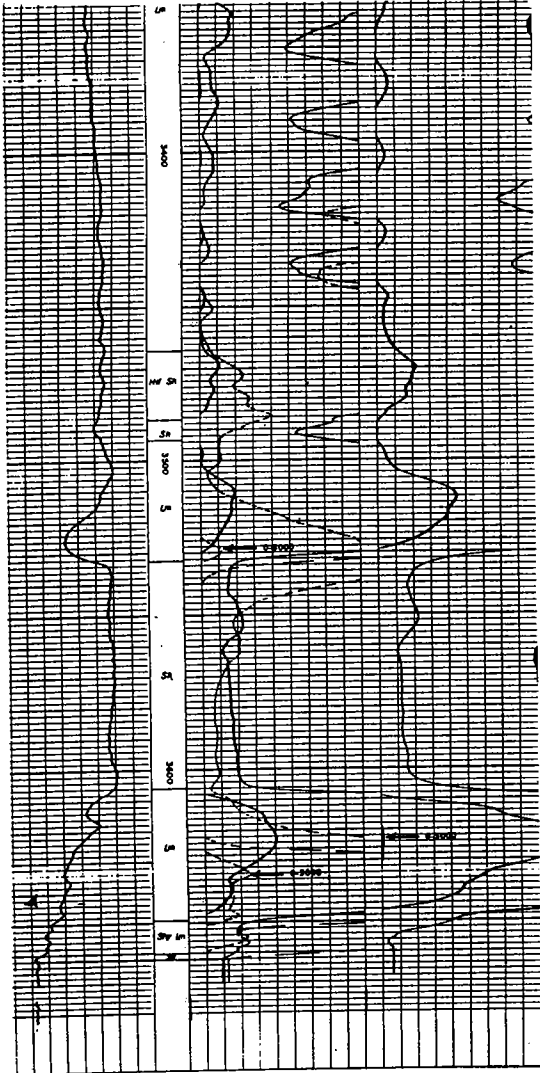
*Fite Limestone* 3625' (sample depth)

3630'-3640' (thin section) Pellet limestone and dense ?algal limestone; scattered dolomite crystals; no detrital quartz observed (pl. 11, fig. 1).

3646' (thin section) Similar to above texture, but more crystalline dolomite.

Gibraltar  
 1 Franks  
 SW NW NE  
 Sec. 32, T. 13 N., R. 10 E.  
 Okfuskee County, Oklahoma  
 elev. 827'

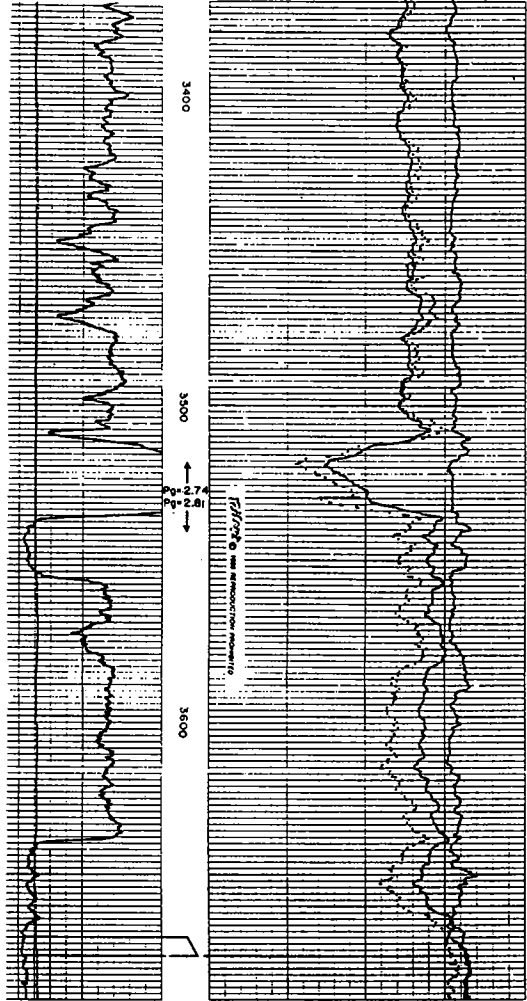
1 Williams  
 NE NE SW  
 Sec. 32, T. 13 N., R. 10 E.  
 Okfuskee County, Oklahoma  
 elev. 823'



GIBRALTAR OIL COMPANY  
 FRANKS NO 1  
 SEM 11 C

SONE. F. R. 3662'  
 SONL. T. D. 3663'  
 ORLR. T. D. 3665'

ELEV. 827'  
 SEC. 32 - 13N - 10E  
 OKFUSKEE CO. OKLA.



SUNRAY DX 1 FRANS--C SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 3, T. 15 N.,  
 R. 16 W., Custer County, Oklahoma; elev. 1846';  
 TD 14,950' (Sylvan); compl. 1/31/69, D&A.  
 Tops: Woodford (CC) 14,400' (-12,554'), Hunton  
 (CC) 14,504' (-12,658'), Sylvan (CC) 14,947'  
 (-13,101'); Hunton thickness 435'. Cored  
 14,504'-14,720' (all Hunton); 11 thin sections;  
 chemical analyses; one porosity test (P15-A);  
 OU Core Library. See panel 10, section B-B'.

This is an interesting and significant core  
 because it includes numerous examples of fos-  
 sils replaced with dolospar and calcspar; see  
 photomicrographs, pl. 5, figs. 1-4; pl. 3,  
 fig. 3; pl. 12, fig. 2.

Woodford Shale 14,400'-14,504'

Hunton Group 14,504'-14,947'

14,504'-14,524' ?Silurian; ?*Kirkidium* biofacies.  
 Crystalline dolomite as below. No diagnostic  
 fossils observed; this could include some  
 Devonian.

14,524'-14,560' Silurian; *Kirkidium* biofacies.  
 Gray crystalline dolomite with numerous speci-  
 mens of *Kirkidium* sp. (Porosity test P15-A;  
 0.14% porosity, 0.00 md permeability.)

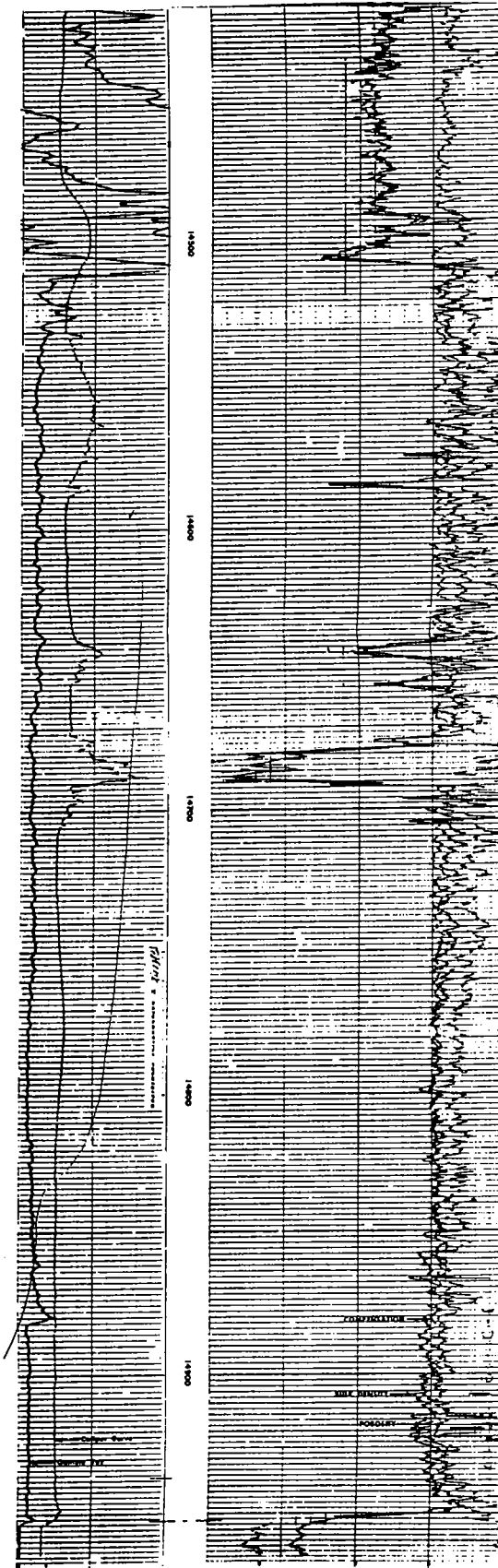
14,560'-14,720' Silurian; ?*Kirkidium* biofacies.  
 Gray crystalline dolomite; no diagnostic  
 fossils observed.

Entire cored interval (14,504'-14,720') is  
 relatively uniform crystalline dolomite which  
 is low in insoluble detritus; averages 34.64%  
 MgCO<sub>3</sub> and 6.56% insolubles (see Chemical  
 Analyses, part III of Appendix). Most of  
 rock shows little visible porosity (P15-A  
 has 0.14% porosity), and fossils, which are  
 abundant in some beds, appear to have been  
 largely filled with spar. However, some  
 visible porosity in hand specimen and thin  
 section is present from 14,622' to 14,648'.  
 Also, small nodules of chert are present  
 throughout, although they are most abundant  
 from 14,650' to 14,722'.

Entire interval is tentatively assigned to  
*Kirkidium* biofacies, although upper 16' could  
 include some Devonian and part below lowest  
 observed *Kirkidium* specimen (14,560') could  
 include some Chimneyhill.

14,720'-14,947' No core.  
 Sylvan Shale 14,947'

Cored 216 ft of Hunton starting just below the Hunton-  
 Woodford contact. The core is almost entirely crystalline  
 dolomite, and *Kirkidium* brachiopods range through ~40 ft,  
 starting 16 ft below the top. Described in Amsden (1975, p.  
 86; pl. 5, figs. 1-4; pl. 9, figs. 2,3; pl. 12, figs. 2,3).



PURE 1 FUQUA--SW $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 18, T. 6 N., R. 16 W., Kiowa County, Oklahoma; elev. 1460'; TD 2019' (Fernvale Limestone from sample log); compl. 5/20/39, D&A. Tops: Pennsylvanian-Hunton contact 430' (+1030'), Sylvan 1690' (-230'), Fernvale 1990' (sample log); Hunton thickness 1260'. Cuttings examined from Woodford through Hunton and into Sylvan; 23 thin sections prepared, stained with Alizarin Red-S.

This well is in one of the shallow fault blocks between the Wichita Mountains uplift and the deep part of the Anadarko basin. It is low-magnesium limestone throughout and clearly a part of the Arbuckle Mountains lithofacies. The sequence is typical for this general region, and for the Arbuckle Mountains and Criner Hills, consisting of an upper organo-detrital limestone (?Lower Devonian), a middle marlstone (?Devonian and/or ?Silurian), the basal bed of which is oolite (Chimneyhill Subgroup).

Pennsylvanian Sandstone and Conglomerate

Hunton Group 430'-1690'

430'-780' ?Frisco Limestone and (or) ?Fittstown Member, Bois d'Arc Formation. Light-colored organo-detrital sparite with minor detrital quartz and crystals of dolomite; some chert. Lower boundary not well defined.

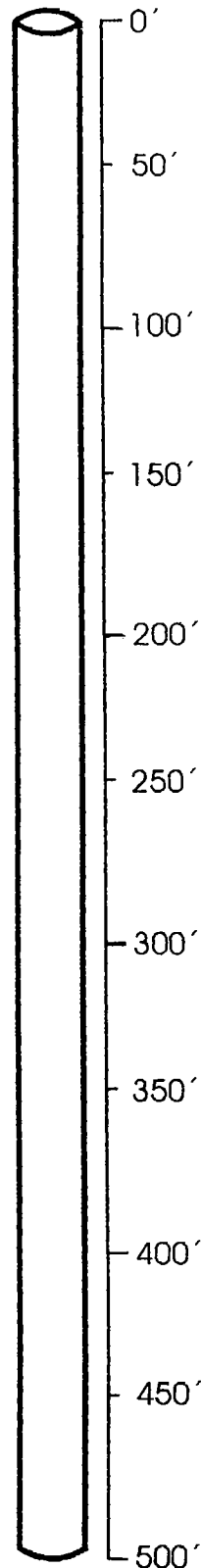
780'-1000' Mixture of light- and dark-colored organo-detrital sparite and micrite; some chert. This interval includes some fairly typical marlstone as below. Very little dolomite. This interval appears to be gradational between overlying and underlying strata.

1000'-1540' Haragan and (or) Henryhouse Formation. Typical marlstone texture with considerable quartz detritus and very little dolomite. Lower 200' has substantial red beds; these have much quartz detritus with some mica, noticeably more than in the upper, gray parts. Many fossils, especially shelly debris and bryozoans, but not much coral material.

1540'-1690' ?Chimneyhill Subgroup. Light-colored organo-detrital limestone with only minor quartz detritus; spar and micrite cement. Many fossils: shelly debris, crinoids, bryozoans, and ostracodes. From 1630' to 1660' much glauconite and some dolomite crystals (?Cochrane Formation). Basal 20' mostly oolite with spar matrix and very little dolomite (Keel Formation).

Sylvan Shale 1690'-1990'

Log not available



CLAYBROOK 1 GARRETT—NE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec. 8, T. 8 N., R. 10 E., Hughes County, Oklahoma; elev. 743' DF (738' GL); TD 4153' (Ordovician); compl. 11/2/55, Hunton oil production reported. Tops: Woodford 3750' (-3007') (sample depth), Hunton 3795' (-3052') (sample depth), Sylvan 3890' (-3147') (sample depth), Welling 3986' (-3248') (sample depth); Hunton thickness 95'. Samples good quality, examined from 3700' to 4020'; 10 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

Hunton strata comprise weakly to moderately dolomitized organo-detrital limestones, which are assigned to the Chimneyhill Subgroup on the basis of lithologic character and stratigraphic position. They can be divided into an upper pink crinoidal limestone (?Clarita, ?Tenkiller) and a lower glauconitic limestone (?Cochrane, ?Blackgum). Note that the lower glauconitic limestones have not been recognized in the nearby 1 Ambrister.

A well-defined cherty sandstone is present between the Chimneyhill and the Woodford. This is tentatively assigned to the Misener Sandstone, although it could be partly or entirely Sallisaw (see Sallisaw Formation in text).

*Woodford (Chattanooga) Shale* 3750'-3795' (CC)  
3785'-3795' (sample depths) Misener Sandstone.

Angular fine (to 0.2 mm) quartz grains set in a silicified matrix and mixed with chert; underlying sample has 1 piece of sandstone with larger (to 0.1 mm) rounded quartz grains.

*Hunton Group* 3795'-3890' (sample depths)  
3795'-3890' (sample depths) Silurian; Chimneyhill Subgroup.

3795'-3880' (sample depths) ?Clarita Formation, ?Tenkiller Formation. Pink crinoidal micrite with minor spar. Pelmatozoan plates dominant, but bryozoans and other shelly debris are also present. Very little detrital quartz. Mostly weak to moderate dolomitization, but some beds with substantial dolomite.

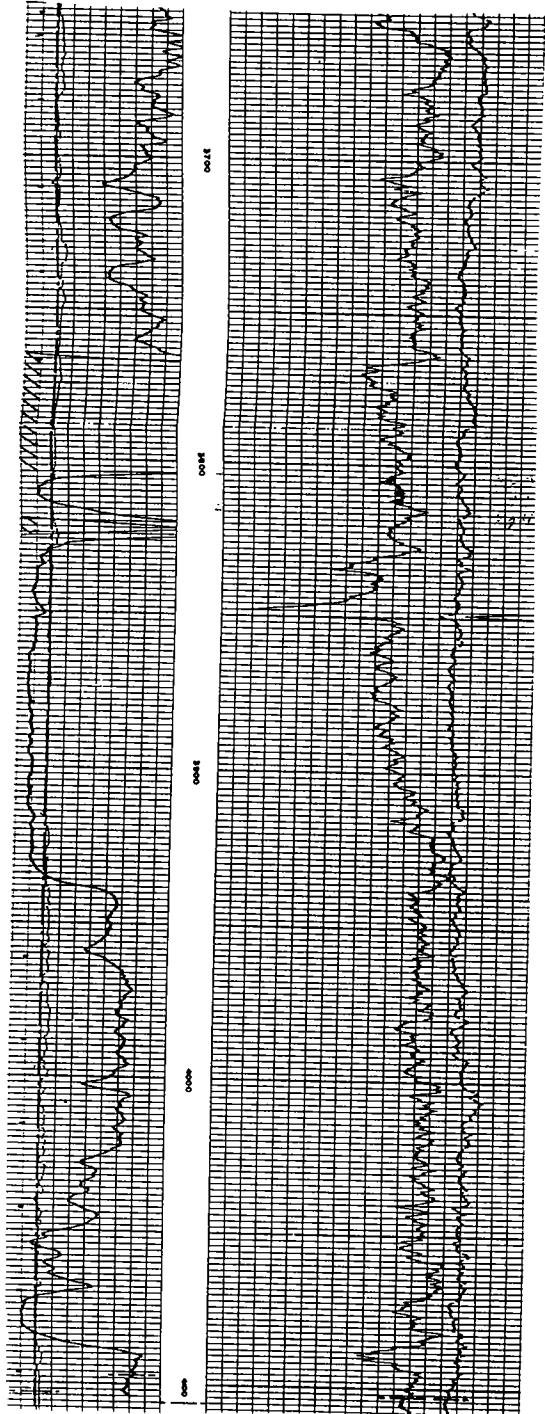
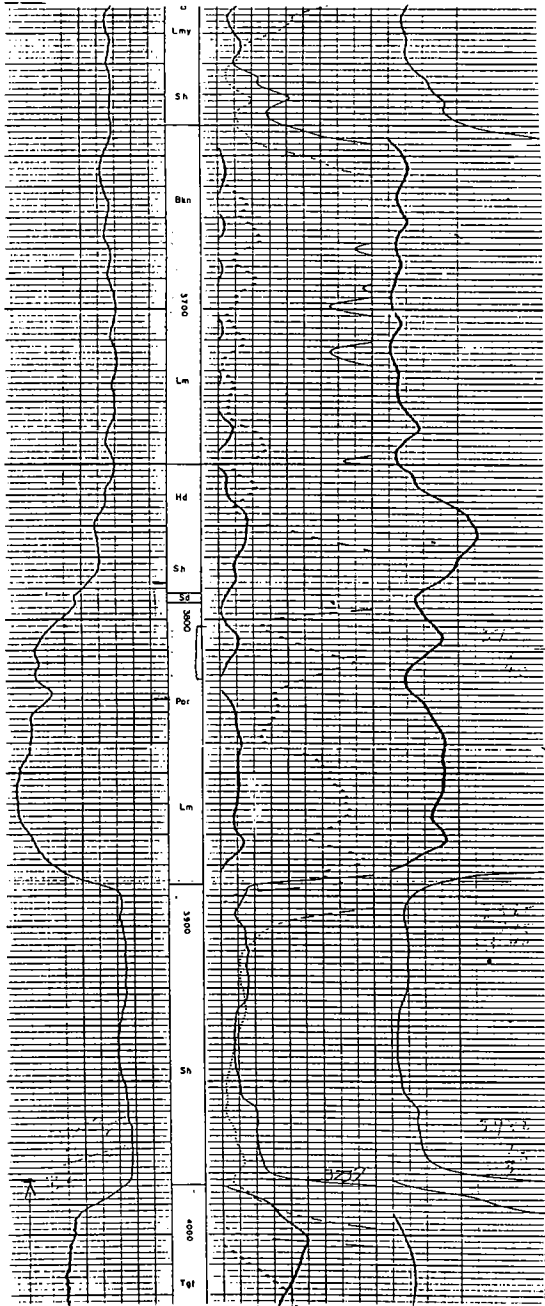
3880'-3890' (sample depths) ?Cochrane, ?Blackgum. Organo-detrital micrite with much glauconite. Moderate to strong dolomitization. Very little quartz.

*Sylvan Shale* 3890'-3986' (sample depths)  
Upper 20' greenish-gray shale; medium-gray below.

*Welling Formation* 3986' (sample depth)  
4015'-4020' (thin section) Organo-detrital pelmatozoan sparite with bryozoans, trilobites, and other shelly debris. A few well-rounded detrital quartz grains to 0.4 mm. No dolomite observed.

Claybrook Drilling Company  
1 Garrett  
NE NE SE  
Sec. 8, T. 8 N., R. 10 E.  
Hughes County, Oklahoma  
elev. 743'

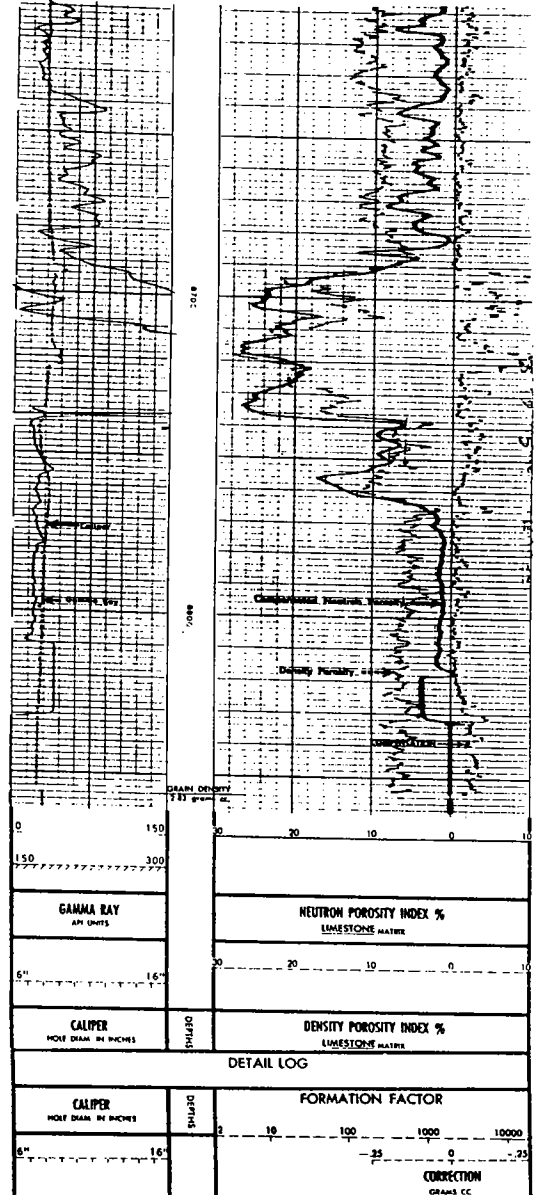
1A Conrad Unit  
W/2 NW  
Sec. 9, T. 8 N., R. 10 E.  
Hughes County, Oklahoma  
elev. 759'





**J. WALTER DUNCAN, JR., 2 GARRETT** — C SW $\frac{1}{4}$ NE $\frac{1}{4}$  SW $\frac{1}{4}$  sec. 22, T17N, R8W, Kingfisher County, Oklahoma; elevation GL 1,115 ft, DF 1,125 ft; TD 8,841 ft (Hunton); completion 4/6/75.

Cored 8,735–9,775 ft (lower Woodford–upper Hunton); studied by Amsden in 1986: 13 thin sections and spot samples for HCl, CaCO<sub>3</sub> and MgCO<sub>3</sub> analysis. Upper 22 ft is a heavily dolomitized skeletal limestone (41.1% MgCO<sub>3</sub>, 6.9% HCl insolubles); specimens of *Kirkidium* sp., stromatoporoids, tabulate corals, tetracorals, halysitid corals; lower 15 ft of core is a dolomitized crinoidal limestone (25.1% MgCO<sub>3</sub>; 7.2% HCl insolubles) with bryozoans, ostracodes, brachiopods, etc. *Illustrated on* PLATE 1, STRATIGRAPHIC SECTION A–A'.



CLEARY 1-21 GILBERT--SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 21, T. 17 N.,  
R. 6 W., Kingfisher County, Oklahoma; elev.  
1012'; TD 7873' (Sylvan); compl. 2/9/68, no  
Hunton production reported. Tops: Woodford  
(CC) 7496' (-6484'), Misener (core) 7545'  
(-6533'), Hunton (core) 7560' (-6548'), Sylvan  
(CC) 7816' (-6804'); Hunton thickness 256'.  
Cored 7542'-7576' (lower Woodford, Misener,  
and upper Hunton); 2 thin sections; chemical  
analyses; OU Core Library.

Woodford Shale 7496'-7545'

Misener Sandstone 7545'-7560'

Dark-gray dolomite with much silt-size  
angular quartz detritus including consider-  
able mica. No fossils observed.

Hunton Group 7560'-7816'

7560'-7576' Silurian; Kirkidium biofacies.

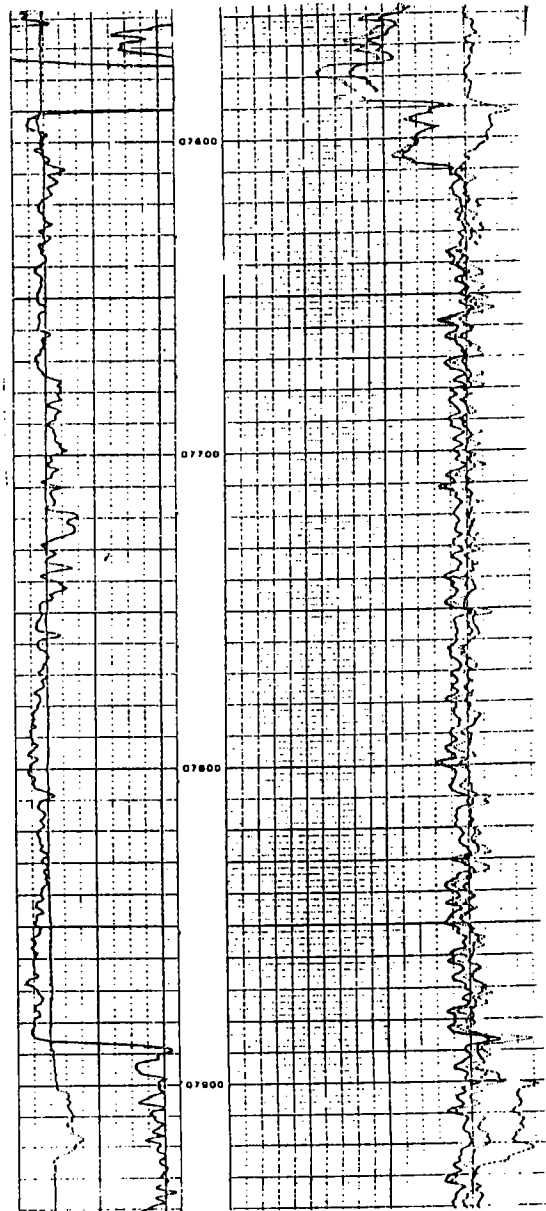
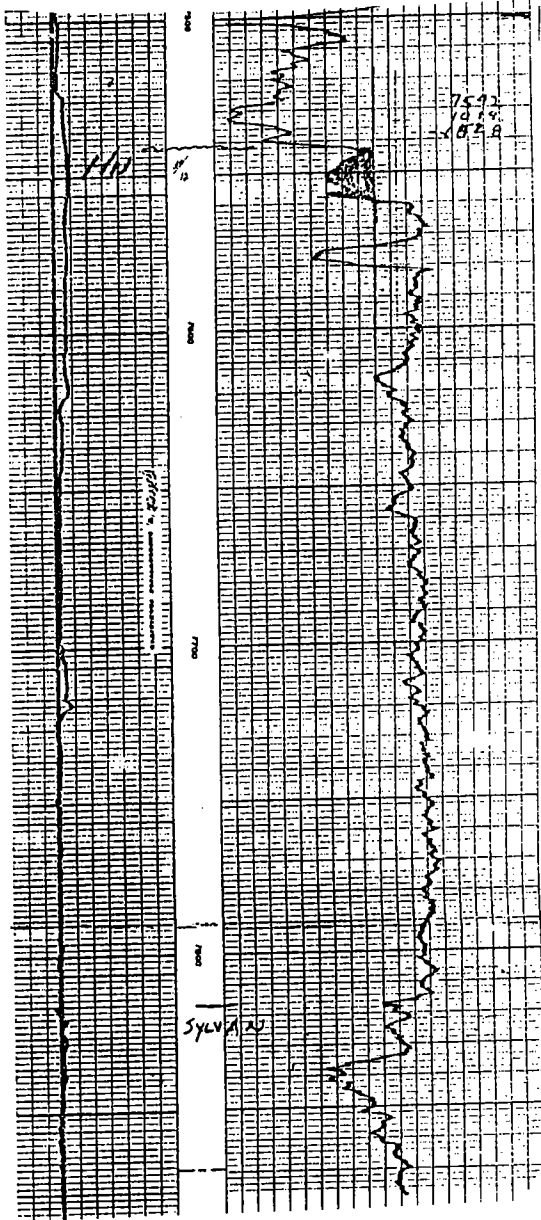
Gray dolomitic marlstone; MgCO<sub>3</sub> averages  
23.90%, insolubles 23.64%. Fossils common,  
including shelly debris and pelmatozoan  
plates. Specimens of Kirkidium sp. at 7560'.

7576'-7816' No core.

Sylvan Shale 7816'

Cleary Petroleum  
1-21 Gilbert  
SW NE  
Sec. 21, T. 17 N., R. 6 W.  
Kingfisher County, Oklahoma  
elev. 1014'

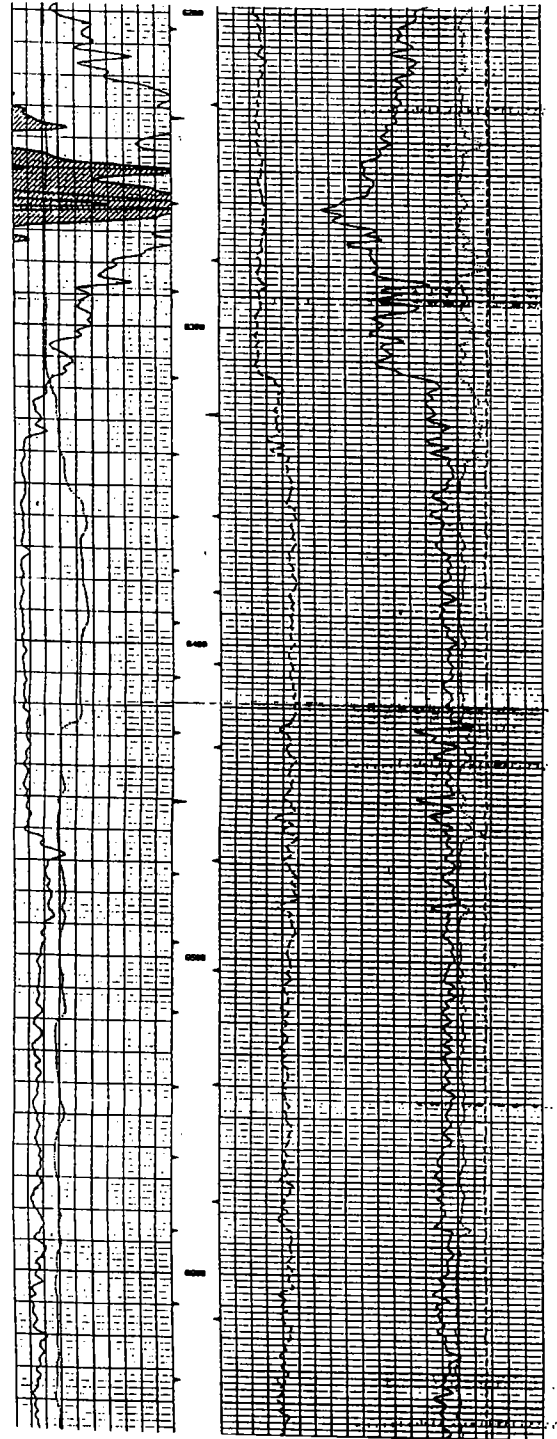
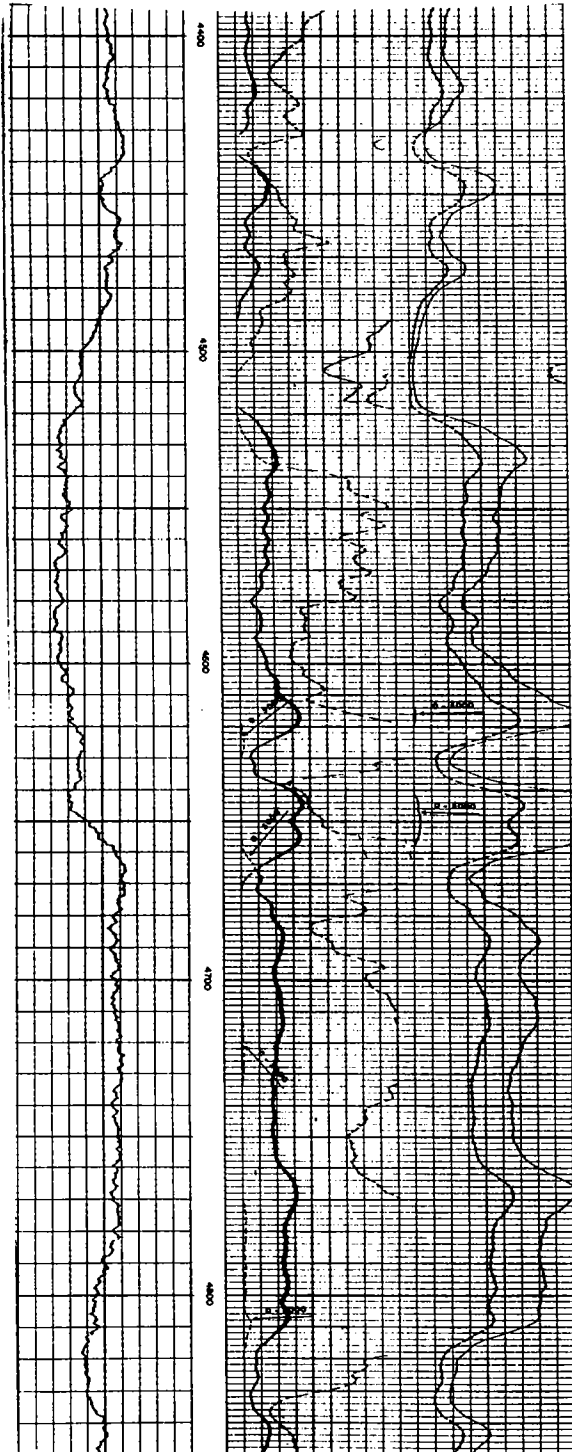
Quail Creek Oil  
1-A John Borelli  
W/2 NE  
Sec. 8, T. 17 N., R. 6 W.  
Kingfisher County, Oklahoma  
elev. 1082'



GOFF-LEEPER 1 GILES--C NW $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 15, T. 6 N.,  
R. 13 W., Caddo County, Oklahoma; elev. 1412';  
TD 7461' (Bromide); compl. 2/15/62, D&A.  
Tops: Woodford-?Misener 4490' (-3078'),  
?Misener-Hunton 4510' (-3098'), Sylvan 5710'  
(-4298'); Hunton thickness 1200'. Samples  
examined from lower Woodford through Hunton  
and into Sylvan (skip 5120'-5540'); 19

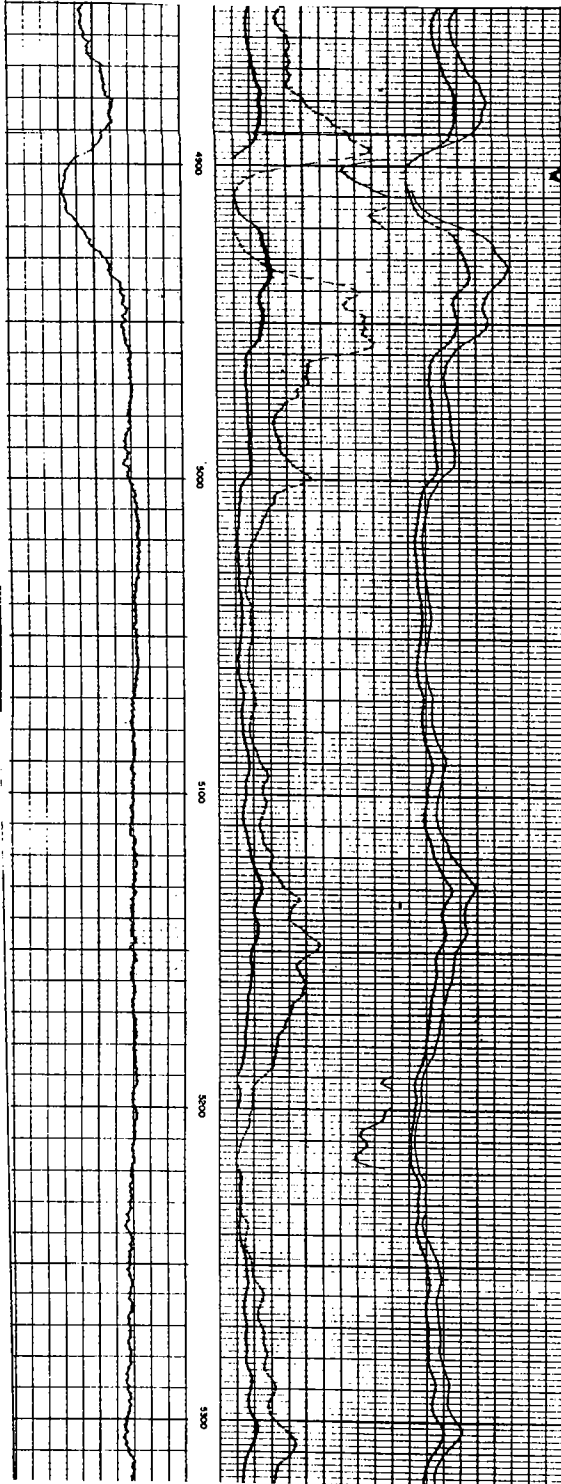
Goff-Leeper  
1 Giles  
NW NE  
Sec. 15, T. 6 N., R. 13 W.  
Caddo County, Oklahoma  
elev. 1412'

Goff-Leeper  
1-A Francis Johnson  
1980' FNL & 1955' FWL  
Sec. 14, T. 6 N., R. 13 W.  
Caddo County, Oklahoma  
elev. 1430'



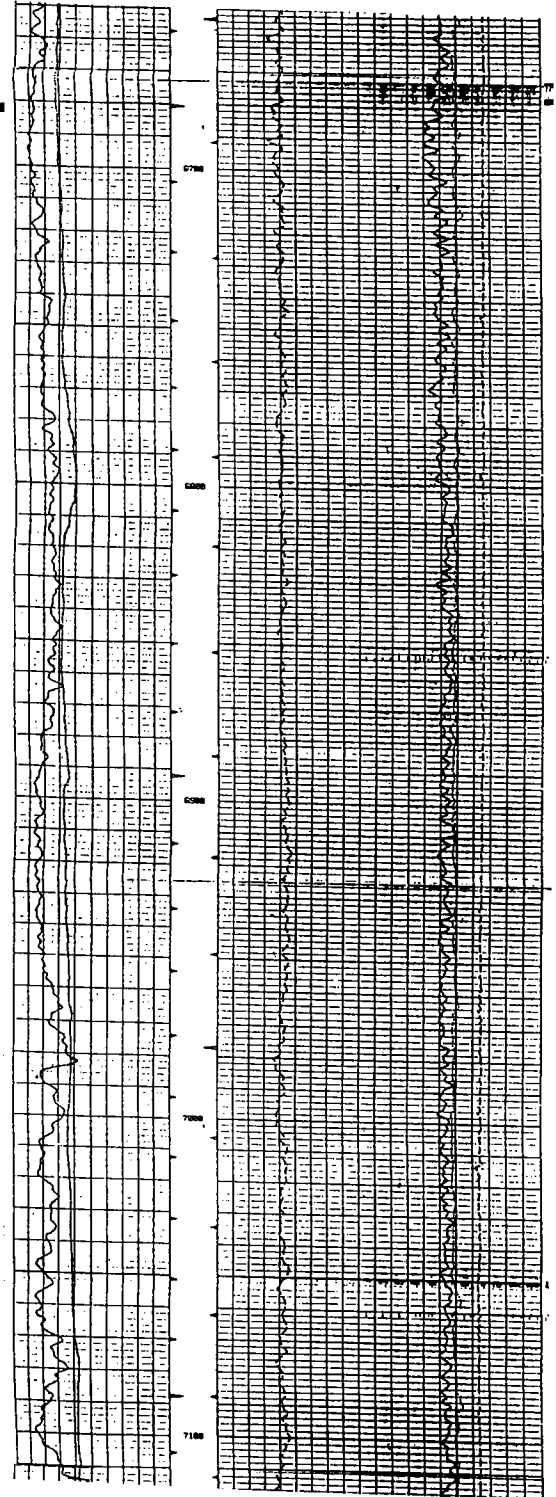
Goff-Leeper  
1 Giles  
NW NE  
Sec. 15, T. 6 N., R. 13 W.  
Caddo County, Oklahoma  
elev. 1412'

continued



Goff-Leeper  
1-A Francis Johnson  
1980' FNL & 1955' FWL  
Sec. 14, T. 6 N., R. 13 W.  
Caddo County, Oklahoma  
elev. 1430'

continued

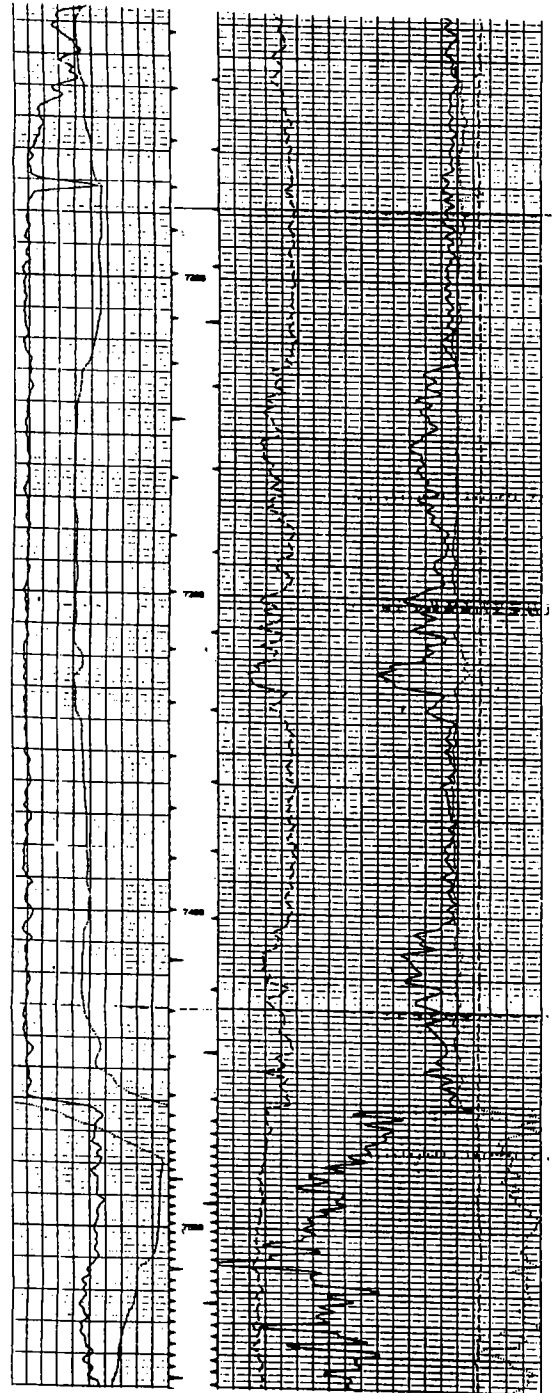
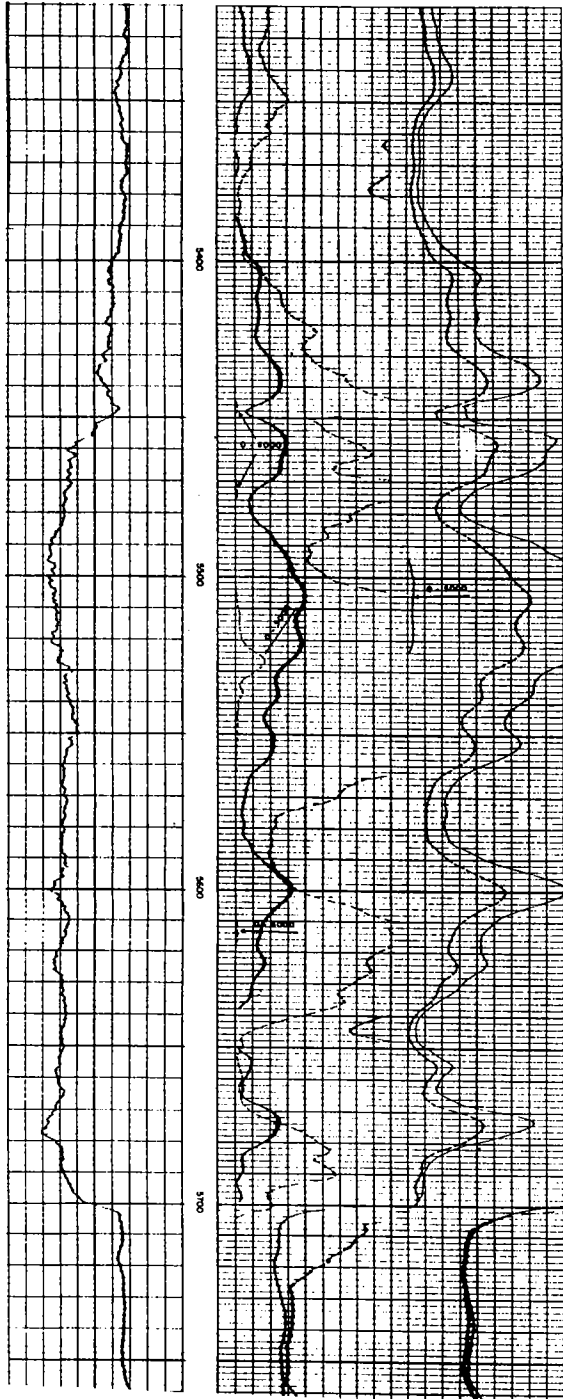


Goff-Leeper  
1 Giles  
NW NE  
Sec. 15, T. 6 N., R. 13 W.  
Caddo County, Oklahoma  
elev. 1412'

Goff-Leeper  
1-A Francis Johnson  
1980' FNL & 1955' FWL  
Sec. 14, T. 6 N., R. 13 W.  
Caddo County, Oklahoma  
elev. 1430'

continued

continued



TEXACO 1 GIPSON--NE $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 11, T. 6 S.,  
R. 6 E., Marshall County, Oklahoma; elev. 707';  
TD 4190' (Sylvan); compl. 5/31/57, Woodford-  
Misener production reported. Tops: Woodford  
(CC) 3565' (-2858'), Misener (CC) 4077' (-3370'),  
Sylvan (CC) 4125' (-3418'), no Hunton present.  
Cored 4095'-4117' (Misener); 3 thin sections;  
no chemical analyses; OU Core Library.  
Woodford Shale 3565'-4077'

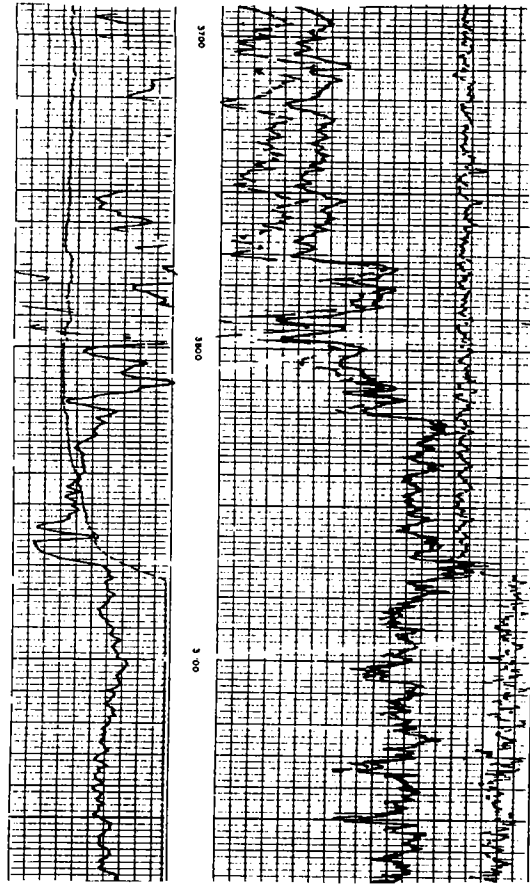
TEXACO 1 GIPSON--NE $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 11, T. 6  
S., R. 6 E., Marshall County, Oklahoma; elev. 707';  
TD 4190' (Sylvan); compl. 5/31/57, Woodford-Mis-  
ener production reported. Tops: Woodford 3565'  
(-2858') (CC), Misener 4077' (-3370') (CC), Sylvan  
4125' (-3418') (CC); no Hunton present. Cored  
4095'-4117' (Misener); 3 thin sections; no analyses;  
OU Core Library.

*Woodford (Chattanooga) Shale* 3365'-4125' (CC)  
4077'-4127' (CC) Misener Sandstone.  
4077'-4095' No core.  
4095'-4117' (core) Dark-gray to brown fine-  
grained dolomitic and glauconitic siltstone. This  
core described by Amsden (1975b, p. 87).  
4117'-4125' No core.  
*Sylvan Shale* 4125' (CC)



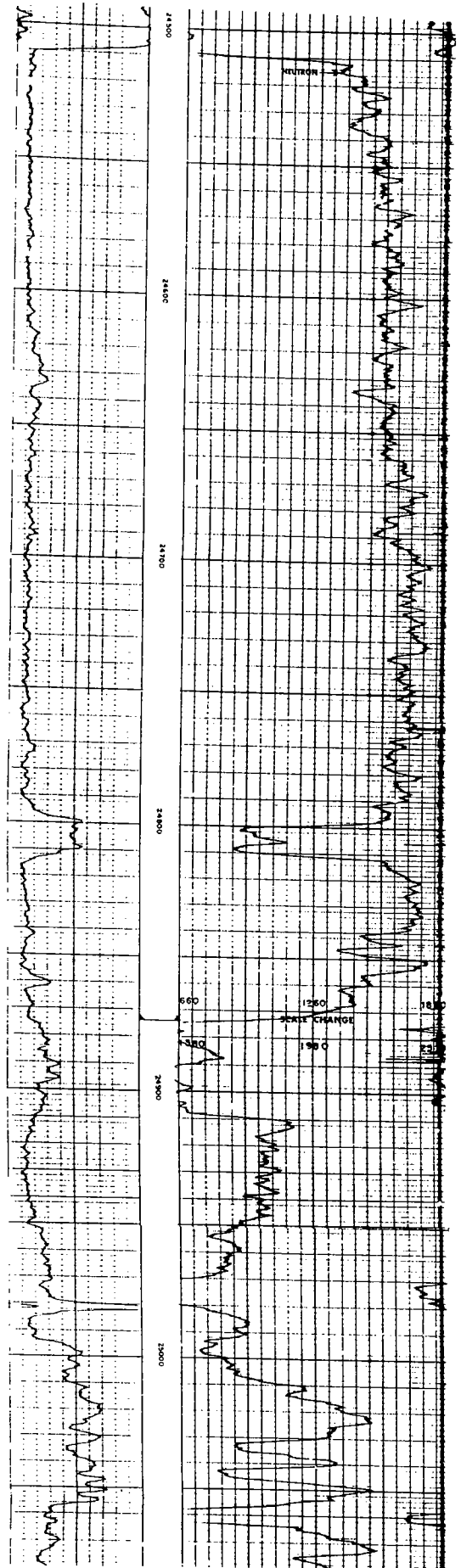
Texaco  
1 Gipson  
NE NE NW  
Sec. 11, T. 6 S., R. 6 E.  
Marshall County, Oklahoma  
elev. 707'

Texaco  
1 A A Drummond "P" Unit  
NW SW  
Sec. 12, T. 6 S., R. 6 E.  
Marshall County, Oklahoma  
elev. ?'



UNION OF CALIFORNIA 1 GOODE--sec. 29, T. 11 N., R. 25 W., Beckham County, Oklahoma; elev. 2094'; TD 25,655' (Sylvan); compl. 1973. Tops: Woodford 24,260' (-22,166'), ?Misener 24,520' (-22,426'), Hunton 24,550' (-22,456'), Sylvan 25,590' (-23,496'); Hunton thickness 1040'. This well drilled in section northwest of Union of California 1-33 Bruner; the latter twisted off about 70' into Hunton (24,136') and then whipstocked to drill to 24,548'; cuttings below whipstock are very poor in quality and were not used. The 1 Goode cuttings were examined from lower part of the Sycamore through Woodford, Hunton, and into top of Sylvan; most cuttings in lower part of Hunton are very fine, but otherwise appear satisfactory; 26 thin sections stained with Alizarin Red-S.

The 30' of strata just beneath the Woodford consists of cherty carbonate with much angular silt-size quartz detritus here referred to the Misener?. The Hunton in this well cannot be effectively compared with the nearby 1-33 Bruner because only the upper 30' of the Hunton in the latter yielded usable cuttings. Hunton rocks in the 1 Goode appear to be transitional between the Arbuckle limestone lithofacies, as typified by the Lone Star 1 Baden and other eastern deep wells, and the crystalline-dolomite lithofacies of the wells to the north and west (panel 2). The threefold stratigraphic division in the 1 Baden and other eastern deep wells (panel 10, stratigraphic section C-C') is not well defined in the 1 Goode, as the marlstones are poorly developed and dolomitization obscures the sequence; however, only in the middle portion of the Hunton (24,880'-25,200') is there any extensive development of the crystalline-dolomite lithofacies. The Hunton section in the 1 Goode is thick, and as there are light-colored organo-detrital limestones present at the top of this well it could include some Lower Devonian; however, it can also be compared to the Phillips 1-C Lee, in which the uppermost Hunton limestones represent the Kirkidium biofacies.



Woodford Shale 24,260'-24,520'

Dark noncalcareous shale.

Misener Sandstone? 24,520'-24,550'

Carbonate, in part dolomitic, with much angular quartz detritus and considerable chert.

Hunton Group 24,550'-25,590'

24,550'-24,650' Light-gray organo-detrital limestone with only minor detrital quartz and dolomite. Spar and micrite matrix.

24,650'-24,880' Medium-gray fossiliferous limestone, mostly with only minor detrital quartz and scattered dolomite crystals. Much micrite cement, but also some sparite. In part this is finely crystalline limestone which may be recrystallized.

24,880'-24,950' Crystalline dolomite with very little detrital quartz.

24,950'-25,040' Mixture of crystalline dolomite, dolomitic limestone, and fossiliferous limestone. Only minor quartz detritus.

25,040'-25,120' Poor-quality cuttings.

25,120'-25,180' Crystalline dolomite with considerable detrital quartz; subangular and with some mica. Minor dolomitic, fossiliferous limestone.

25,180'-25,340' Medium-gray dolomitic limestone with considerable detrital quartz and mica. Very little crystalline dolomite. Similar to marlstone lithology of eastern deep wells.

25,340'-25,530' Mainly finely divided (micrite? recrystallized?) limestone with scattered fossils; very little detrital quartz and only minor dolomite.

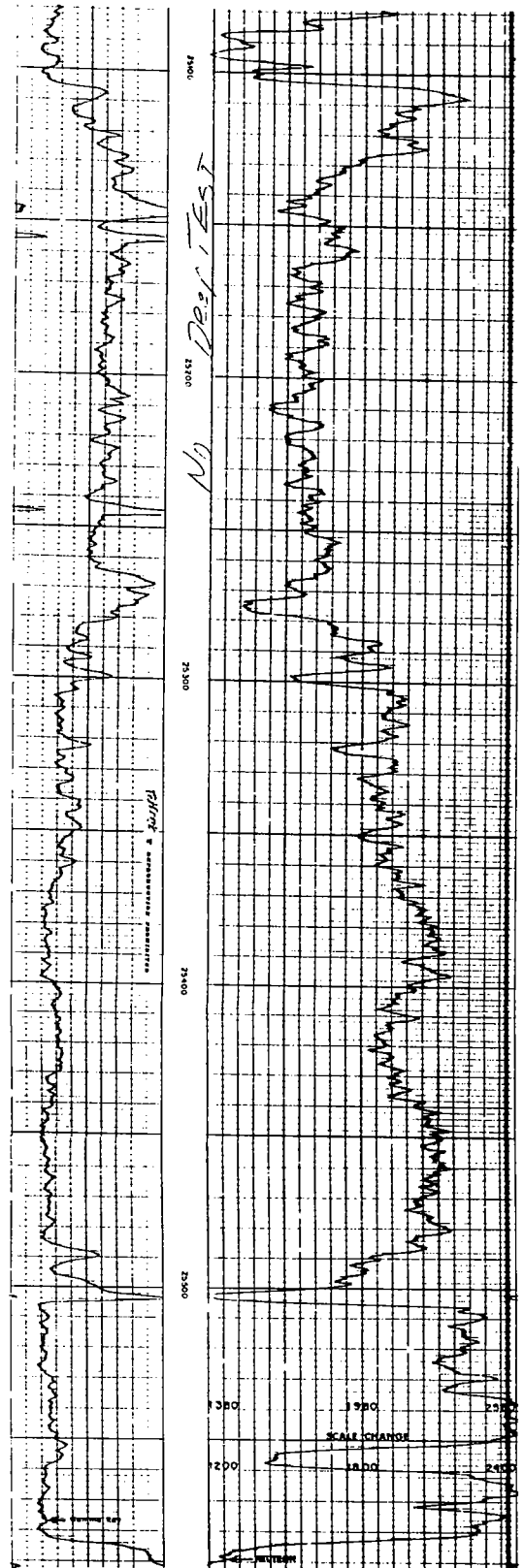
25,530'-25,590' Limestone as above, with some oolite (Keel Formation?). Very little detrital quartz. Some crystalline dolomite.

Sylvan Shale 25,590'-25,655' (TD)

UNION OIL CO. OF CALIFORNIA 1-29 GOODE — C SW¼SE¼ sec. 29, T11N, R25W, Beckham County, Oklahoma; elevation GL 2,094 ft, DF 2,125 ft; TD (Na), Ttu 25,655 ft (Sylvan); completion (Na), 6/8/74 (df).

Samples examined from 24,520 to 25,650 ft; 26 thin sections. Described in Amsden (1975, p. 111); additional lithostratigraphic and biostratigraphic information obtained from more recent drilling in the deep part of the basin (see especially the 1 Malinda Green and adjacent wells, this Summary and PLATE 2, STRATIGRAPHIC SECTION D-D") permit a more realistic interpretation of the Hunton sequence in the 1 Goode:

- 24,500-24,680 ft Low magnesium, skeletal grainstone Hunton Group (overlain by Woodford Shale with a few feet of sandy-cherty beds at its base).
- 24,680-24,880 ft Pellet "birdseye" limestone (see 1 Malinda Green, this Summary and PLATE 2, STRATIGRAPHIC SECTION D-D").
- 24,880-25,200 ft (1-80 ft skip) mostly crystalline dolomite with some chert.
- 25,200-25,550 ft Slightly cherty, silty, fossiliferous marlstone; low dolomite throughout.
- 25,550-25,620 ft Mostly crystalline dolomite; ?oolites.
- 25,620 ft Sylvan Shale.



CALIFORNIA 1 GOODELL ET AL.--NW $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 33,  
 T. 5 S., R. 2 W., Carter County, Oklahoma;  
 elev. 932'; TD 9975' (Sylvan); compl. 9/27/62,  
 Hunton production reported (perforated 9462'-  
 9464', 9505'-9513'). Tops: Woodford (CC)  
 9234' (-8302'), Hunton (core) 9462' (-8530'),  
 Sylvan (CC) 9905' (-8973'); Hunton thickness  
 443'. Cored 9456'-9506' (lower Woodford-upper  
 Hunton); 3 thin sections; chemical analyses;  
 OU Core Library.

Woodford Shale 9234'-9462'

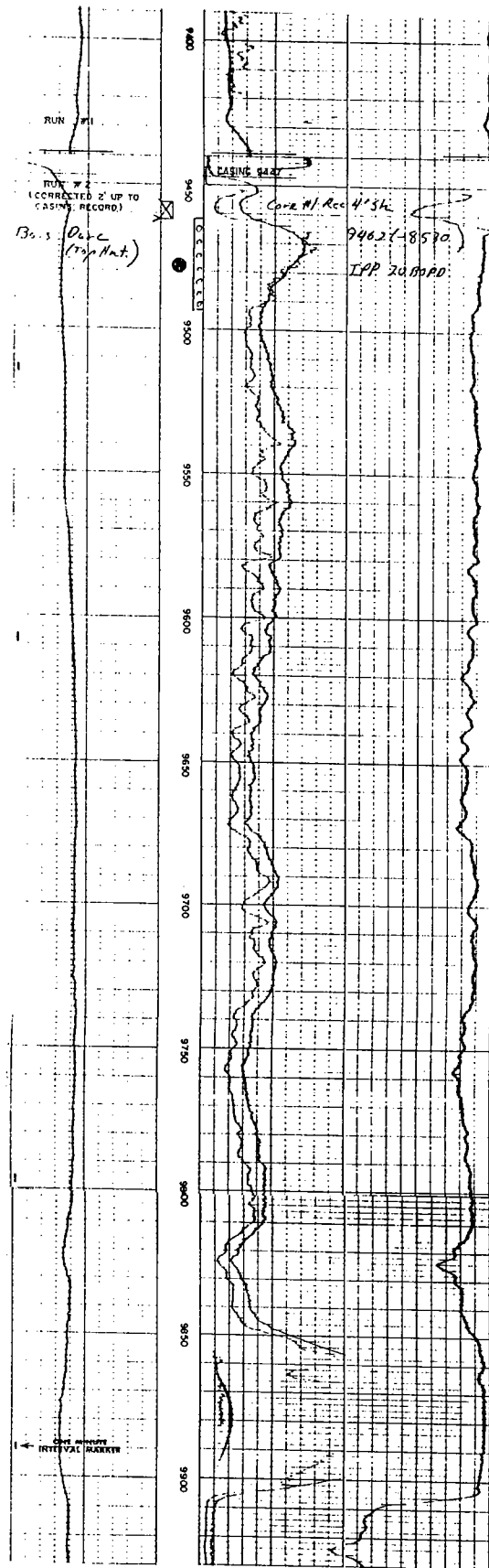
Hunton Group 9462'-9905'

9462'-9480' (?) ?Lower Devonian; ?Haragan For-  
 mation. Gray fossiliferous marlstone with  
 moderate detritus and dolomite; HCl insolubles  
 average 10.86%, MgCO<sub>3</sub> 7.82%. This interval  
 yields some poorly preserved brachiopods  
 including ?Sphaerirhynchia lindenensis and  
Atrypa sp. (9472', 9475', 9480'). The  
 lithology is a typical marlstone texture  
 similar to that of the Haragan-Henryhouse,  
 but the faunal control for assigning it to  
 the Haragan is modest.

9480'-9506' ?Silurian, ?Henryhouse Formation.  
 Gray fossiliferous marlstone similar to above;  
 HCl insolubles average 15.05%, MgCO<sub>3</sub> 7.79%.  
 This interval yields a few poorly preserved  
 brachiopods including a brachiopod tentatively  
 identified as Merista sp. (9465'). Again,  
 lithology is typical Henryhouse-Haragan marl-  
 stone texture, but faunal evidence for  
 assigning it to Henryhouse is modest.

9506'-9905' No core.

Sylvan Shale 9905'



CONTINENTAL 1 GORDON UNIT--C SE $\frac{1}{2}$  sec. 20, T. 10 N., R. 26 W., Beckham County, Oklahoma; elev. 2072'; TD 19,956' (Ordovician); compl. 3/15/72. Tops: no Woodford present, Pennsylvanian?-Hunton contact 16,910' (-14,838'), Sylan 17,160' (-15,088') (GR log); Hunton thickness 250'. Samples examined from 16,580' to 18,800' (?Pennsylvanian, Hunton, Sylan, Viola, Simpson; a few minor skips); 36 thin sections, 7 in strata above Hunton, 10 in Hunton, and 19 in underlying beds; samples borrowed from Continental Oil Co.

The 1 Gordon Unit is in a fault block between the Wichita Mountains uplift and the deep Anadarko basin. It has a relatively thin Hunton section of only 250', but this is presumably due to post-Hunton, pre-Pennsylvanian erosion rather than to structure. The samples present minor difficulties, because they appear to have some contamination, presumably owing at least in part to caving from above. This, combined with the absence of the Woodford Shale, makes it difficult to identify precisely the upper Hunton contact; however, there is a moderately well-defined carbonate contact at 16,910', which I interpret as the upper boundary. Above this the samples are mostly dark silt-shale along with dolomite and chert, and this interval is tentatively placed in the Pennsylvanian. The upper part of the Hunton is mainly dolomitic limestone, and the lower part mainly crystalline dolomite. This Hunton section has its closest resemblance to strata located to the north and west, and thus it is referred to the dolomite facies; cf. Phillips 1-C Lee and Phillips 1-A Bailey, in the Texas Panhandle.

Pennsylvanian

Hunton Group ?16,910'-17,160'

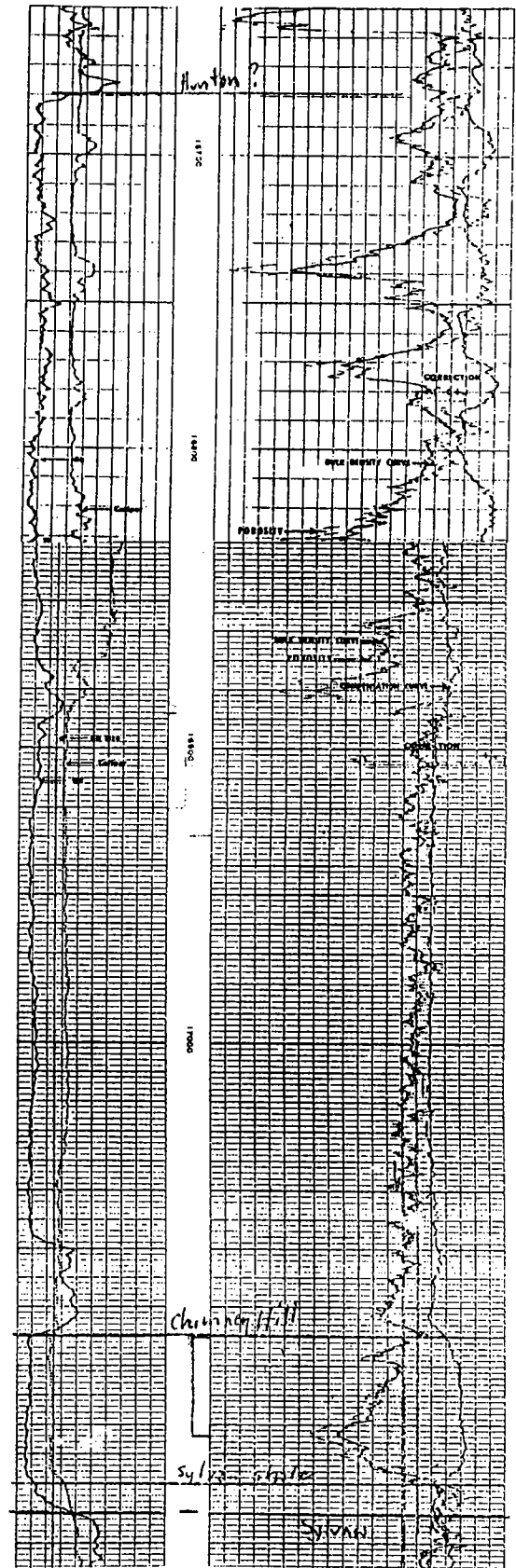
16,910'-16,998' Fossiliferous, dolomitic limestone and calcareous dolomite with very little detrital quartz. Minor amount of crystalline dolomite.

16,998'-17,160' Almost entirely crystalline dolomite with only minor detrital quartz.

Some appears to be porous.

Sylan Shale 17,160'-17,410'

Viola Limestone 17,410'



CARTER 1 GRAHAM—NW $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 3, T. 9 N., R. 16 E., McIntosh County, Oklahoma; elev. 713'; compl. 1951, production unknown. Tops: Hunton 4630' (-3917') (sample depth), Sylvan 4795' (-4082') (sample depth), Welling 4845' (-4132') (sample depth); Hunton thickness 165'. Hunton samples were described by T. L. Rowland using two prepared thin sections (Amsden and Rowland, 1965, p. 151-152; thin section illustrated pl. 18, fig. 5). In 1975 I examined the samples from 4600' to 4880' and had an additional 16 thin sections prepared. The description which follows does not differ in any significant respect from that given by T. L. Rowland, except for the provisional recognition of the Sallisaw. The sample quality is good; samples, OGS Core Library (see also Frezon, 1962, pl. 2).

Upper Hunton beds are provisionally assigned to the Sallisaw; see remarks following. The lower 10' of the Quarry Mountain Formation (4755'-4765') is heavily dolomitized, and Rowland assigned this to the "Barber Member." It should be noted, however, that the overlying beds are also rather heavily dolomitized. In fact, almost the entire Quarry Mountain has substantial dolomite. The Quarry Mountain, Tenkiller, and Blackgum lithostratigraphic sequence is reasonably well defined, although precise correlation with the outcrop area of eastern Oklahoma is uncertain (see panel 4, and discussion of the Chimneyhill Subgroup). All depths given are from the samples.

*Woodford (Chattanooga) Shale*

Strata assigned to the Sallisaw may be in part or entirely the Sylamore Sandstone.

*Hunton Group* 4630'-4795' (sample depths)

4630'-4655' (sample depths) ?Lower Devonian; ?Sallisaw Formation. Dolomitic sandstone; detrital quartz in subangular to rounded grains (some with overgrowths to 0.75 mm). The grain size, concentration, and degree of rounding are suggestive of the Sylamore. The high carbonate content is suggestive of the Sallisaw. The regional relations suggest that at least some Sallisaw is present (panel 4).

4655'-4795' (sample depths) Silurian; Chimneyhill Subgroup.

4655'-4765' (sample depths) Quarry Mountain Formation. Pale-gray organo-detrital pelmatozoan limestone (with many pink crinoid plates), much of which is moderately to heavily dolomitized; little or no detrital quartz. Pelmatozoan plates strongly dominate the fossils.

4655'-4750' (sample depths) Most chips show the matrix to be partly to largely replaced by dolomite.

4750'-4765' (sample depths) Barber Member. The matrix is almost completely replaced by crystalline dolomite, leaving only corroded remnants of crinoids.

4765'-4775' (sample depths) Tenkiller Formation. Gray to pinkish-gray organo-detrital limestone, weakly to moderately dolomitized.

Pelmatozoan plates, commonly with an orange-pink color, are the dominant fossil. Much other organic debris is present, including many ostracodes. The matrix is dominantly micrite with only minor spar. Insoluble detritus low.

4775'-4795' (sample depths) Blackgum Formation. Organo-detrital crinoidal limestone grading into dolomite, glauconitic. Pale-gray chert. No oolite observed.

*Sylvan Shale* 4795'-4845' (sample depths) Greenish-gray shale in upper part, medium-gray shale below.

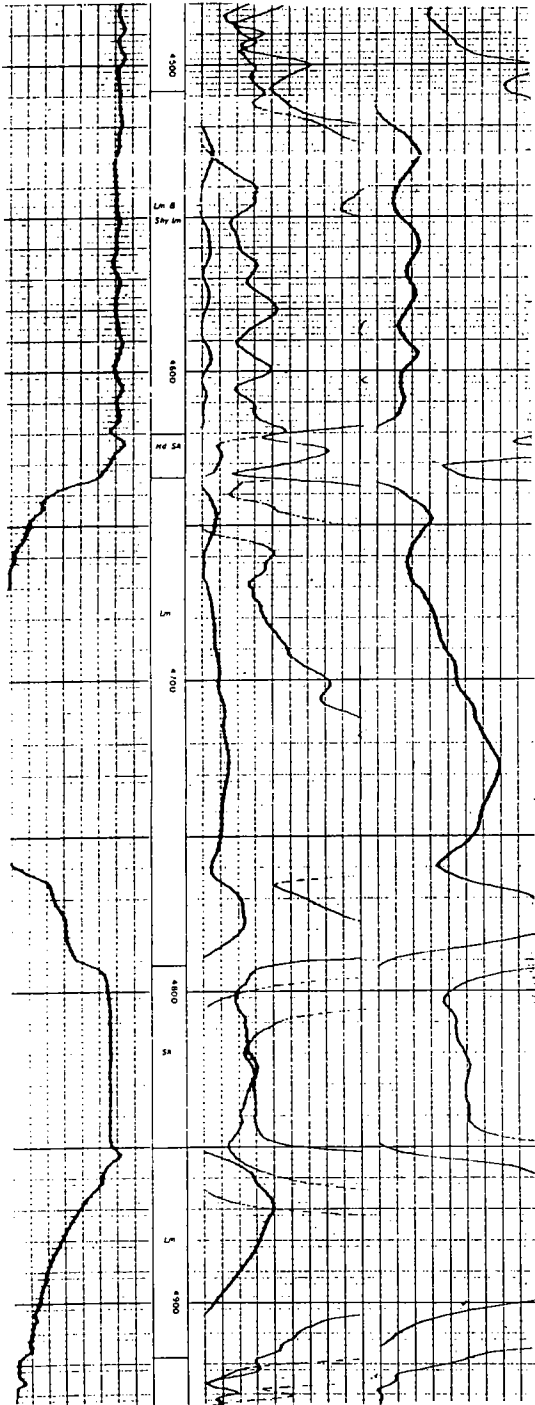
*Welling Formation* 4845' (sample depth)

4850'-4855' (thin section) Organo-detrital pelmatozoan micrite and sparite with much shelly debris; no detrital quartz observed and very little dolomite.

4870'-4875' (thin section) Like above, but with a few widely scattered detrital quartz grains.

Carter Oil Company  
1 Graham  
NW SE NE  
Sec. 3, T. 9 N., R. 16 E.  
McIntosh County, Oklahoma  
elev. 713'

1 A Sneed  
650 FNL & 1980' FEL  
Sec. 4, T. 9 N., R. 16 E.  
McIntosh County, Oklahoma  
elev. 690'



**WELL M**  
Carter Oil Company, 1 Graham

This well is in NW $\frac{1}{4}$  SE $\frac{1}{4}$  NE $\frac{1}{4}$  sec. 3, T. 9 N., R. 16 E., McIntosh County, about 2 miles west of Eufaula (text-figs. 3, 15). The well was drilled with rotary tools in 1951, and the collar elevation is 713 feet. Cuttings were studied from 4,650 to 4,800 feet in intervals of 5 feet, and the sample quality is good. Frezon (1962, pls. I, II) assigned rocks in this well to the St. Clair undifferentiated upon the basis of sample examination. Lower Devonian rocks are absent in this well (text-figs. 3, 15). Silurian rocks are 137 feet thick (4,655-4,792? feet; text-fig. 3) and comprise four units: Quarry Mountain Formation 109? feet (4,655-4,764?), Marble City Member 100 feet (4,655-4,755) and Barber Member 9? feet (4,755-4,764?; contact estimated from the electric log as Barber and Tenkiller are present in sample 4,760-4,765), Tenkiller Formation, and Blackgum Formation 28? feet (4,764?-4,792?). Individual thicknesses of Tenkiller and Blackgum are uncertain, as Barber and Tenkiller are present in sample 4,760-4,765, Tenkiller and Blackgum are mixed in sample 4,770-4,775, and Blackgum and Sylvan are present in sample 4,790-4,795. The Sylvan Shale was encountered in sample 4,790-4,795 and the electric log indicates the top at 4,792 feet. The Barber Member is thin, consisting of only 9 feet of dolomite. Two thin sections were prepared from the following intervals: Marble City Member, 4,675-4,680, and Blackgum Formation, 4,780-4,785. The photomicrograph of the thin section from the Blackgum Formation is on plate XVIII, figure 5.

<i>Depth (feet)</i>	<i>Thickness (feet)</i>	
4,650-4,655	5	<i>Sylamore Sandstone:</i> Dolomitic medium-grained sandstone.
		QUARRY MOUNTAIN FORMATION: 109 feet (4,655-4,764?; Barber-Tenkiller contact estimated from the electric log, as both are present in sample 4,760-4,765).
		<i>Marble City Member:</i> 100 feet (4,655-4,755). Off-white to white pink-crinoidal limestone; in part dolomitic; gray fine-crystalline dolomite. Thin section (M-1) was prepared from sample 4,675-4,680.
4,655-4,660	5	Limestone, off-white; some pink crinoidal material; in part dolomitic.
4,660-4,665	5	Limestone, as above; trace gray fine-crystalline dolomite.
4,665-4,670	5	Limestone, off-white, dolomitic; some pink crinoidal material; dolomite, gray, fine-crystalline, 40-45%.
4,670-4,675	5	Limestone, as above; dolomite, as above, 3-5%.
4,675-4,690	15	Limestone, off-white; abundant pink crinoidal material; in part dolomitic; dolomite, gray, fine-crystalline, 15-20%; thin section (M-1) was prepared from sample 4,675-4,680.
4,690-4,695	5	Limestone, as above; dolomite, as above, 5%.



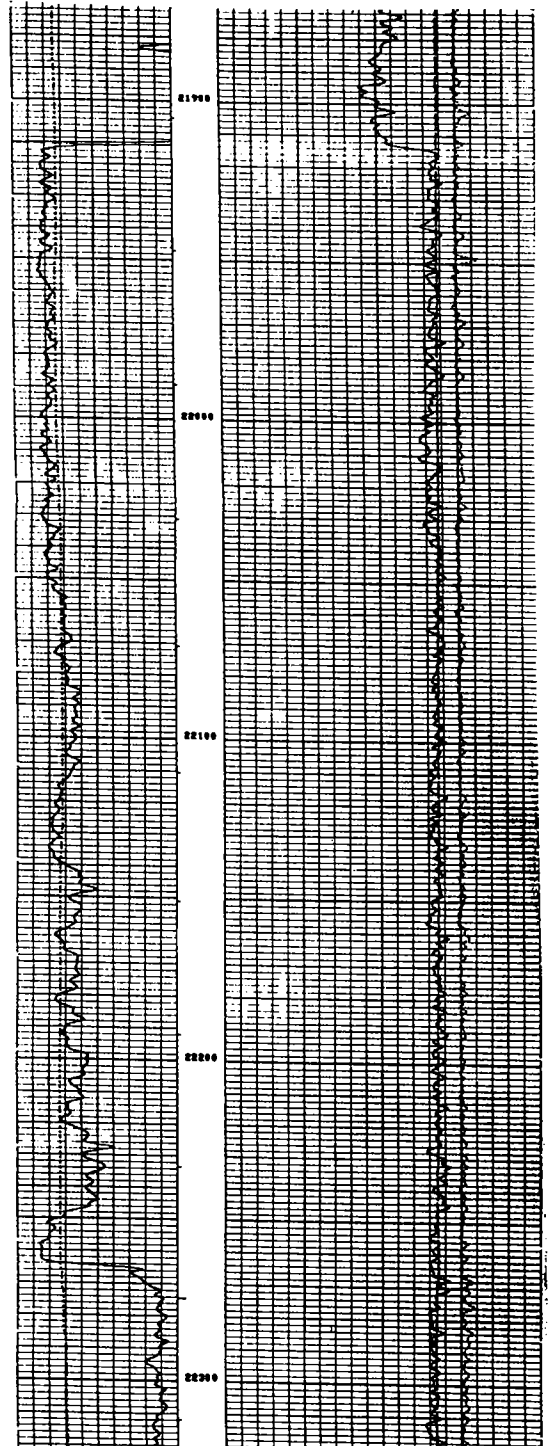
4,695-4,700	5	Limestone, as above; trace of dolomite, as above.
4,700-4,710	10	Limestone, off-white to white; in part slightly dolomitic; abundant pink crinoidal; dolomite, gray, fine-crystalline, 3-5%.
4,710-4,715	5	Limestone, as above, except more dolomitic; dolomite, as above, 5-10%.
4,715-4,720	5	Limestone, as above; dolomite, as above, only a trace.
4,720-4,725	5	Limestone, as above; except more dolomitic; dolomite as above, 3-5%.
4,725-4,730	5	Limestone, as above; dolomite, as above, only a trace.
4,730-4,750	20	Limestone, as above, except more dolomitic; dolomite, as above, 5%.
4,750-4,755	5	Limestone, off-white to white, highly dolomitic; dolomite, as above, 5%.
		<i>Barber Member</i> : 9? feet (4,755-4,764?; Barber-Tenkiller contact estimated from the electric log, as both are present in sample 4,760-4,765). Gray fine-crystalline calcitic dolomite.
4,755-4,760	5	Dolomite, calcitic, gray, fine-crystalline.
4,760-4,765	5	Dolomite, as above, 65%; limestone, gray to reddish, in part dolomitic, 35% (Tenkiller).
		<b>TENKILLER FORMATION</b> : Gray to dark-gray pinkish pyritic limestone; in part dolomitic and containing abundant orange crinoidal material. Thickness uncertain, as Barber and Tenkiller are both present in sample 4,760-4,765 and Tenkiller and Blackgum are mixed in sample 4,770-4,775. Samples were circulated at 4,775 for 15, 30, 60, 90, and 120 minutes. Samples 15, 30, and 60 minutes contain Tenkiller limestone. Samples 90 and 120 minutes contain Blackgum dolomite.
4,765-4,770	5	Limestone, light-gray to gray to dark-gray, pink; in part dolomitic; abundant orange crinoidal material; pyritic, 5-10% residue.
4,770-4,775	5	Limestone, as above; circulated at 4,775 for 15, 30, 60, 90, and 120 minutes; samples 15, 30, 60 minutes contain limestone as above; samples 90 and 120 minutes contain light-gray glauconitic calcitic dolomite (Blackgum).
		<b>BLACKGUM FORMATION</b> : Light-gray glauconitic calcitic dolomite; brown to tan fine-crystalline argillaceous dolomite; dark-gray glauconitic limestone; clear light-gray opaque chert. Thickness uncertain, as Blackgum is present with Tenkiller in sample 4,770-

4,775 and Sylvan in sample 4,790-4,795. Thin section (M-2) was prepared from sample 4,780-4,785 and the photomicrograph is on plate XVIII, figure 5.

4,775-4,780	5	Limestone, dark-gray, glauconitic, 65%; dolomite, calcitic, light-gray, glauconitic, 35%.
4,780-4,785	5	Limestone, as above, 15%; dolomite, as above, 60%; chert, clear, light-gray, opaque, 25%; thin section (M-2), plate XVIII, figure 5.
4,785-4,790	5	Limestone, as above, 10%; dolomite, as above, 55%; chert, as above, 30%; dolomite, brown to tan, fine-crystalline, argillaceous, glauconitic, 5%.
4,790-4,795	5	Dolomite, brown to tan, argillaceous, 15%; chert, gray, opaque, 15%; shale, gray to green, 70%.
4,795-4,800	5	SYLVAN FORMATION: Thickness not determined, as the samples were studied only to 4,800 feet. The top of the Sylvan estimated from the electric log at 4,792 feet as it is present with Blackgum in sample 4,790-4,795. Gray to green shale.

**NORTEX GAS AND OIL CO. 1-19 GRAHAM** — W½  
W½NE¼ sec. 19, T3N, R7W, Grady County, Oklahoma;  
elevation GL 1,319 ft, DF 1,352 ft; TD 23,914 ft (Bromide);  
completion 1/26/83.

Samples examined 21,900–23,914 ft (TD), Woodford;  
Hunton (top 21,930 ft), low magnesium, fossiliferous  
cherty marlstone with 20 ft of skeletal limestone at the base  
(Chimneyhill); Sylvan (top 22,300 ft); Viola (top 22,500 ft)  
with Welling(?) skeletal grainstones at the top underlain by  
Viola Springs Formation; TD Bromide? 33 thin sections;  
samples borrowed from Nortex, Tulsa, 1983; studied by  
Amsden.

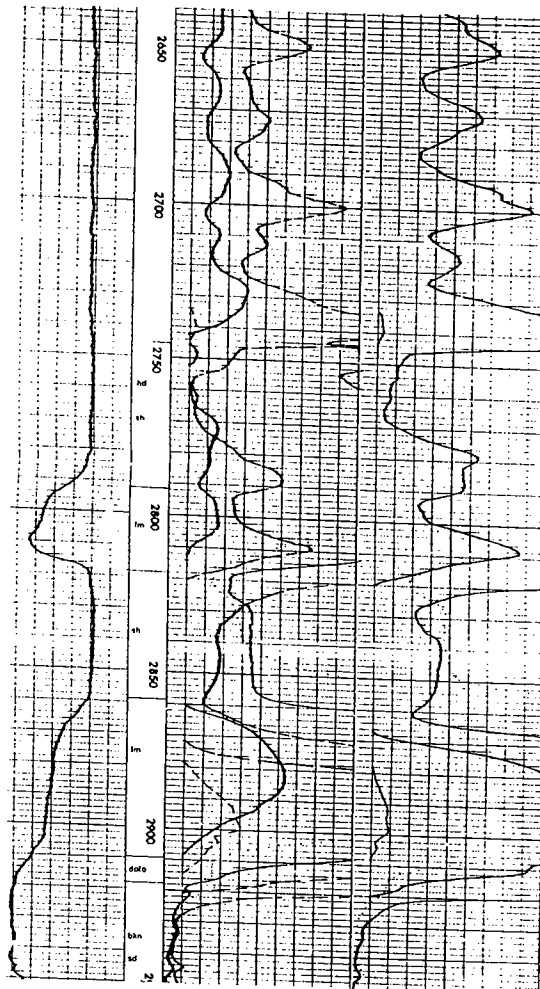


**WELL N**

Bell Oil and Gas Company, 1 Grant

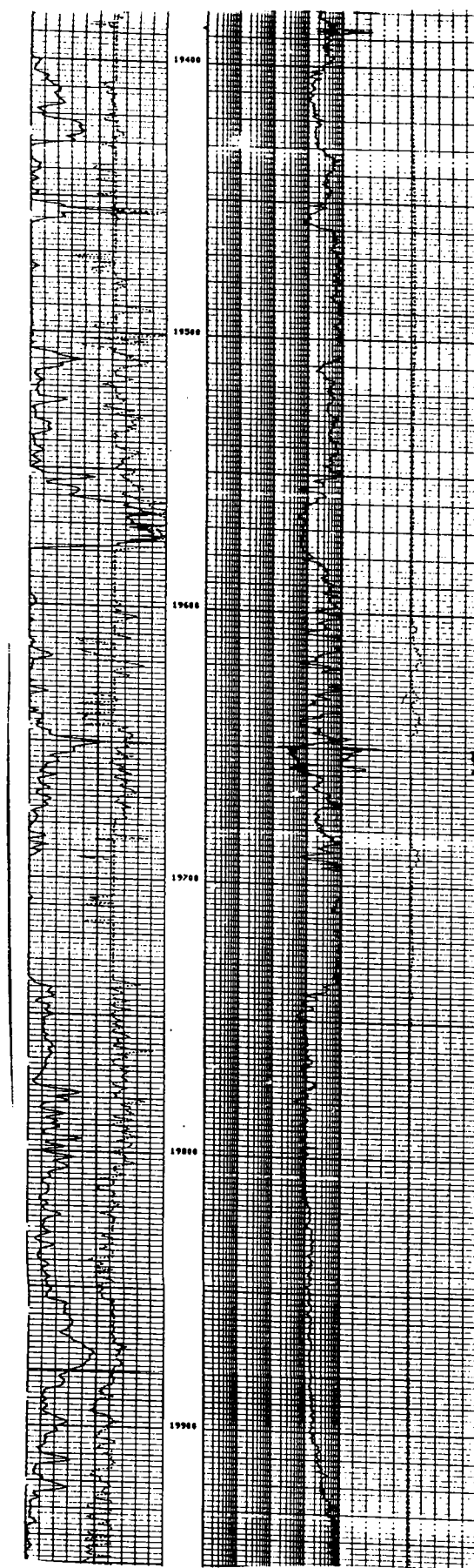
This well is in C S½ SE¼ NE¼ sec. 17, T. 11 N., R. 17 E., McIntosh County, about 10 miles northeast of Eufaula (text-fig. 3). The well was drilled in 1959 with rotary tools, and the collar elevation is 664 feet. Cuttings were examined from 2,785 to 2,835 feet in intervals of 5 feet, and the sample quality is good. Lower Devonian rocks are absent (text-fig. 3). Silurian rocks are 25? feet thick (2,795-2,820? feet; text-fig. 3) and consist of only the Tenkiller Formation and the Blackgum Formation. Individual thickness of each unit is uncertain, as Tenkiller and Blackgum are both present in sample 2,795-2,800, and Blackgum and Sylvan are present in sample 2,820-2,825. The Blackgum-Sylvan contact was estimated from the electric log at 2,820 feet. Blackgum present with Sylvan in sample 2,820-2,825 is attributed to sample lag or cavings. The Tenkiller-Blackgum contact cannot be distinguished on the electric log.

Depth (feet)	Thickness (feet)	Description
2,785-2,795	10	CHATTANOOGA FORMATION: Black and brown pyritic shale.
2,795-2,800	5	TENKILLER FORMATION: Gray to light-gray dolomitic limestone. Thickness uncertain, as it is present with Blackgum in sample 2,795-2,800. Limestone, dolomitic, gray to light-gray, 35%; dolomite, light-gray, fine-crystalline, 55%; chert, gray to light-gray, opaque, 10% (Blackgum).
2,800-2,805	5	BLACKGUM FORMATION: Light-gray to gray fine-crystalline glauconitic dolomite; brown to tan fine-crystalline argillaceous dolomite; gray to dark-gray glauconitic limestone; gray to white opaque chert. Thickness uncertain, as it is present with Sylvan in sample 2,820-2,825. Limestone, gray to dark-gray, dolomitic, glauconitic, 5-8% residue, 20%; dolomite, slightly calcitic, gray to light-gray, fine-crystalline, glauconitic, 40%; chert, gray to white, opaque, 40%.
2,805-2,810	5	Limestone, as above, 20%; dolomite, as above, 60%; chert, as above, 20%.
2,810-2,815	5	Limestone, as above, 10%; dolomite, as above, 55%; chert, as above, 35%; trace of brown to tan fine-crystalline dolomite.
2,815-2,820	5	Limestone, as above, 10%; dolomite, as above, 60%; chert, as above, 30%.
2,820-2,825	5	Dolomite, brown to tan, fine-crystalline, argillaceous, 60%; chert, as above, 10%; shale, gray to gray-green, 30% (Sylvan).
2,825-2,835	10	SYLVAN FORMATION: Thickness not determined as the samples were studied only to 2,835 feet. Gray to gray-green shale. Top of the Sylvan was estimated from the electric log at 2,820 feet.



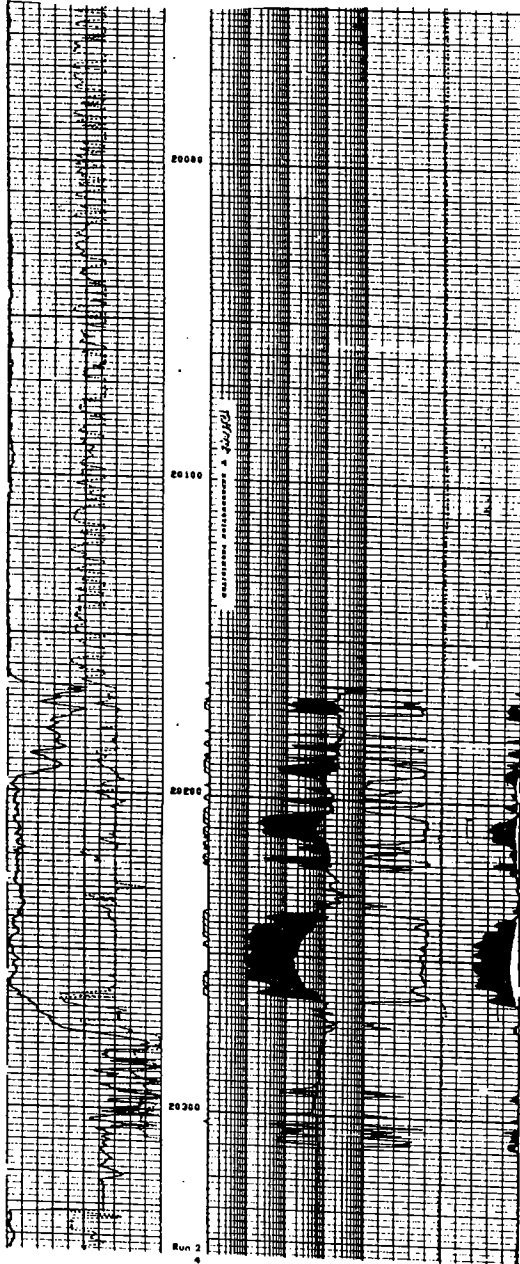
**NATOMAS NORTH AMERICA INC. 1 MALINDA GREEN** —  $W\frac{1}{2}W\frac{1}{2}NE\frac{1}{4}$  sec. 31, T10N, R26W, Beckham County, Oklahoma; elevation GL 2,003 ft, DF 2,034 ft; TD 20,314 ft (Sylvan); completion (Na), 2/28/78 (P).

The 1 Malinda Green well, which is located along the structurally deep axis of the Anadarko basin, cored Hunton strata from 19,599 to 19,770 ft and from 20,230 to 20,260 ft; this core was the deepest in the basin to be examined by Amsden. Samples examined, from the lower Woodford to the upper Sylvan; 29 thin sections prepared from the samples, and 20 from the core;  $MgCO_3$  and HCl-insoluble residues analyzed from core samples. The 1 Green is of particular interest because it cored a shallow-water, "birdseye" intertidal facies (Amsden, 1981, p. 159-160), a facies which can be recognized in the nearby wells (PLATE 2, STRATIGRAPHIC SECTION D-D"); also included are ribbed pentamerids, provisionally referred to *Kirkidium* sp. Thin sections and chemical analyses show that parts of the middle and lower Hunton in the 1 Malinda Green have been intensively dolomitized. 42 thin sections were prepared from samples and 29 from the core; 29 spot samples from the core were analyzed for HCl residues and  $MgCO_3$ . Described in Amsden (1980, p. 57). *Illustrated on PLATE 2, STRATIGRAPHIC SECTION D-D*".



Natomas North America Inc.  
 1 Malinda Green  
 W/2 W/2 NE  
 Sec. 31, T. 10 N., R. 26 W.  
 Beckham County, Oklahoma  
 KB 2034'

Continued



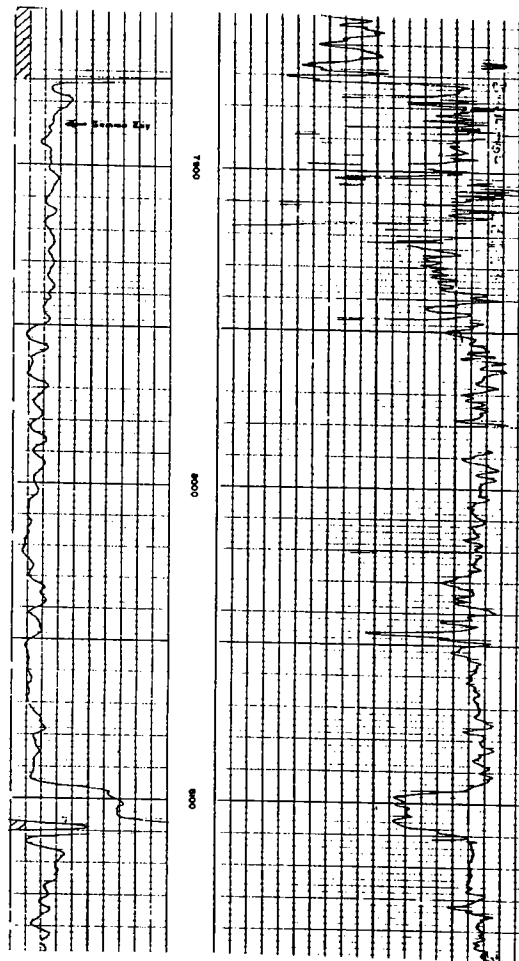
GRAIN DENSITY <small>gm/cc</small>	DEEP RESISTIVITY <small>Ohm-cm</small>	CALIPER (-) BIT SIZE <small>INCHES</small>	
SHALE INDEX	WET RESISTIVITY <small>Ohm-cm</small>	WATER SATURATION	POROSITY ANALYSIS

**SHELL 1-34 GROBER—NW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec. 34, T. 7 N., R. 32 W., Sebastian County, Arkansas; elev. 537' DF (521' GL); TD 8231' (Ordovician); compl. 3/3/64, Hunton gas production reported 7914'-7950'. Tops: Woodford 7800' (-7263') (GR log), ?Penters Chert (=Sallisaw Formation) 7872' (-7335') (GR log), Cason (=Sylvan) 8096' (-7559') (GR log), Welling 8114' (-7577') (GR log); Hunton thickness 224' (presumably includes the Penters Chert). Air drilled to a depth of 7940'; samples examined from 7940' to 8200', good quality; 15 thin sections; samples, Arkansas Geological Commission, Little Rock, Arkansas.**

This is 1 of the producing wells in the Bonanza Gas Field (text-fig. 11). It was air drilled to a depth of 7940' and the samples above this point are unsatisfactory for study. Below 7940' the cuttings are large and appear to have minimum contamination. The uppermost Hunton sample studied (7940'-7950') is composed entirely of crystalline dolomite with no chert, and if the Penters Chert (=Sallisaw Formation) is present it must occupy some part of the interval between 7872' (Hunton top from the GR log) and 7940'. The gamma-ray log shows a break at 7840',

which might represent the Penters Chert-?Chimneyhill boundary. The interval from 7040' to 8040', which is entirely crystalline dolomite, is tentatively correlated with the upper part of the Chimneyhill Subgroup (=?Quarry Mountain Formation) of eastern Oklahoma; see Chimneyhill Subgroup, Eastern Outcrops. This part of the Chimneyhill in eastern Oklahoma is moderately to heavily dolomitized (panel 4), although it should be noted that the presence of detrital quartz in the 1-34 Grober is anomalous, as upper Chimneyhill strata are commonly very low in insoluble detritus. The Hunton strata studied in the 1-34 Grober are similar in lithology and lithostratigraphic sequence to the 1 Western Coal & Mining Co. well about 2 miles east (described in Haley and Frezon, 1965, and in the present report). The assignment of the Hunton strata in the Bonanza Field to the Chimneyhill Subgroup is based entirely on lithological similarity and stratigraphic position. It is possible that these beds include some younger Silurian and (or) Lower Devonian equivalents (see Chimneyhill Subgroup, Subsurface).

**Woodford (Chattanooga) Shale 7800'-7872' (GR log)**  
**Hunton Group 7872'-8096' (GR log)**  
 7872' (GR log) -7940' (sample depth) This part was air drilled, and the samples were not studied; probably includes some Penters Chert (=Sallisaw Formation).  
 7940'-8040' (sample depths) Almost entirely gray crystalline dolomite, in part porous. Thin sections show a few pieces with subrounded to well-rounded detrital quartz grains to 1 mm. No chert observed.  
 8040'-8080' (sample depths) Weakly to heavily dolomitized organo-detrital sparite with minor micrite; minor crystalline dolomite. Fossils include pelmatozoan plates and numerous bryozoans. Only 1 fragment observed with fine detrital quartz. No chert observed.  
 8080'-8096' (sample depths) Mostly crystalline dolomite; minor chert. No detrital quartz observed.  
**Cason Shale (=Sylvan Shale) 8096'-8114' (GR log)**  
 Samples with shale to 8140'. Upper part is a greenish-gray dolomitic shale underlain by dark shale.  
**Welling Formation ("Viola") 8114' (GR log)**  
 8150'-8160' (thin section) Entirely crystalline dolomite.  
 8170'-8180' (thin section) Weakly to strongly dolomitized dense organo-detrital micrite ranging into crystalline dolomite.  
 8190'-8200' (thin section) Like above. Also shows some dense limestone and minor rounded detrital quartz. Chert.



STANOLIND 1 GROVES UNIT--SW $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 36, T. 8 N., R. 18 W., Washita County, Oklahoma; elev. 1625'; TD 5500' (Bromide); compl. 2/22/55, D&A. Tops: Pennsylvanian-Hunton contact 1940' (-315'), Sylvan 3600' (-1975'); Hunton thickness 1660'; examined cuttings from base of Pennsylvanian through Hunton and into Sylvan Shale; 22 thin sections prepared, stained with Alizarin Red-S; cuttings borrowed from Oklahoma Well Sample Service, Shawnee, Oklahoma.

This well is in one of the shallow fault blocks between the Wichita Mountains uplift and the deep part of the Anadarko basin. The lithology is low-magnesium limestone throughout and is clearly a part of the Arbuckle Mountains limestone facies. This is one of the thickest Hunton sections studied, but the sequence is similar to that in the Arbuckle Mountains-Criner Hills region, which consists of an upper organo-detrital limestone section (?Lower Devonian), underlain by marlstone (?Lower Devonian and/or ?Silurian), which is in turn separated from the Sylvan Shale by a light-colored organo-detrital limestone with a basal oolite (Chimneyhill Subgroup) (see panel 10, section C-C').

Pennsylvanian Sandstone and Conglomerate

Hunton Group 1940'-3600'

1940'-2350'+ ?Frisco Formation and (or)

?Fittstown Member, Bois d'Arc Formation.

Light-colored organo-detrital limestone, mostly with micrite cement, only minor spar. Very little detrital quartz and only minor, scattered dolomite crystals. Fossils are mainly crinoids, shelly debris (probably mostly brachiopods), and many bryozoans; very few corals, if any. Some light-colored chert.

2350'+-2530'+ Appears to be transitional between above biomicrite and underlying fossiliferous marlstone. Very little dolomite in this interval.

2530'+-3370' ?Haragan and (or) Henryhouse Formation. Gray to red fossiliferous marlstone; all has detrital quartz, and red beds have substantial amount of quartz and some mica. Very little dolomite. Lower contact well defined.

3370'-3600' Chimneyhill Subgroup. Light-colored organo-detrital limestone, mostly micrite cement. Many crinoids and ostracodes. Very little detrital quartz. Some crystals of dolomite in lower part, not much elsewhere; glauconite sparingly present in lower part. Oolite with micrite cement at base (Keel Formation).

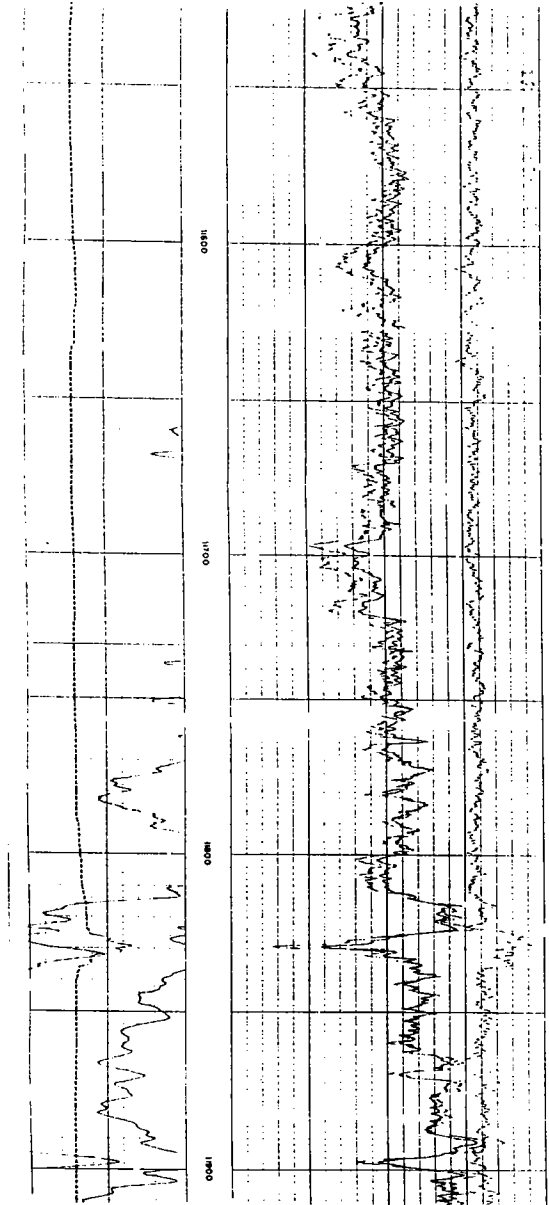
Sylvan Shale 3600'-3955'

Viola Limestone 3955' (Sample log)



Stanolind Oil & Gas Company  
1 Grooves Unit  
SW SW NW  
Sec. 36, T. 8 N., R. 18 W.  
Washita County, Oklahoma  
elev. 1625'

North American Royalties, Inc.  
1 Rocky Unit  
N/2 n/2 SE  
Sec. 35, T. 8 N., R. 18 W.  
Washita County, Oklahoma  
elev. 1625'

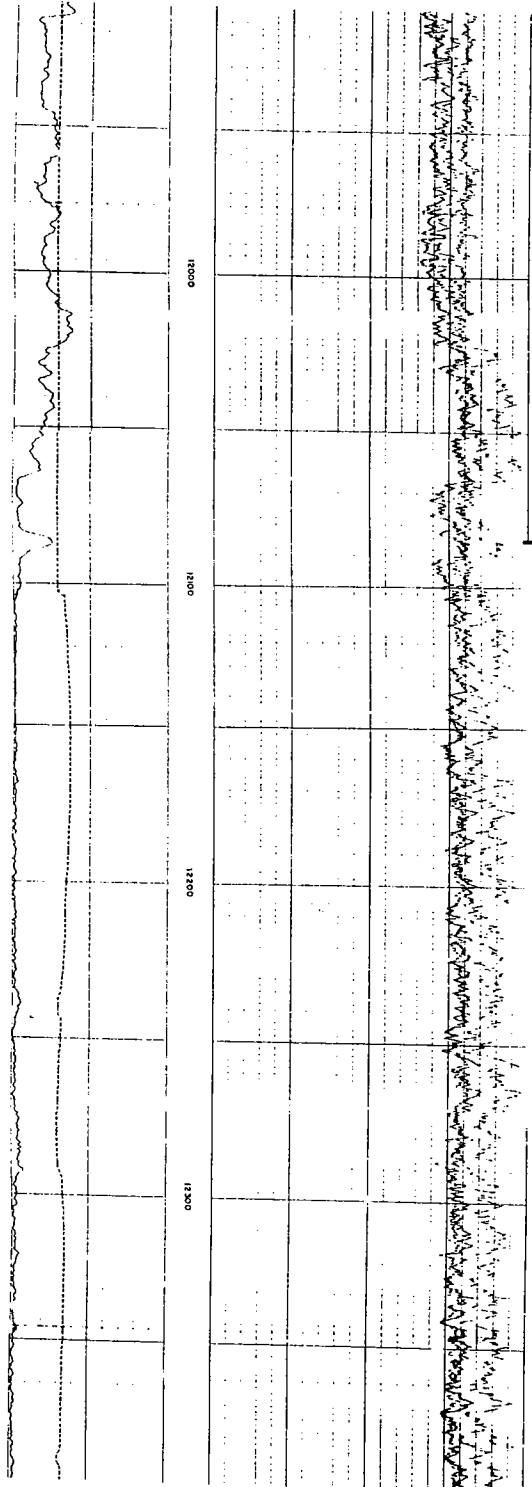


Stanolind Oil & Gas Company  
1 Grooves Unit  
SW SW NW  
Sec. 36, T. 8 N., R. 18 W.  
Washita County, Oklahoma  
elev. 1625'

continued

North American Royalties, Inc.  
1 Rocky Unit  
N/2 n/2 SE  
Sec. 35, T. 8 N., R. 18 W.  
Washita County, Oklahoma  
elev. 1625'

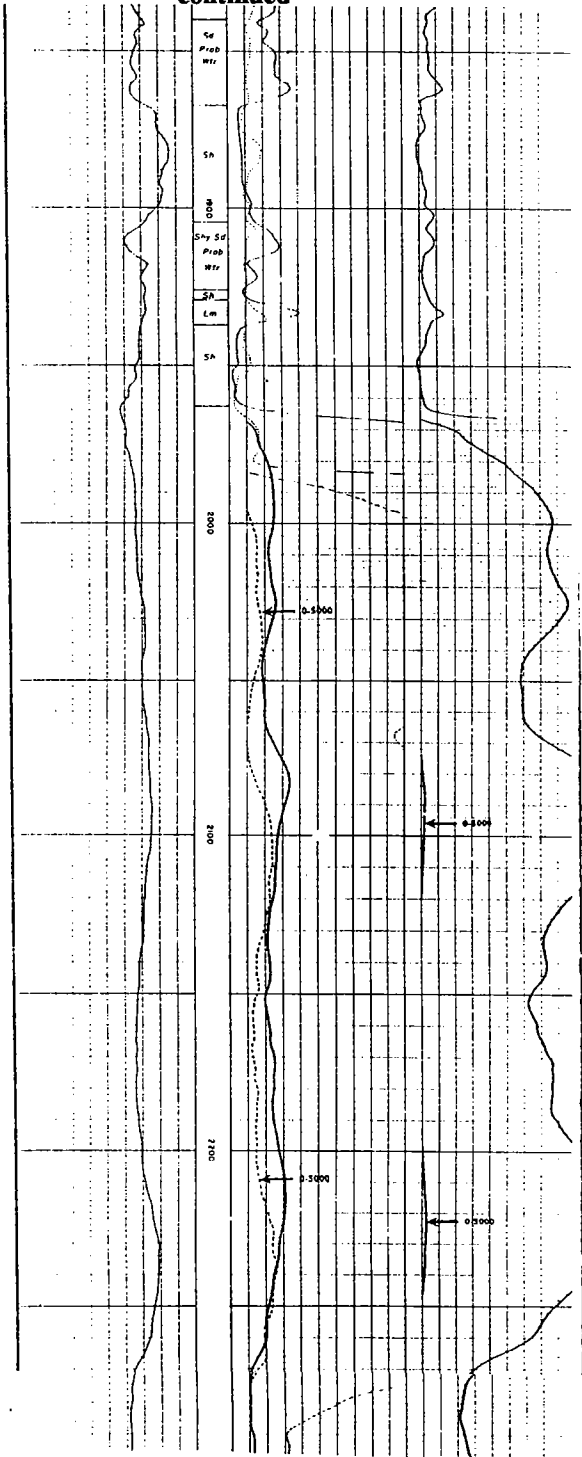
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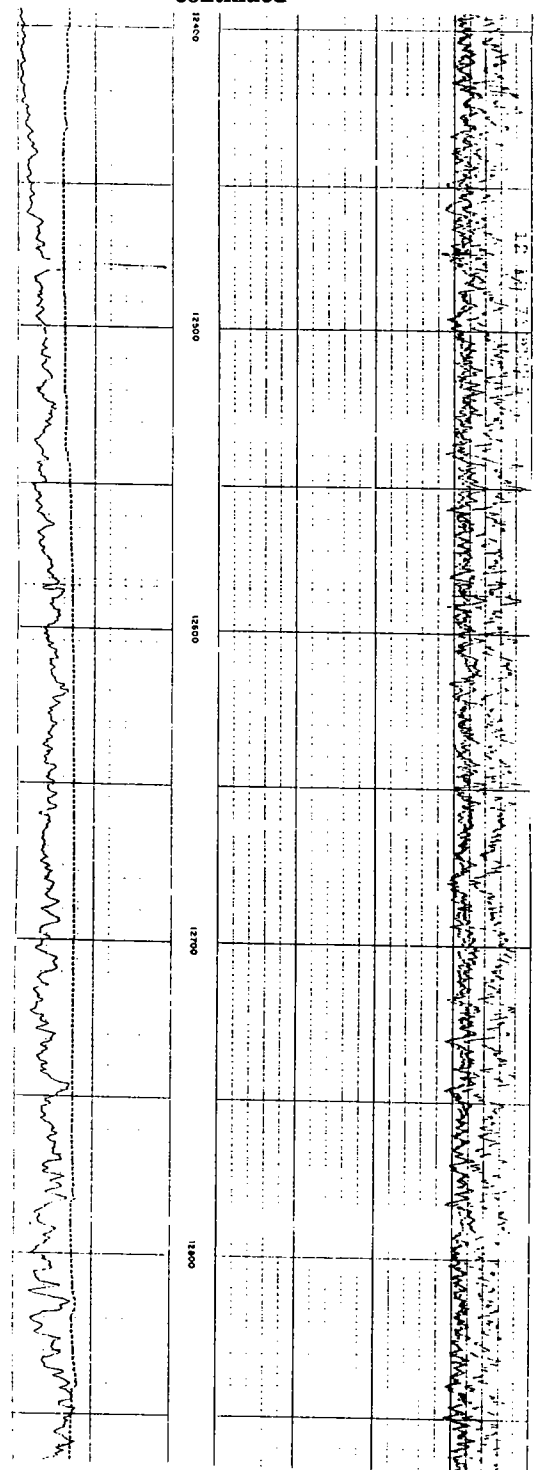
Stanolind Oil & Gas Company  
 1 Grooves Unit  
 SW SW NW  
 Sec. 36, T. 8 N., R. 18 W.  
 Washita County, Oklahoma  
 elev. 1625'

North American Royalties, Inc.  
 1 Rocky Unit  
 N/2 n/2 SE  
 Sec. 35, T. 8 N., R. 18 W.  
 Washita County, Oklahoma  
 elev. 1625'

continued

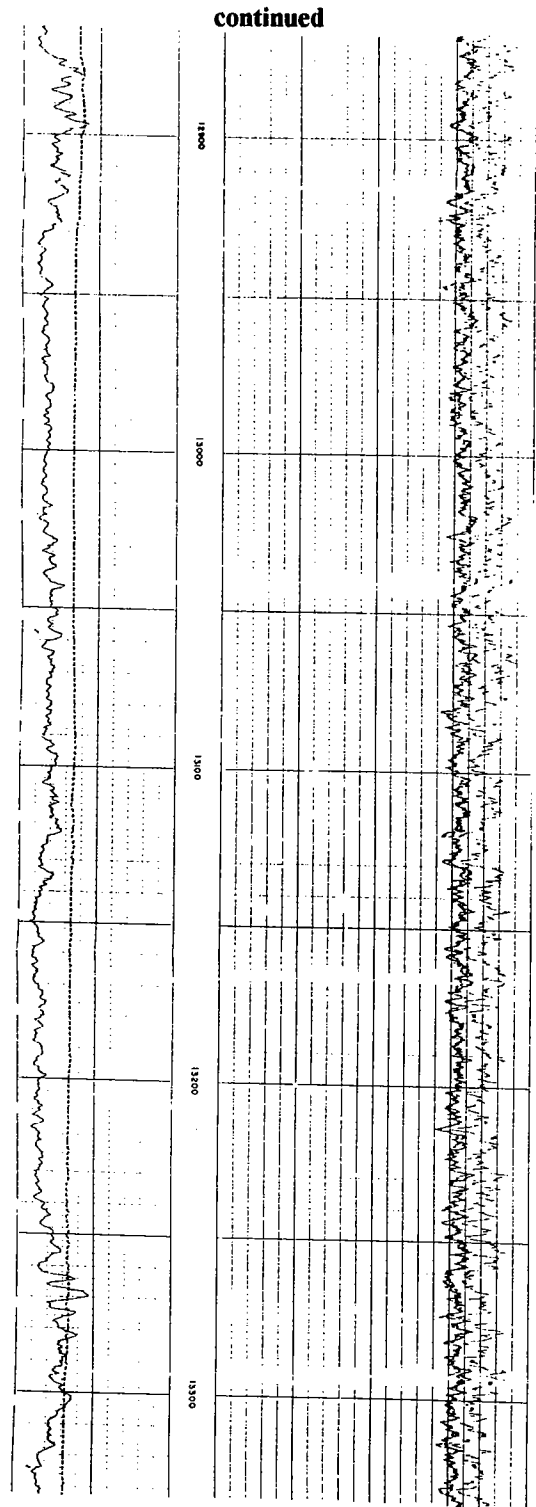
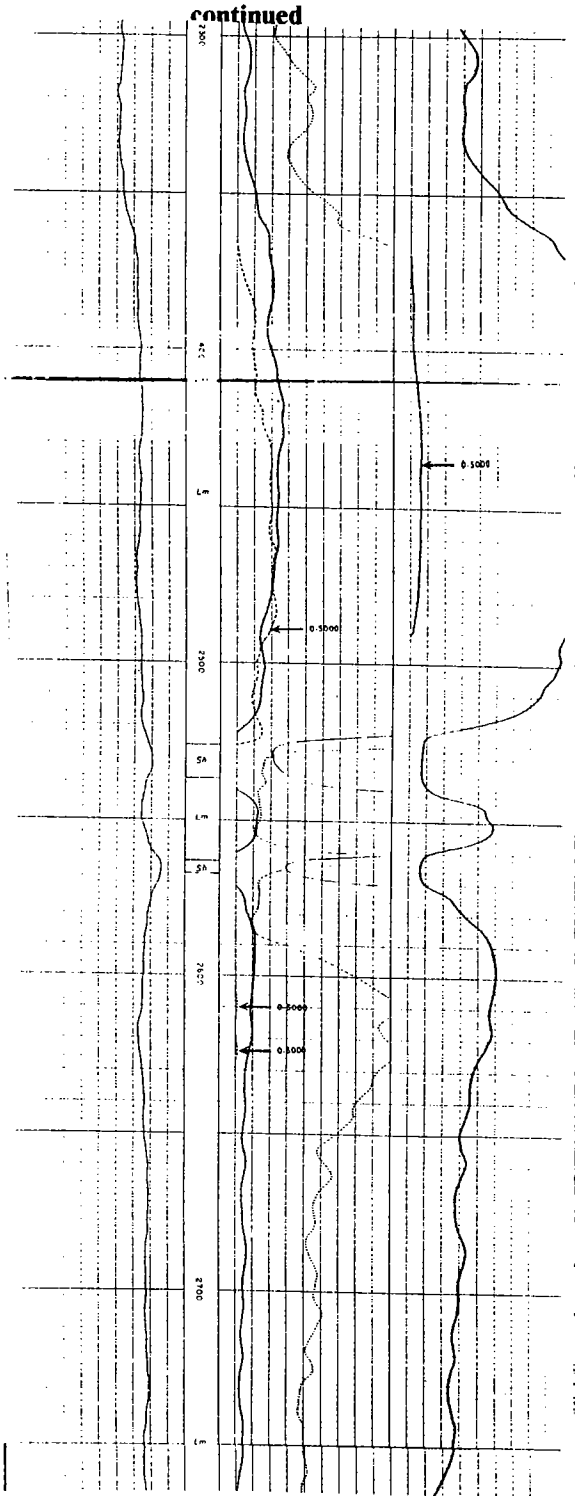


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Stanolind Oil & Gas Company  
 1 Grooves Unit  
 SW SW NW  
 Sec. 36, T. 8 N., R. 18 W.  
 Washita County, Oklahoma  
 elev. 1625'

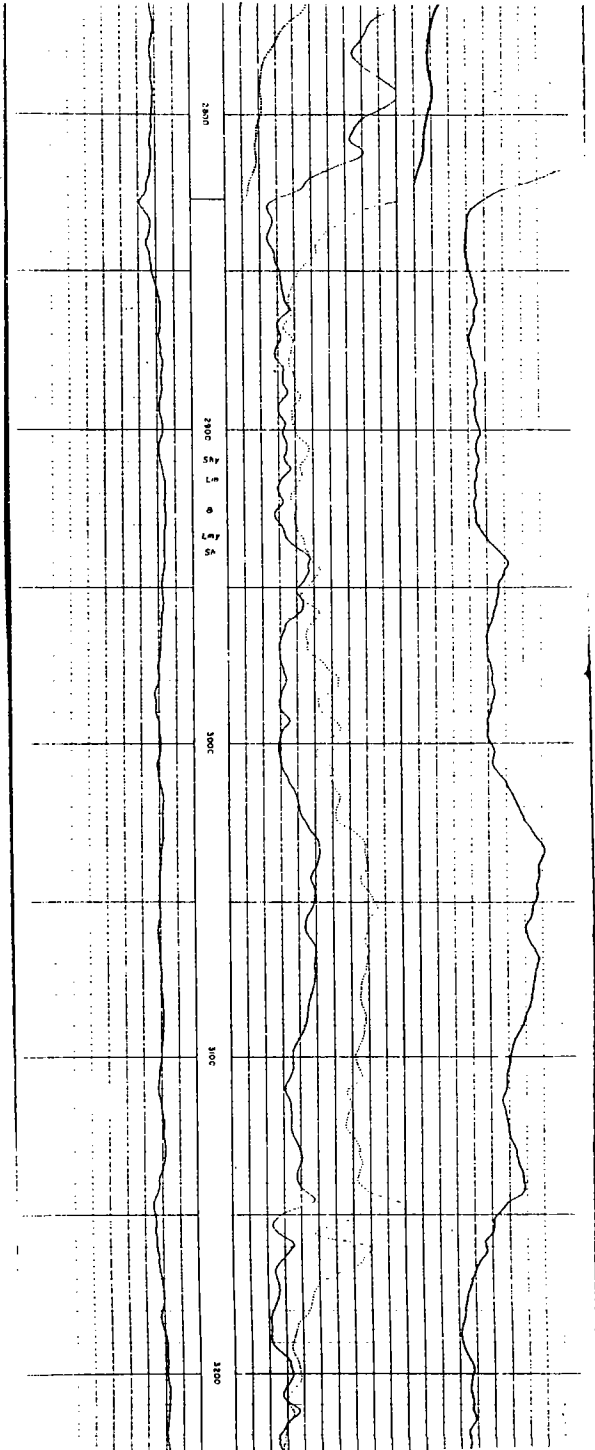
North American Royalties, Inc.  
 1 Rocky Unit  
 N/2 n/2 SE  
 Sec. 35, T. 8 N., R. 18 W.  
 Washita County, Oklahoma  
 elev. 1625'



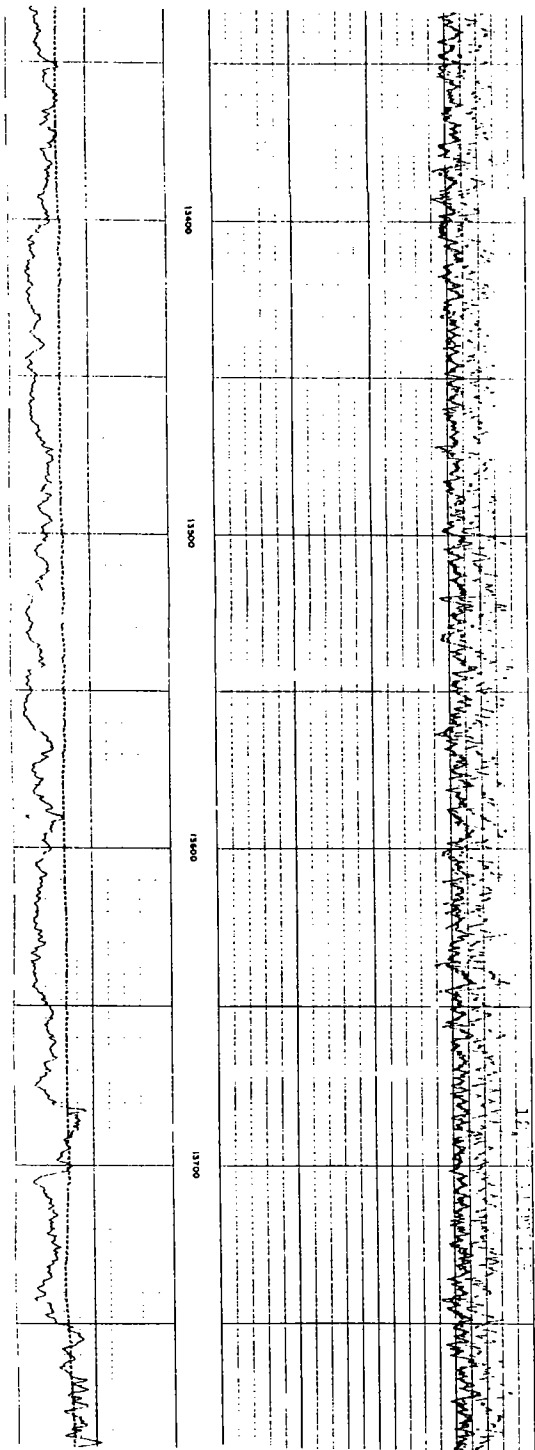
Stanolind Oil & Gas Company  
1 Grooves Unit  
SW SW NW  
Sec. 36, T. 8 N., R. 18 W.  
Washita County, Oklahoma  
elev. 1625'

North American Royalties, Inc.  
1 Rocky Unit  
N/2 n/2 SE  
Sec. 35, T. 8 N., R. 18 W.  
Washita County, Oklahoma  
elev. 1625'

continued



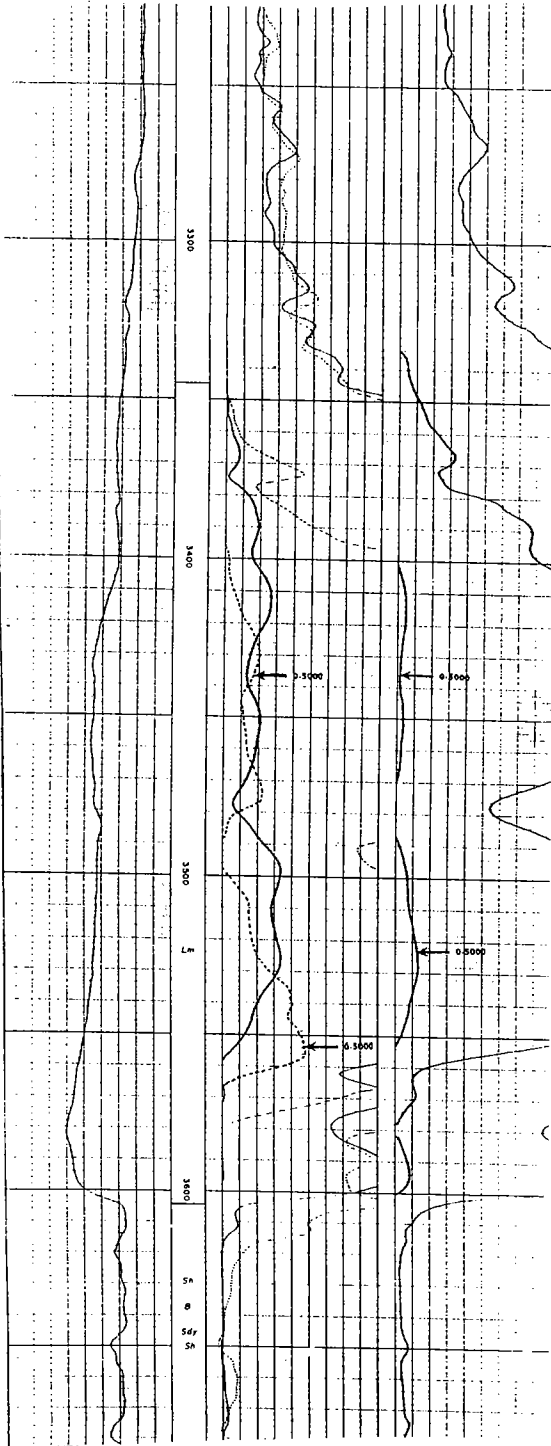
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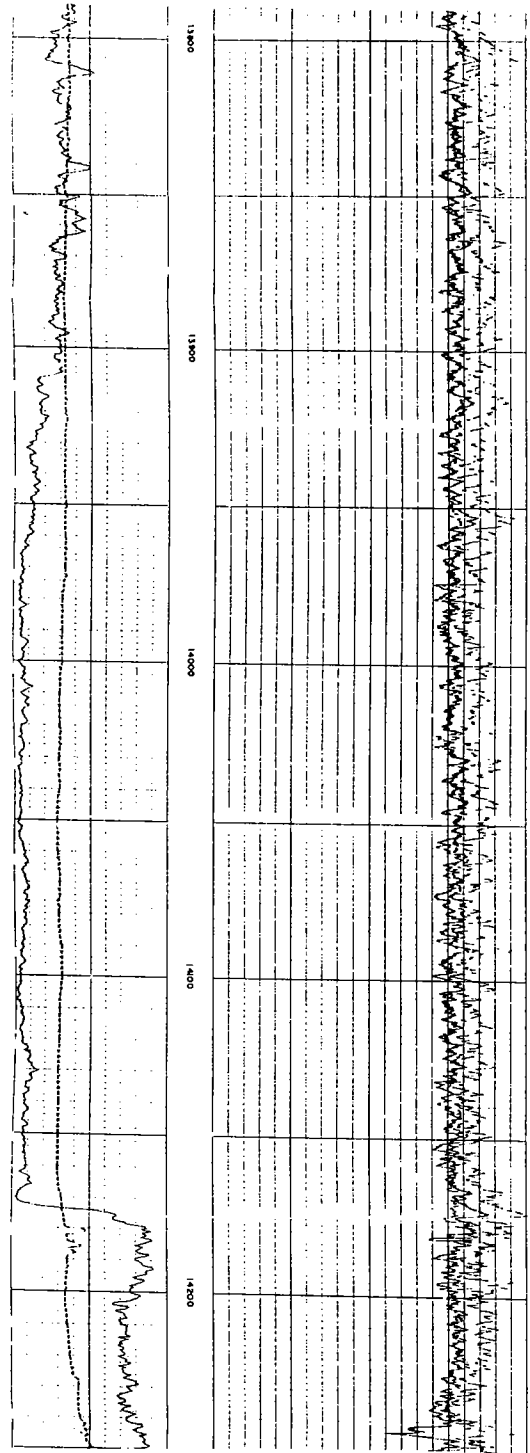
Stanolind Oil & Gas Company  
 1 Grooves Unit  
 SW SW NW  
 Sec. 36, T. 8 N., R. 18 W.  
 Washita County, Oklahoma  
 elev. 1625'

North American Royalties, Inc.  
 1 Rocky Unit  
 N/2 n/2 SE  
 Sec. 35, T. 8 N., R. 18 W.  
 Washita County, Oklahoma  
 elev. 1625'

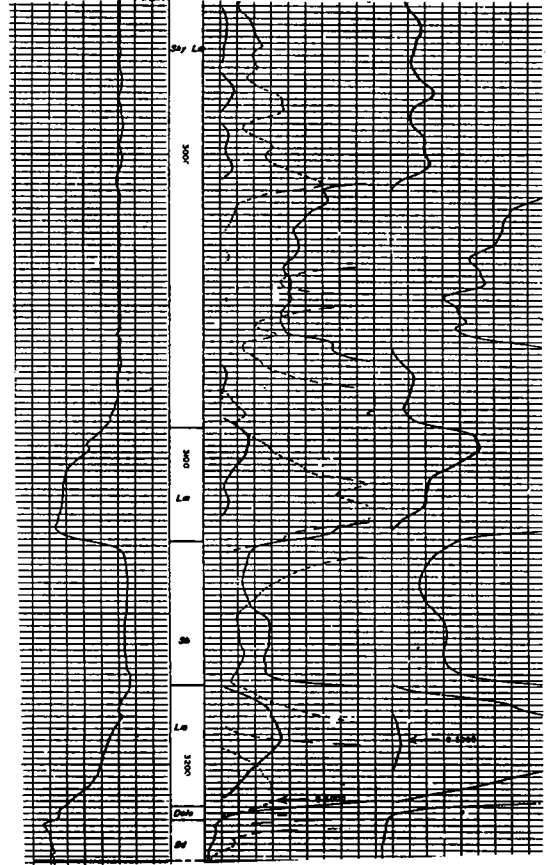
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CAMPBELL 1 HAGGARD—NW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec. 6,  
T. 12 N., R. 16 E., McIntosh County, Oklahoma; elev.  
unknown; compl. 1955, production unknown. Tops:  
Hunton 3080' (sample depth), Sylvan 3120' (sample  
depth); Hunton thickness 40'. Samples examined  
from 3070' to 3130'. Well examined by T. L. Rowland  
(Amsden and Rowland, 1965, p. 156-157).



**WELL Q****W. T. Campbell, 1 Haggard**

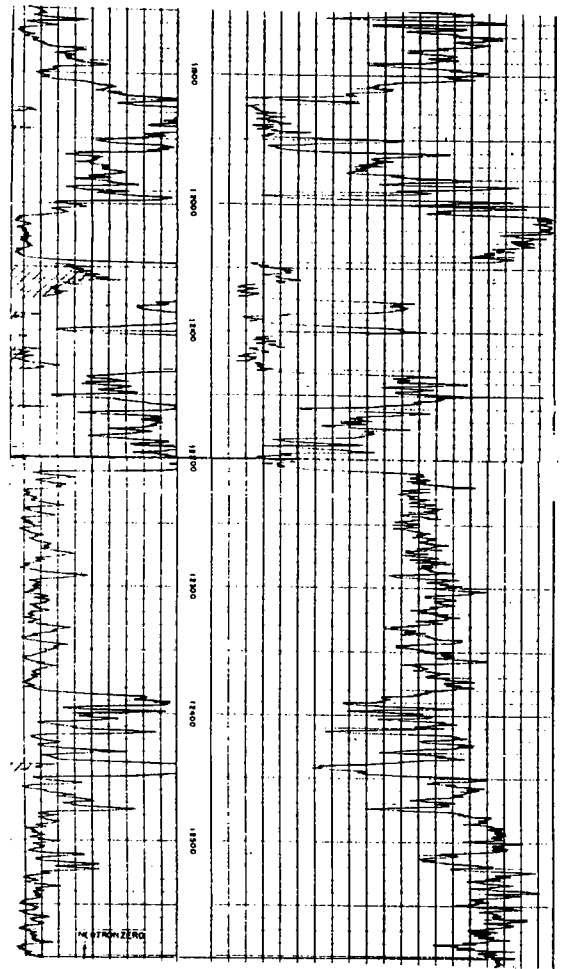
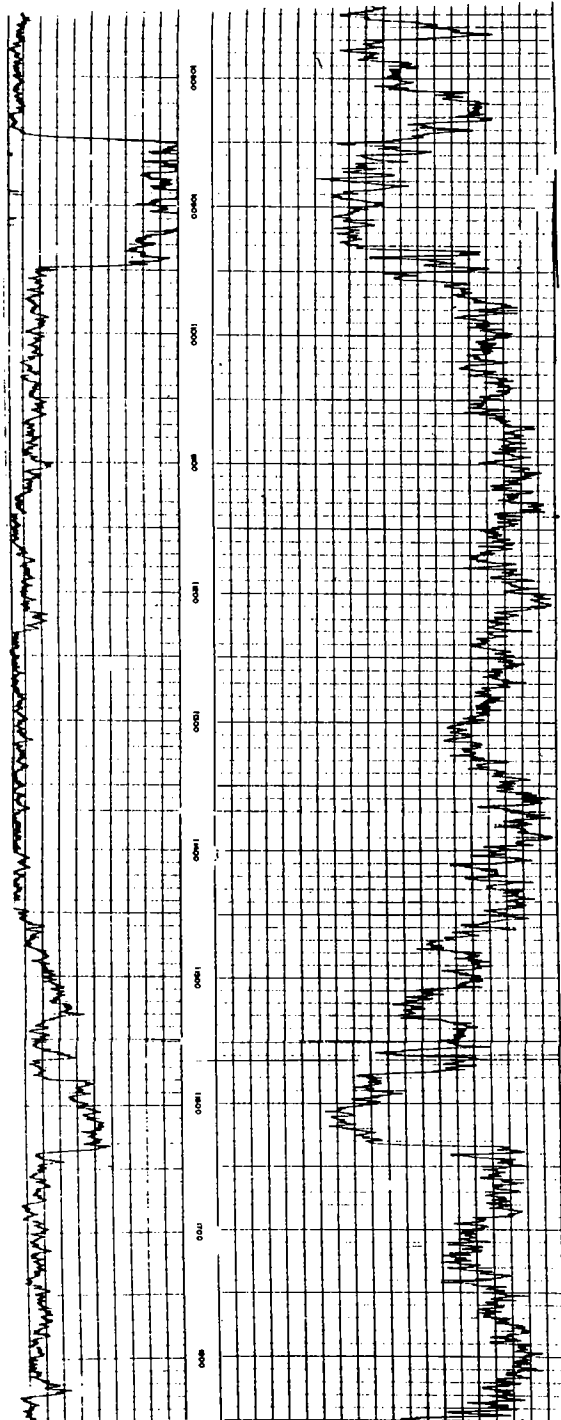
This well is in NW¼ NW¼ NE¼ sec. 6, T. 12 N., R. 16 E., McIntosh County, about 20 miles north of Eufaula (text-figs. 3, 15). The well was drilled in 1955, and the elevation is not available. Cuttings were studied from 3,070 to 3,130 feet in intervals of 10 feet, and the sample quality is good. Lower Devonian rocks are absent in this well (text-figs. 3, 15). Silurian rocks are 37? feet thick (3,090?-3,127? feet; text-fig. 3) and consist of only the Tenkiller Formation, Blackgum Formation, and Pettit Oölite. This thickness was taken from the electric log. The samples suggest the top of the Silurian rocks at 3,080 and the base in sample interval 3,110-3,120. This discrepancy may be attributed to mislabeling of the sample containers, careless sampling methods, or misreading of the electric log. Individual thicknesses of Tenkiller, Blackgum, and Pettit are uncertain owing to presence of Tenkiller and Blackgum in sample 3,080-3,090 and of Blackgum, Pettit, and Sylvan in sample 3,110-3,120. Sylvan Shale was encountered in sample 3,110-3,120, but the electric log suggests the top at 3,127 feet.

<i>Depth (feet)</i>	<i>Thickness (feet)</i>	
3,070-3,080	10	<b>CHATTANOOGA FORMATION:</b> Black and brown pyritic shale. <b>TENKILLER FORMATION:</b> Light-gray to gray limestone, with abundant orange crinoidal material. Thickness uncertain, as it is present with Blackgum in sample 3,080-3,090. The top of the Tenkiller was found to be 3,080 in the samples but 3,090? on the electric log.
3,080-3,090	10	Limestone, light-gray to gray; abundant orange crinoidal material; 1-2% residue; 45% Tenkiller in the sample; limestone, light-gray to dark-gray, highly glauconitic; 2-3% residue, 55% (Blackgum). <b>BLACKGUM FORMATION:</b> Light-gray to dark-gray dolomitic glauconitic limestone; light-gray to dark-gray brown fine-crystalline dolomite; gray to dark-gray opaque chert. Thickness uncertain, as it is present with Tenkiller in sample 3,080-3,090 and with Sylvan in sample 3,110-3,120.
3,090-3,100	10	Limestone, light-gray to gray, dolomitic, glauconitic; chert, gray to light-gray, opaque; 3-5%.
3,100-3,110	10	Limestone, as above, 45%; dolomite, light-gray to dark-gray, 25-30%; chert, gray, opaque, 20-25%. <i>Pettit Oölite:</i> Gray to dark-gray oölite. Thickness uncertain as it is mixed with Blackgum and Sylvan in sample 3,110-3,120.
3,110-3,120	10	Dolomite, light-gray, brown to tan, fine-crystalline; in part glauconitic, 65%; chert, gray to dark-gray to light-gray, opaque, 35%; few pieces of dark-gray to gray oölite present.
3,120-3,130	10	<b>SYLVAN FORMATION:</b> Thickness not determined, as the samples were studied only to 3,130 feet. Samples suggest the top of the Sylvan between 3,110-3,120 feet, but the top was estimated from the electric log at 3,127 feet. Gray-green shale.



**GULF OIL CORP. 1 HAGGARD** — Blk. 2, sec. 5, I&GN Survey, Roberts County, Texas; elevation 3,097 ft (unk); TD 12,597 ft; completion 2/21/72; cored 10,970–11,000 ft; 12,270–11,300 ft (cores not examined).

Samples borrowed from Texas Bureau of Mines, Austin; lower Woodford–Hunton–upper Viola samples examined; 20 thin sections. *Illustrated on PLATE 2, STRATIGRAPHIC SECTION C-C'.*



OKLAHOMA NATURAL GAS 1 HALE—C  
NE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> sec. 7, T. 9 N., R. 14 E., McIntosh  
County, Oklahoma; elev. 761' GL; TD 4400'; compl.  
6/27/65, no Hunton production reported. Tops: Hun-  
ton 4062' (-3301') (sample depth), Sylvan 4205'  
(-3444') (sample depth), Welling 4280' (-3519')  
(sample depth); Hunton thickness 143'. Samples exa-  
mined from 4000' to 4330', excellent quality; 9 thin  
sections; samples, Oklahoma Well Sample Service,  
Shawnee, Oklahoma.

Hunton strata include about 40' of fossiliferous marl-  
stone in the upper part. This rock is largely free  
of quartz detritus and is unlike the strata assigned  
to the Sallisaw Formation in the nearby 1 Brotten  
and 1 Follansbee. It is similar to the uppermost  
Hunton strata in the 1 Schrimsher. Lithologically  
these marlstones resemble the Henryhouse-Haragan  
beds in the Arbuckle Mountains, but similar marl-  
stones are also known to be present in the Clarita  
Formation. The thickness and regional relations sug-  
gest that these beds are facies of the Chimneyhill  
Subgroup. This is the most easterly extension of any  
known marlstone in Oklahoma.

*Woodford (Chattanooga) Shale*

*Hunton Group* 4062'-4205' (sample depths)

4062'-4205' (sample depths) Silurian; Chimney-  
hill Subgroup.

4062'-4100' (sample depths) Fossiliferous  
marlstone with very little detrital quartz. Mostly  
pelmatozoan plates, some ostracodes, bryozoans,  
brachiopods, etc. A few pieces of grain-supported  
carbonate like below, but mainly mud supported.  
Provisionally referred to the Chimneyhill.

4100'-4200' (sample depths) ?Quarry Moun-  
tain Formation. Weakly to heavily dolomitized  
pelmatozoan biosparite and biomicrite. Some  
porous crystalline dolomite. Very little detrital  
quartz. Some pink crinoidal type of lithology but  
no well-defined lithostratigraphic unit.

4200'-4205' (sample depths) ?Blackgum  
Formation. Glauconitic biomicrite with consider-  
able shelly debris; some dolomitized limestone;  
some chert.

*Sylvan Shale* 4205'-4280' (sample depths)

Upper 20' greenish-gray shale, lower part dark-gray.

*Welling Formation* 4280'-4300' (sample depths)

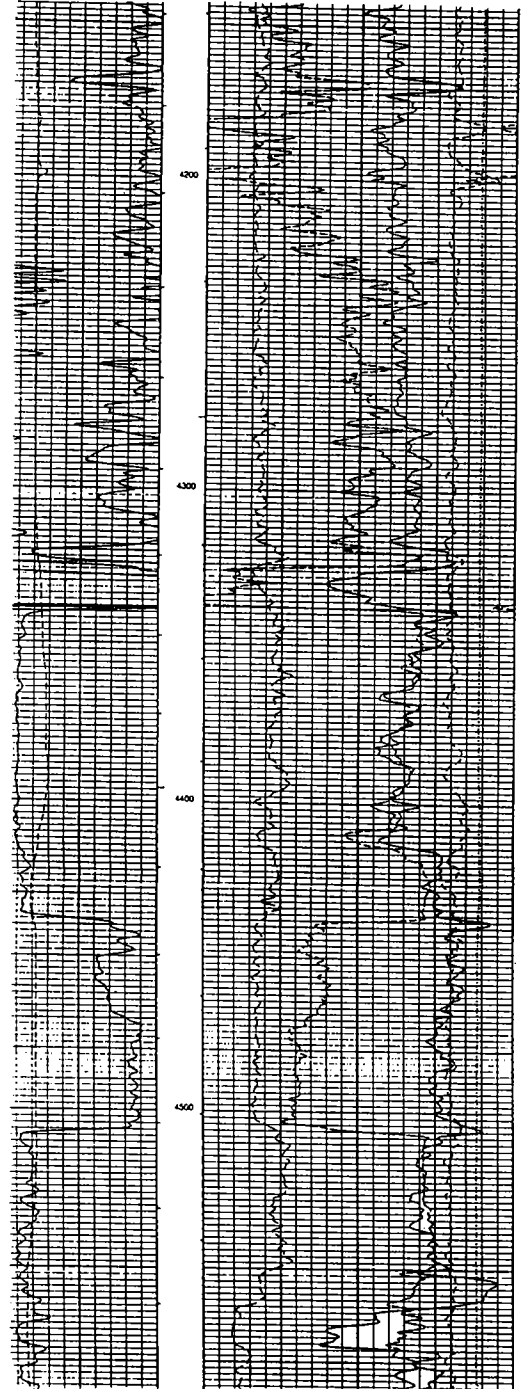
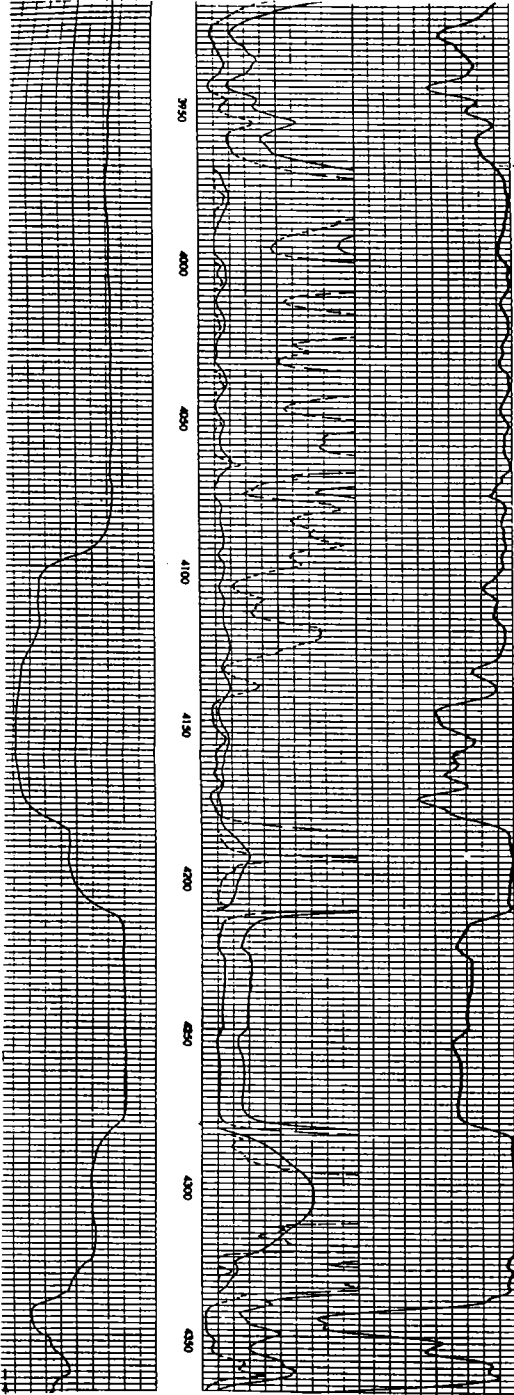
4280'-4290' (thin section) Organo-detrital pel-  
matozoan sparite with minor micrite and much  
shelly debris. Subangular to rounded detrital  
quartz, very little dolomite (pl. 11, fig. 3).

*Fite Limestone* 4300' (approximate sample depth)

4320'-4330' (thin section) Mostly dense ?algal  
limestone with sparry areas and some pellet lime-  
stone. Chert. Organo-detrital sparite with many  
well-rounded quartz grains to 0.8 mm.

Oklahoma Natural Gas  
1 Hale  
NE SW NW  
Sec. 7, T. 9 N., R. 14 E.  
McIntosh County, Oklahoma  
elev. 761'

Cummings  
1 Fisher  
166' FSL & 1980' FEL  
Sec. 9, T. 9 N., R. 14 E.  
McIntosh County, Oklahoma  
elev. 809'



WOLFE 1 HALL—SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> sec. 6, T. 9 N., R. 10 E., Hughes County, Oklahoma; elev. unknown, TD 3890' (?Hunton); compl. unknown, production unknown. No electric log or completion card observed. Tops: Woodford 3795' (sample depth), Hunton 3830' (sample depth), last sample, 3885'–3890', may include Sylvan. Samples examined from 3750' to 3890' (TD), good quality; 7 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

There is approximately 10' of Misener Sandstone at the base of the Woodford. The upper 20' of the Hunton is light-gray organo-detrital crinoidal-bryozoan sparite with no observed dolomite or quartz. This resembles the upper 10' of the Hunton in the 1 Scott and the 1 Armbrister. On the basis of its stratigraphic position and lithology (note the absence of any dolomite), these beds are provisionally referred to the Frisco Formation (cf. 1 Reed and 1 Boley). The underlying strata are moderately to strongly dolomitized pink crinoidal micrite here referred to the Chimneyhill Subgroup.

*Woodford (Chattanooga) Shale* 3795'–3830' (sample depths)

3795'–3820' Black shale.

3820'–3830' (sample depths) Misener Sandstone.

Mostly quartz sandstone, the quartz grains with overgrowths.

*Hunton Group* 3830'–3890' (sample depths)

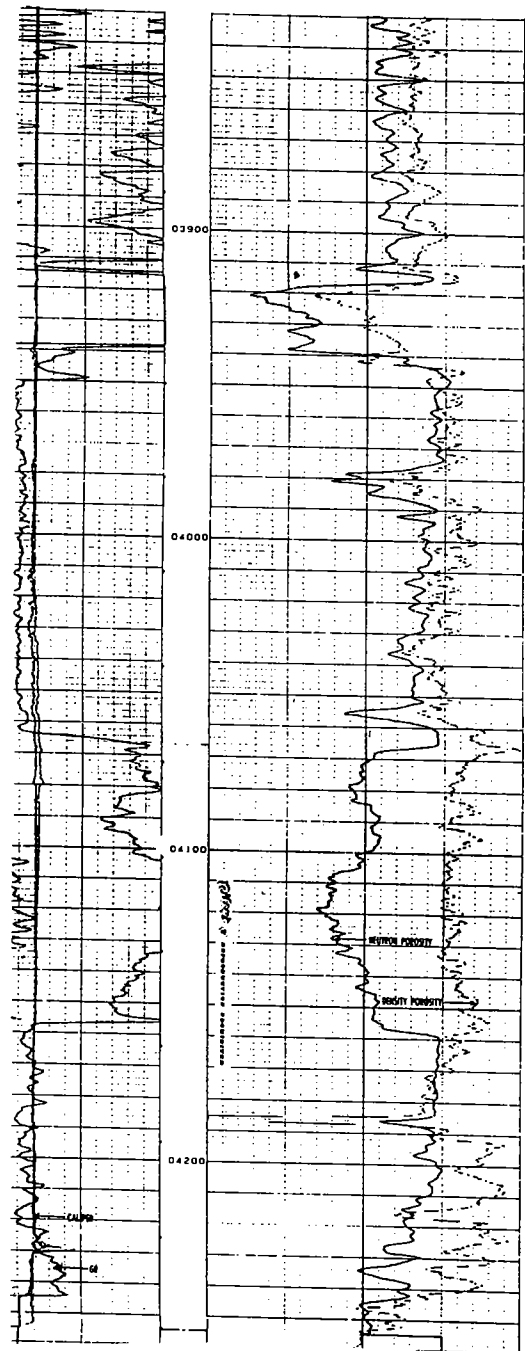
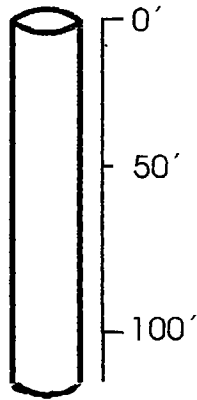
3830'–3850' ?Lower Devonian; ?Frisco Formation. Light-colored organo-detrital crinoidal-bryozoan sparite. No dolomite or quartz observed.

3850'–3890' (sample depths) Silurian; Chimneyhill Subgroup. Moderately to strongly dolomitized pink crinoidal micrite. No detrital quartz observed.

Wolfe  
1 Hall  
SW SW NW  
Sec. 6, T. 9 N., R. 10 E.  
Hughes County, Oklahoma  
elev. unknown'

Heston Oil Company  
7-1 Mary  
NE NE SW  
Sec. 7, T. 9 N., R. 10 E.  
Hughes County, Oklahoma  
elev. 867'

Log not  
available



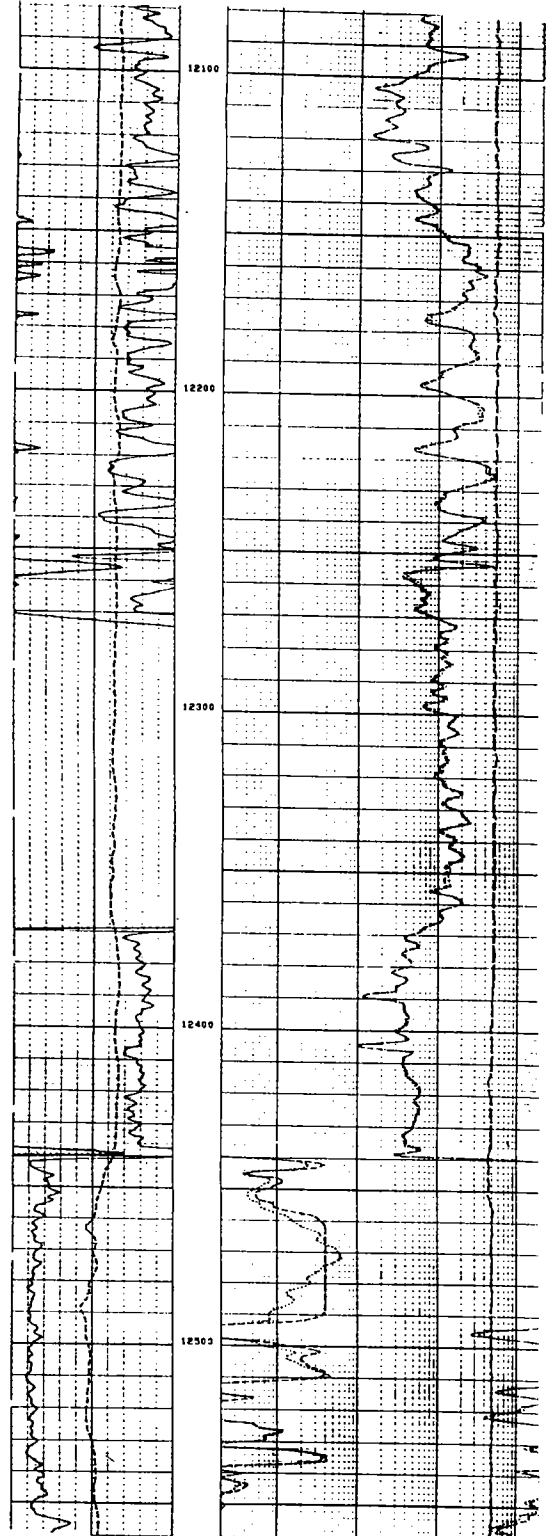
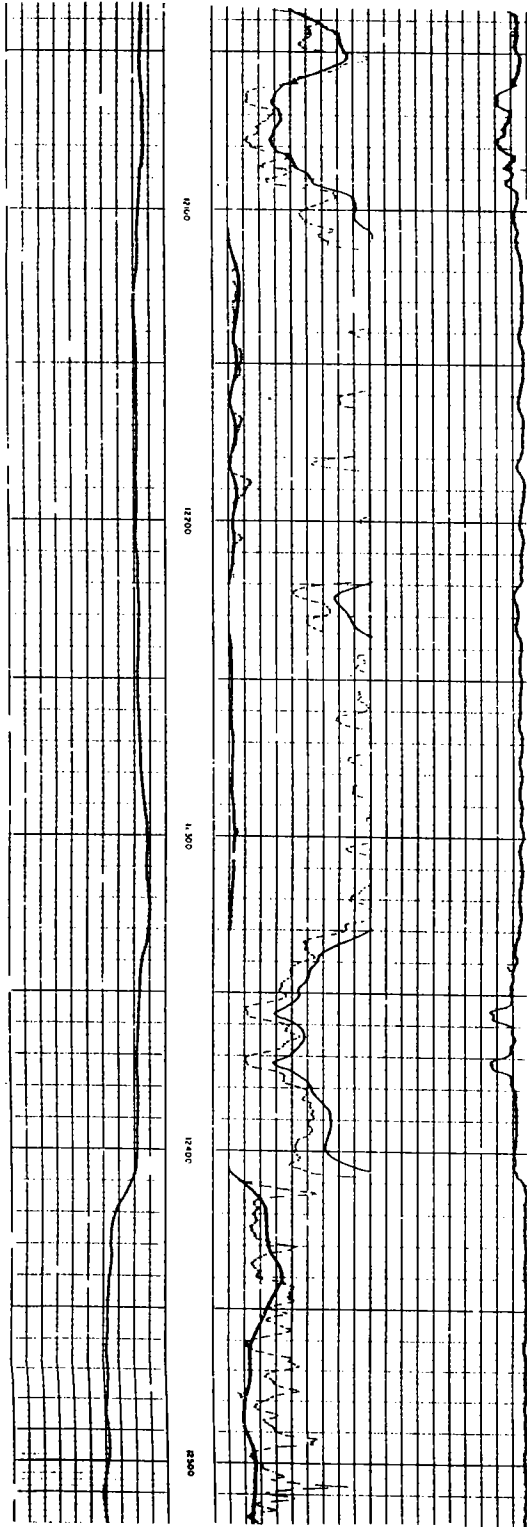
SINCLAIR 1 G. B. HALL—N<sup>1</sup>/<sub>2</sub>S<sup>1</sup>/<sub>2</sub>SW<sup>1</sup>/<sub>4</sub> sec. 17, T. 5 N., R. 16 E., Pittsburg County, Oklahoma; elev. 735' GL; TD 13, 428' (Arbuckle); compl. 8/23/62, D&A. Tops: Woodford 12,093' (-11,341') (interval transit time log), Sylvan 12,333' (-11,581') (interval transit time log), Welling 12,407' (-11,655') (samples and interval transit time log); no Hunton present. Samples examined from 11,980' to 12,480'; samples appear to show some mixing; 8 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The Woodford-Sylvan contact is not clearly marked in the samples, both formations being composed of dark shale. This contact is, however, well defined on the interval transit log. The light-green shale so characteristic of the upper Sylvan throughout most of the Arkoma Basin is absent here and in the 1 Manschrick, possibly owing to pre-Woodford erosion. (See 1 Price, 1 Jones-Bonas Unit, 1 Rosendahl.)

2 thin sections from the Welling interval, 12,410'-12,420' are organo-detrital limestone with much rounded detrital quartz and very little dolomite; 12,440'-12,450' interval same as above.

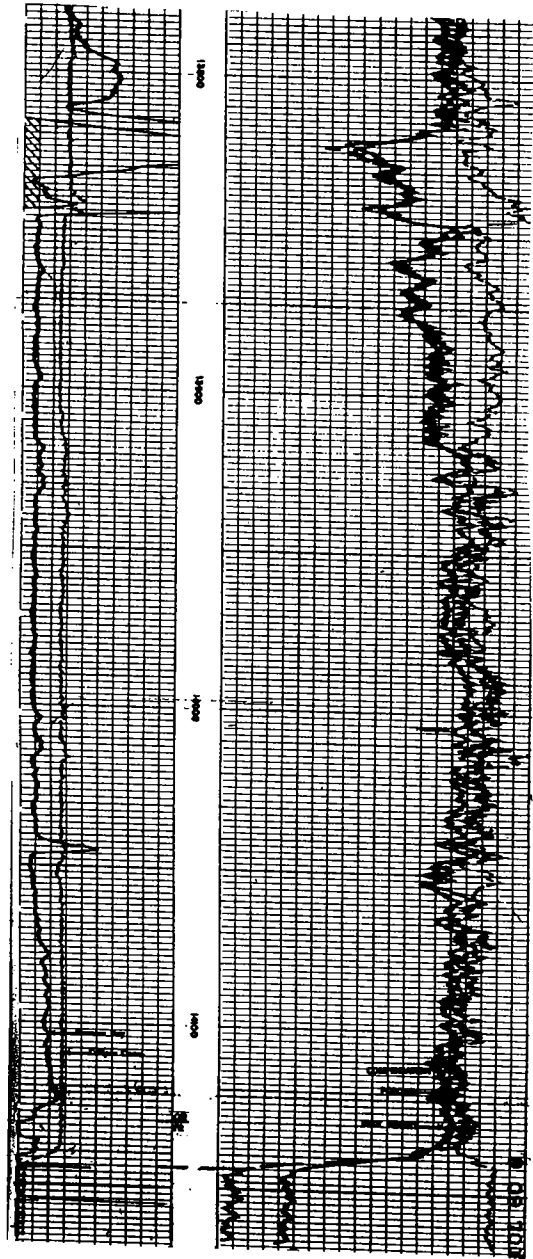
Sinclair  
1 G. B. Hall  
N/2 S/2 SW  
Sec. 17, T. 5 N., R. 16 E.  
Pittsburg County, Oklahoma  
elev. 735'

1 George. B. Hall  
840'FSL & 1320'FWL  
Sec. 17, T. 5 N., R. 16 E.  
Pittsburg County, Oklahoma  
elev. 762'



**CLARK CANADIAN EXPLORATION CO. 1 HANAN**  
— C SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 35, T20N, R23W, Ellis County, Okla-  
homa; elevation GL 2,483 ft, DF 2,504 ft; TD 14,149 ft  
(Viola); completion (Na), 9/1/70 (P).

Lower Woodford–Hunton–Sylvan–upper Viola sam-  
ples examined, 1979; 14 thin sections. Illustrated in Ams-  
den (1980, text-fig. 16). *Illustrated on PLATE 2, STRATI-  
GRAPHIC SECTION C–C'.*

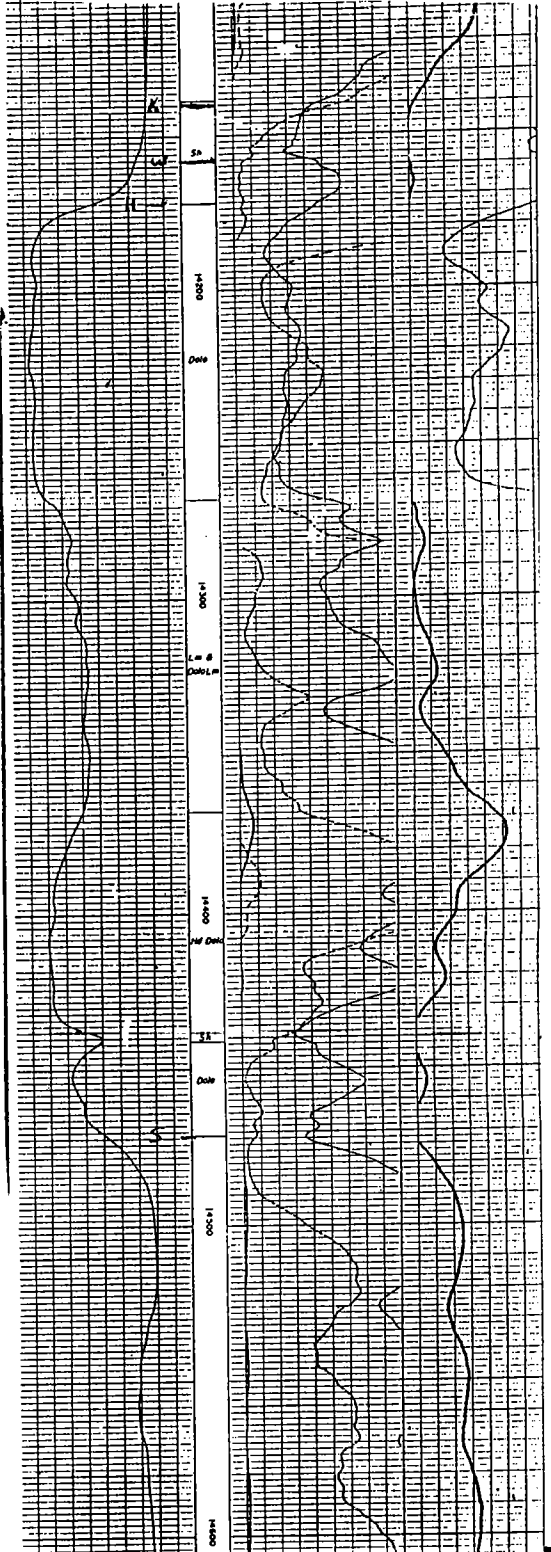




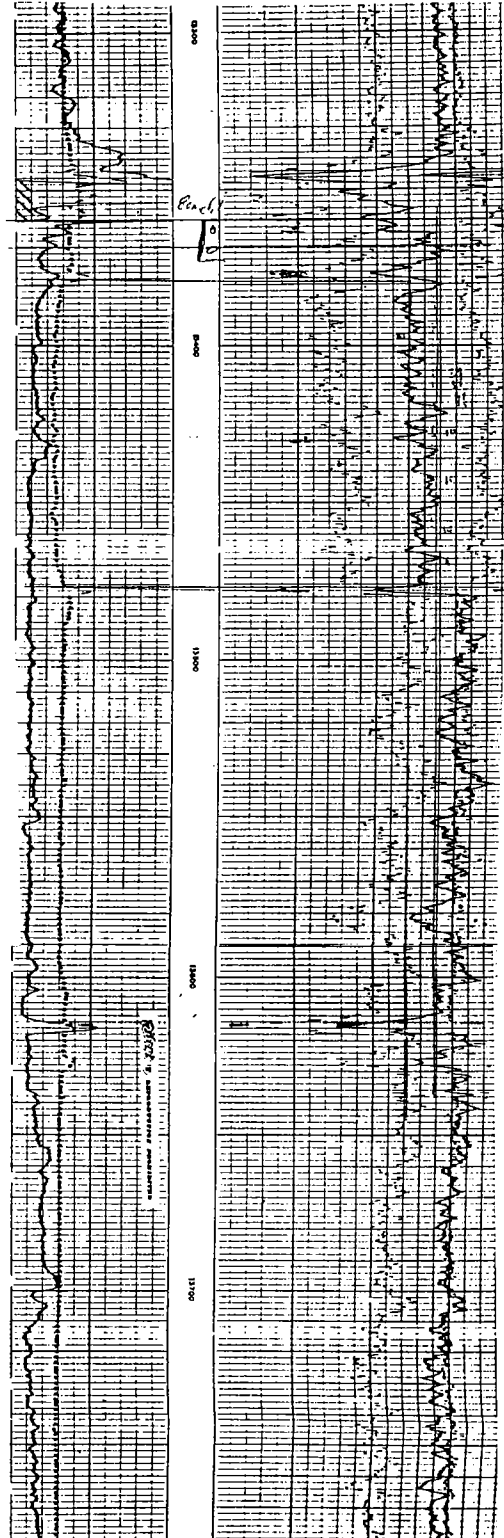
**SUNRAY OIL CORP. 1 RALPH HANAN** — SE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>  
sec. 1, T19N, R24W, Ellis County, Oklahoma; elevation GL  
(Na), DF 2,475 ft; TD (Na), Ttu 15,047 ft (Viola); completion  
(Na), 11/14/50 (P).

Lower Woodford–Hunton–Sylvan–upper Viola sam-  
ples examined by Amsden; 15 thin sections. Described and  
illustrated in Amsden (1980, p. 42, text-fig. 16). *Illustrated*  
*on* PLATE 2, STRATIGRAPHIC SECTION C–C'.

Sunray Oil  
 1 Hanan  
 SE NW  
 Sec. 1, T. 19 N., R. 24 W.  
 Ellis County, Oklahoma  
 elev. 2475'

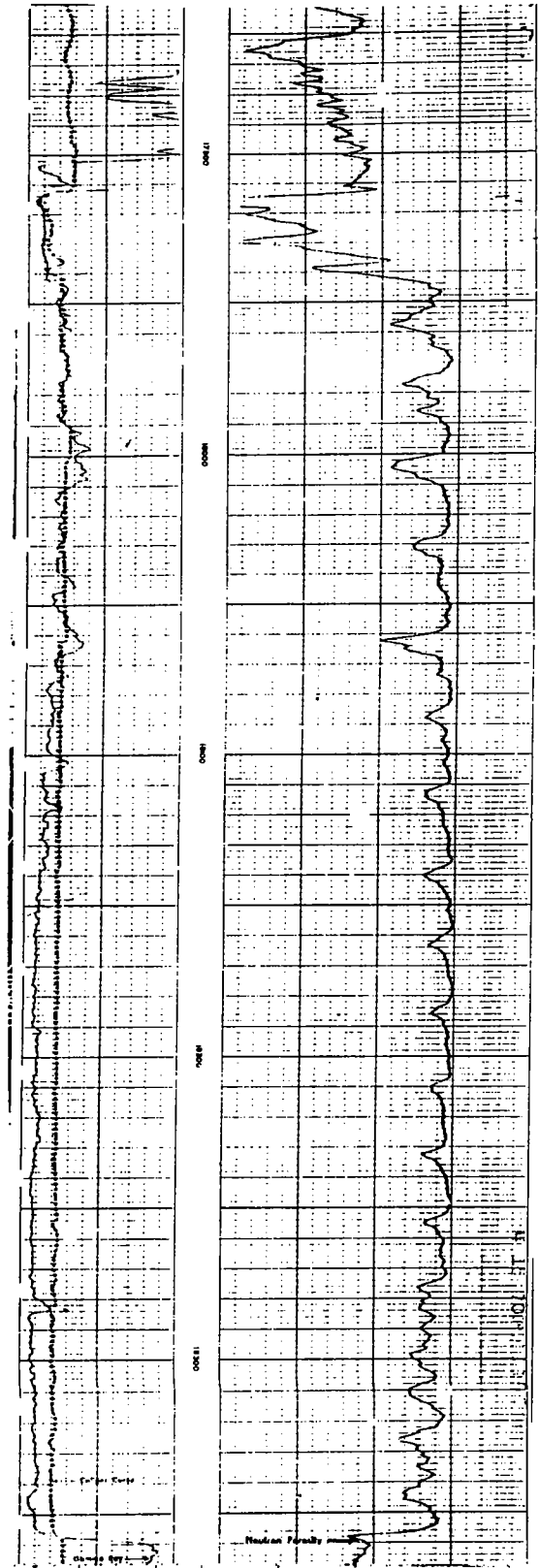


Pan American Petroleum  
 1 Reeves unit  
 NE SW  
 Sec. 29, T. 20 N., R. 23 W.  
 Ellis County, Oklahoma  
 elev. 2476'



**McCULLOCH OIL CORP.—STATEX 1-35 HANEY et al.**  
— C NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 35, T15N, R19W, Custer County, Oklahoma; elevation GL 1,698 ft, DF 1,721 ft; TD (Na), Ttu 18,410 ft; completion (Na), 4/7/70 (P).

Samples from the 1 Haney examined in 1979; 14 thin sections. The upper 80 ft is crystalline dolomite, underlain by a sequence of low magnesium, fossiliferous marlstones with relatively little terrigenous detritus. The basal 50 ft is mostly crystalline dolomite with minor skeletal grainstone. Illustrated on PLATE 2, STRATIGRAPHIC SECTION D-D'.



LONE STAR 1 HANNAN UNIT--NE $\frac{1}{4}$  sec. 6, T. 19 N.,  
 R. 24 W., Ellis County, Oklahoma; elev. 2498';  
 TD 14,640' (Viola); compl. 1/21/69, D&A. Tops:  
 Woodford (CC) 14,296' (-11,798'), Hunton (core)  
 14,342' (-11,844'), Sylvan (CC) 14,522'  
 (-12,024'); Hunton thickness 180'. Cored  
 14,322'-14,389' (lower Woodford, upper Hunton);  
 7 thin sections; chemical analyses; 3 porosity  
 tests (P12-A, P12-B, P12-C); OU Core Library.

I tried to locate samples for this well, but  
 apparently they have been lost. Note the  
 presence of relatively large, rounded quartz  
 grains.

Woodford Shale 14,296'-14,342'

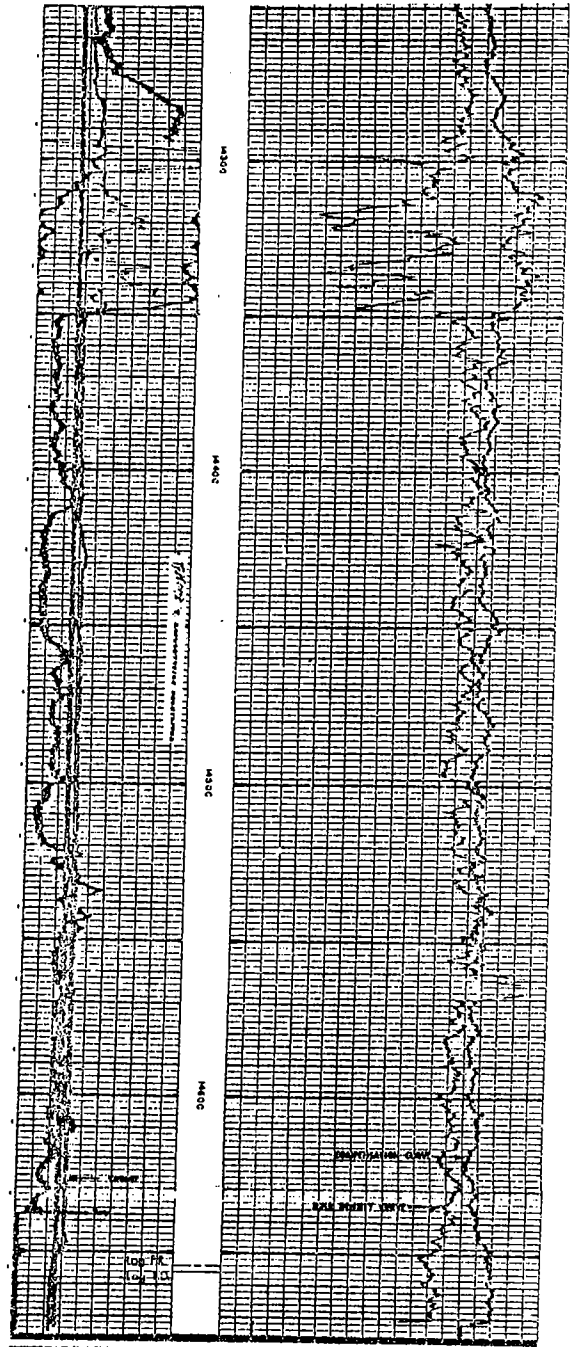
Hunton Group 14,342'-14,522'

14,342'-14,384' ?Silurian; ?Kirkidium bio-  
 facies. Gray crystalline dolomite with  
 nodules of vitreous chert. MgCO<sub>3</sub> averages  
 35.23%. This interval has some subrounded to  
 well-rounded quartz grains up to 0.5 mm  
 (average HCl insolubles 10.92%). Some frac-  
 turing (mostly healed) and some brecciation  
 of chert; sample P12-A tested 0.36% porosity.  
 A few specimens of pentamerid, probably  
Kirkidium, at 14,361'; on basis of these  
 shells, interval assigned to Silurian,  
 although upper 20 feet could be Devonian.

14,384'-14,389' ?Kirkidium biofacies. Fos-  
 siliferous, dolomitic limestone with nodules  
 of chert; MgCO<sub>3</sub> averages 16.60%, HCl insol-  
 ubles 13.95%. Some fracturing, mostly healed  
 with spar. Fossils abundant, with shelly  
 debris including trilobites and ostracodes  
 and crinoidal material. Porosity tests P12-B,  
 P12-C, 0.20% and 0.10% porosity. No diag-  
 nostic fossils observed; assigned to Kirkidium  
 biofacies on basis of stratigraphic position.

14,389'-14,522' No core.

Sylvan Shale 14,522'



BEACH 1 HARBOR—S<sup>1</sup>/<sub>2</sub>NE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> sec. 3, T. 9 N., R. 6 E., Seminole County, Oklahoma; elev. 1062' KB (1055' GL); TD 4335' (Viola); compl. 8/10/58, production unknown. Tops: Hunton 4080' (-3018') (sample depth), Sylvan 4175 (-3113') (sample depth), Welling 4280' (-3218') (sample depth); Hunton thickness 95'. Samples examined from 4050' to 4310', good quality; 9 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

Hunton rocks are assigned to the Chimneyhill Subgroup, although the upper 30' have a modest amount of fine angular silt-size quartz detritus. The cement is micrite, but the texture appears to be all organo-detrital grain supported rather than marlstone. This could be the Henryhouse and (or) Haragan marlstone, but the general textural characters and relationship to other wells in this area suggest Chimneyhill (cf. 10A Rentie and 1 Davis). The remainder of the Hunton is crinoidal micrite with some spar, weakly to strongly dolomitized. Only widely scattered quartz grains.

*Woodford (Chattanooga) Shale*

*Hunton Group* 4080'-4175' (sample depths)

4080'-4175' (sample depths) Silurian; Chimneyhill Subgroup.

4080'-4105' Weakly to moderately dolomitized crinoidal micrite with scattered angular quartz grains to 0.1 mm.

4105'-4150' Moderately to strongly dolomitized (including some crystalline dolomite) crinoidal micrite with some spar; a few widely scattered fine angular quartz grains.

4150'-4175' Weakly to moderately dolomitized pink crinoidal limestone with a few widely scattered fine angular quartz grains.

*Sylvan Shale* 4175'-4280' (sample depths)

Pale-green shale in upper 20', becoming dark-greenish-gray below.

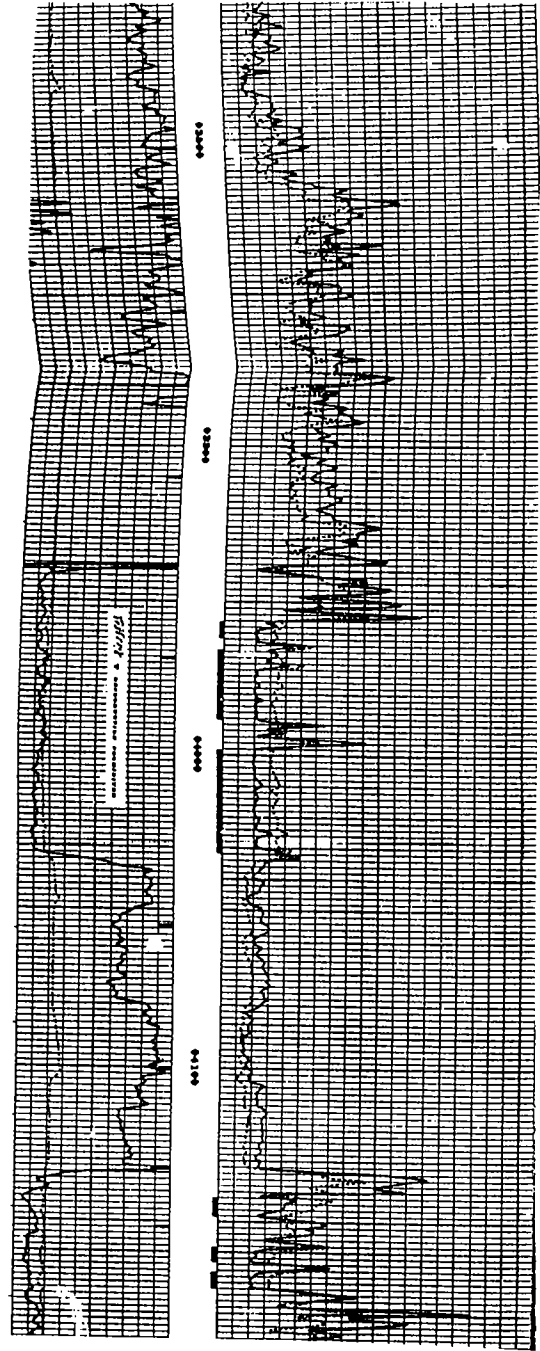
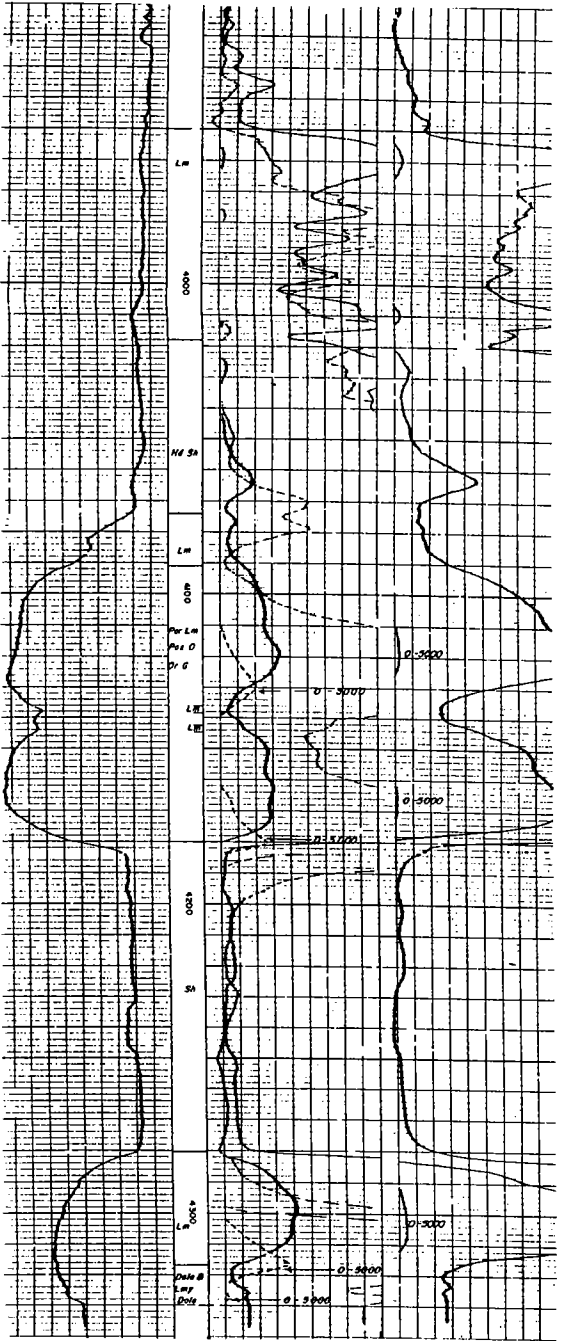
*Welling Formation* 4280' (sample depth)

4280'-4285' (thin section) Organo-detrital sparite with no quartz or dolomite.

4295'-4300' (thin section) Organo-detrital limestone as above, but with 1 or 2 well-rounded quartz grains.

Beach  
 1 Harber  
 S/2 NE NW  
 Sec. 3, T. 9 N., R. 6 E.  
 Seminole County, Oklahoma  
 elev. 1062'

Genesis  
 2 Pippin  
 N/2 NE NE  
 Sec. 3, T. 9 N., R. 6 E.  
 Seminole County, Oklahoma  
 elev. 946'



TENNESSEE 1 HARGROVE-HUDSON S.W.D.—125'  
NE of C NE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> sec. 7, T. 1 N., R. 10 E., Coal  
County, Oklahoma; elev. 726'; TD 8657' (Ordovician);  
compl. unknown, no Hunton production reported.  
Tops: Hunton 7134' (-6408') (sample depth), Sylvan  
7366' (-6640') (sample depth), Welling 7480'  
(-6754') (sample depth); Hunton thickness 232'.  
Samples examined from 7100' to 7520', good quality;  
13 thin sections; samples, Oklahoma Well Sample  
Service, Shawnee, Oklahoma.

Hunton strata are all low-magnesium limestones with  
a stratigraphic sequence similar to that in the Ar-  
buckle Mountain outcrops (cf. 1-6 Johnson). The  
uppermost beds are low-magnesium organo-detrital  
limestones (Frisco, possibly including some Fittstown  
Member, Bois d'Arc Formation), underlain by marl-  
stones (Henryhouse-Haragan undifferentiated). The  
basal strata are organo-detrital limestones resem-  
bling the Chimneyhill Subgroup at its type locality.

*Woodford (Chattanooga) Shale*

No Misener Sandstone observed.

*Hunton Group 7134'-7366'* (sample depths)

7134'-7170' (sample depths) Devonian; Frisco  
Formation, possibly including some Bois d'Arc  
Formation (Fittstown Member). Organo-detrital  
limestone with chert. Pelmatozoan plates and some  
trilobites, ostracodes, bryozoans, and a few bra-  
chiopod fragments. Very little detrital quartz and  
very little dolomite.

7170'-7320' (sample depths) Silurian-Devonian;  
Henryhouse and Haragan Formations undifferen-  
tiated. Fossiliferous marlstone; relatively few cri-  
noid plates but some ostracodes, trilobites, bryo-  
zoans, and brachiopods. From 7170' to 7200' much  
silt-size (to 0.2 mm) subangular quartz detritus;  
below this the quartz content is considerably re-  
duced. Some dolomite present, especially in the  
upper, more silty parts.

7320'-7366' (sample depths) Silurian; Chimney-  
hill Subgroup, 40' thick.

7320'-7350' (sample depths) Clarita Forma-  
tion. Pink crinoidal sparite with some micrite.  
In addition to pelmatozoans, includes ostracodes,  
trilobites, and some bryozoans and brachiopods.  
Very little detrital quartz and very little dolo-  
mite.

7350'-7366' Cochrane Formation. Glauconitic  
organo-detrital sparite and micrite. Much pel-  
matozoan material. Very little detrital quartz  
and only minor dolomite.

*Sylvan Shale 7366'-7480'* (sample depths)

Upper few feet an apple-green shale, underlain by  
dull-gray to slightly greenish-gray shale.

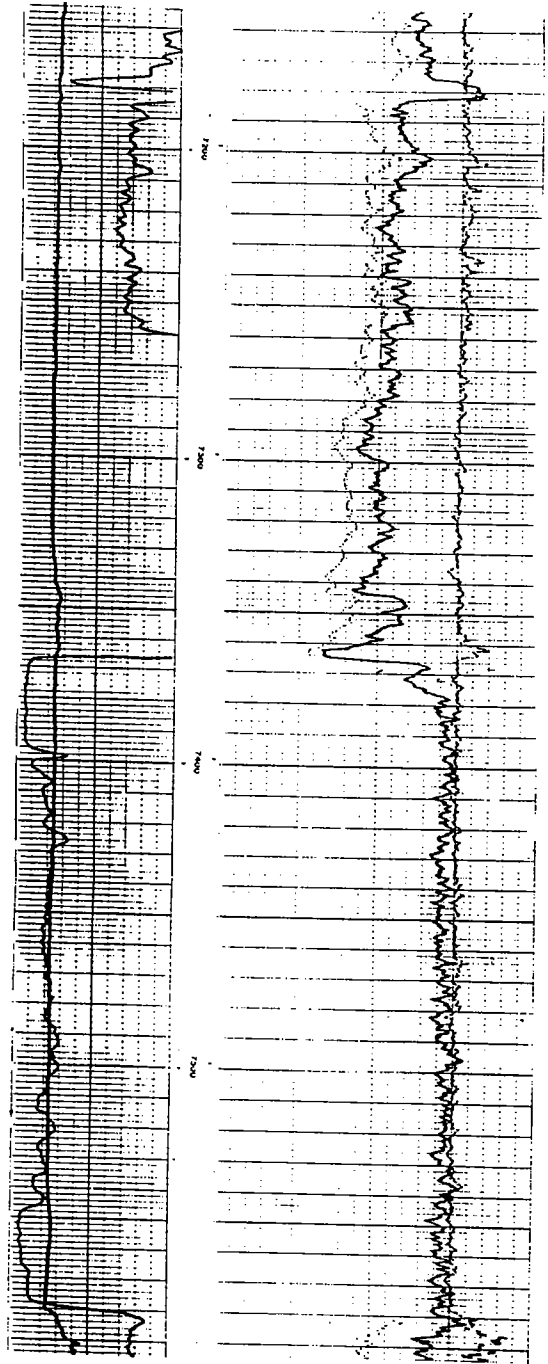
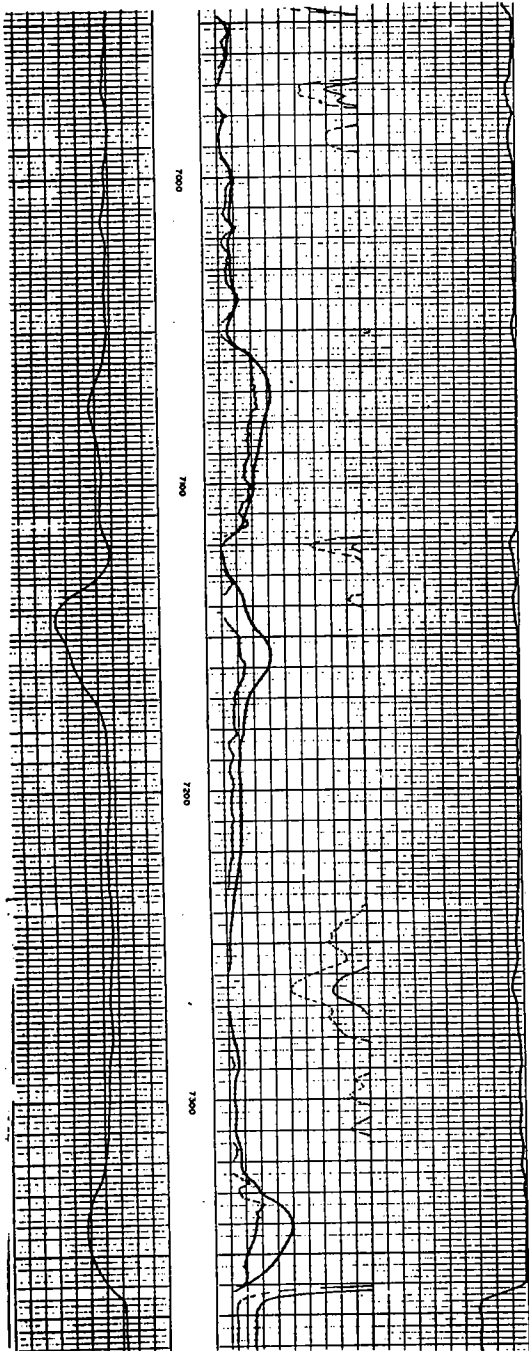
*Welling Limestone 7480'* (sample depth)

7480'-7490' (thin section) Organo-detrital sparite  
and minor micrite with no quartz detritus.

7510'-7520' (thin section) Similar to above but  
bearing numerous rounded quartz grains.

Tennessee  
1 Hargrove-Hudson S.W.D.  
NE NW  
Sec. 7, T. 1 N., R. 10 E.  
Coal County, Oklahoma  
elev. 726'

Global Gas Corporation  
1 Bey  
990'FSL & 850'FWL  
Sec. 7, T. 1 N., R. 10 E.  
Coal County, Oklahoma  
elev. 733'





ARKLA 1-17 HARRELL--E $\frac{1}{2}$ W $\frac{1}{2}$ SE $\frac{1}{4}$  sec. 17, T. 16 N., R. 21 W., Roger Mills County, Oklahoma; elev. 2108'; TD 17,829' (Sylvan); compl 10/5/72, D&A. Tops: Hunton-Woodford contact 17,330' (-15,222'), Sylvan 17,785' (-15,677'); Hunton thickness 455'. Samples examined from lower part of Woodford through Hunton and to TD in Sylvan; 13 thin sections; samples at Oklahoma Well Sample Service, Shawnee, Oklahoma.

The Hunton strata in this well are a part of the western dolomite facies, including much crystalline dolomite. Their relationship to Hunton rocks in the Custer County area to the east and in the Texas Panhandle area to the west is shown in panel 10, section C-C'; this relationship suggests that all of the Hunton Group in the 1-17 Harrell is Silurian.

Woodford Shale

Hunton Group 17,330'-17,785'

17,330'-17,430' ?Silurian. Medium-gray crystalline dolomite with some chert. Minor silt-size angular to subangular quartz detritus.

17,430'-17,560' Fossiliferous limestone with scattered euhedral crystals of dolomite; dolomite content variable but appears to be everywhere low, probably all less than 15% MgCO<sub>3</sub>. Fossils retain original microtexture. Minor silt-size quartz detritus.

17,560'-17,590' Crystalline dolomite with some chert.

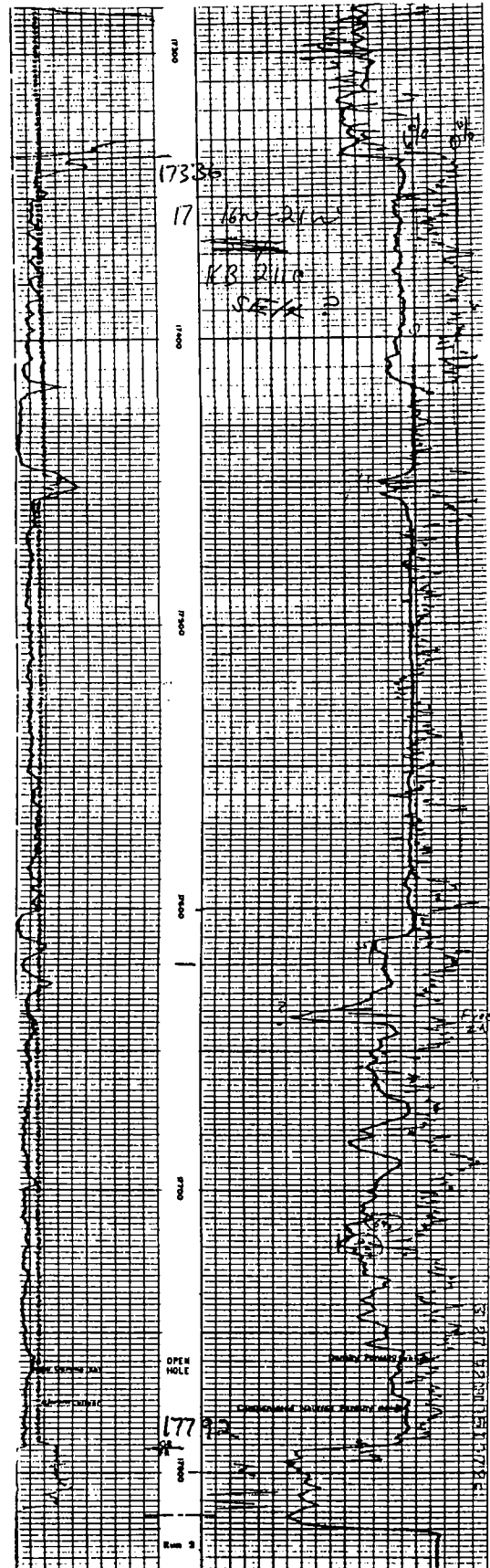
17,590'-17,610' ?Chimneyhill Subgroup. Organo-detrital limestone with pink crinoids; very little dolomite, and only minor detrital quartz.

17,610'-17,785' Crystalline dolomite with scattered detrital quartz. Some chert. Overlying pink crinoidal limestone suggests that this unit may be dolomitized Chimneyhill. (Sample skip from 17,750' to 17,770'.)

Sylvan Shale 17,785'-17,829' (TD)

✓ **ARKLA EXPLORATION CO. 1-17 HARREL** — E $\frac{1}{2}$ W $\frac{1}{2}$  SE $\frac{1}{4}$  sec. 17, T16N, R21W, Roger Mills County, Oklahoma; elevation GL 2,083 ft, DF 2,108 ft; TD 17,829 ft (Sylvan); completion (Na), 10/5/72 (P).

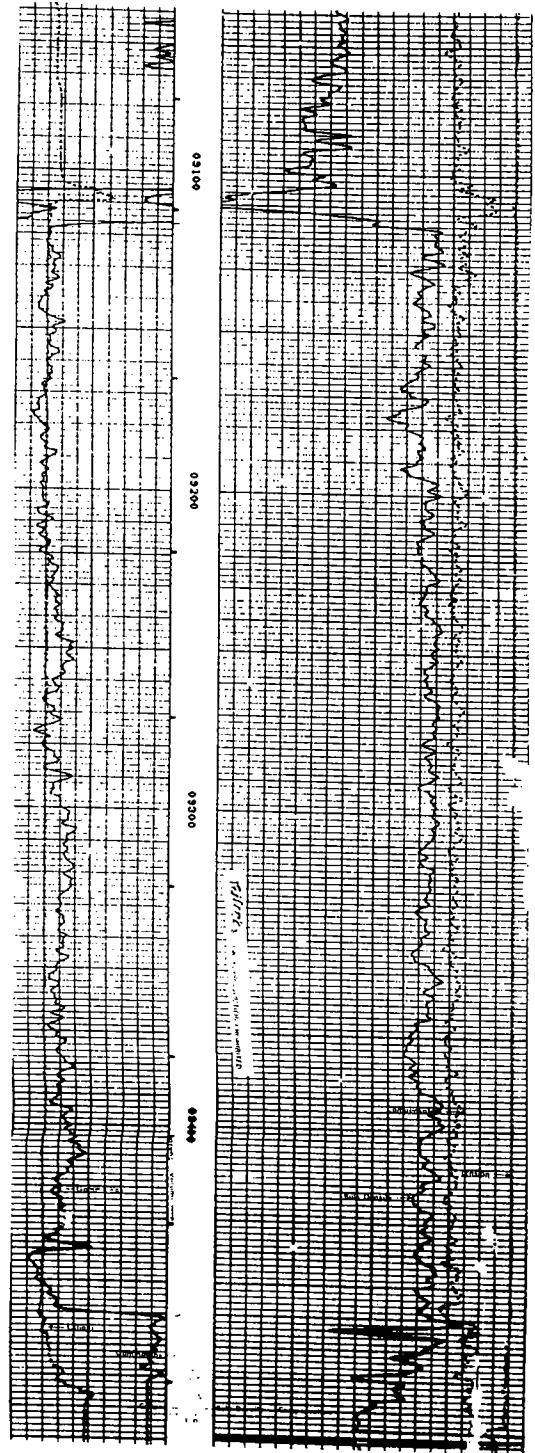
Described in Amsden (1975, p. 112-113). In 1975 the upper Hunton skeletal limestones were provisionally referred to the Lower Devonian Frisco and/or Fittstown Member(s) of the Bois d'Arc Formation. Present information on the distribution of Hunton strata in the basin suggests that these upper limestones are more reasonably referred to the *Kirkidium* biofacies, Henryhouse Formation.



**ANADARKO PRODUCTION CO. 1-35-A HARRIS —**  
NW¼SW¼NW¼ sec. 35, T3N, R3W, Garvin County,  
Oklahoma; elevation GL 1,255 ft, DF 1,276 ft; TD 9,520 ft  
(Viola); completion 4/12/84.

Tops (GR log) Hunton 9,114 ft, Sylvan 9,462 ft. Cored  
Hunton strata 9,750–9,798 ft; 7 thin sections (OGS Core and  
Sample Library). The cored interval is a low magnesium  
skeletal grainstone with a considerable amount of shearing  
and including calcite veins; glauconite common. Fossils  
include crinoids, ostracodes, trilobites, corals, brachiopods,  
the latter with kozlowskiellinids, schuchertellids, meristel-  
lids, and others; all mostly disarticulated. Poor preserva-  
tion precludes precise identification, but this assemblage  
appears to be Helderbergian. Dr. James E. Barrick (Texas  
Tech University) processed samples for conodonts but re-  
covered no diagnostic species.

Compare to the 2-26-A Bradshaw and the 1-24-A Phoe-  
nix.



ANADARKO 1-A HAWKINS--SE $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 26, T. 26 N., R. 11 W., Alfalfa County, Oklahoma; elev. 1190'; TD 6200' (Sylvan); compl. 4/14/66, D&A (formerly Ambassador Oil Co.). Tops: Woodford 6110' (-4920'), Hunton 6143' (-4953'), Sylvan 6155' (-4965'); Hunton thickness 12'. Cored 6135'-6160' (Woodford-Hunton-Sylvan); 2 thin sections; chemical analyses; OU Core Library.

This well is located very near northern truncated margin of Hunton.

Woodford Shale 6110'-6143'

About 1 inch of Misener Sandstone at base of Woodford.

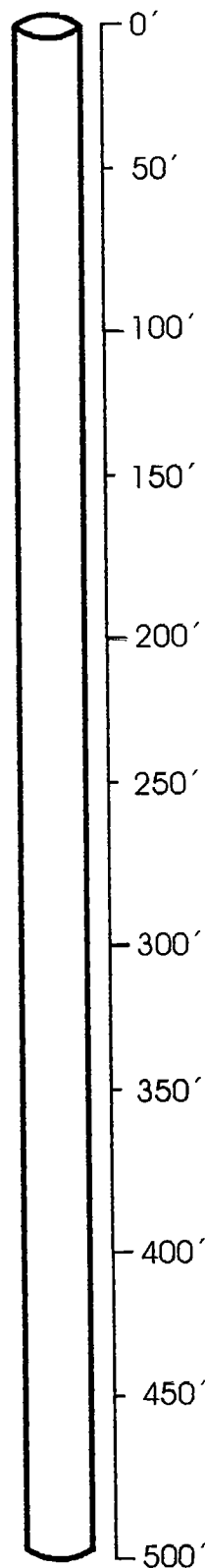
Hunton Group 6143'-6155'

6143'-6155' Silurian-Chimneyhill Subgroup-?Cochrane Formation. Glauconitic organo-detrital dolomitic limestone with some pink crinoidal beds (MgCO<sub>3</sub> averages 18.79%, insoluble detritus 1.31%). Referred to Cochrane Formation, Chimneyhill Subgroup, on basis of lithologic character and stratigraphic position.

Sylvan Shale 6155'

Upper foot or so is green dolomitic siltstone.

Log not available



GLOVER HEFNER KENNEDY 1-27 HAYES--NW¼NW¼SW¼SE¼ sec. 27, T. 12 N., R. 14 W., Custer County, Oklahoma; elev. 1807'; TD 19,474' (Ordovician); compl. 10/1/72, Atoka production. Tops: Woodford 18,370' (-16,563'), Hunton 18,528' (-16,721'), Sylvan 19,050' (-17,243'), Viola 19,474' (-17,667') (samples indicate Viola top at 19,220'); Hunton thickness 522'. Samples examined from Mississippian (Sycamore) through Woodford, Hunton, Sylvan, and into upper Viola; 15 thin sections, stained with Alizarin Red-S; samples from Oklahoma Well Sample Service, Shawnee, Oklahoma.

Hunton strata in the 1-27 Hayes are in a fairly typical Arbuckle Limestone facies, both in terms of lithology and lithostratigraphic sequence; however, this well is probably located near the northern extension of this facies, although control in this region is sparse. Compare Hunton rocks in this well with those present in wells to the south, in the deeper parts of the Anadarko basin (panel 10, section C-C').

Woodford Shale 18,370'-18,528'

Hunton Group 18,528'-19,050'

18,528'-18,610' ?Frisco Formation and (or) Pittstown Member, Bois d'Arc Formation.

Light-gray organo-detrital sparite with very little dolomite and not much detrital quartz. Organic material fragmented, consisting of pelmatozoan plates and shelly debris, latter with fragments of large brachiopods, trilobites, ostracodes, and numerous bryozoans. Contact with underlying unit well defined.

18,610'-18,980' ?Haragan and (or) ?Henryhouse Formation. Medium- to dark-gray marlstone with varying concentrations of angular to subangular silt-size quartz detritus, mostly less than 0.1 mm in diameter; some mica present. Dolomite crystals (about same size as quartz detritus) moderately common, in places fairly concentrated but at no place approaching a crystalline-dolomite texture. Fossils present, including pelmatozoan plates and shelly debris; ostracodes common in some beds.

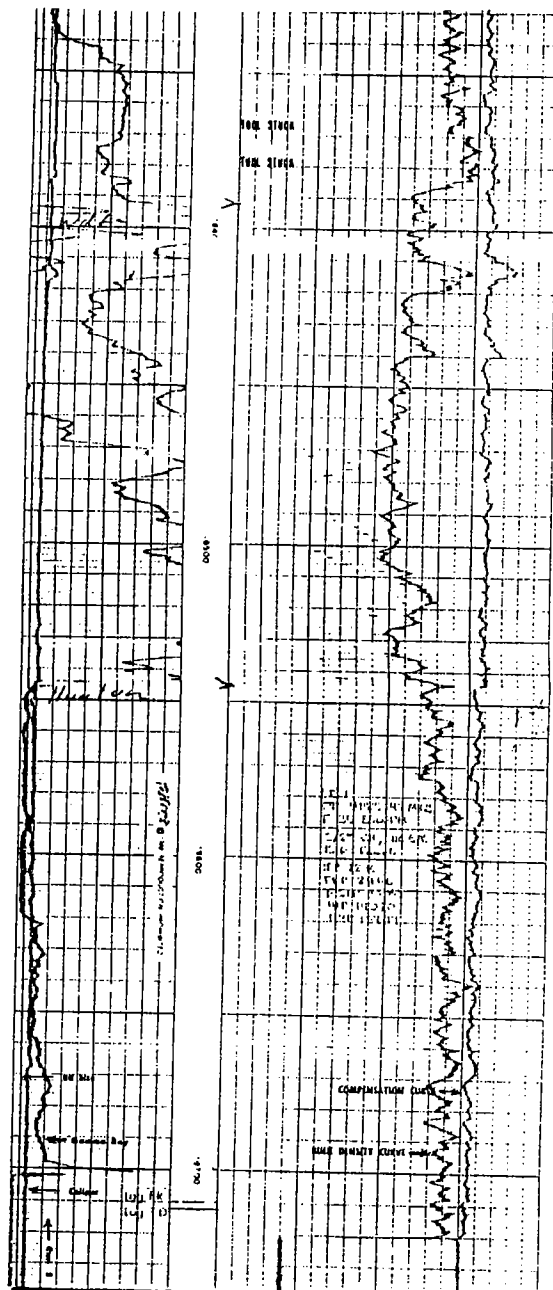
18,980'-19,050' Chimneyhill Subgroup.

Light-gray to pinkish-gray pelmatozoan limestone with very little detrital quartz or dolomite. Includes some shelly debris, but largely crinoidal limestone.

Sylvan Shale 19,050'-19,474'

Viola Limestone 19,474'

Dark-gray organo-detrital limestone with very little quartz or dolomite.



GHK-GAS ANADARKO 1-27 WILBUR HAYES — NW¼ SW¼SE¼ sec. 27, T12N, R14W, Custer County, Oklahoma; elevation GL 1,781 ft, DF 1,805 ft; TD 19,474 ft (Ordovician); completion 10/1/72.

Lower Woodford-Hunton-Sylvan-upper Viola samples examined; 15 thin sections (Amsden, 1975, p. 113). The stratigraphic sequence of Frisco-Henryhouse-Chimneyhill cited in the 1975 report and followed on the PRE-WOODFORD SUBCROP MAP (PLATE 1) is based on lithostratigraphic sequence, there being no biostratigraphic control available from the 1-27 Hayes or any nearby well.

WOODS 1 HENDERSON—C NE<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub> sec. 18, T. 4 N., R. 6 E., Pontotoc County, Oklahoma; elev. 971' RT (968' GL); TD 3125' (Ordovician, Simpson); compl. 11/13/52, production unknown. Tops: Hunton 2162' (-1191') (sample depth), Sylvan 2230' (-1259') (sample depth), Welling 2364' (-1393') (sample depth); Hunton thickness 68'. Samples examined from 2080' to 2390', good quality; 10 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The Hunton Group in this well appears to be in the typical Arbuckle Mountain lithofacies consisting of an upper marlstone (Henryhouse and/or Haragan), underlain by Chimneyhill Subgroup (including Clarita, Cochrane, and Keel Formations). It is all low-magnesium limestone.

*Woodford (Chattanooga) Shale*

No Misener Sandstone recognized.

*Hunton Group* 2162'-2330' (sample depths)

2162'-2210' (sample depths) Silurian-?Devonian; Henryhouse Formation possibly including some Haragan beds. Weakly fossiliferous marlstone. Sparse, scattered subangular detrital quartz to 0.2 mm; only weakly dolomitized throughout.

2210'-2230' (sample depths) Chimneyhill Subgroup (thickness 20').

2210'-2215' (sample depths) ?Clarita Formation. Pink crinoidal micrite with minor spar; ostracodes and trilobites common. Very little detrital quartz and very little dolomite.

2215'-2220' (sample depths) Cochrane Formation. Glauconitic organo-detrital spar and micrite. Very little detrital quartz; moderate scattered dolomite crystals. Chert.

2220'-2230' (sample depths) Keel Formation. Oolites with radial and banded structure set in a matrix partly spar, partly micrite. Fossiliferous, including fossils forming the core of the oolites (some oolites not well rounded, taking the shape of its fossil nucleus). Very little detrital quartz and very little dolomite.

*Sylvan Shale* 2230'-2364' (sample depths)

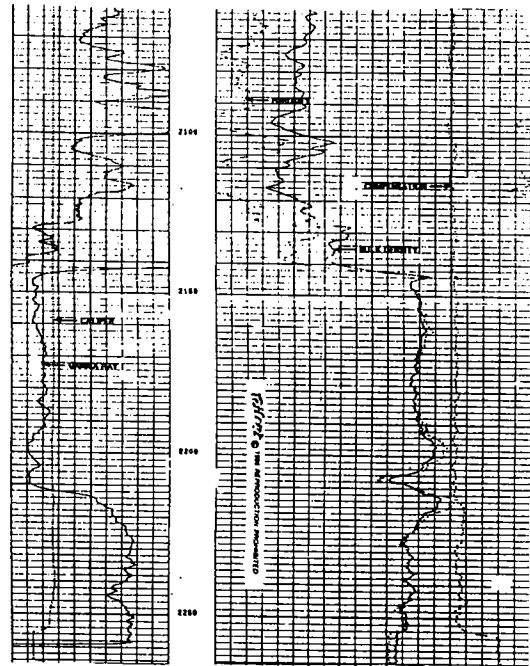
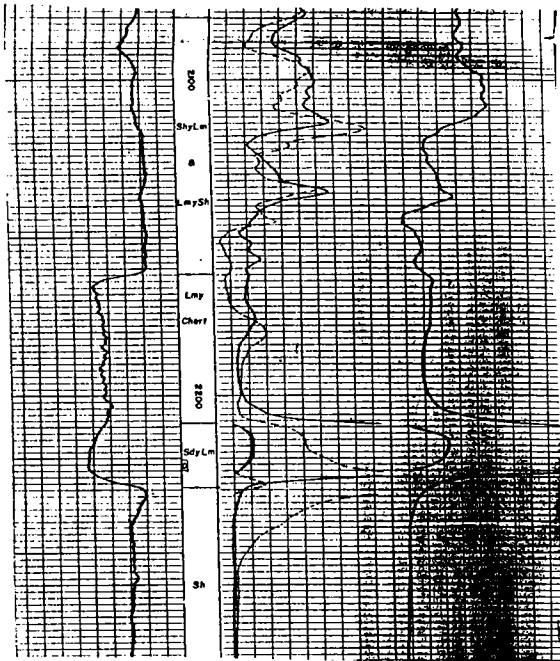
*Welling Formation* 2364' (sample depth)

2368'-2370' (thin section) Organo-detrital sparite, minor micrite, with no observed detrital quartz and very little dolomite.

2385'-2390' (thin section) Crystalline dolomite with numerous well-rounded quartz grains to 0.7 mm.

Woods  
1 Henderson  
NE NW NW  
Sec. 18, T. 4 N., R. 6 E.  
Pontotoc County, Oklahoma  
elev. 971'

Lema Petroleum  
1 Lucky  
NW NW  
Sec. 18, T. 4 N., R. 6 E.  
Pontotoc County, Oklahoma  
elev. 964'



PARKER 1 HENSLEY--C NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 21, T. 23 N.,  
R. 18 W., Woodward County, Oklahoma; elev.  
1968'; TD 9266' (Sylvan); compl. 10/20/60,  
D&A. Tops: Woodford (CC) 8958' (-6990'),  
Hunton (CC) 8959' (-6991'), Sylvan (CC) 9219'  
(-7251'); Hunton thickness 260'. Cored 8966'-  
9000', 9009'-9040' (all Hunton); no thin  
sections; chemical analyses; OU Core Library.

No diagnostic fossils obtained from this core,  
but these strata are tentatively correlated  
with *Kirkidium* biofacies on basis of their  
stratigraphic position; cf. to Getty 1-B  
Coffman and Tenneco 1-A Jordan Unit.

Woodford Shale 8958'

Hunton Group 8959'-9219'

8959'-8966' No core.

8966'-9000' ?Silurian. Gray crystalline  
dolomite with some fossils; chert in upper  
10' (MgCO<sub>3</sub> averages 35.62%, HCl insolubles  
7.59%). No diagnostic fossils observed;  
assigned to Silurian on basis of strati-  
graphic position.

9000'-9009' No core.

9009'-9040' Light-gray dolomitic limestone  
with a few small chert nodules (MgCO<sub>3</sub>  
averages 12.83%, HCl insolubles 3.35%).

9040'-9219' No core.

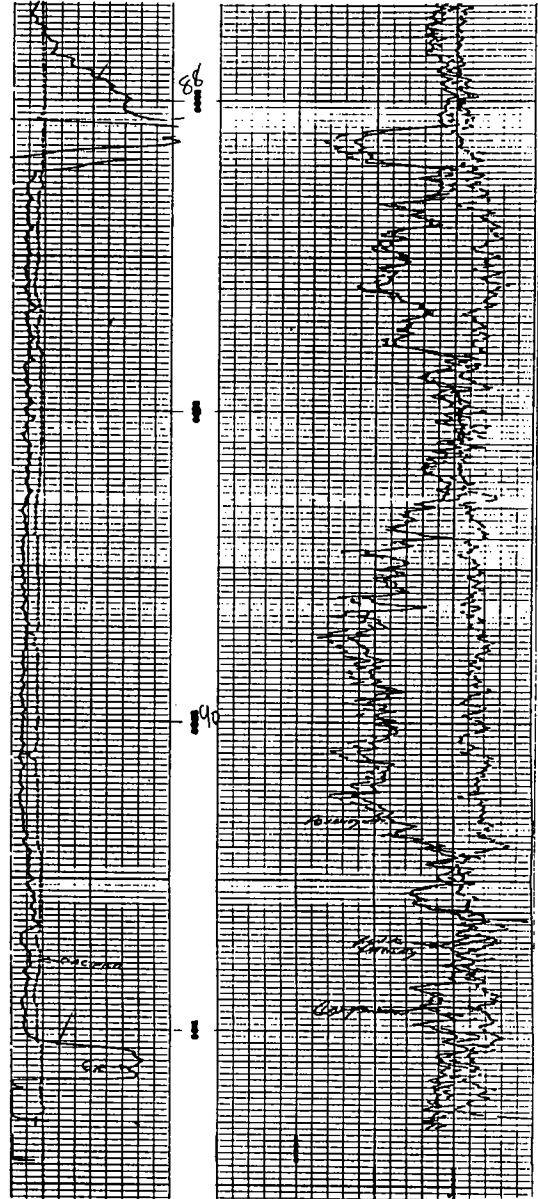
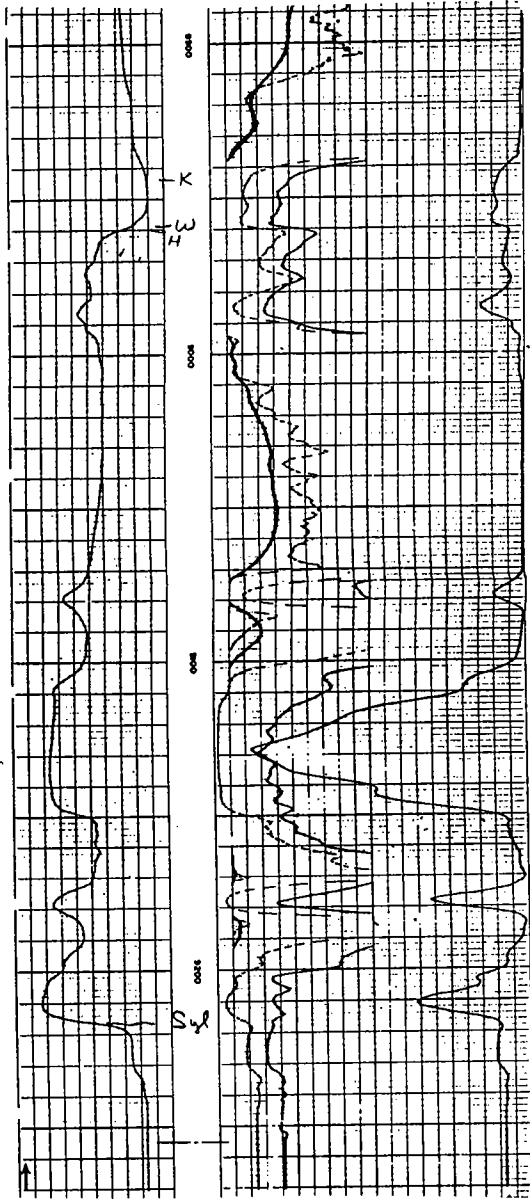
Sylvan Shale 9219'

G. C. PARKER et al. 1 HENSLEY — C NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 21,  
T23N, R18W, Woodward County, Oklahoma; elevation  
1,968 ft (unk); TD 9,266 ft (Sylvan); completion (Na), drill-  
ing started 6/3/60.

Cored 73 ft of basal Woodford and upper Hunton  
strata; 9 thin sections prepared; MgCO<sub>3</sub> and HCl analy-  
ses made; conodont samples sent to Dr. James E. Barrick  
(Texas Tech University) who reports *Walliserodus* sp., *Pan-  
derodus unicastatus* and other conodonts from the core.  
Samples from the underlying Hunton and upper Sylvan  
examined and 10 thin sections prepared. Described in  
Amsden (1975, p. 88). *Illustrated on PLATE 2, STRATIGRAPHIC  
SECTION B-B'.*

Parker  
1 Hensley  
NE SW  
Sec. 21, T. 23 N., R. 18 W.  
Woodward County, Oklahoma  
elev. 1968'

Apache Corporation  
1 Gariuie Unit  
SE NW  
Sec. 26, T. 23 N., R. 18 W.  
Woodward County, Oklahoma  
elev. 1897'





CARTER 1 HESTER--SW $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 27, T. 5 N.,  
R. 3 W., McClain County, Oklahoma; elev.  
1036'; TD 7799' (Sylvan); compl. 7/28/60, no  
Hunton production reported. Tops: Hunton  
(CC) 7451' (-6415'), Sylvan (CC)  
7784' (-6748'); Hunton thickness 333'. Cored  
7770'-7783.3' (all Hunton); 4 thin sections;  
chemical analyses; OU Core Library.

Lithology and lithostratigraphic sequence  
is typical for Clarita-Cochrane section of  
Chimneyhill (no Keel observed); Cochrane  
fossil Triplesia alata Ulrich and Cooper  
collected at 7777'.

Woodford Shale Top not determined.

Hunton Group 7451'-7784'

7451'-7770' No core.

7770'-7775' Silurian; Chimneyhill

Subgroup; Clarita Formation. Gray  
organo-detrital limestone with micrite  
cement; numerous pink crinoid plates.

Formic residues with inarticulate brachi-  
opods and conodonts. Assigned to Clarita  
Formation on basis of lithologic character  
and stratigraphic position.

7775'-7783.3' Chimneyhill Subgroup; Cochrane

Formation. Pale-gray organo-detrital lime-  
stone, mainly spar cement; much glauconite.

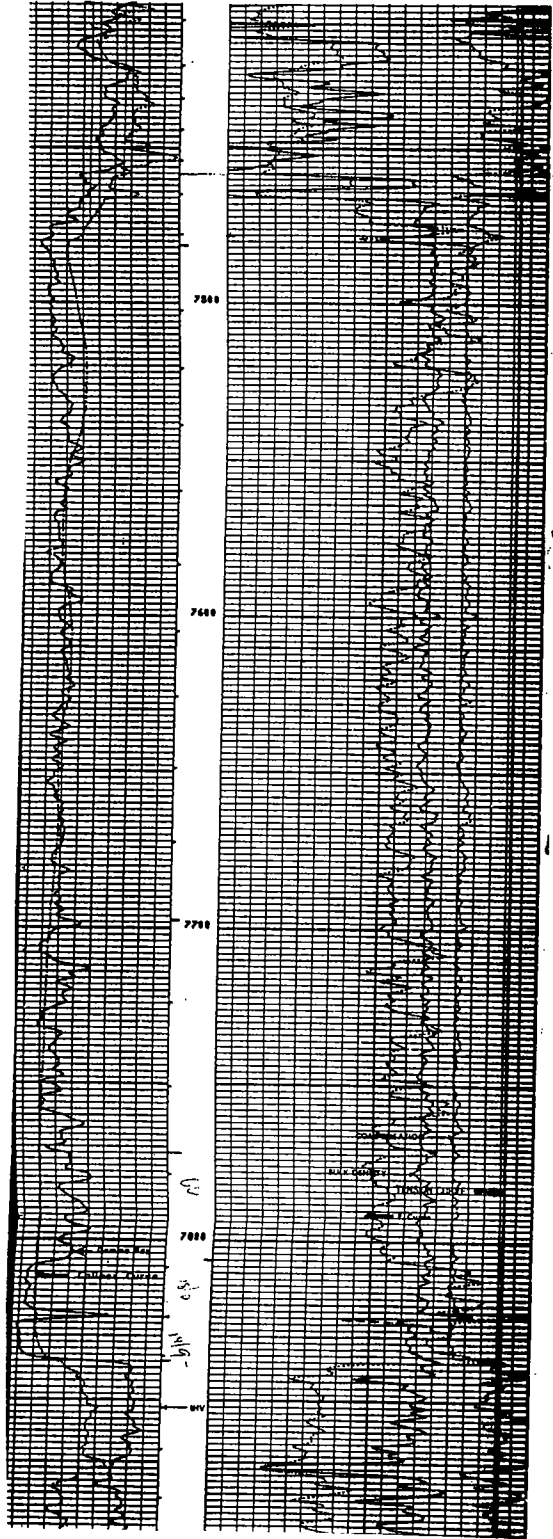
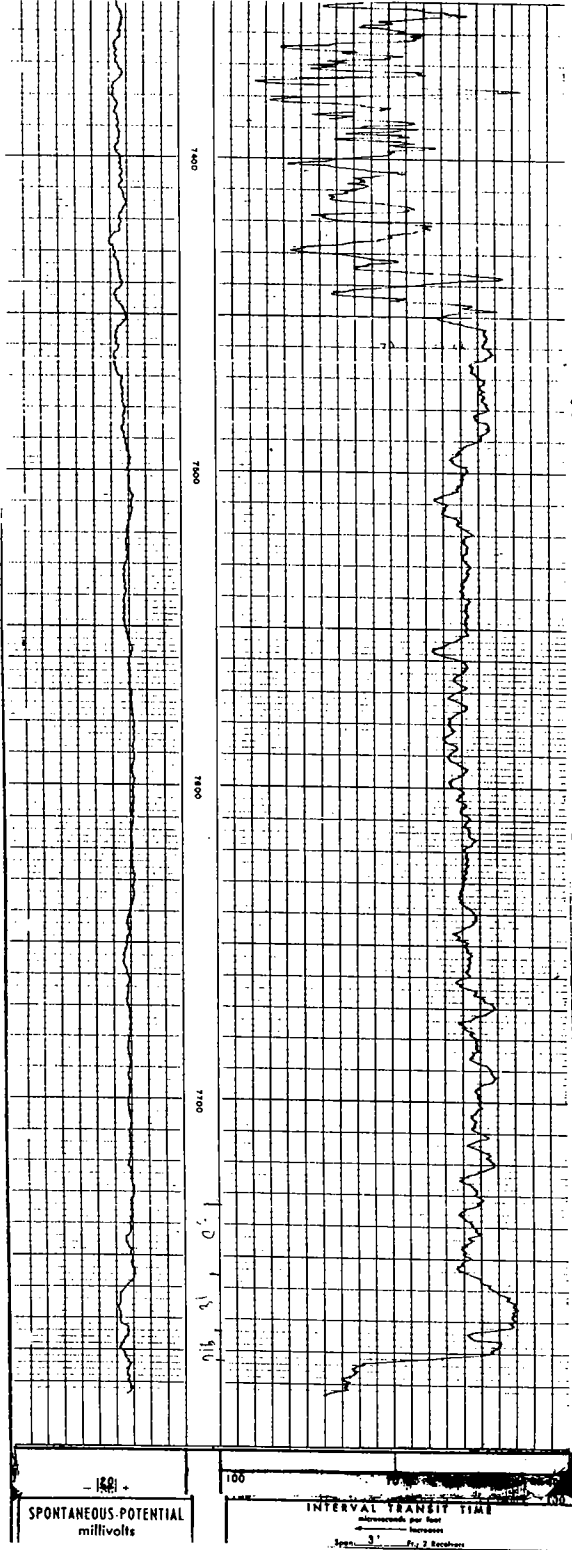
Triplesia alata at 7777'. Assigned to  
Cochrane on basis of fossils, lithologic  
character, and stratigraphic position.

Note: all of cored interval is low-  
magnesium limestone; MgCO<sub>3</sub> averages 2.54%,  
HCl insolubles 6.51%. Core did not cut  
Sylvan, but reported tops indicate that it  
must have been very near.

Sylvan Shale 7784'

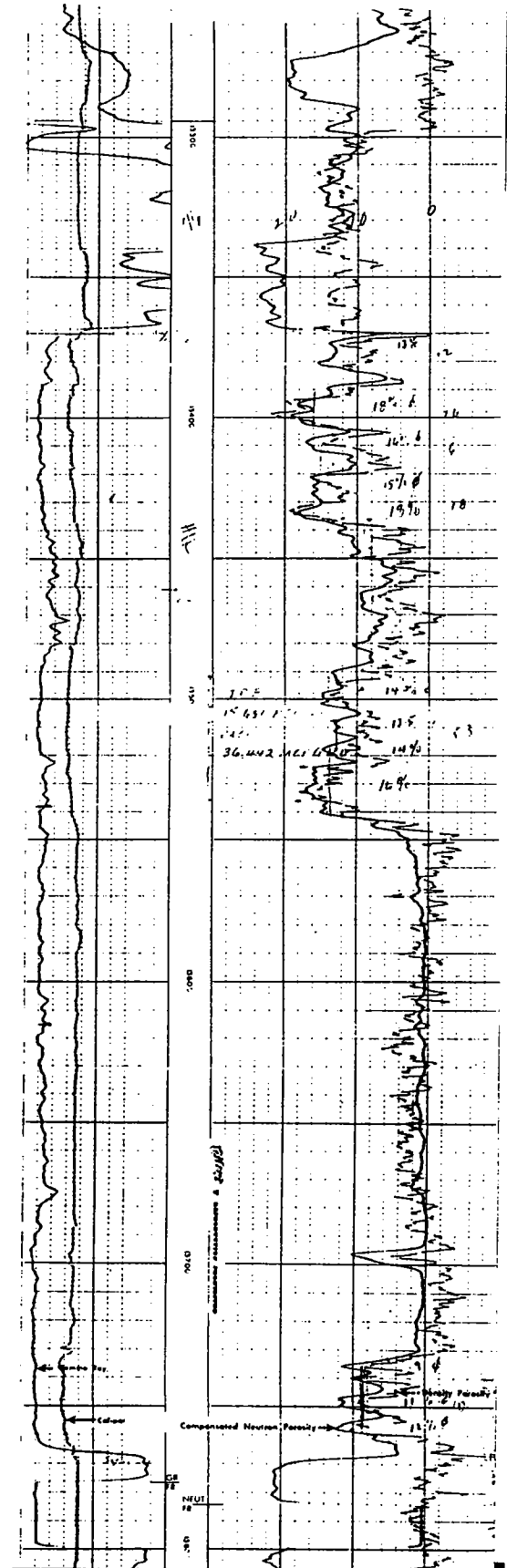
Carter  
 1 Hester  
 SW SE  
 Sec. 27, T. 5 N., R. 3 W.  
 McClain County, Oklahoma  
 elev. 1036'

Devon Energy  
 2-27 Baker  
 SE SE  
 Sec. 27, T. 5 N., R. 3 W.  
 McClain County, Oklahoma  
 elev. 1082'



**AMAX PETROLEUM CORP. 1 HICKMAN** — NE $\frac{1}{4}$ SW $\frac{1}{4}$  NE $\frac{1}{4}$  sec. 24, T17N, R18W, Dewey County, Oklahoma; elevation GL 1,849 ft, DF 1,859 ft; TD (Na), Ttu 13,818 ft (Sylvan); completion 1/4/76.

Cored 50 ft of Hunton, starting 130 ft below the Woodford-Hunton contact. This is a porous, crystalline dolomite with fossils, mostly preserved as molds; specimen of a calymenid trilobite at 13,500 ft. Examined by Amsden, 1976, 1981; 3 thin sections. *Illustrated on PLATE 2, STRATIGRAPHIC SECTION B-B'.*



ANADARKO 1 HILPERT--C SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 2, T. 14 N., R. 4 W., Oklahoma County, Oklahoma; elev. 1071'; TD 6700' (Sylvan); compl. 9/6/66, Hunton production reported (perforated 6782'-6790', 6795'-6800'). Tops: Woodford (CC) 6366' (-5295'), Hunton (CC) 6387' (-5316'), Sylvan (CC) 6661' (-5590'); Hunton thickness 274'. Cored 6581'-6587.8', 6595'-6601', 6641.3'-6646', 6650'-6656' (all Hunton); 2 thin sections; chemical analyses; OU Core Library.

Cored portion of this well is low-magnesium limestone showing substantial solution and some visual porosity.

Woodford Shale 6366'-6387'

Hunton Group 6387'-6661'

6387'-6581' No core. This interval may include some Lower Devonian in upper part (see pre-Woodford subcrop map, panel 9).

6581'-6587.8' Silurian; Chimneyhill Subgroup.

Gray to pinkish-gray organo-detrital limestone with numerous pink crinoid plates; mostly micrite cement. Formic residues with conodonts. No diagnostic fossils observed; referred to Chimneyhill on basis of lithologic character and stratigraphic position (it has typical Clarita lithology).

6587.8'-6596' No core.

6595'-6601' Organo-detrital limestone like above.

6601'-6641.3' No core.

6641.3'-6646' Organo-detrital limestone with pink crinoid plates; similar to overlying cored strata.

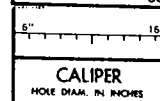
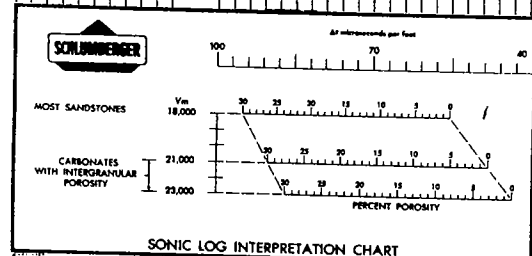
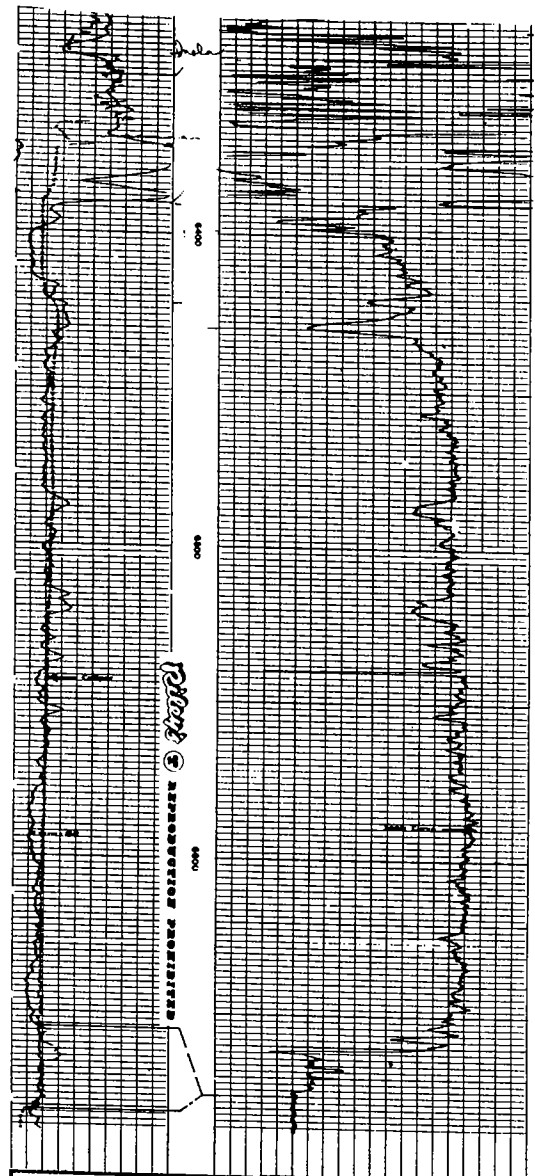
6646'-6650' No core.

6650'-6656' Gray to pinkish-gray organo-detrital limestone; micrite cement, numerous pink crinoids. Similar to overlying cored strata.

Note: All of above cored strata are organo-detrital micrites with very little dolomite or HCl insolubles (MgCO<sub>3</sub> averages 2.58%, HCl insolubles 3.225%); it is typical Clarita lithology with very little glauconite.

6656'-6661' No core.

Sylvan Shale 6661'



GLOVER HEFNER KENNEDY 1-1 HOFFMAN--NE $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 1, T. 14 N., R. 16 W., Custer County, Oklahoma; elev. 1711'; TD 14,880' (Viola); compl. 2/27/69, D&A. Tops: Hunton (core) 14,267' (-12,556'), Sylvan (CC) 14,824' (-13,113'); Hunton thickness 557'. Cored 14,250'-14,349' (Woodford-Hunton); 2 thin sections; chemical analyses; porosity-permeability test (P16-A); OU Core Library.

No specimens of *Kirkidium* recovered from upper 14' of Hunton, and this interval could include some Lower Devonian; however, it is tentatively referred to *Kirkidium* biofacies because of its lithologic similarity to underlying strata, which bear *Kirkidium*. Cored strata have a relatively high insoluble content (average 16.52%), possibly reflecting proximity of this well to basinal marlstone lithofacies (see panel 2). *Kirkidium* sp. ranges through at least 70' of this core.

Woodford Shale Top not available.

Hunton Group 14,267'-14,824'

14,267'-14,281' ?Silurian; ?*Kirkidium* biofacies. Gray crystalline dolomite. No diagnostic fossils observed, and this interval assigned to *Kirkidium* biofacies on basis of stratigraphic position and lithologic character (immediately underlain by crystalline dolomites with *Kirkidium* sp. This interval has 35%-36% MgCO<sub>3</sub> and 9% HCl insolubles. One porosity test<sup>3</sup> (P16-A) shows 0.32% porosity and 0.00 md permeability.

14,281'-14,319' Silurian; *Kirkidium* biofacies. Photomicrograph, pl. 13, fig. 5. Gray crystalline dolomite; MgCO<sub>3</sub> averages 33.01%, HCl insolubles 15.37%.<sup>3</sup> Specimens of *Kirkidium* at 14,281' and 14,293'.

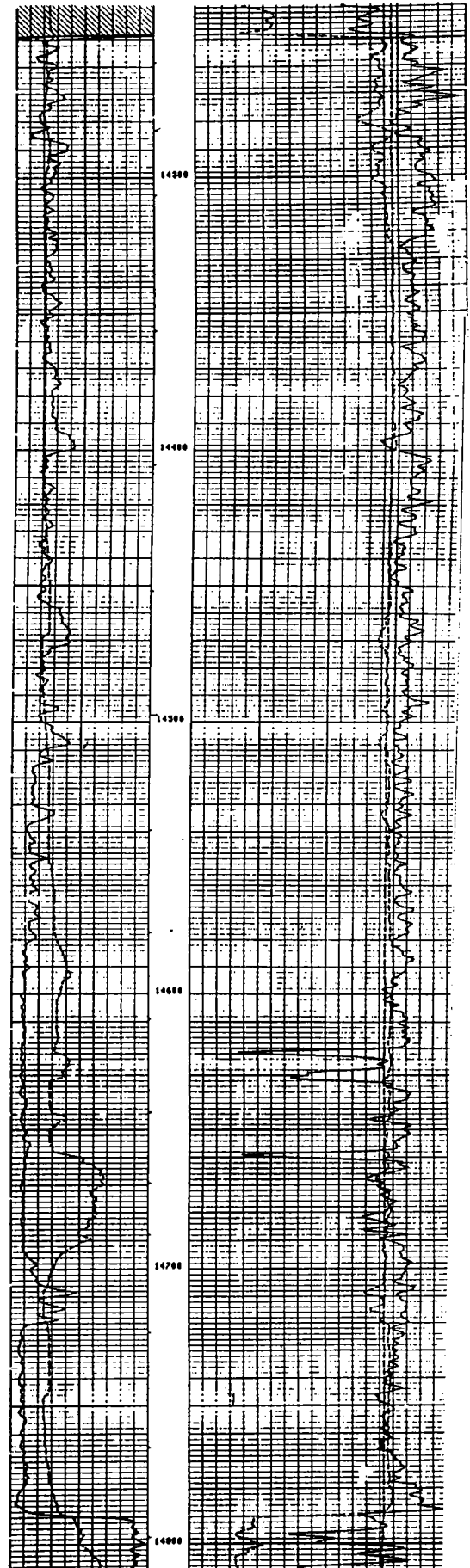
14,319'-14,349' Gray calcareous dolomite and dolomitic limestone with many specimens of *Kirkidium* sp. This interval averages 21.24% MgCO<sub>3</sub> and 18.25% HCl-insoluble residues.

14,349'-14,824' No core.

Sylvan Shale 14,824'

**GLOVER HEFNER KENNEDY OIL CO. 1-1 HOFFMAN**  
— SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 1, T14N, R16W, Custer County, Oklahoma; elevation GL 1,688 ft, DF 1,710 ft; TD 14,905 ft (Ordovician); completion (Na), 2/14/69 (P).

Cored ~100 ft of lower Woodford- upper Hunton strata. Cored 83 ft of heavily dolomitized Hunton carbonate strata. Specimens of *Kirkidium* sp. range throughout this interval (Amsden, 1975, p. 89). Compare to Hunton cores from other wells located in Custer County (see PLATE 1, PRE-WOODFORD SUBCROP MAP; PLATE 2, STRATIGRAPHIC SECTION D-D').



PAN AMERICAN 1 ZOE HOLT UNIT—C  
 N<sup>1</sup>/<sub>2</sub>NE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 20, T. 9 N., R. 25 E., Le Flore  
 County, Oklahoma; elev. 531'; TD 8342' (Ordovician);  
 compl. 11/23/62, production unknown. Tops: Wood-  
 ford 7965' (-7421') (GR log), Hunton 8041' (-7510')  
 (GR log), Sylvan 8212' (-7681') (GR log), Welling  
 8240' (-7709') (sample depth); Hunton thickness  
 170'. Samples examined from 7990' to 8280'; cuttings  
 small (not air drilled) and with considerable dark  
 shale contamination; 13 thin sections, OGS; samples,  
 Oklahoma Well Sample Service, Shawnee, Oklaho-  
 ma.

Only 1 piece of quartz sandstone identified in the  
 upper part of this well, and the ?Misener (?Sallisaw)  
 must be very thin. The Hunton in this well has less  
 dolomite than does the 1 Reinhardt. Some parts are  
 represented by crystalline dolomite; the 1 Holt is  
 more similar to the 1 Dyer in this respect. Hunton  
 strata are tentatively assigned to the Chimneyhill  
 Subgroup (on the basis of stratigraphic position and  
 thickness).

*Woodford (Chattanooga) Shale* 7965'-8041' (GR log)  
 ?Thin Misener Sandstone at base.

*Hunton Group* 8041'-8212' (GR log)

8041'-8080' (sample depths) Silurian; Chimney-  
 hill Subgroup. Weakly to strongly dolomitized,  
 pelmatozoan limestone with little if any detrital  
 quartz.

8080'-8125' (sample depths) Mostly crystalline  
 dolomite, parts porous. Little if any detrital quartz.

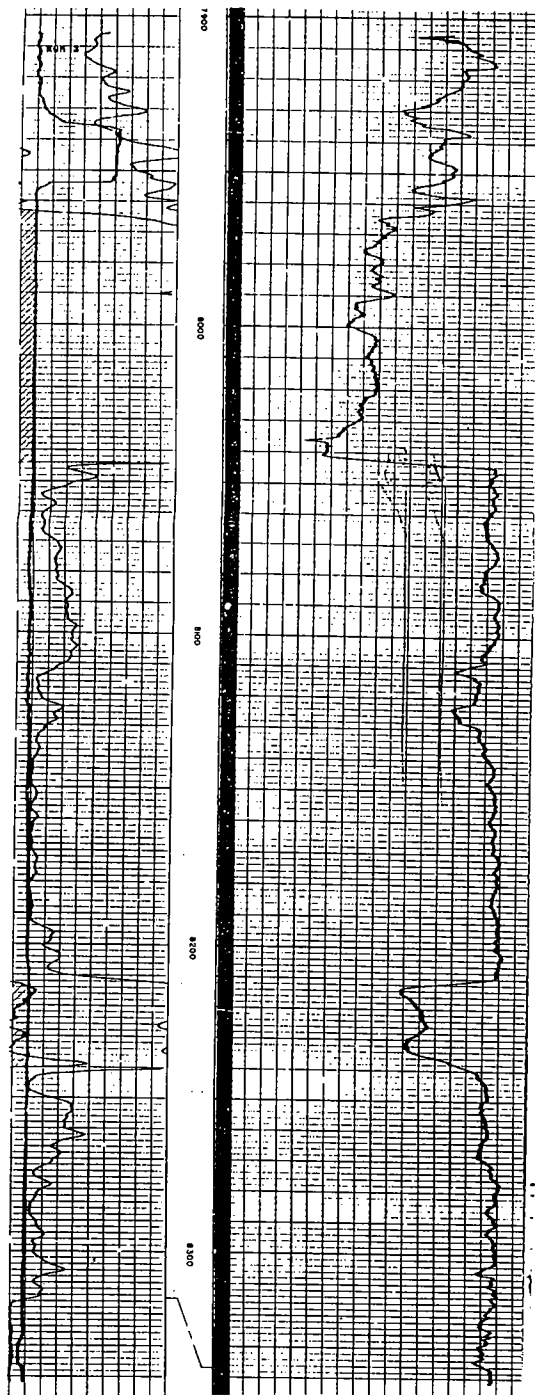
8125'-8195' (sample depths) Weakly to heavily  
 dolomitized pelmatozoan limestone. Little if any  
 detrital quartz.

8195'-8212' (sample depths) Heavily dolomitized  
 limestone.

*Sylvan Shale* 8212' (GR log) -8240' (sample depth)

*Welling Formation* 8240' (sample depth)

8240'-8245' (thin section) Mostly pelmatozoan  
 sparite with some brachiopod and bryozoan debris;  
 scattered, relatively coarse (to 1 mm). Euhedral  
 dolomite crystals; no detrital quartz observed.



GULF 1 HOLTZSCHUE--NW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 8, T. 12 N.,  
R. 2 W., Oklahoma County, Oklahoma; elev.  
1143'; TD 6505' (Hunton); compl. 11/6/49,  
Hunton production reported (perforated  
6442'-6478'). Tops: Misener (core) 6431'  
(-5288'), Hunton 6447' (-5304') (TD in  
Hunton). Cored 5687'-5746', 6342'-6506'  
(latter Woodford-Misener-Hunton); 7 thin  
sections; chemical analyses; OU Core Library.

Silurian-Devonian boundary can be precisely  
located in this well; specimens of Kirkidium  
are present within 3' of strata with Frisco  
brachiopods. Undoubtedly some, if not all,  
Hunton production is from Lower Devonian  
Frisco Formation (probably some also from  
overlying Misener Sandstone).

Woodford Shale Top not available.

Misener Sandstone 6431'-6447'

Light-colored sandstone with some shaly  
beds.

Hunton Group 6447'-6505' (TD)

6447'-6479' Lower Devonian; Frisco Formation.

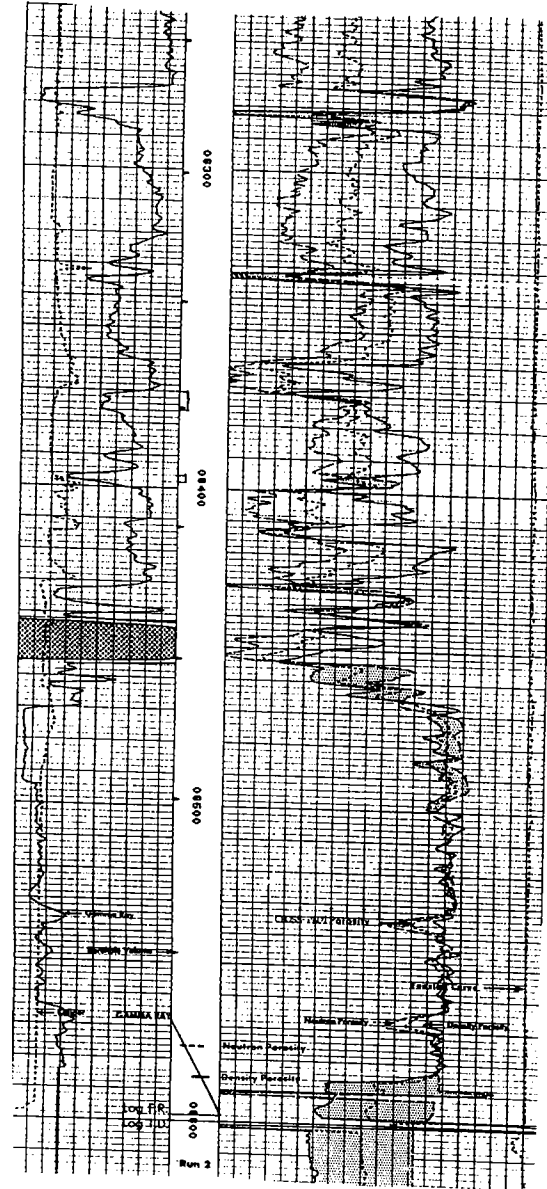
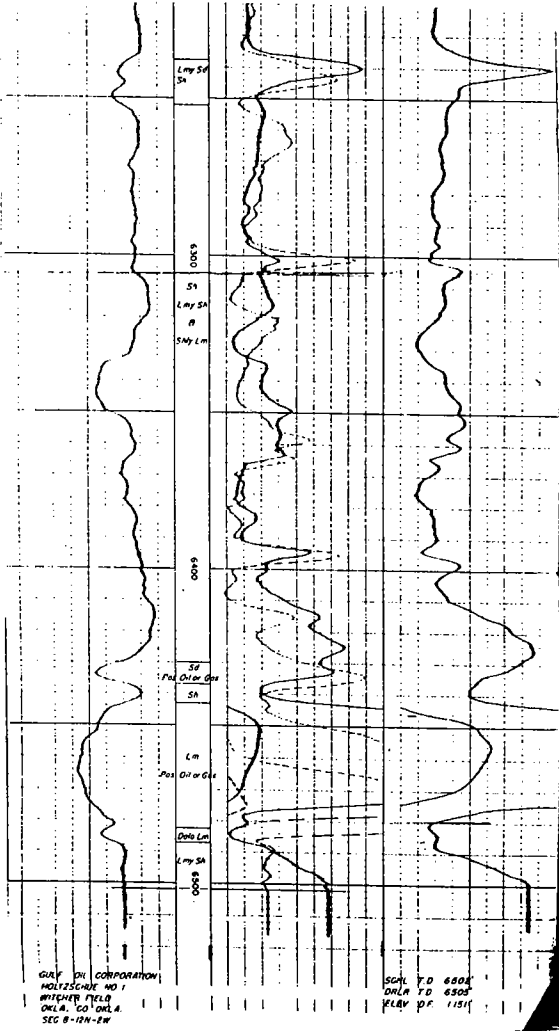
Light-gray organo-detrital limestone, mostly  
with spar cement; very low in dolomite and  
insoluble residues (MgCO<sub>3</sub> averages 0.91%;  
HCl insolubles 2.10%). Oolitic beds in  
lower part (photomicrograph, pl. 2, fig. 6).  
This interval fossiliferous, yielding  
specimens of Costispirifer arenosus,  
Leptostrophia magnifica, Rensselaeria cf.  
R. elongata, Meristella vascularia?,  
Strophonella sp., Trachypora sp. (fossils  
at 6455', 6462', 6468', 6470', 6474',  
6479'). Assigned to Frisco Formation on  
basis of these fossils. Sharp lithologic  
break between low-magnesium, low-insoluble  
limestones of Frisco and underlying  
Kirkidium biofacies with substantially  
increased dolomite and insoluble detritus  
(see text-fig. 20).

6479'-6505' Silurian; Kirkidium biofacies.  
Gray organo-detrital limestone with much  
subangular silt-size quartz detritus (HCl  
insolubles average 15.48%). Micrite  
cement with euhedral crystals of dolomite  
(MgCO<sub>3</sub> averages 14.12%). Probably largely  
a grain-supported (fossil-clast) texture.  
Specimens of Kirkidium recovered at 6482'-  
6486', 6496'.

TD 6505'

Gulf  
 1 Holtzschue  
 NW NW SW  
 Sec. 8, T. 12 N., R. 2 W.  
 Oklahoma County, Oklahoma  
 elev. 1143'

ONEOK Resources  
 1-A Krauss  
 SE SE SE  
 Sec. 8, T. 12 N., R. 2 W.  
 Oklahoma County, Oklahoma  
 elev. 1222'





SINCLAIR 1 HORLIVY--C SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 19, T. 11 N.,  
 R. 5 W., Canadian County, Oklahoma; elev.  
 1387'; TD 9792' (Simpson Group); compl.  
 4/1/65, D&A. Tops: Woodford (CC) 8680'  
 (-7293'), Hunton (CC) 8764' (-7377'), Sylvan  
 9171' (-7784'); Hunton thickness 407'.  
 Cored 8780'-8839' (all Hunton); 4 thin sec-  
 tions; chemical analyses; OU Core Library.

Well-defined lithostratigraphic contact at  
 8837' between low-magnesium, low-insoluble  
 organo-detrital limestones of Frisco Forma-  
 tion and an underlying unit with substan-  
 tially increased insoluble detritus (7.06%)  
 and some increase in MgCO<sub>3</sub> (3.33%). Lower  
 strata are tentatively assigned to Fitts-  
 town Member of the Bois d'Arc Formation,  
 but there are no faunal data to support this;  
 quite possibly this lower unit represents  
Kirkidium biofacies or even silty bed in Frisco,  
 although all of known Frisco Limestone in this  
 region has 95% or more CaCO<sub>3</sub> (text-fig. 32).

Woodford Shale 8680'-8764'

Hunton Group 8764'-9171'

8764'-8780' No core.

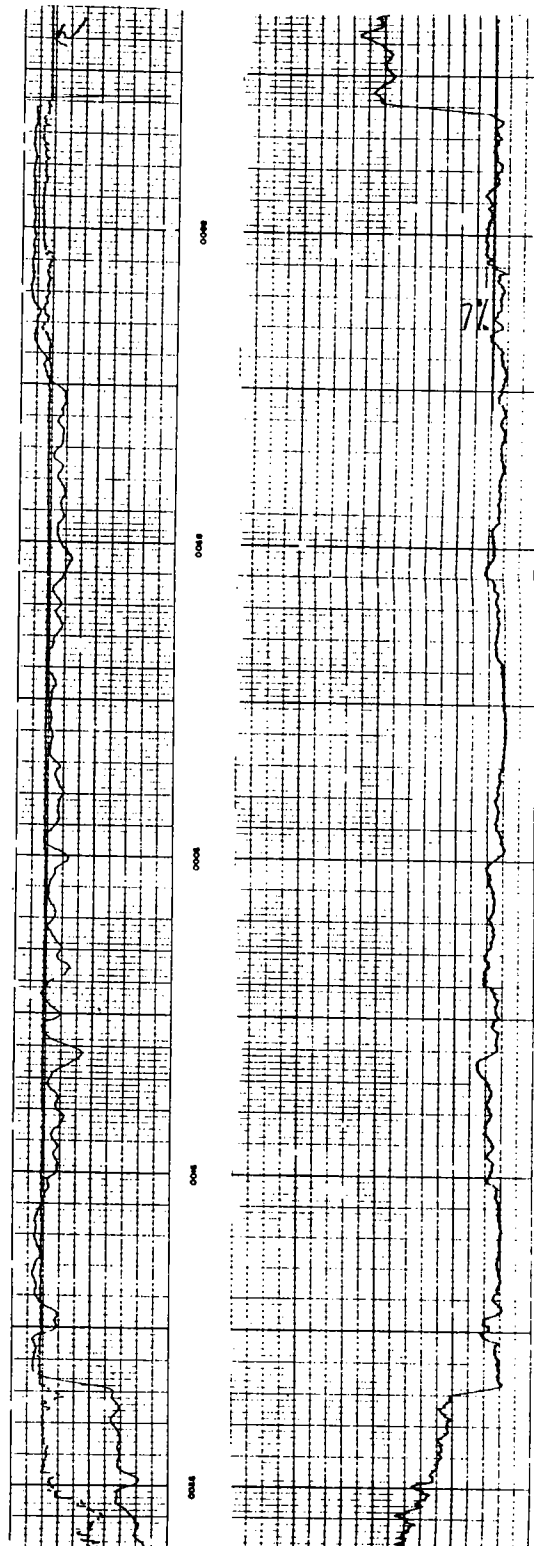
8780'-8837' Lower Devonian; Frisco Formation.

Light-gray organo-detrital limestone with  
 spar and micrite cement; very low in dolo-  
 omite and insolubles (MgCO<sub>3</sub> averages 1.13%,  
 HCl insolubles 0.70%). Photomicrographs,  
 pl. 1, fig. 4a, pl. 2, fig. 2. Fossils at  
 8781', 8802', 8813', 8820', 8828'; include  
Costispirifer arenosus and Rensselaeria sp.  
 Sharp lithologic break with underlying  
 unit.

8837'-8839' ?Lower Devonian; ?Fittstown  
 Member, Bois d'Arc Formation. Silty,  
 organo-detrital limestone with micrite  
 cement; 7.06% HCl insolubles, 3.33% MgCO<sub>3</sub>.  
 No diagnostic fossils observed, and refer-  
 ence of these strata to Bois d'Arc is  
 uncertain (see remarks above).

8839'-9171' No core.

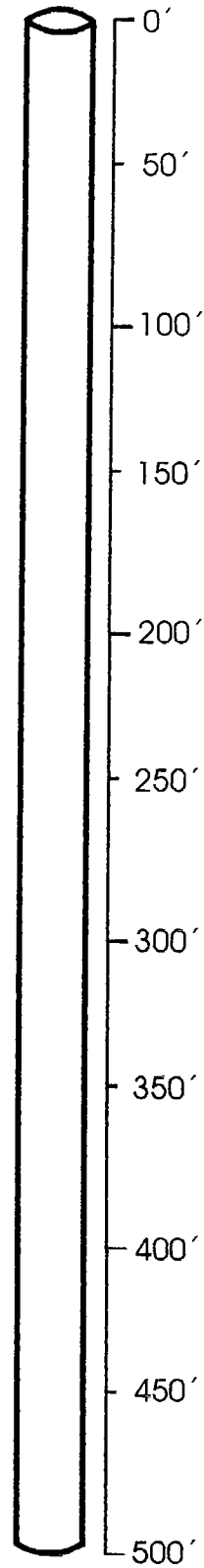
Sylvan Shale 9171'



**PHILLIPS 1-A HORN** — 1,980 ft FS & WL Sec. 81, Blk. A-5; H&GN Survey, Wheeler County, Texas; elevation 2,696 ft (unk); TD (Na).

Cored 15,775–15,875 ft. Basal Hunton strata are represented by high-magnesium dolomite. Described by Amsden (1975, p. 103). (See Mobil 1 Walker.)

**Log not available**



MOBIL 1 HORTON--C SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 14, T. 15 N.,  
R. 15 W., Custer County, Oklahoma; elev.  
1783'; TD 14,869' (Ord.); compl. 5/18/61,  
no Hunton production reported. Tops: Wood-  
ford (CC) 14,143' (-12,360'), Hunton (CC)  
14,242' (-12,459'), Sylvan (CC) 14,769'  
(-12,986'); Hunton thickness 527'. Cored  
14,262'-14,280', 14,290'-14,358', 14,370'-  
14,592', 14,599'-14,610', 14,629'-14,642',  
14,660'-14,672', 14,682'-14,753' (all Hunton);  
15 thin sections; 2 porosity tests (P1-A,  
P1-B); chemical analyses; OU Core Library.

Upper 280' of Hunton, including Kirkidium-  
bearing strata, is high in insoluble  
detritus (averaging about 17%), probably  
reflecting proximity of this well to marl-  
stone lithofacies in deep basin (see panels  
2, 10). Hunton strata in 1 Horton presum-  
ably include some Chimneyhill equivalents;  
however, there is no biostratigraphic  
information bearing on this. There is a  
fairly sharp reduction in insoluble detritus  
at 14,530', and possibly this represents  
Kirkidium biofacies-Chimneyhill boundary.

Woodford Shale 14,143'-14,242'

Hunton Group 14,242'-14,769'

14,242'-14,262' No core.

14,262'-14,280' Silurian; Kirkidium biofacies.

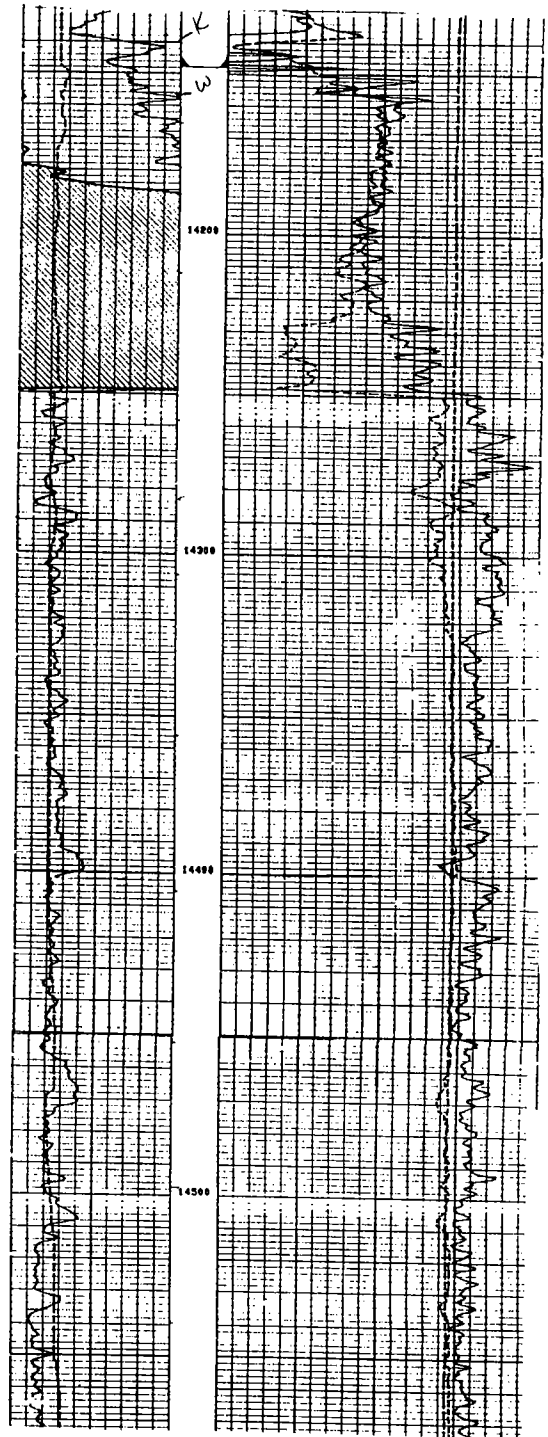
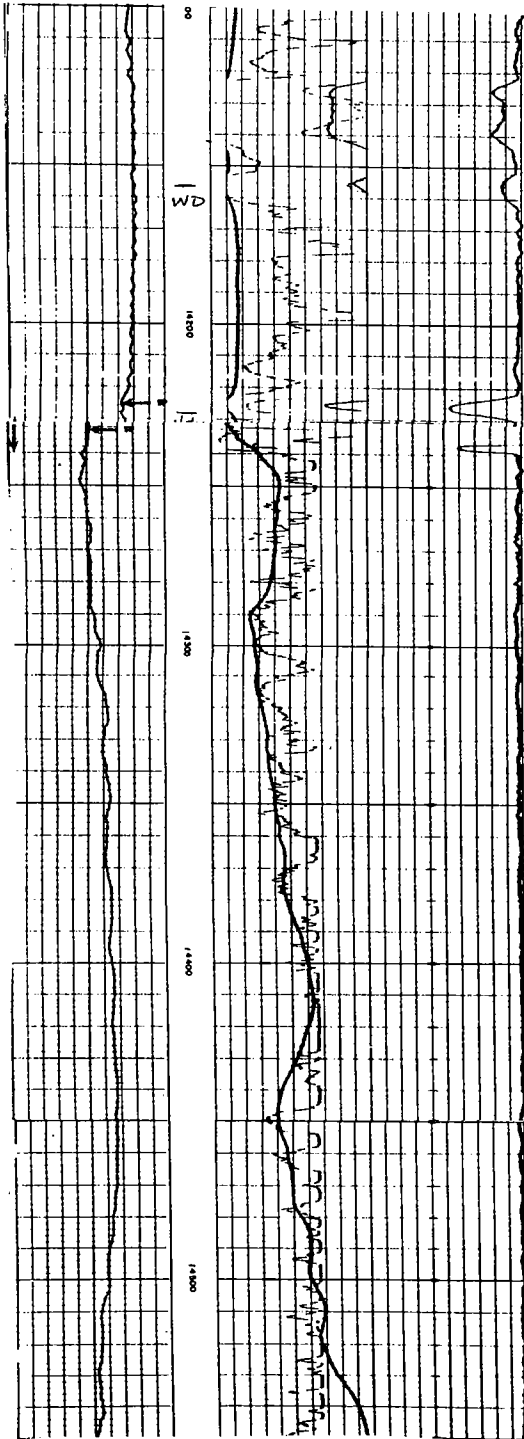
Dark-gray fossiliferous limestone with much  
silt-size subangular quartz detritus (HCl  
insolubles range up to 18%). This interval  
is dolomitized, MgCO<sub>3</sub> averaging about 17%;  
dolomite is present as euhedral crystals in  
matrix which impinge on and corrode fossil  
boundaries in some places. Fossils retain  
their original microtexture. Kirkidium sp.  
observed from 14,267'-14,280'; this inter-  
val also has numerous corals, including  
Heliolites sp. and Enterolasma waynense  
(identified by P. K. Sutherland). Pelmato-  
zoan plates are abundant. Porosity test  
P1-A at 14,265'; 0.00% porosity, 0.00 md  
permeability.

14,280'-14,290' No core.

14,290'-14,358' Kirkidium biofacies. Dark-  
gray fossiliferous, dolomitized limestone.  
Much silt-size subangular quartz detritus;  
insolubles average 12.36%. This ranges  
from dolomitized limestone into calcitic  
dolomite (photomicrograph, pl. 6, fig. 1),  
locally grading into crystalline dolomite  
(14,310'-14,320') with fossils replaced by  
spar (photomicrograph, pl. 4, figs. 3a,  
3b). Porosity test P1-B at 14,315'; 0.00%  
porosity, 0.00 md permeability (this is  
crystalline-dolomite facies, but fossils  
are replaced by spar). Specimens of  
Kirkidium collected from 14,290' to 14,340'  
Also specimens of Halysites sp. at 14,344'  
and 14,352'. This is brachiopod-crinoid-  
coral biofacies similar to unit above.

Mobil  
1 Horton  
SE NW  
Sec. 14, T. 15 N., R. 15 W.  
Custer County, Oklahoma  
elev. 1783'

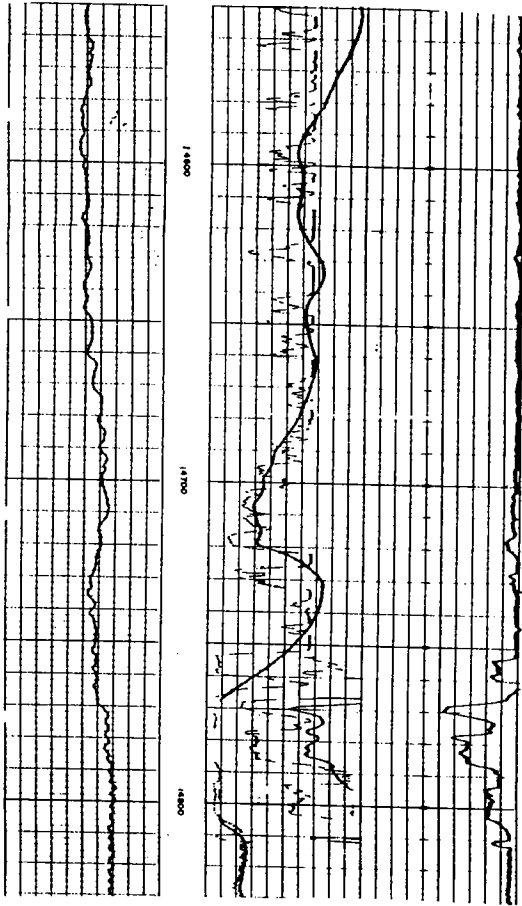
GADSCO, Inc.  
1 Hoffman  
SE NW  
Sec. 1, T. 14 N., R. 16 W.  
Custer County, Oklahoma  
elev. 1724'



- 14,358'-14,370' No core.
- 14,370'-14,530' Kirkidium biofacies. Dark-gray fossiliferous, dolomitic limestone with much silt-size subangular quartz detritus; HCl insolubles average about 20%. This interval is primarily dolomitized limestone averaging about 10% MgCO<sub>3</sub>; dolomite is represented largely by euhedral crystals scattered through matrix, in places abundant enough to impinge against and corrode fossils. This interval and overlying beds are mainly fossiliferous marlstone, at some places grading into grain-supported (fossil-clast) texture. Fossils include shelly debris, brachiopods, bryozoans, ostracodes, corals, and much pelmatozoan debris. Specimens of Kirkidium observed only at 14,375', remainder of this interval being referred to this biofacies on basis of lithologic similarity and stratigraphic position.
- 14,530'-14,642' ?Chimneyhill Subgroup. Gray organo-detrital limestone, low in insoluble detritus and low in dolomite; averages 6.29% MgCO<sub>3</sub>, 7.34% HCl insolubles. No diagnostic fossils observed, and age of these strata uncertain. (Note two core skips; 14,592'-14,599'; 14,610'-14,629'.)
- 14,642'-14,682' 8' of core recovered; no analysis.
- 14,682'-14,753' ?Chimneyhill Subgroup. Dark-gray fossiliferous, cherty limestone, probably mostly grain supported. Insoluble residues are high (24.61%), but this interval includes much chert and in all probability insolubles, in large part, represent silicification. Dolomite is relatively low, averaging 10.45% MgCO<sub>3</sub>. No diagnostic fossils observed, and this interval is assigned to Chimneyhill on basis of its stratigraphic position.
- 14,753'-14,769' No core.
- Sylvan Shale 14,769'

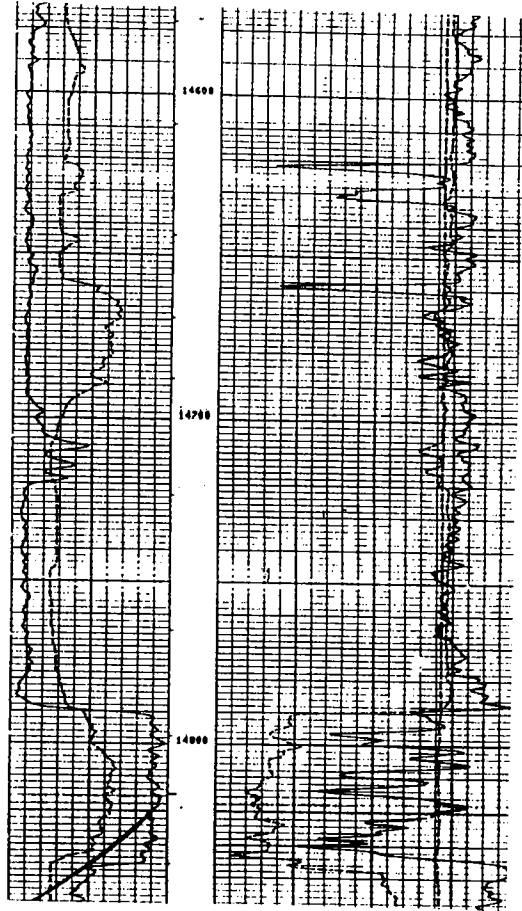
Mobil  
1 Horton  
SE NW  
Sec. 14, T. 15 N., R. 15 W.  
Custer County, Oklahoma  
elev. 1783'

continued



GADSCO, Inc.  
1 Hoffman  
SE NW  
Sec. 1, T. 14 N., R. 16 W.  
Custer County, Oklahoma  
elev. 1724'

continued



PAYNE 1 HOUCK--SE $\frac{1}{2}$ NE $\frac{1}{4}$  sec. 36, T. 17 N., R. 5 W., Kingfisher County, Oklahoma; elev. 1069'; TD 7150' (?Sylvan); compl. 4/28/66, no Hunton production reported (perforated Woodford-Hunton 6900'-7020'). Tops: Woodford (CC) 6868' (-5799'), Hunton (CC) 6941' (-5872'), Sylvan (CC) 7100' (-6031'); Hunton thickness 159. Cored 7000'-7040', 7050'-7099' (all Hunton).

Entire cored interval is tentatively referred to Chimneyhill, although diagnostic fossils have not been observed in upper 40 feet. This upper core has considerable insoluble detritus, averaging 9.40% with some beds ranging up to 16.36%; it could represent intermediate marlstone lithofacies of Kirkidium-Henryhouse strata, although general lithologic characteristics and thickness suggest Chimneyhill Subgroup.

Woodford Shale 6868'-6941'

Hunton Group 6941'-7100'

6941'-7000' No core.

7000'-7040' Silurian; ?Chimneyhill Subgroup.

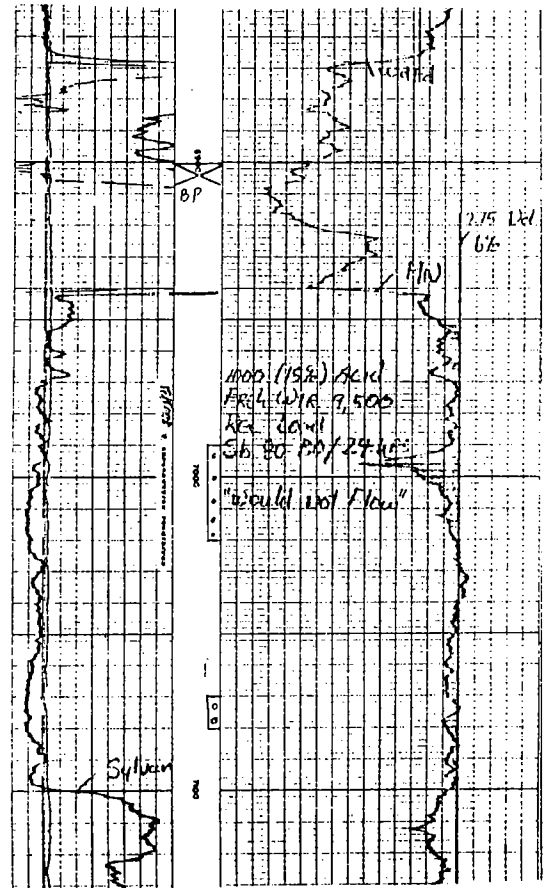
Light-gray biomicrite with irregular bands that are, at least in part, shale-silt partings. Fossils include much shelly debris, including brachiopods, ostracodes, bryozoans, and many pelmatozoan plates, some of which are pink. Matrix is almost entirely micrite with only a few euhedral crystals of dolomite ( $MgCO_3$  ranges from 1.82% to 4.17%); a fair amount of silt-size subangular to angular quartz detritus (insoluble ranges from 4.82% to 16.35%). This interval tentatively referred to Chimneyhill on basis of its lithology and stratigraphic position.

7040'-7050' No core.

7050'-7099' Silurian; Chimneyhill Subgroup.

Light-gray biomicrite with many pink crinoid plates. In addition to crinoidal material there is much shelly debris, including substantial number of ostracodes. This interval has some silt-size quartz detritus like above, HCl insolubles ranging from 2.84% to 10.72%; dolomite content is low, all analyses testing less than 7%, and generally present as irregular bodies of moderately concentrated dolomite crystals. Brachiopod tentatively identified as Kozlowskiellina vaningeni (Thomas) was found at 7057'; this is Clarita-type series, and at least upper part of interval is considered correlative with that formation. Lower part of cored interval may include Cochrane correlatives.

Entire cored interval averages 3.65%  $MgCO_3$  and 7.85% HCl-insoluble residues.



MIDWEST 1 HUGHES UNIT--C SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 4, T. 20 N., R. 10 W., Major County, Oklahoma; elev. 1158'; TD 8272' (Sylvan); compl. 7/12/68, no Hunton production reported. Tops: Woodford (CC) 7982' (-6824'), Hunton (CC) 8020' (-6862'), Sylvan (CC) 8261' (-7103'); Hunton thickness 241'. Cored 8062'-8158' (all Hunton); 4 thin sections; chemical analyses; porosity-permeability test P18-A; OU Core Library.

This is interesting core because it is only one studied by me which includes both Kirkidium and Chimneyhill fossils (Eospirifer acutolineatus acutolineatus Amsden=Clarita Formation; see discussion in text of Chimneyhill Subgroup). Kirkidium brachiopods occur

at 8073', and Chimneyhill brachiopods at 8142' and 8153'; thus they are separated by 69' of strata with no diagnostic fossils. There is no really well-defined lithostratigraphic boundary in interval separating these fossils, although there is break between upper marlstones and underlying light-colored organo-detrital limestones. This break is tentatively used as Kirkidium-Chimneyhill boundary, but it should be noted that lower 10' of marlstone sequence has reduced insoluble detritus, becoming increasingly fossiliferous and grading toward underlying limestones. Moreover, lower part of Chimneyhill becomes marly and resembles upper marlstones.

Woodford Shale 7982'-8020'

Hunton Group 8020'-8261'

8020'-8262' No core.

8062'-8092 $\frac{1}{2}$ ' Silurian; Kirkidium biofacies.

Gray fossiliferous marlstone, probably largely if not entirely mud supported; considerable silt-size quartz detritus and euhedral dolomite crystals. Lower part of this interval has reduced insolubles and is increasingly fossiliferous; upper 20' with 19.82% HCl insolubles, lower part with 11.18%; MgCO<sub>3</sub> averages about 8%. Specimens of Kirkidium at 8073'. Entire interval assigned to Silurian on basis of these fossils, although upper part could include some Devonian and lower part some Chimneyhill.

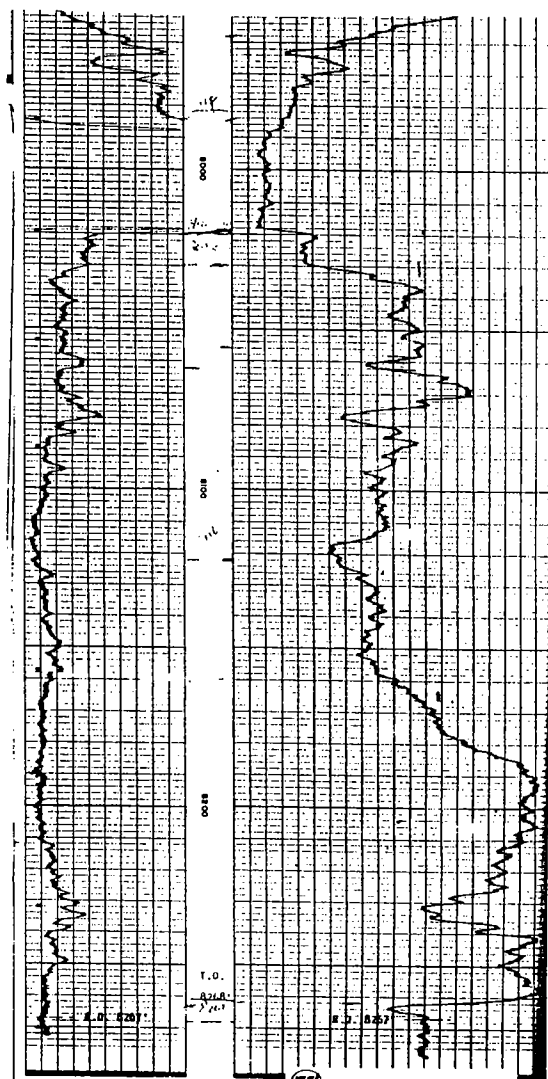
8092 $\frac{1}{2}$ '-8112' ?Chimneyhill Subgroup. Light-colored organo-detrital limestone. Boundary with underlying unit is not sharply defined, being marked mainly by increase in dolomite, from about 6% MgCO<sub>3</sub> to about 14%. No diagnostic fossils observed, and this interval assigned to Chimneyhill on basis of lithologic character and stratigraphic position.

8112'-8122' Similar to above, but with increased dolomite. No diagnostic fossils observed.

8122'-8158' Similar to above in dolomite content, but becoming more marly; probably in large part mud-supported fabric similar to 8062'-8092 $\frac{1}{2}$ ' interval above. Specimens of Eospirifer acutolineatus acutolineatus Amsden at 8142' and 8151', and Resserella sp. at 8151' (similar to Resserella sp., Amsden, 1968, pl. 3, figs. 5a-5h).

8158'-8261' No core.

Sylvan Shale 8261'





TENNECO 1 HUNTZINGER--C NE $\frac{1}{4}$  sec. 24, T. 27 N.,  
 R. 21 W., Harper County, Oklahoma; elev.  
 1840'; TD 7500' (Viola); compl. 7/5/68, D&A.  
 Tops: Hunton (CC) 7335' (-5495'), Sylvan  
 (core) 7337' (-5497'); Hunton thickness 2'.  
 Cored 7335'-7360' (Hunton-Sylvan); 1 thin  
 section; no analyses; OU Core Library.

Well located very near truncated margin of  
 Hunton Group.

Woodford Shale Top not available.

Hunton Group 7335'-7337'

7335'-7337' Silurian; Chimneyhill Subgroup.

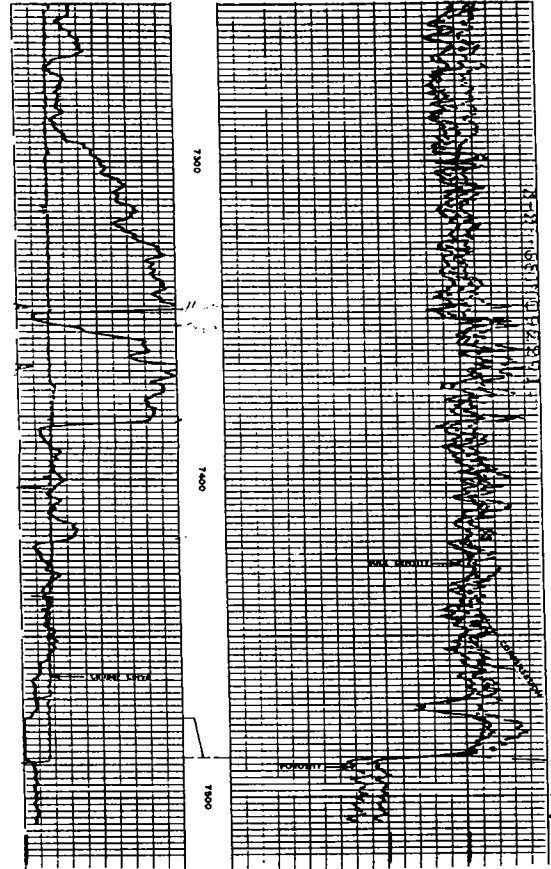
Light-gray to pinkish-gray organo-detrital  
 sparite; mostly pelmatozoan limestone.

Low in dolomite and insoluble detritus.

Appears to have considerable solution and  
 some recrystallization. Assigned to  
 Chimneyhill on basis of stratigraphic  
 position and lithology.

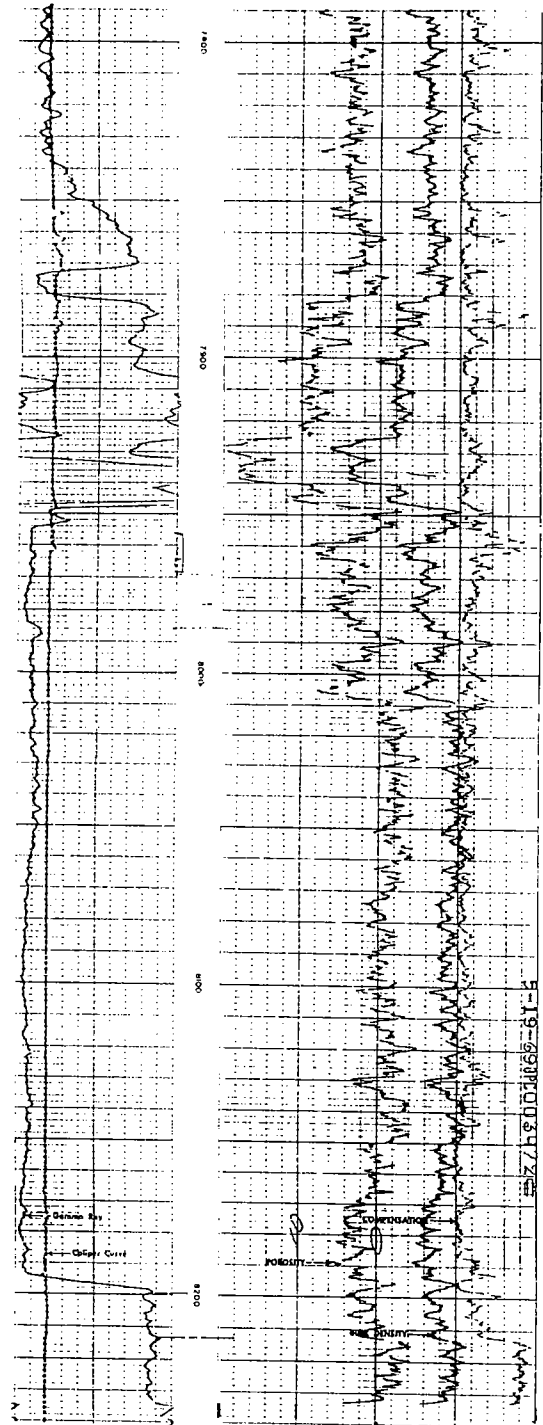
Sylvan Shale 7337'

7337'-7360' Cored; green shale.



PAN AMERICAN PETROLEUM CORP. 1 INMAN  
 UNIT J — C NE¼SW¼ sec. 31, T23N, R14W, Major  
 County, Oklahoma; elevation GL 1,335 ft; TD 8,225 ft; com-  
 pletion 7/7/69.

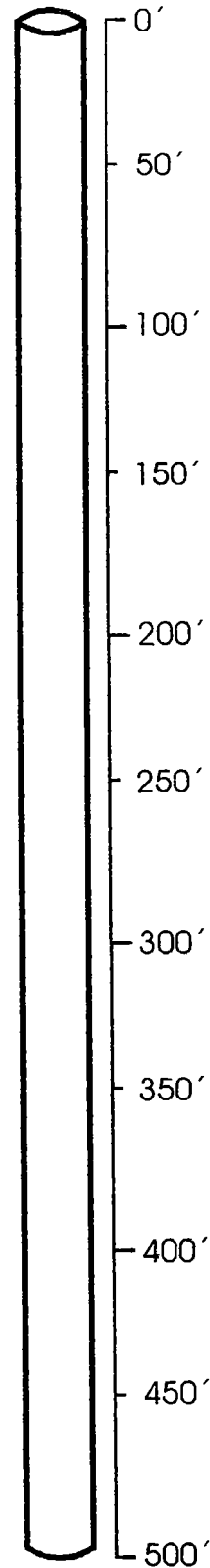
Cored the upper 70 ft of Hunton strata; only core chips  
 available. Samples from the underlying Hunton strata and  
 upper Sylvan examined; 18 thin sections. Hunton strata  
 from this well *illustrated* on PLATE 1, STRATIGRAPHIC SEC-  
 TION A-A'.



**CHEVRON OIL CORP. 1 JAMES** — 1,867 ft FSL, 773 ft FEL, sec. 20, Blk. L, S. M. Lindsay Survey, Wheeler County, Texas; elevation GL 2,186 ft, KB 2, 219 ft; TD 24,405 ft; completion 12/29/75.

Samples (Amarillo Sample, Amarillo, Texas) examined by Amsden, 1979; 20,300–21,600 ft (Woodford–Hunton–Sylvan–upper Viola Group); 29 thin sections. *Illustrated on PLATE 2, STRATIGRAPHIC SECTION D–D’.*

**Log not available**



TIDEWATER 1 JOHNSON--NE $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 19,  
T. 3 N., R. 23 W., Jackson County, Oklahoma;  
elev. 1487'; compl. 1/31/50, D&A; TD 8032'  
(Arbuckle). Tops: Hunton (?core) 7514'  
(-6027'), Ordovician (core) 7534'? (-6037'),  
Hunton thickness 20'?. Cored 7514'-7565'  
(Hunton-Ordovician); chemical analyses; OU  
Core Library.

This well, located in the Hollis basin, is the only well in this area known to me in which Hunton rocks have been positively identified. A description of this well is given by Jordan (1965, p. 20-27), including a lithologic description of Hunton rocks by W. E. Ham. The Hunton is believed to be overlain by Mississippian strata, no Woodford being recognized in this area. The upper 20' of the cored portion yields Lower Devonian, Frisco, brachiopods, and these strata are believed to rest directly on Late Ordovician limestone, possibly the "Fernvale" (Jordan, 1965, p. 22). The Frisco here, as elsewhere in Oklahoma, is a low-magnesium limestone (text-fig. 32).

Mississippian?

Hunton Group 7514'?-7534'

7514'-7534' Lower Devonian; Frisco Formation.

Light-gray organo-detrital limestone; mostly spar cement, but includes some micrite.

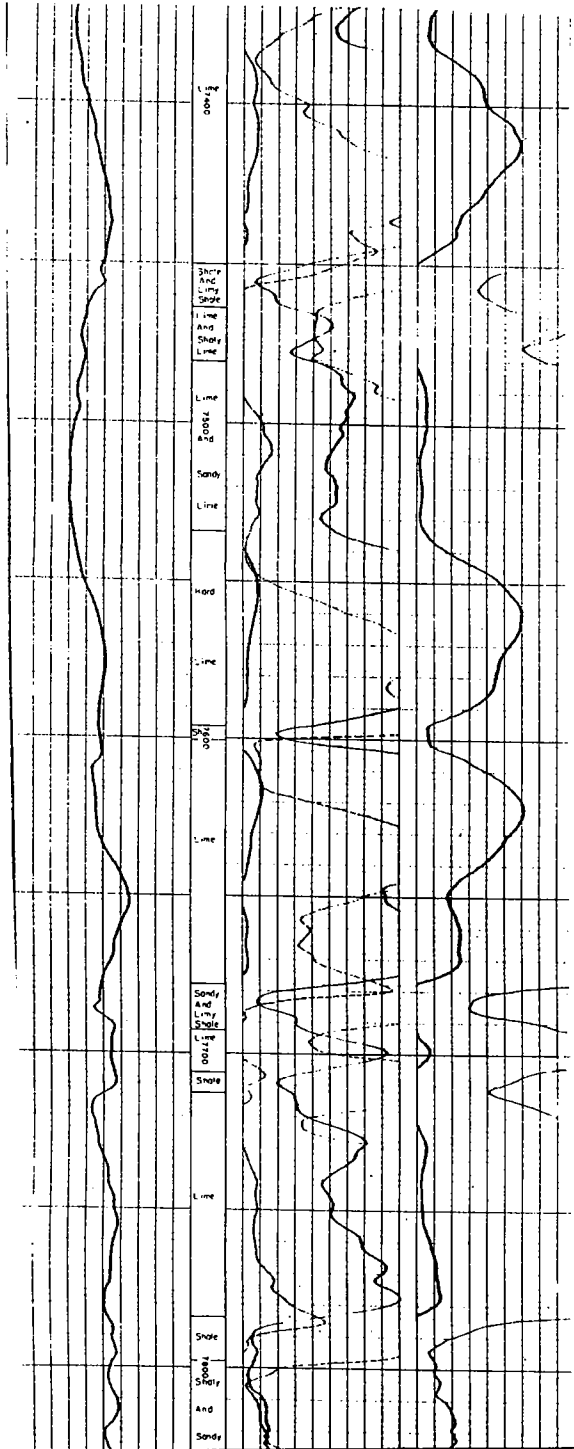
Fossils include much shelly debris, brachiopods, bryozoans, trilobites, and corals as well as considerable crinoidal material.

Insoluble detritus and dolomite low, 5.16% MgCO<sub>3</sub> and 0.54% HCl insolubles. Fossils from this interval include Rensselaeria cf. R. elongata (Conrad) (similar to Frisco specimens), Costellirostra sp., Meristella sp., Atrypa sp. Earlier G. Arthur Cooper, U.S. National Museum, examined this fauna and assigned it an Oriskanian (Deerparkian) age, a correlation with which I agree.

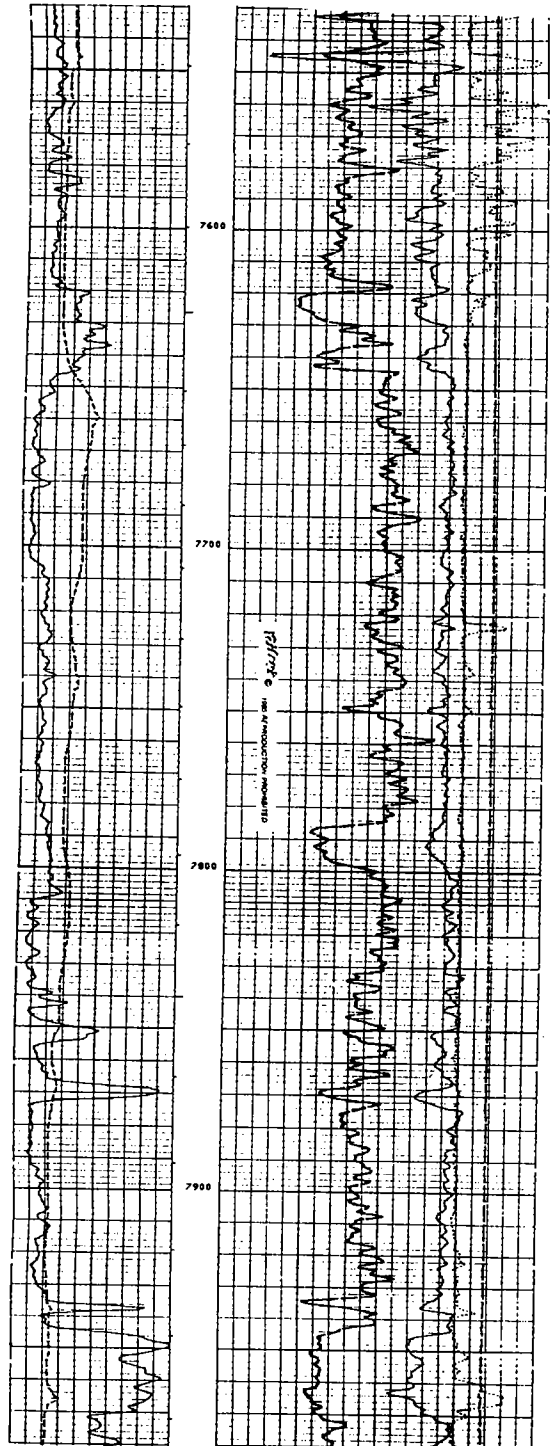
Ordovician 7534'?

Organo-detrital micrite with many crinoid plates and including brachiopods, trilobites, and other shelly debris. On basis of a strongly biconvex rafinesquinoid brachiopod, G. Arthur Cooper suggested this represents Late Ordovician age ("Fernvale") (Jordan, 1965, p. 22).

Tidewater  
 I Johnson  
 NE NE SE  
 Sec. 19, T. 3 N., R. 23 W.  
 Jackson County, Oklahoma  
 elev. 1487'



Anschutz Corp.  
 I Frankie Johnson  
 NE NW SE  
 Sec. 18, T. 3 N., R. 23 W.  
 Greer County, Oklahoma  
 elev. 1554'



PINE 1 S. JOHNSON—NE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec. 9, T. 3 N., R. 7 E., Pontotoc County, Oklahoma; elev. 852' KB (846' GL); TD 2286' (Ordovician; Simpson); compl. 3/20/51, D&A. Tops: Woodford 1430' (-578') (GR log), Hunton 1509' (-657') (GR log), Sylvan 1898' (-1046') (sample depth), Welling 2030' (-1178') (sample depth); Hunton thickness 389'. Samples examined from 1450' to 2060', some contamination and mixing; 25 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

Hunton strata comprise a well-defined lithostratigraphic sequence consisting of an upper light-colored organo-detrital limestone (Frisco, possibly including some Fittstown beds), gray marlstone (Henryhouse-Haragan undifferentiated), and a basal organo-detrital crinoidal limestone (Chimneyhill Subgroup, including identifiable Clarita and Cochrane units). This sequence is similar to that in the northeastern Arbuckle outcrops (Lawrence Uplift south to old Hunton townsite; see Amsden, 1960, Appendix). It is also similar to that in the 3 Burris. Hunton strata are almost entirely low-magnesium limestones, estimated at less than 10% MgCO<sub>3</sub>.

*Woodford (Chattanooga) Shale* 1430'-1509' (GR log)  
 Misener Sandstone. A little spicular chert with subangular detrital quartz at the base.

*Hunton Group* 1509'-1898' (GR log)  
 1509' (GR log)-1590' (sample depth) Lower Devonian Frisco Formation (may include some Fittstown Member, Bois d'Arc Formation). Light-gray organo-detrital sparite and micrite. Crinoids are the dominant fossils, but most beds contain many bryozoans; also some brachiopods, ostracodes, trilobites, etc. Very low in dolomite and detrital quartz; a few widely scattered subrounded grains of quartz in the 1565'-1570' interval.

1590'-1860' (sample depths) Lower Devonian-Silurian Henryhouse-Haragan undifferentiated. Gray marlstone with scattered fossils. Crinoids are probably the dominant fossils, but bryozoans are common; other megafossils are also present. Silt-size (to 0.1 mm) subangular detrital quartz is present throughout, ranging from sparse to abundant; for the most part it is only moderately common. Scattered dolomite crystals are also present throughout most of this interval; lithology varies, but for the most part it consists of low-magnesium limestones. This interval is lithologically well defined, with no evidence of gradation above or below.

1860'-1898' (sample depths) Silurian; Chimneyhill Subgroup.

1860'-1885' (sample depths) Clarita Formation; pink crinoidal micrite with many ostracodes; also snails, trilobites, and other shelly fossils are present. Some scattered detrital quartz and dolomite in the upper part; below, very little.

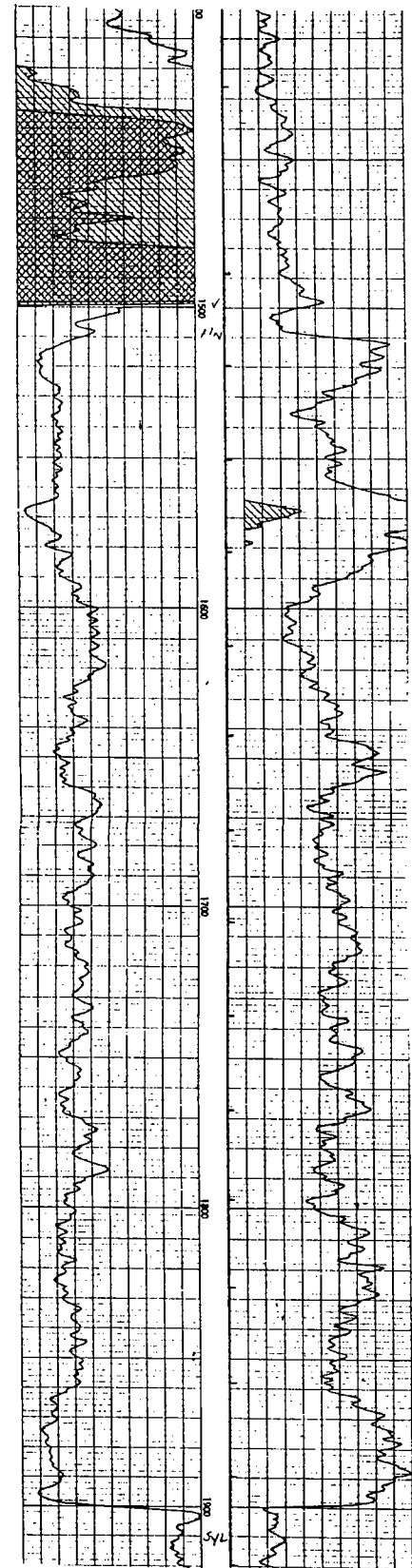
1885'-1900' (sample depths) Cochrane Formation. Glauconitic crinoidal micrite with chert. Some scattered silt-size detrital quartz; low in dolomite.

*Sylvan Shale* 1898'-2030' (sample depths)

*Welling Formation* 2030' (sample depth)

2035'-2040' (thin section) (sample depths) Organo-detrital sparite with no observed quartz or dolomite.

2060'-2065' (thin section) (sample depths) Same as above, no quartz or dolomite observed.



Tidewater  
2 Johnson  
NE NE SE  
Sec. 19, T. 3 N., R. 23 W.  
Jackson County, Oklahoma  
elev. 1487'

Anschutz Corp.  
1 Frankie Johnson  
NE NW SE  
Sec. 18, T. 3 N., R. 23 W.  
Greer County, Oklahoma  
elev. 1554'

**See Number 130**

**Tidewater  
1-Johnson**

TENNECO 1-6 JOHNSTON (formerly AMERADA 1 JOHNSTON)—SW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 6, T. 1 N., R. 10 E., Coal County, Oklahoma; elev. 690' DF; TD 8566' (Ordovician); compl. unknown, production unknown. Tops: Woodford 6972' (-6282') (CC), Hunton 7154' (-6464') (sample depth), Sylvan 7385' (-6695') (sample depth), Welling 7493' (-6803') (sample depth); Hunton thickness 231'. Samples examined from 7050' to 7530', excellent quality; 14 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

This well, which is only a few miles east of the Arbuckle Mountain outcrops, has a Hunton lithostratigraphic sequence similar to that in the eastern Arbuckle Mountain outcrop (cf. also 1 Hargrove-Hudson). The uppermost beds are organo-detrital limestones (Frisco Formation, possibly including some Fittstown Member, Bois d'Arc Formation), underlain by marlstone (Henryhouse-Haragan Formations undifferentiated), which are in turn underlain by Chimneyhill organo-detrital limestones (Clarita, Cochrane, and Keel stratigraphic units recognizable). All these strata are low in dolomite and, with the exception of the marlstones, low in insoluble detritus. *Woodford (Chattanooga) Shale* 6972' (CC)-7154' (sample depth)

No Misener Sandstone recognized.

*Hunton Group* 7154'-7385' (sample depths)

7154'-7200' (sample depths) Lower Devonian; Frisco Formation; possibly includes some Fittstown Member, Bois d'Arc Formation. Organo-detrital sparite and micrite. Very little detrital quartz and only widely scattered dolomite crystals.

7200'-7340' (sample depths) Silurian-Devonian; Henryhouse and Haragan Formations undifferentiated. Fossiliferous marlstone; common fossils are crinoid plates, bryozoans, ostracodes, and brachiopods. Scattered subangular quartz detritus to 0.1 mm and a little mica. Minor dolomite.

7340'-7385' (sample depths) Silurian; Chimneyhill Subgroup (45' thickness).

7340'-7360' (sample depths) Clarita Formation. Pink crinoidal micrite and sparite. Low in insoluble detritus and with very little dolomite.

7360'-7380' (sample depths) Cochrane Formation. Glauconitic organo-detrital sparite; pink crinoids and many ostracodes. Very little detrital quartz or dolomite.

7380'-7385' (sample depths) Keel Formation. Well-formed oolites with radial and concentric structure set in a spar matrix; fossiliferous. Very little quartz or dolomite.

*Sylvan Shale* 7385'-7493' (sample depths)

Dark shale.

*Welling Formation* 7493' (sample depth)

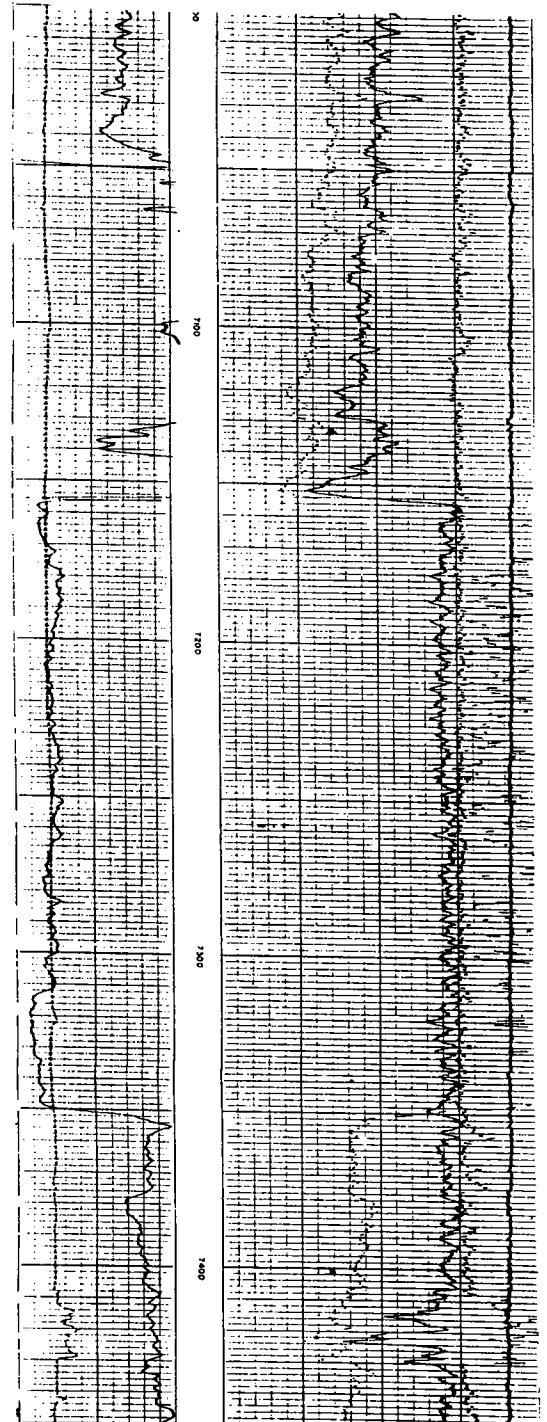
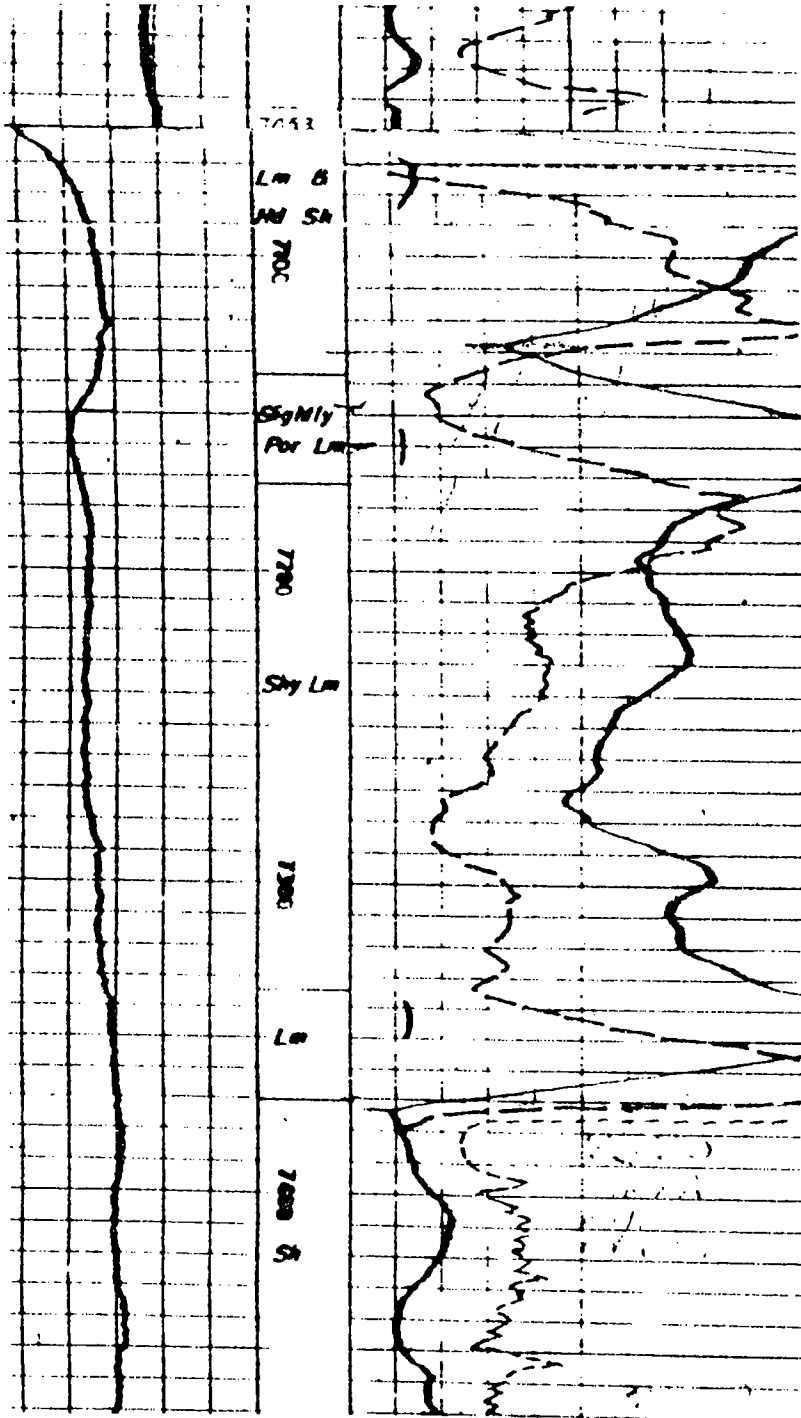
7490'-7495' (thin section) Organo-detrital sparite-micrite with minor dolomite; no detrital quartz.

7505'-7510' (thin section) Same as above.



Tenneco  
 1-6 Johnston  
 SW SE SW  
 Sec. 6, T. 1 N., R. 10 E.  
 Coal County, Oklahoma  
 elev. 690'

Samson  
 1 Bey  
 188' FEL & 600' FNL  
 Sec. 7, T. 1 N., R. 10 E.  
 Coal County, Oklahoma  
 elev. 701'



MOBIL 1 JONES UNIT--200' S C NE½ sec. 21,  
 T. 15 N., R. 16 W., Custer County, Oklahoma;  
 elev. 1873'; TD 15,003' (Sylvan); compl.  
 8/29/63, Hunton production (perforations  
 through most of interval 14,490'-14,930').  
 Tops: Woodford (CC) 14,384' (-12,511'),  
 Hunton (CC) 14,481' (-12,608'), Sylvan (CC)  
 14,947' (-13,074'); Hunton thickness 466'.  
 Cored 14,503'-14,613' (all Hunton); chemical  
 analyses; OU Core Library.

Specimens of *Kirkidium* were observed at  
 14,521', 40' below Woodford. All of upper  
 Hunton strata are referred to Silurian; how-  
 ever, this upper 40' could include some Lower  
 Devonian. This well, like most of others in  
 area, has substantial insolubles, undoubtedly  
 reflecting proximity to marlstone lithofacies  
 in deep basin.

Woodford Shale 14,384'-14,481'

Hunton Group 14,481'-14,947'

14,481'-14,503' No core.

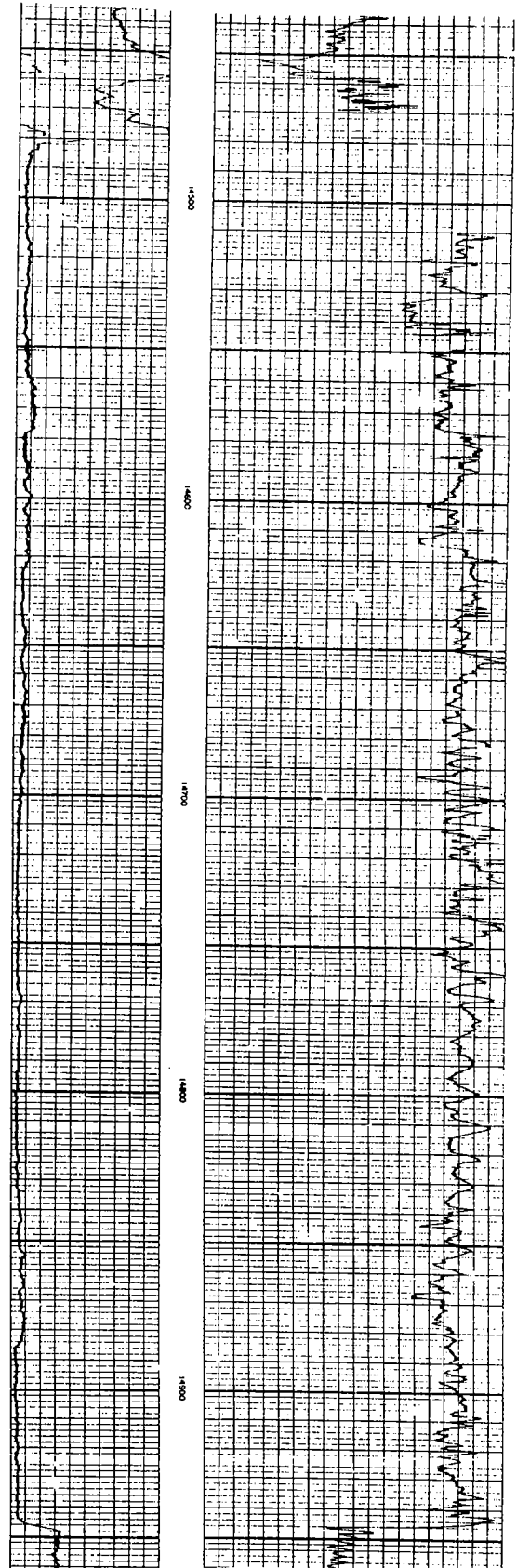
14,503'-14,613' Silurian; *Kirkidium* bio-  
 facies. Gray crystalline dolomite with  
 substantial insoluble material; MgCO<sub>3</sub>  
 averages 33.85%, HCl insolubles 16.02%.  
 Specimens of *Kirkidium* at 14,521' and  
 questionably at 14,584'. All of interval  
 referred to *Kirkidium* biofacies on basis  
 of these shells, plus stratigraphic posi-  
 tion and lithologic character.

14,613'-14,947' No core.

Sylvan Shale 14,947'

**MOBIL OIL CO. 1 FLOYD JONES UNIT** — NE¼ sec. 21,  
 T15N, R16W, Custer County, Oklahoma; elevation GL 1,854  
 ft, DF 1,873 ft; TD 15,003 ft (Sylvan); completion 7/26/63.

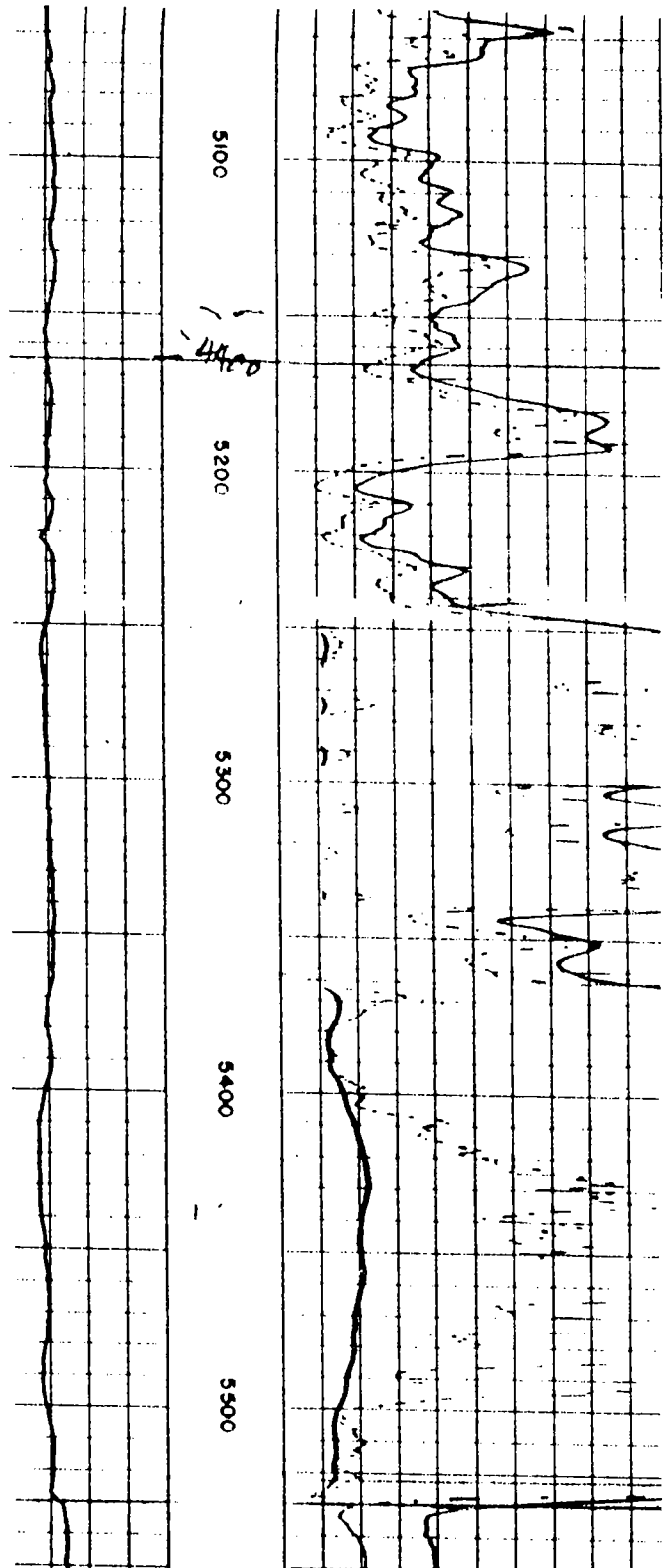
Cored the upper 180 ft of the Hunton. The entire core is  
 a high magnesium dolomite; analyses of 4 spot samples  
 averaged 33.9% MgCO<sub>3</sub>. Specimens of *Kirkidium* sp. at  
 14,521 ft and 14,584 ft. Described in Amsden (1975, p. 92).  
 In 1979, samples from the 1 Jones were examined from the  
 cored portion down to the upper Sylvan; 13 thin sections  
 prepared. These show that the dolomite sequence is under-  
 lain by low magnesium, fossiliferous marlstones; the basal  
 60 ft of the Hunton is low magnesium marlstones inter-  
 bedded with crinoidal-skeletal grainstones (?Chimneyhill  
 Subgroup). *Illustrated on PLATE 2, STRATIGRAPHIC SECTION  
 D-D'.*



APACHE 1 JONES-BINAS UNIT—NW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 33, T. 6 N., R. 10 E., Hughes County, Oklahoma; elev. 763' KB (749' GL); TD 6348'; compl. 7/4/65, no Hunton present. Woodford Shale rests directly on the Sylvan Shale. Tops: Sylvan 5520' (-4757') (sample depth), Welling 5610' (-4847') (sample depth). Samples examined from 5470' to 5900', good quality; 5 thin sections, all Ordovician; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The Woodford-Sylvan contact is reasonably well defined in the samples, as the uppermost Sylvan is a greenish-gray shale, contrasting with the very dark shale of the Woodford; it is also well defined on the conductivity log. See description of the 1 G. Hall and the 1 Manschrick.

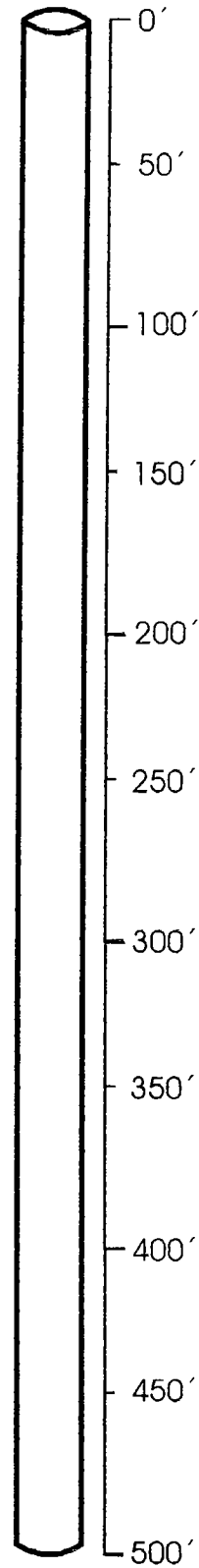
The Sylvan Shale is underlain by the Welling Formation (5610'-5640') organo-detrital limestones. A thin section at 5610'-5620' is organo-detrital sparite with minor micrite and no detrital quartz. A thin section at 5630'-5640' has similar texture but includes rounded grains of detrital quartz. Underlying the Welling is the Bromide (Corbin Ranch), which is dense pellet limestone (5640') with some ?algal limestone and scattered ostracodes; some dolomite crystals.



TENNECO 1-34 JORDAN--NW $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 34, T. 22 N.,  
R. 14 W., Major County, Oklahoma; elev. 1452';  
TD 8930'; compl. 10/18/68, Hunton production  
reported. Tops: No electric-log tops avail-  
able. Cored 8454'-8466'; no analyses or thin  
sections; OU Core Library.

Compare to 1-A Jordan Unit.

Log not  
available



TENNECO 1-A JORDAN UNIT--SW $\frac{1}{2}$ NE $\frac{1}{4}$  sec. 3 ("twin"),  
 T. 21 N., R. 14 W., Major County, Oklahoma;  
 elev. 1489'; TD 8927' (Sylvan); compl. 9/1/67,  
 Hunton production reported (perforated 8499'-  
 8504'). Tops: Woodford (CC) 8424' (-6935'),  
 Hunton (core) 8489' (-7000'), Sylvan (CC)  
 8910' (-7421'); Hunton thickness 421'. Cored  
 8471'-8614' (lower Woodford, Hunton); 2 thin  
 sections; chemical analyses; 2 porosity tests,  
 P2-A (8501') and P2-B (8523').

Upper part of Hunton is represented by  
 crystalline dolomite lithofacies and has  
 excellent porosity.

Woodford Shale 8424'-8489'

Hunton Group 8489'-8910'

8489'-8509' ?Silurian; ?Kirkidium biofacies.

Gray porous crystalline dolomite with little  
 or no chert; MgCO<sub>3</sub> averages 40.01%, HCl  
 insolubles 8.73%. No diagnostic fossils  
 observed, and this interval referred to  
Kirkidium biofacies because of its litho-  
 logic similarity to underlying strata; may  
 include some Lower Devonian. Porosity test  
 P2-A at 8501'; 18.49% porosity, 154.31 md  
 permeability.

8509'-8551' Silurian; Kirkidium biofacies.

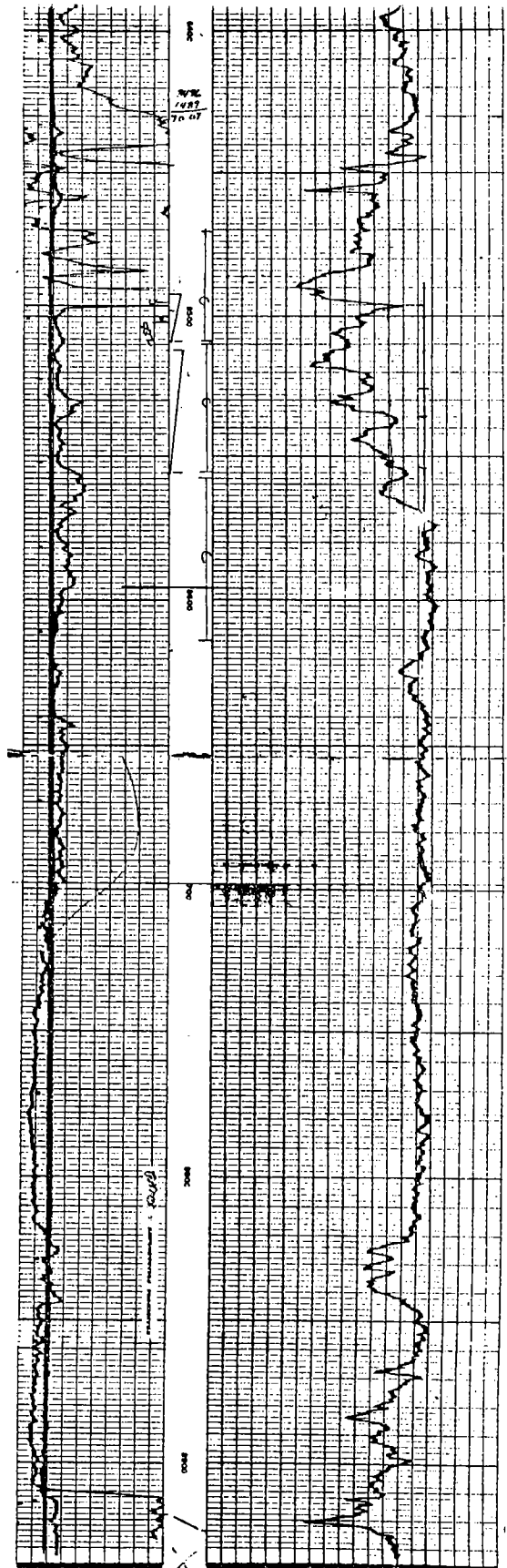
Gray cherty, porous crystalline dolomite;  
 MgCO<sub>3</sub> averages 39.94%, HCl insolubles 9.67%.  
 Specimens of Kirkidium at 8522'; entire  
 interval referred to this biofacies on  
 basis of these fossils, plus lithologic  
 similarity and stratigraphic position.  
 Porosity test P2-B at 8523'; 15.63% porosity,  
 7.27 md permeability.

8551'-8581' Cherty crystalline dolomite like  
 above; MgCO<sub>3</sub> averages 34.31%, HCl insolubles  
 11.96%. No diagnostic fossil observed.

8581'-8614' Cherty, fossiliferous, dolomitic  
 limestone; MgCO<sub>3</sub> averages 14.53%, HCl insol-  
 ubles 6.53%. Corals Tryplasma cf. T.  
radiculum and Enterolasma sp. at 8593' (iden-  
 tified by P. K. Sutherland); Halysites sp.  
 at 8594'.

8614'-8910' No core.

Sylvan Shale 8910'



TENNECO 2-34 JORDAN UNIT--SE 1/4 NE 1/4 SW 1/4 sec. 34,  
 T. 22 N., R. 14 W., Major County, Oklahoma;  
 elev. 1480'; compl. 10/18/68, Hunton produc-  
 tion reported. Tops: no electric-log tops  
 available. Cored 8464'-8570'; two thin  
 sections; chemical analyses; two porosity  
 tests (P4-A, P4-B); OU Core Library.

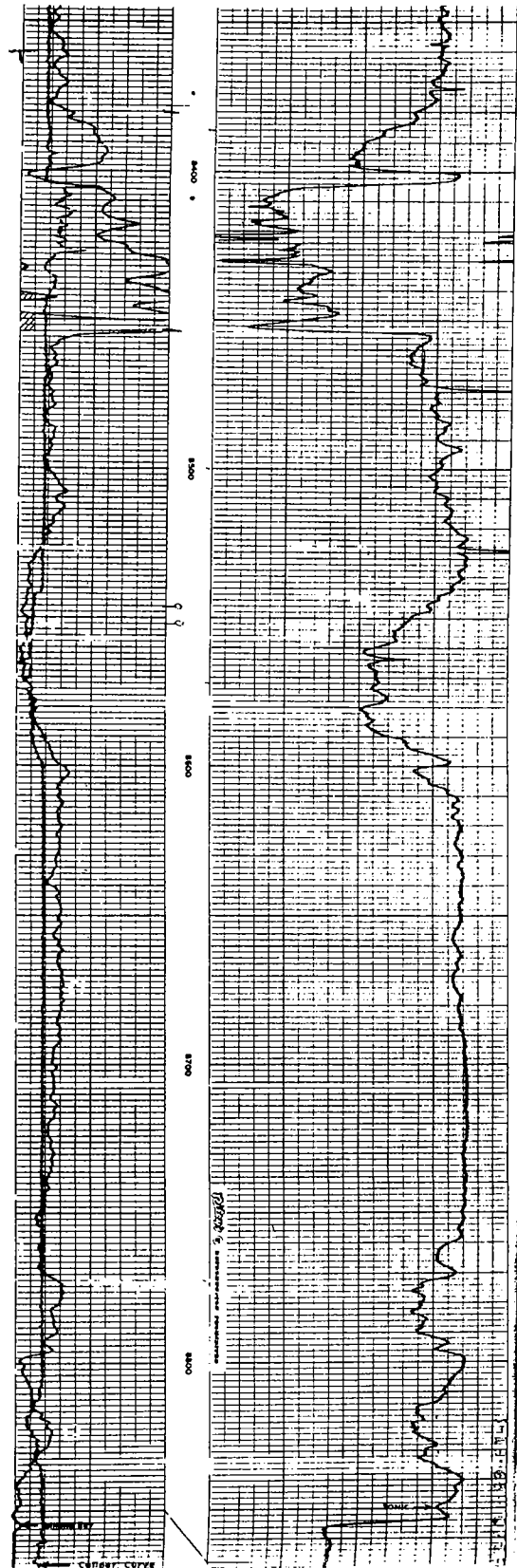
This core probably, at least in part, in  
 Kirkidium biofacies; cf. to 1-A Jordan Unit,  
 located a short distance south of 2-34  
 Jordan Unit.

Hunton Group

8464'-8514' ?Silurian. Gray crystalline  
 dolomite with many nodules of vitreous  
 chert; MgCO<sub>3</sub> averages 34.26%, HCl insolubles  
 13.44%. Chert probably accounts for at  
 least part of relatively high insolubles.  
 Porosity test P4-A at 8477'; 2.5% porosity,  
 0.00 md permeability.

8514'-8540' Gray crystalline dolomite with  
 less vitreous chert than overlying unit;  
 MgCO<sub>3</sub> averages 35.75%, HCl insolubles 7.85%.

8540'-8570' Gray porous, crystalline dolomite  
 with very little chert; MgCO<sub>3</sub> averages  
 41.20%, HCl insolubles 4.14%. Porosity  
 test P4-B at 8562'; 19.0% porosity, 70.24%  
 md permeability.



CLEARY 1-24 KRAMP-COBB--C W<sub>2</sub>NW<sub>4</sub>NW<sub>4</sub> sec. 24,  
 T. 19 N., R. 10 W., Blaine County, Oklahoma;  
 elev. 1191'; TD 8570' (Hunton); compl. 5/17/66,  
 Hunton production reported. Tops: Woodford  
 (CC) 8464' (-7273'), Hunton (CC) 8488'  
 (-7297'); 82' of Hunton to TD. Cored 8495'-  
 8532' (all Hunton); 6 thin sections; chemical  
 analyses; 2 porosity tests (P9-A, P9-B); OU  
 Core Library.

Excellent example of fossiliferous, strongly  
 dolomitized oolite (pl. 3, fig. 3; pl. 4,  
 figs. 2a, 2b).

Woodford Shale 8464'-8488'  
Hunton Group 8488'-8570' (TD)

8488'-8495' No core.

8495'-8512' Silurian; Kirkidium biofacies.

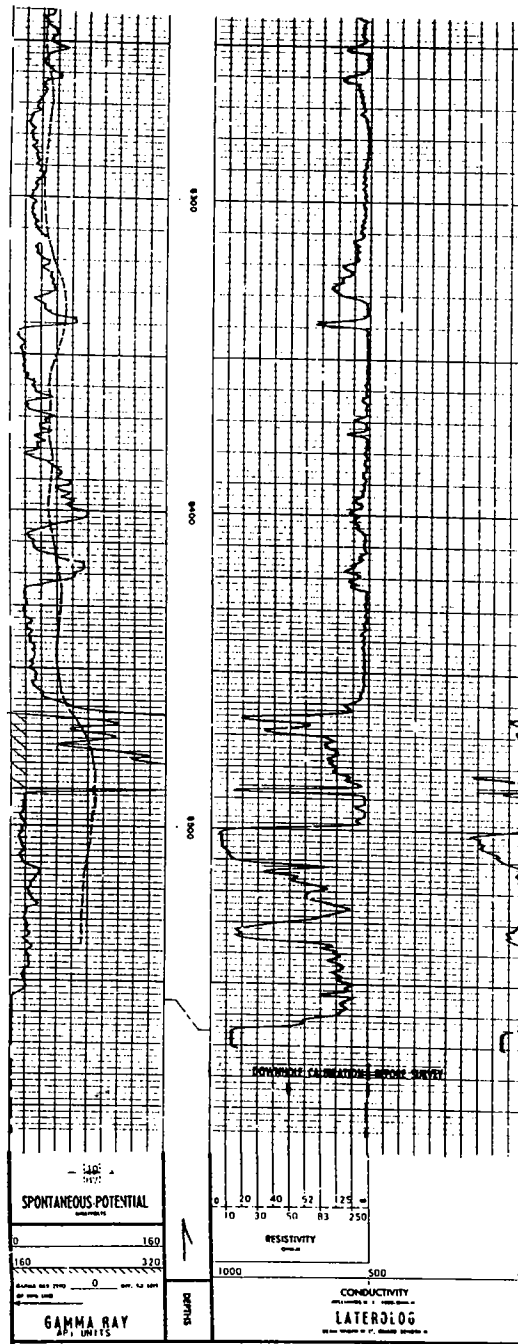
Gray fossiliferous, porous dolomitized  
 oolite (pl. 3, fig. 3; pl. 4, figs. 2a, 2b);  
 MgCO<sub>3</sub> averages 44.35%, HCl insolubles 0.92%.  
 Porosity test P9-A at 8512'; porosity 13.6%,  
 permeability 174.89 md. Specimens of  
Kirkidium 8505'-8508'.

8512'-8515' No core.

8515'-8532' Kirkidium biofacies. Gray  
 fossiliferous, crystalline dolomite; MgCO<sub>3</sub>  
 averages 37.14%, HCl insolubles 8.08%.  
 Porosity test P9-B, 8515'; porosity 0.16%,  
 0.00 md permeability. Numerous specimens  
 of Kirkidium from 8515' to 8528'.

8532'-8570' No core.

TD 8570'



FERGUSON 1 KANNADY—C NW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec. 26, T. 9 N., R. 26 E., Le Flore County, Oklahoma; elev. 450' KB (436' GL); TD 7988' (last sample; log gives 7869' at TD; last sample includes two pieces of Sylvan Shale); compl. unknown, no Hunton production reported. Tops: Woodford 7704' (-7254') (GR log), Hunton 7792' (-7342') (GR log), Sylvan 7988' (-7538') (sample depth); Hunton thickness 196'. Samples examined from 7760' to TD; very fine, air-drilled samples to 7860'; no samples 7860' to 7900', good-quality samples from here to bottom of hole; 9 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The samples from 7792' to 7850' (just beneath the Woodford Shale) are air drilled, very fine, and difficult to study. Much of this material is chert with fine subangular quartz grains and is provisionally assigned to the Sallisaw Formation, although it could be in part Sylamore Sandstone (see discussion of Sallisaw Formation in text). No samples are available from 7860' to 7905'. From 7905' to 7988' (TD) the samples are large and of reasonable quality. These samples are heavily dolomitized pelmatozoan limestones ranging into porous crystalline dolomite and are assigned to the Chimneyhill Subgroup on the basis of stratigraphic position and thickness.

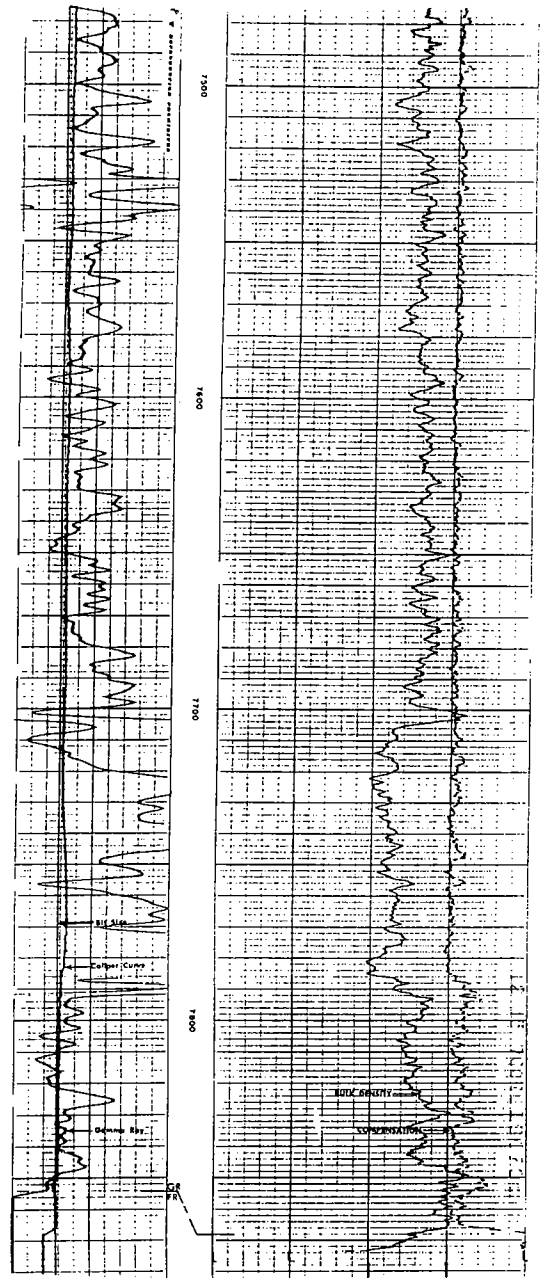
Woodford (Chattanooga) Shale 7704'-7792' (GR log)  
 Hunton Group 7792' (GR log)-7988' (sample depth)  
 7792' (GR log)-7850' (sample depth) ?Lower Devonian; ?Sallisaw Formation. Mostly chert with scattered fine angular to subangular detrital quartz (? = Penters Chert; see discussion of Bonanza Gas Field in text).

7850'-7905' No samples.

7905'-7988' (sample depths) Silurian; Chimneyhill Subgroup. Heavily dolomitized pelmatozoan limestone grading into porous crystalline dolomite.

Sylvan Shale 7988' (sample depth)

The last sample at 7988' (circulated) had two pieces of greenish-gray shale.





**MOBIL 1 KASINER UNIT**—C SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 22, T. 8 N., R. 20 E., Haskell County, Oklahoma; elev. 540' DF; TD 7800' (Ordovician); compl. 6/8/65, D&A. Tops: Woodford 6512' (-5972') (SP log), Hunton 6590' (-6050') (SP log), Sylvan 6643' (-6103') (SP log), Welling 6686' (-6146') (SP log); Hunton thickness 53'. Samples examined from 6500' to 6750', good quality; 5 thin sections, OGS; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The Hunton strata are referred to the Chimneyhill Subgroup on the basis of lithology and stratigraphic position. These are moderately to heavily dolomitized rocks but with little or no crystalline dolomite. The lower part includes pink crinoidal lithology (?Tenkiller Formation); no glauconite or oolite observed, although the basal beds do include some chert.

*Woodford (Chattanooga) Shale* 6512'-6590' (SP log)

*Hunton Group* 6590'-6643' (SP log)

6590'-6643' (SP log) Silurian; Chimneyhill Subgroup.

6590' (SP log)-6640' (sample depth) ?Quarry Mountain Formation. Weakly to heavily dolomitized pelmatozoan limestone; no detrital quartz observed.

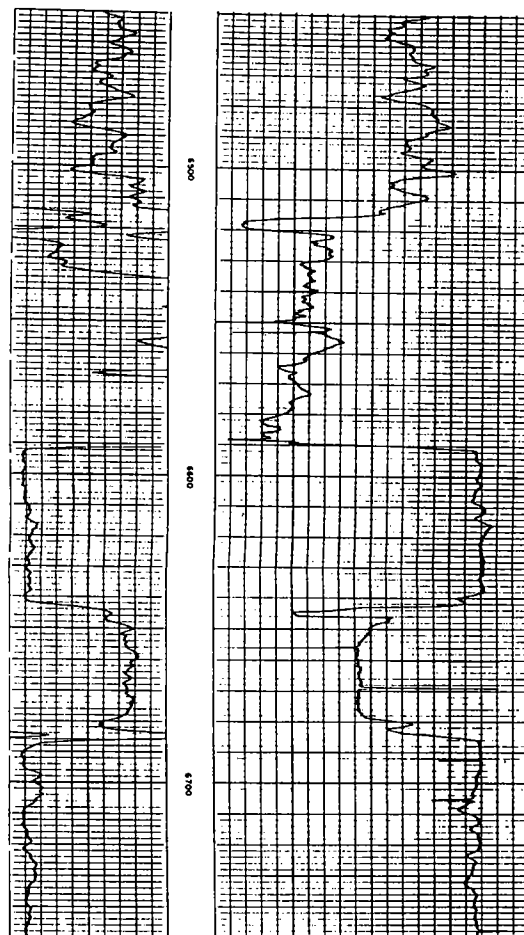
6640'-6660' (sample depths) ?Tenkiller Formation. Pink crinoidal micrite with many ostracodes and other fossils. The lower 10 feet with chert and increased dolomite. (?Blackgum Formation).

*Sylvan Shale* 6643'-6686' (SP log)

*Welling Formation* 6686' (SP log)

6710'-6720' (thin section) (sample depths) Organo-detrital pelmatozoan sparite with little or no detrital quartz or dolomite crystals.

6740'-6750' (thin section) (sample depths) Organo-detrital limestone like above but with scattered rounded quartz grains to 0.5 mm and similar-sized dolomite crystals.



HUMBLE 1 KATES UNIT—C SE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> sec. 29, T. 10 N., R. 22 E., Haskell County, Oklahoma; elev. 667' KB (656' GL); TD 4421' (Sylvan); compl. 12/30/62, D&A. Tops: Woodford 4161' (-3496') (CC), Hunton 4170' (-3514') (sample depth), Sylvan 4410' (-3754') (sample depth); Hunton thickness 240'. Examined samples from 4100' to 4425', excellent quality; 13 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The well samples show a reasonably well-defined sequence from Woodford Shale to Sallisaw Formation, Frisco Formation, Chimneyhill Subgroup, and Sylvan Shale. Chimneyhill strata can be provisionally separated into the Quarry Mountain, Tenkiller, and Blackgum strata. Silurian strata are in a limestone, dolomitic-limestone, dolomite lithofacies similar to that in the Marble City outcrop area.

*Woodford (Chattanooga) Shale* 4161' (CC)-4170' (sample depth)

*Hunton Group* 4170'-4410' (sample depths)

4170'-4200' (sample depths) Lower Devonian; Sallisaw Formation. Dolomitic quartz sandstone; estimated to be approximately 50% crystalline dolomite and 50% angular to subangular detrital quartz (to 0.2 mm); minor fossil debris including brachiopod fragments. Much chert with scattered dolomite crystals and detrital quartz.

4200'-4210' (sample depths) Lower Devonian; Frisco Formation. Organo-detrital limestone; no dolomite or detrital quartz observed.

4210'-4410' (sample depths) Silurian; Chimneyhill Subgroup.

4210'-4330' (sample depths) ?Quarry Mountain Formation. Moderately to heavily dolomitized pelmatozoan-bryozoan sparite with little if any detrital quartz.

4210'-4300' (sample depths) Only minor crystalline dolomite.

4300'-4330' (sample depths) Much crystalline dolomite.

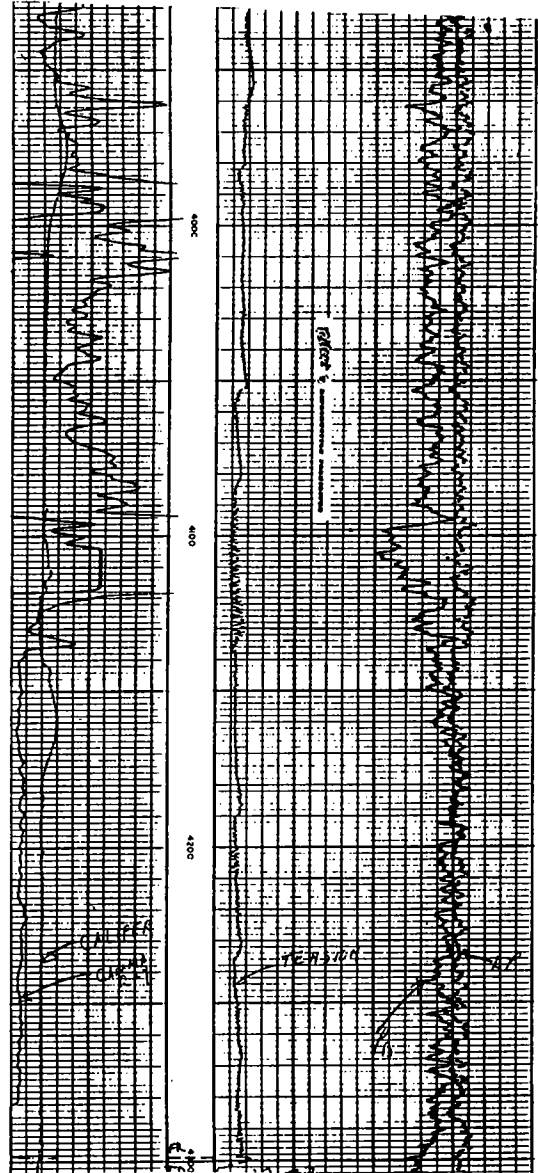
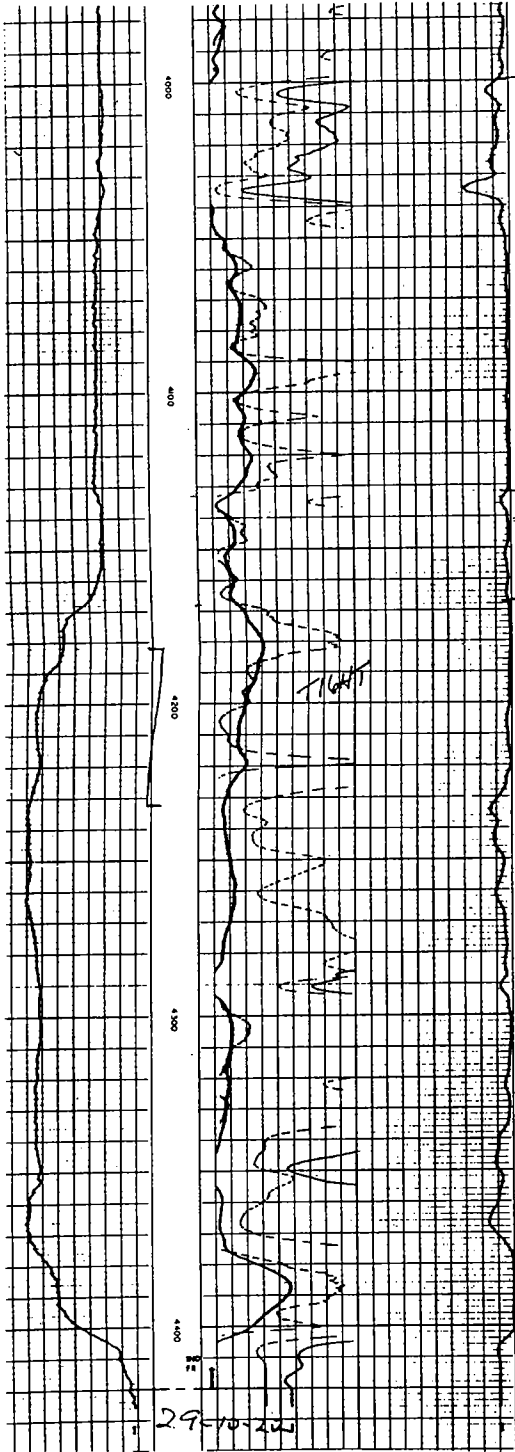
4330'-4380' (sample depths) ?Tenkiller Formation. Pink crinoidal spar and micrite with some dolomite in the matrix. Very little detrital quartz.

4380'-4410' (sample depths) ?Blackgum Formation. Organo-detrital glauconitic crinoidal micrite with moderate dolomite. Some detrital quartz. No oolites observed.

*Sylvan Shale* 4410'-4425' (sample depths)

Humble  
1 Kates Unit  
SE NW  
Sec. 29, T. 10 N., R. 22 E.  
Haskell County, Oklahoma  
elev. 667'

1 Tate  
C SE  
Sec. 28, T. 10 N., R. 22 E.  
Haskell County, Oklahoma  
elev. 597'



ALLIED ET AL 1-D KEEGAN—SE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec. 5, T. 13 N., R. 5 E., Lincoln County, Oklahoma; elev. 841' DF (836' GL); TD 4900' (Ordovician); compl. 10/27/52, D&A. Tops: Woodford 4513' (-3672') (SP log), Hunton 4592' (-3751') (SP log), Sylvan 4684' (-3843') (SP log), Welling 4790' (-3949') (sample depth), Bromide 4810' (-3969') (sample depth); Hunton thickness 92'. Samples examined from 4500' to 4820', good quality; 9 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

On the basis of lithology and thickness, all of the Hunton is provisionally assigned to the Chimneyhill Subgroup (the presence of crystalline dolomite in the uppermost Hunton would seem to preclude the possibility of any Frisco Limestone). Except for the middle 30' or so, the Hunton is heavily dolomitized, and the basal part is mostly porous crystalline dolomite.

*Woodford (Chattanooga) Shale* 4513'-4492' (SP log)  
No Misener Sandstone observed.

*Hunton Group* 4592'-4684' (SP log)

4592'-4684' (SP log) Silurian; ?Chimneyhill.

4592' (SP log) -4550' (sample depth) Almost all crystalline dolomite with little or no detrital quartz.

4550'-4560' (sample depths) Weakly to heavily dolomitized pink crinoidal limestone with minor crystalline dolomite.

4560'-4700' (sample depths) Almost entirely porous crystalline dolomite with little or no detrital quartz.

*Sylvan Shale* 4684' (SP log) -4790' (sample depth)

Gray shale; no green shale at the top.

*Welling Formation* 4790'-4810' (sample depths)

Organo-detrital crinoidal sparite with minor micrite. No detrital quartz or dolomite; thin dense pellet limestone.

*Bromide Formation* (Pooleville Member; Corbin Ranch) 4810' (sample depth) 4810'-4820' (thin section) Mix of organo-detrital limestone like above (a few pieces with detrital quartz) and dense pellet limestone. Latter marks top of the Bromide.



INEXCO 1 KENDALL--NE $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 14, T. 15 N.,  
 R. 24 W., Roger Mills County, Oklahoma; elev.  
 2285'; TD 19,926' (Sylvan); compl. 4/11/71,  
 D&A. Tops: Woodford 19,310' (-17,025'),  
 Hunton 19,374' (-17,089'), Sylvan 19,826'  
 (-17,541'); Hunton thickness 452'. Cuttings  
 examined from Woodford Shale through Hunton  
 and into Sylvan Shale; 14 thin sections pre-  
 pared, stained with Alizarin Red-S. Samples,  
 Oklahoma Well Sample Service, Shawnee, Okla-  
 homa.

The Hunton in this well is predominantly in a  
 dolomite and dolomitic-limestone facies, al-  
 though there is a fair amount of rather low-  
 magnesium limestone in the middle portion.  
 The 1 Kendall has decidedly less dolomite  
 than does the 1 Viersen and probably some-  
 what less than the 1 Lovett, although the  
 lithologic sequence is similar to the latter.  
 The Hunton is probably all Silurian in age,  
 judging from the lithostratigraphic relations  
 in this area (see panel 10, section B-B').

Woodford Shale 19,310'-19,374'

Hunton Group 19,374'-19,826'

19,374'-19,390' ?Silurian. Gray crystalline  
 dolomite with minor quartz detritus.

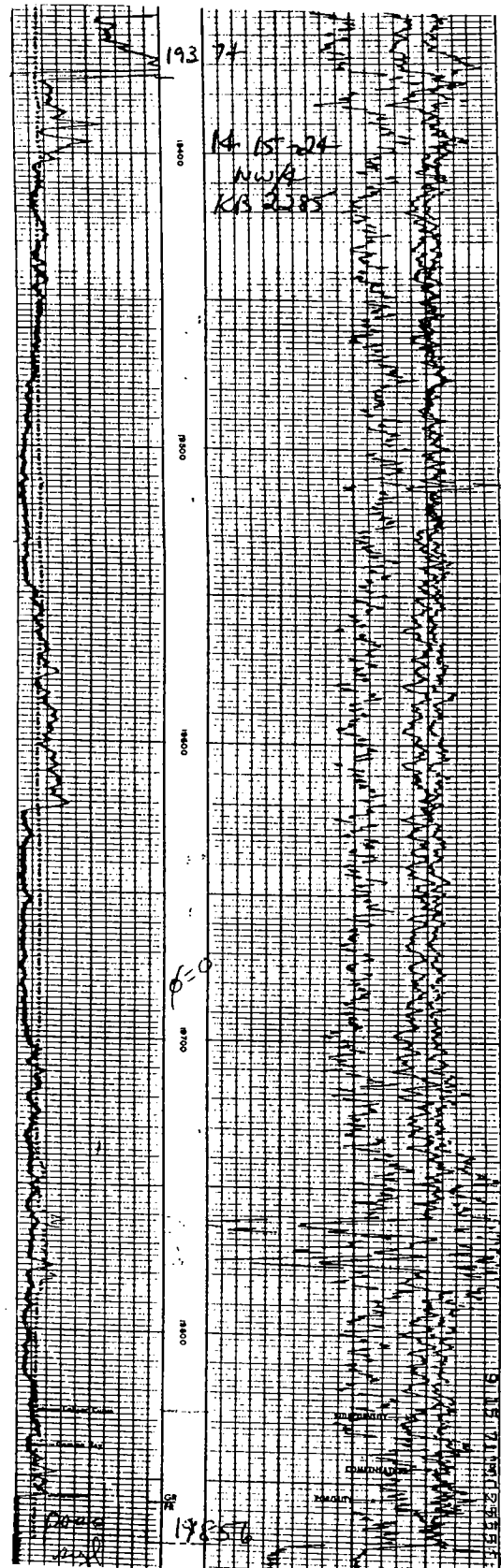
19,390'-19,550' Dolomitic limestone with  
 fossils. Parts rather strongly dolomitized,  
 but no crystalline dolomite observed. Fos-  
 sils retain original microstructure; mod-  
 erate angular silt-size quartz detritus.

19,550'-19,630' Dark-gray dolomitic lime-  
 stone with considerable fossil debris,  
 including shelly material and ostracodes.  
 Minor silt-size detrital quartz.

19,630'-19,720' ?Chimneyhill Subgroup.  
 Light-gray to pinkish-gray organo-detrital  
 limestone with much chert. Very little  
 quartz detritus.

19,720'-19,826' Chimneyhill Subgroup. Gray  
 crystalline dolomite with much chert.  
 Lower few feet is dolomitized oolite (Keel  
 Formation).

Sylvan Shale 19,826'



SNEE & EBERLY 1 KENNEDY—NE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>  
NE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 4, T. 10 N., R. 13 E., McIntosh County,  
Oklahoma; elev. 748'; TD 3945' (Ordovician); compl.  
unknown, no Hunton production reported. Tops:  
Hunton 3702' (-2954') (CC), Sylvan 3752' (-3004')  
(sample depth), Welling 3817' (-3069') (sample  
depth); Hunton thickness 50'. Samples examined  
from 3600' to 3850', good quality; 7 thin sections;  
samples, Oklahoma Well Sample Service, Shawnee,  
Oklahoma.

Hunton strata penetrated in this well are unusual  
for this region in having very little dolomite. The  
upper 10' ranges from weakly to moderately dolomi-  
tized, but the remainder of the beds have very little  
dolomite.

*Woodford (Chattanooga) Shale*

No Misener-Sylamore Sandstone observed.

*Hunton Group* 3702' (CC) -3752' (sample depth)  
3702' (CC) -3752' (sample depth) Silurian; Chim-  
neyhill Subgroup.

3725'-3740' (sample depths) ?Tenkiller Forma-  
tion. Pink crinoidal micrite with minor spar; some  
ostracodes and other shelly debris, but relatively  
few bryozoans. The upper part is weakly to moder-  
ately dolomitized, but the rest is almost free of  
dolomite. No detrital quartz.

3740'-3755' (sample depths) Cochrane-?Black-  
gum Formation. Glauconitic crinoidal micrite with  
some spar; some shelly debris but very few bryo-  
zoans. Chert present. Very little dolomite or detrital  
quartz observed.

*Sylvan Shale* 3755'-3817' (sample depths)

Upper 10' includes some greenish-gray shale; rest  
is a medium-gray shale.

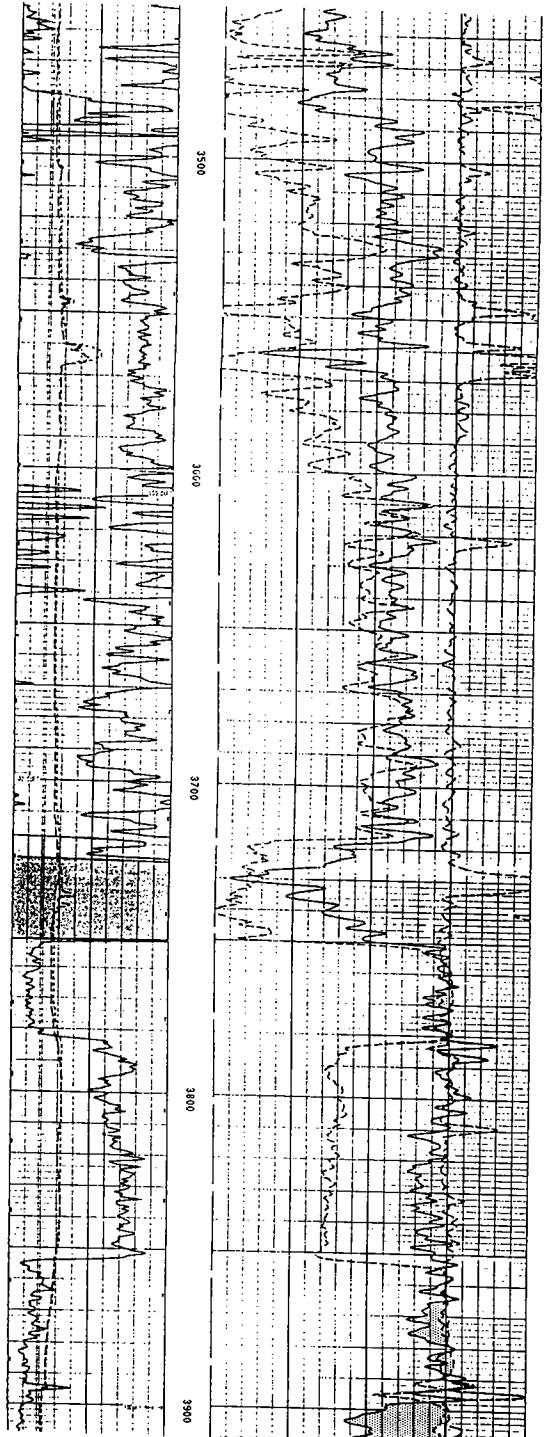
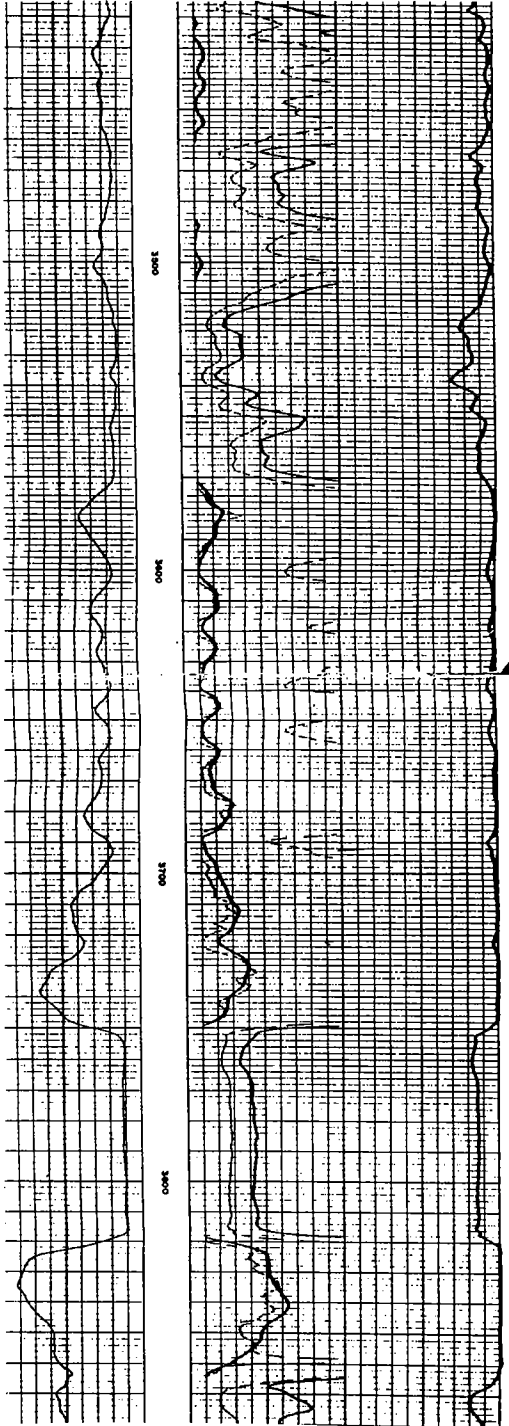
*Welling Formation* 3817' (sample depth)

3825'-3830' (thin section) Organo-detrital cri-  
noidal sparite with no observed detrital quartz or  
dolomite.

3835'-3840' (thin section) Similar to the above,  
but has scattered rounded detrital quartz grains  
to 0.8 mm.

Snee & Eberly  
1 Kennedy  
NE SW NE SW  
Sec. 4, T. 10 N., R. 13 E.  
McIntosh County, Oklahoma  
elev. 748'

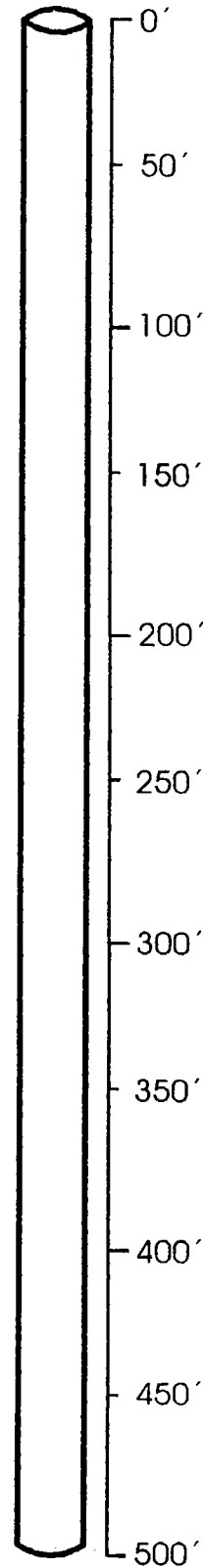
Pepin Operating Co.  
1-A Erin  
NE SW SE  
Sec. 4, T. 10 N., R. 13 E.  
McIntosh County, Oklahoma  
elev. 740'





HUMBLE 1 KERR (SAMEDAN 1 TURNIPSEED)—C  
NE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec. 17, T. 6 N., R. 25 E., Le Flore  
County, Oklahoma; elev. 522' KB (505' GL); TD  
15,838' (Ordovician); comp. 2/11/64, D&A. Tops (all  
tops from GR log): Woodford 14,330 (-13,808'), Hun-  
ton 14,562' (-14,040'), Sylvan 14,652' (-14,130'),  
Welling 14,700' (-14,178'); Hunton thickness 90'.  
Well air drilled, and samples not satisfactory for  
study.

Log not  
available



ALLYN JR. 1 KIKER—NW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec. 3, T. 10 N., R. 7 E., Seminole County, Oklahoma; elev 931' DF (924' GL); TD 4517' (Ordovician); compl. 4/7/50, D&A. Tops: Misener 4180' (-3249') (sample depth), Hunton 4187' (-3256') (SP log), Sylvan 4312' (-3382') (SP log); Hunton thickness 125'. Samples examined from 4140' to 4350', good quality; tops from SP log; slight sample lag; 11 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The Woodford Shale appears to be thin in this well (25' or less); typical Misener Sandstone underlies the Woodford. Hunton strata, all of which are assigned to the Chimneyhill Subgroup, consist of weakly to strongly dolomitized pink crinoidal micrite and sparite with a thin glauconitic unit at the base. Presumably the upper crinoidal beds include Clarita-Quarry Mountain equivalents, possibly with some Tenkiller-age beds in the lower part, and the basal glauconitic beds may correlate with the Cochrane-Blackgum strata. The upper part of the Hunton could include Frisco correlatives, but the presence of substantial dolomite strongly suggests that the entire section is Silurian.

*Woodford (Chattanooga) Shale*

4180' (sample depth) -4187' (SP log) Misener Sandstone. Sandstone with well-rounded quartz grains to 1½ mm; some quartz overgrowths.

*Hunton Group 4187'-4312' (SP log)*

4187'-4312' (SP log) Silurian; Chimneyhill Subgroup.

4187' (SP log) -4230' (sample depth) Weakly to strongly dolomitized (some crystalline dolomite), mostly micrite cement, minor spar. Some pink crinoids, along with bryozoans, ostracodes, trilobites, etc. Little or no quartz.

4230'-4270' (sample depths) Weakly to strongly dolomitized pink crinoidal limestone; mostly micrite cement, minor spar. In addition to crinoids the micrite includes many bryozoans. Little or no detrital quartz.

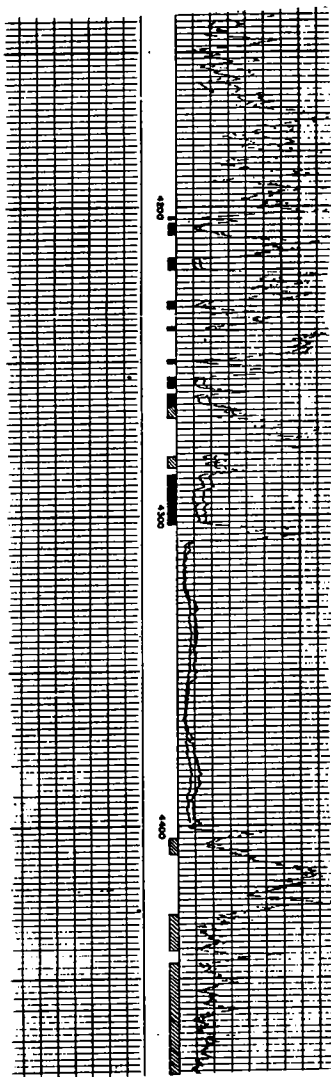
4270'-4300' (sample depths) Weakly dolomitic pink crinoidal limestone; mixture of spar and micrite cement. Many bryozoans. Very little detrital quartz.

4300' (sample depth) -4312' (SP log) Glauconitic dolomite with some chert. Some pelmatozoan material, but much is crystalline dolomite. Very little detrital quartz.

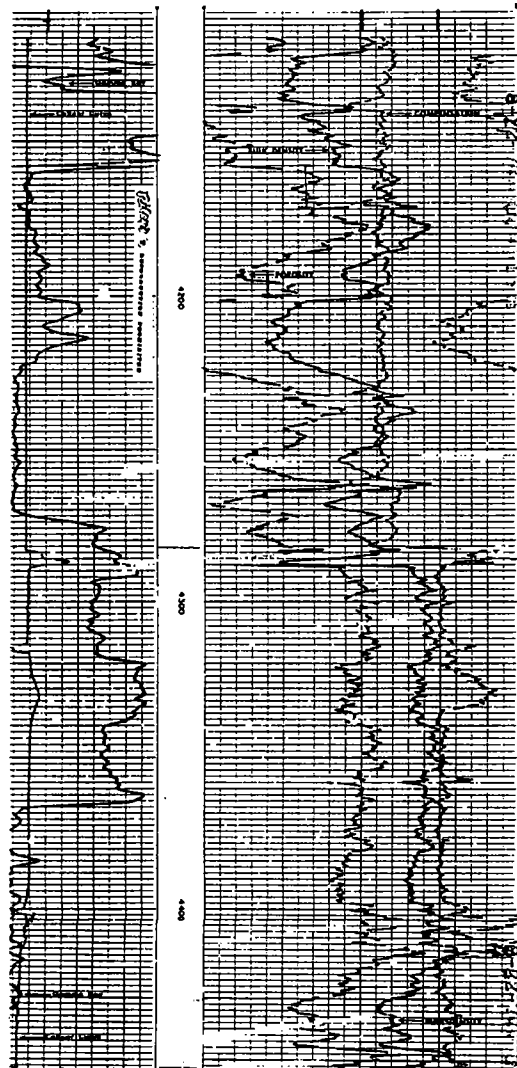
*Sylvan Shale 4312' (SP log)*

Upper 10' greenish-gray shale, medium-gray below.

Allyn Jr.  
1 Kiker  
NW NW SE  
Sec. 3, T. 10 N., R. 7 E.  
Seminole County, Oklahoma  
elev. 924'



San Roque Oil  
1 Baily  
SW NE SW  
Sec. 3, T. 10 N., R. 7 E.  
Seminole County, Oklahoma  
elev. 943'



SNEE & EBERLY 1 KILLIAN—NE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 10, T. 9 N., R. 21 E., Haskell County, Oklahoma; elev. 671' DF (661' GL); TD 4915' (Sylvan); compl. 8/21/64, D&A. Tops: Hunton 4744' (-4073') (SP log), Sylvan 4895' (-4224') (SP log); Hunton thickness 151'. Samples examined from 4700' to 4915' (TD), good quality; 12 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

All the Hunton in this well is assigned to the Chimneyhill Formation and probably correlates with the lower part of the ?Quarry Mountain Formation-?Tenkiller-?Blackgum Formations (see the Humble 1 Kates Unit and the Calvert-Mid-America 1 Bundy). There is no lithologic evidence for any Sallisaw or Frisco strata in this well; if originally present, these beds have been removed by pre-Woodford erosion. The strata in the upper part of the Hunton (?Quarry Mountain Formation) are heavily dolomitized, the upper 50' being almost entirely porous crystalline dolomite. The lowest Hunton bed is an oolite tentatively correlated with the Pettit Oolite and the Keel Formation.

*Woodford (Chattanooga) Shale*

No Misener Sylamore Sandstone observed.

*Hunton Group 4744'-4895' (SP log)*

4744'-4895' (SP log) Silurian; Chimneyhill Subgroup. Strata from 4744' to 4875' provisionally assigned to Quarry Mountain Formation.

4744' (SP log) -4800' (sample depth) Almost entirely porous crystalline dolomite; no detrital quartz observed.

4800'-4875' (sample depths) Weakly to heavily dolomitized crinoidal micrite-sparite with some porous crystalline dolomite. Shelly debris in addition to the crinoids, but very few bryozoans. No detrital quartz observed, but 1 or 2 fragments of chert.

4875'-4900' (sample depths) ?Tenkiller Formation. Pink crinoidal micrite with only minor spar; shelly debris includes some bryozoans. No detrital quartz observed and very little dolomite.

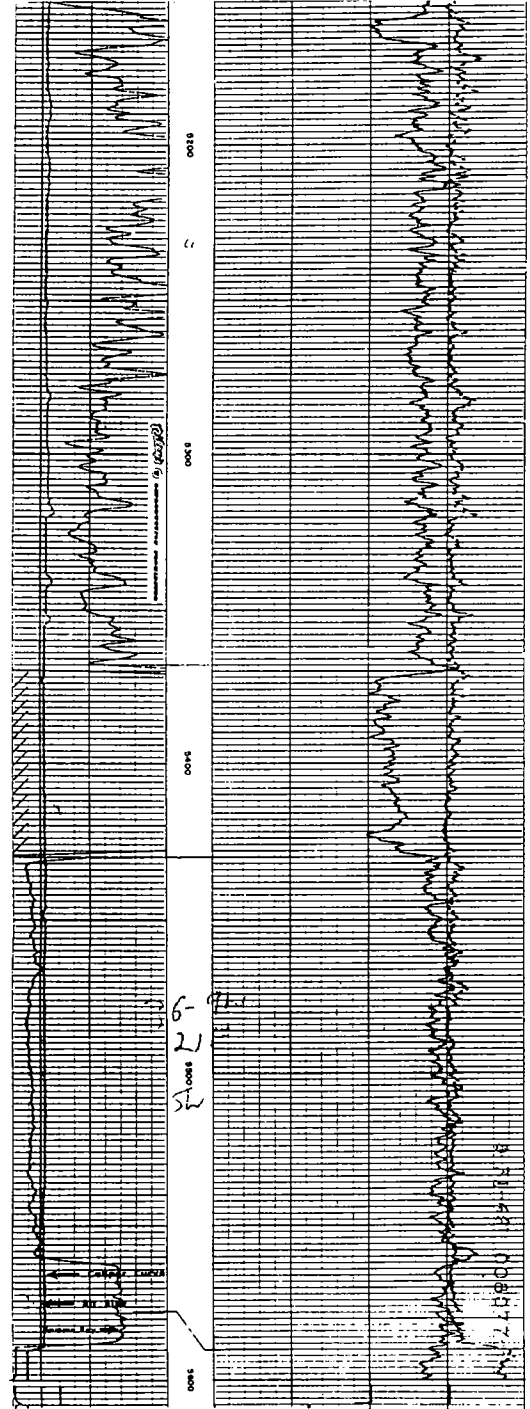
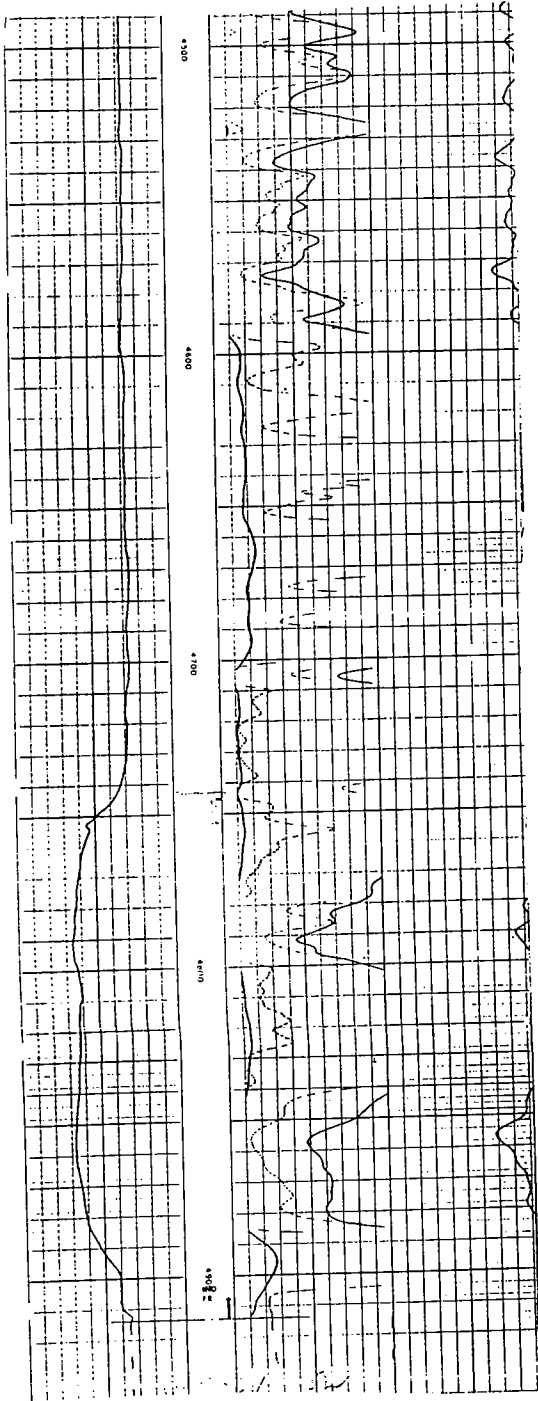
4900'-4910' (sample depths) ?Blackgum Formation. Weakly to heavily dolomitized glauconitic pink crinoidal micrite with a little spar; ranges into crystalline dolomite. Shelly debris in addition to the crinoids, but only a few bryozoans. No detrital quartz observed.

4910'-4915' (sample depths) ?Pettit oolite; ?Keel Formation. Oolites with well-marked radial structure set in sparite; few fossils. Oolites with scattered euhedral dolomite crystals. No detrital quartz observed.

*Sylvan Shale 4895'-4915' (SP log)*

Snee & Eberly  
1 Killian  
NE NE SW  
Sec. 10, T. 9 N., R. 21 E.  
Haskell County, Oklahoma  
elev. 671'

Calvert Mid-American, Inc.  
1 Bundy  
NE NE SW  
Sec. 36, T. 9 N., R. 21 E.  
Haskell County, Oklahoma  
elev. 487'



CLEARY 1-20 KINNEY--SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 20, T. 25 N.,  
 R. 21 W., Harper County, Oklahoma; elev. 2139';  
 compl. 4/5/68, D&A. Tops: Hunton (CC) 8720'  
 (-6581'), Sylvan (CC) 8802' (-6663'); Hunton  
 thickness 82'. Cored 8721'-8760' (all Hunton);  
 3 thin sections; chemical analyses; OU Core  
 Library.

Well is located near truncated northwestern  
 margin of Hunton Group.

Woodford Shale

Hunton Group 8720'-8802'

8720'-8721' No core.

8721'-8730' Silurian; Chimneyhill Subgroup.

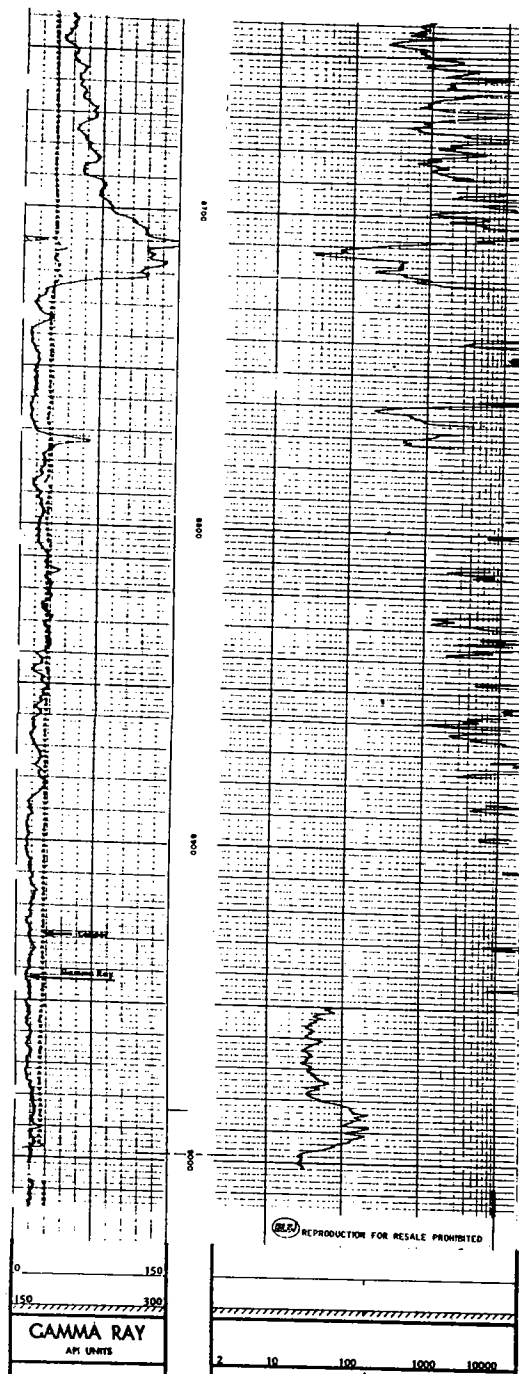
Pale-gray organo-detrital limestone, which  
 appears brecciated. Angular "fragments"  
 appear to be mostly dolomitic; this texture  
 may be result of solution near Woodford  
 contact. MgCO<sub>3</sub> averages 7.36%, HCl insol-  
 ubles 7.92%. No diagnostic fossils  
 observed; referred to Chimneyhill on basis  
 of lithology and stratigraphic position.

8730'-8760' Chimneyhill Subgroup. Upper

part of this interval is pale-gray organo-  
 detrital micrite with much glauconite; some  
 shelly debris, but mostly pelmatozoan plates.  
 Lower part is pinkish-gray crinoidal lime-  
 stone; mostly pelmatozoan plates set in a  
 spar matrix. Some irregular patches of  
 dolomite, but most of rock is very low-  
 magnesium limestone; MgCO<sub>3</sub> averages 1.09%,  
 HCl insolubles 1.19%. No diagnostic fossils  
 observed, and this unit referred to Chimney-  
 hill on basis of lithology and stratigraphic  
 position.

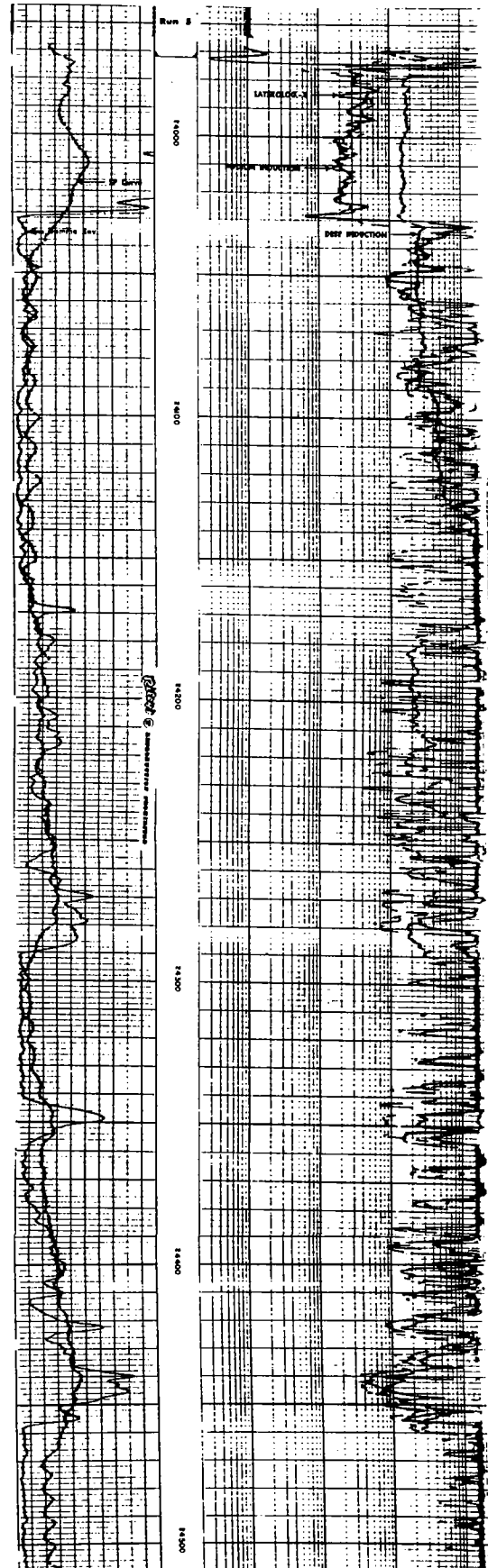
8760'-8802' No core.

Sylvan Shale 8802'



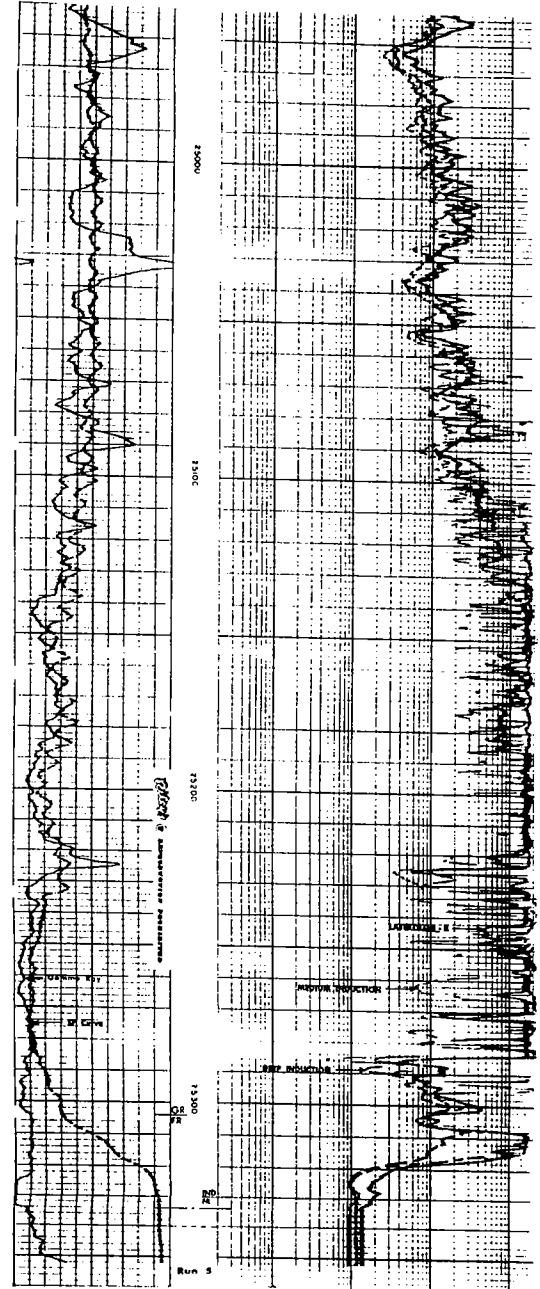
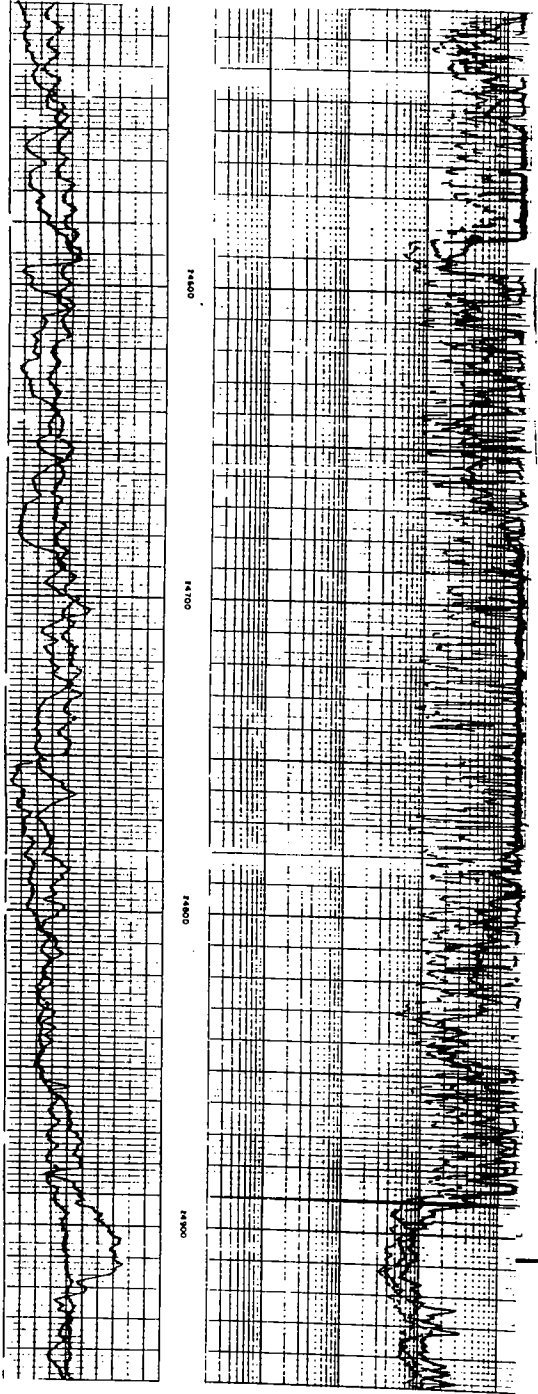
**MRT EXPLORATION CO. 1 KIRTLEY UNIT** — NE¼ SE¼ sec. 19, T10N, R24W, Beckham County, Oklahoma; elevation GL 1,974 ft, DF 2,003 ft; TD 25,320 ft (Sylvan); completion 3/20/76. (Workover by Champlin Petroleum Co. 11/28/78 to a TD of 25,445 ft.)

Lower Woodford–Hunton–upper Sylvan samples studied; 34 thin sections. *Illustrated on PLATE 2, STRATIGRAPHIC SECTION D–D*. Compare to nearby 1 Sanders Unit from which it differs in having a reduced “birdseye” facies and reduced dolomite. See also Ampexco 1 Green.



M.R.T. Exploration  
I Kirtley  
C NE SE  
Sec. 19, T. 10 N., R. 24 W.  
Beckham County, Oklahoma  
KB 2004'

Continued





MOHAWK 1 KOLAR—NE<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> sec. 11, T. 12 N., R. 6 E., Lincoln County, Oklahoma; elev. 1001' DF (996' GL); TD 4665' (Ordovician); compl. 7/4/59, D&A. Tops: Woodford 4337' (-3336') (CC), Hunton 4364' (-3363') (SP log), Sylvan 4472' (-3471') (SP log), Welling 4570' (-3569') (sample depth); Hunton thickness 108'. Samples examined from 4300' to 4600', poor quality with considerable mixing of Hunton with dark shale (no samples, 4470'-4490'); 6 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The uppermost Hunton sample is an organo-detrital pink crinoidal limestone with only a small amount of dolomite; this could represent the Frisco (cf. 1 Boley), but the thickness and presence of some dolomitization suggests that it is all Chimneyhill. The rest of the Hunton is heavily dolomitized including considerable crystalline dolomite.

*Woodford (Chattanooga) Shale* 4337' (CC) -4364' (SP log)

No Misener Sandstone observed.

*Hunton Group* 4364'-4472' (SP log)

Silurian; ?Chimneyhill Subgroup. The upper 10' is an organo-detrital pink crinoidal sparite with only a small amount of dolomite. The remainder is moderately to strongly dolomitized pink crinoidal sparite including much crystalline dolomite. The bottom 10' is almost entirely porous crystalline dolomite.

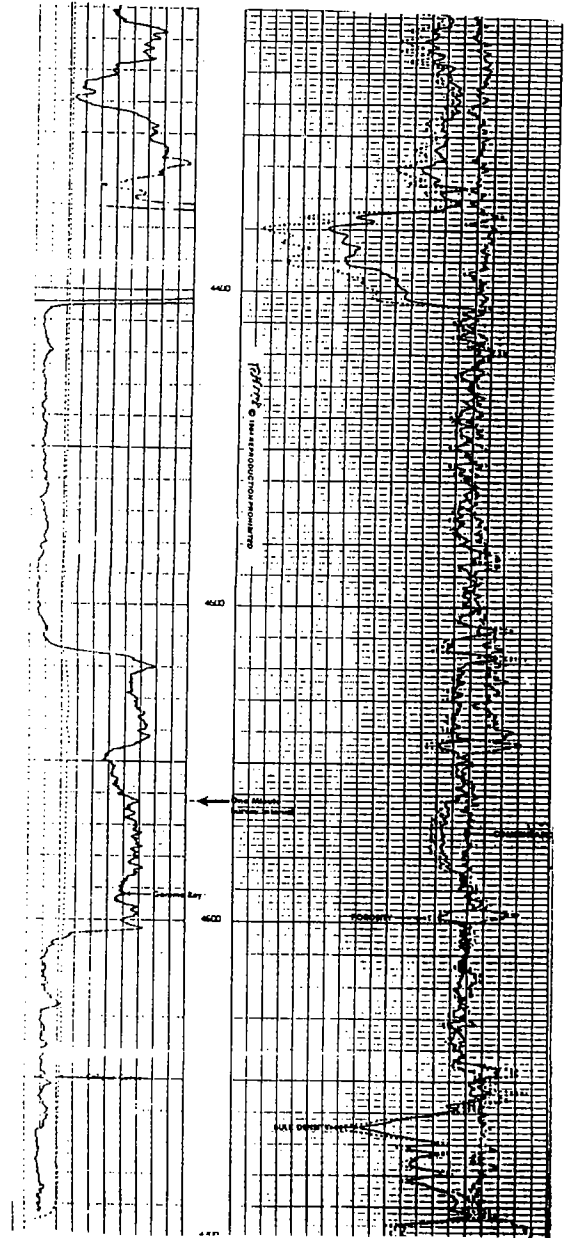
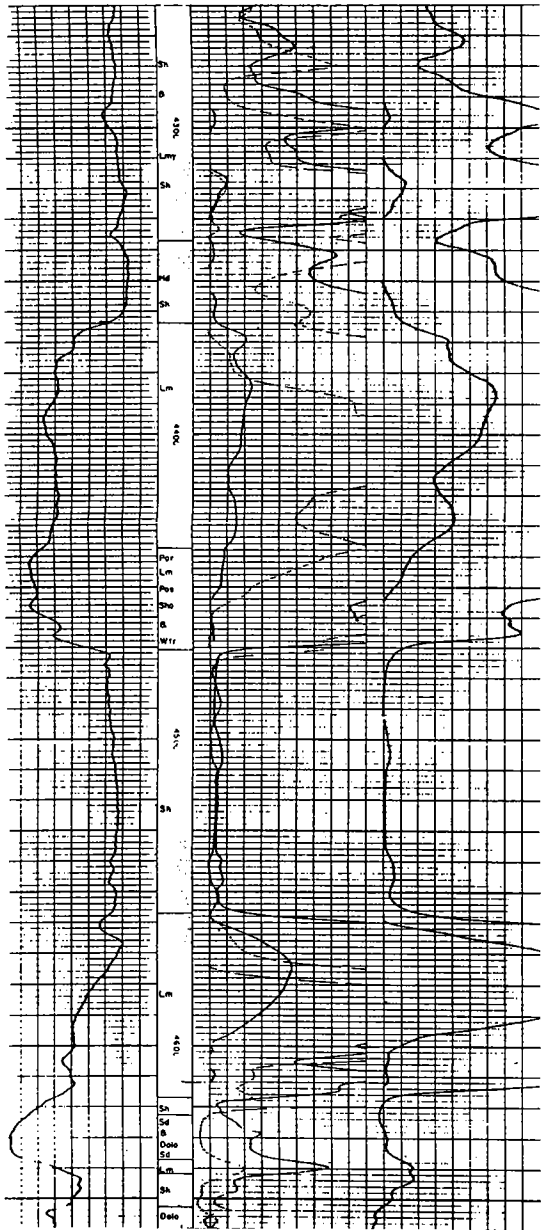
*Sylvan Shale* 4472' (SP log) -4570' (sample depth) 4470'-4490' No samples.

*Welling Formation* 4570' (sample depth)

4590'-4595' (thin section) Organo-detrital sparite with little or no dolomite or detrital quartz.

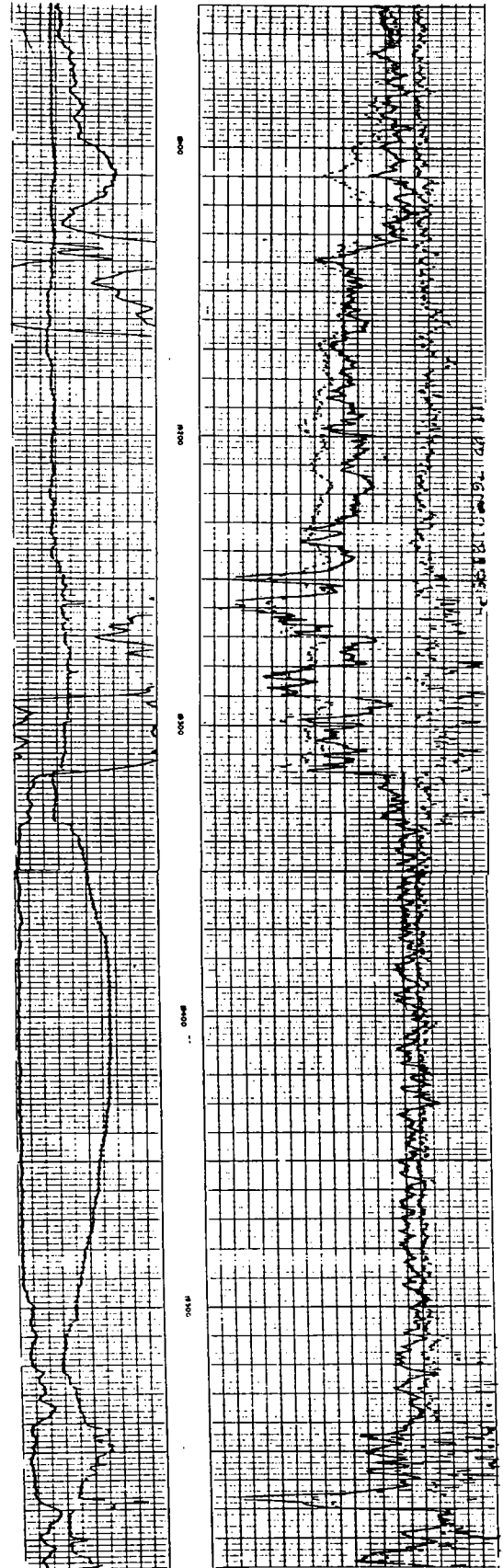
Mohawk  
 1 Kolar  
 NE SE NW  
 Sec. 11, T. 12 N., R. 6 E.  
 Lincoln County, Oklahoma  
 elev. 1001'

Hailey Energy  
 1 Vlasik  
 SE SE NW  
 Sec. 14, T. 12 N., R. 6 E.  
 Lincoln County, Oklahoma  
 elev. 1031'



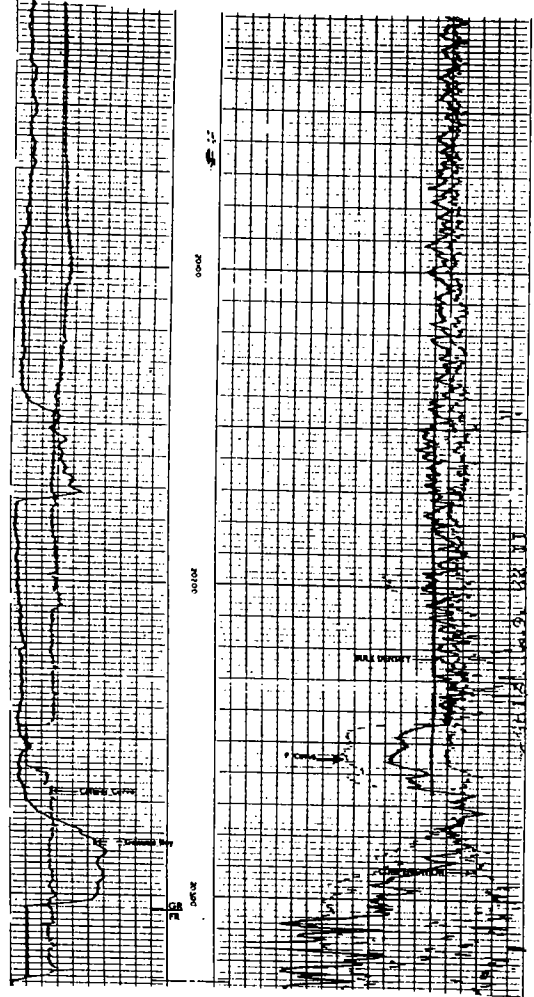
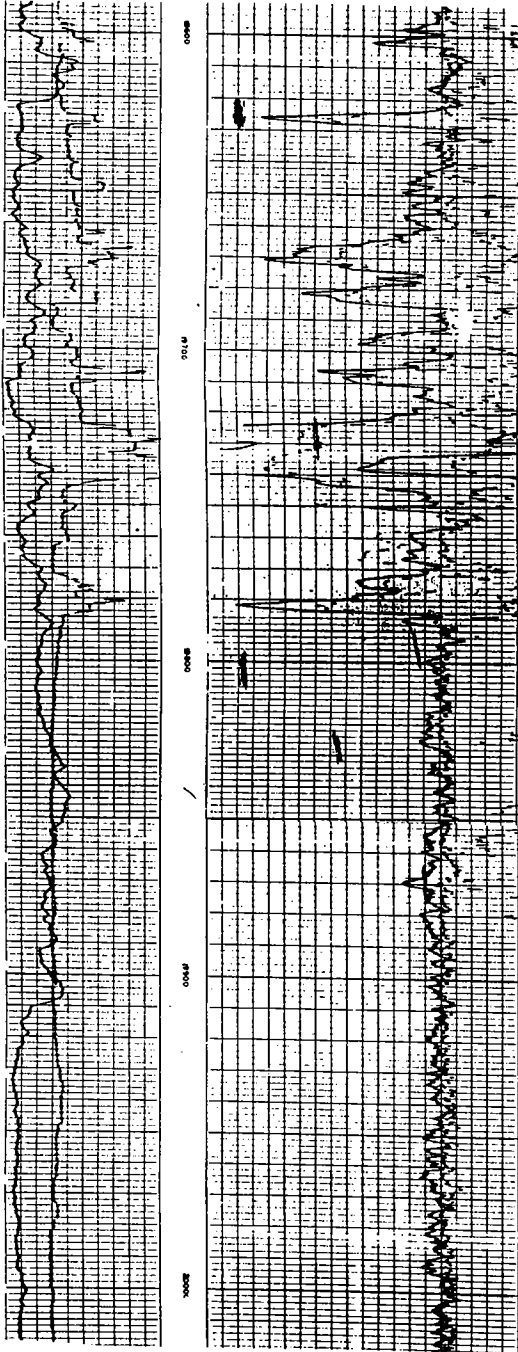
**APEXCO 1 KRUG** — C SW¼ sec. 20, Blk. A-7, H&GN Survey, Wheeler County, Texas; elevation GL 2,093 ft, KB 2,125 ft; TD 20,320 ft (Sylvan); completion (Na).

Samples examined by Amsden, 1979 (lower Woodford-Sylvan); 39 thin sections. Tops (samples) Hunton 19,350 ft; Sylvan 20,320 ft; 39 thin sections. *Illustrated on PLATE 2, STRATIGRAPHIC SECTION D-D'.*



Apexco, Inc.  
I Krug  
C SW  
Sec. 20, Blk A-7, H&Gn Survey  
Wheeler County, Texas  
KB 2125'

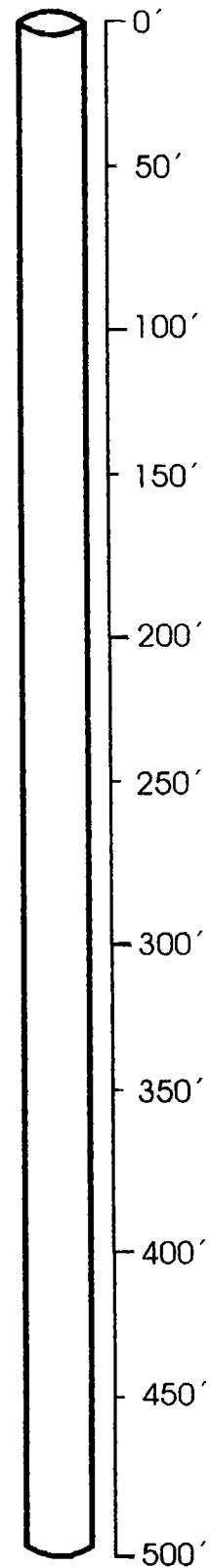
Continued



CARTER OIL CO. 1 ANNA KURZ — C SE $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 25, T1S, R17N, Tillman County, Oklahoma (Hollis basin); elevation GL (Na), DF 1,197 ft; TD 6,360 ft (Arbuckle); completion (Na), 9/8/51 (P).

Samples studied 4,600 ft (Pennsylvanian) to 6,360 ft (Arbuckle); 49 thin sections. Tops: Hunton (Chimneyhill Subgroup) 5,220–5,260 ft, pink crinoidal, skeletal grainstone, glauconitic in lower 10 ft; Sylvan Shale 5,260 ft; Viola Group (Welling Formation) 5,350 ft; Arbuckle Group? 6,160 ft. Sample: Oklahoma Well Sample Service, Shawnee, Oklahoma. *Illustrated on* PLATE 2, STRATIGRAPHIC SECTION B–B'.

Log not available



SMITH BROTHERS 1 KYTLE-RAY--SW $\frac{1}{2}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 36,  
T. 8 N., R. 2 E., Pottawatomie County, Okla-  
homa; elev. 971'; TD 5490'; compl. 11/9/47,  
D&A. Top: Hunton (CC) 4830' (-3859').  
Cored interval unknown, only one piece of  
fossiliferous core examined (4930'); chemical  
analyses; OU collections.

This fragment of Frisco core yields an  
excellent specimen of Rensselaeria sp. (Amsden  
and Huffman, 1958, p. 74; Amsden and Ventress,  
1963, pl. 7, figs. 19-20).

Woodford Shale

Hunton Group 4830'

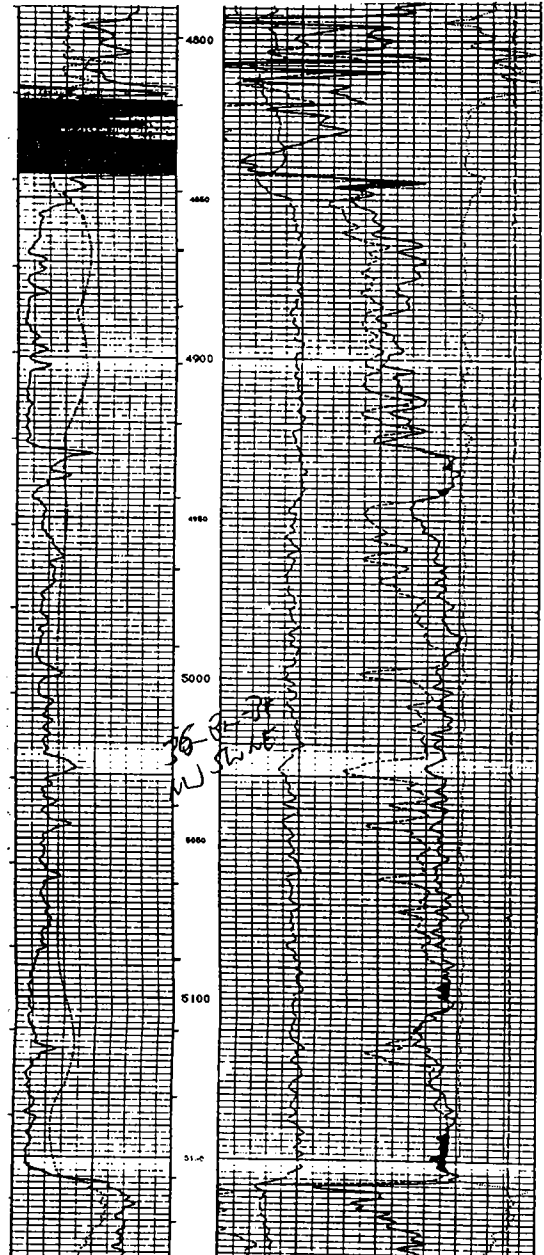
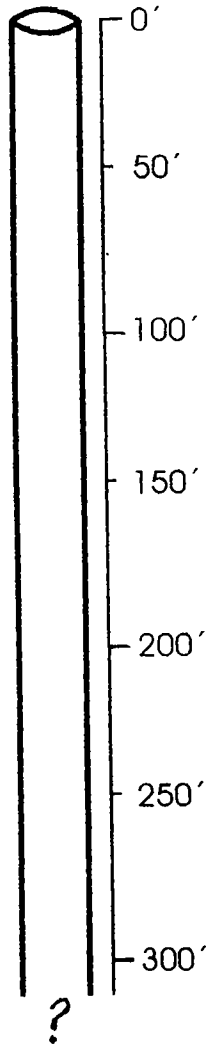
4930' Lower Devonian; Frisco Formation.

Organo-detrital sparite, most of fossil  
debris being crinoidal material; MgCO<sub>3</sub> 1.44%,  
HCl insolubles 1.09% (insolubles incorrectly  
reported by Amsden and Huffman, 1958, p. 74,  
as 30%). This includes large specimen of  
Rensselaeria mentioned above, a character-  
istic Frisco brachiopod.

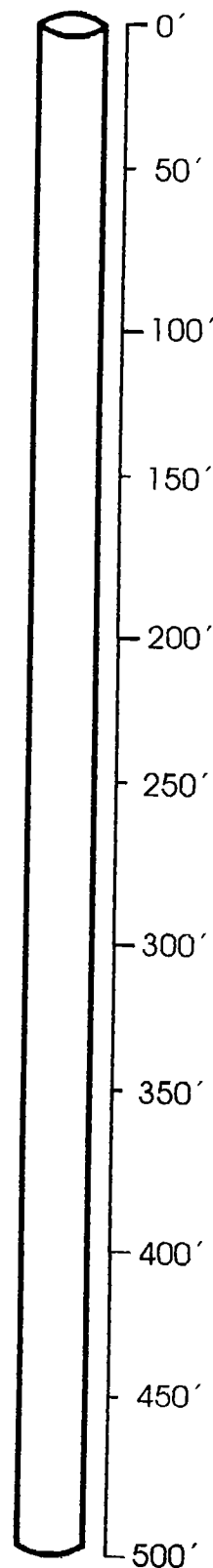
Smith Brothers  
1 Kyle-Ray  
SW NE NW  
Sec. 36, T. 8 N., R. 2 E.  
Pottawatomie County, Oklahoma  
elev. 971'

1-36 Taylor- Northcutt  
1815'FNL & 2310'FEL  
Sec. 36, T. 8 N., R. 2 E.  
Pottawatomie County, Oklahoma  
elev. 1019'

Log not available



Log not available



**WELL P**

Superior Oil Company, 1 Lackey

This well is in SE $\frac{1}{4}$  SE $\frac{1}{4}$  NE $\frac{1}{4}$  sec. 14, T. 12 N., R. 16 E., McIntosh County, about 17 miles north of Eufaula (text-figs. 3, 15). The well was drilled in 1959 with rotary tools, and the collar elevation is 642 feet. Cuttings were examined from 2,930 to 2,980 feet in intervals of 10 and 5 feet, and the sample quality is good. Lower Devonian rocks are absent in this well (text-figs. 3, 15). Silurian rocks are 30 feet thick (2,940-2,970 feet; text-fig. 3) and consist of only the Tenkiller Formation and the Blackgum Formation. Individual thickness of Tenkiller and Blackgum is uncertain owing to the presence of both in sample 2,940-2,950. The contact cannot be distinguished on the electric log. The Sylvan Shale was encountered in sample 2,970-2,975. One thin section was prepared of the Blackgum Formation from sample 2,960-2,965.

Depth (feet)	Thickness (feet)	Description
2,930-2,940	10	CHATTANOOGA FORMATION: Black and brown pyritic shale; 10% of the sample contains Sylamore sandstone.  TENKILLER FORMATION: Gray to tan limestone; abundant orange crinoidal material. Thickness uncertain, as it is present with Blackgum in sample 2,940-2,950.
2,940-2,950	10	Limestone, gray to tan; abundant orange crinoidal material; 5% residue; 50% of sample Tenkiller; limestone, dark-gray, glauconitic, 10%; dolomite, light-gray, fine-crystalline, 25%; chert, gray to white, opaque, 15% (Blackgum).  BLACKGUM FORMATION: Limestone, dolomitic, gray to dark-gray, glauconitic; light-gray to gray fine-crystalline dolomite; brown to tan fine-crystalline dolomite; white to gray opaque chert. Thickness uncertain, as it is present with Tenkiller in sample 2,940-2,950. Thin section (P-1) was prepared from sample 2,960-2,965.
2,950-2,960	10	Limestone, dolomitic, gray to dark-gray, glauconitic, 3% residue, 40%; dolomite, light-gray to gray, fine-crystalline, 35%; chert, white to gray, opaque, 25%.
2,960-2,965	5	Limestone, as above, 25%; dolomite, as above, 40%; chert, as above, 35%; thin section (P-1) was prepared from this interval.
2,965-2,970	5	Dolomite, light-gray to gray, fine-crystalline; in part glauconitic; 70%; chert, white, gray, opaque, 30%; trace of brown to tan fine-crystalline dolomite.
2,970-2,980	10	SYLVAN FORMATION: Thickness not determined, as the samples were studied only to 2,980 feet. Gray-green shale.



PHILLIPS 1-C LEE--1980' F S & EL, sec. 80, Blk. M-1, H&GN Survey, Wheeler County, Texas; elev. 2773'; TD 17,098'; compl. 9/14/64; Woodford-Hunton contact 14,973' (-12,200') (samples), Hunton-Sylvan contact 15,330' (-12,557') (samples); Hunton thickness 357'. Core from this well (14,980' to 15,100') was examined by T. L. Rowland and me at Phillips warehouse, Bartlesville, Oklahoma, in 1967. Several samples were taken, and 4 oversize thin sections were prepared; 5 specimens were chemically analyzed in interval from 14,993' to 15,100' (average HCl-insoluble residue, 1.54%; average MgCO<sub>3</sub> content, 2.61%; see part III of Appendix). In 1973 I borrowed 1-C Lee samples from Phillips, examining these from 15,100' to 15,350'; these consist of core chips from 15,100' to 15,240', a skip from 15,240' to 15,260', and well cuttings below this point; sample quality good. Thirteen thin sections were prepared from core chips (15,100' to 15,240'), and 6 from samples (15,260' to 15,330'). See panel 10, section B-B'.

Woodford Shale

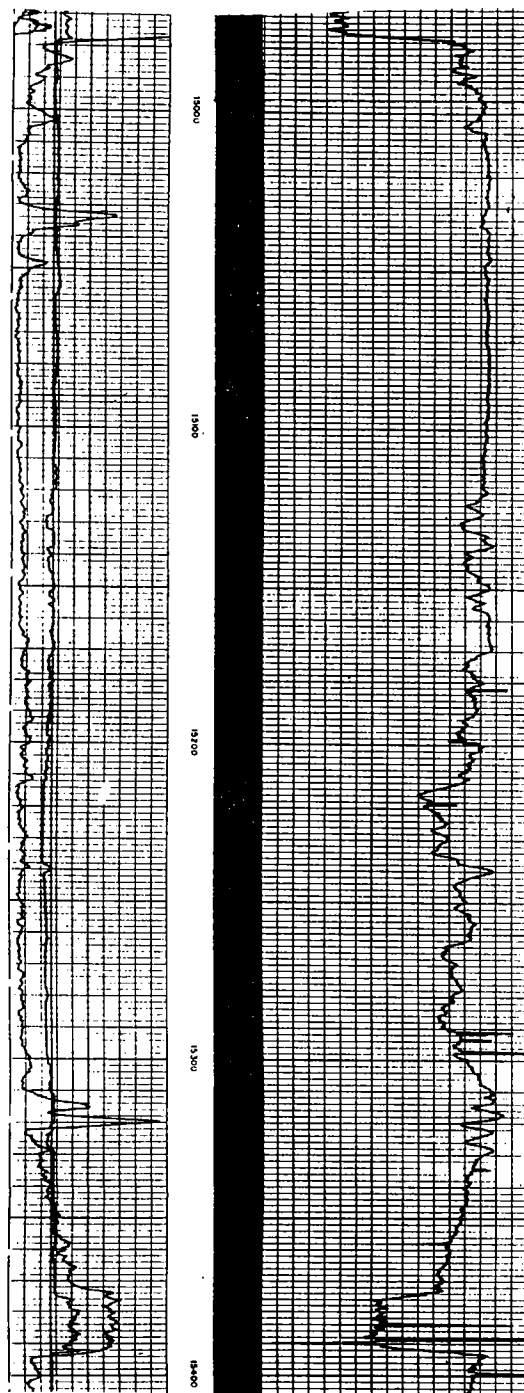
Hunton Group

14,975'-15,101' Silurian; Kirkidium biofacies.

Light-gray organo-detrital biosparite. This limestone is very low in insolubles and in dolomite. Numerous specimens of Kirkidium sp. are present throughout interval, also corals and other groups. Considerable recrystallization and solution, but little evidence of porosity.

15,102'-15,330' (photomicrographs, pl. 2, figs. 1a, 1b) ?Chimneyhill Subgroup. Crystalline dolomite with some angular quartz detritus up to 0.30 mm. Chert is present, and thin sections commonly show minor evidence of silicification. Rock appears to have good porosity. Basal samples, from 15,300' to 15,330', are dolomitized oolite, showing porosity around oolites; ?Keel Formation (photomicrographs, pl. 12, fig. 6). Interval appears to include some Chimneyhill correlatives, but position of Kirkidium-Chimneyhill contact is uncertain.

Sylvan Shale 15,300'



PHILLIPS PETROLEUM CO. 1-C LEE — 1,980 ft FS & EL, sec. 80, Blk. M-1 H&GN Survey, Wheeler County, Texas; elevation 2,773 ft (unk); TD 17,098 ft; completion 9/14/64.

Woodford-Hunton contact 14,973 ft (samples), Hunton-Sylvan contact 15,330 ft (-12,557 ft) samples; Hunton thickness 357 ft. Described in Amsden (1975, p. 93-94).

Amsden (1975, p.93-94) assigned the cored interval in the 1-C Lee well to the Late Silurian Kirkidium biofacies of the Henryhouse Formation. A subsequent restudy of the

brachiopod faunas by Amsden and an investigation of the 1-C Lee coral faunas by Dr. W. A. Oliver, Jr. (USGS, Washington, D.C.) indicate that these strata are of Early rather than Late Silurian age (Amsden in Amsden and Barrick, 1988, p. 48). Accordingly, these strata are assigned to the Chimneyhill Subgroup and correlated with the Cochrane Formation of the Arbuckle outcrop area. See PLATE 2, STRATIGRAPHIC SECTIONS D-D' and D-D"; PLATE 1, PRE-WOODFORD SUBCROP MAP.

APCO 1 LEON--NE $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 9, T. 8 N., R. 2 W.,  
Cleveland County, Oklahoma; elev. 1168'; TD  
8807' (Arbuckle); compl. 10/22/59, no Hunton  
production reported. Tops: Woodford (CC)  
7280' (-6112'), Hunton (CC) 7289' (-6121'),  
Sylvan (CC) 7541' (-6373'); Hunton thickness  
252'. Core; cored interval unknown; one  
fragment of fossiliferous core (Kirkidium  
biofacies) examined, depth unknown; chemical  
analysis; no thin section; Oklahoma Geological  
Survey collections.

A piece of core from this well has excellent  
specimen of Kirkidium pingue pingue (Amsden);  
well is important because it represents most  
southeasterly extent of Kirkidium biofacies  
presently known (see panel 9).

Woodford Shale 7280'-7289'

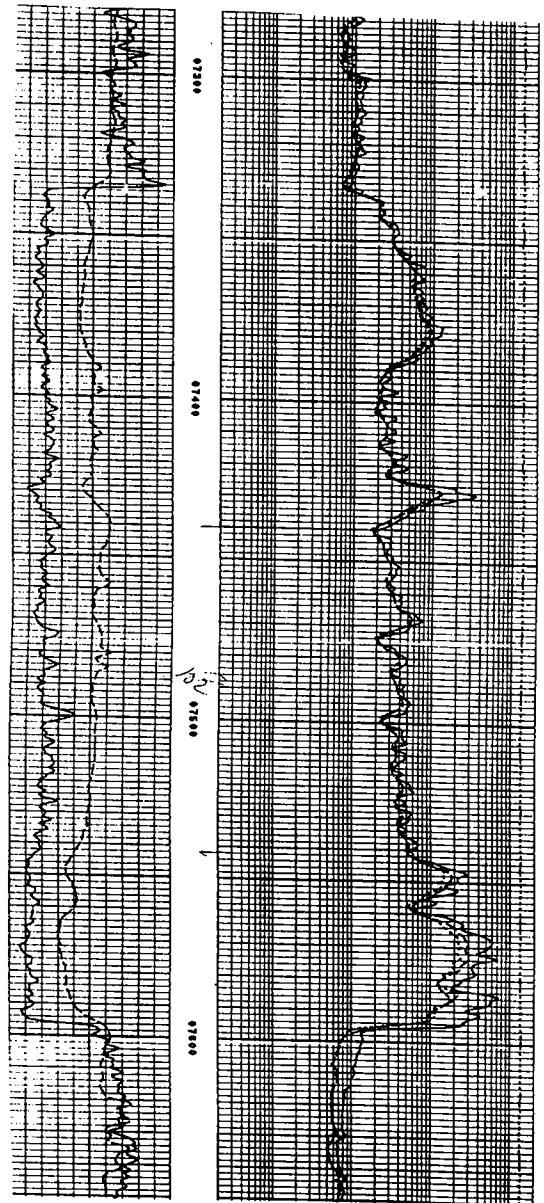
Hunton Group 7289'-7541'

Nothing is known concerning stratigraphic  
distribution of Kirkidium biofacies in this  
well, as only a single piece of Kirkidium-  
bearing core is known but depth is not  
known. This is dolomitic, fossiliferous  
limestone with substantial insoluble  
detritus; MgCO<sub>3</sub> 10.24%, HCl insolubles  
17.45%.

Sylvan Shale 7541'

APCO  
1 Leon  
NE SW SW  
Sec. 9, T. 8 N., R. 2 W.  
Cleveland County, Oklahoma  
elev. 1168'

Kaiser-Francis Oil  
1-9 Maddle  
2175'FSL & 650'FWL  
Sec. 9, T. 8 N., R. 2 W.  
Cleveland County, Oklahoma  
elev. 1172'



GETTY 1 LUETKEMEYER UNIT--C SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 24,  
T. 19 N., R. 11 W., Blaine County, Oklahoma;  
elev. 1222'; TD 9254' (Sylvan); compl. 12/9/67,  
D&A. Tops: Hunton (CC) 8820' (-7598'),  
Sylvan (core) 9248' (-8026'); Hunton thick-  
ness 428'. Cored 8827'-8852', 9192'-9253.5'  
(Hunton-upper Sylvan); chemical analyses; 5  
thin sections; porosity test (P8-A); OU Core  
Library.

Silurian in this well includes strongly  
dolomitized beds of oolite in Kirkidium bio-  
facies (pl. 3, fig. 4) and very weakly dolo-  
mitic oolites in basal Keel Formation (pl. 12,  
fig. 5). Dolomitized oolite in Kirkidium  
beds has 14.3% porosity (P8-A).

#### Woodford Shale

Hunton Group 8820'-9248'

8820'-8827' No core.

8827'-8852' Silurian; Kirkidium biofacies.

Gray crystalline dolomite. Upper part is  
strongly porous, dolomitized, fossiliferous  
oolite (photomicrograph, pl. 3, fig. 4),  
and lower part fossiliferous crystalline  
dolomite; insolubles low throughout. MgCO<sub>3</sub>  
averages 42.13%, HCl insolubles 2.65%.

Porosity test P8-A at 8842' in oolite with  
14.3% porosity, 211.28 md permeability.

Specimens of Kirkidium common from 8835'  
to 8852'; all of cored interval referred to  
Kirkidium biofacies, although upper 8' (and  
overlying uncored interval) may include  
some Lower Devonian.

8852'-9192' No core.

9192'-9245' Chimneyhill Subgroup. Light-  
gray fossiliferous limestone with nodules  
of vitreous chert. This rock includes high  
percentage of HCl insolubles, but undoubt-  
edly this largely represents silicification  
rather than detritus; there is some silt-  
size angular to subangular quartz detritus,  
but not in quantity indicated by analyses.  
Dolomite content is relatively low, aver-  
aging 7.34% MgCO<sub>3</sub>. No diagnostic fossils  
observed, and this interval is referred to  
Chimneyhill on basis of stratigraphic  
position and lithology.

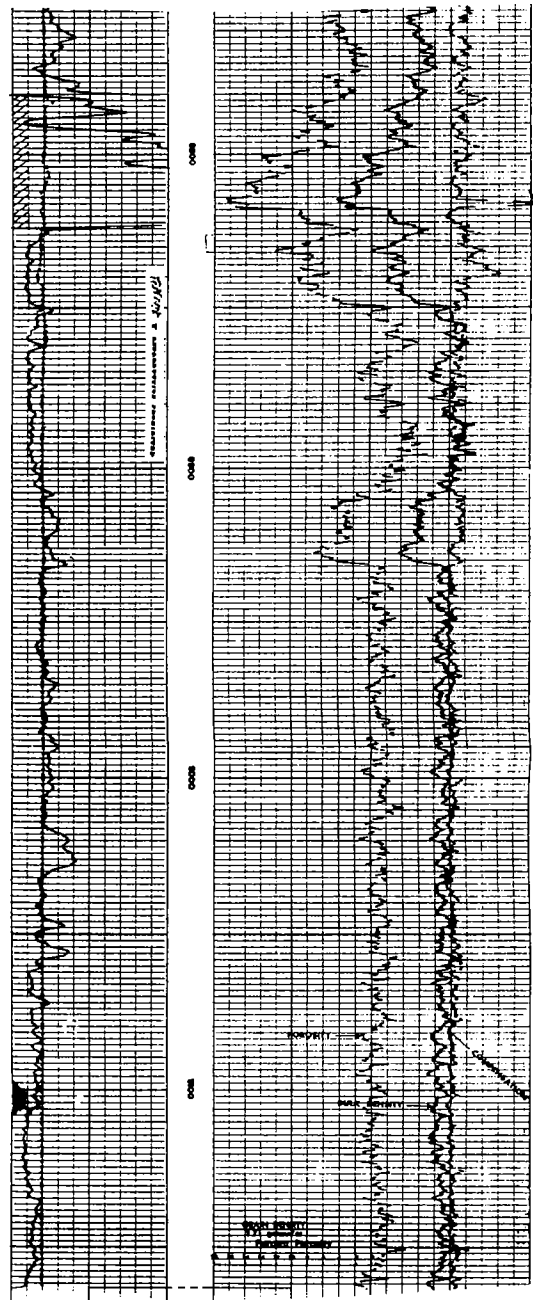
9245'-9248' Chimneyhill Subgroup; Keel For-  
mation. Pale-gray fossiliferous oolite  
with spar matrix (photomicrograph, pl. 12,  
fig. 5). MgCO<sub>3</sub> 11.90%, HCl insolubles  
3.62%. Referred to Keel on basis of  
lithology and stratigraphic position.

Sylvan Shale 9248'

9248'-9253.5' Core; greenish-gray shale.

GETTY OIL CO. 1 LUETKEMEYER UNIT — C SE $\frac{1}{4}$   
NW $\frac{1}{4}$  sec. 24, T19N, R11W, Blaine County, Oklahoma; ele-  
vation GL 1,222 ft, DF 1,234 ft; TD 9,254 ft (Sylvan); com-  
pletion (Na), 12/22/67 (P).

Cored the upper 25 ft of Hunton (starting ~7 ft below  
the Woodford); this is heavily dolomitized fossiliferous  
strata including 7 ft of dolomitized oolites (Amsden, 1975,  
p. 94-95, pl. 3, fig. 4; see analytical data, appendix 1975  
report). Kirkidium ranges throughout this interval includ-  
ing the oolites. This well also cored the lower 60 ft of Hun-  
ton and uppermost Sylvan Shale. The lower 3 ft of Hunton  
is a moderately dolomitized oolite (Keel). (Amsden, 1975,  
pl. 12, fig. 5; 11.9% MgCO<sub>3</sub>.)



TEXAS EASTERN & ANDERSON-PRICHARD 1  
 LEWIS—C NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 31, T. 2 S., R. 11 E.,  
 Atoka County, Oklahoma; elev. 616' KB (599' GL);  
 TD 11,833' (Ordovician); compl. 3/15/58, no Hunton  
 production. Tops: Woodford 9390' (-8791') (SP log),  
 Hunton 9680' (-9081') (SP log) (may include some  
 Misener in the upper 20'), Sylvan 9790' (-9191')  
 (SP log) Welling 9940' (-9349) (SP log); Hunton  
 thickness 110'. Samples examined from 9640' to  
 10,000'; cuttings fine (air drilled?) but usable; 9 thin  
 sections; samples, Oklahoma Well Sample Service,  
 Shawnee, Oklahoma.

This well is within 1 mile or so of the Choctaw Fault  
 and presumably is in proximity to the Ouachita  
 province. Hunton strata, however, represent the Ar-  
 buckle Mountain lithofacies with an upper fossilif-  
 erous marlstone (the uppermost 20' or so is silty  
 and dolomitic and may include Misener Sandstone),  
 underlain by pink crinoidal sparite. These beds are  
 low-magnesium limestones with only scattered dolo-  
 omite crystals.

*Woodford (Chattanooga) Shale* 9390'-9680' (SP log)  
 May include some Misener Sandstone (see below).

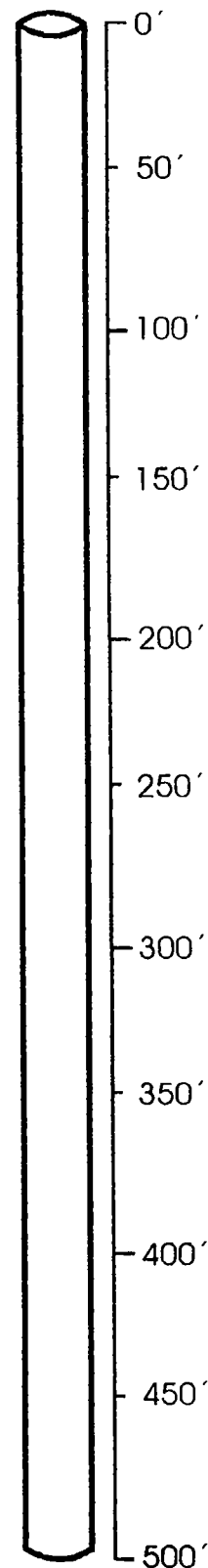
*Hunton Group* 9680'-9790' (SP log)  
 9680' (SP log) -9750' (sample depth) Silurian;  
 ?Henryhouse Marlstone (may include some Devo-  
 nian Haragan marlstone). Sparingly fossiliferous  
 marlstone; upper 20'-30' with some fine (to 0.2  
 mm) subangular quartz detritus and dolomite crys-  
 tals (may include Misener), the underlying beds  
 having little silt or dolomite. Referred to the Si-  
 lurian on the basis of lithology and stratigraphic  
 position.

9750' (sample depth) -9790' (SP log) Chimneyhill  
 Subgroup, ?Clarita Formation. Pink crinoidal or-  
 gano-detrital sparite with some micrite; parts with  
 many ostracodes. Very little dolomite or quartz.  
 Some chert in the lower 10'-15'.

*Sylvan Shale* 9790'-9940' (SP log)

*Welling Formation* 9940' (SP log)  
 9980'-9990'; 9990'-10,000' (thin sections) Or-  
 gano-detrital sparite with subrounded quartz  
 grains.

Log not  
 available



TEXAS PACIFIC 1-33 LIBBY--E<sub>2</sub>E<sub>1</sub>NW<sub>4</sub> sec. 33, T. 14 N., R. 26 W., Roger Mills County, Oklahoma; elev. 2540'; TD 22,450' (Ordovician, ?Sylvan); compl. 6/30/73, Morrow production. Tops: Woodford 21,656' (-19,116'), Hunton 21,764' (-19,224'), Sylvan 22,356' (-19,816'); Hunton thickness 592'. Samples examined from top of Woodford Shale through Hunton and into upper Sylvan; 14 thin sections, stained with Alizarin Red-S; samples borrowed from Oklahoma Well Sample Service, Shawnee, Oklahoma.

The Hunton in this well is largely in the western dolomitic facies, the upper 440' composed of dolomitic limestone and calcitic dolomite with some beds of crystalline dolomite, and the lower 150' composed of crystalline dolomite. The Hunton is similar to that present in the 1 Lovett; it is probably all Silurian (see panel 10, section B-B').

Woodford Shale 21,656'-21,764'

Hunton Group 21,764'-22,356'

21,764'-21,790' ?Silurian. Organo-detrital limestone with pelmatozoans and shelly debris. Very little dolomite, and only minor detrital quartz.

21,790'-21,830' Crystalline dolomite with very little quartz.

21,830'-21,860' Poor-quality samples.

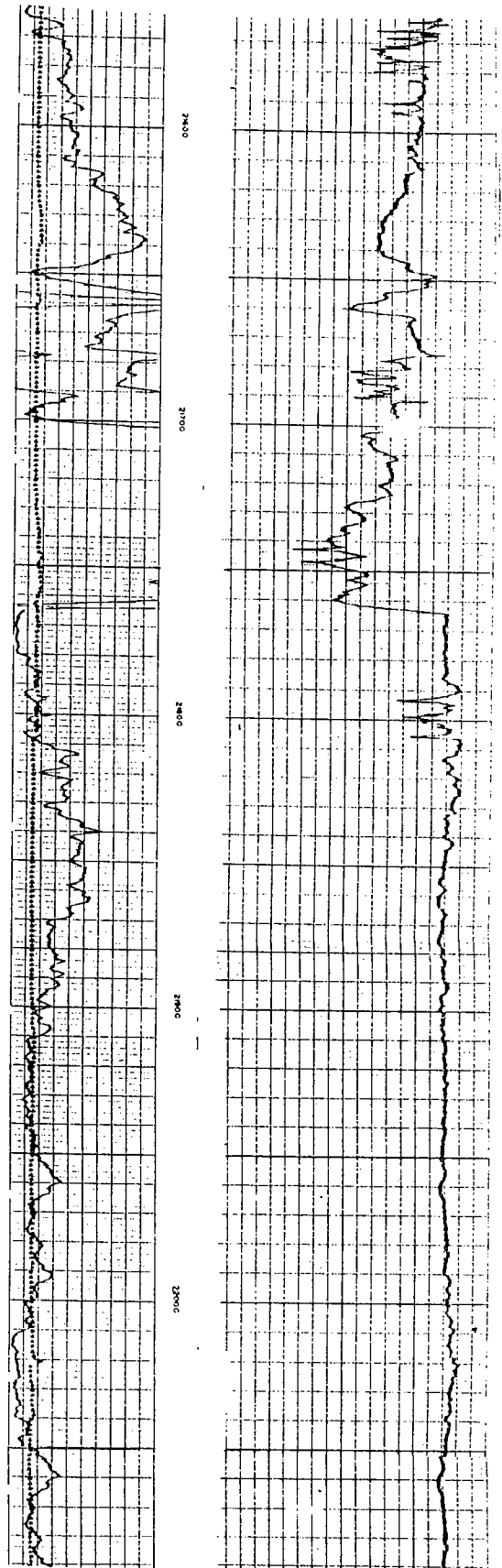
21,860'-22,150' Medium- to dark-gray dolomitic limestone and calcitic dolomite with a few beds of crystalline dolomite. Some detrital quartz. Fossiliferous in places.

22,150'-22,200' ?Chimneyhill Subgroup.

Light-gray to pinkish-gray organo-detrital limestone with some chert. Very little dolomite or detrital quartz. Sharp contact with overlying strata.

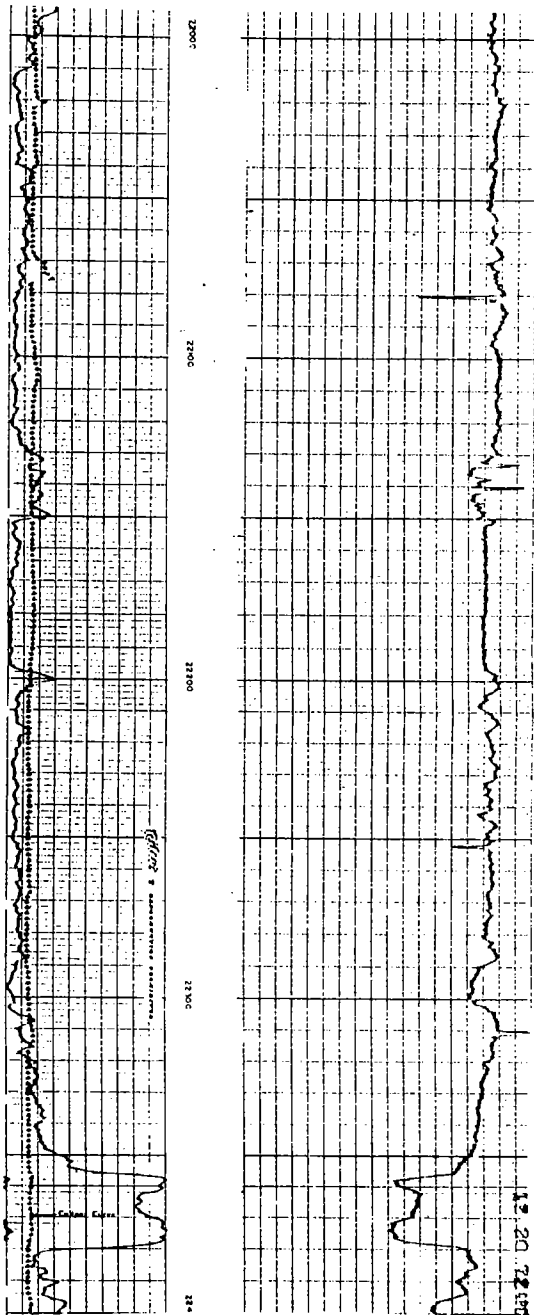
22,200'-22,356' Chimneyhill Subgroup. Crystalline dolomite with some chert.

Sylvan Shale 22,356'



Texas Pacific  
1-33 Libby  
2310'FWL & 1320'FNL  
Sec. 33, T. 14 N., R. 26 W.  
Roger Mills County, Oklahoma  
Elev 2540'

Continued



TEXAS PACIFIC OIL CO. INC. 1-33 NELLIE B. LIBBY —  
C E½E½NW¼ sec. 33, T14N, R26W, Roger Mills County,

Oklahoma; elevation GL 2,511 ft, DF 2,539 ft; TD 22,450 ft  
(Sylvan); completion 4/30/73.

Samples described in Amsden (1975, p. 113–114); 14  
thin sections. *Illustrated on* PLATE 2, STRATIGRAPHIC SECTION  
D–D'.

PHILLIPS 1-C LINA--sec. 570, Blk. 43, H&TC  
 Survey, Ochiltree County, Texas; elev. 2879';  
 TD 11,906'; compl. 2/27/68. Tops (from  
 Phillips): Kinderhook (no Woodford recognized)  
 10,960' (-8081'), Hunton 11,060' (-8181'),  
 Sylvan (core) 11,078' (-8199'); Hunton thick-  
 ness 18'. Cored 11,070'-11,138' (Hunton-  
 Sylvan); no chemical analyses; Phillips,  
 Bartlesville, Oklahoma.

This core is interesting because Hunton lime-  
 stone, with late Early Devonian (Emsian)  
 fossils, rests directly on Sylvan Shale.  
 Sylvan in this area is quite calcareous, and,  
 in fact, upper part of strata here referred  
 to Sylvan is argillaceous limestone.

Kinderhook 10,960'-11,060'

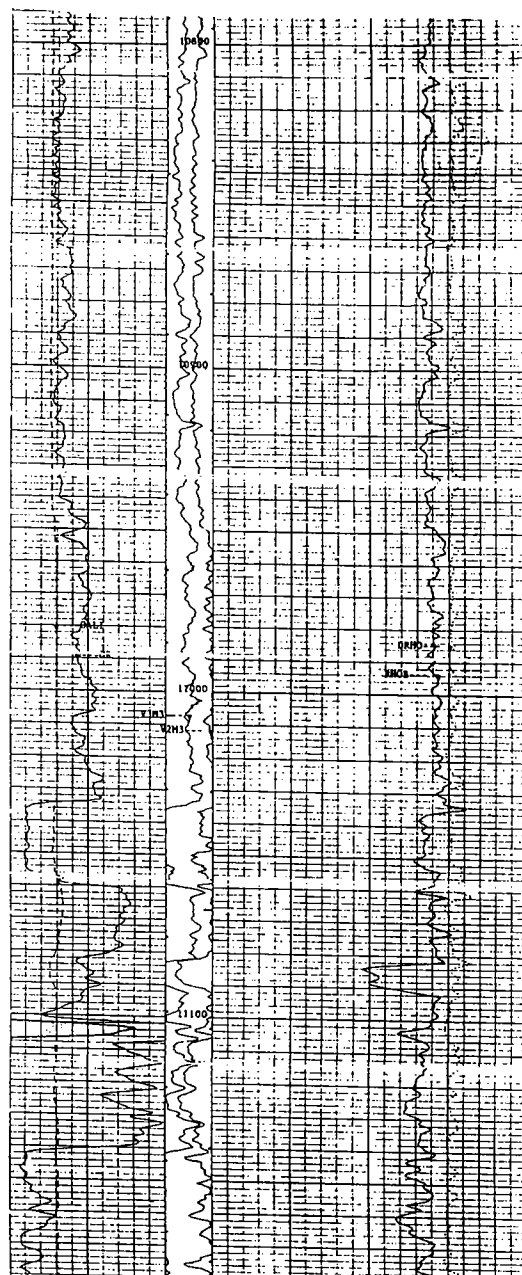
Hunton Group 11,060'-11,078'

11,060'-11,070' No core.

11,070'-11,078' Lower Devonian (?Sallisaw  
 Formation, ?Turkey Creek Limestone). Gray  
 organo-detrital limestone with numerous  
 euhedral crystals of dolomite and scattered  
 subrounded quartz grains. Numerous mega-  
 fossils including Amphigenia sp., Eodevonaria?  
 sp., Acrospirifer cf. A. worthenanus,  
Leptocoelia? sp., and several large lepto-  
 strophid brachiopods representing either  
Leptostrophia or Protoleptostrophia. These  
 brachiopods indicate a late Early Devonian  
 age (Emsian) with similarities to faunas  
 from Kirkpatrick 1 Cronkite in Kingfisher  
 County, Oklahoma, and Sallisaw Formation in  
 eastern Oklahoma (Amsden, 1963a, p. 148);  
 Turkey Creek limestone, Marshall County,  
 Oklahoma, is also late Early Devonian unit  
 of about same age (Amsden, Klapper, and  
 Ormiston, 1968, p. 166).

Sylvan Shale 11,078'

11,078'-11,138' Upper 4 feet of this interval  
 is dark-gray fine-grained organo-detrital  
 limestone with clay bands; this is under-  
 lain by 6 feet of argillaceous limestone  
 with thin sandstone bands and chert nodules.  
 Remainder of core is dark-gray calcareous  
 clay with some thin shelly bands. Upper  
 10 feet of core is limestone and could  
 represent Hunton, but shale and sandstone  
 bands suggest that it is calcareous facies  
 of Sylvan; in fact, entire Sylvan in this  
 area is strongly calcareous.



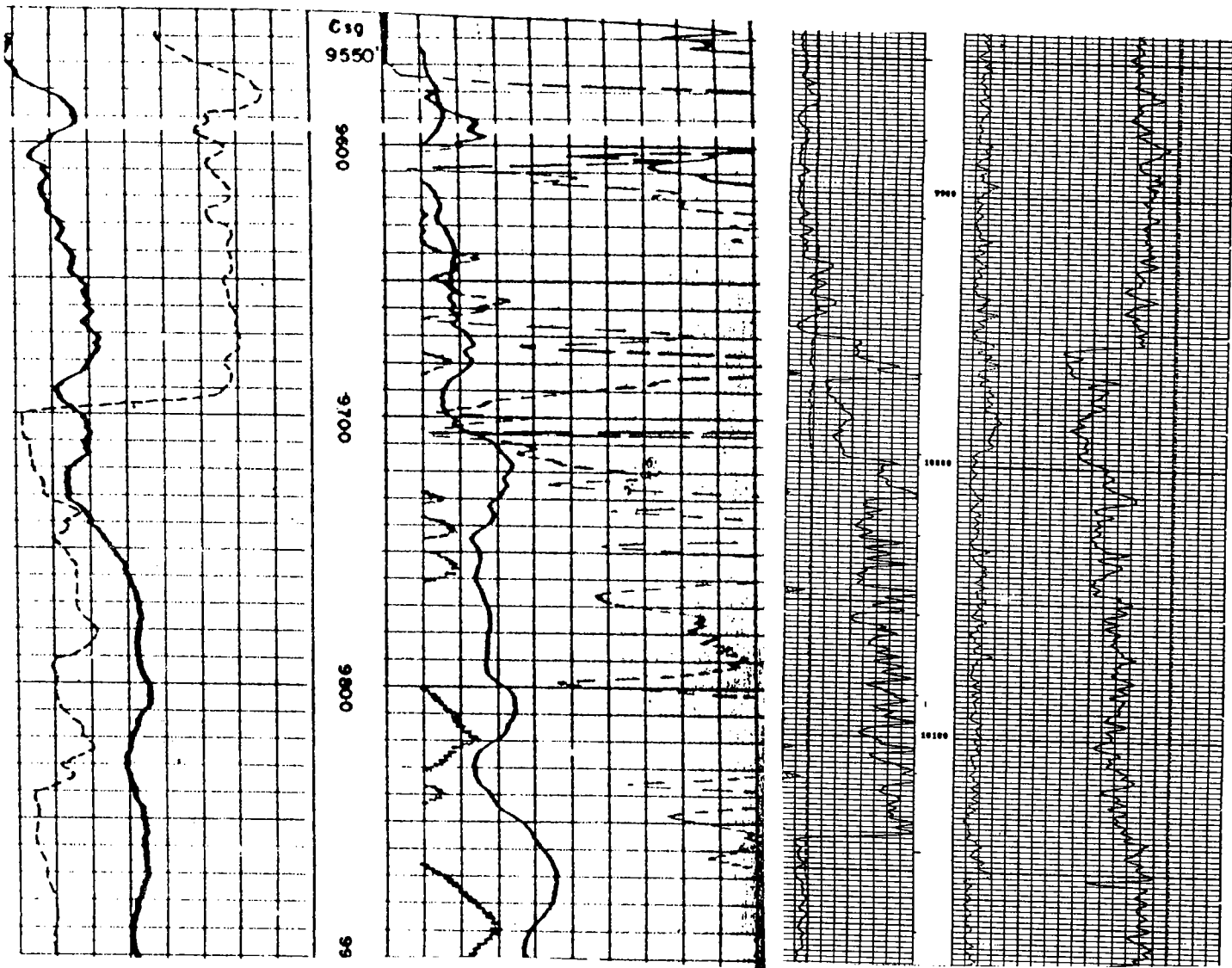


**SINCLAIR OIL AND GAS CO. 1 LIPS** — Sec. 135, Blk. C, G&M Survey, Roberts County, Texas; elevation 2,805 ft (unk); TD 10,706 ft; completion 4/27/49.

Core Texas Bureau of Mines, Austin, examined by Amsden, 1979, Austin, Texas; 9,680–9,730 ft; Woodford–Hunton 9,686–9,725 ft, upper Sylvan. Hunton strata comprise fossiliferous limestones and dolomitic limestones; brachiopods include a nearly complete dorsal valve of *Amphigenia* sp. and shells provisionally assigned to *Hysterolites worthenanus* (Amsden in Amsden and Barrick, 1988, p. 50). These beds correlated with the *Amphigenia* bearing beds of the 1-C Lina (see PLATE 1, PRE-WOODFORD SUBCROP MAP).

Sinclair Oil and Gas  
1 Lips  
Sec. 135, Blk. C, G&M Survey.  
Roberts County, Texas  
elev. 2807'

Hilliard Oil and Gas  
1 AF B. Lips  
2750'FSL & 2450'FWL  
Sec. 137, Blk. C, G&M Survey.  
Roberts County, Texas  
elev. 2602'



INEXCO 1 LOVETT--NW $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 21, T. 14 N., R. 24 W., Roger Mills County, Oklahoma; elev. 2096'; TD 21,276' (?Sylvan); compl. 8/11/71, Hunton gas production. Tops: Woodford 20,490' (-18,394'), Woodford-?Misener contact 20,594' (-18,498'), ?Misener-Hunton contact 20,630' (-18,534'), Sylvan 21,170' (-19,074'); Hunton thickness 540'. Samples examined from Woodford through Hunton and into Sylvan; samples borrowed from Oklahoma Well Sample Service, Shawnee, Oklahoma.

Hunton strata in the 1 Lovett are a part of the western dolomite facies, being in considerable part crystalline dolomite, in part dolomitic limestone and calcitic dolomite, and with some low-magnesium, organo-detrital limestone. The relationship to Hunton rocks from other wells in this area suggests that the 1 Lovett is largely if not entirely of Silurian age (see panel 10, section B-B').

Woodford Shale 20,490'-20,594'

?Misener Sandstone 20,594'-20,630'

Dark-gray fine-grained siliceous shale? with some small dolomite crystals.

Hunton Group 20,630'-21,170'

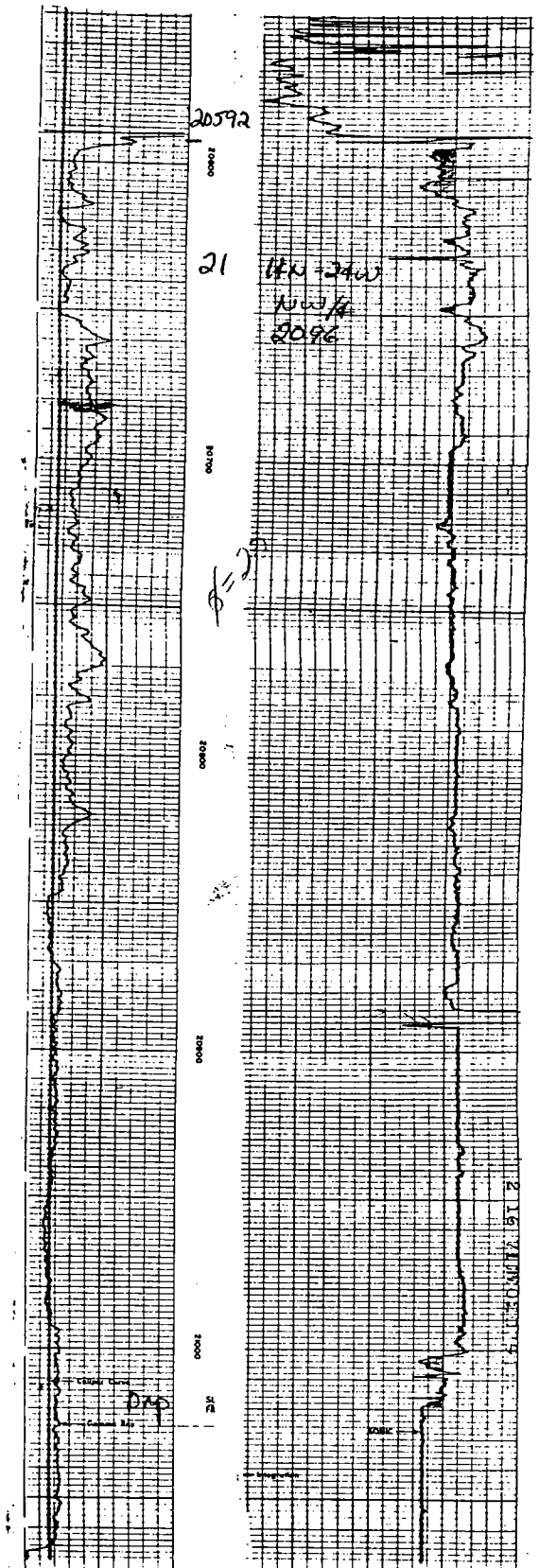
20,630'-20,680' ?Silurian. Medium-gray crystalline dolomite with very little fossil debris; minor detrital quartz.

20,680'-20,800' Calcareous dolomite and dolomitic limestone with much angular silt-size quartz detritus. Some fossil material, both pelmatozoans and shelly debris.

20,800'-21,050' ?Chimneyhill. Organo-detrital limestone with shelly and pelmatozoan debris. Mostly with only minor detrital quartz, and weakly to moderately dolomitic.

21,050'-21,170' Medium-gray crystalline dolomite with very little organic debris and only minor quartz.

Sylvan Shale 21,170'



GULF 1 MAINKA RING--SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 12, T. 5 N.,  
R. 5 W., Grady County, Oklahoma; elev. 1160';  
TD 13,631' (McLish); compl. 12/6/66, D&A.  
Tops: Woodford (CC) 11,521' (-10,361'),  
Hunton (core) 11,746' (-10,586'), Sylvan (CC)  
12,210' (-11,050'); Hunton thickness 464'.  
Cored 11,714'-11,765', 12,158'-12,208' (lower  
Woodford-Hunton); 3 thin sections; no chemical  
analyses; OU Core Library.

This is one of few wells with good biostrati-  
graphic control on Haragan-Bois d'Arc strata.  
It also cored Cochrane?-Keel oolite strata.

Woodford Shale 11,521'-11,746'

11,714'-11,746' Core; black shale.

Hunton Group 11,746'-12,210'

11,746'-11,765' Lower Devonian; Haragan-Bois  
d'Arc Formations. Dark-gray fossiliferous  
marlstone; parts with considerable amount  
of euhedral dolomite crystals and with sub-  
angular silt-size quartz detritus. Fossil  
debris includes trilobites, brachiopods,  
bryozoans, and pelmatozoan plates; in places  
fossils are scattered, and in other places  
they are more concentrated; locally it  
probably grades into a grain-supported  
(fossil-clast) rock. Upper part (11,748'-  
11,750') with Howellella cycloptera (Hall),  
Dalejina oblata (Hall)?, Strophonella  
bransonii Amsden?, phacopid trilobites. On  
basis of these fossils, interval is referred  
to Helderbergian, although lower part below  
these fossils could include some Silurian.

11,765'-12,158' No core.

12,158'-12,206' Silurian; Chimneyhill Sub-  
group. Light-gray organo-detrital limestone  
with relatively little dolomite. Referred  
to Chimneyhill on basis of lithology and  
stratigraphic position.

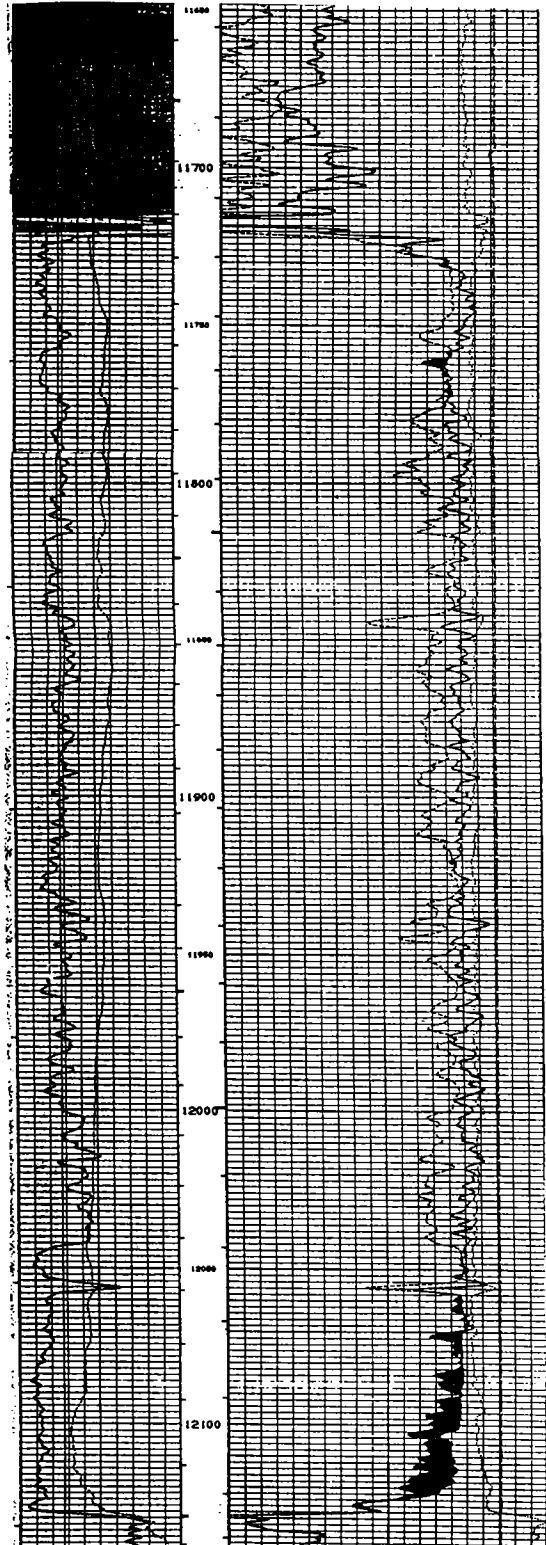
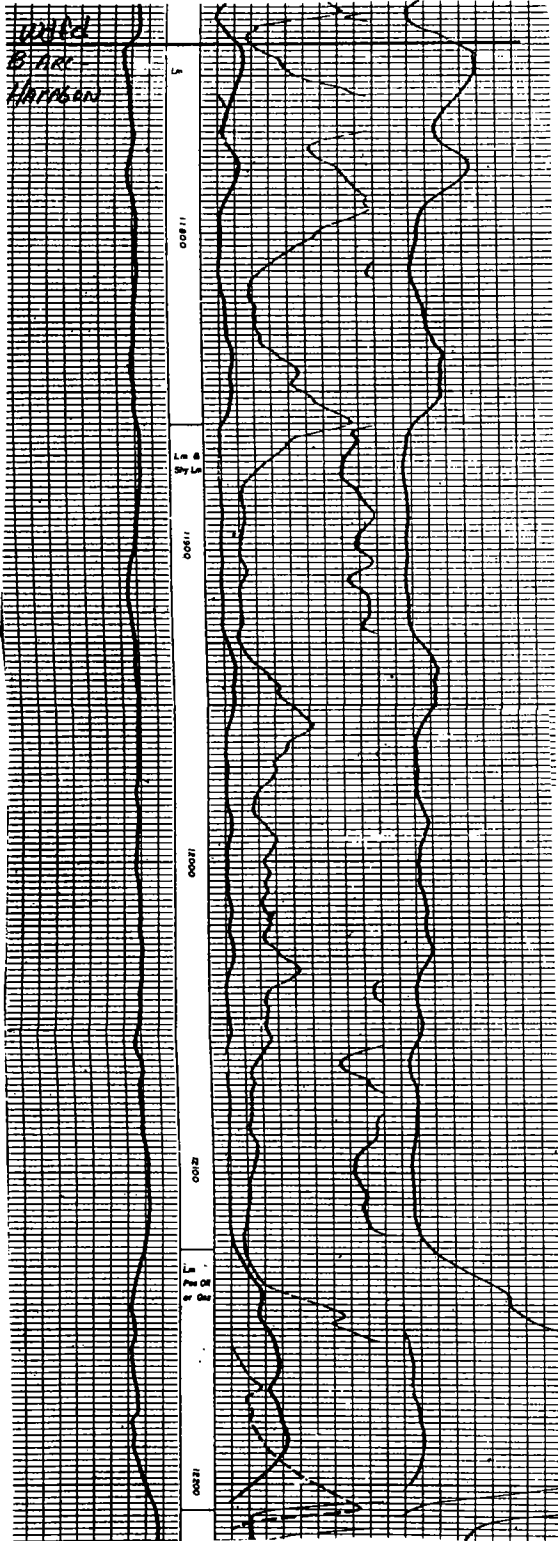
12,206'-12,208' Chimneyhill Subgroup; Keel  
Formation. Closely packed oolites with  
spar cement; oolites with radial and con-  
centric structure. Low in dolomite and HCl  
insolubles. Referred to Keel on basis of  
lithology and stratigraphic position.

12,208'-12,210' No core.

Sylvan Shale 12,210'

Gulf  
1 Mainka Ring  
SE NE  
Sec. 12, T. 5 N., R. 5 W.  
Grady County, Oklahoma  
elev. 1160'

Terraquest Corp.  
1-12 Sharon Rose  
NW NW  
Sec. 12, T. 5 N., R. 5 W.  
Grady County, Oklahoma  
elev. 1146'



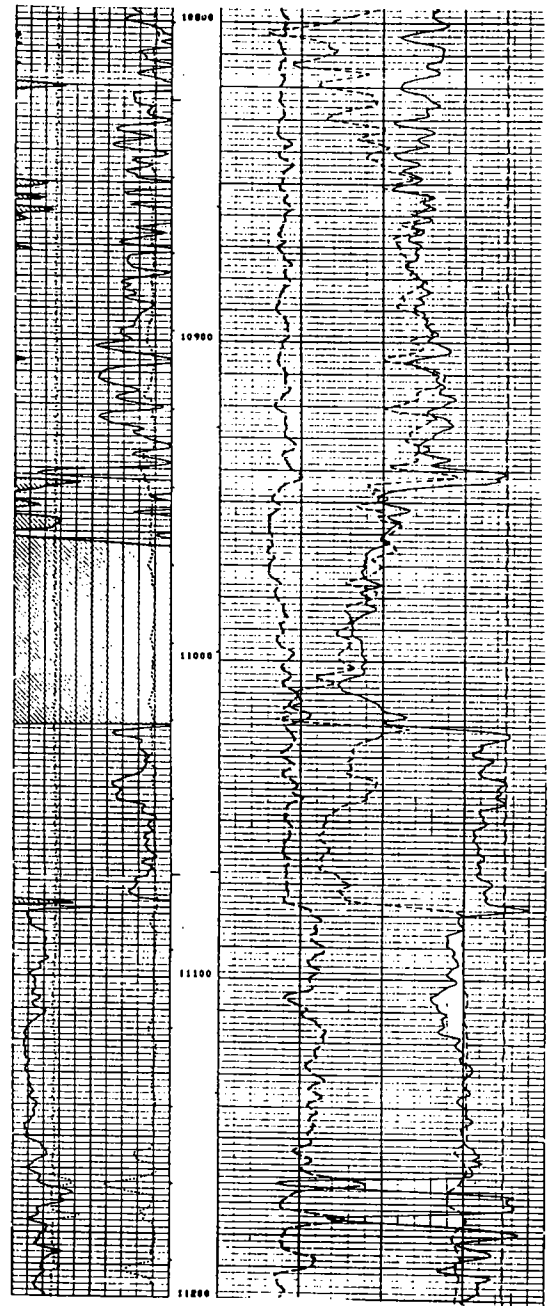
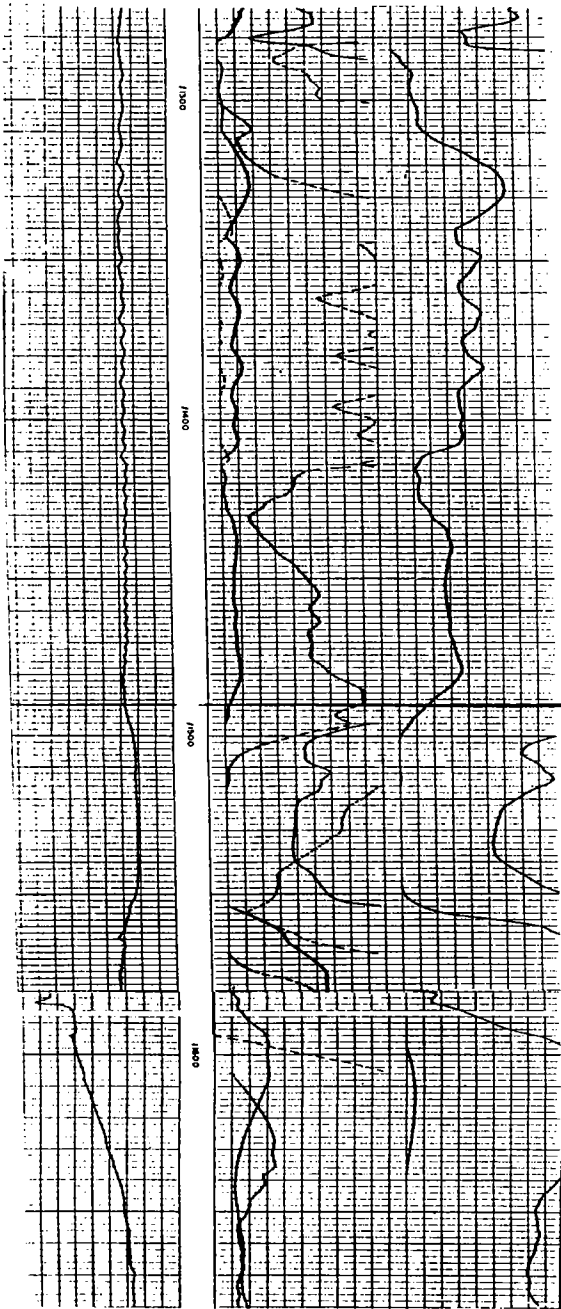
MAGNOLIA 1 MANSCHRICK—C SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 28, T. 6 N., R. 17 E., Pittsburg County, Oklahoma; elev. 963' KB (950' GL); TD 12,915' (Ordovician); compl. 9/23/54, D&A. Tops: Woodford 11,412' (-10,450') (CC), Sylvan 11,495' (-10,553') (SP log), Welling 11,552' (-10,590') (SP log); no Hunton present. Samples examined from 11,340' to 11,620', good quality; 3 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The Woodford and Sylvan Shales are separated by about 10' of quartz sandstone, sandy chert, and dolomite, here referred to the Misener Sandstone (14,490'-14,495', sample depth). The uppermost Sylvan is a dark calcareous shale similar in appearance to the lower part of the Woodford Shale. The greenish-gray shale characteristic of the uppermost Sylvan over much of the Arkoma Basin is not present here (or in the 1 G. Hall), possibly having been removed by pre-Woodford erosion (see 1 Price, 1 Jones-Binas Unit, 1 Rosendahl). The Woodford-Sylvan contact is marked in the SP and resistivity logs.

A thin section from the uppermost Welling Formation, 11,555'-11,560' (sample depths), is organo-detrital sparite with widely scattered dolomite crystals; no detrital quartz observed.

Magnolia  
I Manschrick  
SE NE  
Sec. 28, T. 6 N., R. 17 E.  
Pittsburg County, Oklahoma  
elev. 963'

I Browne  
251'FNL & 2028'FEL  
Sec. 28, T. 6 N., R. 17 E.  
Pittsburg County, Oklahoma  
elev. 993'



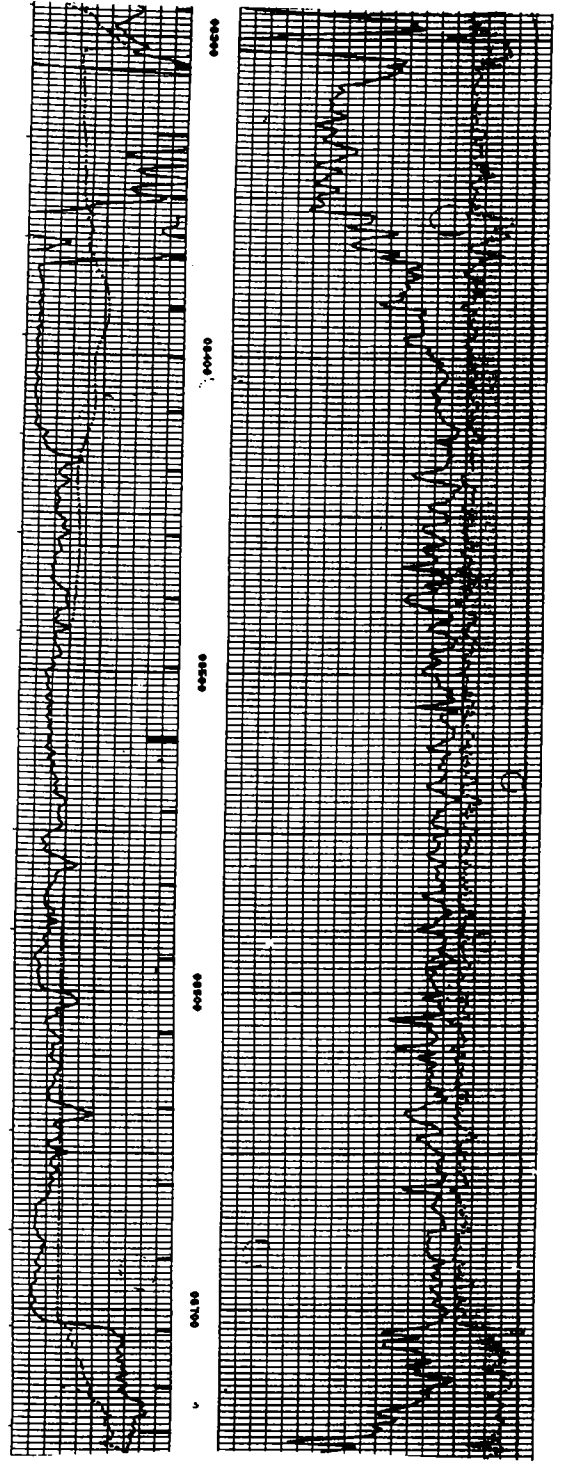
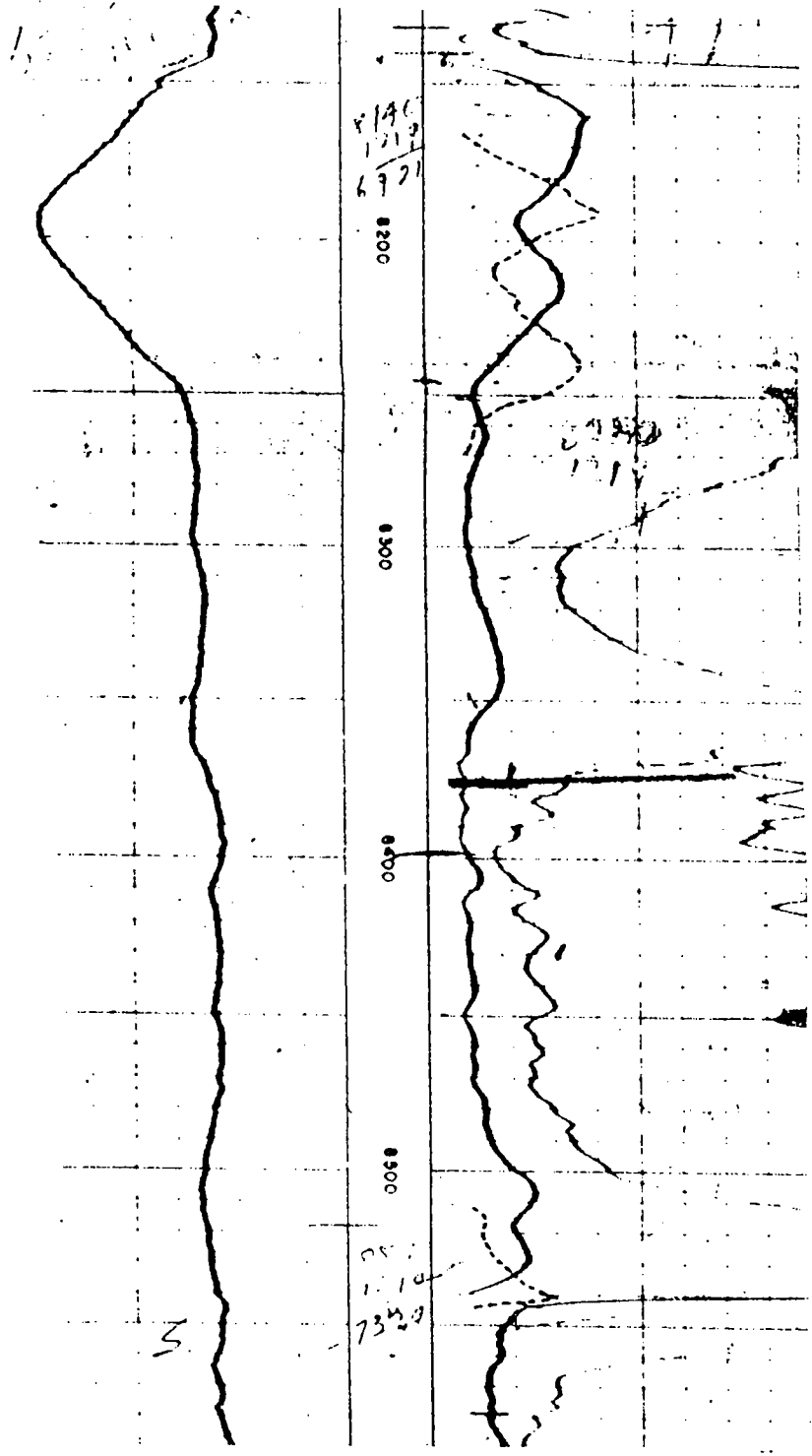
**CONTINENTAL OIL CO. 1 J. MARUSKA — SE<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub>  
SW<sup>1</sup>/<sub>4</sub> sec. 16, T10N, R4W, Cleveland County, Oklahoma;  
elevation 1,248 ft (unk); TD 9,098 ft (Hunton); completion  
8/2/48.**

Penetrated the Woodford–Hunton contact at 8,214 ft,  
ending at 8,350 ft in the Hunton. Cored the Hunton



Continental Oil Co.  
 1 J. Maruska  
 SE SE SW  
 Sec. 16, T. 10 N., R. 4 W.  
 Cleveland County, Oklahoma  
 elev. 1248'

Agar & Agar  
 1 E.A.  
 E/2 SE NW  
 Sec. 17, T. 10 N., R. 4 W.  
 Cleveland County, Oklahoma  
 elev. 1297'



GULF 1 MAY--SE $\frac{1}{4}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 17, T. 19 N., R. 9 W.,  
Kingfisher County, Oklahoma; elev. 1131';  
TD 8749' (Sylvan); compl. 11/1/62, ?Hunton  
production. Tops: Woodford (CC) 8302'  
(-7171'), Hunton (CC) 8324' (-7193'), Sylvan  
(core) 8725' (-7594'); Hunton thickness 401'.  
Cored 8723'-8749' (Hunton-Sylvan); 1 thin  
section; chemical analyses; OU Core Library.

Hunton-Sylvan contact was cored; no recog-  
nizable Keel oolite present.

Woodford Shale 8302'-8324'

Hunton Group 8324'-8725'

8324'-8723' No core.

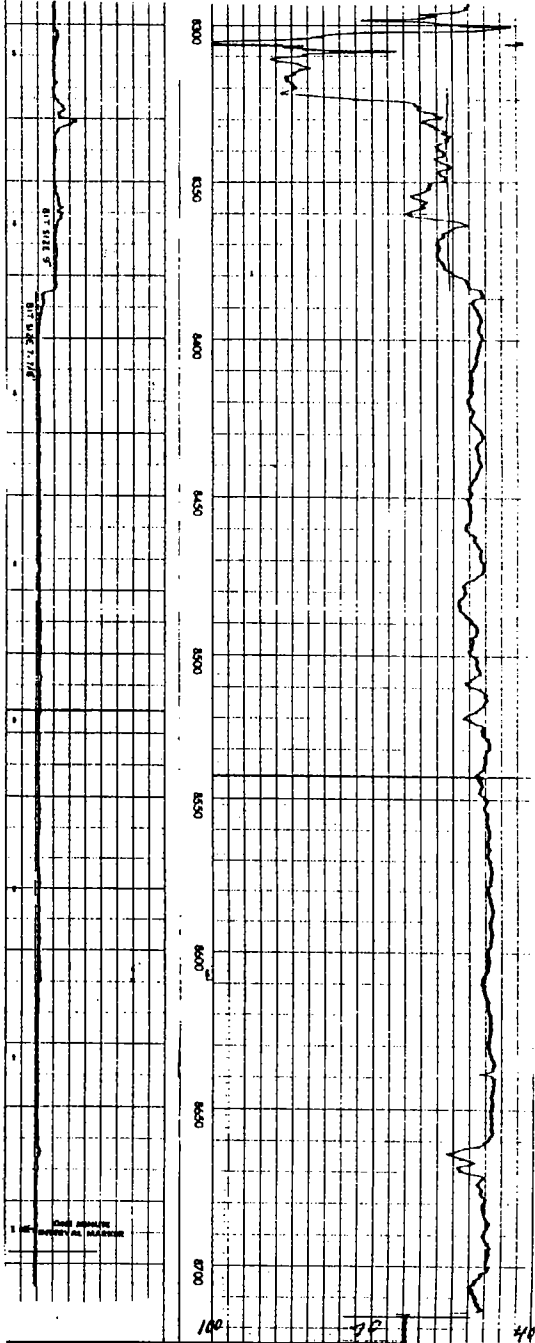
8723'-8725' Silurian; Chimneyhill Subgroup.

Dark-gray cherty, organo-detrital limestone  
with only minor dolomite and HCl-insoluble  
detritus; MgCO<sub>3</sub> averages 6.39%, HCl insol-  
ubles 12.43% (latter probably includes some  
silicified material). No diagnostic fossils  
observed; assigned to Chimneyhill on basis  
of lithology and stratigraphic position.

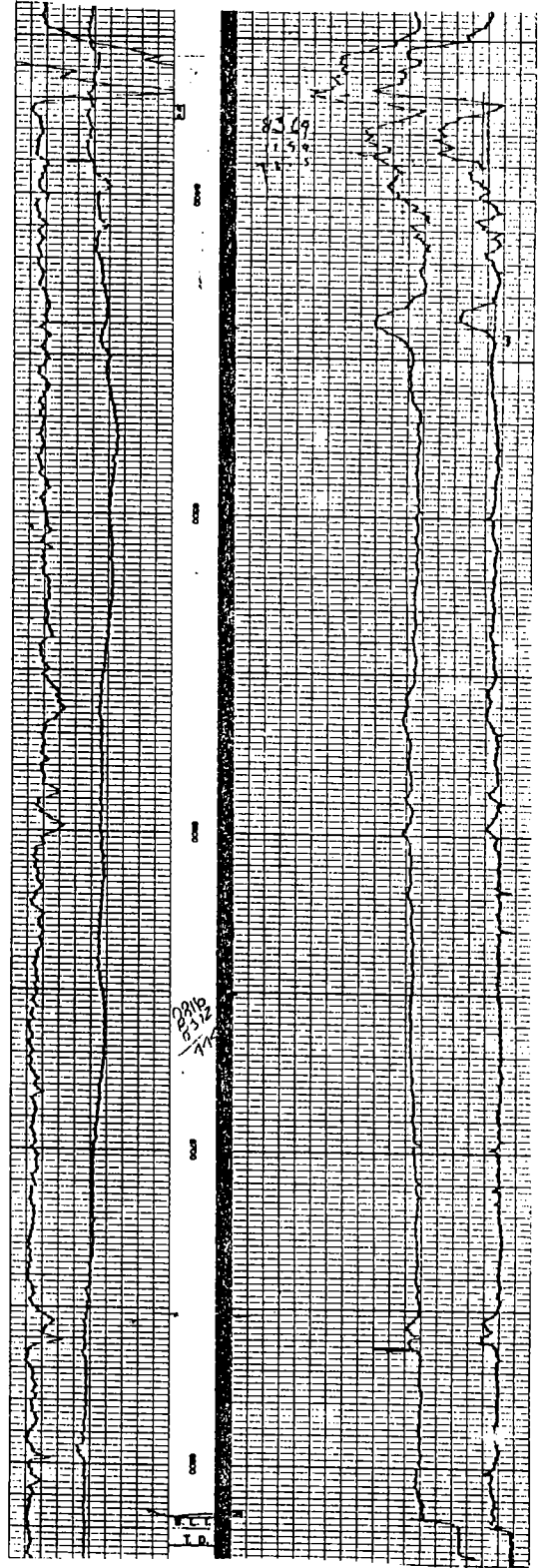
Sylvan Shale 8725'

8725'-8749' Core; dark-greenish shale.

Gulf  
 1 May  
 SE NE SW  
 Sec. 17, T. 19 N., R. 9 W.  
 Kingfisher County, Oklahoma  
 elev. 1131'



Pan American  
 1 Roetzel Unit  
 NE SW  
 Sec. 16, T. 19 N., R. 9 W.  
 Kingfisher County, Oklahoma  
 elev. 1154'



YINGER 1 MAYES--S<sub>1</sub><sup>2</sup>N<sub>1</sub>NE<sub>1</sub>NW<sub>4</sub> sec. 1, T. 17 N.,  
 R. 7 W., Kingfisher County, Oklahoma; elev.  
 1081'; TD 8107' (Sylvan); compl. 1/9/70, no  
 Hunton production reported. Tops: Woodford  
 (CC) 7750' (-6669'), Hunton (CC) 7780'  
 (-6699'), Sylvan (CC) 8079' (-6998'); Hunton  
 thickness 299'. Cored 7780'-7809' (all Hun-  
 ton); 1 thin section; chemical analyses; OU  
 Core Library.

Woodford Shale 7750'-7780'

Hunton Group 7780'-8079'

7780'-7789' Silurian; Kirkidium biofacies.

Dark-gray fossiliferous, crystalline dolo-  
 mite with some insoluble detritus; MgCO<sub>3</sub>  
 averages 36.13%, HCl insolubles 10.89%.

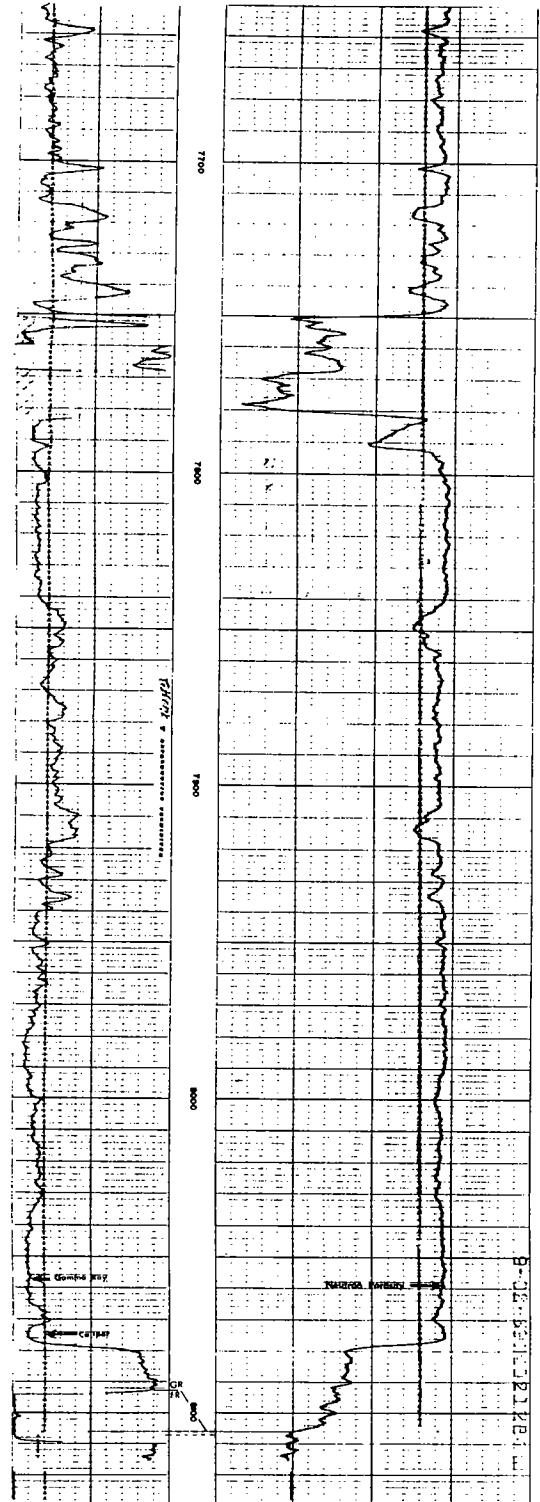
Specimens of Kirkidium at 7780'-7781'.

7789'-7796' Kirkidium biofacies. Dark-gray  
 fossiliferous, dolomitic limestone; MgCO<sub>3</sub>  
 averages 22.86%, HCl-insoluble residues  
 8.64%. Excellent specimens of Kirkidium  
 at 7791'-7792'.

7796'-7809' Dark-gray cherty, fossiliferous  
 marlstone; MgCO<sub>3</sub> averages 10.29%, HCl insol-  
 ubles 13.84%. Specimens of Halysites at  
 7809'.

7809'-8079' No core.

Sylvan Shale 8079'



**WELL A**

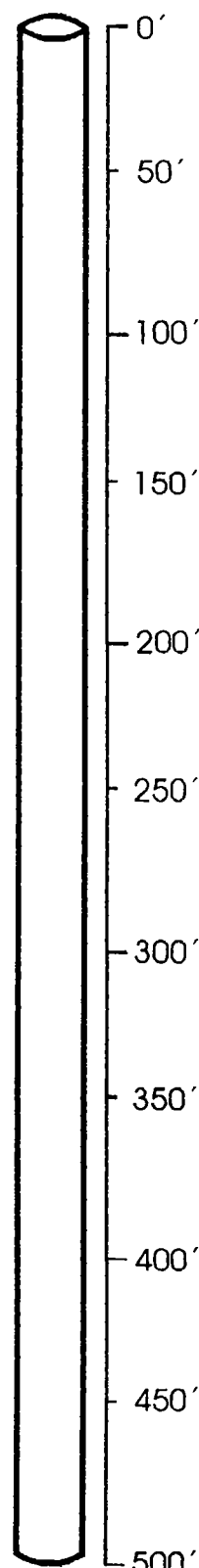
T. Jack Foster, 1 Mabee

This well is in SW $\frac{1}{4}$  SW $\frac{1}{4}$  NE $\frac{1}{4}$  sec. 15, T. 13 N., R. 25 E., Sequoyah County, 10 miles east of the Marble City outcrop area (text-fig. 3). The well was drilled in 1959 with rotary tools and the collar elevation is 1,335 feet. Cuttings were examined from 850 to 1,120 feet in intervals of 10 feet, and the sample quality is good. The positions of three samples are questionable. The interval 880-890 contains typical Marble City rock types, whereas samples above and below consist of Sallisaw lithology. Owing to this, the top of the Frisco was 900 feet sample depth and the Marble City, 910 feet; however, the electric log suggests that the Sallisaw-Frisco contact may be at 890 feet, substantiating the sample observation that interval 880-890 is mislabeled. The sample interval 920-930 contains siltstone and chert which do not resemble either Silurian or Lower Devonian rock types. This may be attributed to careless sampling methods or cavings from up the hole. From 1,060 to 1,070 feet, 20% of the sample contains typical Sallisaw lithology, most probably explained as cavings. Lower Devonian rocks are approximately 45? feet thick (855-890?) and consist of the Sallisaw Formation 35? feet (855?-890?; this thickness was estimated from the electric log because 850-860 contained Chattanooga and Sallisaw) and Frisco Formation 10 feet (900?-910?; the top of the Frisco may be 890 feet, as explained above). Silurian rocks are 195 feet thick (910?-1,105? feet; text-fig. 3) and comprise four units: Quarry Mountain Formation 170? feet (910?-1,080), Marble City Member 160 feet (910?-1,070; the actual thickness may be 170 feet and the top 900 feet, as explained above) and Barber Member 10 feet (1,070-1,080), Tenkiller Formation, and Blackgum Formation 20 feet (1,080-1,100; the electric log suggests a thickness of 25 feet, as the top of the Sylvan Shale was estimated at 1,105 feet). The Pettit Oolite is absent or too thin to detect in the well cuttings. Sylvan Shale was encountered in sample 1,100-1,110. The electric log suggests the top at 1,105 feet. Two thin sections were prepared from the following intervals: Sallisaw Formation 870-880 and Marble City Member 940-950 (pl. XVIII, fig. 3). Cuttings in this well were not investigated for insoluble residues.

The sequence of the following description is that of the sample labels.

<i>Depth (feet)</i>	<i>Thickness (feet)</i>	
		<b>CHATTANOOGA FORMATION:</b> Black and brown pyritic shale.
		<b>SALLISAW FORMATION:</b> 35? feet (855?-890?). Thickness approximated from the electric log, as sample 850-860 contained Chattanooga and Sallisaw. The top of the Frisco also estimated from the electric log, as explained above. Gray to dark-gray, medium- to fine-crystalline arenaceous calcitic dolomite; light-gray to gray arenaceous dolomitic limestone; gray to white opaque to semitranslucent chert.
850-860	10	Shale, black, brown, pyritic; dolomite, calcitic, arenaceous, gray to dark-gray, medium-crystalline; in part glauconitic; chert, gray, opaque, 25%; shale 50%; dolomite 25%.
860-870	10	Limestone, dolomitic, arenaceous, light-gray to gray; in part glauconitic.

**Log not available**

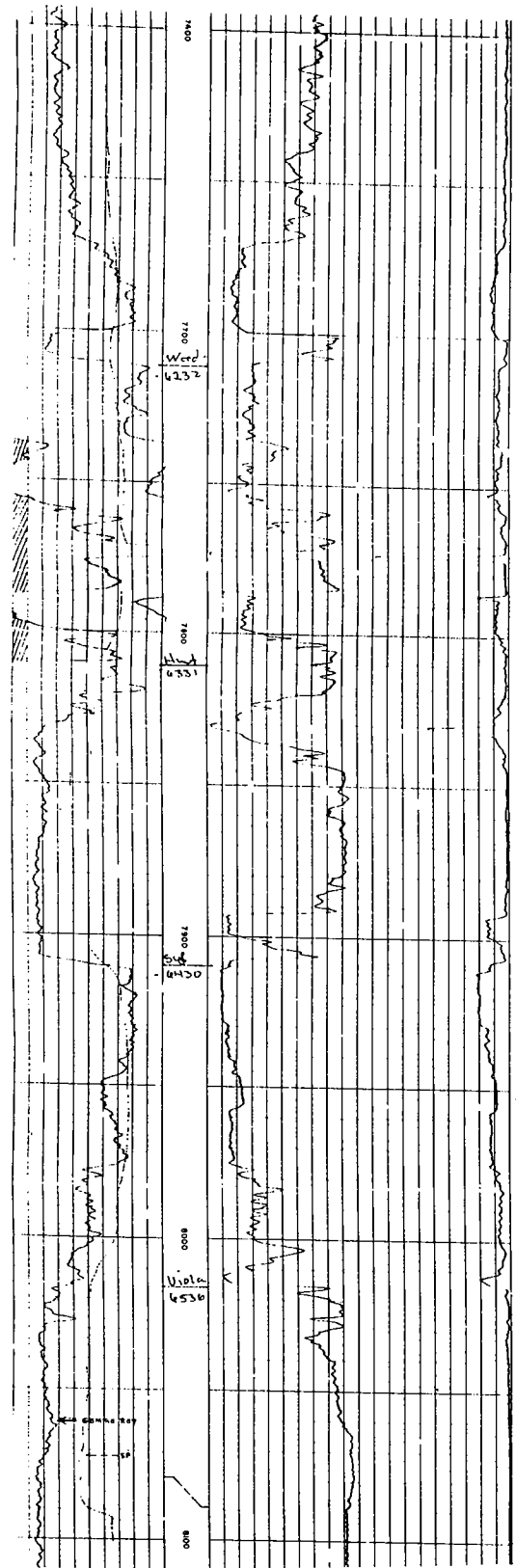


870-880	10	Dolomite, slightly arenaceous, gray to dark-gray, medium- to fine-crystalline; chert, gray, opaque, 50%; thin section (A-1).
880?-890?	10	Limestone, light-pink to off-white, trace crinoidal; dolomite, gray, fine-crystalline, 10%; this sample is probably mislabeled, as explained above.
890-900	10	Dolomite, light-gray, fine-crystalline; in part glauconitic; chert, white, semitranslucent to opaque, some with pyrite, 55%.
900-910	10	FRISCO FORMATION: 10 feet (900-910). Frisco is present in the samples from 900-910, but the electric log suggests the top may be at 890 feet, as explained above. Light-gray fossiliferous limestone. QUARRY MOUNTAIN FORMATION: 170 feet (910-1,080). Exact thickness may be 180 feet, as explained above. <i>Marble City Member</i> : 160 feet (910-1,070). Exact thickness may be 170 feet, as sample 880-890 is possibly mislabeled. Light-pink to off-white crinoidal limestone; gray fine-crystalline dolomite.
910-920	10	Limestone, light-pink to off-white, crinoidal; dolomite, gray, fine-crystalline, 2%
920?-930?	10	Siltstone, fine-grained, calcitic, brown, mottled; chert, tan, opaque, 2%; sample out of place, as this siltstone does not resemble either Silurian or Lower Devonian rock types.
930-940	10	Limestone, light-pink to off-white, crinoidal; dolomite, gray, fine-crystalline, 2%.
940-950	10	Limestone, pink to off-white, crinoidal; trace of dolomite as above; thin section (A-2) (pl. XVIII, fig. 3).
950-960	10	Dolomite, gray, fine-crystalline.
960-970	10	Limestone, light-pink to off-white, crinoidal; in part dolomitic; dolomite, gray, fine-crystalline, 35-40%.
970-980	10	Limestone as above; dolomite as above, 10-15%.
980-1,020	40	Limestone, pale-pink to off-white to white, crinoidal; in part dolomitic; trace of dolomite as above.
1,020-1,060	40	Limestone, off-white to white, crinoidal; in part dolomitic.
1,060-1,070	10	Limestone as above; dolomite, gray, medium- to fine-crystalline, glauconitic, arenaceous, 15-20%; the dolomite is typical Sallisaw lithology and is present possibly as cavings from above.
1,070-1,080	10	<i>Barber Member</i> : 10 feet (1,070-1,080). Gray fine-crystalline dolomite.

1,080-1,090	10	<b>TENKILLER FORMATION:</b> Light-pink to pink, gray to light-gray, off-white crinoidal limestone; in part dolomitic and glauconitic; some with abundant pyrite and orange crinoidal material. Exact thickness uncertain, as sample 1,090-1,100 contains both Tenkiller and Blackgum lithology.
1,090-1,100	10	<b>BLACKGUM FORMATION:</b> Gray to dark-gray fine-crystalline glauconitic dolomitic limestone; gray to dark-gray fine-crystalline dolomite; white, semi-translucent chert; only one piece found. Thickness uncertain, as sample interval 1,090-1,100 contains 35% Tenkiller limestone; 50% Blackgum limestone; 15% Blackgum dolomite.
1,100-1,120	20	<b>SYLVAN FORMATION:</b> Thickness not determined, as the samples were studied only to 1,120 feet. Electric log suggests the top at 1,105 feet. Green to gray-green shale.

**BLACKWELL ZINC CO. INC. 1 McBRIDE — C SW ¼ NE ¼ sec. 7, T23N, R14W, Woods County, Oklahoma; elevation GL 1,467 ft, DF 1,477 ft; TD 8,100 ft (Ordovician); completion (Na), 8/28/61 (df).**

Hunton-Sylvan-upper Viola samples examined by Amsden; 16 thin sections. *Illustrated on PLATE 1, STRATIGRAPHIC SECTION A-A'.*

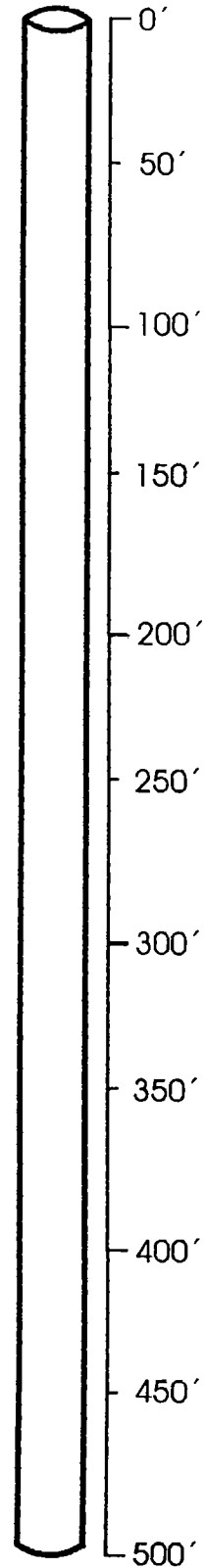




**NFC PETROLEUM CORP. 1-19 McBRIDE** — C SW¼ SE¼ sec. 19, T23N, R13W, Woods County, Oklahoma; elevation GL 1,462 ft; TD 7,975 ft (Sylvan); completion 5/31/78.

Cored 43 ft of lower Woodford-Hunton strata; core examined 1980, 6 thin sections chemical analyses. *Illustrated on PLATE 1, STRATIGRAPHIC SECTION A-A'.*

**Log not available**



YINGLING 1 McCURDY—C SE<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 15, T. 5 N., R. 4 E., Pontotoc County, Oklahoma; elev. 1044'; TD 2690' (Ordovician); compl. unknown, no Hunton production reported (Viola production). Tops: Woodford 2336' (-1292') (CC), Hunton 2386' (-1342') (SP log), Sylvan 2554' (-1510') (SP log), Welling 2614' (-1570') (SP log); Hunton thickness 168'. Samples examined from 2330' to 2630', some mixing and contamination; 9 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

Hunton strata make up a well-marked sequence of marlstone (Henryhouse and/or Haragan Formation) and pink crinoidal micrite (Chimneyhill Subgroup; Clarita-Cochrane-Keel; lithostratigraphic division not recognized). A moderate amount of dolomite is present in the lower part of the marlstone and the lower part of the Chimneyhill. However, this is a low-magnesium limestone section comparable to that in the Arbuckle outcrop area.

*Woodford (Chattanooga) Shale* 2336'-2386' (SP log)  
Poorly defined in samples. No Misener Sandstone recognized.

*Hunton Group* 2386'-2554' (SP log)  
2386' (SP log) -2500' (sample depth) Silurian-Devonian; Henryhouse-Haragan Formations undifferentiated. Sparingly fossiliferous marlstone; fossils mainly pelmatozoan plates, ostracodes, brachiopods, and bryozoans. Widely scattered sub-angular detrital quartz grains to 0.1 mm. Scattered dolomite crystals, sparse in the upper part, becoming slightly more abundant in the lower part.

2500' (sample depth) -2554' (SP log) Silurian; Chimneyhill Subgroup. Pink crinoidal micrite; many ostracodes present, but some beds with substantial mollusks, mainly gastropods; also brachiopods, bryozoans, and trilobites are present. A few scattered detrital quartz grains in the upper 5'; below, very little. Very little dolomite except in the lower sample, where there is a moderate amount.

*Sylvan Shale* 2554' -2614' (SP log)

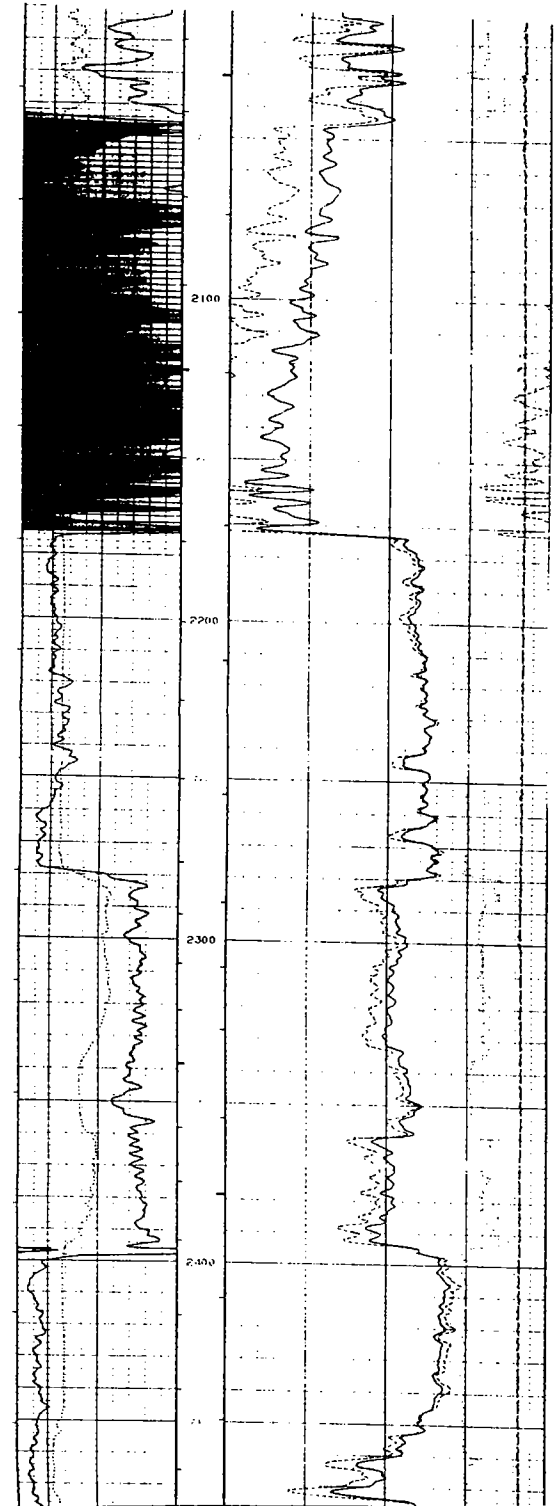
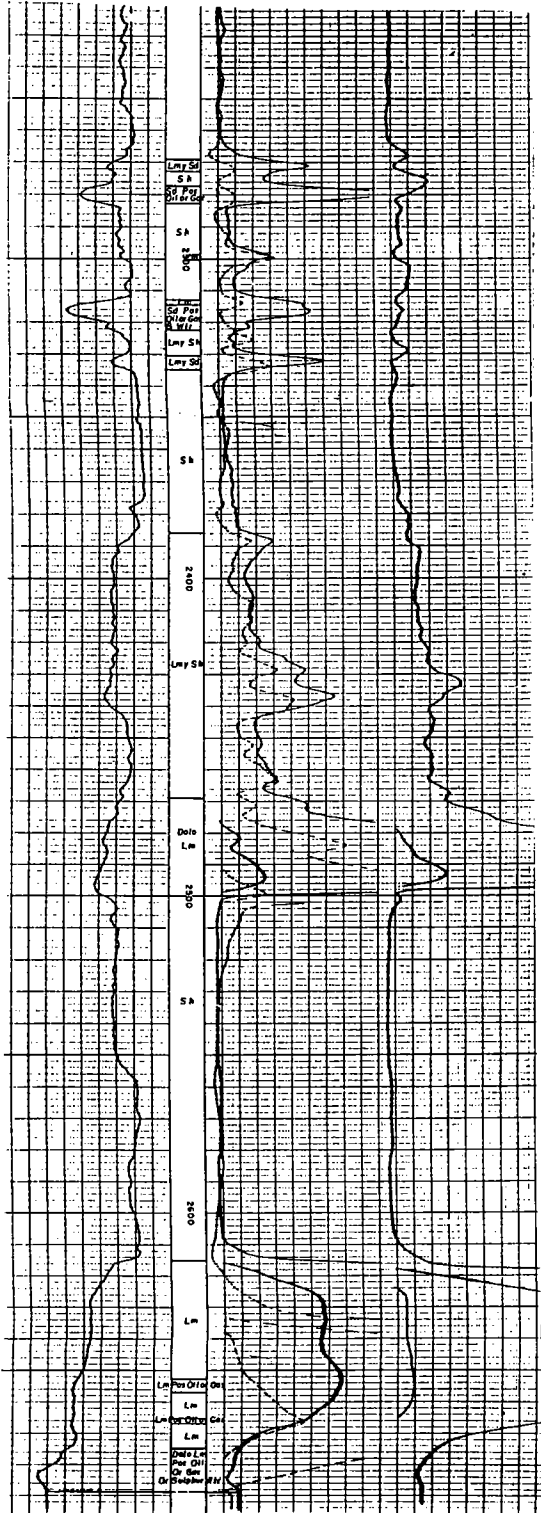
*Welling Formation* 2614' (SP log)

2630'-2635' (thin section) (sample depths) Organo-detrital sparite; no observed dolomite or detrital quartz.

2660' (thin section) (sample depth) As above, but with scattered subrounded to well-rounded detrital quartz grains; some quartz sandstone.

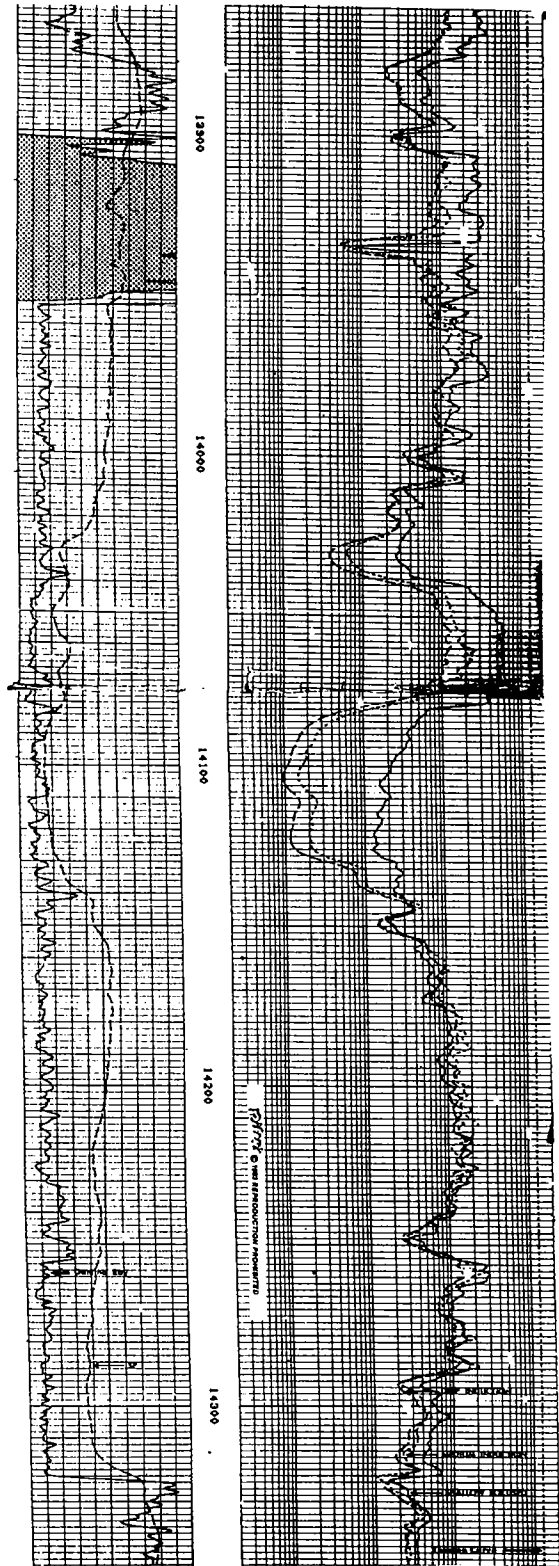
Yingling  
 1 McCurdy  
 SE SE SW  
 Sec. 15, T. 5 N., R. 4 E.  
 Pontotoc County, Oklahoma  
 elev. 1044'

Research Oil Company  
 B-6 Burk  
 NW SE SE  
 Sec. 25, T. 5 N., R. 4 E.  
 Pontotoc County, Oklahoma  
 elev. 1070'



**WOODS PETROLEUM CORP. 1-25 McDANNALD —**  
E½SW¼NE¼ sec. 25, T18N, R19W, Dewey County, Okla-  
homa; elevation GL 2,180 ft, DF 2,199 ft; TD 14,390 ft (Syl-  
van); completion (Na), 8/25/83 (P).

*Illustrated on PLATE 2, STRATIGRAPHIC SECTION B-B'.*



BUNKER 2 McELVANEY—C S $\frac{1}{2}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 10, T. 12 N., R. 5 E., Lincoln County, Oklahoma; elev. 883' KB (876' GL); TD 4593' (Ordovician); compl. 8/26/75, D&A. Tops: Woodford 4250' (-3374') (GR log), Misener 4314' (-3438') (core), Hunton 4318' (-3442') (core), Sylvan 4375' (-3499') (GR log), Welling 4465' (-4589') (GR log); Hunton thickness 57'. Cored 4305' (Woodford) to 4328' (Hunton), OU Core Library; 14 thin sections. Core report by Core Laboratories, Inc., Dallas, Texas, including porosity-permeability, fluid-saturation, and grain-density report. Samples studied from 4328' to 4520'; 6 thin sections from Hunton strata, 13 from the Ordovician.

The core laboratory report and logs were furnished by Mr. Robert Northcut.

Core samples from 4317', 4318', and 4381' were sent to Dr. Gilbert Klapper, The University of Iowa, for conodont examination. (Dr. Klapper and Dr. James Barrick reported their findings in a letter dated December 11, 1975.)

4317' *Ploygnathus cristatus* Hinde, *P. dubius* Hinde.

According to Klapper and Barrick, these are Misener-type conodonts, with no evidence of Silurian conodonts. Thin sections of this unit show much quartz sand dispersed through the limestone, and accordingly it is assigned to the Misener.

4318' "*Distacodus*" *obliquicostatus* Branson and Mehl, *Penderodus unicosatus* (Branson and Mehl) *Schmidtognathus hermanni* Ziegler, *Polygnathus latifossatus* Wirth.

According to Klapper and Barrick, "*D.*" *obliquicostatus* has not been observed below the Prices Falls Member, and it ranges as high as the Henryhouse; *S. hermanni* and *P. latifossatus* are Misener forms and suggest leakage into the Silurian. This interval is a marlstone, and, since a similar lithology appears in the underlying unit (4319'), I am assigning it to the Clarita rather than the Henryhouse.

4319' *Panderodus unicosatus*, *Pseudooneotodus bicornis* Drygant, *Decoriconus fragilis* (Branson and Mehl), "*Distacodus*" *obliquicostatus*, *Walliserodus* sp. indet.

According to Klapper and Barrick, the most important element in this fauna is *P. bicornis*, which ranges throughout the Fitzhugh Member of the Clarita Formation.

4319.5' *Panderodus unicosatus*.

Klapper and Barrick state this to be indeterminate for age.

The foregoing indicates that the Misener-Hunton contact is located at 4317.5' and that the uppermost Hunton is correlative with the Fitzhugh Member of the Clarita Formation. The possible exception is the uppermost 18" marlstone bed, which could be Henryhouse (here tentatively assigned to the Fitzhugh; see remarks above). It should be emphasized that the entire cored section has been exposed to intensive solution, which developed numerous cracks and crevices. These were later filled from above with Misener sand; clearly defined "veins" of sandstone are present through the cored position. The Misener (4314'-

4317.5') is interesting because it includes beds of crinoidal limestone with only scattered quartz sand grains.

The Chimneyhill is in a dolomitic facies with all parts of the core showing at least some dolomitization. The strata from 4320' to 4323' are porous crystalline dolomite. The pores are largely fossils that have been removed by solution, leaving only molds (mostly crinoidal debris). Core Laboratories' core report shows a grain density of 2.8 for 4318'-4427' and a porosity ranging from less than 1.6% up to 23%.

Chimneyhill strata in the 2 McElvane are at least 55' thick. If the upper marlstone bed is assigned to the Fitzhugh as is herein suggested, it exceeds 57'.

Woodford (*Chattanooga*) Shale 4250'-4318' (GR log) 4250'-4305' Black shale.

4305'-4314' (core) Mostly dark shale with minor sandstone.

4314'-4318' (core) Misener Sandstone. Calcareous quartz sandstone and organo-detrital limestone with scattered quartz grains; quartz grains usually rounded (many with overgrowths), up to 1 mm in diameter. Misener conodonts.

Hunton Group 4318' (core) -4375' (GR log)

4318' (core) -4375' (GR log) Chimneyhill Subgroup; Clarita Formation; extends down to at least 4319'.

4318'-4319' (core) Banded pale-gray and greenish-gray marlstone.

4319'-4320' (core) Dolomitized organo-detrital crinoidal limestone; conodonts present, discussed above. Much evidence of solution and Misener Sandstone infiltration.

4320'-4323' (core) Porous crystalline dolomite; see discussion above.

4323'-4327' (core) Dolomitized organo-detrital limestone.

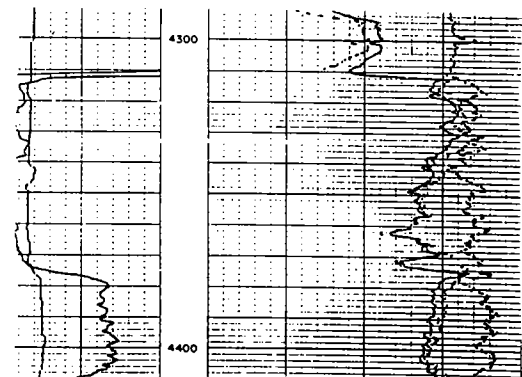
4327'-4328' (core) Weakly dolomitized organo-detrital limestone; much solution and Misener Sandstone infiltration.

4328' (core) -4390' (sample depth) Moderately to heavily dolomitized organo-detrital limestone and crystalline dolomite.

Sylvan Shale 4390'-4490' (sample depth); Sylvan top, 4375' (GR log).

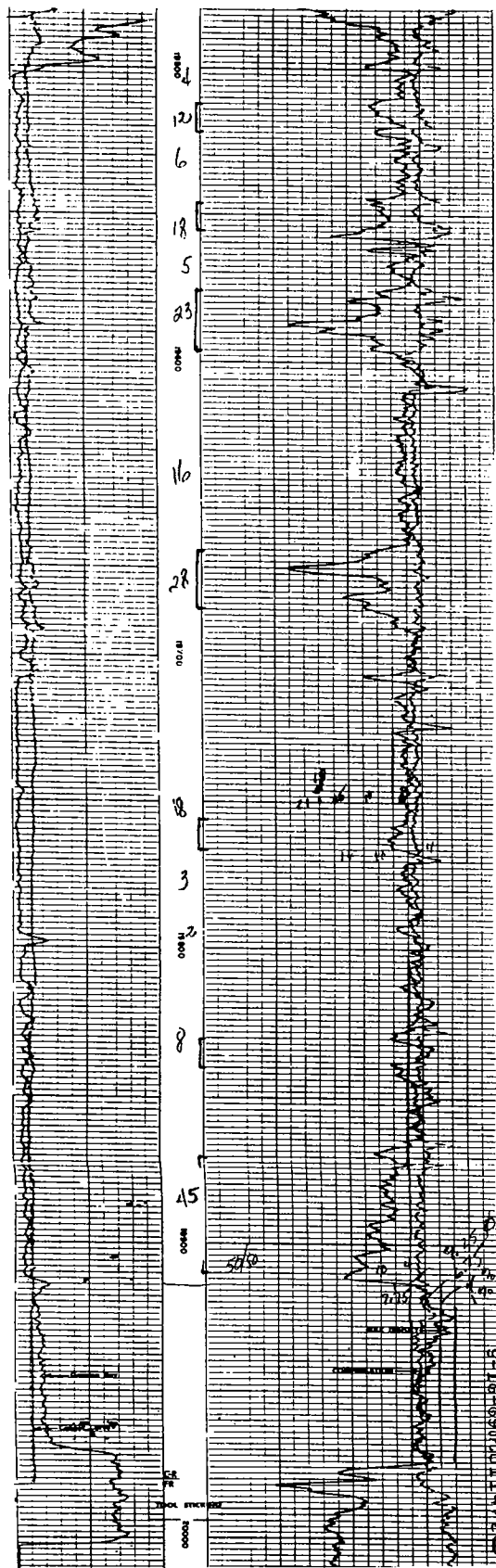
Welling Formation 4490' (sample depth); 4465' (GR log)

Organo-detrital limestone.



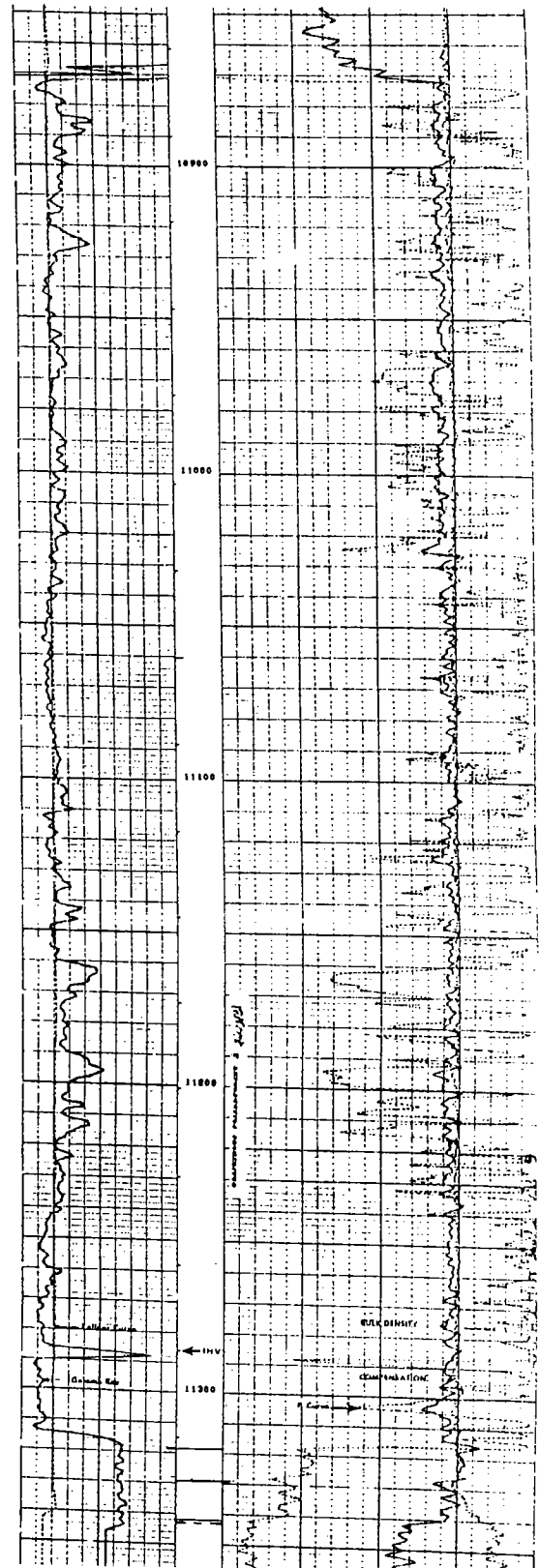
**GULF OIL CORP. 1 MELVIN-HELTON** — 1,867 ft FNL, 1,867 ft FWL, sec. 21, Blk. M1, H&GN Survey; Hemphill County, Texas, elevation GL 2,552 ft; TD 20,110 ft (samples); completion (Na).

Well samples; Amarillo Sample, Amarillo, Texas; examined by Amsden, 1979; 32 thin sections; lower Woodford, Hunton top 19,730 ft, Sylvan top 19,980 ft. *Illustrated on PLATE 2, STRATIGRAPHIC SECTION D-D'.*



**TRIGG DRILLING CO. 1 MEYER** — C SW¼ sec. 8, T11N, R7W, Canadian County, Oklahoma; elevation GL 1,372 ft; TD 11,350 ft (Sylvan); completion (Na), 6/1/77 (P).

Samples examined 10,840 (lower Woodford) to 11,310 ft (upper Sylvan). The interval from 10,900 to 11,290 ft comprises low magnesium Hunton carbonates of which the upper 20 ft are skeletal grainstones (?Frisco) and the lower 20 ft are crinoidal limestones (?Chimneyhill); the intervening strata are fossiliferous marlstones (Henryhouse Formation); 13 thin sections. See Morgan and Schenider (1981, fig. 6).



AMAX 1 MORRISON—C SE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> sec. 34, T. 9 N., R. 16 E., Pittsburg County, Oklahoma; elev. 666' KB (651' GL); TD 6357' (Hunton); compl. 9/12/67, no Hunton production reported (Cromwell gas production). Tops: Woodford 6150' (-5484') (sample depth), Hunton 6215' (-5549') (SP log); Hunton thickness 135' plus (TD Hunton). Samples examined from 6050' to TD, poor quality with considerable contamination; 13 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

This well is interpreted to have penetrated both Sylamore and Sallisaw Formations. The problems in identifying these 2 stratigraphic units is discussed in the text. No Frisco strata identified in this well. The Silurian, which is weakly to heavily dolomitized, is tentatively assigned to the Quarry Mountain and Tenkiller Formations.

*Woodford (Chattanooga) Shale* 6150' (sample depth)  
-6215' (SP log)

A few feet of Sylamore Sandstone is present.

*Hunton Group* 6215'-6357' (SP log)

6215' (SP log) -6250' (sample depth) Lower Devonian; Sallisaw Formation (may include some Sylamore Sandstone). Mostly chert with fine sub-angular to subrounded detrital quartz and euhedral dolomite crystals.

6250'-6357' (sample depths) Silurian; Chimney-hill Subgroup.

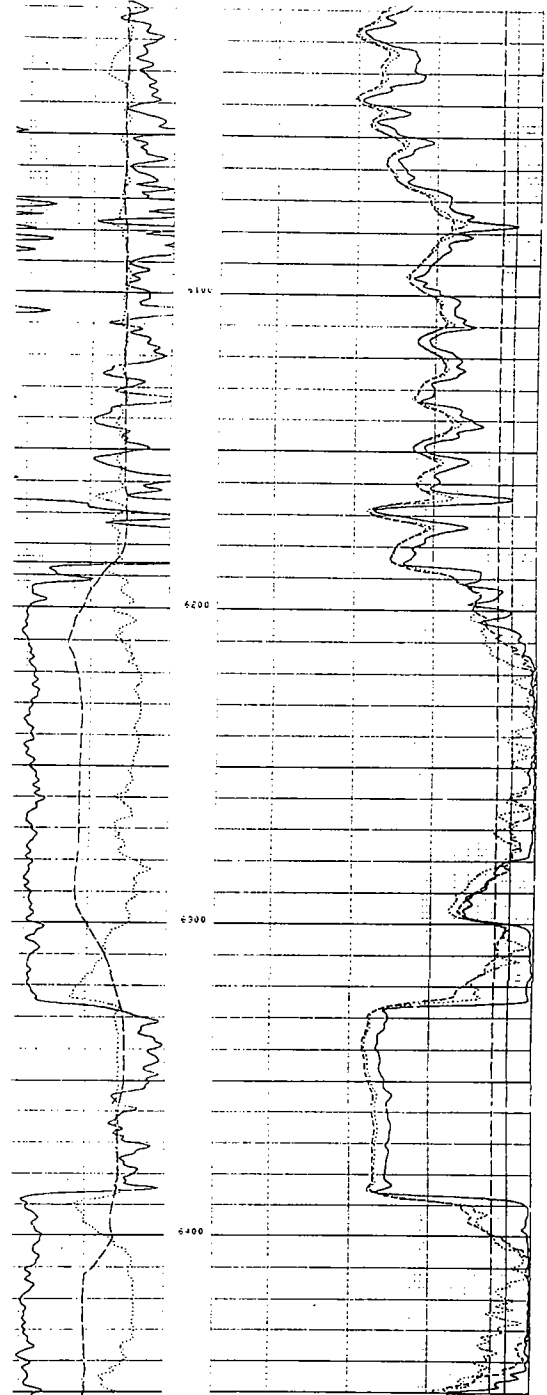
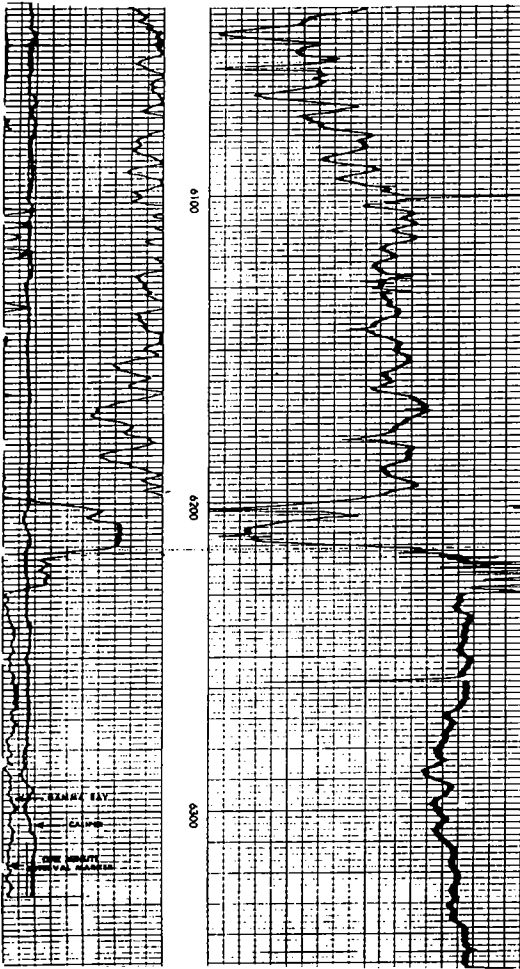
6250'-6350' (sample depths) ?Quarry Mountain Formation. Moderately to heavily dolomitized organo-detrital sparite with abundant pelmatozoan plates and bryozoans; some crystalline dolomite present. Very little detrital quartz.

6350'-6357' (TD) ?Tenkiller Formation. Weakly to heavily dolomitized pink crinoidal sparite and micrite; very little detrital quartz observed. Minor chert.



Amax  
1 Morrison  
SE NW  
Sec. 34, T. 9 N., R. 16 E.  
Pittsburg County, Oklahoma  
elev. 666'

Bill D. Andress  
1-36 Erquhart  
C NW  
Sec. 36, T. 9 N., R. 16 E.  
Pittsburg County, Oklahoma  
elev. 687'



**WHITTAKER 1 MOWDY** (originally drilled by Delphi to a depth of 12,063')—SE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec. 10, T. 2 N., R. 11 E., Coal County, Oklahoma; elev. 670' DF (671' KB); TD 12,510' (Ordovician); compl. 3/22/54, no Hunton production reported. Tops: Hunton 11,010' (-10,340') (sample depth), Sylvan 11,055' (-10,385') (sample depth), Welling 11,170' (-10,500') (sample depth); Hunton thickness 45'. Samples examined from 10,900' to 11,200', good quality; core chips start at 11,178'; 8 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

Hunton strata are represented by fairly typical Arbuckle Mountain lithofacies with only minor dolomite. The section comprises an upper marlstone (Silurian, Henryhouse, possibly including some Devonian Haragan beds), pink crinoidal limestone (Clarita Formation), and a basal glauconitic limestone (Cochrane Formation). No oolite observed.

**Woodford (Chattanooga) Shale**

Misener Sandstone at the base; fossiliferous, heavily dolomitized carbonate with numerous subangular to subrounded quartz grains.

**Hunton Group** 11,010'-11,055' (sample depths)

11,010'-11,035' (sample depths) Silurian; Henryhouse Formation; may include some Lower Devonian Haragan beds. Fossiliferous marlstone with much bryozoan debris along with ostracodes, trilobites, and other shelly debris; relatively few crinoid plates. Widely scattered subangular silt-size detrital quartz; minor dolomite crystals.

11,035'-11,055' (sample depths) Chimneyhill Subgroup, 20' thick.

11,035'-11,050' (sample depths) Clarita Formation. Pink crinoidal micrite and sparite with numerous ostracodes, some trilobites, bryozoans and other shelly debris. A few irregular areas with dolomite crystals. Very little detrital quartz.

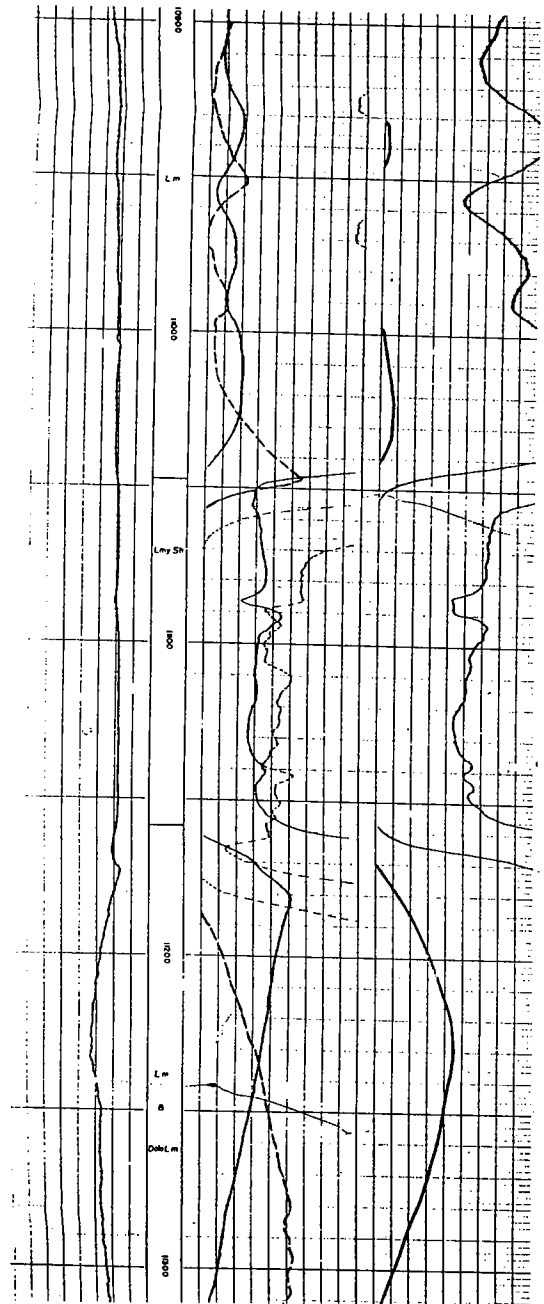
11,050'-11,055' (sample depths) Cochrane Formation. Glauconitic biosparite and biomicrite; much crinoidal material. Very little detrital quartz or dolomite.

**Sylvan Shale** 11,055'-11,170' (sample depths)

**Welling Formation** 11,170' (sample depth)

11,176' (thin section) Organo-detrital biosparite with very little dolomite and no observed detrital quartz.

11,180'-11,181' (thin section) Organo-detrital sparite with numerous rounded quartz grains about 1 mm.



CALIFORNIA 1 MULLEN ET AL.--C SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 29,  
T. 5 S., R. 2 W., Carter County, Oklahoma;  
elev. 943'; TD 9613' (Sylvan); compl. 4/5/62,  
Hunton production reported. Tops: Woodford  
(CC) 8970' (-8027'), Hunton (core) 9187'  
(-8244'), Sylvan (CC) 9606' (-8663'); Hunton  
thickness 419'. Cored 9019'-9332' (Woodford-  
Hunton); chemical analyses; OU Core Library.

This well cored upper 145' of Hunton, all of  
which is low-magnesium marlstone. This  
undoubtedly represents some part of Henryhouse-  
Haragan marlstone sequence (it is located only  
a short distance west of Criner Hills out-  
crops); presence of a calymenid trilobite at  
9265' suggests that this part is Henryhouse,  
but contact with overlying Haragan (if it is  
present) cannot be determined on basis of  
present evidence.

Woodford Shale 8970'-9187'

Hunton Group 9187'-9606'

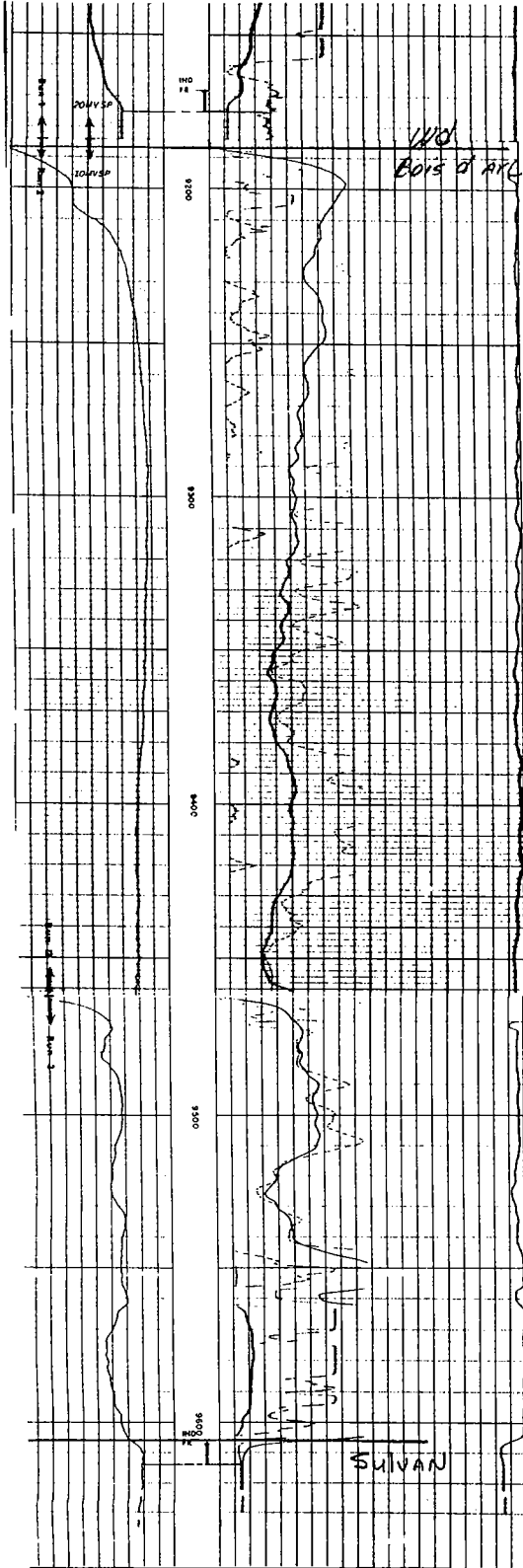
9187'-9258' ?Lower Devonian; ?Haragan Forma-  
tion. Gray fossiliferous marlstone with  
only minor dolomite; MgCO<sub>3</sub> averages 5.42%,  
HCl insolubles 12.03%. Some fragmentary  
brachiopods at 9208' and 9217', and corals  
at 9253', but no diagnostic fossils iden-  
tified; this marlstone interval referred  
with question to Haragan on basis of  
stratigraphic position.

9258'-9332' ?Silurian; ?Henryhouse Formation.  
Gray fossiliferous marlstone similar to  
overlying unit; MgCO<sub>3</sub> averages 4.72%, HCl  
insolubles 13.68%. Calymenid trilobite at  
9265', this being basis for referring this  
unit to Silurian.

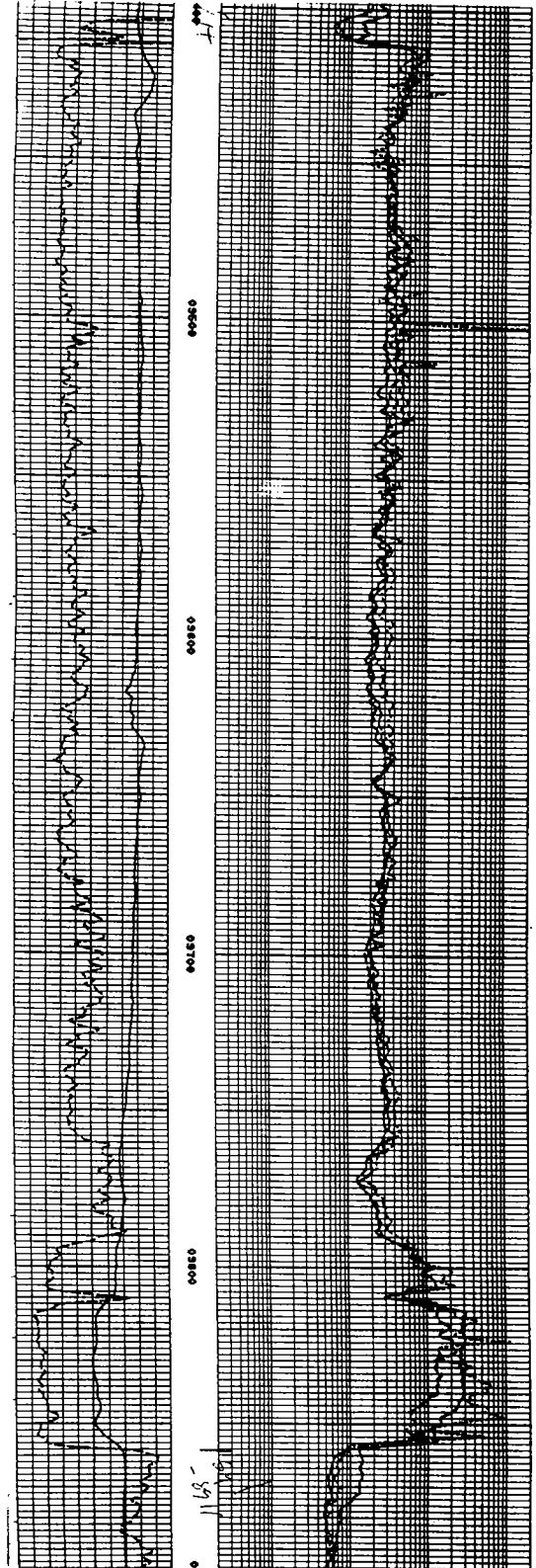
9332'-9606' No core.

Sylvan Shale 9606'

California  
I Mullen Et Al.  
SE SE  
Sec. 29, T. 5 S., R. 2 W.  
Carter County, Oklahoma  
elev. 943'



Chevron USA  
I L.A. Zellers  
E/2 W/2 SE SW  
Sec. 28, T. 5 S., R. 2 W.  
Carter County, Oklahoma  
elev. 949'



**CARTER-GRAGG 1 MULLINS**—C SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 29, T. 4 N., R. 14 E., Pittsburg County, Oklahoma; elev. 718.5' KB (705' GL); TD 12,605' (Ordovician Arbuckle); compl. 12/31/61, no Hunton production reported (Cromwell and Simpson gas). Tops: Woodford 11,294' (-10,575') (GR log), Hunton 11,411' (-10,692') (GR log), Sylvan 11,430' (-10,711') (GR log), Welling 11,509' (-10,790') (GR log), Fite 11,545' (-10,826') (sample depth); Hunton thickness 19'. Samples examined from 11,370' to 12,510', good quality; 6 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

This well is about 5 miles northwest of the Choctaw Fault. Hunton strata are in a fairly typical low-magnesium pink crinoidal facies. There appears to be very little detrital quartz, but some small (less than 0.5 mm) elongate crystals are present, which may be quartz. No glauconite or oolite observed. Hunton strata referred to the Chimneyhill on the basis of lithology and stratigraphic position.

**Woodford (Chattanooga) Shale** 11,294'-11,411' (GR log)

**Hunton Group** 11,411'-11,430' (GR log)

11,411'-11,430' Silurian; Chimneyhill Subgroup. Pink crinoidal organo-detrital micrite with only scattered dolomite and very little detrital quartz. Some small crystals of questionable quartz. Considerable bryozoan material with the pelmatozoan plates.

**Sylvan Shale** 11,430'-11,509' (GR log)

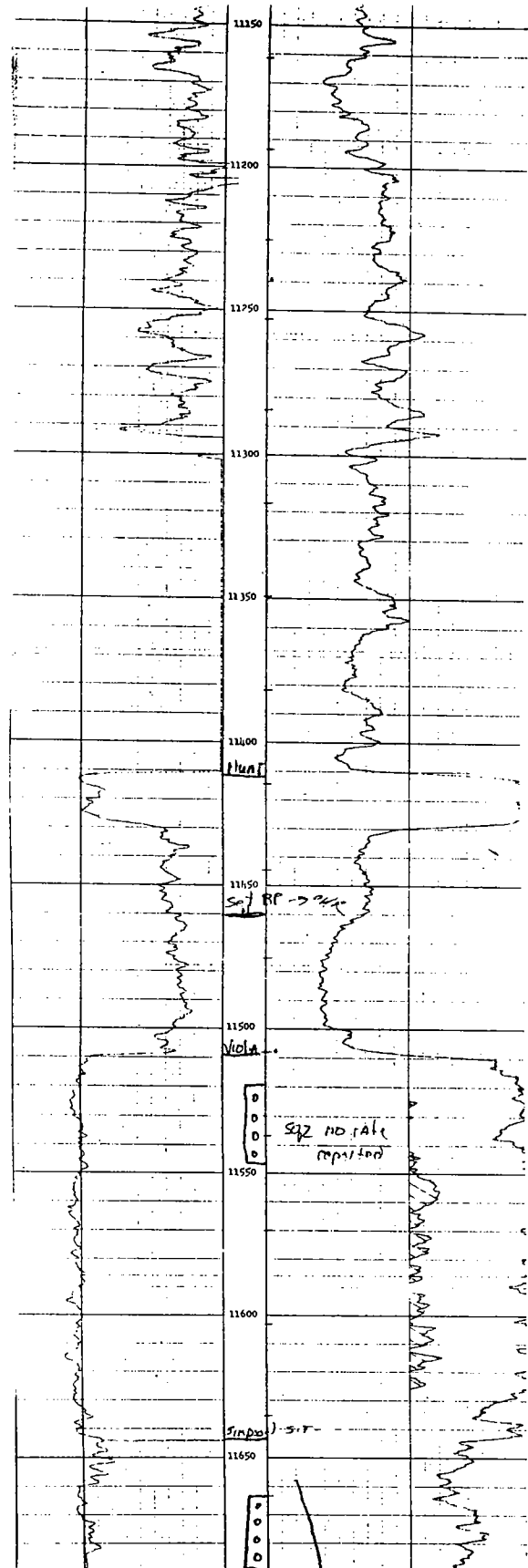
Gray-green shale at the top, becoming dark-gray below.

**Welling Formation** 11,509' (GR log) -11,545' (sample depth)

11,530' (thin section) Organo-detrital crinoidal sparite with some micrite; scattered dolomite crystals and subangular to well-rounded quartz grains to 0.5 mm.

**Fite Limestone** 11,545' (sample depth)

11,550'-11,560' (thin section) Pellet limestone and dense limestone with spar (?algal).



SUN 1 MURRAY—NE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 29, T. 10 N., R. 27 E., Le Flore County, Oklahoma; elev. 432' KB (418' GL); TD 7258' (Hunton); compl. 3/20/64, D&A. Tops: Woodford 7010' (-6579') (GR log), Hunton 7060' (-6629') (GR log); Hunton thickness 198' plus. Samples examined from 7000' to TD, good quality; 11 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

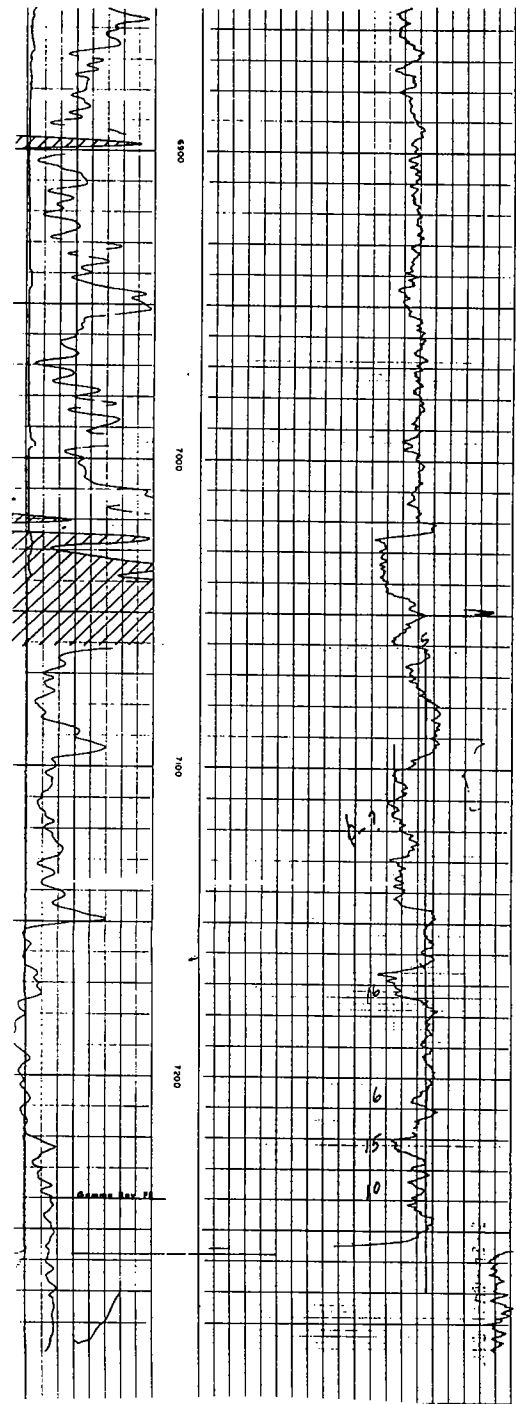
The upper 110' of the Hunton consists of dolomite and chert with fine detrital quartz and is assigned to the Sallisaw Formation largely on the basis of the size and angularity of the quartz grains. This could be in part or entirely Sylamore Sandstone (see discussion under Sallisaw Formation in text). This unit is separated from the Chimneyhill by a sharp lithologic change at 7170' (sample depth), which probably correlates with a change on the gamma-ray log at 7150'.

Woodford (Chattanooga) Shale 7010' - 7060' (GR log)

Hunton Group 7060' - 7258' (GR log) (TD)

7060' (GR log) - 7170' (sample depth) Lower Devonian; Sallisaw Formation. Strongly dolomitized pelmatozoan limestone and porous crystalline dolomite with scattered subangular to subrounded detrital quartz grains to 0.2 mm. Much chert with dolomite crystals and detrital quartz similar to that of the dolomite.

7170' - 7258' (sample depths) Silurian; Chimneyhill Subgroup. This is a mixture of heavily dolomitized pelmatozoan limestone and porous crystalline dolomite with very little detrital quartz. Minor chert as above probably represents float from above.



GARR-WOOLEY 1 NEAL—SW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec. 3, T. 5 N., R. 4 E., Pottawatomie County, Oklahoma; elev. 931' KB (929' GL); TD 3934' (Ordovician); compl. unknown, D&A. Tops: Woodford 3390' (-2461') (SP log), Hunton 3545' (-2816') (SP log), Sylvan 3732' (-2803') (SP log), Welling 3845' (-2916') (SP log); Hunton thickness 187'. Samples examined from 3530' to 3890', considerable mixing and contamination from above; 14 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

Hunton strata in this well comprise an upper marlstone sequence (Henryhouse-Haragan Formations undifferentiated) and a lower Chimneyhill Subgroup. The lithologic distinction between these two is reasonably well defined, although there are some organo-detrital micrites in the marlstone (sample 3600'-3605') and some marls in the Chimneyhill. Some dolomite is present in both the marlstones and the Chimneyhill. These strata are generally weakly dolomitized, and the lithofacies are similar to Hunton rocks in the Arbuckle outcrop area.

*Woodford (Chattanooga) Shale* 3390'-3545' (SP log)  
No Misener Sandstone observed.

*Hunton Group* 3545'-3732' (SP log)

3545' (SP log) -3695' (sample depth) Silurian-  
?Lower Devonian; Henryhouse-Haragan Formations undifferentiated. Sparingly fossiliferous marlstone; pelmatozoans the dominant fossils with a moderate number of ostracodes. Scattered subangular detrital quartz to 0.1 mm, increasing slightly downward; scattered dolomite crystals.

3695' (sample depth) -3732' (SP log) Chimneyhill Subgroup.

3695'-3740' (sample depths) Clarita Formation. Pink crinoidal micrite; also many ostracodes. Some fine subangular detrital quartz in the upper few feet. Only scattered dolomite crystals.

3740' (sample depths) -3732' (SP log) Cochrane Formation. Glauconitic organo-detrital micrite; pelmatozoans present, but dominant fossil probable ostracodes. Low in detrital quartz, but fair amount of dolomite is present.

*Sylvan Shale* 3732'-3845' (SP log)

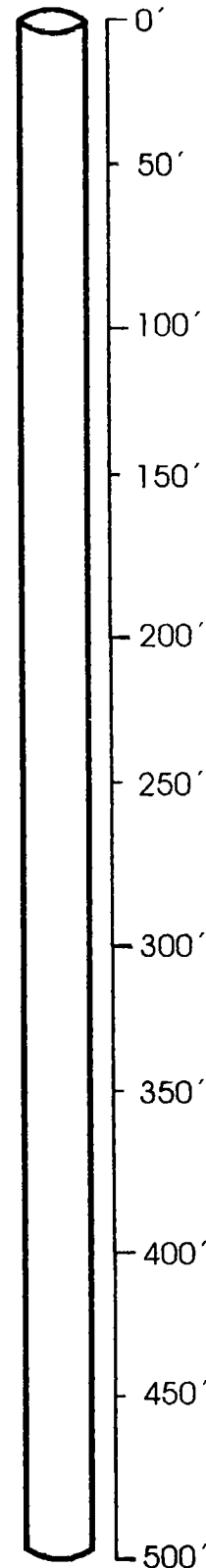
Upper 10' greenish-gray shale, medium-gray shale below.

*Welling Formation* 3845' (SP log)

3855'-3860' (thin section) Organo-detrital sparite with a few widely scattered rounded detrital quartz grains; no dolomite observed.

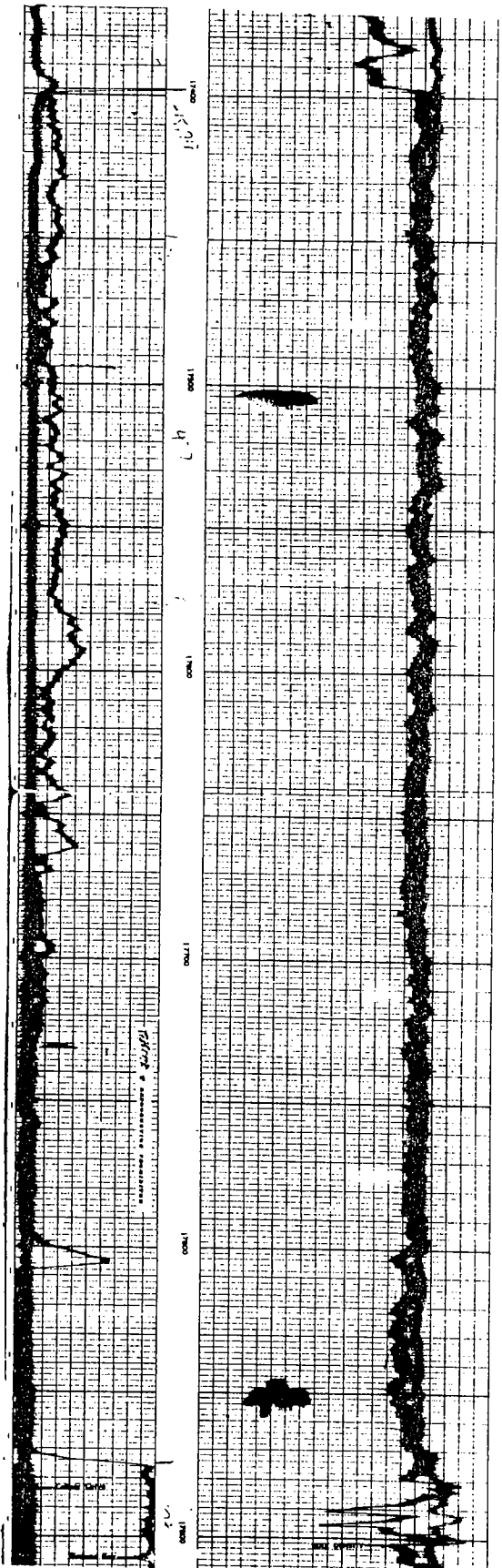
3880'-3885' (thin section) Organo-detrital sparite and micrite; no detrital quartz or dolomite observed.

Log not available



**WOODS PETROLEUM CORP. 1-35 NICKEL** — SW¼ NE¼ sec. 35, T13N, R16W, Custer County, Oklahoma; elevation GL 1,682 ft, DF 1,702 ft; TD 21,054 ft (Ordovician); completion 11/19/70.

Lower Woodford, Hunton, Sylvan and upper Viola (Welling? skeletal grainstone at top) samples studied; 24 thin sections. Hunton strata are 460 ft thick and entirely in a low magnesium facies. They are divisible into an upper marlstone sequence (?Henryhouse) which is 380 ft thick, and a lower Chimneyhill organo-detrital limestone with the Keel Oolite at its base (80 ft thick). 24 thin sections.





KIRKPATRICK & NATOL 1 NICKEL UNIT--C NW¼

sec. 34, T. 22 N., R. 12 W., Major County,  
Oklahoma; elev. 1283'; TD 8147' (Sylvan);  
compl. 8/16/66, no Hunton production reported.  
Tops: Hunton (CC) 7871', (-6588'), Sylvan  
(CC) 8119' (-6836'); Hunton thickness 248'.  
Cored 7880'-7907' (Hunton); chemical analyses;  
OU Core Library.

Woodford Shale

Hunton Group 7871'-8119'

7871'-7880' No core.

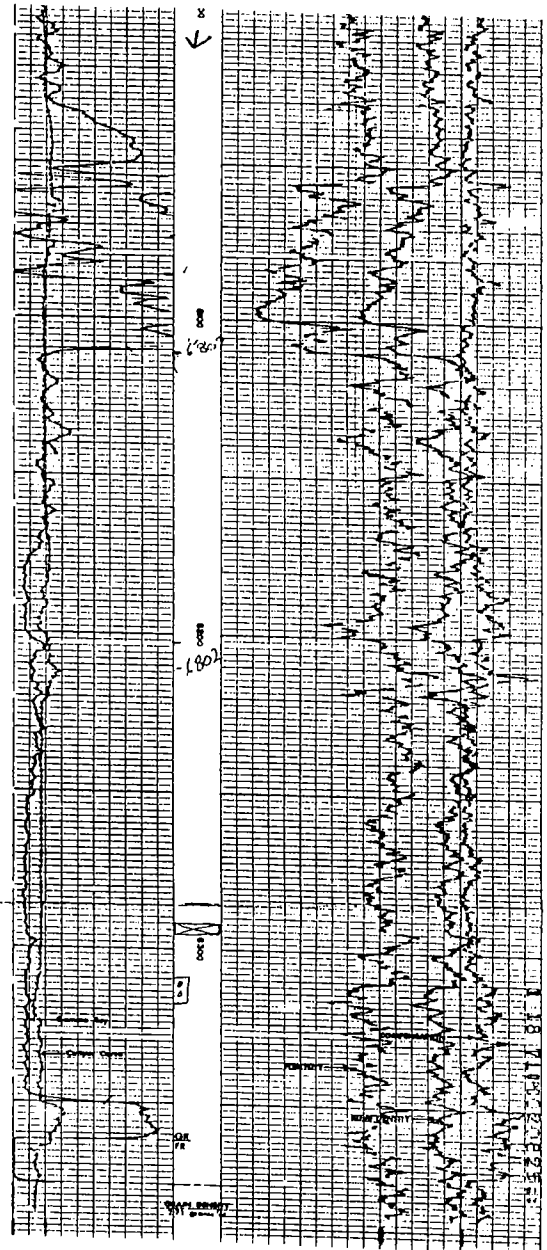
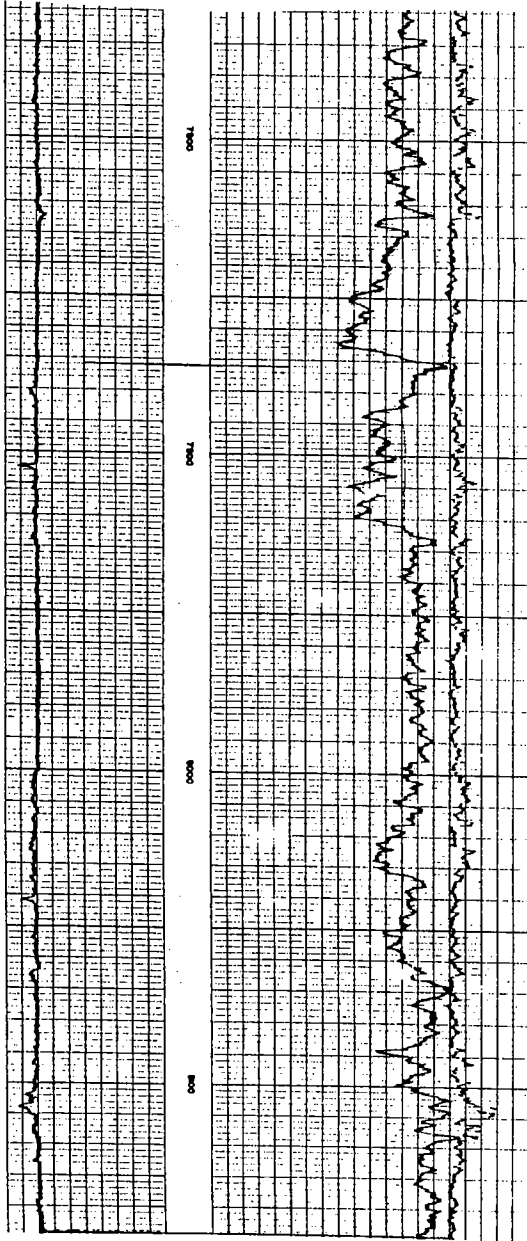
7880'-7907' ?Silurian. Gray fossiliferous,  
porous, crystalline dolomite with relatively  
little insoluble debris; MgCO<sub>3</sub> averages  
41.83%, HCl insolubles 6.95%. This rock  
shows much visible porosity, much of which  
is result of leaching of fossils. Much  
crinoidal debris along with bryozoans,  
trilobites, and brachiopods. Pentameracid  
brachiopod at 7882'; this is internal mold  
of brachial valve, probably with smooth  
shell. No diagnostic fossils observed, and  
this interval referred to Silurian on basis  
of stratigraphic position and lithology.

7907'-8119' No core.

Sylvan Shale 8119'

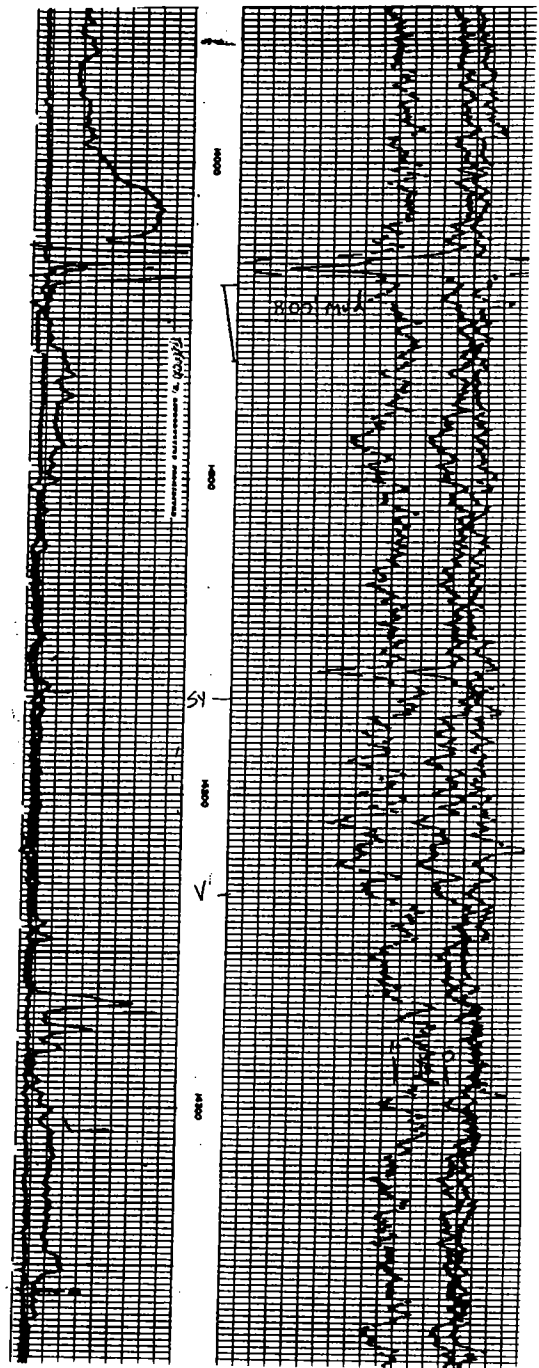
Kirkpatrick & Natol  
1 Nickel Unit  
C NW  
Sec. 34, T. 22 N., R. 12 W.  
Major County, Oklahoma  
elev. 1383'

Cleary Petroleum  
1-6 Wichert  
NW SE  
Sec. 6, T. 21 N., R. 12 W.  
Major County, Oklahoma  
elev. 1308'



**WOODS PETROLEUM CORP. 1 OBLANDER** — C SE¼ NW¼ sec. 27, T20N, R25W, Ellis County, Oklahoma; elevation GL (Na), DF 2,493 ft, KB 2,495 ft; TD 14,422 ft (Viola Group); completion (Na), 8/24/67 (P).

Lower Woodford–Hunton–Sylvan–upper Viola samples, examined by Amsden, 1979; 12 thin sections. Described in Amsden (1980, p. 42, text-fig. 16). *Illustrated on PLATE 2, STRATIGRAPHIC SECTION C–C'.*

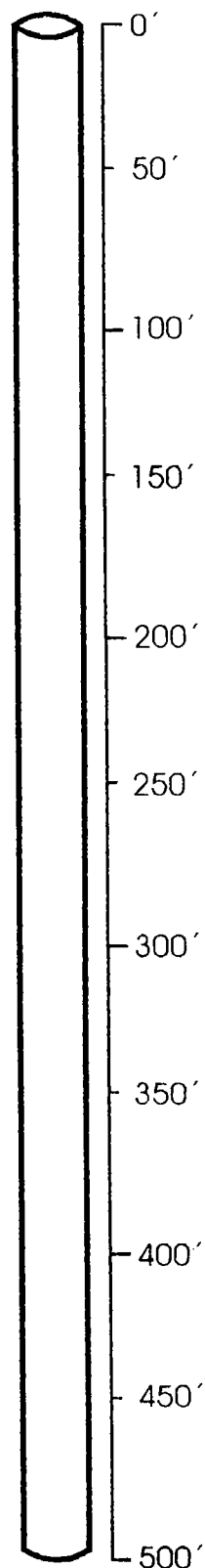


OKLAHOMA GEOLOGICAL SURVEY DIAMOND CORE HOLE OGS 1—SW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 4, T. 14 N., R. 24 E., Adair County, Oklahoma; compl. 8/23/62, no Hunton production. This core starts in the upper part of the Hunton Group (Marble City Member, Quarry Mountain Formation, Chimneyhill Subgroup) and extends into the upper part of the Sylvan Shale; approximately 130' of Hunton strata penetrated. A lithostratigraphic description and chemical analyses of the strata in this core are given in Amsden and Rowland (1965, p. 102-105, 160, 166).

OKLAHOMA GEOLOGICAL SURVEY DIAMOND CORE HOLE OGS 2—SE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec. 2, T. 14 N., R. 23 E., Cherokee County, Oklahoma; compl. 8/25/62, no Hunton production. This core starts in the Hunton Group (Barber Member, Quarry Mountain Formation, Chimneyhill Subgroup) and extends into the upper Sylvan Shale; it penetrates approximately 72' of Hunton strata. A lithostratigraphic description and chemical analyses of this core are given in Amsden and Rowland (1965, p. 105-108, 161, 166). In June 1977, the upper 2" of the Sylvan Shale was analyzed: CaCO<sub>3</sub>, 38.74%, MgCO<sub>3</sub>, 24.25%, HCl-acid insolubles 35.54%.

OKLAHOMA GEOLOGICAL SURVEY DIAMOND CORE HOLE OGS 3—SE<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec. 20, T. 13 N., R. 21 E., Sequoyah County, Oklahoma; compl. 8/30/62. This core starts in the upper part of the Hunton Group (Marble City Member, Quarry Mountain Formation, Chimneyhill Subgroup), penetrating the Hunton, Sylvan Shale, Welling Formation and Fite Limestone, ending in the Tyner Formation. A lithostratigraphic description and chemical analyses of this core are given in Amsden and Rowland (1965, p. 108-113, 162, 166).

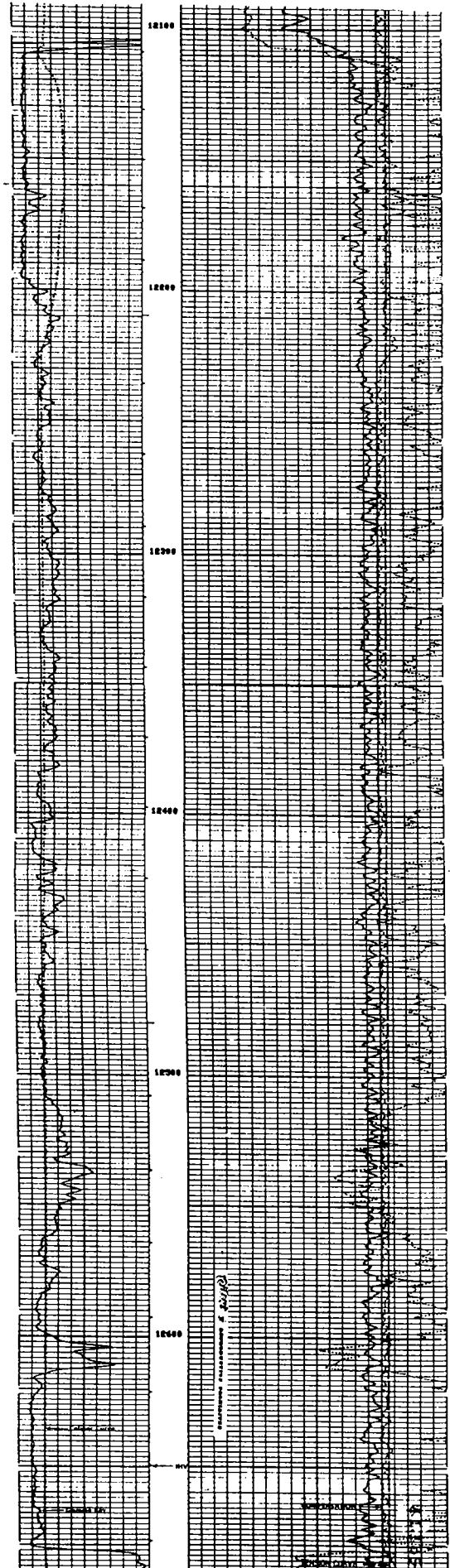
Log not available



**GETTY RESERVE OIL INC. 1-9 OSBORN** — C NW¼  
sec. 9, T9N, R7W, Grady County, Oklahoma; elevation GL  
1,365 ft, DF 1,381 ft; TD 12,750 ft; completion 10/16/79.

Hunton-Woodford contact 12,010 ft; Hunton-Sylvan  
contact 12,680 ft (GR log). Hunton strata cored from 12,120  
to 12,132 ft (OGS Core and Sample Library), all low mag-  
nesium, skeletal grainstone; 10 spot samples analyzed:  
<2.2% MgCO<sub>3</sub>, and <2% HCl insolubles; 7 thin sections. Dr.

James E. Barrick (Texas Tech University) reports Frisco  
type conodonts from this core.

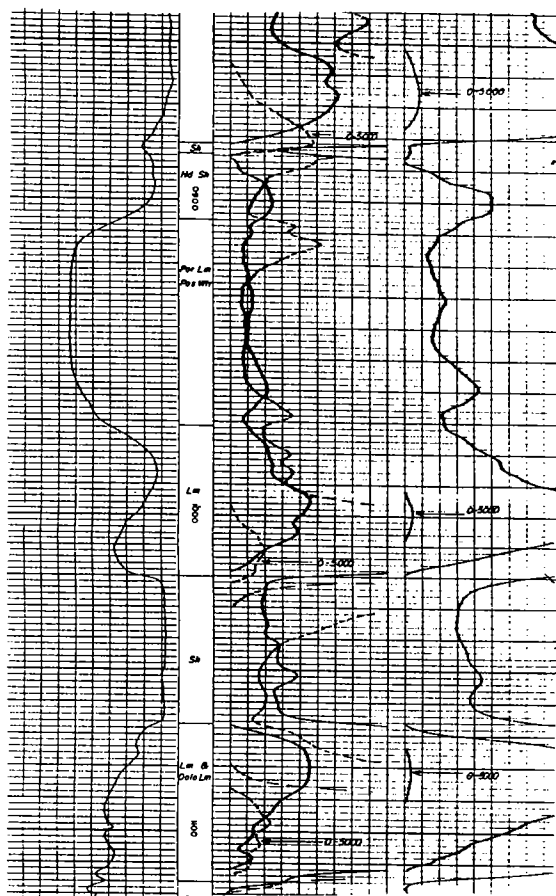


**WELL H**

United States Smelting Refining and Mining Company, 1 Padgett

This well is in C NW $\frac{1}{4}$  NW $\frac{1}{4}$  sec. 29, T. 13 N., R. 20 E., Muskogee County, about 8 miles west of the Tenkiller dam (text-figs. 3, 15). The well was drilled in 1958 with rotary tools, and the collar elevation is 595 feet. Cuttings were studied from 890 to 1,040 feet in intervals of 10 feet, and the sample quality is good. Lower Devonian rocks are absent in this well (text-figs. 3, 15). Silurian rocks are 115 feet thick (905?-1,020? feet; text-fig. 3) and comprise four units: Quarry Mountain Formation 65? feet (905?-970; Chattanooga-Marble City contact was estimated from the electric log, as both are present in sample 900-910), Marble City Member 55? feet (905?-960; top of the Marble City estimated from the electric log, as it is present with Chattanooga in sample 900-910) and Barber Member 10 feet (960-970), Tenkiller Formation 40 feet (970-1,010), and Blackgum Formation 10? feet (1,010-1,020?; Blackgum-Sylvan contact approximated from the electric log, as both are present in sample 1,020-1,030). The upper part (900-920) of the Marble City contains a substantial amount of dolomite. The Sylvan Shale was encountered in sample 1,020-1,030, and the top was estimated from the electric log at 1,020 feet. Three thin sections were prepared from the following intervals: Marble City Member, 924; Barber Member, 960-970; Tenkiller Formation, 980-990.

<i>Depth (feet)</i>	<i>Thickness (feet)</i>	
890-900	10	CHATTANOOGA FORMATION: Black and brown pyritic shale.  QUARRY MOUNTAIN FORMATION: 65? feet (905?-970; Chattanooga-Marble City contact approximated from the electric log, as both are present in sample 900-910).  <i>Marble City Member</i> : 55? feet (905?-960; top of the Marble City estimated from the electric log). Off-white to white to pink crinoidal dolomitic limestone; off-white to light-gray medium- to fine-crystalline calcitic dolomite. Thin section (H-1) was prepared from circulated sample at 924 feet.
900-910	10	Shale, black, brown, pyritic, 60%; dolomite, calcitic, off-white to light-gray, medium- to fine-crystalline, 25%; limestone, off-white, some pink, dolomitic, some crinoidal, 15%.
910-920	10	Dolomite, as above; limestone, as above, 10%.
920-940	20	Limestone, off-white to white, dolomitic; abundant pink crinoidal debris; interval 920-930 has 5 circulated samples; 924, 15 and 30 minutes; 929, 15 and 30 minutes; and 930, 15 minutes.
940-960	20	Limestone, as above, except slightly dolomitic; dolomite, gray, fine-crystalline, 2-3% in sample 950-960.
960-970	10	<i>Barber Member</i> : 10 feet (960-970). Light-gray to gray fine-crystalline dolomite; thin section (H-2) was prepared from 960-970.  TENKILLER FORMATION: 40 feet (970-1,010). Light-gray to dark-gray pink light-tan limestone;

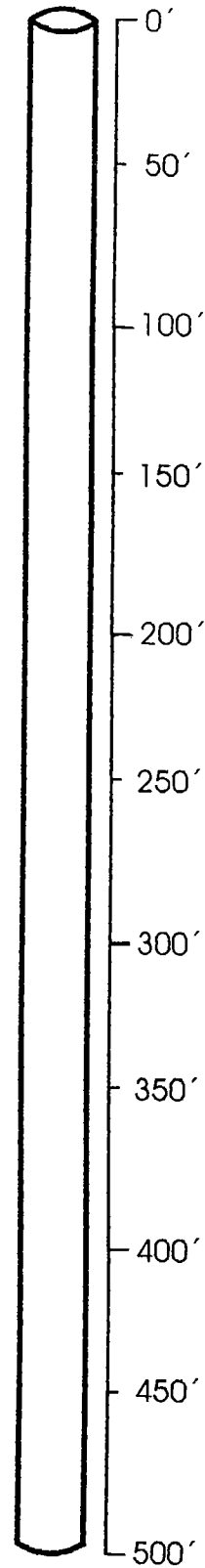


		abundant orange crinoidal and pyritic material; in part dolomitic.
970-980	10	Limestone, light-gray, pink, gray; in part dolomitic; some orange crinoidal material and pyritic material.
980-990	10	Limestone, as above, more dark-gray and pyritic; some greenish material with pyrite; thin section (H-3) was prepared from 980-990.
990-1,000	10	Limestone, gray to dark-gray, pink to light-tan; abundant pyrite; some glauconite; abundant orange crinoidal material; in part dolomitic; abundant greenish material.
1,000-1,010	10	Limestone, light-gray to gray, pink; abundant orange crinoidal debris, some glauconite and pyrite; in part dolomitic.
1,010-1,020	10	BLACKGUM FORMATION: 10? feet (1,010-1,020?; Blackgum-Sylvan contact estimated from the electric log, as both are present in sample 1,020-1,030). Tan to brown fine-crystalline partly silty argillaceous dolomite.
1,020-1,040	20	SYLVAN FORMATION: Thickness not determined, as samples were studied only to 1,040 feet. Gray to gray-green shale. Trace of dolomite, as above, in sample 1,020-1,030.

**COBRA OIL AND GAS CORP. 1-4 PARRY** — C SW¼ sec. 4, T19N, R18W, Dewey County, Oklahoma; elevation GL 1,889 ft, KB 1,905 ft; TD 12,190 ft (Sylvan); completion (Na), 2/8/81 (P).

Cored Hunton strata from 11,980 to 12,030 ft. Conodonts recovered by Dr. James E. Barrick (Texas Tech University). *Illustrated on* PLATE 2, STRATIGRAPHIC SECTION B-B'.

**Log not available**





SELLERS 1 PAYNE—SW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 34, T. 12 N., R. 5 E., Lincoln County, Oklahoma; elev. 1055' DF (1050' GL); TD 4941' (Ordovician); compl. 5/12/60, D&A. Tops: Hunton 4680' (-3625') (SP log), Sylvan 4755' (-3700') (SP log), Welling 4845' (-3790') (SP log); Hunton thickness 75'. Samples examined from 4560' to 4890' (no samples, 4580' to 4665'), good quality; 9 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

Hunton strata are assigned to the Chimneyhill Subgroup on the basis of lithologic character, stratigraphic position, and thickness. The rocks are mainly heavily dolomitized pink crinoidal strata, showing some visible porosity.

*Woodford (Chattanooga) Shale*

No Misener Sandstone observed.

*Hunton Group* 4680'-4755' (SP log)

4680'-4755' (SP log) Silurian; Chimneyhill Subgroup.

4680'-4730' (sample depth) Mostly crystalline dolomite with scattered corroded pink crinoid plates; some porous crystalline dolomite. A few fragments of crinoidal sparite with little or no dolomite. No detrital quartz observed.

4730'-4760' (sample depths) Moderately to heavily dolomitized pink crinoidal micrite with minor spar; some bryozoan debris. No visible quartz.

4760'-4770' (sample depths) Mostly porous crystalline dolomite with scattered corroded crinoid plates. No visible quartz.

*Sylvan Shale* 4755'-4845' (SP log)

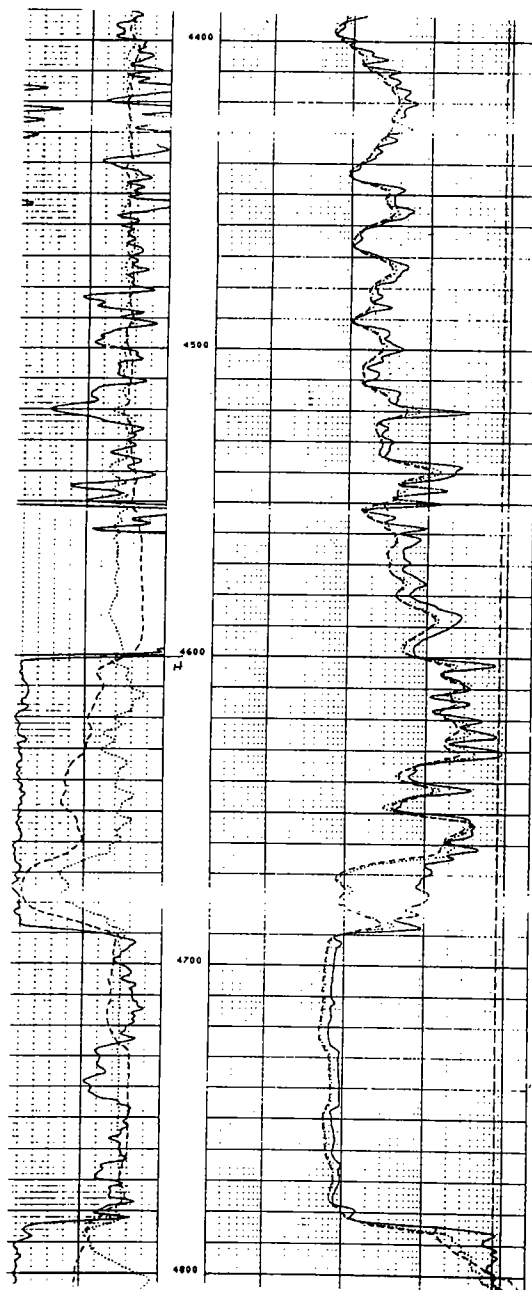
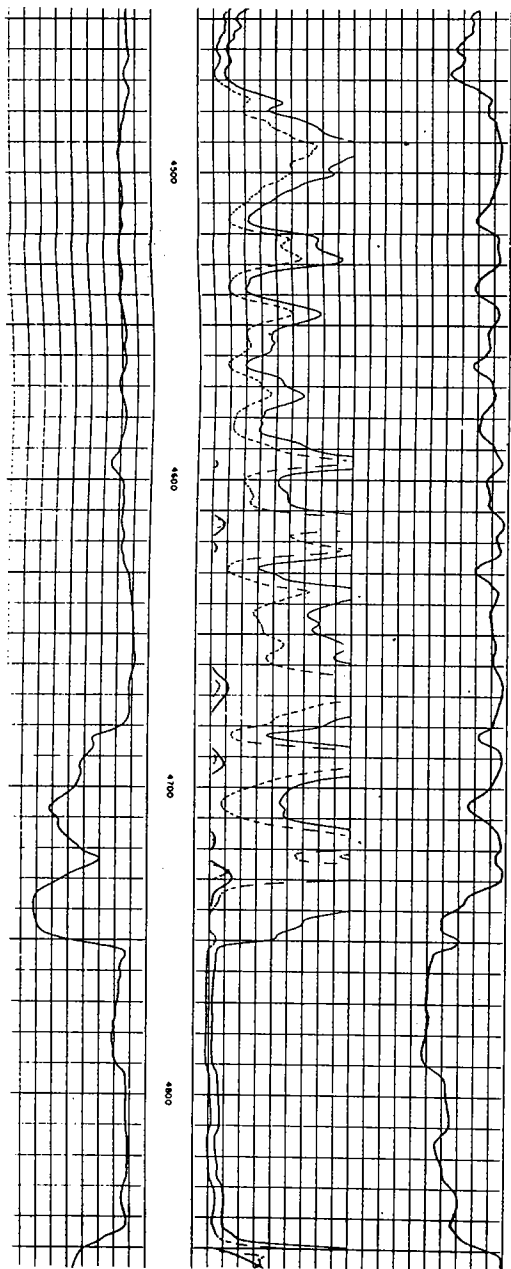
*Welling Formation* 4845' (SP log)

4865'-4870' (thin section) (sample depth) Organo-detrital crinoid micrite with some spar; no visible quartz or dolomite.

4885'-4890' (thin section) (sample depth) Like above but with subangular to subrounded detrital quartz.

Sellers  
1 Payne  
SW SE SW  
Sec. 34, T. 12 N., R. 5 E.  
Lincoln County, Oklahoma  
elev. 1055'

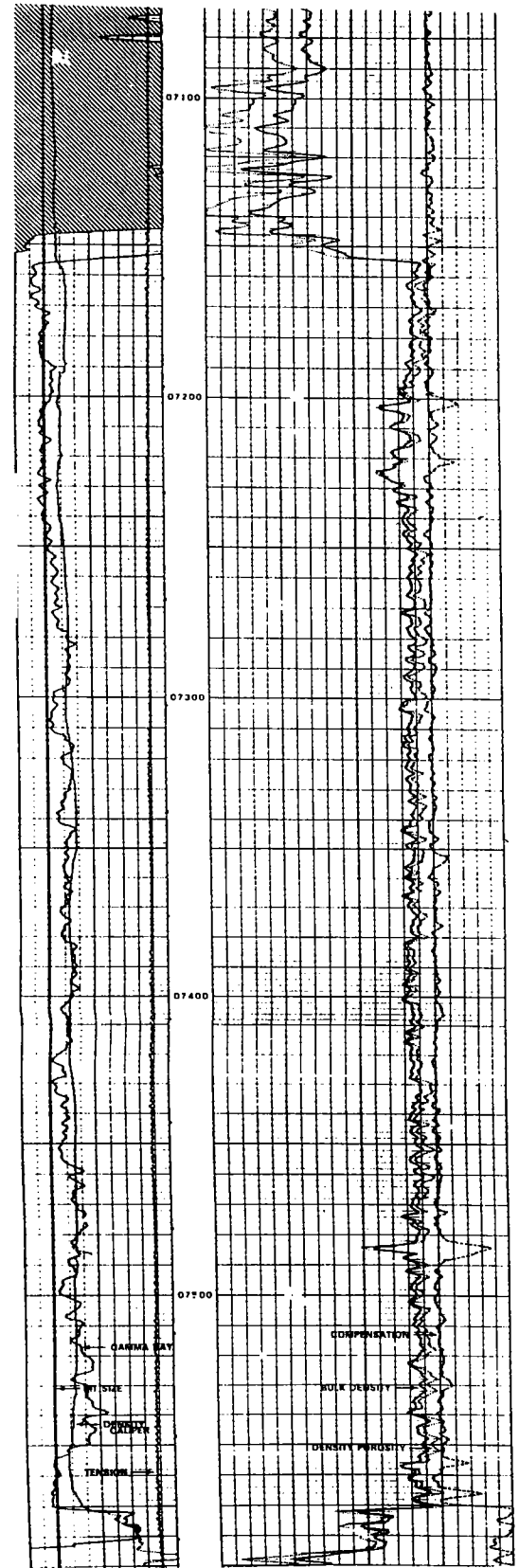
1 Opal Dukes  
NE NW SE  
Sec. 34, T. 12 N., R. 5 E.  
Lincoln County, Oklahoma  
elev. 998'



**ANADARKO PRODUCTION CO. 1-24-A PHOENIX** — W½SW¼NE¼ sec. 24, T3N, R3W, Garvin County, Oklahoma; elevation GL 1,035 ft, DF 1,048 ft; TD 8,320 ft; completion 3/20/85.

Tops (geophysical logs) Hunton 7,154 ft; Sylvan 7,571 ft; Viola 7,808 ft. Cored Hunton strata from 7,400 to 7,460 ft (OGS Core and Sample Library); 8 samples taken from this interval. Splits from these samples sent to Dr. James E. Barrick (Texas Tech University) for conodont processing; 8 to the Oklahoma Geological Survey Analytical Chemistry Laboratory for rock analyses: 8 specimens were used for thin sections. This interval is a typical low magnesium (5–10% MgCO<sub>3</sub>) fossiliferous marlstone with crinoid plates, brachiopods, trilobites and other representatives of the sessile and vagrant benthos. Identifiable brachiopods include *Nanospira* sp. and *Amphistropiella* (*Amsdenostropiella*) *prolongata*. According to Barrick the conodonts include *Ozarkodina eosteinhornensis*, a species with a known range of Ludlovian to Pridolian. This faunal data indicates a correlation with the Henryhouse Formation, and the lithofacies represented is similar to that exposed in the Arbuckle Mountains ~40 miles to the east. *Illustrated on PLATE 1, STRATIGRAPHIC SECTION A–A'.*

I was unable to obtain satisfactory samples of the uncored portion of the Hunton. This well can be compared to the nearby Anadarko 1-35-A Harris and the Anadarko 2-26-A Bradshaw. Examined by Amsden, 1985.



EL PASO 1 PIERCE (not shown on maps)--1320' FSL and 1320' FWL sec. 9, T. 13 N., R. 25 W., Roger Mills County, Oklahoma; elev. 2376'; TD 23,449' (Viola); compl. 1974, Hunton production reported. Tops: Woodford 22,390' (-20,014'), Misener 22,545' (-20,169'), Hunton 22,570' (-20,194'), Sylvan 23,160' (-20,784'), Viola 23,285' (-20,909'); Hunton thickness 615'. Samples examined from 22,500' to TD; borrowed from Oklahoma Well Sample Service, Shawnee, Oklahoma; good-quality samples; 22 thin sections prepared, stained with Alizarin Red-S.

Hunton strata in the 1 Pierce are in a dolomite facies, although a considerable part of the middle part contains substantial low-magnesium limestone. Hunton rocks in this well are similar to those in the 1-33 Libby, 1-27 Bradshaw, and 1 Kendall, the lower 100' to 150' being in a crystalline-dolomite facies overlain by relatively low-magnesium limestones with considerable detrital quartz; the upper 100' or so of the Hunton in the 1 Pierce is crystalline dolomite and in this respect is comparable to the 1 Lovett. I assign the 30' of crystalline dolomite with a large amount of fine (less than 0.1 mm) quartz detritus lying just under the Woodford Shale to the Misener Sandstone. All the Hunton strata are probably Silurian in age, judging from the regional relations in this area (panel 10, section B-B').

Woodford Shale 22,380'-22,545'

Misener Sandstone 22,545'-22,570'

Fine angular quartz detritus (to 0.1 mm) set in a crystalline-dolomite matrix.

Hunton Group 22,570'-23,160'

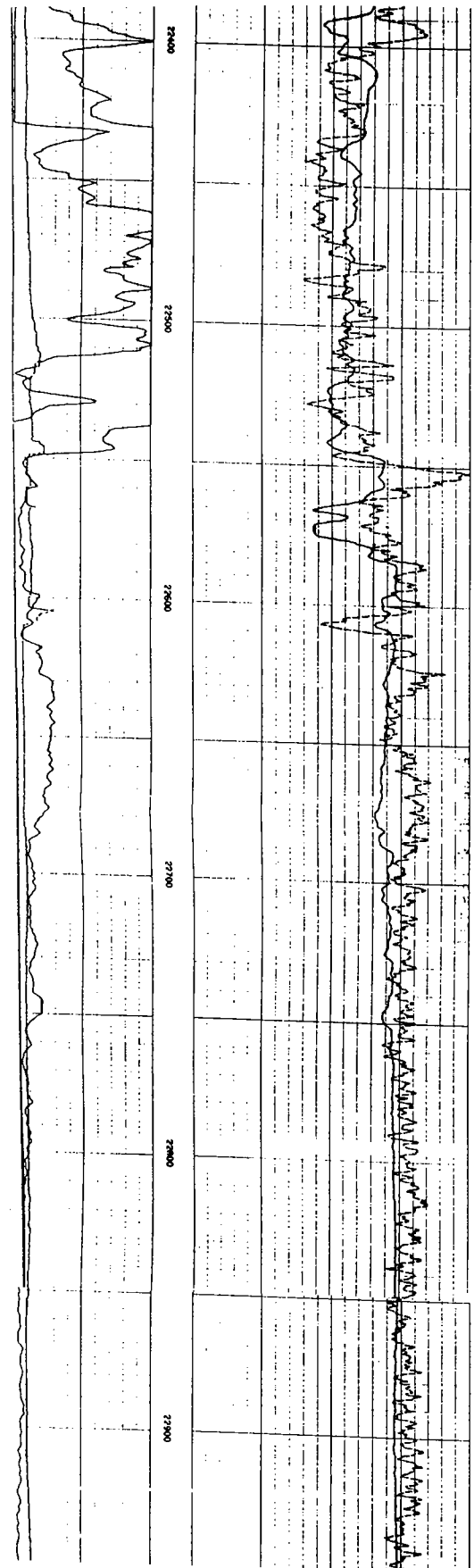
22,570'-22,700' Predominantly crystalline dolomite with very little detrital quartz; some chert; minor dolomitic limestone.

22,700'-23,100' Predominantly fossiliferous marlstone, commonly with scattered dolomite crystals and substantial fine angular quartz detritus. Interbedded with some dolomitic limestone and crystalline dolomite. Chert is present through much of interval.

23,100'-23,160' Largely crystalline dolomite with minor amount of fine angular detrital quartz. Upper part has some interbedded fossiliferous marlstone with scattered dolomite crystals, but lower 70' or so is almost entirely crystalline dolomite. No oolites observed.

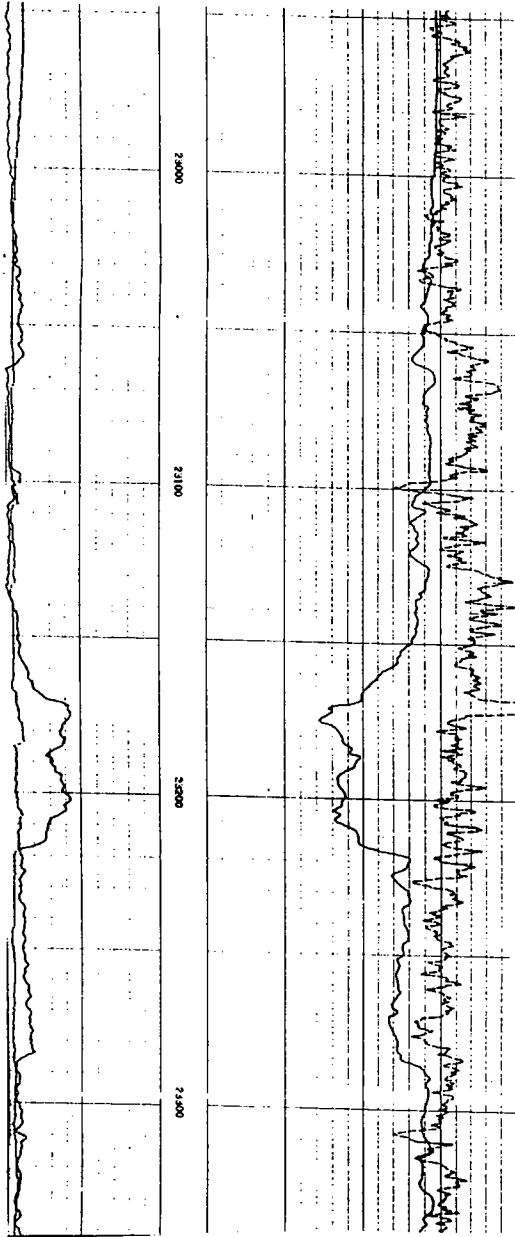
Sylvan Shale 23,160'-23,285'

Viola Limestone 23,285'-23,449' (TD)



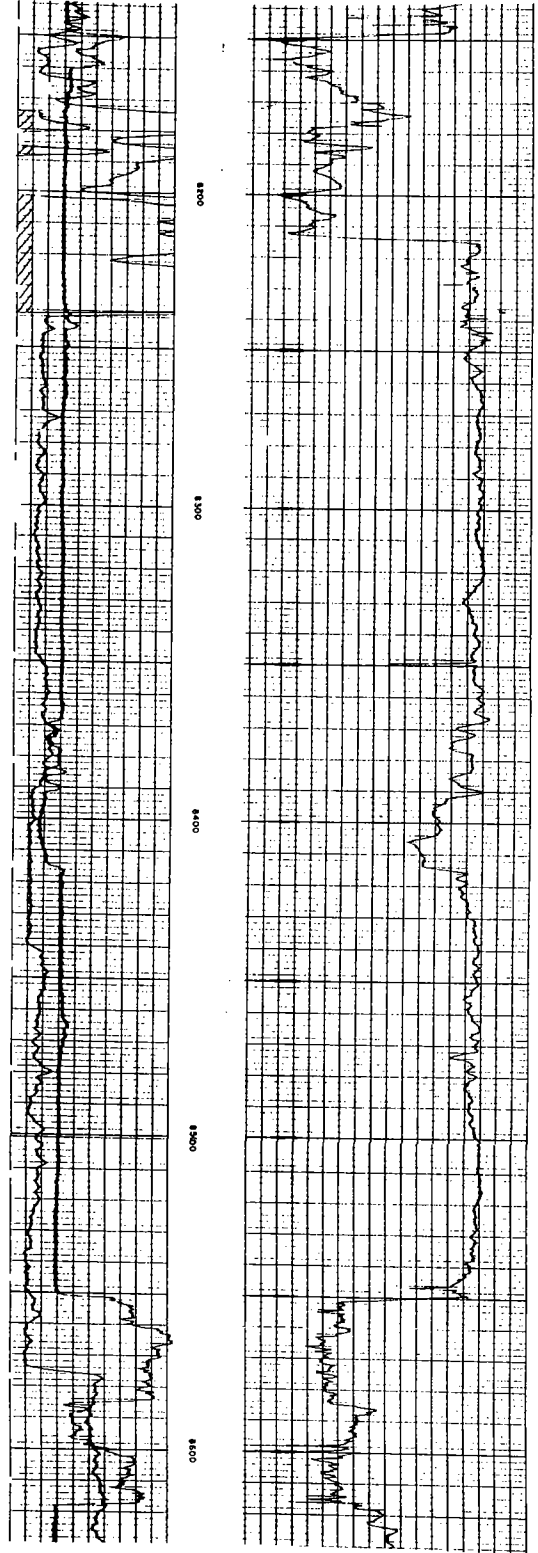
El Paso Natural Gas  
1 Pierce  
1320'FSL & 1320'FWL  
Sec. 9, T. 13 N., R. 25 W.  
Roger Mills County, Oklahoma  
KB 2403'

Continued



PAN AMERICAN 1 POST UNIT--C NW $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 34,  
T. 16 N., R. 7 W., Kingfisher County, Oklahoma;  
elev. 1086'; TD 9274' (Simpson Group); compl.  
1/30/64, D&A. Tops: Woodford (CC) 8147'  
(-7061'), Hunton (CC) 8214' (-7128'), Sylvan  
(CC) 8554' (-7468'); Hunton thickness 340'.  
Cored 8307'-8327' (Hunton); no thin sections  
or chemical analyses; Pan American (now  
Amoco), Tulsa, Oklahoma.

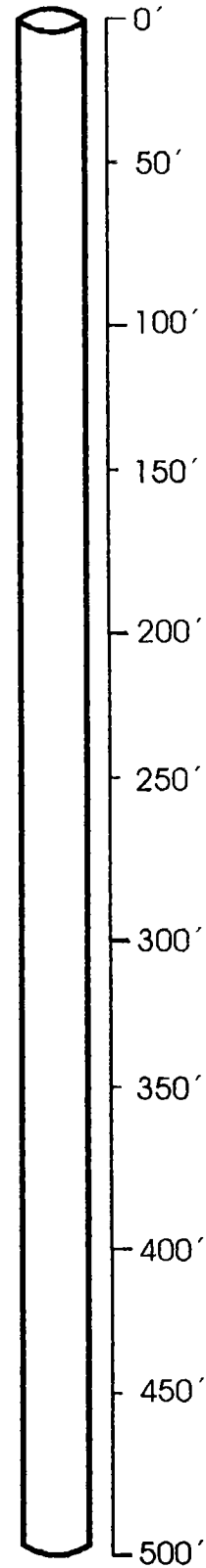
I have not examined this core, but Gilbert  
Klapper (The University of Iowa, personal  
communication) identified Polygnathoides  
siluricus at a depth of 8325', indicating  
Late Silurian age. Lower Devonian strata may  
be represented in upper part of Hunton.



CHAMPLIN 1 PRICE—SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 21, T. 7 N., R. 10 E., Hughes County, Oklahoma; elev. 824' KB (814' GL); TD 5829' (Ordovician); compl. 12/8/66, no Hunton production. Tops: Sylvan 4765' (-3841') (SP log and samples), Welling 4855' (-4031') (SP log and samples); no Hunton present; Woodford rests directly on the Sylvan Shale. Samples examined from 4720' to 4880'; no thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

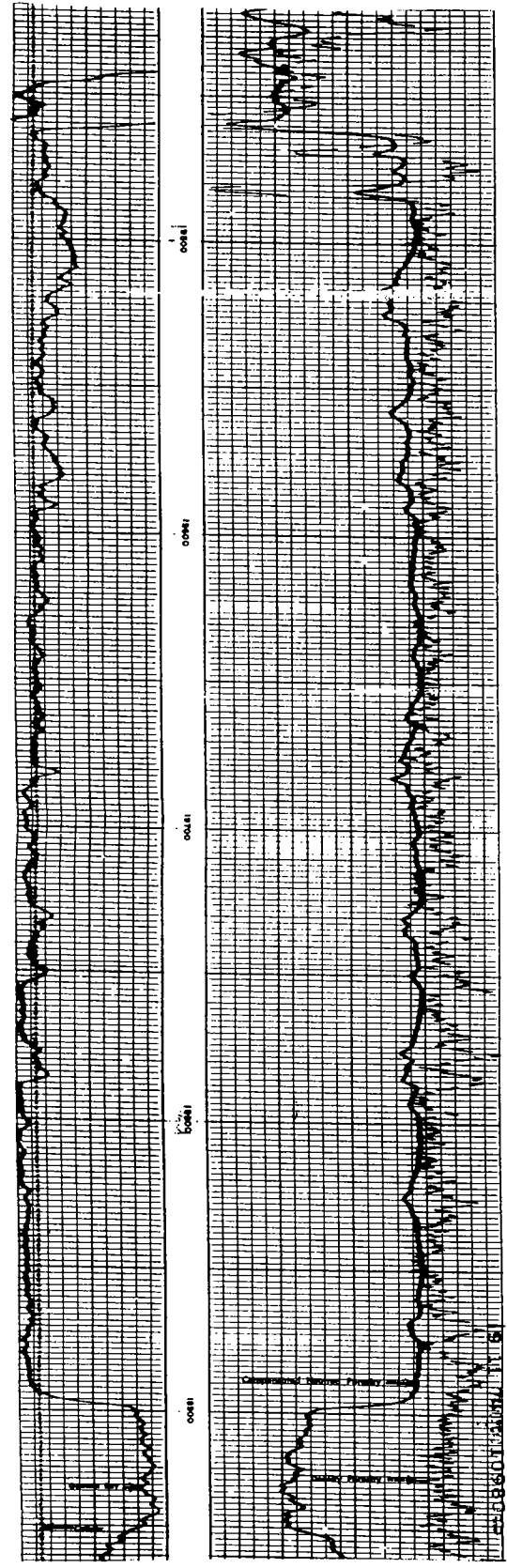
The Woodford-Sylvan contact is reasonably well defined in the samples, as the uppermost Sylvan is a pale-green shale, contrasting with the dark shale of the overlying Woodford. It is also fairly well marked on the SP log. (See 1 Jones-Binas Unit, 1 Manschrick, and 1 G. Hall.)

Log not available



**MICHIGAN-WISCONSIN PIPE LINE CO. 1 PRICE —**  
NW¼SE¼NW¼ sec. 36, T15N, R21W, Roger Mills County,  
Oklahoma; elevation GL 1,794 ft, DF 1,815 ft; TD 19,980 ft  
(Sylvan); completion (Na), 8/28/74 (P).

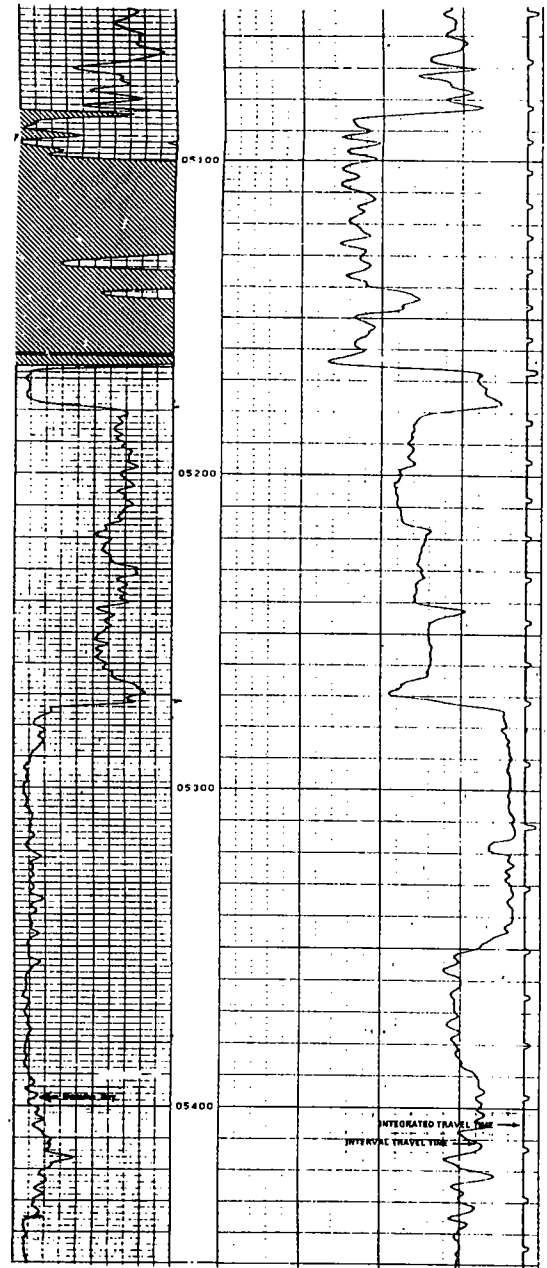
Hunton cored from 19,472 to 19,484 ft; Hunton top (PI  
card) reported at 19,460 ft. This is a high magnesium dolo-  
mite; analysis of three spot samples averaged 42.4% MgCO<sub>3</sub>.  
No fossils observed. Samples not examined. *Illustrated on*  
**PLATE 2, STRATIGRAPHIC SECTION D-D'.**





**BASS ENTERPRISES PRODUCING CO. 1 PRITCHARD**  
— C NW¼NE¼SE¼ sec. 9, T12N, R4E, Lincoln County,  
Oklahoma; elevation GL (Na), KB 868 ft; TD 5,470 ft (Or-  
dovician); completion (Na), 12/22/82 (P).

Cored from 5,104 to 5,196 ft (lower Woodford, Hunton,  
upper Sylvan Shale); 11 thin sections and spot samples for  
MgCO<sub>3</sub> and HCl analysis; Hunton strata cored from 5,173  
to 5,186 ft of which the upper 11 ft (5,173–5,184 ft) are  
heavily dolomitized skeletal grainstone (?Chimneyhill  
Subgroup); analysis of spot samples range from 14 to 31%  
MgCO<sub>3</sub>; from 5,184 to 5,186 ft oolitic beds (Keel Oolite) in  
part heavily dolomitized and silicified; Sylvan Shale at  
5,186 ft. Core examined by Amsden, 1985.



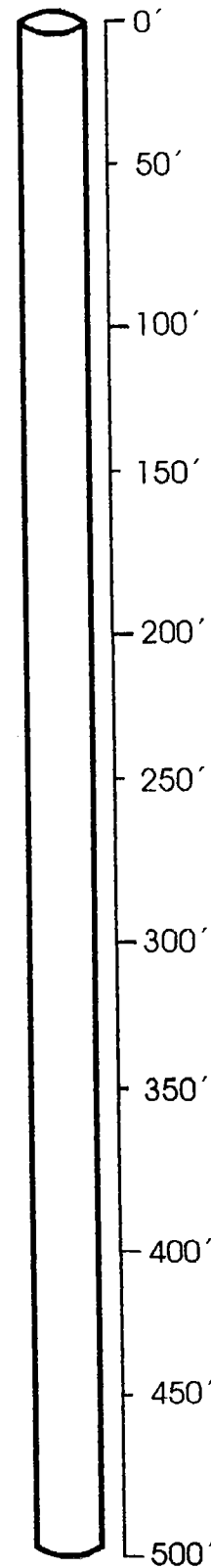
COLUMBIA FUEL 2 RAINY MOUNTAIN (STRATIGRAPHIC TEST)--sec. 14, T. 6 N., R. 15 W., Kiowa County, Oklahoma; elev. ?; TD ?; compl. ?. Tops: no tops available. Cored 623'-633' (possibly Hunton); chemical analyses; OU Core Library.

Correspondence with Oklahoma Corporation Commission and with Cities Service fails to produce any information on this well. Columbia Fuel (subsidiary of Cities Service) does have record of 1 Doyle Hancock, SE $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 14, T. 6 N., R. 15 W., which bottomed at 620' and penetrated Hunton at 610' (813' above sea level); driller's log indicates that 1 Hancock ran 13' high to adjacent 2 Rainy Mountain. Cored portion of 1 Rainy Mountain is pale-gray low-magnesium calcilutite.

COLUMBIA FUEL 3 RAINY MOUNTAIN (STRATIGRAPHIC TEST)--sec. 22, T. 6 N., R. 15 W., Kiowa County, Oklahoma; elev. ?; TD ?; compl. ?  
Tops: Hunton 595' (?), Sylvan 767' (?); depths from information accompanying core.  
Cored 757'-761' (all Hunton?); OU Core Library.

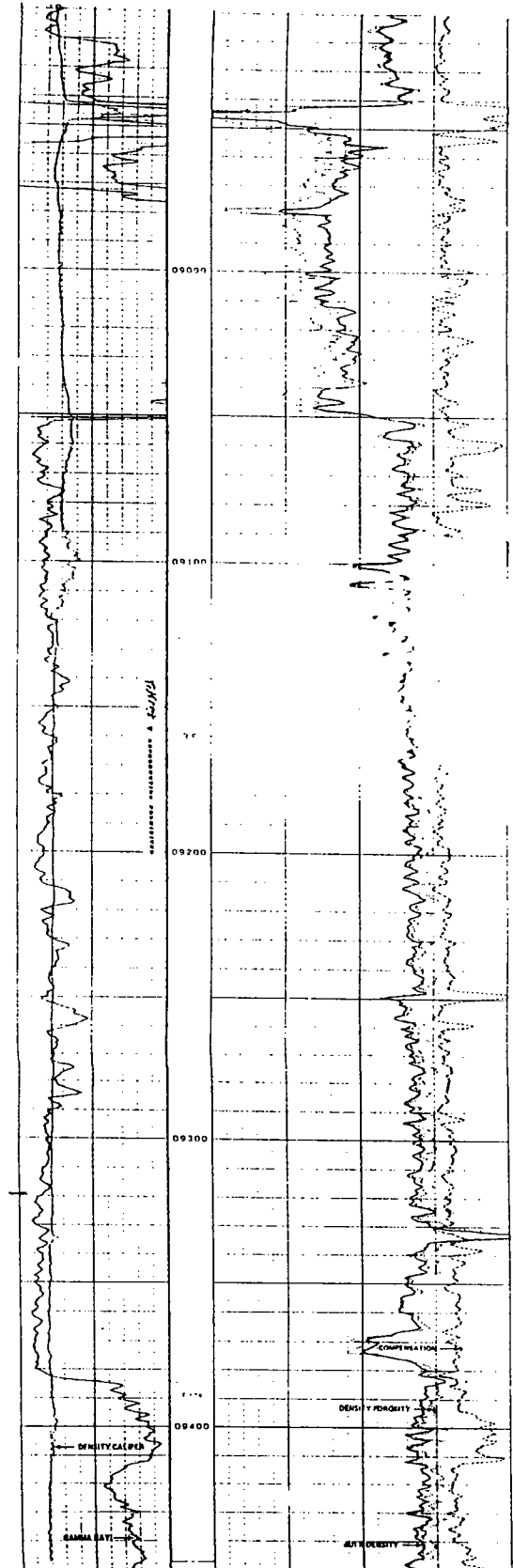
No information is available to me concerning this well; see remarks under 2 RAINY MOUNTAIN. Cored portion is dark-gray low-magnesium limestone.

Log not available



**UNIVERSAL RESOURCES CORP. 1-20-C RALPH — C**  
 SW¼NE¼ sec. 20, T13N, R6W, Canadian County, Okla-  
 homa; elevation GL 1,328 ft, DF 1,342 ft; TD 9,450 ft (Syl-  
 van); completion 12/3/80.

Cored the lower 54 ft of Hunton and upper 26 ft of the  
 Sylvan. Hunton strata are referred to the Chimneyhill Sub-  
 group divisible into Clarita, Cochrane, and Keel Forma-  
 tions based on lithostratigraphy. These are all very low mag-  
 nesium strata except for the basal 10 ft of the Hunton and  
 upper Sylvan which average ~10% MgCO<sub>3</sub>. 28 thin sec-  
 tions and spot chemical analyses. Core examined 1984-85.  
*Illustrated on PLATE 1, STRATIGRAPHIC SECTION A-A'.*



PAN AMERICAN 1 RAMM—SE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> sec. 17, T. 11 N., R. 24 E., Sequoyah County, Oklahoma; elev. 488'; TD 4950' (Sylvan); compl. 4/24/63, D&A. Tops: Woodford 4600' (-4112') (GR log), 4620' (sample depth); Hunton 4624' (-4236') (GR log), 4620' (sample depth); Sylvan 4924' (-4436') (GR log), 4930' (sample depth); Hunton thickness 300'. Samples examined from 4600' to 4950', good quality; 15 thin sections, OGS; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The Woodford Shale is apparently interbedded with Misener Sandstone (Sylamore Sandstone) throughout, as the samples are a mixture of dark shale and quartz sandstone. The Sallisaw Formation, which has a thickness of approximately 50', can be distinguished from the Misener by its finer grained, more angular quartz detritus and its high concentration of dolomite. The Silurian beds, all of which are assigned to the Chimneyhill Subgroup, are mostly moderately to heavily dolomitized organo-detrital limestones with some beds grading into crystalline dolomite. The beds just below the Sallisaw sandy dolomite are dolomitic, indicating that no Frisco is present. The basal 20' is pink crinoidal limestone, with some glauconite in the lower 10' and is tentatively correlated with at least a part of the Tenkiller and Blackgum Formations of the outcrop area.

**Woodford (Chattanooga) Shale 4600'-4624'** (GR log)  
The samples in this interval comprise a mixture of black shale and quartz sandstone (Misener), the latter having well-rounded quartz grains up to 1.5 mm. Some silicification and some chert.

**Hunton Group 4624'-4924'** (GR log)  
4624' (GR log) -4740' (sample depth) Lower Devonian; Sallisaw Formation. Chert mixed with silty dolomite; the chert has scattered dolomite crystals and subangular quartz detritus; the crystalline dolomite has grains of subangular quartz detritus up to 0.4 mm.

4740'-4924' (sample depths) Silurian; Chimneyhill Subgroup.

4740'-4910' (sample depths) ?Quarry Mountain Formation. Weakly to strongly dolomitized organo-detrital limestone and crystalline dolomite with little or no detrital quartz; no chert observed.

4740'-4760' (sample depths) Crystalline dolomite with some organo-detrital limestone.

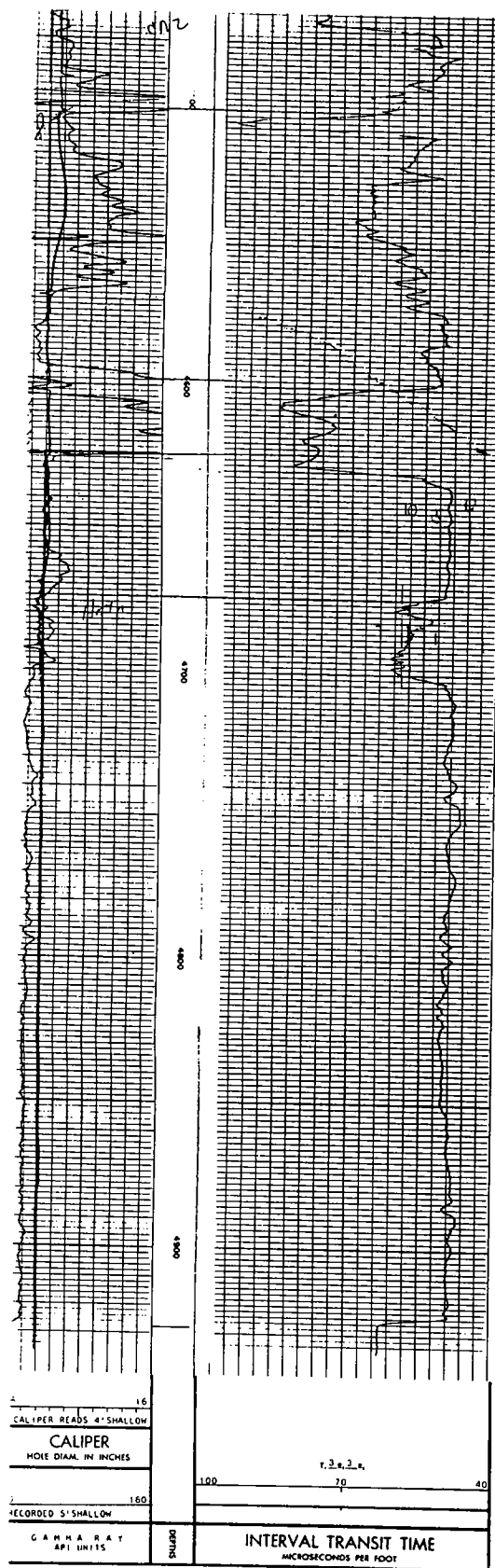
4760'-4850' (sample depths) Mostly moderately to strongly dolomitized organo-detrital limestone.

4850'-4910' (sample depths) Like above, but with substantial crystalline dolomite.

4910'-4920' (sample depths) ?Tenkiller Formation. Pink crinoidal micrite with many ostracodes. Scattered dolomite crystals and very little detrital quartz.

4920'-4930' (sample depths) ?Blackgum Formation. Organo-detrital limestone with some glauconite. No oolites observed.

**Sylvan Shale 4924'-4950'** (TD) (GR log)  
Greenish-gray shale.



**HARPER 1 RAMSEY**—SE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 22, T. 7 N., R. 10 E., Hughes County, Oklahoma; elev. 892' DF; TD 6073' (Ordovician); compl. unknown, D&A. Tops: Woodford 4857' (-3965') (CC), Hunton 4976' (-4084') (CC), 4990' (sample depth), Sylvan 5059' (-4176') (sample depth), Welling 5150' (-4258') (sample depth); Hunton thickness 82'. Samples examined from 4870' to 5190', excellent quality; 11 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

Hunton strata appear to be dominantly in limestone facies. The Chimneyhill is lithologically divisible into an upper crinoidal limestone (?Clarita Formation) and a lower glauconitic limestone (?Cochrane); no basal oolite observed.

*Woodford (Chattanooga) Shale* 4857'-4976' (CC)

*Hunton Group* 4976'-5059' (CC)

4990'-5059' (sample depths) Silurian; Chimneyhill Subgroup.

4990'-5030' (sample depths) The upper 20' is organo-detrital sparite and organo-detrital micrite; mostly pelmatozoan plates with bryozoans and some ostracodes and brachiopods; scattered beds with dolomite crystals, and in the interval from 5010' to 5020' some heavily dolomitized limestone. The basal 10' is a pink crinoidal micrite with ostracodes, bryozoans, etc.; very little dolomite. The entire interval has very little detrital quartz.

5030'-5059' (sample depths) Organo-detrital limestone with glauconite; mainly pelmatozoan plates with some ostracodes, etc. This interval has considerable dolomite.

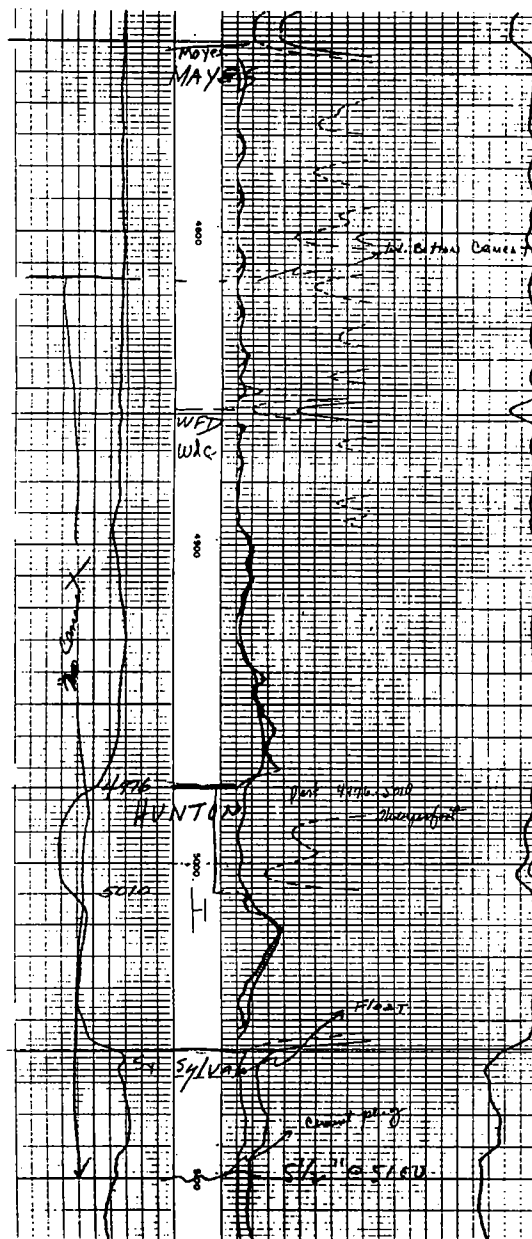
*Sylvan Shale* 5059'-5150' (sample depths)

Upper 20' greenish-gray shale, dark shale below.

*Welling Formation* 5150' (sample depth)

5150'-5160' (thin section) Organo-detrital sparite with many pelmatozoan plates and some brachiopods, bryozoans, and other shelly debris; no detrital quartz; minor dolomite.

5180'-5190' (thin section) Like above, but with some rounded quartz grains and increased dolomite.

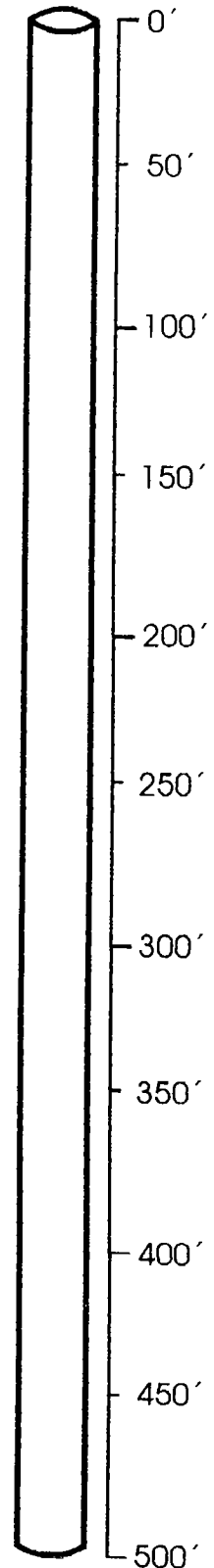


T. L. Gober, 1 Ready

This well is in NW $\frac{1}{4}$  SW $\frac{1}{4}$  SW $\frac{1}{4}$  sec. 1, T. 13 N., R. 23 E., Sequoyah County, about 1 $\frac{1}{2}$  miles north of the St. Clair Lime Company quarry (pl. A and text-figs. 3, 15). The well was drilled in 1961 with cable tools. No elevation or electric log was run. Cuttings were studied from 0 to 201 feet in erratic intervals, and the sample quality is good. Only Silurian rocks are present, as the well was spudded in alluvial deposits overlying the Marble City Member (Lower Devonian strata are present in this area). Silurian rocks are 164 feet thick (20-184 feet; text-fig. 3) and comprise five units: Quarry Mountain Formation 140 feet (20-160), Marble City Member 61 feet (20-81) and Barber Member 79 feet (81-160), Tenkiller Formation, Blackgum Formation, and Pettit Oölite 24 feet (160-184). Individual thicknesses of the Tenkiller and Blackgum are uncertain, as sample 171-175 contains both units. Sylvan Formation was encountered in sample 184-192 feet. Samples were missing from 114-126 feet.

Depth (feet)	Thickness (feet)	Description
0- 20	20	ALLUVIAL DEPOSITS: Unconsolidated fine- to coarse-grained subangular to well-rounded sand; with fragments of chert and light-colored limestone.
		QUARRY MOUNTAIN FORMATION: 140 feet (20-160).
		<i>Marble City Member:</i> 61 feet (20-81). Off-white to pink crinoidal limestone; in part dolomitic; gray fine-crystalline dolomite.
20- 22	2	Limestone, off-white to pink, crinoidal; abundant crinoidal debris.
22- 30	8	Limestone, off-white to pink, crinoidal; abundant crinoidal debris; in part dolomitic; dolomite, gray, fine-crystalline, 10%.
30- 33	3	Limestone, as above; dolomite, as above, 20%.
33- 35	2	Limestone, as above; dolomite, as above, 15%.
35- 40	5	Limestone, as above, more pink crinoidal; trace of dolomite, as above.
40- 66	26	Limestone, pink to off-white, crinoidal; abundant crinoidal debris.
66- 81	15	Limestone, pink to off-white, crinoidal; in part dolomitic.
		<i>Barber Member:</i> 79 feet (81-160). Light-gray to gray fine-crystalline dolomite; in part calcitic. No sample from 114-126 feet.
81-114	33	Dolomite, light-gray to gray, fine-crystalline; in part calcitic.
114-126	12	Samples missing.
126-151	25	Dolomite, light-gray to dark-gray, fine-crystalline.

Log not available



- 151-160 9 Dolomite, as above; slight trace of Tenkiller limestone.
- 160-175 15 **TENKILLER FORMATION:** Light-gray to gray to pink pyritic limestone; abundant orange crinoidal material, 1-3% residue. Thickness uncertain, as sample interval 171-175 contains 60% Tenkiller limestone and 40% Blackgum limestone.
- BLACKGUM FORMATION:**
- 175-180 5 Gray to dark-gray glauconitic dolomitic limestone, 55%; light-gray fine-crystalline glauconitic dolomite, 10%; clear white to gray opaque chert, 35%. Thickness uncertain, as both Tenkiller and Blackgum are present in sample 171-175.
- 180-184 4 *Pettit Oölite:* Gray to dark-gray silicified oölite. Thickness uncertain, as sample interval 180-184 contains 55% Blackgum dolomite; 45% Blackgum chert mixed with abundant silicified oölite.
- 184-201 17 **SYLVAN FORMATION:** Thickness not determined, as samples were only studied to 201 feet. Gray-green to green shale.

FALCON-SEABOARD 1 REED—NW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub>  
sec. 16. T. 9 N., R. 7 E., Seminole County, Oklahoma;  
elev. 1009' DF (1004' GL); TD 4458' (Ordovician);  
compl. 10/28/52, D&A. Tops: Woodford 4063'  
(-3054') (CC), Hunton 4091' (-3082') (SP log), Syl-  
van 4223' (-3214') (SP log), Welling 4316' (-3307')  
(SP log); Hunton thickness 132'. Samples examined  
from 4090' to 4350', good quality; 13 thin sections;  
samples, Oklahoma Well Sample Service, Shawnee,  
Oklahoma.

The upper 15' (to 4115', sample depth) is an organo-  
detrital crinoid-bryozoan sparite showing no trace  
of dolomite or quartz. This is provisionally assigned  
to the Frisco Limestone on the bases of lithology  
and stratigraphic position (cf. 1 Boley). Beneath this  
is weakly to moderately dolomitized pink crinoidal  
micrite here assigned to the Chimneyhill Subgroup  
on the basis of lithology and stratigraphic position;  
some fine angular quartz detritus, especially in the  
upper part. Much of this is lithologically similar to  
the micritic facies of the Clarita Formation in the  
Arbuckle Mountains, including degree of dolomitiza-  
tion.

*Woodford (Chattanooga) Shale* 4063'-4091' (CC)

No Misener Sandstone observed.

*Hunton Group* 4091'-4223' (SP log)

4091-4115' (sample depths) Lower Devonian;  
Frisco Formation. Organo-detrital crinoid-bryo-  
zoan sparite with some arthropods, brachio-  
pods, etc. No dolomite or quartz observed. Some  
matrix porosity.

4115'-4190' (sample depths) Silurian; Chimney-  
hill Subgroup. Weakly to moderately dolomitized  
pink crinoidal micrite with ostracodes, trilobites,  
brachiopods, bryozoans, etc. Some fine (to 0.1 mm)  
angular quartz detritus, mostly in the upper 20'.

4190'-4200' (sample depths) Moderately to  
heavily dolomitized pink crinoidal micrite with  
very little quartz. Parts have the matrix composed  
entirely of crystalline dolomite with some porosity  
and only scattered corroded pelmatozoan plates.

4200'-4240' (sample depths) Pink crinoidal mi-  
crite with a moderate amount of spar cement.  
Weakly dolomitic and with very little quartz.

*Sylvan Shale* 4223'-4316' (SP log)

Upper 10'-20' greenish-gray shale, underlain by  
medium-gray shale.

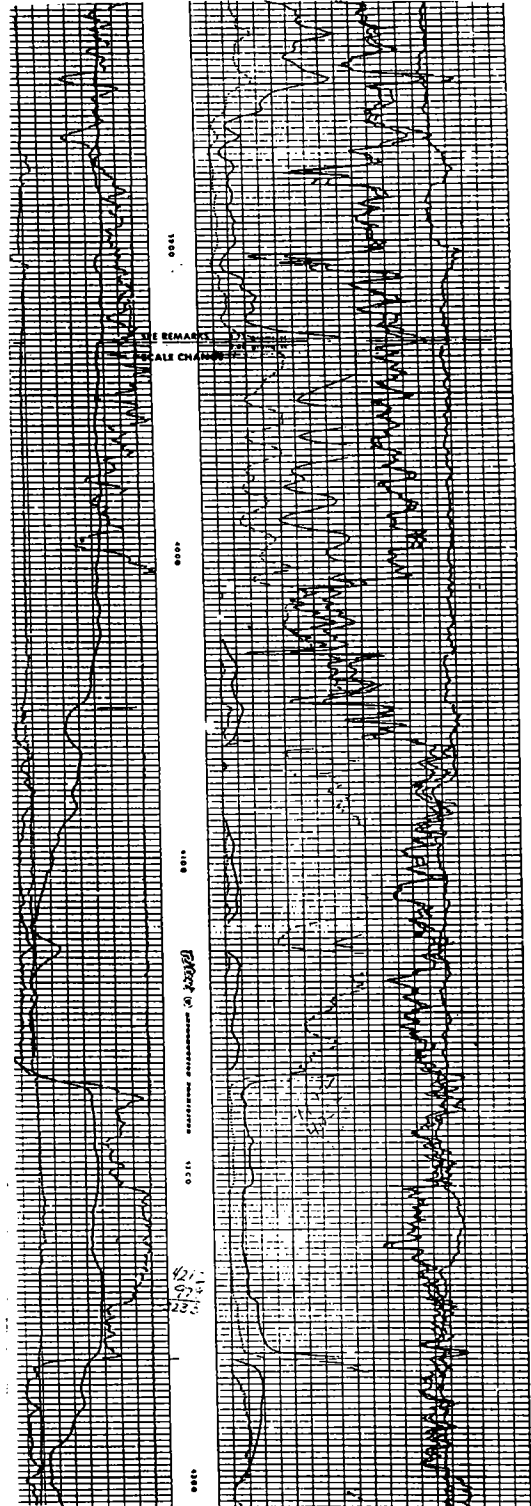
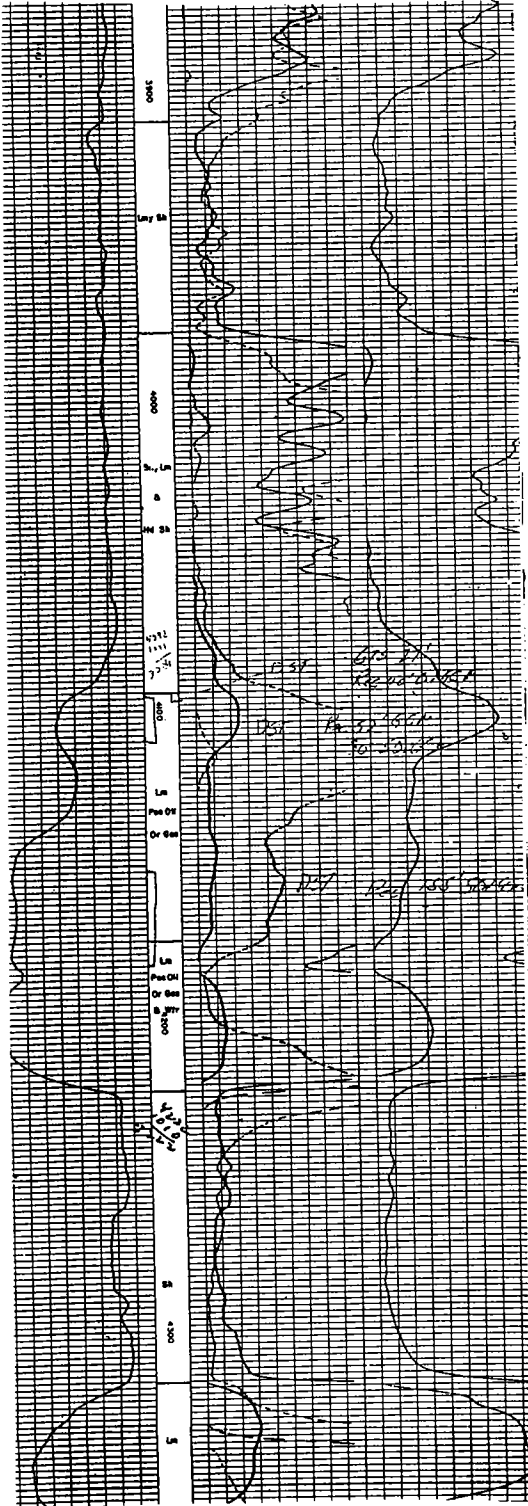
*Welling Formation* 4316' (SP log), 4325' (sample  
depth)

4330'-4335' and 4345'-4350' (thin sections) Or-  
gano-detrital sparite with minor micrite; mostly  
crinoid plates with other shelly debris. A few  
scattered quartz grains and minor dolomite.



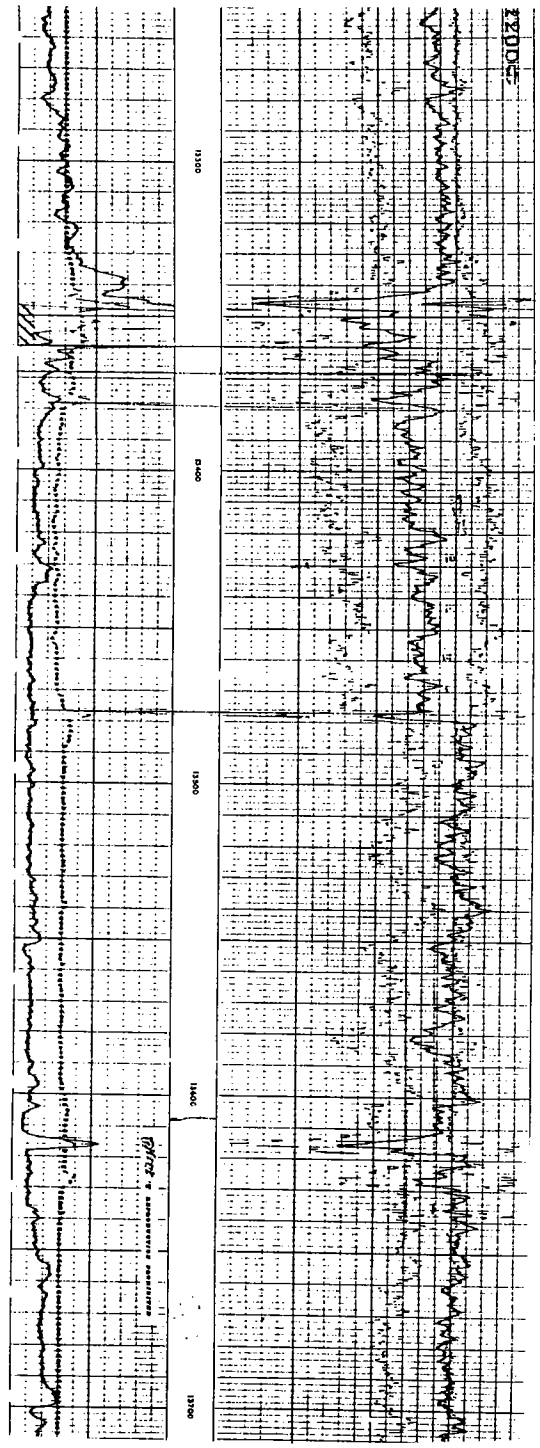
Falcon-Seaboard  
 1 Reed  
 NW NW NE  
 Sec. 16, T. 9 N., R. 7 E.  
 Seminole County, Oklahoma  
 elev. 1009'

Genesis, Inc.  
 5 Naifen  
 NW SE SW  
 Sec. 15, T. 9 N., R. 7 E.  
 Seminole County, Oklahoma  
 elev. 979'



**PAN AMERICAN PETROLEUM CORP. 1 REEVES UNIT** — C NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 29, T20N, R23W, Ellis County, Oklahoma; elevation GL (Na), DF 2,474 ft; TD 14,125 ft (Viola Group); completion 4/4/67.

Lower Woodford–Hunton–Sylvan–upper Viola samples examined by Amsden, 1978; 25 thin sections. Illustrated in Amsden (1980, p. 42, text-fig. 16).



JONES & PELLOW 1 REHERMAN--C NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 25,  
T. 15 N., R. 6 W., Kingfisher County, Oklahoma;  
elev. 1174'; TD 7989' (Hunton); compl. 3/22/68,  
no Hunton production reported. Tops: Wood-  
ford (CC) 7658' (-6484'), Hunton (CC) 7720'  
(-6546'). Cored 7867'-7923' (all Hunton);  
2 thin sections; chemical analyses; OU Core  
Library.

This core yields small brachiopod fauna at  
7911'-7912' with similarities to Clarita  
fauna (Amsden, 1968, p. 18).

Woodford Shale 7658'-7720'  
Hunton Group 7720'-7989' (TD)

7720'-7867' No core.

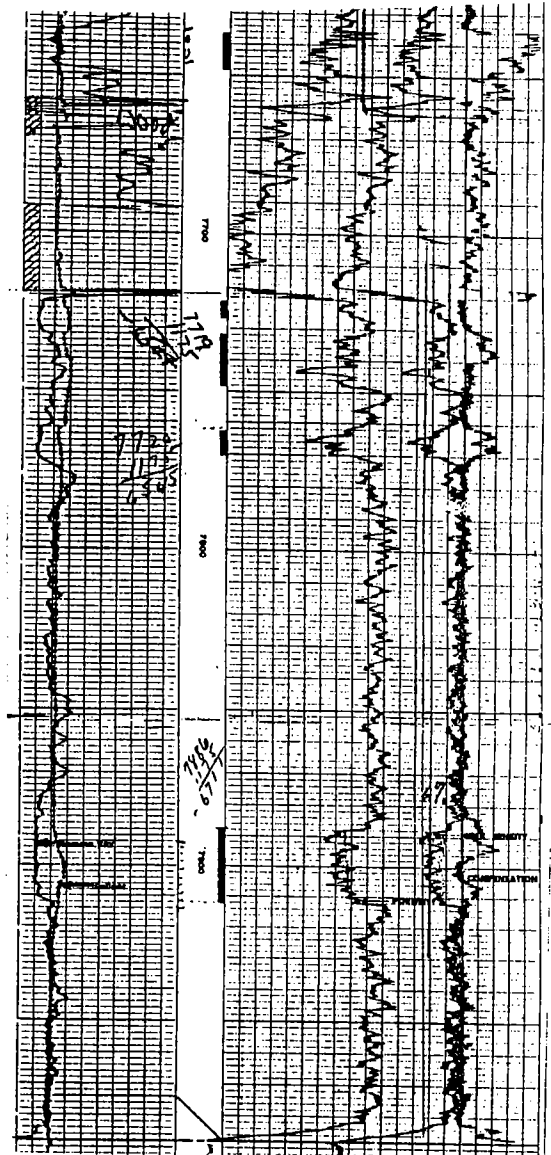
7867'-7909' Silurian; ?Chimneyhill Subgroup.

Light-gray organo-detrital limestone, partly  
micrite cement, partly spar cement. Low in  
dolomite and in insoluble detritus; MgCO<sub>3</sub>  
averages 7.48%, HCl insolubles 3.68%.

Reference of this unit to Chimneyhill Sub-  
group is uncertain, as no diagnostic fossils  
were observed; it is lithologically somewhat  
like underlying beds, which do yield fossils.

7909'-7923' Chimneyhill Subgroup, Clarita  
Formation. Light-gray to greenish-gray  
argillaceous, organo-detrital limestone,  
mostly micrite cement. Relatively low  
dolomite content; MgCO<sub>3</sub> averages 13.07%,  
HCl insolubles 12.33%. Small brachiopod  
fauna collected at 7911'-7912'; Plicocyrtria  
arkansana? Amsden, Resserella sp. (cf. to  
Resserella sp. Amsden, 1968, pl. 3, figs.  
5a-5h), ?Leangella sp. (cf. to L. (O.)  
dissiticostella Amsden, 1968, pl. 16, figs.  
1a-1e), ?Howellella splendens (Thomas),  
Atrypa sp.; calymenid trilobite at 7919'.  
Assigned to Clarita Formation on basis of  
this fauna.

7923'-7989' (TD) No core.



**JONES AND PELLOW OIL CO. 1 REHERMAN —**  
NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 25, T15N, R6W, Kingfisher County, Okla-  
homa; elevation GL 1,164 ft, DF 1,174 ft; TD 7,989 ft (Hun-  
ton); completion 12/23/67.

Cored 56 ft of Hunton strata starting 147 ft below the  
Woodford-Hunton contact. It cuts a fossiliferous section of  
low magnesium marlstones and skeletal grainstones with  
several brachiopods in the lower part. Point counts of thin  
sections in the lower part of the core show: 61% micrite  
matrix, 18% pelmatozoan plates, 1.6% ostracodes, 5.2% tri-  
lobites, 3.9% bryozoans, 4.5% brachiopods. Described in  
Amsden (1975, p. 96). *Illustrated on PLATE 1, STRATIGRAPHIC*  
*SECTION A-A' (which includes a list of brachiopods).*

CONTINENTAL 1 REINHARDT—C SW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec.

10, T. 10 N., R. 26 E., Sequoyah County, Oklahoma; elev. 433' KB; TD 7357' (Simpson); compl. 5/10/66, no Hunton production reported. Tops: Woodford 6342' (-5909') (GR log), Hunton 6374' (-5941') (GR log), Sylvan 6672' (-6239') (sample depth), Welling 6710' (-6277') (sample depth); Hunton thickness 298'. Samples examined from 6420' (air drilled above this point) to 7357'; 10 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

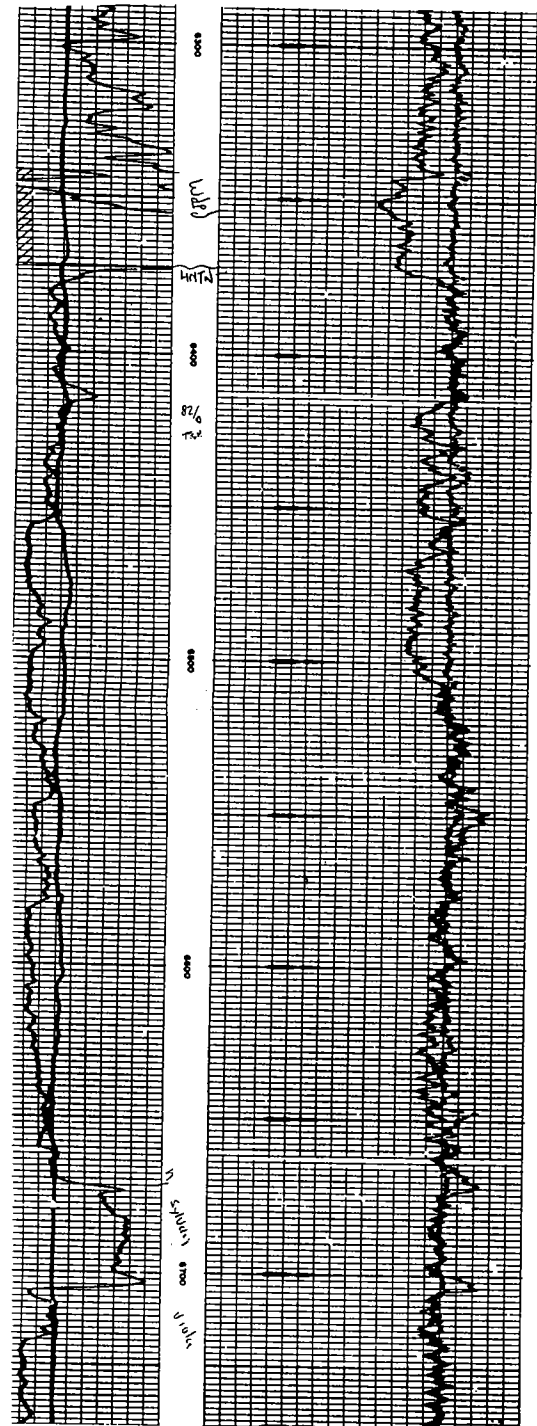
This well was air drilled to a depth of 6420'. The samples above this point are too fine to be useful (GR log indicates Woodford-Hunton contact at 6374'). From 6420' to 6450' the samples are a mixture of dark shale and chert, possibly with some carbonate (presumably with quartz sand grains). This interval is assigned to the Sallisaw Formation (GR log indicates the Sallisaw-Chimneyhill contact to be at 6454'). Hunton strata from 6454' to the Sylvan Shale are almost entirely crystalline dolomite and are provisionally assigned to the Chimneyhill on the basis of lithology and stratigraphic position (see following discussion).

*Woodford (Chattanooga) Shale* 6342'-6374' (GR log)  
*Hunton Group* 6374' (GR log) -6672' (sample depth)  
 6374'-6452' (GR log) ?Lower Devonian; ?Sallisaw Formation. Probably all chert and carbonate with quartz sand.

6452' (GR log) -6672' (sample depth) ?Silurian; ?Chimneyhill Subgroup. Almost all crystalline dolomite with only minor dolomitized organo-detrital limestone. Much appears to be porous, and some is impregnated with a dark material. No detrital quartz observed. These strata occupy the stratigraphic position of the Chimneyhill, and the regional biostratigraphic and lithostratigraphic relations suggest that the entire interval represents this subgroup. The absence of detrital quartz and the high degree of dolomitization seem to rule out the presence of either Sallisaw or Frisco. (See Chimneyhill Subgroup in text; also 1 Western Coal & Mining Co. well in Appendix.)

*Sylvan Shale* 6672'-6710' (sample depths)  
 Greenish-gray (above) and dark-gray (below) shale.  
*Welling Formation* 6710'-6730' (sample depths)  
 6710'-6720' (thin section) Organo-detrital sparite with no detrital quartz or dolomite observed.

*Fite Limestone* 6730' (sample depth)  
 6740' (thin section) Pellet sparite and dense ?algal limestone with well-formed dolomite crystals.



SUNRAY DX 10-A RENTIE--NE $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 14,  
 T. 9 N., R. 6 E., Seminole County, Oklahoma;  
 elev. 976'; TD 4413' (Simpson); compl. 10/4/66,  
 Hunton oil production reported. Tops: Wood-  
 ford (CC) 3956' (-2980'), Hunton (CC) 4029'  
 (-3053'), Sylvan (core) 4104' (-3128'); Hunton  
 thickness 75'. Cored 4030'-4110' (Hunton-  
 upper Sylvan); 8 thin sections; chemical  
 analyses; porosity tests (Earlougher Engineer-  
 ing Co., Tulsa, Oklahoma); OU Core Library.

Cored portion of Hunton is a low-magnesium  
 limestone which appears to be assigned to  
 Chimneyhill Subgroup with reasonable cer-  
 tainty. Mr. L. A. Brandon, Sun Oil Company,  
 provided porosity data showing reasonably  
 good porosity throughout most of core, and  
 this well is therefore a good example of  
 low-magnesium limestone with satisfactory  
 porosity (see discussion in text, Porosity  
 and Permeability in Late Ordovician and  
 Silurian Strata, and part IV of Appendix).

Woodford Shale 3956'-4029'

Hunton Group 4029'-4104'

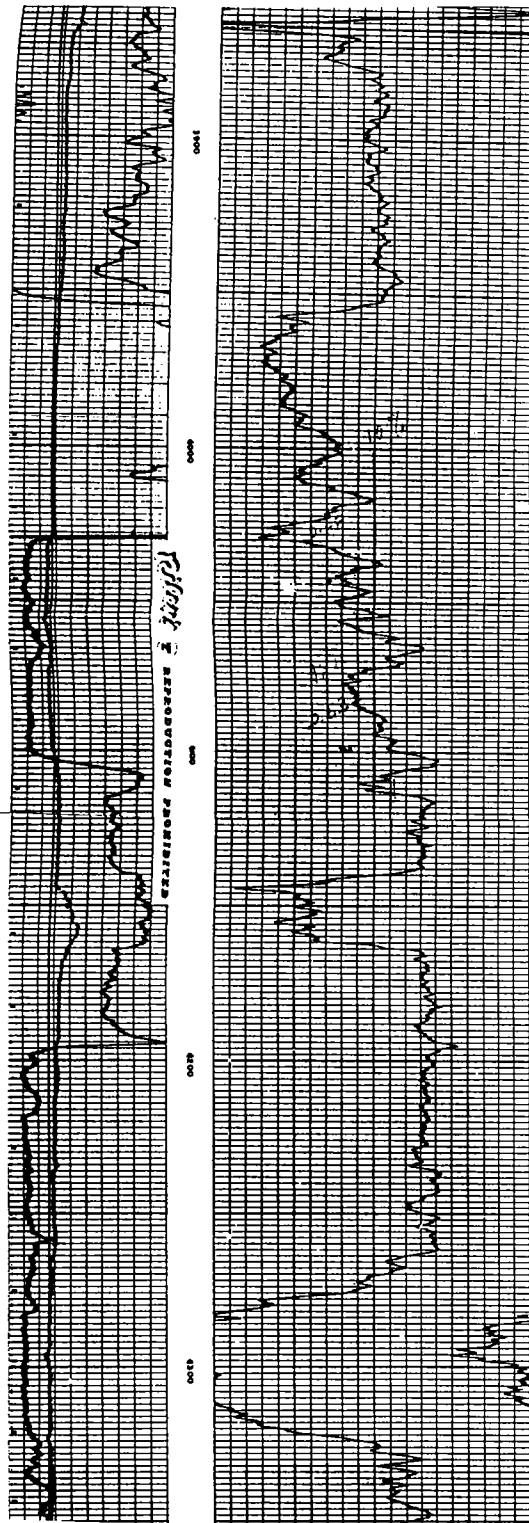
4029'-4030' No core.

4030'-4104' Silurian; Chimneyhill Subgroup.

Mostly pelmatozoan limestone with some  
 shelly debris. It is low-magnesium lime-  
 stone with very little insoluble detritus;  
 MgCO<sub>3</sub> averages 7.9%, HCl-insoluble debris  
 2.07%. This rock has considerable visual  
 vuggy porosity, most of which appears to be  
 concentrated in matrix; solution producing  
 this may extend into and corrode fossils,  
 but its primary locus appears to be in  
 matrix. Also some recrystallization in rock,  
 although original fossil texture is largely  
 preserved. Porosity averages 6.32%, per-  
 meability 1.36 md. Entire cored interval  
 assigned to Chimneyhill Subgroup on basis  
 of lithology and stratigraphic position.

Sylvan Shale 4104'

4104'-4110' Core; calcareous shale; 15.11%  
 MgCO<sub>3</sub>, 57.20% HCl insolubles.



SUNRAY DX 10-A RENTIE—NE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec. 14, T. 9 N., R. 6 E., Seminole County, Oklahoma; elev. 976'; TD 4413' (Simpson); compl. 10/4/66, Hunton oil production reported. Tops: Woodford 3956' (-2980') (CC), Hunton 4029' (-3053') (CC), Sylvan 4104' (-3128') (core); Hunton thickness 75'. Cored 4030'-4110' (Hunton-upper Sylvan); 8 thin sections, chemical analyses, porosity tests, Earlougher Engineering Co., Tulsa, Oklahoma; OU Core Library; Described in Amsden (1975b, p. 97, 149, 161-171).

This is a dolomitized organo-detrital limestone with a variable MgCO<sub>3</sub> content; seventeen chemical analyses show a range in MgCO<sub>3</sub> content from 1.59% to 21.94%, averaging 7.9%. It is low in insoluble detritus throughout, averaging 2.07%. It appears to have been subjected to extensive solution, producing numerous cavities and some recrystallization; reasonably good porosity is developed throughout. Described in Amsden (1975b, p. 161-171).

James Barrick recovered conodonts from 3 samples in the upper 40' of the cored interval and reports a fauna as given in the following table:

Barrick states (letter, May 18, 1976) that the fauna indicates a Clarita Formation (*Kockelella amsdeni* zone; Barrick and Klapper, 1976, p. 65-67) or younger zone. On the basis of this evidence, the upper part of the cored strata is assigned to the Clarita Formation of the Chimneyhill Subgroup. No lithologic subdivisions have been recognized in the core, and the presence of other Chimneyhill Subdivisions is conjectural.

Woodford (*Chattanooga*) Shale 3956'-4029' (CC)

Hunton Group 4029' (CC) -4104' (core)

4029'-4030' No core; samples not examined.

4030'-4104' (core) Silurian; Chimneyhill Subgroup. Dolomitic organo-detrital crinoidal limestone, some beds having substantial bryozoan and other shelly debris. The HCl-acid insolubles are low throughout. Clarita conodonts 4030'-4040'.

Sylvan Shale 4104'-4110' (core)

4104'-4110' (core) Calcareous shale with 15.11% MgCO<sub>3</sub> and 57.20% HCl-acid insolubles.

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SUNRAY DX 10-A RENTIE

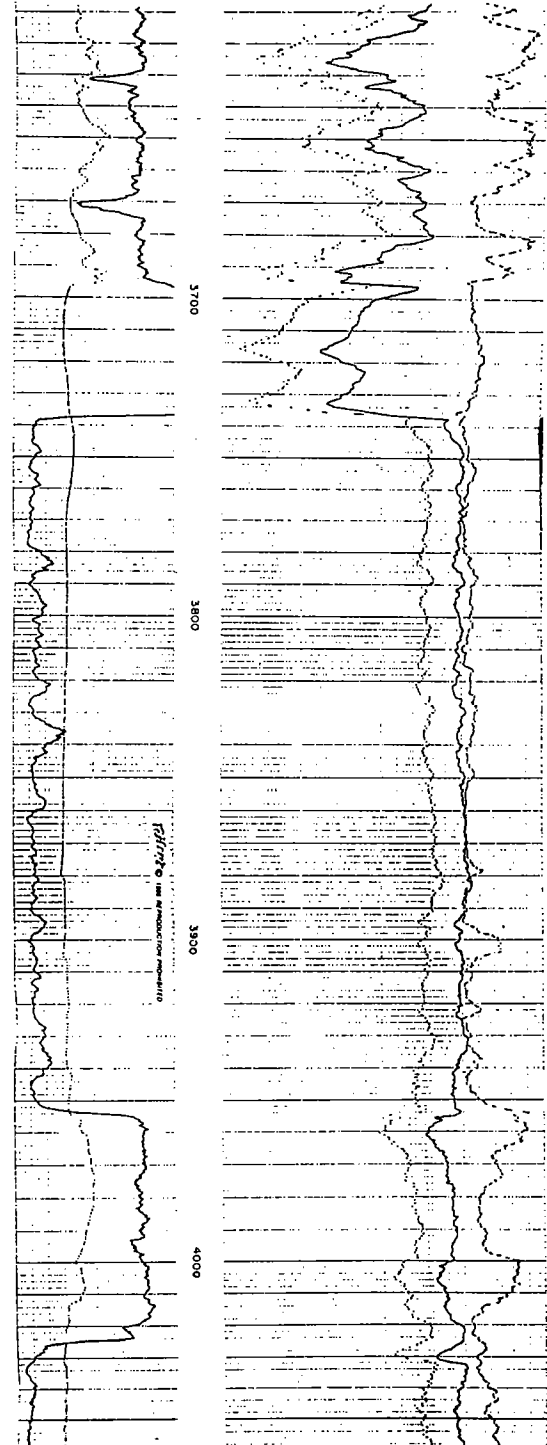
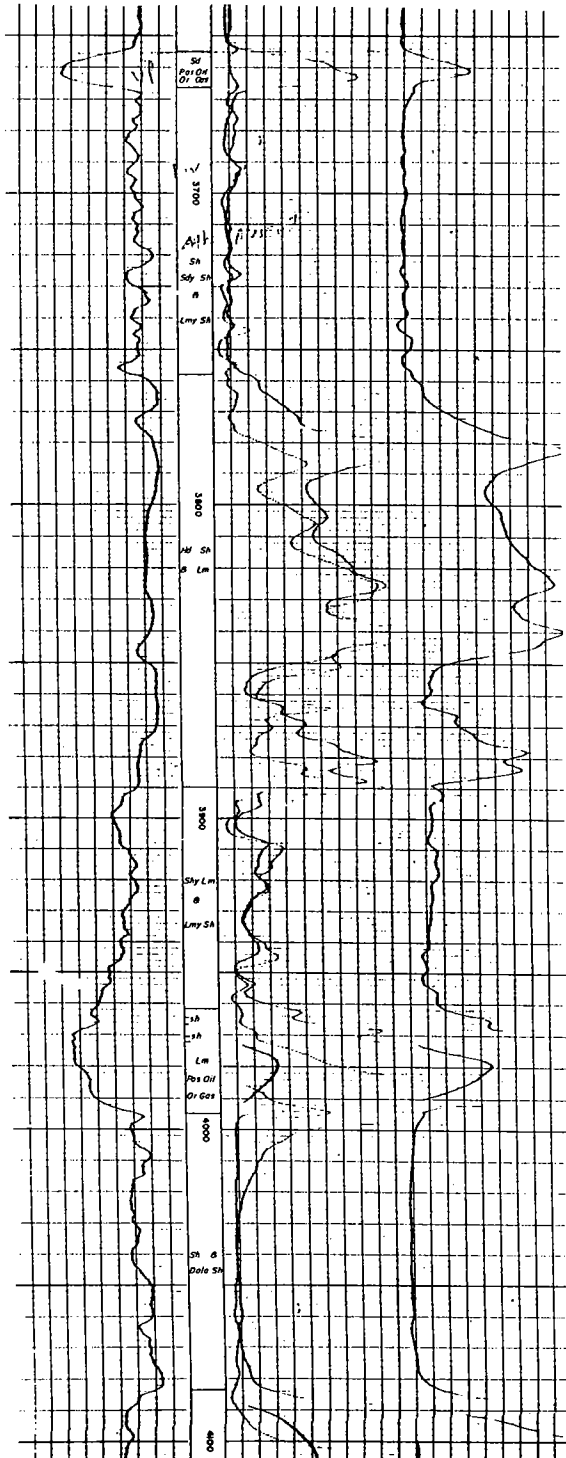
Depth (ft)	Grams dissolved	Specimen type	Number of specimens
4030	970	<i>Panderodus unicostatus</i>	35
		<i>Walliserodus</i> sp.	4
		<i>Dapsilodus obliquicostatus</i>	1
		Ramiform elements (indet.)	2
4035	750	<i>Panderodus unicostatus</i>	8
		<i>Walliserodus</i> sp.	1
		Ramiform elements (indet.)	1
4040	1000	<i>Panderodus unicostatus</i>	17
		<i>Panderodus</i> sp.	1
		<i>Walliserodus</i> sp.	2
		<i>Dapsilodus obliquicostatus</i>	11
		<i>Belodella</i> sp.	2
		<i>Pseudoneotodus</i> sp.	1
		Ramiform elements (indet.)	1

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SHERROD & APPERSON 3 RICHARDSON—  
SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub>sec. 17, T. 7 N., R. 4 E., Pottawatomie  
County, Oklahoma; elev. 981' DF; TD 4132' (SP log);  
(samples only go to 4003') (Ordovician); compl. un-  
known. Hunton production reported (perf. 3912'-  
3924'). Tops: Woodford 3738' (-2757') (CC), Hunton  
3830' (-2848') (sample depth), Sylvan 3995' (-3014')  
(sample depth); Hunton thickness 165'. Samples ex-  
amined from 3680' to 4003' (last sample), poor quality  
with considerable contamination; 11 thin sections;  
samples, Oklahoma Well Sample Service, Shawnee,  
Oklahoma.

Sherrod & Apperson  
 3 Richardson  
 SW SW SE  
 Sec. 17, T. 7 N., R. 4 E.  
 Pottawatomie County, Oklahoma  
 elev. 981'

11 Wyatt  
 SW NE SW  
 Sec. 17, T. 7 N., R. 4 E.  
 Pottawatomie County, Oklahoma  
 elev. 959'



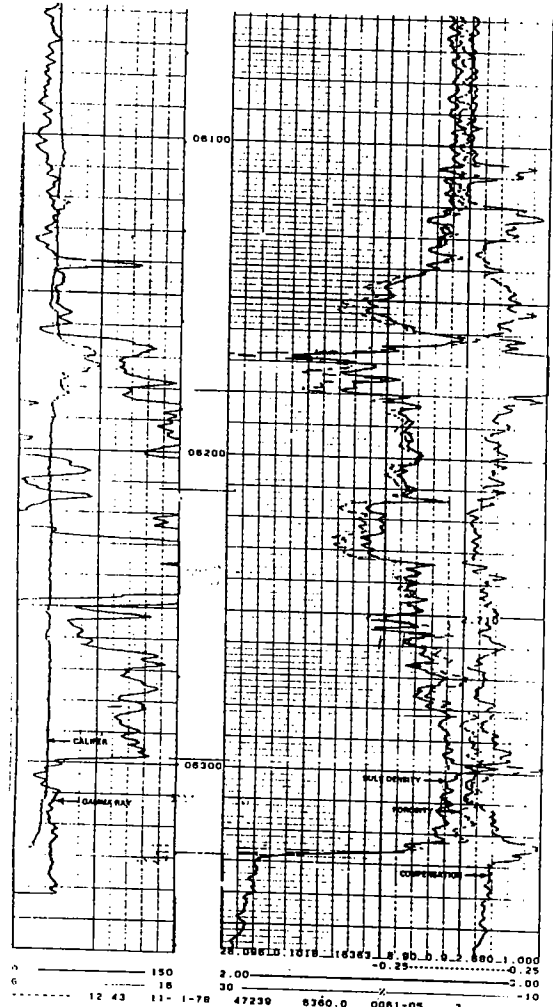
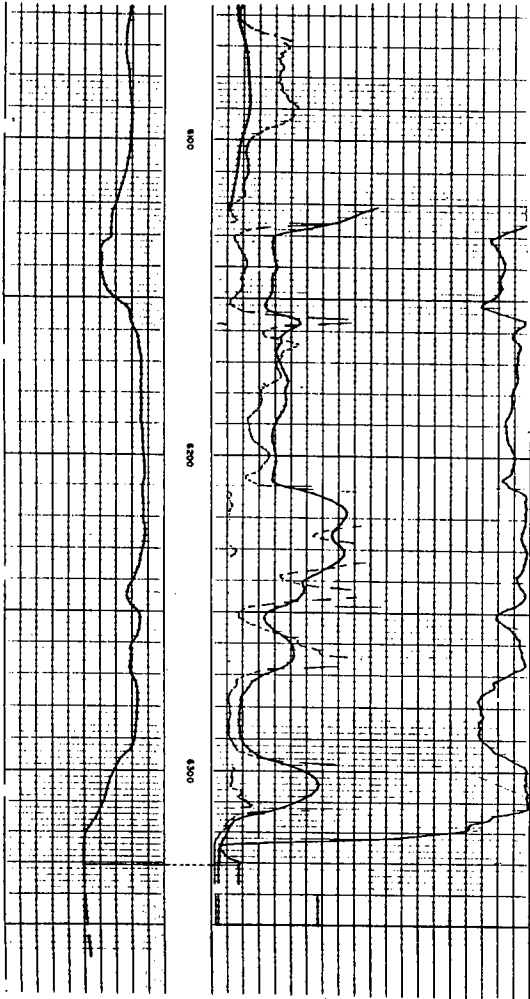


AMERADA 1 RICHEY--C N $\frac{1}{2}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 33, T. 25 N.,  
R. 6 W., Grant County, Oklahoma; elev. 1082';  
TD 6332' (Viola); compl. 1/21/65, Misener  
production reported. No tops reported.  
Cored 6235'-6266' (all Misener); 3 thin  
sections; chemical analyses; OU Core Library.

This well is situated north of Hunton zero  
isopach (panel 1, map A; panel 9), in an area  
where Misener presumably rests directly on  
Sylvan Shale. Conodonts from this core indi-  
cate an early Late Devonian (early Frasnian)  
age (Amsden and Klapper, 1972, p. 2328-2330).  
Misener in this area is believed to be over-  
lain by Woodford Shale and underlain by Sylvan  
Shale (Amsden and Klapper, 1972, p. 2325). It  
is dolomitic quartz sandstone grading into  
sandy dolomite; insolubles, most of which are  
detrital quartz, range from 26.6% to 62.8%,  
and MgCO<sub>3</sub> from 30.6% to 13.0%. Quartz grains  
are generally subrounded, and many have quartz  
overgrowths giving them an angular external  
shape (Amsden and Klapper, 1972, fig. 4).

Amerada  
 1 Richey  
 N/2 SW NW  
 Sec. 33, T. 25 N., R. 6 W.  
 Grant County, Oklahoma  
 elev. 1082'

Vaughn Good  
 1 Janzen  
 NE SW  
 Sec. 33, T. 25 N., R. 6 W.  
 Grant County, Oklahoma  
 elev. 1079'



HOLE SIZE - INCHES	16	CORRECTION	
CALPER		DENSITY POROSITY (%)	
D	150	BULK DENSITY	
150	300	GRAIN DENSITY	
GAMMA RAY		BULK DENSITY	
API - 15 UNITS		GRAMS/CC	
Company	VAUGHN GOOD	OO #	6328
Well	JANZEN NO. 1	OO 10	6329
Field	NORTH KREMLIN	OO 10	6330
County	GRANT	OO	1079
	State OKLAHOMA	OO	1082
		OO	1083

SAMEDAN 2 RIO BRAVO--1980' FSL & 1980' FEL  
 sec. 23, Blk. 42, H&TC Survey, Hemphill County,  
 Texas; elev. 2521'; TD 15,680' (Ordovician);  
 compl. 3/22/68. Tops: Woodford 15,210'  
 (GR log) (-12,689'), Hunton 15,234' (GR log)  
 (-12,713'), Sylvan (GR log) 15,374' (-12,853');  
 Hunton thickness 140'. Cored 15,250'-15,283'  
 (all Hunton); Chevron Oil Co., Oklahoma City,  
 Oklahoma.

No fossils observed in upper 17' of core;  
 specimens of *Halysites* sp. observed at 15,267',  
 15,273', and 15,278', and on basis of these  
 fossils entire core interval is tentatively  
 assigned to Silurian, ?*Kirkidium* biofacies.

Woodford Shale 15,210'-15,234' (GR log)

Hunton Group 15,234'-15,250' No core.

15,250'-15,267' Silurian; ?*Kirkidium* bio-  
 facies. Gray fossiliferous limestone with  
 oolitic beds 15,255'-15,260'. No identi-  
 fiable fossils observed.

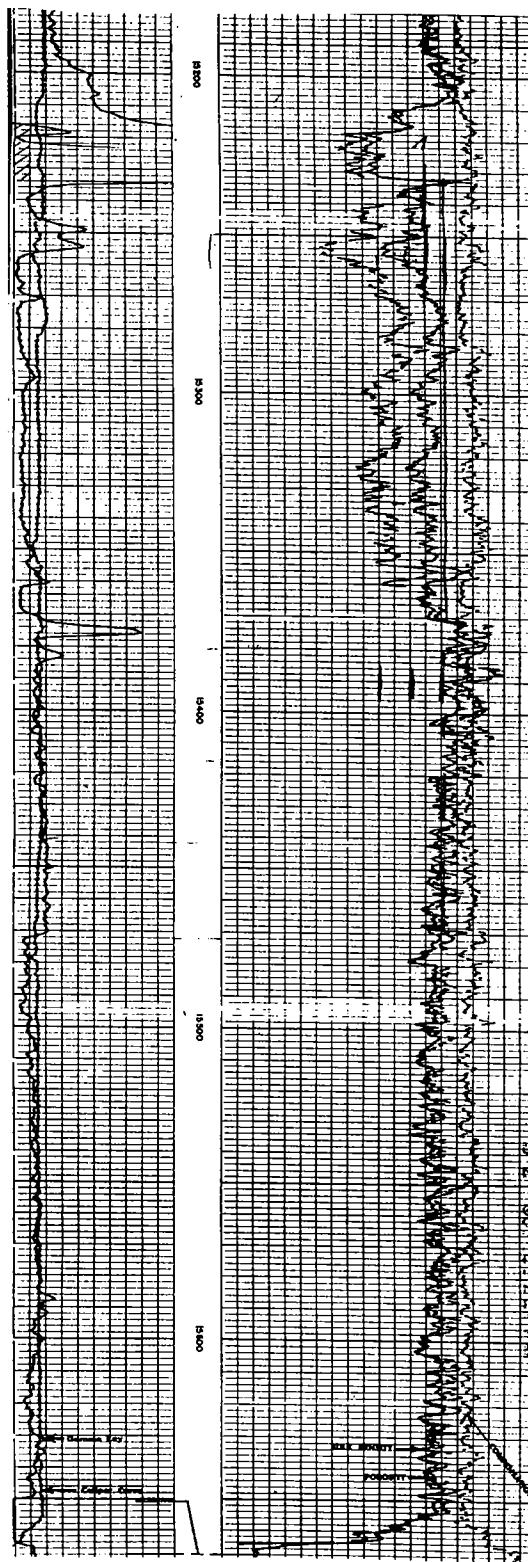
15,267'-15,283' Gray limestone with much  
 broken fossil debris. Specimens of *Haly-*  
*sites* sp. observed at 15,267', 15,273', and  
 15,278'.

15,283'-15,374' No core.

Sylvan Shale 15,374' (GR log)

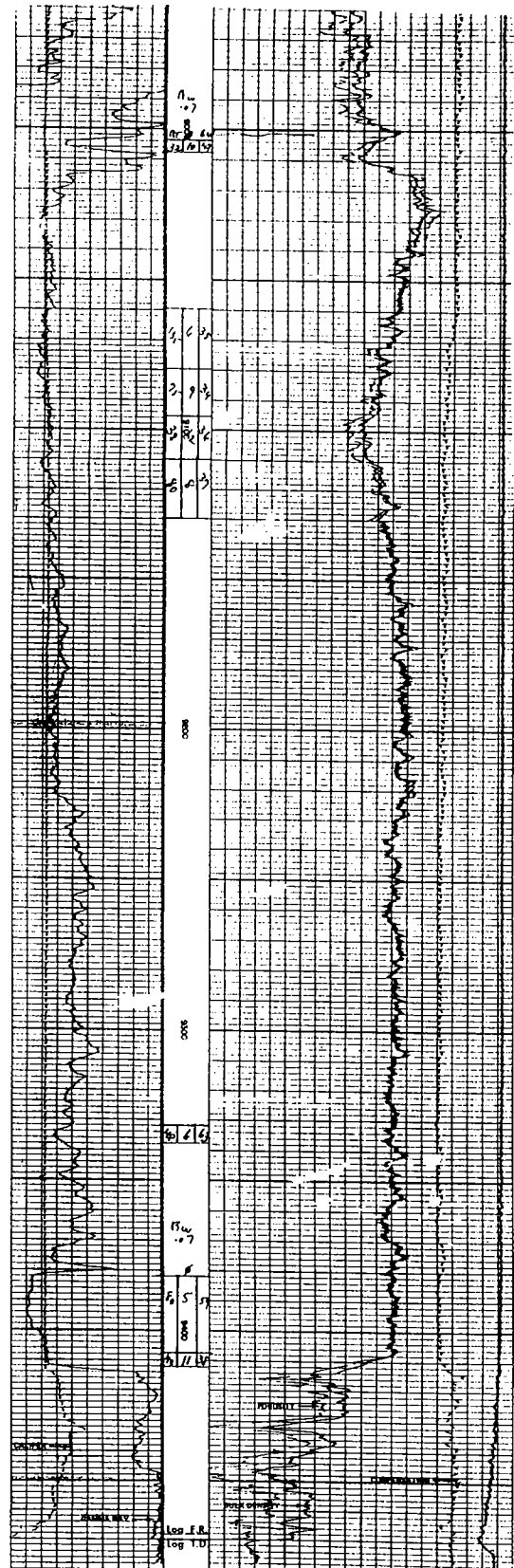
SAMEDAN 2 RIO BRAVO — 1,980 ft FSL & 1,980 ft FEL,  
 sec. 23, Blk. 42, H&TC Survey, Hemphill County, Texas;  
 elevation GL 2,546 ft, KB 2,564 ft; TD 15,655 ft (last sample)  
 (Viola Group); completion 3/22/68.

Cored 15,250-15,280 ft (Hunton), 15,460-15,490 ft  
 (Viola). Described in Amsden (1975, p. 97). Reexamined in  
 1979 and the samples studied from lower Woodford to TD  
 (Viola Group); 19 thin sections. *Illustrated on PLATE 2,*  
*STRATIGRAPHIC SECTION C-C'.*



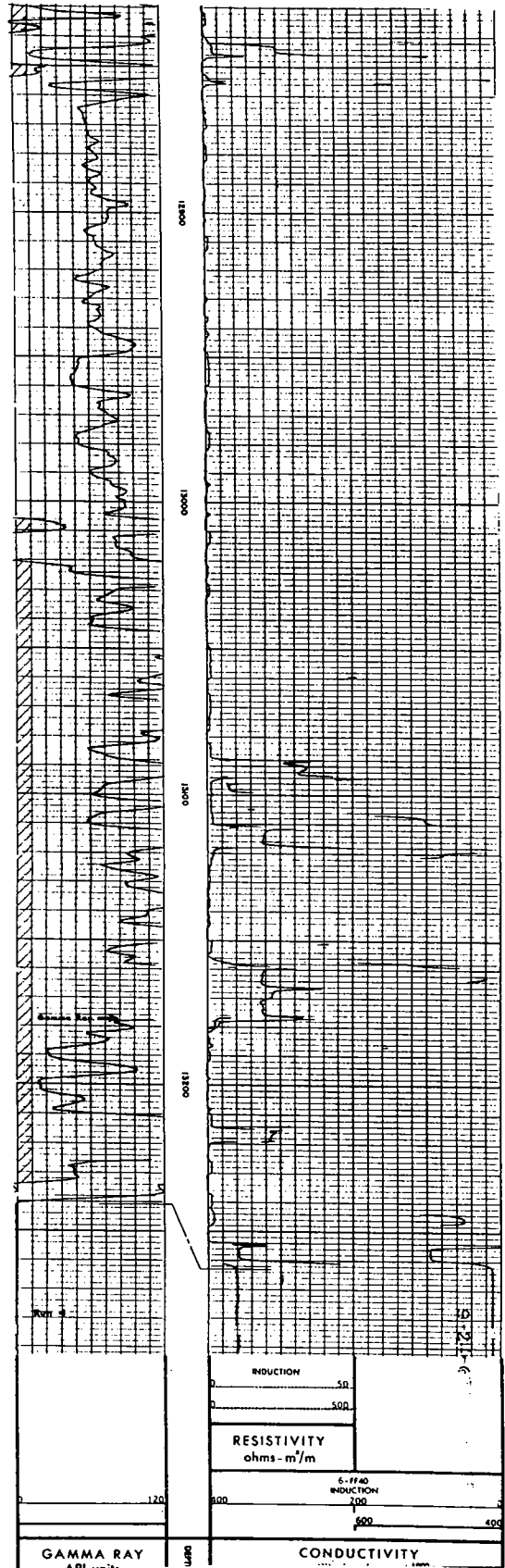
**KEITH F. WALKER 1 CHAN RIX VICTORY — C W 1/2 NE 1/4 sec. 32, T3S, R2W, Carter County, Oklahoma; elevation 935 ft (unk); TD 9,473 ft (Sylvan); completion 4/20/81.**

Samples examined 9,000–9,473 ft (TD). Upper part (9,000–9,150 ft) appears mixed (faulted?), but from 9,200 ft to TD appears to be an uninterrupted sequence of low magnesium marlstone (9,150–9,380 ft) underlain by low magnesium skeletal grainstones, glauconitic in the lower part (Chimneyhill); Sylvan Shale 9,430–9,473 ft (TD). Samples examined by Amsden, 1987; 13 thin sections.



MIDWEST 1 ROBBS UNIT—1980' FEL & 1980' FSL  
 sec. 26, T. 7 N., R. 26 E., Le Flore County, Oklahoma;  
 elev. 646.7' KB (524.5 GL); TD 13,271'; ?13,440' (GR  
 log); compl. 9/13/63, D&A. Tops: Woodford 13,020'  
 (-12,473') (CC), Hunton 13,260' (-12,713') (CC).

This well was air drilled, and the samples were too  
 fine for study.



PAN AMERICAN 1-B ROETZAL UNIT--NW $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 13,  
 T. 19 N., R. 10 W., Blaine County, Oklahoma;  
 elev. 1170'; TD 8500' (Hunton); compl. 1/14/65,  
 D&A. Tops: Woodford (CC) 8407' (-7237'),  
 Hunton (core) 8434' (-7264'). Cored 8414'-  
 8470' (Woodford-Hunton); chemical analyses;  
 5 thin sections; OU Core Library.

Specimens of Kirkidium pingue pingue (Amsden)  
 from this well (depth 8437') illustrated in  
 Amsden (1969, pl. 117, fig. 12). Specimens  
 of Kirkidium observed directly below Woodford,  
 indicating absence of any Lower Devonian  
 strata.

Woodford Shale 8407'-8434'

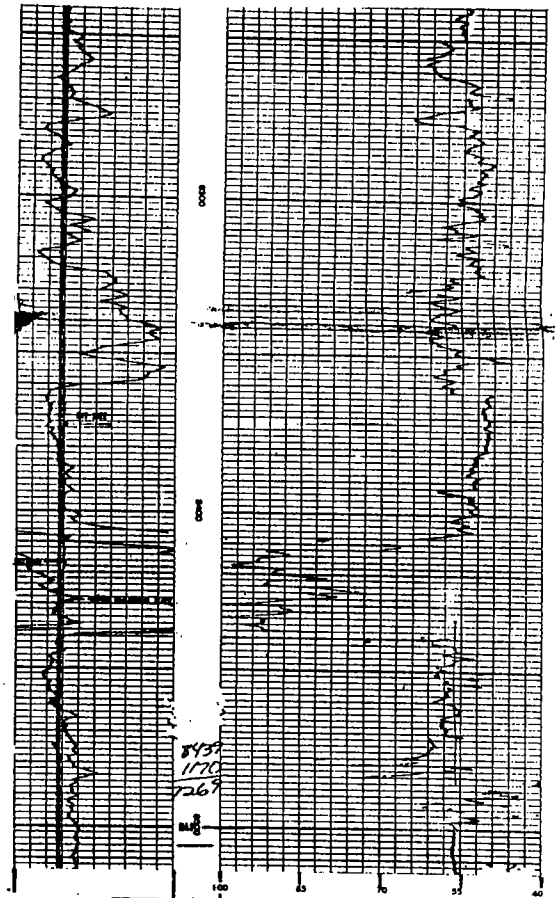
Hunton Group 8434'-8500' (TD)

8434'-8470' Silurian; Kirkidium biofacies.

Crystalline dolomite with subangular silt-  
 size quartz detritus; MgCO<sub>3</sub> averages 36.36%,  
 HCl insolubles 13.26%. Fossil debris,  
 including brachiopod shells, preserved  
 entirely in spar, mostly calcspar. Speci-  
 mens of Kirkidium from 8434' to 8440'.

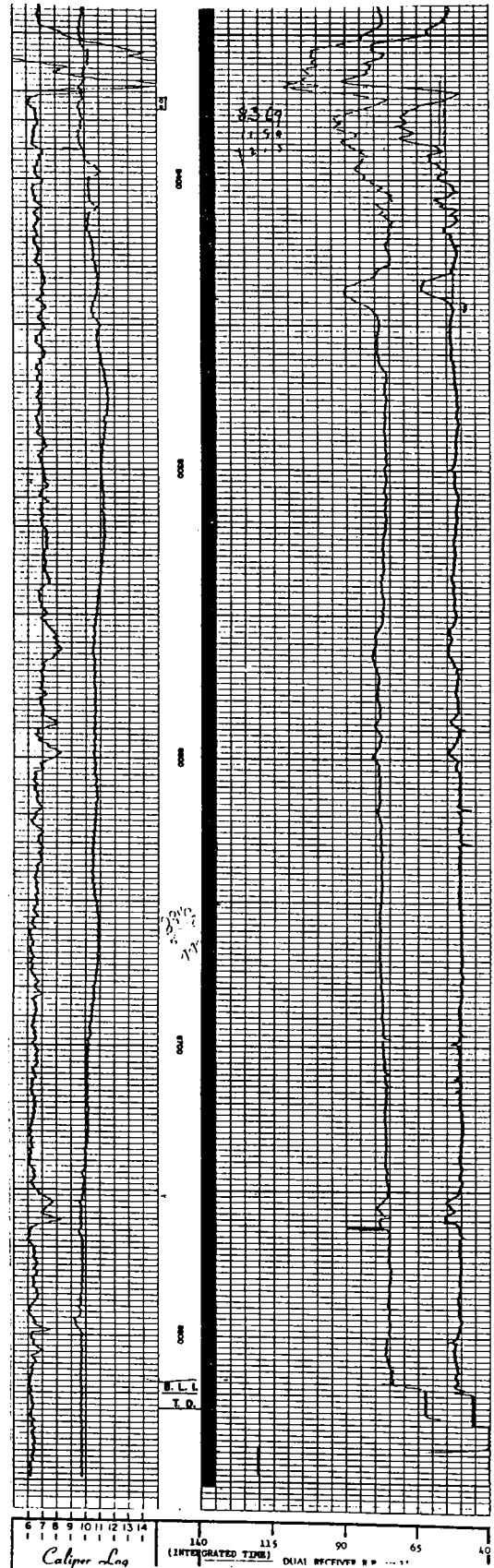
8470'-8500' No core.

8500' TD



PAN AMERICAN 1 ROETZAL UNIT--C NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 18,  
 T. 19 N., R. 9 W., Kingfisher County, Oklahoma;  
 elev. 1152'; TD 8825'? (Hunton); compl. 1/23/64,  
 Hunton production reported. Tops: Woodford  
 8332' (-7180'), Hunton 8370' (-7218'). Cored  
 8056'-8106', 8293'-8444'; no thin sections or  
 chemical analyses; Pan American (now Amoco),  
 Tulsa, Oklahoma.

I have not examined this core except for  
 study of specimen of Kirkidium sp. from 8428',  
 loaned by Pan American; also, A. R. Ormiston  
 (Amoco Production Company, Tulsa, Oklahoma,  
 personal communication) reports Kirkidium at  
 8400'. This well could include some Lower  
 Devonian strata in the upper 30' of Hunton.



LONE STAR 1 ROGERS--C SE $\frac{1}{4}$  sec. 27, T. 10 N., R. 19 W., Washita County, Oklahoma; elev. 1893'; TD 31,441' (Arbuckle Group; at time of completion this was world's deepest well); compl. 1974, no Hunton production reported. Tops (from well samples): Woodford ?27,550' (-25,657'), Hunton 27,760' (-25,867'), Sylvan 28,870' (-26,977'), Viola 29,040' (-27,147'), Simpson 29,760' (-27,867'), Arbuckle 31,220' (-29,327'); Hunton thickness 1110'. Samples examined from 27,500' to 31,441' (skips 29,960'-30,900' in Simpson Group, and 31,300' to 31,430' in Arbuckle Group); samples of good quality; 26 thin sections prepared from Hunton samples, and 30 thin sections from Ordovician samples; samples borrowed from Lone Star.

The Hunton strata in this well are in the Arbuckle Mountains-Criner Hills lithofacies, and, in fact, the gross lithology is remarkably similar to that in the northeastern part of the Arbuckle region (the outcrop section is much thinner). The uppermost Hunton beds comprise a sequence of light-colored organo-detrital limestones (27,760'-27,970'), underlain by medium- to dark-gray marlstone (27,970'-28,580'), and a bottom section consisting of light-colored (becoming darker in the basal portion) organo-detrital

limestones with some chert (28,580'-28,870'), ending with an oolite. Lithologically this sequence suggests that the uppermost limestones correlate with the Frisco-Fittstown beds of the outcrop area, the middle marlstones with the Henryhouse-Haragan Formations, and the lower limestones with the Chimneyhill Subgroup. This lithologic sequence is similar to that found in the Sunray DX (Phillips) 1-A Wesner and the Lone Star 1 Baden; it also resembles that found in other deep wells, including those in the shallow fault blocks.

Woodford Shale (no Misener recognized)

Hunton Group 27,760'-28,870'

27,760'-27,970' ?Frisco Formation and (or)

Fittstown Member, Bois d'Arc Formation.

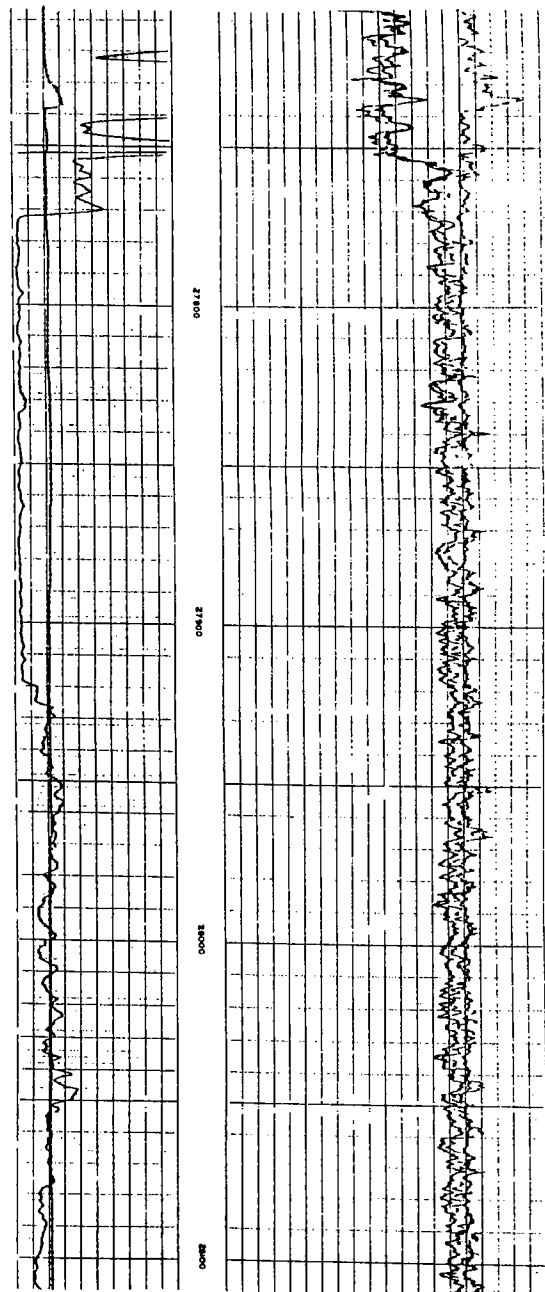
Light-colored organo-detrital limestone with pelmatozoan plates; bryozoans, and shelly debris; mostly spar cement and with very little dolomite. Possibly some recrystallization.

27,970'-28,580' ?Haragan and (or) Henryhouse marlstone. Medium- to dark-gray fossiliferous marlstone; fossil content variable, most fragments showing some organic material. Much silt-size subangular quartz detritus. Very little dolomite.

28,580'-28,840' Chimneyhill Subgroup. Light colored in upper part, becoming darker in lower part (about 28,770'); organo-detrital limestone, mixed with some medium-crystalline (?recrystallized) limestone; lower, darker portion has substantial dolomite, although only a few pieces are crystalline dolomite. Considerable chert and silicification, but very little detrital quartz.

28,840'-28,870' Keel oolite. Much oolitic material, oolites set in spar matrix; some fossils in oolites, and some organo-detrital limestone in this interval.

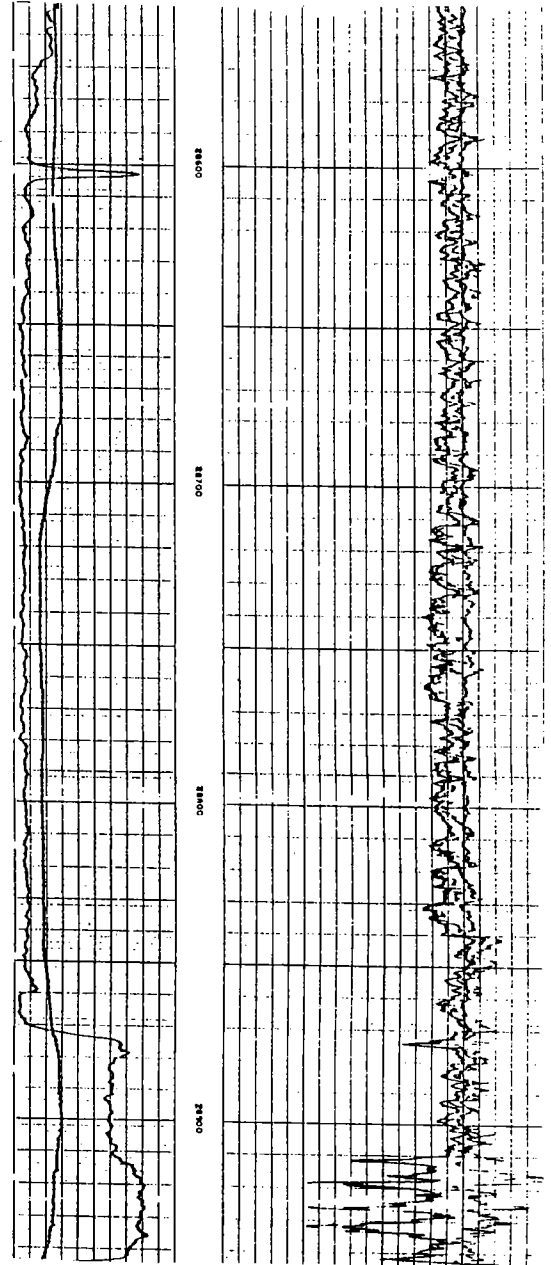
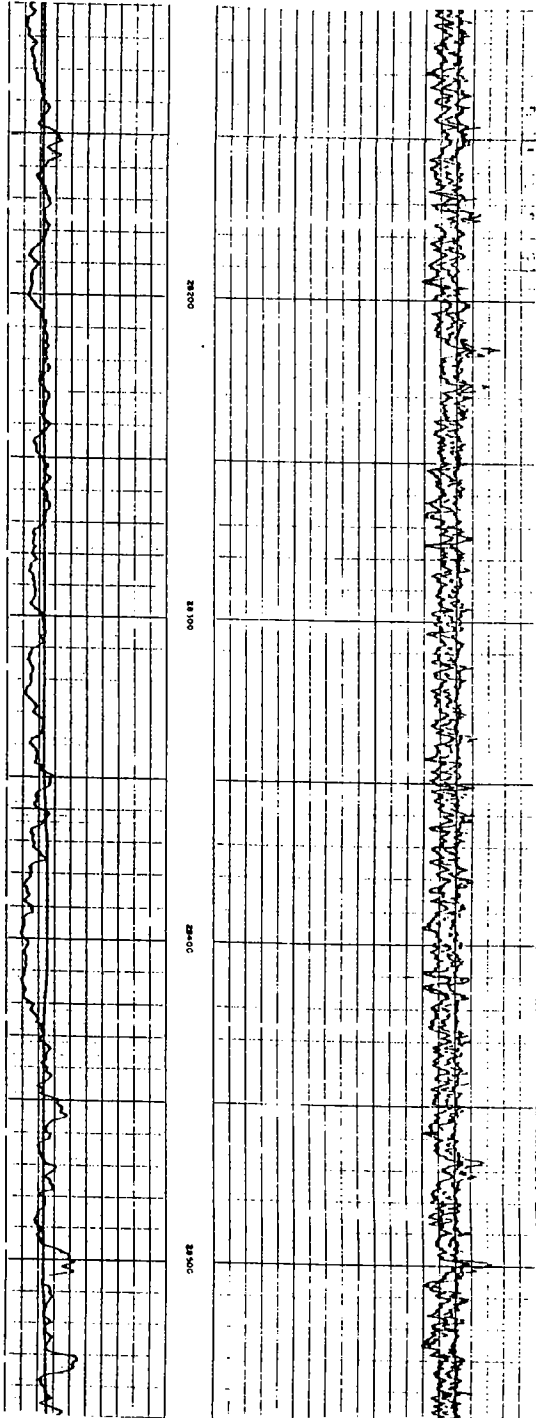
Sylvan Shale





Lone Star  
1 Rogers  
C SE  
Sec. 27, T. 10 N., R. 19 W.  
Washita County, Oklahoma  
Elev 1893'

Continued



ROBERT R. BINKLEY, JR., 1 ROGERS—C  
NE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec. 14, T. 9 N., R. 8 E., Hughes  
County, Oklahoma; elev. 856' KB (849' GL); TD 4391'  
(Ordovician); compl. 6/4/65, no Hunton production  
reported. Tops: Woodford 4079' (-3225') (SP log),  
Hunton 4126' (-3272') (sample depth), Sylvan 4228'  
(-3374') (SP log), Welling 4314' (-3460') (SP log);  
Hunton thickness 102'. Samples examined from 4020'  
to 4330', good quality; 11 thin sections; samples,  
Oklahoma Well Sample Service, Shawnee, Oklaho-  
ma.

Hunton strata in this well include no marlstone. All  
of the beds are weakly to heavily dolomitized organo-  
detrital crinoidal limestones. The stratigraphic se-  
quence suggests the Quarry Mountain (pink crinoidal  
limestone)-Blackgum (glauconitic limestone).  
However, the distinction between the Quarry Moun-  
tain and the Tenkiller is too poorly defined to be  
useful (note that it cannot be recognized in other  
wells in this region; see panel 4).

*Woodford (Chattanooga) Shale* 4079'-4126' (SP log)  
Misener Sandstone at the base; quartz sand composed  
of well-rounded grains to 2 mm with quartz over-  
growths.

*Hunton Group* 4126'-4228' (SP log)  
4126'-4228' (SP log) Silurian; Chimneyhill Sub-  
group.

4126'-4180' (sample depths) ?Quarry Moun-  
tain Formation. Weakly to heavily dolomitized  
organo-detrital limestone. Crinoids are strongly  
predominant, but other shelly fossils are present.  
No detrital quartz observed. Parts are heavily  
dolomitized, but only a small quantity of crystal-  
line dolomite observed.

4180'-4215' (sample depths) ?Tenkiller Forma-  
tion. Pink crinoidal micrite-sparite; parts with  
many bryozoans. Only weakly dolomitic. No  
detrital quartz observed.

4215'-4228' (sample depths) ?Cochrane-Black-  
gum Formation. Glauconitic dolomite with a few  
remnants of crinoid plates. No detrital quartz  
observed, but considerable pyrite.

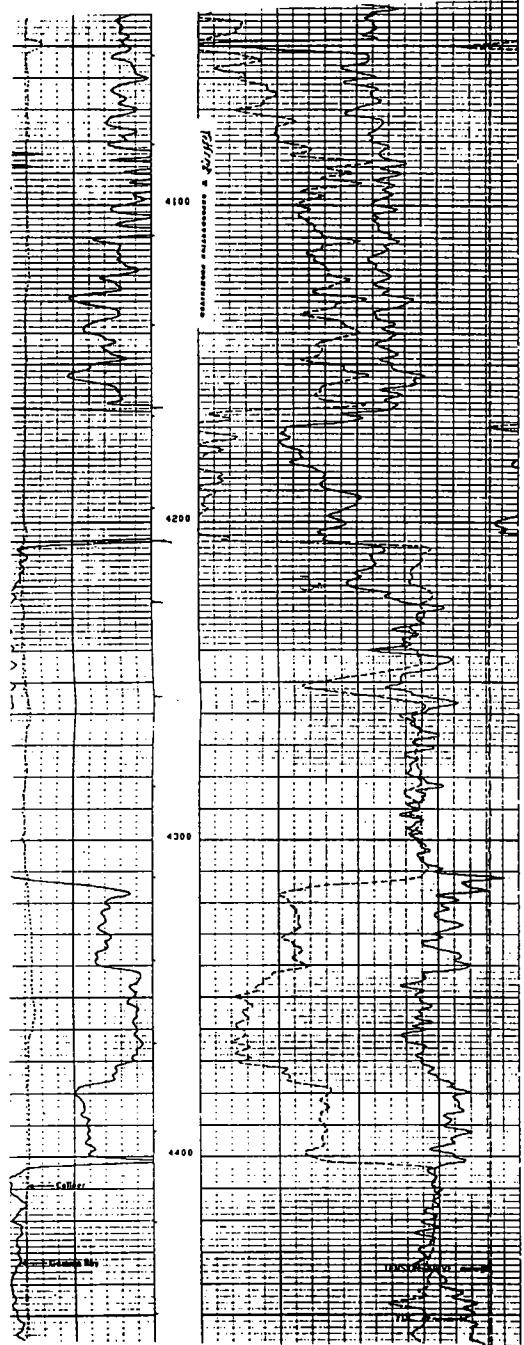
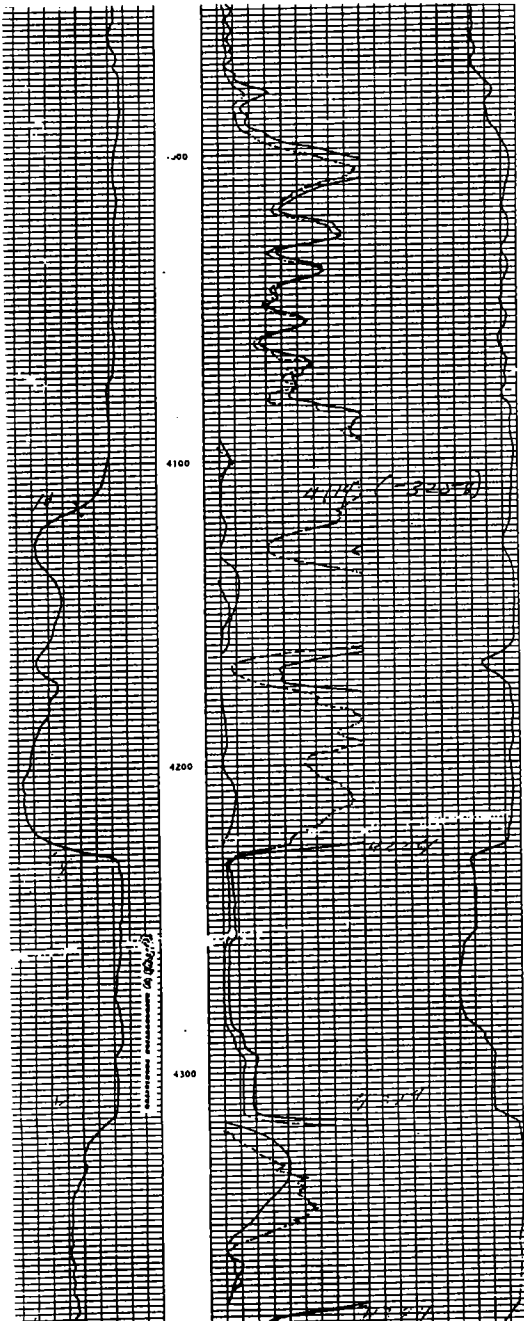
*Sylvan Shale* 4228'-4314' (SP log)  
Upper 10'-15' greenish-gray shale, medium-gray  
below.

*Welling Formation* 4314' (SP log)  
4310'-4315' (thin section) (sample depth) Or-  
gano-detrital sparite with no observed quartz or  
dolomite.

4325'-4330' (thin section) (sample depth) Or-  
gano-detrital sparite with numerous well-rounded  
detrital quartz grains.

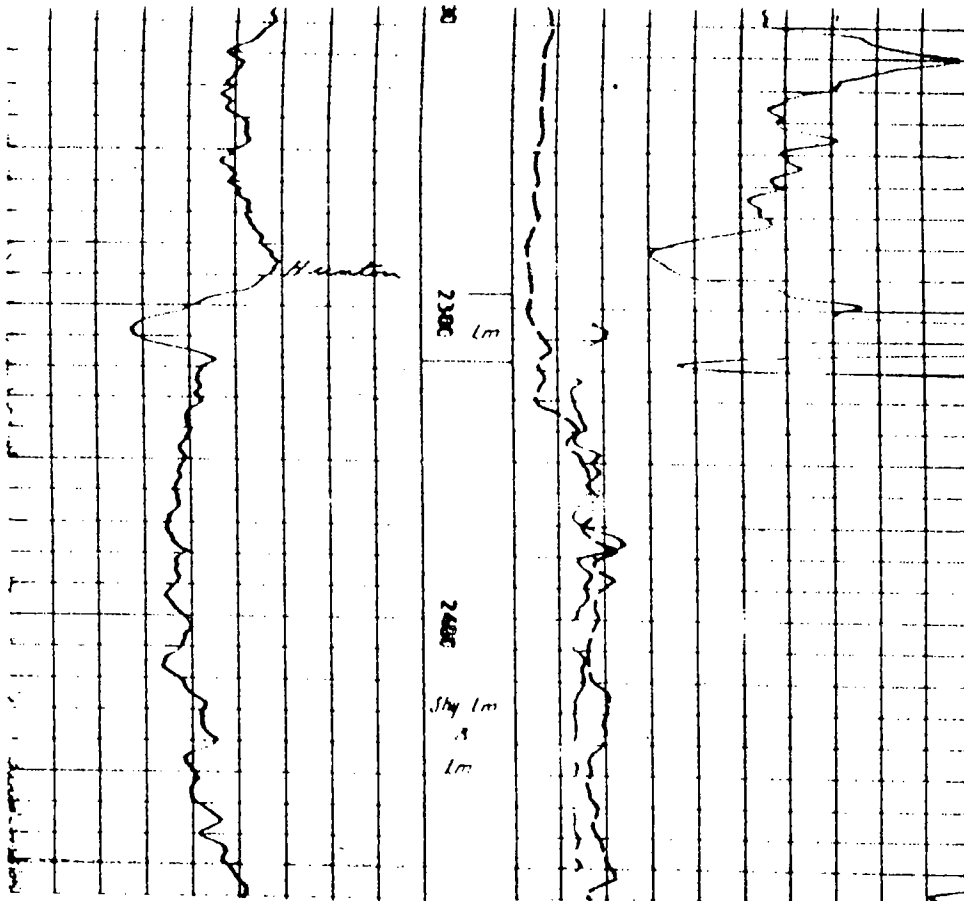
Robert R. Binkley  
1 Rogers  
NE SW SE  
Sec. 14, T. 9 N., R. 8 E.  
Hughes County, Oklahoma  
elev. 856'

Premier Resources  
Rogers AO 5401  
SW NE SW  
Sec. 14, T. 9 N., R. 8 E.  
Hughes County, Oklahoma  
elev. 897'



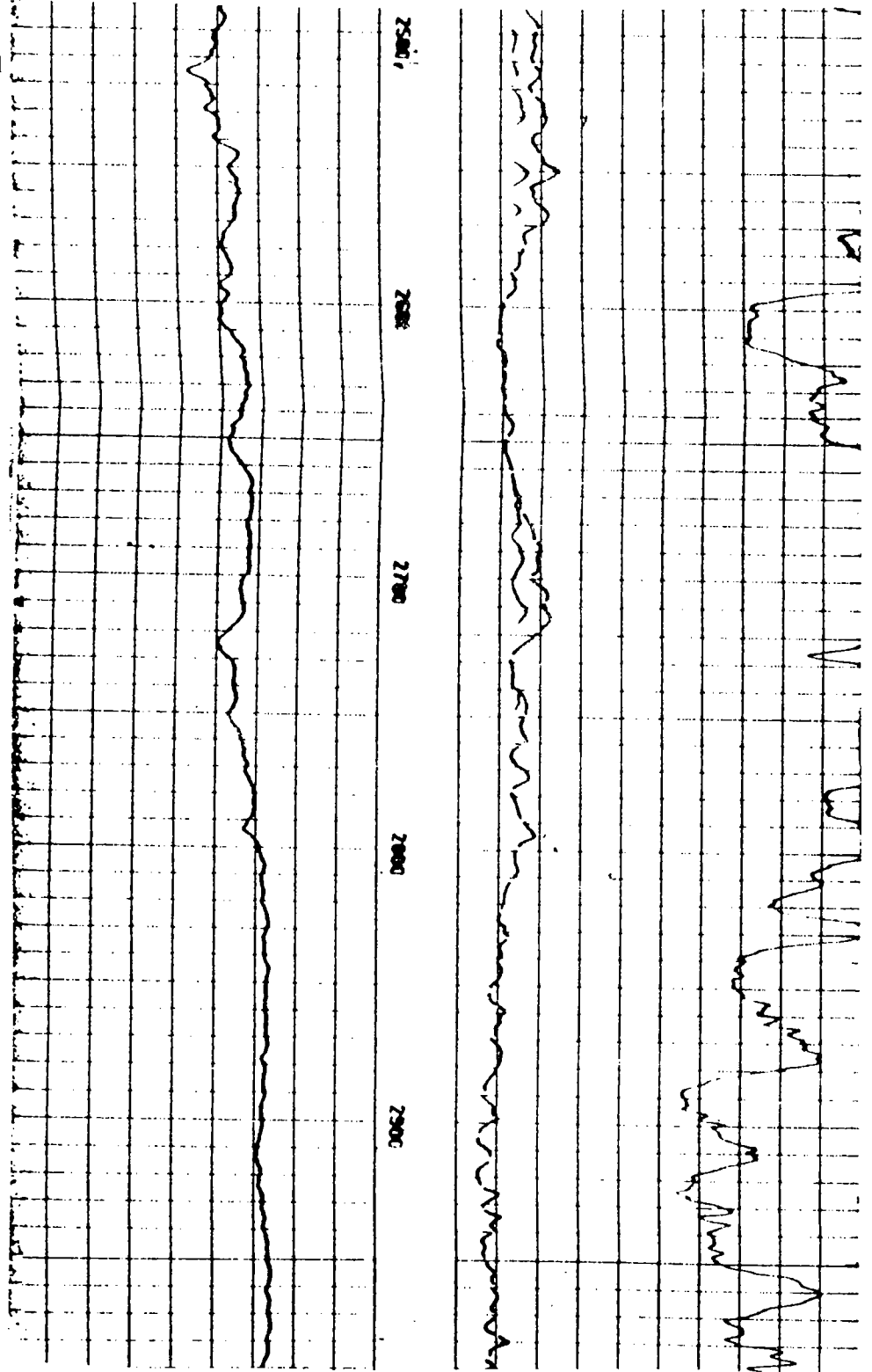
TEXAS 1 ROLLS--C SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 5, T. 3 N., R.  
 10 W., Comanche County, Oklahoma; elev.  
 1241'; TD 8078' (Oil Creek); compl. 9/15/42,  
 D&A. Tops: Woodford 1858' (-617') (sample  
 log), ?Misener 2290' (-1049'), Hunton 2300'  
 (-1059'), Sylvan 3440' (-2199'); Hunton  
 thickness 1140'. Samples examined from Wood-  
 ford Shale through Hunton and into upper  
 Sylvan; 19 thin sections, stained with Ali-  
 zarin Red-S; samples in OU Core Library.

This well is located on one of the fault  
 blocks between the Wichita Mountains uplift  
 and the deep Anadarko basin. The Hunton is  
 a low-magnesium limestone throughout and  
 represents a part of the Arbuckle Mountains  
 limestone facies. The lithostratigraphic  
 sequence consists of an upper organo-detrital  
 limestone (?Lower Devonian) and a lower marl-  
 stone (?Lower Devonian, ?Silurian), the  
 latter resting directly on the Sylvan Shale.  
 The Hunton section in the 1 Rolls is similar  
 to Hunton rocks in other wells in this area  
 except that it lacks the lower organo-detrital



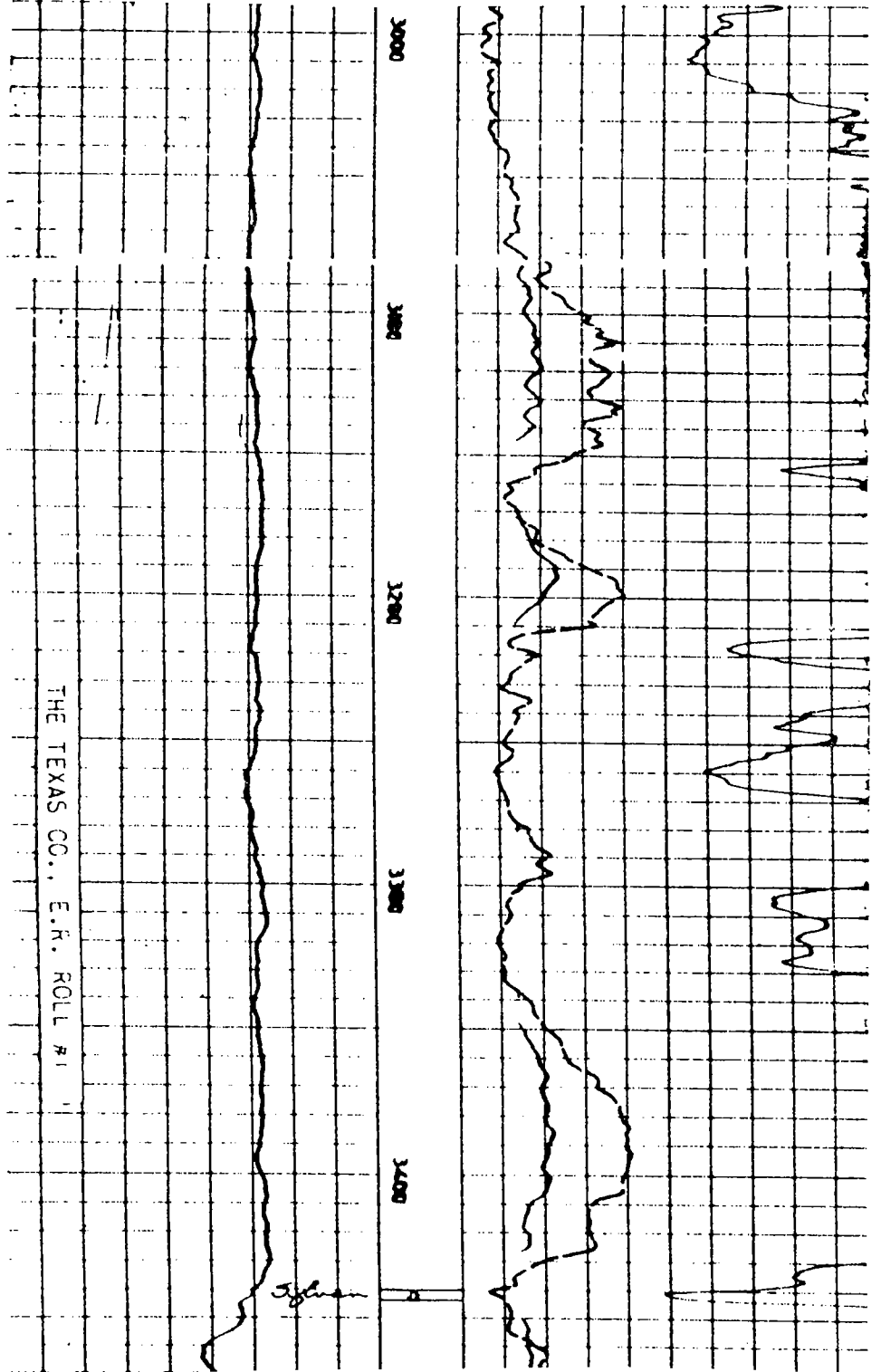
Texas  
1 Rolls  
SE SW  
Sec. 5, T. 3 N., R. 10 W.  
Comanche County, Oklahoma  
KB 1241'

Continued



Texas  
1 Rolls  
SE SW  
Sec. 5, T. 3 N., R. 10 W.  
Comanche County, Oklahoma  
KB 1241'

Continued



HORWITZ 1 ROSE—NE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 10, T. 11 N., R. 7 E., Seminole County, Oklahoma; elev. 851' DF (844' GL); TD 4629' (Ordovician); compl. 5/21/52, production unknown. Tops: Woodford 4285' (-3434') (SP log), Hunton 4315' (-3464') (SP log), Sylvan 4420' (-3569') (SP log), Welling 4510' (-3659') (SP log), Fite 4540' (-3689') (sample depth); Hunton thickness 105'. Samples examined 4280'-4550', good quality; 9 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

Hunton strata, which are provisionally referred to the Chimneyhill Subgroup, consist of moderately to heavily dolomitized (including some porous crystalline dolomite) crinoidal micrite-sparite with a few feet of glauconitic dolomite at the base. The uppermost Hunton could include some Frisco, but the presence of crystalline dolomite indicates that this is almost certainly not the case. The upper crinoidal micrite-sparite presumably includes Clarita-Quarry Mountain equivalents, possibly with some Tenkiller strata in the lower part. The basal glauconitic strata may be correlative with the Cochrane-Blackgum beds, but these lithostratigraphic correlations are too tenuous to be of much significance.

*Woodford (Chattanooga) Shale* 4285'-4315' (SP log)

*Hunton Group* 4315'-4420' (SP log)

4325'-4420' (sample depth) Silurian; ?Chimneyhill Subgroup. Note lag.

4325'-4360' (sample depths) Moderately to heavily dolomitized crinoidal limestone. This includes considerable porous crystalline dolomite. Little or no detrital quartz.

4360'-4420' (sample depth) Weakly to heavily dolomitized pink crinoidal sparite-micrite; includes some crystalline dolomite. Little or no detrital quartz.

4420'-4430' (sample depths) Glauconitic dolomite; no detrital quartz observed.

*Sylvan Shale* 4420' (SP log) -4510' (sample depth)

Greenish shale in top, becoming gray below.

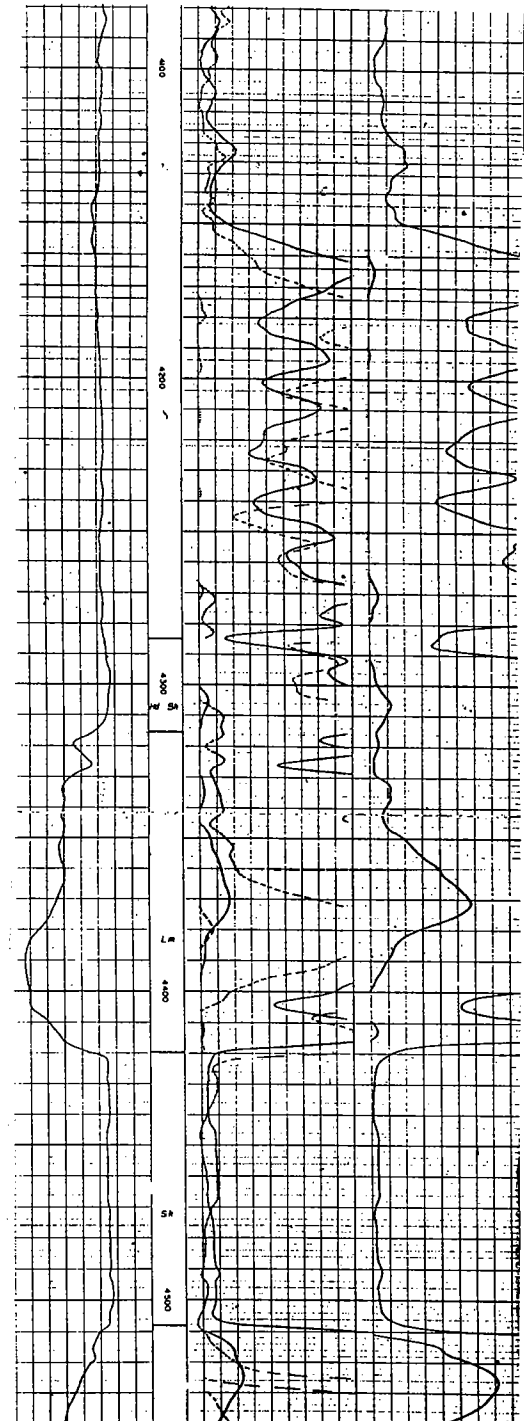
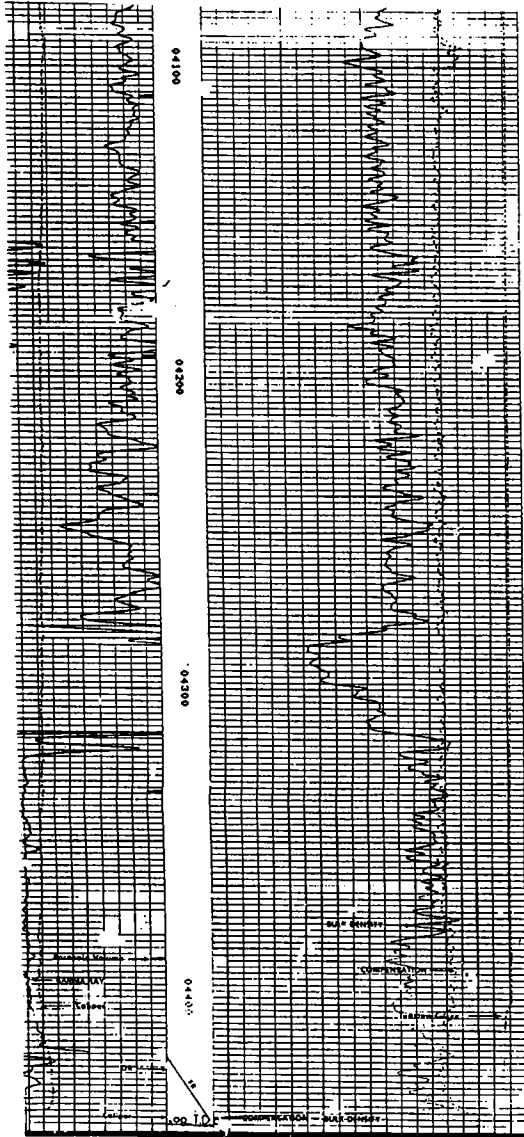
*Welling Formation* 4510'-4540' (sample depths)

4520'-4530' (thin section) Organo-detrital pelmatozoan sparite with much other shelly debris. No detrital quartz or dolomite observed.

*Fite Limestone* (?Bromide Formation, Pooleville Member) 4540' (sample depth) Pellet sparite and dense limestone with some ostracodes. No detrital quartz or dolomite observed.

Horwitz  
 1 Rose  
 NE NW SW  
 Sec. 10, T. 11 N., R. 7 E.  
 Seminole County, Oklahoma  
 elev. 851'

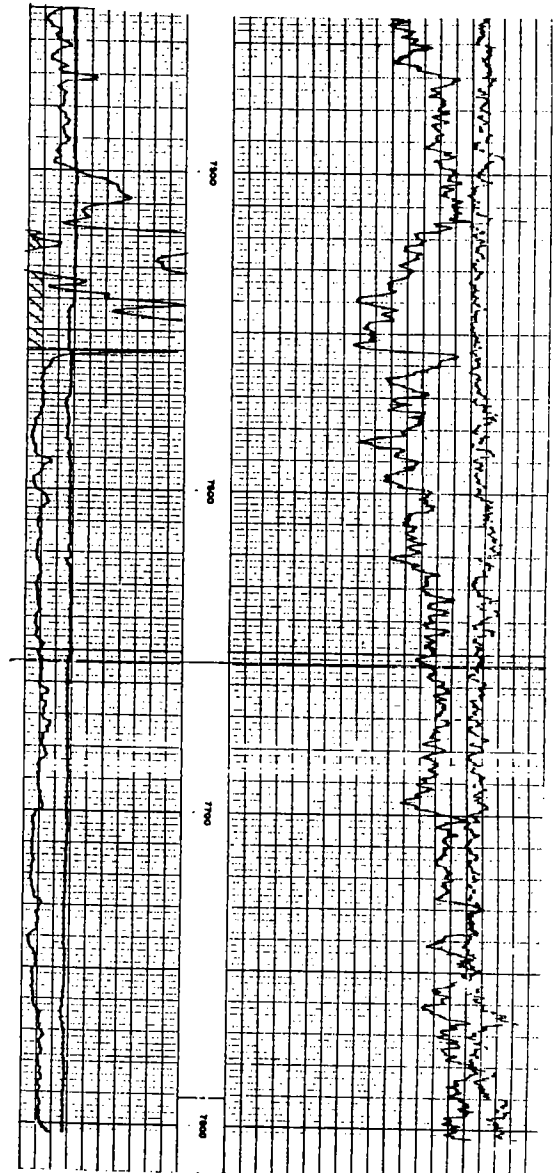
Simrco  
 1 Simrco  
 NE NW SW  
 Sec. 10, T. 11 N., R. 7 E.  
 Seminole County, Oklahoma  
 elev. 856'



GAMMA RAY & CALIPER		DEPTH	BULK DENSITY GRAMS/CC
Company	Horwitz 1 Rose		Drillers T.D.
Well	Horwitz 1 Rose		Log F.R.
Field	NE NW SW		Log T.D.
County	Seminole		Elevations:
State	Oklahoma		K.B. 851' D.F. 851' G.L. 851'

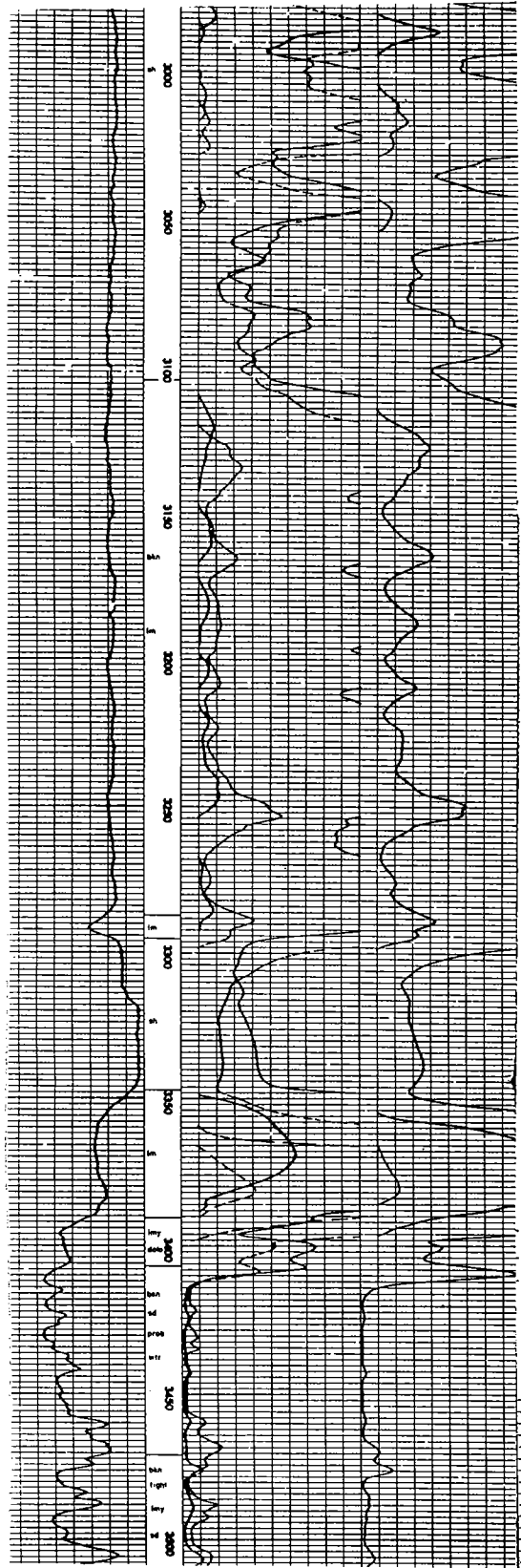


CLEARY 1-12 ROSE--C E $\frac{1}{2}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 12, T. 22 N.,  
 R. 12 W., Major County, Oklahoma; elev. 1285';  
 TD 7794' (Sylvan); compl. 7/26/66, no Hunton  
 production reported. Tops: Woodford (CC)  
 7518' (-6233'), Hunton 7553' (-6268'), Sylvan  
 (CC) 7780' (-6495'); Hunton thickness 227'.  
 Cored 7540'-7590' (Woodford-Hunton); no thin  
 sections; chemical analyses; OU Core Library.  
Woodford Shale 7518'-7553'  
Hunton Group 7553'-7780'  
 7553'-7590' Silurian? Crystalline dolomite  
 with relatively little insoluble detritus;  
 MgCO<sub>3</sub> averages 38.58%, HCl insolubles 5.02%.  
 No diagnostic fossils observed; assigned to  
 Silurian on basis of lithology and strati-  
 graphic position.  
 7590'-7780' No core.  
Sylvan Shale 7780'



HARPER 1 ROSENDAHL—C NW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec. 7, T. 11 N., R. 15 E., McIntosh County, Oklahoma; elev. 670'; TD 3635' (Ordovician); compl. 6/23/58, no Hunton production. Tops: Misener 3288' (SP log), Sylvan 3296' (SP log), Welling 3348' (SP log); no Hunton present. Samples examined from 3200' to 3380', good quality; 4 thin sections (2 Misener Sandstone, 2 Welling Formation); samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The Woodford Shale is separated from the Sylvan Shale by about 8' of chert (in part dolomitic) and dolomite. The latter shows some silicification and a few rounded quartz grains. All the chert-carbonate interval is assigned to the Misener Sandstone. No Hunton recognized. The upper part of the Sylvan is a greenish-gray shale, becoming dark below. The Woodford-Misener-Sylvan contacts are also well marked on the SP log. The upper 30' of the Welling Formation is organo-detrital limestone with a little fine quartz sand in the 3370'-3375' interval (2 thin sections, 3350'-3355', 3370'-3375').



BARNES 1 ROUNDS--SE $\frac{1}{4}$ NW $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 6, T. 15 N.,  
R. 18 W., Custer County, Oklahoma; elev. 1902';  
TD 18,289' (Arbuckle); compl. 12/30/68,  
Hunton production reported. Tops: Woodford  
(CC) 15,223' (-13,321'), Hunton (CC) 15,315'  
(-13,413'), Sylvan (CC) 15,756' (-13,854');  
Hunton thickness 441'. Cored 15,320'-15,407'  
(Hunton); no thin sections or chemical anal-  
yses; Cities Service, Tulsa, Oklahoma.

I briefly examined upper 90 feet of this core  
in Tulsa. It appears to be crystalline dolo-  
mite with some fossils, including brachiopods  
and corals. One specimen of Kirkidium  
observed at 15,320', this being 5' below  
Hunton-Woodford contact; if any Lower Devo-  
nian is present it must be very thin.

GULF 1 SCHROEDER--SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 3, T. 12 N.,  
R. 2 W., Oklahoma County, Oklahoma; elev.  
1193'; TD 6336' (Hunton); compl. 12/30/49,  
Hunton production reported (perforated 6291'-  
6325', all in Frisco Formation). Tops:  
Hunton (core) 6283' (-5090'). Cored 6272'-  
6336' (Woodford-Hunton); 5 thin sections;  
chemical analyses; OU Core Library.

Core from this well provides excellent bio-  
stratigraphic control on Frisco-Kirkidium  
biofacies boundary, with diagnostic Frisco  
fossils being found within 3' of Kirkidium-  
bearing beds (text-fig. 20).

#### Woodford Shale

6272'-6283' Core; black shale.

Hunton Group 6283'-6336' (TD)

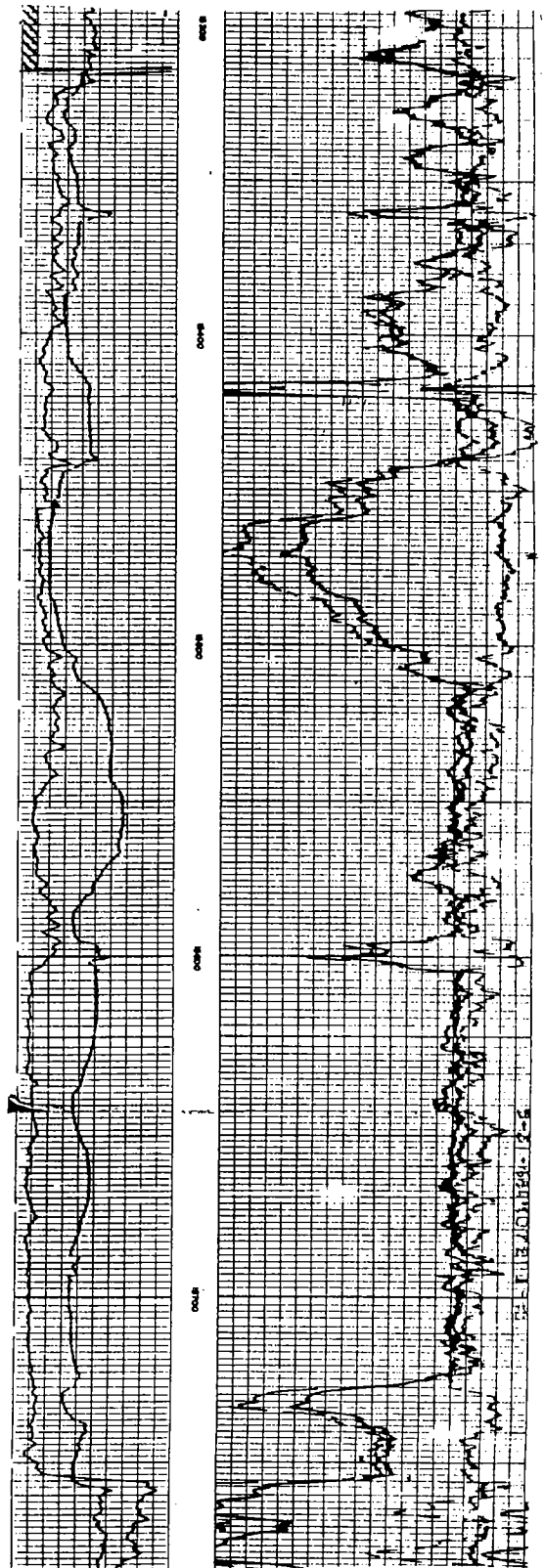
6283'-6322' Lower Devonian; Frisco Formation.

Light-gray organo-detrital sparite; MgCO<sub>3</sub>  
averages 0.98%, HCl insolubles 1.24%.

Fossil debris includes much pelmatozoan  
material along with substantial shelly  
debris; brachiopods and bryozoans are common,  
as well as some corals, snails, etc. Parts  
of this rock have good visual porosity, with  
pore space mostly occupying matrix or in  
center of hollow fossils. Brachiopods from  
following intervals: 6287', Rensselaeria  
cf. R. elongata (Conrad), Dalejina musculosus  
(Hall)?; 6295', Acrospirifer murchisoni  
(Castelnau)?; 6300'-6302', Costispirifer  
arenosus (Conrad), Acrospirifer murchisoni?;  
6322', Leptostrophia magnifica (Hall),  
Costispirifer arenosus?. This fauna and  
lithology are typical of Frisco Formation.

6322'-6336' Silurian; Kirkidium biofacies.  
Greenish-gray fossiliferous marlstone with  
silt-size subangular quartz detritus; MgCO<sub>3</sub>  
averages 9.36%; HCl insolubles 11.27%.  
This is fairly typical marlstone lithology,  
although insolubles are perhaps slightly  
low and fossil content slightly high for  
Henryhouse Formation, at least in much of  
Arbuckle Mountains region. Dictyonella sp.  
and Kirkidium sp. collected at 6324.5', this  
being one of few places where these two  
brachiopods are found together.

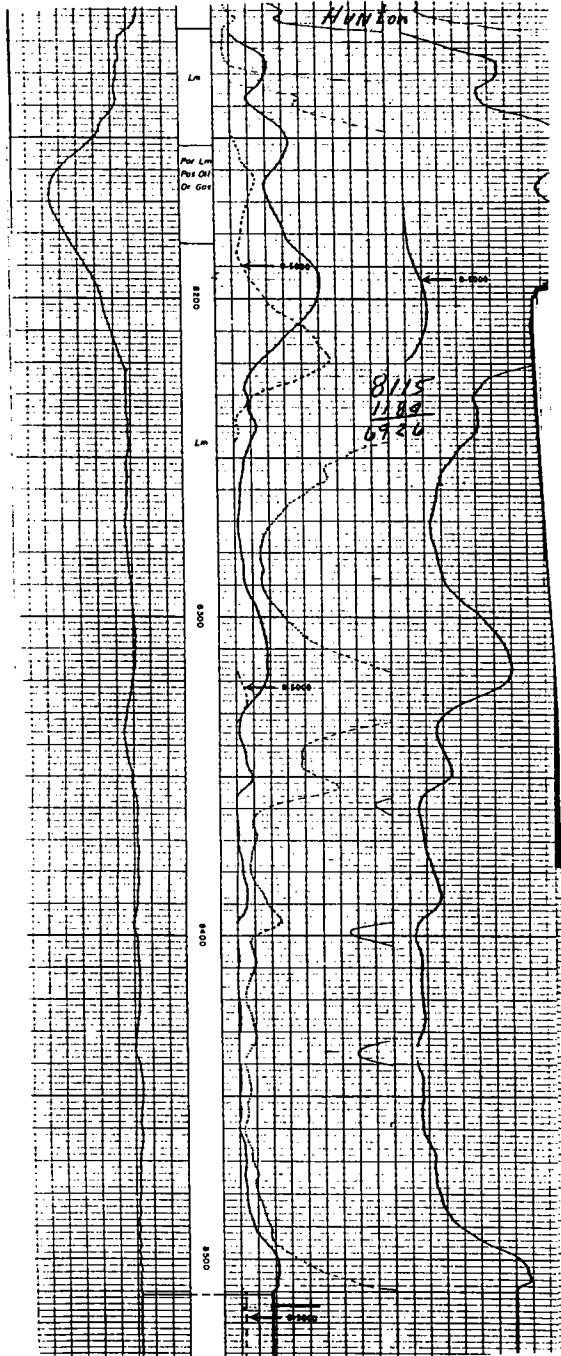
6336' TD



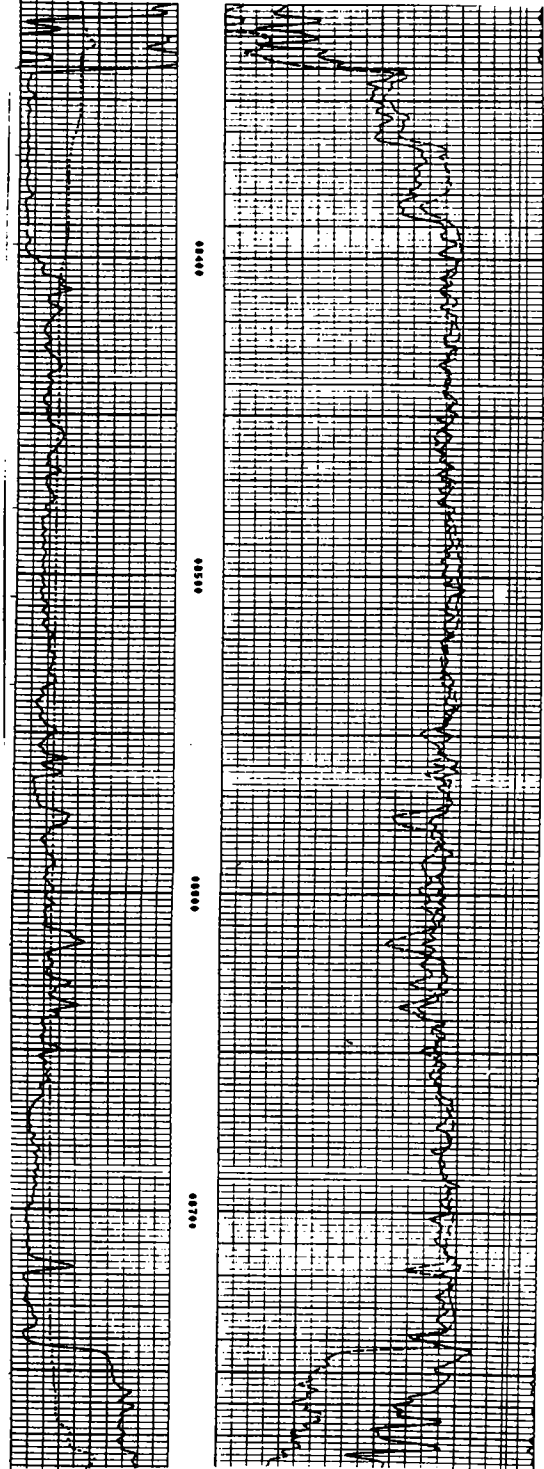
CONTINENTAL OIL CO. 3 E. S. ROWLAND — C  
NE¼NE¼ sec. 21, T10N, R4W, Cleveland County, Okla-  
homa; elevation GL (Na), KB 1,189 ft; TD 8,586 ft; comple-  
tion 6/1/55.

Samples examined from 8,080–8,350 ft (Woodford–  
Hunton contact 8,140 ft). Core examined from 8,350 to  
8,488 ft; 8,560 to 8,590 ft; 8,533 to 8,586 ft (TD). 7 thin sec-  
tions prepared from the samples and 17 from the core. *Kir-  
kidium?* at 8,352 ft and a pentamerid brachiopod, probably  
*Kirkidium*, at 8,434 ft. Hunton strata in the 3 Rowland are in  
a low magnesium facies throughout. *Illustrated on* PLATE  
1, STRATIGRAPHIC SECTION A-A'.

Continental Oil  
 3 E. S. Rowland  
 NE NE  
 Sec. 21, T. 10 N., R. 6 W.  
 Cleveland County, Oklahoma  
 elev. unknown



OEXCO, Inc.  
 21-1 Prodyaker  
 SE NW SW  
 Sec. 21, T. 10 N., R. 6 W.  
 Cleveland County, Oklahoma  
 elev. 1201'



FALCON SEABOARD 1 RUSHING—C NW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec. 18, T. 2 N., R. 10 E., Coal County, Oklahoma; elev. 708' DF (698' GL); TD 8172' (Ordovician); compl. 3/8/59, D&A. Tops: Woodford 6786' (-6088') (SP log), Hunton 6940' (-6235') (SP log), Sylvan 7145' (-6435') (SP log), Welling 7235' (-6530') (sample depth); Hunton thickness 205'. Samples examined from 6900' to 7270', good quality, large pieces; 13 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The samples are of excellent quality and show a well-defined lithostratigraphic sequence of Woodford Shale, Hunton Limestone, Sylvan Shale, and Welling Formation. Hunton rocks can be further subdivided into an upper marlstone (Henryhouse, possibly including some Lower Devonian Haragan, although the thickness makes this unlikely), pink crinoidal limestone (Clarita Formation), glauconitic limestone (Cochrane Formation), and oolite (Keel Formation). All units contain some dolomite crystals, but the rock probably does not exceed 15% MgCO<sub>3</sub> at any place. The lithostratigraphic sequence is similar to that in the Arbuckle Mountains-Criner Hills, with which it can be correlated with reasonable certainty. The Silurian sequence in this well is similar to that in the 1 Hargrove-Hudson. Hunton strata have been thinned by pre-Woodford erosion (also cf. 1 Mullin).

*Woodford (Chattanooga) Shale* 6786'-6940' (SP log)

*Hunton Group* 6940'-7145' (SP log)

6940' (SP log) -7120' (sample depth) Silurian;

Henryhouse Formation (may include some Haragan). Medium-gray marlstone composed of finely divided carbonate plus a variable quantity of insoluble terrigenous detritus, most of which is fine subangular to angular quartz to 0.2 mm. Fossils scattered through the matrix, variable in quantity, but almost all the rock appears to be mud supported. Pelmatozoan plates are the most common, along with ostracodes, bryozoans, brachiopods, and other shelly debris. Dolomite ranges from sparse to moderate, only uncommonly abundant. Dolomite and quartz are slightly more abundant in the upper part. This is typical marlstone texture.

7120' (sample depth) -7145' (SP log) Silurian; Chimneyhill Subgroup.

7120'-7135' (sample depths) Clarita Formation. Pink crinoidal micrite with only minor spar. Fossils abundant; appears to be entirely grain supported. Pelmatozoan plates abundant; many ostracodes and other shelly debris. Very little quartz detritus or dolomite.

7135'-7143' (sample depths) Cochrane Formation. Organo-detrital micrite and sparite with much glauconite. Some beds with moderate dolomite and a little detrital quartz. Chert.

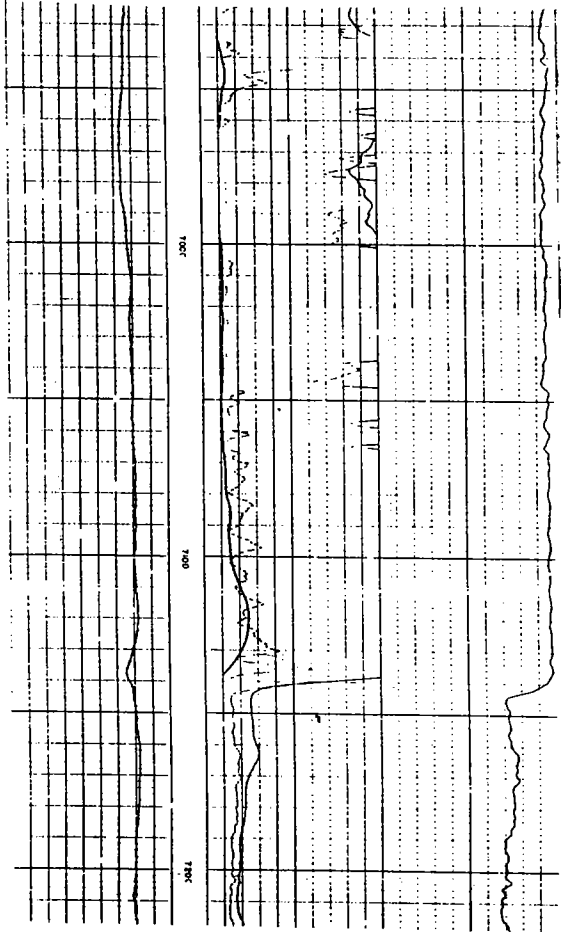
7143'-7150' (sample depths) Keel Formation. Oolites set in a spar matrix. Ooids with radial and concentric structure, commonly showing a fossil nucleus. Very little dolomite or quartz.

*Sylvan Shale* 7145' (SP log) -7235' (sample depth)

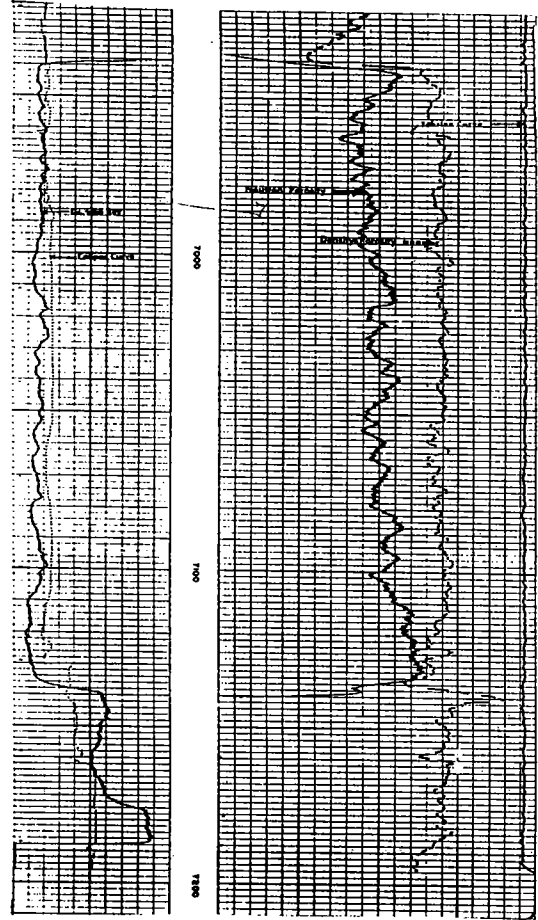
*Welling Formation* 7235' (sample depth)

7250' (thin section) Low-magnesium organo-detrital sparite with a few rounded quartz grains to 0.8 mm.

Falcon Seaboard  
1 Rushing  
NW NE  
Sec. 18, T. 2 N., R. 10 E.  
Coal County, Oklahoma  
elev. 708'

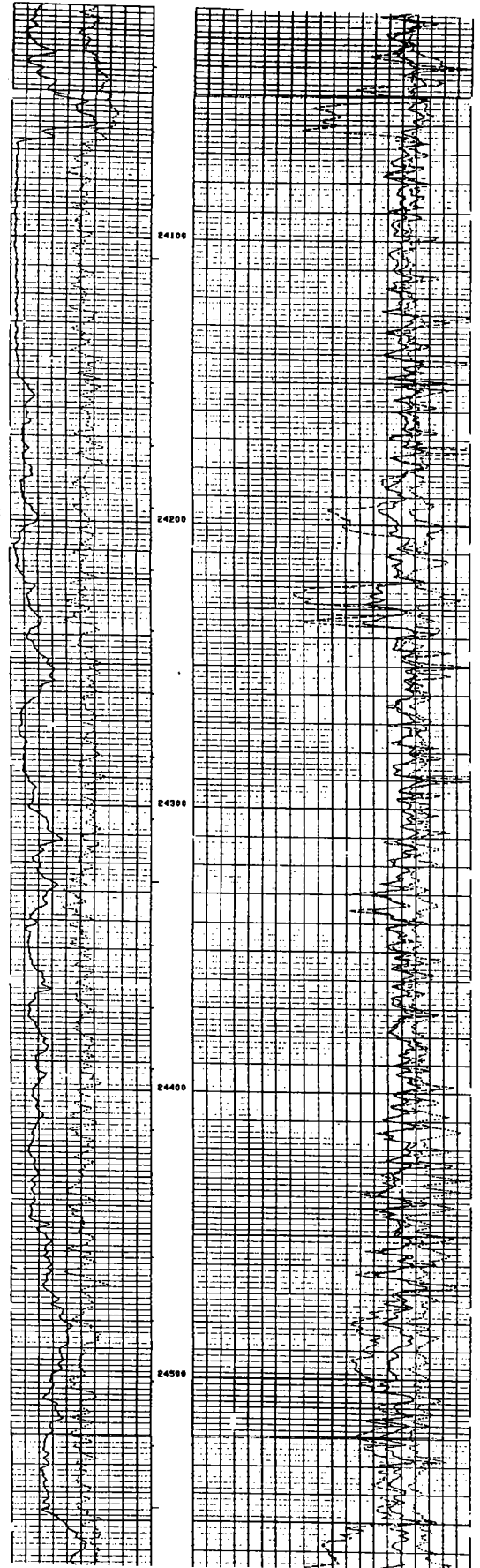
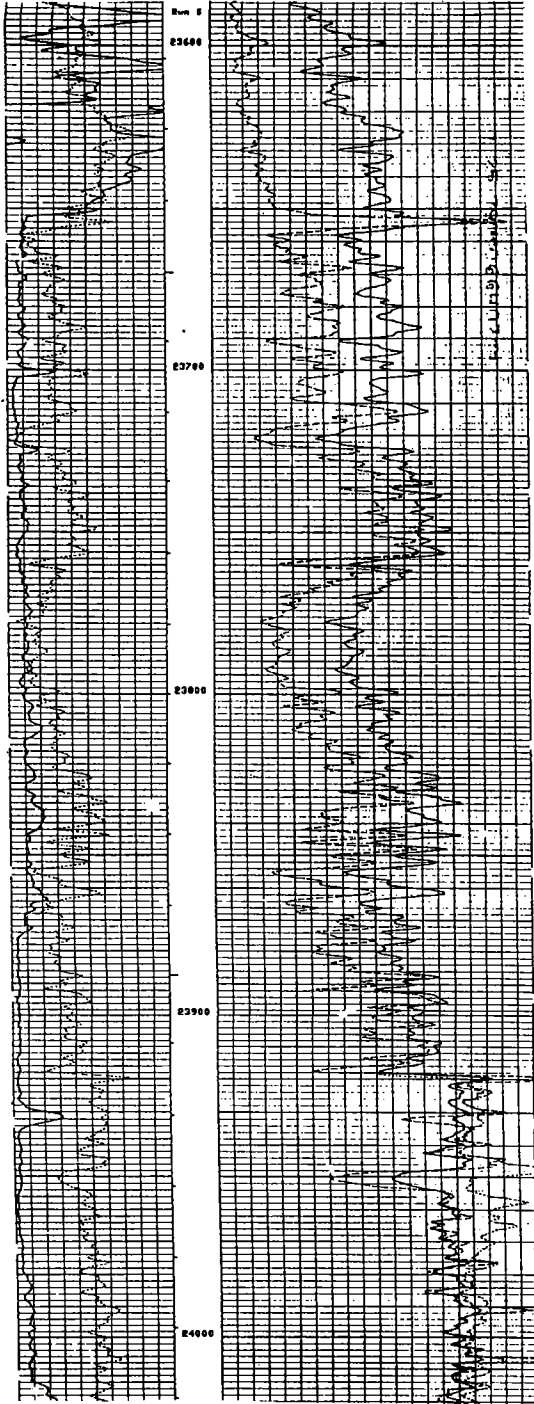


Global Gas Corp  
1-A Rushing  
100' S of NW NE  
Sec. 18, T. 2 N., R. 10 E.  
Coal County, Oklahoma  
elev. 712'



**CHAMPLIN PETROLEUM CO. 1 D. L. SANDERS UNIT**  
 — NE¼NW¼SE¼ sec. 24, T10N, R25W, Beckham County,  
 Oklahoma; elevation GL 1,989 ft, DF 2,017 ft; TD 24,924 ft  
 (Sylvan); completion 2/20/79.

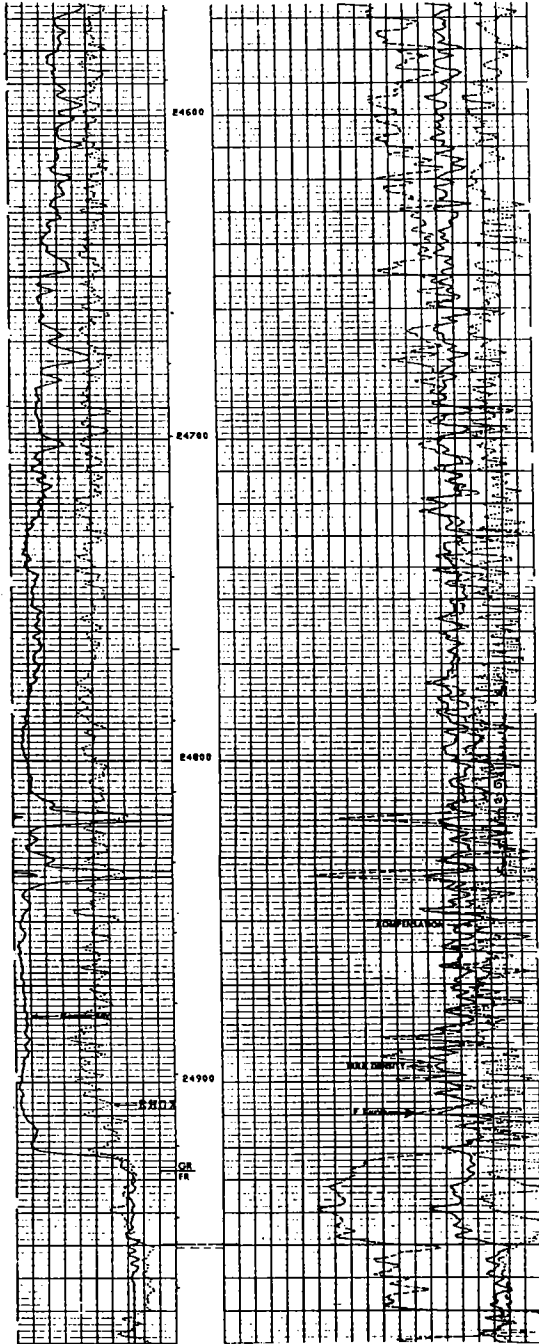
Lower Woodford–Hunton–upper Sylvan samples stud-  
 ied; 44 thin sections. *Illustrated on PLATE 2, STRATIGRAPHIC  
 SECTION D–D'*. Compare to the nearby 1 Kirtley Unit from  
 which it differs mainly in having increased dolomite and  
 increased "birdseye" facies.





Champlin Petroleum Co.  
1 D. L. Sanders Unit  
NE NW SE  
Sec. 24, T. 10 N., R. 25 W.  
Beckham County, Oklahoma  
KB 2017'

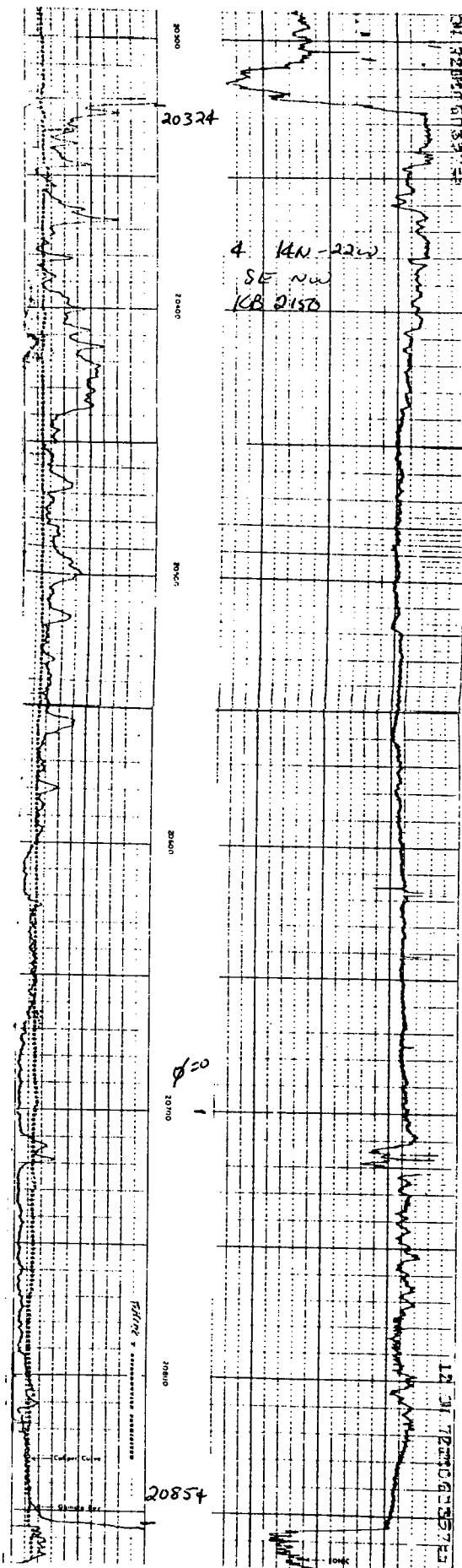
Continued



INEXCO 1 SANVE--C SE<sup>1</sup>/<sub>2</sub>NW<sup>1</sup>/<sub>4</sub> sec. 4, T. 14 N., R. 22 W., Roger Mills County, Oklahoma; elev. 2149'; TD 20,922' (Sylvan); compl. 12/17/72, D&A. Tops: Woodford 20,250' (-18,101'), Hunton 20,324' (-18,175'), Sylvan 20,860' (-18,711'); Hunton thickness 536'. Samples examined from top of Woodford through Hunton and into Sylvan; 11 thin sections, stained with Alizarin Red-S; samples from Oklahoma Well Sample Service, Shawnee, Oklahoma.

This well appears to be a part of the western dolomite facies, having considerable crystalline dolomite, calcitic dolomite, and dolomitic limestone. The concentration of dolomite in the 1 Sanve appears to be roughly comparable to that in the 1 Kendall and the 1 Lovett, and less than that in the 1 Viersen Unit. See panel 10, section B-B'. Stratigraphic relations in this area suggest that the Hunton in the 1 Sanve is all Silurian.

- Woodford Shale 20,250'-20,324'
- Hunton Group 20,324'-20,860'
- 20,324'-20,420' ?Silurian. Medium-gray crystalline dolomite, mostly low in detrital quartz.
- 20,420'-20,700' Medium- to dark-gray fossiliferous limestone, dolomitic limestone and calcitic dolomite; very little crystalline dolomite. Some angular silt-size quartz detritus and some chert.
- 20,700'-20,760' ?Chimneyhill Subgroup. Light-gray organo-detrital limestone with much light-gray chert. Some dolomite crystals and very little detrital quartz. Contact with overlying strata sharply defined.
- 20,760'-20,860' ?Chimneyhill Subgroup. Medium-gray crystalline dolomite with some chert.
- Sylvan Shale 20,860'



DENVER 1-A SCHOOL LAND--C SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 16, T. 10 N., R. 9 W., Caddo County, Oklahoma; elev. 1540'; TD 17,090' (?Bromide); compl. 12/7/48. Tops: Woodford 14,310' (-12,770'), ?Misener 14,420' (-12,880'), Hunton 14,480' (-12,940'), Sylvan 15,220' (-13,680'); Hunton thickness 740'. Samples examined from lower Woodford through Hunton and into upper Sylvan; 19 thin sections prepared, stained with Alizarin Red-S; samples borrowed from Oklahoma Well Sample Service, Shawnee, Oklahoma.

This well is located in the eastern part of the Anadarko basin in an area with relatively few Hunton tests. The rock is a low-magnesium limestone throughout and appears to be typical for the Arbuckle Mountains limestone facies. The lithostratigraphic sequence suggests that the upper organo-detrital limestone is Early Devonian in age, but there is no biostratigraphic evidence to confirm this; however, the Sinclair 1 Horlivy, about 30 miles east, does have an upper organo-detrital limestone which was cored and which yields diagnostic Frisco megafossils. (See part I of Appendix, core descriptions.)

Woodford Shale 14,310'-14,420'

?Misener Sandstone 14,420'-14,480'

14,420'-14,480' Dolomitic quartz sandstone and sandy dolomite; angular quartz grains to about 0.2 mm. Much chert, some with detrital quartz.

Hunton Group 14,480'-15,220'

14,480'-14,675' ?Frisco and (or) ?Fittstown Member, Bois d'Arc Formation. Light-gray organo-detrital limestone with very little dolomite and very little detrital quartz; mostly micrite cement, some spar. Fossils include numerous pelmatozoan plates and bryozoans, as well as other shelly debris.

14,675'-15,130' ?Haragan and (or) ?Henry-house Formation. Medium- to dark-gray marlstone; much angular quartz to 0.2 mm. Scattered fossils, including numerous crinoids and ostracodes.

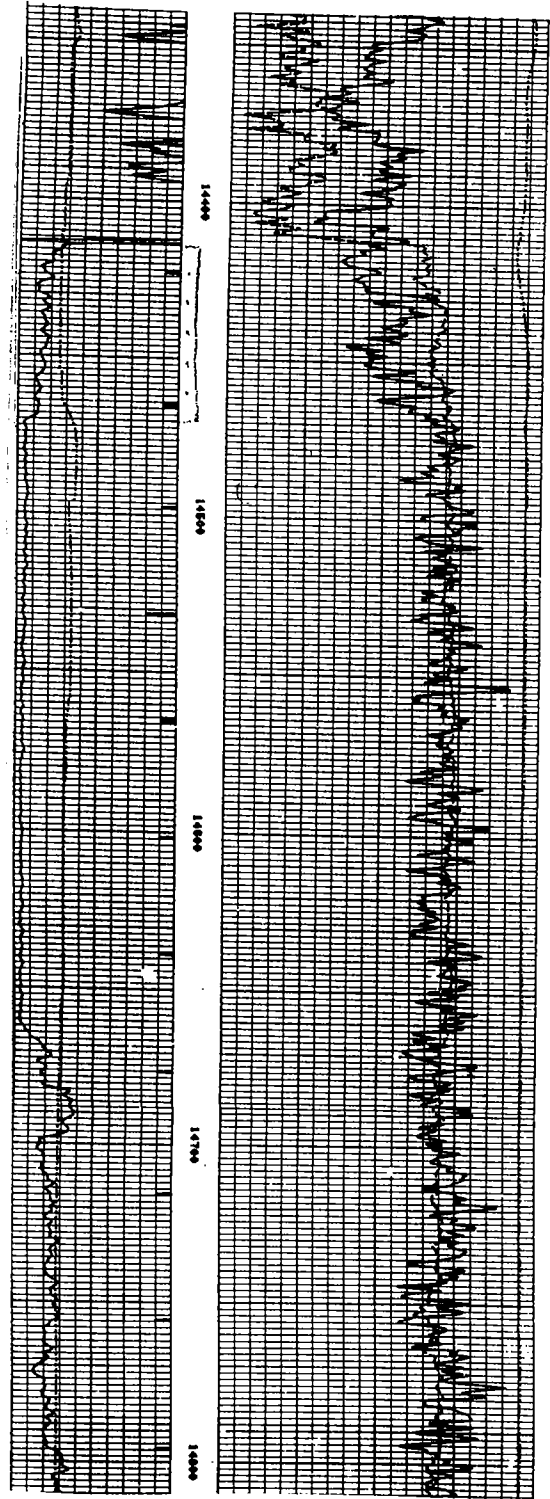
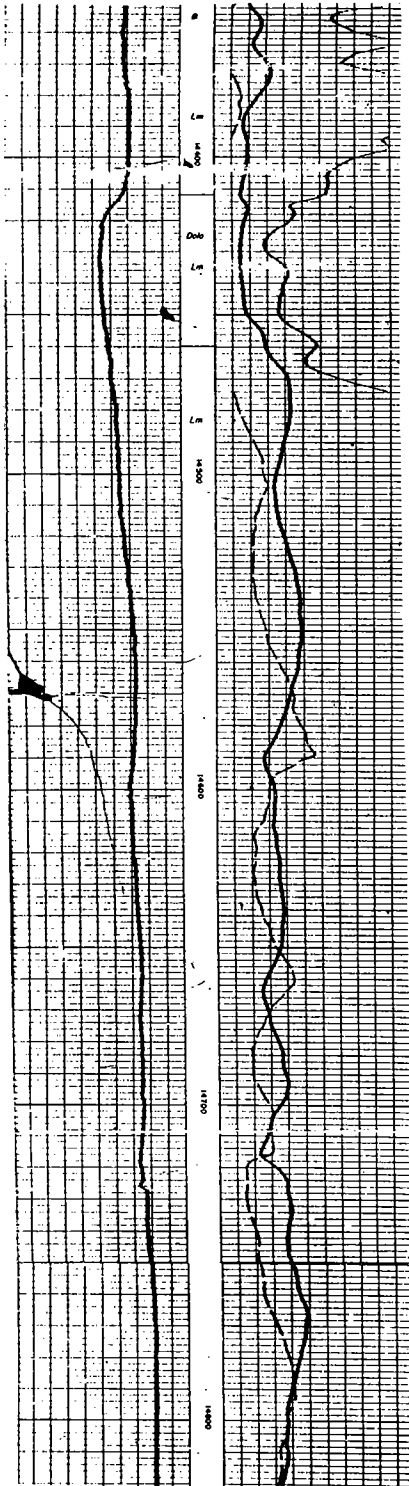
15,130'-15,180' ?Chimneyhill Subgroup. Dark-gray to faint-reddish-gray fossiliferous micrite with much reduced quartz and very little dolomite; many ostracodes.

15,180'-15,220' ?Chimneyhill Subgroup. Light-gray organo-detrital limestone with much light chert. Very little detrital quartz, and only a small amount of dolomite.

Sylvan Shale 15,220'

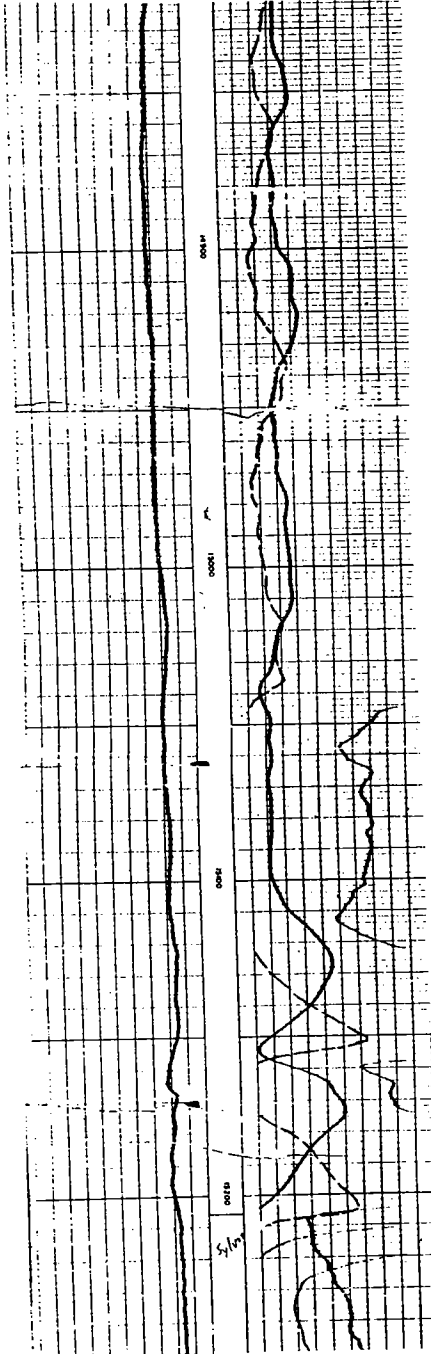
Denver  
1-A School Land  
SE SW  
Sec. 16, T. 10 N., R. 9 W.  
Caddo County, Oklahoma  
elev. 1540'

Amoco Production  
1-A Caldwell  
600' FNL & 1980' FEL  
Sec. 21, T. 10 N., R. 9 W.  
Caddo County, Oklahoma  
elev. 1521'



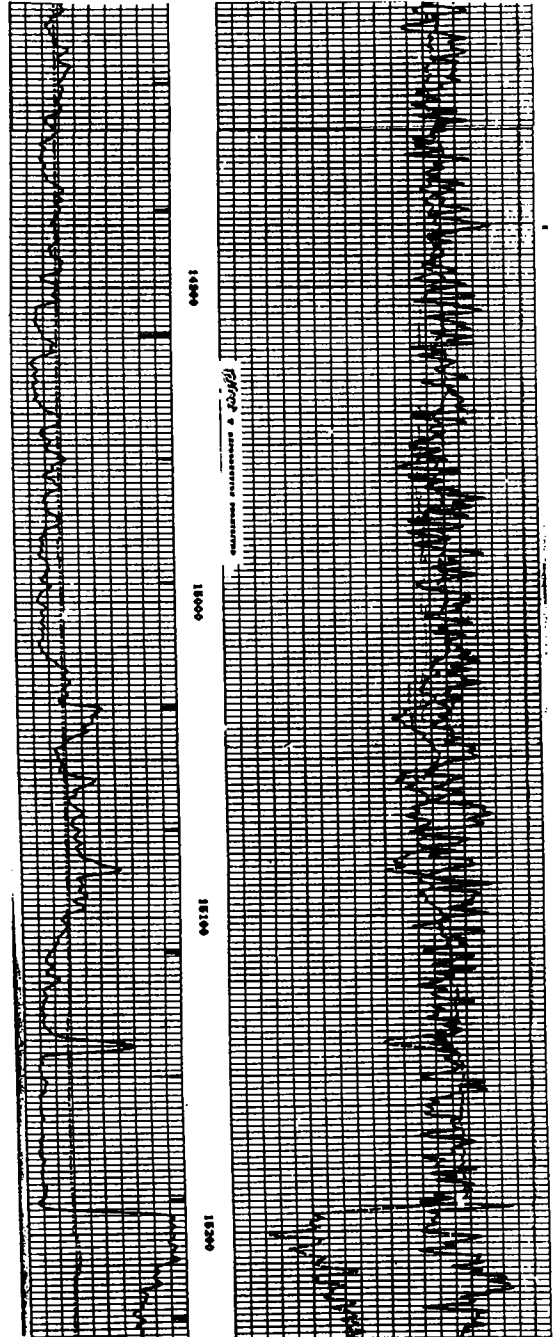
Denver  
1-A School Land  
SE SW  
Sec. 16, T. 10 N., R. 9 W.  
Caddo County, Oklahoma  
elev. 1540'

continued



Amoco Production  
1-A Caldwell  
600'FNL & 1980'FEL  
Sec. 21, T. 10 N., R. 9 W.  
Caddo County, Oklahoma  
elev. 1521'

continued



CHAPMAN & POLAND 1 SCHRIMSHER—  
SW $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 19, T. 10 N., R. 15 E., McIntosh  
County, Oklahoma; elev. 781 KB (775' GL); TD 4580'  
(the last sample is from 4580'; Lane Wells logged  
a total depth of 4429', but the well must have been  
deepened after the log was run); compl. unknown.  
(Lane Wells logged this well 2/20/60, D&A?) Tops:  
Hunton 4343' (-3568') (SP log), Sylvan 4423'  
(-3648') (SP log), Welling 4490' (-3715') (sample  
depth); Hunton thickness 80'. Samples examined  
from 4300' to 4580', fair quality, but with some  
contamination from above; 10 thin sections; samples,  
Oklahoma Well Sample Service, Shawnee, Oklaho-  
ma.

Hunton strata in this well include about 10' of  
marlstone at the top. This has widely scattered fossils,  
mostly ostracodes, along with minor fine angular  
detrital quartz but very little dolomite. This rock  
resembles the marlstone beds in the upper part of  
the Oklahoma Natural Gas 1 Hale, about 7 miles  
to the southwest. Lithologically these strata resemble  
the Henryhouse-Haragan marlstones of the Arbuckle  
Mountain region. A similar marlstone lithology is  
also known to be present in the Clarita Formation  
of the Arbuckle Mountains, and the thickness and  
regional relations suggest that this is the case in  
the 1 Schrimsher. This is the farthest known eastward  
extension of any marlstone in the Silurian of Oklaho-  
ma and is here referred to the Chimneyhill with  
question. The underlying Hunton beds are heavily  
dolomitized crinoidal beds that are tentatively corre-  
lated with the strongly dolomitic facies of the Quarry  
Mountain Formation.

*Woodford (Chattanooga) Shale*

No Misener (Sylamore) Sandstone recognized.

*Hunton Group 4343'-4423' (SP log)*

4343' (SP log) -4350' (sample depth) ?Silurian;  
?Chimneyhill Subgroup. Ostracodal marlstone with  
a few widely scattered fine (to 0.1 mm) angular  
detrital quartz grains; very little dolomite. This  
appears to be a mud-supported rock with fairly  
typical marlstone texture.

4350'-4400' (sample depths) Silurian; Chimney-  
hill Subgroup. ?Quarry Mountain Formation.  
Heavily dolomitized crinoidal carbonate and porous  
crystalline dolomite. Little or no detrital quartz.

4400'-4430' (sample depths) ?Tenkiller Forma-  
tion. Pink crinoidal micrite with only traces of spar;  
ostracodes and other shelly fossils common, but  
only a few bryozoans. Weakly to moderately do-  
lomitized. No detrital quartz observed.

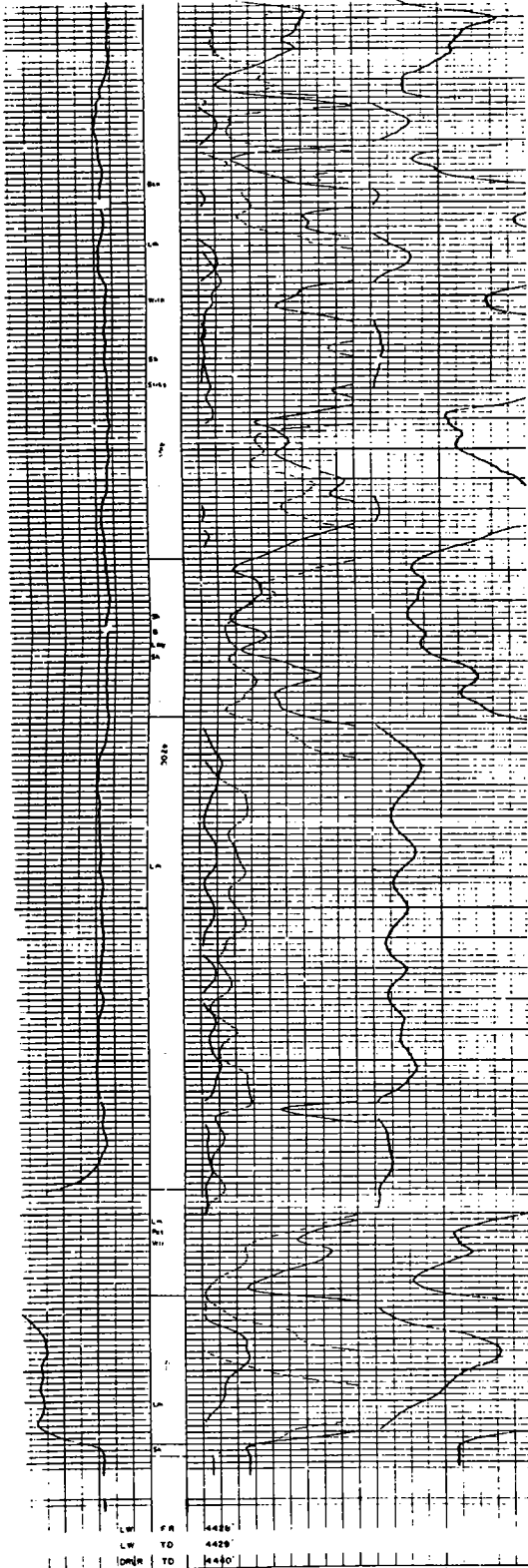
4430'-4440' (sample depths) ?Blackgum Forma-  
tion. Mixture of pink crinoidal micrite like above  
and heavily dolomitized crinoidal carbonate. Chert  
present, but no glauconite observed. Some scattered  
angular detrital quartz grains in the lower part.

*Sylvan Shale 4423' (SP log) -4490' (sample depth)*

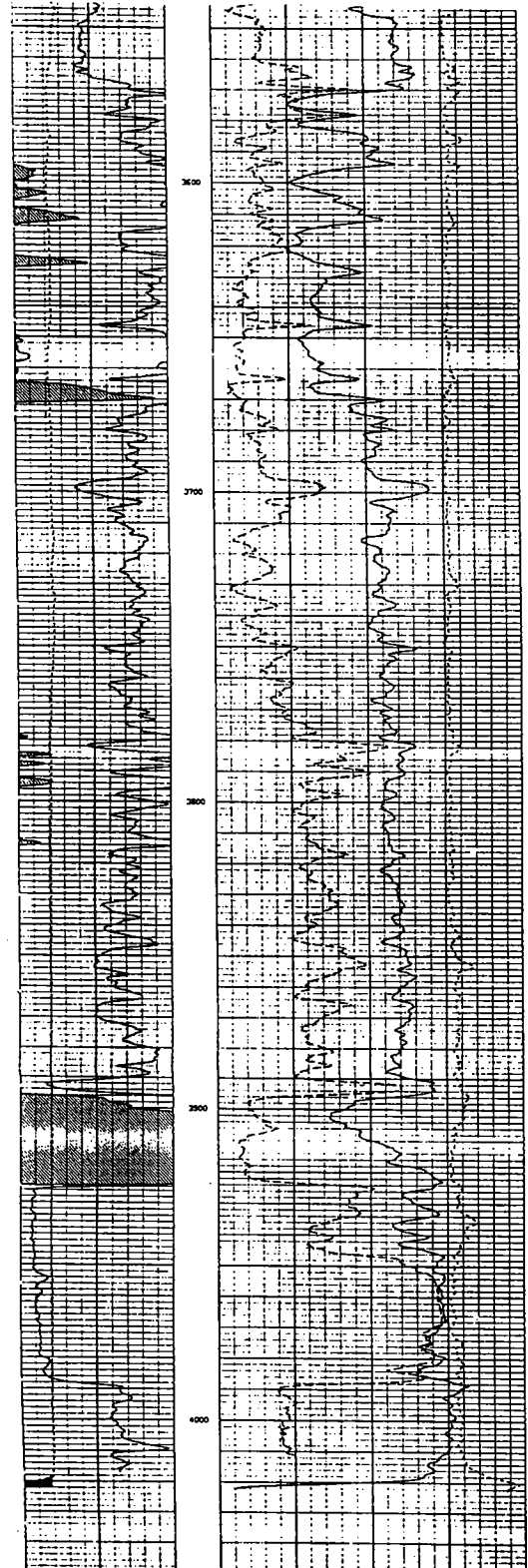
*Welling Formation 4490' (sample depth)*

4490'-4495' (thin section) Organo-detrital cri-  
noidal sparite with numerous well-rounded quartz  
grains to 0.5 mm.

Chapman & Poland  
 1 Schrimsher  
 SW SE NE  
 Sec. 19, T. 10 N., R. 15 E.  
 McIntosh County, Oklahoma  
 elev. 781'



Dyne Exploration  
 1-17 T-Bar Ranch  
 SE NW NE SW  
 Sec. 17, T. 10 N., R. 15 E.  
 McIntosh County, Oklahoma  
 elev. 667'







MID-CONTINENT 1 SCOTT—NW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec. 29, T. 10 N., R. 10 E., Okfuskee County, Oklahoma; elev. 904' DF; TD 4150'; compl. 10/20/50, Hunton production reported. Tops: Misener 3800' (-2896') (sample depth), Hunton 3890' (-2986') (sample depth), Sylan 3995' (-3091') (sample depth), Welling 4085' (-3181') (sample depth); Hunton thickness 115'. Samples examined from 3800' to 4120', good quality; 8 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The upper 10' to 15' of the Hunton is a light-gray crinoidal-bryozoan sparite with no visible dolomite or quartz. On the basis of its stratigraphic position and lithology, it is provisionally referred to the Frisco Formation (cf. 1 Hall and 1 Boley). The remainder of the Hunton strata are strongly dolomitized pelmatozoan sparites ranging into porous crystalline dolomite and are here referred to the Chimneyhill Subgroup.

*Woodford (Chattanooga) Shale*

3800'-3890' (sample depth) Misener Sandstone.  
Chert and carbonate with subangular to well-rounded quartz detritus.

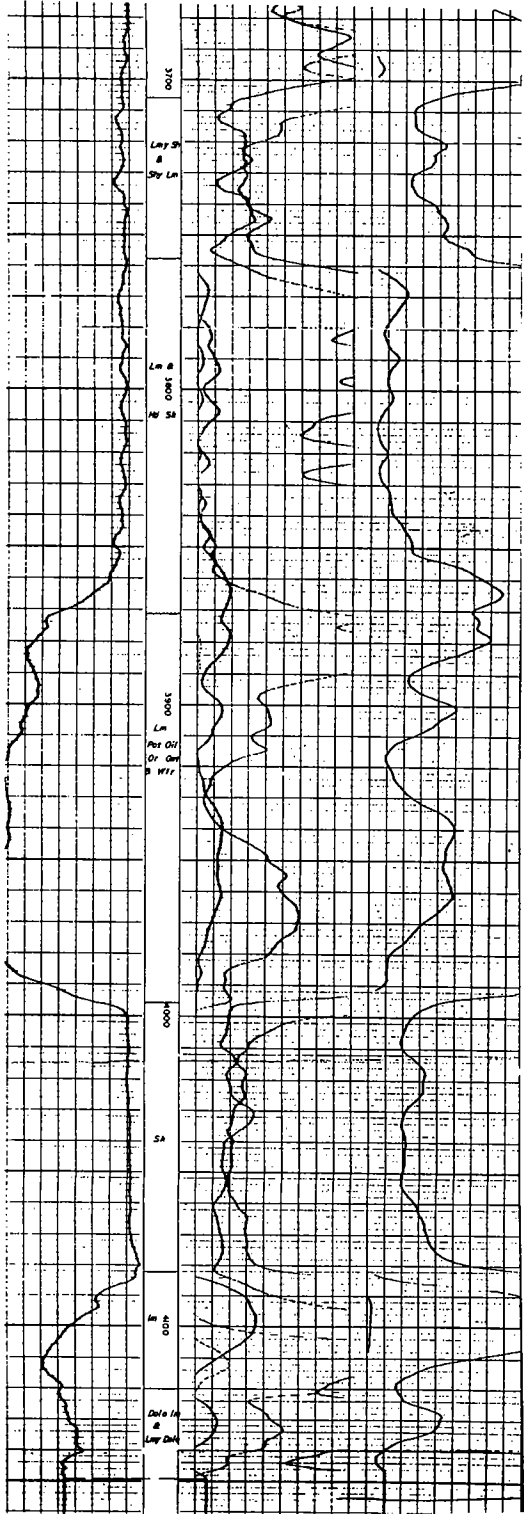
*Hunton Group* 3890'-3995' (sample depth)  
3890'-3905' (sample depths) ?Lower Devonian;  
?Frisco Formation. Light-gray, organo-detrital crinoidal-bryozoan sparite. No quartz or dolomite observed.

3905'-3995' (sample depths) Silurian; Chimneyhill Subgroup. Some moderately dolomitized pelmatozoan sparite, but mainly heavily dolomitized crinoidal limestone and porous crystalline dolomite. Very little detrital quartz.

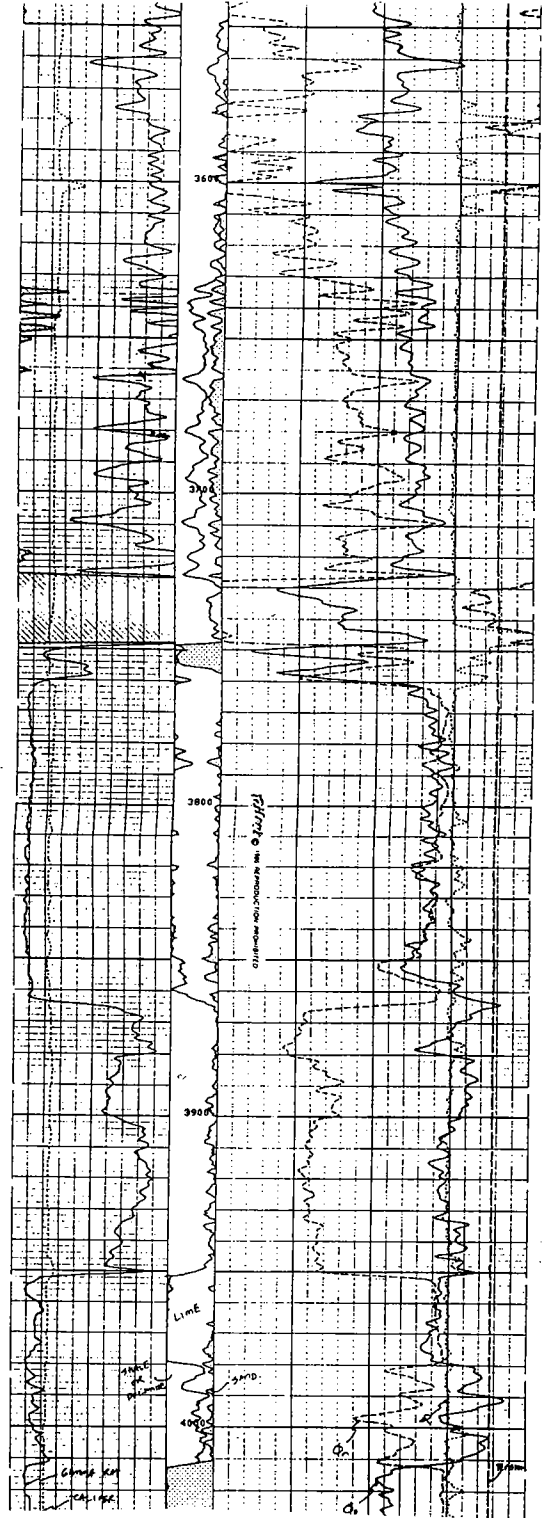
*Sylan Shale* 3995'-4085' (sample depths)

*Welling Formation* 4085' (sample depth)  
4105'-4110' (thin section) Organo-detrital sparite with a few rounded quartz grains. Little or no dolomite.

Mid-Continent  
1 Scott  
NW SE NE  
Sec. 29, T. 10 N., R. 10 E.  
Okfuskee County, Oklahoma  
elev. 904'



Eagle Oil  
3 Wallace  
SE NE  
Sec. 19, T. 10 N., R. 10 E.  
Okfuskee County, Oklahoma  
elev. 795'

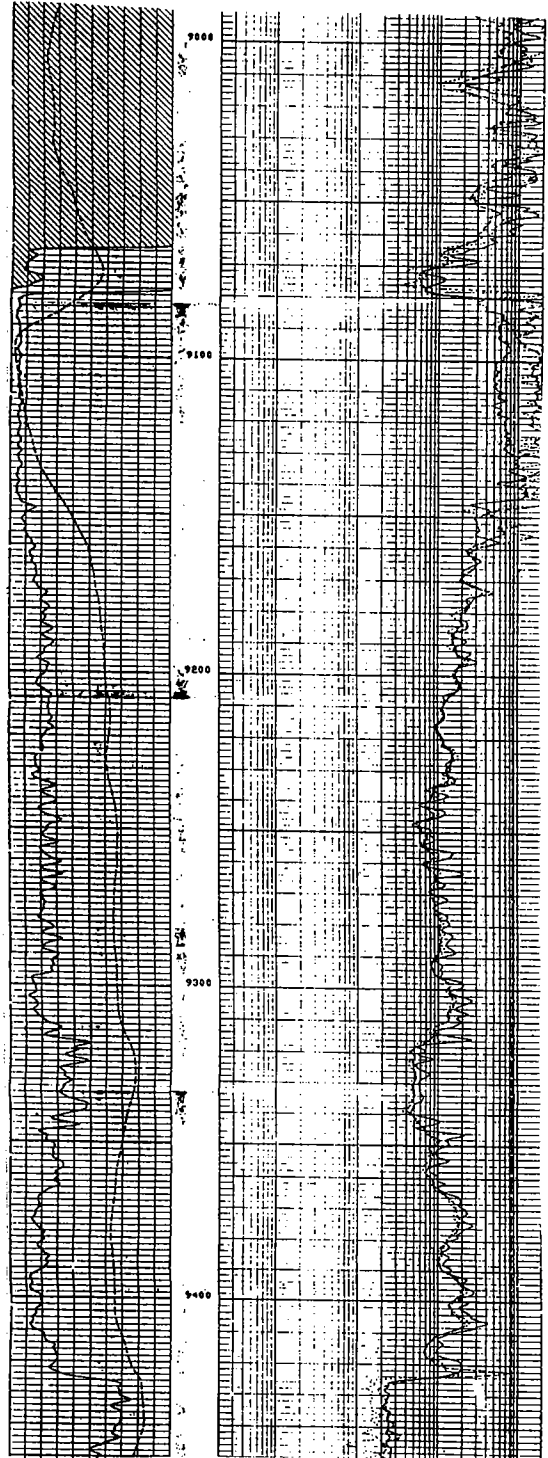
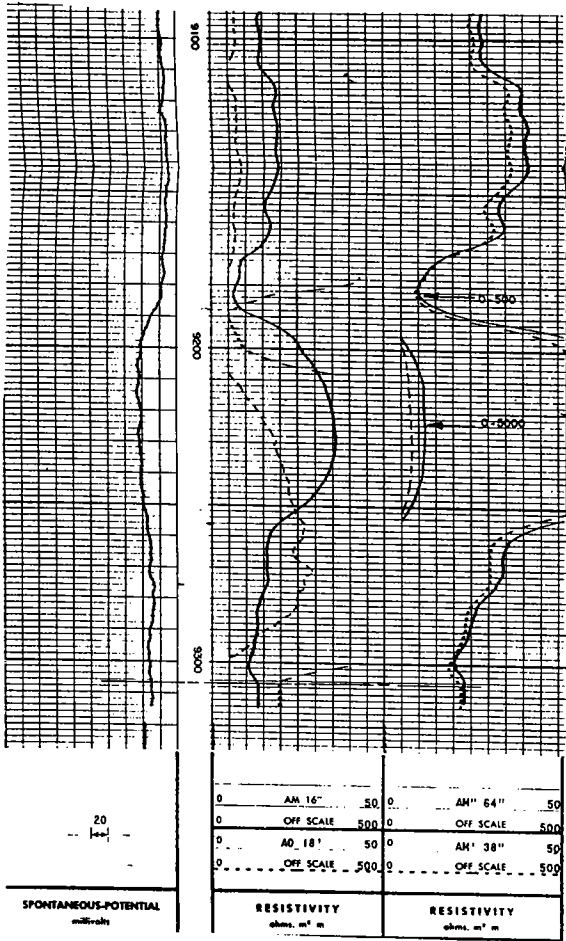


GULF 1 SHADDIX--C NW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec. 29, T. 6 N.,  
R. 3 W., McClain County, Oklahoma; elev.  
1191'; TD 9253' (Hunton); compl. 7/15/57,  
Hunton production reported. Tops: Woodford  
(CC) 9042' (-7851'), Hunton (CC) 9190'  
(-7999'). Cored 9205'-9253' (Hunton); 3 thin  
sections; no analyses. OU Core Library.

Core has been reboxed, and some portions  
appear to have been mixed. It is organo-  
detrital sparite, low in dolomite and low in  
insoluble detritus (pl. 1, figs. 3a, 3b).  
Fossils at 9248' (?) yield number of large  
shells, including leptostrophid brachiopods,  
?Meristella vascularia (cf. Amsden and Ven-  
tress, 1963, pl. 9, figs. 13-17), and large  
plethorhynchid (cf. Amsden and Ventress, 1963,  
pl. 4, figs. 5-10). These fossils and lithol-  
ogy indicate Frisco Formation rather than  
Fittstown Member of Bois d'Arc Formation.

Gulf  
 1 Shaddix  
 NW NE  
 Sec. 29, T. 6 N., R. 3 W.  
 McClain County, Oklahoma  
 elev. 1191'

1-29 Atkinson  
 NW SW SE  
 Sec. 29, T. 6 N., R. 3 W.  
 McClain County, Oklahoma  
 elev. 1164'



GULF 1 SHADE--C SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 31, T. 25 N.,  
R. 14 W., Woods County, Oklahoma; elev. 1596';  
TD 8000' (Arbuckle); compl. 7/25/57, Hunton  
production reported. Tops: Woodford (CC)  
7034' (-5438'), Hunton (CC) 7128' (-5532'),  
Sylvan (CC) 7173' (-5577'); Hunton thickness  
45'. Cored 7131'-7172' (Hunton); no thin  
sections; chemical analyses; OU Core Library.

This well located near northern truncated  
margin of Hunton Group (panel 1, map A).

Woodford Shale 7034'-7128'

Hunton Group 7128'-7173'

7128'-7131' No core.

7131'-7172' Silurian; Chimneyhill Subgroup.

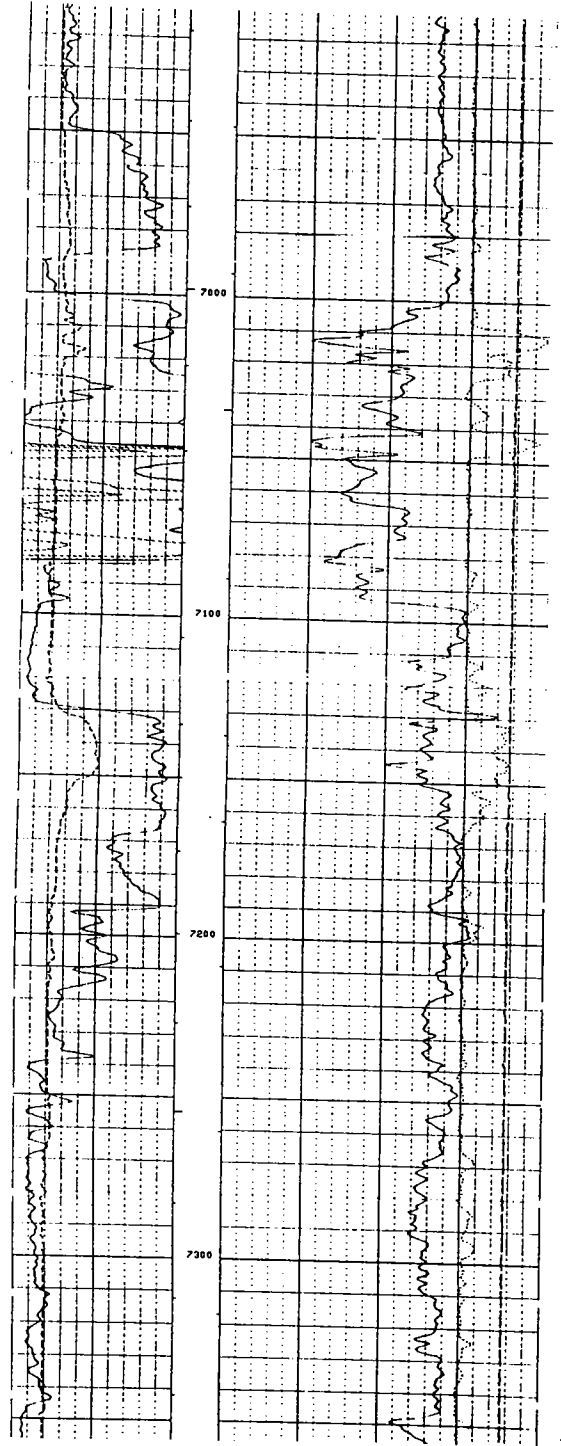
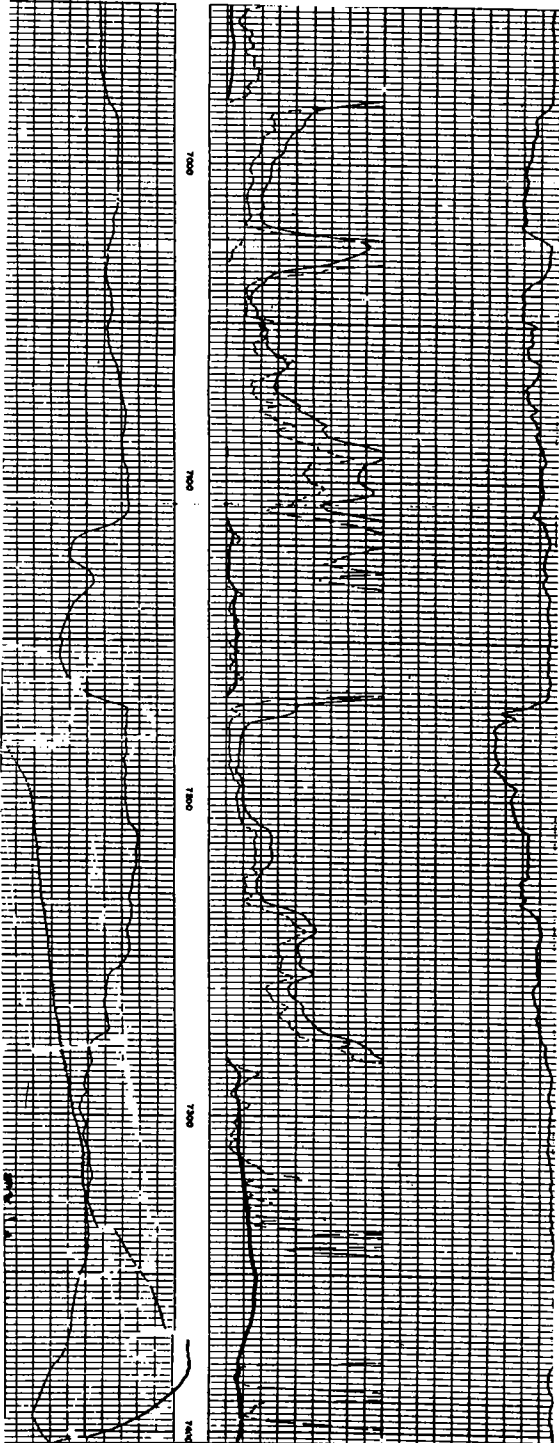
Pale-gray to greenish-gray organo-detrital  
limestone; MgCO<sub>3</sub> averages 9.04%, HCl insol-  
ubles 8.19%. Parts with much pyrite and  
glauconite. Some visual porosity in form  
of open vugs lined with crystals. No diag-  
nostic fossils observed, and this interval  
referred to Chimneyhill Subgroup on basis  
of lithology and stratigraphic position.

7172'-7173' No core.

Sylvan Shale 7173'

Gulf  
1 Shade  
SE SW  
Sec. 31, T. 25 N., R. 14 W.  
Woods County, Oklahoma  
elev. 1596'

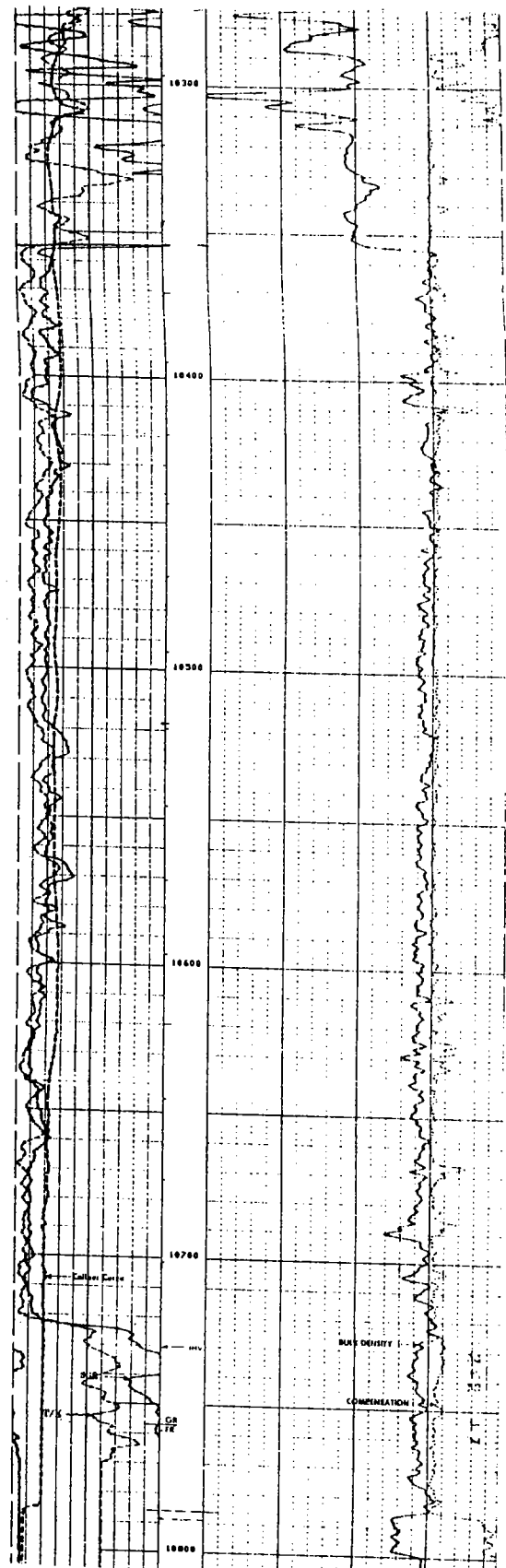
1-31 Petro-hopeton-Litzenberger  
SE SW  
Sec. 31, T. 25 N., R. 14 W.  
Woods County, Oklahoma  
elev. 1610'



**GULF OIL CORP. 1-23 SHAFFER** — C SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 23, T16N, R10W, Blaine County, Oklahoma; elevation GL 1,232 ft; TD 10,785 ft (Sylvan); completion 12/2/80.

Cored Hunton strata from 10,400 to 10,485 ft; 10,600 to 10,673 ft; and 10,684 to 10,700 ft. 25 thin sections prepared and 25 spot samples analyzed for CaCO<sub>3</sub>, MgCO<sub>3</sub>, and HCl insolubles. Conodont samples were sent to Dr. James E. Barrick (Texas Tech University) and the core was examined by Amsden for megafossils. The following is a brief summary of this core.

- 10,400-10,402 ft Low magnesium fossiliferous oolite; 2 thin sections.
- 10,402-10,420 ft Crystalline dolomite; 2 spot samples average 37.7% MgCO<sub>3</sub>. 2 thin sections.
- 10,420-10,485 ft Moderately dolomitic, fossiliferous marlstone; moderately large pentamerid fragments, probably *Kirkidium* sp. 6 thin sections; MgCO<sub>3</sub> average 13.8%; 9.1% HCl insolubles (*Kirkidium* biofacies).
- 10,485-10,600 ft No core.
- 10,600-10,638 ft Skeletal grainstone; 4 samples average 3.5% MgCO<sub>3</sub>, 9.1% HCl insolubles. Dr. James E. Barrick (Texas Tech University) identifies specimens of *Belodella silurica* at 10,626 ft indicating a late Wenlockian age in Chimneyhill Subgroup (Barrick and Klapper, 1976, p. 66).
- 10,638-10,673 ft Marlstone grading into skeletal grainstone in the lower part; 4 spot samples averaging 6.5% MgCO<sub>3</sub> and 8.5% HCl insolubles. Specimens of the conodont *Kockelella* sp. at 10,692 ft; small brachiopods at 10,695 ft include *Orthostrophella*, sp., *Acutilineolus* sp., *Merista* sp. *Nanospira* sp. The lower beds are slightly glauconitic (Chimneyhill Subgroup).
- 10,673-10,684 ft (no core)
- 10,684-10,700 ft

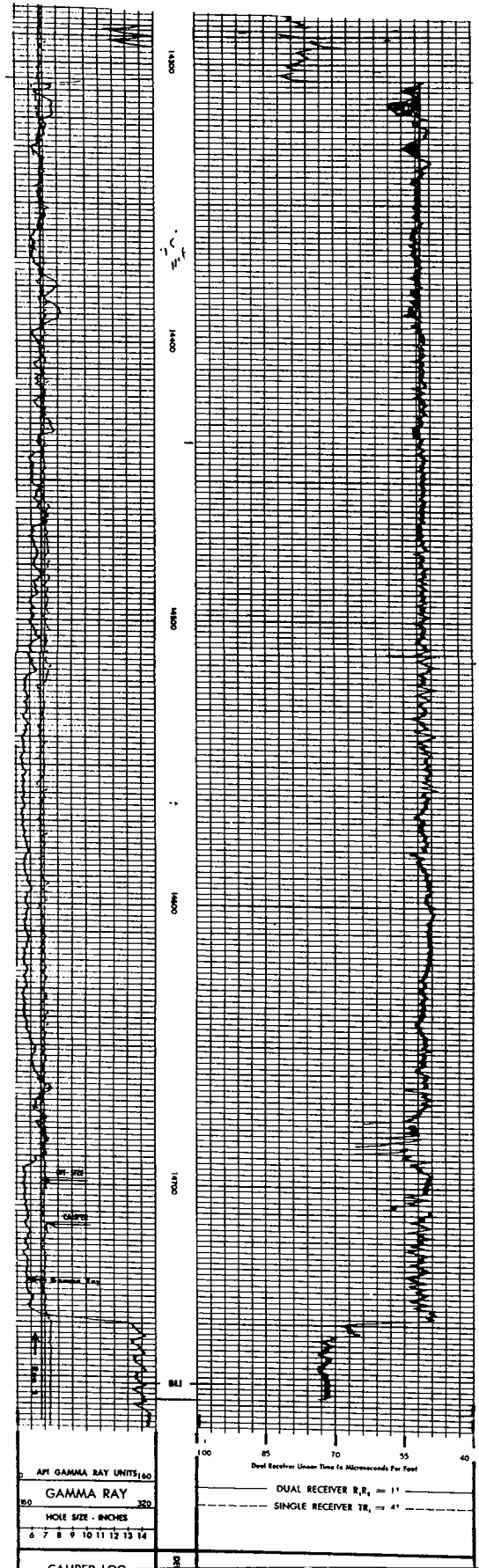


MOBIL 1 SHARP-HUNT UNIT--E $\frac{1}{2}$ E $\frac{1}{2}$ NW $\frac{1}{4}$  sec. 26,  
 T. 15 N., R. 16 W., Custer County, Oklahoma;  
 elev. 1760'; TD 14,790' (Sylvan); compl.  
 2/26/66, Hunton production reported. Tops:  
 Woodford (CC) 14,204' (-12,444'), Hunton  
 (core) 14,299' (-12,539'), Sylvan (CC) 14,750'  
 (-12,990'); Hunton thickness 451'. Cored  
 14,287'-14,453' (Woodford-Hunton); no thin  
 sections or chemical analyses; Mobil ware-  
 house, Lindsay, Oklahoma.  
Woodford Shale 14,204'-14,299'  
Hunton Group 14,299'-14,750'  
 14,299'-14,453' Silurian; Kirkidium biofacies.  
 Gray dolomite with minor chert nodules.  
 Specimens of Kirkidium observed from 14,299'  
 to 14,314'.  
 14,453'-14,750' No core.  
Sylvan Shale 14,750'

MOBIL OIL CO. 1 SHARP-HUNT UNIT — E $\frac{1}{2}$ E $\frac{1}{2}$ NW $\frac{1}{4}$   
 sec. 26, T15N, R16W, Custer County, Oklahoma; elevation  
 GL 1,740 ft, DF 1,758 ft; TD 10,343 ft (Sylvan); completion  
 12/21/64.

This well was reworked by Mobil Oil Co., designated as  
 the 1-DD Sharp-Hunt Unit; TD 14,790 ft (Sylvan); comple-  
 tion 2/26/66.

Cored the upper 198 ft of Hunton of which the upper-  
 most 50 ft is high magnesium dolomite; two spot samples  
 average 29.4% MgCO<sub>3</sub> (Amsden, 1975, p. 98-99). Samples  
 from this well were examined in 1979 and 16 thin sections  
 prepared. This part of the Hunton is mostly a low magne-  
 sium marlstone interbedded with some skeletal grain-  
 stones. The basal 50 ft of the Hunton included interbeds of  
 crystalline dolomite. *Illustrated on PLATE 2, STRATIGRAPHIC  
 SECTION D-D'.*





ARKLA 1 SHAW—SW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 19, T. 9 N., R. 20 E., Haskell County, Oklahoma; elev. 568' KB (558' GL); TD 4968' (Ordovician); compl. 6/9/71, D&A. Tops: Woodford 4790' (-4222') (GR log), Hunton 4838' (-4270') (GR log), Sylvan 4946' (-4378') (GR log), Welling 4960' (-4392') (GR log); Hunton thickness 108'. Samples examined from 4800' to 4968' (TD); 9 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The Woodford-Hunton sequence is fairly well defined in the samples, although there is some shale contamination through the Hunton interval. A thin section from the deepest sample (4965') is composed of pink crinoidal micrite with glauconite and appears to be typical Hunton-Blackgum-type lithology. The Sylvan Shale is reasonably well defined on the gamma-ray log from 4946' to 4956'. Its absence from the samples is almost certainly due to sample lag. Hunton strata are represented by a dolomitic lithofacies with most samples ranging from strongly dolomitized into crystalline dolomite. This all appears to represent Chimneyhill strata, although the divisions of Quarry Mountain-Tenkiller-Blackgum are not well defined.

*Woodford (Chattanooga) Shale* 4790'-4838' (GR log)

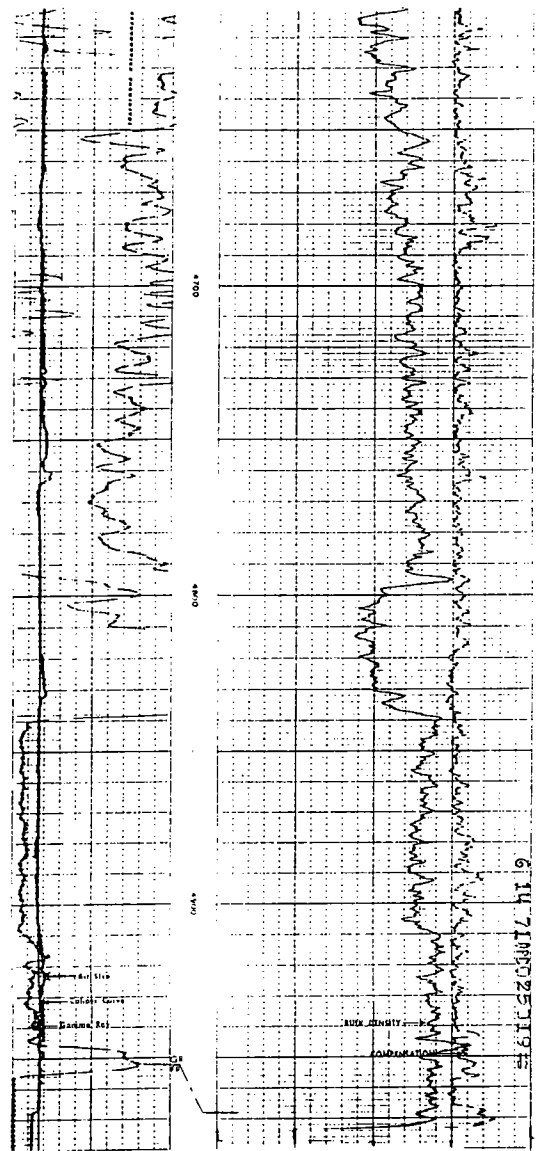
Trace of Misener Sandstone.

*Hunton Group* 4838'-4946' (GR log)

4838'-4946' (GR log) Silurian; Chimneyhill Subgroup. Mostly heavily dolomitized organo-detrital limestone ranging into crystalline dolomite; a few pieces of weakly dolomitized limestone. Fossils all appear to retain original microtexture; pelmatozoans common, along with bryozoans, etc. A few scattered grains of detrital quartz in lower part. Little or no chert. This interval assigned to the Chimneyhill on the basis of its lithologic character and stratigraphic position. No clearly defined Tenkiller or Blackgum lithology.

*Sylvan Shale* 4946'-4960' (GR log)

*Welling Formation* 4960'-4968' (GR log)



KIRKPATRICK 1-A SHEWEY--C NW¼ sec. 27, T. 22 N.,  
 R. 12 W., Major County, Oklahoma; elev. 1256';  
 TD 8070' (Hunton); compl. 9/6/66, Hunton  
 production reported. Tops: Hunton (CC)  
 7818' (-6562'). Cored 7855'-7908' (Hunton);  
 4 thin sections; chemical analyses; porosity  
 test (P5-A); OU Core Library.

Kirkpatrick 1 Shewey Unit, 1-A Shewey, and 1  
 Wichert, located in adjacent sections, all  
 cored upper part of Hunton and all encountered  
 gray porous, crystalline dolomite. Porosity  
 appears to be in large part result of dissolu-  
 tion of fossil material, mostly pelmatozoan  
 debris. Faunal information from 1 Shewey Unit  
 and 1 Wichert indicates that Hunton is largely  
 if not entirely Silurian in age.

Woodford Shale

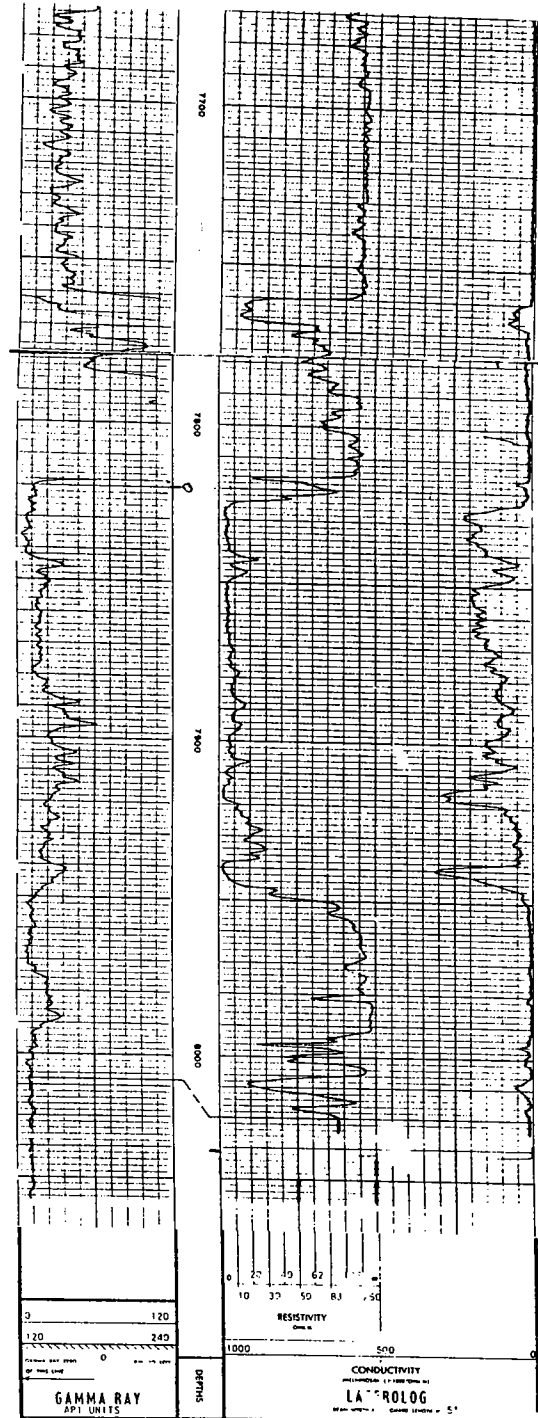
Hunton Group 7818'-8070' (TD)

7818'-7855' No core.

7855'-7908' Silurian. Light-gray porous,  
 crystalline dolomite;  $MgCO_3$  averages 35.30%,  
 HCl insolubles 11.35%. Fossiliferous, with  
 bryozoans, brachiopods, trilobites and much  
 pelmatozoan material. Fossils mostly pre-  
 served as molds or in spar. Porosity test  
 P5-A, depth 7856', with 12.8% porosity, 0.00  
 md permeability. Assigned to Silurian on  
 basis of lithology and stratigraphic posi-  
 tion (cf. to 1 Shewey Unit and 1 Wichert).

7908'-8070' No core.

8070' TD



KIRKPATRICK 1 SHEWEY UNIT--C SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 28,  
 T. 22 N., R. 12 W., Major County, Oklahoma;  
 elev. 1266'; TD 8135' (Sylvan); compl. 8/30/66,  
 Hunton production reported. Tops: Woodford  
 (CC) 7856' (-6590'), Hunton (CC) 7890' (-6624'),  
 Sylvan (CC) 8056' (-6790'); Hunton thickness  
 166'. Cored 7895'-7932' (Hunton); 4 thin  
 sections; chemical analyses; porosity test  
 (P7-A); OU Core Library.

Cored interval is porous dolomite (P7-A);  
 15.6% porosity, 5 md permeability, with poros-  
 ity, in large part, result of dissolution  
 of crinoidal material.

Woodford Shale 7856'-7890'

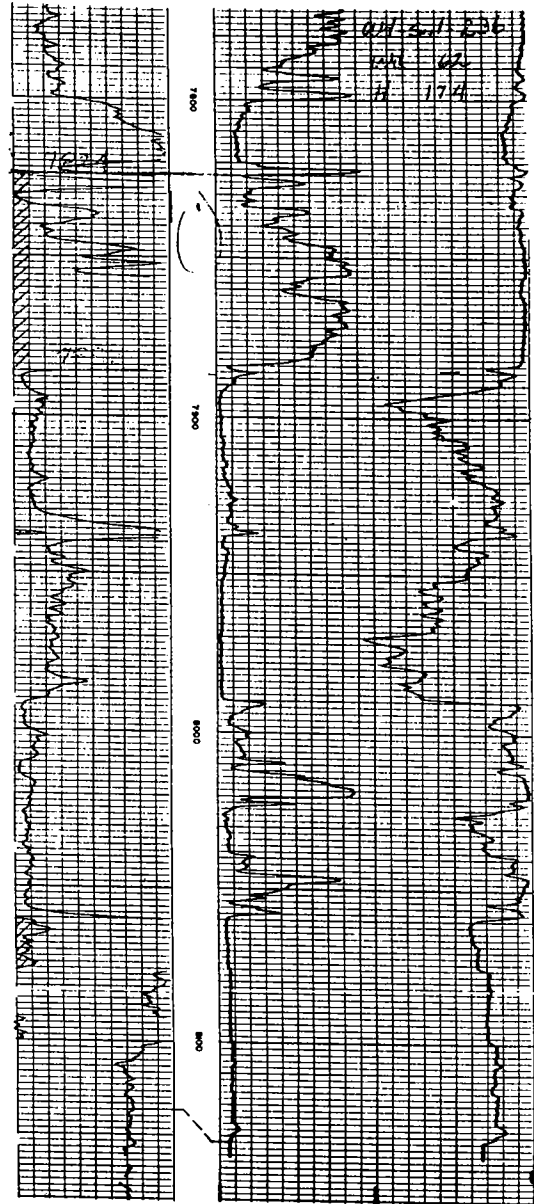
Hunton Group 7890'-8056'

7890'-7895' No core.

7895'-7932' Silurian. Light-gray porous,  
 crystalline dolomite with a few widely scat-  
 tered chert nodules; MgCO<sub>3</sub> averages 40.33%,  
 HCl insolubles 6.24%. Fossils include  
 pelmatozoan material and some trilobites,  
 preserved as molds. Porosity test P7-A at  
 7906'. Specimen of calymenid trilobite at  
 7913'. Assigned to Silurian on basis of  
 this fossil and its stratigraphic position.

7932'-8056' No core.

Sylvan Shale 8056'



FLEET 1 SINCLAIR—C NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 14, T. 4 N., R. 8 E., Pontotoc County, Oklahoma; elev. 894' KB (883' GL); TD 6205' (Ordovician, Arbuckle); compl. 11/23/57, production unknown. Tops: Woodford 4685' (-3791') (SP log), Hunton 4845' (-3951') (SP log), Sylvan 5058' (-4164') (SP log) 5095' (sample depth), Welling 5170' (-4276') (sample depth), Bromide 5205' (-4311') (sample depth); Hunton thickness 213'. Samples examined from 4800' to 5220', good quality, although there is substantial sample lag in the Sylvan top; 19 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The Hunton sequence is fairly typical for the Arbuckle Mountain outcrops. It consists of marlstone (Henryhouse and/or Haragan) underlain by the Chimneyhill organo-detrital limestones including Clarita pink crinoidal limestone, Cochrane glauconitic limestone, and Keel oolite. The marlstone includes a substantial amount of silt-size quartz detritus with low to moderate dolomitization. Hunton strata are 213' thick but include no organo-detrital sparite (Frisco) at the top (cf. 1 Hargrove-Hudson and 1-6 Johnson).

*Woodford (Chattanooga) Shale* 4685'-4845' (SP log)  
No Misener Sandstone observed.

*Hunton Group* 4845'-5058' (SP log)

4845' (SP log) -5000' (sample depth) Silurian-?Devonian; Henryhouse Formation, probably including some Haragan Formation. Fossiliferous marlstone with scattered crinoids, ostracodes, trilobites, bryozoans, and other shelly debris; some beds with many bryozoans. Moderate to substantial subangular detrital quartz grains to 0.2 mm. Low to moderate dolomite in the form of euhedral crystals scattered through the mud matrix. A few pieces of chert in the upper 40'.

5000' (sample depth) -5058' (SP log) Chimneyhill Subgroup.

5000'-5055' (sample depths) Clarita Formation. Pink crinoidal micrite with some subangular silt-size detrital quartz; mostly with very little dolomite. Shelly debris, including a number of ostracodes.

5055'-5090' (sample depths) Cochrane Formation. Weakly dolomitized glauconitic crinoidal micrite and sparite. Very little detrital quartz, but some chert.

5090'-5095' (sample depths) Keel Formation. Fossiliferous oolite with a micrite matrix. Oolites commonly with a fossil nucleus and with radial and concentric banding. Some silicified oolites. Little or no dolomite.

*Sylvan Shale* 5058' (SP log) -5170' (sample depth)  
Light-green shale above, dark-gray below.

*Welling Formation* 5170'-5205' (sample depths)

5174'-5180' (thin section) Organo-detrital crinoidal sparite with some micrite; no detrital quartz or dolomite.

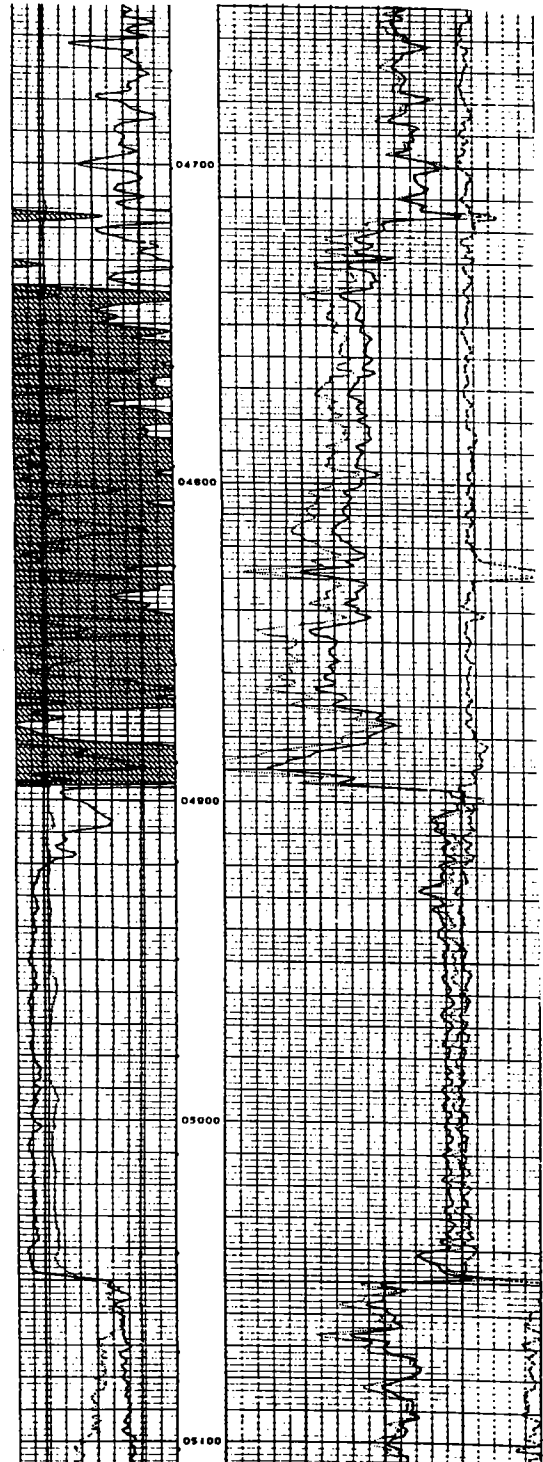
5195'-5200' (thin section) Same as above but with a few scattered detrital quartz grains.

*Bromide Formation* (Pooleville Member-Corbin Ranch) 5205' (sample depth)

5205'-5210' (thin section) Pellet limestone and dense ?algal limestone with sparry calcite; ostracodes, also some organo-detrital micrite with numerous well-rounded quartz grains up to 0.5 mm (pl. 11, fig. 7).

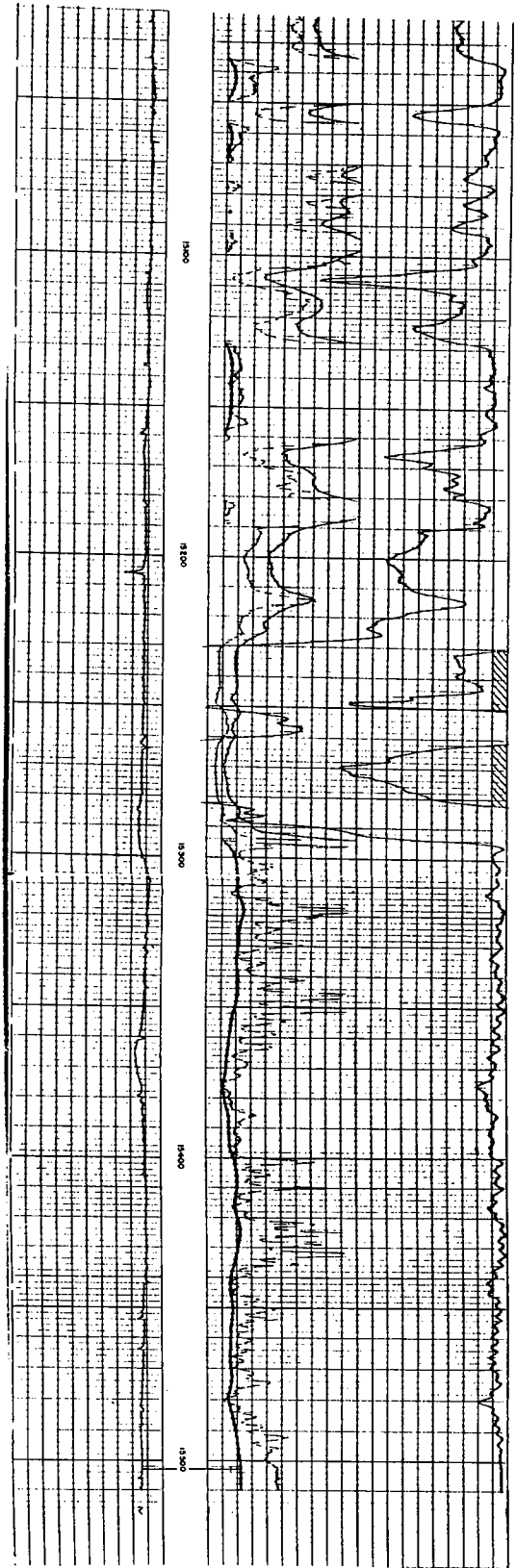
Fleet  
1 Sinclair  
NE NE  
Sec. 14, T. 4 N., R. 8 E.  
Pontotoc County, Oklahoma  
elev. 894'

Lamina Corp  
3-12 Yarbrough  
NW SE SW NW  
Sec. 12, T. 4 N., R. 8 E.  
Pontotoc County, Oklahoma  
elev. 861'



**MAGNOLIA PETROLEUM CO. 1 H. TROY SMITH —**  
SW¼NW¼ sec. 12, T11N, R11W, Caddo County, Okla-  
homa; elevation GL 1,670 ft, DF 1,686 ft; TD 15,500 ft (Hun-  
ton); completion (Na), 8/9/59 (P).

Core (chips only available) 15,256–15,276 ft (Woodford);  
15,295–15,433 ft (Hunton; Henryhouse); samples 15,433–  
15,500 ft (TD). 50 thin sections; samples and core examined  
by Amsden, 1981. Entire Hunton interval is a fossiliferous  
marlstone, moderately silty and dolomitic in upper part,  
with reduced silt and dolomite in the lower part. A well-  
preserved specimen of *Coelospira saffordi* at 15,361 ft; based  
on this brachiopod the Hunton strata are referred to the  
Late Silurian Henryhouse Formation.



**WELL F**

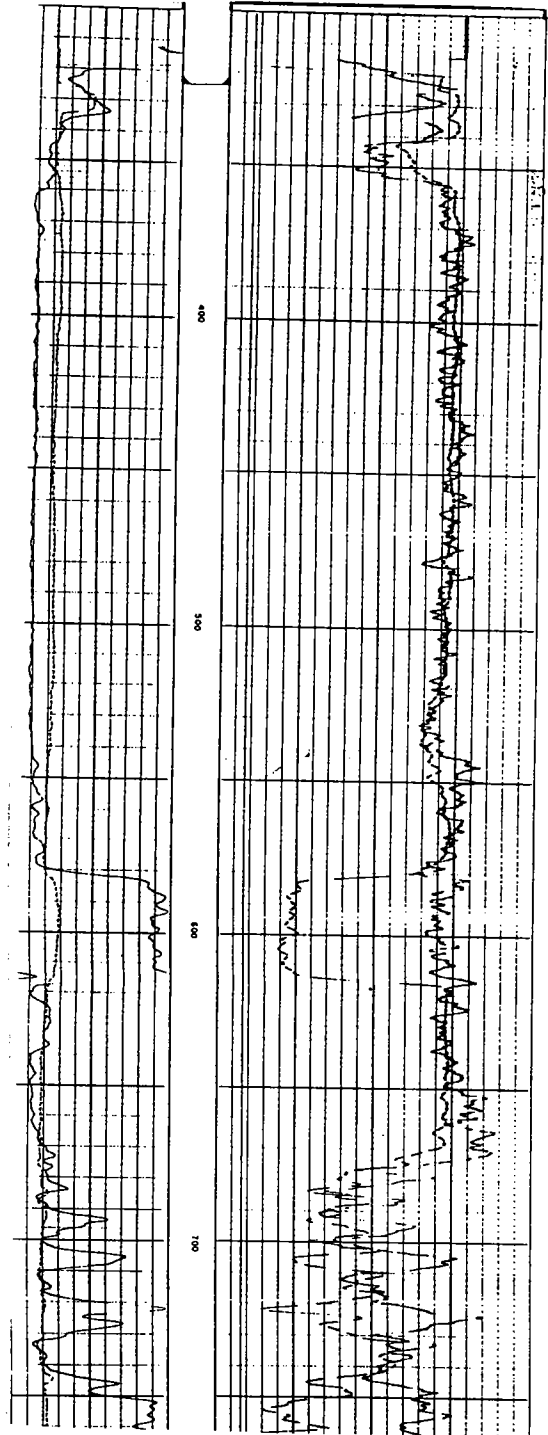
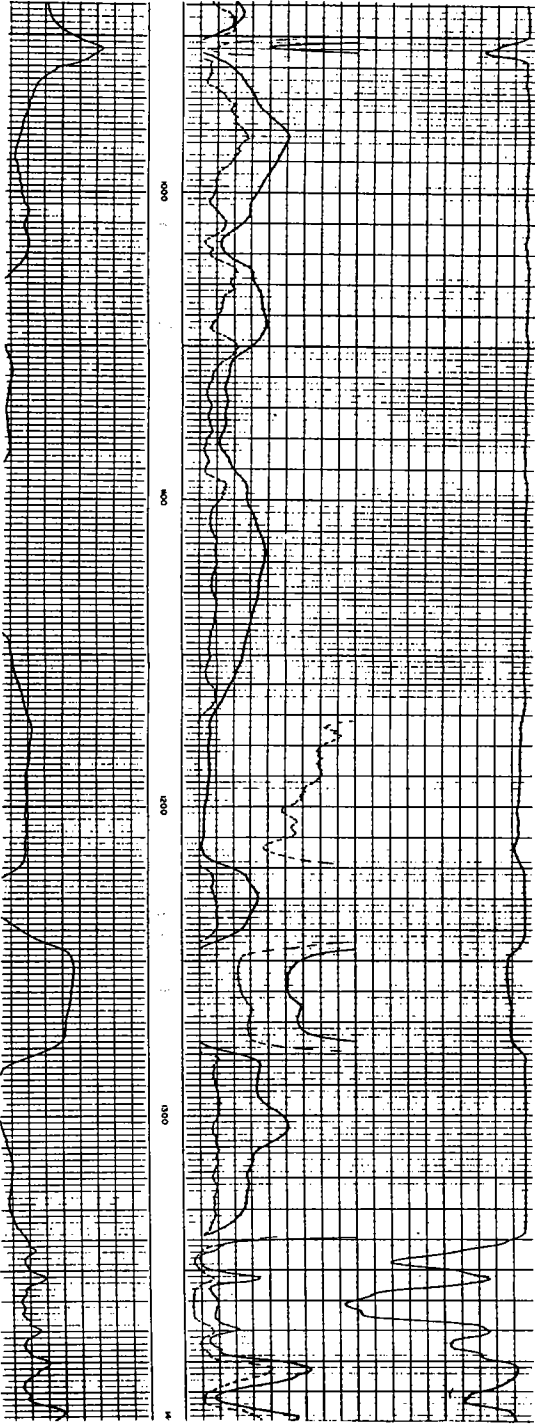
Wheeler et al., 1 Snow

This well is in C SE $\frac{1}{4}$  SW $\frac{1}{4}$  sec. 36, T. 12 N., R. 22 E., Sequoyah County, about 11 miles southwest of Marble City (text-figs. 3, 15). The well was drilled in 1959 with rotary tools, and the collar elevation is 517.6 feet. Cuttings were studied from 960 to 1,260 feet in intervals of 5 feet, and the sample quality is good. Twenty feet of Sylamore Sandstone was encountered in samples 965-985. Lower Devonian rocks are 45 feet thick (985-1,030) and consist of the Sallisaw Formation 40 feet (985-1,025) and Frisco Formation 5 feet (1,025-1,030). Silurian rocks are 220 feet thick (1,030-1,250 feet; text-fig. 3) and comprise five units: Quarry Mountain Formation 190? feet (1,030-1,220?), Marble City Member 155 feet (1,030-1,185) and Barber Member 35? feet (1,185-1,220?; Barber-Tenkiller contact was approximated from the electric log as both units are present in sample 1,220-1,225), Tenkiller Formation, Blackgum Formation, and Pettit Oölite 30? feet (1,220-1,250; top of the Tenkiller estimated from the electric log and individual thickness of Tenkiller and Blackgum uncertain, as both are present in sample 1,235-1,240). The upper portion of the Marble City Member (1,040-1,095) consists largely of dolomite. The Sylan Shale was encountered in sample 1,250-1,255. One thin section was prepared of the Frisco Formation from sample interval 1,025-1,030.

<i>Depth (feet)</i>	<i>Thickness (feet)</i>	
		<b>CHATTANOOGA FORMATION:</b>
960-965	5	Black and brown pyritic shale. <i>Sylamore Sandstone:</i> 20 feet (965-985). Gray sub-angular to subrounded dolomitic calcitic glauconitic phosphatic sandstone; 50-60% residue consisting of quartz and glauconite, coarse- to medium-grained.
965-970	5	Sandstone, gray, coarse- to medium-grained, sub-angular to subrounded; in part dolomitic; trace of fine-grained gray sand.
970-985	15	Sandstone, dolomitic, calcitic, medium- to fine-grained, glauconitic, phosphatic; 50-60% residue consisting of quartz and glauconite; abundant black phosphatic material. <b>SALLISAW FORMATION:</b> 40 feet (985-1,025). Gray to light-gray arenaceous glauconitic limestone; off-white fine-crystalline arenaceous calcitic dolomite; light-gray to off-white to white arenaceous opaque chert.
985-990	5	Limestone, dolomitic, arenaceous, glauconitic, gray to light-gray; 3% residue consisting of quartz and glauconite.
990-995	5	Limestone, as above; dolomite, calcitic, off-white, fine-crystalline, 50%.
995-1,000	5	Dolomite, calcitic, fine-crystalline, off-white.
1,000-1,005	5	Dolomite, as above; chert, gray, opaque, 15%; trace of limestone, gray to dark-gray, mottled, fine-crystalline, dolomitic.

Wheeler et al  
1 Snow  
SE SW  
Sec. 36, T. 12 N., R. 22 E.  
Sequoyah County, Oklahoma  
elev. 524'

Cimarron Petroleum  
1 Pace CPC 149  
NE SE SW  
Sec. 16, T. 12 N., R. 22 E.  
Sequoyah County, Oklahoma  
elev. 562'





1,005-1,015	10	Dolomite, calcitic, arenaceous, fine-crystalline, off-white to light-gray; in part fossiliferous, 3-5% quartz residue.
1,015-1,020	5	Dolomite, as above; chert, gray, off-white, white, arenaceous, 50-60%.
1,020-1,025	5	Chert, light-gray, off-white to white, arenaceous, opaque.
1,025-1,030	5	<b>FRISCO FORMATION:</b> 5 feet (1,025-1,030). Light-gray to gray, off-white, fossiliferous limestone; in part glauconitic. Thin section (F-1) 1,025-1,030.  <b>QUARRY MOUNTAIN FORMATION:</b> 190? feet (1,030-1,220?; Barber-Tenkiller contact was estimated from the electric log, as both are present in sample 1,220-1,225).  <i>Marble City Member:</i> 155 feet (1,030-1,185). Off-white to white to pink crinoidal limestone; in part dolomitic; light-gray fine-crystalline dolomite; in part calcitic.
1,030-1,035	5	Limestone, off-white to white to pinkish, crinoidal; abundant crinoidal debris.
1,035-1,040	5	Limestone, as above; trace of gray fine-crystalline dolomite.
1,040-1,095	55	Dolomite, light-gray, fine-crystalline; in part calcitic, only in samples 1,040-1,045 and 1,060-1,075.
1,095-1,100	5	Dolomite, as above; in part calcitic; trace of limestone, off-white to pinkish.
1,100-1,105	5	Dolomite, as above; limestone, as above, 10%.
1,105-1,110	5	Dolomite, as above, except calcitic; limestone, white dolomitic, 40%.
1,110-1,115	5	Limestone, as above, 60%; dolomite, as above, 40%.
1,115-1,165	50	Limestone, off-white to white, pinkish, crinoidal; abundant crinoidal debris; in part dolomitic.
1,165-1,185	20	Limestone, as above, except not dolomitic.  <i>Barber Member:</i> 35? feet (1,185-1,220?; Barber-Tenkiller contact approximated from the electric log, as both are present in sample 1,220-1,225). Off-white to white medium- to fine-crystalline calcitic dolomite; gray fine-crystalline dolomite.
1,185-1,190	5	Dolomite, off-white to white, calcitic; limestone, as above, 40%.
1,190-1,195	5	Dolomite, as above; limestone, as above, 20%.
1,195-1,215	20	Dolomite, as above, except less calcitic.

1,215-1,220	5	Dolomite, light-gray, fine-crystalline; abundant white fine-crystalline dolomite.
1,220-1,225	5	Dolomite, as above, 80%; limestone, light-gray to off-white, in part dolomitic, abundant orange crinoidal material, 20% (Tenkiller).
1,225-1,240	15	TENKILLER FORMATION: Off-white to light-gray crinoidal limestone; in part dolomitic; pyritic; abundant orange crinoidal material. Thickness uncertain, as Barber and Tenkiller are both present in sample 1,225-1,230, and sample 1,235-1,240 contains Tenkiller limestone mixed with Blackgum limestone described below.
		BLACKGUM FORMATION:
1,240-1,245	5	Gray to dark-gray dolomitic glauconitic limestone, 15%; light-gray fine-crystalline glauconitic dolomite, 60%; brown to tan argillaceous fine-crystalline dolomite; gray to white opaque chert, 25%. Thickness uncertain, as Tenkiller and Blackgum are present in sample 1,235-1,240.
1,245-1,250	5	<i>Pettit Oölite</i> : Abundant gray to dark-gray silicified oölite, mixed with dolomite as above, 55%; brown to tan fine-crystalline argillaceous dolomite, 10-15%; residue, 15%; dark-gray opaque chert, 30%. Thickness uncertain as Pettit is mixed with Blackgum in this sample.
1,250-1,260	10	SYLVAN FORMATION: Thickness not determined, as the samples were studied only to 1,260 feet. Sylvan encountered in sample 1,250-1,255. Green to gray-green shale.

HUMBLE 1 STATE HUNTON--NE $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 16, T. 18 N., R. 7 W., Kingfisher County, Oklahoma; elev. 1129'; TD 8295' (Sylvan); compl. 2/25/69, Hunton production reported. Tops: Woodford (CC) 7876' (-6747'), Hunton (core) 7904' (-6775'), Sylvan (CC) 8262' (-7133'); Hunton thickness 358'. Cored 7892'-8007' (Woodford-Hunton); 7 thin sections; chemical analyses; 2 porosity tests (P17-A, P17-B), OU Core Library.

Sharp lithologic break at 7947', upper unit being low-insoluble, crystalline dolomite with some porosity and lower unit a dolomitic marlstone. No faunal data are available bearing on biostratigraphic significance of this change, but it probably only represents place where change from marlstone to low-insoluble dolomite is abrupt rather than gradational.

Woodford Shale 7876'-7904'

Hunton Group 7904'-8262'

7904'-7947' Silurian; ?Kirkidium biofacies.

Medium-gray cherty, crystalline dolomite with scattered fossils. Some scattered silt-size subangular quartz detritus, but insoluble detritus is low; HCl insolubles average 6.29% (may include some silicification associated with chert), MgCO<sub>3</sub> averages 37.15%. This interval has some visual porosity in form of vugs commonly partly filled with dolomite crystals (pl. 12, fig. 1), dissolution of fossils, and solution cavities distributed in linear fashion suggesting solution along fractures; porosity test P17-A, depth 7905', with 2.29% porosity and 0.18 md permeability, and P17-B, depth 7919', with 2.90% porosity and 2.90 md permeability. Large pentamerid, probably representative of Kirkidium sp., at 7904', and Halysites sp. at 7921'; tabulate corals at 7929'; pelmatozoan debris scattered throughout. All fossils observed in this interval preserved as molds or in spar, generally dolospar. Assigned to Silurian, ?Kirkidium biofacies, on basis of fossils and stratigraphic position.

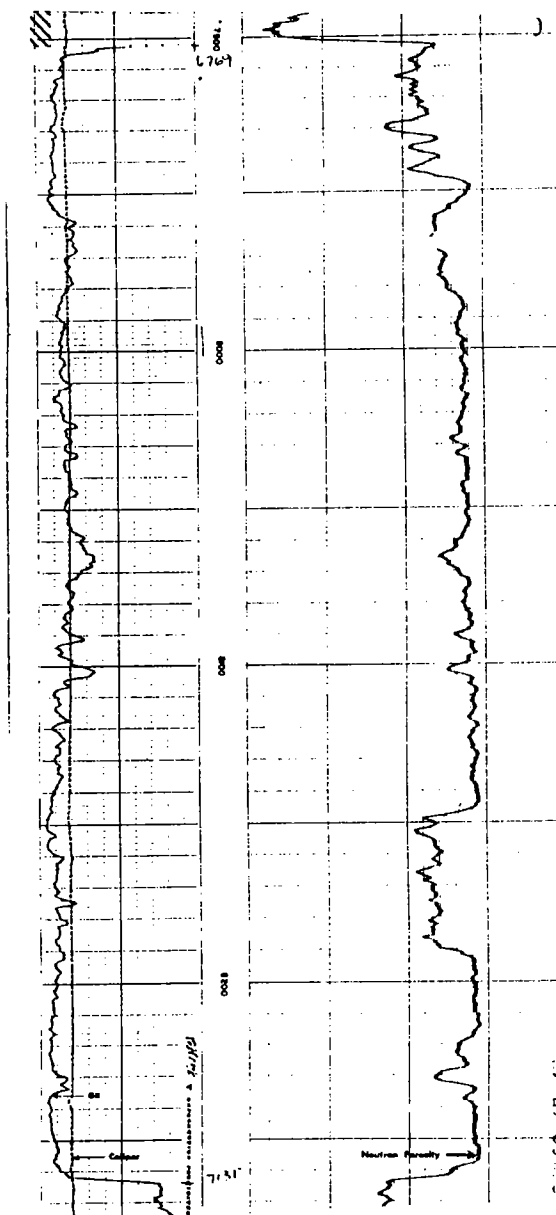
7947'-8007' Fossiliferous dolomitic marlstone with much silt-size subangular quartz detritus; HCl insolubles average 24.99%, MgCO<sub>3</sub> averages 16.66%. Fossils retain their original microtexture, and this unit has typical marlstone texture. Reasonably well-defined contact between this unit and overlying cherty crystalline dolomite. Specimens of small- to moderate-sized smooth pentamerid at 7956' and 7998'; specimens of Halysites sp. at 7976'. Biostratigraphic position of interval uncertain, but it probably represents part of Kirkidium biofacies.

8007'-8262' No core.

Sylvan Shale 8262'

HUMBLE OIL AND REFINING CO. 1 STATE — C NE $\frac{1}{4}$  NW $\frac{1}{4}$  sec. 16, T18N, R7W, Kingfisher County, Oklahoma; elevation GL 1,120 ft, DF 1,131 ft; TD 8,295 ft (Sylvan); completion 2/10/69.

Core was first examined in 1970 and a description of the lithostratigraphy and faunal characteristics are given in Amsden (1975, p. 99). Reexamined 1986. The core is divisible into two parts, an upper, heavily dolomitized skeletal carbonate averaging 37.15% MgCO<sub>3</sub>, and a lower fossiliferous marlstone with greatly reduced dolomitization averaging 16.6% MgCO<sub>3</sub>. The upper dolomite has numerous corals, both solitary and colonial, tetracorals, tabulates, halysitids. Brachiopods are present including some pentamerids, most of which are smooth; the ribbed ones are all small, and the presence of Kirkidium cited in 1975 cannot be established with certainty. The stratigraphic position of the upper dolomite with respect to other cored wells in this region which do yield unquestioned Kirkidium would suggest, however, that this is the equivalent horizon. See PLATE 1, PRE-WOODFORD SUBCROP MAP.



CARTER 1 STATE TAYLOR--C SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 31, T. 9 N., R. 21 W., Beckham County, Oklahoma; elev. 1862'; TD 10,500', Ordovician; compl. 1951, D&A. Tops: Pennsylvanian-Hunton contact 7750' (-5888'), Sylan 8180' (-6318'); Hunton thickness 430'. Samples examined from base of Pennsylvanian through Hunton and into Sylan Shale; 13 thin sections prepared (two in basal Pennsylvanian strata), stained with Alizarin Red-S; borrowed from Oklahoma Well Sample Service, Shawnee, Oklahoma.

This well is in one of the shallow fault blocks between the Wichita Mountains uplift and the deep Anadarko basin. The Hunton is thin for this area (in the Lone Star 1 Baden, located in the deep part of the Anadarko basin about 6 miles northwest of the 1 State Taylor, the Hunton is over 1000' thick); however, the thinning, at least in part, is due to pre-Pennsylvanian, post-Hunton erosion, as the Hunton rocks appear to have been thinned from the top, with the upper organo-detrital limestones and some of the marlstones in the 1 Baden being absent in the 1 State Taylor (panel 10, section C-C'). The marlstone and the upper (?Chimneyhill) part of the 1 State Taylor are low-magnesium limestones and resemble the limestone facies in the Arbuckle Mountains-Criner Hills region; the lower part of the ?Chimneyhill, including the Keel oolite, is somewhat dolomitized, suggesting a gradation toward the strongly dolomitized ?Chimneyhill of western Oklahoma and the Texas Panhandle. The following is a summary of the lithostratigraphy.

Pennsylvanian

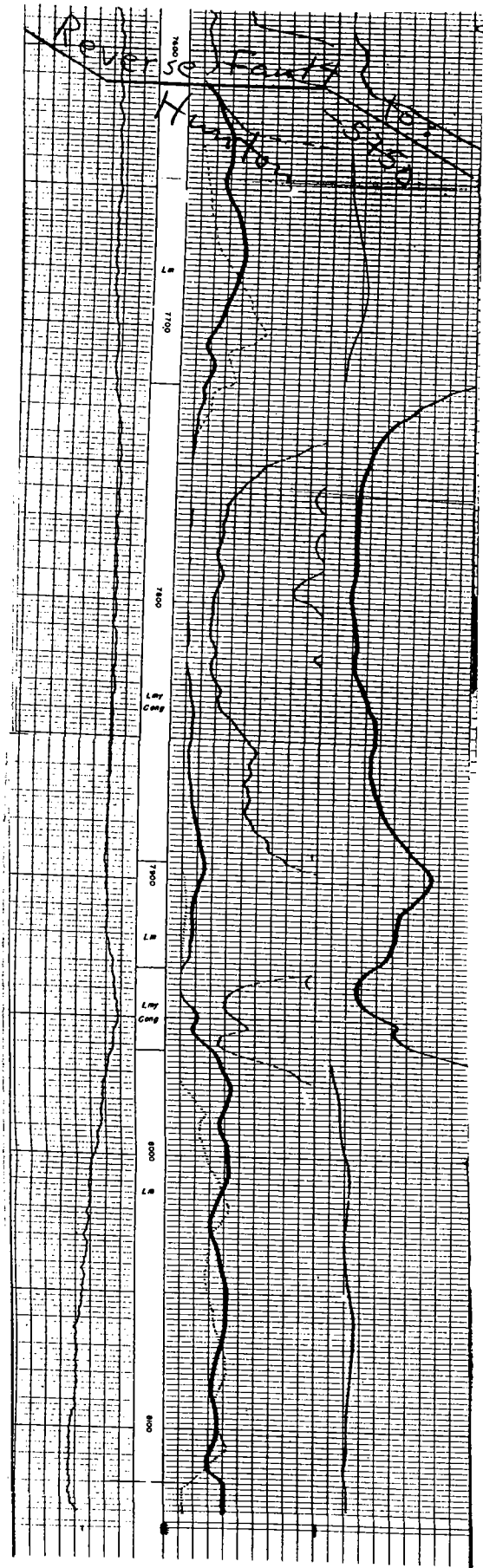
Brecciated limestone with much detrital quartz up to 0.5 mm; many of the quartz grains are well rounded; considerable silicification.

Hunton Group 7750'-8180'

7750'-7950' ?Haragan and (or) ?Henryhouse Formation. Gray fossiliferous marlstone with substantial silt-size angular to sub-angular quartz detritus. Very little dolomite.

7950'-8180' ?Chimneyhill Subgroup. Light-colored organo-detrital micrite; minor spar cement and very little detrital quartz; some chert. Only minor dolomite in upper part, but lower 70' to 80' has considerable dolomite in form of euhedral crystals. Basal bed is oolite, mostly with spar cement and substantial dolomite crystals (?Keel Formation).

Sylan Shale 8180'



GLASS 1 STEWART—SE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> sec. 32, T. 12 N., R. 6 E., Lincoln County, Oklahoma; elev. 977' DF (971' GL); TD 4739' (Ordovician); compl. 12/20/61, production unknown. Tops: Hunton 4400' (-3423') (SP log), Sylvan 4526' (-3542') (SP log), Welling 4612' (-3635') (SP log); Hunton thickness 126'. Samples examined from 4350' to 4739', good quality; 12 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The upper 10' of the Hunton is a crinoid-bryozoan sparite showing no detrital quartz or dolomite. On the basis of stratigraphic position and lithology it is here referred to the Frisco Formation (cf. Shell 1 Boley, described in this report and in Amsden, 1975b, p. 81). The underlying strata are dolomitized pink crinoidal limestones, grading downward into porous crystalline dolomite. These are provisionally referred to the Chimneyhill Subgroup.

*Woodford (Chattanooga) Shale*

Misener Sandstone.

4350'-4400' (SP log) Angular to subangular quartz sand mixed with black shale; much carbonate cement.

*Hunton Group* 4400'-4526' (SP log)

4410'-4420' (sample depths) Lower Devonian; Frisco Formation. Organo-detrital crinoid-bryozoan sparite with no visible dolomite or quartz.

4420' (sample depth) -4526' (SP log) Silurian; Chimneyhill Subgroup. Weakly to heavily dolomitized pink crinoidal micrite with some spar. Some beds have abundant bryozoans in addition to the other shelly debris, but mainly it is a crinoid-rich rock. Very little detrital quartz. The dolomite content increases downwards, from 4470' to the base of the Hunton; it is mainly porous crystalline dolomite.

*Sylvan Shale* 4526'-4612' (SP log)

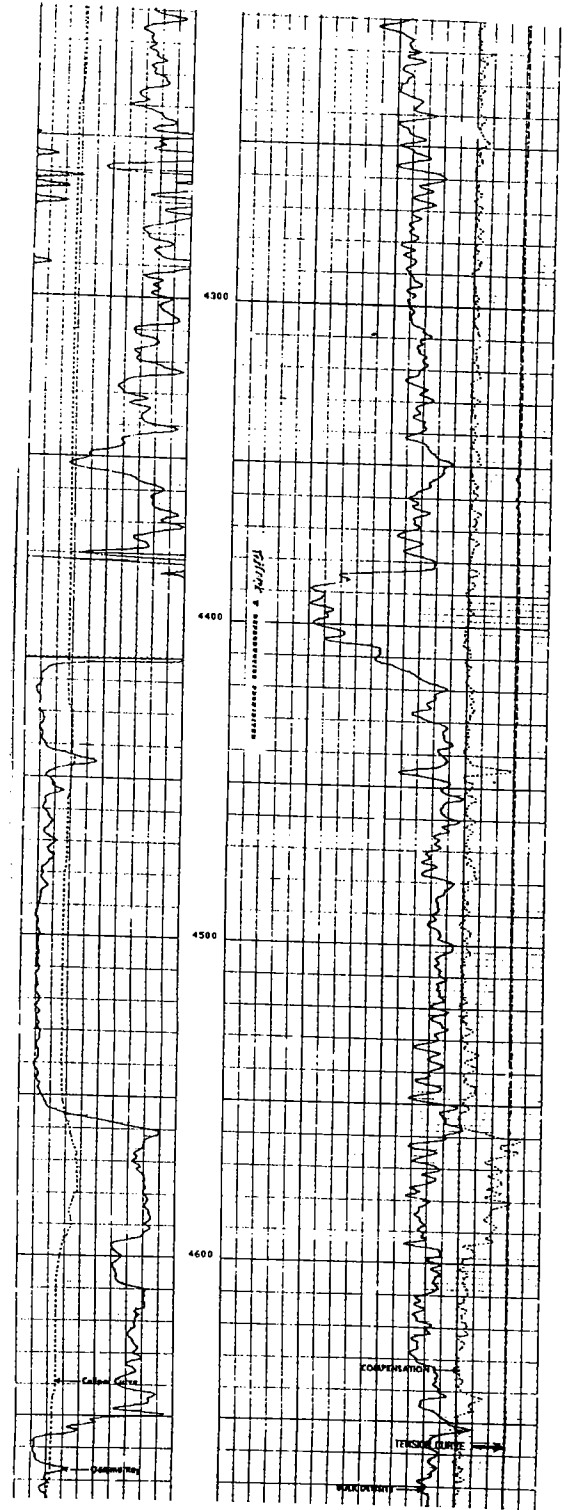
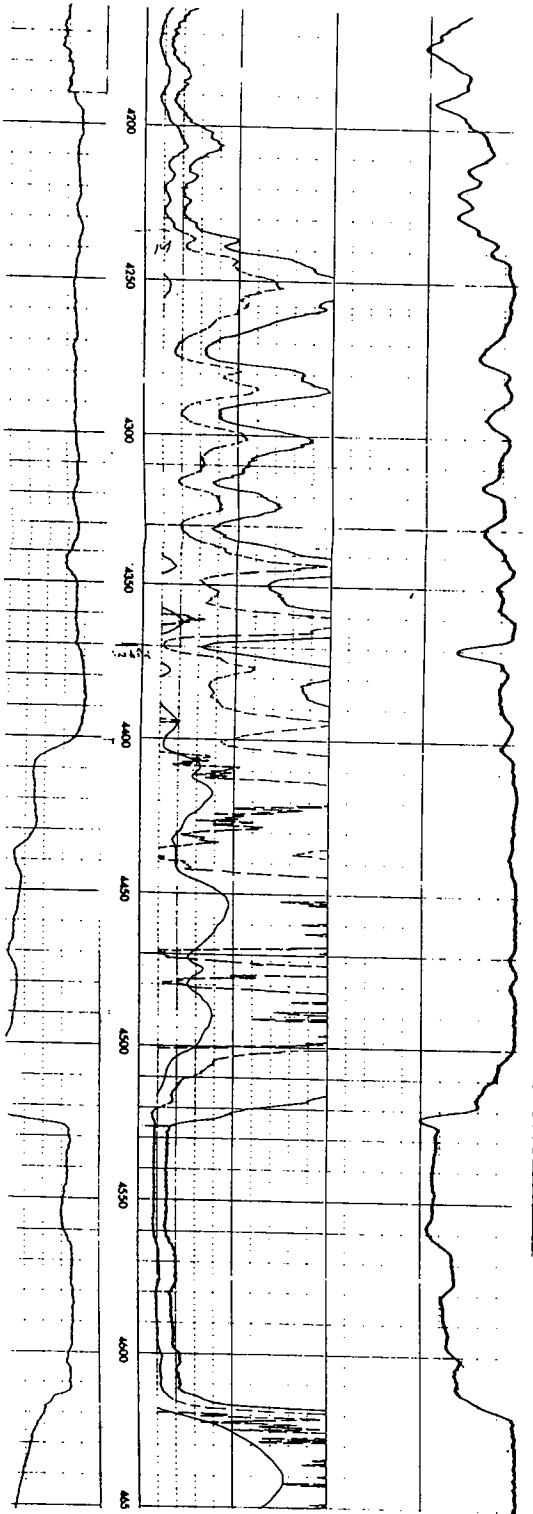
The upper 10' or so is apple-green shale; underlain by gray shale.

*Welling Formation* 4612' (SP log)

4625'-4630' and 4640'-4645' (thin sections) (sample depths) Organo-detrital crinoid-bryozoan sparite with no visible dolomite or detrital quartz.

Glass  
 1 Stewart  
 SE NW NW  
 Sec. 32, T. 12 N., R. 6 E.  
 Lincoln County, Oklahoma  
 elev. 977'

Mahan Rowsey  
 1 Moon  
 NE NE  
 Sec. 33, T. 12 N., R. 6 E.  
 Lincoln County, Oklahoma  
 elev. 1013'





SHELL 1-32 STOCKING--C E $\frac{1}{2}$ NW $\frac{1}{4}$  sec. 32, T. 22 N., R. 19 W., Woodward County, Oklahoma; elev. 1971'; TD 11,300' (Arbuckle); compl. 7/21/67, D&A. Tops: Hunton (CC) 10,226' (-8255'); other tops not available. Cored 10,247'-10,321' (Hunton); 5 thin sections; chemical analyses; OU Core Library.

Woodford Shale (not reported)

Hunton Group 10,226'

10,226'-10,247' No core.

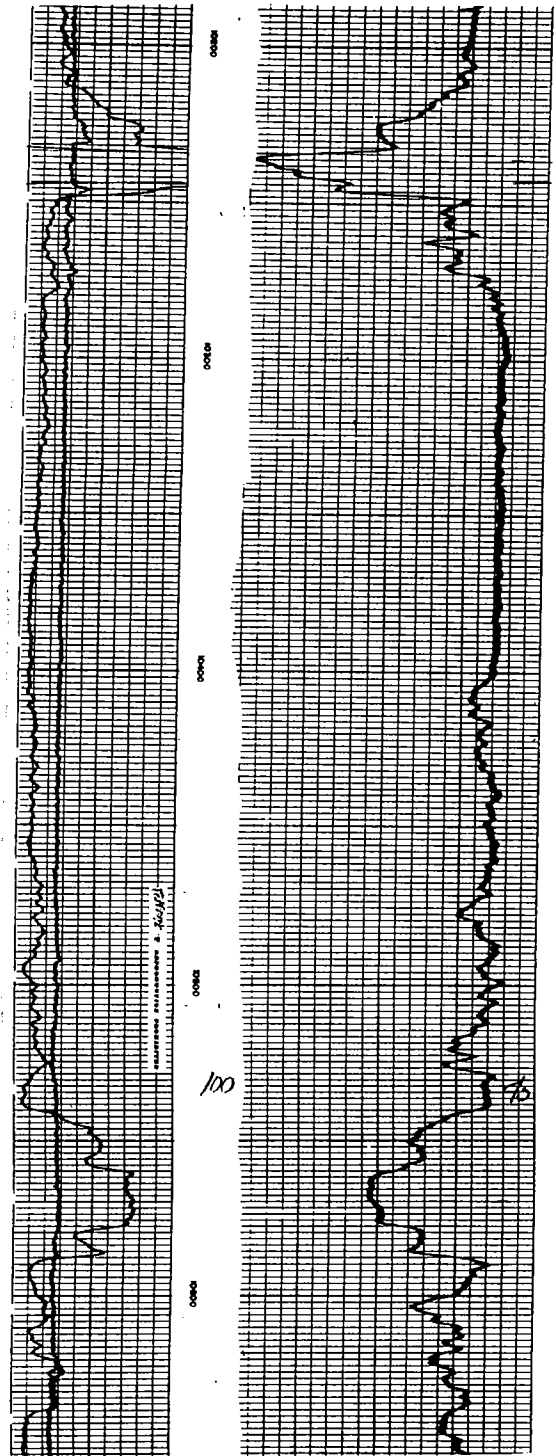
10,247'-10,259' Silurian. Dolomitic limestone-chert breccia with much subrounded silt- to sand-size quartz detritus. This may be solution-type breccia associated with weathering which preceded deposition of Misener-Woodford sequence. Quite possibly quartz sand represents infiltration of Misener along numerous solution channels and cavities somewhat similar to that developed in Sycamore Sandstone of eastern Oklahoma (Amsden, 1961, p. 64-65); however, carbonate pieces, which make up large part of rock, are Silurian, as they include *Halysites*. In addition to *Halysites*, there are other corals, bryozoans, stromatoporids, much crinoidal material, and also skeletal debris. This interval averages 16.67% MgCO<sub>3</sub> and 58.79% HCl insolubles, although latter probably includes much cherty material.

10,259'-10,274' Silurian. Crystalline dolomite, mostly with low-insoluble detritus; MgCO<sub>3</sub> averages 32.22%, HCl insolubles 7.44%. Few scattered fossils, mainly pelmatozoan plates, preserved in spar. No diagnostic fossils observed.

10,274'-10,321' Silurian. Dark-gray dolomitic limestone with only minor insoluble detritus; MgCO<sub>3</sub> averages 16.35%, HCl-insoluble detritus 5.49%. Texture is mostly micritic (?lime mud) with scattered dolomite crystals and scattered fossils. No diagnostic fossils observed in this interval.

SHELL OIL CO. 1-32 STOCKING — SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 32, T22N, R19W, Woodward County, Oklahoma; elevation GL 1,971 ft, DF 1,981 ft; TD 11,300 ft (Ordovician); completion (Na), 7/5/67 (P).

Described in Amsden (1975, p. 100); core restudied, 1985; 6 additional thin sections prepared from the cored portion, and well samples examined from end of core to base of the Hunton; 11 thin sections prepared. The upper part of the cored portion has a rich benthic fauna with a number of corals including *Halysites* sp., tetracorals, tabulates, stromatoporoids and other shelly fossils. *Illustrated on PLATE 2, STRATIGRAPHIC SECTION B-B'*. Conodonts reported from this core by Dr. James E. Barrick (Texas Tech University) include *Walliserodus* sp.





GULF 1 STREETER--SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 20, T. 13 N., R. 4 W., Oklahoma County, Oklahoma; elev. 1189'; TD 7307' (Sylvan); compl. 8/30/45, Hunton production reported. Tops: Hunton (CC) 6945' (-5756'), Sylvan (core) 7298' (-6109'); Hunton thickness 353'. Cored 6875'-7301' (two small skips); 22 thin sections; chemical analyses; OU Core Library.

This well, located in West Edmond field, cored almost entire interval from Woodford Shale through Hunton and into Sylvan Shale. Core provides excellent lithostratigraphic and biostratigraphic control for Frisco-Kirkidium biofacies contact (i.e., middle Lower Devonian-Silurian boundary). This is "welded" contact, and uppermost Silurian bed bearing specimens of Kirkidium can be observed in direct contact with overlying Frisco Formation; Silurian fossils (pl. 15, figs. 1, 2), including shells of Kirkidium, are cut off beneath pre-Frisco erosion surface (cf. to Frisco-Silurian boundary in eastern Oklahoma; Amsden, 1961, p. 37-42, pls. 4, 5, and frontispiece). Diagnostic Frisco brachiopods observed at 7041', only 2' above this contact.

Hunton in this well was described in some detail by Swesnick (1948, p. 370), although he referred strata here assigned to Frisco Formation to Bois d'Arc Formation.

Woodford Shale (cored from 6875' to 6938')  
Hunton Group 6945'-7298'

6945'-6954' No core.

6954'-7043 $\frac{1}{2}$ ' Lower Devonian; Frisco Formation.

Light-gray low-magnesium organo-detrital limestone, mostly with spar cement and with very little insoluble detritus; MgCO<sub>3</sub> averages 1.99%, HCl insolubles 1.99%. This is grain-supported (fossil-clast) rock with much pelmatozoan material and also much shelly debris (pl. 1, figs. 1a, 1b; pl. 2, fig. 3; pl. 14, fig. 2). This rock shows evidence of solution and recrystallization. Visual porosity is common, being located mainly in matrix and in hollow parts of fossils (pl. 7, figs. 1a, 1b); also some irregular cavities with linear distribution suggesting solution along fractures (pl. 14, fig. 1). Fossils observed at 6960', 6967', 7015', 7034', 7041'; these include Leptostrophia magnifica?, Acrospirifer purchisoni, Plethorhyncha sp., large meristelloid brachiopods, large snails, and ramose favositid corals. Fauna and lithology are characteristic for Frisco Formation. Contact with underlying strata is sharply defined.

7043 $\frac{1}{2}$ '-7051' Silurian; Kirkidium biofacies. Organo-detrital limestone, mostly with micrite cement; MgCO<sub>3</sub> averages 3.43%, HCl insolubles 4.08%. Variety of fossils represented, with both pelmatozoan plates

and shelly debris, latter including brachiopods, bryozoans, ostracodes, and trilobites. Contact with overlying Frisco is sharply defined. Specimens of Kirkidium are present in bed directly beneath Frisco Formation; also specimens at 7046' and 7047'.

7051'-7055' Silurian; Kirkidium biofacies. Fossiliferous oolite with spar cement; oolites with fossil core and concentric structure (pl. 12, fig. 4). Very low-magnesium rock; MgCO<sub>3</sub> averages 0.62%, HCl insolubles 1.30%. Specimens of Kirkidium at 7054'.

7055'-7085' Kirkidium biofacies. Fossiliferous dolomitic marlstone, probably grading into grain-supported organo-detrital limestone; HCl insolubles average 12.25%, MgCO<sub>3</sub> averages 10.92%. Specimen of Kirkidium pingue pingue (Amsden) at 7060' (Amsden, 1969, pl. 117, fig. 11); other specimens at 7065', 7068', 7073'.

7085'-7104' No core.

7104'-7148' ?Kirkidium biofacies. Fossiliferous marlstone like unit above; MgCO<sub>3</sub> averages 9.24%, HCl insolubles 18.15%. No diagnostic fossils observed; assigned to Kirkidium biofacies on basis of lithology and stratigraphic position.

7148'-7178' ?Chimneyhill Subgroup. Pink crinoidal limestone, partly spar, partly micrite cement; MgCO<sub>3</sub> averages 2.30%, HCl insolubles 4.92%. No diagnostic fossils observed; tentatively assigned to Chimneyhill on basis of lithology and stratigraphic position.

7178'-7298' Chimneyhill Subgroup. Fossiliferous limestone, very largely micrite cement, and probably ranging from mud supported to grain supported. Insolubles range widely from 2.17% to 21.85%, and MgCO<sub>3</sub> ranges from 2.76% to 20.03%. No diagnostic fossils observed, and this interval assigned to Chimneyhill on basis of stratigraphic position and lithology.

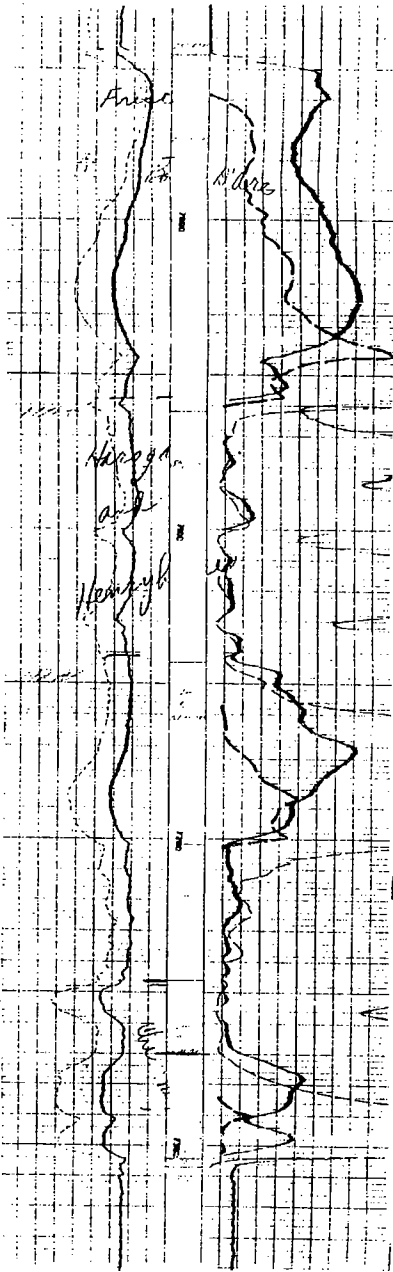
Sylvan Shale 7298'

GULF OIL CORP. 1 STREETER -- C SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 20, T13N, R4W, Oklahoma County, Oklahoma; elevation GL (Na), DF 1,189 ft; TD 7,308 ft (Sylvan); completion 5/21/45.

The Gulf 1 Streeter provides an important stratigraphic core which cuts a complete sequence of Hunton in a fossiliferous limestone facies: lower Woodford-Hunton Group; Frisco Formation, Kirkidium biofacies of the Henryhouse Formation, Chimneyhill Subgroup-Sylvan Shale. Described in Amsden (1975, p. 100-101; pls. 2,7,14,15). *Illustrated on* PLATE 1, STRATIGRAPHIC SECTION A-A'.

The Gulf 1 Streeter core was examined by Amsden (1975, p. 100-101) and reexamined by Amsden in 1981 at which time a specimen of the St. Clair Limestone (Chimneyhill Subgroup) brachiopod Hircinisca havliceki Amsden (1968, p. 60) was recovered at 7,290 ft. Core samples were sent to Dr. James E. Barrick (Texas Tech University) for co-

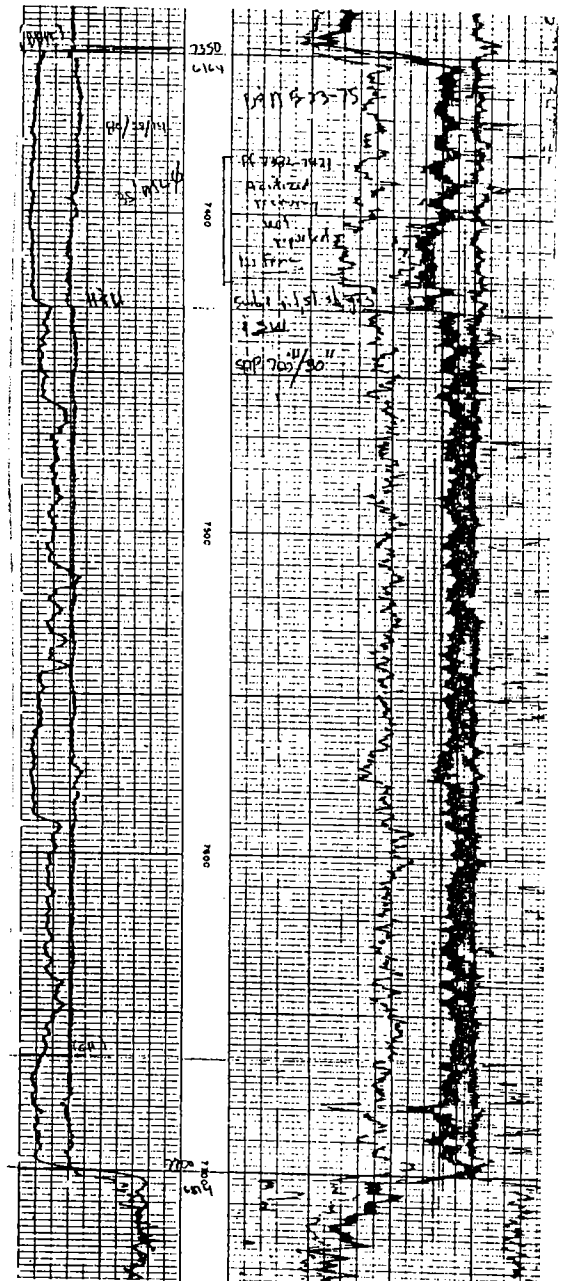
Gulf Oil Corp.  
 1 Streeter  
 SE SE  
 Sec. 20, T. 13 N., R. 4 W.  
 Oklahoma County, Oklahoma  
 elev. 1189'



nodont analysis. In a letter dated Aug. 11, 1989, he makes the following observations regarding conodonts from the Streeter core: the base of the Clarita-Wenlockian sequence is at 7,292 ft (*Pterospirifer amorphognathoides*); at 7,284 ft an early Wenlockian age is indicated by the presence of *Kockelella ranuliformis*. He does not think that Wenlockian strata extend much above 7,270 ft.

This data base indicates a very thin Wenlockian-Llan-

Union Oil Company  
 1 Horton  
 2310'FNL & 1650'FEL  
 Sec. 16, T. 12 N., R. 22 W.  
 Oklahoma County, Oklahoma  
 elev. 1186'

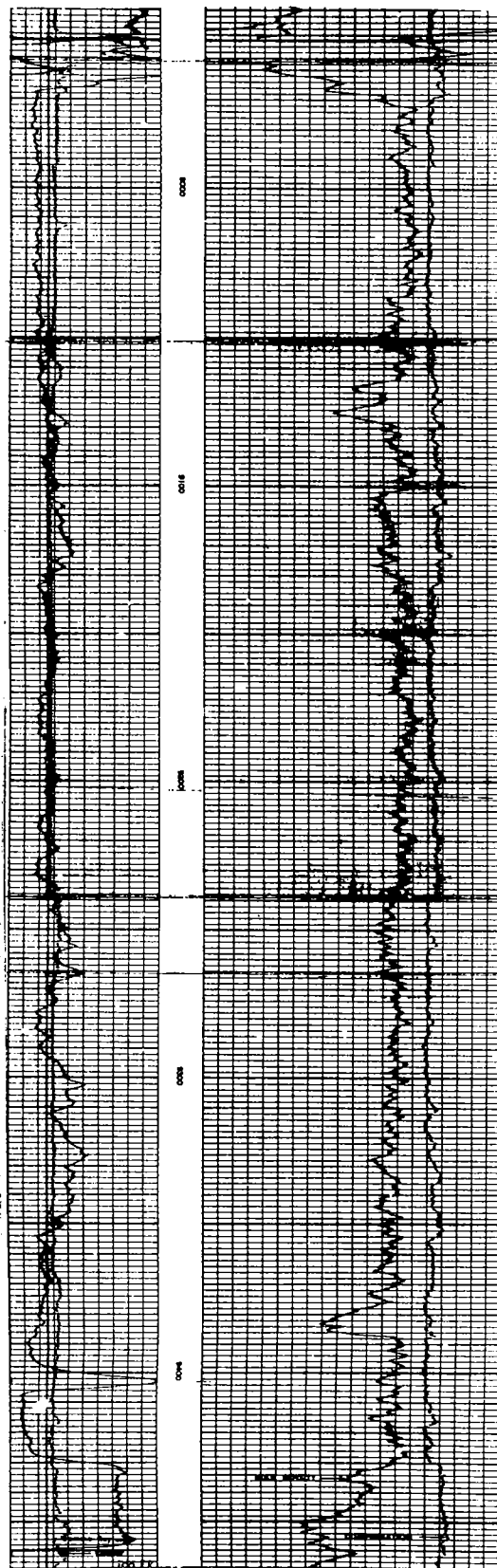


doverian sequence in the 1 Streeter. The 1 Streeter core has been examined many times since it was first described by Amsden in 1975, and the possibility of some core mixing cannot be eliminated. However, the data are internally consistent, and the overall thickness is not significantly different from other Llandoveryan-Wenlockian penetrations in this general area (see PLATE 1, STRATIGRAPHIC SECTION A-A').

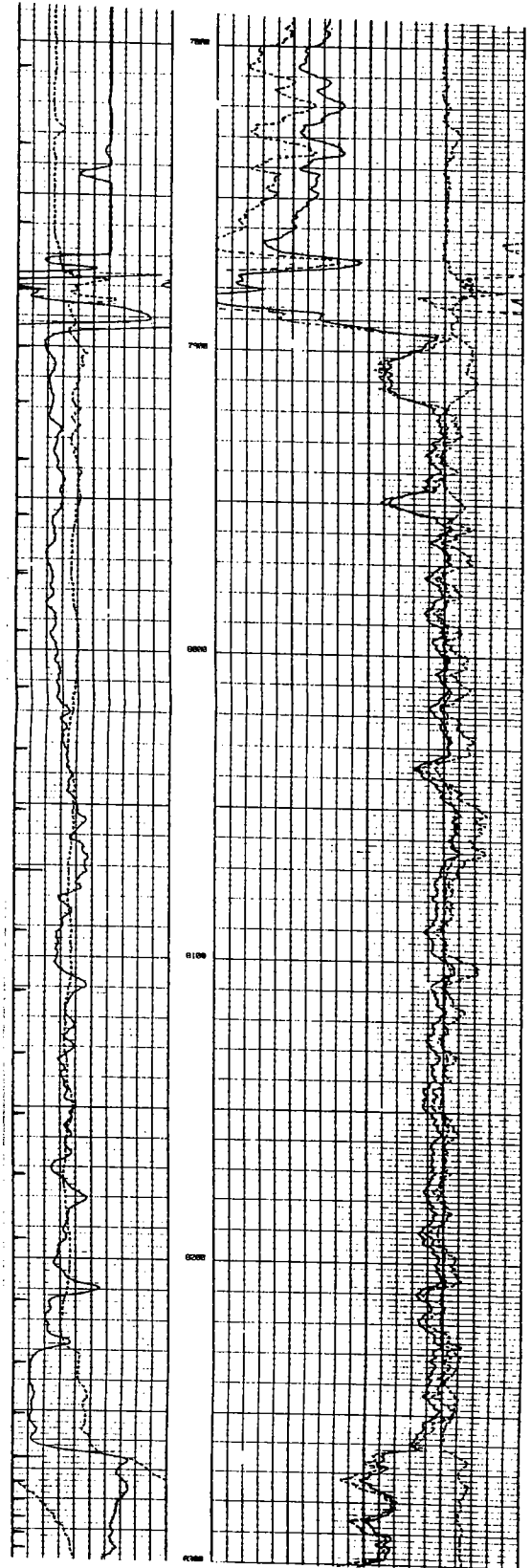
TEXAS PACIFIC OIL CO. INC. 1-17 SULLIVAN — C SE $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 17, T5S, R3W, Carter County, Oklahoma; elevation GL 912 ft, DF 923 ft; TD 9,520 ft (Sylvan); completion 2/18/71.

Cored ~10 ft of upper Hunton marlstone (top of core ~10 ft below Woodford contact); three spot samples average 10.3% HCl insolubles, 4.1% MgCO<sub>3</sub>. Sample examination shows low magnesium marlstone extends down to top of Chimneyhill Subgroup at 9,430 ft; upper 50 ft of marlstone is low in terrigenous detritus, but from 9,200 to 9,430 ft (top of Chimneyhill) the terrigenous detritus increases sharply and red beds are present. Chimneyhill skeletal limestone from 9,430 to 9,460 ft; 9,460–9,490 ft much glauconite (Cochrane?); 9,490–9,500 ft Keel Oolite. 17 thin sections; core and samples examined by Amsden, 1986; chemical analyses of core samples, OGS Chemistry Laboratory.

Dr. James E. Barrick (Texas Tech University) recovered conodonts from the core at 9,015 ft; elements of *Bellodella* sp. suggest a late Ludlovian or younger age.

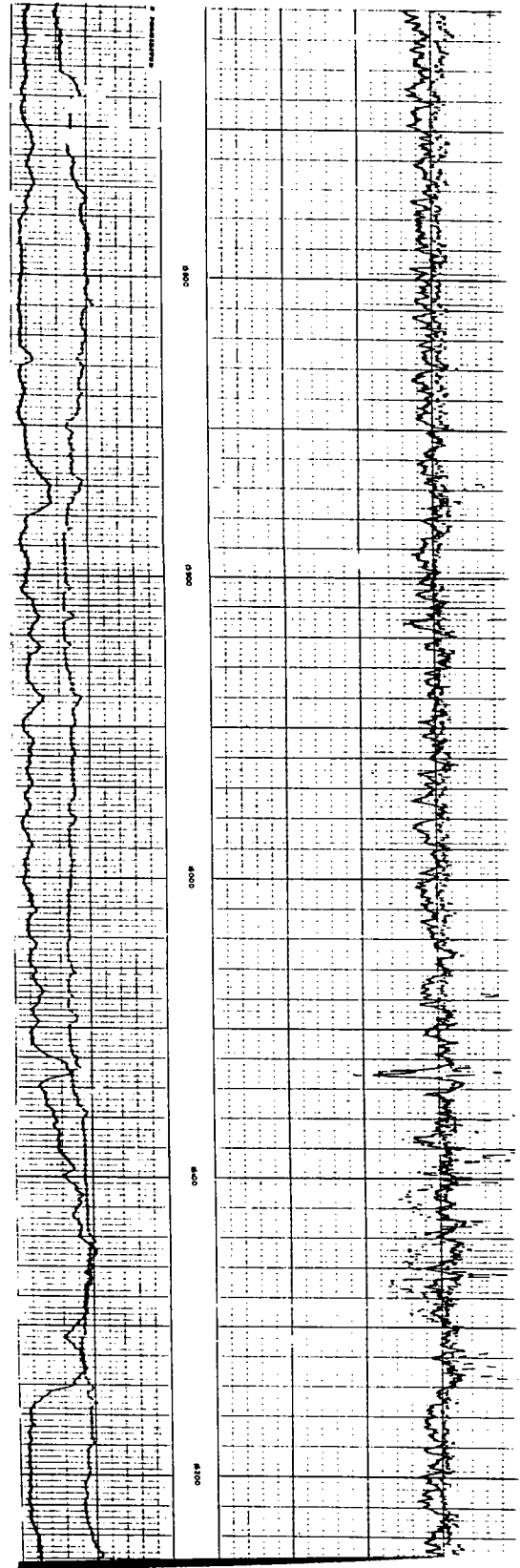
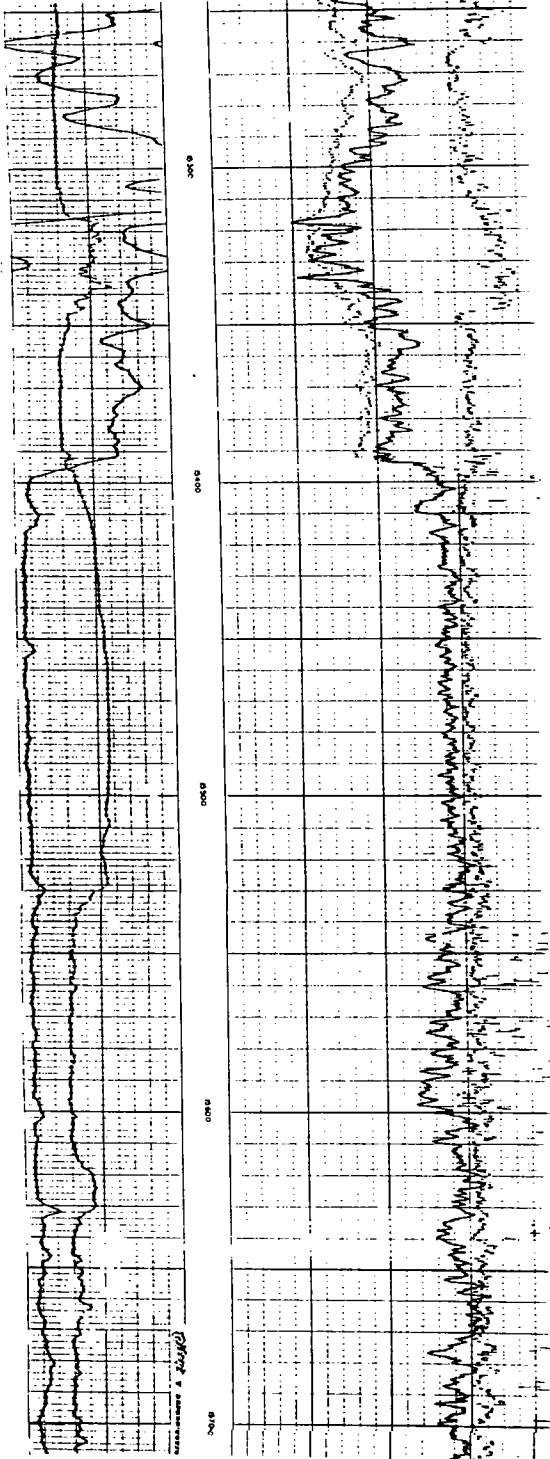


**NONDORF OIL AND GAS INC. 1-25 SULLIVAN — C**  
SW¼SE¼NW¼ sec. 25, T5S, R2W, Carter County, Okla-  
homa; elevation GL 897 ft; TD 9,786 ft; completion 6/9/82.  
Misener Formation cored.



**HELMERICH & PAYNE INC. 1 SUTTON UNIT — C**  
SW¼ sec. 23, T10N, R26W, Beckham County, Oklahoma;  
elevation GL 2,141 ft, DF 2,165 ft; TD 17,305 ft; completion  
10/26/77.

Samples examined from 15,300 to 17,300 ft (TD). Hun-  
ton strata appear to have been exposed to considerable  
structural deformation, and no recognizable sequence  
could be identified.

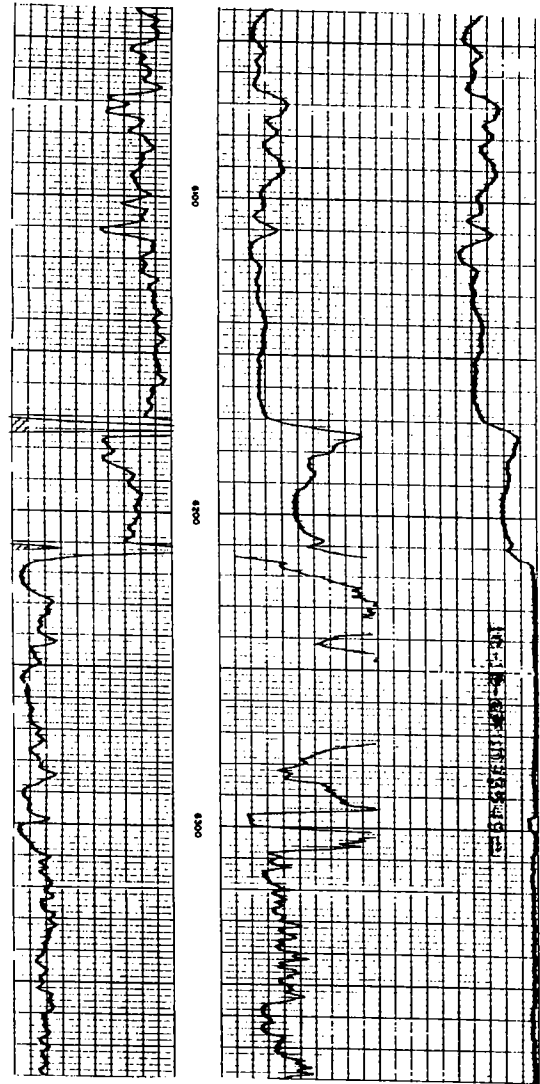
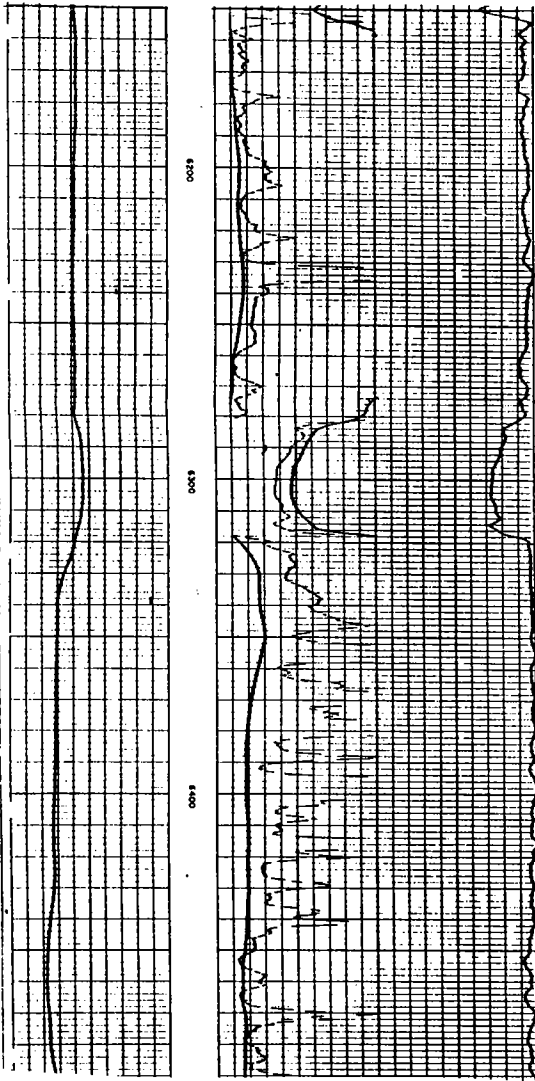


PAN AMERICAN 1 TACKETT UNIT—C SW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec. 28, T. 8 N., R. 23 E., Le Flore County, Oklahoma; elev. 526'; TD 9272' (Ordovician); compl. 7/11/63, Cromwell gas reported. Tops: Woodford 6147' (-5621') (CC), Misener 6280' (-5754') (sample depth), Sylvan 6290' (-5764') (sample depth), Welling 6330' (-5804') (sample depth), Fite 6350' (-5824') (sample depth). Samples examined from 6250' to 7020' and 7890' to 7955' (TD), samples missing from 7020' to 7890', samples good quality except for interval from 6330' to 6450', where they are very fine (air drilled?); 23 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

If Hunton strata are present in this well, they are very thin. The samples from 6280' to 6290' comprise chert and dolomite with sparse, scattered fine detrital quartz and are provisionally assigned to the Misener. The overlying Woodford Shale is distinctly darker than the underlying Sylvan Shale.

Pan American  
1 Tackett Unit  
SW NE  
Sec. 28, T. 8 N., R. 23 E.  
Le Flore County, Oklahoma  
elev. 526'

Pan American  
1 Teague  
493'N & 743'W of C  
Sec. 27, T. 8 N., R. 23 E.  
Le Flore County, Oklahoma  
elev. 519'



TEXACO 1 THOMPSON--C SE $\frac{1}{2}$ SE $\frac{1}{2}$  sec. 34, T. 17 N.,  
R. 8 W., Kingfisher County, Oklahoma; elev.  
1193'; TD 9130'; compl. 10/14/60, no Hunton  
production reported. Tops: none available.  
Cored 8867'-8904' (Hunton); 4 thin sections;  
two spot analyses; two porosity tests (P6-A,  
P6-B); OU Core Library.

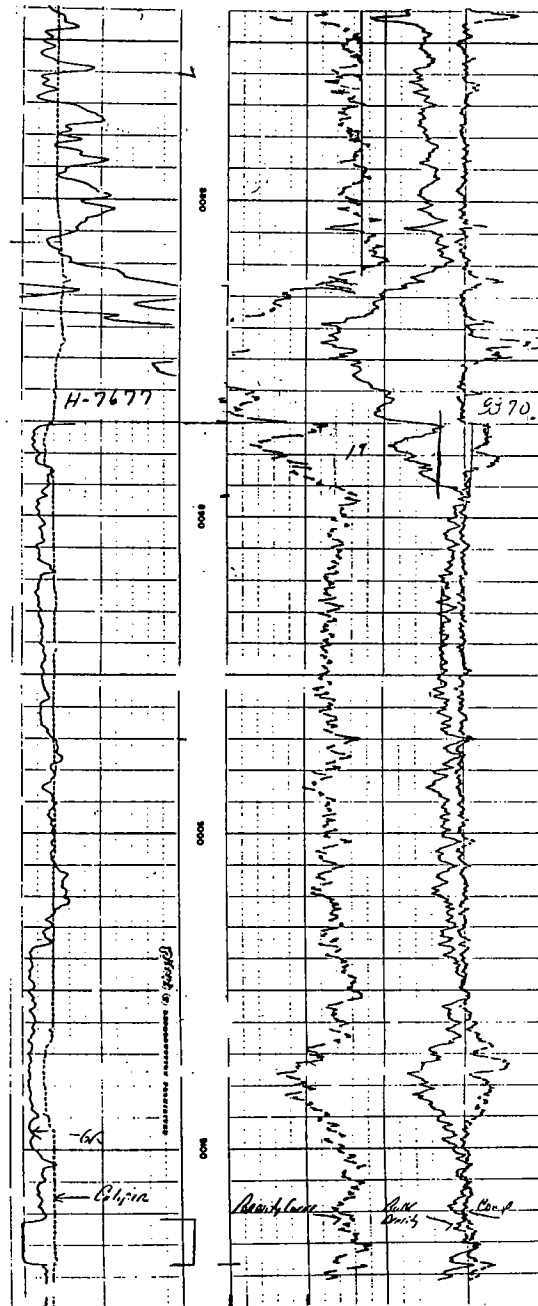
Woodford Shale

Hunton Group

8867'-8870' ?Silurian; ?Kirkidium biofacies.  
Dolomitized, porous oolite. Porosity test  
P6-A, depth 8869', 13.7% porosity and 38.48  
md permeability; MgCO<sub>3</sub> 43.08%; HCl insol-  
ubles 1.31%. Visual porosity is almost  
entirely in matrix surrounding oolites. No  
diagnostic fossils observed, and assignment  
to Silurian is based on stratigraphic posi-  
tion with respect to underlying Kirkidium-  
bearing strata.

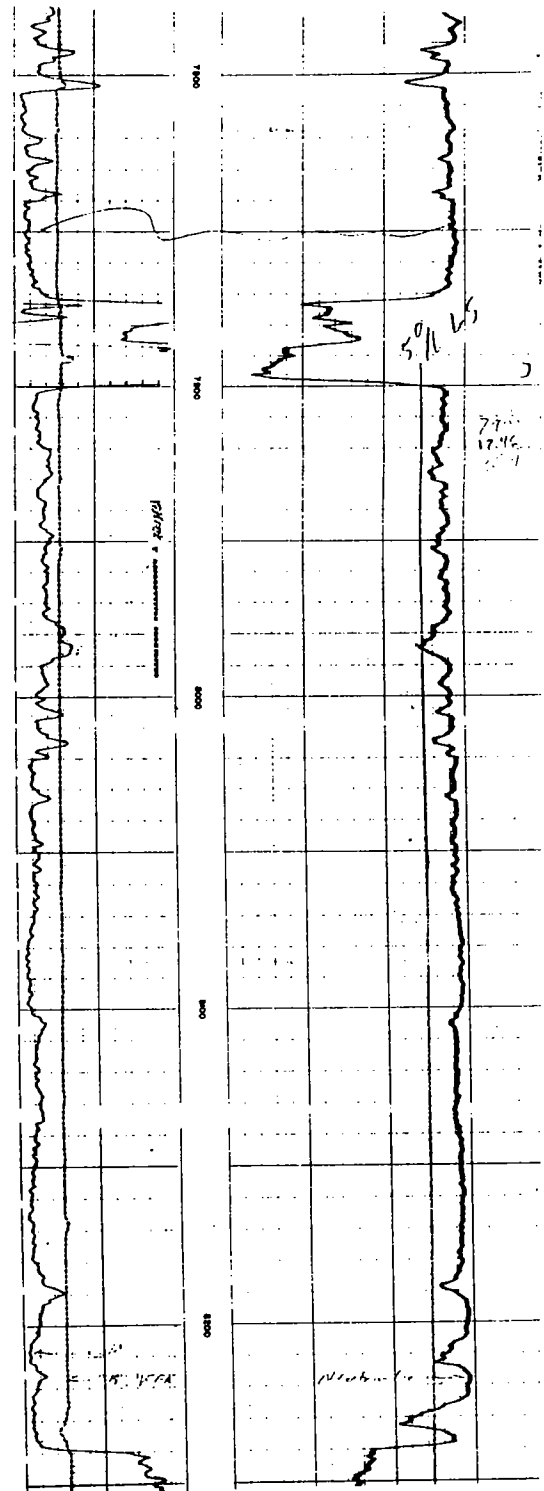
8870'-8884' Silurian; Kirkidium biofacies.  
Gray crystalline dolomite. Porosity test  
P6-B, depth 8880'; porosity 1.3%, perme-  
ability 0.00 md; MgCO<sub>3</sub> 34.77%, HCl insol-  
ubles 12.18%. Specimens of Kirkidium  
8876'-8884'.

8884'-8904' Silurian; Kirkidium biofacies.  
Fossiliferous dolomitic limestone with  
scattered silt-size subangular quartz  
grains. Fossils retain their original  
microtexture. Specimens of Kirkidium from  
8884' to 8886', 8902'.





RODEN 12-1 THRASHER--C SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 12, T. 19 N.,  
 R. 8 W., Kingfisher County, Oklahoma; elev.  
 1244'; TD 8290' (Sylvan); compl. 6/8/69,  
 Hunton production reported. Tops: Woodford  
 (CC) 7872' (-6628'), Hunton (CC) 7899' (-6655'),  
 Sylvan (CC) 8240' (-6996'); Hunton thickness  
 341'. Cored 7904'-7953' (Hunton); no thin  
 sections; chemical analyses; OU Core Library.  
Woodford Shale 7872'-7899'  
Hunton Group 7899'-8240'  
 7899'-7904' No core.  
 7904'-7953' ?Silurian; ?Kirkidium biofacies.  
 Dolomitic, fossiliferous limestone with  
 much insolubles; MgCO<sub>3</sub> averages 10.73%, HCl  
 insolubles 18.98%. No diagnostic fossils  
 observed; assigned to Kirkidium biofacies  
 on basis of lithology and stratigraphic  
 position.  
 7953'-8240' No core.  
Sylvan Shale 8240'



**KING 1 TIGER**—NW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec. 3, T. 8 N., R. 5 E., Seminole County, Oklahoma; elev. 911'; TD 4292' (Wilcox); compl. 5/16/69, no Hunton production reported. Tops: Woodford 3794' (-2883') (CC), Hunton 3917' (-3006') (CC), Sylvan 3954' (-3043') (core); Hunton thickness 37'. Cored; 3921'-3960' (Hunton-Sylvan), 1 thin section; chemical analyses; OU Core Library. Described in Amsden (1975b, p. 102, 161).

Hunton strata in this well are referred to the Chimneyhill Subgroup on the basis of stratigraphic position, lithologic character, and fauna. The presence of a reserellid brachiopod (*Resserella* sp.), having similarities to a species present in the Wenlockian St. Clair Limestone (Arkansas), suggests Clarita equivalents within 9' of the Sylvan Shale (Amsden, 1975b, p. 102). This faunal evidence is, however, not overwhelming, and no attempt is here made to recognize formation divisions.

This well is near the truncated margin of the Hunton Group. (See panel 2, also 1-6 Bean and 10A Rentie.)

*Woodford (Chattanooga) Shale* 3794'-3917' (CC)

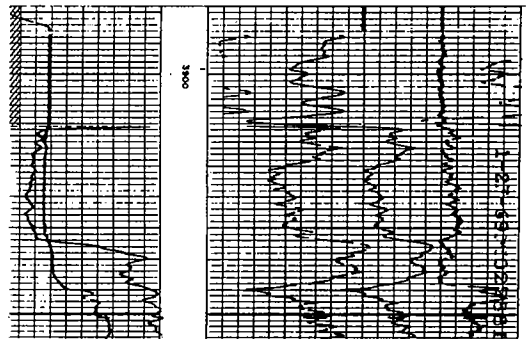
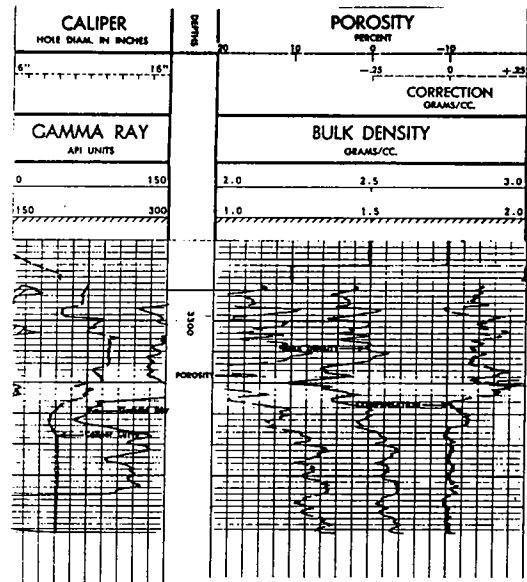
*Hunton Group* 3917'-3954' (CC)

3917'-3921' No core; samples not examined.

3921'-3954' (core) Silurian; Chimneyhill Subgroup. Brownish-gray organo-detrital limestone, mostly with spar cement. Much pelmatozoan debris and shelly material. Some irregular areas with small euhedral crystals of dolomite, but the MgCO<sub>3</sub> content averages only 8.82%, HCl-acid insolubles 2.25%. Fragmentary trilobites and brachiopods present; one specimen of *Resserella* sp. at 3945' (cf. *Resserella* sp., Amsden, 1968, pl. 3, figs. 5a-5h). Referred to the Chimneyhill on the basis of its lithology and stratigraphic position.

*Sylvan Shale* 3954' (core)

3954'-3960' (core) Greenish-gray argillaceous dolomite with numerous small pyrite crystals. HCl-acid insolubles average 15.36%, MgCO<sub>3</sub> 30.87%.



CALIFORNIA 1 TICER ET AL.--C NW $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 33,  
 T. 5 S., R. 2 W., Carter County, Oklahoma;  
 elev. 894'; TD 9640' (Sylvan); compl. 8/30/62,  
 Hunton production reported. Tops: Woodford  
 (CC) 8925' (-8031'), Hunton (CC) 9165' (-8271'),  
 Sylvan (CC) 9567' (-8673'); Hunton thickness  
 402'. Cored 9490'-9532' (Hunton); 1 thin  
 section; chemical analyses; OU Core Library.

Well located about 15 miles west of Criner  
 Hills, where Hunton rocks are exposed at sur-  
 face. Cored interval is similar to Henryhouse-  
 Clarita lithostratigraphic sequence, exposed  
 in Criner Hills, although there are no bio-  
 stratigraphic data to confirm this correlation.  
 Hunton rocks in 1 Ticer et al. and adjacent  
 wells are much thicker than at surface (panel  
 6).

Woodford Shale 8925'-9165'

Hunton Group 9165'-9567'

9165'-9490' No core.

9490'-9517' ?Silurian; ?Henryhouse Formation.

Gray to reddish-gray dolomitic marlstone;  
 MgCO<sub>3</sub> averages 14.24%, HCl insolubles 39.75%.

Insoluble content of interval is high for  
 Henryhouse, although spot samples from  
 Criner Hills have as much as 32% (Amsden,  
 1960, p. 290). There is an abrupt decrease  
 in insolubles in underlying strata. No  
 diagnostic fossils observed, and reference  
 of this unit to Henryhouse is based on  
 lithology and stratigraphic position.

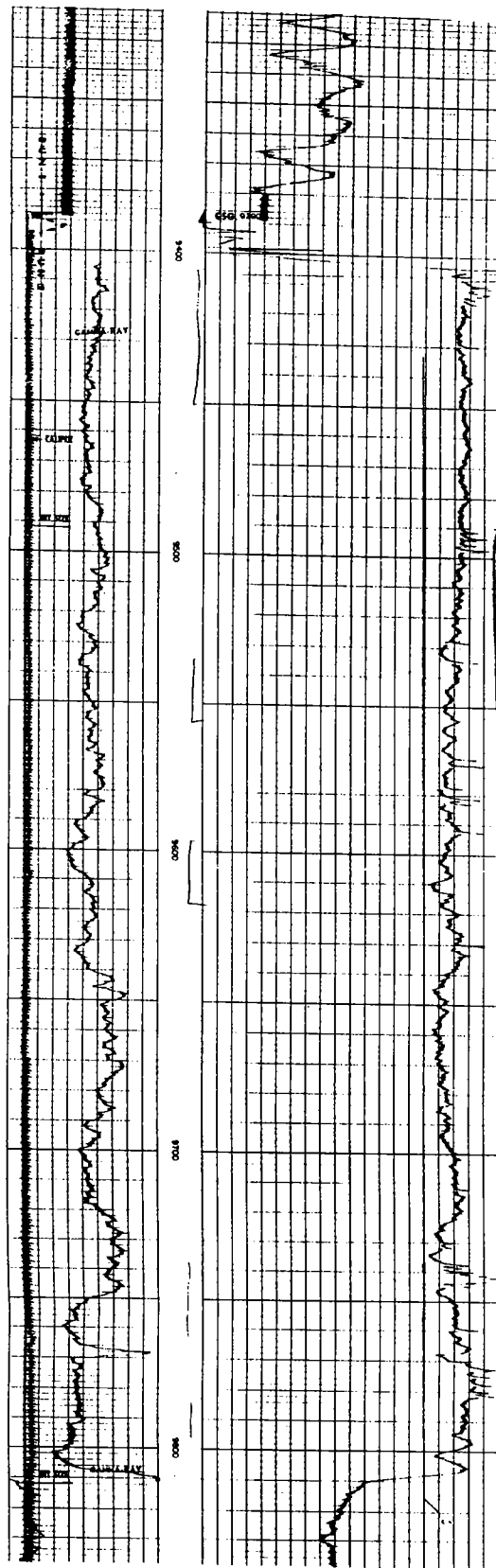
9517'-9532' Silurian; ?Chimneyhill Subgroup;

?Clarita Formation. Light-gray organo-  
 detrital limestone with micrite cement.

Many pink crinoid plates along with numerous  
 other fossils. Basal 1' is greenish cal-  
 careous shale. This interval is low-  
 magnesium limestone with moderate insolubles;  
 MgCO<sub>3</sub> averages 3.65%, HCl insolubles 10.30%.  
 No diagnostic fossils observed; this unit  
 is lithologically similar to Clarita Forma-  
 tion in Criner Hills (basal greenish shale  
 may be Prices Falls Member), and it is in  
 correct stratigraphic position.

9532'-9567' No core.

Sylvan Shale 9567'



GULF 1 TRIPLETT--NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 8, T. 15 N.,  
R. 5 W., Kingfisher County, Oklahoma; elev.  
1096'; TD 7692' (Sylvan); compl. 6/28/45,  
D&A. Tops: Hunton (CC) 7360' (-6264'),  
Sylvan 7682' (-6586'); Hunton thickness 322'.  
Cored 7406'-7411' (Hunton); no thin sections;  
no chemical analyses; OU Core Library.

Woodford Shale

Hunton Group 7360'-7682'

7360'-7406' No core.

7406'-7411' Silurian; Kirkidium biofacies.

Brownish-gray dolomitic limestone with much  
shelly debris. Stained rock specimens show  
this rock to have many fine dolomite crystals  
scattered through matrix; fossils are pre-  
served in calcite with original microtexture.

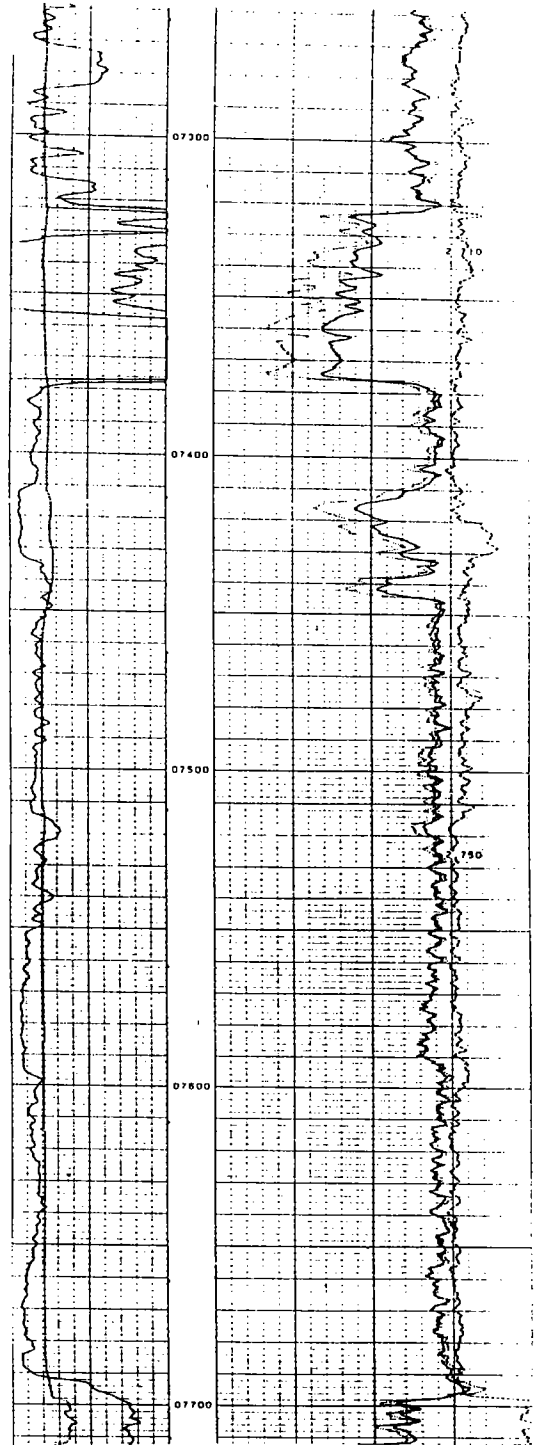
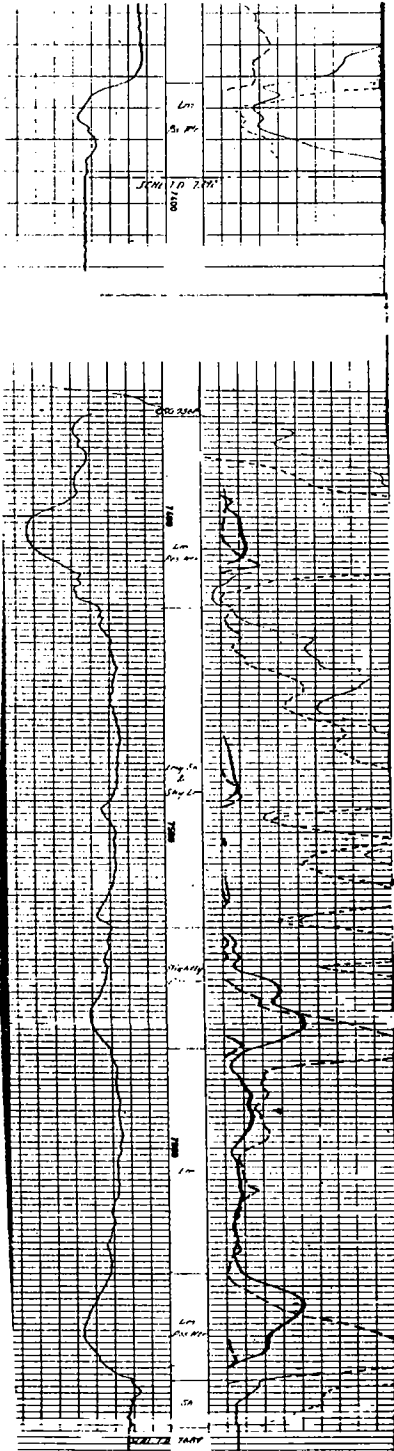
Specimens of Kirkidium sp. at 7410'.

7411'-7682' No core.

Sylvan Shale 7682'

Gulf  
 I Triplett  
 NE SW  
 Sec. 8, T. 15 N., R. 5 W.  
 Kingfisher County, Oklahoma  
 elev. 1096'

L & T Oil and Gas  
 8-3 Harrison  
 NW NW  
 Sec. 8, T. 15 N., R. 5 W.  
 Kingfisher County, Oklahoma  
 elev. unknown



PAN AMERICAN 1 TSAUBY--C NW $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 30, T. 7 N.,  
 R. 13 W., Caddo County, Oklahoma; elev. 1448';  
 TD 8478' (Simpson Group); compl. 6/11/64, D&A.  
 Tops: Woodford (CC) 3352' (-1904'), Hunton  
 (CC) 4160' (-2712'), Sylvan (CC) 5510' (-4062');  
 Hunton thickness 1350'. Cored 5360'-5369'  
 (Hunton); 1 thin section; chemical analyses;  
 OU Core Library.

Well located on one of shallow fault blocks  
 between the Wichita uplift and deep part of  
 Anadarko basin. Thickness is comparable to  
 that of Hunton in other wells in area (see  
 panels 6, 10).

Woodford Shale 3352'-4160'

Hunton Group 4160'-5510'

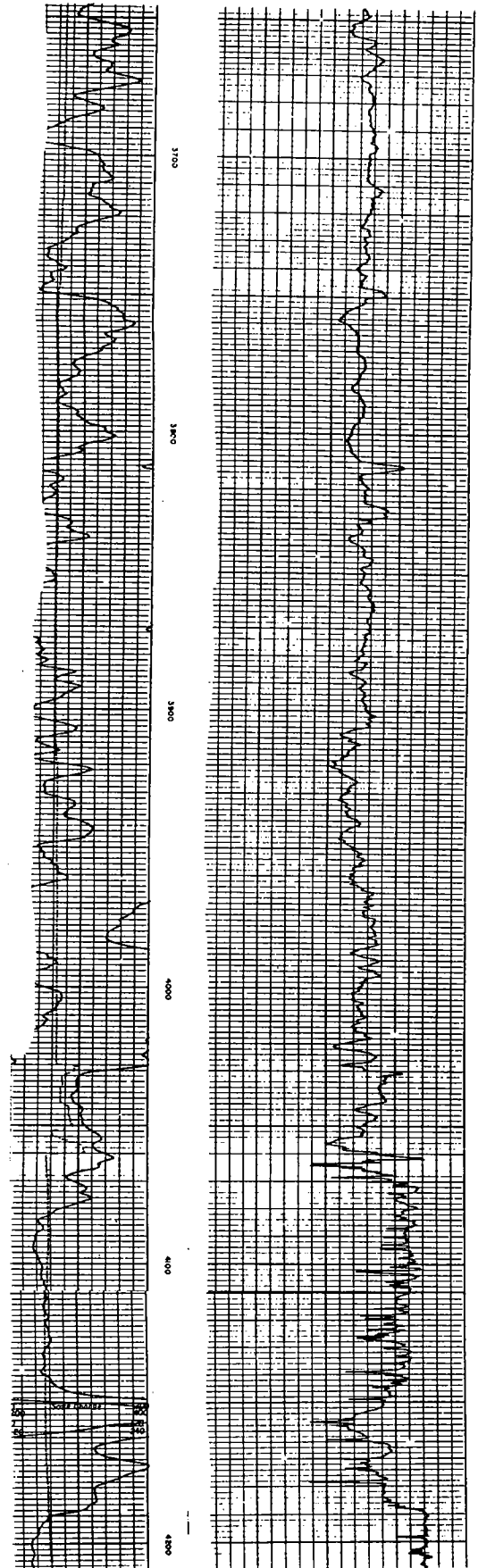
4160'-5360' No core.

5360'-5369' ?Silurian, ?Chimneyhill Subgroup.

Pale-gray cherty limestone. Texture of rock  
 is mainly rather fine calcite crystals  
 (?recrystallized sparite) with scattered  
 fossils, including both pelmatozoan plates  
 and shelly debris. MgCO<sub>3</sub> content is low,  
 averaging 3.07%, and HCl residues are high,  
 averaging 29.72%; however, latter is certain-  
 ly influenced by inclusion of considerable  
 silicified material, as thin section shows  
 very little insoluble detritus. Unit is  
 referred to Chimneyhill Subgroup on basis  
 of lithology (it is not marlstone) and  
 stratigraphic position; it lies 150' above  
 Sylvan, but Chimneyhill is thick in this  
 region (see panel 10).

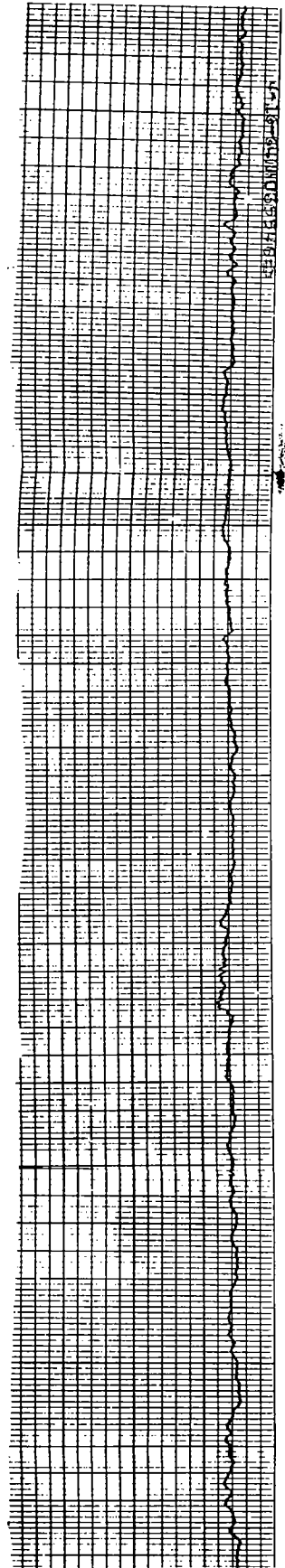
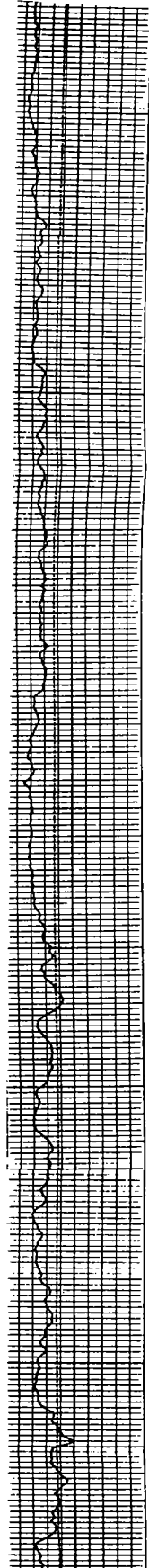
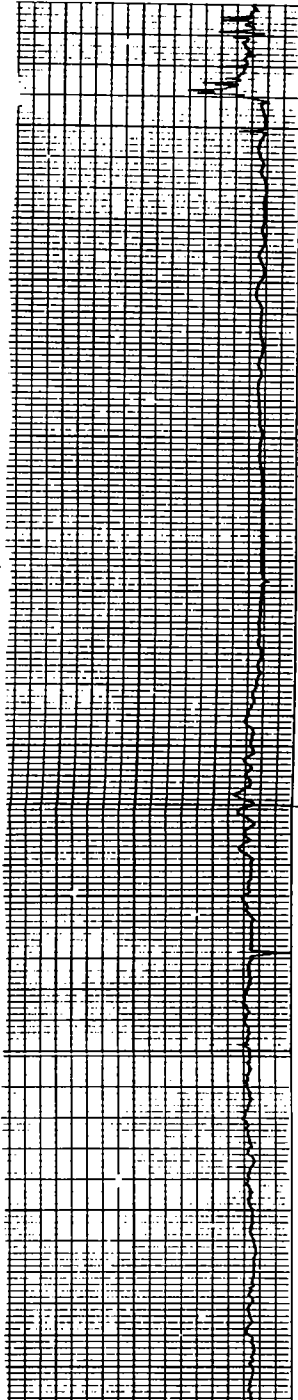
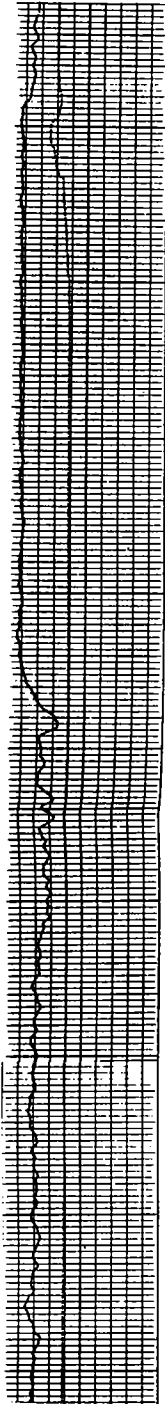
5369'-5510' No core.

Sylvan Shale 5510'



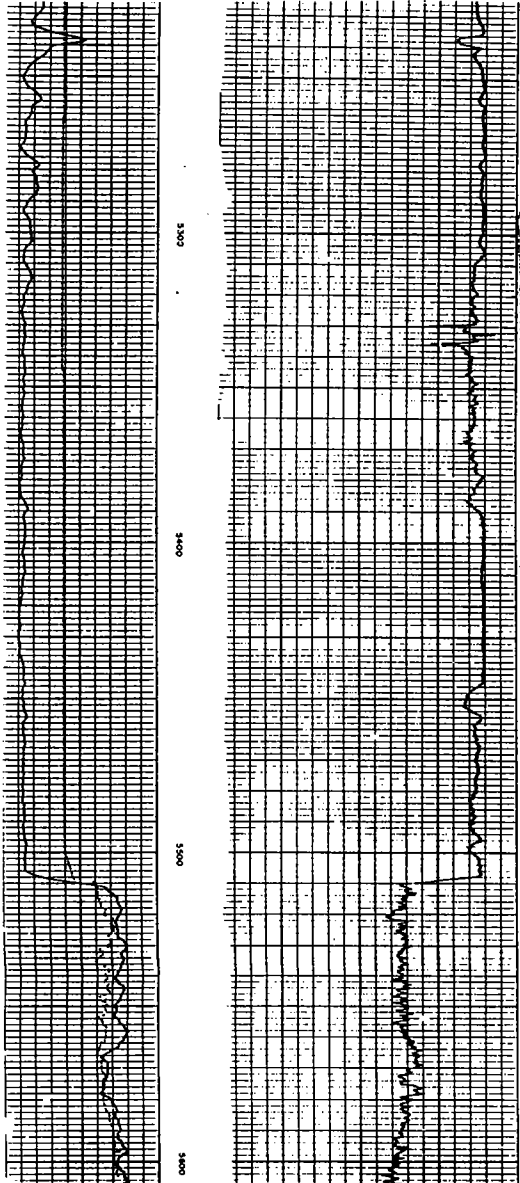
Pan American  
1 Tsauby  
NW SW  
Sec. 30, T. 7 N., R. 13 W.  
Caddo County, Oklahoma  
Elev 1448'

Continued



Pan American  
1 Tsauby  
NW SW  
Sec. 30, T. 7 N., R. 13 W.  
Caddo County, Oklahoma  
Elev 1448'

Continued



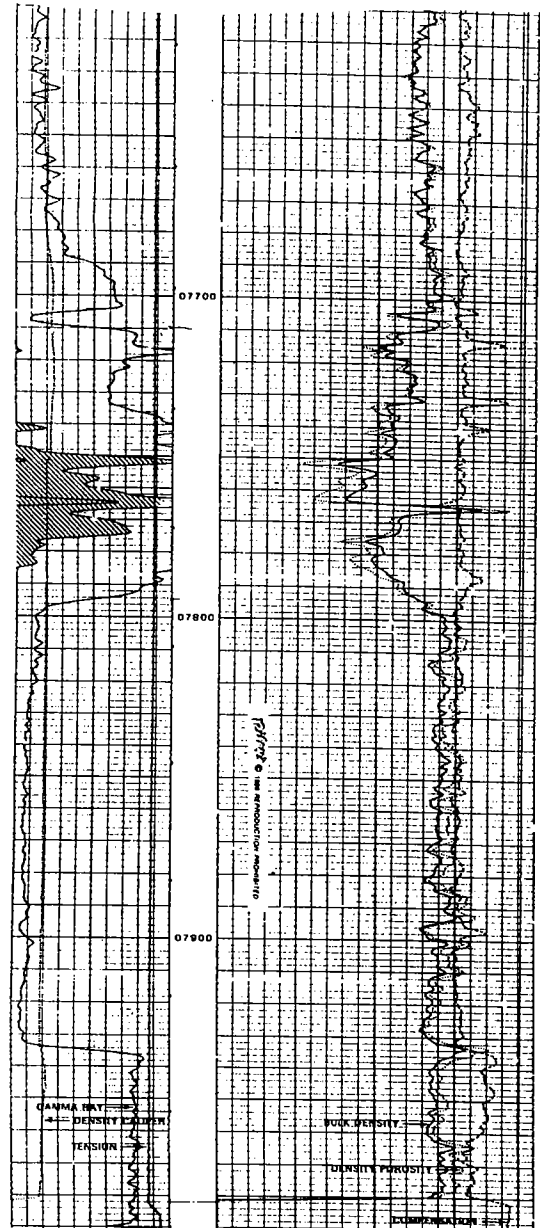
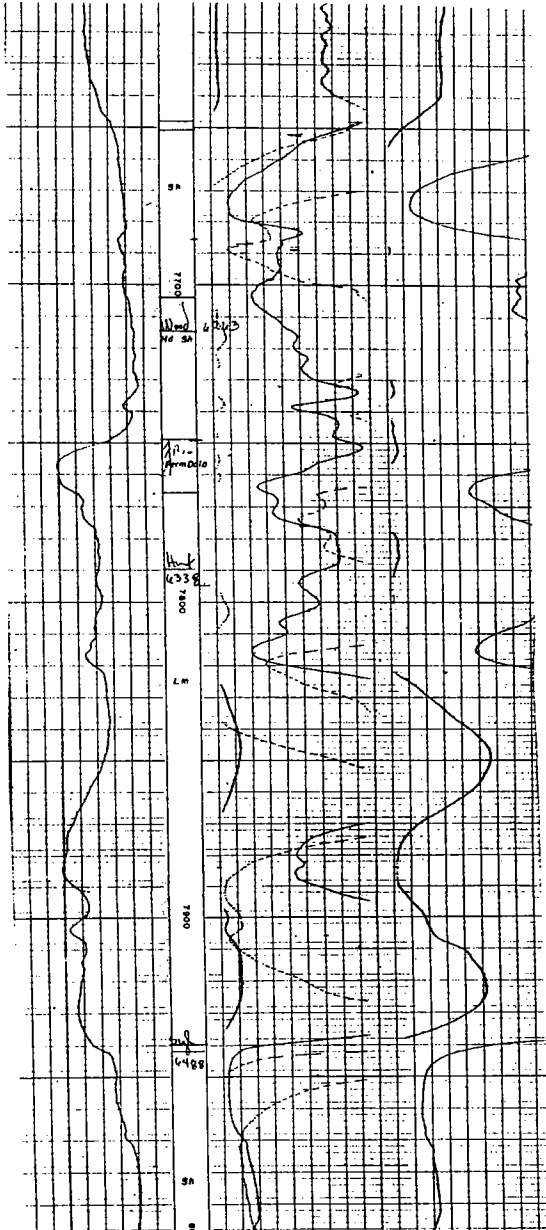


**CALVERT EXPLORATION CO. 1 USA — C NE¼NE¼  
SE¼ sec. 29, T23N, R13W, Woods County, Oklahoma; ele-  
vation GL 1,441 ft, DF 1,451 ft; TD 8,394 ft (Wilcox Sand);  
completion 11/7/62.**

Lower Woodford–Hunton–Sylvan–upper Viola sam-  
ples examined in 1976; 13 thin sections. *Illustrated on*  
**PLATE 1, STRATIGRAPHIC SECTION A–A'.**

Calvert Exploration Co.  
 I USA  
 NE NE SE  
 Sec. 29, T. 23 N., R. 13 W.  
 Woods County, Oklahoma  
 elev. 1451'

Petromark Resources  
 I-29 Davison  
 NE SW  
 Sec. 29, T. 23 N., R. 13 W.  
 Woods County, Oklahoma  
 elev. 1450'



GENERAL AMERICAN TEXAS 1 VIERSEN UNIT--Well started under Clark Canadian Exploration Company; NW $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 8, T. 15 N., R. 22 W., Roger Mills County, Oklahoma; elev. 2158'; TD 19,244' (Ordovician); compl. 1972, Morrow production, Hunton information not available. Tops: Woodford 18,740' (-16,582'), Hunton 18,834' (-16,676'), Sylvan 19,144' (-16,986'), Viola 19,240' (-17,082'); Hunton thickness 310'. Samples examined from Woodford through Hunton and into Sylvan and Viola; 14 thin sections stained with Alizarin Red-S; samples borrowed from Oklahoma Well Sample Service, Shawnee, Oklahoma.

The Hunton in this well is strongly dolomitic throughout, although there is a little calcareous dolomite and dolomitic limestone in the central part. It is a part of the western dolomite lithofacies. Stratigraphic relations in this area suggest that the Hunton is entirely Silurian in age (panel 10, section C-C').

Woodford Shale 18,740'-18,834'

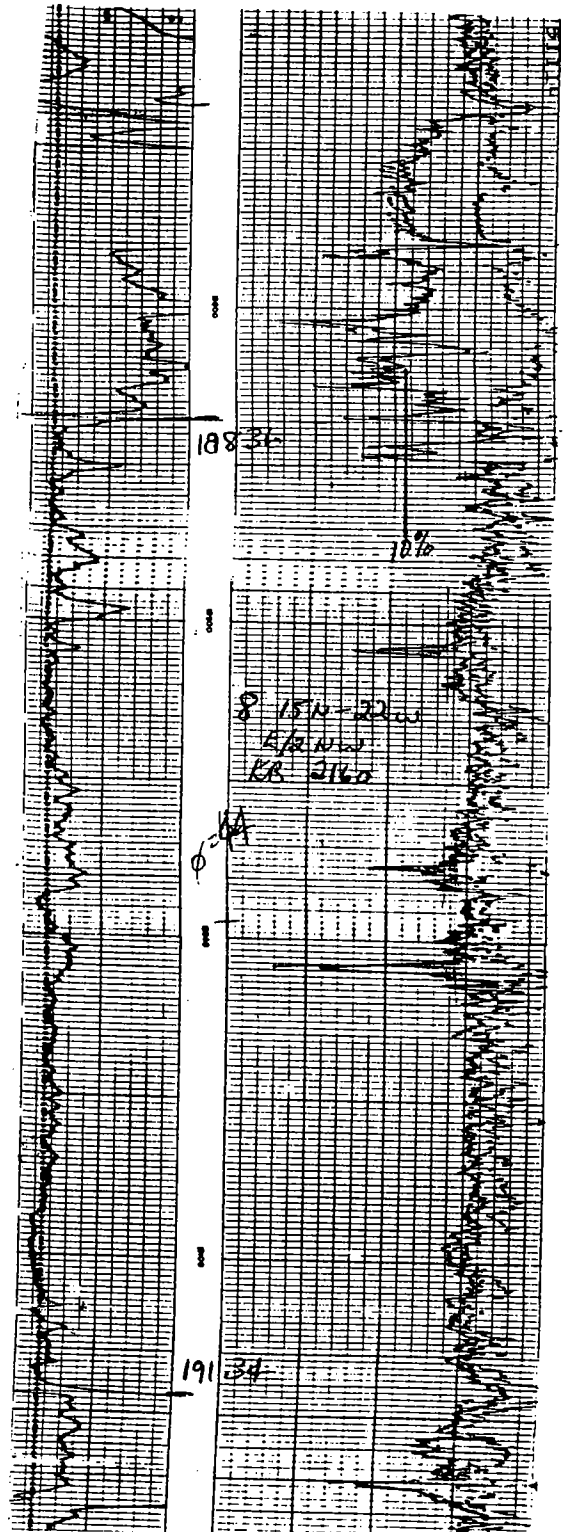
Hunton Group 18,834'-19,144'

18,434'-18,900' ?Silurian. Medium-gray crystalline dolomite with some chert. Very little detrital quartz.

18,900'-19,020' Calcareous dolomite (some crystalline dolomite from 18,920' to 18,940') and dolomitic limestone, latter in part organo-detrital and with some recrystallization. Moderate angular quartz detritus ranging up to 0.05 mm (dolomite in euhedral crystals ranges up to approximately 0.05 mm).

19,020'-19,144' Crystalline dolomite with some chert. Minor detrital quartz.

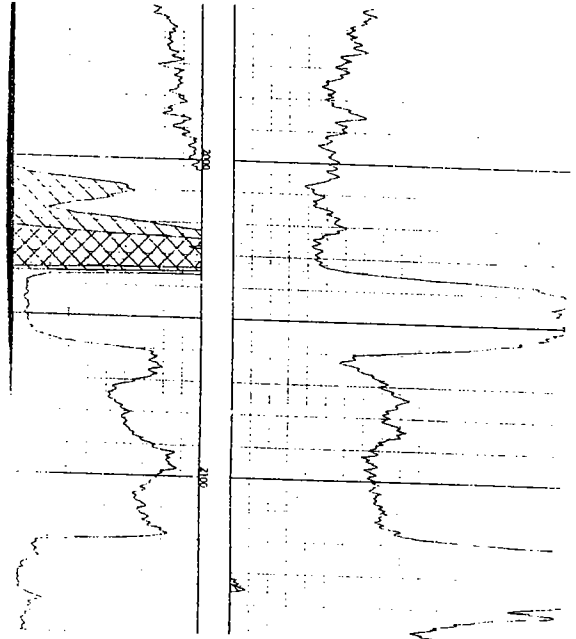
Sylvan Shale 19,144'-19,240'



J. S. Wise, 1 Walker

This well is in SW $\frac{1}{4}$  SW $\frac{1}{4}$  NE $\frac{1}{4}$  sec. 18, T. 13 N., R. 18 E., Muskogee County, about 21 miles west of Lake Tenkiller dam (text-fig. 3). The well was drilled in 1958 with cable tools, and the collar elevation is 602 feet. A radioactivity log was run. Cuttings were studied from 2,025 to 2,075 feet in erratic intervals, and the sample quality is excellent. Lower Devonian rocks are absent in this well (text-fig. 3). Silurian rocks are 23 feet thick (2,038-2,061 feet; text-fig. 3) and consist of only the Tenkiller Formation and the Blackgum Formation. Thicknesses of individual units are uncertain because the Tenkiller and Blackgum are mixed in sample 2,038-2,042. Sylvan Shale was encountered in sample 2,061-2,070. The Tenkiller-Blackgum contact is not distinguishable on the radioactivity log.

Depth (feet)	Thickness (feet)	
2,025-2,038	13	CHATTANOOGA FORMATION: Brown and black pyritic shale.
2,038-2,042	4	TENKILLER FORMATION: Light-gray to off-white orange-crinoidal limestone, 1-3% residue; trace of dark-gray limestone; 65% Tenkiller in sample; light-gray to off-white glauconitic dolomite, 15%; white, opaque chert, 10% Blackgum. Thickness uncertain, as Tenkiller is mixed with Blackgum dolomite and chert in this sample. BLACKGUM FORMATION: Light-gray to off-white fine-crystalline calcitic glauconitic dolomite; gray to dark-gray to tan fine-crystalline glauconitic dolomitic limestone; white to gray opaque chert. Thickness uncertain, as it is present with Tenkiller in sample 2,038-2,042.
2,042-2,046	4	Dolomite, light-gray to off-white, fine-crystalline, calcitic, glauconitic; chert, white to light-gray, opaque, 30-35%; trace of dark-gray dolomitic limestone.
2,046-2,050	4	Dolomite, as above, 55%; chert, as above, 40%; limestone, as above, 5%.
2,050-2,053	3	Dolomite, as above, 50%; chert, as above, 40%; limestone, as above, 10%.
2,053-2,061	8	Limestone, gray to dark-gray to tan, dolomitic, glauconitic, 40%; dolomite, gray, fine-crystalline, glauconitic, calcitic, 40%; chert, white to gray, opaque, 20%.
2,061-2,075	14	SYLVAN FORMATION: Thickness not determined, as the samples were studied only to 2,075 feet. Green to gray shale.



MOBIL 1 WALKER--1980' FNL & 660' FWL sec. 6,  
 J. Poitevent Survey, Wheeler County, Texas;  
 elev. 2365'; TD 17,772'; compl. 1/16/69. Tops:  
 Hunton (GR log) 14,968' (-12,603'), Sylvan  
 (?core) 15,630'? (-13,265'); Hunton thickness  
 662'. Cored 14,970'-15,030', 15,607'-15,638'  
 (Hunton); 16 thin sections (borrowed from  
 Chevron Oil Co., Oklahoma City); no chemical  
 analyses; Chevron Oil Company, Oklahoma City.  
 Upper cored portion of this well (14,970'-  
 15,038') is interesting because Hunton rocks  
 are represented by lithofacies which I have  
 not seen elsewhere in subsurface or surface  
 strata in Oklahoma or Texas Panhandle. This is  
 dark-gray to almost black argillaceous organo-  
 detrital limestone interbedded with dark cal-  
 careous shale. Organo-detrital limestone is  
 mostly micrite cement, but there are beds of  
 sparite; many beds are largely shelly debris,  
 brachiopods, ostracodes, trilobites, and  
 bryozoans, whereas others have much pelmatozoan  
 debris. Some scattered euhedral crystals of  
 dolomite, but this rock appears to be mainly  
 low-magnesium stone. Small spiriferoid brach-  
 iopod (?*Howellella* sp.) is fairly common in  
 parts of this interval, specimens collected at  
 14,992', 15,019', 15,023', 15,024'. Internal  
 characters of this brachiopod are not known,  
 but its external shape, ribbing, and concentric  
 ornamentation are similar to "*Spirifer*"  
*vanuxemi* Hall from Manlius Limestone of New  
 York (lithofacies also resembles that of Man-  
 lius). I have not recognized this brachiopod  
 elsewhere in Oklahoma or Texas Panhandle.

Woodford Shale

Hunton Group 14,968'-15,630'?

14,968'-14,970' No core.

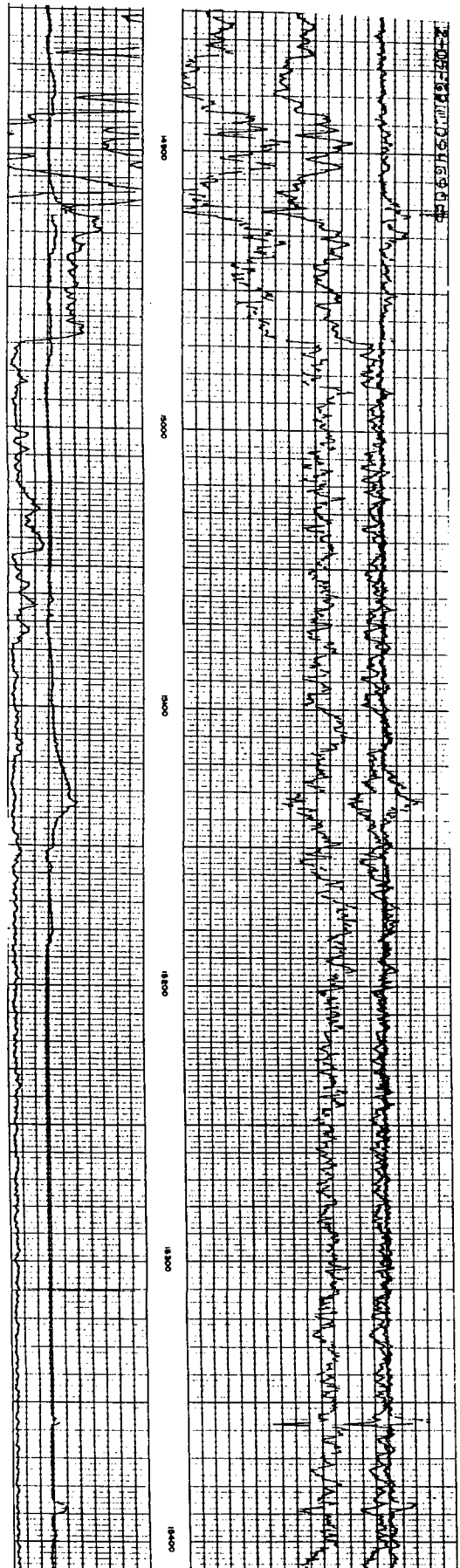
14,970'-15,030' ?Lower Devonian; ?Helderbergian.

Dark-gray argillaceous organo-detrital lime-  
 stone interbedded with calcareous shale (see  
 above). Helderbergian ostracodes have been  
 reported from this interval, but age of this  
 unit requires further study.

15,030'-15,607' No core.

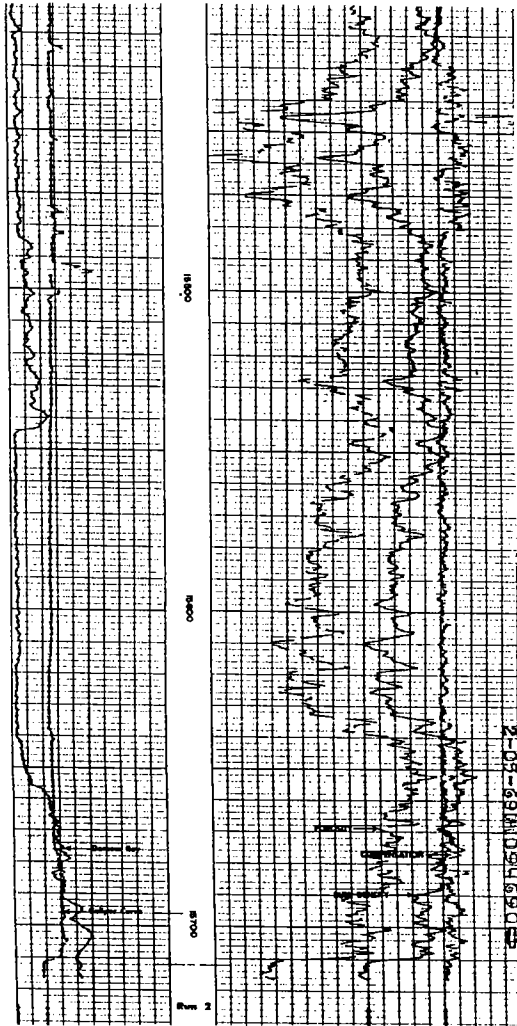
15,607'-15,625' ?Silurian; ?Chimneyhill Sub-

group. Gray porous, crystalline dolomite.  
 No chemical analyses available, but this is  
 unquestionably high-magnesium dolomite with  
 well over 30% MgCO<sub>3</sub>. No diagnostic fossils  
 observed, and its reference to Chimneyhill  
 Subgroup is based on stratigraphic position.  
 Note that in both Phillips 1-C Lee and nearby  
 Phillips 1-A Horn (not described in this  
 report) basal Hunton strata are represented  
 by high-magnesium dolomite (panel 10, section  
 B-B').



Mobil  
 1 Walker  
 1980'FNL & 660'FWL  
 Sec. 5, J. Poitevent Survey.  
 Wheeler County, Texas  
 KB 2365'

Continued



15,625'-15,630' Silurian; Chimneyhill Subgroup;  
 ?Keel Formation. Dolomitized oolite; oolites  
 completely replaced by crystalline dolomite.  
 This unit rests on finely crystalline, argil-  
 laceous? dolomite which has been interpreted  
 as being transitional between Sylvan Shale  
 (15,338') and Hunton Group (Jenkins, 1971,  
 p. 490). However, I tentatively assign these  
 fine dolomites to Sylvan, interpreting them  
 as facies of shale, mainly because in many  
 places basal oolite rests directly on Sylvan  
 Shale (panel 10, sections B-B', C-C').  
 Sylvan Shale 15,630'  
 (Interval from 15,630'-15,638' questionably  
 included in Sylvan.)

**MOBIL OIL CO. 1 WALKER** — 1,980 ft FNL & 660 ft FWL  
 sec. 5, J. Poitevent Survey, Wheeler County, Texas; eleva-  
 tion 2,365 ft (unk); TD 17,772 ft; completion 1969.

Cored 14,970-15,029 ft. Described by Amsden (1975, p.  
 102). Referred cored interval to Late Silurian based on spir-  
 iferoid brachiopods, but W. A. M. Jenkins (personal com-  
 munication, 1969) assigned the cored interval to Lower  
 Devonian (Heilderbergian) based on the ostracodes *Moel-  
 leritia canadensis* and *Eukloedenella* sp. and the spores *Em-  
 phanisporitus* and *Retusotriletes* sp. Hunton-Viola samples  
 examined by Amsden, 1979. *Illustrated on PLATE 2, STRATI-  
 GRAPHIC SECTION D-D'*.

LIGNON 1 J. WALKER—C NE<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 29, T. 8 N., R. 8 E., Seminole County, Oklahoma; elev. 843' GL; TD 4091' (Sylvan); compl. 4/17/67, Hunton oil production reported (perforations 3904'-3910', 3962'-3982', 4000'-4012'). Tops: Woodford 3850' (-3007') (GR log), Misener 3902' (-3054') (sample depth), Hunton 3912' (-3064') (sample depth), Sylvan 4054' (-3206') (GR log); Hunton thickness 142'. Samples examined from 3860' to 4091' (TD), excellent quality: 12 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The upper Hunton in this well is typical marlstone (all of which is provisionally referred to the Silurian Henryhouse Formation), and the lower part is pink crinoidal micrite with some spar, although some beds are heavily dolomitized. However, the boundary between the two is not sharply defined, possibly being obscured by dolomitization. There is no Frisco-type or Fittstown-type organo-detrital limestone in the upper part of the Hunton. The sandstone between the typical Woodford Shale and Hunton marlstone is here arbitrarily assigned to the Sylamore, although its lithologic character is not unlike some known Sallisaw beds.

*Woodford (Chattanooga) Shale* 3850' (GR log) -3912' (sample depth)

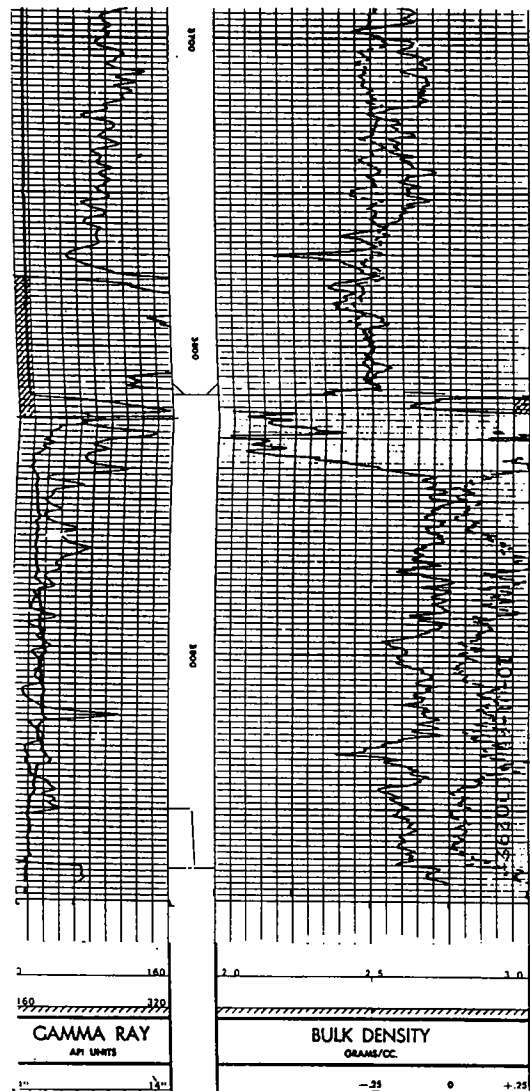
3902'-3912' (sample depths) Misener Sandstone. Silty dolomite and dolomitic siltstone with sub-angular quartz grains to 0.2 mm. This could represent the Sallisaw Formation.

*Hunton Group* 3912' (sample depth) -4054' (GR log) 3912'-3970' (sample depths) Silurian; Henryhouse Formation (upper part may include some Lower Devonian Haragan beds). Fossiliferous marlstone; fossils mostly crinoid plates along with some ostracodes, a few bryozoans, and other shelly fossils. Scattered subangular detrital quartz grains to 0.2 mm. Only minor dolomite.

3970'-4054' Chimneyhill Subgroup (Clarita Formation in part?).

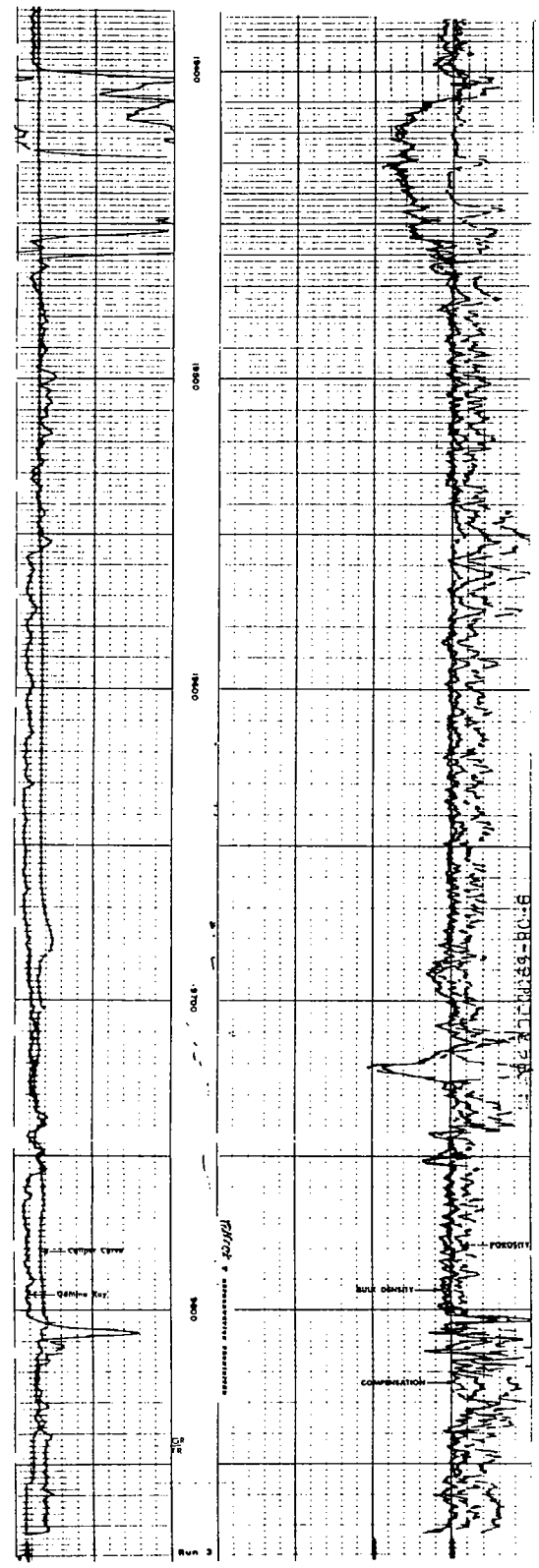
Weakly to heavily dolomitized pink crinodal micrite with some spar; some bryozoans along with a few ostracodes and other shelly fossils. In places the matrix is entirely crystalline dolomite, but no porous crystalline dolomite texture observed. Very little detrital quartz.

*Sylvan Shale* 4054' (GR log) -4075' (sample depth) Greenish-gray shale at the top, dark-gray shale below.



**CHAMPLAIN 1 WATERFIELD-HELTON — 2,300 ft FNL, 2,200 ft FWL, sec. 25, Blk. A1, H&GN Survey, Hemphill County, Texas; elevation GL 2,466 ft, KB 2,493 ft; TD 19,880 ft (Sylvan); completion 6/3/69.**

Well samples, Amarillo Sample, Amarillo, Texas. Samples examined by Amsden. *Illustrated on PLATE 2, STRATIGRAPHIC SECTION C-C'.*





SUNRAY DX (PHILLIPS) 1-A WESNER--C SW $\frac{1}{4}$  sec.  
 35, T. 9 N., R. 17 W., Washita County,  
 Oklahoma; elev. 1543'; TD 23,534' (Hunton);  
 compl. 5/3/68, D&A. Tops: Woodford 22,220'  
 (-20,677'), ?Misener 22,538' (-20,995'),  
 Hunton 22,570' (-21,027'); drilled 964'  
 of Hunton (to TD). Samples examined from  
 Woodford through Hunton to TD; 15 thin sec-  
 tions; samples borrowed from Oklahoma Well  
 Sample Service, Shawnee, Oklahoma.

Hunton strata in the 1-A Wesner are typical  
 of the Arbuckle Mountains limestone facies  
 and are similar in lithology and litho-  
 stratigraphic sequence to other wells in  
 this area. The 1-A Wesner is much like  
 the Lone Star 1 Baden although somewhat  
 thinner, and both resemble Hunton rocks at  
 the northeastern end of the Arbuckle  
 Mountains region (although the latter section  
 is substantially thinner) (see panel 10,  
 section C-C').

Woodford Shale 22,220'-22,538'

?Misener Sandstone 22,538'-22,570'

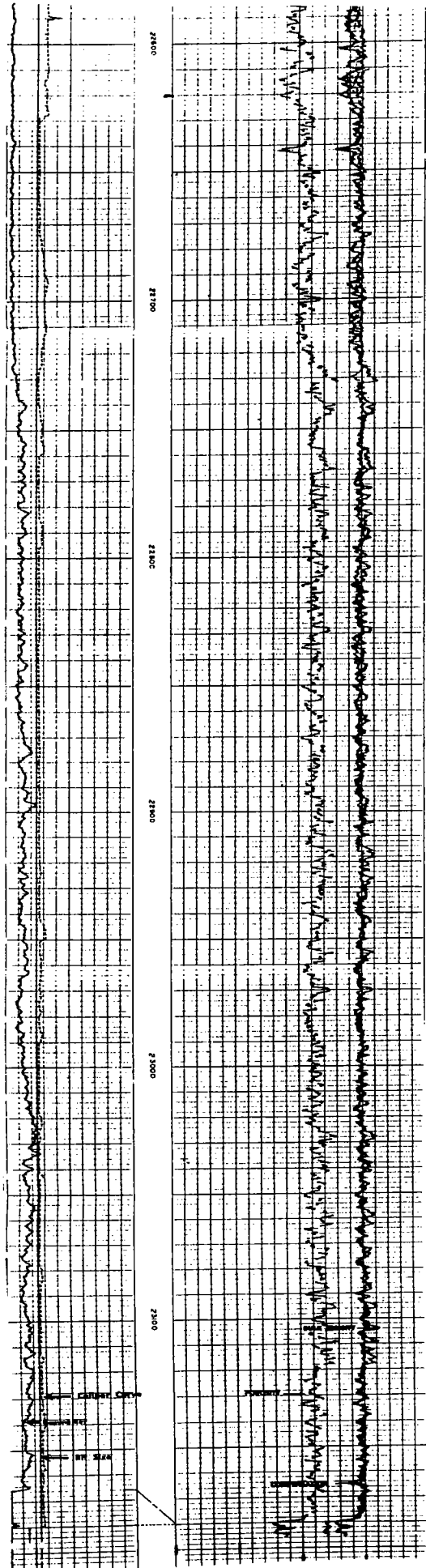
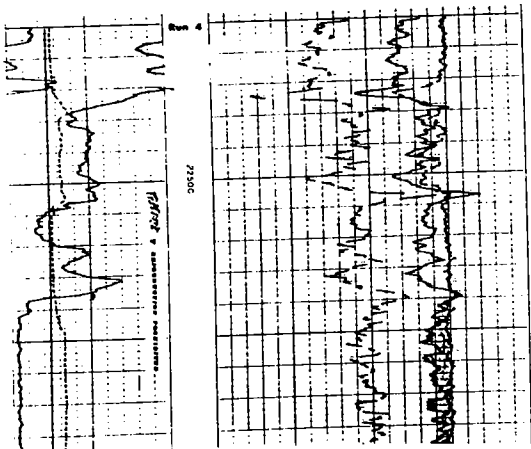
Medium-gray fine-grained calcitic dolomite  
 with silt-size angular quartz detritus  
 and substantial silicification.

Hunton Group 22,570'-23,534' (TD)

22,570'-22,750' ?Frisco and (or) Fittstown  
 Member, Bois d'Arc Formation. Light-  
 gray to pinkish-gray organo-detrital lime-  
 stone, partly with spar cement and partly  
 with micrite cement (latter may be in part  
 recrystallized). Sparse euhedral dolomite  
 crystals and minor silt-size detrital  
 quartz. Some solution?

22,750'-23,390' ?Haragan and (or)  
 ?Henryhouse Formation. Dark-gray marlstone;  
 finely divided limestone with silt-size  
 angular quartz detritus and some mica,  
 abundant in some beds. Scattered dolomite  
 crystals, moderately common in some beds.  
 Scattered fossils throughout.

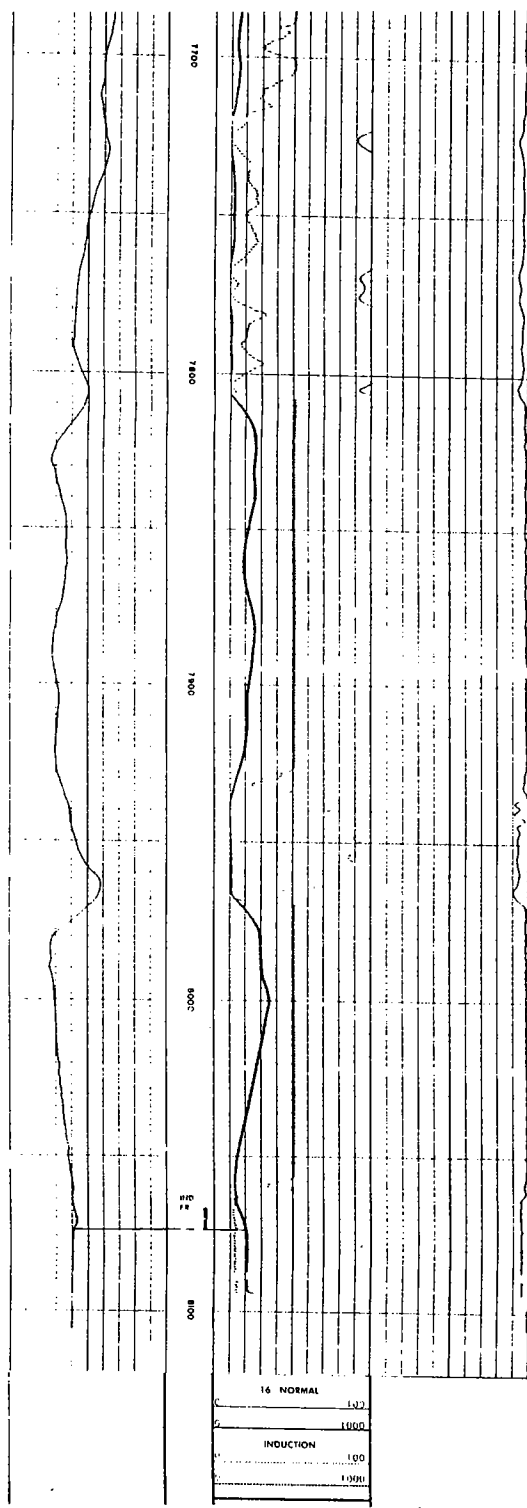
23,390'-23,534' ?Chimneyhill Subgroup.  
 Light-gray to pinkish-gray organo-  
 detrital limestone; partly micrite cement,  
 partly spar. Some detrital quartz and  
 some dolomite crystals, but never abundant.  
 TD 23,534'



SHELL 1 WESTERN COAL & MINING CO.—SE<sup>1</sup>/<sub>4</sub> sec. 36, T. 7 N., R. 32 W., Sebastian County, Arkansas; elev. 523' DF (505' GL); TD 10,921' (Upper Cambrian; Haley, 1965, p. 17); compl. 2/23/62, Hunton gas production 7936' (-7958') Haley and Frezon, 1965, pl. 1. Tops: Woodford 7768' (-7245') (Haley and Frezon, 1965, p. 13), Hunton (Sallisaw Formation-Penters Chert) 7810' (-7287') (sample depth), Hunton (?Silurian) 7850' (-7327') (sample depth), Sylvan (=Cason Shale) 7959' (-7436') (core), Welling 7980' (-7457') (sample depth); Hunton thickness 149'. Samples examined from 7700' to 8010', good quality; 13 thin sections; this well cored lower Hunton and about 4' of Sylvan Shale (7944'-7964', recovering approximately 19'); 15 thin sections; 16 chemical analyses; samples, Arkansas Geological Commission, Little Rock, Arkansas; core, Shell Oil Co., Midland, Texas.

This well was described by Haley and Frezon (1965). In all essential respects I am in accord with their description and formation assignments. Minor discrepancies exist in some of the tops, but this may be due to the samples used. I have studied the samples as well as the core and have had 28 thin sections prepared. Also, 16 core specimens from the Hunton and upper Sylvan have been analyzed in the chemical laboratory of the Oklahoma Geological Survey (see table that follows). The thin sections and chemical analyses make it possible to characterize the Hunton in fairly precise lithologic terms and to compare it with the strata in eastern Oklahoma, especially with the well-known section exposed in the Marble City area.

Hunton rocks in this and the adjoining well studies in the Bonanza Field (text-fig. 11) are similar to those in easternmost Oklahoma. The correlation between the two areas appears to be reasonably straightforward. The uppermost strata make up a sequence that is largely chert, with varying amounts of subangular to subrounded detrital quartz. The grain size of the detritus ranges from well under 0.1 mm to over 1 mm, and the detritus also ranges widely in concentration but generally consists of well under 25% of the total volume. Minor dolomite is present, but this unit is largely chert. Haley and Frezon (1965, p. 3, 13) assigned these beds to the Penters Chert. In lithologic character and stratigraphic position they appear to be correlative with and an extension of the Sallisaw Formation of eastern Oklahoma (panel 4). This chert unit is underlain by crystalline dolomite and calcitic dolomite with little or no chert. The upper 20' to 30' includes minor quantities of fine subangular detrital quartz and a few quartz veins that may represent infiltration along solution cavities. The basal 15' of the Hunton was cored. The thin sections plus the chemical analyses show this rock to be almost entirely low-insoluble crystalline dolomite (pl. 1, figs. 1, 2, 4-6); there is approximately 2' of dolomitic crinoidal limestone from 7953' to 7954' (pl. 1, fig. 3). This interval ranges as high as 41.18% MgCO<sub>3</sub>, averaging 34.44% MgCO<sub>3</sub>. The HCl-acid insolubles are low throughout, with a maximum of 2.6% and an average of 0.80%. The crystalline dolomites show considerable visual porosity. Some of these pores are caused by the dissolution of crinoid plates. In fact, the low-magnesium bed



at 7953'-7954', as well as some of the dolomitic limestones above the cored portion, strongly suggests that the entire Hunton is largely heavily dolomitized crinoidal limestone (pl. 1). Some of the cavities have a linear form, suggesting solution along fractures (pl. 1, figs. 2, 4). All of the Hunton beds below the cherts are assigned to the Chimneyhill Subgroup. The lower, cored crystalline dolomites occupy the stratigraphic position of the Tenkiller-Blackgum, although they do not lithologically resemble these formations. This is possibly due to the intense dolomitization. The very low insolubles in these strata do suggest the Quarry Mountain Formation of the eastern outcrop area, which averages less than 1% insolubles, rather than the Tenkiller or Blackgum Formations, which averages 3% to 5% insolubles (Amsden and Rowland, 1965, p. 8). No glauconite or oolites were observed. For core sample analyses, see table that follows.

*Woodford (Chattanooga) Shale* 7768'-7810' (Haley and Frezon, 1965, p. 13)

*Hunton Group* 7810'-7959' (sample and core depths)  
7810'-7850' (sample depths) Lower Devonian;  
Sallisaw Formation (=Penters Chert). Light-gray chert with subangular to subrounded detrital quartz grains to 1 mm. Quartz grains variable in quantity, generally making up only a small part of the rock. Only minor carbonate.

7850' (sample depth) -7959' (core depth) Silurian;  
Chimneyhill Subgroup.

7850'-7910' (sample depths) Almost all gray crystalline dolomite with some visible porosity.

Minor widely scattered fine (less than 0.1 mm) subangular quartz, possible infiltration along solution cavities. This interval is here interpreted as heavily dolomitized Quarry Mountain strata, although it could include some younger strata.

7910'-7944' (sample depths) Weakly to heavily dolomitized organo-detrital sparite with some micrite. Many pelmatozoans with some ostracodes and much bryozoan material. No detrital quartz observed.

7944'-7959' (core) This is almost entirely crystalline dolomite with very little insoluble detritus. The 14 samples analyzed average 34.44% MgCO<sub>3</sub> (maximum 41.18% MgCO<sub>3</sub>) and 0.80% HCl-acid insoluble residue (see table that follows). A 2' interval (7953'-7954') of dolomitic crinoidal limestone averages 13.64% MgCO<sub>3</sub>. Much visual porosity in the crystalline dolomite.

*Sylvan Shale* (=Cason Shale) 7959' (core) -7980' (sample depth)

Upper 2' to 3' a light-greenish-gray argillaceous dolomite with rounded detrital quartz; 1 sample analyzed 27.34% MgCO<sub>3</sub> and 31.77% HCl-acid insolubles. Underlying shale is dark gray; 1 sample (7964') analyzed 19.22% MgCO<sub>3</sub>, 51.81% HCl-acid insolubles. The depth from 7959' to 7964' was studied from cores; 7964'-7980' depth was studied from samples.

*Welling Formation* 7980'-8010' (sample depths)  
7980'-7985', 7990'-7995', 8005'-8010' (thin sections) Weakly to moderately dolomitized organo-detrital sparite with minor micrite; no detrital quartz observed.

## SHELL 1 WESTERN COAL & MINING CO.

### CORE SAMPLES

Depth (ft)	CaCO <sub>3</sub>	MgCO <sub>3</sub>	Insoluble residue	Recovery	Mn (ppm)	Sr (ppm)
<i>Chimneyhill Subgroup</i>						
7944	59.32	39.02	0.82	99.16	198	100
7945	60.01	39.50	0.56	100.07	195	100
7948 B	62.32	35.57	0.50	98.39	208	100
7948 C	58.49	40.94	0.50	99.93	223	100
7950	61.30	36.41	0.52	98.23	228	100
7952 A	66.14	31.77	0.44	98.35	250	112
7952 B	56.65	41.18	1.16	98.99	238	75
7952 C	59.66	37.80	1.04	98.50	235	62
7954 A	86.81	11.28	0.48	98.57	120	88
7954 B	83.12	15.99	0.52	99.63	145	112
7955	60.72	37.91	0.92	99.55	215	112
7957	58.92	39.40	1.08	99.40	245	125
7958 B	58.27	38.97	2.60	99.84	358	162
7958	62.56	36.38	1.69	100.63	265	112
Average		34.44	0.92			
<i>Sylvan Group</i>						
7959	39.71	27.34	31.77	98.82	1100	125
7964	27.99	19.22	51.81	99.02	938	112

STANDARD OF TEXAS 1 WHEELER UNIT--2470' FNL & 1980' FWL sec. 25, Blk. A-4, H&GN Survey, Wheeler County, Texas; elev. 2451'; TD 18,438'; compl. 2/4/69. Tops: Hunton (GR log) 15,910' (-13,459'), Sylvan (GR log) 16,627' (-14,176'); Hunton thickness 717'. Cored 15,943'-15,962' (Hunton); thin sections (borrowed from Chevron Oil Co., Oklahoma City); no chemical analyses; Chevron Oil Co., Oklahoma City, Oklahoma.

Cored portion of well is low-magnesium limestone yielding brachiopods, one of which is smooth terebratuloid brachiopod, probably *Amphigenia*. This certainly indicates Devonian age, very probably late Early Devonian fairly close to Sallisaw Formation of eastern Oklahoma, Turkey Creek limestone of Marshall County, Oklahoma, and Phillips 1-C Lina, Ochiltree County, Texas. Three wells in Texas Panhandle (1 Wheeler, 1 Walker, and 1-C Lina) include beds of Early Devonian age in Hunton Group, and it seems probable that patches of Early Devonian rocks are scattered over this region, probably thickening and becoming widely distributed in deeper part of Anadarko basin in Oklahoma.

Woodford Shale

Hunton Group 15,910'-16,627'

15,910'-15,943' No core.

15,943'-15,962' Lower Devonian; ?Emsian.

Pale-gray crinoidal limestone with very little dolomite. Lower 7' with pinkish-gray color. Specimens of *Amphigenia?* sp. at 15,961' (see remarks above).

15,962'-16,627' No core.

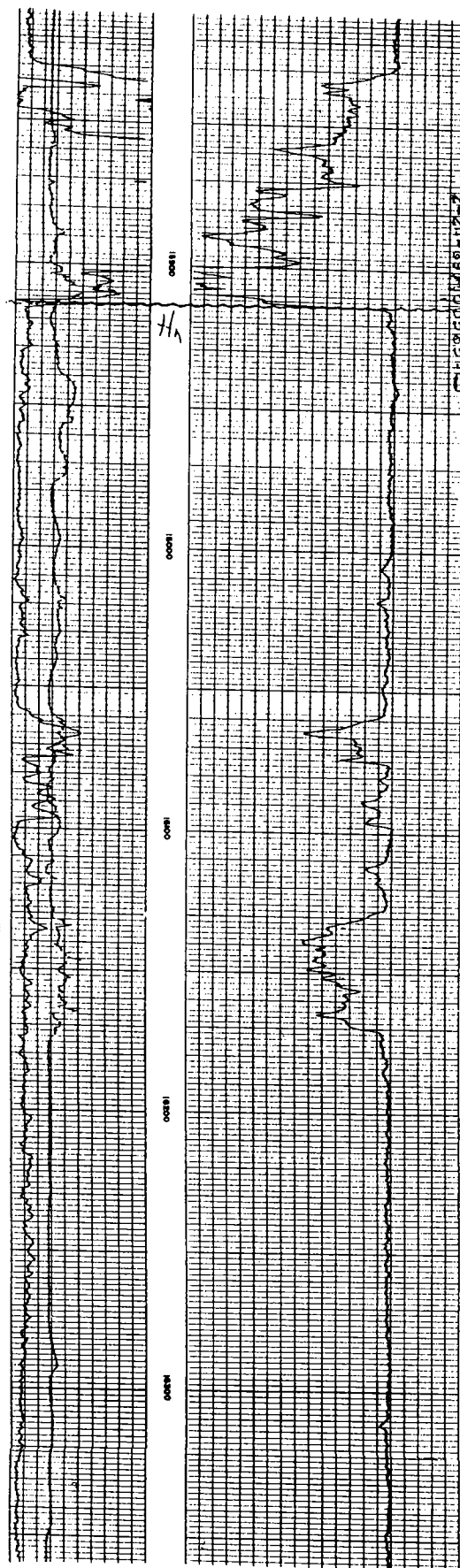
Sylvan Shale 16,627'

**STANDARD OIL CO. OF TEXAS 1 WHEELER UNIT** -- 2,470 ft FNL & 1,980 ft FWL, sec. 25, Blk. A-4 H&GN Survey, Wheeler County, Texas; elevation GL 2,451 ft, KB 2,478 ft; TD 18,438 ft; completion 2/4/69.

Tops: Hunton 15,910 ft (-13,459 ft); Sylvan (GR log) 16,627 ft (-14,176 ft); Hunton thickness 717 ft; cored 15,592-15,943 ft. Described in Amsden (1975, p. 103). Well samples borrowed from Chevron, 1979, examined by Amsden for this report; 31 thin sections. *Illustrated on* PLATE 2, STRATIGRAPHIC SECTION D-D'.

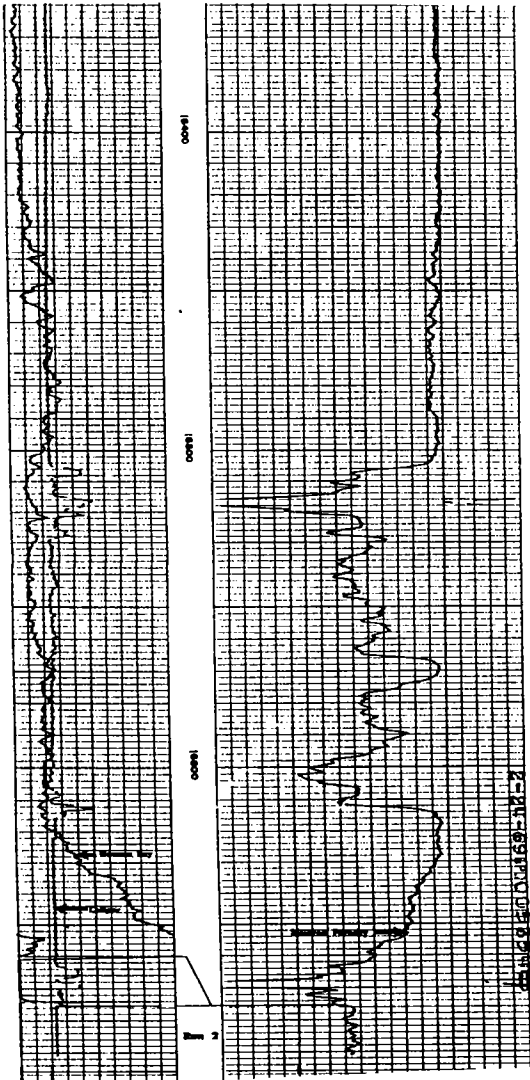
Amsden (1975, p. 103) tentatively identified *Amphigenia* sp. from the core, but a re-study of this specimen suggests a representative of *Rensselaeria* sp. and a Frisco, rather than a Sallisaw, correlation.

The study of Hunton cores in western Oklahoma and the Texas Panhandle shows the local presence of Early Devonian strata representing Helderbergian, Deerparkian, and Sawkillian Stages. These appear to be erosional remnants preserved beneath the Woodford Shale.



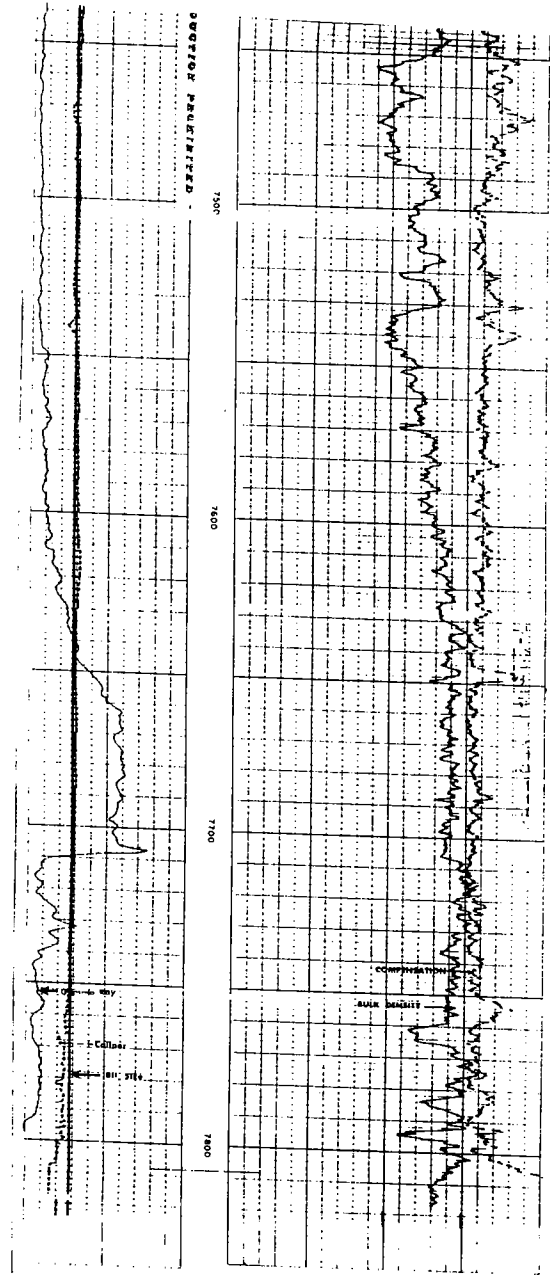
Standard Oil Co.  
1 Wheeler Unit  
2470' FNL & 1980' FWL  
Sec. 25, Blk. A-4, H&GN Survey  
Wheeler County, Texas  
KB 2478'

Continued

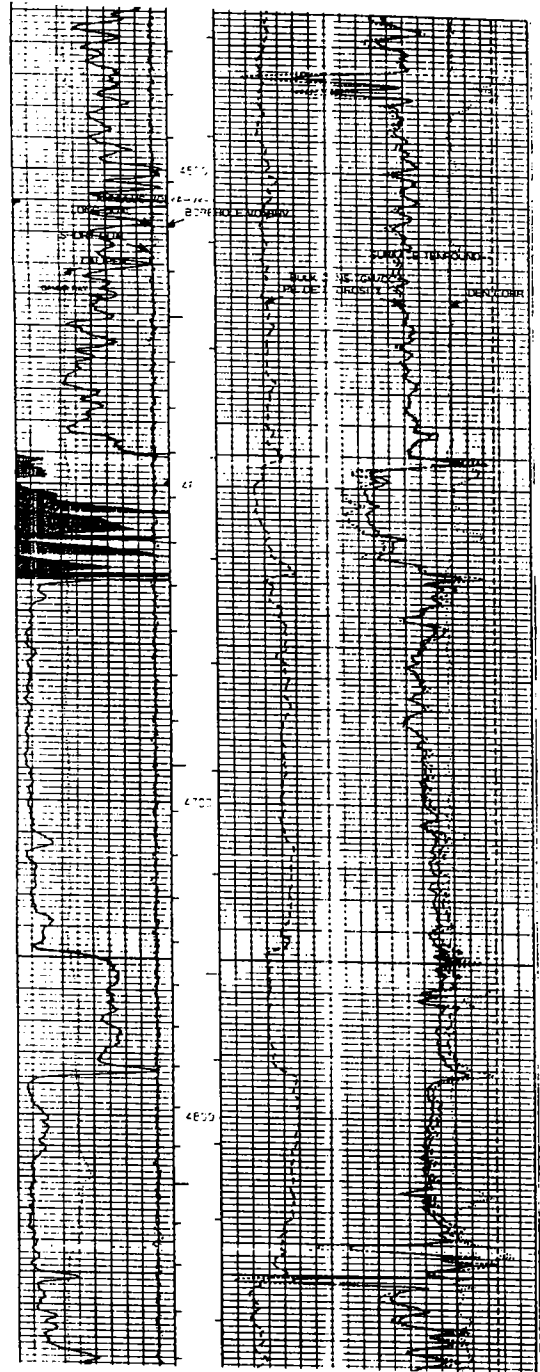


**TEXACO INC. 1 L. O. WHEELER UNIT** — C SW¼NE¼ sec. 25, T25N, R18W, Woodward County, Oklahoma; elevation GL 1,780 ft, DF 1,788 ft; TD 7,810 ft; completion 8/20/66.

Cored 7,730–7,775 ft, examined by Amsden, 1985; conodont samples sent to Dr. James E. Barrick (Texas Tech University). Core from 7,730 to 7,755 ft, low magnesium, cherty, glauconitic limestone; some shelly fossils; Barrick (personal communication) reports Llandoveryian C<sub>5</sub> age conodonts; from 7,755 to 7,775 ft, heavily to moderately dolomitized limestone; glauconitic in lower part. *Illustrated on* PLATE 2, STRATIGRAPHIC SECTION B–B'.



SERVICE 1-13 WHITEFIELD—NE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec.  
13, T. 9 N., R. 19 E., Haskell County, Oklahoma;  
elev. 553'; compl. unknown, Hunton gas production  
4644'-4716'. Hunton top reported at 4638'. Samples  
and mechanical logs were not available at the time  
this report was written.



JONES-SHELBURNE 1 WHITWORTH—C SW<sup>1</sup>/<sub>4</sub> SE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 2, T. 5 N., R. 5 E., Seminole County, Oklahoma; elev. 916'; TD 2814' (Sylvan); compl. 7/15/52, Hunton production reported (perf. 2781'-2788'). Tops: Hunton 2600' (-1684') (sample depth), Sylvan 2790' (-1875') (SP log); Hunton thickness 191'. Samples examined from 2550' to 2815' (TD), good quality; 13 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

This appears to be a typical Arbuckle Mountain Hunton sequence consisting of marlstone (Henryhouse and/or Haragan Formation), underlain by the Chimneyhill Subgroup, including the Clarita, Cochrane, and Keel Formations. Low in dolomite throughout.

*Woodford (Chattanooga) Shale*

No Misener Sandstone observed.

*Hunton Group* 2600' (sample depth) -2591' (SP log) 2600'-2730' (sample depths) Silurian (may include some Devonian at top); Henryhouse Formation, possibly including some Haragan beds in the upper part. Fossiliferous marlstone, mostly with a low fossil content but including pelmatozoans, ostracodes, triobites, bryozoans, and other shelly debris; no corals observed. Moderate scattered sub-angular detrital quartz grains to 0.2 mm. Low to moderate scattered dolomite crystals.

2730'-2790' (sample depths) Chimneyhill Subgroup.

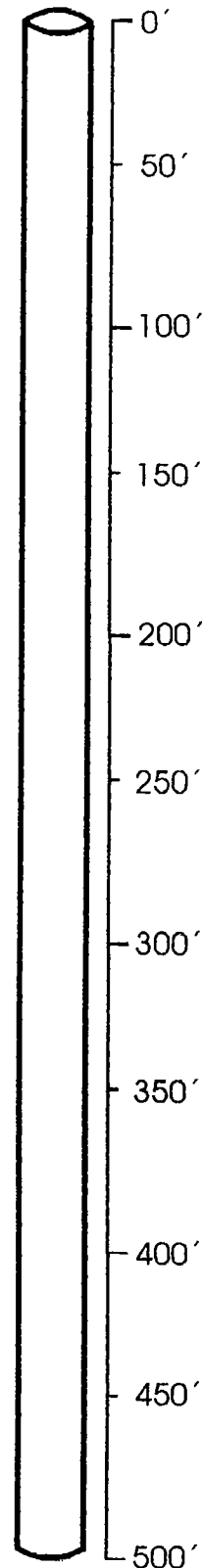
2730'-2780' (sample depths) Clarita Formation. Pink crinoidal micrite with ostracodes, bryozoans, etc. Moderate detrital quartz to 0.2 mm or so. Moderate scattered dolomite crystals.

2780'-2790' (sample depths) Cochrane Formation. Glauconitic crinoidal micrite with many bryozoans. Minor detrital quartz and dolomite. Chert.

2790'-2800' (sample depths) Keel Formation. Mixture of rock like 2780'-2790' interval above plus oolites set in spar. Latter with many fossils and resembling the Ideal Quarry beds of the Arbuckle Mountain exposures. Discussed in Amsden (1960, pl. 10, figs. 1-3).

*Sylvan Shale* 2790' (SP log)

Log not available





KIRKPATRICK 1 WICHERT--SE 1/4 sec. 26, T. 22 N., R. 12 W., Major County, Oklahoma; elev. 1232'; TD 8001' (Sylvan); compl. 5/23/67, no Hunton production reported. Tops: Hunton (CC) 7769' (-6537'), Sylvan (CC) 7996' (-6764'); Hunton thickness 227'. Cored 7770'-7810' (Hunton); 2 thin sections; chemical analyses; OU Core Library.

Well is near Kirkpatrick 1 Shewey Unit, Kirkpatrick 1-A Shewey, and Kirkpatrick & Natol 1 Nickel Unit. In all 4 wells, upper Hunton strata are gray crystalline dolomites with much visible porosity; tests in 1 Shewey Unit and 1-A Shewey show 12% to 15% porosity. Trilobites from 1 Shewey Unit and 1 Wichert indicate that these upper Hunton dolomites are probably all Silurian. No specimens of Kirkidium have been recovered from these wells, although their apparent absence may be due to destruction by intense dolomitization.

Woodford Shale

Hunton Group 7769'-7996'

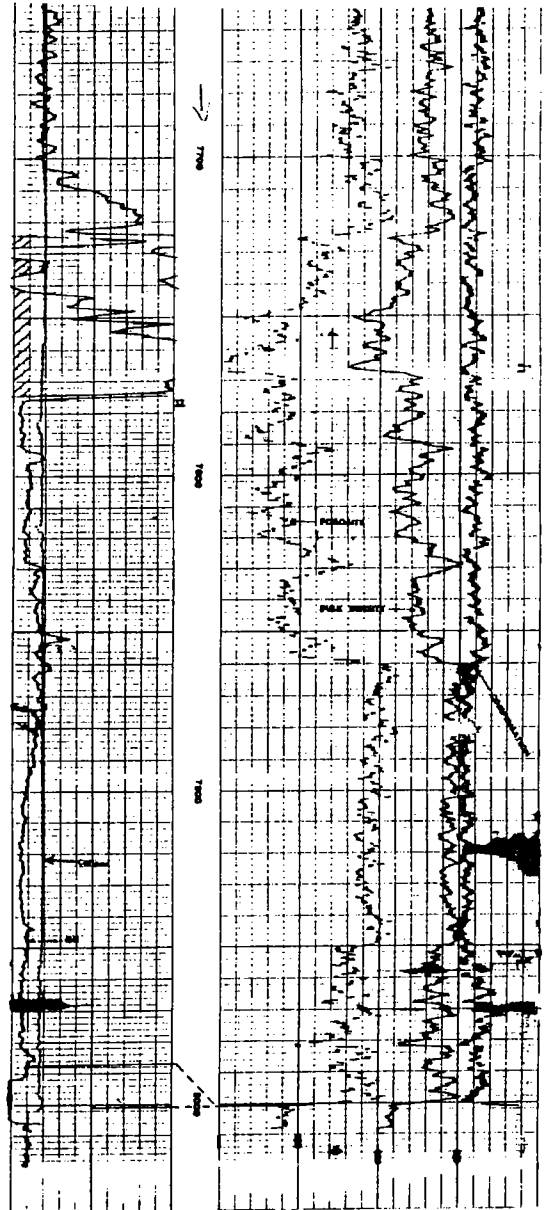
7769'-7770' No core.

7770'-7784' ?Silurian. Gray porous, crystalline dolomite with very little insolubles; HCl insolubles average 1.57%, MgCO<sub>3</sub> 42.08%. Pores in rock are, at least in considerable part, due to leaching of fossils, especially pelmatozoan plates; in fact, rock is so thoroughly leached that fossils are preserved almost entirely as molds. No fossils observed, and this unit referred to Silurian on basis of lithology and stratigraphic position (see remarks above).

7784'-7810' Silurian. Gray crystalline dolomite with some chert nodules in lower part; MgCO<sub>3</sub> averages 39.10%, HCl insolubles 5.56% (latter may include some silicified material). This unit has visible porosity, although not as much as above; it is well leached, and fossils are preserved mostly as molds. Specimens of Gravicalymene cf. G. celebra Raymond (identified by K. S. W. Campbell; letter, 6/4/69) at 7798' indicate a Silurian age.

7810'-7996' No core.

Sylvan Shale 7996'



PAYNE 1 WILLIAMS--C NW $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 11, T. 15 N.,  
 R. 5 W., McClain County, Oklahoma; elev. 1104';  
 TD 7117' (Hunton); compl. 4/11/67, no Hunton  
 production reported. Tops: Woodford (CC)  
 7016' (-5912'), Hunton (core) 7073' (-5969').  
 Cored 7068'-7095' (Woodford-Hunton); 2 thin  
 sections; chemical analyses; OU Core Library.

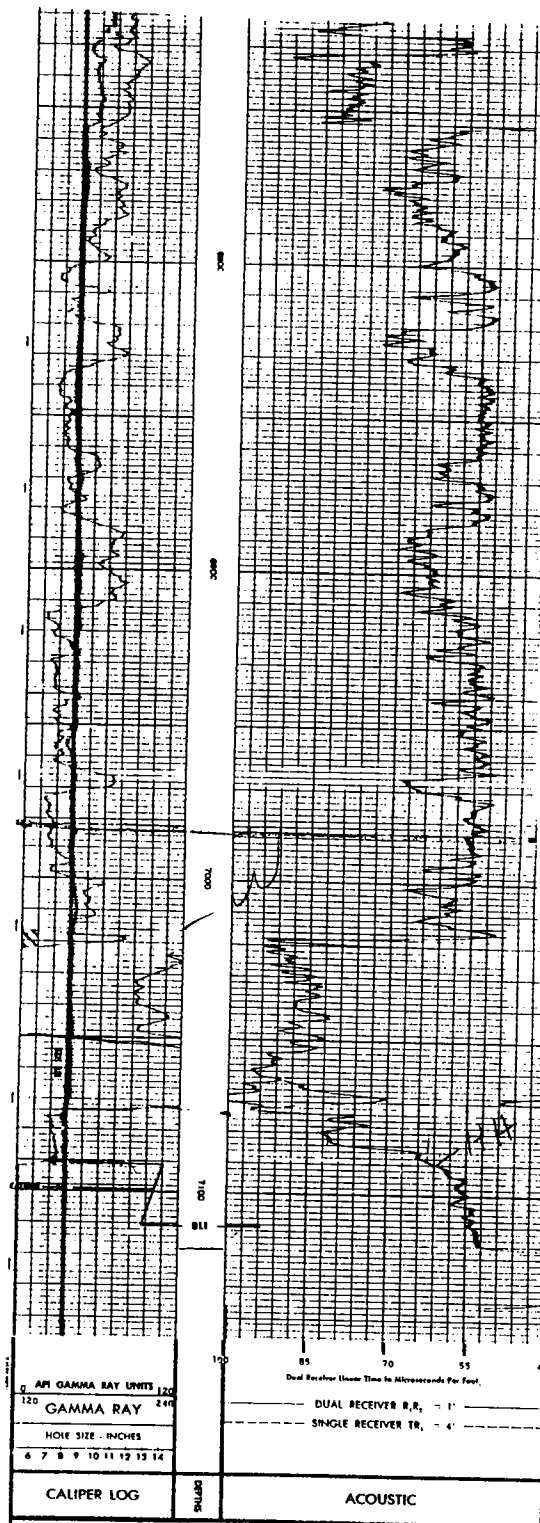
Well not shown on stratigraphic section A-A',  
 panel 10. It is located near Kirkpatrick 1  
 Cronkite, which yielded Lower Devonian fossils,  
 but no diagnostic fossils have been observed  
 in 1 Williams, and the age of cored portion is  
 uncertain.

Woodford Shale 7016'-7073'

Hunton Group 7073'-7117' (TD)

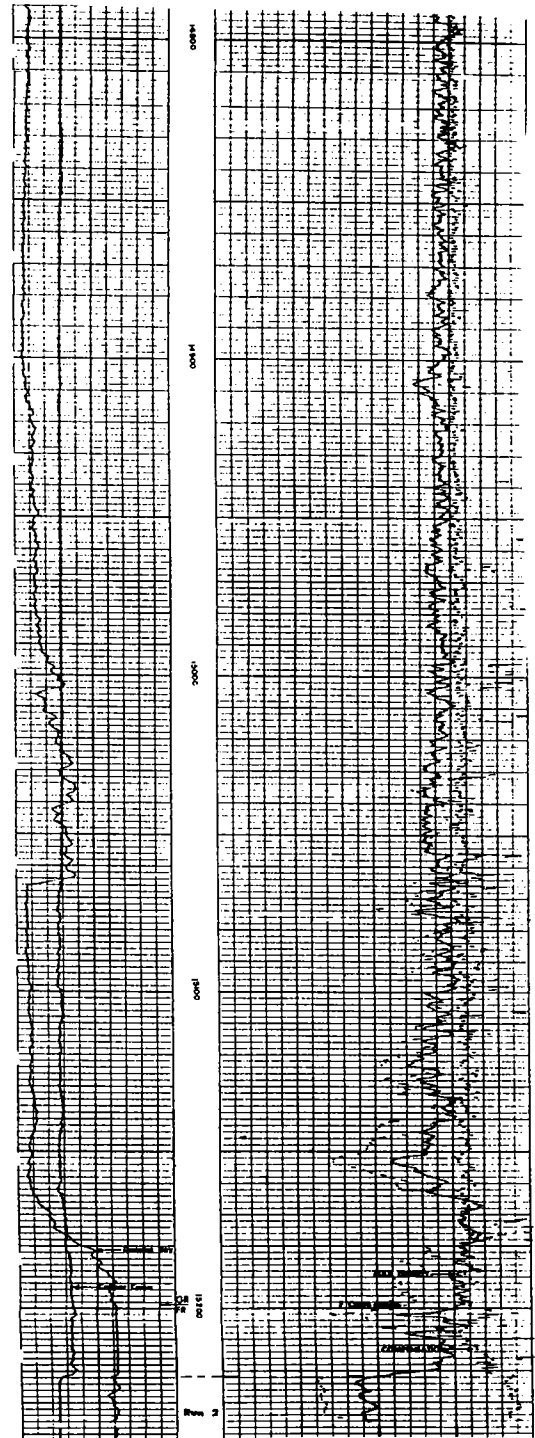
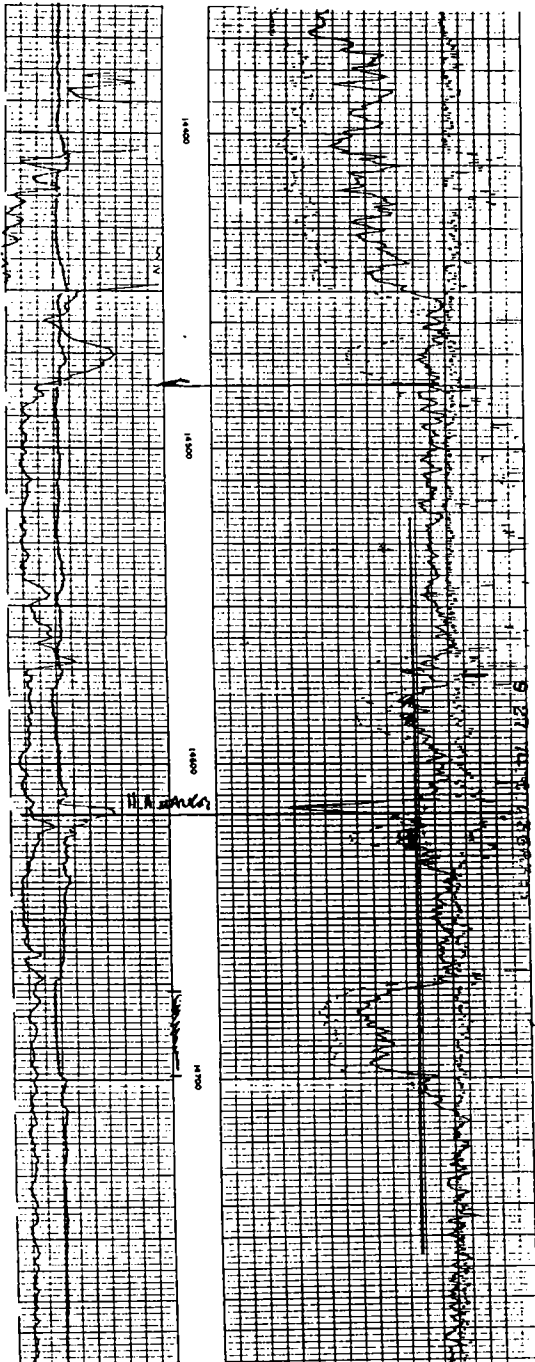
7073'-7095' ?Lower Devonian. Dolomitic, fos-  
 siliferous marlstone with much silt-size  
 subangular quartz detritus; HCl insolubles  
 average 18.69%, MgCO<sub>3</sub> 20.92%. Fossils scat-  
 tered through matrix and include a number of  
 ostracodes. No diagnostic fossils observed  
 and the reference of this unit to the Lower  
 Devonian is based on its proximity to the 1  
 Cronkite; but note that lower, marlstone  
 portion of the 1 Cronkite core did not yield  
 any diagnostic fossils.

7117' TD



GETTY OIL CO. 1 WILLIAMS — 1,324 ft FSL, 1,328 ft FEL, sec. 2, Blk. E, T&NO Survey, Wheeler County, Texas; elevation GL 2,545 ft, KB 2,574 ft; TD (Na); completion 9/8/74.

Tops: (well samples) Hunton 14,490 ft (-11,916 ft), Sylvan 15,220 ft (-12,646 ft). Samples (Amarillo Sample, Amarillo, Texas) examined from lower Woodford to TD (Arbuckle Group); 53 thin sections. *Hunton illustrated on PLATE 2, STRATIGRAPHIC SECTION D-D*."



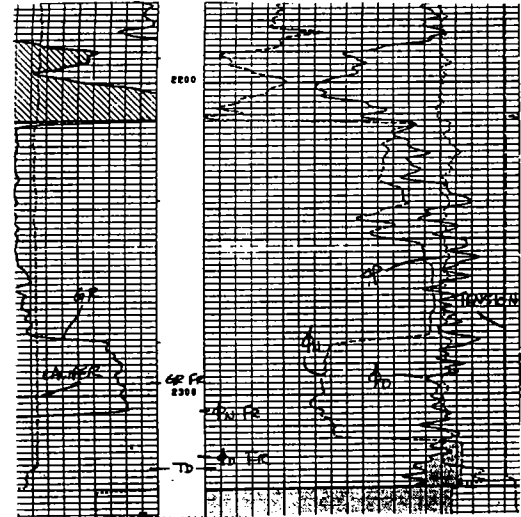
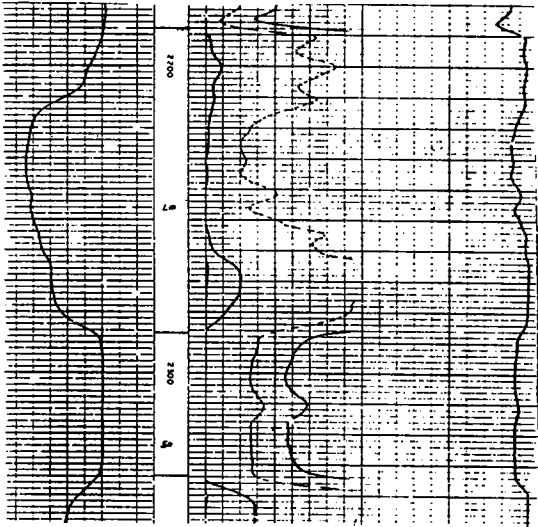
**WELL J**  
**Bridgeview Coal Company, 1 Williamson**

This well is in SE¼ NW¼ SE¼ sec. 2, T. 12 N., R. 18 E., McIntosh County, about 18 miles west of Lake Tenkiller dam (text-figs. 3, 15.) The well was drilled in 1958 with rotary tools, and the collar elevation is 518 feet. Cuttings were studied from 2,200 to 2,300 feet in intervals of 5 feet, and the sample quality is good. Lower Devonian rocks are absent in this well (text-figs. 3, 15). Silurian rocks are 77 feet thick (2,210-2,287? feet; text-fig. 3) and comprise four units: Quarry Mountain Formation 50? feet (2,210-2,260?), Marble City Member 30 feet (2,210-2,240) and Barber Member 20? feet (2,240-2,260?; thickness uncertain as Barber and Tenkiller are present in sample 2,260-2,265; the contact was estimated from the electric log at 2,260?), Tenkiller Formation, and Blackgum Formation 27? feet (2,260?-2,287?; thickness of each unit uncertain as Barber and Tenkiller are present in sample 2,260-2,265 and Blackgum and Sylvan are mixed in sample 2,285-2,290). Sylvan Shale was encountered in sample 2,285-2,290, and the Blackgum-Sylvan contact was estimated at 2,287? from the electric log. Two thin sections were prepared from the following intervals: Barber Member, 2,250-2,255, and Blackgum Formation, 2,275-2,290.

<i>Depth (feet)</i>	<i>Thickness (feet)</i>	
2,200-2,210	10	CHATTANOOGA FORMATION: Black and brown pyritic shale.
		QUARRY MOUNTAIN FORMATION: 50? feet (2,210-2,260?; Barber-Tenkiller contact estimated on the electric log as both are present in sample 2,260-2,265).
		<i>Marble City Member</i> : 30 feet (2,210-2,240). Off-white to pink crinoidal dolomitic limestone; light-gray fine-crystalline, calcitic dolomite.
2,210-2,215	5	Limestone, off-white, dolomitic; some pink crinoidal; dolomite, gray, fine-crystalline, calcitic, 15%.
2,215-2,220	5	Limestone, highly dolomitic, off-white to light-tan; trace of dolomite, as above.
2,220-2,230	10	Limestone, as above, except less dolomitic and abundant pink crinoidal material.
2,230-2,240	10	Limestone, as above, except highly dolomitic; trace of gray fine-crystalline dolomite in sample 2,235-2,240.
		<i>Barber Member</i> : 20 feet (2,240-2,260?; Barber-Tenkiller contact estimated from the electric log as both are present in sample 2,260-2,265). Light-gray fine-crystalline dolomite; in part calcitic. Thin section (J-1) was prepared from sample 2,250-2,255.
2,240-2,260	20	Dolomite, light-gray, fine-crystalline; in part calcitic; thin section (J-1) was prepared from this interval.
2,260-2,265	5	Dolomite, as above; 35-40% Tenkiller limestone present as described below.
2,265-2,275	10	TENKILLER FORMATION: Light-gray to gray to pink pyritic limestone; in part dolomitic; abundant orange crinoidal material; 2-4% residue. Thickness

Bridgeview Coal Company  
 1 Williamson  
 SE NW SE  
 Sec. 2, T. 12 N., R. 18 E.  
 McIntosh County, Oklahoma  
 elev. 524'

Service Drilling Company  
 1-2 Wood  
 1912'FSL & 1750'FEL  
 Sec. 2, T. 13 N., R. 18 E.  
 McIntosh County, Oklahoma  
 elev. 523'



uncertain, as Tenkiller is mixed with Barber in sample 2,260-2,265; contact estimated from the electric log.

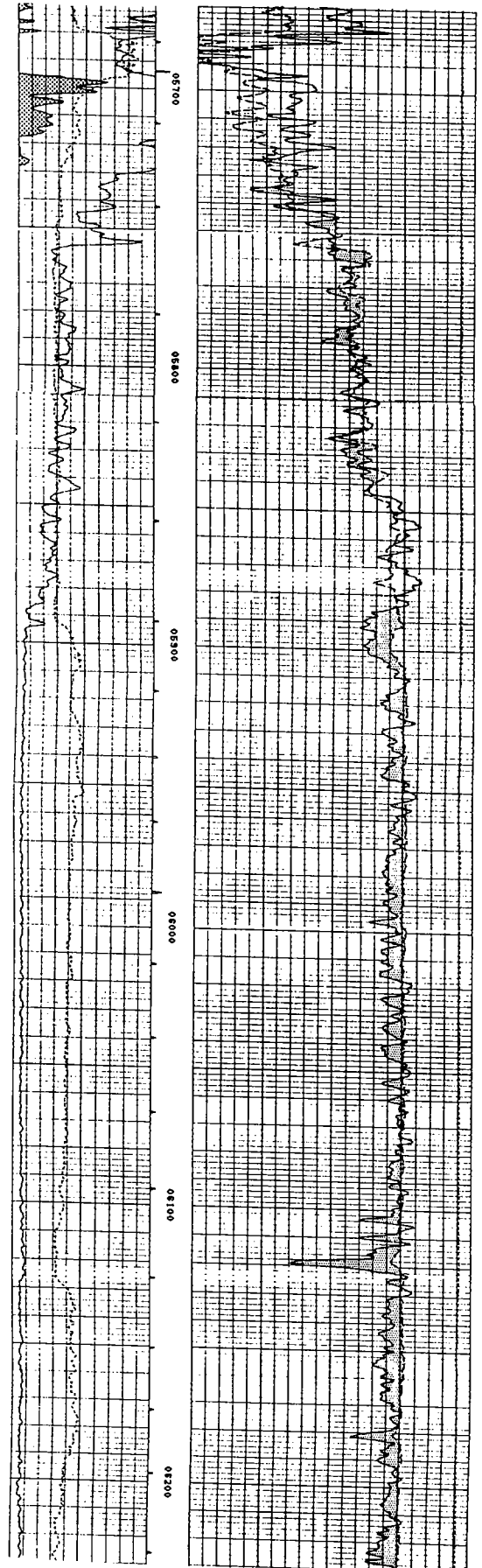
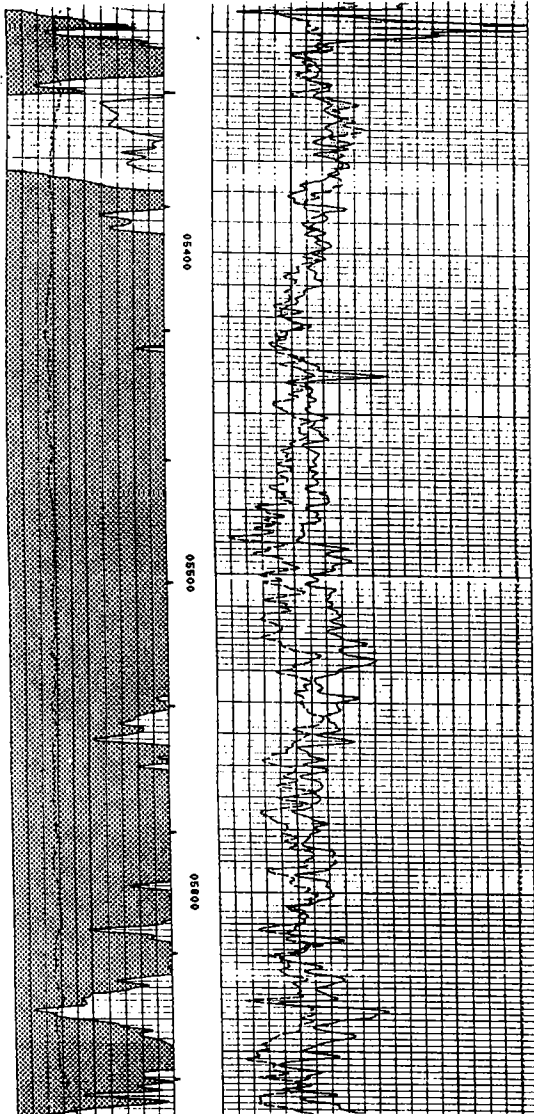
**BLACKGUM FORMATION:** Light-gray to gray glauconitic fine-crystalline calcitic dolomite; clear white to dark-gray opaque chert; brown to tan argillaceous fine-crystalline dolomite. Thickness uncertain, as Blackgum and Sylvan are both present in sample 2,285-2,290, and the contact was estimated from the electric log at 2,287. Thin section (J-2) was prepared from interval 2,275-2,290.

2,275-2,280	5	Dolomite, light-gray, fine-crystalline, calcitic glauconitic; trace of dark-gray limestone; chert, clear, white to dark-gray, opaque, 20-25%.
2,280-2,285	5	Dolomite, as above, except more glauconitic; chert, as above, 10-15%.
2,285-2,290	5	Dolomite, dark-gray, fine-crystalline, highly glauconitic, 40%; dolomite, brown to tan, argillaceous, fine-crystalline, 20%; chert, as above, 20%; shale, gray to green, 20%.
2,290-2,300	10	<b>SYLVAN FORMATION:</b> Thickness not determined, as the samples were studied only to 2,300 feet. Gray to green shale.

**HELMERICH & PAYNE INC. 1-2 WILLINGHAM — C**  
 SE¼ sec. 2, T7N, R17W, Kiowa County, Oklahoma; elevation GL 1,524 ft, DF 1,541 ft; TD 11,500 ft (Arbuckle); completion (Na), 7/7/85 (P).

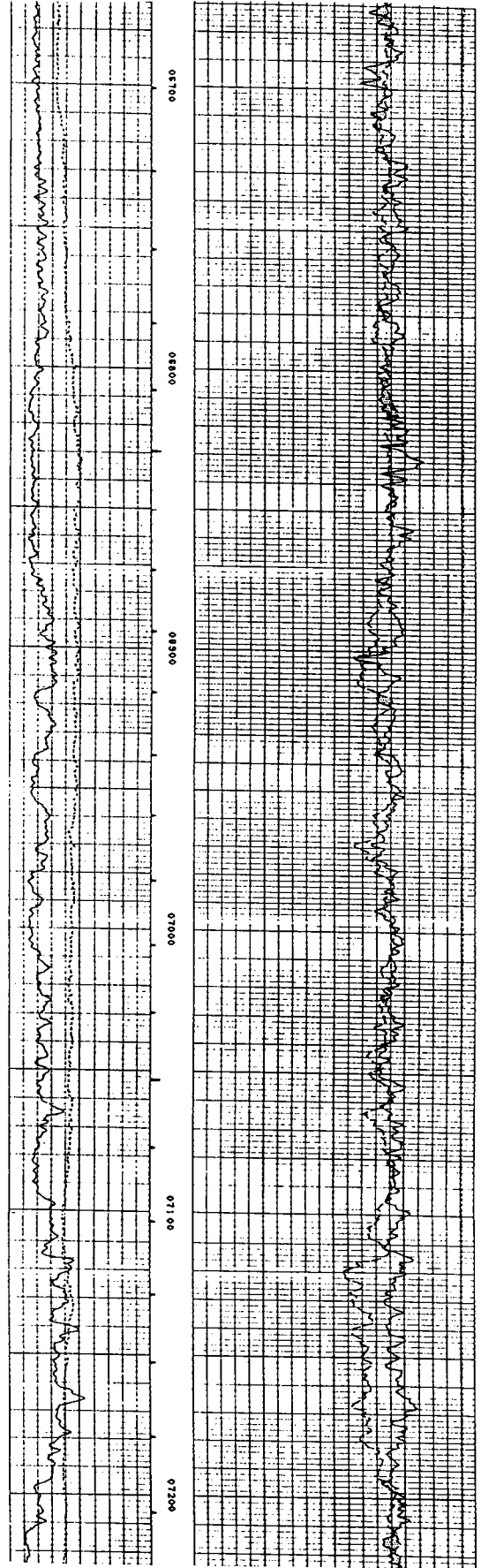
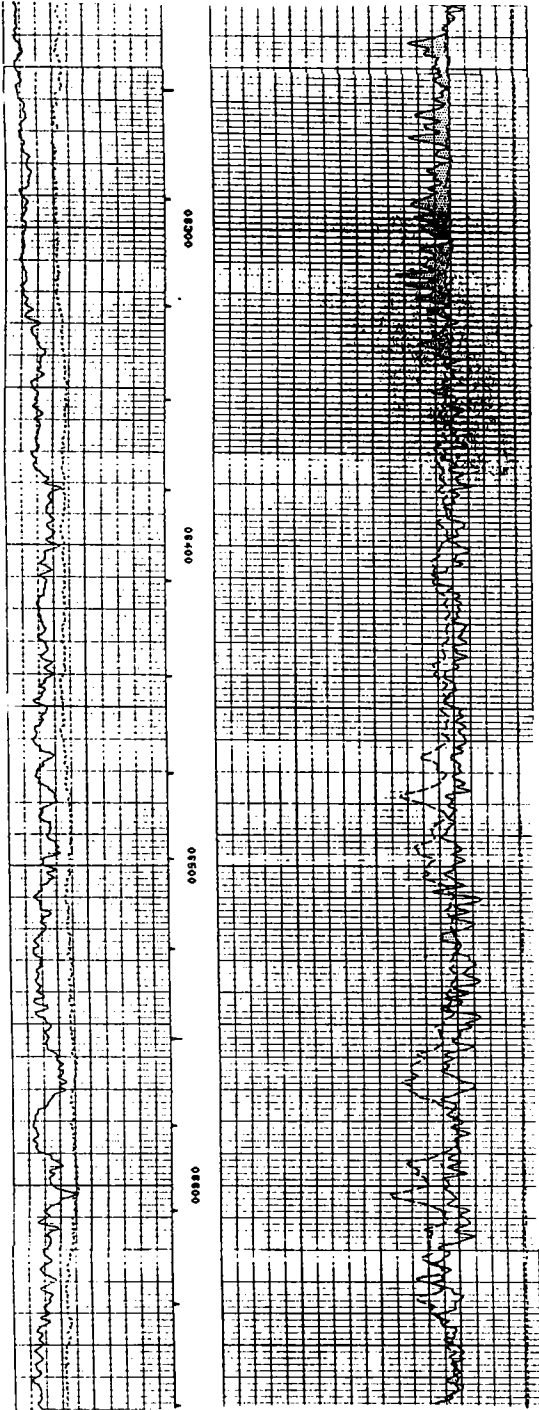
Amsden examined the 1-2 Willingham samples from 5,700 to 9,800 ft (Woodford to Arbuckle); 50 thin sections prepared. A brief summary of Hunton strata follows:

- to 5,980 ft Woodford: dark shale with much chert.
- 5,980–7,510 ft Hunton Group.
- 5,980–6,430 ft Low magnesium skeletal grainstones with chert (Frisco?).
- 6,430–7,100 ft Low magnesium, fossiliferous marlstone with some silt.
- 7,100–7,300 ft Low magnesium marlstone with increased silt-clay and with some mottled red beds.
- 7,300–7,510 ft Chimneyhill organo-detrital limestones; low magnesium except for bottom 50 ft which has some dolomite beds; some chert present throughout.
- 7,510–7,690 ft Sylvan Shale.



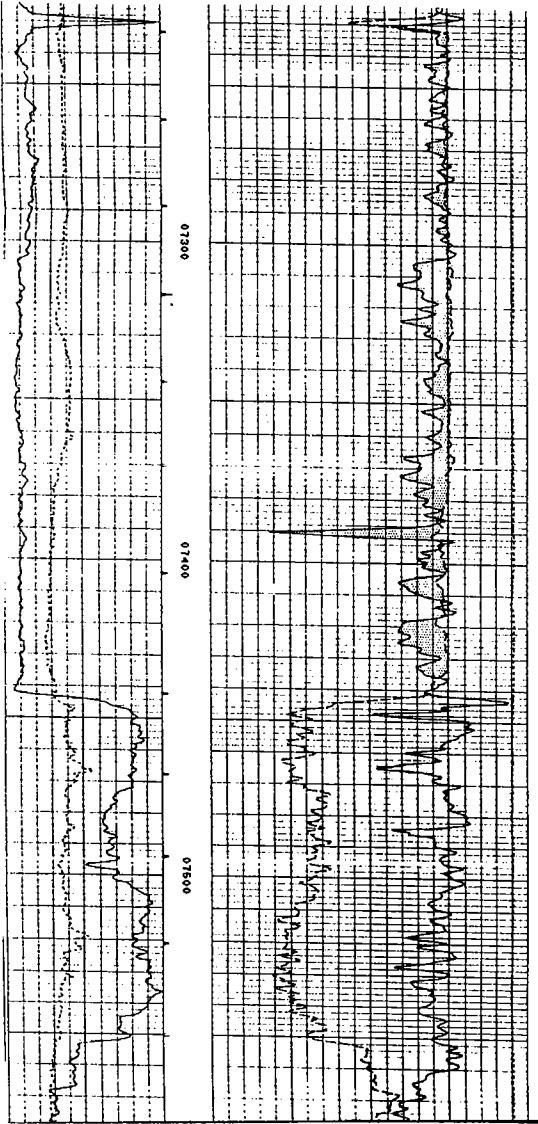
Helmerich & Payne Inc.  
1-2 Willingham  
C SE  
Sec. 2, T. 7 N., R. 17 W.  
Kiowa County, Oklahoma  
KB 1541'

Continued



Helmerich & Payne Inc.  
1-2 Willingham  
C SE  
Sec. 2, T. 7 N., R. 17 W.  
Kiowa County, Oklahoma  
KB 1541'

Continued





GULF 1 WILLIS--SW $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 20, T. 8 N.,  
R. 2 E., Pottawatomie County, Oklahoma; elev.  
1098'; TD 6315'; compl. 10/29/53, D&A. Tops:  
Woodford (CC) 5354' (-4256'), Hunton (CC) 5402'  
(-4304'), Sylvan 5874' (-4776'); Hunton thick-  
ness 472'. Cored 5403'-5477' (Hunton); 5 thin  
sections; one spot chemical analysis; OU Core  
Library.

Well cored Frisco Formation, with core probably  
ending in Cravatt Member of Bois d'Arc Forma-  
tion. Only nearby well which cored Hunton is  
1 Kytile-Ray, which is known to have cut  
Frisco.

Woodford Formation 5354'-5402'

Hunton Group 5402'-5874'

5402'-5403' No core.

5403'-5459' Lower Devonian; Frisco Formation.

Organo-detrital sparite with much pelmato-  
zoan material and shelly debris, including  
abundant bryozoans and brachiopods; shelly  
material much fragmented. A few beds have  
scattered subrounded quartz detritus, but  
for most part insoluble detritus is low;  
very little dolomite. Some visual porosity,  
mainly in matrix and in center of hollow  
fossils; some solution, possibly along frac-  
tures. Specimens of Costispirifer arenosus?  
at 5414'; Meristella carinata? at 5420';  
Costispirifer arenosus at 5424'; Rensselaeria  
elongata?, Costispirifer arenosus at 5452'.

5459'-5468' Lower Devonian; ?Bois d'Arc For-  
mation, Fittstown Member. Light-gray  
organo-detrital sparite with only small  
amount of detrital quartz; very little dolo-  
mite. Scattered chert nodules. Specimens  
of Schellwienella cf. S. marcidula,  
Meristella cf. M. sp. 2 (Amsden, 1958b, pl.  
4, figs. 15-19), Howellella cycloptera? at  
5464'. Preservation of these fossils is not  
very good, but fauna appears representative  
of Bois d'Arc Formation.

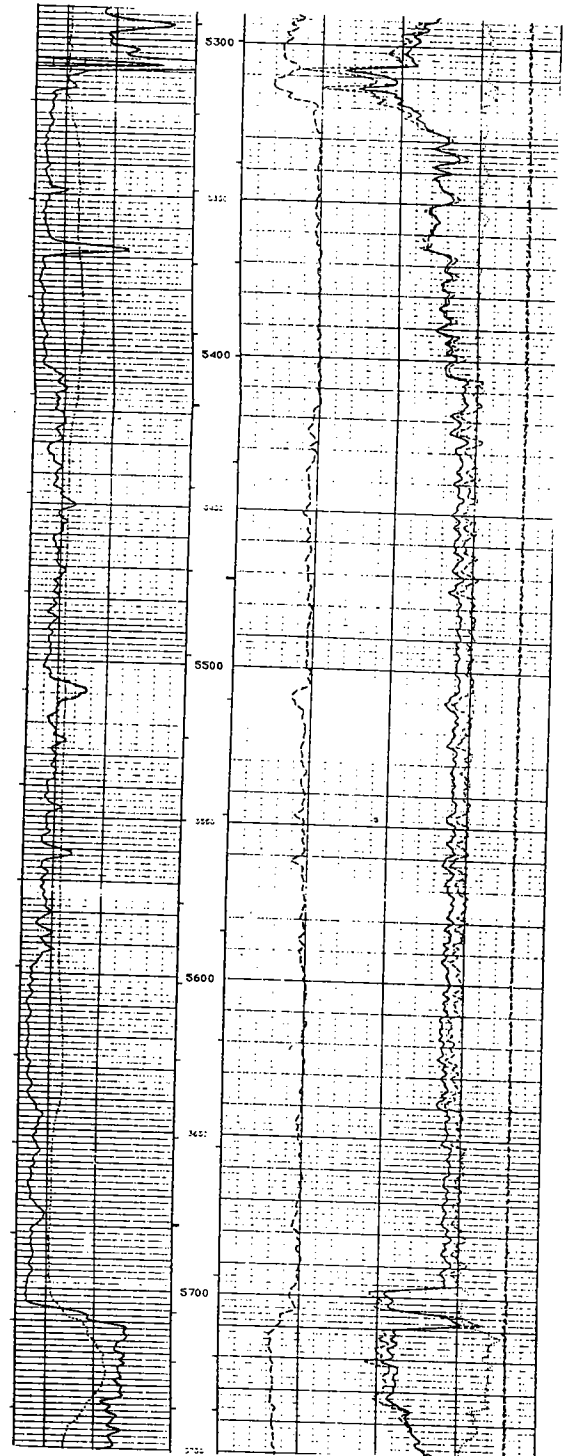
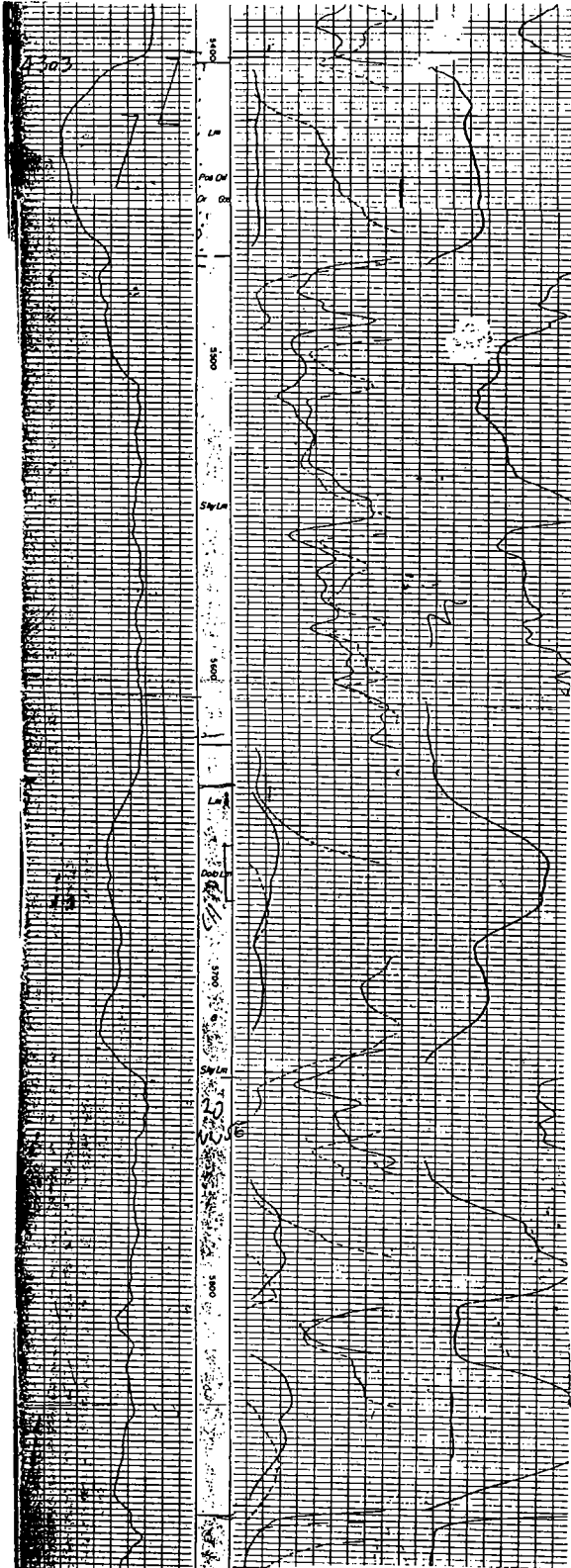
5468'-5477' Lower Devonian; ?Bois d'Arc Forma-  
tion, Cravatt Member. Light-gray cherty,  
fossiliferous marlstone. Much silt-size sub-  
angular quartz detritus; very little dolomite.  
Specimens of Atrypa sp. and Sphaerirhynchia  
glomerosa? at 5473'. Lithology is typical  
for Cravatt Member, and the few fossils accord  
with this correlation.

5477'-5874' No core.

Sylvan Shale 5474'

Gulf  
1 Willis  
SW NW SE  
Sec. 20, T. 8 N., R. 2 E.  
Pottawatomie County, Oklahoma  
elev. 1098'

Hiawatha Exploration  
2 Johnson  
SW NE SE  
Sec. 20, T. 8 N., R. 2 E.  
Pottawatomie County, Oklahoma  
elev. 1090'



FEDERAL 1 WOLLESON--C NW $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 22, T. 21 N., R. 2 W., Noble County, Oklahoma; elev. 1056'; TD 5250' (Ordovician); compl. 4/25/69, ?Misener production. Tops: Misener (CC) 5077' (-4021'), Ordovician (core) 5106' (-4050'); Misener thickness 29'. Cored 5083'-5122' (Misener-Ordovician); 4 thin sections, chemical analyses; OU Core library.

Misener in this core yields late Middle Devonian conodonts and is described and illustrated by Amsden and Klapper (1972, p. 2328-2330, fig. 4E). To my knowledge, this is only Middle Devonian unit which has been reported in Oklahoma. This well lies north of Hunton zero isopach (panel 6).

Woodford Shale

Misener Sandstone 5077'-5106'

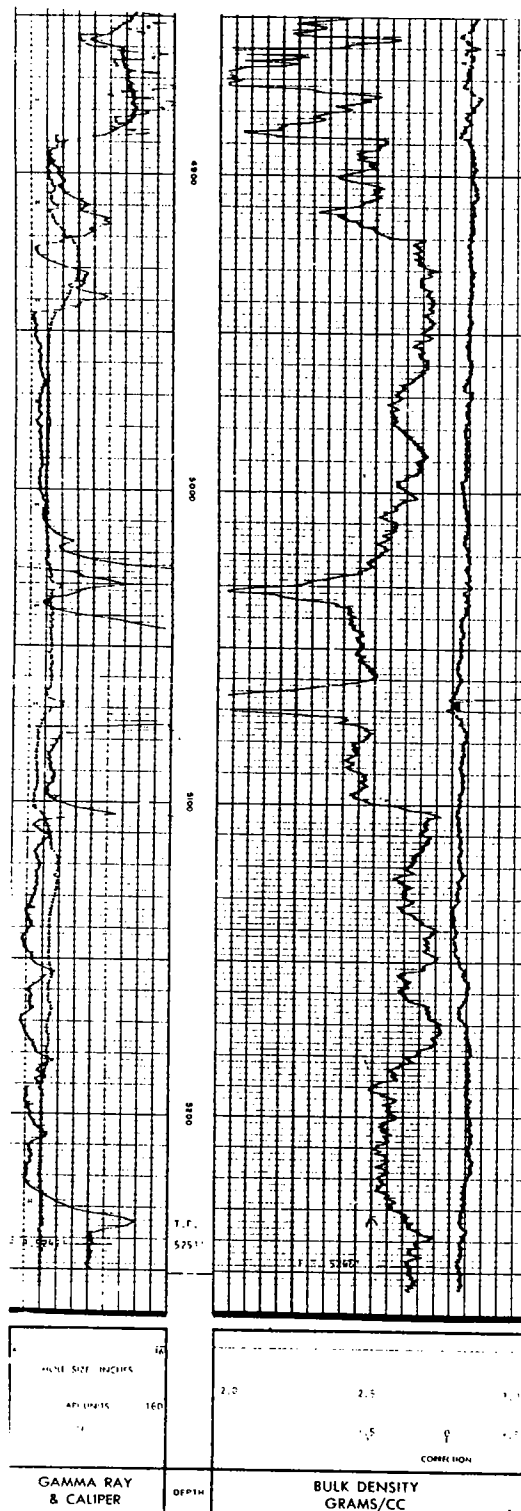
5077'-5083' No core.

5083'-5106' Middle Devonian (Givetian).

Dolomitic quartz sandstone interbedded with, and grading into, crystalline dolomite with many quartz-sand grains. Most of grains are well rounded, although quartz overgrowths give them angular external appearance. MgCO<sub>3</sub> ranges from 5% to 33%, and HCl insolubles from 20% to 81%. Conodonts from 5086'-5103' indicate late Givetian age (Amsden and Klapper, 1972, table 1, p. 2329).

Ordovician 5106'

5106'-5122' ?Viola Limestone. Organo-detrital limestone. Ordovician conodonts reported by Gilbert Klapper (letter, 5/13/71) at 5119'.



CONOCO 1 WOMAN GOING UP HILL--C SW $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 17,  
 T. 13 N., R. 11 W., Blaine County, Oklahoma;  
 elev. 1572'; TD 14,844' (Simpson Group); compl.  
 8/15/63, D&A. Tops: Woodford (CC) 13,468'  
 (-11,896'), Hunton (CC) 13,712' (-12,140'),  
 Sylvan (CC) 14,010' (-12,438'); Hunton thick-  
 ness 298'. Cored 13,735'-13,831', 13,837'-  
 13,849', 13,871'-13,877' (Hunton); 10 thin  
 sections; chemical analyses; OU Core Library.

Well cored approximately 150' of upper Hunton,  
 all low-magnesium marlstone. This is clearly  
 part of Arbuckle Mountains marlstone lithofacies  
 which is so well developed at surface and in  
 deep part of Anadarko basin; however, organo-  
 detrital limestones which overlie the marlstone,  
 and which are so well developed in deep basin,  
 are absent in 1 Woman Going Up Hill, perhaps  
 owing to removal by post-Hunton erosion (Hunton  
 rocks are substantially thinner in this well  
 than in deep basin). No diagnostic fossils have  
 been obtained from core, and it is not possible  
 to determine whether core includes equivalents  
 of Haragan Formation (Lower Devonian) as well as  
 Henryhouse Formation (Silurian).

Woodford Shale 13,468'-13,712'

Hunton Group 13,712'-14,010'

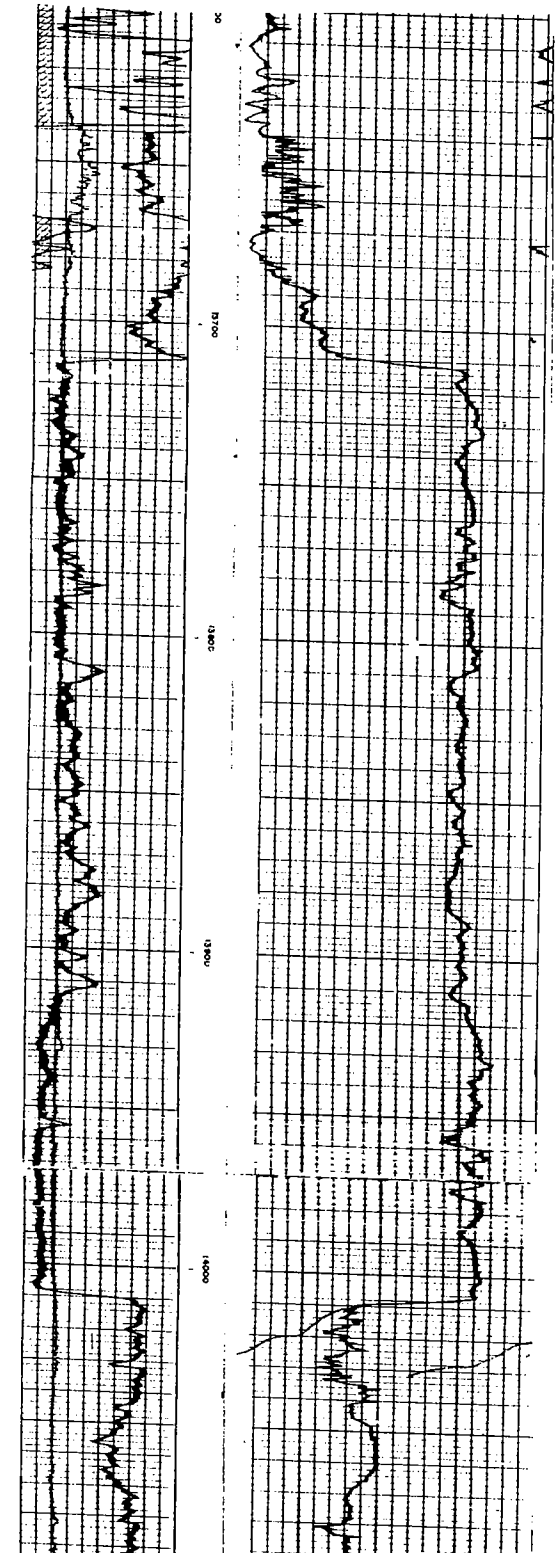
13,712'-13,735' No core.

13,735'-13,877' (Two skips; see above.)

?Silurian; ?Henryhouse Formation. Gray to  
 greenish-gray low-magnesium, fossiliferous  
 marlstone. Considerable silt-size angular to  
 subangular quartz detritus, including some  
 mica; in some beds, generally with relatively  
 low fossil content, quantity of detritus is  
 substantial. HCl insolubles average 18.22%,  
 MgCO<sub>3</sub> averages 7.74%. Fossils are scattered  
 through matrix in varying concentrations, but  
 rock is probably all mud supported; fossils  
 include pelmatozoan plates and variety of  
 shelly debris including brachiopods, trilo-  
 bites, ostracodes, bryozoans, and a few  
 corals. No diagnostic fossils observed, and  
 this unit may include some of Haragan Forma-  
 tion (Lower Devonian) in upper part.

13,877'-14,010' No core.

Sylvan Shale 14,010'

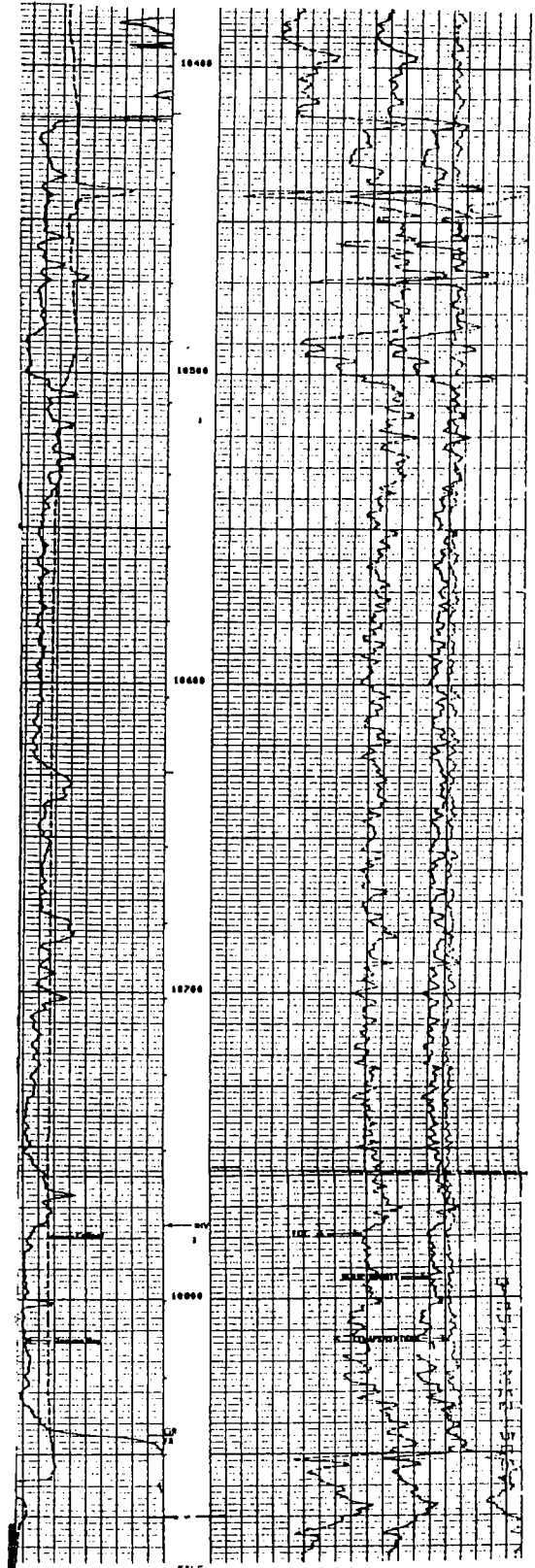


CONOCO INC. 1 WOODRUFF — C SE¼ sec. 16, T16N, R10W, Blaine County, Oklahoma; elevation GL 1,256 ft, DF 1,274 ft; TD 10,889 ft (Sylvan); completion 1/6/81.

Cored the Hunton from 10,447 to 10,490 ft; core examined by Amsden, 1985; 14 thin sections, (2 point counted); 13 spot samples for chemical analyses. A brief summary of the cored interval follows:

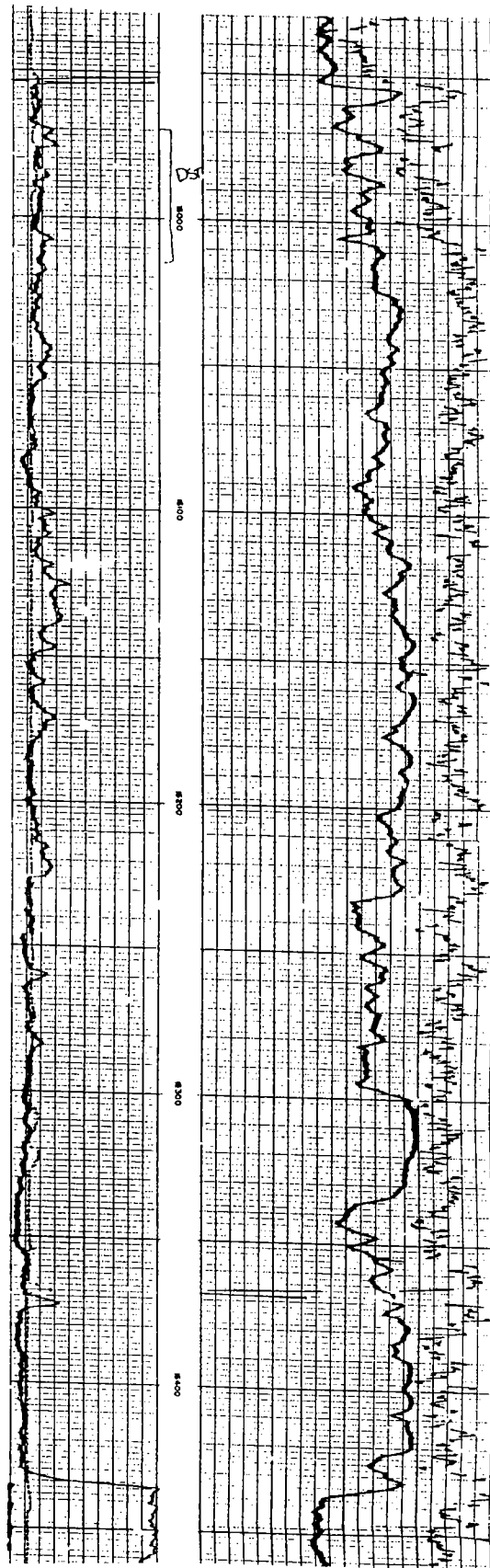
(Woodford-Hunton contact, 10,420 ft)

- 10,447-10,460 ft Crystalline dolomite; average of 5 spot samples, 38.9% MgCO<sub>3</sub>. Some shelly debris and pelmatozoan plates preserved in spar.
- 10,460-10,488 ft Heavily dolomitized skeletal limestone; 3 spot samples average 33.4% MgCO<sub>3</sub>. Mostly shell debris and pelmatozoan plates in a dolomite matrix and including specimens of *Kirkidium* sp. including nearly intact valves >100 mm long. Two thin sections point counted: W6 - 51% matrix (crystalline dolomite), 3.2% crinoids, 37.9% brachiopods; rest unidentified; W8 - 53% matrix (crystalline dolomite), 23% crinoids, 17% brachiopods; remainder unidentified.
- 10,488-10,490 ft Crystalline dolomite. Spot sample 33.8% MgCO<sub>3</sub>.



**ARKLA EXPLORATION CO. 1-4 WRIGHT** — NE¼ SW¼NE¼ sec. 4, T14N, R17W, Custer County, Oklahoma; elevation GL 1,774 ft, DF 1,793 ft; TD 16,700 ft (Viola); completion 4/27/72.

Lower Woodford-Hunton-Sylvan and upper Viola samples (15,900-16,700 ft) examined; 22 thin sections. Hunton strata are largely in a heavily dolomitized (much crystalline dolomite) facies. *Illustrated on PLATE 2, STRATIGRAPHIC SECTIONS B-B' and D-D'.*



WISE 2-A WRIGHT—SE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec. 3, T. 8 N., R. 4 E., Pottawatomie County, Oklahoma; elev. 994'; TD 4365' (Ordovician; Viola); compl. 1/29/59, Hunton production reported. Tops: Woodford 3970' (-2976') (CC), Hunton 4134' (-3140') (CC), Sylvan 4200' (-3206') (CC), Welling 4288' (-3294') (CC); Hunton thickness 66'; samples examined from 4000' to 4330', good quality; 8 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

The Hunton strata are assigned to the Chimneyhill Subgroup on the basis of stratigraphic position, thickness, and lithology. For the most part, these strata are only weakly dolomitized.

*Woodford Shale* 3970'-4134' (CC)

No Misener Sandstone observed.

*Hunton Group* 4134'-4200' (CC)

4134'-4200' (CC) Silurian; Chimneyhill Subgroup. Weakly to heavily dolomitized pink crinoidal micrite and sparite; ostracodes, bryozoans, trilobites, and brachiopods are also common. The upper 10' or so is heavily dolomitized, the underlying beds having only scattered dolomite crystals. Very little quartz observed. Minor glauconite in the lower few feet.

*Sylvan Shale* 4200'-4288' (CC)

Pale-green shale at the top, becoming gray or grayish-green below.

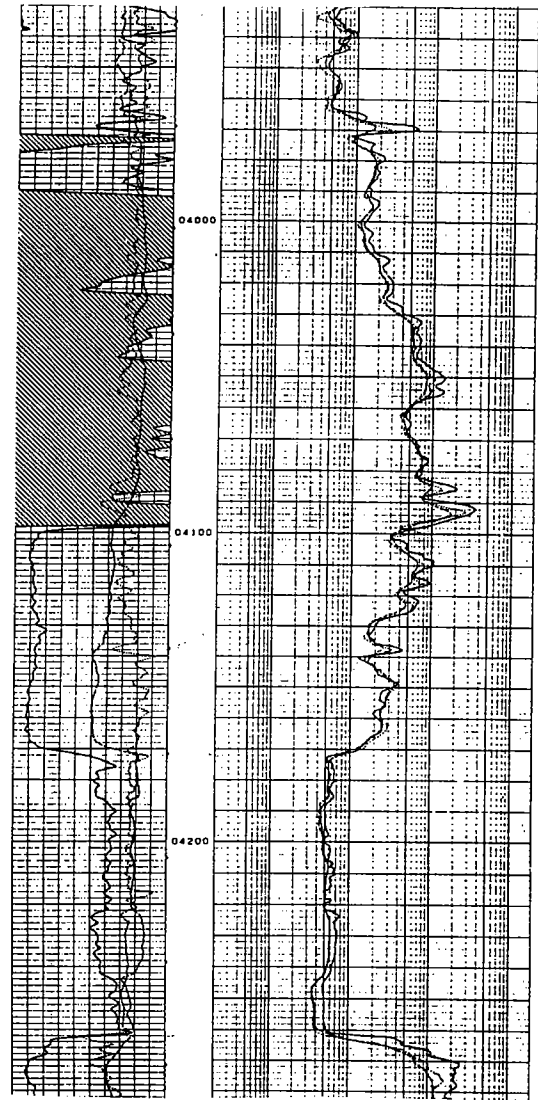
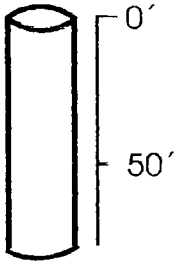
*Welling Formation* 4288' (CC)

4305'-4310', 4325'-4330' (thin sections) (sample depths) Organo-detrital sparite with no visible quartz or dolomite.

Vise  
2-A Wright  
SE SW SE  
Sec. 3, T. 8 N., R. 4 E.  
Pottawatomie County, Oklahoma  
elev. 994'

SE SE SE  
Sec. 3, T. 8 N., R. 4 E.  
Pottawatomie County, Oklahoma  
elev. 962'

Log not  
available





GULF 1 WRIGHT HEIRS--NW $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 5, T. 12 N., R. 2 W., Oklahoma County, Oklahoma; elev. 1116'; TD 6345' (Hunton); compl. 8/10/50, Hunton production reported. Tops: Misener (core) 6300' (-5184'), Hunton (core) 6305' (-5189'). Cored 7276'-6343' (Woodford, Misener, Hunton); 3 thin sections; chemical analyses; OU Core Library.

Stratigraphic relations in this well are similar to those in Gulf 1 Holtzschue and Gulf 1 Schroeder; in all 3 wells Frisco Formation (Lower Devonian) rests directly on Kirkidium-Henryhouse strata (text-fig. 20).

Misener Sandstone 6300'-6305'

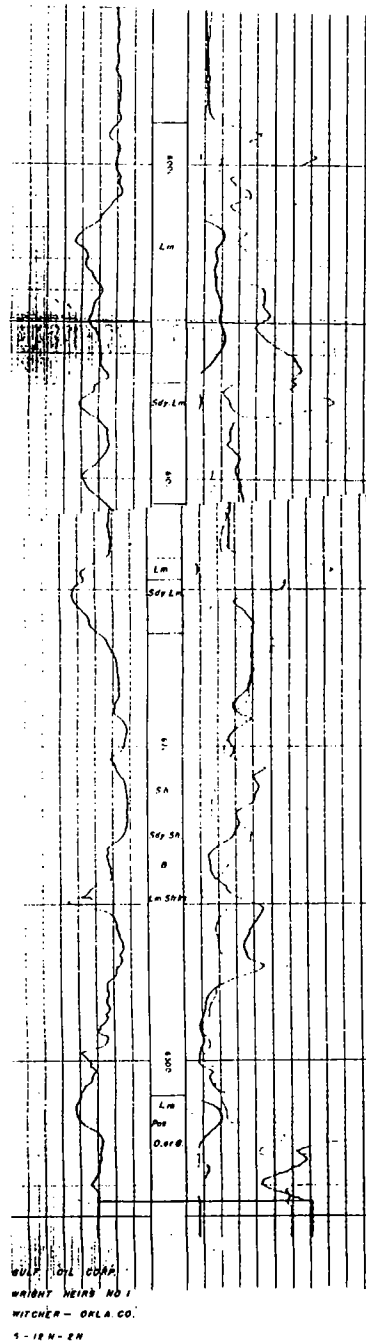
6300'-6305' ?Upper Devonian. Dark-gray calcareous sandstone. No diagnostic fossils observed; Misener is generally of Late Devonian age (Amsden and Klapper, 1972, p. 2328), but in Federal 1 Wolleson Misener has a late Middle Devonian conodont fauna.

Hunton Group 6305'-6345' (TD)

6305'-6315' Lower Devonian; Frisco Formation. Light-gray organo-detrital limestone with very little dolomite or insoluble detritus; MgCO<sub>3</sub> averages 1.69%, HCl insolubles 2.42%. Mostly cemented with spar, but a few beds with micrite. Some visual porosity, mainly in matrix and in center of hollow fossils (pl. 7, figs. 2a, 2b). Frisco fossils at 6306', 6309', 6311', 6314'; Leptostrophia magnifica, Costispirifer arenosus, large terebratuloid brachiopod, large ramose favositid coral.

6315'-6343' Silurian; Henryhouse Formation. Light-gray fossiliferous marlstone grading into argillaceous organo-detrital limestone; HCl insolubles average 8.01%, MgCO<sub>3</sub> 7.81%. Silurian tabulate corals of Henryhouse type at 6333'-6335' (identified by P. K. Sutherland).

6343'-6345' (TD) No core.



U.S.S.R.A.M. 1 YOUNG—NE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec. 13, T. 13 N., R. 5 E., Lincoln County, Oklahoma; elev. 801' DF (795' GL); TD 4559' (Ordovician; Arbuckle); compl. unknown, Hunton and Simpson ("Wilcox") production reported. Tops: Hunton 4170' (-3369') (SP log), Sylvan 4260' (-3459') (SP log), Welling 4345' (-3544') (sample depth); Hunton thickness 90'. Samples examined 4100'-4172', core chips 4172'-4188', samples 4188'-4440', core chips 4440'-4515', samples 4515'-4959' (TD), good quality; 37 thin sections; samples, Oklahoma Well Sample Service, Shawnee, Oklahoma.

Hunton strata in the 1 Young are almost entirely in a crystalline dolomite lithofacies showing considerable visual porosity. This appears to be a part of a northwest-southeast elongate area of rather intensely dolomitized rock (see panel 4).

*Woodford (Chattanooga) Shale*

Misener Sandstone present in the basal part.

*Hunton Group* 4170'-4260' (SP log)

4170'-4260' (SP log) Silurian; Chimneyhill Subgroup. Almost entirely crystalline dolomite showing visual porosity.

4189'-4190' (sample depths) Heavily dolomitized pink crinoidal limestone with some bryozoan, brachiopod, and other shelly debris.

4200'-4201' (sample depths) Pink crinoidal limestone with little or no dolomitization. Entire Hunton shows very little detrital quartz.

*Sylvan Shale* 4260' (SP log) -4345' (sample depth)

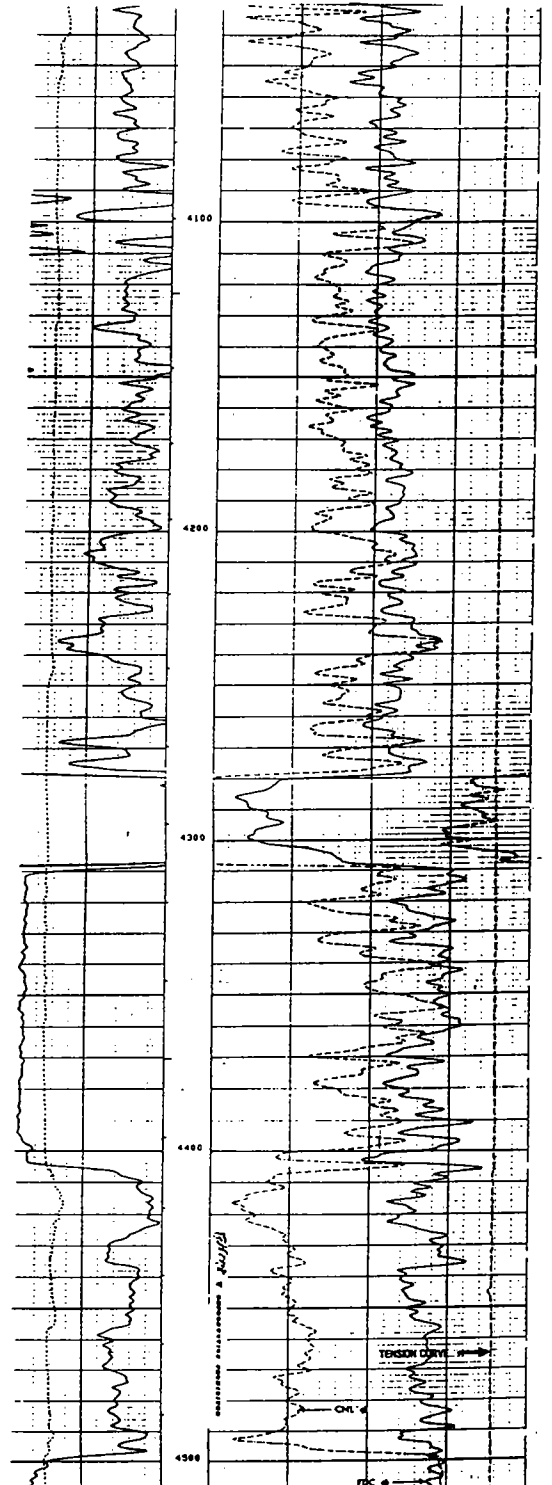
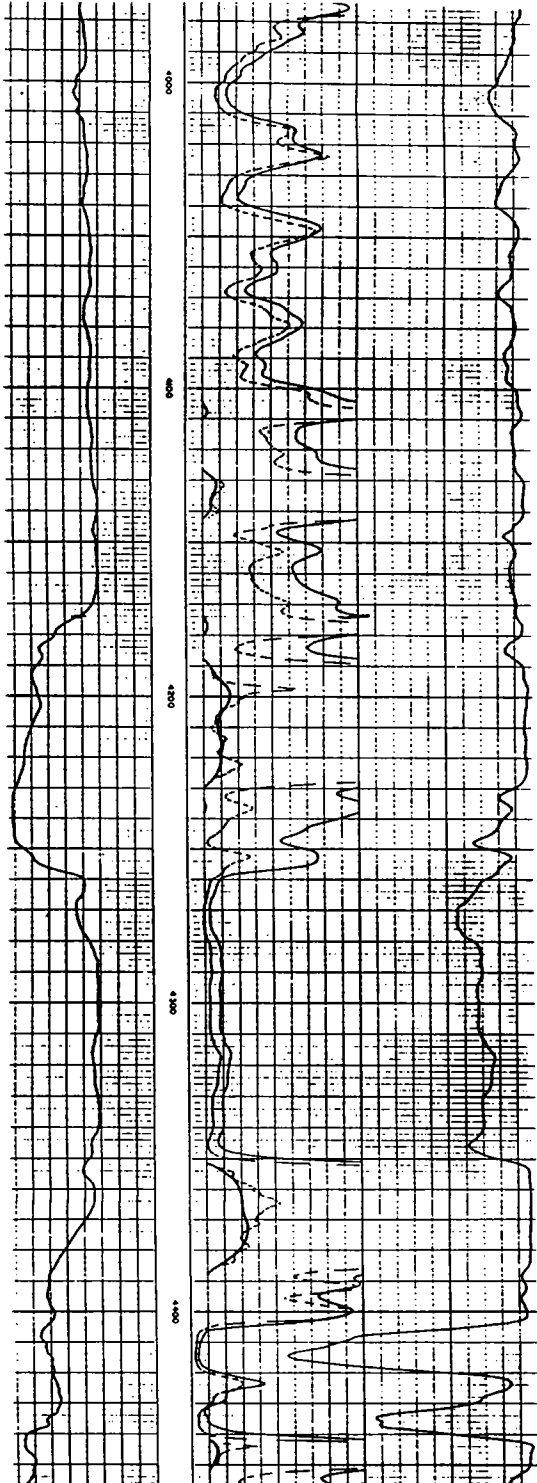
Greenish-gray to gray shale.

*Welling Formation* 4345'-4390' (sample depths)

Organo-detrital sparite; mostly pelmatozoan plates, but including bryozoan, brachiopod, and other shelly debris. Minor dolomite. No detrital quartz observed except in basal 10' which has scattered rounded quartz grains to 0.4 mm.

U.S.S.R.A.M.  
1 Young  
NE SW SW  
Sec. 13, T. 13 N., R. 5 E.  
Lincoln County, Oklahoma  
elev. 801'

1-13 Martin  
NW NE  
Sec. 13, T. 13 N., R. 5 E.  
Lincoln County, Oklahoma  
elev. 814'



CHEVRON 1 ZELLERS--C SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 28, T. 5 S.,  
 R. 2 W., Carter County, Oklahoma; elev. 955';  
 TD 9958' (Sylvan); compl. 2/2/68, Hunton pro-  
 duction reported. Tops: Woodford (CC) 9225'  
 (-8270'), Hunton (CC) 9454' (-8499'), Sylvan  
 (CC) 9895' (-8940'); Hunton thickness 441'.  
 Cored 9825'-9875' (Hunton); 4 thin sections;  
 chemical analyses; OU Core Library.

Strata here referred to Clarita Formation have  
 substantial amount of insolubles (average  
 22.75%). This high insoluble content suggests  
 Henryhouse Marlstone (cf. to 1 Ticer et al.),  
 but in the main these beds have "pink-crinoidal"  
 type of lithology, and since they directly over-  
 lie strata with Cochrane fossils they are ten-  
 tatively assigned to Clarita Formation.

Woodford Shale 9225'-9454'

Hunton Group 9454'-9895'

9454'-9825' No core.

9825'-9851' Silurian; ?Chimneyhill Subgroup;  
 ?Clarita Formation. Light-gray to pinkish-  
 gray biomicrite with many pink crinoid plates.  
 Two thin sections show only moderate insol-  
 ule detritus; but analyses indicate average  
 of 22.75%; MgCO<sub>3</sub> averages 6.81%. In addition  
 to crinoids, this rock has richly varied  
 shelly fauna. No diagnostic fossils observed  
 (see discussion above).

9851'-9875' Silurian; Chimneyhill Subgroup;  
 Cochrane Formation. Light-gray to greenish-  
 gray biosparite. This unit has much pelmato-  
 zoan material plus varied shelly fauna, almost  
 all cemented with spar. Some beds have con-  
 siderable glauconite; HCl insolubles average  
 1.22%, MgCO<sub>3</sub> 1.43%. Triplesia alata Ulrich  
 and Cooper at 9869', indicating correlation  
 with Cochrane Formation.

9875'-9895' No core.

Sylvan Shale 9895'

