MORNING DRILLING REPORT

For: H&S Exploration, LLC

SOUTHWIND DRILLING, INC.
Rig No. 2

Well Name: Dudrey #1
Location: 330' FSL & 990 'FEL
Section: 32-24S-12W
County: Stafford
API: 15-185-23842-00-00

Elevation: GL 1881'
KB 1900'
Est. TD: 4300'
Conductor: N/A

Rig No. 2 (Pusher: Bill Sanicenti 620 617-6796
Rig No. 2 (DogHouse) 620 617-5921
Southwind Drilling Office 620 564-3800

Surface Casing: Ran 17 joints of new 23#, 8 5/8" casing, Tally @ 712', Set @ 722', used ____sacks of Common, 3% cc, 2% gel, cement circulated, by Basic (Ticket #____, plug down @ 3:00 pm on 12.06.13.

Production Info: Ran 97 joints of 15.5#, 5 1/2" casing, Tally @ 4233', Set @ 4242', used 200 sacks of 50/40 Poz, 2% gel, 10% salt, 3/4% CFR, 1/4% DeFoamer, 5% Gilsonite, cemented, by Basic (Ticket #6587). Job complete @ 3:15 am on 12.17.13.

Rotary Total Depth: 4250'
Log Total Depth: 4251'

Geologist: Jim Musgrove

7:00 A.M. Depth: 4250'

7:00 A.M. Current Operation: TEAR DOWN

Spud Date & Time: 12/05/2013 @ 10:30 PM	12/05/13 Day 1	12/06/13 Day 2	12/07/13 Day 3	12/08/13 Day 4	12/09/13 Day 5	12/10/13 Day 6	12/11/13 Day 7	12/12/13 Day 8	12/13/13 Day 9	12/14/13 Day 10	12/15/13 Day 11	12/16/13 Day 12	12/17/13 Day 13	Total
Total Depth (7:00am)	0	615	840	1810	2495	2866	3075	3455	3650	3805	3930	4250	4250	
Daily Progress	615	225	970	685	371	209	380	195	155	125	320	0		4250
Ft. Per Hr.	111.82	75.00	65.76	38.06	47.87	36.35	19.49	22.29	17.22	13.51	15.24	#DIV/0!	#DIV/0!	34.76
Current Operation (7:00am)	Rig Up	Drilling	Drilling	Drilling	Drilling	Drilling	TIWB	Drilling	Drilling	Drilling	Drilling	Drilling	Tear Down	
Formation	Surface	Surface	Redbed	Redbed	Redbed	Redbed / Shale	Sand	Lime / Shale	Lansing	Lansing	Viola	Viola		
Fuel Used (34.5 Gal/Inch)	276.00	276.00	345.00	448.50	379.50	241.50	448.50	310.50	379.50	310.50	345.00	258.75		4019.25
Survey (degree & depth)		1° @ 722'				1° @ 3075'			1° @ 3760'			1° @ 4250'		
Mud Info														
Mud Cost	$0.00	$0.00	$583.40	$4,159.20	$0.00	$613.60	$0.00	$715.90	$232.45	$17.85	$976.30	$0.00		$7,497.80
Weight (#/ Gal)							9.2	9.2	9.3	9.4				
Vis (Funnel)							52	61	58	59				
Water Loss (cc)							8.4	10.8	10.8					
Bit #1														
Bit Make / Type	Reed ReTip	Reed ReTip												
Bit Size	12 1/4	12 1/4												
Bit Hours	5.50	1.25												6.75
Bit #2														
Bit Make / Type		JZ HA20Q	JZ HA20Q	JZ HA20Q	JZ HA20Q	JZ HA20Q	JZ HA20Q	JZ HA20Q	JZ HA20Q	JZ HA20Q	JZ HA20Q			
Bit Size		7 7/8	7 7/8	7 7/8	7 7/8	7 7/8	7 7/8	7 7/8	7 7/8	7 7/8	7 7/8			
Bit Hours		1.75	14.75	18.00	7.75	5.75	19.50	8.75	9.00	9.25	21.00			115.50
Bit Cumulative Hours	5.50	3.00	14.75	18.00	7.75	5.75	19.50	8.75	9.00	9.25	21.00	0.00	0.00	122.25
Weight on Bit (WOB)	15,000	15,000	20,000	30,000	35,000	35,000	35,00	35,000	35,000	35,000	35,000			
RPM	120	80	80	80	80	80	80	80	80	80	80			
Pump Pressure	500	700	800	850	800	800	850	750	800	750	800			
Drilling (Rotating) Hours	5.50	3.00	14.75	18.00	7.75	5.75	19.50	8.75	9.00	9.25	21.00	0.00	0.00	122.25
Daywork Hrs. (Operator's time)														
Rat Hole (>.75 Hrs)														0.00
Wait on Cement		12.00												12.00
Trip		1.50				6.00	0.75	7.75	7.25	7.50		4.75		35.50
Circulate		0.25				1.00	1.50	2.50	2.25	2.00	1.50	1.75		12.75
Tool						1.25		0.75	0.75	1.00				3.75
Testing						3.25		3.00	3.00	3.00				12.25
Clean Floor after DST						0.25				0.25				0.50
Logging												4.50		4.50
Wait on Loggers														0.00
LDDP & LDDC												3.50		3.50
Run Casing / Cement		3.00										4.25		7.25
Nipple Down / Jet Cellar												0.50		0.50
Set Slips												0.50		0.50
Billable Hours	0.00	16.75	0.00	0.00	0.00	11.75	2.25	14.00	13.25	13.75	1.50	19.75	0.00	93.00
Non-Billable Hours (Southwind's time)														
Rig Up / Rig Down	13.50											3.25		16.75
Wait on Cement (if NC)		0.25												0.25
Drill Rat Hole (<.75 hrs)	0.50													0.50
Drill Plug		1.00												1.00
Circulate / Trip (Surface)		1.00												1.00
Rig Repair	0.50	0.25	0.25	1.75	10.50	2.25			0.75					22.25
Connections	2.25	1.00	2.25	1.75	0.75	0.50	1.50	0.75	0.50	0.25	0.75			12.25
Jet/Displace	0.25	0.25	0.50	0.75	1.25									3.00
Surveys		0.25				0.25			0.25			0.25		1.00
Rig Check		0.25	0.25	0.75	0.25	0.25	0.75	0.50	0.25	0.75	0.75			4.75
Circulate (NB)	1.50													1.50
Trip Time (NB)				1.00										1.00
Trip Time for Repairs					3.50									3.50
Trip Time Plugged Bit						3.25								3.25
Lost Circulation (< 2 hrs)														0.00
Lay Down Kelly / RH												0.75		0.75
Non-Billable Hrs.	18.50	4.25	3.25	6.00	16.25	6.50	2.25	1.25	1.75	1.00	1.50	4.25	0.00	72.75
Footage Cost	$ 8,917.50	$ 3,262.50	$ 14,065.00	$ 9,932.50	$ 5,379.50	$ 3,030.50		$ 2,827.50	$ 2,247.50	$ 1,812.50	$ 4,640.00	$ -	$ -	$ 56,115.00
Daywork Cost	$ -	$ 5,862.50	$ -	$ -	$ -	$ 4,112.50	$ 787.50	$ 4,900.00	$ 4,637.50	$ 4,812.50	$ 525.00	$ 6,912.50	$ -	$ 32,550.00
Combined Est. Cost*	$ 8,917.50	$ 9,125.00	$ 14,065.00	$ 9,932.50	$ 5,379.50	$ 7,143.00	$ 787.50	$ 7,727.50	$ 6,885.00	$ 6,625.00	$ 5,165.00	$ 6,912.50	$ -	$ 88,665.00

*Please note that this is estimated footage & daywork cost only. Additional charges will apply on invoice (fuel surcharge, water transfer pump, etc.)

DST #1 Info -
Footage Interval: 2995' - 3075'
Recovery: 80' Mud

DST #2 Info -
Footage Interval: 3570' - 3590' Lansing "B"
Recovery: Gas to surface - 2 minutes
80' Oil Cut Mud

DST #3 Info -
Footage Interval: 3695' - 3760' Lansing "H-I"
Recovery: 75' Gas
45' Oily Gassy Mud

DST #4 Info -
Footage Interval: 3760' - 3830' Lansing "K-L"
Recovery: 320' Gassy Oil
80' Slight Oil Cut Mud
40' Muddy Water

Anhydrite @

Displaced @

Joshua R. Austin

Petroleum Geologist

report for

H&D Exploration, LLC

COMPANY: H&D Exploration LLC

LEASE: Dudrey #1

FIELD: Wildcat

LOCATION: W2-SW-SE-SE (330' FSL & 996' FEL)

SEC: 32 TWSP: 24s RGE: 12w

COUNTY: Stafford STATE: Kansas

KB: 1900' GL: 1891'

API # 15-185-23842-00-00

CONTRACTOR: Southwind Drilling Company (Rig # 2)

Spud: 12/05/2013 Comp:12/16/2013

RTD: 4250' LTD: 4251'

Mud Up: 2800' Type Mud: Chemical was displaced

Samples Saved From: 2900' to RTD
Drilling Time Kept From: 2900' to RTD
Samples Examined From: 2900' to RTD
Geological Supervision From: 2900' to RTD
Geologist on Well: Josh Austin

Surface Casing: 8 5/8" @ 722'
Production Casing: 5 1/2" @ 4242'

Electronic Surveys: By Pioneer Energy Services

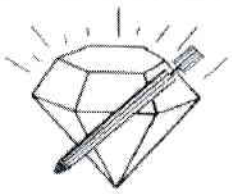
NOTES

On the basis of the positive structural position and drill stem test, it was recommended by all parties involved in the Dudrey #1, that 5 1/2" production casing be set and cemented at the rotary total depth 4242'.
The following zones should be tested before plugging; Simpson Sand, Viola, Lansing 'L', Lansing 'J' and Lansing 'B'

H&D Exploration, LLC

well comparison sheet

	DRILLING WELL Dudrey #1				COMPARISON WELL Wright #1			
	1900 KB				1903 KB		Structural Relationship	
Formation	Sample	Sub-Sea	Log	Sub-Sea	Sample	Sub-Sea	Sample	Log
Heebner	3386	-1486	3388	-1488	3391	-1488	2	0
Toronto	3402	-1502	3402	-1502	3406	-1503	1	1
Douglas	3434	-1534	3429	-1529	3432	-1529	-5	0
Brown Lime	3539	-1639	3540	-1640	3549	-1646	7	6
Lansing	3564	-1664	3564	-1664	3572	-1669	5	5
Base KC	3842	-1942	3844	-1944	3850	-1947	5	3
Viola	3977	-2077	3970	-2070	3982	-2079	2	9
Simpson Shale	4079	-2179	4082	-2182	4112	-2209	30	27
Simpson Sand	4086	-2186	4086	-2186	4134	-2231	45	45
Arbuckle	4164	-2264	4167	-2267	4176	-2273	9	6
Total Depth	4250	-2350	4251	-2351	4210	-2307		



DIAMOND TESTING
P.O. Box 157
HOISINGTON, KANSAS 67544
(800) 542-7313
DRILL-STEM TEST TICKET
FILE: dudrey1dst1

TIME ON: 10:32 PM
TIME OFF: 5:58 AM

Company H&D Exploration, LLC — Lease & Well No. Dudrey #1
Contractor Southwind #2 — Charge to H&D Exploration, LLC
Elevation 1900 KB Formation Severy Sand Effective Pay ____ Ft. Ticket No. K066
Date 12-10-13 Sec. 32 Twp. 24 S Range 12 W County Stafford State KANSAS
Test Approved By Josh Austin — Diamond Representative Jason McLemore

Formation Test No. 1 Interval Tested from 2995 ft. to 3075 ft. Total Depth 3075 ft.
Packer Depth 2990 ft. Size 6 3/4 in. — Packer depth ____ ft. Size 6 3/4 in.
Packer Depth 2995 ft. Size 6 3/4 in. — Packer depth ____ ft. Size 6 3/4 in.
Depth of Selective Zone Set ____

Top Recorder Depth (Inside) 2976 ft. — Recorder Number 5513 Cap. 5000 P.S.I.
Bottom Recorder Depth (Outside) 2977 ft. — Recorder Number 5588 Cap. 6000 P.S.I.
Below Straddle Recorder Depth ____ ft. — Recorder Number ____ Cap. ____ P.S.I.

Mud Type Chemical Viscosity 58 — Drill Collar Length 0 ft. I.D. 2 1/4 in.
Weight 8.6 Water Loss 7.8 cc. — Weight Pipe Length 0 ft. I.D. 2 7/8 in
Chlorides 7700 P.P.M. — Drill Pipe Length 2962 ft. I.D. 3 1/2 in
Jars: Make STERLING Serial Number 7 — Test Tool Length 33 ft. Tool Size 3 1/2-IF in
Did Well Flow? NO Reversed Out No — Anchor Length 80 ft. Size 4 1/2-FH in
Main Hole Size 7 7/8 Tool Joint Size 4 1/2 XH in. — 63' DP in Anchor Surface Choke Size 1 in. Bottom Choke Size 5/8 in

Blow: 1st Open: Weak Blow, Built to 5-1/2", No Blowback
2nd Open: Weak Blow, Built to 2", No Blowback

2nd Open: Weak Blow, Built to 2", No Blowback

Recovered 80 ft. of Muddy Water, 60% Water, 40% Mud

Recovered 80 ft. of Total Fluid

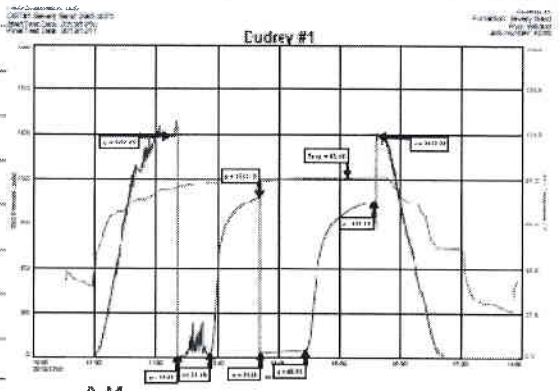
Recovered ____ ft. of

Recovered ____ ft. of CHLORIDES: 78000

Recovered ____ ft. of PH: 7

Recovered ____ ft. of RW: .120 @ 70

Remarks:



Time Set Packer(s) 12:23 AM A.M. P.M. Time Started Off Bottom 3:23 AM A.M. P.M. Maximum Temperature 92

Initial Hydrostatic Pressure (A) 1414 P.S.I.

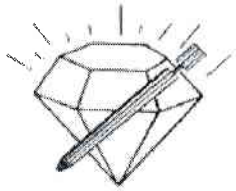
Initial Flow Period Minutes 30 (B) 10 P.S.I. to (C) 28 P.S.I.

Initial Closed In Period Minutes 45 (D) 1022 P.S.I.

Final Flow Period Minutes 45 (E) 31 P.S.I. to (F) 50 P.S.I.

Final Closed In Period Minutes 60 (G) 998 P.S.I.

Final Hydrostatic Pressure (H) 1412 P.S.I.



DIAMOND TESTING
P O. Box 157
HOISINGTON, KANSAS 67544
(800) 542-7313
DRILL-STEM TEST TICKET
FILE: dudrey1dst2

TIME ON: 5:11 PM
TIME OFF: 11:37 PM

Company H&D Exploration, LLC Lease & Well No. Dudrey #1

Contractor Southwind #2 Charge to H&D Exploration, LLC

Elevation 1900 KB Formation Lansing B Effective Pay ____ Ft. Ticket No. K067

Date 12-12-13 Sec. 32 Twp. 24 S Range 12 W County Stafford State KANSAS

Test Approved By Josh Austin Diamond Representative Jason McLemore

Formation Test No. 2 Interval Tested from 3570 ft. to 3590 ft. Total Depth 3590 ft.

Packer Depth 3565 ft. Size 6 3/4 in. Packer depth ____ ft. Size 6 3/4 in.

Packer Depth 3570 ft. Size 6 3/4 in. Packer depth ____ ft. Size 6 3/4 in.

Depth of Selective Zone Set

Top Recorder Depth (Inside) 3551 ft. Recorder Number 5513 Cap. 5000 P.S.I.

Bottom Recorder Depth (Outside) 3552 ft. Recorder Number 5588 Cap. 6000 P.S.I.

Below Straddle Recorder Depth ____ ft. Recorder Number ____ Cap. ____ P.S.I.

Mud Type Chemical Viscosity 63 Drill Collar Length 0 ft. I.D. 2 1/4 in.

Weight 9.5 Water Loss 10.8 cc. Weight Pipe Length 0 ft. I.D. 2 7/8 in

Chlorides 12200 P.P.M. Drill Pipe Length 3537 ft. I.D. 3 1/2 in

Jars: Make STERLING Serial Number 7 Test Tool Length 33 ft. Tool Size 3 1/2-IF in

Did Well Flow? NO Reversed Out No Anchor Length 20 ft. Size 4 1/2-FH in

Main Hole Size 7 7/8 Tool Joint Size 4 1/2 XH in. Surface Choke Size 1 in. Bottom Choke Size 5/8 in

Blow: 1st Open: BOB on Open, GTS in 2 Min., Gaging Gas, No Blowback

2nd Open: O on Open, Gaging Gas, No Blowback

Recovered 60 ft. of Drilling Mud

Recovered 60 ft. of Total Fluid

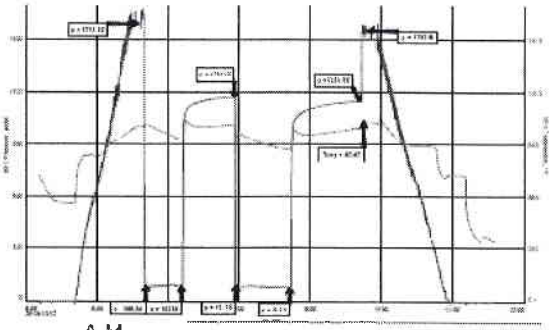
Recovered _____ ft. of _____

Recovered _____ ft. of _____

Recovered _____ ft. of _____

Recovered _____ ft. of Tool Sample: Drilling Mud

Remarks: Gas Gaged At 23# on a 3/4" Choke, =436000 MCF



Time Set Packer(s) 6:41 PM A.M. P.M. Time Started Off Bottom 9:41 PM A.M. P.M. Maximum Temperature 98

Initial Hydrostatic Pressure ..... (A) 1774 P.S.I.

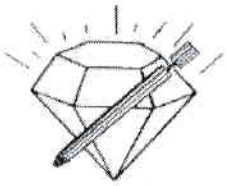
Initial Flow Period ..... Minutes 30 (B) 106 P.S.I. to (C) 103 P.S.I.

Initial Closed In Period ..... Minutes 45 (D) 1298 P.S.I.

Final Flow Period ..... Minutes 45 (E) 108 P.S.I. to (F) 91 P.S.I.

Final Closed In Period ..... Minutes 60 (G) 1275 P.S.I.

Final Hydrostatic Pressure ..... (H) 1733 P.S.I.



DIAMOND TESTING
P.O. Box 157
HOISINGTON, KANSAS 67544
(800) 542-7313
DRILL-STEM TEST TICKET
FILE: dudrey1dst3

TIME ON: 5:31 PM
TIME OFF: 12:27 AM

Company H&D Exploration, LLC Lease & Well No. Dudrey #1

Contractor Southwind #2 Charge to H&D Exploration, LLC

Elevation 1900 KB Formation Lansing H-J Effective Pay _____ Ft. Ticket No. K068

Date 12-13-13 Sec. 32 Twp. 24 S Range 12 W County Stafford State KANSAS

Test Approved By Josh Austin Diamond Representative Jason McLemore

Formation Test No. 3 Interval Tested from 3695 ft. to 3760 ft. Total Depth 3760 ft.

Packer Depth 3690 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.

Packer Depth 3695 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.

Depth of Selective Zone Set _____

Top Recorder Depth (Inside) 3676 ft. Recorder Number 5513 Cap. 5000 P.S.I.

Bottom Recorder Depth (Outside) 3677 ft. Recorder Number 5588 Cap. 6000 P.S.I.

Below Straddle Recorder Depth _____ ft. Recorder Number _____ Cap. _____ P.S.I.

Mud Type Chemical Viscosity 59 Drill Collar Length 0 ft. I.D. 2 1/4 in.

Weight 9.1 Water Loss 10.8 cc. Weight Pipe Length 0 ft. I.D. 2 7/8 in

Chlorides 12000 P.P.M. Drill Pipe Length 3662 ft. I.D. 3 1/2 in

Jars: Make STERLING Serial Number 7 Test Tool Length 33 ft. Tool Size 3 1/2-IF in

Did Well Flow? NO Reversed Out No Anchor Length 65 ft. Size 4 1/2-FH in

Main Hole Size 7 7/8 Tool Joint Size 4 1/2 XH in. 32' DP in Anchor Surface Choke Size 1 in. Bottom Choke Size 5/8 in

Blow: 1st Open: Fair Blow, Built to 7", No Blowback

2nd Open: Fair Blow, Built to 5-1/2", No Blowback

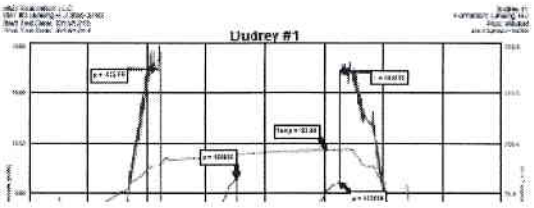
Recovered 45 ft. of VSOCM 3% Oil, 97% Mud

Recovered 45 ft. of Total Fluid

Recovered _____ ft. of _____

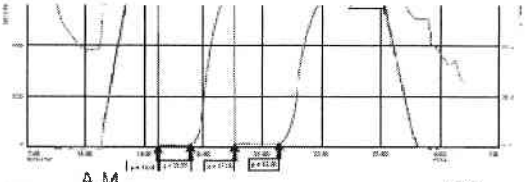
Recovered _____ ft. of 75' Gas In Pipe

Recovered _____ ft. of _____



Recovered ____ ft. of Tool Sample: 10% Oil, 90% Mud

Remarks:



Time Set Packer(s) 7:17 PM A.M. P.M. Time Started Off Bottom 10:17 PM A.M. P.M. Maximum Temperature 102

Initial Hydrostatic Pressure ..... (A) 1823 P.S.I.

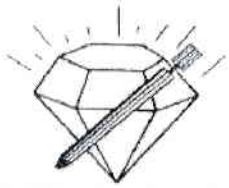
Initial Flow Period ..... Minutes 30 (B) 11 P.S.I. to (C) 22 P.S.I.

Initial Closed In Period ..... Minutes 45 (D) 1099 P.S.I.

Final Flow Period ..... Minutes 45 (E) 21 P.S.I. to (F) 32 P.S.I.

Final Closed In Period ..... Minutes 60 (G) 1077 P.S.I.

Final Hydrostatic Pressure ..... (H) 1811 P.S.I.



DIAMOND TESTING
P.O. Box 157
HOISINGTON, KANSAS 67544
(800) 542-7313
DRILL-STEM TEST TICKET
FILE: dudrey1dst4

TIME ON: 11:09 AM
TIME OFF: 6:44 PM

Company H&D Exploration, LLC Lease & Well No. Dudrey #1

Contractor Southwind #2 Charge to H&D Exploration, LLC

Elevation 1900 KB Formation Lansing K-L Effective Pay ____ Ft. Ticket No. K069

Date 12-14-13 Sec. 32 Twp. 24 S Range 12 W County Stafford State KANSAS

Test Approved By Josh Austin Diamond Representative Jason McLemore

Formation Test No. 4 Interval Tested from 3760 ft. to 3830 ft. Total Depth 3830 ft.

Packer Depth 3755 ft. Size 6 3/4 in. Packer depth ____ ft. Size 6 3/4 in.

Packer Depth 3760 ft. Size 6 3/4 in. Packer depth ____ ft. Size 6 3/4 in.

Depth of Selective Zone Set

Top Recorder Depth (Inside) 3741 ft. Recorder Number 5513 Cap. 5000 P.S.I.

Bottom Recorder Depth (Outside) 3742 ft. Recorder Number 5588 Cap. 6000 P.S.I.

Below Straddle Recorder Depth ____ ft. Recorder Number ____ Cap. ____ P.S.I.

Mud Type Chemical Viscosity 58 Drill Collar Length 0 ft. I.D. 2 1/4 in.

Weight 9.4 Water Loss 14.4 cc. Weight Pipe Length 0 ft. I.D. 2 7/8 in

Chlorides 14000 P.P.M. Drill Pipe Length 3727 ft. I.D. 3 1/2 in

Jars: Make STERLING Serial Number 7 Test Tool Length 33 ft. Tool Size 3 1/2-IF in

Did Well Flow? NO Reversed Out No Anchor Length 70 ft. Size 4 1/2-FH in

Main Hole Size 7 7/8 Tool Joint Size 4 1/2 XH in. 32' DP in Anchor Surface Choke Size 1 in. Bottom Choke Size 5/8 in

Blow: 1st Open: Strong, BOB in 45 Seconds, Surface Blowback

2nd Open: Strong, BOB in 30 Seconds, GTS in 20 Min. to weak to Gage, Blowback BOB in 10 Min.

Recovered 80 ft. of SOCM: 5% Oil, 95% Mud

Recovered 320 ft. of Frothy Oil, 60% Gas, 40% Oil

Recovered 40 ft. of Muddy Water, 82% Water, 18% Mud

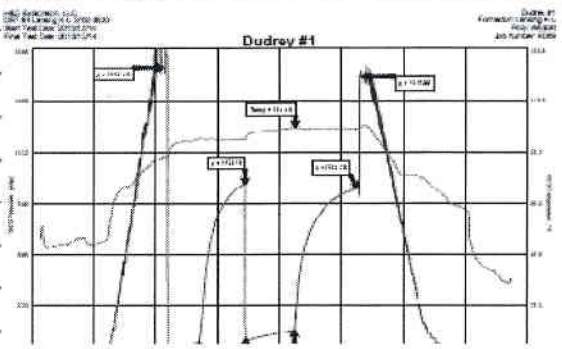
Recovered 440 ft. of Total Fluid

Recovered ____ ft. of ____

Recovered ____ ft. of CHLORIDES: 64000

Remarks: PH: 7

RW: .160 @ 50



Time Set Packer(s)	1:13 PM A.M. P.M.	Time Started Off Bottom	4:13 PM A.M. P.M.	Maximum Temperature	104

Initial Hydrostatic Pressure		(A)	1880 P.S.I.		
Initial Flow Period	Minutes 30	(B)	62 P.S.I. to (C)	106 P.S.I.	
Initial Closed In Period	Minutes 45	(D)	1124 P.S.I.		
Final Flow Period	Minutes 45	(E)	128 P.S.I. to (F)	180 P.S.I.	
Final Closed In Period	Minutes 60	(G)	1100 P.S.I.		
Final Hydrostatic Pressure		(H)	1818 P.S.I.		

ROCK TYPES

Cht, Congl, Chtcongl, Dolsec, Lmst fw7>, shale, grn, shale, gry, Carbon Sh, Ss

ACCESSORIES

MINERAL
- △ Chert White

FOSSIL
- ⊙ Crinoids
- F Fossils < 20%
- ◊ Oolite
- Oomoldic
- Fussilinid

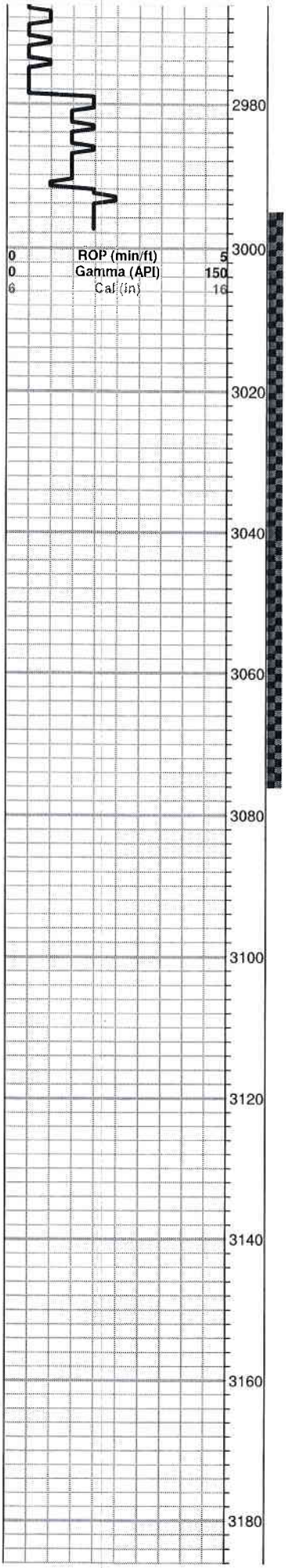
TEXTURE
- C Chalky

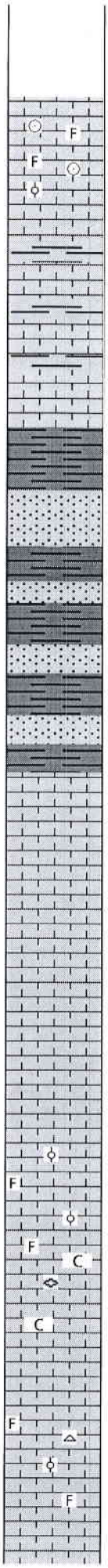
OTHER SYMBOLS

Oil Show
- ● Even Stn
- ◐ Spotted Stn 50-75
- ◑ Spotted Stn 25-50
- ◑ Spotted Stn 1-25
- ○ Questionable Stn
- D Dead Oil Stn
- ■ Fluorescence
- ✳ Gas

DST
- ■ DST Int
- ■ DST alt
- Core
- tail pipe

Curve Track #1	Depth | Intervals	DST	Lithology	Oil Show	Geological Descriptions	TG, C1 - C5
ROP (min/ft)	Cored Interval					Total Gas (units)
Gamma (API)	DST Interval					C1 (units)
Cal (in)						C2 (units)
						C3 (units)
						C4 (units)
1:240 Imperial						1:240 Imperial
0 ROP (min/ft) 5	2900					0 Total Gas (units) 100
0 Gamma (API) 150						0 C1 (units) 100
6 Cal (in) 16						0 C2 (units) 100
						0 C3 (units) 100
						0 C4 (units) 100
	2920					
	2940					
	2960					





HOWARD 2979 (-1079)

Limestone; cream-lt. grey, fine xln, chalky, dense, few finely oolitic-fossiliferous pieces

Limestone; as above, dense

Shale; grey-green, soft plus limestone as above

SEVERY SAND 3030 (-1130)

Sand; grey, very fine grained, micaceous, sub angular, friable, when sample broke lt. spotty SFO, faint odor, trace gas bubbles

Sand as above plus grey-green-dark grey shale

TOPEKA 3074 (-1174)

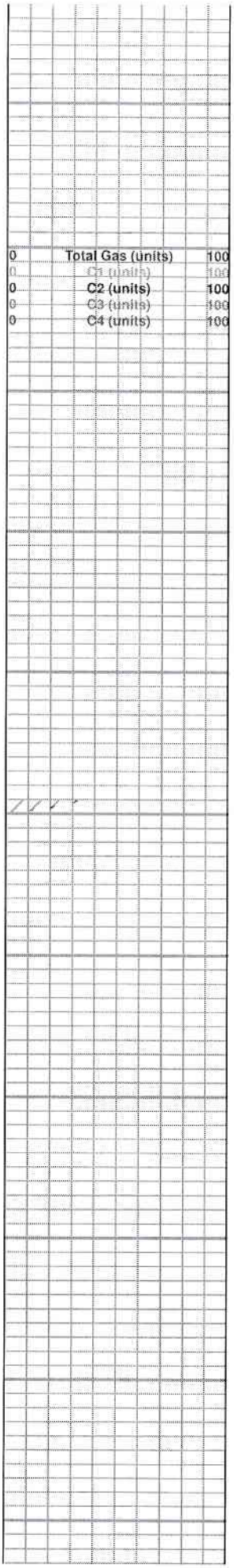
Limestone; cream-tan, fine xln, dense, cherty, fossiliferous in part

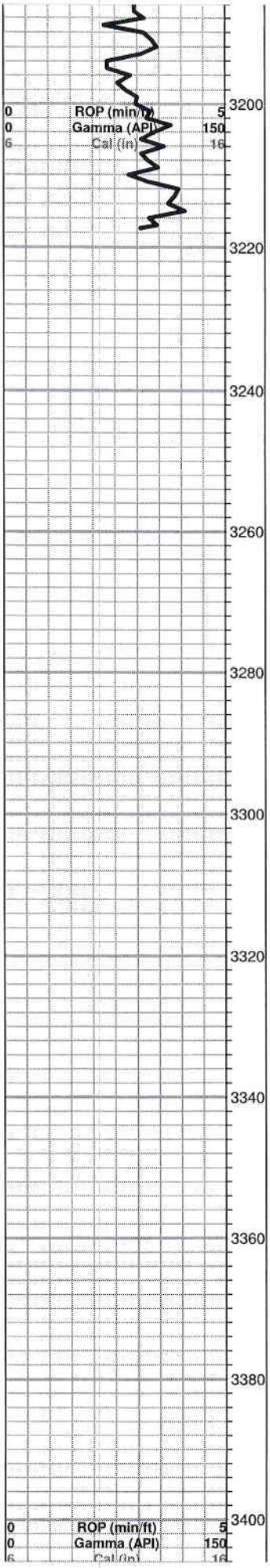
Limestone; tan-cream, fossiliferous, chalky in part, slightly granular, poorly developed porosity, no shows

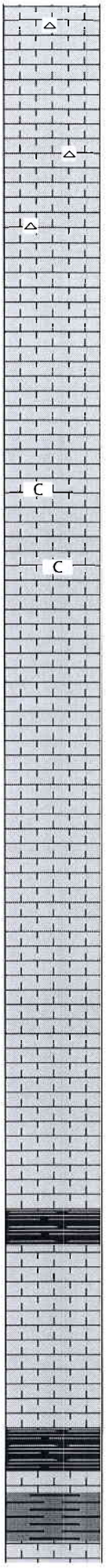
Limestone; as above

Limestone; white-cream, fine xln, chalky, finely oolitic/fossiliferous, few cherty pieces, plus white chalk

Limestone; grey-cream, fine xln, dense, slighlty fossiliferous, cherty, poor porosity, plus grey fossiliferous Chert, boney







Limestone; as above

Limestone; cream-tan, fine-medium xln, fossiliferous in part, slighlty cherty, few sparry calcite inclusions, plus Chert; grey, fossiliferous, boney

as above

Limestone; cream-grey-buff, fine xln, dense, slightly fossiliferous, plus white chalk

Limestone; cream-buff, fine-medium xln, chalky, granular in part, few fossiliferous pieces, no shows

Limestone; as above, few scattered porosity

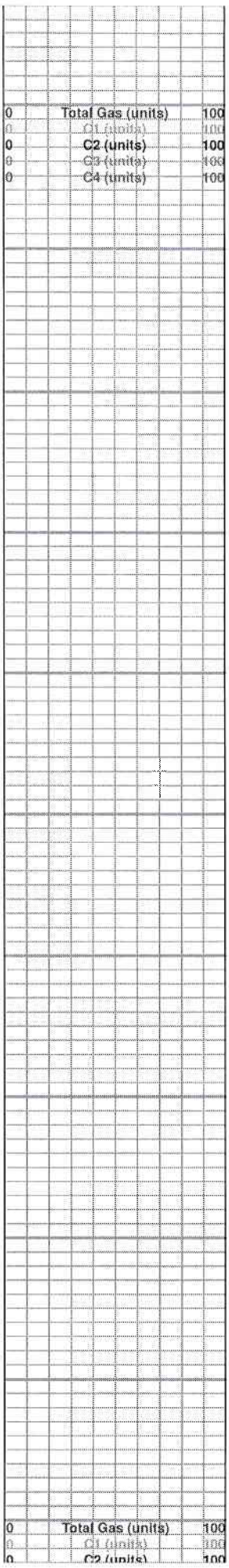
Limestone; cream, fine xln, dense, few inter xln type porosity, questionable trace spotty brown stain, NSFO, no odor

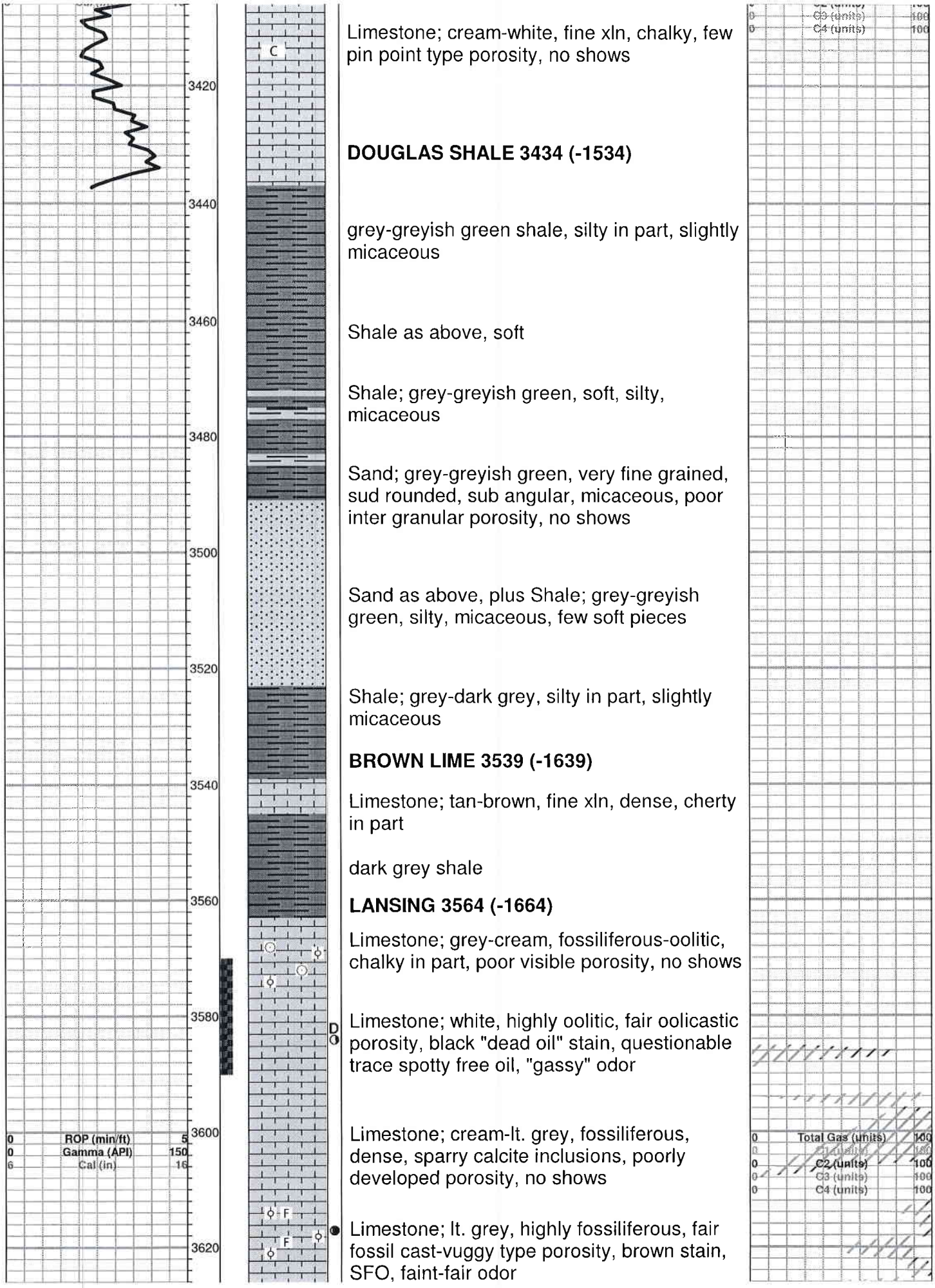
black-dark grey shale

HEEBNER 3386 (-1486)

black carboniferous Shale

TORONOT 3402 (-1502)





Limestone; cream-white, fine xln, chalky, few pin point type porosity, no shows

DOUGLAS SHALE 3434 (-1534)

grey-greyish green shale, silty in part, slightly micaceous

Shale as above, soft

Shale; grey-greyish green, soft, silty, micaceous

Sand; grey-greyish green, very fine grained, sud rounded, sub angular, micaceous, poor inter granular porosity, no shows

Sand as above, plus Shale; grey-greyish green, silty, micaceous, few soft pieces

Shale; grey-dark grey, silty in part, slightly micaceous

BROWN LIME 3539 (-1639)

Limestone; tan-brown, fine xln, dense, cherty in part

dark grey shale

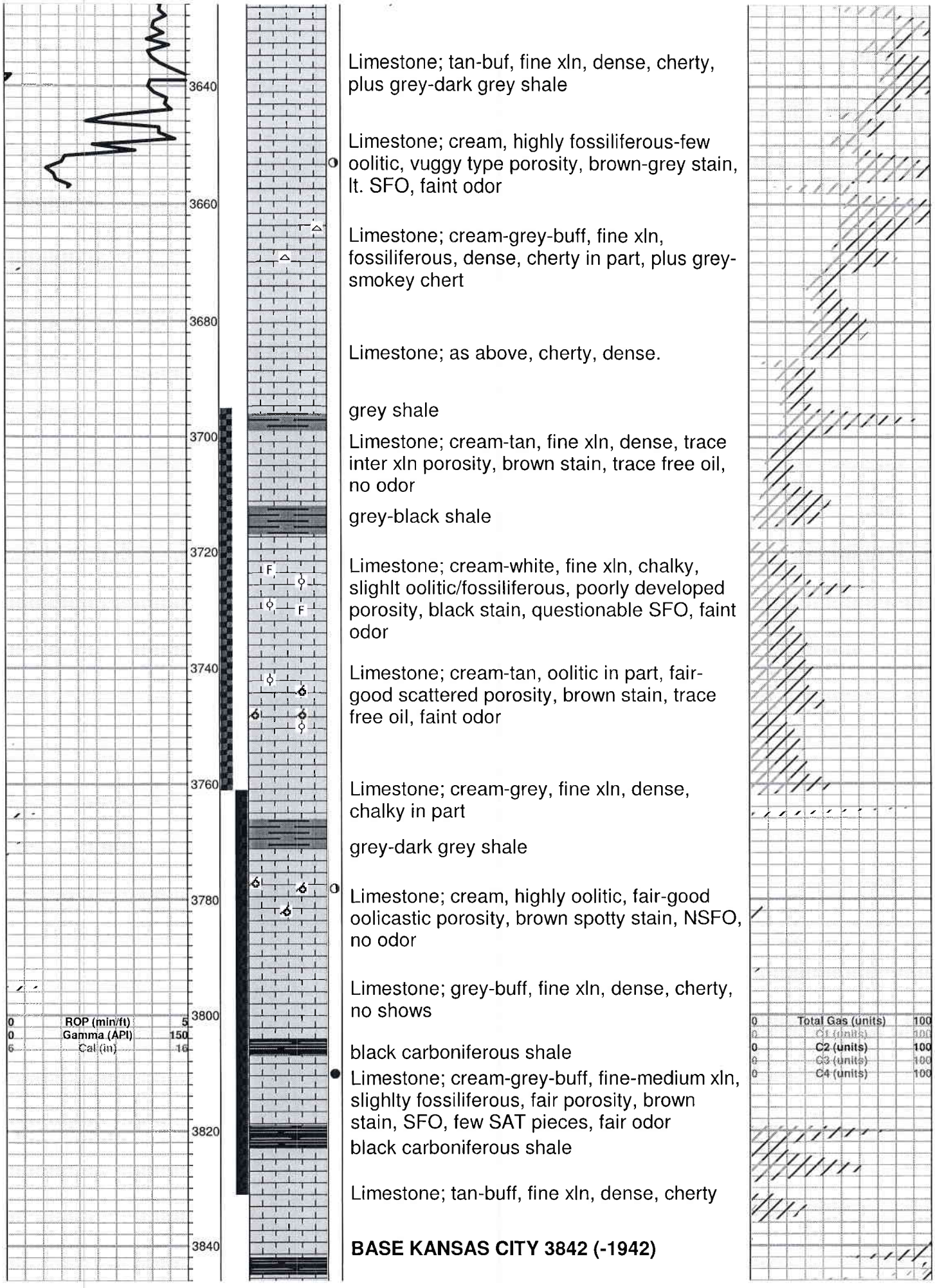
LANSING 3564 (-1664)

Limestone; grey-cream, fossiliferous-oolitic, chalky in part, poor visible porosity, no shows

Limestone; white, highly oolitic, fair oolicastic porosity, black "dead oil" stain, questionable trace spotty free oil, "gassy" odor

Limestone; cream-lt. grey, fossiliferous, dense, sparry calcite inclusions, poorly developed porosity, no shows

Limestone; lt. grey, highly fossiliferous, fair fossil cast-vuggy type porosity, brown stain, SFO, faint-fair odor



Limestone; tan-buf, fine xln, dense, cherty, plus grey-dark grey shale

Limestone; cream, highly fossiliferous-few oolitic, vuggy type porosity, brown-grey stain, lt. SFO, faint odor

Limestone; cream-grey-buff, fine xln, fossiliferous, dense, cherty in part, plus grey-smokey chert

Limestone; as above, cherty, dense.

grey shale

Limestone; cream-tan, fine xln, dense, trace inter xln porosity, brown stain, trace free oil, no odor

grey-black shale

Limestone; cream-white, fine xln, chalky, slighlt oolitic/fossiliferous, poorly developed porosity, black stain, questionable SFO, faint odor

Limestone; cream-tan, oolitic in part, fair-good scattered porosity, brown stain, trace free oil, faint odor

Limestone; cream-grey, fine xln, dense, chalky in part

grey-dark grey shale

Limestone; cream, highly oolitic, fair-good oolicastic porosity, brown spotty stain, NSFO, no odor

Limestone; grey-buff, fine xln, dense, cherty, no shows

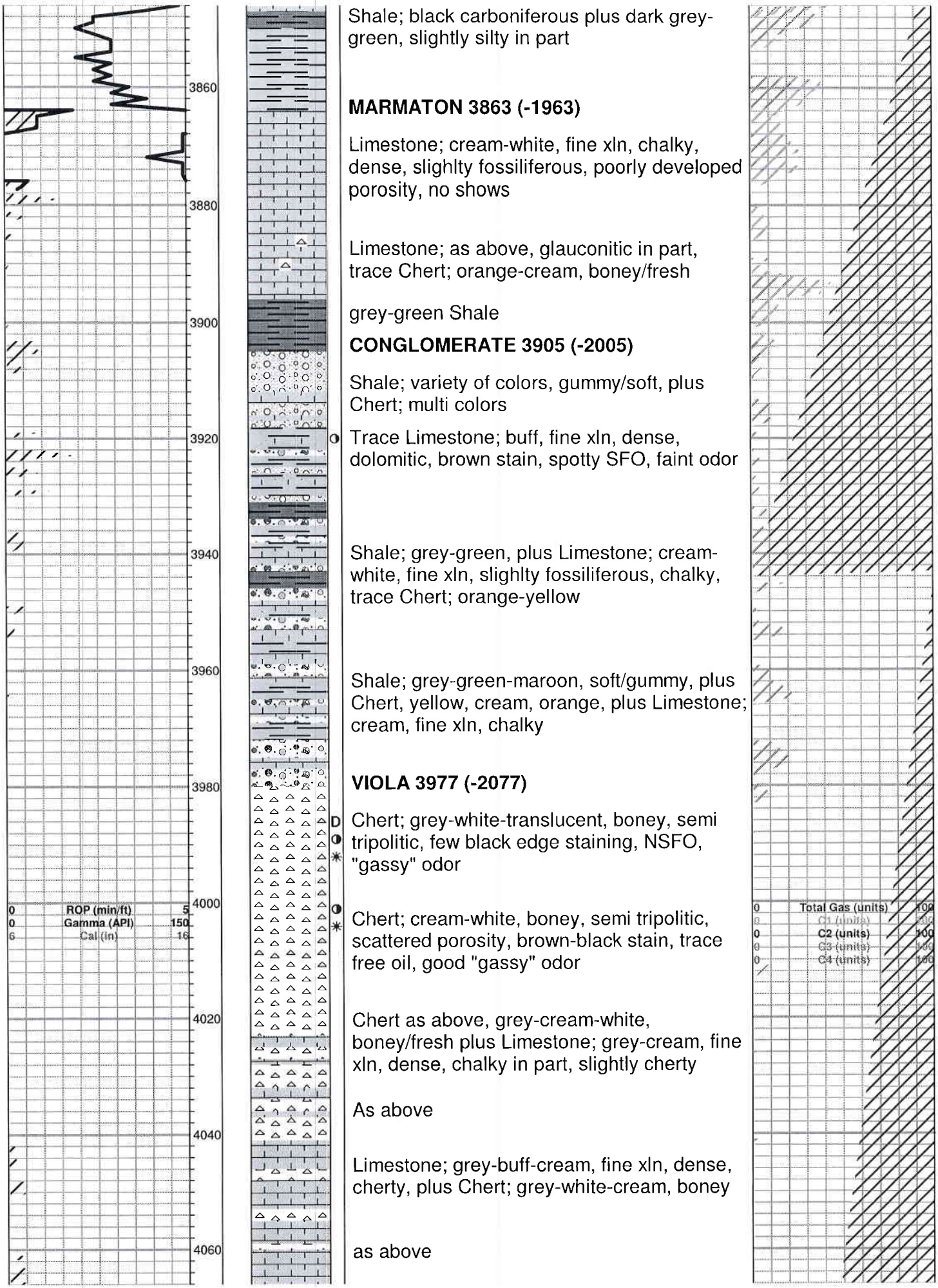
black carboniferous shale

Limestone; cream-grey-buff, fine-medium xln, slighlty fossiliferous, fair porosity, brown stain, SFO, few SAT pieces, fair odor

black carboniferous shale

Limestone; tan-buff, fine xln, dense, cherty

BASE KANSAS CITY 3842 (-1942)



Shale; black carboniferous plus dark grey-green, slightly silty in part

MARMATON 3863 (-1963)

Limestone; cream-white, fine xln, chalky, dense, slighlty fossiliferous, poorly developed porosity, no shows

Limestone; as above, glauconitic in part, trace Chert; orange-cream, boney/fresh

grey-green Shale

CONGLOMERATE 3905 (-2005)

Shale; variety of colors, gummy/soft, plus Chert; multi colors

Trace Limestone; buff, fine xln, dense, dolomitic, brown stain, spotty SFO, faint odor

Shale; grey-green, plus Limestone; cream-white, fine xln, slighlty fossiliferous, chalky, trace Chert; orange-yellow

Shale; grey-green-maroon, soft/gummy, plus Chert, yellow, cream, orange, plus Limestone; cream, fine xln, chalky

VIOLA 3977 (-2077)

Chert; grey-white-translucent, boney, semi tripolitic, few black edge staining, NSFO, "gassy" odor

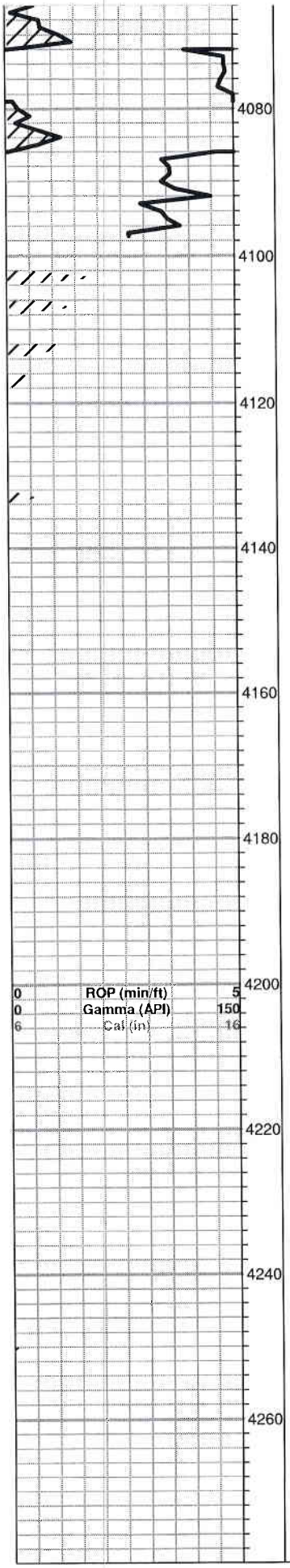
Chert; cream-white, boney, semi tripolitic, scattered porosity, brown-black stain, trace free oil, good "gassy" odor

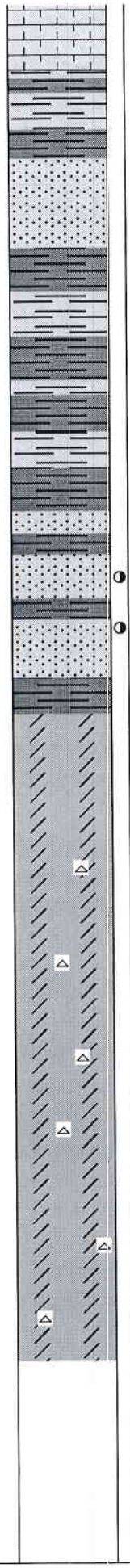
Chert as above, grey-cream-white, boney/fresh plus Limestone; grey-cream, fine xln, dense, chalky in part, slightly cherty

As above

Limestone; grey-buff-cream, fine xln, dense, cherty, plus Chert; grey-white-cream, boney

as above





SIMPSON SHALE 4079 (-2179)

Shale; green-grey, silty, micaceous

SIMPSON SAND

Sand; grey-clear, sub rounded, sub angular, dense, micaceous in part, trace black-dark brown stain, NSFO, no odor

Shale; grey-green, maroon, soft, gummy in part

Shale; as above, few silty, micaceous

Sand; cream-tan, medium grained, angular, sub rounded, dolomitic in part, friable in part, fair inter granular porosity, few brown stain, trace SFO/SAT, good odor

Sand; as above

ARBUCKLE 4164 (-2264)

Dolomite; buff-grey, fine xln, scattered vuggy porosity, no shows

Dolomite; grey-cream-buff, fine xln, slighlty sucrosic, sandy/granular in part, few scattered porosity, no shows, trace white Chert

Dolomite; tan-grey, fine xln, dense, cherty, poor visible porosity, no show

plus Chert; grey-smokey grey-white, boney

Dolomite and Chert as above

Dolomite; cream-grey, fine-medium xln, dense, cherty, few inter xln type porosity, no shows, Chert; as above

ROTARY TOTAL DEPTH 4250 (-2350)