



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1221398
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

- New Well Re-Entry Workover
- Oil WSW SWD SIOW
- Gas D&A ENHR SIGW
- OG GSW Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

- Deepening Re-perf. Conv. to ENHR Conv. to SWD
- Plug Back Conv. to GSW Conv. to Producer
- Commingled Permit #: _____
- Dual Completion Permit #: _____
- SWD Permit #: _____
- ENHR Permit #: _____
- GSW Permit #: _____

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested
Date: _____
- Confidential Release Date: _____
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT I II III Approved by: _____ Date: _____

1221398

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
Cores Taken	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Electric Log Run	<input type="checkbox"/> Yes <input type="checkbox"/> No			
List All E. Logs Run:				

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate				
<input type="checkbox"/> Protect Casing				
<input type="checkbox"/> Plug Back TD				
<input type="checkbox"/> Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD: Size: _____ Set At: _____ Packer At: _____ Liner Run: Yes No

Date of First, Resumed Production, SWD or ENHR: _____ Producing Method:
 Flowing Pumping Gas Lift Other *(Explain)* _____

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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MORNING DRILLING REPORT

For: H&D Exploration

SOUTHWIND DRILLING, INC.

RIG No. 2

Well Name: Kirkpatrick #1
 Location: 1722' FSL & 330' FEL
 Section: 34-24S-13W
 County: Stafford
 API: 15-185-23885-00-00

Elevation: GL 1923'
 KB 1932'
 Est. TD: 4200'

Rig No. 2 (Pusher Bill Sanders) 620-617-0708
 Rig No. 2 (Dophauser) 620-617-5921
 Southwind Drilling Office 620-564-3800



Surface Casing: Ran 18 joints of used 2 3/8", 8 5/8" casing, Tally @ 757', Set @ 768', used 450 sacks of 80/40 Poz, 3% cc, 2% gel, 1/2# Flo-Seal, cement circulated, by Quality (Ticket #614), plug down @ 1:45 am on 8.20.14.

Plugging Info: Plugged well with 210 sacks of 80/40 Poz, 4% gel, 1st plug @ 4210' w/ 50 sacks, 2nd plug @ 810' w/ 50 sacks, 3rd plug @ 240' w/ 40 sacks, 4th plug @ 60' w/ 20 sacks, 30 sacks for Rat hole, 20 sacks for Mouse hole, cemented, by Quality (Ticket #335), job complete @ 10:30 pm on 08.27.14.

Rotary Total Depth: 4258'
 Log Total Depth: 4258'

Geologist: Jim Musgrove

7:00 A.M. Depth: 4258'

7:00 A.M. Current Operation: DRILLING

Spud Date & Time:	08/19/14	08/20/14	08/21/14	08/22/14	08/23/14	08/24/14	08/25/14	08/26/14	08/27/14	08/28/14	Total
8/19/14 @ 12:45pm	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	
Total Depth (7:00am)	0	770	1865	2565	3250	3785	3875	4115	4258	4258	4258
Daily Progress	770	1095	700	695	535	90	240	143	0	0	
Fl. Per Hr.	181.18	85.88	39.44	33.01	25.78	21.18	14.33	15.46	0.00	#DIV/0!	39.89
Current Operation (7:00am)	Rig Up	WOC	Drilling	Drilling	Drilling	Drilling	TIWT	Drilling	Drilling	Tear Down	
Formation	Surface	Red Bed	Lime / Shale	Lime / Shale	Lime / Shale	Lime / Shale	Lime / Shale	Lime / Shale	Simpson Sand		
Fuel Used (34.5 Gall/inch)	207.00	345.00	483.00	448.50	483.00	276.00	345.00	310.50	120.75		3018.75
Survey (degree & depth)	1' @ 770'					1' @ 3840'					

Mud Cost	\$0.00	\$0.00	\$2,214.80	\$3,932.65	\$1,728.45	\$291.25	\$622.10	\$1,387.85	\$0.00		\$10,376.90
Weight (# / Gal)							9.3				
Vis (Funnel)							49				
Water Loss (cc)							8.8				
Bit #1											
Bit Make / Type	JZ RT										
Bit Size	12 1/4										
Bit Hours	4.25										4.25
Bit #2											
Bit Make / Type		JZ HA20Q	JZ HA20Q								
Bit Size		7 7/8	7 7/8								
Bit Hours		12.75	0.50								13.25
Bit #3											
Bit Make / Type			Reed R24A	Reed R24A	Reed R24A	Reed R24A					
Bit Size			7 7/8	7 7/8	7 7/8	7 7/8					
Bit Hours			17.25	20.75	20.75	4.25					0.00
Bit #4											
Bit Make / Type							Reed R24 A	Reed R24 A	Reed R24 A		
Bit Size							7 7/8	7 7/8	7 7/8		
Bit Hours							16.75	9.25	0.25		0.00
Bit Cumulative Hours	4.25	12.75	17.75	20.75	20.75	4.25	16.75	9.25	0.25	0.00	106.75
Weight on Bit (WOB)	15,000	15,000	25,000	30,000	30,000	30,000	35,000	35,000	35,000		
RPM	100	80	80	80	80	80	80	80	80		
Pump Pressure	750	850	800	750	850	750	800	800	800		
Drilling (Rotating) Hours	4.25	12.75	17.75	20.75	20.75	4.25	16.75	9.25	0.25	0.00	106.75

Daywork Hrs. (Operator's time)											
Rat Hole (>.75 Hrs)											0.00
Wait on Cement	5.25	6.75									12.00
Trips						10.25	3.00	8.25	3.25		22.75
Circulate					1.00	5.00	0.50	4.00	1.00		11.50
Tool						1.25	0.50	1.00			2.75
Testing						2.00	2.00	2.00			6.00
Clean Floor after DST											0.00
Wait on Orders											0.00
Logging											0.00
Nipple Down / Jol Clear									4.50		4.50
LDDP / LDDC / Plug well											0.00
Run Casing / Circ / Cement	4.00								6.25		6.25
Set Slips											4.00
Wait on Loggers											0.00
Lost Circulation (> 2 hrs)											0.00
Billable Hours	9.25	6.75	9.00	9.00	1.00	18.50	6.00	13.25	15.00	0.00	69.75

Non-Billable Hours (Southwind's time)											
Rig Up / Tear Down	5.25									8.50	13.75
Wait on Cement (NB)											0.00
Drill Rat Hole (<.75 hrs)	0.50										0.50
Drill Plug		0.75									0.75
Circulate / Trip (Surface)	1.50										1.50
Rig Repair											0.25
Connections	2.75	2.25	2.00	1.75	1.50	0.25	0.75	0.50			11.75
Jol/Displace	0.25	1.00	1.00	0.75		0.25		0.25			3.50
Surveys	0.25					0.25				0.25	0.75
Rig Check		0.50	0.50	0.75	0.75	0.50	0.50	0.50		0.25	4.00
Lost Circulation (< 2 hrs)											0.00
Lay Down Kelly / MH & RH											0.00
Bit Trip			2.25								2.25
Circulate (NB)			0.50								0.50
Non-Billable Hrs.	10.50	4.50	6.25	3.25	2.25	1.25	1.25	1.50	6.75	0.00	39.50

Footage Cost	\$ 10,780.00	\$ 15,330.00	\$ 9,800.00	\$ 9,590.00	\$ 7,490.00	\$ 1,260.00	\$ 3,360.00	\$ 2,002.00	\$ -	\$ -	\$ 59,612.00
Daywork Cost	\$ 3,237.50	\$ 2,362.50	\$ -	\$ -	\$ 350.00	\$ 6,475.00	\$ 2,100.00	\$ 4,637.50	\$ 5,250.00	\$ -	\$ 24,412.50
Combined Est. Cost*	\$ 14,017.50	\$ 17,692.50	\$ 9,800.00	\$ 9,590.00	\$ 7,840.00	\$ 7,735.00	\$ 5,460.00	\$ 6,639.50	\$ 5,250.00	\$ -	\$ 84,024.50

*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 -				DST #2 Info -				DST #3 Info -			
Footage Interval: 3815' - 3840'		Lansing "X"		Footage Interval: 3855' - 3875'		"Lower KC"		Footage Interval: 4125' - 4170'		"Simpson Sand"	
Recovery: 15' Mud				Recovery: 10' Mud				Recovery: 20' Mud			
DST #4 Info -											
Footage Interval:				Footage Interval:				Footage Interval:			
Recovery:				Recovery:				Recovery:			

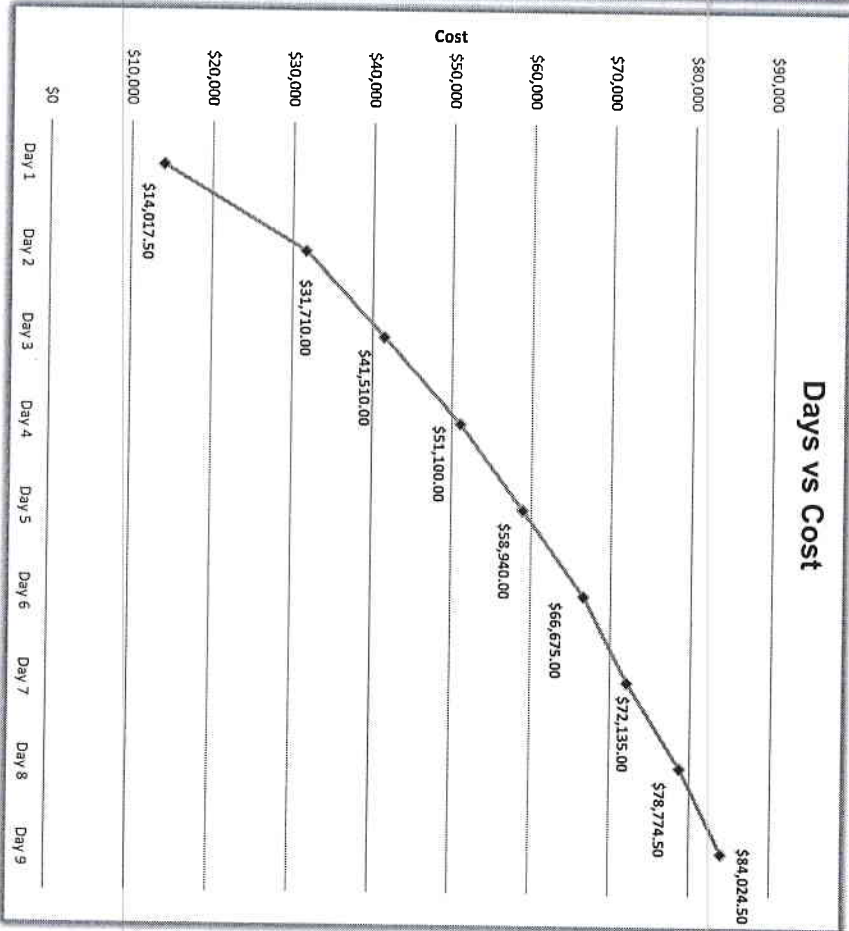
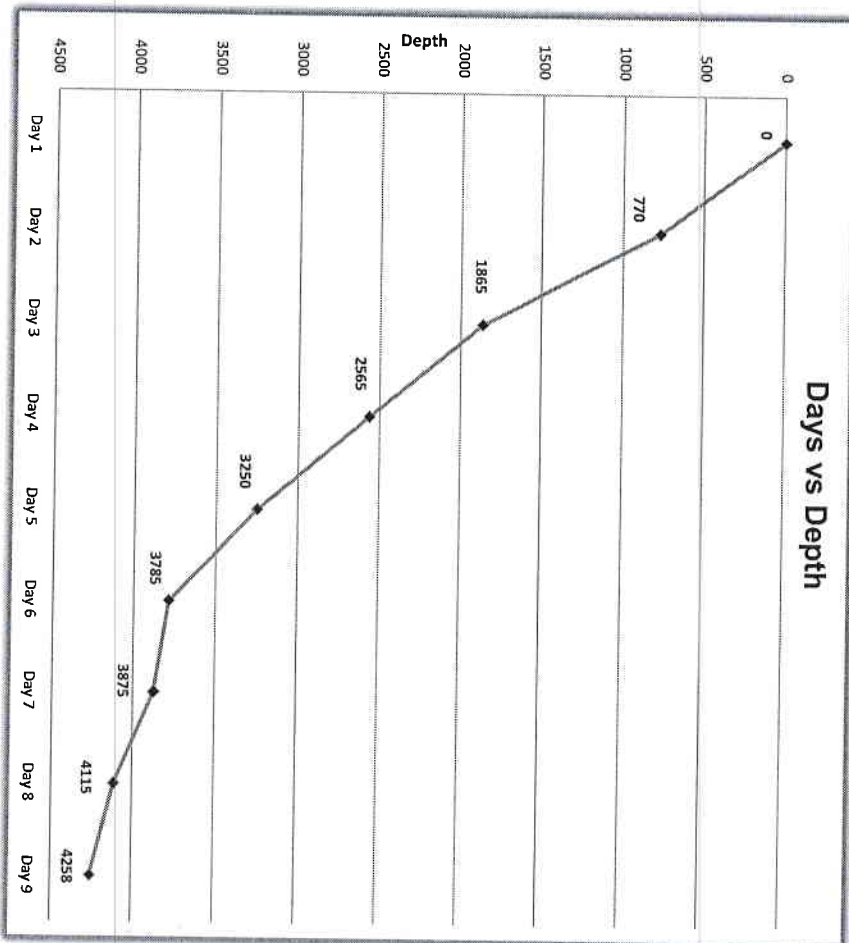
Anhydrite @ 847'

Displaced @



Job Summary Graphical Report

Southwind Rig No. 2
Kirkpatrick #1



QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 336
10.30pm

Date	8-27-14	Sec.	34	Twp.	24	Range	13	County	Stafford	State	KS	On Location	5.30pm	Finish	7.00pm
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Lease Kirkpatrick Well No. 1 Location 281 + 50 Hwy 35 1E Owner AN Wntc

Contractor Smith well 2 To Quality Oilwell Cementing, Inc.
You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.

Type Job Plugs Charge To HD Exploration

Hole Size 7 7/8 T.D. 4258 Street _____ City _____ State _____

Csg. Pill pipe Depth _____ The above was done to satisfaction and supervision of owner agent or contractor.

Tbg. Size _____ Depth _____ Cement Amount Ordered 210 6/40 40/8 gal

Tool _____ Depth _____ Meas Line _____ Displace 1/4 flo seal

EQUIPMENT Common 126

Pumptrk 20 No. Cementer 2785 Poz. Mix 84

Bulktrk 15 No. Driver Nick Gel. 7

Bulktrk 90 No. Driver Ryan Calcium _____

JOB SERVICES & REMARKS Hulls _____

Remarks: Salt _____

Rat Hole 30 5/16 Flowseal 50#

Mouse Hole 40 5/16 Kol-Seal _____

Centralizers Mud CLR 48 _____

Baskets CFL-117 or CD110 CAF 38 _____

D/V or Port Collar Sand _____

1st 4210 50 5/16 Handling 217

2nd 810 40 5/16 Mileage _____

3rd 240 40 5/16 **FLOAT EQUIPMENT**

4th 60 20 5/16 Guide Shoe _____

Centralizer _____

Baskets _____

AFU Inserts _____

Float Shoe _____

Latch Down _____

Pumptrk Charge plug
Mileage 20

Tax _____
Discount _____
Total Charge _____

Signature William Adams



Mudgrove

**PETROLEUM
CORPORATION**
Clafin, Kansas

COMPANY: H&D Exploration LLC

LEASE: Kirkpatrick #1

FIELD: Halley East

LOCATION: N2-Se-Ne-Se (1722' FSL & 330' FEL)

SEC: 34 TWSP: 24s RGE: 13w

COUNTY: Stafford STATE: Kansas

KB: 1932' GL: 1923'

API # 15-185-23885-00-00

CONTRACTOR: Southwind Drilling Company (Rig#2)

Spud: 08/20/2014 Comp: 08/27/2014

RTD: 4258' LTD: 4258'

Mud Up: 2900' Type Mud: Chemical was displaced

Samples Saved From: 3000' to RTD

Drilling Time Kept From: 3000' to RTD

Samples Examined From: 3000' to RTD

Geological Supervision From: 3000' to RTD

Geologist on Well: Josh Austin

Surface Casing: 8 5/8" @768'

Production Casing: none

Electronic Surveys: By Pioneer Energy Services

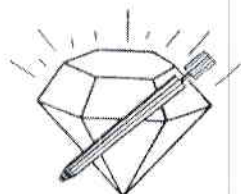
NOTES

On the basis of the negative drill stem test and after reviewing the electric logs, it was recommended by all parties involved that the Kirkpatrick #1 be plugged and abandoned at the rotary total depth 4258'.

H&D Exploration, LLC well comparison sheet

DRILLING WELL	COMPARISON WELL	COMPARISON WELL	COMPARISON WELL
Kirkpatrick 1	Keller 'E' 1 Se-Sw-Ne	C.E. Kirkpatrick #1 Sw-Sw-Se	Halley "A" 1 Sw-Se-Sw

Formation	1932 KB				1932 KB				Structural Relationship		1939 KB				Structural Relationship		1939 KB				Structural Relationship			
	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Anhydrite			803	1129	793	1139	-1139	-10																
Heebner	3447	-1515	3446	-1514	3448	-1516	1	2			3494	-1555	40	41										
Toronto	3461	-1529	3461	-1529	3471	-1539	10	10			3511	-1572	43	43			3461	-1522	7	8				
Douglas	3482	-1550	3478	-1546	3485	-1553	3	7			3532	-1593	43	47										
Brown Lime	3594	-1662	3593	-1661	3597	-1665	3	4			3641	-1702	40	41			3609	-1670	8	9				
Lansing	3617	-1685	3617	-1685	3624	-1692	7	7			3664	-1725	40	40			3633	-1694	9	9				
BKC	3893	-1961	3889	-1957							3946	-2007	46	50			3913	-1974	13	17				
Mississippi	3910	-1978	3909	-1977	3909	-1977	-1	0									4033	-2094	116	117				
Viola	4011	-2079	4009	-2077	4012	-2080	1	3																
Simpson Sand	4153	-2221	4152	-2220	4144	-2212	-9	-8																
Arbuckle	4210	-2278	4208	-2276	4197	-2265	-13	-11									4166	-2227	6	7				
Total Depth	4258	-2326	4258	-2326	4250	-2318					3963	-2024					4227	-2288	10	12				
																	4264	-2325						



DIAMOND TESTING
P.O. Box 157
HOISINGTON, KANSAS 67544
(800) 542-7313
DRILL-STEM TEST TICKET
FILE: STC/Kirkpatrick1dst1

TIME ON: 17:30 8/24/2014

TIME OFF: 23:00 8/24/2014

Company H+D EXPLORATION LLC

Lease & Well No. KIRKPATRICK #1

Contractor SOUTHWIND DRILLING RIG #2

Charge to H+D EXPLORATION LLC

Elevation 1932 K.B

Formation Lansing "J"

Effective Pay _____

Ft. Ticket No. J3277

Date 8/24/14

Sec. 34

Twp. _____

24 S Range _____

13 W County _____

STAFFORD

State KANSAS

Test Approved By JOSH AUSTIN

Diamond Representative _____

JOHN RIEDL

Formation Test No. 1 Interval Tested from 3815 ft. to 3840 ft. Total Depth 3840 ft.

Packer Depth 3810 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.

Packer Depth 3815 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.

Depth of Selective Zone Set _____

Top Recorder Depth (Inside) 3818 ft. Recorder Number 30046 Cap. 6000 P.S.I.

Bottom Recorder Depth (Outside) 3837 ft. Recorder Number 13498 Cap. 6000 P.S.I.

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

Mud Type CHEMICAL Viscosity 48 Drill Collar Length 0 ft. I.D. 2 1/4 in.

Weight 9.4 Water Loss 10.2 cc. Weight Pipe Length 0 ft. I.D. 2 7/8 in.

Chlorides 6,300 P.P.M. Drill Pipe Length 3795 ft. I.D. 3 1/2 in.

Jars: Make STERLING Serial Number NOT REQUESTED Test Tool Length 20 ft. Tool Size 3 1/2-4F in.

Did Well Flow? NO Reversed Out NO Anchor Length 25 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: WEAK DEAD 2 MINUTES

2nd Open: NO BLOW; FLUSHED TOOL AND RECEIVED WEAK SURGE

Recovered 15 ft. of DRILLING MUD

Recovered _____ ft. of _____

Recovered _____ ft. of _____

Recovered _____ ft. of _____

Recovered _____ ft. of _____

Recovered _____ ft. of _____

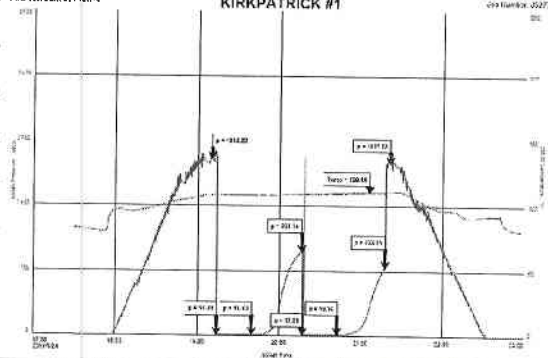
Remarks: TOTAL FLUID REC: 15' IN DRILL PIPE

TOOLSAMPLE GRINDOUT: (100% MUD)

H+D EXPLORATION LLC
No. Test: STC-214-0004
Printed Date: 08/24/2014

KIRKPATRICK #1

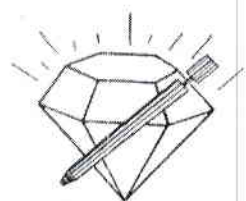
Printed: 08/24/14
Form: H+D-0001-01
019 Number: 0227



Time Set Packer(s) 7:15 P.M. ^{A.M.}/_{P.M.} Time Started Off Bottom 9:15 P.M. ^{A.M.}/_{P.M.} Maximum Temperature 110

Initial Hydrostatic Pressure..... (A) 1905 P.S.I.
 Initial Flow Period..... Minutes 30 (B) 14 P.S.I. to (C) 17 P.S.I.
 Initial Closed In Period..... Minutes 30 (D) 901 P.S.I.
 Final Flow Period..... Minutes 30 (E) 17 P.S.I. to (F) 19 P.S.I.
 Final Closed In Period..... Minutes 30 (G) 733 P.S.I.
 Final Hydrostatic Pressure..... (H) 1858 P.S.I.

Diamond Testing shall not be liable for damages of any kind to the property or personal of the one for whom a test is made or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statement or opinion concerning the result of any test. Tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



DIAMOND TESTING
 P.O. Box 157
HOISINGTON, KANSAS 67544
 (800) 542-7313
DRILL-STEM TEST TICKET
 FILE: STC/Kirkpatrick1dst2

TIME ON: 05:50 8/25/2014
 TIME OFF: 10:30 8/25/2014

Company H+D EXPLORATION LLC Lease & Well No. KIRKPATRICK #1
 Contractor SOUTHWIND DRILLING RIG #2 Charge to H+D EXPLORATION LLC
 Elevation 1932 K.B Formation LANSING "K" Effective Pay _____ Ft. Ticket No. J3278
 Date 8/25/14 Sec. 34 Twp. _____ 24 S Range _____ 13 W County STAFFORD State KANSAS
 Test Approved By JOSH AUSTIN Diamond Representative JOHN RIEDL

Formation Test No. 2 Interval Tested from 3855 ft. to 3875 ft. Total Depth 3875 ft.
 Packer Depth 3850 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.
 Packer Depth 3855 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.
 Depth of Selective Zone Set _____

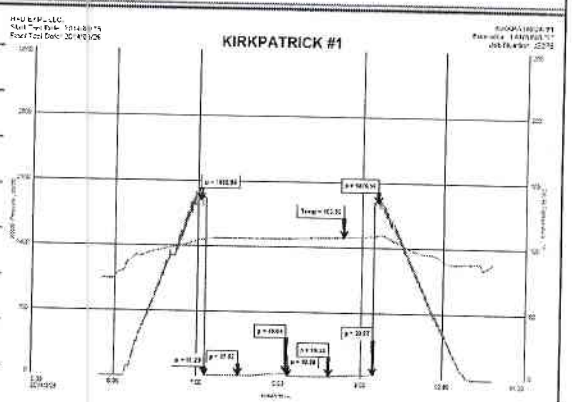
Top Recorder Depth (inside) 3858 ft. Recorder Number 30046 Cap. 6000 P.S.I.
 Bottom Recorder Depth (Outside) 3872 ft. Recorder Number 13498 Cap. 6000 P.S.I.
 Below Straddle Recorder Depth _____ ft. Recorder Number _____ Cap. _____ P.S.I.

Mud Type CHEMICAL Viscosity 48 Drill Collar Length 0 ft. I.D. 2 1/4 in.
 Weight 9.4 Water Loss 10.2 cc. Weight Pipe Length 0 ft. I.D. 2 7/8 in.
 Chlorides 6,300 P.P.M. Drill Pipe Length 3835 ft. I.D. 3 1/2 in.
 Jars: Make STERLING Serial Number NOT REQUESTED Test Tool Length 20 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: VERY WEAK DEAD 10 MIN.
 2nd Open: NO BLOW

Recovered 10 ft. of OIL SPECKED MUD
 Recovered _____ ft. of _____
 Recovered _____ ft. of _____
 Recovered _____ ft. of _____
 Recovered _____ ft. of _____

Remarks: TOTAL FLUID REC: 10' IN DRILL PIPE
TOOLSAMPLE GRINDOUT: (100% MUD)



Time Set Packer(s) 7:00 A.M. A.M. P.M. Time Started Off Bottom 9:00 A.M. A.M. P.M. Maximum Temperature 108

Initial Hydrostatic Pressure..... (A) 1893 P.S.I.

Initial Flow Period..... Minutes 30 (B) 15 P.S.I. to (C) 19 P.S.I.

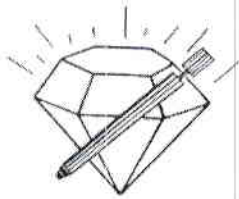
Initial Closed In Period..... Minutes 30 (D) 49 P.S.I.

Final Flow Period..... Minutes 30 (E) 19 P.S.I. to (F) 19 P.S.I.

Final Closed In Period..... Minutes 30 (G) 39 P.S.I.

Final Hydrostatic Pressure..... (H) 1877 P.S.I.

Diamond Testing shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statement or opinion concerning the result of any test. Tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



DIAMOND TESTING
P.O. Box 157
HOISINGTON, KANSAS 67544
(800) 542-7313
DRILL-STEM TEST TICKET
FILE: STC/Kirkpatrick1dst3

TIME ON: 15:00 8/26/2014
TIME OFF: 21:00 8/26/2014

Company H+D EXPLORATION LLC Lease & Well No. KIRKPATRICK #1

Contractor SOUTHWIND DRILLING RIG #2 Charge to H+D EXPLORATION LLC

Elevation 1932 K.B Formation SIMPSON SAND Effective Pay _____ Ft. Ticket No. J3279

Date 8/26/14 Sec. 34 Twp. 24 S Range 13 W County STAFFORD State KANSAS

Test Approved By JOSH AUSTIN Diamond Representative JOHN RIEDL

Formation Test No. 3 Interval Tested from 4125 ft. to 4170 ft. Total Depth 4170 ft.

Packer Depth 4120 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.

Packer Depth 4125 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.

Depth of Selective Zone Set _____

Top Recorder Depth (Inside) 4128 ft. Recorder Number 30046 Cap. 6000 P.S.I.

Bottom Recorder Depth (Outside) 4167 ft. Recorder Number 13498 Cap. 6000 P.S.I.

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

Mud Type CHEMICAL Viscosity 53 Drill Collar Length 0 ft. I.D. 2 1/4 in.

Weight 9.3 Water Loss 10.2 cc. Weight Pipe Length 0 ft. I.D. 2 7/8 in.

Chlorides 6,500 P.P.M. Drill Pipe Length 4121 ft. I.D. 3 1/2 in.

Jars: Make STERLING Serial Number NOT REQUESTED Test Tool Length 326 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: weak "1" " DEAD IN 20 MIN.

2nd Open: NO BLOW FLUSHED TOOL AND PROVED TOOL WASN'T PLUGGED

Recovered 20 ft. of DRILLING MUD

Recovered _____ ft. of _____

Recovered _____ ft. of _____

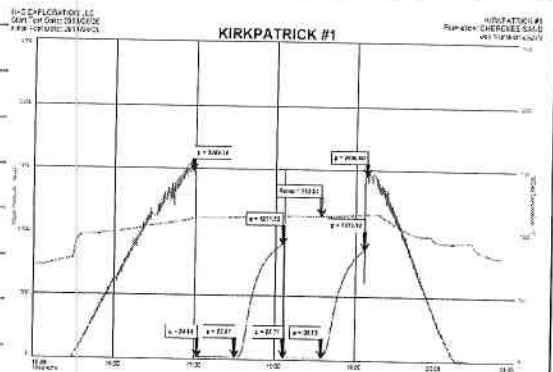
Recovered _____ ft. of _____

Recovered _____ ft. of _____

Recovered _____ ft. of _____

Remarks: TOTAL FLUID REC: 20' IN DRILL PIPE

TOOLSAMPLE GRINDOUT: (100% MUD)



Time Set Packer(s) 5:00 P.M. A.M. P.M. Time Started Off Bottom 7:00 P.M. A.M. P.M. Maximum Temperature 114

Initial Hydrostatic Pressure..... (A) 2083 P.S.I.
 Initial Flow Period..... Minutes 30 (B) 24 P.S.I. to (C) 28 P.S.I.
 Initial Closed In Period..... Minutes 30 (D) 1271 P.S.I.
 Final Flow Period..... Minutes 30 (E) 28 P.S.I. to (F) 30 P.S.I.
 Final Closed In Period..... Minutes 30 (G) 1216 P.S.I.
 Final Hydrostatic Pressure..... (H) 2057 P.S.I.

Diamond Testing shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statement or opinion concerning the result of any test. Tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.

ROCK TYPES

Chert	Lmst fw7>	Carbon Sh	Silst
Congl	shale, grn	shale, red	
Dolsec	shale, gry	Ss	

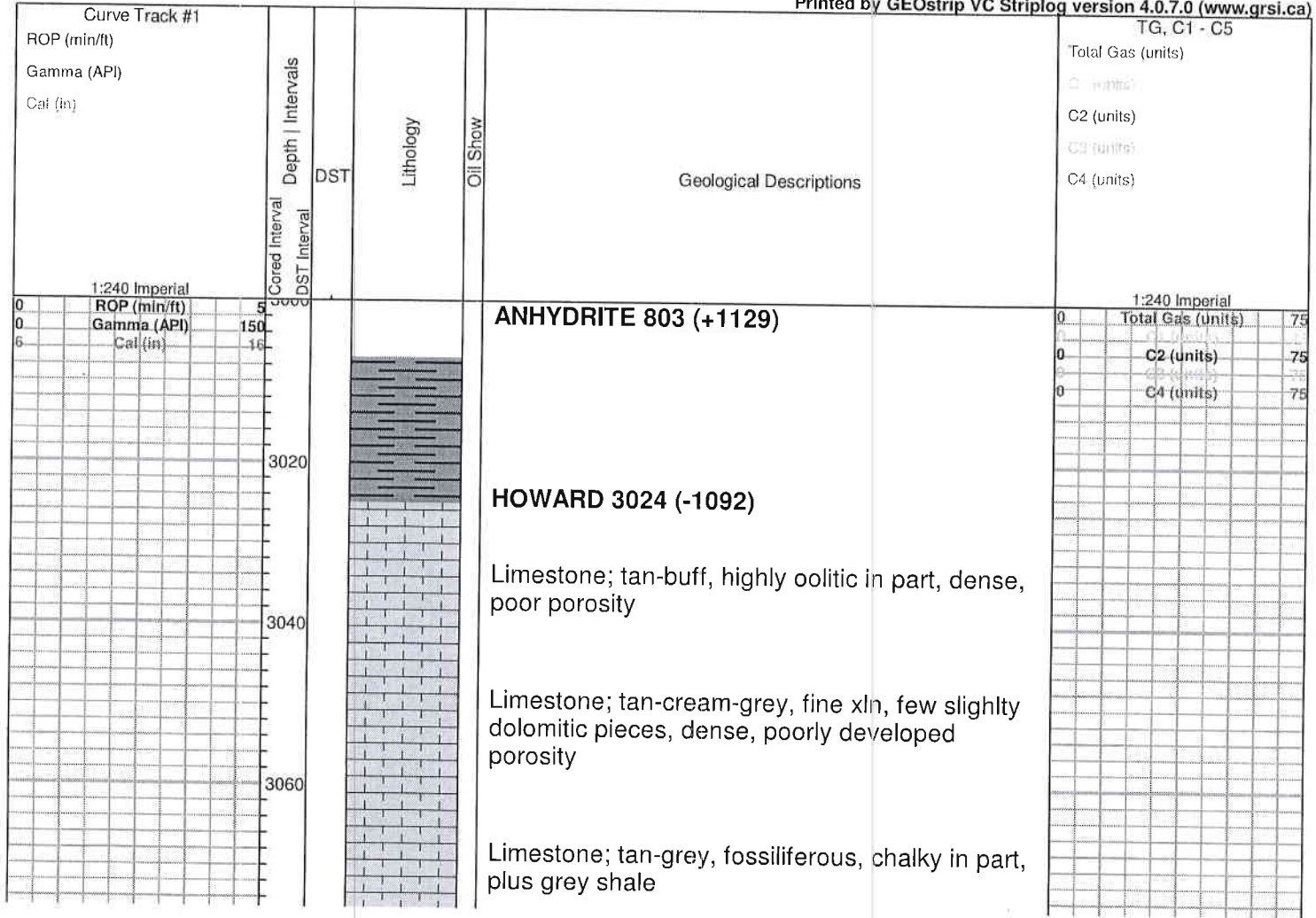
ACCESSORIES

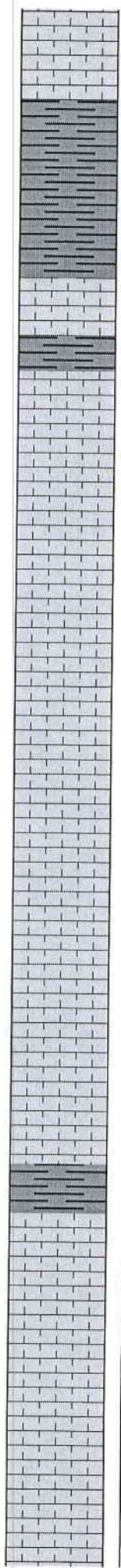
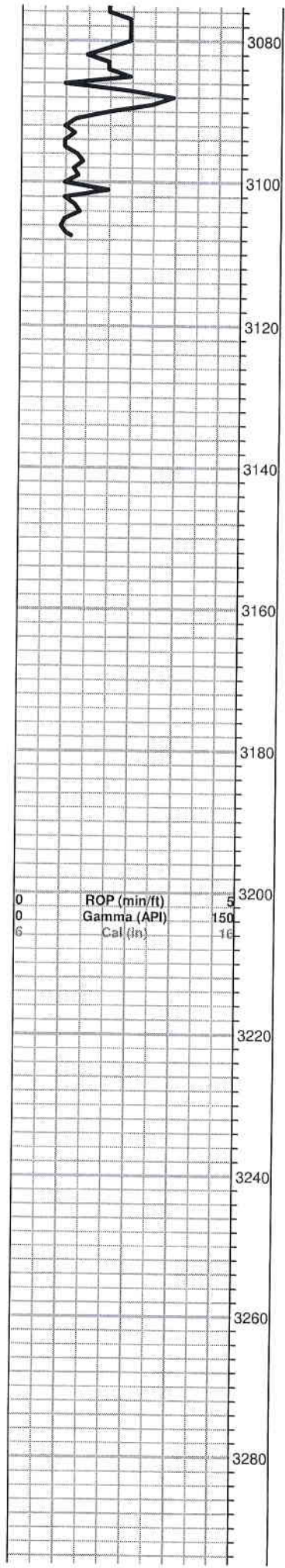
MINERAL
 Chert, tripolitic
 Chert White

OTHER SYMBOLS

DST
 DST Int
 DST all
 Core
 tail pipe

Printed by GEOstrip VC Striplog version 4.0.7.0 (www.grsi.ca)





Limestone; as above

Shale; grey-greish green, micaceous in part, few siltstone pieces, greysis green, micaceous

TOPEKA 3116 (-1184)

Limestone; cream-lt. grey, fine xln, fossiliferous in part, dense, poor visible porosity, no shows

Limestone; tan-cream, finexln, fossiliferous in part, dense, cherty, no shows

Limestone; cream-white, fine-medium xln, slightly dolomitic, few granular pieces, scattered porosity in part, no shows

Limestone; as above

Limestone; cream, fine xln, chalky, granular, fossiliferous, scattered porosity, no shows

Limestone; as above plus white chalk

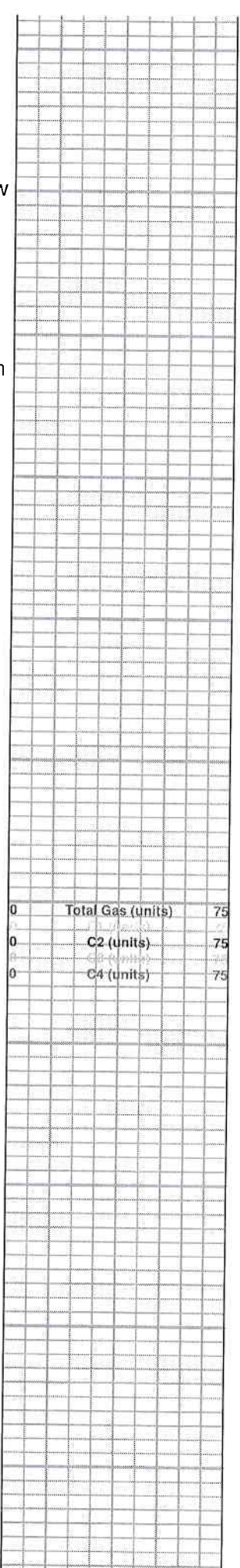
Limestone; cream-buff, fine-medium xln, dense, fossiliferous in part, slightly cherty, poorly developed porosity, plus grey-white Chert

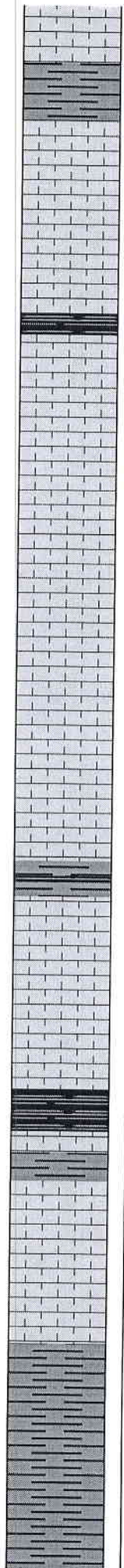
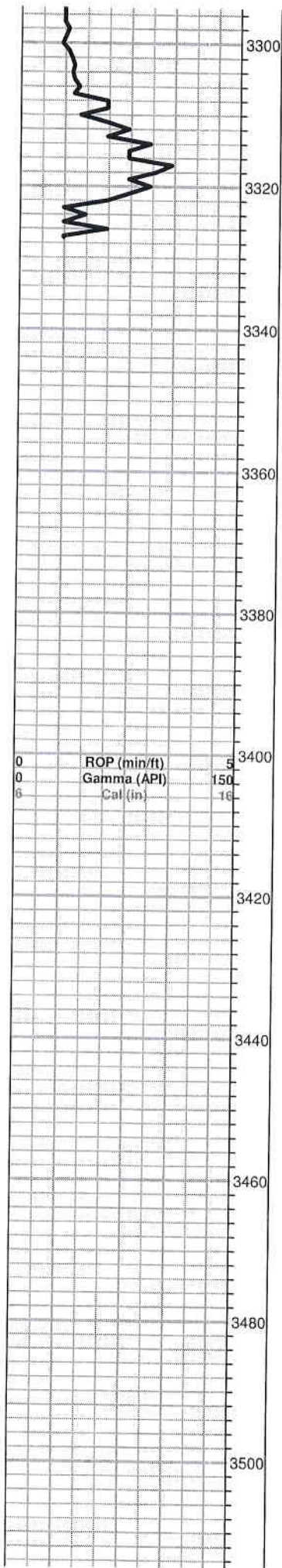
grey-black shale

Limestone, cream, fine xln, chalky, dense, few sparry calcite crystals, no shows

Limestone; cream-buff, fine xln, fossiliferous, cherty in part, few granular pieces, plus grey-white-opaque Chert

Limestone; cream, granular in part, fossiliferous,





dense

grey shale

Limestone; cream-lt. grey, fine xln, fossiliferous, mottled in part, few inter xln porosity, no shows

Black carboniferous shale

Limestone; grey-tan, fossiliferous, fine-medium xln, dense, poor visible porosity, no shows

Limestone; cream-tan, fossiliferous, dense, chalky in part, plus lt grey Chert

Limestone as above

Limestone; cream, fossiliferous, granular in part, few scattered porosity, no shows

black-grey-green shale

Limestone; cream, fine xln, chalky in part, fossiliferous, poor visible porosity, cherty in part, no shows

HEEBNER 3447 (-1515)

black carboniferous shale

TORONTO 3461 (-1529)

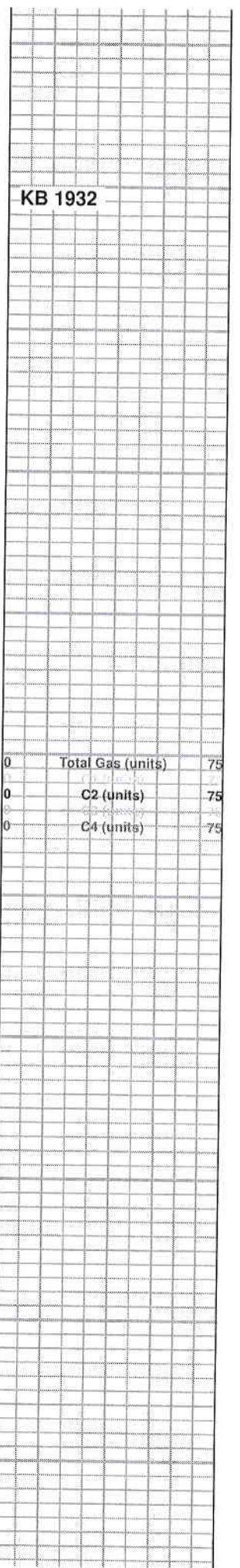
Limestone; cream-lt. grey, fine xln, sparry calcite in part, slightly dolomitic, few scattered porosity, no shows

plus white chalk

DOUGLAS 3482 (-1550)

grey-green-maroon-rusty brown, soft, Shale

Shale; as above, plus siltstone; grey-greyish green. micaceous in part



green, micaceous in part

as above

Sand; grey-greyish green, very fine grained, micaceous, no shows

Shale; grey-dark grey-greyish green, soft, silty in part, few micaceous pieces

Shale as above

BROWN LIME 3594 (-1662)

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

Shale; grey-green-maroon

LANSING 3617 (-1685)

Limestone; tan-cream, fine xln, fossiliferous, poor visible porosity, cherty in part, dense, no shows

Limestone; cream-lt. grey, fine xln, fossiliferous, dense, poor porosity, no shows

Limestone; cream, white, fine xln, chalky, sparry calcite inclusions, poorly developed porosity, when sample broke trace spotty SFO and faint-fair odor

Limestone; lt. grey-cream, granular in part, few scattered vuggy porosity "tight", questionable trace free oil, odor when sample broke

Limestone; buff-grey, fine-medium xln, dense, slightly cherty, poor visible porosity, slightly fossiliferous, questionable trace black staining, NSFO, no odor plus grey boney Chert

Limestone, cream, chalky in part, highly oolitic/fossiliferous, scattered porosity, lt. grey Chert, no shows

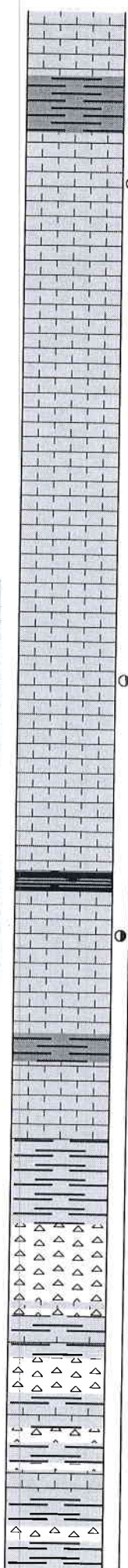
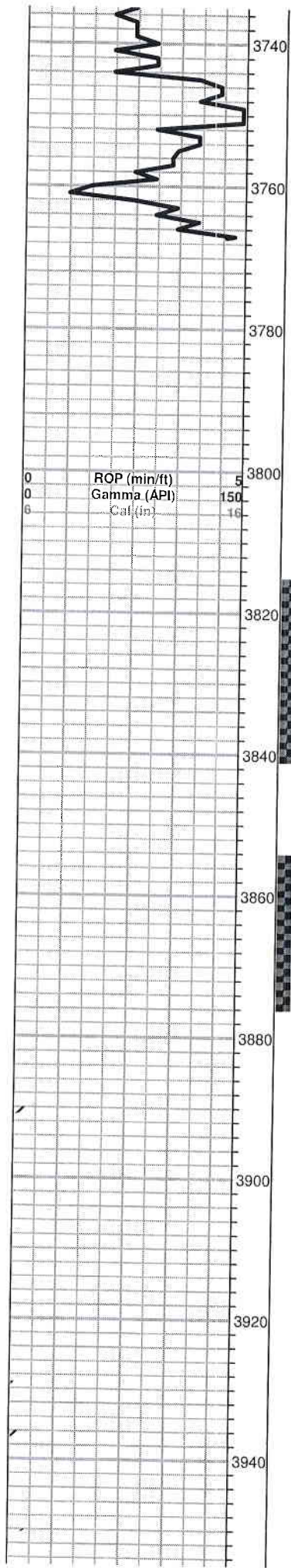
Limestone and Chert as above

Limestone; cream-grey, fine xln, slightly fossiliferous, chalky in part, dense, poorly developed porosity, plus grey-white tan honey

3520
3540
3560
3580
3600
3620
3640
3660
3680
3700
3720

ROP (min/ft) 5
Gamma (API) 150
Cal (in) 16

Total Gas (units) 75
C2 (units) 75
C4 (units) 75



developed porosity, plus grey-white-tan, boney Chert

grey-black shale

Limestone; cream, oomoldic, chalky, oolitic in part, good oomoldic porosity, grey stain, SFO, faint odor

Limestone; cream-lt. grey, fine xln, highly oolitic in part, dense, poor porosity, no shows

Limestone; as above no shows

Limestone; white-cream, highly oomoldic-oolitic, good oomoldic porosity (Barren)

Limestone; tan-cream, fine xln, oolitic, dense, no shows, plus amber-cream boney Chert

Limestone; cream, fine xln, poorly developed inter xln type porosity, brown stain, spotty SFO, fair odor when sample broke

Limestone; cream, fine xln, dense, cherty poor visible porosity

black shale

Limestone; cream, lt. grey, fine xln, fair inter xln-fossil cast porosity, brown stain, SFO, fair odor

black shale

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

BASE KANSAS CITY 3893 (-1961)

grey-green, Shale

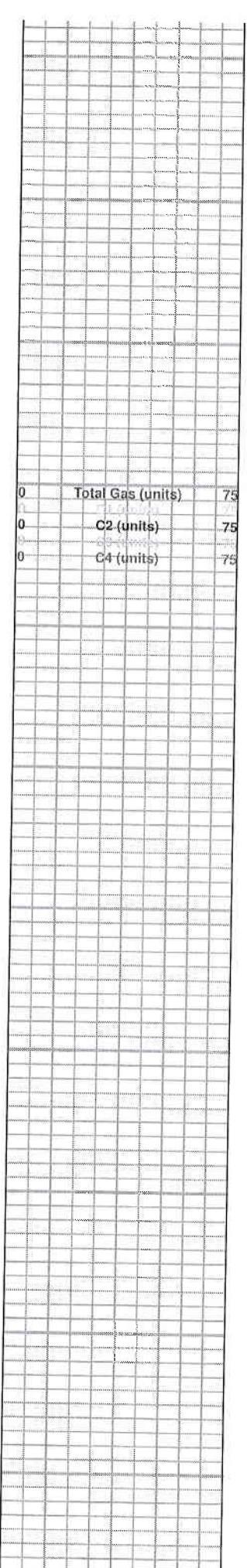
MISSISSIPPI 3910 (-1978)

Chert; white-lt. grey, boney, black, stain, questionable trace spotty free oil, no odor

Chert as above plus Shale; grey-green

Limestone; cream-lime green, chalky in part, slightly cherty, black-brown stain, plus orange-yellow Chert

as above plus Shale; variety of color



CONGLOMERATE 3963 (-2031)

Limestone; cream-white, chalky, FeS2 inclusions, Shale; grey-rusty brown, Chert; cream, weathered in part, brown stain, NSFO, no odor

KINDERHOOK 3986 (-2054)

Shale; grey-green-maroon, silty in part, few fissile pieces

Shale as above slightly dolomitic

VIOLA 4011 (-2079)

Chert; white, cream, boney, semi tripolitic, brown edge staining, NSFO, no odor

as above

Limestone; cream-white, fine xln, dense, cherty, plus white, boney Chert, few black-brown edge staining, NSFO, no odor

Limestone; cream, fine xln, dense, cherty, few dolomitic pieces, plus white-cream Chert, no shows

Limestone and Chert as above

Limestone; grey-cream, fine xln, dense, chalky in part, few scattered porosity, cherty, plus lt. grey-white-cream, boney Chert

Chert; white, tripolitic, boney, no shows

SIMPSON SHALE

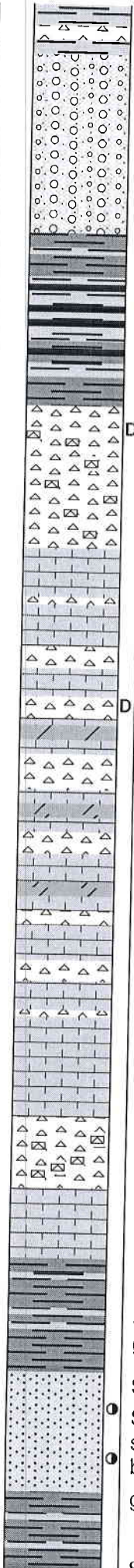
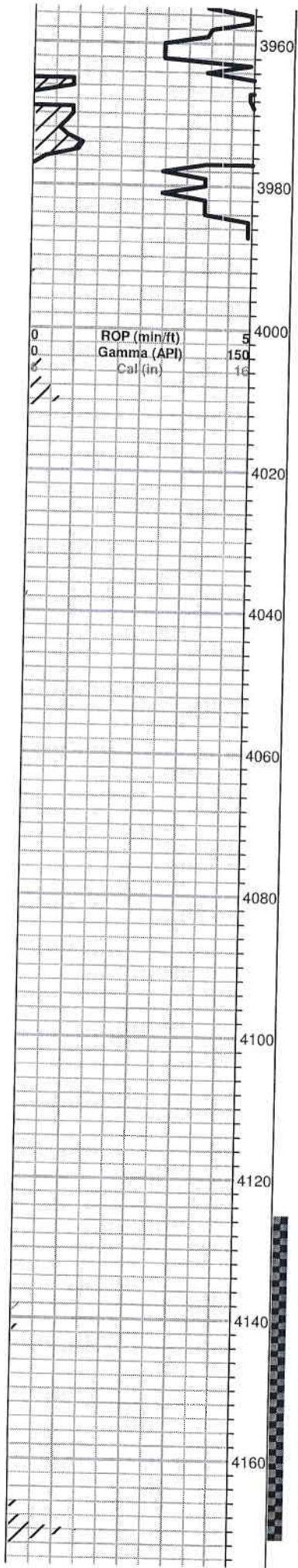
Shale; grey-green, soft, silty in part

Shale as above plus Sand; white, fine-medium grained, glauconitic in part, friable, no shows

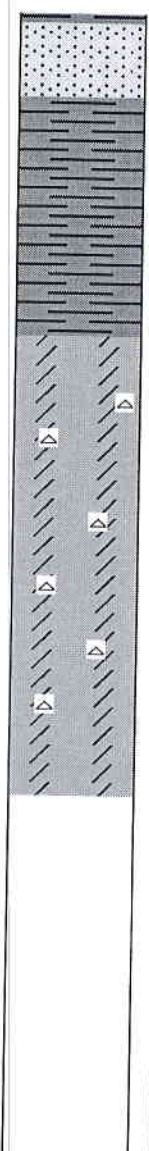
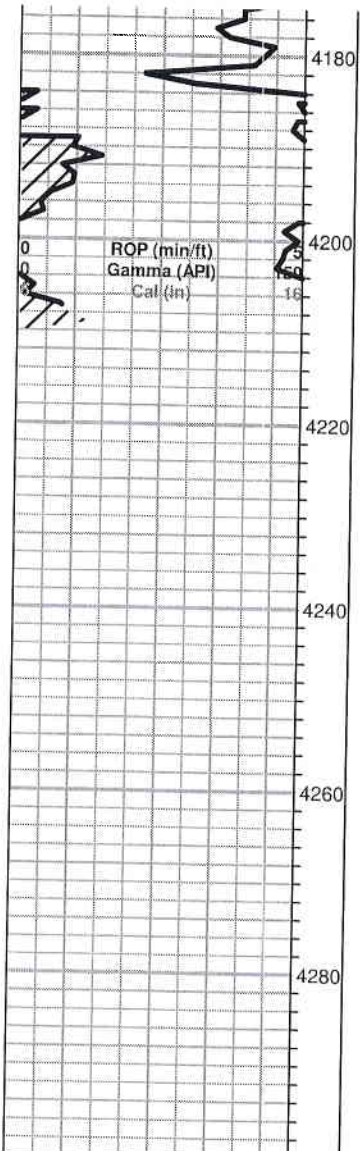
SIMPSON SAND

Sand; grey, clear, medium grained, sub rounded, sub angular, friable, good inter granular porosity, brown stain, SFO, fair-good odor
grey-dark grey shale

Sand; grey-clear, angular, dense, bitite



0	Total Gas (units)	75
0	C2 (units)	75
0	C4 (units)	75



Sand, grey-clear, angular, dense, brittle inclusions, shaley in part, poor-no porosity, no shows, few pieces Quartzite; grey

Sand and Quartzite as above

Shale; grey-dark grey

ARBUCKLE 4210 (-2278)

Dolomite; tan-cream, fine xln, dense, few scattered finely vuggy porosity, no shows plus tan, boney Chert

Dolomite; tan, sandy, highly oolitic in part, fair vuggy porosity, no shows

Dolomite; grey-buff, highly oolitic, dense, scattered vuggy porosity, no shows, plus grey - white Chert

ROTARY TOTAL DEPTH 4258

0	Total Gas (units)	75
0	C2 (units)	75
0	C4 (units)	75