

Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION  
OIL & GAS CONSERVATION DIVISION

Form ACO-1

January 2018

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

Gas  DH  EOR

OG  GSW

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 EOR  Conv. to SWD

Plug Back  Liner  Conv. to GSW  Conv. to Producer

Commingled Permit #: \_\_\_\_\_

Dual Completion Permit #: \_\_\_\_\_

SWD Permit #: \_\_\_\_\_

EOR Permit #: \_\_\_\_\_

GSW Permit #: \_\_\_\_\_

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: \_\_\_\_\_

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  Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

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

1. Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*
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)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____			
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>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	Mull Drilling Company, Inc.
Well Name	JOHNSON FARMS 1-18
Doc ID	1423957

All Electric Logs Run

CDL/CNL
DIL
MEL
SONIC



# QUALITY WELL SERVICE, INC.

6865

Federal Tax I.D. # 481187368

Home Office 30060 N. Hwy 281, Pratt, KS 67124

Mailing Address P.O. Box 468

Office 620-727-3410

Fax 620-672-3663

Rich's Cell 620-727-3409

Brady's Cell 620-727-6964

Date	Sec.	Twp.	Range	County	State	On Location	Finish
6-20-13	18	30S	7W	KINGMAN	Ks		
Lease Johnson Farms	Well No. H-13		Location				
Contractor PICKRELL DOLG. REG 10				Owner			
Type Job SURFACE	T.D. 213'			To Quality Well Service, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.			
Hole Size 12 1/4	Depth 215'		Charge To MULL Drilling Company Inc.				
Csg. 8 5/8 23	Depth		Street				
Tbg. Size	Depth		City				
Tool	Depth		State				
Cement Left in Csg. 25	Shoe Joint		The above was done to satisfaction and supervision of owner agent or contractor.				
Meas Line	Displace 12 Bbls		Cement Amount Ordered 230 x 60/40				
<b>EQUIPMENT</b>				2 1/2 GEL 3 1/2 CC 1/4' CF			
Pumptrk 8 No.	TS		Common 138				
Bulktrk 10 No.	MIKE		Poz. Mix 92				
Bulktrk No.			Gel. 4				
Pickup No.	TODD		Calcium 8				
<b>JOB SERVICES &amp; REMARKS</b>				Hulls			
Rat Hole				Salt			
Mouse Hole				Flowseal 57.5			
Centralizers				Kol-Seal			
Baskets				Mud CLR 48			
D/V or Port Collar				CFL-117 or CD110 CAF 38			
Run 6 H's 8 5/8 23" csg set @ 215'				Sand			
Csg on Bottom				Handling 242			
Hook up to csg				Mileage 45			
Break Circ				<b>FLOAT EQUIPMENT</b>			
Pump 10 bbls H2O				Guide Shoe			
Mix Pump 230 x 60/40 2 1/2 GEL 3 1/2 CC 1/4' CF				Centralizer			
				Baskets			
Disp 12 Bbls H2O				AFU Inserts			
Close Valve on csg 200" @ 30				Float Shoe			
Back p from circ then 23				Latch Down			
Circ out to P.T				LMV 45			
				SERVICE SUPERVISOR			
				Pumptrk Charge SURFACE			
Thank you				Mileage 90			
PLEASE CALL AGAIN				Tax			
TODD TS MIKE				Discount			
X Signature [Signature]				Total Charge			

# QUALITY WELL SERVICE, INC.

6871

Federal Tax I.D. # 481187368

Home Office 30060 N. Hwy 281, Pratt, KS 67124

Mailing Address P.O. Box 468

Office 620-727-3410

Fax 620-672-3663

Rich's Cell 620-727-3409

Brady's Cell 620-727-6964

Date	Sec.	Twp.	Range	County	State	On Location	Finish
6-27-13	13	30S	7W	Kingman	KS		
Lease Johnson Farm	Well No. 1-13	Location Raco St to 150 rd 2 1/2 W N. 1st					
Contractor PICKDELL Drilling #10	Owner						
Type Job 5 1/2 L.S	To Quality Well Service, Inc.						
Hole Size 7 7/8	T.D. 4302'	You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.					
Csg. 5 1/2 17"	Depth 4273.66	Charge To MULL Drilling Co. Inc.					
Tbg. Size	Depth	Street					
Tool	Depth	City State					
Cement Left in Csg.	Shoe Joint 33.22	The above was done to satisfaction and supervision of owner agent or contractor.					
Meas Line	Displace 98.33 Bbls	Cement Amount Ordered 130 SK Pro C					
<b>EQUIPMENT</b>							
Pumptrk 8 No.	TJ	2 1/2 GAL 10% SALT 5 1/2 SK KOSEAL					
Bulktrk 10 No.	MIKE	Common 130					
Bulktrk No.		Poz. Mix					
Pickup No.	TODD	Gel. 3					
<b>JOB SERVICES &amp; REMARKS</b>							
Rat Hole 30 SK	Hulls						
Mouse Hole	Salt 19						
Centralizers 1-2-3-4-5-6-7	Flowseal						
Baskets	Kol-Seal 900						
D/V or Port Collar	Mud CLR 48 500 gal						
Run 106 ft's 5 1/2 17" csg SET @ 4273.66	CFL-117 or CD110 CAF 38						
csg on Bottom Drop Ball	Sand CC-1						
BREAK CIRC W/ 12 1/2 HRS	Handling 292						
START PUMPING 5 Bbls @ 12 R/H @ 5 Bbls @ 12	Mileage 45						
Plug P-hole 30 SK	5 1/2 <b>FLOAT EQUIPMENT</b>						
START MIX PUMP 150 SK DOWN CSG	Guide Shoe 1 EA						
SHOT DOWN WHIP TAIL & RELEASE 5 1/2 TR PLUG	Centralizer 7 EA						
START DISP	Baskets						
50 Bbls out Ran out OF WATER	AFU Inserts 1 EA						
Get WATER BACK	Float Shoe TOP RUBBER PLUG 1 EA						
Disp total 9 1/2 Bbls	Latch Down						
PSI up 1200'	LMV 45						
Release! HELD	SERVICE SUPERVISOR						
	Pumptrk Charge LC						
	Mileage 90						
Thank you PLEASE CALL AGAIN	TODD MIKE						
Signature Tom Hays							
	Tax						
	Discount						
	Total Charge						

**OPERATOR**

Company: Mull Drilling  
 Address: 1700 N Waterfront PKWY BLDG 1200  
 Wichita, KS 67206

Contact Geologist: Rusty Mourning  
 Contact Phone Nbr: 316-264-6366  
 Well Name: Johnson Farms 1-18  
 Location: Sec.18 -T30S - R7W  
 API: 15-095-22323-00-00  
 Pool: Spivey-Grabs-Basil  
 State: Kansas

Field: Spivey-Grabs-Basil  
 Country: USA



Scale 1:240 Imperial

Well Name:	Johnson Farms 1-18	
Surface Location:	Sec.18 -T30S - R7W	
Bottom Location:		
API:	15-095-22323-00-00	
License Number:		
Spud Date:	6/20/2018	Time: 12:15 AM
Region:	Kingman	
Drilling Completed:	6/26/2018	Time: 8:11 AM
Surface Coordinates:	1560' FNL & 990' FEL	
Bottom Hole Coordinates:		
Ground Elevation:	1471.00ft	
K.B. Elevation:	1478.00ft	
Logged Interval:	2900.00ft	To: 0.00ft
Total Depth:	4300.00ft	
Formation:	Mississippi	
Drilling Fluid Type:	Chemical/Fresh Water Gel	

**SURFACE CO-ORDINATES**

Well Type: Vertical  
 Longitude:  
 Latitude:  
 N/S Co-ord: 1560' FNL  
 E/W Co-ord: 990' FEL

**LOGGED BY**

# WALKER

**GEO CONSULTING**

Company: Walker Geo Consulting  
 Address: 209 Lioba Dr.  
 Andover, KS 67002

Phone Nbr: 316-371-0249  
 Logged By: Geologist

Name: Logan Walker

**CONTRACTOR**

Contractor: Pickrell Drilling Company, Inc.  
 Rig #: 10  
 Rig Type: mud rotary  
 Spud Date: 6/20/2018  
 TD Date: 6/26/2018  
 Rig Release:

Time: 12:15 AM  
 Time: 8:11 AM  
 Time:

### ELEVATIONS

K.B. Elevation: 1478.00ft  
 K.B. to Ground: 7.00ft  
 Ground Elevation: 1471.00ft

### NOTES

No DST's were performed on this well.

The Samples from this well were saved and were delivered to the Mull Drilling office located in Wichita, Kansas.

Respectfully submitted by,  
Logan Walker

## Mull Drilling Company, Inc. daily drilling report

DATE	7:00 AM DEPTH	REMARKS
06/23/2018		Geologist Logan Walker on location @ 1340 hrs, 2904 ft, displaced mud @3100 ft, jetted at @3110' 3115' 3120', drilling ahead Heebner
06/24/2017	3445	Drilling ahead Lansing, Stark
06/25/2018	3982	Drilling ahead Base KC, Cherokee, Mississippian, jetted water off the mud pits to reserve pit due to heavy rain @3917', TOH for bit trip @4192', TIH
06/26/2018	4280	TIH, Drilling ahead to RTD, RTD @4300' 0811 hrs, TOH for logging, Loggers onsite 1105 hrs, Logged TD @4302', Loggers offsite 1753 hrs, geologist offsite hrs

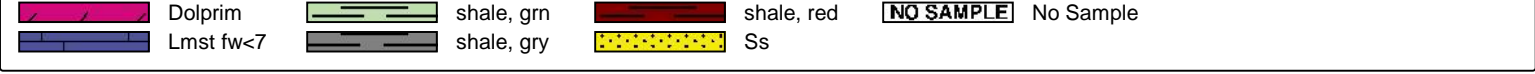
## Mull Drilling Company, Inc. well comparison sheet

DRILLING WELL					COMPARISON WELL			
Johnson Farms 1-8 1650' FNL & 990' FEL Sec 18-T30S-R07W					T Jaden "C" #3 1980' FNL & 660' FWL Sec 18-T30S-R07W			
1478 KB					1482 KB		Structural Relationship	
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log
Heebner	3124	-1646	3126	-1648	3128	-1646	0	-2
Lansing	3329	-1851	3336	-1858	3348	-1866	15	8
Stark	3756	-2278	3777	-2299	3776	-2294	16	-5
Base KC	3862	-2384	3871	-2393	3882	-2400	16	7
Cherokee	4003	-2525	4024	-2546	4022	-2540	15	-6
Mississppian	4132	-2654	4132	-2654	4145	-2663	9	9
Total Depth	4300	-2822	4302	-2824	4400	-2918	96	94

### ROCK TYPES

Cht    Lmst fw7>    Carbon Sh    Sltst





### ACCESSORIES

#### MINERAL

- ▲ Chert, dark
- ∩ Glauconite
- P Pyrite
- Silty
- △ Chert White

#### FOSSIL

- Bioclastic or Fragmenta
- Crinoids
- Gastropod
- Oolite

#### STRINGER

- ∩ Chert
- Sandstone

#### TEXTURE

- ∩ Chalky

### OTHER SYMBOLS

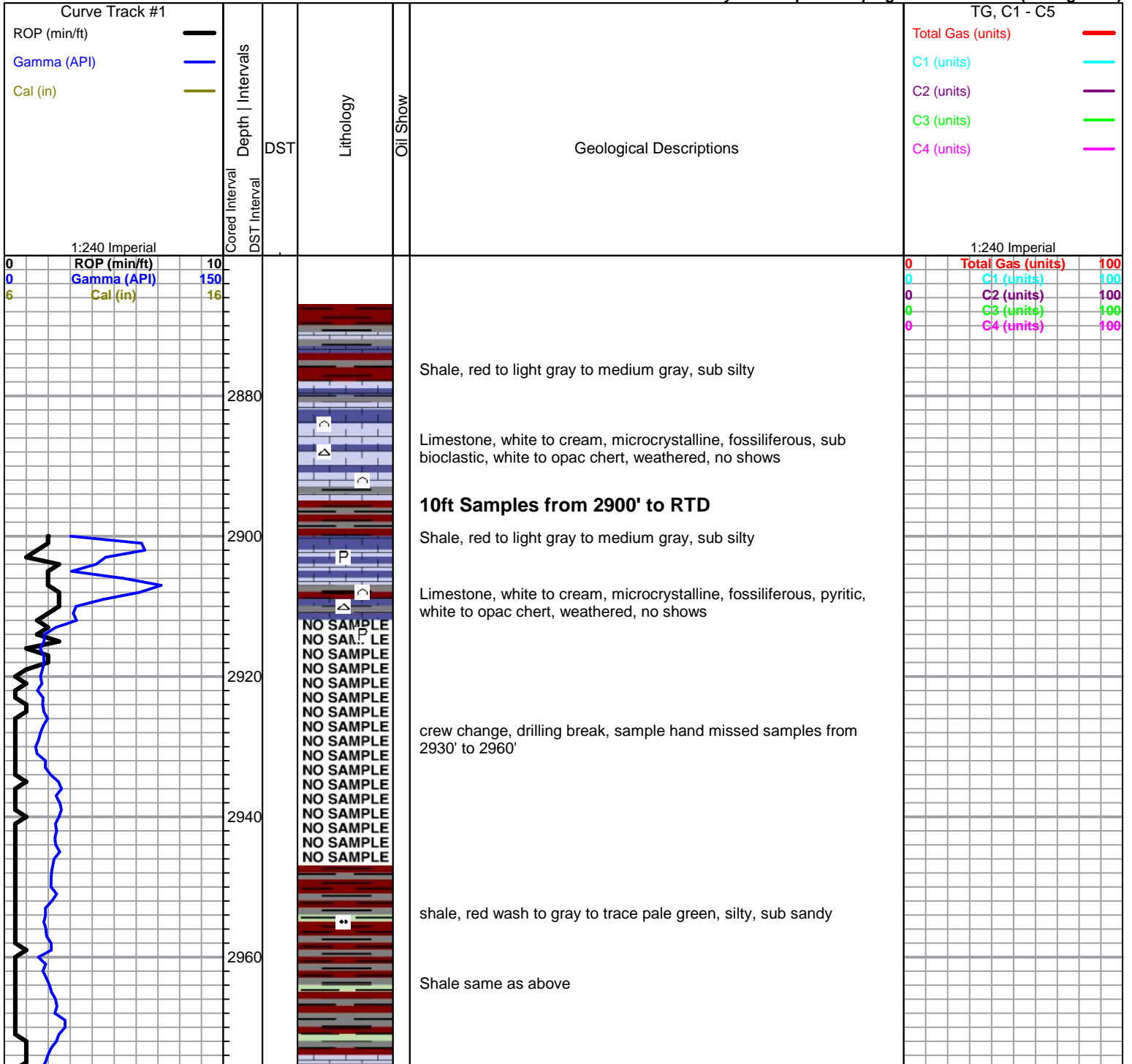
#### Oil Show

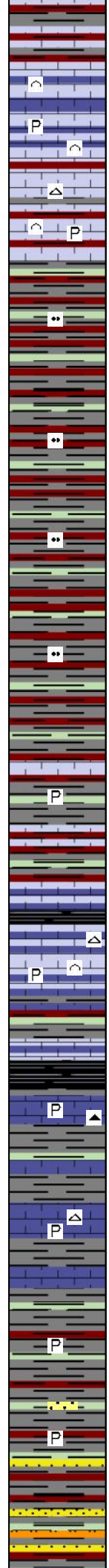
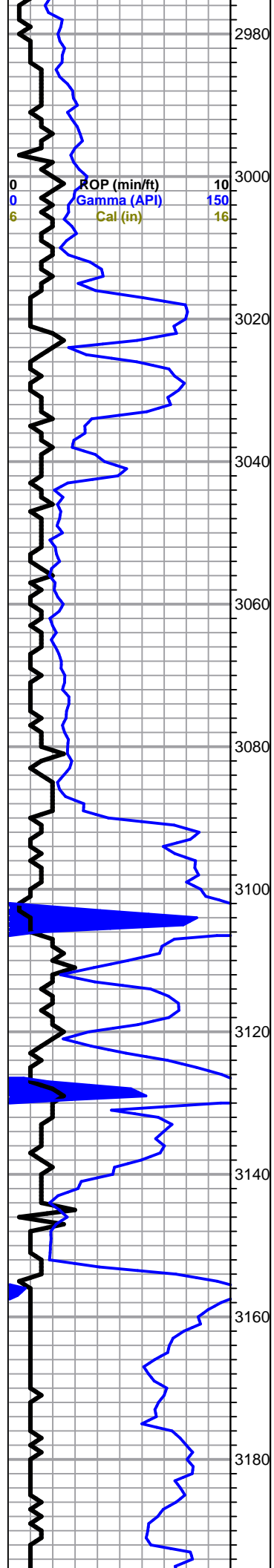
- Good Show
- Fair Show
- Poor Show
- Spotted or Trace
- Questionable Stn
- D Dead Oil Stn
- Fluorescence
- ✱ Gas

#### DST

- DST Int
- DST alt
- Core
- tail pipe

Printed by GEOstrip VC Striplog version 4.0.8.15 (www.grsi.ca)





Limestone, white to cream, microcrystalline, bioclastic, fossiliferous, white to sub opac pink chert, soft to dense, no shows

Limestone, white to sub cream, microcrystalline, bioclastic, fossiliferous, pyritic, opac chert, soft to dense, no shows

Limestone, white to sub cream, microcrystalline, bioclastic, fossiliferous, sub pyritic, white to opac pink chert, soft to dense, no shows

shale, light gray to medium gray to red to trace pale green, silty, soft to dense

shale, gray to dark gray to red to trace pale green, silty, angular, layered soft to dense

shale same as above

shale, gray to dark gray to red to trace pale green, silty, angular, layered, pyritic, soft to dense

shale, gray to dark gray to red to trace pale green, silty, pyritic, soft to dense, sub gummy

shale, gray to dark gray to red to trace pale green, silty, pyritic, soft to dense, sub gummy

Limestone, white to cream, microcrystalline, bioclastic, fossiliferous, white to opac pink to opac yellow chert, surface etching, soft to dense, no shows

**Heebner 3124' -1646 Log Top 3126' -1648**  
Shale, black carbonaceous

Limestone, tan to brown, microcrystalline, fossiliferous, brown to opac chert, pyritic, dense, no shows

Limestone, cream, microcrystalline, fossiliferous, white chert, pyritic, dense, trace chalky, no shows

Shale, gray to sub red and pale green, silty to sandy, sub pyritic

Shale, gray to sub red and pale green, silty to sandy, sub pyritic, sub gummy

Sandstone, clear to cloudy, fine grain, sub rounded to sub angular, well cemented, well sorted, siltstone, shale gray to sub red, sub gummy

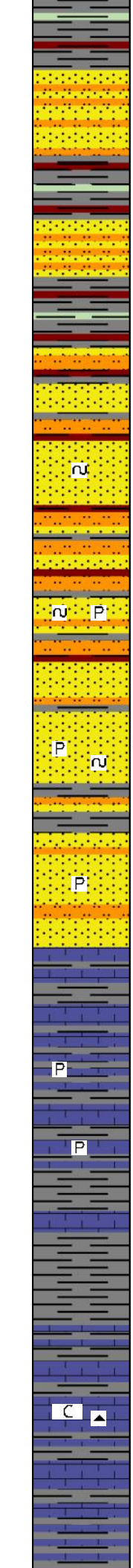
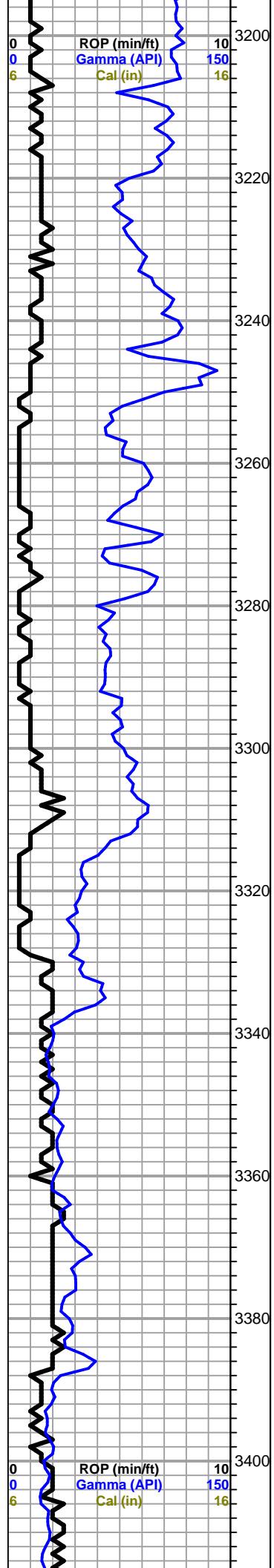
0	Total Gas (units)	100
0	C1 (units)	100
0	C2 (units)	100
0	C3 (units)	100
0	C4 (units)	100

Mudding up @3100'

Jet @3110'

Jet @3115'

Jet @3120'



Shale, gray to dark gray to sub red and pale green, silty to sandy, sub gummy

Sandstone, clear to cloudy, fine grain, sub rounded to sub angular, well cemented, well sorted, siltstone, shale gray to sub red, sub gummy

Shale, gray to dark gray to sub red and pale green, silty to sandy, sub gummy

Sandstone, clear to cloudy, fine grain, sub rounded to sub angular, well cemented, well sorted, siltstone, shale gray to sub red to trace pale green, gummy

Sandstone, clear to cloudy, fine grain, sub rounded to sub angular, well cemented, well sorted, siltstone, trace glauconite, trace pyritic, trace dead staining, no shows, shale gray to sub red to trace pale green, gummy

Sandstone, clear to cloudy, fine grain, sub rounded to sub angular, well cemented, well sorted, siltstone, glauconite, pyritic, dead staining, no shows, shale gray to sub red to trace pale green, gummy

Sandstone, clear to cloudy, fine grain, sub rounded to sub angular, well cemented, well sorted, siltstone, glauconite, pyritic, dead staining, no shows, shale gray to sub red to trace pale green, gummy

Sandstone, clear to cloudy, fine grain, rounded to sub angular, well cemented, well sorted, siltstone, pyritic, shale gray to sub red to trace pale green, gummy

**Lansing 3329' -1851 Log Top 3336' -1858**

Limestone, cream, microcrystalline, fossiliferous, soft to dense, surface etching, no shows

Limestone, cream, microcrystalline, fossiliferous, soft to dense, pyritic, surface etching, no shows

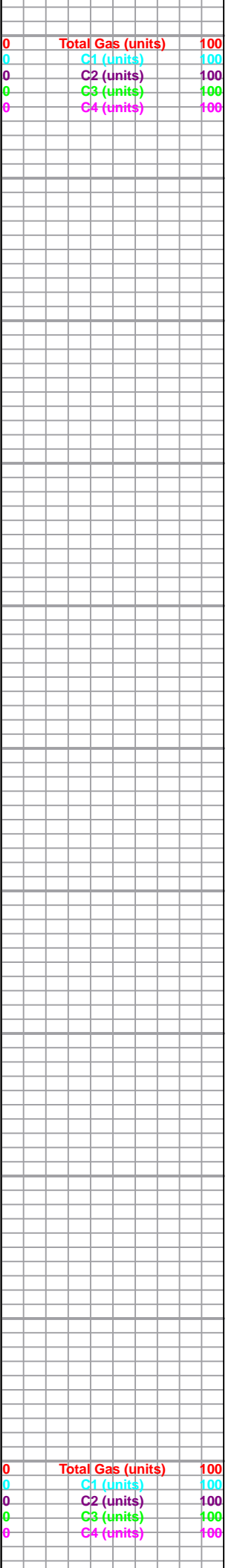
Limestone, cream, microcrystalline, fossiliferous, soft to dense, pyritic, cream angular chert, surface etching, no shows

Shale, gray to dark gray to red to trace pale green, sub soft to dense, sub silty

Limestone, cream to tan, microcrystalline, fossiliferous, soft to dense, brown angular chert, sub chalky, no shows

Limestone, same as above

Shale, gray to dark gray to red to trace pale green, sub soft to dense, sub silty, sub gummy



3420  
3440  
3460  
3480  
3500  
3520  
3540  
3560  
3580  
3600  
3620



Limestone, cream to tan, microcrystalline, fossiliferous, soft to dense, brown angular chert, sub chalky, no shows

Shale, gray to dark gray to red to trace pale green, sub soft to dense, sub silty

Limestone, cream to tan, microcrystalline, fossiliferous, soft to dense, brown angular chert, crinoid, pyritic, sub chalky, no shows

Shale, gray to dark gray to trace red, sub soft to dense

Limestone, cream to tan, microcrystalline, fossiliferous, firm to dense, brown angular chert, sub pyritic, no shows

Shale, gray to dark gray to trace red, sub soft to dense

Limestone, cream to tan, microcrystalline, fossiliferous, firm to dense, brown angular chert, no shows

Shale, gray to dark gray to trace red, sub soft to dense

Limestone, cream to tan, microcrystalline, fossiliferous, firm to dense, brown angular chert, crinoids, no shows

Shale, gray to dark gray to trace red, sub soft to dense

Limestone, cream, microcrystalline, fossiliferous, firm to dense, opac angular chert, pyritic, no shows

Limestone, cream to tan, microcrystalline, fossiliferous, firm to dense, sub oolitic, gastropod, opac orange chert, no shows

Shale, gray to dark gray to trace red, firm to dense, sub silty

Limestone, cream to tan, microcrystalline, fossiliferous, firm to dense, sub chalky, opac chert, no shows

Limestone, cream, microcrystalline, fossiliferous, firm to dense, weathered, surface etching, no shows

Limestone, cream, microcrystalline, fossiliferous, firm to dense, weathered, surface etching, opac chert, no shows

Shale, gray to dark gray to trace red, firm to dense, sub silty

Limestone, cream to tan, microcrystalline, fossiliferous, sub bioclastic, firm to dense, sub pyritic, no shows

Shale, gray to dark gray to trace red, soft to dense, sub silty

Limestone, cream to tan, microcrystalline, fossiliferous, firm to dense, sub chalky, no shows

Limestone, cream to tan to light gray, microcrystalline, fossiliferous, soft to dense, sub chalky, surface etching, no shows

Shale, gray to dark gray to trace red, soft to dense, sub silty

Limestone, tan to light gray, microcrystalline, fossiliferous, soft to dense, crinoid, no shows

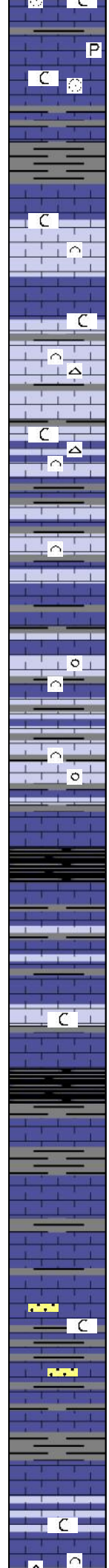
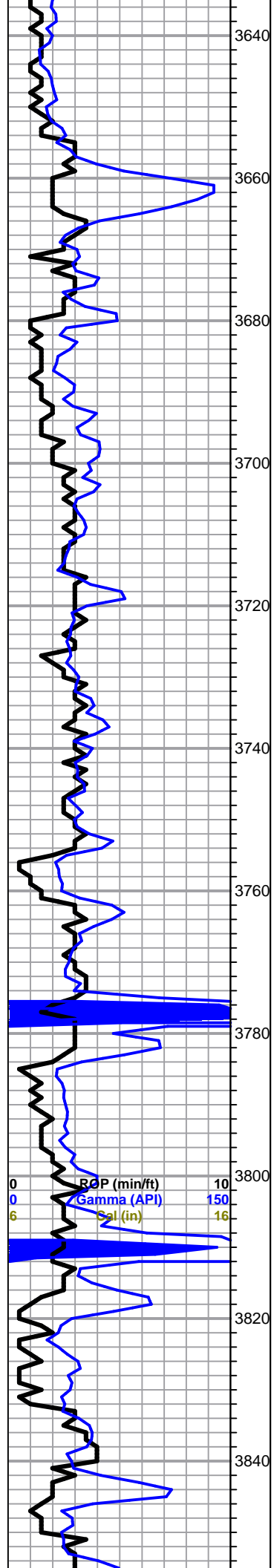
Limestone, tan to light gray, microcrystalline, fossiliferous, soft to

replaced a spring  
in the mud pump  
@3447'

Mud-Co Mud chk  
@ 3472 ft.  
0845 hrs- 6/23/18  
Vis: 49 Wt: 9.1  
PV 14 YP 15  
WL 9.2  
Cake -/32,  
pH 9.2  
CHL 6000 ppm  
Ca 80 ppm  
Sol 6.1 LCM TRC  
DMC \$1,730.69  
CMC \$7,484.79

ROP (mi/ft) 10  
Gamma (API) 150  
Cat (in) 16

0	Total Gas (units)	100
0	C1 (units)	100
0	C2 (units)	100
0	C3 (units)	100
0	C4 (units)	100



Limestone, tan to light gray, microcrystalline, fossiliferous, soft to dense, crinoid, pyritic, sub chalky, no shows

Limestone, cream to tan, microcrystalline, fossiliferous, soft to dense, crinoid, pyritic, surface etching, pin hole vug, sub chalky, no shows

Shale, gray to dark gray, to trace red, soft to dense

Limestone, white to cream, microcrystalline, fossiliferous, bioclastic, soft to dense, weathered, surface etching, sub chalky, no shows

Limestone, white to cream, microcrystalline, fossiliferous, bioclastic, soft, weathered, surface etching, white chert, sub chalky, no shows

Shale, gray to dark gray, to trace red, soft to dense

Limestone, white to cream, microcrystalline, fossiliferous, bioclastic, soft to dense, weathered, surface etching, white chert, sub chalky, no shows

Limestone, white to cream, microcrystalline, fossiliferous, bioclastic, soft to dense, weathered, surface etching, pin hole vugs, no shows

Shale, gray to dark gray, to trace red, soft to dense

Limestone, white to cream, microcrystalline, fossiliferous, bioclastic, soft to dense, weathered, surface etching, pin hole vugs, sub oolitic, no shows

Limestone, white to cream, microcrystalline, fossiliferous, bioclastic, soft to dense, surface etching, pin hole vugs, sub oolitic, no shows

Shale, gray to dark gray, to trace red, soft to dense

**Stark 3756' -2278 Log Top 3777 -2299**

Shale, black carbonaceous

Limestone, white to cream, microcrystalline, fossiliferous, soft to dense, sub pyritic, no shows

Limestone, cream, microcrystalline, fossiliferous, soft to dense, sub chalky, no shows

Shale, black carbonaceous

Shale, gray to dark gray, soft to dense

Limestone, white to cream, microcrystalline, fossiliferous, soft to dense, surface etching, no shows

Limestone, cream, microcrystalline, fossiliferous, soft to dense, opac orange chert, sub chalky, no shows

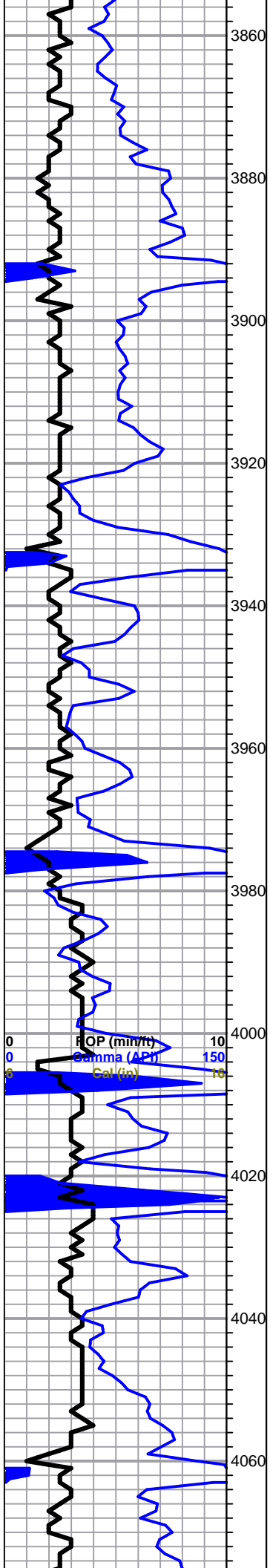
sandstone stringer, clear, large grain, rounded, no cementation

Sale, gray to dark gray, soft to dense, sub gummy

Limestone, cream, microcrystalline, fossiliferous, sub bioclastic, soft to dense, weathered, surface etching, sub chalky, no shows

Adjust brakes @3700'

0	Total Gas (units)	100
0	C1 (units)	100
0	C2 (units)	100
0	C3 (units)	100
0	C4 (units)	100



**Base KC 3862 -2384 Log Top 3871 -2393**

Limestone, cream, microcrystalline, fossiliferous, sub bioclatic, soft to dense, weathered, surface etching, trace white chert, sub chalky, no shows

Shale, gray to dark gray, soft to dense, silty, pyritic

shale, black carbonaceous

Limestone, cream, microcrystalline, fossiliferous, sub bioclatic, soft to dense, weathered, surface etching, sub chalky, no shows

Shale, gray to dark gray, soft to dense, silty, pyritic, sub gummy

sandstone stringer, clear, large grain, rounded, no cementation

Limestone, white to cream, microcrystalline, fossiliferous, sub bioclatic, soft to dense, weathered, surface etching, pin hole vugs, no shows

shale, black carbonaceous

Limestone, white to cream, microcrystalline, fossiliferous, sub bioclatic, soft to dense, weathered, surface etching, pin hole vugs, no shows

Shale gray, soft to dense, pyritic, sub gummy

Limestone, white to cream, microcrystalline, fossiliferous, sub bioclatic, soft to dense, weathered, surface etching, pin hole vugs, oolitic, sub chalky, no shows

shale, black carbonaceous

Limestone, white to cream, microcrystalline, fossiliferous, soft to dense, weathered, surface etching, crinoid, brown opac charp chert sub chalky, no shows

Shale, gray to dark gray, soft to dense, pyritic,

Limestone, cream to tan, microcrystalline, fossiliferous, soft to dense, pin hole vugs, oolitic, fleeting to no odor, a gas bubble on break, poor fluorescence, poor to questionable staining, no free oil

shale, black carbonaceous

Shale, gray to dark gray, soft to dense

Limestone, cream to tan, microcrystalline, fossiliferous, sub pyritic, surface etching, soft to dense, light brown chert, sub chalky, no shows

**Cherokee 4003 -2525 Log Top 4024 -2546**

shale, black carbonaceous

Limestone, cream to tan, microcrystalline, fossiliferous, pyritic, surface etching, soft to dense, no shows

Shale, gray to dark gray, soft to dense

Limestone, white, microcrystalline, fossiliferous, sub bioclastic, surface etching, in hole vugs, poor fluorescence, white opac sharp chert, sub chalky, no shows

Limestone, white, microcrystalline, fossiliferous, sub bioclastic, soft to dense, surface etching, poor to fair fluorescence, pyritic, chalky, fairly tight porosity, poor to fair gas bubbles on break, questionable dead stain on break, no free oil

Limestone, cream to tan to brown, microcrystalline, fossiliferous, dense, surface etching, weathered, poor to fair fluorescence, pyritic, tight porosity, poor to small gas bubbles on break, no free oil

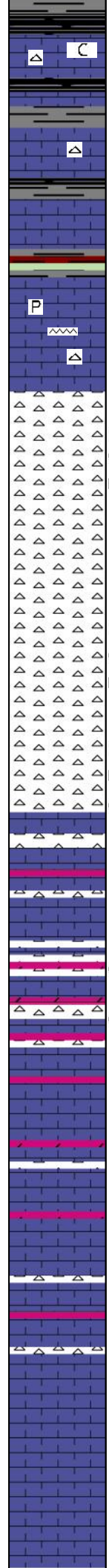
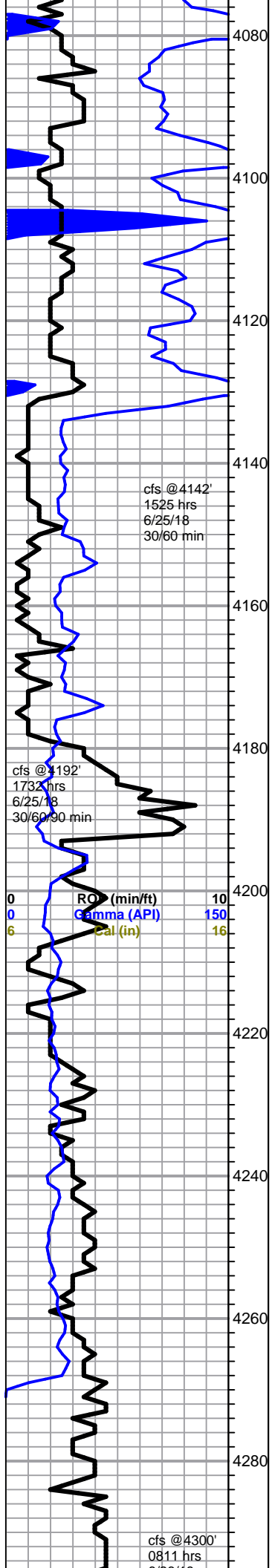
Shale, black carbonaceous, gray to dark gray, soft to dense

Limestone, white to cream, microcrystalline, fossiliferous dense, crinoid, sub pyritic, no shows

drained water off mud pits to reserve pit due to heavy rain @3917'

Mud-Co Mud chk @ 3986 ft.  
0800 hrs. 6/25/18  
Vis. 51 Wt. 9.5  
PV 14 YP 15  
WL 11.2

0	Cal (in)	100
0	Free Gas (units)	100
0	pH	100
0	CHL (ppm)	100
0	Ca (ppm)	100
0	Sol. 8.1 LCM 1/2#	100
	DMC \$2,174.05	
	CMC \$9,658.84	



Shale, black carbonaceous, gray to dark gray, soft to dense

Limestone, white to cream, microcrystalline, fossiliferous dense, weathered sub rounded white chert sub chalky, no shows

Shale, black carbonaceous, gray to dark gray, soft to dense

Limestone, white to cream, microcrystalline, fossiliferous dense, white chert, no shows

Shale, black carbonaceous, gray to dark gray, soft to dense, gummy

Shale, gray to dark gray, trace of red to to pale green to purple, soft to dense, sub cubic pyritic

Limestone, white to cream, microcrystalline, fossiliferous dense, pyritic, white fresh chert, no shows

**Mississippian 4132 -2654 Log Top 4132 -2654**

4142'- Limestone same as above  
 30 min - chert, white, sharp, fresh, cemented dolomite fragments, good staining, fleeting odor, spoty free oil on break, gas bubbles on break, fair porosity, good cut, fair to good fluorescence  
 60 min - chert, white, sharp, fresh, good to great staining, good odor, free oil in tray, free oil on break, free gas bubbles, gas bubbles on break, good porosity, pin hole vugs, great cut, good fluorescence

chert, white, sharp, dense, fresh, cemented dolomite fragments, good to great staining, dark staining, good odor, spotty free oil in tray, bleeding oil, free oil on break, free gas bubbles bleeding, gas bubbles on break, tight to good visible porosity, pin hole vugs, great cut, good fluorescence

4192' 30/60 min. - chert, white, sub rounded to sharp, dense, fresh, cemented dolomite fragments, good to great staining, good odor, free oil in tray, bleeding oil, free oil on break, free gas bubbles bleeding, tripoolitic, tight to good visible porosity, pin hole vugs, great cut, good fluorescence

Limestone, white, microcrystalline, fossiliferous, surface etching, fine crystalline, dolomitic, cherty, white sharp chert, poor pososity, intercrystalline, dense, sub chalky, no shows

Limestone, white, microcrystalline, fossiliferous, surface etching, fine crystalline, dolomitic, cherty, white fresh sharp chert, poor visible pososity, weathered, intercrystalline, dense, chalky, free oil in tray, fleeting to good odor, spotty bleeding oil, free on break.

Limestone same as above

Limestone, white, microcrystalline, fossiliferous, surface etching, fine crystalline, dolomitic, cherty, white sharp chert, pin hole vug pososity, weathered, intercrystalline, dense, chalky, no shows

Limestone, white, microcrystalline, fossiliferous, surface etching, fine crystalline, dolomitic, cherty, white sharp chert, pin hole vug pososity, weathered, intercrystalline, dense, chalky, no shows

Limestone, white, microcrystalline, fossiliferous, surface etching, fine crystalline, dolomitic, cherty, white sharp chert, weathered, intercrystalline, dense, chalky, no shows

Limestone, white, microcrystalline, fossiliferous, surface etching, fine crystalline, cherty, white sharp chert, weathered, intercrystalline, dense, chalky, no shows

4300' 30/60 min - Limestone, white, microcrystalline, fossiliferous, pyritic surface etching, fine crystalline, cherty, white fresh chert,

**Bit trip @ 4192'**  
 Survey 1 degree  
 0.79" long on pipe  
 strap

0	Total Gas (units)	100
0	C1 (units)	100
0	C2 (units)	100
0	C3 (units)	100
0	C4 (units)	100

Mud-Co Mud chk  
 @ 4300 ft.  
 0845 hrs. 6/26/18  
 Vis. 55 Wt. 9.6  
 PV 15 YP 20  
 WL 10.4  
 Cake 1/32,  
 pH 9.5  
 CHL 6000 ppm  
 Ca 80 ppm  
 Sol 8.9 LCM 1#  
 DMC \$1,602.47  
 CMC \$11,261.31

6/26/18  
30/60 min

4300



pyritic, surface etching, fine crystalline, cherty, white fresh sharp  
chert, weathered, intercrystalline, dense, chalky, no shows

RTD 4300' 0811 hrs 6/26/18  
Logged TD @ 4302'