



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1118956
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: _____



1118956

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
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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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Form	ACO1 - Well Completion
Operator	Falcon Exploration, Inc.
Well Name	JOAN WARD 2-32(SW)
Doc ID	1118956

All Electric Logs Run

DIL
MEL
BHCS
CNL/CDL

Conservation Division
Finney State Office Building
130 S. Market, Rm. 2078
Wichita, KS 67202-3802



Phone: 316-337-6200
Fax: 316-337-6211
<http://kcc.ks.gov/>

Mark Sievers, Chairman
Thomas E. Wright, Commissioner
Shari Feist Albrecht, Commissioner

Sam Brownback, Governor

February 19, 2013

CYNDE WOLF
Falcon Exploration, Inc.
125 N MARKET STE 1252
WICHITA, KS 67202-1719

Re: ACO1
API 15-069-20411-00-00
JOAN WARD 2-32(SW)
SW/4 Sec.32-28S-30W
Gray County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,
CYNDE WOLF

ALLIED CEMENTING CO., INC.

Federal Tax I.D.# 48-0727860

REMIT TO P.O. BOX 31
RUSSELL, KANSAS 67665

SERVICE POINT: General 27199

DATE <u>11-15-12</u>	SEC <u>32</u>	TWP <u>28S</u>	RANGE <u>30W</u>	CALLED OUT	ON LOCATION	JOB START <u>9:30 AM</u>	JOB FINISH <u>5:30 PM</u>
LEASE <u>Wheat</u>	WELL # <u>2-32</u>	LOCATION <u>Cpland Ki N + E to Loc</u>	COUNTY <u>OSAWA</u>	STATE <u>KS</u>			
OLD OR NEW (Circle one)							

CONTRACTOR STERLING #5

TYPE OF JOB PTA

HOLE SIZE 7 1/2" T.D.

CASING SIZE 8 1/2" 24" DEPTH 1876'

TUBING SIZE DEPTH

DRILL PIPE 4 1/4 x 14 DEPTH 1880

TOOL DEPTH

PRES. MAX 100 PSI MINIMUM

MEAS. LINE SHOE JOINT N/A

CEMENT LEFT IN CSG. N/A

PERFS. N/A

DISPLACEMENT 23.4 / 7.4

EQUIPMENT

OWNER SAME

CEMENT AMOUNT ORDERED 170 SK

60/40 4 1/2" GEL

COMMON	<u>102 A</u>	@	<u>1725</u>	<u>1825.00</u>
POZMIX	<u>68</u>	@	<u>935</u>	<u>635.00</u>
GEL	<u>6 SK</u>	@	<u>2344</u>	<u>140.40</u>
CHLORIDE		@		
ASC		@		
HANDLING	<u>176</u>	@	<u>248</u>	<u>436.48</u>
MILEAGE	<u>7.41 x</u>	@	<u>2.60</u>	<u>989.30</u>
	<u>380.3</u>			
	<u>230.5</u>			
TOTAL				<u>4627.24</u>

PUMP TRUCK CEMENTER R. Ryan 1

529/530 HELPER A. Tapia 3

BULK TRUCK # 457/528 DRIVER Edui Coimbra 3

BULK TRUCK # 528 DRIVER

REMARKS:

Thank You!

CHARGE TO: FALCON Exp

STREET _____

CITY _____ STATE _____ ZIP _____

SERVICE

DEPTH OF JOB	<u>1880'</u>		
PUMP TRUCK CHARGE			<u>2249.24</u>
EXTRA FOOTAGE	@		
MILEAGE <u>50 mi</u>	@	<u>72</u>	<u>355.00</u>
MANIFOLD	@		
<u>CTUEL 50 mi</u>	@	<u>2150</u>	<u>220.00</u>
TOTAL			<u>2854.24</u>

PLUG & FLOAT EQUIPMENT

<u>N/A</u>	@		
	@		
	@		
	@		
	@		
TOTAL			

To Allied Cementing Co., Inc.
You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read & understand the "TERMS AND CONDITIONS" listed on the reverse side.

TAX 512.76

TOTAL CHARGE 6882.62

DISCOUNT 2064.79 IF PAID IN 30 DAYS

\$4817.83 Net

ALAN LOFTIS
PRINTED NAME

SIGNATURE Alan E. Loftis

ALLIED OIL & GAS SERVICES, LLC

KB
053308

Federal Tax I.D.# 20-5975804

REMIT TO P.O. BOX 31
RUSSELL, KANSAS 67665

SERVICE POINT:

Liberal KS

DATE <u>11-8-12</u>	SEC <u>32</u>	TWP <u>28S</u>	RANGE <u>30 W</u>	CALLED OUT	ON LOCATION	JOB START <u>11:30</u>	JOB FINISH <u>12:30</u>
LEASE <u>Jerry Hill</u> WELLS# <u>2-32</u> LOCATION <u>Vec Copeland KS</u>						COUNTY <u>Gray</u>	STATE <u>KS</u>
OLD OR NEW (Circle one)						1.01	7.45

CONTRACTOR Sterling Drilling Company OWNER _____
 TYPE OF JOB Surface
 HOLE SIZE 12 1/4 T.D. 1876
 CASING SIZE 8 5/8 DEPTH 1871
 TUBING SIZE _____ DEPTH _____
 DRILL PIPE _____ DEPTH _____
 TOOL _____ DEPTH _____
 PRES. MAX 1,500 MINIMUM _____
 MEAS. LINE _____ SHOE JOINT 42.15
 CEMENT LEFT IN CSG. 2.68 barrels
 PERFS. _____
 DISPLACEMENT 116.5 barrels

CEMENT
 AMOUNT ORDERED 450SK Class A 3% OCL
2% Sodium Metasilicate 2% gypsum 1/4 # #10
150 class C 2% OCL 1/4 # #10 seal

COMMON <u>450 class A</u>	@ <u>17.90</u>	<u>8,055</u>
POZMIX _____	@ _____	_____
GEL _____	@ _____	_____
CHLORIDE <u>19sk</u>	@ <u>64.00</u>	<u>1,216</u>
ASC _____	@ _____	_____
<u>Class C 150sk</u>	@ <u>24.40</u>	<u>3,660</u>
<u>GPSL-Gyp Seal 9sk</u>	@ <u>37.60</u>	<u>338.40</u>
<u>Sodium Metasilicate 89lb #</u>	@ <u>3.30</u>	<u>2,791.80</u>
<u>Flo seal 113 #</u>	@ <u>2.97</u>	<u>335.61</u>
_____	@ _____	_____
_____	@ _____	_____
_____	@ _____	_____
<u>Orange 1196</u>	@ <u>2.60</u>	<u>3109.60</u>
HANDLING <u>660</u>	@ <u>2.48</u>	<u>1,637.79</u>
MILEAGE _____	@ _____	_____

EQUIPMENT
 PUMP TRUCK CEMENTER Lenny Baccia, Kennelburn
 # 530-484 HELPER Vicent Torrez
 BULK TRUCK _____
 # 457-527 DRIVER Ed Coronado
 BULK TRUCK _____
 # _____ DRIVER _____

REMARKS:
Thank You

TOTAL 21,144.20

CHARGE TO: Falcon Exploration
 STREET _____
 CITY _____ STATE _____ ZIP _____

SERVICE
 DEPTH OF JOB 1001-2000
 PUMP TRUCK CHARGE 2,213.75
 EXTRA FOOTAGE _____ @ _____
 MILEAGE 40 @ 4.40 176.00
 MANIFOLD _____ @ _____
heavy Vehicle 40 @ 7.70 308.00
 _____ @ _____

TOTAL 2,972.75

To: Allied Oil & Gas Services, LLC.
 You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PLUG & FLOAT EQUIPMENT

<u>Guid Shoe 1</u>	@ <u>460.98</u>	<u>460.98</u>
<u>AFU Float Valve 1</u>	@ <u>446.94</u>	<u>446.94</u>
<u>Centralizer 3</u>	@ <u>74.88</u>	<u>224.64</u>
<u>Cement Basket 3</u>	@ <u>559.26</u>	<u>1,677.78</u>
<u>Top Rubber Plug 1</u>	@ <u>131.04</u>	<u>131.04</u>

TOTAL 2,941.38

PRINTED NAME Lead Kuk W
 SIGNATURE _____

SALES TAX (If Any) 1,440.69
 TOTAL CHARGES \$27,058.33
 DISCOUNT 8117.50 IF PAID IN 30 DAYS
\$18,940.83

OPERATOR

Company: Falcon Exploration, Inc.
 Address: 125 N. Market
 Suite 1252
 Wichita, KS 67202
 Contact Geologist: Brian Fisher
 Contact Phone Nbr: 316-262-1378
 Well Name: Joan Ward #2-32 (SW)
 Location: Sec. 32 - T28S - R30W
 Pool: API: 15-069-20411-0000
 State: Kansas Field: Wildcat
 Country: USA

Scale 1:240 Imperial

Well Name: Joan Ward #2-32 (SW)
 Surface Location: Sec. 32 - T28S - R30W
 Bottom Location:
 API: 15-069-20411-0000
 License Number: 5316
 Spud Date: 11/6/2012 Time: 00:00
 Region: Gray County
 Drilling Completed: 11/14/2012 Time: 04:25
 Surface Coordinates: 2310' FSL & 2030' FWL
 Bottom Hole Coordinates:
 Ground Elevation: 2806.00ft
 K.B. Elevation: 2819.00ft
 Logged Interval: 3380.00ft To: 5500.00ft
 Total Depth: 5500.00ft
 Formation: Morrow - Mississippian
 Drilling Fluid Type: Chemical/Fresh Water Gel

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: Latitude:
 N/S Co-ord: 2310' FSL
 E/W Co-ord: 2030' FWL

LOGGED BY

Keith Reavis
Consulting Geologist

Company: Keith Reavis, Inc.
 Address: 3420 22nd Street
 Great Bend, KS 67530
 Phone Nbr: 620-617-4091
 Logged By: KLG #136 Name: Keith Reavis

CONTRACTOR

Contractor: Sterling Drilling Company
 Rig #: 5
 Rig Type: mud rotary Time: 00:00
 Spud Date: 11/6/2012 Time: 04:25
 TD Date: 11/14/2012
 Rig Release: Time:

ELEVATIONS

K.B. Elevation: 2819.00ft Ground Elevation: 2806.00ft
 K.B. to Ground: 13.00ft

NOTES

No potentially productive zones encountered warranted drill stem testing during the drilling of this well. Electrical log analysis confirmed that the Joan Ward #2-32 would be non-commercial, therefore it was decided that this well be plugged and abandoned as a dry hole.

A Tooke Daq gas detection system operated by Sterling Drilling Company was employed on this well. The ROP and gas data were imported into this mudlog. The gamma ray and caliper was imported from the electrical log data. Sample tops were generally within accepted ranges of log tops and therefore, the curves were not shifted to provide exact matches.

The samples were saved and will be available for review at the Kansas Geological Survey Well Sample Library located in Wichita, KS.

Respectfully submitted,
 Keith Reavis

Falcon Exploration, Inc
daily drilling report

DATE	7:00 AM DEPTH	REMARKS
11/10/2012	3327	Geologist Keith Reavis on location @ 0600 hrs, 3259 ft., drilling ahead Stotler, Tarkio, Topeka,
11/11/2012	4205	Drilling ahead, Topeka, Lecompton, Heebner, Douglas, plugged bit at 4205' TOH w/bit, resume drilling Douglas, LKC, Stark, Marmaton
11/12/2012	5082	drilling ahead, Marmaton, Pawnee, Cherokee, bit trip, out with PDC, in with button bit @ 5082 ft., resume drilling
11/13/2012	5269	drilling ahead, Morrow, Mississippian, St. Gen, St. Louis
11/14/2012	5500	TD @ 0425 hrs, ctc, TOH for logs, conduct and complete electrical logging operations, geologist released @ 1810 hrs

Falcon Exploration, Inc.
well comparison sheet

DRILLING WELL					COMPARISON WELL			
Joan Ward #2-32					Joan Ward #1-32			
2310' FSL & 2030' FWL					1150' FSL & 130' FWL			
Sec 32-T28S-R30W					Sec 32-T28S-R30W			
2819 KB					2831 KB		Structural Relationship	
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log
Stotler	3531	-712	3530	-711	3546	-715	3	4
Tarkio	3600	-781	3598	-779	3614	-783	2	4
Topeka	3802	-983	3800	-981	3813	-982	-1	1
Heebner	4139	-1320	4138	-1319	4151	-1320	0	1
Douglas	4181	-1362	4177	-1358	4189	-1358	-4	0
Lansing	4244	-1425	4249	-1430	4261	-1430	5	0
Stark	4626	-1807	4624	-1805	4642	-1811	4	6
Marmaton	4762	-1943	4762	-1943	4780	-1949	6	6
Pawnee	4864	-2045	4861	-2042	4878	-2047	2	5
Cherokee	4907	-2088	4906	-2087	4922	-2091	3	4
Morrow	5140	-2321	5137	-2318	5152	-2321	0	3
Morrow Sand	np	np	np	np	np	np	np	np
Chester	5182	-2363	5179	-2360	5194	-2363	0	3
St. Gen	5288	-2469	5272	-2453	5290	-2459	-10	6
St. Louis por	5388	-2569	5390	-2571	5395	-2564	-5	-7
Total Depth	5500	-2681	5500	-2681	5498	-2667	-14	-14

ROCK TYPES

sdv lmst Lmst fw> shale, gry shale, red
 Lmst fw<7 shale, grn Carbon Sh

ACCESSORIES

MINERAL
 ▲ Chert, dark
 ▲ Dolomitic
 RU Glauconite
 P Pyrite
 * Sandy
 * Varicolored chert
 ▲ Chert White

FOSSIL
 ^ Bioclastic or Fragmental
 △ Brachiopod
 F Fossils < 20%
 φ Oolite
 ♀ Pellets
 ♀ Oomoldic

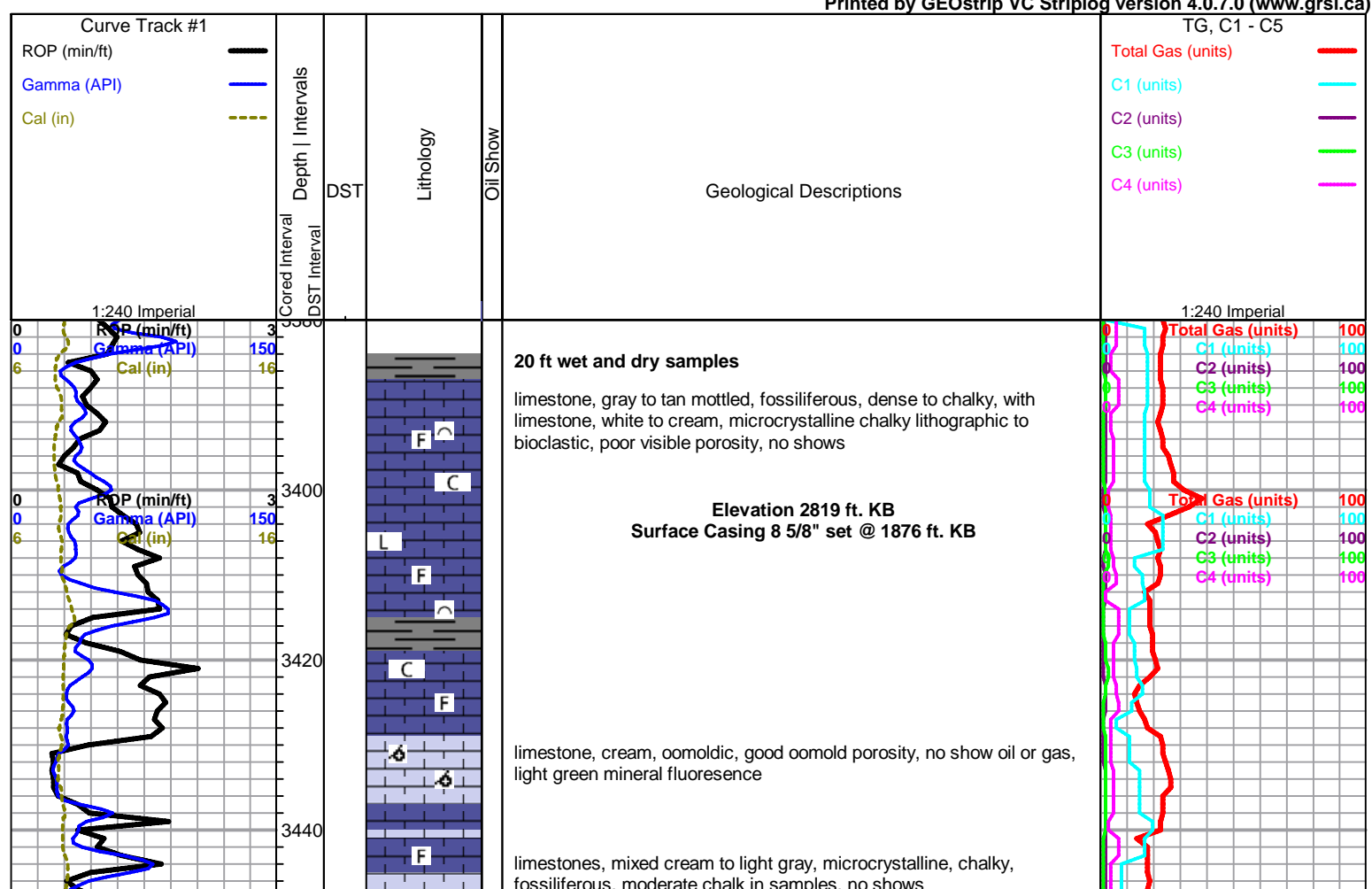
STRINGER
 ■ Dolomite
 ■ Limestone
 ■ Sandstone
 ■ Siltstone
 ■ Shale
 ■ green shale
 ■ red shale
 ■ carb shale

TEXTURE
 C Chalky
 L Lithogr

OTHER SYMBOLS

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

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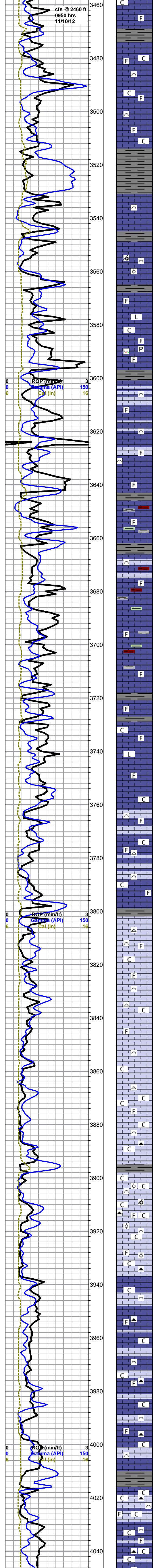


cfs @ 2460 ft
0950 hrs
11/10/12

ROP (min/ft)
Gamma (API)
Cal (in)

ROP (min/ft)
Gamma (API)
Cal (in)

ROP (min/ft)
Gamma (API)
Cal (in)



as above

limestone, light gray to white, microcrystalline, chalky, fossiliferous to grainy bioclastic, moderate chalk in samples, no shows

as above

Stotler 3531 -712

limestone, light gray to cream, bioclastic, chalky to dense, some scattered vuggy interclast porosity, with limestone, pale gray/green, dense arenaceous, no visible shows

as above, trace oolitic to oomoldic

limestone, mixed gray fossiliferous, gray/green cryptocrystalline arenaceous to lithographic, trace pyritic, reddish brown chalky limestone, trace or orange chert, red and green silty shales

Tarkio 3600 -781

limestone, light gray to cream and white, microcrystalline, bioclastic to fossiliferous, with limestone, pale green to gray-green, fossiliferous to arenaceous, dense, poor visible porosity, no shows

limestone, cream to light gray to white, grainy, fossiliferous, with limestone, pale green, grainy to sub-sucrosic, slightly fossiliferous, mixed shales, no shows, abundant red, green and red/green mottled shales, limey, silty

white to cream chalky fossiliferous to bioclastic, limestone as above, with abundant shales

grading to limestone, gray, microcrystalline, grainy, dense, fossiliferous to arenaceous, trace pyritic, abundant shales as above

limestone, gray/green, micro-cryptocrystalline, arenaceous, with limestone, white to light gray, cryptocrystalline, lithographic to fossiliferous, chalky, no shows

limestone, mixed white to cream and light gray, fossiliferous to bioclastic, trace oolitic, chalky in part, poor visible porosity, trace white chert, no shows

Topeka 3802 -983

limestone, white to cream, light gray, microcrystalline, bioclastic to fossiliferous, chalky, grainy in part, some pinpoint porosity, no shows, with fresh white chert, slightly fossiliferous

as above, some light tan bioclastic to fossiliferous, some grainy, cherts grading to more of frosted gray fossiliferous, increase chert

limestone, cream to gray and white, bioclastic, fossiliferous and oolitic, trace oomoldic, scattered porosity, no shows, abundant chalk, some light gray fossiliferous chert

limestone, mixed cream to gray and white, fossiliferous to bioclastic, chalky, with limestone, gray, shaly to cherty, abundant gray to light gray fossiliferous cherts, no show, moderate chalk

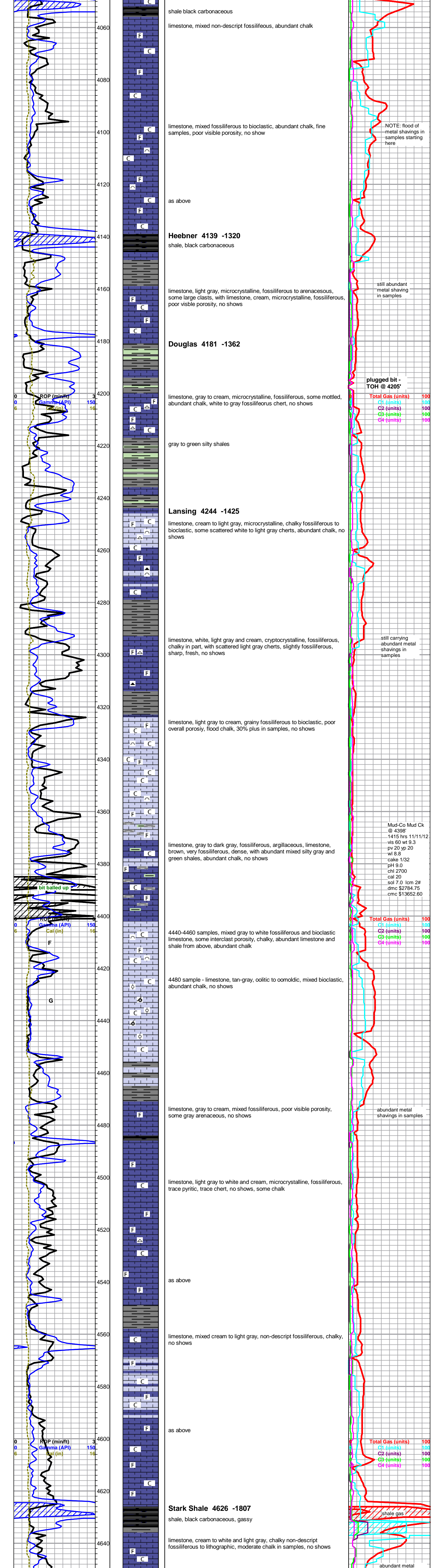
limestone, as above, decrease in chert, increase in chalk

Mud-Co Mud Ck
@ 3543'
1155 hrs 11/10/12
vis 68 wt 8.8
pv 23 yp 22
wl 8.8
cake 1/32
pH 9.0
chl 2700
cal 20
sol 3.4 lcm 2#
dmc \$2957.15
cmc \$10867.85

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

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

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



shale black carbonaceous

limestone, mixed non-descript fossiliferous, abundant chalk

limestone, mixed fossiliferous to bioclastic, abundant chalk, fine samples, poor visible porosity, no show

NOTE: flood of metal shavings in samples starting here

as above

Heebner 4139 -1320

shale, black carbonaceous

still abundant metal shaving in samples

limestone, light gray, microcrystalline, fossiliferous to arenaceous, some large clasts, with limestone, cream, microcrystalline, fossiliferous, poor visible porosity, no shows

Douglas 4181 -1362

limestone, gray to cream, microcrystalline, fossiliferous, some mottled, abundant chalk, white to gray fossiliferous chert, no shows

plugged bit - TOH @ 4205'

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

gray to green silty shales

Lansing 4244 -1425

limestone, cream to light gray, microcrystalline, chalky fossiliferous to bioclastic, some scattered white to light gray cherts, abundant chalk, no shows

limestone, white, light gray and cream, cryptocrystalline, fossiliferous, chalky in part, with scattered light gray cherts, slightly fossiliferous, sharp, fresh, no shows

still carrying abundant metal shavings in samples

limestone, light gray to cream, grainy fossiliferous to bioclastic, poor overall porosity, flood chalk, 30% plus in samples, no shows

limestone, gray to dark gray, fossiliferous, argillaceous, limestone, brown, very fossiliferous, dense, with abundant mixed silty gray and green shales, abundant chalk, no shows

Mud-Co Mud Ck @ 4398
1415 hrs 11/11/12
vis 60 wt 9.3
pv 20 yp 20
wl 8.8
cake 1/32
pH 9.0
chl 2700
cal 20
sol 7.0 lcm 2#
dmc \$2784.75
cmc \$13652.60

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

4440-4460 samples, mixed gray to white fossiliferous and bioclastic limestone, some interclast porosity, chalky, abundant limestone and shale from above, abundant chalk

4480 sample - limestone, tan-gray, oolitic to oomoldic, mixed bioclastic, abundant chalk, no shows

limestone, gray to cream, mixed fossiliferous, poor visible porosity, some gray arenaceous, no shows

abundant metal shavings in samples

limestone, light gray to white and cream, microcrystalline, fossiliferous, trace pyritic, trace chert, no shows, some chalk

as above

limestone, mixed cream to light gray, non-descript fossiliferous, chalky, no shows

as above

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

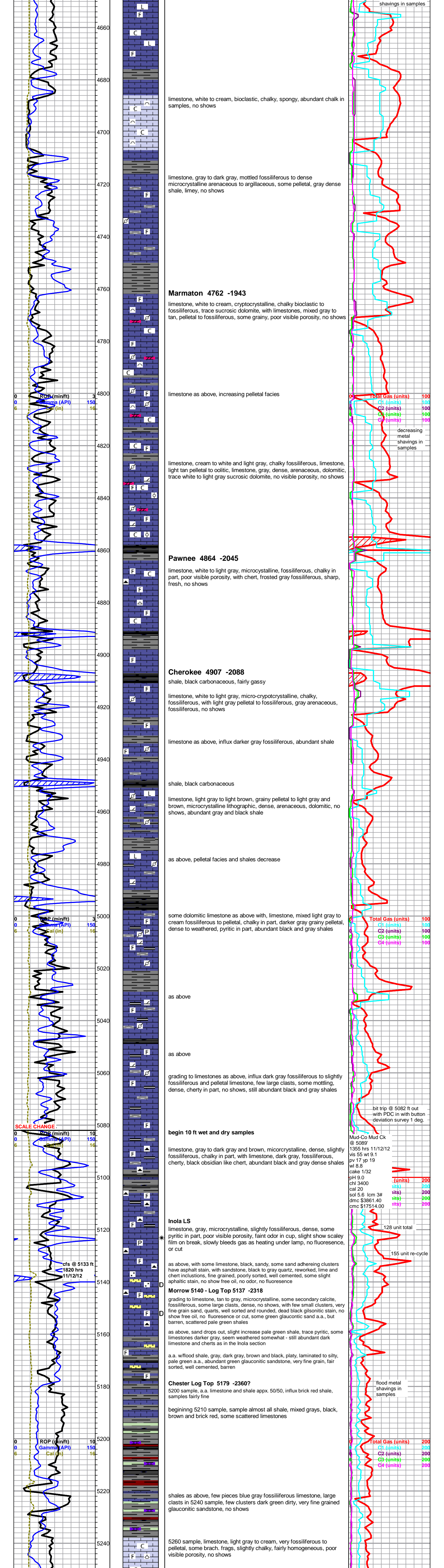
Stark Shale 4626 -1807

shale, black carbonaceous, gassy

shale gas

limestone, cream to white and light gray, chalky non-descript fossiliferous to lithographic, moderate chalk in samples, no shows

abundant metal



limestone, white to cream, bioclastic, chalky, spongy, abundant chalk in samples, no shows

limestone, gray to dark gray, mottled fossiliferous to dense microcrystalline arenaceous to argillaceous, some pelletal, gray dense shale, limey, no shows

Marmaton 4762 -1943

limestone, white to cream, cryptocrystalline, chalky bioclastic to fossiliferous, trace sucrosic dolomite, with limestones, mixed gray to tan, pelletal to fossiliferous, some grainy, poor visible porosity, no shows

limestone as above, increasing pelletal facies

limestone, cream to white and light gray, chalky fossiliferous, limestone, light tan pelletal to oolitic, limestone, gray, dense, arenaceous, dolomitic, trace white to light gray sucrosic dolomite, no visible porosity, no shows

Pawnee 4864 -2045

limestone, white to light gray, microcrystalline, fossiliferous, chalky in part, poor visible porosity, with chert, frosted gray fossiliferous, sharp, fresh, no shows

Cherokee 4907 -2088

shale, black carbonaceous, fairly gassy

limestone, white to light gray, micro-cryptocrystalline, chalky, fossiliferous, with light gray pelletal to fossiliferous, gray arenaceous, fossiliferous, no shows

limestone as above, influx darker gray fossiliferous, abundant shale

shale, black carbonaceous

limestone, light gray to light brown, grainy pelletal to light gray and brown, microcrystalline lithographic, dense, arenaceous, dolomitic, no shows, abundant gray and black shale

as above, pelletal facies and shales decrease

some dolomitic limestone as above with, limestone, mixed light gray to cream fossiliferous to pelletal, chalky in part, darker gray grainy pelletal, dense to weathered, pyritic in part, abundant black and gray shales

as above

as above

grading to limestones as above, influx dark gray fossiliferous to slightly fossiliferous and pelletal limestone, few large clasts, some mottling, dense, cherty in part, no shows, still abundant black and gray shales

begin 10 ft wet and dry samples

limestone, gray to dark gray and brown, microcrystalline, dense, slightly fossiliferous, chalky in part, with limestone, dark gray, fossiliferous, cherty, black obsidian like chert, abundant black and gray dense shales

Inola LS

limestone, gray, microcrystalline, slightly fossiliferous, dense, some pyritic in part, poor visible porosity, faint odor in cup, slight show scaly film on break, slowly bleeds gas as heating under lamp, no fluorescence, or cut

as above, with some limestone, black, sandy, some sand adhering clusters have asphalt stain, with sandstone, black to gray quartz, reworked, lime and chert inclusions, fine grained, poorly sorted, well cemented, some slight aphalitic stain, no show free oil, no odor, no fluorescence

Morrow 5140 - Log Top 5137 -2318

grading to limestone, tan to gray, microcrystalline, some secondary calcite, fossiliferous, some large clasts, dense, no shows, with few small clusters, very fine grain sand, quarts, well sorted and rounded, dead black gilsonitic stain, no show free oil, no fluorescence or cut, some green glauconitic sand a.a., but barren, scattered pale green shales

as above, sand drops out, slight increase pale green shale, trace pyritic, some limestones darker gray, seem weathered somewhat - still abundant dark limestone and cherts as in the Inola section

a.a. w/flood shale, abundant dark gray and black, platy, laminated to silty, pale green a.a., abundant green glauconitic sandstone, very fine grain, fair sorted, well cemented, barren

Chester Log Top 5179 -2360?

5200 sample, a.a. limestone and shale appx. 50/50, influx brick red shale, samples fairly fine

beginning 5210 sample, sample almost all shale, mixed grays, black, brown and brick red, some scattered limestones

shales as above, few pieces blue gray fossiliferous limestone, large clasts in 5240 sample, few clusters dark green dirty, very fine grained glauconitic sandstone, no shows

5260 sample, limestone, light gray to cream, very fossiliferous to pelletal, some brach. frags, slightly chalky, fairly homogeneous, poor visible porosity, no shows

shavings in samples

Total Gas (units) 100
C1 (units) 100
C2 (units) 100
C3 (units) 100
C4 (units) 100
decreasing metal shavings in samples

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

bit trip @ 5082 ft out with PDC in with button deviation survey 1 deg.
Mud-Co Mud Ck @ 5089' 1355 hrs 11/12/12 vis 55 wt 9.1 pv 17 yp 19 wl 8.8 cake 1/32 pH 9.0 chl 3400 (units) 200 cal 20 (its) 200 sol 5.6 lcm 3# (its) 200 dmc \$3861.40 (its) 200 cmc \$17514.00 (its) 200

128 unit total
155 unit re-cycle

flood metal shavings in samples
Total Gas (units) 200
C1 (units) 200
C2 (units) 200
C3 (units) 200
C4 (units) 200

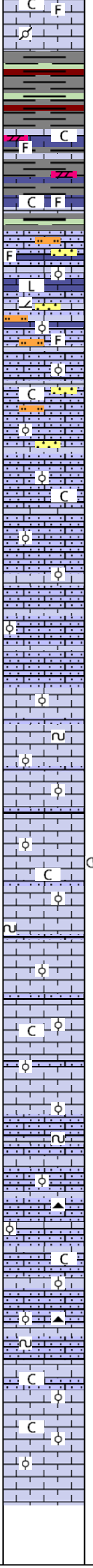
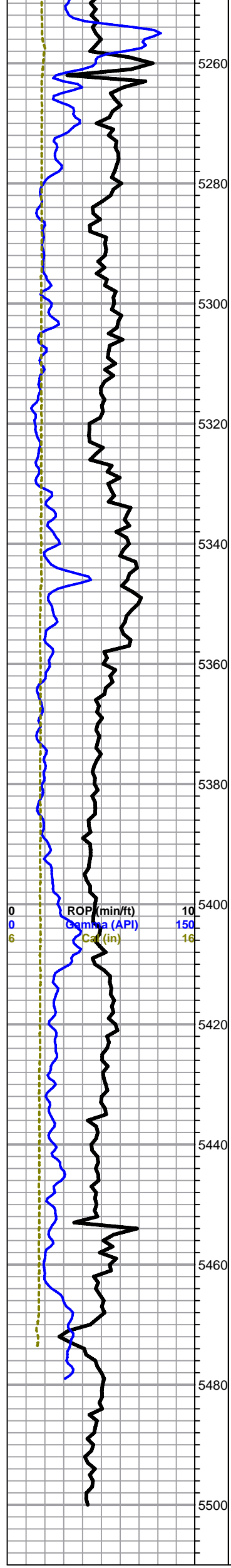
ROP (min/ft) 3
Gamma (API) 150
Cal (in) 16

ROP (min/ft) 3
Gamma (API) 150
Cal (in) 16

SCALE CHANGE
ROP (min/ft) 10
Gamma (API) 150
Cal (in) 16

cfs @ 5133 ft 1820 hrs 11/12/12

ROP (min/ft) 10
Gamma (API) 150
Cal (in) 16



grades back to shales, mixed as above, with limestone as above, no shows

limestone, gray to tan, microcrystalline, fossiliferous, some large clasts, chalky and weathered in part, with abundant shale as above, trace light gray dolomite, microcrystalline, sub-sucrosic, dense, no shows,

St Gen Log top 5272 -2453

St Gen. 5288 -2469

limestone, cream to light gray fossiliferous, oolitic and sub-oolitic, with some white to gray/green micro-oolitic sandy limestone, some lithographic tan and gray cryptocrystalline lithographic and sub-sucrosic dolomitic, sandstone/siltstone, pale green to white, very fine grain, well sorted and cemented, no shows

grades to limestone, white to light gray, fine chalky oolitic, with limestone, micro-oolitic, white to light gray to pale green, sandy, chalky, sandstone/siltstone a.a., some chalk, scattered pale green lithographic cryptocrystalline limestone, no shows, still abundant shales (sluff from above?)

as above, sand dropping out, decreasing shales, no shows

limestone, light gray to white, fine to medium oolitic, mature to flattened, poor visible porosity, trace glauconitic, chalky in part, sandy limestone as above, with some chalk in samples, no shows or fluorescence

St. Louis Por. 5388 -2569

limestone as above, some mature oolitic with slight inter-oolite porosity, spotty dark edge and inter-oolite stain, one piece with show heavy dark free oil on break, no odor and no fluorescence

limestone as above, in 5430 sample only 2 small pieces in 2 trays (from above?) with slight stain, no free oil, no odor

a.a., increase in sandy micro-oolitic facies, appx 50/50, trace orange chert, no shows

as above, no shows

limestone, cream to light gray, mixed mature to flattened oolitic, large oolites, chalky in part, poor visible porosity, trace sandy, barren

Rotary TD @ 5500 ft. 0425 hrs 11/14/12
Pioneer Wireline TD 5500 ft.
Complete Logging Operations @ 1530 hrs 11/14/12

Mud-Co Mud Ck @ 5307'
1040 hrs 11/13/12
vis 55 wt 9.2
wl 9.2
cake 1/32
pH 9.5
chl 3100
cal 20
sol 5.6 lcm 2#
dmc \$1815.65
cmc \$19329.65

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

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

abundant metal shavings in samples