



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1204197  
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: \_\_\_\_\_

1204197

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

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <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> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	Mary Ann 8-1
Doc ID	1204197

All Electric Logs Run

Dual Induction
Dual Compensated
Microresistivity
Borehole Compensated



Mary Ann #8-1  
 Daily Drilling Report  
 Page Two

MDCI Mary Ann #8-1 1470' FNL 630' FWL Sec. 1-T1S-R36W 3141' KB							MDCI Mary Ann #5-1 900' FNL 1075' FWL Sec. 1-T1S-R36W 3177' KB	
Formation	Sample top	Datum	Ref	Log Top	Datum	Ref	Log Top	Datum
Anhydrite	3075	+66	-2	3073	+68	Flat	3109	+68
B/Anhydrite	3110	+31	-2	3110	+31	-2	3144	+33
Neva				3557	-416	-4	3589	-412
Red Eagle				3621	-480	-5	3652	-475
Foraker				3668	-527	-7	3697	-520
Topeka				3880	-739	-3	3913	-736
Oread				3992	-851	-5	4023	-846
Lansing				4099	-958	-7	4128	-951
Stark				4312	-1171	-4	4344	-1167
BKC				4372	-1231	-6	4402	-1225
RTD	5014			4482	-1341		4510	-1333
LTD				4485	-1344		4514	-1364



PO Box 93999  
Southlake, TX 76092

Voice: (817) 546-7282  
Fax: (817) 246-3361

# INVOICE

Invoice Number: 141136  
Invoice Date: Jan 29, 2014  
Page: 1

*acct  
Prod-Li*

<b>Bill To:</b>
Murfin Drlg. Co., Inc. 250 N. Water STE #300 Wichita, KS 67202

Customer ID	Field Ticket #	Payment Terms	
Murfin	62485	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-01	Oakley	Jan 29, 2014	2/28/14

Quantity	Item	Description	Unit Price	Amount
1.00	WELL NAME	Mary Ann #8-1		
225.00	CEMENT MATERIALS	Class A Common	17.90	4,027.50
8.00	CEMENT MATERIALS	Chloride	64.00	512.00
236.25	CEMENT SERVICE	Cubic Feet Charge	2.48	585.90
335.07	CEMENT SERVICE	Ton Mileage Charge	2.60	871.18
1.00	CEMENT SERVICE	Surface	1,512.25	1,512.25
80.00	CEMENT SERVICE	Pump Truck Mileage	7.70	616.00
1.00	CEMENT SERVICE	Manifold Head Rental	275.00	275.00
80.00	CEMENT SERVICE	Light Vehicle Mileage	4.40	352.00
1.00	CEMENT SUPERVISOR	Andrew Forslund		
1.00	OPERATOR ASSISTANT	Brandon Wilkinson		

*@15M*

ALL PRICES ARE NET, PAYABLE  
30 DAYS FOLLOWING DATE OF  
INVOICE. 1 1/2% CHARGED  
THEREAFTER. IF ACCOUNT IS  
CURRENT, TAKE DISCOUNT OF

\$ 3,063.14 *356*

ONLY IF PAID ON OR BEFORE *OK*

Feb 23, 2014

Subtotal	8,751.83
Sales Tax	358.62
Total Invoice Amount	9,110.45
Payment/Credit Applied	
<b>TOTAL</b>	<b>9,110.45</b>

*- 3063.14*

# ALLIED OIL & GAS SERVICES, LLC 062485

Federal Tax I.D. # 20-8651475

REMIT TO P.O. BOX 93999  
SOUTHLAKE, TEXAS 76092

SERVICE POINT: ogkley

DATE <u>1-29-14</u>	SEC. <u>1</u>	TWP. <u>1</u>	RANGE <u>36</u>	CALLED OUT	ON LOCATION	JOB START <u>9:30 AM</u>	JOB FINISH <u>10:00</u>
LEASE <u>Mary Ann</u>	WELL # <u>8-1</u>	LOCATION <u>Beardsley N TO AA W TO</u>		COUNTY <u>Rowlins</u>	STATE <u>KS</u>		
OLD OR NEW (Circle one) <u>NEW</u>			<u>3N W + 14 into</u>				

CONTRACTOR <u>Murfin 2</u>	OWNER <u>Same</u>
TYPE OF JOB <u>Surface</u>	CEMENT
HOLE SIZE <u>12 1/4</u>	T.D. <u>265'</u>
CASING SIZE <u>8 3/8</u>	DEPTH <u>264.36'</u>
TUBING SIZE	DEPTH
DRILL PIPE	DEPTH
TOOL	DEPTH
PRES. MAX	MINIMUM
MEAS. LINE	SHOE JOINT
CEMENT LEFT IN CSG. <u>15</u>	
PERFS.	
DISPLACEMENT <u>15.86</u>	

EQUIPMENT		COMMON <u>225 sks</u>	@ <u>17.90</u>	<u>4027.50</u>
PUMP TRUCK	CEMENTER <u>Andrew Trandurd</u>	POZMIX	@	
# <u>422</u>	HELPER <u>Brandon Wilkison</u>	GEL	@	
BULK TRUCK		CHLORIDE <u>8 sks</u>	@ <u>64.00</u>	<u>512.00</u>
# <u>381</u>	DRIVER <u>Eddie (TWS)</u>	ASC	@	
BULK TRUCK			@	
#	DRIVER		@	
		HANDLING <u>236.25 cu/ft</u>	@ <u>2.48</u>	<u>585.90</u>
		MILEAGE <u>260 ton/mile 10.89 ton</u>	@ <u>8.76</u>	<u>2271.20</u>

REMARKS:

Cement did circulate

thank you

CHARGE TO: Murfin

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

**SERVICE**

DEPTH OF JOB	
PUMP TRUCK CHARGE	<u>1512.25</u>
EXTRA FOOTAGE	@
MILEAGE <u>80 miles</u>	@ <u>7.70</u> <u>616.00</u>
MANIFOLD <u>head</u>	@ <u>325.00</u>
<u>light vehicle</u>	@ <u>440</u> <u>352.00</u>

TOTAL 2255.25

**PLUG & FLOAT EQUIPMENT**

_____	@	_____
_____	@	_____
_____	@	_____
_____	@	_____

TOTAL \_\_\_\_\_

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.

PRINTED NAME Anna Lub...

SIGNATURE Anna Lub...

SALES TAX (if Any) \_\_\_\_\_

TOTAL CHARGES 8,751.85

DISCOUNT 3,063.14 IF PAID IN 30 DAYS

5,688.70 Net.



P. O. Box 466  
Ness City, KS 67560  
Off: 785-798-2300



# Invoice

DATE	INVOICE #
2/4/2014	25376

BILL TO
Murfin Drilling Co Inc PO Box 661 Colby, KS 67701-0661

USED FOR LC 103

APPROVED JT

- Acidizing
- Cement
- Tool Rental

*FH*

TERMS	Well No.	Lease	County	Contractor	Well Type	Well Category	Job Purpose	Operator
Net 30	#8-1	Mary Ann	Rawlins		Oil	Development	Cement Top To ...	Don
PRICE REF.	DESCRIPTION				QTY	UM	UNIT PRICE	AMOUNT
575D	Mileage - 1 Way				150	Miles	6.00	900.00
579D	Pump Charge - Top To Bottom LongString - 4998 Feet				1	Job	2,000.00	2,000.00
221	Liquid KCL (Clayfix)				4	Gallon(s)	25.00	100.00T
281	Mud Flush				500	Gallon(s)	1.25	625.00T
290	D-Air				6	Gallon(s)	42.00	252.00T
403-5	5 1/2" Cement Basket				3	Each	300.00	900.00T
406-5	5 1/2" Latch Down Plug & Baffle				1	Each	275.00	275.00T
407-5	5 1/2" Insert Float Shoe With Auto Fill				1	Each	375.00	375.00T
409-5	5 1/2" Turbolizer				15	Each	90.00	1,350.00T
419-5	5 1/2" Rotating Head Rental				1	Each	200.00	200.00T
325	Standard Cement				250	Sacks	14.50	3,625.00T
276	Flocele				125	Lb(s)	2.50	312.50T
283	Salt				1,250	Lb(s)	0.20	250.00T
284	Calseal				12	Sack(s)	35.00	420.00T
285	CFR-1				176	Lb(s)	4.50	792.00T
330	Swift Multi-Density Standard (MIDCON II)				350	Sacks	18.50	6,475.00T
276	Flocele				175	Lb(s)	2.50	437.50T
581D	Service Charge Cement				600	Sacks	2.00	1,200.00
583D	Drayage				4,585.65	Ton Miles	1.00	4,585.65
	Subtotal							25,074.65
	Sales Tax Rawlins County						7.90%	1,294.73
<b>We Appreciate Your Business!</b>							<b>Total</b>	<b>\$26,369.38</b>





Services, Inc.

CHARGE TO: Martin Drig Co.  
ADDRESS  
CITY, STATE, ZIP CODE

TICKET 25376

PAGE 1 OF 2

SERVICE LOCATIONS

1. Hays, KS WELLPROJECT NO. 8-1 LEASE Marp Ann COUNTY/PARISH Rawlins STATE KS CITY Rawlins DATE 2-4-14 OWNER

2. Ness City, KS TICKET TYPE SALES CONTRACTOR Co RIG NAME/NO. #2 SHIPPED VIA CT DELIVERED TO Well Permitt No. ORDER NO. 2-4-14

3. Oil/sand WELLCATEGORY Oil Field JOB PURPOSE Cement to be @ thru L.S WELLPERMIT NO. Well Location

4. REFERRAL LOCATION INVOICE INSTRUCTIONS

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	MILEAGE	QTY.	UM	QTY.	UM	UNIT PRICE	AMOUNT
		LOC	ACCT	DF								
575					4/13	152	Mi.				640	92000
579					Ramp Charge - CNT. TO TOB HAW L.S	1	ea		4998	ft	2000	200000
281					Liquid KCl	4	gal				2500	10000
281					Mixed Plesh	520	gal				1.25	62500
290					D-Aie	6	gal				4200	25200
423					Cement Baskets	3	ea		5 1/2	in	3000	9000
424					Lebbi Down Plug 3044	1	ea		5 1/2	in	27500	27500
407					Zusport Flat Shoe w/ Auto Run	1	ea		5 1/2	in	37500	37500
409					Zurbalizes	15	ea		5 1/2	in	9000	135000
419					Rotating Head Round (no Rot Coll Sensors)	1	ea		5 1/2	in	2000	20000

LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY provisions.

MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS

X Alan Robinson DATE SIGNED 2-4-14 TIME SIGNED 0700  A.M.  P.M.

REMIT PAYMENT TO:  
SWIFT SERVICES, INC.  
P.O. BOX 466  
NESS CITY, KS 67560  
785-798-2300

SURVEY

OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?

WE UNDERSTOOD AND MET YOUR NEEDS?

OUR SERVICE WAS PERFORMED WITHOUT DELAY?

WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?

ARE YOU SATISFIED WITH OUR SERVICE?  YES  NO

CUSTOMER DID NOT WISH TO RESPOND

PAGE TOTAL 82 TOTAL 26,369.38

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket

SWIFT OPERATOR Alan Robinson APPROVAL Alan Robinson

Thank You!



**JOB LOG**

**SWIFT Services, Inc.**

DATE 2-4-14 PAGE NO. 1

CUSTOMER Murphy Drilling Co.

WELL NO. 8-1

LEASE MARY ANN

JOB TYPE Convent Longstring

TICKET NO. 25376

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0700					15.5 #/ft	5 1/2	TD-5014
	0915							On location F.E - R <sub>5</sub> LDD C. Start 5 1/2" casing to KB-4928' Insert Float Shoe w/Auto Kill L.D. Bottle - SJ-21 = 4972' = 118 1/2' Cent 1 through 10 - 12-14-16-46-72 Cent Baskets - 15-47-73 (P <sub>u</sub> end) NO Reto Wall Scratches Cir #70 Drop fill-up ball - 6 jets out FIR run - casing St. cir / Rotate FIR cir - Plus RH-30SKS / M H 20SKS SMD out
	1025							
		5	12			600		Pump 500 gal mud flush
		6	30			600		Pump 20 BBI KCL flush
		5				600		Start 300 SKS SMD @ 11.2 #/gal
		4 1/2	166			300		Fir SMD - Start 250 SKS EA-2 end
	1115		227			300 100		Fir casing - Wash out Pump & Lines Drop L.D. Plug. 300 Start Displ - 1st Tank KCL wtr. (15 BBI) 400 Caught cut lift 500 Slow rate CIR good 700 Slow rate CIR good 800 CIR press CIR good
		9	0/15			1100		
		9	70			1400		Plus Down - Hold - Release & Hold Job Complete cut Did Not cir
		8	80					
		6 1/2	100					
		6 1/2	48					
	1430		118 1/2			1600		
								Wash up & Packup

*[Signature]*  
 Tom & Craig  
 & Janel



**WESLEY D. HANSEN Consulting Petroleum Geologist**

212 N. Market, Suite 257, Wichita, KS 67202  
Office: 316-267-7313 Cellular ; 316-772-6188

**KGS  
AAPG  
Kansas License #418**



**Scale 1:240 (5"=100') Imperial  
Measured Depth Log**

**Well Name:** Murfin Drilling Co., Inc. #8-1 Mary Ann  
**Location:** 1470' FNL, 630' FWL of Section 1-1S-36W  
**License Number:** API: 15-153-20975  
**Spud Date:** 1-29-2014  
**Surface Coordinates:** 1470' FNL, 630' FWL of Section 1-1S-36W  
**Region:** Rawlins County, KS  
**Drilling Completed:** 2-4-2014

**Bottom Hole Vertical hole**  
**Coordinates:**  
**Ground Elevation (ft):** 3130' **K.B. Elevation (ft):** 3141'  
**Logged Interval (ft):** 3450' **To: RTD** **Total Depth (ft):** 5014'  
**Formation:** Arbuckle at DDTD  
**Type of Drilling Fluid:** Chemical - Displaced at 3125'

Printed by MUD.LOG from WellSight Systems 1-800-447-1534 [www.WellSight.com](http://www.WellSight.com)

#### **OPERATOR**

**Company:** Murfin Drilling Co., Inc.  
**Address:** 250 N. Water  
Suite 300  
Wichita, KS 67202

#### **GEOLOGIST**

**Name:** Wesley D. Hansen  
**Company:** Wesley D. Hansen - Consulting Petroleum Geologist  
**Address:** 212 N. Market, Suite 257  
Wichita, KS 67202  
**Office:** 316-263-7313 **Cellular:** 316-772-6188

## COMMENTS

Contractor: Murfin Drilling Co., Inc. Rig #2  
 Pusher: Arturo Cabezas

Surface Casing: 8 5/8" set at 265' w/225 sx  
 Production Casing: 5 1/2" set at 4998' w/550 sx

Mud by: Morgan Mud - Cade Lines was the engineer

DST's by: No DST's

Logs by: Pioneer Wireline (DIL, CN-CD, MEL, BHCS)

Deviation Surveys: 1/4 deg. @ 265'; 1/4 deg. @ 1012'; 1/2 deg. @ 1800'; 3/4 deg. @ 4482'





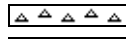
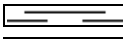



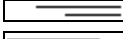




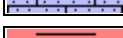


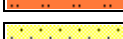


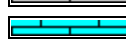






## BIT RECORD

Bit #	Size	MFG	Type	Depth Out	Footage Cut	Hours on bit
1	12 1/4"	HTC	FDS	225'	225'	2
2	7 7/8"	HTC	DP 506	5014'	4789'	49 3/4

## FORMATION TOPS AND STRUCTURAL COMPARISON

FORMATION	SAMPLE TOPS		LOG TOPS		COMPARISON WELL
	Depth	Datum	Depth	Datum	
	3141'	KB	3141'	KB	MDC #5-1 Mary Ann 900'FNL, 1075' FWL Section 1-1S-36W 3177' KB
Anhydrite	3075'	+66	3073'	+68	flat
B/Anhydrite	3110'	+31	3110'	+31	-2'
Neva			3557'	-416	-4
Red Eagle			3621'	-480	-5
Foraker			3668'	-527	-7
Topeka			3880'	-739	-3
Oread			3992'	-851	-5
Lansing			4099'	-958	-7
Stark Shale			4312'	-1171	-4
BKC			4372'	-1231	-6
RTD	4482'	-1341			
LTD			4485'	-1344	
DDTD	5014'	-1873			

## ROCK TYPES

 Anhy	 Salt	 Dol	 Shlyslts
 Cht	 Shale	 Dtd	 SltysH
 Coal	 Shcol	 Gry sh	 Sdy dolo
 Congl	 Shgy	 Sandylms	 Silty dolo
 Gyp	 Sltst	 redshale	 Shy dolo
 Ls colorless	 Ss	 Shale	 Shaly ls
 Lmst	 Carb sh	 Sltstn	

## ACCESSORIES

### FOSSIL

- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram
- Fossil
- Gastro
- Oolite
- Ostra
- Pelec
- Pellet
- Pisolite

- Plant
- Strom
- Fuss
- Oomold

### MINERAL

- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Breclrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel
- Ferr

- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff
- Chlorite
- Dol
- Sand
- Sltly

### STRINGER

- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Sltstrg
- Ssstrg
- Carbstn
- Clystn
- Dol
- Grysh
- Grystl
- Lms
- Sandylms
- Sh
- Sltstn

## OTHER SYMBOLS

### INTERVALS

- Core
- Dst
- Dst

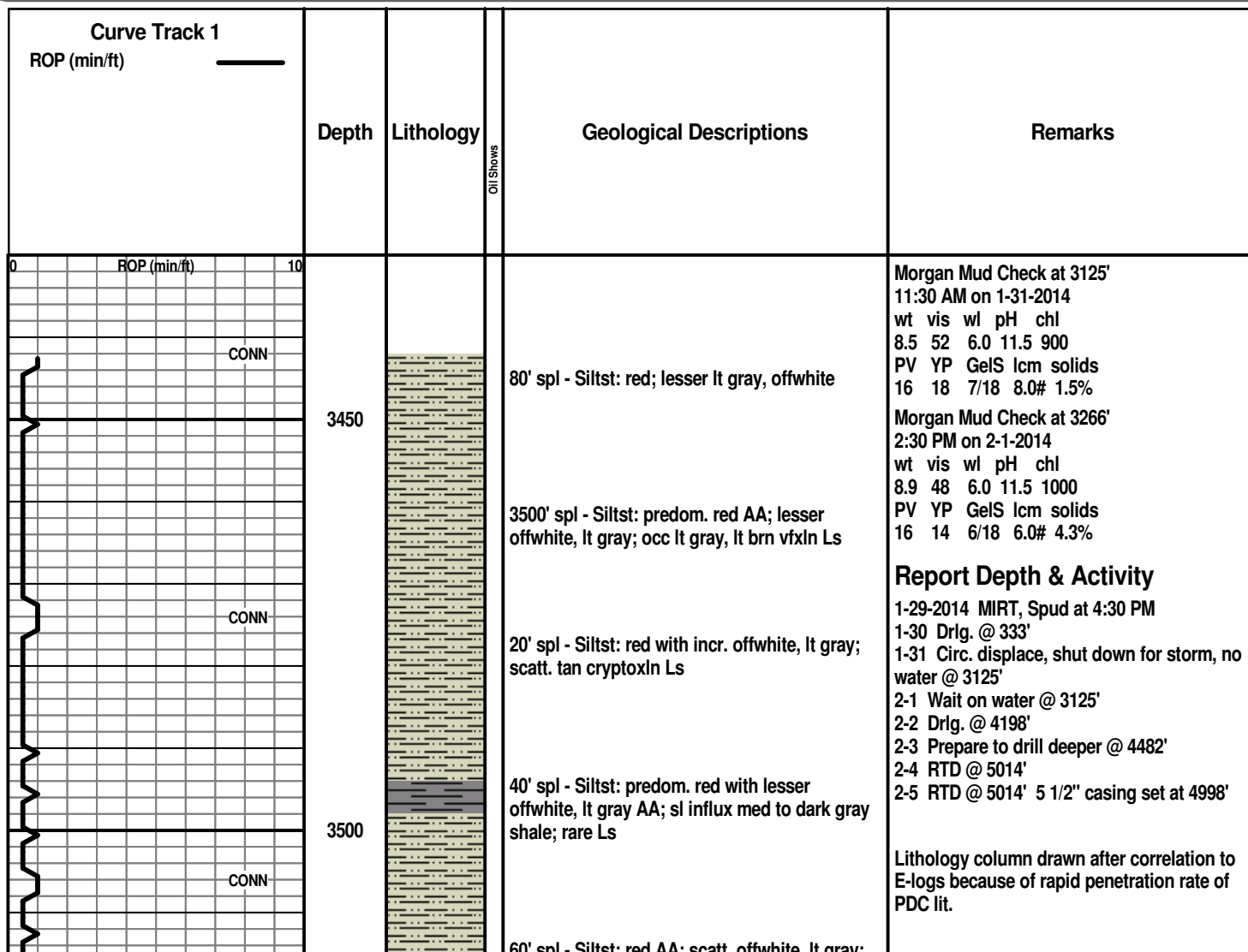
### EVENTS

- Rft
- Dst top/base

### OIL SHOWS

- Even
- Spotted
- Quest.

- Trace
- Dead
- Gas show



60' spl - Siltst. red AA, scatt. offwhite, lt gray, Sh: red silty and some lt red gummy

Sample quality is fair to good

CONN

80' spl - mix of red Siltst and red silty shale; occ offwhite, lt gray siltst

3550

mix AA with occ lt gray, lt brn vfg Sst, N.S.

**Neva**

3600' spl - Ls: good influx offwhite very soft, mushy, clayey; lesser tan fn granular

CONN

20' spl - Sh: flood red, soft, gummy

ROP (min./ft)

CONN

3600

40' spl - Sh: decr. red soft AA; good influx med to dark red, silty; sl influx lt gray vfg Sst, soft, N.S.; occ tan cryptoxln Ls

**Red Eagle**

60' spl - flood Ls: mix white chalky; offwhite, lt gray mic-vfxln dense, subchalky; much decr. shales AA with influx dark gray shale

CONN

3650

80' spl - Ls: decr. white chalky; predom. offwhite, lt gray mic-vfxln dense, subchalky IP; Sh: beds of med to dark gray and red-brn

**Foraker**

3700' spl - Sh: much incr. % of vc gray and red-brn; Ls: mix AA decr. %; occ lt to med gray and lt brn vf-cryptoxln

CONN

20' spl - Ls: lt to med gray mic-vfxln dense, shaly and silty IP; Sh: predom. lt to med gray, lesser red-brn, red

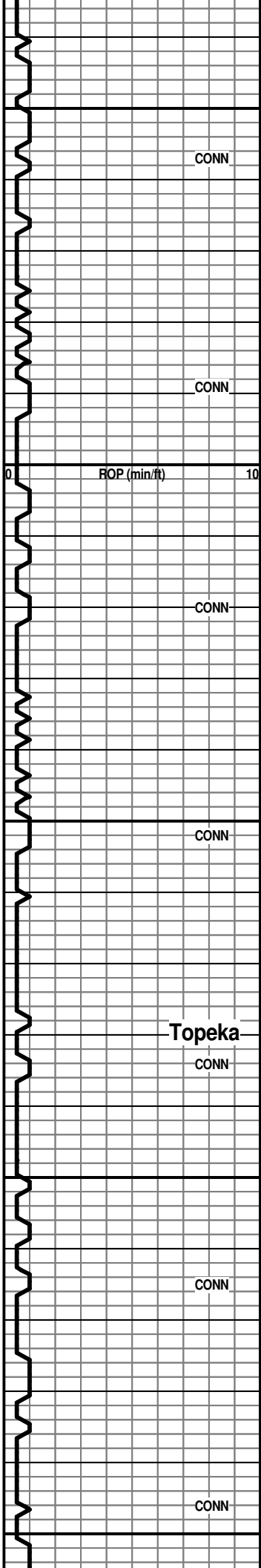
CONN

3700

40' spl - Ls: various lt to med gray AA with sl influx offwhite, tan mic-vfxln dense; Sh: lt to med gray, calcar. IP

60' spl - Ls: various gray, offwhite dense AA, shaly IP; Sh: incr. % lt to med gray and incr. red silty

CONN



3750

CONN

80' spl - abund. shales AA; Ls: mix offwhite, tan, lt gray mic-vfxln dense; lesser lt gray, offwhite fn granular, poor-NVP, N.S.

3800' spl - Sh: lt to med gray, red, red-brn and red-maroon; interbedded with Ls: various tan, lt gray, offwhite mic-vfxln dense; some micxln to fn granular, poor-NVP, N.S.

20' spl - flood Sh: lt to med red, soft, gummy

CONN

40' spl - Sh: lt to med gray, red, red-brn silty IP; Ls: beds of offwhite, lt to med gray mic-vfxln dense

3800

ROP (min/ft)

CONN

60' spl - Sh: abund. lt to med red, silty; lesser med gray; lesser Ls: offwhite, lt gray, some tan vf-cryptoxln; trace offwhite dense with spotty black, dead gilsonite stain

80' spl - predom. shales AA with lesser Ls mix AA

3850

CONN

3900' spl - very predom. lt to med red shales, some soft and gummy; lesser med gray; Ls: scatt. lt gray, tan granular, N.S.; one chip tan med to coarse granular with pp black stain, nfo, no odor

20' spl - decr. shale %; Ls: tan, lt gray cryptoxln to sl granular, NVP, N.S.

Topeka

CONN

40' spl - predom. Ls: mix tan, lt gray, some lt brn cryptoxln with influx offwhite, tan mic-vfxln dense, subchalky IP

3900

CONN

60' spl - Ls: mix AA with Sh: med to dark red, soft red, red-maroon; lesser gray

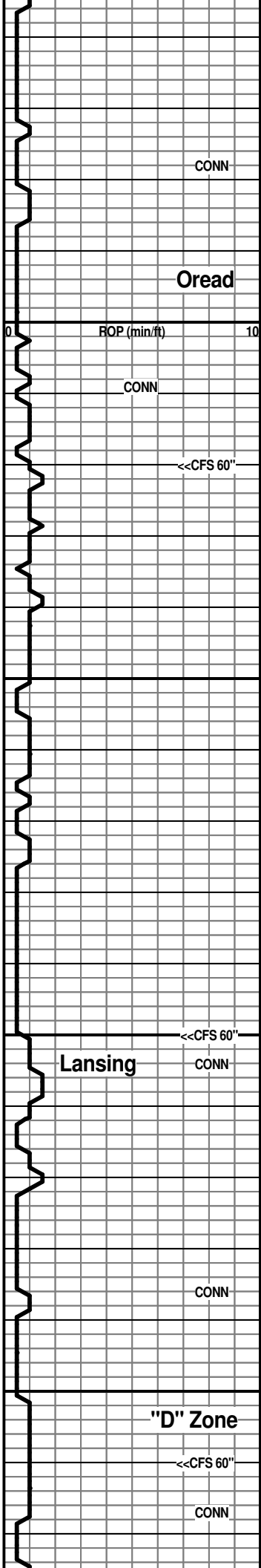
80' spl - strong influx Sh: various red, red-brn; Ls: various cryptoxln AA; some lt red cryptoxln and lt red/offwhite granular, N.S.

3950

CONN

4000' spl - very predom. Sh: lt to med red, red-maroon; lesser med gray, gray-green





20' spl - very predom. Sh: various red, red-maroon

CFS 4020' 30" spl - shales AA with influx med gray; Ls: fair influx white chalky, some with spotty black stain, nfo, no odor

CFS 4020' 60" spl - flood Ls: very predom. lt gray, offwhite mic-vfxln dense, NVP; some white chalky, very scatt. pp black stain AA

40' spl - new rocks??; Sh: abund. med to dark gray; Ls: mix AA; very scatt. offwhite with spotty stain AA; trace offwhite granular with spotty black stain

60' spl - mix med gray shale and Ls: offwhite, lt gray mic-vfxln dense and lt gray vfxln, sl shaly

80' spl - flood lt to med gray calcar. shale and dense, mic-vfxln shaly Ls

CFS 4100' 30" spl - Sh: influx soft red and red-brn ; influx offwhite, lt gray Siltst; decr. Ls % AA

CFS 4100' 60" spl - Sh: predom. various red, red-brn, vc gray and offwhite; lt gray Siltst; Ls: predom. offwhite, lt gray mic-vfxln dense, N.S.; rare offwhite, cream micxln with spotty black stain, new??

20' spl - new rocks??; very predom. shales and siltst AA; occ lt gray med grd Sst, N.S.; scatt. lt gray vvfgr Sst with black pp stain, nfo, no odor

40' spl - Sh: predom. vc gray; lesser red, red-brn; Ls: good influx lt to med brn and gray-brn cryptoxln and offwhite mic-vfxln dense, NVP, no shows

60' spl - Sh: influx more red-brn, maroon red, some vc gray; Ls: much decr. mix AA; trace offwhite cryptoxln with scatt. vug. por. with lt stain

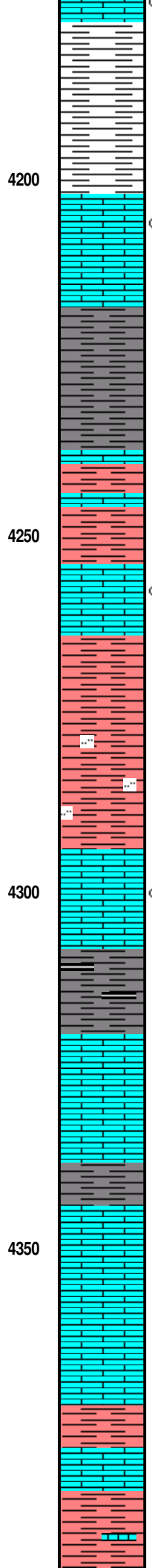
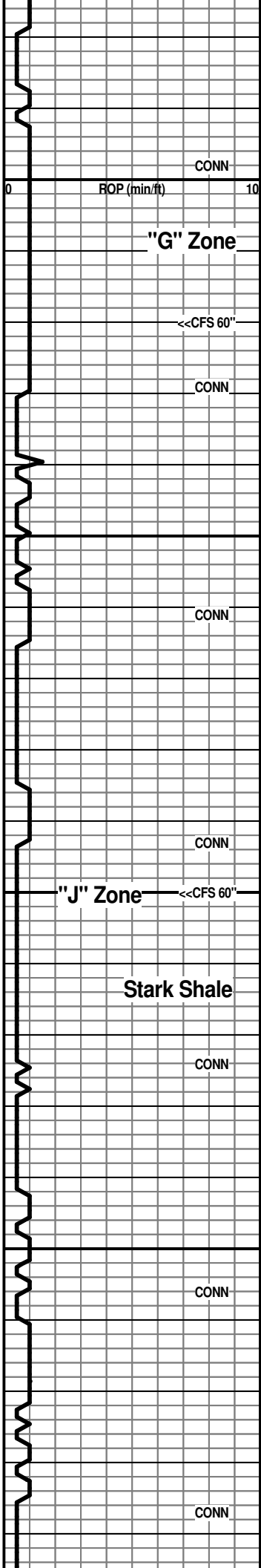
CFS 4160' 30" spl - very shaly and poor sample AA; Ls: some offwhite micxln to fn granular with spotty black to patchy brn stain, nfo; rare to occ offwhite cryptoxln with scatt. vug. por. with lt stain, nfo, no odor

CFS 4160' 60" spl - very shaly and poor spl; scatt. shows AA, some sl improvement in stain

80' spl - new rocks??; very predom. Sh: predom. med gray with lesser med to dark red-brn, brn, occ maroon; some shaly pyrite

4200' spl - Sh: varied AA; Ls: minor % some lt gray, tan granular; offwhite, lt gray mic-vfxln dense; tan, lt gray cryptoxln

Sample quality generally poor, much shale slough



20' spl - Ls: incr. % offwhite, lt gray mic-vfxln dense and offwhite, lt gray granular, NVP, N.S.; scatt. offwhite mic-vfxln with patchy pp brn to black stain, gen. poor vis. por., nfo, no odor

CFS 4220' 30" spl - flood Ls: offwhite, lt gray mic-vfxln dense and lt gray, tan vf-cryptoxln, NVP, N.S.; many chips offwhite mic-vfxln with spotty pp stain, trace residual oil, nfo, no odor

CFS 4220' 60" spl - Ls: mix AA; occ shows AA; Sh: incr. med gray

40' spl - no new rocks

60' spl - mix AA with incr. med gray shale

80' spl - predom. Sh: lt to med gray with red-brn, influx red-maroon; Ls: offwhite, lt gray mic-vfxln dense and lt gray, gray-brn vfxln dense

4300' spl - shale mix AA with incr. % of Ls: offwhite, lt gray vfxln to granular, NVP, N.S.; trace spotty stain in offwhite mic-vfxln dense (new??)

CFS 4300' 30" spl - Sh: good influx soft, mushy red, red-brn, red-maroon silty IP

CFS 4300' 60" spl - very predom. shales AA with med to dark gray; scatt. offwhite, lt gray dense to granular Ls

20' spl - influx Ls: predom. offwhite mic-vfxln, subchalky IP; scatt. lt gray, offwhite cryptoxln with edge stain, some vug. por. with stain, nfo, no odor; some offwhite mic-vfxln, fn granular IP with pp stain, trace oily residue, nfo, no odor

40' spl - Ls: predom. offwhite mic-vfxln dense; Sh: med to dark gray, some carbon. laminae; lesser red-brn, red-maroon

60' spl - Ls: offwhite mic-vfxln, subchalky to chalky IP; Sh: mix AA

80' spl - very predom. Ls: mix AA with sl influx lt gray cryptoxln, NVP

4400' spl - Ls: still predom. offwhite mic-vfxln dense; lesser lt gray, lt brn cryptoxln; Sh: fairly minor med to dark gray; occ red-brn

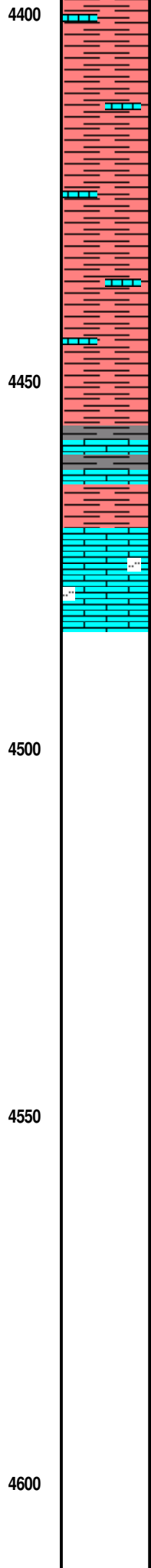
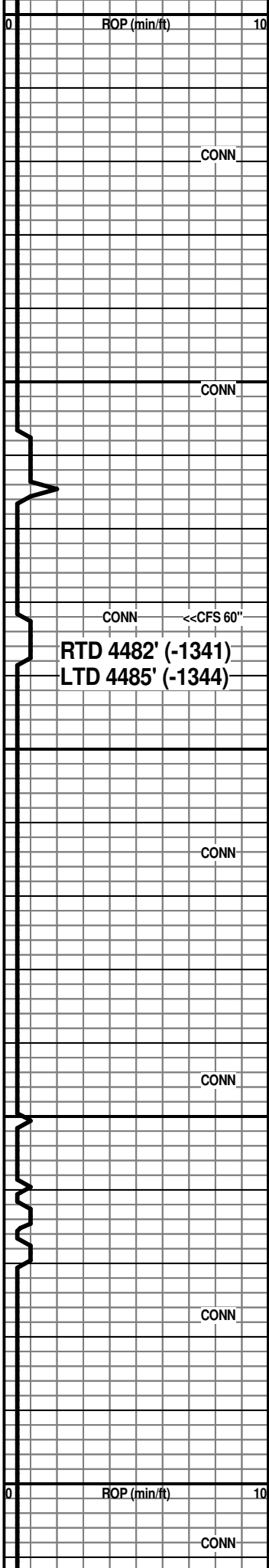
20' spl - Ls: mix AA with influx Sh: soft lt to med red, med to dark red-brn, med gray

40' spl - Sh: good influx med to dark red-brn, soft red; Ls: some tan, lt gray cryptoxln, NVP, N.S.

Samples very shaly and poor

Samples much improved

Morgan Mud Check at 4300'  
 11:55 AM on 2-2-2014  
 wt vis wl pH chl  
 9.3 55 6.8 9.5 1000  
 PV YP GelS lcm solids  
 20 20 8/30 9.0# 7.1%



60' spl - very shaly AA; scatt. ochre, gray-green, gray-maroon; minor Ls: tan, gray cryptoxln

80' spl - Sh: very predom. soft red; lesser med to dark gray, gray-green; scatt. tan, lt gray, offwhite vf-cryptoxln Ls

CFS 4482' 30" spl - Sh: predom. various red, red-brn, soft IP; more gray, gray-green; some red-brn siltst; Ls: various tan, offwhite, lt gray vf-cryptoxln; scatt. offwhite, tan granular, NVP, N.S.

CFS 4482' 60" spl - Sh: mix AA with red-maroon; Ls: fair influx lt gray, sl silty and lt gray, lt brn cryptoxln

4500' spl - trashy  
20' spl - still trashy; mix Sh: red, red-brn, med to dark gray, some lt gray and gray-green, purplish-brn

40' spl - abund. multi-colored shales AA, decr. %; Ls: mix offwhite, lt gray mic-vfxln sl silty IP; scatt. lt to med brn, lt gray cryptoxln

60' spl - Sh: more med to dark gray, splintery with red-brn AA; Ls: more lt to med brn, gray cryptoxln

80' spl - predom. Sh: mostly med to dark gray, lesser red, red-maroon; decr. % Ls: offwhite, lt gray mic-vfxln; scatt. cryptoxln AA; scatt. offwhite, gray fg calcar. Sst, N.S.

4600' spl - Sh: lt to med gray, red-brn, red-maroon, trace mottled red-green; Sst: scatt. offwhite fg calcar., N.S.; Ls: some lt gray, lt brn vf-cryptoxln

20' spl - very predom. Sh: med to dark gray, lesser purplish-gray, purple, dark red-brn; minor Ls: lt to med brn cryptoxln and offwhite, lt gray granular, NVP, N.S.

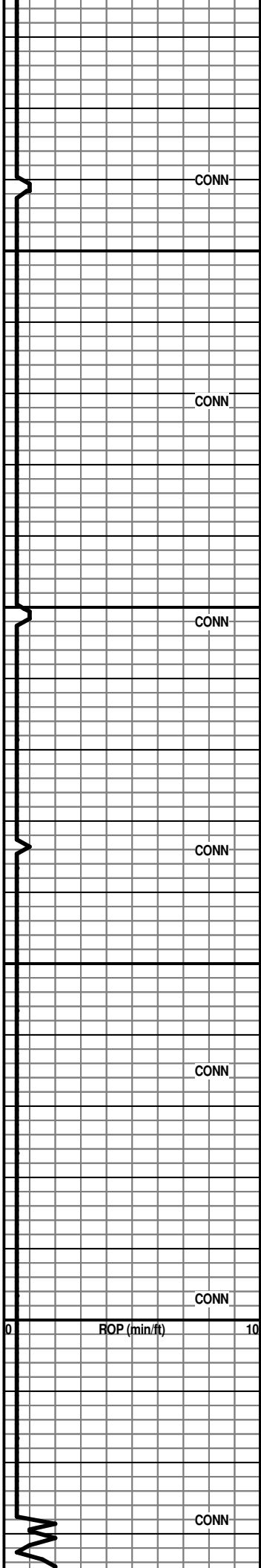
40' spl - Sh: predom. med to dark gray with more multi-colored AA; very minor Ls %

60' spl - shales AA; trace gray med grnd Sst; rare gray cryptoxln Ls, N.S.

80' spl - Sh: mix AA; occ offwhite calcar. to dolomitic shale and shale with imbedded pyrite

After logging the operator elected to go back to drilling for a DDRTD in the Granite wash for use as a SWD well.

No attempt was made to draw lithology column from 4482' to 5014' because of the lack of any E-logs below 4482'



4700' spl - Sh: multi-colored AA, predom. vc gray, gray-green; scatt. dense Ls

CONN

4650

20' spl - Sh: multi-colored AA, more red-brn; scatt. dense Ls; scatt. very coarse clear qtz grains

CONN

40' spl - Sh: multi-colored AA, more purple and red-purple; very scatt. lt gray fg Sst with shale partings; trace coarse single grains

4700

60' spl - mixed and mottled shales AA; Sst: sl influx offwhite vf-fg calcar., very finely micac.

CONN

80' spl - shales AA; scatt. tight calcar. Sst and very coarse loose qtz grains, some free pyrite

4800' spl - Sh: multi-colored AA, predom. med to dark gray; scatt. Sst and loose grains AA

CONN

4750

20' spl - Sh: very predom. med to dark gray; Sst: influx offwhite, lt gray, tan vvfq micac. and shaly, scatt. shale partings, vsl glauc. IP

CONN

40' spl - decr. shale %; Dolo: good influx offwhite, tan vfxln, sucrosic with interxln and some vug. por., some glauc., N.S.; Chert: offwhite, mottled with gray, tan opq; scatt. white chalky Ls

CONN

4800

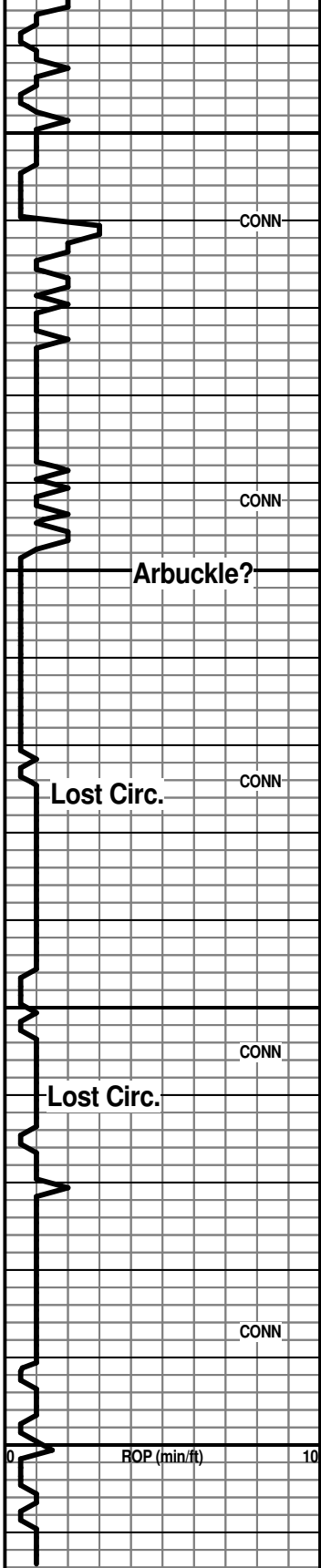
ROP (min./ft)

60' spl - Dolo: AA with incr. various cherts

CONN

Morgan Mud Check at 4730'  
12:35 PM on 2-3-2014  
wt vis wl pH chl  
9.3 53 7.6 10.0 1100  
PV YP GelS lcm solids  
20 16 8/27 8.0# 7.1%

common shales in samples



4850  
4900  
4950  
5000  
5050

80' spl - much decr. cherty Dolo AA; good influx Ls: offwhite, tan mic-vfxln dense, subchalky IP; lesser lt brn, lt gray vfxln dense

4900' spl - Ls: offwhite, tan mic-vfxln dense, subchalky IP

20' spl - Ls: mix AA, becoming sl granular IP with chalky matrix; samples are shaly

40' spl - very shaly and poor; Sst: sl influx tan fn-med grd with dolomitic cement; Dolo: lt brn sandy and glauc.; some dirty gray fxln

60' spl - very shaly and poor samples; Dolo: various sandy and glauc. AA with some dolomitic Sst, N.S.

80' spl - very shaly and poor samples; Dolo: tan, lt gray fn-vfxln

5000' spl - very shaly and poor samples; Dolo: tan, lt gray fn-vfxln; some sandy and glauc.

no cfs samples

DDRTD 5014' (-1873)

Operator set casing at 4998'. Well will likely be drilled deeper for SWD in the Reagan Sand with completion tools. Any oil potential from the Lansing will be determined at operator's discretion.

Respectfully submitted,

Wesley D. Hansen  
Petroleum Geologist  
Kansas License No. 418

Lost returns at 4925' Approx. 100 bbl

Raised LCM to 14#, no returns; raised to 20# drilled ahead

Lost returns at 4960'  
Raised LCM to 25# drilling ahead

Losing returns with 25# lcm  
Called RTD at 5014'

Estimated total fluid loss of 1300 bbl

