

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1245627
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: _____

1245627

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> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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OPERATOR

Company: HERTEL OIL COMPANY, LLC
 Address: 704 E 12TH STREET
 HAYS, KANSAS 67601

Contact Geologist: MIKE HERTEL
 Contact Phone Nbr: 785-628-2445
 Well Name: JACOBS # 1
 Location: SW NW SE NW SEC.4-T15S-R18W
 API: 15-051-26,772-00-00
 Pool: INFIELD
 State: KANSAS
 Field: RUDER NORTH
 Country: USA

Scale 1:240 Imperial

Well Name: JACOBS # 1
 Surface Location: SW NW SE NW SEC.4-T15S-R18W
 Bottom Location:
 API: 15-051-26,772-00-00
 License Number: 33625
 Spud Date: 2/19/2015 Time: 12:17 PM
 Region: ELLIS COUNTY
 Drilling Completed: 2/24/2015 Time: 12:19 PM
 Surface Coordinates: 1977' FNL & 1634' FWL
 Bottom Hole Coordinates:
 Ground Elevation: 2016.00ft
 K.B. Elevation: 2024.00ft
 Logged Interval: 2900.00ft To: 3700.00ft
 Total Depth: 3700.00ft
 Formation: LANSING-KANSAS CITY
 Drilling Fluid Type: CHEMICAL/FRESH WATER GEL

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: -99.3313517
 Latitude: 38.7785646
 N/S Co-ord: 1977' FNL
 E/W Co-ord: 1634' FWL

LOGGED BY

Company: SOLUTIONS CONSULTING, INC.
 Address: 108 W 35TH
 HAYS, KS 67601

Phone Nbr: (785) 639-1337
 Logged By: GEOLOGIST Name: HERB DEINES

CONTRACTOR

Contractor: DISCOVERY DRILLING, INC.
 Rig #: 2
 Rig Type: MUD ROTARY
 Spud Date: 2/19/2015 Time: 12:17 PM
 TD Date: 2/24/2015 Time: 12:19 PM
 Rig Release: 2/25/2015 Time: 10:00 AM

ELEVATIONS

K.B. Elevation: 2024.00ft Ground Elevation: 2016.00ft
 K.B. to Ground: 8.00ft

NOTES

RECOMMENDATION TO PLUG AND ABANDON BASED ON LOG ANALYSIS AND NEGATIVE RESULTS OF TWO

DSTS

OPEN HOLE LOGGING BY GEMINI WIRELINE LLC: DUAL INDUCTION LOG, COMPENSATED DENSITY NEUTRON LOG, MICRORESISTIVITY LOG

DRILL STEM TESTING BY TRILOBITE TESTING INC: ONE (1) CONVENTIONAL TEST AND ONE (1) STRADDLE TEST

FORMATION TOPS COMPARISON

	JACOBS # 1 SW NW SE NW SEC.4-15S-18W 2016'GL 2024'KB	RUDER # A-1 NW SE NW SEC.4-15-18W KB 2021'	JACOBS-WERTH #1 SE NE SE NW SEC.4-15-18W KB 2027'
<u>FORMATION</u>	<u>LOG TOPS</u>	<u>LOG TOPS</u>	<u>LOG TOPS</u>
Anhydrite-top	1202+ 822	+ 824	+ 819
Anhydrite-base	1239+ 785	+ 787	+ 781
Topeka	3009- 985	- 982	- 991
Heebner Sh.	3269-1245	-1247	-1250
Toronto	3289-1265	-1269	-1269
LKC	3323-1299	-1302	-1304
BKC	3550-1526	-1529	-1530
Marmaton	3591-1567	-1571	-1571
Conglomerate Sd	3622-1598	-1597	None
Arbuckle	3654-1630	-1643	-1600
RTD	3700-1676	-1659	-1723

SUMMARY OF DAILY ACTIVITY

2-19-15	RU, spud 12:15 PM, set 8 5/8" surface casing to 224' w/150 sxs Common 2%Gel 3%CC, slope 1 degree
2-20-15	557', drill plug at 3:30AM
2-21-15	2065', drilling
2-22-15	2825', drilling
2-23-15	3440', CFS 3622', CFS 3630', CFS 3635,ST 25 stands, CCH, TOWB, DST # 1 3601' to 3635' Conglomerate Sand, slope 1 ¼ degree
2-24-15	3635', finish DST # 1, TIWB, RTD 3700' @ 12:19PM, TOWB, logs, Straddle DST #2 3331' to 3402' "C", "D", "F", top of "G", TOWT
2-25-15	3700', TIWB, LDDP, P&A

DST # 1 TEST SUMMARY

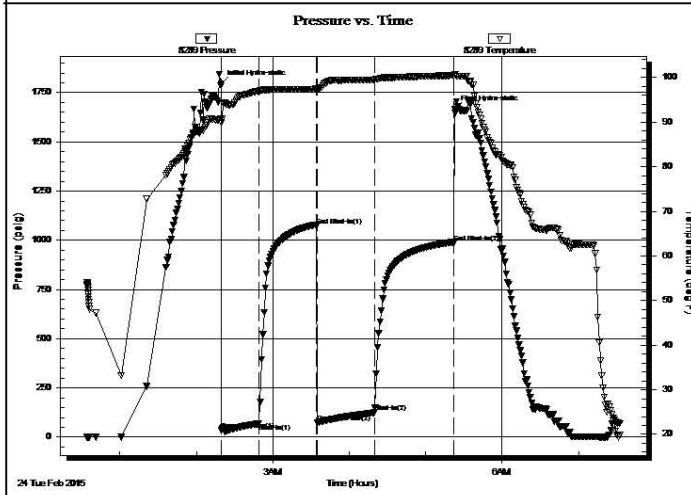
 TRILOBITE TESTING, INC.	DRILL STEM TEST REPORT	
	Hertel Oil Company LLC 704 E 12th St Hays KS 67601-3440 ATTN: Herb Deines	4 15s 18w Ellis Jacobs # 1 Job Ticket: 61397 DST#: 1 Test Start: 2015.02.24 @ 00:34:00

GENERAL INFORMATION:

Formation: Cong. Sand	Test Type: Conventional Bottom Hole (Initial)
Deviated: No Whipstock: ft (KB)	Tester: Jim Svaty
Time Tool Opened: 02:19:45	Unit No: 76
Time Test Ended: 07:33:00	
Interval: 3601.00 ft (KB) To 3635.00 ft (KB) (TVD)	Reference Elevations: 2025.00 ft (KB)
Total Depth: 3635.00 ft (KB) (TVD)	2017.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Fair	KB to GR/CF: 8.00 ft

Serial #: 8289 Inside	Capacity: 8000.00 psig
Press@RunDepth: 125.35 psig @ 3607.00 ft (KB)	Last Calib.: 2015.02.24
Start Date: 2015.02.24 End Date: 2015.02.24	Time On Btm: 2015.02.24 @ 02:19:30
Start Time: 00:34:02 End Time: 07:33:00	Time Off Btm: 2015.02.24 @ 05:23:00

TEST COMMENT: 30-IFP- BOB in 21min.
 45-ISIP- Surface Blow in 3min.
 45-FFP- BOB in 31min.
 60-FSIP- Surface Blow in 1min.



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1796.68	90.84	Initial Hydro-static
1	33.50	89.88	Open To Flow (1)
30	69.38	96.97	Shut-In(1)
75	1075.30	97.43	End Shut-In(1)
76	75.17	96.99	Open To Flow (2)
121	125.35	99.51	Shut-In(2)
183	989.82	100.45	End Shut-In(2)
184	1666.04	100.69	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
62.00	OCM 10%o 90% m	0.46
84.00	WMCO 15%w 30% m 55% o	0.62
122.00	CO 100%	0.90
0.00	180 GIP	0.00

Gas Rates			
	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

DST # 2 TEST SUMMARY

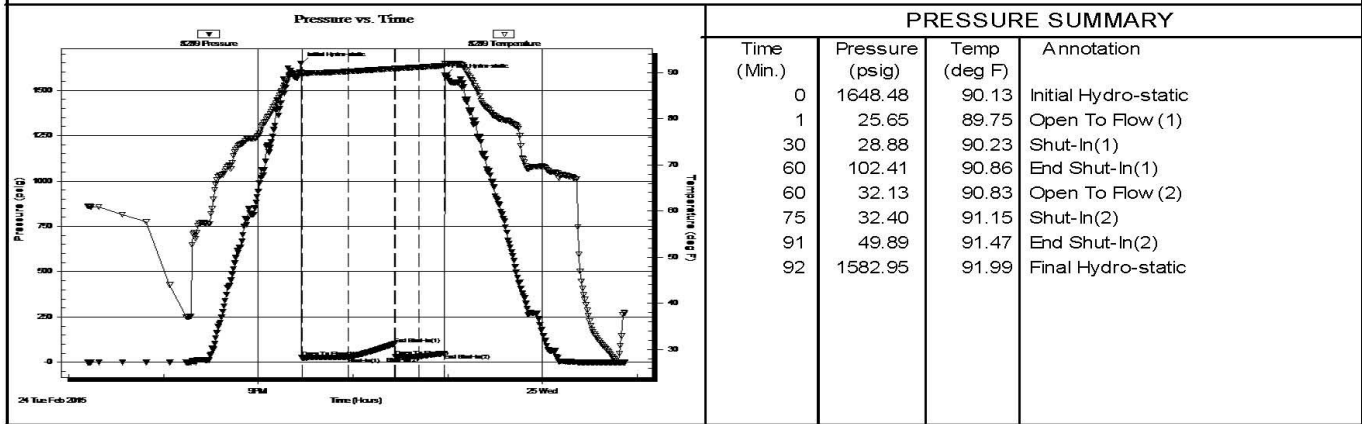
 TRILOBITE TESTING, INC.	DRILL STEM TEST REPORT	
	Hertel Oil Company LLC 704 E 12th St Hays KS 67601-3440 ATTN: Herb Deines	4 15s 18w Ellis Jacobs # 1 Job Ticket: 61398 DST#: 2 Test Start: 2015.02.24 @ 19:12:00

GENERAL INFORMATION:

Formation: LKC " C - G "	Test Type: Conventional Straddle (Reset)
Deviated: No Whipstock: ft (KB)	Tester: Jim Svaty
Time Tool Opened: 21:27:30	Unit No: 76
Time Test Ended: 00:53:00	Reference Elevations: 2025.00 ft (KB)
Interval: 3331.00 ft (KB) To 3402.00 ft (KB) (TVD)	2017.00 ft (CF)
Total Depth: 3700.00 ft (KB) (TVD)	KB to GR/CF: 8.00 ft
Hole Diameter: 7.88 inches Hole Condition: Fair	

Serial #: 8289 Outside	Capacity: 8000.00 psig
Press@RunDepth: 32.40 psig @ 3351.00 ft (KB)	Last Calib.: 2015.02.25
Start Date: 2015.02.24 End Date: 2015.02.25	Time On Btm: 2015.02.24 @ 21:27:00
Start Time: 19:12:02 End Time: 00:53:00	Time Off Btm: 2015.02.24 @ 22:58:15

TEST COMMENT: 30-IFP- Surface Blow Building to 2 1/4in.
 30-ISIP- No Blow
 15-FFP- 1/4in. Blow
 15-FSIP- No Blow



Recovery			Gas Rates			
Length (ft)	Description	Volume (bbl)		Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
15.00	Mud 100% Show of Oil in Tool	0.11				

* Recovery from multiple tests

ROCK TYPES

 Clystgy	 Dol Lime	 shale, grn	 shale, red
 Chtcong	 Lmst fw<7	 shale, gry	 Ss
 Delorim	 Lmst fw>7	 Carbon Sh	 CalSandy

ACCESSORIES

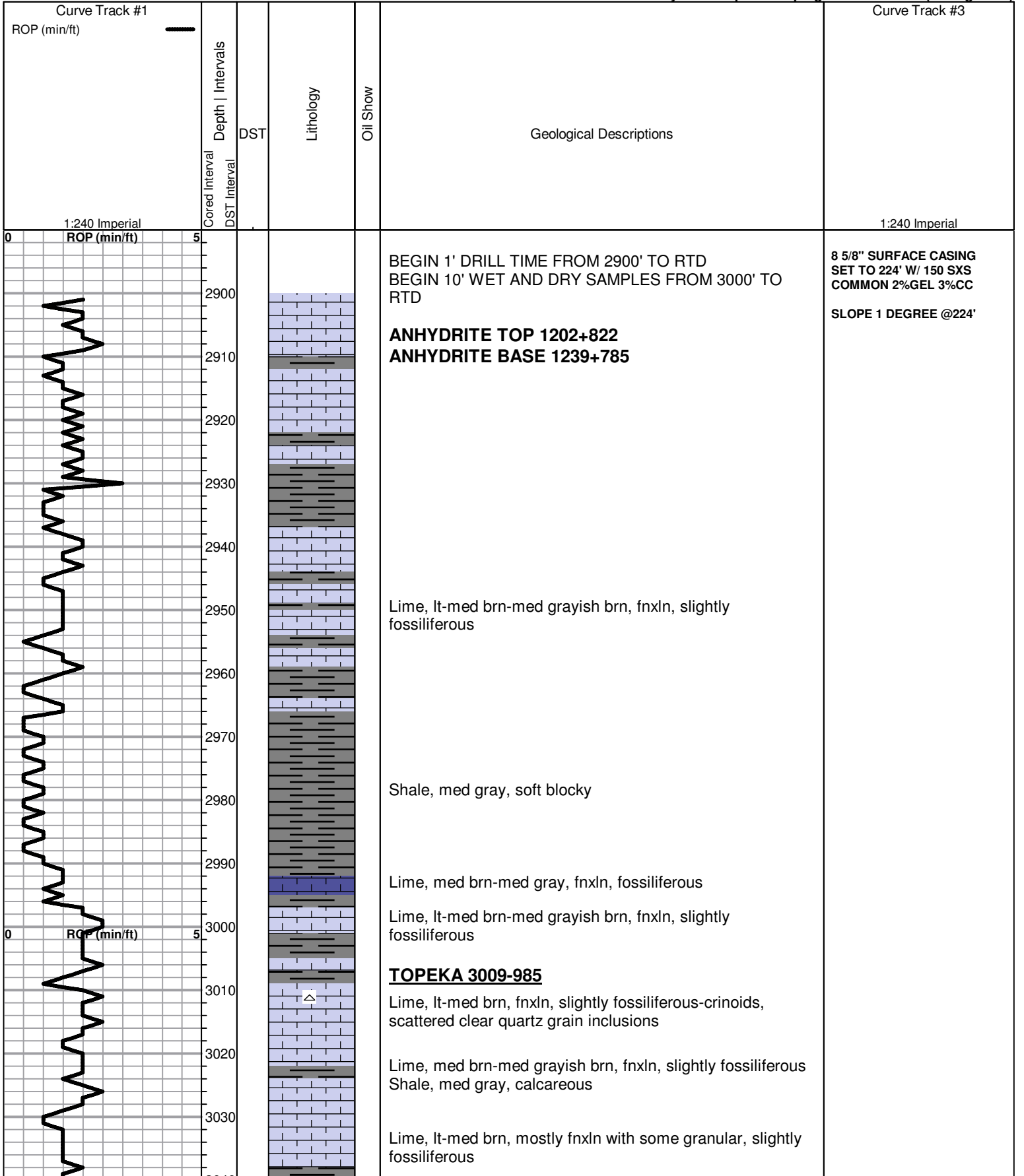
MINERAL

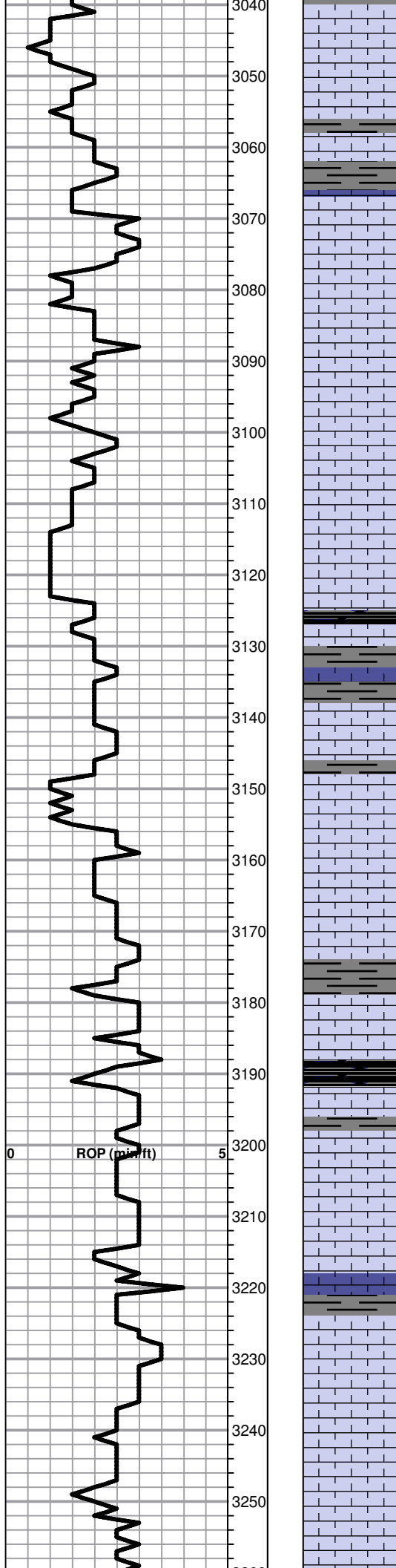
- ▲ Chert, dark
- ▨ Nodules
- △ Chert White

FOSSIL

- Oolite
- ⊕ Oomoldic

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Lime, lt-med brn, fnxln-granular, slightly fossiliferous

Shale, med-dark gray, blocky, calcareous

Lime, med brn-gray shaley, fnxln

Lime, offwhitelgt brn, granular with lt chalky matrix, NS

Lime, offwhite-lt brn-lt gray, granular with slight mottling in part

Lime, lt brn-lt gray, fnxln

Lime, lt brn-lt gray, fnxln, sticky chalk clumps in part

Shale, black carbonaceous, blocky
Lime, med grayish brn, fn-vfxln

Lime, lt-med brn, fnxln

Lime, lt brn-lt grayish brn, fnxln with some granular in part, NS

Lime, tan-lt brn, fnxln-granular, NS

Lime, lt-med brn, fnxln

Lime, lt brn-crm, fnxln-granular in part

Shale, black carbonaceous

Lime, crm-lt brn, fnxln-granular

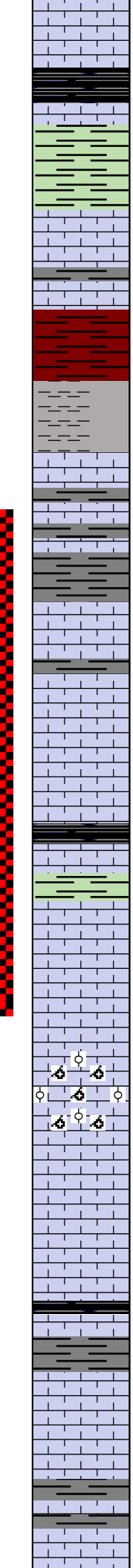
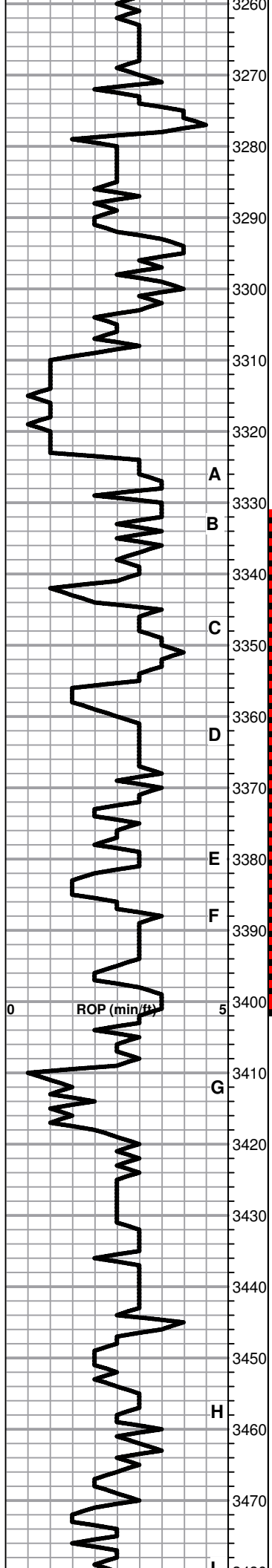
Lime, crm-lt brn, fnxln, slightly fossiliferous

Lime, lt brn, fnxln-granular in part

Lime, lt-med brn, fnxln-granular with bedded chalk

Lime, lt brn, fnxln

Lime, lt-med brn, fn-vfxln



Lime, lt brn-lt grayish brn, fnxln

HEEBNER SHALE 3269-1245
 Shale, black carbonaceous, blocky
 Lime, lt-med brn, vfxln

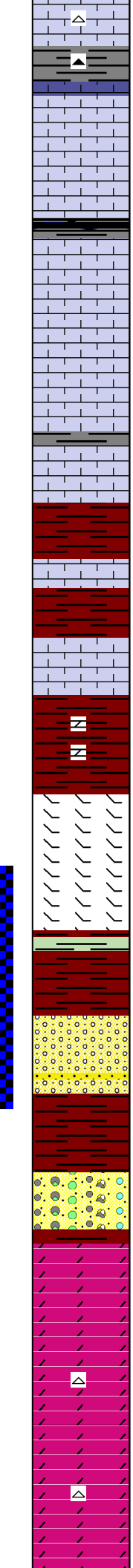
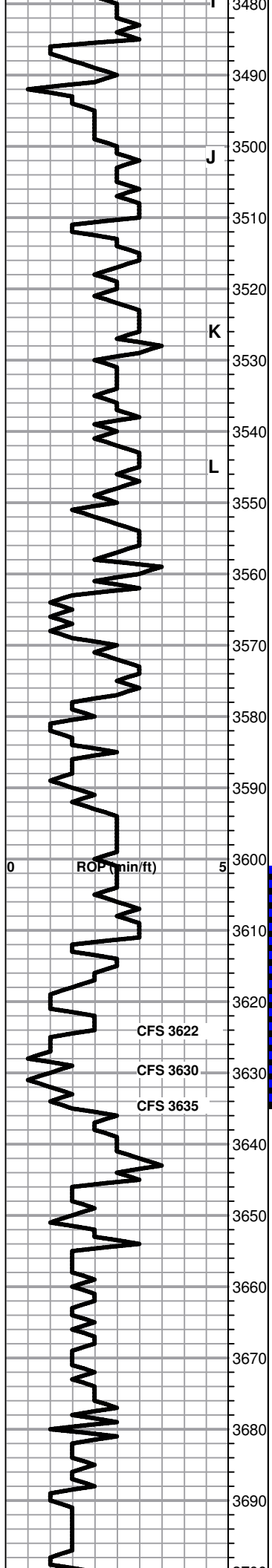
Shale, lt gray, soft-firm blocky

TORONTO 3289-1265
 Lime, crm-lt brn, fnxln, slight bedded chalk, NS
 Lime, lt-med brn-med gray near shale boundary, fn-vfxln

Shale, lt red wash, soft mud

LKC 3323-1299
 Lime, crm-lt brn, fnxln, slight bedded chalk, NS
 Lime, lt-med brn-grayish brn, fn-vfxln, slightly fossiliferous
 Shale, lt-med gray, soft mud-soft blocky
 Lime, lt-med brn, fn-vfxln, NS, no visible porosity
 Lime, crm-lt brn, fnxln with thin oolitic, fossiliferous bed, spotty staining, lt odor, NFO, appears poorly developed
 Lime, crm-lt brn, fn-vfxln, slight bedded chalk
 Shale, black carbonaceous, blocky
 Lime, lt gray, fn-vfxln
 Lime, crm-lt brn, thin cemented fossiliferous bed, spotty staining, NFO, no odor
 Lime, crm-lt brn, fnxln, spotty staining, NFO, no odor
 Lime, crm-lt brn, oomoldic/oolitic, NS, no staining
 Lime, crm-lt brn, fn-vfxln, slight bedded chalk
 Lime, crm-lt brn-lt grayish brn, fnxln, slightly fossiliferous, lt white wash
 Shale, gray-black carbonaceous, blocky
 Lime, lt grayish brn, fn-vfxln
 Lime, white-crm, fnxln, few cemented oolitic chips, NS
 Lime, white-crm-lt brn, fn-vfxln, slight bedded chalk
 Lime, lt brn, fn-vfxln, few oolitic chips, slight spotty oil staining, NFO, No Odor

**DST # 2 STRADDLE TEST
 3331' TO 3402' SEE HEADER
 FOR TEST SUMMARY**



Lime, crm-lt brn, fnxln, slight bedded chalk, white chert, fresh, sharp

Lime, crm-lt brn, fnxln, slight bedded chalk, NS

Lime, crm-lt brn, fn-vfxln, slight bedded chalk, NS

Shale, gray-black, blocky

Lime, offwhite-white, fnxln

Lime, crm-tan, fnxln, bedded chalk, NS

Lime, crm-lt brn, fn-micro xln

Lime, crm-lt brn, fnxln

BKC 3550-1526

Shale, red-redish brn, soft blocky

Lime, crm, fn-micro xln, slight bedded chalk

Shale, red with lt red wash, soft mud

Lime, crm, fn-vfxln, no visible porosity

Shale, reddish brn, soft blocky, few red chert nodules

MARMATON MARKER 3591-1567

Lime, crm, fnxln, chert, bright orange, fresh

Lime, crm, fnxln, slightly dolomitic

Shale, red mud with sticky lime green shale clumps

CONGLOMERATE SAND 3622-1598

Sandy cemented conglomeritic sand and rubble mix with thin quartz sand len, show of lt gassy oil on crush, very lt odor, spotty lt staining, white clay cementing, lt dolomitic cement in part

Shale, reddish brn-dark brn, soft to moderately firm

Shale, red-med gray, with vari colored cherts

ARBUCKLE 3654-1630

Dolomite, ivory-crm, granular, NS, No Staining

Dolomite, ivory, granular

Dolomite, ivory, granular-fnxln in part, few chips of fresh, sharp chert

Dolomite, ivory, fnxln-granular

Dolomite, ivory, fnxln-granular, few chips with coarse rhombic dolomite xls.

RTD 3700-1676 LTD 3700-1676

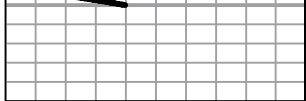
CFS 3622
CFS 3630
CFS 3635

DST #1 3601' TO 3635' SEE
HEADER FOR TEST
SUMMARY

SLOPE 1 1/4 DEGREE @3635'

1ST PLUG @3635 W/ 50 SXS
2ND PLUG @1215' W/50 SXS
3RD PLUG @520' W/100 SXS
4TH PLUG @275' W/50 SXS
5TH PLUG @ 40' W/ 10 SXS
RATHOLE W/ 30 SXS
MOUSEHOLE W/ 15 SXS

ORDERED 305 SXS 60/40
POS 4% GEL, 1/4# FLOCELE
PER SX



3/700



QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

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

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

No. 1214

Date	2-19-15	Sec.	4	Twp.	15	Range	18	County	Ellis	State	KS	On Location		Finish	7:30am
Location								Antenino Rd 1w / SE to Rig							

Lease	Jacobs	Well No.	1	Owner	To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.
Contractor	D. S. ...				
Type Job	Surface				
Hole Size	12 1/4	T.D.	224	Charge To	Hertel Oil
Csg.	8 5/8	Depth	223	Street	
Tbg. Size		Depth		City	State
Tool		Depth		The above was done to satisfaction and supervision of owner agent or contractor.	
Cement Left in Csg.	15'	Shoe Joint		Cement Amount Ordered	15000m 3/CL 2/62
Meas Line		Displace	13BL	Common	150

EQUIPMENT			JOB SERVICES & REMARKS		
Pumptrk	No. 20	Cement Helper Craig			
Bulktrk	No.	Driver Dick			
Bulktrk	No. 3	Driver T. J. ...			

Remarks:	
Rat Hole	
Mouse Hole	
Centralizers	
Baskets	
D/V or Port Collar	
8 5/8 on bottom. Est. Circulation	
MIX 15000m + Displace	

FLOAT EQUIPMENT	
Guide Shoe	
Centralizer	
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	
Pumptrk Charge	Surface
Mileage	7

X Signature <i>[Signature]</i>	Tax	
	Discount	
	Total Charge	

