**OPERATOR** 

Company: CARRIE EXPLORATION AND DEVELOPMENT, LLC

1611 COPPER CREEK COURT Address:

HAYS, KANSAS 67601-2667

Contact Geologist: **RON HEROLD** Contact Phone Nbr: 785-625-9318 Well Name: **BOB THOMAS # C-2** 

Location: NE SE NW SW SEC.T19S-R11W

API: 15-009-26,154-00-00

Pool: **INFIELD** Field: CHASE-SILICA

State: **KANSAS** Country: USA

Scale 1:240 Imperial

Well Name: **BOB THOMAS # C-2** 

Surface Location: NE SE NW SW SEC.T19S-R11W

**Bottom Location:** 

API: 15-009-26,154-00-00

License Number: 6768

Spud Date: 10/20/2016 Time: 12:17 PM

Region: **BARTON COUNTY** 

**Drilling Completed:** 10/26/2016 Time: 12:00 AM

Surface Coordinates: 1813' FSL & 1149' FWL

**Bottom Hole Coordinates:** 

Ground Elevation: 1770.00ft K.B. Elevation: 1778.00ft

Logged Interval: 2200.00ft To: 3370.00ft

3370.00ft Total Depth: Formation: ARBUCKLE

**Drilling Fluid Type:** CHEMICAL/FRESH WATER GEL

### SURFACE CO-ORDINATES

Well Type: Vertical Longitude: -98.5126677 Latitude: 38.3521914 N/S Co-ord: 1813' FSL E/W Co-ord: 1149' FWL

## **LOGGED BY**



SOLUTIONS CONSULTING, INC. Company:

Address: 108 W 35TH

HAYS, KS 67601

Phone Nbr: (785) 639-1337

Logged By: **GEOLOGIST** HERB DEINES Name:

CONTRACTOR

Contractor: SOUTHWIND DRILLING, INC.

Rig #:

Rig Type: MUD ROTARY

Spud Date: 10/20/2016 Time: 12:17 PM TD Date: 10/26/2016 Time: 12:00 AM Rig Release: 10/27/2016 Time: 6:30 AM

**ELEVATIONS** 

K.B. Elevation: 1778.00ft Ground Elevation: 1770.00ft

K.B. to Ground: 8.00ft

## **NOTES**

PRODUCTION CASING RAN BASED ON RESULTS OF DST # 3 AND LOG ANALYSIS.

DRILL STEM TESTING BY EAGLE TESTERS, LLC: FIVE (5) CONVENTIONAL TESTS

	BOB THOMAS C-2 NE SE NW SW SEC.35-19S-11W 1770'GL 1778'KB	BOB THOMAS C-1 NE SE SW SW SEC.35-19-11W KB 1775'	THOMAS #7 W2 W2 SW SEC.35-19-11W KB 1775'
FORMATION	LOG TOPS	LOG TOPS	LOG TOPS
Anhydrite	503 +1275	+1278	+1277
<b>B-Anhydrite</b>	526 +1252	+1256	
Heebner Sh	. 2875-1097	-1103	-1112
Toronto	2892-1114	-1120	-1129
<b>Brown Lime</b>	2998-1220	-1227	-1237
LKC	3018-1240	-1249	-1258
ВКС	3274-1496	-1502	-1496
Arbuckle	3284-1506	-1509	-1521
RTD	3370-1592	-1647	-1536

# **SUMMARY OF DAILY ACTIVITY**

10-20-16	Spud 4:15 PM, set 8 5/8" surface casing to 277' w/225sxs 60/40 Pos
	2%Gel 3%CC, plug down 12:00AM
10-21-16	234', WOC
10-22-16	1590', drilling
10-23-16	2630', drilling, displaced 2599-2630', CFS 3004', short trip, CFS 3033'
10-24-16	3050', CFS 3050', DST # 1 3006'-3050' "A" to "B" LKC, TIWB, CFS
	3075' DST # 2 3052' to 3075' "D" LKC, TIWB, CFS 3098', TOWB
10-25-16	3098', DST # 3 3076' to 3098' "F" LKC, TIWB, CFS 3118', DST #4 3102'
	to 3118' "G" LKC, TIWB
10-26-16	3298', CFS 3288', CFS 3298', DST # 5 3270' to 3298' Arbuckle, TIWB,
	RTD 3370' @ 1:50PM, CCH, TOWB, Logs, TIWB, start LDDP
10-27-16	3370, finish LDDP and run production casing, cement bottom stage



## DRILL STEM TEST REPORT

CARRIE EXPLOATION LLC

35-19S-11W BARTON

1611 COPPER CREEK C-2 HAYS, KANSAS 67601-2667 **BOB THOMAS C-2** 

Job Ticket: 01135

DST#: 1

ATTN: HERB DEINES

Test Start: 2016.10.24 @ 02:15:00

#### **GENERAL INFORMATION:**

KANSAS CITY A-B-C Formation:

Deviated: Whipstock: ft (KB)

Time Tool Opened: 04:39:00

Tester:

Unit No:

Test Type:

GENE BUDIG 30

Time Test Ended: 00:00:00

Interval:

3006.00 ft (KB) To 3050.00 ft (KB) (TVD)

Total Depth: 3050.00 ft (KB) (TVD) Hole Diameter:

7.88 inches Hole Condition: Fair

Reference Elevations: 1778.00 ft (KB)

> 1770.00 ft (CF) 8.00 ft

Conventional Bottom Hole (Initial)

KB to GR/CF:

Serial #: 9139 Inside

Press@RunDepth: 886.88 psia @

3044.76 ft (KB)

Capacity:

psia

Start Date: Start Time:

2016.10.24 02:16:00

End Date: End Time:

2016.10.24 07:50:30 Last Calib.: Time On Btm:

1899.12.30 2016.10.24 @ 03:28:00

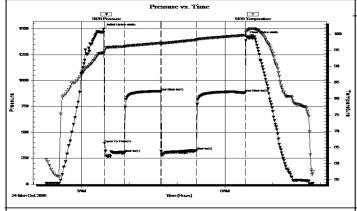
Time Off Btm: 2016.10.24 @ 06:27:00

TEST COMMENT: 1ST OPENING 15 MINUTES STRONG BLOW GAS TO SURFACE IN 2 MINUTES

1ST SHUT-IN 45 MINUTES NO BLOW BACK

2ND OPENING 30 MINUTES STRONG BLOW SEE GAS FLOW REPORT

2ND SHUT-IN 60 MINUTES WEAK BLOW BACK



PRESSU	RE	SUMMARY

PRESSURE SUMIMARY					
Time	Pressure	Temp	Annotation		
(Min.)	(psia)	(deg F)			
0	1497.92	94.26	Initial Hydro-static		
1	395.99	94.77	Open To Flow (1)		
27	304.18	96.14	Shut-In(1)		
72	896.94	97.23	End Shut-In(1)		
73	283.99	97.08	Open To Flow (2)		
116	323.82	98.20	Shut-In(2)		
178	886.88	99.66	End Shut-In(2)		
179	1423.60	101.19	Final Hydro-static		

# Recovery

Length (ft)	Description	Volume (bbl)
80.00	THICK HEAVY MUD	1.12
60.00	MUDDY WATER 30 MUD 70 WATER	0.84
60.00	MUDDY WATER 15 MUD 85 WATER	0.84
0.00	CHLORIDES 88000	0.00

#### Gas Rates

	Choke (inches)	Pressure (psia)	Gas Rate (Mcf/d)
First Gas Rate	1.00	33.10	951.59
Last Gas Rate	1.00	34.60	994.71
Max. Gas Rate	1.00	34.60	994.71

Ref. No: 01135 Eagle Testers Printed: 2016.10.26 @ 07:33:09



## DRILL STEM TEST REPORT

CARRIE EXPLOATION LLC

35-19S-11W BARTON

1611 COPPER CREEK C-2 HAYS, KANSAS 67601-2667

ATTN: HERB DEINES

**BOB THOMAS C-2** 

Job Ticket: 01136 DST#: 2

**GENERAL INFORMATION:** 

Formation: KANSAS CITY D Test Start: 2016.10.24 @ 14:15:00

Deviated: No Whipstock:

Time Tool Opened: 15:31:00

Time Test Ended: 00:00:00

3052.00 ft (KB) To 3075.00 ft (KB) (TVD) Interval:

3075.00 ft (KB) (TVD) Total Depth:

Hole Diameter:

Reference Elevations: 1778.00 ft (KB)

Unit No: 1-30

Test Type:

Tester:

1770.00 ft (CF)

GENE BUDIG

KB to GR/CF: 8.00 ft

Conventional Bottom Hole (Initial)

Serial #: 93335

7.88 inches Hole Condition: Fair

831.47 psia @

ft (KB)

Capacity:

psia

Press@RunDepth:

Start Time:

Start Date: 2016.10.24

End Date: 14:15:00 End Time: 2016.10.24 19:01:00

Last Calib.: Time On Btm:

1899.12.30 2016.10.24 @ 15:24:30

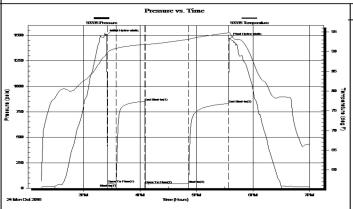
Time Off Btm: 2016.10.24 @ 17:35:30

TEST COMMENT: 1ST OPENING 10 MINUTES STRONG BLOW GAS TO SURFACE IN 8 MINUTES

1ST SHUT-IN 30 MINUTES-NO BLOW BACK

2ND OPENING 45 MINUTES STRONG BLOW SEE GAS FLOW REPORT

2ND SHUT-IN 45 MINUTES-NO BLOW BACK



T	PRESSURE SUMMARY					
Ī	Time	Pressure	Temp	Annotation		
ı	(Min.)	(psia)	(deg F)			
ı	0	1503.93	89.61	Initial Hydro-static		
١	1	46.92	89.89	Open To Flow (1)		
ı	10	42.20	90.78	Shut-In(1)		
١	41	851.88	91.89	End Shut-In(1)		
١	41	42.09	91.90	Open To Flow (2)		
١	87	45.33	93.14	Shut-In(2)		
١	130	831.47	94.80	End Shut-In(2)		
ı	131	1468.84	94.74	Final Hydro-static		
ı						
ı						
ı						
١						
١						
ı						

#### Recovery

Length (ft)	Description	Volume (bbl)
15.00	MUD	0.21
0.00	THERE WAS A SLIGHT SHOW OF OIL E	E0.00EN
0.00	THE SHUT-IN AND HYDRAULIC TOOS	0.00

#### Gas Rates

	Choke (inches)	Pressure (psia)	Gas Rate (Mcf/d)
First Gas Rate	1.00	7.75	222.80
Last Gas Rate	1.00	7.50	215.62
Max. Gas Rate	1.00	7.75	222.80

Printed: 2016.10.24 @ 19:24:09 Eagle Testers Ref. No: 01136



## DRILL STEM TEST REPORT

CARRIE EXPLOATION LLC

35-19S-11W BARTON

1611 COPPER CREEK C-2

**BOB THOMAS C-2** 

HAYS, KANSAS 67601-2667

Job Ticket: 01137 DST#: 3

ATTN: HERB DEINES Test Start: 2016.10.25 @ 12:15:00

## GENERAL INFORMATION:

Formation: KANSAS CITY F

Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Initial)

Time Tool Opened: 01:26:00 Tester: GENE BUDIG

Time Test Ended: Unit No:

> 3076.00 ft (KB) To 3098.00 ft (KB) (TVD) Reference Elevations: 1778.00 ft (KB)

1770.00 ft (CF) Total Depth: 3098 00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 8.00 ft

Serial #: 9139 Inside

Interval:

809.69 psia @ Press@RunDepth: 3093.00 ft (KB) 5000.00 psia Capacity:

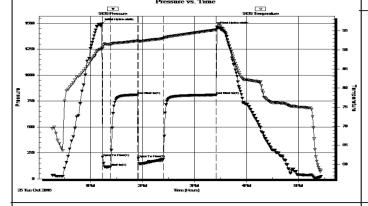
Start Date: 2016.10.25 End Date: 2016.10.25 Last Calib.: 2016.10.25 Start Time: 12:16:00 End Time: 17:26:30 Time On Btm: 2016.10.25 @ 13:13:00

Time Off Btm: 2016.10.25 @ 15:26:00

TEST COMMENT: 1ST OPENING 10 MINUTES STRONG BLOW GAS TO SURFACE IN 6 MINUTES

1ST SHUT-IN 30 MINUTES -STRONG BLOW BACK 2ND OPENING 30 MINUTES STRONG BLOW SEE GAS FLOW REPORT

2ND SHUT-IN 60 MINNUTES STRONG BLOW BACK



PRESSURE SUMMARY					
Time	Pressure	Temp	Annotation		
(Min.)	(psia)	(deg F)			
0	1497.35	90.44	Initial Hydro-static		
1	209.33	90.33	Open To Flow (1)		
10	118.96	91.46	Shut-In(1)		
42	811.12	92.36	End Shut-In(1)		
42	198.25	92.21	Open To Flow (2)		
71	188.90	93.02	Shut-In(2)		
132	809.69	95.27	End Shut-In(2)		
133	1461.50	96.03	Final Hydro-static		

## Recovery

Length (ft)	Description	Volume (bbl)
425.00	CLEAN GASSY OIL 50 GAS 50 OIL	5.96
0.00	GRAVITY 43 CORRECTED	0.00
60.00	HEAVY OIL AND GAS CUT MUD	0.84
0.00	35 GAS 30 OIL 35 MUD	0.00
30.00	HEAVY OIL AND GAS CUT MUD	0.42
0.00	50 GAS 20 OIL 30 MUD	0.00

	Choke (inches)	Pressure (psia)	Gas Rate (Mcf/d)
First Gas Rate	1.00	4.25	122.18
Last Gas Rate	1.00	5.45	156.68
Max. Gas Rate	1.00	5.70	163.87

Eagle Testers Ref. No: 01137 Printed: 2016.10.26 @ 07:34:22



## DRILL STEM TEST REPORT

CARRIE EXPLOATION LLC

1611 COPPER CREEK C-2 HAYS, KANSAS 67601-2667

Job Ticket: 01138

Test Start: 2016.10.25 @ 10:30:00

35-19S-11W BARTON

**BOB THOMAS C-2** 

ATTN: HERB DEINES

GENERAL INFORMATION:

Formation: KANSAS CITY G

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:33:00

Time Test Ended: 00:00:00

Interval: 3102.00 ft (KB) To 3118.00 ft (KB) (TVD)

Total Depth: 3118.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole (Initial)
Tester: GENE BUDIG

Unit No: 1-30

Reference Elevations: 1778.00 ft (KB)

1770.00 ft (CF)

DST#:4

KB to GR/CF: 8.00 ft

Serial #: 9119 Inside

Press@RunDepth: 739.08 psia @ 5000.00 psia 3113.00 ft (KB) Capacity: Start Date: 2016.10.25 End Date: 2016.10.25 Last Calib.: 2016.10.25 Start Time: 10:31:00 End Time: 15:58:00 Time On Btm: 2016.10.25 @ 11:34:00

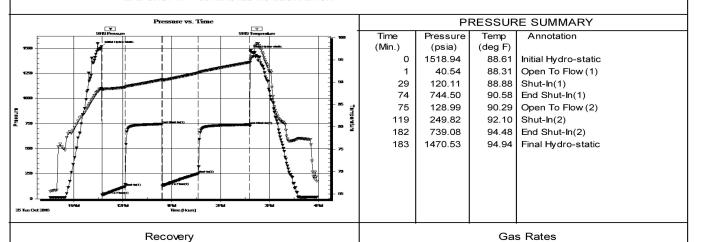
Time Off Btm: 2016.10.25 @ 14:36:30

TEST COMMENT: 1ST OPENING 30 MINUTES GOOD BLOW BUILT TO THE BOTTOM OF A 5 GALLON BUCKET IN 6 MINUTES

1ST SHUT-IN 45 MINUYTES NO BLOW BACK

2ND OPENING 45 MINUTES GOOD BLOW BUILT TO THE BOTTOM OF 5 GALLON BUCKET IN 12 MINUTES

2ND SHUT-IN 60 MINUTES NO BLOW BACK



l	Length (ft)	Description	Volume (bbl)	Ī	
	425.00	w ater chlorides 82000	5.96		_

	Choke (inches)	Pressure (psia)	Gas Rate (Mcf/d)
П			
┑			

Ref. No: 01138 Printed: 2016.10.26 @ 07:35:23 Eagle Testers



## DRILL STEM TEST REPORT

CARRIE EXPLOATION LLC

35-19S-11W BARTON

1611 COPPER CREEK C-2

**BOB THOMAS C-2** 

HAYS, KANSAS 67601-2667

Job Ticket: 01139 DST#: 5

ATTN: HERB DEINES Test Start: 2016.10.26 @ 05:52:00

**GENERAL INFORMATION:** 

Formation: ARBUCKLE

ft (KB) Conventional Bottom Hole (Initial) Deviated: No Whipstock: Test Type:

Time Tool Opened: 06:56:30 Tester: GENE BUDIG

Time Test Ended: 09:48:30 Unit No:

3270.00 ft (KB) To 3298.00 ft (KB) (TVD) Interval: 3270.00 ft (KB) (TVD)

Reference Elevations: 1778.00 ft (KB) 1770.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 9139

Total Depth:

Press@RunDepth: 67.90 psia @ ft (KB) Capacity: psia

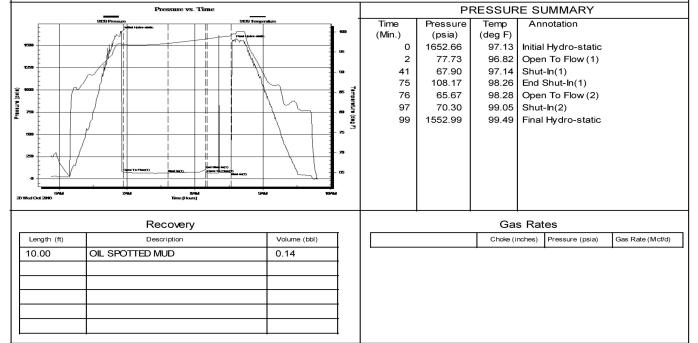
Start Date: 2016.10.26 End Date: 2016.10.26 1899.12.30 Last Calib.: Start Time: 05:52:00 End Time: 09:48:30 Time On Btm: 2016.10.26 @ 06:55:00 Time Off Btm: 2016.10.26 @ 08:33:30

TEST COMMENT: 1st OPENING 30 MINUTES VERY WEAK SURFACE BLOW FOR 12 MINUTES AND DIED

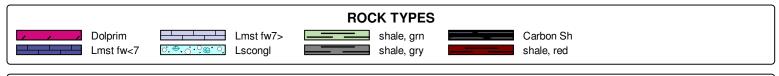
45 MINUTES-NO BLOW BACK 1ST SHUT-IN

2ND OPENING 20 MINUTES NO BLOW FLUSHED TOOL GOOD SURGE NO HELP

2ND SHUT-IN NONE TAKEN

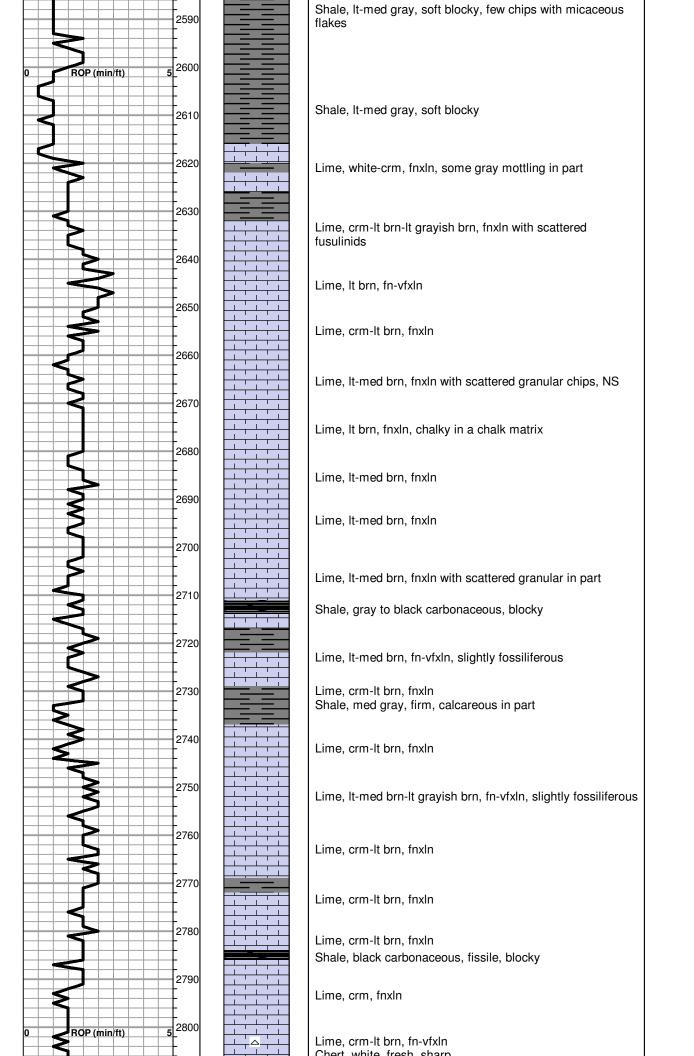


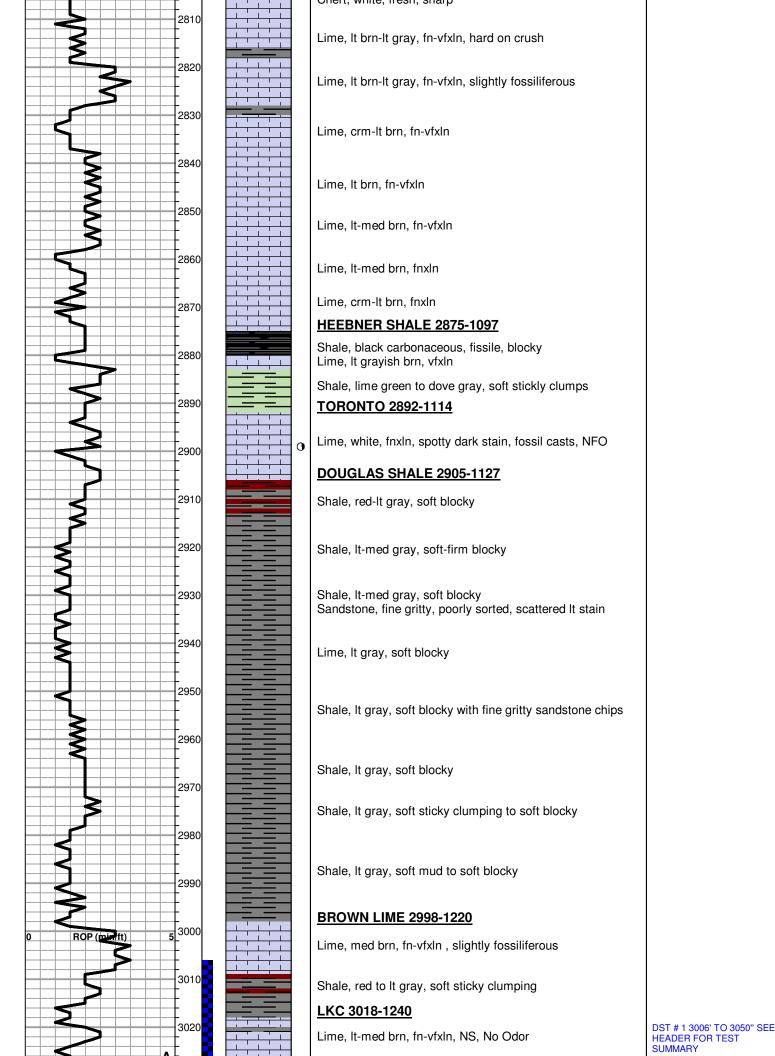
Ref. No: 01139 Printed: 2016.10.26 @ 10:01:57 Eagle Testers



## **ACCESSORIES**

Printed by GEOstrip VC Striplog version 4.0.8.15 (www.grsi.ca) Curve Track #3 Curve Track #1 ROP (min/ft) Depth | Intervals Oil Show Lithology DST Geological Descriptions Sored Interval DST Interval 1:240 Imperial ROP (min/ft) 1:240 Imperial 8 5/8" SURFACE CASING SET BEGIN 1' DRILL TIME FROM 2450' TO RTD 2450 TO 277' W/ 225 SXS 60/40 POS BEGIN 10' WET AND DRY SAMPLES FROM 2600' TO 2%GEL 3%CC RTD SLOPE 3/4 DEGREE @277' 2460 **ANHYDRITE TOP 503+1275 ANHYDRITE BASE 526+1252** 2470 2480 2490 2500 2510 2520 2530 2540 2550 2560 Lime, crm-lt brn, fnxln, scattered fusulinids 2570 Shale, med gray, soft blocky Lime, It gray-crm-lt brn, fnxln 2580





	<u> </u>		A	3030			Lime, It-med brn, fn-vfxIn	CFS 3033'
	<		В	3040		0	Lime, white-crm, oomoldic/oolitic, dark , staining, It odor, NFO	
			C	3050 - - -			Lime, It brn-It grayish brn, fn-vfxln, hard on crush, slightly fossiliferous	SLOPE 1 3/4 DEGREE @3050'
				3060		0	Shale, med gray-green, soft blocky Lime, crm-lt brn, thin fossiliferous with scattered pinpoint vuggy porosity, It stain, NFO, very It odor	DST # 2 3052' TO 3075' SEE HEADER FOR TEST SUMMARY
		2	D	3070			Lime, It brn-It grayish brn, fn-vfxln	DOT # 00701 TO 00001 0FF
			E	3080				DST # 3076' TO 3098' SEE HEADER FOR TEST SUMMARY
			-	3090		0	Lime, med brn-med grayish brn, fn-vfxln with chips of fine fossil and oolitic contact with scattered to sat stain, NFO	
E				3100			Lime, med brn, fn-vfxln	
				3110	60	<u>6</u>	Lime It brn, fnxln with white chalky wash grading into cemented oolitic zone grading into oomoldic zone. Scattered dark staining, NFO, questionable odor	DST # 4 3102' TO 3118' SEE HEADER FOR TEST SUMMARY
	\ =			3120	<b>6</b>	5	Lime, It-med brn, fnxln	
			G	3130	6	5]	Lime, It brn, oolitic/oomoldic, NFO, No odor, lot of barren chips	
		\$		- - - - 3140			Lime, crm, fnxln with bedded chalk	
		}		- - -			Lime, It brn, fnxln	
		2		3150			Shale, black carbonaceous, blocky	
		5		- 3160 -			Lime, It brn-It grayish brn, fnxln Shale, It gray, firm, blocky with some sticky clumps in part	
E			Н	-			Lime, It brn, fnxln, bedded chalk, NS	
		3		3170 - - -			Lime, crm-lt brn, fnxln with scattered barron comoldic chips	
			_	3180 - - -			Lime, crm-lt brn, fn-vfxln	
		\$		3190 - -			Lime, crm-lt brn, fnxln with few oolitic chips with trace of lt staining, NFO, no odor, not well developed in appearance	
0		ROP (Inin/ft)	5	3200				
		$\leq$	J	3210			Lime, It brn, fn-vfxln, NS	
		\$		- - - - - - - - - - - - - - - - - - -			Lime, crm-lt brn, fnxln with white chalky wash from bedded chalk	
		₹					Shale, med gray-black carbonaceous, soft blocky	
	<			3230 - -	6-6-	61	Lime, crm-lt brn, fnxln with scattered oomoldic chips, NS	
			K	- 3240 - -			Lime, crm-lt brn, fn-vfxln	

