



Scale 1:240 Imperial

Well Name: BIEKER #1
Surface Location: NE NE SE 24-15-19
Bottom Location:
API: 15-051026204
License Number: 4787
Spud Date: 11/19/2011 Time: 1:00 PM
Region: ELLIS
Drilling Completed: 11/26/2011 Time: 2:07 PM
Surface Coordinates: 2310 FSL & 330 FEL
Bottom Hole Coordinates:
Ground Elevation: 1978.00ft
K.B. Elevation: 1988.00ft
Logged Interval: 0.00ft To: 3743.00ft
Total Depth: 3746.00ft
Formation:
Drilling Fluid Type: FRESH WATER/CHEMICAL GEL

OPERATOR

Company: TDI, INC.
Address: 1310 BISON ROAD
HAYS, KS 67601
Contact Geologist: TOM DENNING
Contact Phone Nbr: (785) 628-2593
Well Name: BIEKER #1
Location: NE NE SE 24-15-19 API: 15-051026204
Pool: Field: UNNAMED
State: KANSAS Country: USA

SURFACE CO-ORDINATES

Well Type: Vertical
Longitude: -99.3761986 Latitude: 38.732216
N/S Co-ord: 2310 FSL
E/W Co-ord: 330 FEL

LOGGED BY



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

60.00	OCM-10%O-90%M	0.84
720.00	Muddy Oil-97%O-3%M	10.10
150.00	Muddy Water-95%W-5%M	2.10

Trilobite Testing, Inc

Ref. No: 44694

Printed: 2011.11.24 @ 22:49:13

DST #2 LKC " I,J "



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TDI Inc.
1310 Bison Road
Hays, KS. 67601
ATTN: Jeff Lawler

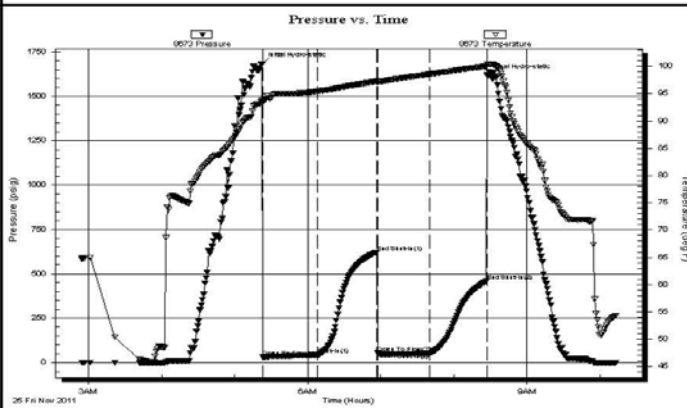
24-15s-19w-Ellis
Beiker #1
Job Ticket: 44695 **DST#: 2**
Test Start: 2011.11.25 @ 02:54:32

GENERAL INFORMATION:

Formation: **I-J**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 05:23:02
Time Test Ended: 10:12:32
Test Type: Conventional Bottom Hole (Reset)
Tester: Jason McLemore
Unit No: 54
Interval: **3428.00 ft (KB) To 3478.00 ft (KB) (TVD)**
Total Depth: 3478.00 ft (KB) (TVD)
Reference Elevations: 1988.00 ft (KB)
1981.00 ft (CF)
Hole Diameter: 7.80 inches Hole Condition: Good
KB to GR/CF: 7.00 ft

Serial #: 8673 Inside
Press@RunDepth: 51.48 psig @ 3465.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2011.11.25 End Date: 2011.11.25 Last Calib.: 1899.12.30
Start Time: 02:54:34 End Time: 10:12:32 Time On Btm: 2011.11.25 @ 05:22:32
Time Off Btm: 2011.11.25 @ 08:27:17

TEST COMMENT: IFF-Weak Blow , Built to 4-1/2"
ISI-Dead
FFP-Weak Blow , Built to 3"
FSI-Dead



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1683.82	93.79	Initial Hydro-static
1	30.47	93.27	Open To Flow (1)
46	42.69	95.43	Shut-In(1)
95	623.00	97.25	End Shut-In(1)
95	55.22	97.10	Open To Flow (2)
138	51.48	98.54	Shut-In(2)
185	458.93	100.01	End Shut-In(2)
185	1619.33	100.47	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Free Oil	0.07
45.00	Muddy Water-60%W-40%M	0.63

* Recovery from multiple tests

Gas Rates

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

Trilobite Testing, Inc

Ref. No: 44695

Printed: 2011.11.25 @ 14:18:44



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TDI Inc.
1310 Bison Road
Hays, KS. 67601
ATTN: Jeff Lawler

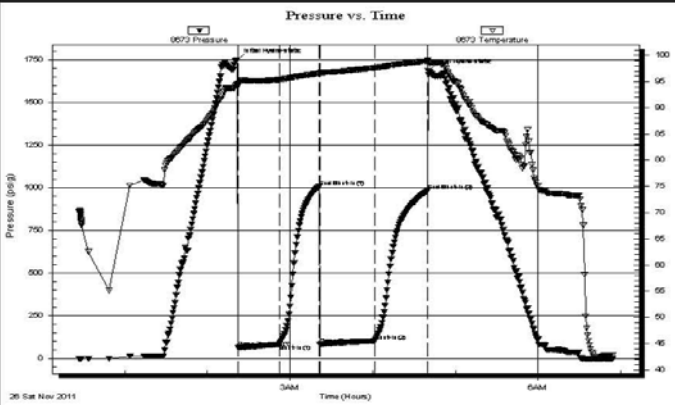
24-15s-19w-Ellis
Beiker #1
Job Ticket: 44696 **DST#: 3**
Test Start: 2011.11.26 @ 00:26:54

GENERAL INFORMATION:

Formation: **K-Conglomerate Sand**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 02:22:09
Time Test Ended: 06:54:09
Interval: **3470.00 ft (KB) To 3605.00 ft (KB) (TVD)**
Total Depth: 3605.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Reset)
Tester: Jason McLemore
Unit No: 54
Reference Elevations: 1988.00 ft (KB)
1981.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 8673 Inside
Press@RunDepth: 103.44 psig @ 3572.00 ft (KB)
Start Date: 2011.11.26 End Date: 2011.11.26
Start Time: 00:26:56 End Time: 06:54:09
Capacity: 8000.00 psig
Last Calib.: 2011.11.26
Time On Btm: 2011.11.26 @ 02:21:39
Time Off Btm: 2011.11.26 @ 04:40:09

TEST COMMENT: IFF-Good Blow ,BOB in 10 Min
ISI-Dead
FFP-Good Blow ,BOB in 7 Min.
FSI-Dead



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1752.79	94.54	Initial Hydro-static
1	64.26	94.13	Open To Flow (1)
31	83.59	95.39	Shut-In(1)
60	1008.85	96.52	End Shut-In(1)
60	83.25	96.59	Open To Flow (2)
100	103.44	97.61	Shut-In(2)
138	982.74	98.93	End Shut-In(2)
139	1689.52	99.18	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
50.00	Free Oil	0.70
60.00	Mud Cut Oil-30%G-40%O-30%M	0.84
0.00	360' Gas In Pipe	0.00

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

* Recovery from multiple tests

Trilobite Testing, Inc

Ref. No: 44696

Printed: 2011.11.26 @ 14:12:51

ROCK TYPES

- Cht
- Dolprim
- Lmst fw7>
- Carbon Sh
- Ss
- Cht vari
- Dolsec
- shale, grn
- shale, red
- Chtcong
- Lmst fw<7
- shale, gry
- Shcol

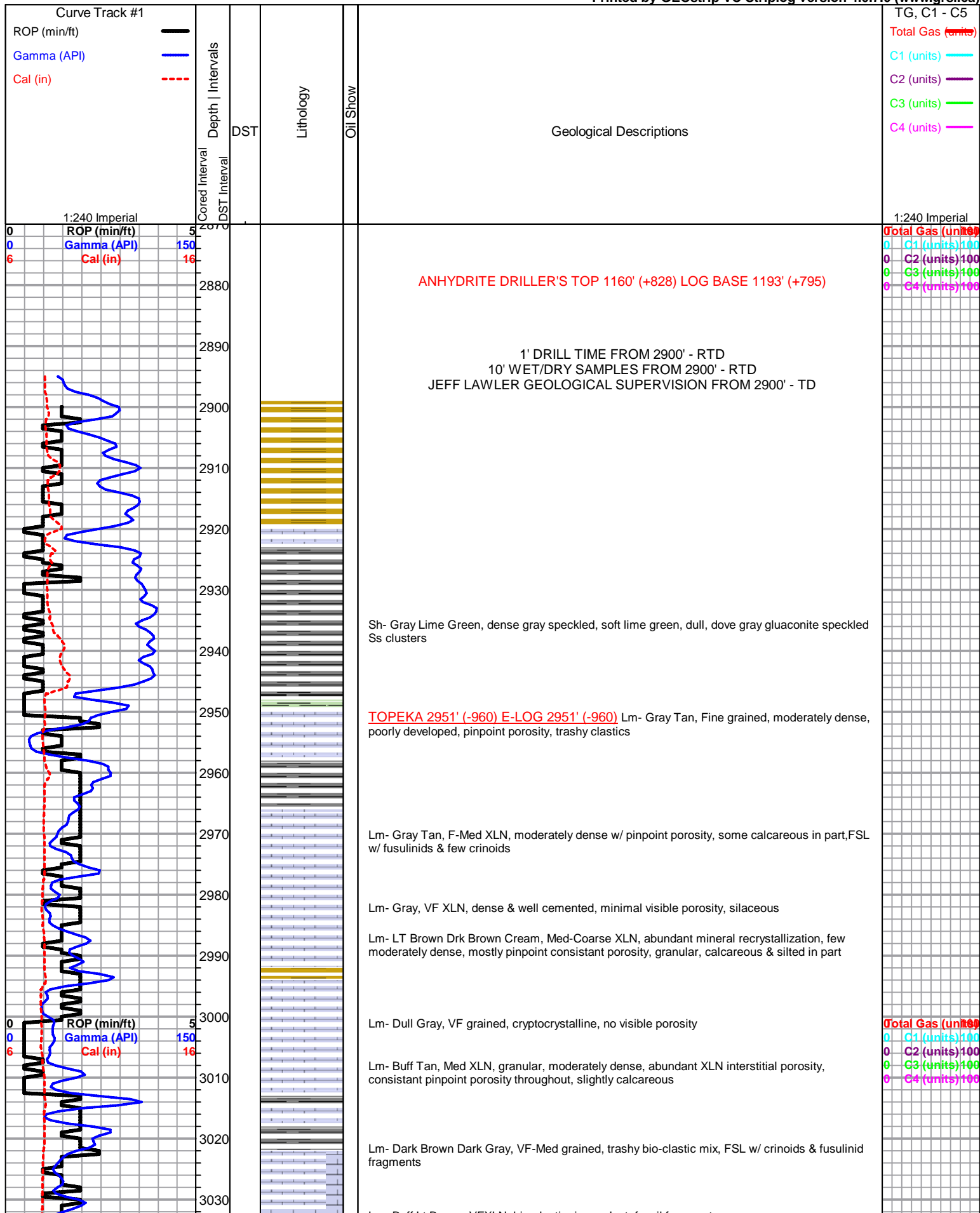
ACCESSORIES

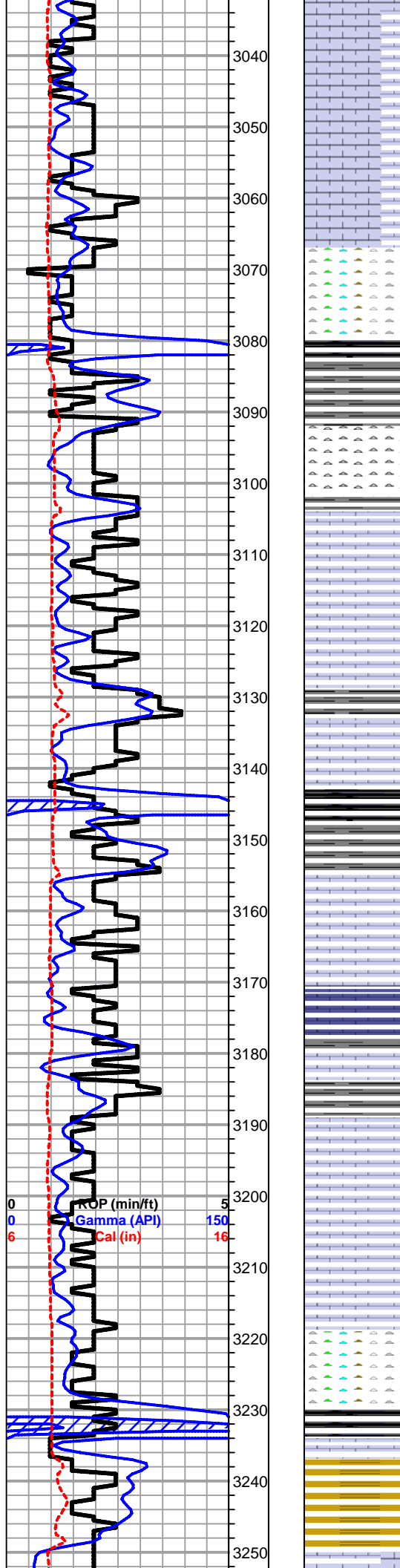
- STRINGER**
- Sandstone

OTHER SYMBOLS

- DST
- DST Int
- DST alt
- Core

Printed by GEOstrip VC Striplog version 4.0.7.0 (www.grsi.ca)





Lm- Buff Lt Brown, VFXLN, bio-clastic rip up clast, fossil fragments

Lm- Tan Cream, Med grained, granular, dense silted mud matrix, slightly dolomitic, few chips of reworked unconsolidated cherty Ls

Lm- Tan Gray, sticky argillaceous calcareous clumps

Chert- Dove Gray, VF, trashy bio-clastic dense bedded, massive, FSL

Sh-Black Gray Milky White, carbonaceous, fissile, soft, smooth round chips, abundant sticky argillaceous clumps

Chert- Brown Cream Gray, sharp angular bedded, some dense granular dolomitic chert, pinpoint porosity

Lm- Buff, Med grained, granular & gritty, moderately dense & well cemented, consistant pinpoint porosity, few chips w/ XLN porosity

Sh- Light Gray White, sticky argillaceous clumps, gray wash

Lm- Lt Brown Lt Gray, Med XLN, gritty & granular, semi-friable, good pinpoint porosity, mottled, NO STN, NO ODR

Sh- Black Gray, soft, semi-gritty, black dense & well compacted

Lm- Dark Gray Brown Tan, VF grained, dense & well cemented, minimal visible porosity, semi-cryptocrystalline

Lm- Buff Cream Tan, Fine - FXLN, gritty, slightly dolomitic, dense & well cemented, some chips silty mud matrix

Lm- Cream Lt Gray, VF-F, some XLN, mostly calcareous, some granular, moderately dense w/ pinpoint porosity, slightly FSL w/ fusulinids

Lm- Dark Gray, mostly dense, partly siliceous, FSL w/ fusulinids, little visible porosity

Lm- Cream Lt Gray, VF-F XLN, calcareous in part, some granular, mostly dense w/ minimal visible porosity, 1-2 chips dense w/ LT SCATTERED LT BRWN STN, NO ODR, edge recrystallization

Lm- Cream Tan, Med XLN, granular w/ consistant pinpoint porosity, some reworked trashy bio-clastics, FSL w/ crinoids

Chert- Smokey Gray Semi-Translucent Gray, mostly reworked, FSL w/ fusulinids, few chips of sharp angular bedded, dense w/ some pinpoint porosity

HEEBNER 3234' (-1246) E-LOG 3230' (-1242) Sh- Black Gray Lime Green, Carbonaceous & fissile, grainy, soft, clumps of argillaceous lime green

Sh- Cream, calcareous, soft

TORONTO 3253' (-1265) E-LOG 3250' (-1262) Lm- Tan Cream, VF-F XLN, calcareous in

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

part, some granular & dense, well cemented, 1-2 chips, MED XLN, MOSTLY DENSE W/
 SCATTERED EDGE POROSITY, RARE DRK STN, RECRYSTALLIZATION, NO ODR,
 MINERAL FLOR, INSTANT HVY STREAMING WET CUT & FLOR

3260
3270
3280
3290
3300
3310
3320
3330
3340
3350
3360
3370
3380
3390
3400
3410
3420
3430
3440
3450
3460
3470

D
S
T

1

D
S
T

2

ROP (min/hr)
Gamma (API)
Calcium

LKC 3279' (-1291) E-LOG 3275' (-1287) Lm- Lt Gray Cream, VF-F XLN, moderately dense w/ minimal visible porosity, poorly developed, some institial recrystallization, FEW CHIPS MOSTLY DENSE W/ SCATTERED EDGE POROSITY, LT GSY STN, FNT ODR, CLOUDY WET CUT, 1 CHIP GRANULAR CONSISTANT PINPOINT POROSITY, SATURATED DRK BRWN STN

Lm-Cream Tan, VF grained, calcareous in part, silted & dense, soft, some VF XLN, dense w/ scattered recrystallization porosity

Lm- Tan Cream, Med-Coarse XLN, well developed, oolitic-oolomoldic, recrystallization w/in vugs, some w/ dark gilsonitic stn, mostly LT GSY SCATTERED STN, SFO, FR ODR, INSTANT SLOW STREAMING WET CUT, development & porosity lessen w/ depth

Lm- Cream Tan, F-Coarse XLN, moderately developed w/ scattered coarse XLN vuggy porosity w/ recrystallization w/in, mostly pinpoint porosity, LT GSY STN THROUGHOUT, SFO, GOOD ODR, INSTANT STREAMING WET CUT

Lm- Cream, VF grained, mostly dense w/ scattered edge porosity, recrystallization, SCATTERED LT GSY STN, NFO, FNT ODR

LM- Cream Tan, Coarse XLN, oolitic, well developed, vuggy porosity w/ recrystallization w/in, SCATTERED GSY STN, NSFO, NO ODR

Lm- Cream Tan, MedXLN -VF grained, mostly well developed w/ consistant small vuggy porosity, SATURATED GSY LT BRWN STN, RECRYSTALLIZATION W/IN VUGS, SLGSGYFO, few chips mostly dense w/ scattered micro-vuggy porosity, LT GSY STN in vugs, NSFO, porosity lessens w/ depth

Lm- White, abundant calcareous sticky lime

Lm- Tan Buff, VF-F XLN, mostly dense, poorly developed, few chips w/ solution veins w/ recrystallization, DRK STN w/in, SCATTERED EDGE POROSITY W/ DRK STN, ODR Chert- White Semi-Translucent, sharp, angular, fresh bedded chert

Lm- Tan Cream, Med-Coarse XLN, very well developed, slightly dolomitic, rhombedral crystals, consistant interconnected micro-vugular porosity, SATURATED GSY STN, FEW BLEEDING W/ LIVELY FO, INSTANT BRIGHT WET CUT

Lm- Cream Tan, Med XLN, oolitic, scattered pinpoint porosity, scattered vugs, recrystallization w/in vugs, LT GSY STN, NFO, STREAMING WET CUT

CFS @ 3340'
 SHORT TRIP
 SLOPE 1/2 dgr
 BOARD 3369.38
 STRAP 3367.34
 STRAP -2.04
 DST #1
 3284-3340

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

3480
3490
3500
3510
3520
3530
3540
3550
3560
3570
3580
3590
3600
3610
3620
3630
3640
3650
3660
3670
3680
3690

D
S
T

3

0
0
6

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

5
150
16

Lm- Cream Tan, Med-Coarse XLN, scattered oolitic development, scattered micro-vugular porosity, calcareous in part, some moderately dense, , SL SCATTERED STN, SLFFO, GD ODR

Lm- Tan Cream, VFXLN, poorly developed, mostly dense w/ little to no visible porosity

BKC 3520' (-1532) E-LOG 3520' (-1532) Sh- Gray Blue-Green Gray, grainy, soft, some dense, calcareous white clumps

Lm- Cream, Med XLN, poorly developed, dense, tight interstitial XLN porosity

Lm- Cream Tan Red Mottled, VF, some XLN, mostly calcareous & silted, minimal porosity

Sh- Maroon, grainy, gritty & earthy, soft

Lm- Cream Buff, VF XLN, dense w/ little visible porosity

Cherty/Dolomitic Conglomerate- VF XLN, consistant pinpoint porosity dolomite, DRK BROWN SATURATED STN, SLOW CLOUDY WET CUT UPON CRUSH, SFO FEW CHIPS OF VF GRAINED PEBBLEY UNCONSOLIDATED CONGLOMERATE W/ SATURATED STN, INSTANT STREAMING WET CUT & FLOR, mult-colored sharp angular fresh bedded chert

Cherty Sand- Clusters of sub-rounded to sub-angular, slightly frosted, silicon cemented. Mostly conglomeritic clusters, few cleaner, semi-friable to friable. SCATTERED STN, HVY BRWN, STREAMING WET CUT, slightly efferevescent

Conglomerate- abundant multi-colored shales. Reworked chert, various colors, some oolitic, few pieces oolimidic w/ SATURATED DRK HVY BLACK OIL STN, NO ODR

E-LOG ARBUCKLE TOP 3630' (-1642)

Weathered Arbuckle- Coarse XLN, tan cream, rhombic crystalline, friable, efferevescences to nothing, some silted w/ pyrite inclusions. Clean on top and silted towards bottom of section

ARBUCKLE 3662' (-1674) E-LOG 3630' (-1642) Dolomite- Cream Tan, VF XLN, dense w/ consistant pinpoint poroisty, scattered micro vugular porosity, NSO, NO STN, NO ODR

Dolomite- Cream Tan, Med-Fine XLN, pinpoint porosity throughout, moderately dense & well cemented, some recrystallization

Dolomite- A/A, Med-Coarse XLN

Total Gas (units)
CFS @ 3605
DST #3
3470-3605'

