



Scale 1:240 Imperial

Well Name: Leiker #4-25-15-20  
Surface Location: 133' FSL, 1285' FWL, Sec. 25-T15S-R20W  
Bottom Location:  
API: 15-051-26884-00-00  
License Number: 1349692  
Spud Date: 6/30/2017 Time: 3:15 PM  
Region: Ellis County  
Drilling Completed: 7/8/2017 Time: 5:15 AM  
Surface Coordinates:  
Bottom Hole Coordinates:  
Ground Elevation: 2137.00ft  
K.B. Elevation: 2145.00ft  
Logged Interval: 2900.00ft To: 3850.00ft  
Total Depth: 3850.00ft  
Formation: Lansing Kansas-City  
Drilling Fluid Type: Chemical/Fresh Water Gel

#### OPERATOR

Company: Cynosure Energy, LLC  
Address: 1125 17th St., Suite 410  
Denver, CO 80202  
Contact Geologist: Gene Davis  
Contact Phone Nbr: 720-272-9620 / 720-476-3678  
Well Name: Leiker #4-25-15-20  
Location: 133' FSL, 1285' FWL, Sec. 25-T15S-R20W  
API: 15-051-26884-00-00  
Pool: Kansas Field: Post Rock South  
State: Kansas Country: USA

#### LOGGED BY

Company: Mile High Exploration, LLC  
Address: 675 Loveland St  
Golden, CO 80401  
Phone Nbr: 203-671-6034  
Logged By: Geologist Name: Jeremy Schwartz

#### NOTES

The Cynosure Energy, LLC Leiker #4-25-15-20 was drilled to a total depth of 3850', bottoming in the Precambrian.

Three DST's were conducted throughout the Lansing-Kansas City and Conglomerate zones during the drilling of this well. The DST Reports can be found at the bottom of this log.

Due to negative DST Results, sample shows, and log analysis it was determined by all parties involved to run casing for a future injection well. The dry samples were saved and will be available for further review at the Kansas Geological Society Well Sample Library, located in Wichita, KS.

Respectfully Submitted,  
Jeremy Schwartz  
Geologist

#### CONTRACTOR

Contractor: Duke Drilling  
Rig #: 2

Rig Type: Mud Rotary  
 Spud Date: 6/30/2017  
 TD Date: 7/8/2017  
 Rig Release:

Time: 3:15 PM  
 Time: 5:15 AM  
 Time:









### ELEVATIONS

K.B. Elevation: 2145.00ft      Ground Elevation: 2137.00ft  
 K.B. to Ground: 8.00ft

DATE	DEPTH	ACTIVITY
Tuesday, July 04, 2017	2965'	Geologist Jeremy Schwartz on location @0030hrs, ~2960', drlg ahead through Tarkio, Topeka, King Hill, Queen Hill, Heebner, Toronto, Lansing,
Wednesday, July 05, 2017	3526'	CFS @ 3526', conduct short trip, CTCH 1hr, drop survey, strap out for DST #1 in the Lansing "A-F", successful test, trip back in hole, CTCH 2.5hrs (work on mud pump), Resume drlg ahead through Lansing,
Thursday, July 06, 2017	3614' 3641'	CFS @ 3614', trip out of hole to conduct DST #2 in the Lansing "H-I", successful test Resume drlg ahead through Lansing, Rig down for repairs (work on mud pump)
Friday, July 07, 2017	3683' 3760'	Resume drlg, Rig down for repairs (work on mud pump), Resume drlg, CFS @ 3746', resume drlg, CFS @ 3760' trip out of hole to conduct DST #3 in the Conglomerate, successful test, resume drlg ahead to TD
Saturday, July 08, 2017	3850'	TD of 3850' reached @ 0515hrs, CFS 1hr, drop survey, trip out of hole for logs Conduct Logging operations, logging operations complete @ 1045hrs, Waiting on orders, decision made to set casing for future injection well Geologist Jeremy Schwartz off location @ 1600hrs



FORMATION	Cynosure Energy, LLC																	
	Leiker #4-25-15-20						Leiker #3-25-15-20						Leiker #2-25-15-20					
	KB		2145		KB		2149		SMPL.		KB		2131		KB		2131	
	LOG TOPS		SAMPLE TOPS		COMP. CARD		LOG		SMPL.		COMP. CARD		LOG		SMPL.			
DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	DEPTH	DATUM	CORR.	CORR.			
Anhydrite Top	1366	779	1367	778	1376	773		+	6	+	5	1363	768	+	11	+	10	
Anhydrite Base	1410	735	1408	737	1418	731		+	4	+	6	1403	728	+	7	+	9	
Stotler	2951	-806	2949	-804	2958	-809		+	3	+	5	2932	-801	-	5	-	3	
Tarkio	2996	-851	2997	-852	3000	-851		+	0	-	1	2976	-845	-	6	-	7	
Topeka	3120	-975	3120	-975	3124	-975		+	0	+	0	3100	-969	-	6	-	6	
King Hill	3247	-1102	3248	-1103	3250	-1101		-	1	-	2	3226	-1095	-	7	-	8	
Queen Hill	3307	-1162	3308	-1163	3310	-1161		-	1	-	2	3286	-1155	-	7	-	8	
Heebner	3398	-1253	3398	-1253	3396	-1247		-	6	-	6	3375	-1244	-	9	-	9	
Toronto	3420	-1275	3420	-1275	3418	-1269		-	6	-	6	3396	-1265	-	10	-	10	
Lansing	3442	-1297	3442	-1297	3442	-1293		-	4	-	4	3422	-1291	-	6	-	6	
Muncie Creek	3570	-1425	3567	-1422	3568	-1419		-	6	-	3	3546	-1415	-	10	-	7	
Stark	3640	-1495	3639	-1494	3641	-1492		-	3	-	2	3620	-1489	-	6	-	5	
BKC	3687	-1542	3692	-1547	3688	-1539		-	3	-	8	3666	-1535	-	7	-	12	
Marmaton	3722	-1577	3722	-1577	3727	-1578		+	1	+	1	3695	-1564	-	13	-	13	
Conglomerate	3752	-1607	3752	-1607	3764	-1615		+	8	+	8							
Cong. Sand	3755	-1610	3753	-1608	3790	-1641		+	31	+	33	3747	-1616	+	6	+	8	
Pre-Cambrian	3794	-1649	3792	-1647	3804	-1655		+	6	+	8	3758	-1627	-	22	-	20	
RTD			3850	-1705	3865	-1716				+	11	3800	-1669				36	
LTD	3853	-1708			3863	-1714		+	6			3799	-1668	-	40			

### ROCK TYPES



 Chtcong     
  shale, grn     
  Carbon Sh     
  Ss  
 Lmst fw<7     
  shale, gry     
  shale, red     
  Ignebasic

### ACCESSORIES






#### MINERAL

 Chert White  
 Varicolored chert


#### FOSSIL

 Bioclastic or Fragmental  
 Fossils < 20%

#### STRINGER










 Chert  
 Limestone  
 Sandstone  
 Shale  
 red shale

#### TEXTURE

 Chalky

OTHER SYMBOLS

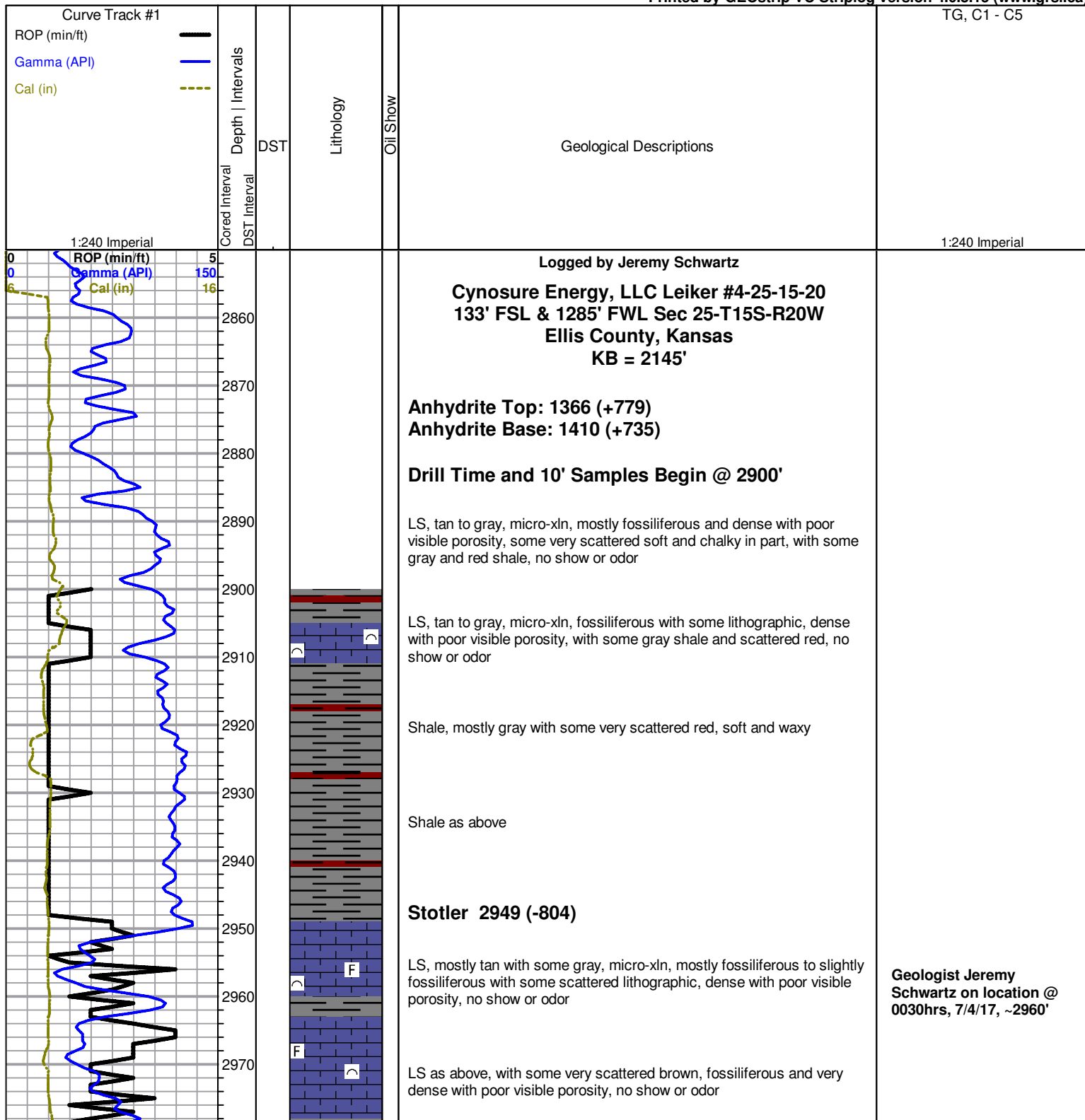
MISC

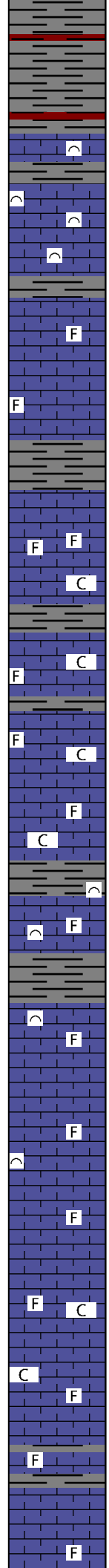
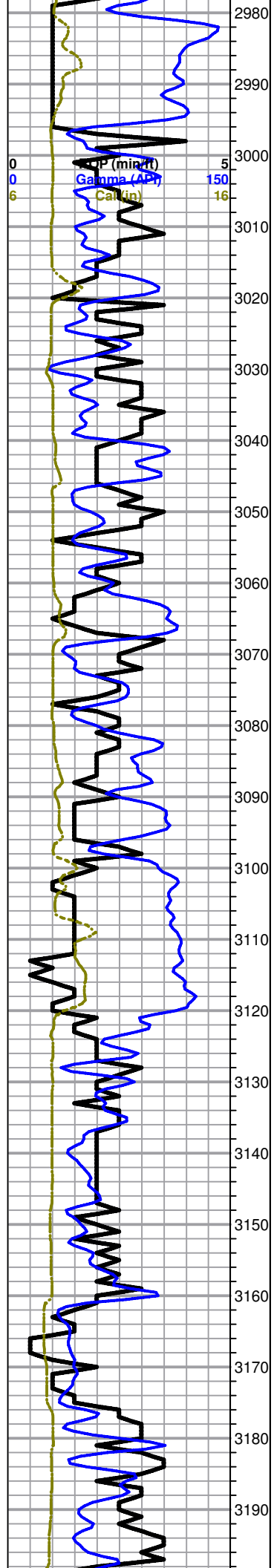
-  Daily Report
-  Digital Photo
-  Document
-  Folder
-  Link
-  Vertical Log File
-  Horizontal Log File
-  Core Log File
-  Drill Cuttings Rpt

DST

-  DST Int
-  DST alt

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Shale, gray with trace red, mostly soft and waxy

**Tarkio 2997 (-852)**

LS, tan to gray with some very scattered brown, micro-xln, mostly fossiliferous and dense with poor visible porosity, some scattered lithographic, no show or odor

LS as above, no show or odor

LS, tan to gray with some very scattered brown, micro-xln, slightly fossiliferous to lithographic, no show or odor

LS as above, no show or odor

LS, mostly gray to brown with some scattered tan, mostly lithographic and dense with poor visible porosity, some scattered slightly fossiliferous, no show or odor

LS, tan to cream with some gray, micro-xln, mostly lithographic with poor visible porosity, some very scattered slightly fossiliferous, with some scattered soft and chalky in part, no show or odor

LS, mostly tan to cream, micro-xln, lithographic with poor visible porosity, some scattered soft and chalky in part, with some scattered gray, slightly fossiliferous and dense with poor visible porosity, no show or odor

LS, tan to cream and gray, micro-xln, some lithographic, some fossiliferous, mostly dense with poor visible porosity, slightly chalky, no show or odor

LS, mostly gray to brown, fossiliferous and dense with poor visible porosity, with some scattered cream to tan, lithographic to slightly fossiliferous with poor visible porosity, no show or odor

LS, mostly gray to brown with some scattered cream, micro-xln, lithographic to fossiliferous with poor visible porosity, no show or odor

**Topeka 3120 (-975)**

LS, cream to gray, micro-xln, mostly lithographic with poor visible porosity, also with some dark gray to dark brown, lithographic and very dense with poor visible porosity, no show or odor

LS, gray to cream, micro-xln, some fossiliferous, some lithographic, overall mostly dense with poor visible porosity, no show or odor

LS, mostly same as above, mostly lithographic, some scattered slightly fossiliferous, poor visible porosity, no show or odor

LS, gray with some scattered cream, micro-xln, mostly lithographic and dense with poor visible porosity, some very scattered slightly fossiliferous, no show or odor

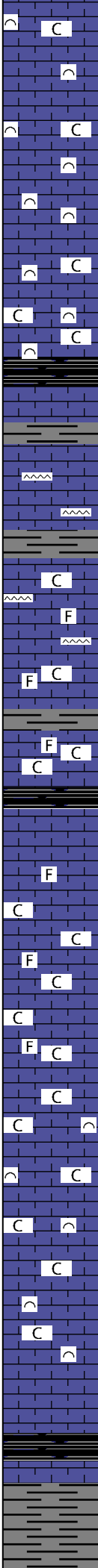
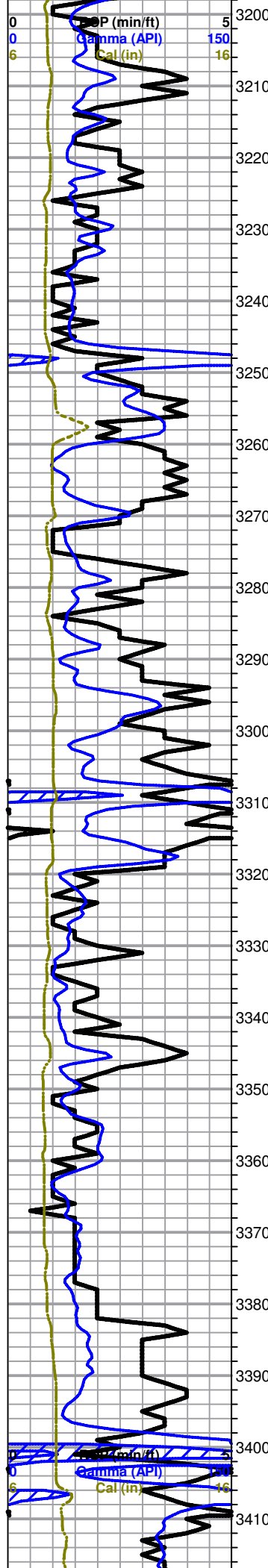
LS, cream with some scattered gray, micro-xln, mostly lithographic to slightly fossiliferous with poor visible porosity, some soft and chalky in part, also with some scattered with poor to fair visible pinpoint porosity, chips fairly friable, some chalky in part, no show or odor

LS, cream with some scattered gray, micro-xln, mostly lithographic with poor visible porosity, some very scattered slightly fossiliferous, no show or odor

LS as above, no show or odor

LS, cream to gray, micro-xln, lithographic to fossiliferous, mostly poor

Mud-Co Mud chk  
 3198'  
 7/04/17  
 Vis: 43 Wt: 9.1  
 PV: 14 YP: 19  
 WL: 7.2  
 Cake: 1/32



LS, cream to gray, micro-xln, lithographic to fossiliferous, mostly poor visible porosity, with some very scattered chips cream with mostly poor visible pinpoint porosity, few chips with fair porosity, barren, some soft and chalky in part, no show or odor

LS as above, no show or odor

LS, gray to cream, micro-xln, mostly fossiliferous and dense with poor visible porosity, no show or odor

LS as above, no show or odor

LS, gray to cream with some scattered brown, micro-xln, mostly fossiliferous and dense with poor visible porosity, with some scattered cream, lithographic, soft and chalky in part, fairly chalky sample, no show or odor

**King Hill 3248 (-1103)**  
Shale, black carbonaceous

LS, cream to light gray, crypto-micro xln, mostly lithographic and dense with poor visible porosity, few scattered chips micro-xln with re-crystallized edges with poor visible porosity, also with trace tan chert, fresh and sharp, no show or odor

LS with trace chert as above, no show or odor

LS, mostly cream, crypto-xln and lithographic with poor visible porosity, some soft and chalky in part, with some scattered micro-xln, slightly fossiliferous and trace tan to brown chert, no show or odor

LS, cream to gray, micro-xln, mostly lithographic with some scattered slightly fossiliferous and some soft and chalky in part, overall poor visible porosity, no show or odor

LS as above, fairly chalky, no show or odor

**Queen Hill 3308 (-1163)**  
Shale, black carbonaceous

LS, gray to cream, micro-xln, mostly lithographic with some scattered fossiliferous and gray mottled, dense with poor visible porosity, no show or odor

LS as above, fairly chalky, no show or odor

LS, mostly cream, micro-xln and soft and chalky in part, poor visible porosity, very chalky sample, no show or odor

LS as above, very chalky, no show or odor

LS as above, with slight influx brown, micro-xln, fossiliferous and dense with poor visible porosity, very chalky, no show or odor

LS, mostly cream with some scattered gray and brown, lithographic to fossiliferous, overall poor visible porosity, fairly chalky, no show or odor

LS as above, slightly less chalky, no show or odor

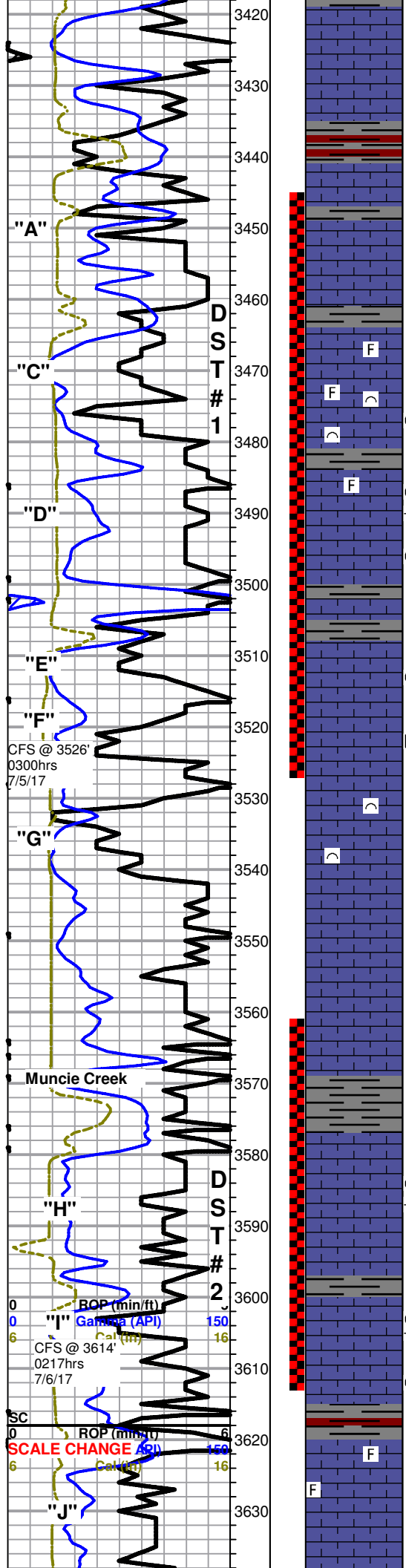
LS, cream to light gray, micro-xln, mostly lithographic with some scattered slightly fossiliferous, mostly dense with poor visible porosity, slightly chalky, no show or odor

**Heebner 3398 (-1253)**  
Shale, black carbonaceous

Shale, gray, soft and waxy

**Toronto 3420 (-1275)**

Ca: Tr  
CHL: 9,800ppm  
Sol: 5.2 LCM: 2  
DMC: \$1,109.16  
CMC: \$5,938.15



LS, white to cream with some scattered light gray, micro-xln with some scattered crypto-xln, lithographic and mostly dense with poor visible porosity, no show or odor

**Lansing 3442 (-1297)**

Coachman Leiker 4-25-15-20 dst 1.jpg

LS, cream to gray, micro-xln, mostly lithographic with some very scattered slightly fossiliferous, dense with poor visible porosity, some scattered chips re-crystallized with poor visible porosity, upon break chips show poor inter-xln porosity, barren, no show, fluor., or odor

~3450' LS as above, with slight influx cream to light gray, micro-xln, oolitic with poor visible porosity, no show, fluor., or odor

LS, cream to gray, micro-xln, mostly lithographic with some scattered oolitic as above and very scattered slightly fossiliferous, overall poor visible porosity, no show, fluor., or odor

LS as above, also with some brown, fossiliferous and very dense with poor visible porosity, no show, fluor., or odor

LS, cream to gray, micro-xln, mostly lithographic and dense with poor visible porosity, also with some very scattered cream (<5%), slightly fossiliferous to oolitic with mostly poor very scattered inter-fossil stain between fragments or oolites, upon break most chips show poor inter-xln porosity with mostly poor very spotty inter-xln stain and VSSFO (1-2heavy droplets), very weak cut with dull yellow to milky white fluor., NSFO in tray, no odor

~3490' LS, mostly cream, lithographic and dense with poor visible porosity, some (~10%) with scattered poor to fair visible pinpoint porosity and scattered to very scattered stain in and around porosity only, few chips with scattered free oil pooling up on surface around porosity, upon break some chips show fair inter-xln porosity and staining with fair show free oil and very slight show gas bubbles, slow streaming cut with milky white fluor., few chips increase to mostly saturated light golden brown stain when left under lamp for several minutes, SSFO in tray, fair odor

~3500' LS, cream, micro-xln, lithographic with some scattered oolitic and fossiliferous, mostly dense and barren with poor visible porosity, few very scattered chips with very scattered poor pinpoint porosity and poor stain around porosity only, upon break few have VSSFO and show poor inter-xln porosity and stain, SSFO in tray, no fluor., poor fleeting odor

~3510' LS, cream, micro-xln, lithographic to oolitic with some scattered fossiliferous, mostly dense and barren with poor visible porosity, few chips (<5%) with very scattered poor inter-fossil or inter-oolite stain, upon break most show poor visible inter-xln porosity and NSFO to VSSFO, no odor

See Sidebar for CFS samples

~3530' LS, cream to gray with some scattered white to off-white, micro-xln, mostly lithographic with some oolitic and fossiliferous, dense with poor visible porosity, with some scattered soft and chalky in part, no show, fluor., or odor

~3540' LS, cream to white, micro-xln, mostly lithographic with poor visible porosity, some scattered soft and chalky in part as well as some scattered oolitic, no show, fluor., or odor

~3550' LS as above, with slight influx light gray to light brown, lithographic and dense with poor visible porosity, no show, fluor., or odor

LS, cream to brown, micro-xln, lithographic and dense with poor visible porosity, with some very scattered slightly fossiliferous, no show, fluor., or odor

Coachman Leiker 4-25-15-20 dst 2.jpg

LS, cream to light gray with some light brown, micro-crypto xln, lithographic and dense with poor visible porosity, no show, fluor., or odor

~3590' LS, mostly same as above, with few very scattered chips (<5%) cream, micro-xln, lithographic with some scattered poor to fair visible pinpoint porosity and stain around porosity only, chips show dull to bright yellow fluor., upon break VSSFO (very light brown to opaque droplets) and few very scattered gas bubbles in few with poor to fair visible inter-xln porosity and fair inter-xln stain, when left under lamp for several minutes stain increases throughout matrix to mostly saturated light golden brown stain, slow streaming cut, VSSFO in tray, very poor fleeting odor in wet cup

~3600' LS, cream to white, micro-xln, mostly lithographic and dense with poor visible porosity, some scattered chips (~15%) with some scattered poor to fair visible pinpoint porosity to slightly vuggy and re-crystallized with stain in and around porosity as well as fair show gas bubbles, upon break some chips show fair to good show free oil and scattered poor to fair inter-xln stain and porosity, some chips too dense to break but when agitated have good show free oil, few very scattered small chips re-crystallized with fair vuggy porosity and mostly saturated stain, SSFO in tray, poor odor

See sidebar for CFS samples

~3620' LS, gray to cream, micro-xln, mostly lithographic and dense with poor visible porosity, with some scattered slightly fossiliferous, no show or odor

~3630' LS, cream to white with some gray, micro-xln, mostly same as above, with some scattered soft and chalky in part, no show or odor

**DST #1 3445'-3526'**  
**LKC "A-F"**  
**15-60-30-90**  
**Recovered: 203' GIP,**  
**62' SOCMW (5%O/25% M/70%W)**  
**297' WOCM (20% W/15%O/65%M)**  
**SIP: 1087-1030#**

**3526' 30"** LS, cream to light gray, micro-xln, lithographic to oolitic, mostly dense and barren with poor visible porosity, trace lithographic with scattered poor pinpoint porosity on edges only with poor stain in porosity only, upon break NSFO and poor visible inter-xln porosity, NSFO in tray, no fluor., or odor

**3526' 60"** Mostly same as above, with trace oolitic with very scattered dead gilsonitic inter-oolite stain, NSFO in tray, no odor

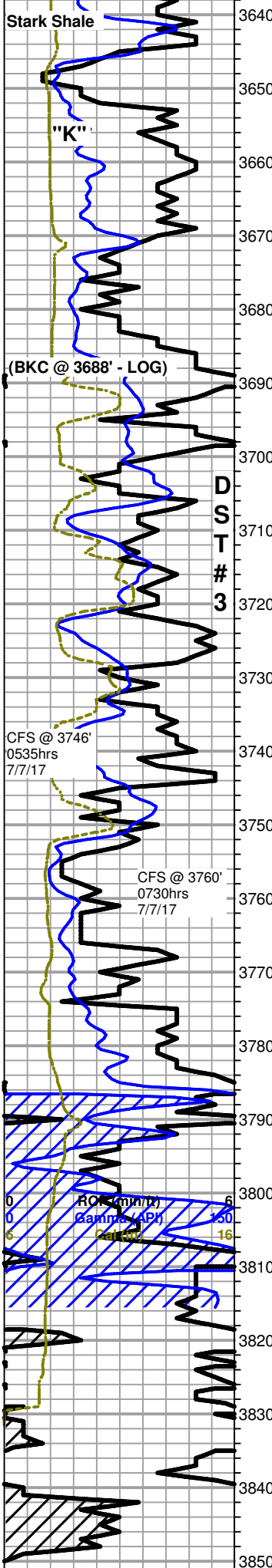
**Survey @ 3526' = 1Deg Strap 1.70LTB**

Mud-Co Mud chk  
 3526'  
 7/5/17  
 Vis: 55 Wt: 9.1  
 PV: 14 YP: 26  
 WL: 6.8  
 Cake: 1/32  
 pH: 11.0  
 Ca: Tr  
 CHL: 6,600ppm  
 Sol: 5.4 LCM: 2  
 DMC: \$340.10  
 CMC: \$6,278.25

**3614' 30"** LS, light gray to white, micro-xln, mostly lithographic and dense with poor visible porosity, few very scattered chips (<5%) with some scattered mostly poor edge pinpoint porosity and stain in and around porosity only, most too dense to break, also with few small chips with very scattered areas of fair vuggy porosity and stain confined to areas of porosity, SSFO in tray, poor odor

**3614' 60"** LS as above with shows mostly dropping out, with slight influx oolitic, few chips have scattered inter-oolite staining, fairly dense with poor visible porosity, when agitated and eventually broken chips have fair to good show free oil, SSFO in tray, poor odor

**DST #2 3561'-3614'**  
**LKC "H-I"**  
**15-60-30-90**



LS as above, no show or odor

LS, cream to white, micro-xln, lithographic to oolitic and dense with poor visible porosity, with some soft and chalky in part, no show or odor

LS, light brown to gray with some cream to white, micro-xln, fossiliferous to lithographic and mostly dense with poor visible porosity, some scattered oolitic as well as some soft and chalky in part, no show or odor

LS as above, no show or odor

LS, light brown to white with some scattered cream and gray, micro-xln, mostly lithographic with some very scattered oolitic, dense with poor visible porosity, also with some scattered soft and chalky in part, no show or odor

**BKC 3692 (-1547)**

Shale, red and gray, soft and waxy

LS, gray to cream, micro-xln, lithographic and dense with poor visible porosity, no show or odor

LS, cream to gray, micro-xln, lithographic to slightly fossiliferous and dense with poor visible porosity, no show or odor

**Marmaton 3722 (-1577)**

LS, gray to cream with some scattered brown, mostly lithographic with some fossiliferous, dense with poor visible porosity, no show or odor

3746' 30" Mostly maroon to red and gray shale, with some LS, gray to cream, micro-xln, lithographic to slightly fossiliferous and dense with poor visible porosity, with trace red to orange chert, also with few very scattered quartz SS grains in bottom of tray, fine grained, sub-rounded to rounded, grains appear barren, no show or odor

3746' 60" Same as above, also with few very scattered SS clusters, f-med grained, gray to green, sub-rounded to sub-angular and poorly sorted, most well cemented and dense, few fairly friable, no show or odor

Coachman Leiker 4-25-15-20 dst 3.jpg

3760' 30" LS, cream, micro-xln, re-crystallized and mostly dense, some fairly friable, some with mostly poor visible vf pinpoint to inter-xln porosity, most appear barren, some gassy, some also slowly bleed free oil droplets to surface, upon break some chips with good show free oil and mostly poor to some scattered fair inter-xln porosity with free oil and gas bubbles slowly bleeding from porosity, slow to instant streaming cut, also with slight influx white chert with some very scattered tan to opaque, with **some scattered loose SS grains in bottom of tray, fine grained, sub-rounded to sub-angular, appear barren, good show free oil in tray, poor odor**

3760' 60" Mostly same as above, with noticeably less shows and VSSFO in tray, no odor

~3762 Mixed red and gray shales with varicolored orange/red to tan/brown and opaque cherts, most fresh and sharp, few pieces with very slightly poor tripolitic edge with poor tarry, black stain, with scattered cream to gray and white LS, also with some vf-f and coarse quartz ss grains in bottom of tray, most sub-rounded to rounded, clear and barren, no show or odor

~3770' Conglomerate as above, with abundant vf-f quartz ss grains in bottom of tray, sub-rounded to rounded, clear and barren, no shows or odor

~3780' Conglomerate as above, with slight influx ss clusters, clear to dirty reddish-brown, mostly fine grained and well cemented, sub-rounded to sub-angular and poorly sorted, barren, also with some scattered quartzite, most reddish-brown with some clear, with pyrite/magnetite inclusions, no shows or odor

**Pre-Cambrian Quartzite 3792' (-1647)**

Quartzite, most reddish-brown with abundant pyrite/magnetite inclusions, no show or odor

Quartzite, mostly reddish-brown to pink, with abundant pyrite and magnetite inclusions, some scattered clear

Quartzite as above, some scattered mostly black due to abundant mineral inclusions

**Recovered: 109' WM (20%W/80%M) SIP: 490-437#**

Mud-Co Mud chk  
3614'  
7/6/17  
Vis: 49 Wt: 9.2  
PV: 15 YP: 21  
WL: 7.4  
Cake: 1/32  
pH: 10.5  
Ca: 20ppm  
CHL: 9,800ppm  
Sol: 5.9 LCM: 2  
DMC: \$17.11  
CMC: \$6,295.36

Mud-Co Mud chk  
3760'  
7/7/17  
Vis: 51 Wt: 9.3  
PV: 17 YP: 24  
WL: 7.8  
Cake: 1/32  
pH: 10.5  
Ca: Tr  
CHL: 11,300ppm  
Sol: 5.7 LCM: 2  
DMC: \$855.12  
CMC: \$7,150.48

**DST #3 3685'-3760' Pawnee 15-30-30-60 Recovered: 172'M (Very Sandy) SIP: 1102-1093#**

Mud-Co Mud chk  
3850'  
7/8/17  
Vis: 57 Wt: 9.4  
PV: 19 YP: 27  
WL: 8.0  
Cake: 1/32  
pH: 10.5  
Ca: Tr  
CHL: 10,800ppm  
Sol: 7.2 LCM: 2  
DMC: \$732.80  
CMC: \$7,883.28

Survey @ 3850' = 3/4Deg

Coachman Leiker 4-25-15-20 dst 1.jpg

	<b>DRILL STEM TEST REPORT</b>	
	Coachman Energy Operating Co., LLC 1125 17th St. Suite 410 Denver, CO 80202 ATTN: Jeremy Schwartz	<b>25-15S-20W Ellis, KS</b>  <b>Leiker #4-25-15-20</b> Job Ticket: 63278 <b>DST#: 1</b> Test Start: 2017.07.05 @ 08:15:33

**GENERAL INFORMATION:**

Formation: **LKC "A-F"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 11:21:09  
 Time Test Ended: 17:03:08

**Interval: 3445.00 ft (KB) To 3526.00 ft (KB) (TVD)**  
 Total Depth: 3526.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair

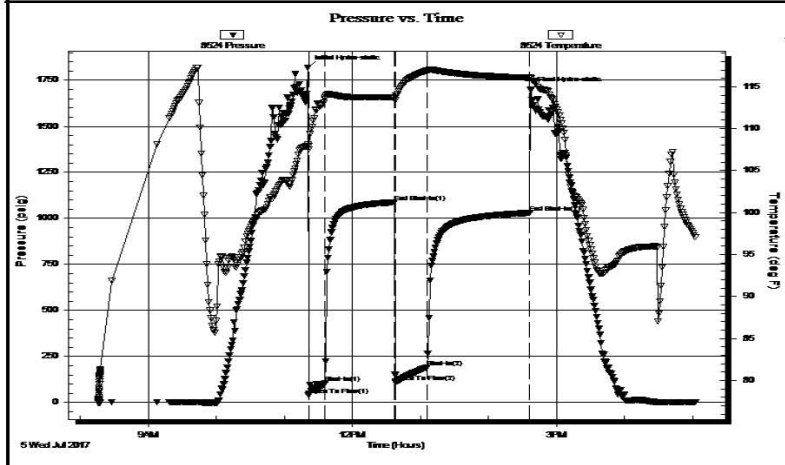
Test Type: Conventional Bottom Hole (Initial)  
 Tester: Brannan Lonsdale  
 Unit No: 73

Reference Elevations: 2145.00 ft (KB)  
 2137.00 ft (CF)  
 KB to GR/CF: 8.00 ft

**Serial #: 8524      Outside**

Press@RunDepth: 190.28 psig @ 3459.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2017.07.05      End Date: 2017.07.05	Last Calib.: 2017.07.05
Start Time: 08:15:34      End Time: 17:03:08	Time On Btm: 2017.07.05 @ 11:20:39
	Time Off Btm: 2017.07.05 @ 14:37:24

**TEST COMMENT:** 15- IF- BOB 8mins  
 60- IS- No blow  
 30- FF- BOB 11mins  
 90- FS- Weak surface blow died in 20mins



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1819.06	108.12	Initial Hydro-static
1	39.02	107.55	Open To Flow (1)
16	105.11	113.76	Shut-In(1)
77	1087.31	113.79	End Shut-In(1)
78	111.79	113.78	Open To Flow (2)
105	190.28	116.90	Shut-In(2)
196	1030.03	116.07	End Shut-In(2)
197	1698.39	116.01	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
62.00	SOCMV, 5%O 25%M 70%W	0.88
297.00	WOCM, 20%W 15%O 65%M	4.21
0.00	203' GIP	0.00

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



# DRILL STEM TEST REPORT

Coachman Energy Operating Co., LLC  
 1125 17th St.  
 Suite 410  
 Denver, CO 80202  
 ATTN: Jeremy Schwartz

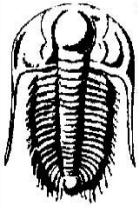
25-15S-20W Ellis, KS

Leiker #4-25-15-20

Job Ticket: 63279

DST#: 2

Test Start: 2017.07.06 @ 04:39:05



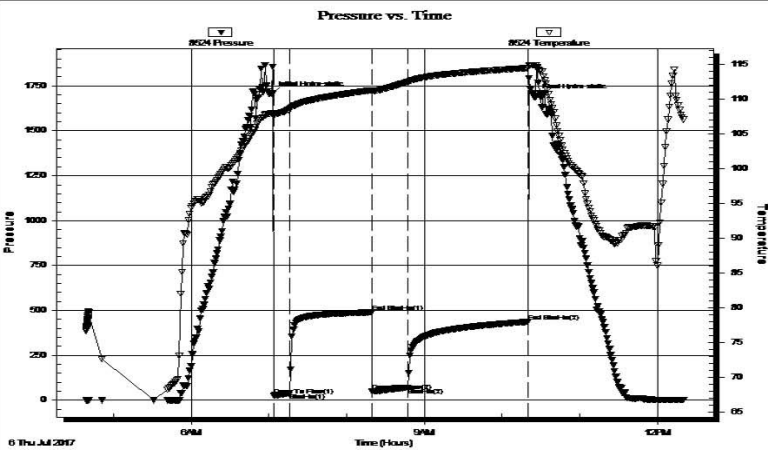
**TRILOBITE TESTING, INC.**

**GENERAL INFORMATION:**

Formation: **LKC "H&I"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 07:03:41  
 Time Test Ended: 12:20:11  
 Interval: **3561.00 ft (KB) To 3614.00 ft (KB) (TVD)**  
 Total Depth: 3614.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Brannan Lonsdale  
 Unit No: 73  
 Reference Elevations: 2145.00 ft (KB)  
 2137.00 ft (CF)  
 KB to GR/CF: 8.00 ft

Serial #: **8524** Outside  
 Press@RunDepth: 70.39 psig @ 3579.00 ft (KB)  
 Start Date: 2017.07.06 End Date: 2017.07.06 Capacity: 8000.00 psig  
 Start Time: 04:39:06 End Time: 12:20:11 Last Calib.: 2017.07.06  
 Time On Btm: 2017.07.06 @ 07:02:26  
 Time Off Btm: 2017.07.06 @ 10:25:56

TEST COMMENT: 15- IF- Slow ly built to 3"  
 60- IS- No blow  
 30- FF- Slow ly built to 2.5"  
 90- FS- No blow



**PRESSURE SUMMARY**

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1706.96	107.91	Initial Hydro-static
2	27.79	107.56	Open To Flow (1)
14	39.31	108.56	Shut-In(1)
77	489.62	111.25	End Shut-In(1)
78	48.52	111.07	Open To Flow (2)
105	70.39	112.43	Shut-In(2)
198	436.73	114.44	End Shut-In(2)
204	1688.80	114.86	Final Hydro-static

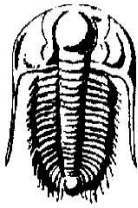
**Recovery**

Length (ft)	Description	Volume (bbl)
109.00	MWV, 20%VW 80%M	1.55

\* Recovery from multiple tests

**Gas Rates**

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



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

Coachman Energy Operating Co., LLC

**25-15S-20W Ellis, KS**

1125 17th St.  
Suite 410  
Denver, CO 80202  
ATTN: Jeremy Schwartz

**Leiker #4-25-15-20**

Job Ticket: 63280

**DST#: 3**

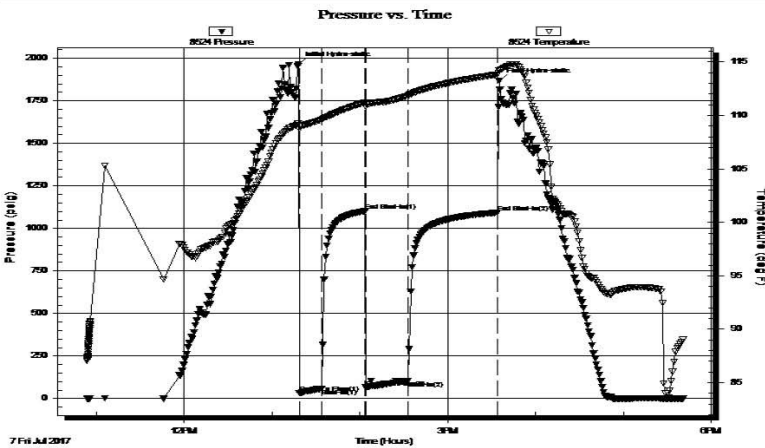
Test Start: 2017.07.07 @ 10:53:56

**GENERAL INFORMATION:**

Formation: **Pawnee**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 13:18:47  
 Time Test Ended: 17:40:47  
 Interval: **3685.00 ft (KB) To 3760.00 ft (KB) (TVD)**  
 Total Depth: 3760.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Brannan Lonsdale  
 Unit No: 73  
 Reference Elevations: 2145.00 ft (KB)  
 2137.00 ft (CF)  
 KB to GR/CF: 8.00 ft

**Serial #: 8524 Outside**  
 Press@RunDepth: 105.40 psig @ 3694.00 ft (KB)  
 Start Date: 2017.07.07 End Date: 2017.07.07 Capacity: 8000.00 psig  
 Start Time: 10:53:57 End Time: 17:40:47  
 Time On Btm: 2017.07.07 @ 13:18:17  
 Time Off Btm: 2017.07.07 @ 15:35:17

**TEST COMMENT:** 15- IF- Slow ly built to 5.5"  
 30- IS- No blow  
 30- FF- Slow ly built to 7.5"  
 60- FS- No blow



**PRESSURE SUMMARY**

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1965.81	109.28	Initial Hydro-static
1	32.50	108.70	Open To Flow (1)
16	57.72	109.57	Shut-In(1)
46	1102.43	111.22	End Shut-In(1)
46	65.84	110.81	Open To Flow (2)
75	105.40	111.82	Shut-In(2)
136	1093.11	113.81	End Shut-In(2)
137	1868.71	114.18	Final Hydro-static

**Recovery**

Length (ft)	Description	Volume (bbl)
172.00	M (Very sandy)	2.44

\* Recovery from multiple tests

**Gas Rates**

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