

OPERATOR: Chiefain Oil Co., Inc.
 LEASE: Lethayer, WELL NO. J2
 FIELD: Medicine Springs South, API No. 15-007-29306

LOCATION: NW 34 SW SE 34 07 15 L & 105 7 FEL
 SEC. 04 T1P. 33S. RGE. 10W
 COUNTY: Barber STATE: Kansas

CONTRACT: Fossil Rig #2
 DATE: 08/21/2012
 R/O: 5250
 SHELTERS: 240
 DRILLING: 3400
 SAMPLES: 3400
 GEOLOGICAL: 3400
 MUDLOG: 3400
 FORMATION: THE MID-CHEROKEE

PRODUCTION: BENTLEY
 5 1/2" 15 # @ 5051'

MEASUREMENTS: All
 CASING RECORD: 8 5/8" @ 335'
 SURFACE: 3005X
 ELECTRICAL STRIERS: CNL, CDL, DIL

CL: 1457'
 KB: 1468'
 ELEVATION: 1468'

From: Barber
 Measurements: All
 CASING RECORD: 8 5/8" @ 335'
 SURFACE: 3005X
 PRODUCTION: BENTLEY
 5 1/2" 15 # @ 5051'

INDUSTRIAL: 3528-2060-3325-2052
 DEXTER: 3528-2060-3325-2052
 LAWRENCE: 3775-2808-3775-2807
 KANSAS CITY: 2660-4022-2554
 STARK: 4190-2722-4190-2722
 MISSOURI: 3114-2060-3114-2060
 MISSOURI: 4475-3010-4475-3010
 KIDDERHOOK: 4720-3026-4728-3026
 KIDDERHOOK: 4774-3306-4774-3306
 BENTLEY: 4885-3388-4856-3388
 LOWER DOUGLAS: 4994-3526-4996-3527
 ARBUCKLE: 5052-3584-5050-3582



GEOLOGIST
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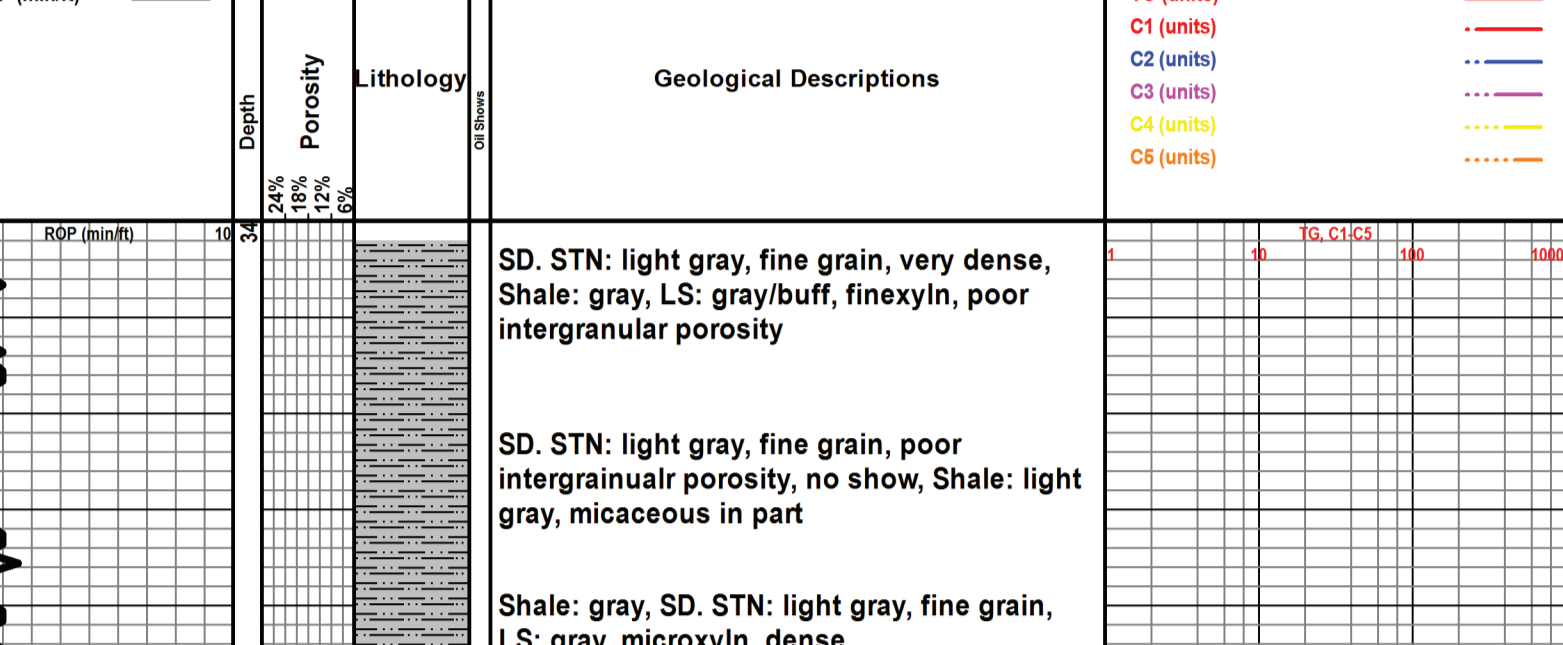
OPERATOR
 Company: Chiefain Oil Co., Inc.
 Address: 605 S. 6th, P.O. Box 124
 Kiowa, Kansas 67070

Daily Status
 8/21/2012: Derrick up at 11:15 AM, drill to 325'
 8/22/2012: ran 8 5/8" casing, cmt with 300 sx of 60/40 pzs cement, plug down at 1:30 A.M. drill plug at 9:45 AM
 8/23/2012: morning depth: 1702', drilled 1377'
 8/24/2012: morning depth: 2621', drilled 1219'
 8/25/2012: morning depth: 3280', drilled 659'
 8/26/2012: morning depth: 3835', drilled 555'
 8/27/2012: morning depth: 4325', drilled 530'
 8/28/2012: morning depth: 4655', drilled 330', DST #1
 8/29/2012: morning depth: 4773', drilled 138', DST #1
 8/30/2012: morning depth: 4926', drilled 153'
 8/31/2012: morning depth: 5050', drilled 124'
 9/04/2012: morning depth: 5050', ran 117 fts of 5 1/2" casing
 15.5# set @ 5051',

Contractor
 Fossil Rig #2
 P.O. Box 464
 Pratt, KS 67124-0464

FOSSIL		MINERAL		OTHER SYMBOLS		ROCK TYPES		TEXTURE		ROUNDING	
Algae	Plant	Anhy	Fracture	Carb shale	Carb shale	D. green shale	D. green shale	Bound	Rounded	Oil SHOWS	Even
Belm	Strom	Arg	Inter	Gray shale	Gray shale	Green shale	Green shale	Chalky	Subrnd	Spotted	Dead
Biocist	Fuss	Argm	Moldic	Blank	Blank	Brown imst	Brown imst	Cryxln	Subang	Ques	Gas show
Brach	Oomold	Bent	Organic	Gray imst	Gray imst	Brown cream	Brown cream	Earthy	Angular	Grainst	
Bryozoa		Calc	Pinpoint	Shale	Shale	D. green cream	D. green cream	Finexln		Microxln	
Cephal		Carb	Vuggy	Silt stn	Silt stn	Brown dol	Brown dol	Mudst		Packet	
Crin		Chkt		Shaly stst	Shaly stst	Blue-green siltstn	Blue-green siltstn	Wackest			
Echin		Chgt		Light cream imst	Light cream imst	Well	Well				
Fish		Congl		Gray cream imst	Gray cream imst	Moderate	Moderate				
Foram		Shgy		Green dol	Green dol	Poor	Poor				
Fossil		Ss									
Gastro											
Oolite											
Ostra											
Pelec											
Pellet											

DST # 1
 4753'-4773' 30-60-30-60 IF STRONG
 BLO, BOB 2MIN, GTS 27MIN, ISI
 SURFACE BLO BACK, FF STRONG BLO,
 BOB & GTS IMMEDIATE, FSI NO BLO,
 REC 4565' GIP, 62' GOCM, 120' GOCM,
 HP 2468#-2338#, FP 37-47/51-105,
 BHT 119 F
 SHT 909#-910#, CHLOR 2600 ppm,



ROP (psia)	Depth (ft)	Lithology	Geological Descriptions	Well
3000	3280	SD. STN: light gray, fine grain, very dense, Shale: gray, LS: gray/buff, finexlyn, poor intergranular porosity	SD. STN: light gray, fine grain, poor intergranular porosity, no show, Shale: light gray, micaceous in part	Heebner Sh @3514 -2046
3000	3280	Shale: gray, SD. STN: light gray, fine grain, LS: gray, microxlyn, dense	Shale: gray, micaceous	Toronto LS @3525 -2057
3000	3280	LS: brown, microxlyn, very dense, SD. STN: fine grain, micaceous	Shale: gray, micaceous	Douglas SH. @3550 -2094
3000	3280	LS: dark gray/brown, microxlyn, dense, mudstone, Shale: gray	Shale: gray to gray/green, set dark green in part, LS: brown, microxlyn very dense, microfossils	Lower Douglas SD. @3652 -2196
3000	3280	Shale: gray to gray/green, set dark green in part, LS: brown, microxlyn very dense, microfossils	LS: cream, finexlyn, friable, no show, Siltstone: light gray, very dense, lmy, Shale: black, carb, LS: brown, microxlyn, very dense, lithographic	
3000	3280	LS: cream, finexlyn, friable, no show, Siltstone: light gray, very dense, lmy, Shale: black, carb, LS: brown, microxlyn, very dense, lithographic	LS: cream, finexlyn, friable, Chert: white, LS: buff, poor interxlyn porosity, friable in part	
3000	3280	SD. STN: light gray, fine grain, dense, Shale: gray, LS: brown to gray, microxlyn, very dense	SD. STN: light gray, fine grain, dense, Shale: gray	
3000	3280	SD. STN: to siltstone, light gray, fine grain, poor intergranular porosity	looks the same with gray very fine grain siltstone	
3000	3280	LS: cream to buff to brown, cream/gray in part, microxlyn, dense, mott in part, Shale: gray	SD. STN: light gray to white/gray, very fine grain, micaceous, dense, Shale: gray	
3000	3280	looks the same with gray very fine grain siltstone	SD. STN: light gray, very fine grain, dense	
3000	3280	SD. STN: light gray to gray, fine grain, friable in part, no show	SD. STN: light gray to gray, fine grain, friable in part, no show	
3000	3280	SD. STN: light gray to gray, fine grain, friable in part, no show	sample mostly Sd. Stn. A. A. Shale: gray to light gray	
3000	3280	Shale: gray LS: buff, finexlyn, poor interxlyn porosity	Shale: gray LS: buff, finexlyn, poor interxlyn porosity	Lansing @3775 -2307
3000	3280	LS: light brown to brown, microxlyn, dense, slightly cryptoxlyn, Shale: gray	LS: dark gray, fine xlyn, mott, poor interxlyn porosity, Shale: gray	
3000	3280	LS: dark gray, fine xlyn, mott, poor interxlyn porosity, Shale: gray	LS: dark gray/brown, microxlyn, very dense, LS: buff oolitic packstone, microxlyn, dense, LS: brown to gray/buff, finexlyn	
3000	3280	LS: dark gray/brown, microxlyn, very dense, LS: buff oolitic packstone, microxlyn, dense, LS: brown to gray/buff, finexlyn	LS: buff/gray, finexlyn, mott, poor interxlyn porosity, slight visible porosity, LS: buff/brown, microxlyn, very dense, Chert: brown	
3000	3280	LS: buff/gray, finexlyn, mott, poor interxlyn porosity, slight visible porosity, LS: buff/brown, microxlyn, very dense, Chert: brown	LS: brown, microxlyn, dense, lithographic, Shale: gray	
3000	3280	LS: brown, microxlyn, dense, lithographic, Shale: gray	LS: rust/brownish gray, finexlyn, poor interxlyn porosity, oolitic streaks, mott, set slight visible pinpoint oolitic packstone, Shale: dark gray/black, oolitic packstone	
3000	3280	LS: rust/brownish gray, finexlyn, poor interxlyn porosity, oolitic streaks, mott, set slight visible pinpoint oolitic packstone, Shale: dark gray/black, oolitic packstone	LS: dark gray/brown, microxlyn, dense, Shale: dark gray/green, dense	
3000	3280	LS: dark gray/brown, microxlyn, dense, Shale: dark gray/green, dense	LS: gray to gray/brown, microxlyn, very dense, no visible porosity	
3000	3280	LS: gray to gray/brown, microxlyn, very dense, no visible porosity	LS: dark gray, microxlyn, very dense, silty in part, shaley, Shale: dark gray	
3000	3280	LS: dark gray, microxlyn, very dense, silty in part, shaley, Shale: dark gray	Shale: brownish/gray to dark gray, LS: dark gray, microxlyn, very dense	
3000	3280	Shale: brownish/gray to dark gray, LS: dark gray, microxlyn, very dense	Shale: dark gray to black, lmy with fossil fragments	
3000	3280	Shale: dark gray to black, lmy with fossil fragments	LS: dark brown to dark gray, microxlyn, very dense, Shale: black	Kansas City @4022 -2554
3000	3280	LS: dark brown to dark gray, microxlyn, very dense, Shale: black	LS: cream, microxlyn, poor interxlyn porosity, Shale: gray	
3000	3280	LS: cream, microxlyn, poor interxlyn porosity, Shale: gray	LS: cream/buff, finexlyn to microxlyn, streaks of pyrite, set friable pccs., soft, no show, mott	
3000	3280	LS: cream/buff, finexlyn to microxlyn, streaks of pyrite, set friable pccs., soft, no show, mott	LS: cream, friable, no show, finexlyn, fair porosity, silty??	
3000	3280	LS: cream, friable, no show, finexlyn, fair porosity, silty??	LS: cream to buff to white, chky in part, set slight visible porosity, cryptoxlyn pccs.	
3000	3280	LS: cream to buff to white, chky in part, set slight visible porosity, cryptoxlyn pccs.	LS: buff to light gray/buff, finexlyn to microxlyn, chert: white, sharp	
3000	3280	LS: buff to light gray/buff, finexlyn to microxlyn, chert: white, sharp	Shale: dark gray, LS: light brown, microxlyn, cherty, LS: cream finexlyn, friable in part	
3000	3280	Shale: dark gray, LS: light brown, microxlyn, cherty, LS: cream finexlyn, friable in part	LS: brown to buff, microxlyn to finexlyn, dense, friable in part, Chert: dark brown to semi clear, sharp, Shale: dark gray, laminar, lmy	
3000	3280	LS: brown to buff, microxlyn to finexlyn, dense, friable in part, Chert: dark brown to semi clear, sharp, Shale: dark gray, laminar, lmy	shale: gray, LS: dark brown, microxlyn, very dense, LS: gray/brown, finexlyn, poor interxlyn porosity	Stark SH. @4190 -2722
3000	3280	shale: gray, LS: dark brown, microxlyn, very dense, LS: gray/brown, finexlyn, poor interxlyn porosity	shale: black to gray, fossiliferous, Chert: brown, semi clear, LS: dark brown, microxlyn, lithographic, with LS: white, chky, soft	
3000	3280	shale: black to gray, fossiliferous, Chert: brown, semi clear, LS: dark brown, microxlyn, lithographic, with LS: white, chky, soft	LS: brown/buff, finexlyn to microxlyn, set friable pieces, poor interxlyn porosity, Chert: brown to white to semi clear	Hush SH. @4220 -2752
3000	3280	LS: brown/buff, finexlyn to microxlyn, set friable pieces, poor interxlyn porosity, Chert: brown to white to semi clear	LS: dark gray, microxlyn, Shale: gray; LS: cream, finexlyn, cherty	
3000	3280	LS: dark gray, microxlyn, Shale: gray; LS: cream, finexlyn, cherty	Shale: gray to dark gray, fossiliferous, lmy, dense, LS: dark brown, sharp, dense	
3000	3280	Shale: gray to dark gray, fossiliferous, lmy, dense, LS: dark brown, sharp, dense	Shale: black, chert: tan/honey brown, translucent, sharp	
3000	3280	Shale: black, chert: tan/honey brown, translucent, sharp	Shale: light green to gray LS: buff to gray in part, microxlyn, dense, blocky	
3000	3280	Shale: light green to gray LS: buff to gray in part, microxlyn, dense, blocky	LS: buff, finexlyn, poor interxlyn porosity, Shale: gray	
3000	3280	LS: buff, finexlyn, poor interxlyn porosity, Shale: gray	Shale: black, pyritic, Shale: light green, dense, LS: buff, finexlyn, firm, poor interxlyn porosity	
3000	3280	Shale: black, pyritic, Shale: light green, dense, LS: buff, finexlyn, firm, poor interxlyn porosity	LS: blond, microxlyn, lithographic, dense, blocky, cherty, Shale: black to dark gray	
3000	3280	LS: blond, microxlyn, lithographic, dense, blocky, cherty, Shale: black to dark gray	Shale: black, LS: brown, microxlyn, lithographic dense, no visible porosity	
3000	3280	Shale: black, LS: brown, microxlyn, lithographic dense, no visible porosity	LS: gray/buff, microxlyn, dense, poor interxlyn porosity, Shale: black	
3000	3280	LS: gray/buff, microxlyn, dense, poor interxlyn porosity, Shale: black	shale: light green, Chert: tan, sharp, LS: cream/buff, finexlyn, poor interxlyn porosity, no show	
3000	3280	shale: light green, Chert: tan, sharp, LS: cream/buff, finexlyn, poor interxlyn porosity, no show	LS: buff/green, microxlyn, poor interxlyn porosity, Shale: green	
3000	3280	LS: buff/green, microxlyn, poor interxlyn porosity, Shale: green	Shale: green, blocky, red, SD. STN: very fine grain, clear grained tight, to gray green, no show, LS: cream to tan, fine xlyn to microxlyn, poor interxlyn porosity, dense	
3000	3280	Shale: green, blocky, red, SD. STN: very fine grain, clear grained tight, to gray green, no show, LS: cream to tan, fine xlyn to microxlyn, poor interxlyn porosity, dense	slight odor from sample, Siltstone/dolomite: very fine grain, black to very dark brown, very dense, no fluorescence, no acid reaction, slight cut, LS: black, spotted, no fluorescence	
3000	3280	slight odor from sample, Siltstone/dolomite: very fine grain, black to very dark brown, very dense, no fluorescence, no acid reaction, slight cut, LS: black, spotted, no fluorescence	Chert: white to semi clear to opach, with spotted light brown to black stain, slight visible porosity, set loose pin point free oil droplets, Chert: fresh white, sharp, no fluorescence, very very slight odor, porcelain white in part	Mississippian @4473 -3005
3000	3280	Chert: white to semi clear to opach, with spotted light brown to black stain, slight visible porosity, set loose pin point free oil droplets, Chert: fresh white, sharp, no fluorescence, very very slight odor, porcelain white in part	Chert: slight increase in visible porosity, show of free oil, no fluorescence, set fair tripolitic porosity, mixed with semi trans Chert	
3000	3280	Chert: slight increase in visible porosity, show of free oil, no fluorescence, set fair tripolitic porosity, mixed with semi trans Chert	Chert: white, fresh, block with slight edge stain	
3000	3280	Chert: white, fresh, block with slight edge stain	Chert: fresh white dull gray to semi trans, sharp, mott. in part, no show, Chert: white to off white, slight visible tripolitic porosity	
3000	3280	Chert: fresh white dull gray to semi trans, sharp, mott. in part, no show, Chert: white to off white, slight visible tripolitic porosity	Chert: gray/brown, LS: gray/brown, silty, finexlyn, poor interxlyn porosity	
3000	3280	Chert: gray/brown, LS: gray/brown, silty, finexlyn, poor interxlyn porosity	LS: brown to gray/brown, silty in part rare oolitic packstone in part,	
3000	3280	LS: brown to gray/brown, silty in part rare oolitic packstone in part,	LS: gray/green, waxey, finexlyn, poor interxlyn porosity, LS: gray/brown, poor interxlyn porosity,	
3000	3280	LS: gray/green, waxey, finexlyn, poor interxlyn porosity, LS: gray/brown, poor interxlyn porosity,	Shale: green, blocky, LS: gray, microxlyn, dense, LS: brown, finexlyn, dense	
3000	3280	Shale: green, blocky, LS: gray, microxlyn, dense, LS: brown, finexlyn, dense	LS: buff to light green/gray, microxlyn, poor interxlyn porosity, buff/gray in part,	
3000	3280	LS: buff to light green/gray, microxlyn, poor interxlyn porosity, buff/gray in part,	LS: light cream/gray, buff/gray in part microxlyn, no visible porosity, poor interxlyn porosity, LS: gray/green, finexlyn, poor inxlyn porosity, silty	Kinderhook SH. @4680 -3212
3000	3280	LS: light cream/gray, buff/gray in part microxlyn, no visible porosity, poor interxlyn porosity, LS: gray/green, finexlyn, poor inxlyn porosity, silty	Shale: green to gray/green, laminar	
3000	3280	Shale: green to gray/green, laminar	Shale: gray to very dark black, very dense, laminar, set loose pyrite	
3000	3280	Shale: gray to very dark black, very dense, laminar, set loose pyrite	Shale: brownish/dark gray, no fluorescent spores, loose pyrite	
3000	3280	Shale: brownish/dark gray, no fluorescent spores, loose pyrite	Shale: brown, dense, fluorescent spores, dense	Chat. SH. @4728 -3260
3000	3280	Shale: brown, dense, fluorescent spores, dense	Sd. STN: white to white/light brown, fine grain, fair sorting, subrounded, fair intergranular porosity, friable, set fair even light brown stain, small amount of shale particles, slight odor from sample, fair to bright spotted fluorescence, slight show of free oil	Miesner SD. @4763 -3295
3000	3280	Sd. STN: white to white/light brown, fine grain, fair sorting, subrounded, fair intergranular porosity, friable, set fair even light brown stain, small amount of shale particles, slight odor from sample, fair to bright spotted fluorescence, slight show of free oil	Dolomite: light gray, fine to medium granular, spotted fair visible porosity, slightly rhombic in part, no fluorescence, no cut, no acid reaction	Viola @4774 -3306
3000	3280	Dolomite: light gray, fine to medium granular, spotted fair visible porosity, slightly rhombic in part, no fluorescence, no cut, no acid reaction	LS: brown and or brown/buff dolomite, finexlyn, poor interxlyn porosity, Chert: brown, glassy, sharp, Shale: green	
3000	3280	LS: brown and or brown/buff dolomite, finexlyn, poor interxlyn porosity, Chert: brown, glassy, sharp, Shale: green	Chert: brown LS: light brown, with brown specks, dense, poor interxlyn porosity,	
3000	3280	Chert: brown LS: light brown, with brown specks, dense, poor interxlyn porosity,	Chert: Tan, sharp, glassy, no fluorescence	
3000	3280	Chert: Tan, sharp, glassy, no fluorescence	Chert: brown, sharp, Shale: light green, LS: gray/white, coarsxlyn, friable, no show, SD. STN: fine grain, poorly sorted, dirty gray, poor intergranular porosity, no show of oil and or gas, no odor	Base of Viola @4856 -3388
3000	3280	Chert: brown, sharp, Shale: light green, LS: gray/white, coarsxlyn, friable, no show, SD. STN: fine grain, poorly sorted, dirty gray, poor intergranular porosity, no show of oil and or gas, no odor	4871 30 min: Sd. STN: clear, white, fine grain, rounded, fair intergranular porosity, no show, no odor	
3000	3280	4871 30 min: Sd. STN: clear, white, fine grain, rounded, fair intergranular porosity, no show, no odor	SD. STN: fine grain, white to clear grained, dolomitic streaks, friable, rounded grains, no show	
3000	3280	SD. STN: fine grain, white to clear grained, dolomitic streaks, friable, rounded grains, no show	Shale: green, waxey	Bit Trip @4926
3000	3280	Shale: green, waxey	Shale: green to green/gray, SD. STN: light gray, fine grain, with rounded gray shale particles, friable no show, loose pyrite	
3000	3280	Shale: green to green/gray, SD. STN: light gray, fine grain, with rounded gray shale particles, friable no show, loose pyrite	SD. STN: light gray, fine grain, poorly sorted, with rounded green shale particles, friable, SD. STN: light brown, poorly sorted, dolomitic, no fluorescence, no show of oil or gas, white clear grained in part	Lower Simpson SD @4990 -3534
3000	3280	SD. STN: light gray, fine grain, poorly sorted, with rounded green shale particles, friable, SD. STN: light brown, poorly sorted, dolomitic, no fluorescence, no show of oil or gas, white clear grained in part	Dolomite: dark gray, dense, no show, poor intergranular porosity	Arbuckle @5010 -3542
3000	3280	Dolomite: dark gray, dense, no show, poor intergranular porosity	Dolomite: brown, fine granular, set very slight random visible porosity, no show, friable in part poor intergranular porosity in part, set random imbedded rounded quartz grains	
3000	3280	Dolomite: brown, fine granular, set very slight random visible porosity, no show, friable in part poor intergranular porosity in part, set random imbedded rounded quartz grains		

ROP (psia) vs Depth (ft) scale on the left side of the log.