



Scale 1:240 Imperial

Well Name: STEELSMITH #1
Surface Location: SW NW NW NW Sec. 2 - 7S - 24W
Bottom Location:
API: 15-065-23974-00-00
License Number: 34916
Spud Date: 11/7/2013 Time: 4:15 AM
Region: GRAHAM COUNTY, KS
Drilling Completed: 11/13/2013 Time: 2:33 PM
Surface Coordinates: 370' FNL & 180' FWL
Bottom Hole Coordinates:
Ground Elevation: 2206.00ft
K.B. Elevation: 2211.00ft
Logged Interval: 3450.00ft To: 4057.00ft
Total Depth: 4050.00ft
Formation: LANSING - KANSAS CITY
Drilling Fluid Type: FRESH WATER / CHEMICAL GEL

OPERATOR

Company: FOURWINDS OIL CORPORATION
Address: P.O. BOX 1063
HAYS, KS 67601
Contact Geologist: DANNY WINDHOLZ
Contact Phone Nbr: (785) 259-8403
Well Name: STEELSMITH #1
Location: SW NW NW NW Sec. 2 - 7S - 24W API: 15-065-23974-00-00
Pool: WILDCAT
State: KANSAS Country: USA

SURFACE CO-ORDINATES

Well Type: Vertical
Longitude: -99.9743243 Latitude: 39.4791489
N/S Co-ord: 370' FNL
E/W Co-ord: 180' FWL

LOGGED BY



Company: SOLUTIONS CONSULTING, INC.
Address: 108 W 35TH
HAYS, KS 67601
Phone Nbr: (785)259-3737
Logged By: Geologist Name: JEFF LAWLER

CONTRACTOR

Contractor: WW DRILLING, LLC
 Rig #: 6
 Rig Type: MUD ROTARY
 Spud Date: 11/7/2013
 TD Date: 11/13/2013
 Rig Release: 11/14/2013
 Time: 4:15 AM
 Time: 2:33 PM
 Time: 9:00 AM

ELEVATIONS

K.B. Elevation: 2211.00ft
 K.B. to Ground: 5.00ft
 Ground Elevation: 2206.00ft

NOTES

THE STEELSMITH #1 WAS DRILLED OFF OF SEISMIC INTERPRETATION. THE SEISMIC INDICATED THINNING DOWN TO THE BASE OF THE KANSAS CITY. THINNING OCCURED, ALTHOUGH STILL LEAVING THIS WELL LOW STRUCTURALLY. THIS WELL RAN LOW TO A DRY HOLE IN THE AREA AND CONSIDERABLY LOW TO PRODUCTION NORTHWEST OF THIS WELL AND EXTREMELY LOW TO PRODUCTION TO THE EAST.

SAMPLE TOPS WERE ~15' - 20' HIGHER THAN LOG TOPS, THEREFORE CORRECTED DST'S SHOULD BE:

DST #1 LKC "C"
 DST #2 LKC "D" & "E"

SAMPLES WERE SAVED AND WILL BE AVAILABE AT THE KANSAS GEOLOGICAL SURVEY SAMPLE REPOSITORY.


DUE TO STRUCTURAL POSITION AND LACK OF RECOVERY ON BOTH DRILL STEM TESTS THE STEELSMITH WAS PLUGGED AND ABANDONED.

RESPECTFULLY SUBMITTED,
 JEFF LAWLER

WELL COMPARISON SHEET

	STEELSMITH #1				NW NW SE SE 34 - 6 - 24				NESW NW SE 34 - 6 - 24				E2 SE SE SW 1 - 7 - 24				NW SE NW NE 1 - 7 - 24			
	2511		2506		2506		2485		2485		2457		2469							
	KB	GL	KB	GL	KB	GL	KB	GL	KB	GL	KB	GL	KB	GL						
FORMATION	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM		
ANHYDRITE TOP	2225	286	2222	289	2232	274	+ 12	+ 15	2197	288	- 2	+ 1	2156	301	- 15	- 12	2156	313	- 27	- 24
BASE	2259	252	2256	255	2265	241	+ 11	+ 14	2231	254	- 2	+ 1	2189	268	- 16	- 13	2189	280	- 28	- 25
TOPEKA	3579	-1068	3564	-1053	3572	-1066	- 2	+ 13	3535	-1050	- 18	- 3	3495	-1038	- 30	- 15	3497	-1028	- 40	- 25
HEEBNER SHALE	3783	-1272	3764	-1253	3773	-1267	- 5	+ 14	3735	-1250	- 22	- 3	3692	-1235	- 37	- 18	3694	-1225	- 47	- 28
TORONTO	3807	-1296	3788	-1277					3757	-1272	- 24	- 5	3715	-1258	- 38	- 19	3719	-1250	- 46	- 27
LKC	3819	-1308	3805	-1294	3810	-1304	- 4	+ 10	3769	-1284	- 24	- 10	3731	-1274	- 34	- 20	3734	-1265	- 43	- 29
STARK	3980	-1469	3971	-1460					3932	-1447	- 22	- 13	3891	-1434	- 35	- 26	3897	-1428	- 41	- 32
BKC	4009	-1498	4009	-1498	4004	-1498	+ 0	+ 0	3962	-1477	- 21	- 21	3923	-1466	- 32	- 32	3926	-1457	- 41	- 41
TOTAL DEPTH	4057	-1546	4050	-1539	4046	-1540	- 6	+ 1	4050	-1565	+ 19	+ 26	3960	-1503	- 43	- 36	4008	-1539	- 7	+ 0

DST #1 LKC D 3844' - 3870'

	DRILL STEM TEST REPORT	
	Fourw inds Oil Corp. PO Box 1063 Hays Ks. 67601 ATTN: Jeff Lawler	2-7s-24w Graham Steelsmith #1 Job Ticket: 54336 Test Start: 2013.11.11 @ 18:20:01

GENERAL INFORMATION:

Formation: **LKC "D"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 20:38:00
 Time Test Ended: 01:55:00

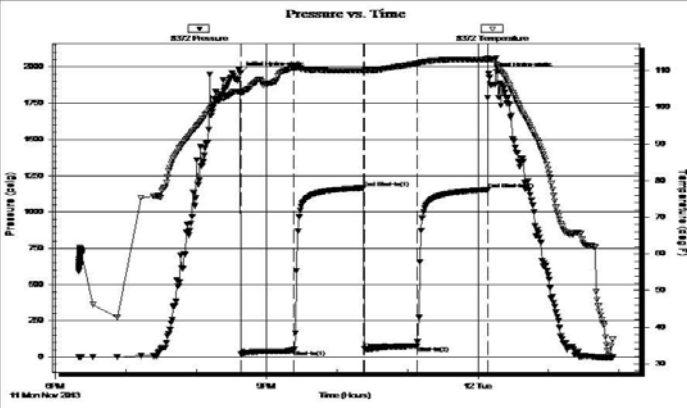
Test Type: Conventional Bottom Hole (Initial)
 Tester: Andy Carreira
 Unit No: 68

Interval: 3844.00 ft (KB) To 3870.00 ft (KB) (TVD)
 Total Depth: 3570.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Poor

Reference Elevations: 2511.00 ft (KB)
 2506.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8372 Inside
 Press@RunDepth: 76.56 psig @ 3845.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.11.11 End Date: 2013.11.12 Last Calib.: 2013.11.12
 Start Time: 18:20:01 End Time: 01:55:00 Time On Btm: 2013.11.11 @ 20:37:30
 Time Off Btm: 2013.11.12 @ 00:09:00

TEST COMMENT: IF:(45min) 1" blow in 13 min. 2" in 29 min. Built to 2.75"
 ISl:(60min) No Return
 FF:(45min) 1" blow in 17 min. 2" in 40 min. Built to 2.25"
 FSl:(60min) No Return



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1959.22	104.29	Initial Hydro-static
1	19.51	103.86	Open To Flow (1)
46	49.12	110.77	Shut-In(1)
105	1166.54	110.04	End Shut-In(1)
106	55.87	110.05	Open To Flow (2)
151	76.56	111.89	Shut-In(2)
211	1154.09	113.06	End Shut-In(2)
212	1953.64	113.18	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
130.00	MVV	0.72

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

Trilobite Testing, Inc Ref. No: 54336 Printed: 2013.11.12 @ 06:54:36

DST #2 LKC E-F 3869' - 3884'

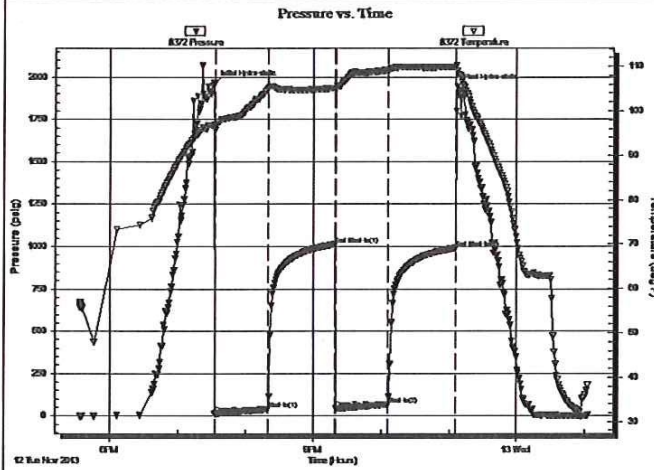


DRILL STEM TEST REPORT
 Fourw inds Oil Corp. 2-7s-24w Graham
 PO Box 1063 Steelsmith #1
 Hays Ks. 67601 Job Ticket: 54337 DST#: 2
 ATTN: Jeff Lawler Test Start: 2013.11.12 @ 17:34:01

GENERAL INFORMATION:
 Formation: LKC"E,F"
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 19:32:30 Tester: Andy Carreira
 Time Test Ended: 01:02:30 Unit No: 68
 Interval: 3869.00 ft (KB) To 3884.00 ft (KB) (TVD) Reference Elevations: 2511.00 ft (KB)
 Total Depth: 3884.00 ft (KB) (TVD) 2506.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Poor KB to GR/CF: 5.00 ft

Serial #: 8372 Inside
 Press@RunDepth: 67.20 psig @ 3870.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.11.12 End Date: 2013.11.13 Last Calib.: 2013.11.13
 Start Time: 17:34:01 End Time: 01:02:30 Time On Btm: 2013.11.12 @ 19:32:00
 Time Off Btm: 2013.11.12 @ 23:07:30

TEST COMMENT: IF:(45min) 1" blow in 4 min. 2" in 15 min. 3" in 25 min. Built to 3.75"
 ISI:(60min) No Return
 FF:(45min) 1" blow in 17 min. 2" in 41 min. Built to 2.25"
 FSI:(60min) No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1958.42	96.83	Initial Hydro-static
1	13.12	95.74	Open To Flow (1)
48	40.38	105.15	Shut-In(1)
107	1013.02	105.16	End Shut-In(1)
108	43.11	104.73	Open To Flow (2)
154	67.20	109.21	Shut-In(2)
214	991.93	109.81	End Shut-In(2)
216	1941.24	108.94	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
90.00	MW w/ oil spcks in tool	0.44

* Recovery from multiple tests

Gas Rates

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

Trilobite Testing, Inc

Ref. No: 54337

Printed: 2013.11.13 @ 07:56:45

ROCK TYPES

Cht	shale, grn	Carbon Sh	Shcol
Lmst fw7>	shale, gry	shale, red	

ACCESSORIES

MINERAL ~ Glauconite	FOSSIL ◇ Oolite	STRINGER ~~~~ Chert
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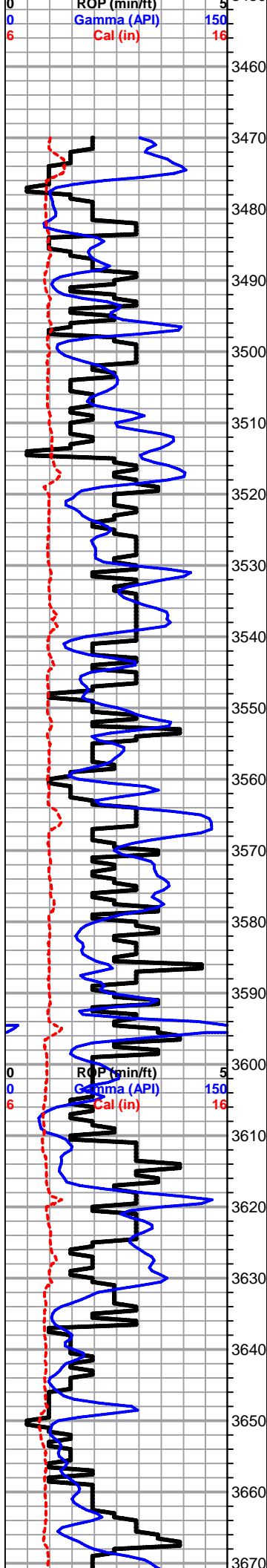
OTHER SYMBOLS

DST

	DST Int
	DST alt

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

Curve Track #1	Depth Intervals	DST	Lithology	Oil Show	Geological Descriptions	Curve Track #3
ROP (min/ft) Gamma (API) Cal (in)	Cored Interval DST Interval					
1:240 Imperial						1:240 Imperial



1' DRILL TIME THROUGH ANHYDRITE FROM 2220' - 2280'
1' DRILL TIME FROM 3470' - RTD
10' WET/DRY SAMPLES FROM 3520' - RTD

GEOLOGICAL SUPERVISION BY JEFF LAWLER FROM 3520' - RTD

8 5/8" SURFACE PIPE SET @ 304' SURVEY 3/4 dgr.

ANHYDRITE TOP 2222' (+289) E-LOG 2225' (+286)
BASE 2256' (+255) E-LOG 2259' (+252)

Lm- Cream Tan Buff, FXLN, dense, sl fsl, well cemented, poorly dev. w/ XLN porosity

Sh- Maroon Brick Red, gritty & earthy

Lm- Cream Tan, FXLN, mix of sl fsl, well cemented, mod. dev. w/ sctrd to dense XLN porosity & sub-sucrosic sl dolomitic ls w/ consistant micro XLN porosity, throughout, loosely cemented & chalk to well cemented, barren

Lm- Lt Gray, FXLN, fsl, well cemented, poorly dev. w/ XLN porosity

Lm- Buff Tan, FXLN, dense, high-energy bioclastic mix w/ fsl fragments, sl trashy, well cemented, sctrd micro XLN & XLN porosity

Sh- Lt Gray Lm Green, silty, gummy argillaceous wash, silty & soft, calcareous

Lm- Cream Tan, F-Med XLN, fsl, mod. dev. w/ dense micro XLN & XLN porosity, some clear cemented fsl biomicrite, barren

Sh- Lt Gray Lm Green, silty & soft, calcareous

TOPEKA 3564' (-1053) E-LOG 3579' (-1068) Lm- Cream Tan, F-Med XLN, densely packed fsl w/ fusulinids, well cemented, sl dev. w/ dense fenestral XLN porosity, barren

Lm- Cream Tan, F-Med XLN, well cemented, sl dev., heavily fsl, fenestral XLN porosity, poor effective porosity, barren

Sh- Maroon Lm Green Lt Gray White, most all gritty & earthy, soft white chalk

Lm- Cream Off White, VFXLN, densely packed small oolites, poorly dev. & well cemented, micro XLN porosity, poor effective porosity, barren

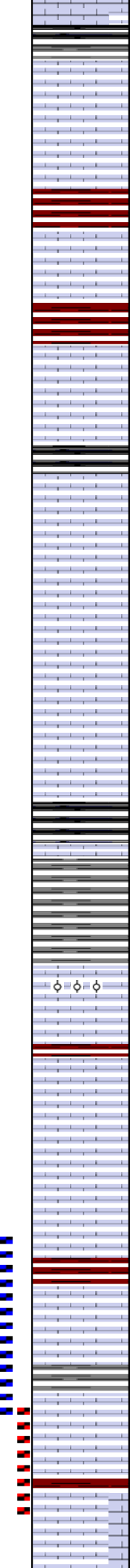
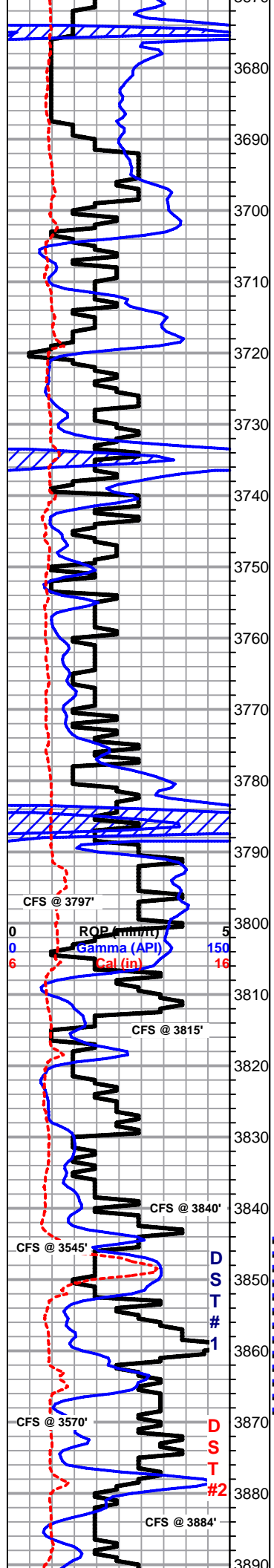
Lm- White Off White, VF-FXLN, most loosely cemented to chalky, sl fsl, poorly dev., vry clean, barren, few pcs of fsl sl dolomitic chert

Lm- Cream, Med XLN, fsl & oolitic biomicrite, most w/ clear siliceous cementation, some w/ sctrd XLN & ppt porosity, barren

Chert- White Milky White Smokey Tan, mix of gritty sl dolomitic chert, fsl fresh bedded chert, & some cherty ls, all w/o vis. porosity, vry well cemented, & barren

Lm- Cream Off White, VF-FXLN, fsl & oolitic, densely packed, poorly dev. micro XLN porosity, poorly cemented & chalky, vry clean, barren

Sh- Maroon White, gritty & earthy, sl sandy, gummy argillaceous



Sh- Black Lt Gray, soft, fissile, carbonaceous, silty, sandy

Lm- Cream, VF-FXLN, fsl & oolitic, poorly dev. massive, spherical, well cemented, micro XLN porosity, vry clean, barren, much soft white chalk

Sh- Maroon, gritty & earthy, sandy, gummy argillaceous clumps

Lm- Cream Off White, FXLN, oolitic w/ fusulinids, mod. dev. w/ micro XLN & sctrd fn ppt porosity, well cemented, vry clean, barren

Lm- Buff Tan, FXLN, dense, sl fsl, poorly dev. & mostly tight w/ sctrd micro XLN porosity, barren

Sh- Black Drk Gray Lm Green, soft, fissile, carbonaceous, silty & calcareous, soft & silty

Lm- A/A w/ much soft white chalk & few pcs of tight cherty ls & sl fsl fresh bedded chert

Lm- A/A w/ increasing amount of fsl chert, some soft white chalk

Lm- Cream Tan, VF-FXLN, dense, tight, well cemented, sl cherty ls w/ micro XLN & sctrd XLN porosity, few pcs of poorly dev. oolitic biomicrite w/ tan cementation & no vis. porosity, barren

HEEBNER 3764' (-1253) E-LOG 3783' (-1272) Sh- Black, fissile, carbonaceous

Sh- Lt Gray, gummy argillaceous clumps

TORONTO 3788' (-1277) E-LOG 3807' (-1296) Lm- Cream Tan, Med XLN, oolitic, sl dev. loosely-well cemented, mostly massive, clear cementation & clear recrystallization inclusions, micro XLN porosity, barren

LKC 3805' (-12894) E-LOG 3819' (-1308) Lm- Cream Tan, F-Med XLN, densely packed med. oolites w/ clear cementation, spherical, no vis. interoolite porosity, barren, much soft white chalk

Lm/Chert- Cream Milky White, VF-FXLN, dense, sl fsl, mostly tight w/ minimal vis. porosity, several pcs of fsl fresh bedded chert, barren, vry much soft white chalk

Lm- Cream Off White, VF-FXLN, dense, sl fsl, mostly tight w/ micro XLN porosity, vry much soft white chalk

Lm- Cream Off White, VF-FXLN, dense, sl fsl, mostly tight w/ micro XLN porosity, barren, much white chalk

Lm- Cream Tan, FXLN, densely packed small oolites, mostly tight w/ micro XLN porosity, few pcs w/ loosely packed med. oolites w/ sctrd interoolite porosity, barren, much soft white chalk, barren

Chert/Dol- Mix of cream FXLN, mod. dev. sucrosic dol w/ constant XLN porosity, barren, various colored fsl fresh bedded chert

Lm- Cream Tan, FXLN, loosely cemented, fsl & oolitic, mod. well dev. w/ sctrd ppt interoolitic porosity, SCTRD DRK TARRY STN, SFO, NO ODR

Lm- Cream Off White, VF-FXLN, dense, well cemented, poorly dev. sctrd XLN porosity, barren

Lm- White Off White, VF-FXLN, dense, sl chalky in part, sctrd micro XLN porosity, vry clean, barren

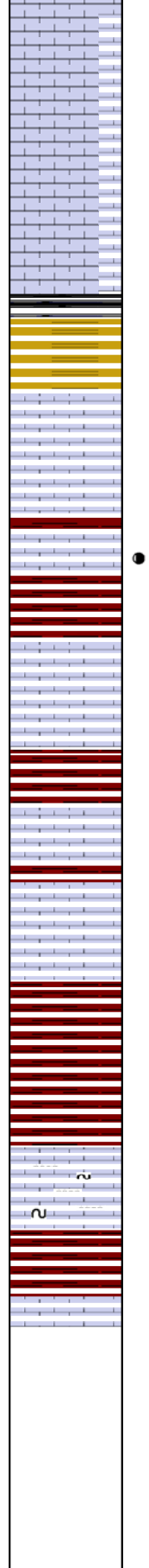
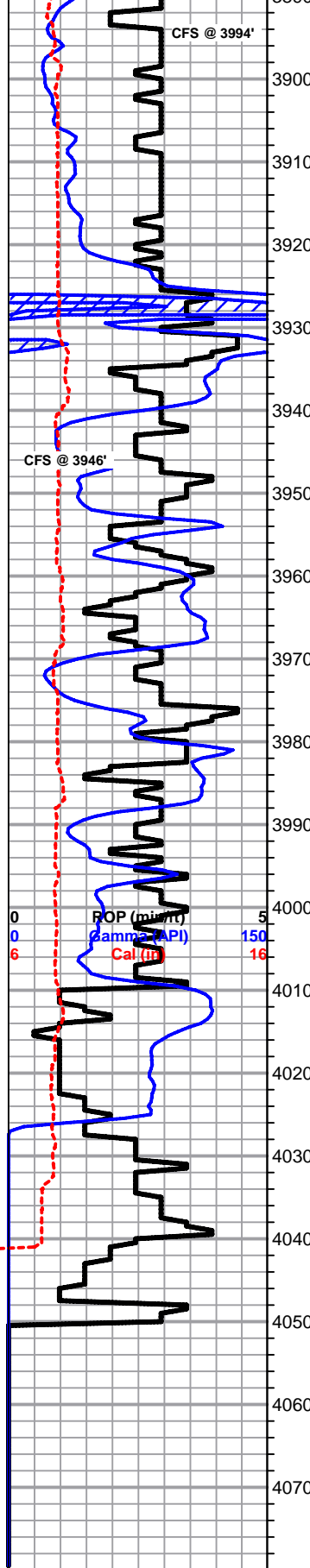
Lm- White Cream, VF-FXLN, dense mix, some white VF-FXLN w/ sctrd ppt porosity, constant micro pyrite inclusions, SCTRD DTK STN, SL SFO, FNT ODR, some cream dense, vry well cemented sl dolomitic ls w/ minimal vis. porosity, few pcs w/ TARRY DRK STN ALONG EDGE PLANES

SHORT TRIP SURVEY 1 dgr

DST #1
LKC D
3844' - 3870'

STRAP +2.00'

DST #2
LKC E-F
3869' - 3884'



Lm- White, FXLN, mix of sl-mod. dev. oolitic, sctrd ppt interoolite porosity, loosely-well cemented, SCTRDRK BRWN STN, SFO, NO ODR, & much soft white chalk
40" SMPL- abundant soft white chalk A/A

Lm- Cream Off White, FXLN, fsl & sl oolitic, poorly dev., loosely cemented & chalky, sctrd XLN porosity, vry clean, barren

Sh- Black Brown Gray, fissile, vry wel compacted, carbonaceous, gritty & earthy, some gray wash

Lm- Cream Off White, FXLN, fsl & sl oolitic, sl dev. w/ sctrd XLN porosity, few w/ dense fenestral XLN porosity, clean & barren

Lm- Cream Lt Gray, FXLN, dense, mostly tight, some sl chalky in part, poor XLN porosity, barren

Lm- White Cream, F-Med XLN, oolitic mix, some poorly dev. cream FXLN, vry well cemented, mostly tight w/ micro XLN porosity & white F-Med XLN, sl dev. w/ sctrd XLN porosity, ALL W/ DRK BLK DO & WK LT BRWN STN, TR SFO, SOME GILSONITE, WK ODR, much soft white chalk

Lm- Cream Off White, FXLN, dense, poorly dev. & mostly tight w/ minimal vis. porosity, barren

Lm- Cream Off White, FXLN, dense, well cemented, mostly tight w/ sctrd XLN porosity, clean & barren, few pcs of VFXLN, lithographic w/o vis. porosity

Sh- Maroon Lm Green, gritty & earthy, sandy lime, some sl argillaceous clumps

Lm- White w/ sl Ylw tint, fsl & sl oolitic, reworked appearance, loosely cemented & chalky, barren

Lm- Tan, VFXLN, dense, tight cherty ls, possibly fractured w/ dense XLN porosity, barren

BKC 4009' (-1498) E-LOG 4009' (-1498) Sh- Maroon Brown, gritty & earthy, sandy lime, shaley Ss, sandy gummy clumps

Lm- White Off White, FXLN, fsl & sl oolitic, sl unconsolidated w/ reworked appearance, some w/ lt glauconite spkng, loosely cemented & chalk in part, dense XLN porosity, few w/ fenestral XLN porosity, barren

Sh- Maroon, gritty & earthy

Lm- White Off White, VF-FXLN, dense, vry well cemented, sl fsl & densely packed w/ small oolites, some w/ sctrd micro XLN porosity, vry clean, barren

RTD 4050' (-1539) LTD 4057' (-1546) @ 14:33 11/13/2013

10 STAND MINI TRIP CTCH TOH FOR LOG