



CONSULTING GEOLOGIST

Geologist's Report
Drilling Time and Sample Log

OPERATOR Chieftain Oil Co., Inc.
LEASE RATHBEN WELL NO. #3
FIELD Stratathian API No. 15-007-24169

LOCATION SE SE SE NW--2702 FSL & 2344 TWL
SEC. 06 TWP. 35S R.0E. 1W
COUNTY Barber STATE Kansas

CONTRACTOR Fossil Rig #3
WELL NO. 5544
DATE 05/05/2014
CORN 05/12/2014

MEASUREMENTS ARE ALL
SURFACE BATH 13.3/24.185
@03' W/ 200 SX
@05'37' W/ 200 SX

PRODUCTION Bar 5 1/2"
@05'37' W/ 200 SX

GEOLOGICAL SUPERVISION FROM 4160' TO TD
MUD UP N/A
TYPE MUD GEL/CHEMICAL

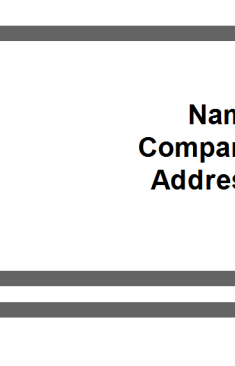
ELECTRICAL SURVEYS
CMT-DT-MLT
PIT

FORMATION TOP LOG DATA SAMPLE STRAT. CORRECTION
Mississippian 4789 3402 4788 3401

Kinderhook SH 5012 -3625 5014 -3627
Misener SD 5117 -3730 5118 -3727
Bath SD 5224 -3837 5226 -3835

Upper Sim SD 5303 -3916 5302 -3915
Lower Sim SD 5424 -4037 5422 -4035
Arbuckle 5474 -4097 5484 -4097

TD 5545 -4158 5544 -4157



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Contractor

Fossile Drilling Rig #2
P.O. Box 464
Pratt, KS 67124-0464

ACCESSORIES			STRINGER		
☐ Ferrpel	☐ Sand		☐ Anhy		
☐ Ferr	☐ Sity		☐ Arg		
☐ Glau			☐ Bent		
☐ Gyp			☐ Coal		
☐ Hymyn			☐ Gyp		
☐ Kaol			☐ Ls		
☐ Marl			☐ Siltstrg		
☐ Mixnl			☐ Ssstrg		
☐ Nodule			☐ Carbsh		
☐ Silt stn			☐ Clystn		
☐ Pyr			☐ Dol		
☐ Salt			☐ Grysh		
☐ Sandy			☐ Gryslt		
☐ Silt					
☐ Sil					
☐ Sulphur					
☐ Tuff					
☐ Chlorite					
☐ Dolomite					

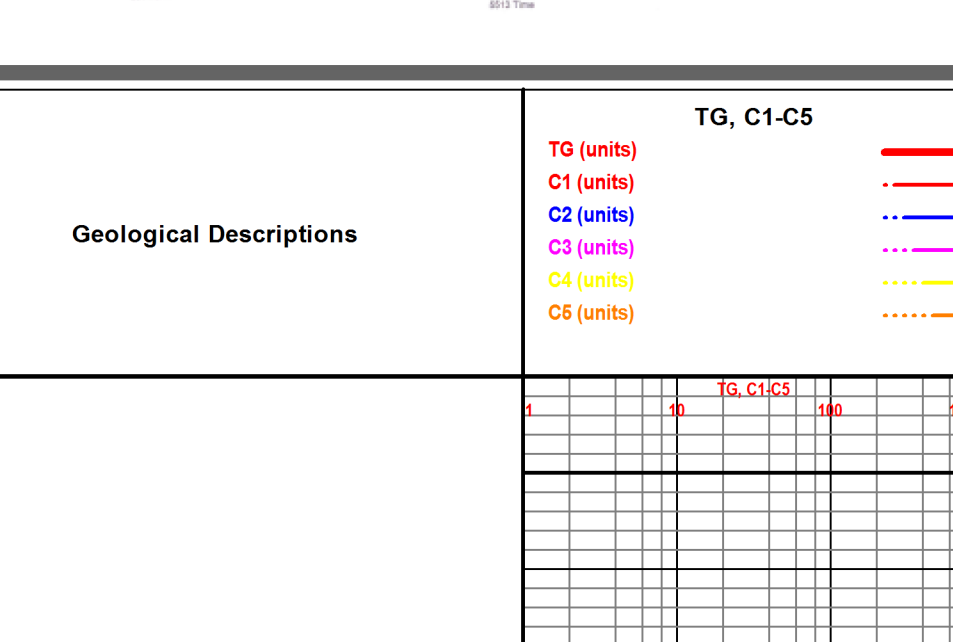
OTHER SYMBOLS			ROUNDING		
☐ Carb shale	☐ Brown lmst		☐ Rounded		
☐ Gray shale	☐ Brown shale		☐ Subrnd		
☐ Sandy lmst	☐ Brown dol		☐ Angular		
☐ Shale	☐ Brown cream				
☐ Shaly slst	☐ D. green lmst				
☐ Sity shale	☐ Light cream lmst				
☐ Blank	☐ Green dol				
☐ Gray lmst	☐ Gray dol				
☐ Cream lmst					
☐ Red shale					
☐ Blue-green siltstn					
☐ D. green shale					
☐ Green shale					

ROCK TYPES			SORTING		
☐ Anhy	☐ Carb shale		☐ Well		
☐ Cht	☐ Gray shale		☐ Moderate		
☐ Congl	☐ Sandy lmst				
☐ Shale	☐ Shale				
☐ Shgy	☐ Silt stn				
☐ Ss	☐ Shaly slst				
	☐ Sity shale				
	☐ Blank				
	☐ Gray lmst				
	☐ Cream lmst				
	☐ Red shale				
	☐ Blue-green siltstn				
	☐ D. green shale				
	☐ Green shale				
	☐ Brown lmst				
	☐ Brown shale				
	☐ Brown dol				
	☐ Brown cream				

5 1/2" Production casing was cemented to a depth of 5537' with 200 SKS of class a asc. Recommended zones of interest in this well would be the Mississippian from 4788' to 4850', Misener Sand from 5117' to 5121' and the Lower Simpson Sand from 5424' to 5434'.

DST # 1

5094'-5125' 1st Open: Good Blo, BOB
in 20 min, NoBB; 2nd Open: Strong
Blow, BOB in 30 Sec, NoBB; 330' GIP
REC 30' Gassy Mud (20% Gas, 80%
Mud), 30' Total Fluid; HP 2486-2478#,
FP 11-22/22-26, SIP 718-732



Curve Track 1 ROP (min/ft)	Depth ft	Porosity %	Lithology	Geological Descriptions	TG (units) C1 (units) C2 (units) C3 (units) C4 (units) C5 (units)
	5094			Shale: gray	
	5125			shale: gray, silty in part	
	5125			Shale: dark gray, soft, mushy in part, set loose sand grains	
	5125			Shale: gray, dense, massive	
	5125			Shale: very dark gray to black	
	5125			Shale: gray, dark gray, LS: brown, microxyn, very dense, one piece of light gray siltstone.	
	5125			Shale: gray Siltstone: gray, tight, no show	
	5125			Shale: gray to gray/green	
	5125			Shale: dark gray	
	5125			Shale: gray, LS: dark gray to gray buff, microxyn, modeled, finexyn, dense, poor interxyn porosity	
	5125			LS: off white, chky, LS: cream to buff, finexyn, poor interxyn porosity, no show	
	5125			LS: cream to buff, microxyn, poor interxyn porosity, no show, chky in part, Shale: gray, Chert: porcelain white	
	5125			LS: dark gray, microxyn, very dense, poor interxyn porosity, LS: gray/buff, finexyn to microxyn coarsexyn in part, Shale: gray	
	5125			LS: dark gray, microxyn, very dense, LS: gray/buff, finexyn to microxyn, set gray coarsexyn.	
	5125			LS: gray/buff, finexyn, poor interxyn porosity, LS: brown, microxyn, poor interxyn porosity, Shale: gray	
	5125			LS: gray/buff, finexyn, poor interxyn porosity, cherty in part, Shale: gray	
	5125			LS: buff to brown to gray/brown, to finexyn to microxyn, dense, poor interxyn porosity, friable, cherty Shale: gray	
	5125			LS: buff/cream, poor interxyn porosity, Chert: smoky brown, semi trans, sharp	
	5125			LS: brown/gray/cream, friable, finexyn, no show, LS: buff, finexyn, poor interxyn porosity, chky in part, Shale: dark gray to black, LS: dark gray, microxyn, dense	
	5125			LS: dark gray, microxyn, very dense, LS: cream, finexyn, modeled, scattered chky pieces, Shale: black	
	5125			LS: dark brown, microxyn, dense, LS: gray, microxyn, very dense, Shale: gray, soft	
	5125			LS: gray to dark gray, very dense in part, LS: gray/buff in part, poor interxyn porosity, Shale: gray	
	5125			LS: gray/buff, microxyn, dense, LS: dark gray, microxyn, dense,	
	5125			Shale: black, LS: white, chky, LS: cream to buff, finexyn, poor interxyn porosity	
	5125			LS: light green/buff, microxyn, dense, Shale: light green	
	5125			LS: gray/cream, microxyn, Shale: green, silty	
	5125			LS: cream to buff, microxyn to finexyn, platy	
	5125			LS: dark gray, microxyn, very dense, Shale: gray to black,	
	5125			LS: cream to buff, finexyn, microxyn, poor interxyn porosity, Shale: gray to gray/green	
	5125			Shale: black, LS: cream to buff, finexyn, poor interxyn porosity, no fluorescence, friable in part	
	5125			LS: light gray, microxyn, poor interxyn porosity, Shale: light gray/green, Shale: black to dark gray	
	5125			LS: dark gray/brown, silty, poor interxyn porosity, Shale: gray/brown	
	5125			Shale: silty gray/green and or gray, LS: dark gray/brown, silty, poor interxyn porosity, Shale: gray/brown	
	5125			Shale: light green silty in part Siltstone: light green with dark brown streaks, no fluorescence, no show	
	5125			slight odor from sample, Chert: sharp to slightly tripolitic, fair scattered stain, no show of free oil, increase in light green siltstone: even brown stain, no fluorescence	
	5125			4810 30 min: slight odor from sample, Chert: sharp to fair tripolitic porosity, increase in visible pin hole porosity, even brown stain with scattered black stain. increase in fresh chert in 60 min. cir. sample	
	5125			slight odor from sample, Chert: fresh with scattered fair tripolitic porosity, scattered fair stain, slight show of free oil, slight of free oil, scattered brecciated chert with fair tripolitic porosity, lmy in part with light green/gray shale partings	
	5125			LS: off white, fine grain, cherty, poor intergranular porosity,	
	5125			Chert: light green, sharp, semi trans in part,	
	5125			Dolomite: off white to light grain, fine granular, poor intergranular porosity, cherty, lmy	
	5125			Dolomite: dirty gray, very fine granular, cherty, poor intergranular porosity, no show, silty, lmy	
	5125			Dolomite: dirty gray, fine granular, poor intergranular porosity, silty, no show cherty in part	
	5125			Dolomite: dirty gray, fine granular, poor intergranular porosity, silty, no show cherty in part	
	5125			LS: dark gray, microxyn, poor interxyn porosity, very dense, Shale: brownish gray	
	5125			LS: dark gray, very finexyn, poor interxyn porosity, no show, dolomitic. Shale: brownish gray	
	5125			Dolomite: light brown, silty, poor intergranular porosity, no show, Shale: dirty gray to brownish gray	
	5125			Shale: dirty gray	
	5125			Shale: gray brown to blue green/black, mott	
	5125			Shale: gray slightly earthy brown	
	5125			Shale: earthy brown, dense, set fluorescence spores,	
	5125			5125 30 min: no odor from sample, Dolomite: dark brown, very fine granular, poor intergranular porosity, Shale: brown, fluorescence spores,	
	5125			5125 60 min: no odor from sample, SD. STN: clear grained, fine grain, friable, very bright fluorescence, slight show of free oil under black light, no odor, Shale: gray to green, SD. STN: white to light green, with dark gray shale particles, fine to medium grained, poor cut, Shale: green	
	5125			SD. STN: light gray to tan, fine grain, poorly sorted, fine to medium grained, subrounded, poor intergranular porosity,	
	5125			Dolomite: dark brown gray brown, very fine granular, dense, poor intergranular porosity, scattered slight visible porosity, no show	
	5125			Dolomite: brown to tan, fine granular, dense, poor intergranular porosity, no show of hydrocarbons	
	5125			Dolomite: brown to dark brown, fine granular, poor intergranular porosity, very dense in part. no show	
	5125			Shale: green, waxey	
	5125			SD. STN: fine grain quartz grains, light brown, friable, no show, rounded, friable clusters, no show, off white lmy streaks, sample mostly sluff	
	5125			SD. STN: dirty gray to light brown, poorly sorted, poor intergranular porosity, friable, Shale: blue green	
	5125			SD. STN: white, medium grained, dolomitic, poor intergranular porosity, Shale: green, sandy	
	5125			SD. STN: light tan, fine grain, poorly sorted, friable, Shale: green waxey	
	5125			Shale: green, waxey	
	5125			Shale: gray to green	
	5125			SD. STN: light tan to dirty gray, medium to fine grained, poorly sorted, dolomitic, poor intergranular porosity, scattered very bright fluorescence, slight show of free oil under black light, no odor, Shale: gray to green, SD. STN: white to light green, with dark gray shale particles, fine to medium grained, poor cut, Shale: green	
	5125			SD. STN: light gray to tan, fine grain, poorly sorted, fine to medium grained, subrounded, poor intergranular porosity,	
	5125			Dolomite: dark brown gray brown, very fine granular, dense, poor intergranular porosity, scattered slight visible porosity, no show	
	5125			Dolomite: brown to tan, fine granular, dense, poor intergranular porosity, no show of hydrocarbons	
	5125			Dolomite: brown to dark brown, fine granular, poor intergranular porosity, very dense in part. no show	