

# Adam Eldani Geo-Log/Report

## WellSight Systems

Scale 1:240 (5"=100') Imperial

Measured Depth Log

Well Name: #1JOSEPH-HESS

Location: SEC 30-TOWNSHIP 13S- RANGE 31W GOVE COUNTY

License Number: API 15-063-22123

Region: KANSAS

Spud Date: 7/23/2013

Drilling Completed: 08/04/2013

Surface Coordinates: 1700' FSL & 175' FEL

Bottom Hole Deviation Surveys are detailed through out the Geo-Report.

Coordinates:

Ground Elevation (ft): 2869'

K.B. Elevation (ft): 2877'

Logged Interval (ft): 3500 To: 4648

Total Depth (ft): 4650

Formation: Mississippian

Type of Drilling Fluid: Mud-Co Chemical

Printed by MUD.LOG from WellSight Systems 1-800-447-1534 [www.WellSight.com](http://www.WellSight.com)

### OPERATOR

Company: Ritchie Exploration Inc. (drilled by WW RIG# 12)

Address: 8100 E. 22nd ST. N. #700  
Wichita, KS, 67278-3188

### GEOLOGIST

Name: Adam M.A. Eldani

Company: Ritchie Exploration Inc.

Address: 8100 E. 22nd ST. N. #700  
Wichita, KS, 67278-3188

## Tops & Drill Report

### TOPS: DRILLING REPORT

#### Sample Tops:

Anhydrite: 2357'+520	Anhydrite: 2356'+521
B/Anhydrite: 2380'+497	B/Anhydrite: 2378'+499
Heebner: 3868'-991	Heebner: 3866'-989
Toronto: 3891'-1014	Toronto: 3890'-1013
Lansing: 3914'-1037	Lansing: 3912'-1035
Muncie Sh: 4065'-1188	Muncie Sh: 4059'-1182
Stark Sh: 4149'-1272	Stark Sh: 4148'-1271
Hush. Sh: 4186'-1309	Hush. Sh: 4184'-1307
BKC: 4229'-1352	BKC: 4220'-1343
Marmaton: 4241'-1364	Marmaton: 4241'-1364
Altamont: 4259'-1382	Altamont: 4258'-1381
Pawnee: 4344'-1467	Pawnee: 4344'-1467
Myrick: 4383'-1506	Myrick: 4381'-1504
Ft Scott: 4399'-1522	Ft Scott: 4399'-1522
Cherokee: 4427'-1550	Cherokee: 4427'-1550
Johnson: 4470'-1593	Johnson: 4469'-1592
Mississippian: 4518'-1641	Mississippian: 4530'-1653
RTD: 4650'-1773	LTD: 4648'-1771

#### DAILY DRILLING REPORT:

##### DATE DEPTH:

7/23	Spud
7/24	860'
7/25	2593'
7/26	3392'
7/27	3920'
7/28	3963'
7/29	4002'
7/30	4020'
7/31	4097'
8/01	4150'
8/02	4230'
8/03	4493'
8/04	4650'

#### Misc.

All DST's info. are NEAR the correct log depth.

RIG: WW DRILLING, LLC. RIG # 12  
TOOL PUSHER: CALVIN PHANNENSTIEL  
MUD: MUD CO. (Reid Atkins)  
GAS DETECTOR: N/A

DRILL STEM TEST'S: TRILOBITE TESTERS INC.

LOGS: NABORS (JEFF LUEBBERS)

OFFICE: PETER FIORINI

## Comments

Moved in and rigged up. Spud at 1:00 p.m. Ran 5 jts new 23# 8-5/8" surface casing. Tally at 225', set at 234'. Cemented with 165 sacks common, 3% cc, 2% gel. Cement circulated. Plug down at 5:00 p.m. Drilled out plug at 1:00 a.m. on 7/24/13.

**AFTER THE RESULTS OF SAMPLE LOGGING, ELECTRIC LOGGING, AND ALL DST TESTS ANALYSIS & CALCULATIONS; IT WAS DECIDED TO RUN 5 1/2 INCH PRODUCTION CASING TO FURTHER TEST THE #1 JOSEPH-HESS FOR OIL & GAS COMMERCIAL QUANTITIES.**

Ran 5-1/2" 15.5# new production casing, set at 4647'. Port collar at 2328'. Insert at 4625'. Pumped 500 gallons mud flush. Cemented casing with 200 sacks OWC, 10% salt, 2% gel, 1/4% CDI-31 and 5 1/4% Kol-Seal. Plug down at 7:00 p.m. Insert held. Plugged rat hole with 30 sacks.


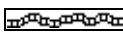
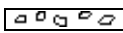


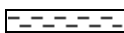







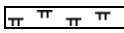
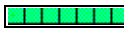
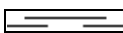
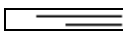
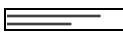



Well Log Surveys BY: NABORS. Compensated Denisty/ Neutron Log, Dual Induction.

SAMPLES WILL BE DEPOSITED WITH KANSAS GEOLOGICAL SURVEY.































































RESPECTFULLY SUBMITTED

Adam M. A. Eldani

### ROCK TYPES

 Anhy  Bent  Brec  Carb sh  Cht	 Clyst  Coal  Congl  Dol  Gyp	 Igne  Lmst  Meta  Mrlst  Salt	 Shale  Shcol  Shgy  Sltst  Ss	 Till
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### ACCESSORIES

<b>MINERAL</b>  Anhy  Arggrn  Arg  Bent  Bit  Brecfrag  Calc  Carb  Chtdk  Chtlt  Dol  Feldspar  Ferrpel  Ferr  Glau  Gyp	 Hvymin  Kaol  Marl  Minxl  Nodule  Phos  Pyr  Salt  Sandy  Silt  Sil  Sulphur  Tuff  <b>FOSSIL</b>  Algae  Amph	 Belm  Bioclst  Brach  Bryozoa  Cephal  Coral  Crin  Echin  Fish  Foram  Fossil  Fuss  Gastro  Oolite  Oomold  Ostra  Pelec	 Pellet  Pisolite  Plant  Strom  <b>STRINGER</b>  Anhy  Arg  Bent  Coal  Dol  Gyp  Ls  Mrst  Sltstrg  Ssstrg	<b>TEXTURE</b>  Boundst  Chalky  Cryxln  Earthy  Finexln  Grainst  Lithogr  Microxln  Mudst  Packst  Wackst
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**OTHER SYMBOLS**

**POROSITY**

- Earthy
- Fenest
- Fracture
- Inter
- Moldic
- Organic
- Pinpoint

Vuggy

- SORTING**
- Well
  - Moderate
  - Poor

**ROUNDING**

- Rounded
- Subrnd
- Subang
- Angular

**OIL SHOW**  
 aiming\_1

- Even
- Spotted
- Ques
- Dead

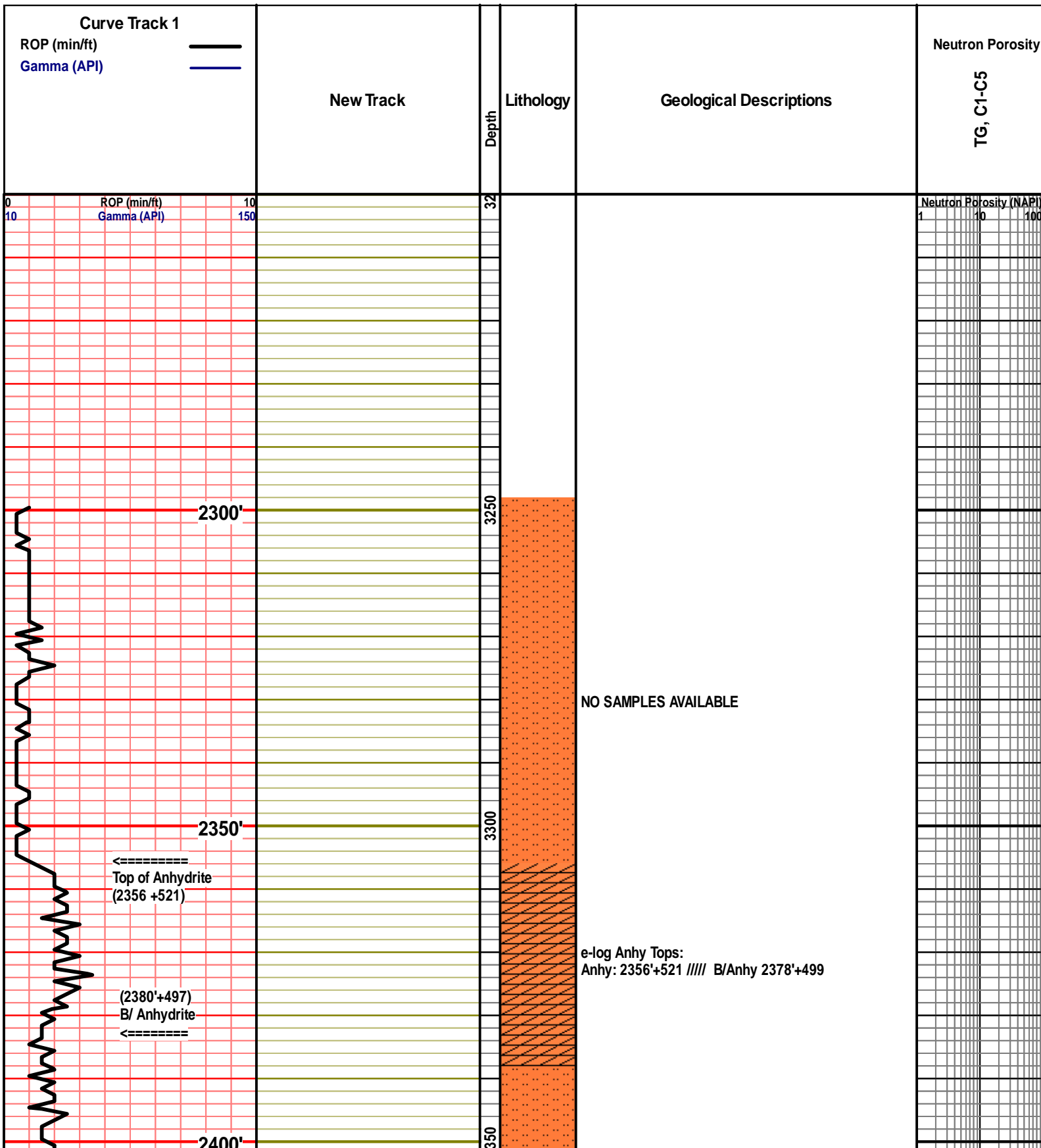
**INTERVAL**

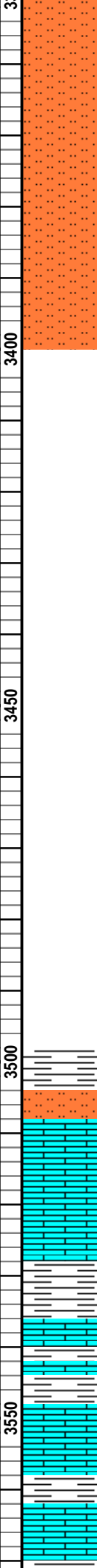
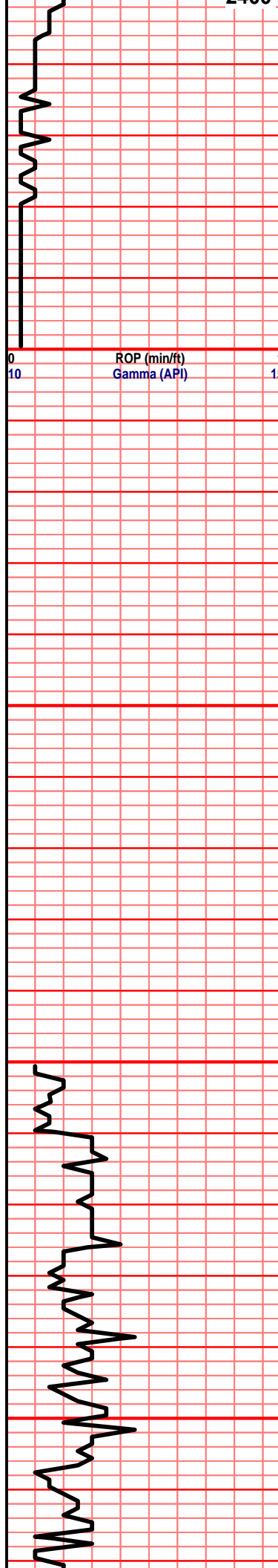
- Core
- Dst

Dst\_alt  
 Dst

**EVENT**

- Rft
- Sidewall





NO SAMPLES AVAILABLE

**GEOLOGIST ON LOCATION @ 3577'**

Location was semi-wet from the rain on 7/25/2013

**MUD DISPLACEMENT @ 3449**

3500: mstly maroon/red- gry sh, crm inxln lm, algal foss, poor por, no odr, ns.

3510: aa, incrs in gry slt stn.

3520: mstly gry slty sh, lots of gry slt stn, few crm v. fn grn lm, sli xln, dense, no odr, ns.

3530: aa, incrs in gry sh.

3540: incrs in crm- v. lght tan foss lm, well cemtd, hrd to brk, no odr, ns.

3550: incrs in crmsh/gry xln lm, dense, incrs in chlkly lm, loose crinoid disks in try, no odr, ns.

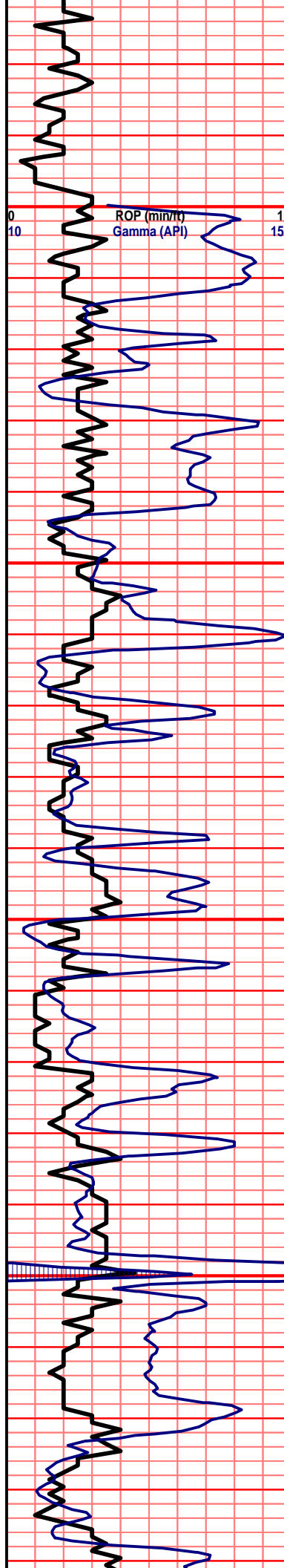
3560: incrs in v. drk gry shly lm, drk crm-gry inxln lm, v. dense, no odr, ns.

3570: decrse in drk gry shly lm, incrs in wht chlk.

3580: incrs in grysh/crm-gry inxln lm, foss, dense, poor inxln por, no odr, ns.

3590: aa. incrs in crm fn arn lm. well cemtd. no odr.

Neutron Porosity (NAPI)  
1 10 100



**PUMP PRESSURE 950+**

**PUMP PRESSURE 950+**

7/27/2013  
 mud info:  
 wt: 9.0  
 Funnel Vis. 51  
 Filtrate API: 10.4  
 Chloride 1,500  
 LCM # 1



3600: peachy sample, mstly red/maroon sh, sig incrs in chlk.

3610: lots of wht chlk, tan cors xln lm, dense, no odr, ns.

3620: lght crm fn xln lm, sli chlky, no vis por, no odr, ns.

3630: brwn-gry inxln lm, sli foss, poor por, sig incrs in gry sh.

3640: mstly gry inxln lm, w/ foraminifera iimprints, poor por, no odr, ns.

3650: mstly gry well cemntd slt stn, incrs in slty sh, lots of loose pyrt.

3660: aa, incrs in tan foss lm, poor por, no odr, ns.

3670: mstly crm inxln lm, cors xln in prt, lots of lght crm fn grn pack stn lm, fair por, no odr, ns.

3680: aa, incrs in wht chlk.

3690: mstly crm chlky lm, lots of crm inxln lm, poor inxln por, sli foss, no odr, ns.

3700: mstly crmsh/gry micrtic lm, intr prtcl por, few tansh/brwn foss lm, sl xln, poor por, no odr, ns.

3710: aa, sig incrs in dirty gry ool wacke lm, poor por, no odr, ns.

3720: v. gummy sample, mstly chlk, incrs in brwn slty sh.

3730: lght tan wacke-pack stn lm, poor intr prtcl por, well cemntd, no odr, ns.

3740: aa, mstly wht chlk.

3750: lots of wht chlk, incrs in grysh/crm wackee lm, sli foss, mod cemntd, no odr, ns.

3760: drty crm inxln lm, poor inxln lm, cemnt flooded algal pores, no odr, ns.

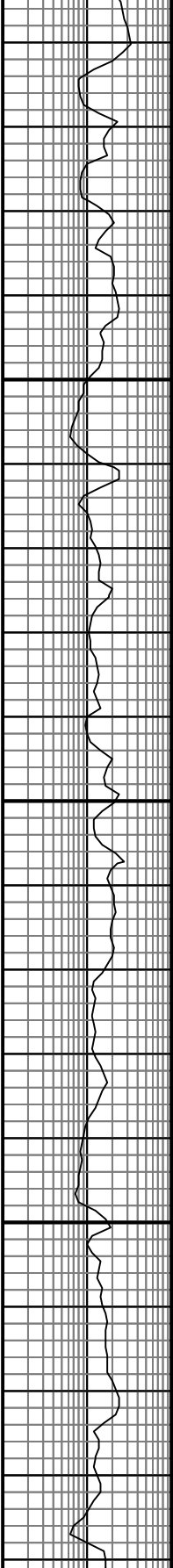
3770: shw of blk carb sh, lm aa, incrs in chlky lm, no odr, ns.

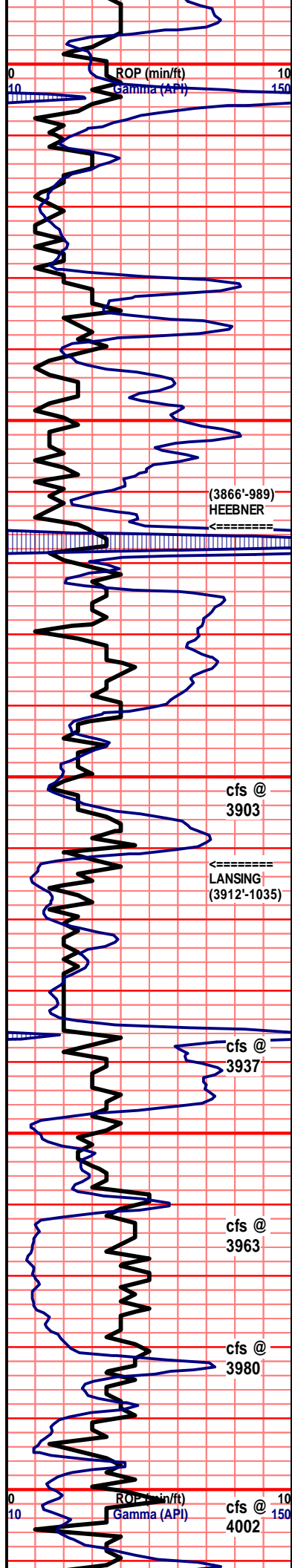
3780: incrs in brwn-gry slty sh, tan foss lm, cemnt flooded, gry inxln lm, poor-no por, no odr, ns.

3790: sig incrs in maroon/brwn sh, lght crm pack stn lm, fair-poor intr prtcl por, no odr, ns.

3800: crm inxln lm, poor inxln por, incrs in wht chlk, no odr, ns.

Neutron Porosity (NAPI)





**PUMP PRESSURE 950+**

**POOR BOY'S STRAIGHT HOLE SURVEY: 1/2 DEGREE**

7/28/2013  
mud info.  
wt: 9.1  
Funnel Vis. 52  
Filtrate API: 10.4  
Chloride 3,000  
LCM # 1

30MIN: mstly lght crm xln lm, sli chlky, poor xln por, lots of wht chl. 60MIN: aa, incrs in wht foss chrt & chrtly lm, no vis por, no odr, ns.

DST #1: 3927' - 3963' (LKC "C")  
Recovered 2' oil, 102' water cut mud (30% water, 70% mud) and 62' mud cut water (10% mud, 90% water).  
Total Fluid 166' (1% oil, 53% water, 47% mud).  
IFP: 17-61#/30" ISIP: 1000#/45"  
FFP: 65-89#/45" FSIP: 937#/60"

30MIN: mstly crm inxln lm, poor inxln por, ns, loose wht chl. 60MIN: mstly crm inxln lm, cemnt flooded fracs, poor-no por, lots of wht chl, no odr, ns.

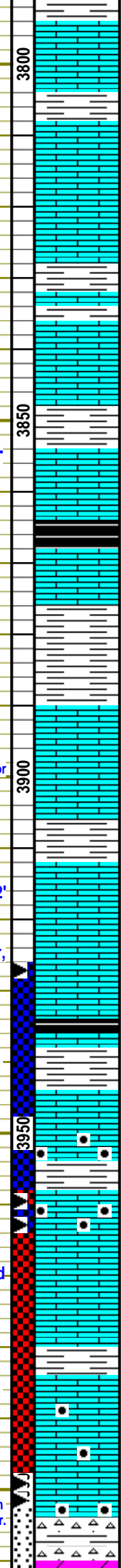
30MIN: mstly crm inxln-fn lm, some chps developed vuggy/xln por w/ shw of brwn free oil, sub-chrtly, fair-strng odr. 60MIN: same as thirty, incrs in shw of brwn oil, strng odr.

DST #2: 3959' - 4002' (LKC "D" & "E")  
Recovered 65' water cut mud (5% water, 95% mud).  
IFP: 19-33#/30" ISIP: 933#/45"  
FFP: 35-49#/45" FSIP: 886#/60"

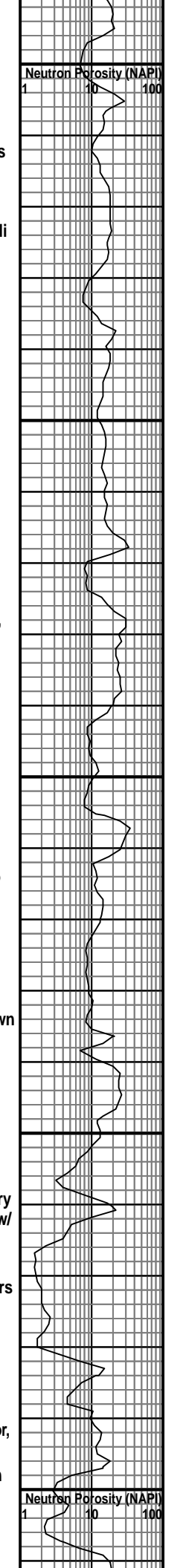
30MIN: mstly crm inxln lm, cors xln in prt, poor inln por, lots of wht chl. 60MIN: same as thirty min sample incse in v. lght crm subchlky lm.

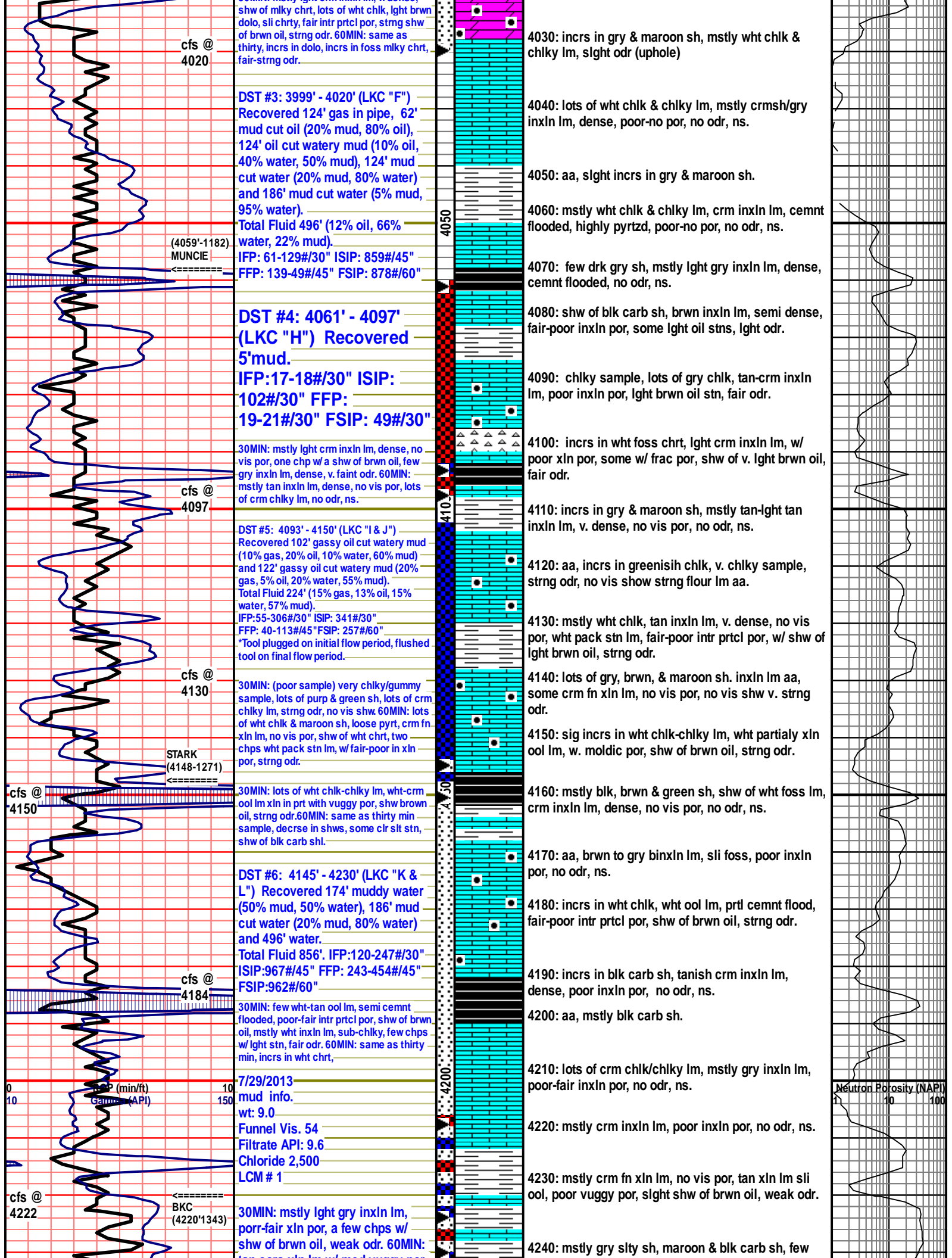
30MIN: crm-tan fn xln lm, w/ pin point vuggy por, shw of brwn oil, few chps cors xln lm, w/ frac por w/ a shw of brwn oil, strng odr. 60MIN: same as thirty, decse in oil shws, slght incrs in drk tan chrt, fair odr.

30MIN: mstly lght crm inxln lm, v. dense.

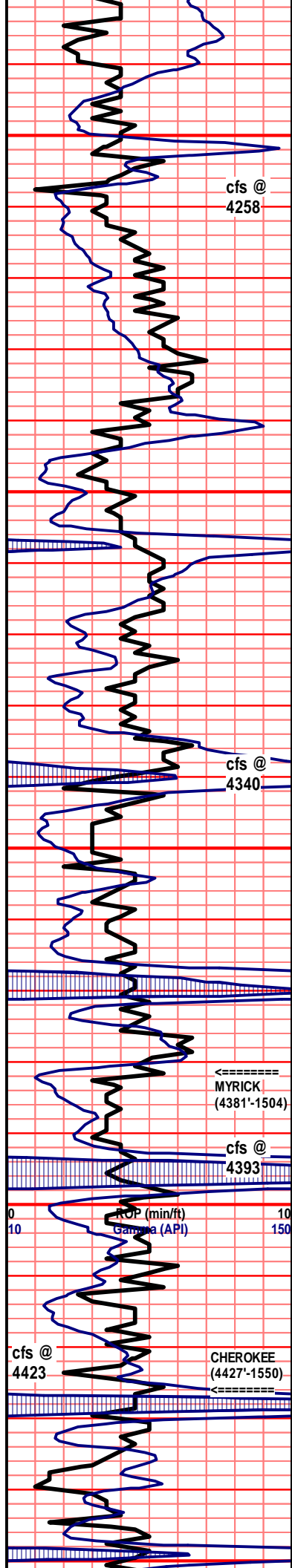


no odr, ns.  
3810: crm ool lm, cemnt flooded, no vis por, no odr, ns.  
3820: aa, incrs in fn xln crm lm, no vis por, incrs in gry sh.  
3830: incrs in wht crmy foss chert & chrtly lm, no vis por, no odr, ns.  
3840: incrs in gry sh, mstly brwn inxln lm, dense, sli foss, no odr, ns.  
3850: aa, incrs in crm xln lm, sli chlky, incrs in gry xln lm, no odr, ns.  
3860: aa, no sig change.  
3870: crm semi xln lm, chlky, poor por, mstly wht chl.  
3880: show of blk carb sh, lots of crmish/wht chlky lm.  
3890: mstly crm-gry inxln lm, poor inxln por, no odr, ns.  
3900: aa, incrs in green & gry sh.  
3910: crm xln lm, dense, lots of crm chrt/ chrtly lm, incrs in maroon/brwn sh, no odr, ns.  
3920: aa, incrs in chlky lm, decse in sh.  
3930: tan grain stn lm, med cors grn, poor-fair intr prtcl por, incrs in lght crm ool lm, cemnt flooded, no vis por.  
3940: incrs grain st & ool cemnt floded lm aa, sig incrs in wht chl, no odr, ns.  
3950: tan xln lm, w/ mod vuggy por, slght shw of brwn oil, mstly lght crm inxln lm, poor xln por, no odr.  
3960: incrs in gry sh, incrs in gry inxln, poor inxln por, ns, incrs in tan xln lm, w/ fair inxln por, shw of brwn oil, fair odr.  
3970: sig incrs in maroon, gry & green sh, shw of gry & brwn slt stn, mstly v. lght crm inxln lm, few chps w/ fair inxln por por w/ SSFO, weak-fair odr.  
3980: mstly lght crm inxln lm aa, poor inxln por, incrs in wht chl, no odr, ns.  
3990: aa, no sig change.  
4000: crmsh tan cors xln lm, w/ fair frac & vuggy por, abundnt shw of v. lght brwn oil, strng odr.  
4010: mstly gnry & maroon sh, few drty crm inxln-fn xln lm, v. dense, ns. v. poor sample.  
4020: v. lght tan fn xln lm, w/ vuggy por, show brwn oil, few crm sub-chlky lm, fair odr.









tan cors xln lm w/ med vuggy por, shw of brwn oil, weak odr.

**DST #7: 4224' - 4340'**  
**(Marmaton & Altamont)**  
**Mis-run.**

cfs @  
4258

30MIN: crm inxln lm, cemnt flooded xln por, lots of crm chlky lm, no odr, ns. 60MIN: lm same as thirty min, sig incrs in green & brwn sh.

**DST #8: 4208' - 4340'**  
**(Marmaton & Altamont)**  
**Recovered 10' mud.**  
**IFP: 24-30#/30" ISIP:**  
**406#/30" FFP: 32-41#/30"**  
**FSIP: 301#/30"**

**PUMP PRESSURE 950+**

7/29/2013  
 mud info.  
 wt: 9.0  
 Funnel Vis. 54  
 Filtrate API: 9.6  
 Chloride 2,500  
 LCM # 1

**PUMP PRESSURE 950+**

cfs @  
4340

30MIN: mstly drk gry to blk carb sh, tan-gry xln lm, dense, poor-no por, no odr, ns. 60MIN: same as thirty min sample, no sig change.

**DST #9: 4336' - 4423'**  
**(Pawnee, Myrick & Fort Scott)**  
**Recovered 60' mud with oil spots.**  
**IFP: 18-29#/30" ISIP:**  
**164#/30" FFP:**  
**32-48#/30" FSIP:**  
**108#/30"**

MYRICK  
 (4381'-1504)

cfs @  
4393

30MIN: wht fn xln lm, fair vuggy por, shw of brwn oil, tan xln lm, fair vuggy por, slght shw of brwn oil, fair-strng odr. 60MIN: same as thirty, incrs in shws in both litho's, incrs in green sh, fair-strng odor.

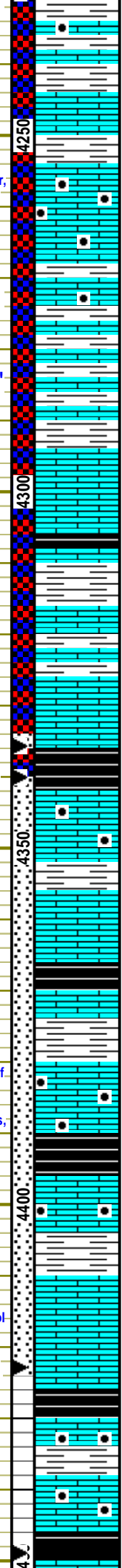
7/30/2013  
 mud info.  
 wt: 9.2  
 Funnel Vis. 55  
 Filtrate API: 9.6  
 Chloride 2,500  
 LCM # 1

ROP (min/ft)  
 Gamma (API)

CHEROKEE  
 (4427'-1550)

30MIN: mstly gr & green sh, a few chps ool lm, prtial cemnt flooded, v. poor intr prtcl por w/ a shw of free brown oil, weak odr. 60MIN: same as thirty, incrs in lght crm fn xln lm, no vis por, decrse in shws as thirty min sample, weak-no odr.

7/31/2013  
 mud info.  
 wt: 9.1  
 Funnel Vis. 51  
 Filtrate API: 8.8  
 Chloride 2,000  
 LCM # 1



chp w/ shw (uphole), no odr.

4250: mstly sh aa, few crm inxln lm w/ pin point vuggy por, slght shw brwn oil, v. weak odr.

4260: crm-tan xln lm, fn xln in prt, v. dense, cemnt flooded, no vis por, no odr, ns.

4270: mstly gry sh, tan inxln lm, w/ pin point vuggy por, slght shw of brwn oil, weak odr.

4280: incrs in wht chlck & v. lght gry xln lm sli chlky, tan xln lm, sli chlky w/ lght oil stn, v. weak odr.

4290: mstly gry chlck, brwn-gry inxln lm, poor inxln por, few chps w/ drk oily stn.

4300: aa, incrs in chlck, ns, slght odr.

4310: mstly brwn dense inxln lm, sli chrty, no vis por, lots of crm chlck & crm chrt, one smale xln lm chp, sli chlky w/ v. slght shw, no odr.

4320: mstly v. lght crm xln lm, incrs in wht chrt, poor-no por, no odr, ns.

4330: aa, sig incrs in brwn sh.

4340: brwn tan fn-inxln lm, cemnt flooded, v. dense, sli foss, no vis or, no odr, ns.

4350: mstly gry & blk carb sh, few crm ool lm w/ poor intr prtcl por, slght show brwn oil, weak odr.

4360: sig incrs in wht chlck & chlky lm, lots of wht chrt, few lght tan inxln lm, w/ pin point vuggy por, slght shw of free oil, v. weak odr.

4370: incrs in gry & green sh, wht chlck & chlky lm, wht-lght brwn chrt, lots of tan-brwn fn xln lm, dense, no vis por, no odr, ns.

4380: aa, shw of blk carb sh, decrse in chlck, incrs in tan-crm inxln lm, poor inxln por, no odr, ns.

4390: incrs in blk carb sh, mstly tan inxln lm, cemnt flooded fracs, no vis por, no odr, ns.

4400: lots blk carb sh, wht-crm cors xln lm, fair inxln/frac por, shw of brwn oil, fair-strng odr.

4410: incrs in blk carb sh, crmish/gry ool lm, cemnt flooded, no vis por, few xl chps w/ shw (uphole), weak odr.

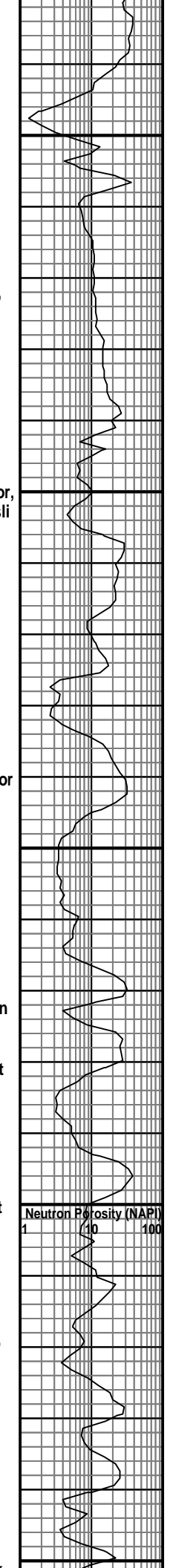
4420: aa, incrs in green & gry sh.

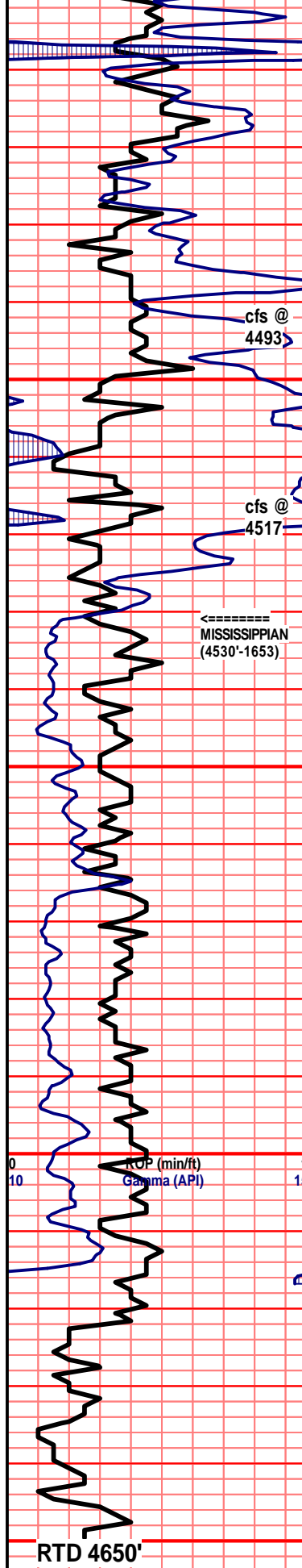
4430: mstly gry sh, few tan semi foss lm, dense, no odr, ns.

4440: decrse in gry sh show blk sh, incrs in lght tan-gry inxln lm, v. dense, no odr, ns.

4450: lots of crm-tan xln lm, sli inxln, w/ vuggy por, good shw of brwn oil, fair-strng odr.

4460: shw of blk carb sh (blk coal?), xln lm w/ shw (uphole), mstly tan inxln lm, dense, no vis por, weak odr.





DST #10: 4449' - 4493' (Johnson)  
 Recovered 446' gas in pipe, 112' oil cut mud (5% oil, 95% mud), 124' watery mud cut oil (5% water, 10% mud, 85% oil) and 62' mud and water cut gassy oil (10% water, 10% mud, 20% gas, 60% oil).  
 Total Fluid 298' (4% gas, 50% oil, 4% water, 42% mud).  
 IFP: 25-78#/30" ISIP: 1093#/45"  
 FFP: 82-127#/45" FSIP: 1018#/60"  
 30MIN: brwnsh/gry-crm xln lm, cors in prt w/ exlcnt vuggy por, shw of brwn oil, lots of crm chlky lm & crm inxln lm w/ ns, fair-strng odr. 60MIN: same as thirty, decrete in oil shws, slght incrs in gry sh, fair odr.

8/01/2013  
 mud info.  
 wt: 9.3  
 Funnel Vis. 55  
 Filtrate API: 9.6  
 Chloride 2,600  
 LCM # 1

30MIN: sh: gry, green, yellow, maroon & purp, incrs in gry & green slt stn. 60MIN: same as thirty min sample, no change.

**PUMP PRESSURE 950+**

8/03/2013  
 mud info.  
 wt: 9.3  
 Funnel Vis. 75  
 Filtrate API: 16.8  
 Chloride 8,000  
 LCM # 1  
 TWO TANKS WERE MIXED FOLLOWING THE MUD-CO. REP RECOMMANDATION... FUNNEL WAS BROUGHT DOWN TO 55 & 9.1 wt.

**PUMP PRESSURE 950+**

**POOR BOY'S STRAIGHT HOLE SURVEY: 3/4 DEGREE**

60MIN: brwn xln dolo, vis grn w/ flood of cemnet, poor por, no odr, ns.



(uphole), misty tan inxln lm, dense, no vis por, weak odr.

4470: crm-grry inxln lm, dense, cemnt flooded, lots of chlky lm, no odr, ns.

4480: lots of brwn fn xln lm w/ pin point vuggy por, slght shw of free brwn oil, fair odr.

4490: brwnsh/gry-crm xln lm, cors in prt w/ exlcnt vuggy por, abundnt strng shw of free brwn oil, v. strng odr.

4500: sig incrs in gry, blk & maroon sh, xln lm w/ shw aa (uphole), v. weak odr.

4510: mstly slty gry, green & maroon sh, tan xln lm w/ v. big vuggy por, exlcnt por, strng show of oil (uphole ?) strng odor.

4520: mstly gry, green & maroon sh, crm xln lm, poor por (a few w/ slght shw uphole), weak-no odr.

4530: aa, no sig change.

4540: shw of ornge & gry foss chrt, mstly tan-crm inxln lm, cemnt flooded, no odr, ns.

4550: crm pack stn, med grn, sli xln, well cmntd, poor-no por, no odr, ns.

4560: aa, incrs in wht chl & gry sh, no odr, ns.

4570: crm-brwn fn xln lm, no vis por, no odr, ns.

4580: tan inxln lm, poor-no por, no odr, ns.

4590: crm pack stn lm, med-fn grn, matrix fill por, no odr, ns.

4600: aa, no sig change.

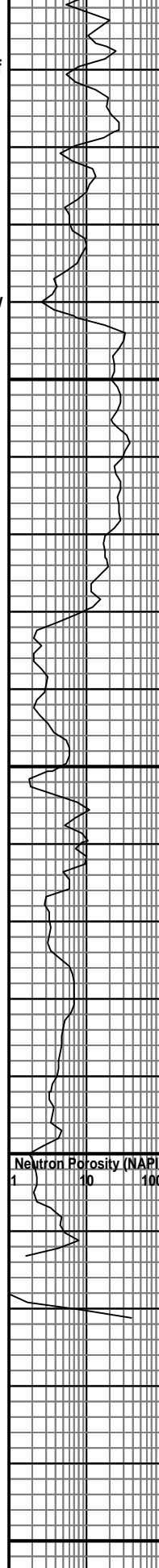
4610: sig incrs in gry & green sh, crm pack stn lm, med-fn grn, matrix fill por, no odr, ns.

4620: aa, decrete in sh.

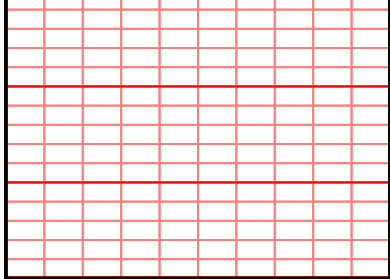
4630: mstly gry sh, crm pack stn, no odr, ns.

4640: aa, no change.

4650: brwn xln dolo, exlcnt vuggy por, lots of wht chl, no odr, ns.



RTD 4650'



00

