

OPERATOR

Company: Younger Energy Company
 Address: 9415 E. Harry Street
 Suite 403 Bldg. 400
 Wichita, KS 67207

Contact Geologist:
 Contact Phone Nbr: 316-681-2542
 Well Name: Keller Becker #1-35
 Location: Sec. 35 - T21S - R15W
 API: 15-145-21773-0000
 Pool:
 State: Kansas

Field: Hurray
 Country: USA



Scale 1:240 Imperial

Well Name: Keller Becker #1-35
 Surface Location: Sec. 35 - T21S - R15W
 Bottom Location:
 API: 15-145-21773-0000
 License Number: 30705
 Spud Date: 7/22/2014
 Region: Pawnee County
 Drilling Completed: 7/29/2014
 Surface Coordinates: 460' FSL & 420' FWL
 Bottom Hole Coordinates:
 Ground Elevation: 1964.00ft
 K.B. Elevation: 1972.00ft
 Logged Interval: 3200.00ft
 Total Depth: 4120.00ft
 Formation: Arbuckle
 Drilling Fluid Type: Chemical/Fresh Water Gel

Time: 3:45 PM
 Time: 7:50 AM
 To: 4120.00ft

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude:
 Latitude:
 N/S Co-ord: 460' FSL
 E/W Co-ord: 420' FWL

LOGGED BY

Keith Reavis
 Consulting Geologist

Company: Keith Reavis, Inc.
 Address: 3420 22nd Street
 Great Bend, KS 67530

Phone Nbr: 620-617-4091
 Logged By: KLG #136

Name: Keith Reavis

CONTRACTOR

Contractor: Duke Drilling Company
 Rig #: 2
 Rig Type: mud rotary
 Spud Date: 7/22/2014
 TD Date: 7/29/2014
 Rig Release:

Time: 3:45 PM
 Time: 7:50 AM
 Time:

ELEVATIONS

K.B. Elevation: 1972.00ft
 K.B. to Ground: 8.00ft
 Ground Elevation: 1964.00ft

NOTES

No drill stem tests were conducted on the Keller Becker #1-35 due low structural position. The well was drilled 200' into the Arbuckle and 5 1/2" production casing was set and cemented with the intent of testing the Viola and Simpson through perforations and stimulation. If production proves non-commercial, the well will then be converted to a salt water disposal.

A Bloodhound gas detection system was employed during the drilling of this well. ROP and gas curves were imported into this mudlog as well as gamma ray and caliper curves from the electrical log suite.

Samples were saved and will be available for review at the Kansas Geological Survey Well Sample Library located in Wichita, KS.

Respectfully submitted,
 Keith Reavis

Younger Energy Company
 daily drilling report

DATE	7:00 AM DEPTH	REMARKS
07/27/2014		Geologist Keith Reavis on location @ 0155 hrs, 3266 ft, drilling ahead Topeka, Heebner, Douglas, Lansing
07/28/2014	3757	drilling ahead, Lansing, Base KC, Marmaton, short trip @ 3800', drill ahead conglomerate, Viola, Simpson, Arbuckle
07/29/2014	4116	ratholing ahead to TD in Arbuckle, TD 4120 ft @ 0750 hrs, TOH, conduct logging operations, geologist off location @ 1615 hrs

Younger Energy Company
 well comparison sheet

DRILLING WELL				COMPARISON WELL				COMPARISON WELL				
Keller - Becker #1-35				F & M - Shartz #1				F & M Keller #2				
460' FSL & 420' FWL				C N/2 SE SE				681' FSL & 4974' FWL				
Sec 35-T21S-R15W				Sec 34-T21S-R15W				Sec 35-T21S-R15W				
1972 KB				1975 KB				1974 KB				
Formation	Sample	Sub-Sea	Log	Log	Sub-Sea	Structural Relationship	Log	Log	Sub-Sea	Structural Relationship	Log	
Queen Hill	3273	-1301	3269	-1297	3268	-1293	-8	-4				
Heebner	3373	-1401	3372	-1400	3372	-1397	-4	-3	3371	-1397	-4	-3
Douglas	3406	-1434	3405	-1433	3405	-1430	-4	-3	3405	-1431	-3	-2
Brown Lime	3482	-1510	3481	-1509	3482	-1507	-3	-2	3481	-1507	-3	-2
Lansing	3494	-1522	3491	-1519	3491	-1516	-6	-3	3490	-1516	-6	-3
BKC	3728	-1756	3724	-1752	3724	-1749	-7	-3	3723	-1749	-7	-3
Cong. Chert	3812	-1840	3814	-1842	3810	-1835	-5	-7	3810	-1836	-4	-6
Viola	3839	-1867	3834	-1862	3834	-1859	-8	-3	3831	-1857	-10	-5
Simpson	3869	-1897	3864	-1892	3864	-1889	-8	-3	3854	-1880	-17	-12
Simp. Sand	3922	-1950	3920	-1948	3916	-1941	-9	-7	3910	-1936	-14	-12
Arbuckle	3926	-1954	3924	-1952	3919	-1944	-10	-8	nr	nr		
Total Depth	4120	-2148	4118	-2146	3920	-1945	-203	-201	3917	-1943	-205	-203

Note, depths in red are driller/sample tops

ROCK TYPES

Cht vari Lmst fw<7 shale, grn Carbon Sh Ss
 Dolprim Lmst fw>7 shale, gry shale, red

ACCESSORIES

MINERAL
 X Mineral Crystals
 P Pyrite
 * Sandy
 ** Silty
 Δ Chert White
 Mc Mica

FOSSIL
 ∩ Bioclastic or Fragmental
 F Fossils < 20%
 φ Oolite
 Pellets
 Oomoldic

STRINGER
 Sandstone
 green shale
 red shale

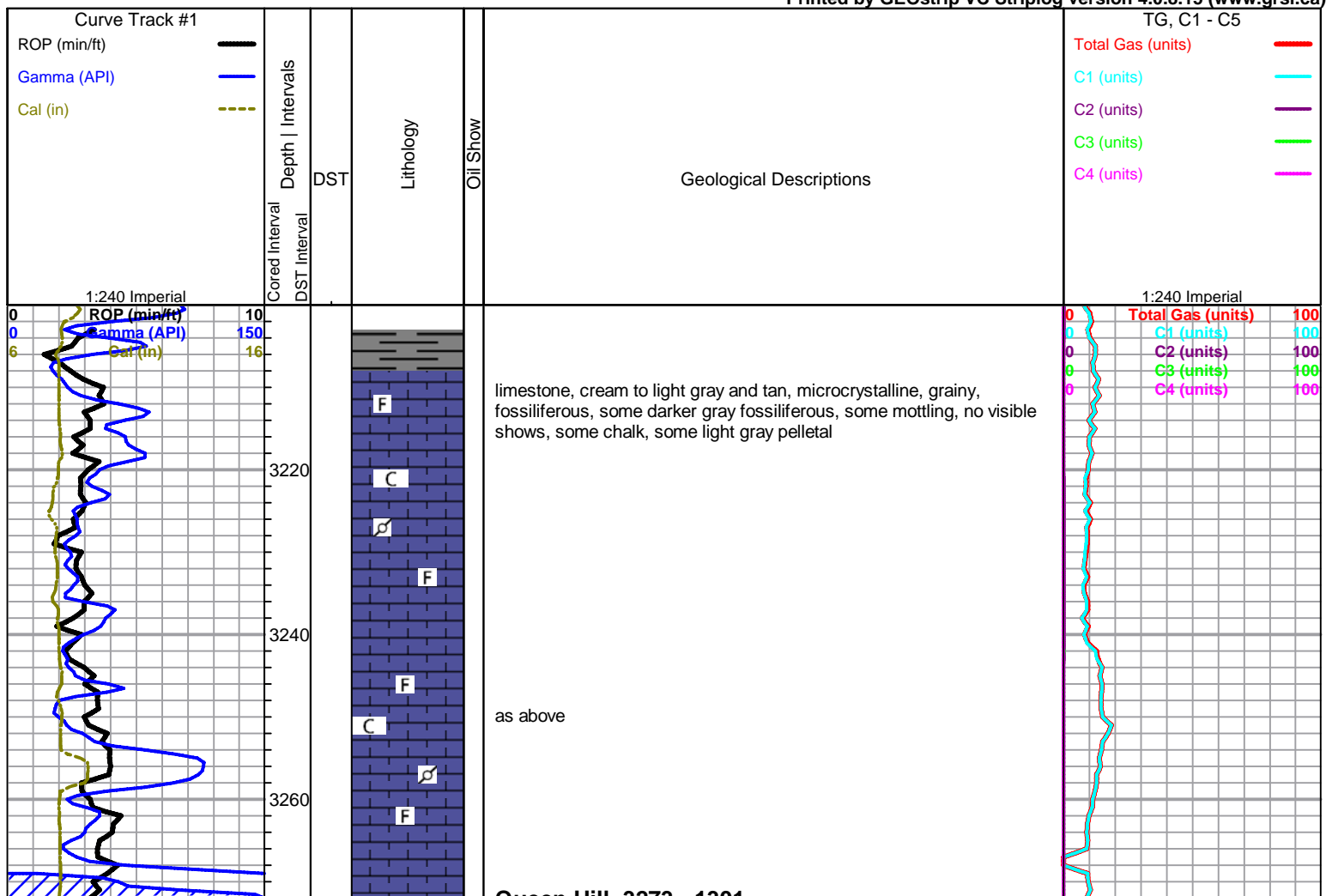
TEXTURE
 C Chalky
 CX Cryptocrystalline
 L Lithogr

OTHER SYMBOLS

Oil Show
 ● Good Show
 ○ Fair Show
 ○ Poor Show
 ○ Spotted or Trace
 ○ Questionable Stn
 D Dead Oil Stn
 ■ Fluorescence
 * Gas

DST
 ■ DST Int
 ■ DST alt
 ■ Core
 || tail pipe

Printed by GEOstrip VC Striplog version 4.0.8.15 (www.grsi.ca)



Queen Hill 3273 -1301

shale, brownish/black carbonaceous

limestones, cream to tan and light gray, mostly fossiliferous, grainy in part, chalky in part, some gray lithographic, no shows

limestone, as above, with grainy, fossiliferous to bioclastic, chalky in part, poor visible porosity, no shows

as above

Heebner 3373 -1401

shale, black carbonaceous

Toronto 3390 -1418

limestone, white to cream and light gray, fossiliferous, friable chalky to dense, poor visible porosity, no shows

Douglas 3406 -1434

shale, mostly gray, some green, some silty and micaceous, trace pyrite

as above

Brown Lime 3482 -1510

limestone, dark gray, cryptocrystalline, fossiliferous, dense

Lansing 3494 -1522

limestone, white to cream, micro-cryptocrystalline, fossiliferous, chalky, poor visible porosity, no shows

limestone, white, mostly cryptocrystalline, fossiliferous, chalky, poor visible porosity, no shows

limestone, cream to white, light gray, microcrystalline, some grainy, fossiliferous, some pale green dense cryptocrystalline, fossiliferous to lithographic, no shows, trace light gray chert

limestone, white to light gray, bioclastic, chalky in part, some fair interclast porosity, barren

limestone, light gray, microcrystalline, bioclastic to fossiliferous, some pin-point and interclast porosity, scattered brown stain, trace sheen with some tarry-clingy free oil on break, trace barren very fine oomoldic, no odor in wet samples, fair fluorescence, good cut

limestone, light gray to tan, oolitic to oomoldic to sub-oomoldic, cryptocrystalline dense matrix, some fair porosity, few pieces with spotty stain, slight sheen, 1 piece with drop of free oil on break, mostly barren, no fluorescence, light cut, no odor

limestone, light gray to white, microcrystalline, fossiliferous, with abundant cryptocrystalline lithographic, some scattered oolitic with slight stain and sheen as above (from above??), no odor

limestone, light gray to white, microcrystalline, fossiliferous, with some brown clast fragments, some light gray micro-oomoldic, fair porosity, 1 specimen with black dead stain, 1 small drop oil on break, no other shows, no odor in wet cup

limestone, mixed white to gray fossiliferous, with light gray dense cryptocrystalline, lithographic, no shows

limestone, light gray, oolitic to sub-oomoldic, some fair molds and solution vugs, trace stain, sheen in cup, fair show gassy heavy oil on break (no noticable bleeding), no fluorescence, good milky cut, no odor - trace orange cherts

Base KC 3728 -1756

mostly gray shale, other multi-color shale

limestone, white to light gray and pale green, mostly cryptocrystalline, fossiliferous, dense, no shows

mixed shales and limestone

as above, red wash

short trip - 20 stands

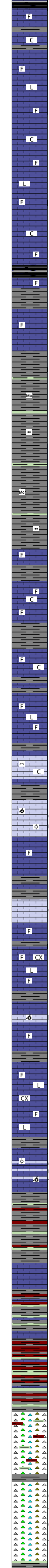
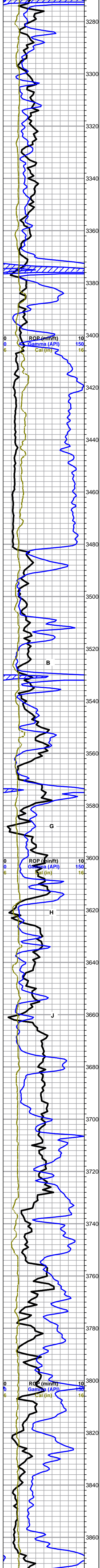
Conglomerate Chert 3812 -1840

chert, orange, pink, sharp, fresh, brick red, gritty, dense, no staining, abundant brick red and brick red and green mottled shales

Viola 3839 -1867

chert, mixed, white to tan to light gray and pale green, sharp and fresh to tripolitic and tripolitic edges, some rotten/brittle, appx 60% barren to edge stain to saturated brown and black, some good spongy tripolitic porosity, trace gassy w/slight bleeding, poor show free oil, faint odor, no fluorescence, poor cut

Simpson Shale 3869 -1897



shale, brownish/black carbonaceous
limestones, cream to tan and light gray, mostly fossiliferous, grainy in part, chalky in part, some gray lithographic, no shows
limestone, as above, with grainy, fossiliferous to bioclastic, chalky in part, poor visible porosity, no shows
as above
Heebner 3373 -1401
shale, black carbonaceous
Toronto 3390 -1418
limestone, white to cream and light gray, fossiliferous, friable chalky to dense, poor visible porosity, no shows
Douglas 3406 -1434
shale, mostly gray, some green, some silty and micaceous, trace pyrite
as above
Brown Lime 3482 -1510
limestone, dark gray, cryptocrystalline, fossiliferous, dense
Lansing 3494 -1522
limestone, white to cream, micro-cryptocrystalline, fossiliferous, chalky, poor visible porosity, no shows
limestone, white, mostly cryptocrystalline, fossiliferous, chalky, poor visible porosity, no shows
limestone, cream to white, light gray, microcrystalline, some grainy, fossiliferous, some pale green dense cryptocrystalline, fossiliferous to lithographic, no shows, trace light gray chert
limestone, white to light gray, bioclastic, chalky in part, some fair interclast porosity, barren
limestone, light gray, microcrystalline, bioclastic to fossiliferous, some pin-point and interclast porosity, scattered brown stain, trace sheen with some tarry-clingy free oil on break, trace barren very fine oomoldic, no odor in wet samples, fair fluorescence, good cut
limestone, light gray to tan, oolitic to oomoldic to sub-oomoldic, cryptocrystalline dense matrix, some fair porosity, few pieces with spotty stain, slight sheen, 1 piece with drop of free oil on break, mostly barren, no fluorescence, light cut, no odor
limestone, light gray to white, microcrystalline, fossiliferous, with abundant cryptocrystalline lithographic, some scattered oolitic with slight stain and sheen as above (from above??), no odor
limestone, light gray to white, microcrystalline, fossiliferous, with some brown clast fragments, some light gray micro-oomoldic, fair porosity, 1 specimen with black dead stain, 1 small drop oil on break, no other shows, no odor in wet cup
limestone, mixed white to gray fossiliferous, with light gray dense cryptocrystalline, lithographic, no shows
limestone, light gray, oolitic to sub-oomoldic, some fair molds and solution vugs, trace stain, sheen in cup, fair show gassy heavy oil on break (no noticable bleeding), no fluorescence, good milky cut, no odor - trace orange cherts
Base KC 3728 -1756
mostly gray shale, other multi-color shale
limestone, white to light gray and pale green, mostly cryptocrystalline, fossiliferous, dense, no shows
mixed shales and limestone
as above, red wash
short trip - 20 stands
Conglomerate Chert 3812 -1840
chert, orange, pink, sharp, fresh, brick red, gritty, dense, no staining, abundant brick red and brick red and green mottled shales
Viola 3839 -1867
chert, mixed, white to tan to light gray and pale green, sharp and fresh to tripolitic and tripolitic edges, some rotten/brittle, appx 60% barren to edge stain to saturated brown and black, some good spongy tripolitic porosity, trace gassy w/slight bleeding, poor show free oil, faint odor, no fluorescence, poor cut
Simpson Shale 3869 -1897

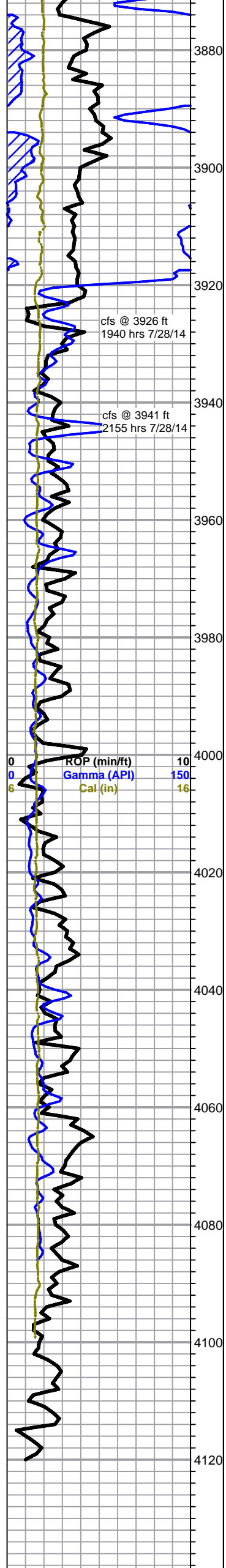
Andy's Mud chk @ 3369 ft. 0800 hrs. 7/27/14 Vis. 45 Wt. 9.3 PV 12 YP 25 WL 10.2 Cake 1/32, pH 9.5 CHL 6000 ppm Ca 10 ppm Sol 6.8 LCM 1/2# DMC \$228.45 CMC \$7572.15

Total Gas (units) 100
C1 (units) 100
C2 (units) 100
C3 (units) 100
C4 (units) 100

Total Gas (units) 100
C1 (units) 100
C2 (units) 100
C3 (units) 100
C4 (units) 100

Andy's Mud chk @ 3800 ft. 0900 hrs. 7/28/14 Vis. 58 Wt. 9.2 PV 14 YP 28 WL 8.0 Cake 1/32, pH 9.5 CHL 3600 ppm Ca 10 ppm Sol 6.2 LCM 1# DMC \$2656.95 CMC \$9949.10

system test - induced spike



influx shales, although not alot in samples, gray to green silty shale, some red shales, silty, still very abundant cherts from above

a.a., slight increase in shale, trace sandstone, quartz, fine grain, white cemented, fair rounding and sorting, fair cementing, no porosity or shows, abundant soft pink clays in samples

3910 sample, marked increase in shales and sandstone a.a.

3920 sample influx waxy prytic green shale

3926 sample, green waxy shale with sandstone, 2 facies, black to light gray, quartz, some arkose, fine to very fine grain, (light gray facies very fine grain and better sorted) sub-round to sub-angular, poor sorting, poor visible porosity, well cemented (siliceous), plant remains, black saturated gilsonitic stain, light gray finer grain facies profusely bleeding oil, no fluorescence, black facies, no cut, light gray facies, good milky cut, good odor in wet samples

Simpson Sand 3922 -1950
 30 min - sandstone, quartz, very fine grain, (few clusters fine grain) sub-round to round, well sorted, fair cementing, fair porosity, barren to light golden stain, trace oil droplets with sheen, bright green fluorescence, no cut, fair odor 60 min - sand a.a., with light gray and tan dolomite, microcrystalline, some sandy, no shows, pungent odor in this sample

Arbuckle 3926 -1954
 3926-3930 see 60 min sample above

@ 3930 - dolomite, light gray to white and tan, micro to fine crystalline, some sucrosic, trace recrystallized, sandy in part, scattered intercrystalline porosity, some light golden stain, trace gas bubbles, sheen, no show free oil, pungent sour odor, bright green yellow fluorescence, questionable cut

dolomite, mixed, gray to tan, micro-fine crystalline rhombic, dense to fair porosity, some very pyritic, trace recrystallized and trace oolitic, no shows

grading to: dolomite, light gray to pink and orange, crypto-microcrystalline, mostly dense with some fair intercrystalline rhombic, some friable, some recrystallized, no shows

as above, more grays, some fine crystalline, fair to good porosity, no shows

flood light green shale

dolomite, mostly light gray to cream, microcrystalline, rhombic, some good vugs and intercrystalline porosity, abundant dense cryptocrystalline lithographic, no shows

dolomite, mixed, light gray to cream and some pink, microcrystalline, rhombic to sucrosic, some oomoldic and some recrystallized, scattered dense cryptocrystalline lithographic, no shows

dolomite, light gray to tan and pink, mixed crystalline to recrystallized, scattered oomoldic, some fair intercrystalline porosity and vugs, with chert, light gray opaque, some oolitic, abundant white chert, slightly weathered, abundant caliche

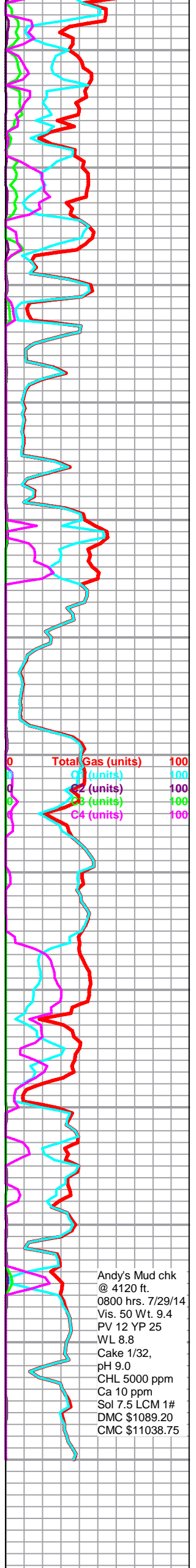
mixed dolomite as above, with chert, some sandy, with sand stringers, quartz, very fine grained, well sorted and rounded, friable, no shows

dolomite, grading to gray and tan and light gray, microcrystalline, some rhombic, abundant recrystallized and oolitic, poor overall visible porosity, no shows, cherts as above but decreasing

as above, influx oomoldic dolomite, tan

dolomite, gray to light gray, microcrystalline, sub-rhombic to sucrosic, increase in cherts, abundant large quartz crystals, poor visible porosity, no shows

rotary TD 4120 ft @ 0750 hrs 7/29/14
Nabor Log TD 4118 ft
Complete Logging Operations @ 1540 hrs 7/29/14



Andy's Mud chk @ 4120 ft.
 0800 hrs. 7/29/14
 Vis. 50 Wt. 9.4
 PV 12 YP 25
 WL 8.8
 Cake 1/32,
 pH 9.0
 CHL 5000 ppm
 Ca 10 ppm
 Sol 7.5 LCM 1#
 DMC \$1089.20
 CMC \$11038.75