

Cynosure Energy, LLC
1401 17th Street, Suite 850
Denver, CO 80202

Seibel Farms # 1-21-14-20
1351' FNL & 1788' FEL
Sec. 21-T14S-R20W
Ellis County, Kansas
KB = 2247'

Scale 1:240 Imperial

Well Name: Seibel Farms #1-21-14-20
Surface Location: 1351' FNL, 1788' FEL Sec 21-14S-20W
Bottom Location:
API: 15-051-26844-00-00
License Number:
Spud Date: 9/17/2016 Time: 7:00 PM
Region: Ellis County
Drilling Completed: 9/24/2016 Time: 8:45 PM
Surface Coordinates: 182185.2 & 1559396.7
Bottom Hole Coordinates:
Ground Elevation: 2239.00ft
K.B. Elevation: 2247.00ft
Logged Interval: 3000.00ft To: 3940.00ft
Total Depth: 3940.00ft
Formation: Reagan
Drilling Fluid Type: Chemical/Fresh Water Gel

OPERATOR

Company: Cynosure Energy, LLC
Address: 1401 17th Street, Suite 850
Denver, CO 80202
Phone: 720-476-3678
Contact Geologist: Gene Davis
Contact Phone Nbr: 720-272-9620
Well Name: Seibel Farms #1-21-14-20
Location: 1351' FNL, 1788' FEL Sec 21-14S-20W
API: 15-051-26844-00-00
Pool: Wildcat Field:
State: Kansas Country: USA

LOGGED BY



Charlie Sturtevant Consulting

Company: Charlie Sturdavant Consulting
Address: 920 12th Street
Golden, CO 80401

Phone Nbr: 303-907-2295----303-384-9481
Logged By: Geologist

Name: Charlie Sturdavant

NOTES

The Cynosure Seibel Farms #1-21-14-20 well was drilled to an RTD of 3940' and an LTD of 3935', bottoming in the Reagan. The geologist was on location, examining samples at 3070'. Sample shows of oil were noted in the Leacompton/Platsmouth and Oread above the Heebner, in the Lansing C, D, F, H, I and J, as well as in the Reagan.

Two DST's were conducted in the Lansing, with rather disappointing results. The test of the Lansing C, D E, and F recovered 190' of muddy water, while test of the I and J zones recovered 15' of oil specked mud. One DST was conducted in the Reagan, and recovered 1562' of muddy water (85% water).

Based on the sample shows, DST results, and log analysis, it was determined by all parties involved that the well should be plugged and abandoned.

The samples were saved and will be available for review at the Kansas Geological Survey well sample library, located in Wichita, Kansas.

Respectfully submitted,
Charlie Sturdavant
Consulting Geologist

SURFACE CO-ORDINATES

Well Type: Vertical
Longitude: 99.5468995
Latitude: 38.8232491
N/S Co-ord: 182185.2
E/W Co-ord: 1559396.7

CONTRACTOR

Contractor: Duke Drilling
Rig #: 2
Rig Type: mud rotary
Spud Date: 9/17/2016
TD Date: 9/24/2016
Rig Release:
Time: 7:00 PM
Time: 8:45 PM
Time:

ELEVATIONS

K.B. Elevation: 2247.00ft
K.B. to Ground: 8.00ft
Ground Elevation: 2239.00ft

ROCK TYPES

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

ACCESSORIES

MINERAL

- Argillaceous
- ⊥ Calcareous
- △ Chert White
- ▲ Chert, dark
- ⋯ Varicolored chert
- Dolomitic
- / Euhed rhombs of dol or
- ⊞ Nodules
- P Pyrite






FOSSIL

- ∩ Bioclastic or Fragmental
- ◇ Brachiopod
- ∩ Bryozoa
- ⊞ Corals
- Crinoids
- F Fossils < 20%
- ⊞ Fossiliferous
- Oolites
- Pelloids
- ⊙ Pisolites

STRAT./SED. STRUCTS

- ∩ Fenestrae
- ≡ Nodular
- ⊞ Stylolite

STRINGER

-  Conglomerate
-  Limestone
-  Shale
-  green shale
-  red shale










TEXTURE

- MX Microxln

× Sponge Spicules
 ▲ Spicules

OTHER SYMBOLS

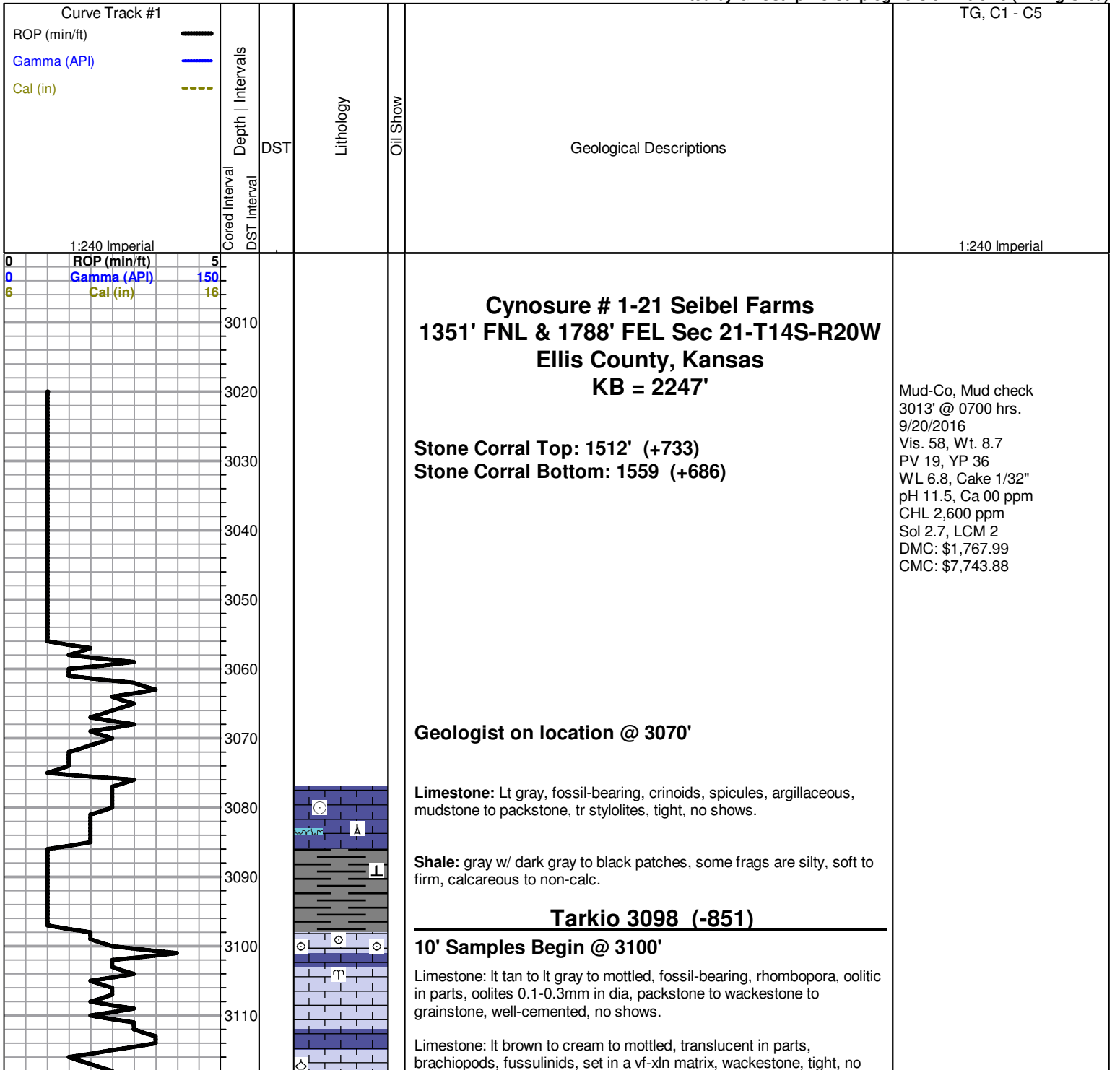
MISC

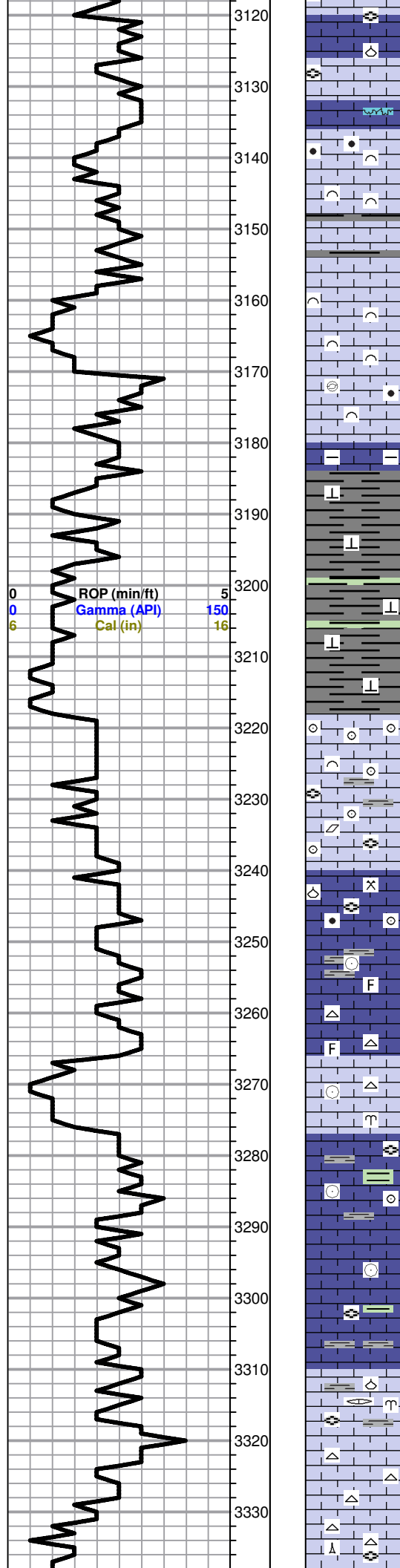
-  Daily Report
-  Digital Photo
-  Document
-  Folder
-  Link
-  Vertical Log File
-  Horizontal Log File
-  Core Log File
-  Drill Cuttings Rpt

DST

-  DST Int
-  DST alt

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shows.

Limestone: cream to lt tan to lt gray, fragmental to pelletal packstone to wackestone, vf-xln matrix, no shows.

Limestone: lt grayish-tan, f-xln, oolitic and bioclastic grainstone, tr porosity, no shows. Tr white bioclastic/oolitic, fussulinids, grainstone.

Streaks of gray to lt gray shale, calc, soft to firm.

Limestone: lt tan to tan w/ reddish-brown specks, bioclastic grainstone, fair inter-xln porosity, no shows.

Limestone: tan to lt gray to mottled, bioclastic grainstone, tr pisolites, pellets, oolites fossil frags, poor porosity, no shows.
fussulinids, crinoids, brachiopods.

Shale: gray to lt gray and brownish-orange, firm to soft, calcareous to non-calc.

Shale: gray to lt gray, soft, calcareous.

Tr lt greenish-gray shale.

Topeka 3218 (-971)

Limestone: cream to off white, oolitic-bioclastic grainstone, well-cemented, no shows, oolites to 1.5mm in dia., fussulinids, recrystallized, micro-sparry cement.

Limestone: tan to lt brown mottled, oolitic, fossiliferous, sparry calcite patches, tr argillaceous, packstone w/ vf-xln matrix, fussulinids, no shows, streaks of gray calc shale.

Limestone, brown to tan, micro-xln matrix, fossiliferous, brachiopods, spicules, fussulinids, oolites, pellets, wackestone, tight, no shows.

Limestone: lt brown, translucent, crypto- to micro-xln, micrite to mudstone w/ isolated fossils, crinoid discs set in gray shale, no shows.

Limestone: tan to mottled brown, gray, and tan, f-xln matrix, fossils, chert: lt gray, dark gray, frosted-sucrosic texture, fossil frags, no shows.

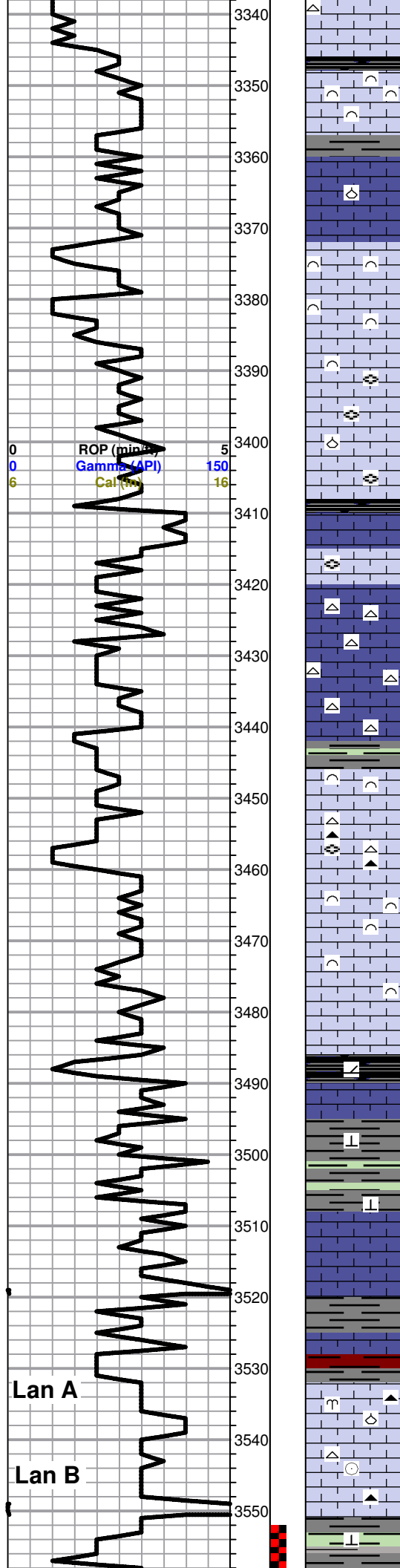
Limestone: brown to tan, fossiliferous, crinoids, bryozoans, no shows.

Limestone: lt gray to grayish-tan, mottled, tr argillaceous, fossil frags, fussulinids, crinoids, oolites, gray and brown shale streaks, tr greenish-gray shale streaks and patches, packstone, tr brown micrite, no shows.

Limestone: lt tan to tan w/ brown patches and spots, argillaceous streaks, fussulinids, fenestrate bryozoans, brachiopods, fossil frags, gray shale laminations, packstone, tr inter-xln porosity, no shows.

Limestone as above w/ chert: tan, brown, dark gray, fossils, fussulinids, frosted to vitreous, conchoidal fractures, no shows.

Limestone: cream, sucrosic to f-xln, fossil frags/debris, grainstone, Chert: cream to lt gray to lt tan, fossiliferous, fussulinids, spicules, no shows.



King Hill Shale 3346 (-1099)

Shale: black, carbonaceous, vy sli dolo, firm.

Limestone: cream to lt tan, fragmental, f-xlnmatrix w/ med-xln framework fossil debris, grainstone, no shows.

Limestone: cream to lt tan, micro-xln micrite, tr brachiopod shells, very tight, no shows.

Limestone: cream to lt tan, f- med-xln fragmental grainstone, fair inter-xln porosity, no shows.

Limestone as above w/ fussulinids.

Tr brachiopods in ls as above. Tr black shale, carbonaceous.

Queen Hill Shale 3408 (-1161)

Limestone: mottled tan and lt brown, fossil frags, fussulinids, packstone to brownish-tan micro-xln mudstone, no shows.

Limestone: cream to lt tan, micro-xln mudstone w/ few fossil frags, very cherty: lt tan, vitreous, plain, conchoidal breaks, some fragments of ls as above had minor pinpoint porosity and weak, spotty show of live oil, weak oil aroma, good to slow cut.

Limestone: lt tan and gray to brown mottled, fossiliferous-fragmental grainstone, tr arg., tr brownish-gray and greenish-gray shale.

Limestone as above w/ chert: black, brown, white, cream, fossiliferous, fussulinids, vitreous to frosted.

Limestone: cream to lt tan, recrystallized bioclastic grainstone w/ fair pinpoint porosity, oil aroma, spotty show of live oil, fair cut. One frag of black shale.

Limestone: cream to tan w/ brown specks/mottled, f-xln, bioclastic grainstone, tr arg., no shows, fleeting oil aroma.

Heebner 3486 (-1239)

Shale: black, carbonaceous, combustible, firm, dolomitic.

Limestone: tan to brown, mottled, vf-xln, tight, arg., no shows.

Shale: gray, lt gray, lt greenish-gray, calc, soft.

Toronto 3508 (-1261)

Limestone: cream to lt tan to vy lt gray, micro-xln mudstone, some thin laminations or algal layers, no shows.

Shale: gray, lt gray, lt greenish-gray.

Lansing 3525 (-1278)

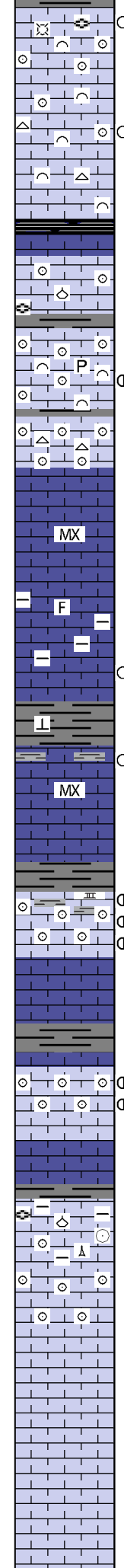
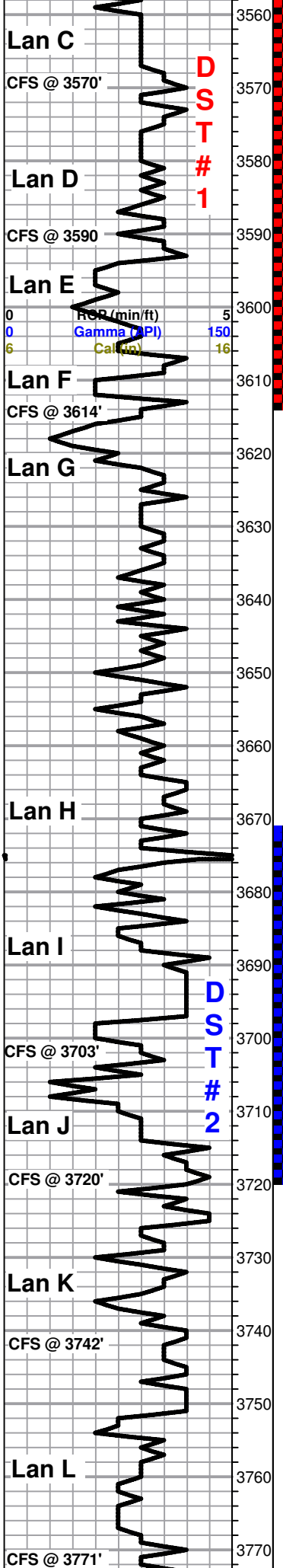
Shale: maroon, gray, soft, sample washes red.

Limestone: brown to tan to lt gray, f-xln, fossiliferous, rhombopora, brachiopods, brown vitreous chert, sli arg., packstone, no shows.

Limestone: cream to grayish-brown, f-xln, crinoids, brown to honey-colored vitreous chert, no shows.

Shale: gray, lt gray lt greenish-gray, calc, soft to firm.

Limestone: cream, oolitic-bioclastic grainstone, corals, fossil debris,



good secondary inter-xln porosity, very strong hydrocarbon aroma, good to fair staining in the porosity, 10% porosity in stained frags, rest is tight, Slow cut at best, most frags need to be crushed to release oil.

Limestone: cream to tan, oolitic-bioclastic grainstone, fussulinids, f-xln, weak porosity, weak oil aroma, spotty oil show, brown live oil to black and dead, slow cut, probably low permeability.

30 min: Spotty inter-xln porosity w/ live brown oil staining, recrystallized, good aroma, fair cut.

Black shale at the bottom in 60 min sample.

Limestone: tan, mottled w/ brown spots, fossiliferous, fussulinids, brachiopods, f-xln, oolites at top w/ some oomoldic porosity and slight oil staining, faint aroma, no cut unless crushed. Some chalky fragments. Tr pinpoint porosity w/ spotty oil stain, weak cut to no cut, most frags need to be crushed to cut.

30 min and 60 min samples: strong aroma, lt tan limestone, bioclastic-oolitic grainstone, fracture por. w/ drizzly calcite lining, pinpoint por., micro-vuggy por., all filled w/ brown live oil, instant streaming cut. Prite cubes up to 5mm. Some frags w/ black, heavier oil, instant streaming cut. Best show to date.

Limestone: lt tan to cream, oolitic grainstone, good inter-xln porosity, oolitic chert: lt gray to white, vitreous, no shows.

Limestone: cream to vy lt gray, massive micro-xln mudstone, sparry calcite patches and streaks, very tight, no shows.

Limestone: gray and tan mottled, f-xln, recrystallized, argillaceous, tr fossil frags, wackestone, tr pinpoint porosity and micro-vugs lined w/ vf-xln calcite druze, spotty live oil show, fair cut, no aroma.

Shale: gray, calc, soft to firm.

Limestone: Cream to vy lt gray, massive micro-xln mudstone, the top few feet have been subareally exposed, and developed fracture porosity, weathering nodules, minor pinpoint porosity. Spotty show of oil in the porosity, weak aroma, fair cut. Oily frags commonly have thin shale laminations. Appears to be tight and impermeable.

Shale: gray, fissile, non-calc, firm to easily scratched.

Limestone: cream to lt tan, oolitic grainstone to mudstone, exposure surface shows erosional textures and porosity: fracture, pinpoint micro-vuggy, and inter-xln, drizzly calcite linings w/ fair live brown oil show, chickenwire type weathering has created limestone nodules encased in druze that is filled with oil, dull yellow fluor, instant streaming cut. Strong hydrocarbon aroma.

30 min: Limestone as above w/ same porosity and oil shows. Some of the porosity is vuggy w/ pockets of free oil. 60 min: tr of oolitic grainstone w/ inter-xln porosity and oil saturation.

Limestone: vy lt gray to cream and tan, oolitic grainstone w/ oomoldic and inter-oolite porosity, oolites 0.2-0.6mm in dia, good live brown oil saturation, good odor, dull yellow fluor, instant streaming cut. Erosional exposure surface characteristics w/ fractures and micro-nodules. Water is quickly absorbed into the porosity. 30 min: chalky frags along w/ oolitic grainstone, free oil and oil staining. Tighter rock with depth.

Limestone: tan and brown mottled, arg., fossiliferous, brachiopods, fussulinids, spicules, crinoids, oolites to 1mm in dia., packstone.

Limestone: cream w/ pinkish-tan specks, oolitic grainstone, mostly recrystallized w/ ghost oolites, tight, no shows.

Limestone: vy lt gray to vy lt tan, micro- to vf-xln, recrystallized grainstone, very tight, no shows. Massive mudstone-like texture.

Limestone as above, no change.

WL 6.8, Cake 1/32"
pH 11.0, Ca Tr ppm
CHL 2,600 ppm
Sol 5.6, LCM 2
DMC: \$320.05
CMC: \$8,063.93

**DST #1: 3552-3614',
Rec: 190' MW, SIP
580-556#**

Seibel Farms 21-14-20 d...

**Strap: 1.09' long to
board.
Deviation: 3/4 degree**

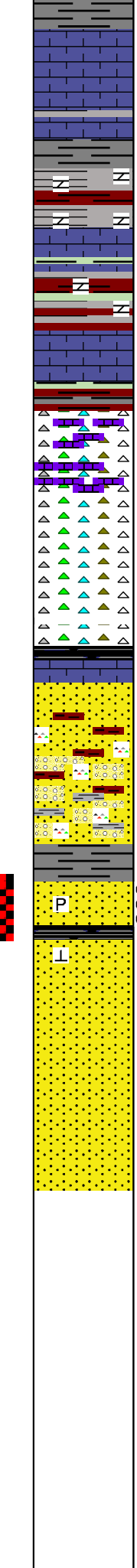
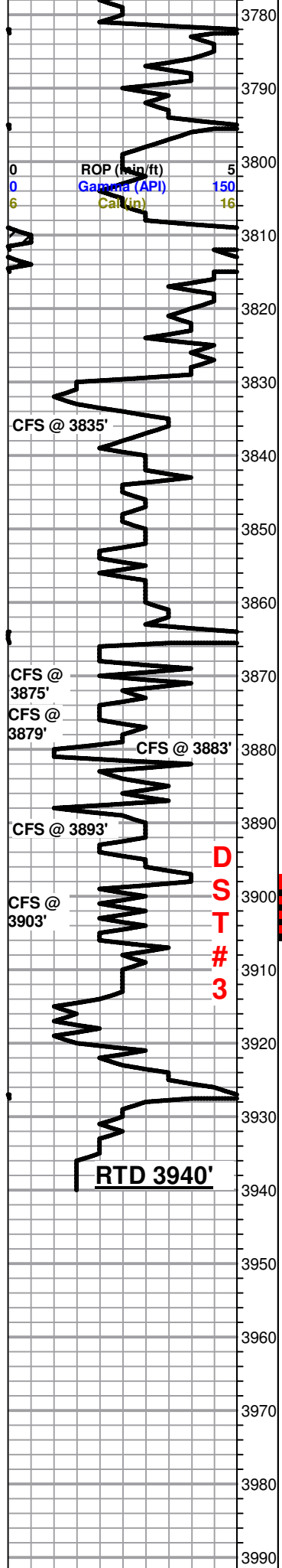
Mud-Co, Mud check
3614' @ 0735 hrs.
9/22/2016
Vis. 41, Wt. 8.9
PV 12, YP 20
WL 7.8, Cake 1/32"
pH 10.5, Ca Tr ppm
CHL 5,700 ppm
Sol 4.0, LCM 1
DMC: \$502.76
CMC: \$8,566.69

**DST # 2: 3671-3720',
Rec: 15' oil specked
mud, SIP: 1010-1000#**

Seibel Farms 21-14-20 d...

Mud-Co, Mud check
3720' @ 0745 hrs.
9/23/2016
Vis. 56, Wt. 9.1
PV 19, YP 25
WL 7.8, Cake 1/32"
pH 11.0, Ca Tr ppm
CHL 4,600 ppm
Sol 5.5 LCM 2
DMC: \$85.55
CMC: \$8,652.24

Base Kansas City 3776 (-1529)



Limestone as above w/ a minor increase in maroon and gray shale.

Increasing shale component to sample.

Limestone: lt tan oolitic grainstone, well-cemented. Also mottled orange and white recrystallized limestone. Brown limestone nodules (balls) up to 2mm in dia. in bottom of pan, Conglomerate?

Shale: gray and maroon, lt gray, tr lt green. Orange and peach-colored limestone as above.

Pawnee 3834 (-1587)

30 & 60 "samples: some flakes of orange and salmon-colored chert, translucent, finely frosted, a few clear qtz sand grains in the bottom of the tray, med-gr, well-rnd., individual grains.

Cherty limestone: vari-colored, clear, translucent cloudy, lt tan, orange, salmon, some are fossil oolites, vitreous, conchoidal fractures. An abundance of shale: vari-colored, gray, lt gray, maroon, lt greenish-gray, no shows.

Shale: black.

Cherokee Shale 3866 (-1619)

Basal Penn. Congl 3871 (-1624)

Sandstone: unconsolidated, med-gr, well-rounded, clear qtz to orange qtz grs., no aroma, no show. Found in the bottom of the sample catcher's bucket. The bucket washed out red (shale?).

Sandstone: unconsolidated, vf- to med-gr, well-rnd. Red, soft & mushy shale washes out of sample bucket.

Chert is still represented in the sample and may be from this zone rather than cavings from the Pawnee cherty limestone. At 3893 sample washes white.

Reagan 3898 (-1651)

Sandstone: translucent vy lt yellow to white quartz arenite, f- to coarse-gr, well-rounded to sub-rounded, dolomitic to silica cement, hard to friable frags, the vy lt yellow fragments are stained by light oil, good aroma, no fluor, releases oil to cutting fluid only when crushed, tr pyrite, tr black dead oil.

30 min: Flooded w/ Shale: gray, maroon, soft, calcareous.

Sandstone: snow white to egg shell white, quartz arenite, almost pure quartz, vf- to med-gr, well- to sub-rounded, mature, forms clusters, some loose grains in the tray bottom, silica cement in some frags, calcite cement in others.

RTD 3940 (-1693)

**RTD 3940' @ 2245 hrs, 9/24/2016
Pioneer Energy Services LTD 3935'
Completed Logging Operations @ 0445 hrs
Geologist: Charlie Sturdavant off location
@ 0000 hrs 9/25/2016**

Mud-Co, Mud check
3903' @ 0710 hrs.
9/24/2016
Vis. 52, Wt. 9.3
PV 18, YP 25
WL 7.8, Cake 1/32"
pH 10.5, Ca 20 ppm
CHL 5,800 ppm
Sol 6.8 LCM 2
DMC: \$855.40
CMC: \$9,507.64

**DST # 3: 3897-3903',
Rec: 1562' Muddy
Water (80% water),
SIP: 1197-1198#**

