



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1220952
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

- New Well Re-Entry Workover
- Oil WSW SWD SIOW
- Gas D&A ENHR SIGW
- OG GSW Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

- Deepening Re-perf. Conv. to ENHR Conv. to SWD
- Plug Back Conv. to GSW Conv. to Producer
- Commingled Permit #: _____
- Dual Completion Permit #: _____
- SWD Permit #: _____
- ENHR Permit #: _____
- GSW Permit #: _____

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested
Date: _____
- Confidential Release Date: _____
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT I II III Approved by: _____ Date: _____

1220952

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD: Size: _____ Set At: _____ Packer At: _____ Liner Run: Yes No

Date of First, Resumed Production, SWD or ENHR. _____ Producing Method:
 Flowing Pumping Gas Lift Other *(Explain)* _____

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	White Exploration, Inc.
Well Name	Spring Valley Ranch 1-14X
Doc ID	1220952

All Electric Logs Run

Compensated Density/Neutron
Dual Induction
Microlog
Sonic

Form	ACO1 - Well Completion
Operator	White Exploration, Inc.
Well Name	Spring Valley Ranch 1-14X
Doc ID	1220952

Tops

Name	Top	Datum
Heebner	4162	-448
Lansing	4217	-503
Base KC	4584	-870
Marmaton	4599	-885
Cherokee Shale	4746	-1032
Morrow Shale	4970	-1256
Keyes Lime	5110	-1396
Mississippi	5200	-1486

ALLIED OIL & GAS SERVICES, LLC

31960
064179

Federal Tax I.D. # 20-8651475

REMIT TO P.O. BOX 93999
SOUTHLAKE, TEXAS 76092

SERVICE POINT:

Dakota, Ky

DATE <i>8/19/14</i>	SEC. <i>14</i>	TWP. <i>14</i>	RANGE <i>41</i>	CALLED OUT	ON LOCATION	JOB START <i>3:30 pm</i>	JOB FINISH <i>4:30 pm</i>
LEASE <i>Spring Valley</i>	WELL# <i>1-14X</i>	LOCATION <i>Sharon Springs, 55 4 W W</i>			COUNTY <i>Wallace</i>	STATE <i>WV</i>	
OLD OR NEW (Circle one)			<i>W intro</i>				

CONTRACTOR *Mar Fin 22*

TYPE OF JOB *Surface*

HOLE SIZE *17 1/2* T.D. *335'*

CASING SIZE *13 7/8* DEPTH *335'*

TUBING SIZE DEPTH

DRILL PIPE DEPTH

TOOL DEPTH

PRES. MAX MINIMUM

MEAS. LINE SHOE JOINT

CEMENT LEFT IN CSG. *15'*

PERFS.

DISPLACEMENT *50.24 bbl*

OWNER *Same*

CEMENT AMOUNT ORDERED *340 SK Com 390 CC*

EQUIPMENT

PUMP TRUCK CEMENTER *Alan Ryan*

423-281 HELPER *Kevin Ryan*

BULK TRUCK

818 DRIVER *Justin M (TUS)*

BULK TRUCK DRIVER

COMMON *340 SK @ 17.20 6086.00*

POZMIX @

GEL @

CHLORIDE *939 @ 1.10 1054.20*

ASC @

Material total 7190.70

(2999.32/35%)

HANDLING *257.00 @ 2.40 825.20*

MILEAGE *25.70/mile @ 16.46 702.29*

REMARKS:

Run Cap Cement, Mix Cement, Displace Cement. 5 hrs in.

Cement 240 Cement

Mark W

Manplain Court

TOTAL

SERVICE

DEPTH OF JOB *335'*

PUMP TRUCK CHARGE *1512.00*

EXTRA FOOTAGE @

MILEAGE *65 mile @ 7.20 500.00*

MANIFOLD *Suebe @ 275.00*

6-Telluride 65 Miles @ 4.40 286.00

(2246.46/35%) TOTAL *6,401.34*

CHARGE TO: *Min So Drilling*

STREET

CITY STATE ZIP

PLUG & FLOAT EQUIPMENT

@

@

@

@

@

TOTAL

To: Allied Oil & Gas Services, LLC.
You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME *Jimmy Casaca*

SIGNATURE

SALES TAX (if Any)

TOTAL CHARGES *13,542.24*

DISCOUNT *4,739.78 (35%)* IF PAID IN 30 DAYS

8,802.45 Net.

FILE COPY

ALLIED OIL & GAS SERVICES, LLC 064084

Federal Tax I.D. # 20-8651475

REMIT TO P.O. BOX 93999
SOUTHLAKE, TEXAS 76092

SERVICE POINT: Oakley, TX

DATE <u>8-28-14</u>	SEC. <u>14</u>	TWP. <u>14</u>	RANGE <u>41</u>	CALLED OUT	ON LOCATION <u>6:30am</u>	JOB START <u>9:03am</u>	JOB FINISH <u>10:08am</u>
LEASE <u>Spring Valley Ranch Well # 1-14X</u>				LOCATION <u>Sharon Springs SS, 40'</u>	COUNTY <u>Wallace</u>	STATE <u>KY</u>	
OLD OR NEW (Circle one)				<u>new</u>			

CONTRACTOR Martin 22

TYPE OF JOB PTA

HOLE SIZE 7 1/8 T.D. 5300'

CASING SIZE _____ DEPTH _____

TUBING SIZE _____ DEPTH _____

DRILL PIPE 4 1/2 DEPTH 2835'

TOOL _____ DEPTH _____

PRES. MAX _____ MINIMUM _____

MEAS. LINE _____ SHOE JOINT _____

CEMENT LEFT IN CSG. _____

PERFS. _____

DISPLACEMENT 33.2 bbl

EQUIPMENT

PUMP TRUCK CEMENTER LaRene E. White

422 HELPER Wayne McGahy

BULK TRUCK

373/308 DRIVER Wayne Massalle

BULK TRUCK

_____ DRIVER _____

OWNER Same.

CEMENT

AMOUNT ORDERED 255 sks Cem 4' bag

19 # flo-seal

COMMON	<u>153 sks @ 17.90</u>	<u>2739.90</u>
POZMIX	<u>102 sks @ 7.35</u>	<u>753.90</u>
GEL	<u>877 # @ .50</u>	<u>438.50</u>
CHLORIDE	_____ @ _____	_____
ASC	_____ @ _____	_____
<u>flo-seal</u>	<u>64 # @ 2.77</u>	<u>190.08</u>
<u>Material total</u>	_____	<u>4371.90</u>
HANDLING	<u>27389.87 @ 2.48</u>	<u>679.25</u>
MILEAGE	<u>144 hrs @ 65 X 2.75</u>	<u>2644.90</u>

REMARKS:

Mix 50 sks 2835'

Mix 100 sks 1800'

Mix 50 sks 385'

Mix 10 sks 40' w/ pump

Mix 15 sks M. H.

Mix 30 sks R. H.

Thank you

White

CHARGE TO: White Exploration

STREET _____

CITY _____ STATE _____ ZIP _____

TOTAL _____

SERVICE

DEPTH OF JOB 2835'

PUMP TRUCK CHARGE _____ 2483.59

EXTRA FOOTAGE _____ @ _____

MILEAGE MTHD 65 @ 7.70 502.50

MANIFOLD _____ @ _____

MTHD 65 @ 4.40 286.00

TOTAL 5,991.24

PLUG & FLOAT EQUIPMENT

Wood sampling _____ @ _____ 110.00

_____ @ _____

_____ @ _____

_____ @ _____

_____ @ _____

TOTAL 110.00

To: Allied Oil & Gas Services, LLC.

You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME Smiley L. White

SIGNATURE _____

SALES TAX (If Any) _____

TOTAL CHARGES 10,425.22

DISCOUNT 2023.04 (20%) IF PAID IN 30 DAYS

8,362.17 Net.

Andrew White

Petroleum Geologist

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

Well Name: Spring Valley Ranch #1-14X
Location: 14-14S-41W
License Number: API: 15-199-20420
Spud Date: 08-20-14
Surface Coordinates: 2542' FNL, 791' FEL
Region: Wallace Co, KS
Drilling Completed: 08-28-14

Bottom Hole
Coordinates:
Ground Elevation (ft): 3703
Logged Interval (ft): 3800 To: 5300
Formation: Mississippian
Type of Drilling Fluid: Chemical
K.B. Elevation (ft): 3714
Total Depth (ft): 5300

Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: White Explorartion, Inc.
Address: 1635 N. Waterfront Pkwy, Suite 100
Wichita, KS 67206

GEOLOGIST

Name: Andrew White
Company: White Exploration, Inc.
Address: 1635 N. Waterfront Pkwy, Suite 100
Wichita, KS 67206

Remarks

Due to Log evaluation and Sample evaluation, the decision was made to Plug the Spring Valley Ranch 1-14X

General Info

Drilling Contractor: Murfin Drilling Rig 22

Logs: Nabors
Compensated Density/Neutron, Dual Induction, Micro, Sonic

Drilling Mud: Mudco/Service Mud, Inc.

Surveys: 335'-.75; 432'-1; .2006'-.4; 2760'-.4; 3614'-.5; 3792'-.9; 3957'-.8;4113'-.3,4291'-.8; 5300'-.75

Daily Status

08/19/14: Skid Murfin Rig #22

08/20/14: Running Surface casing, 335', 8 joints of 13-3/8", 340 sacks common cement with 3% CC and 2% gel. Lost circ @ 370' and 432', total of 190 bbls

08/21/14: Drilling @ 900'

08/22/14: Drilling @ 2845'

08/23/14: Drilling @ 3970', Lost circ @ 4394', lost approx. 250 bbls

08/24/14: Waiting on more fluid,

08/25/14: Drilling @ 4625', have lost approx, 15-20 bbls in last 24 hrs

08/26/14: Drilling @ 4920

08/27/14: Drilling @ 5205, Drilled down to 5300' RTD, Rig up Nabors for log

08/28/14: Plugged with 255 sacks of 60/40 Poz Mix with 4% gel and 1/4# Floseal/sack, 50 scks @ 2835', 100 scks @ 1800', 385 scks @ 50', 10 scks @ 40', 30 scks in Rat, 15 scks in Mouse

Spring Valley Ranch #1-14x 2542' FNL, 791' FEL 14-14S-41W KB: 3714					Cities Service Pearce #1 10-14S-41W Structural Relationship KB: 3772			Cherokee Operating Frank #1 4950' FSL, 3406' FEL 24-14S-41W Structural Relationship KB: 3733		
Formation	Sample	Sub-Se	Log	Sub-Sea	Sample	Log	Sample	Log		
Heebner	4160	-446	4162	-448	-59	-61	-28	-30		
Lansing	4214	-500	4217	-503	-56	-59	-25	-28		
BKC	4570	-856	4584	-870	-35	-49	-10	-24		
Marmaton	4590	-876	4599	-885	-32	-41	-19	-28		
Cherokee	4746	-1032	4746	-1032	-43	-43	-35	-35		
Morrow	4967	-1253	4970	-1256	-33	-36	-20	-23		
Keyes	5106	-1392	5110	-1396	-80	-84	-5	-9		
Mississippi	5206	-1492	5200	-1486	-164	-158	-12	-6		

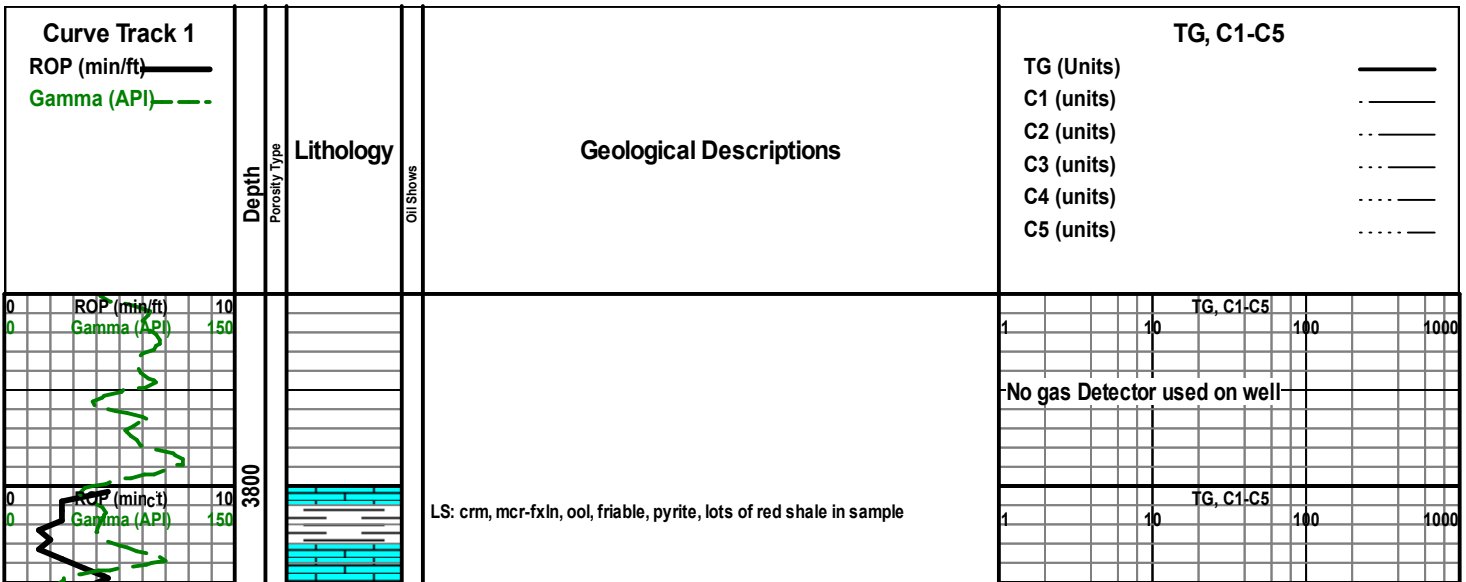
ROCK TYPES

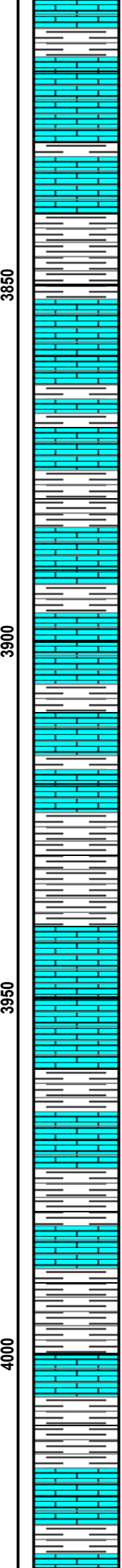
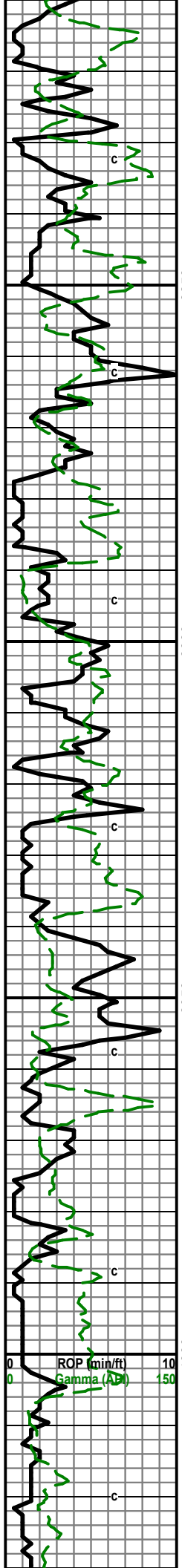
LITHOLOGY

- Anhy
- Bent
- Brec
- Cht
- Clyst
- Black shale
- Congl
- Dol
- Gyp
- Igne
- Lmst
- Meta
- Mrst
- Salt
- Shale

- Shcol
- Shgy
- Sltst
- Ss
- Till
- STRINGER
- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Sltst

- Ssstrg
- OIL SHOW**
- Even
- Spotted
- Ques
- Dead





LS: crm-gry, mcrxln, sli ool, Sh: gry-grn-red

Sample mostly Sh: red/orange-brwn, gry, with some LS: gry, mcrxln, sli friable

LS: crm, mcrxln, sli fos, dense, with good amount of Sh: green/blue, red/orange, gry

LS: crm-gry, mcrxln, sli friable, with Sh: A.A.

LS: crm, mcrxln, sli friable, still good amount of Sh: A.A.

Sample contained mostly Sh: A.A. with some drk gry-blck

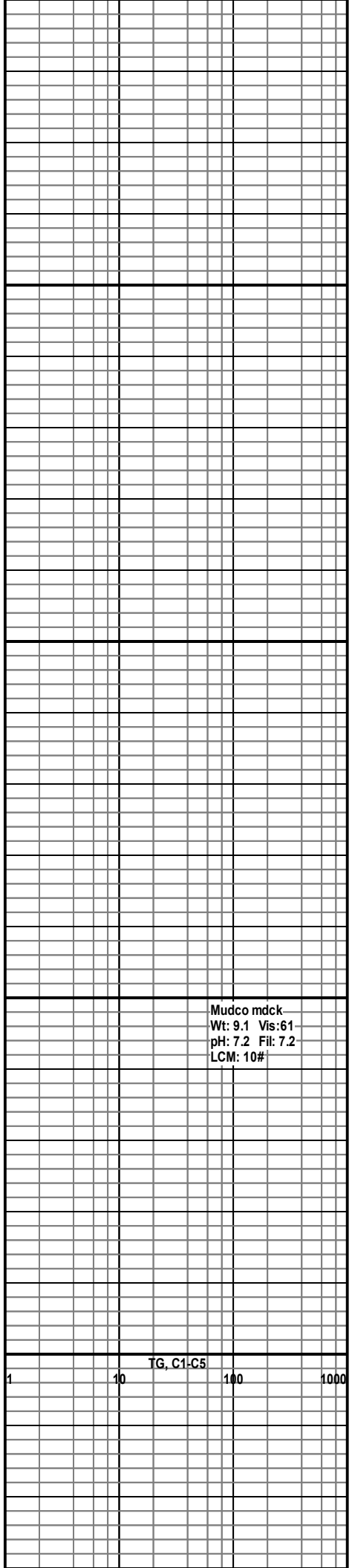
LS: gry, mcrxln, dense sub friable, sli chalky, still Sh: red/orange-gry

LS: gry, mcrxln, dense sub friable, chalky, with Sh: red

LS: gry, mcrxln, friable, dense, Sh: red-green-gry

Sh: gm-rd-gry, lots of chalk, few small pieces of LS: crm, mcrxln

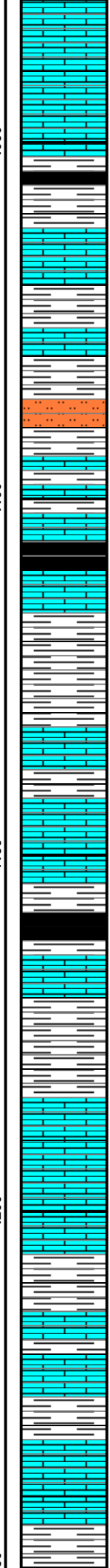
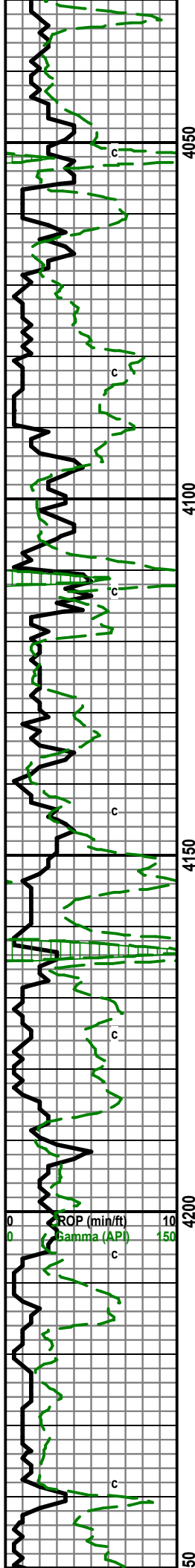
LS: crm, mcrxln, sli friable, very chalky, with Sh: gry-drk gry



Mudco mdck
 Wt: 9.1 Vis:61
 pH: 7.2 Fil: 7.2
 LCM: 10#

TG, C1-C5

1 10 100 1000



LS: crm, mcr-fxln, chalky, sli friable

Sh: gry-red, som blk, trace LS: crm-tan, mcrxln, chalky

LS: crm, mcrxln, chalky, some Sltst, gry-crm, Sh: red-gry, some gm

Sh: gry-red, some blk, LS: crm some gry-brn, fxln, sli ool,

LS: wh-tan, mcr-fxln, trc ool, sli chalky, Sh: gry-drk gry-red

Sh: gry-lt gry-red, LS: crm-tan, mcr-fxln, sli chalky

LS: crm-tan, mcr-fxln, sli ool, sli fos, sli chalky, with some Sh: blk-drk gry

LS: tan, mcrxln, dense, with Sh: gry-grn-red some Sltst

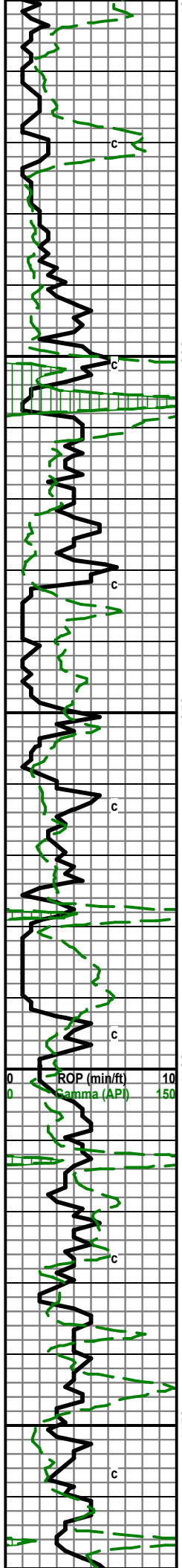
LS: crm-tan, some gry, mcr-fxln, sli fos, sli chalky, some Sh: grn-lt gry

LS: crm-tan, sli fos, sli ool, dense, sli chalky, Sh: gry-grn-red

Sh: grn/gry-gry, with LS: crm-tan, mcr-fxln, sli fos, chalky, few pieces tan chert

Heebner: 4160 (-446)

TG, C1-C5
1 10 100 1000



42
4300
4350
4400
4450

LS: crm-tan, mcrxln some fxln, fos, some gry, mcrxln, ool, Sh: gry-lt gry-gry/grn few drk gry

LS: crm, mcrxln, ool, sli fos, some Sh: gry-grn

LS: crm, mcrxln, dense, Sh: gry-grn

LS: crm-gry, mcrxln, sli fos, Sh: gry-drk gry-blck

sample was basically all chalk with some Sh: gry-red

Sample still basically all chalk with few Sh: gry-red-grn

No sample 4380 sample mostly all shale in 4400 sample after drilling resumed

4410 sample contained lots of red-grn-gry shale with some LS: crm, ool and LS: tan, mcrxln

LS: crm-gry, mcrxln-fxln, fos, sli chalky, some pieces ool

LS: crm-tan, some gry, mcrxln, some fxln, sli fos, good amount of gry Sh in sample

LS: crm, mcrxln, sli fos, some drk gry-blck Sh

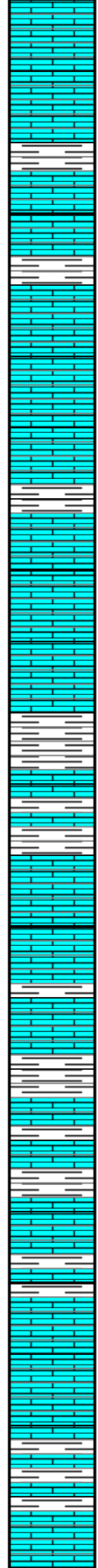
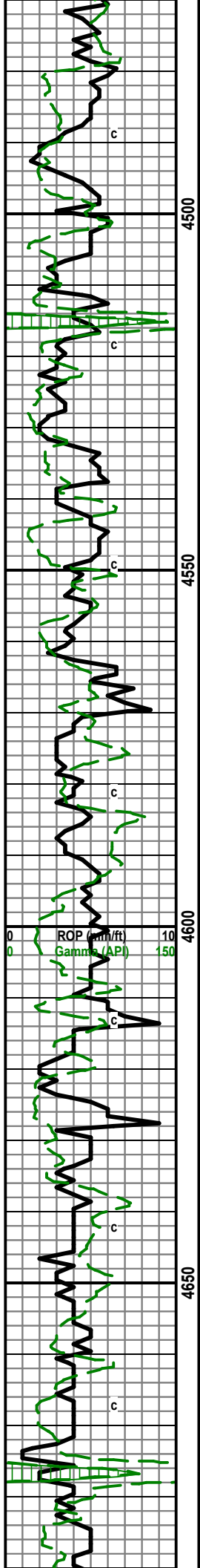
LS: crm-tan, sli gran, fos, with Sh: gry-drk gry some blck

LS: crm-tan, mcrxln, dense, some gry, mcrxln, with calcite veins

LS: gry-crm-tan, f-mxln, sli ool, some Chert: opaque-white

Lost circ. lost 250 bbls @4394, Chg from PDC to Button

Mudco mdck:	
Wt: 9.2	Vis: 54
pH: 9.5	Fil: 8.8
LCM 24#	1000
Mud is new batch after lost circ	



LS: crm, mcrxln, sli ool in part, some gry, mcrxln, Sh: gry-drk gry

LS: gry-crm, mcrxln, dense, few ool, some pyrite

LS: A.A. with some Sh: gry-drk gry

LS: crm-gry, mcrxln, fos, dense

LS: crm-gry, mcrxln, dense, fos, Sh: gry-drk gry

LS: crm-gry, mcr-fxln, some gran, very fos, some chalk

LS: crm-tan, some gry, sli gran, fos

LS: crm-lt gry, mcrxln, sli fos, some chalk, Sh: drk gry

LS: crm, mcr-fxln, sli fos, some Sh: blk

LS: A.A. with some Sh: blue/grn, some red

LS: tan-crm-gry, mcrxln-fxln, fos, Sh: gry-red

LS and Sh: A.A.

LS: tan-gry, mcrxln, fos, poor sample quality

LS: crm-tan, mcrxln-fxln, dense, fos

LS: crm, mcrxln, fos, Sh: red-grn

LS: A.A. with good amount of Sh: red-grn-gry

crm-gry, mcrxln, few fos pieces, Sh: A.A.

LS: crm-gry, mcr-fxln, fos

LS: crm-tan, mcrxln, ool, some sli fos, Sh: gry

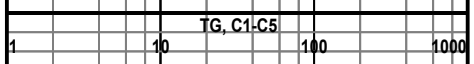
LS: tan, some gry-crm, mcrxln, some fine, sli fos

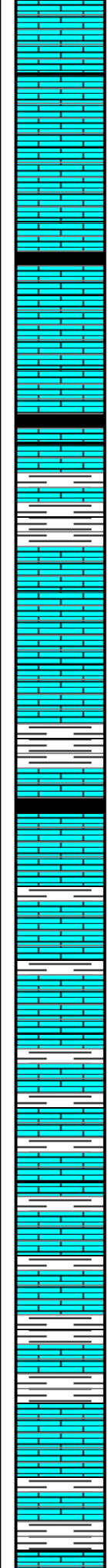
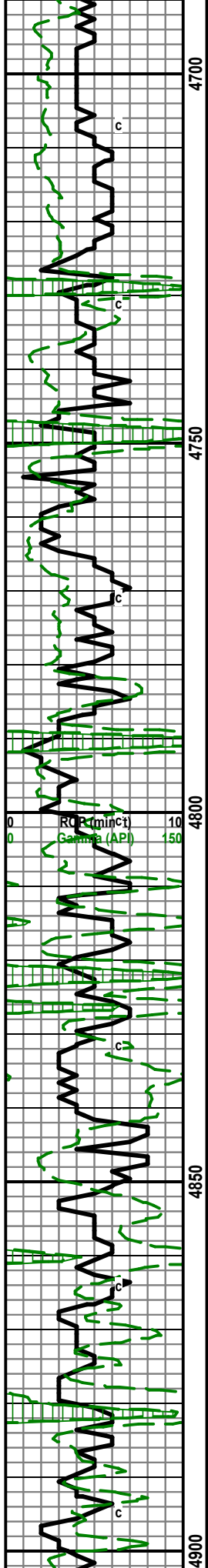
LS: gry-tan, fxln, ool, some Sh: gry-drk gry

LS: gry-crm mcrxln, sli fos, Sh: A.A.

BKC: 4570 (-856)

Marmaton: 4590 (-876)

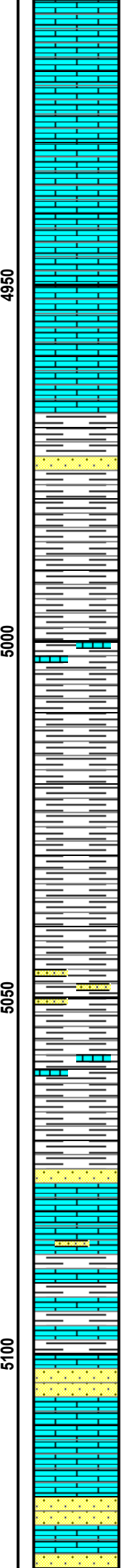
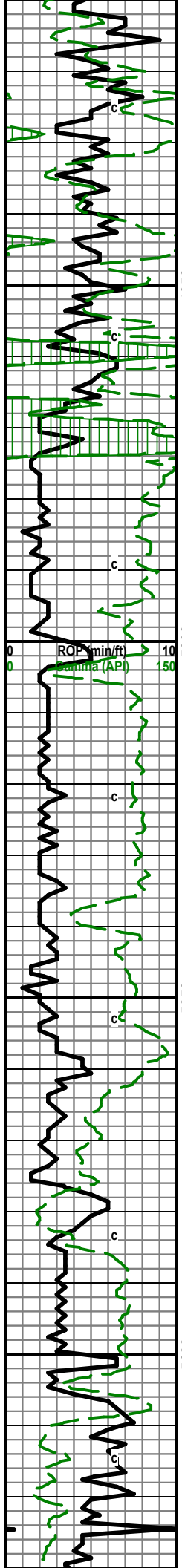




LS: A.A. with some sli ool
 LS: gry-crm, mcrxln, dense
 LS: gry-crm, some tan, m-fxln, sli fos
 LS: A.A. with some pyrite
 LS: gry-crm, mcrxln, sli fos, Sh: blk
 LS: gry-tan, mcrxln, sli fos w/ some crm, ool
 Sh: blk
 LS: crm-gry, mcr-fxln, ool
 LS: gry-tan, mcr-fxln, ool, Sh: blk-gry-grn
 LS: crm-tan, some gry, mcrxln some fxln, sli ool, sli fos
 LS: A.A. with some Sh: gry-drk gry
 LS: A.A. with Sh: gry
 LS: crm, mcrxln, sli chalky, Sh: drk gry-blk
 LS: crm-lt gry, mcr-fxln, some gran, ool, Sh: A.A.
 LS: crm, f-mxln, fos, some Sh: A.A.
 LS: crm-tan, f-mxln, few gran, fos, Sh: drk gry-gry
 LS: crm-tan-gry, mcr-fxln, some mxln, fos, Sh: A.A.
 poor sample, some LS: crm-gry, mxln, sli fos
 LS: crm-tan, f-mxln, sli fos, Sh: gry-drk gry-blk
 LS: tan-crm, mcr-fxln some mxln, sli fos, Sh: A.A.
 LS: crm-tan-gry, mcr-fxln, some ool, some fos, Sh: gry-drk gry
 LS: tan some crm, f-mxln, sli fos, Sh: A.A.
 LS: crm-gry, f-mxln, sli fos, Sh: A.A. w/ some gm

Cherokee Shale: 4746 (-1032)

TG, C1-C5
1 10 100 1000



LS: gry-crm, sli tan, mcr-fxln, some m, sli fos

LS: A.A.

LS: gry-crm, mcr-fxln, sli fos, Sh: gry-drk gry

LS: A.A.

LS: crm-gry, some tan, mcr-fxln, some m, sli fos,

LS: A.A.

LS: crm-gry, mcrxln, dense, sli fos, Sh: drk gry-gry

SS: clusters of clear-opaque, f-m gm, some coarse, tite, sub angular-sub round, no odor, no fluor, no show

Sh: gry-drk gry, circ has the same lime from above

SH: gry-drk gry, sample has a lot of the lime from above sample

Sh: gry-lt gry-drk gry, some pyrite

Sh: gry-drk gry, few pieces of LS: gry-crm, mcrxln-fxln, dense, Sample had one piece of SS: A.A.

Sh: A.A. LS: A.A. with some crm sandy lime, and Silty-sandy shale, gry

Sh and LS: A.A. with some pyrite

Sh: gry-drk gry, some silty lt gry, found one piece of SS: clear-opaque, f gm, sub rounded, well sorted, no show, no fluor

Sh: A.A., SS: A.A. only a few clusters, pyrite

Sh: gry-drk gry, pyrite, some LS: tan, mcr-fxln, sli fos, sli sandy

Sh: gry-lt gry sli silty, few sand Clusters: clear-opaque, sub round, well sort, no show, no fluor, no odor

SS: clear, f-m gm, tite, well sorted, rounded to sub angular, sli glauc, pyritic, no show, no fluor, no odor

LS: brn, mcrxln, dense

LS: A.A., some fos, Sh: gry-drk gry, some silty, few pieces of SS: A.A.

LS: gry-tan, mcr-fxln, dense, fos, sli ool

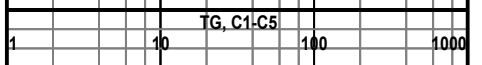
SS: clear-opaque, f gm, tite, well sorted, sub round, sli glauc, no show, no fluor, no odor

LS: gry-crm, mcr-fxln, some mxln, fos, sli ool, dense, Sh: gry-drk gry, some pyrite

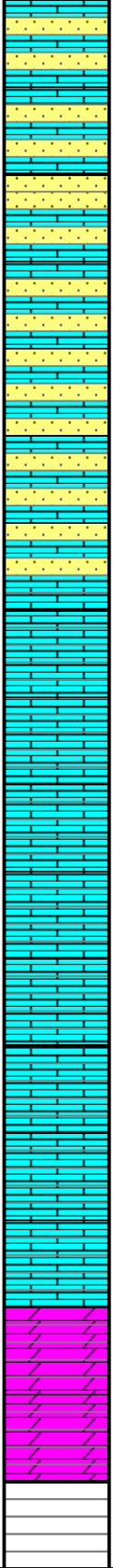
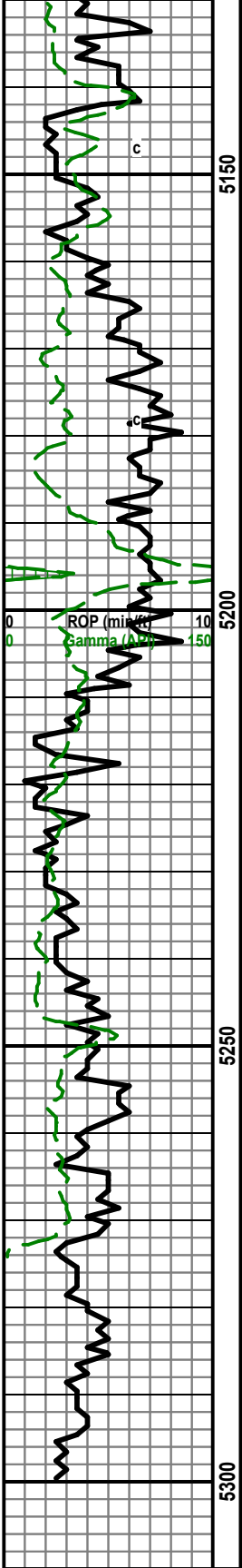
SS: clr-opaque, f-m gm, well sorted, sub round-sub angular, tite (some pieces unbreakable), sli glauc, sli pyrite, no show, odor, or fluor some LS:

Morrow: 4967 (-1253)

CFS @ 4980 60 min



Keyes Lime: 5106 (-1392)



tan-brn-gry, mcrxln, dense

SS: A.A. with some tan/brown, LS: crm-gry, mcrxln, dense

Chert: fresh, crm-brn, LS: crm, mcr-fxln, fos, and gry-brwn, mcr part gran, sli fos, SS: clr-opaque, f-m gm, well sorted, sub round, sli glauc, sli pyrite, no show, fluor, or odor

LS, SS, and Chert: A.A.

LS: tan-crm, mcrxln, dense, few clusters of SS: A.A.

LS: A.A. with some Chert: A.A.

LS, Chert, and SS: A.A.

LS: tan-brn-crm, mcr-fxln, dense, sli fos

LS: crm-tan-gry, mcr-fxln, dense, some brwn, fxln, dolomitic

LS: crm-tan-gry, mcr-mxln, scat Chert: white, fresh

LS: crm-tan, mcr-fxln, dense, Dolo, brown

LS: gry-tan, f-mxln, dense, sli dolo

LS: gry-tan, mcr-fxln, dense, sli fos

LS: A.A.

LS: gry-tan, some crm and brwn, mcr-mxln, sli glauc, sli pyrite

Dolo: brn-gry, mcr-f xln

RTD: 5300
LTD: 5302

CFS @5155 60 min	
TG, C1-C5	
1	1000
Miss: 5206 (-1492)	
Mudco mdck Wt: 9.5 Vis: 55 pH: 9.0 Fil: 7.2 LCM: 20#	