

Contacting New Reservoir in Hunton Dolomite in Nearly Depleted Unger Field, Marion County, Kansas Using a Lateral with Azimuthal Gamma Ray Sensor and Drillpipe Conveyed Wireline Logs

Lynn Watney, John Doveton, Jason Rush, David Newell
Kansas Geological Survey
Lawrence, KS 66006

Alan DeGood, Doug Davis, Karen Houseberg
American Energies Corporation
Wichita, KS 66047

*American
Energies
Corporation*

**TORP Workshop
Horizontal Completion in the
Mississippi Lime
March 6, 2012**



**Small Producer
Project #07123-04**



Outline

- Background
- Pre-spud analysis
 - Structure, Stratigraphy
 - Well planning
- Results
- Conclusions

Acknowledge the patience
and support from:

Project Start: August 25, 2008

Project End: December 31, 2011

DOE Contribution: \$248,385

Performer Contribution: \$271,056

Contact Information:

RPSEA – Martha Cather (prrc.nmt.edu or 575-835-5685)

NETL – Chandra Nautiyal (Chandra.Nautiyal@netl.doe.gov
or 281-494-2488)

University of Kansas – W. Lynn Watney (lwatney@ku.edu
or 785-864-2184)



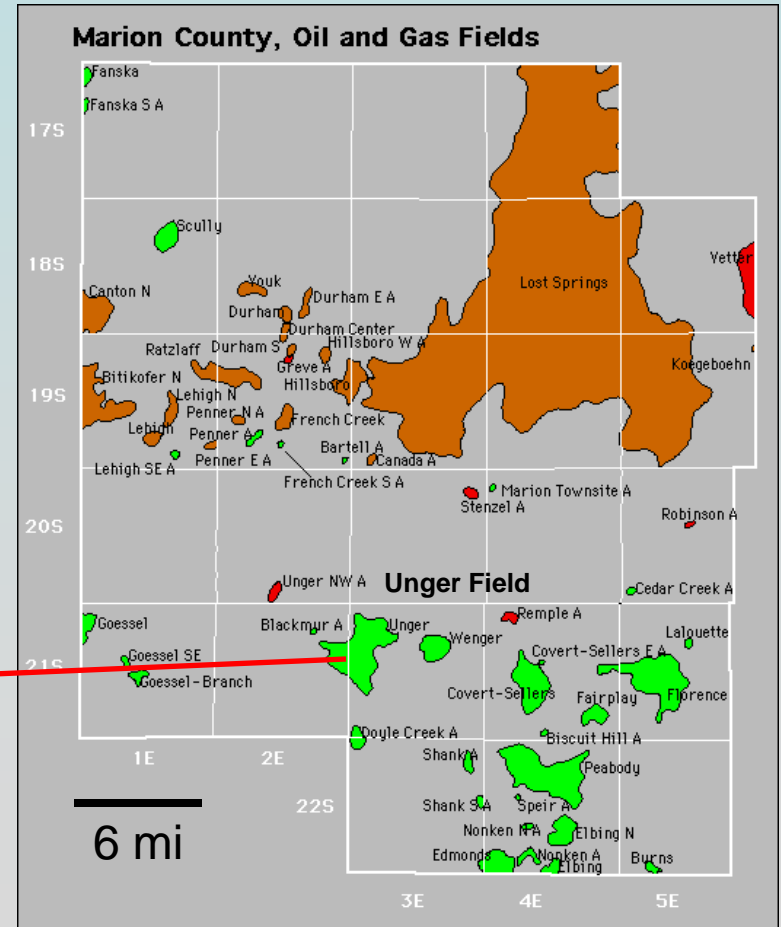
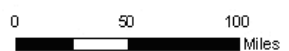
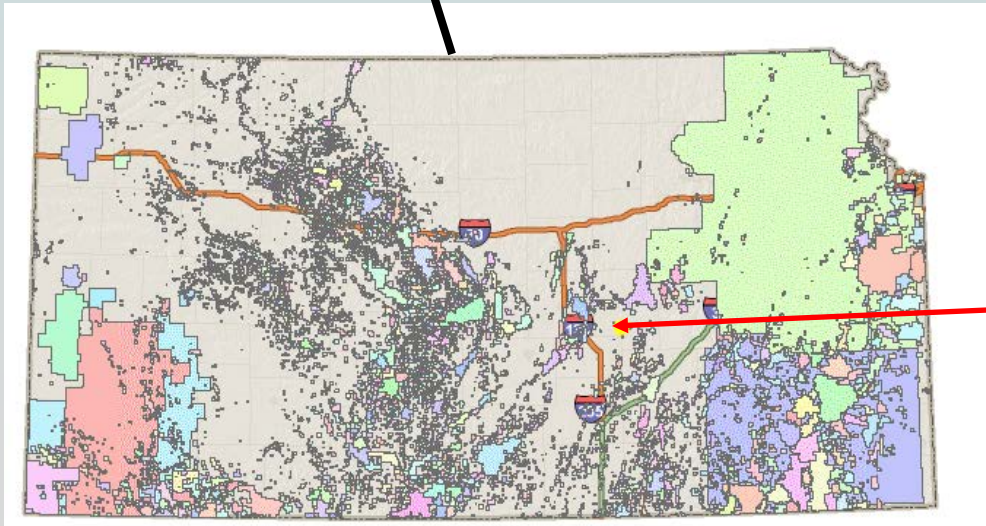
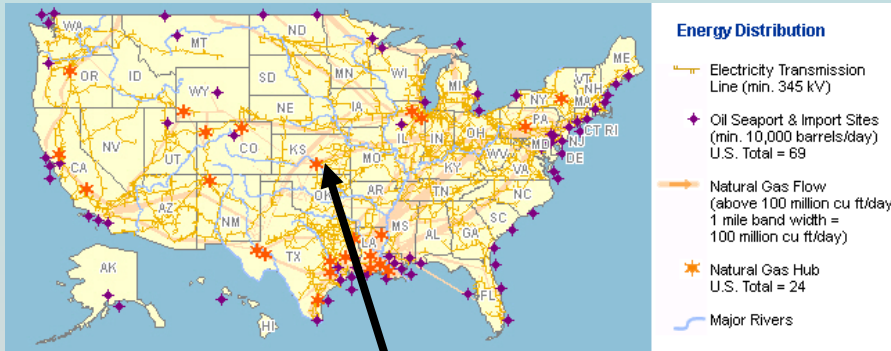
Small Producer
Project #07123-04



Background

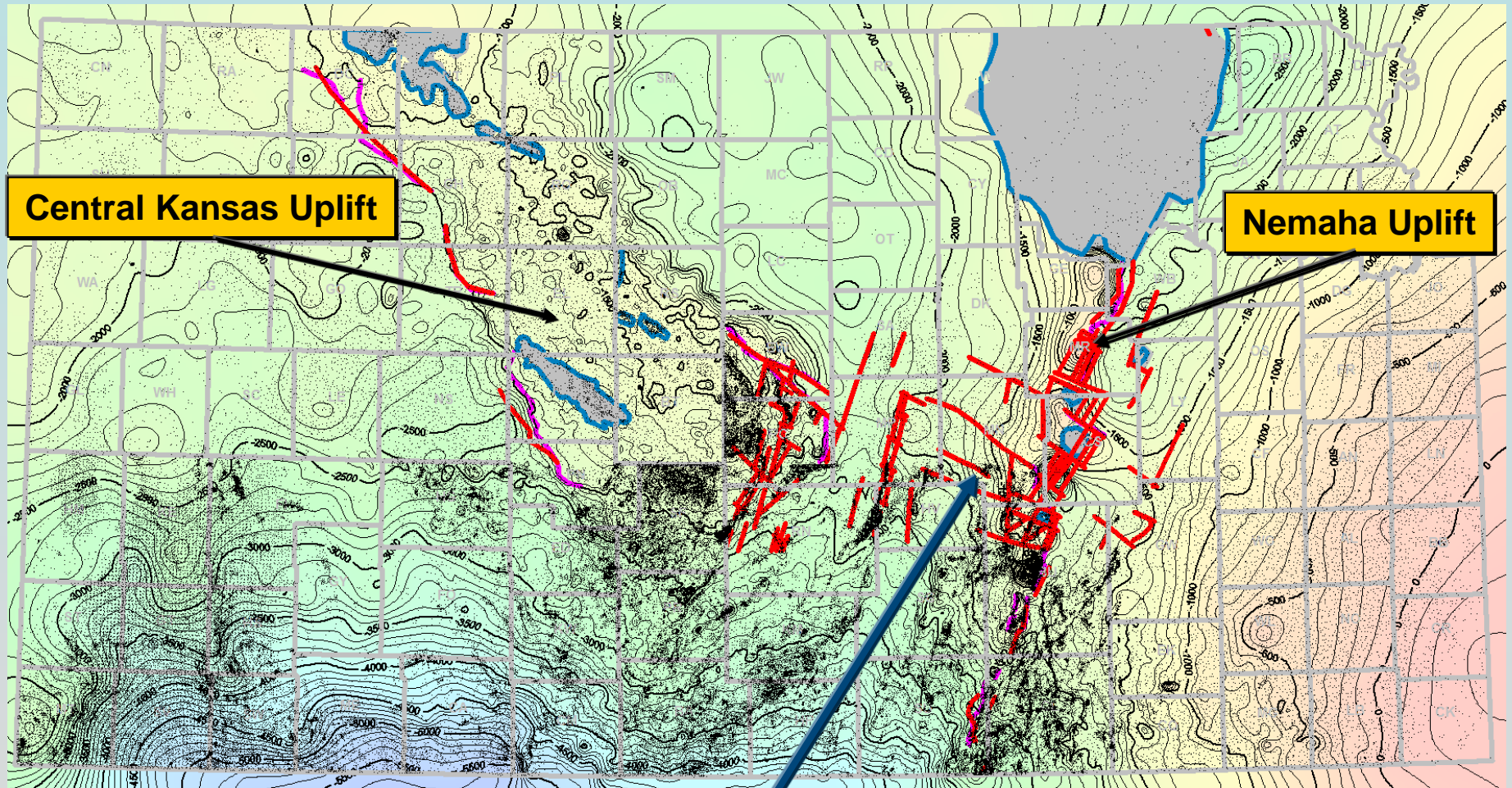
- **Objective –**
 - Drill 1000 to 1500 ft (1137 ft) lateral through porous Hunton dolomite residing at roughly 2800 ft MD
 - Section 19-Range 21 South- Range 4 East of Unger Field in Marion County, Kansas
- **Unger Field –**
 - Discovered in 1955 has produced 8.6 million barrels
 - 17 wells produced 16,191 bbls. in 2009, 2.6 BOPD per well, high water cut, 40 ac spacing
- **Wells on the Section 19 anticline** originally produced several 1000's of barrels of oil per day
 - Strong water drive
 - Oil production can increase as wells attempt to be pumped off suggesting oil still being drained outside of cone of depression; includes wells near original O:W contact
- **Lateral paralleled east flank of $\frac{3}{4}$ mile long northwest-trending anticline**
 - Local structural relief is 45+ feet
 - Original oil column ~40 feet
- **Porous Hunton reservoir**
 - Thickness ranges from 11-25 feet
 - Lithology – Dolomite - fractured, locally cherty and vuggy, and intercrystalline \emptyset
 - Tight dolomudstone caprock above pay ranges from 0 to 10 feet thick
- **The Hunton dolomite is overlain by a thick (~130 feet), relatively hard Kinderhook-Chattanooga Shale**
 - Sufficiently hard rock for making turn of the lateral.

Horizontal Well American Energies Corporation Slocombe-Rood #1-19 Unger Field Marion County, Kansas



Unger Field located on west flank of Nemaha Uplift

Structural Contour Map *Top Arbuckle Group*



Central Kansas Uplift

Nemaha Uplift

Unger Field

50 miles
(80 km)

Contour interval = 100 ft

Gerlach (2011)

Partners in Unger Field Drilling



Design and well site supervision on over 300 horizontal wells drilled including multi-laterals in Oklahoma Hunton, Arbuckle, Barnett Shale and others – up to 8,000' lateral displacement



Focus Gamma (sensor)
-- To avoid shale caprock
above reservoir



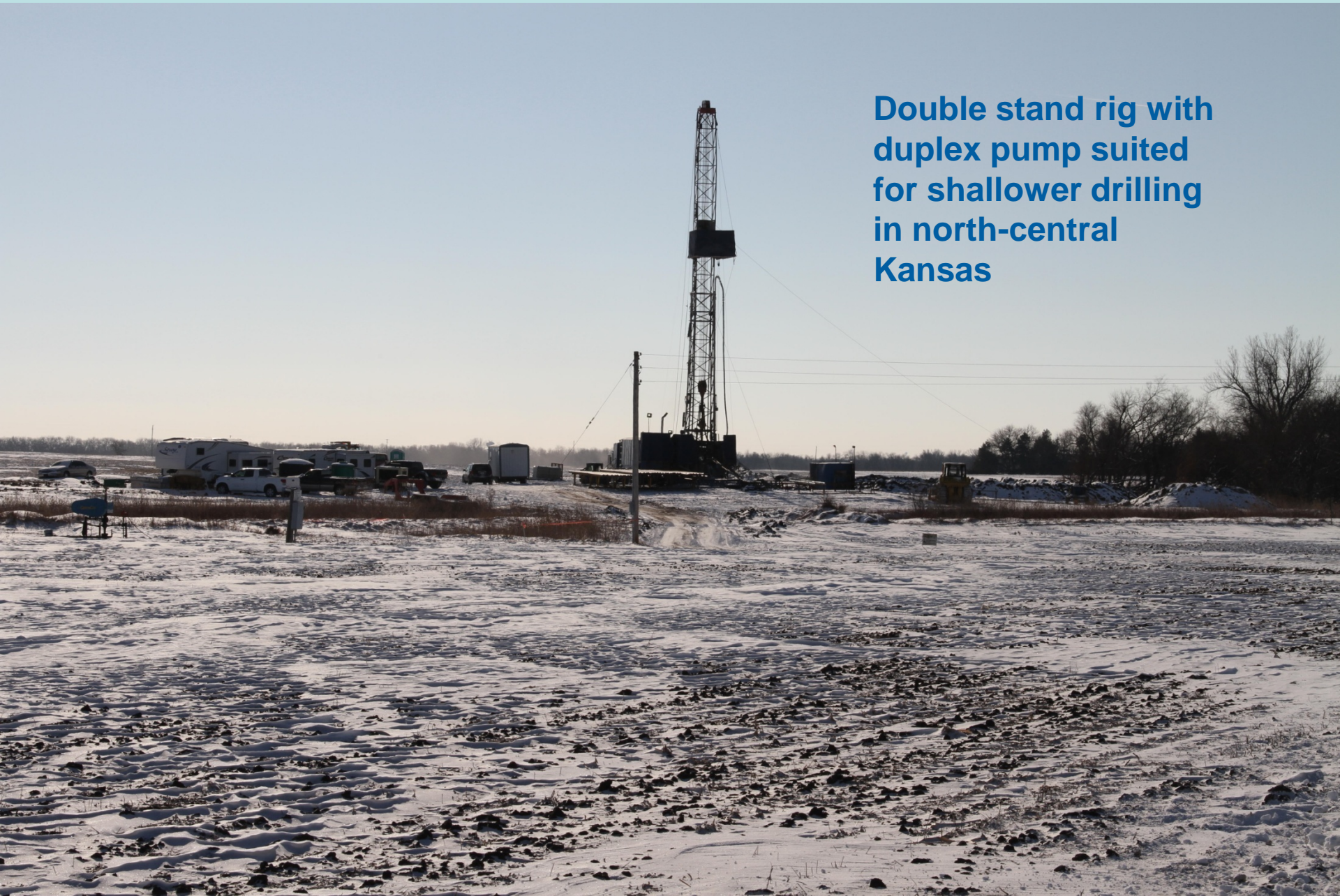
Use of modern logs to complete evaluation:

- Log-derived lithology, pore type
- \emptyset , oil saturation, and fracture detection

Post Drill - Compact Micro Imager (CMI) & Triple Combo (Gr, N-D \emptyset , Array Induction, Pe)

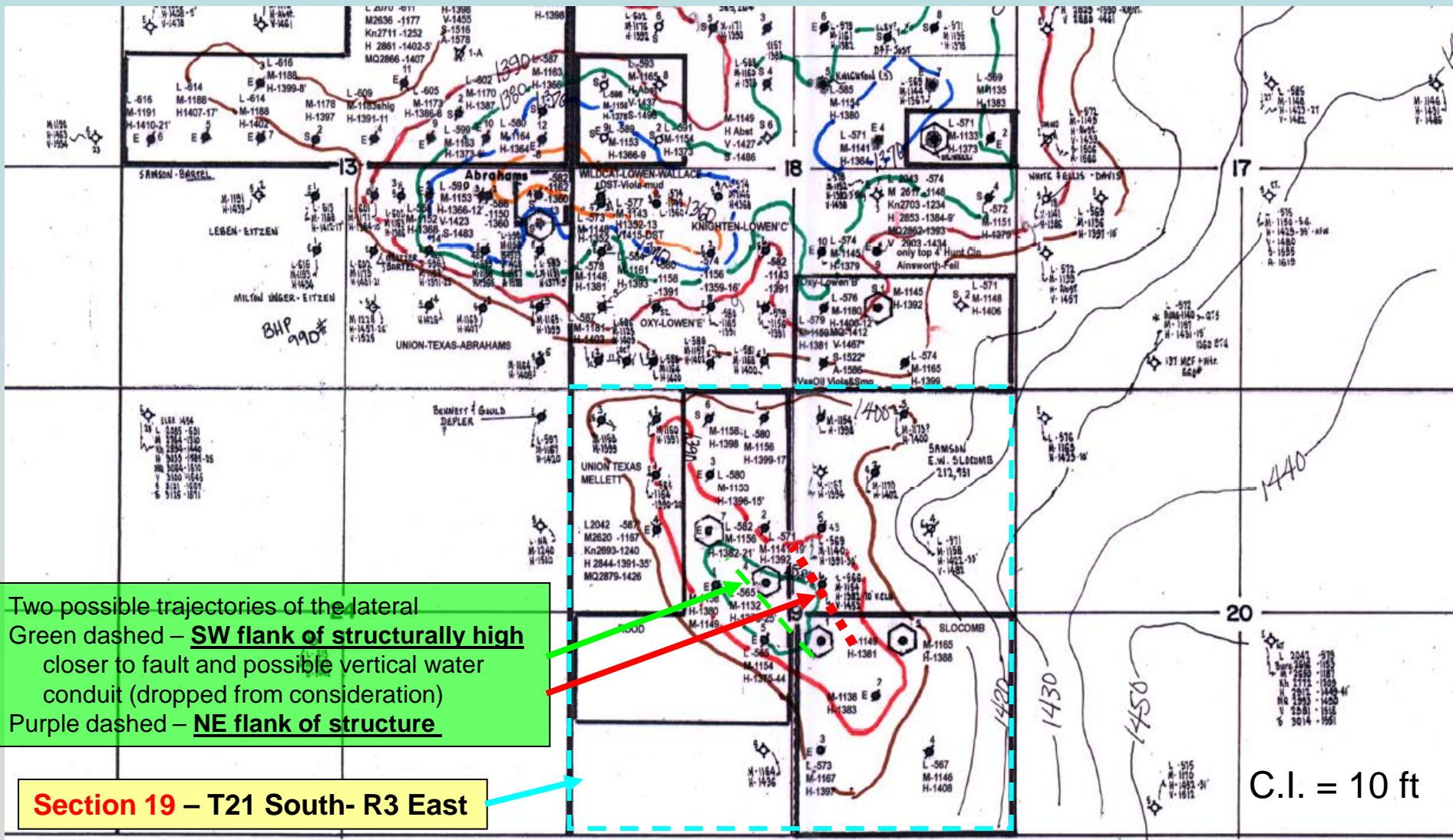
C&G Drilling Rig #2, Geo trailer, Tres Management, Pan American Directional Drilling/MWD (January 2011)

Double stand rig with
duplex pump suited
for shallower drilling
in north-central
Kansas



Hunton Structure – south Unger Field

Geology by Gerry Honas
(initial mapping)



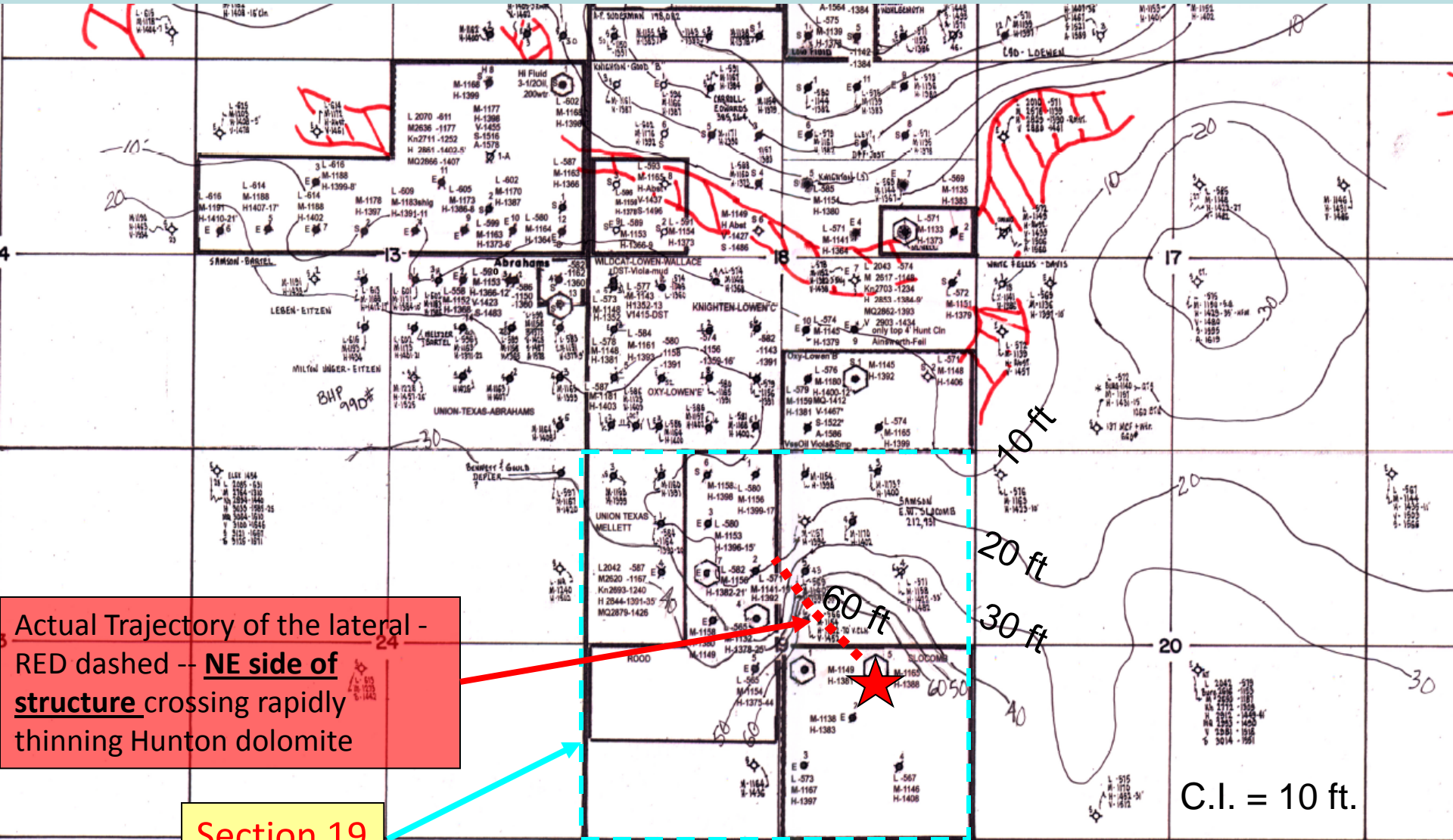
Two possible trajectories of the lateral
Green dashed – **SW flank of structurally high**
closer to fault and possible vertical water
conduit (dropped from consideration)
Purple dashed – **NE flank of structure**

Section 19 – T21 South- R3 East

C.I. = 10 ft

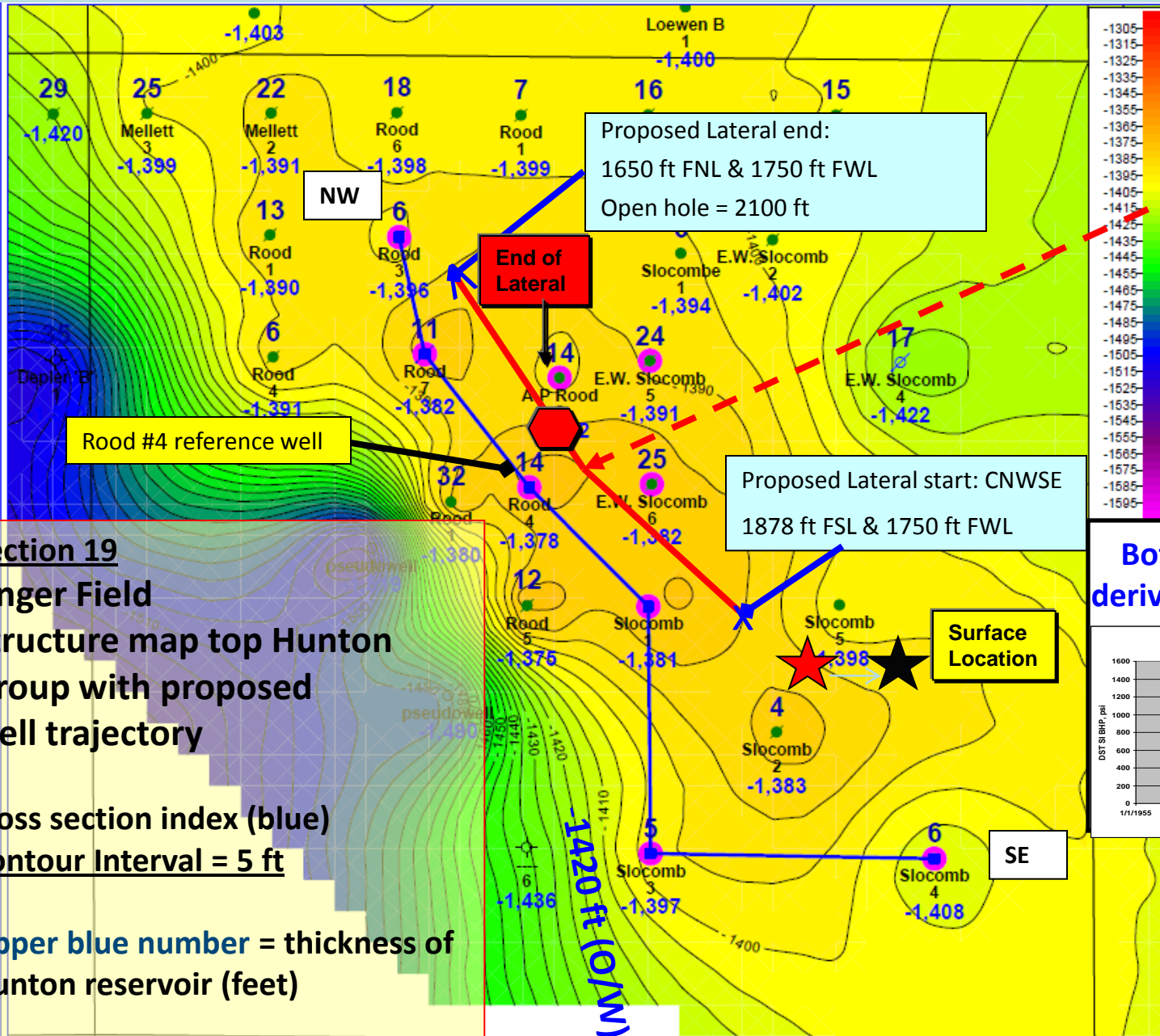
Hunton isopach – south Unger Field

Geology by Gerry Honas



Scout card information

					Wells in study area					Calculated from swab testing			
Location	Well	Operator	Completion	Elev/KB	Top Hunton	DST from	DST to	BHP	Perf From	Perf To	B/d IP Oil	B/d IP Wtr	B/d IP Fluids
NE SE SW	Allison 1	Red Drilling Co	1/17/1957	1477	2871								
N2 N2 SE	LD Slocombe 5	Anderson Prichard	7/15/1957	1421	2843	2810	2821	1035			117	22	139
NW NW SE	L Slocombe 1	Anderson Prichard	3/26/1957	1423	2804						240	NW	240
SE NW SE	L Slocombe 2	Anderson Prichard	4/12/1957	1421	2805						109	46	155
NW SW SE	L Slocombe 3	Anderson Prichard	4/22/1957	1433	2825	2828	2844	1015	2830	2834	38.4	91.2	130
						2859	2871	1400					
SE NW NW	Mellott 1	Anderson Prichard	3/15/1957	1443	2832	2836	2841				214	NW	214
NE NW NW	Mellott 2	Anderson Prichard	3/16/1957	1442	2843						111	NW	111
NW NW NW NW	Mellot 3	Anderson Prichard	4/30/1957	1449	2848						112	4	116
NE SW NW	Mellot 4	Anderson Prichard	5/15/1958	1453	2845				2845	2850	88		88
SW SE NW	Rood 1	Wilton Pet	6/10/1988	1434	2814				2817	2818	3	38	41
NE SE SW	Rood 1	Red Drilling Co	10/25/1957	1435	2871								
NE NE NW	Rood 1	Anderson Prichard	9/7/1956	1454	2854	2857	2884	1020	2858	2861	8	189	198
NE SE NW	Rood 2	Anderson Prichard	2/1/1957	1439	2834	2844	2875	1025	2846	2851	189	NW	189
SW NE NW	Rood 3	Anderson Prichard	2/22/1957	1441	2839	2840	2870	1010	2847	2852	2544	NW	2544
SE SE NW	Rood 4	Anderson Prichard	2/11/1957	1436	2815				2832	2837	252	NW	252
NW NE NW	Rood 6	Anderson Prichard	4/4/1957	1447	2848						148	TW	148
NE NE SW	Rood 5	Anderson Prichard	3/9/1957	1440	2819				2845	2850	201	4	205
SE NW NE	Slocombe 2	Anderson Prichard	8/21/1956	1454	2856						186	6	192
C N2 N2 NE	Slocombe 3	Anderson Prichard	9/15/1956	1449	2849						77	64	141
C NW SE NE	Slocombe 4	Anderson Prichard	9/23/1956	1434	2854	2865	2875	1040					
NW SE SE	Slocombe 4	Anderson Prichard	5/15/1957	1422	2827						5	175	180
NW SE SE	Slocombe 4	Anderson Prichard	6/19/1957								5	250	255
SE SE NW	Rood 4	Anderson Prichard	2/11/1957	1436	2815				2832	2837	252	NW	252
SW SW NE	Slocombe 6	Anderson Prichard	3/1/1957	1434	2816				2816	2826	252	36	288
NW SW NE	Slocombe 5	Anderson Prichard	1/13/1957	1418	2835				2838	2844	235	NW	235
NW SE NW	Rood 7	Anderson Prichard	5/8/1958	1435	2818				2819	2824	219	NW	219
NE NE SW	Rood 5	Anderson Prichard	3/9/1957	1440	2819				2828	2834	201	4	205
SW SE NW	Rood 1	Wilton Pet	6/10/1988	1434	2814				2817	2818	3	38	41
NW NW SE	L Slocombe 1	Anderson Prichard	3/26/1957	1423	2804						240	NW	240
NE SE NW	Rood 2	Anderson Prichard	12/31/1956	1439	2834	2844	2875	1025	2846	2851	189	NW	189



Location of Lateral

Proposed Lateral end:
1650 ft FNL & 1750 ft FWL
Open hole = 2100 ft

Proposed Lateral start: CNWSE
1878 ft FSL & 1750 ft FWL

Rood #4 reference well

Surface Location

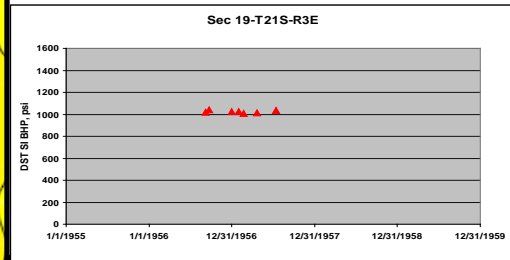
Section 19
Unger Field
Structure map top Hunton
Group with proposed
well trajectory

cross section index (blue)
Contour Interval = 5 ft

Upper blue number = thickness of
Hunton reservoir (feet)

Original O/W ~-1420 ft (yellow)
Edge water drive

Bottom hole pressure
derived from DST = 1000 psi



DST data from:
Slocombe 5, 6
Mellot 4
Rood 1, 2, 3, 4, 5, 7
(steady/constant =
Strong water drive)

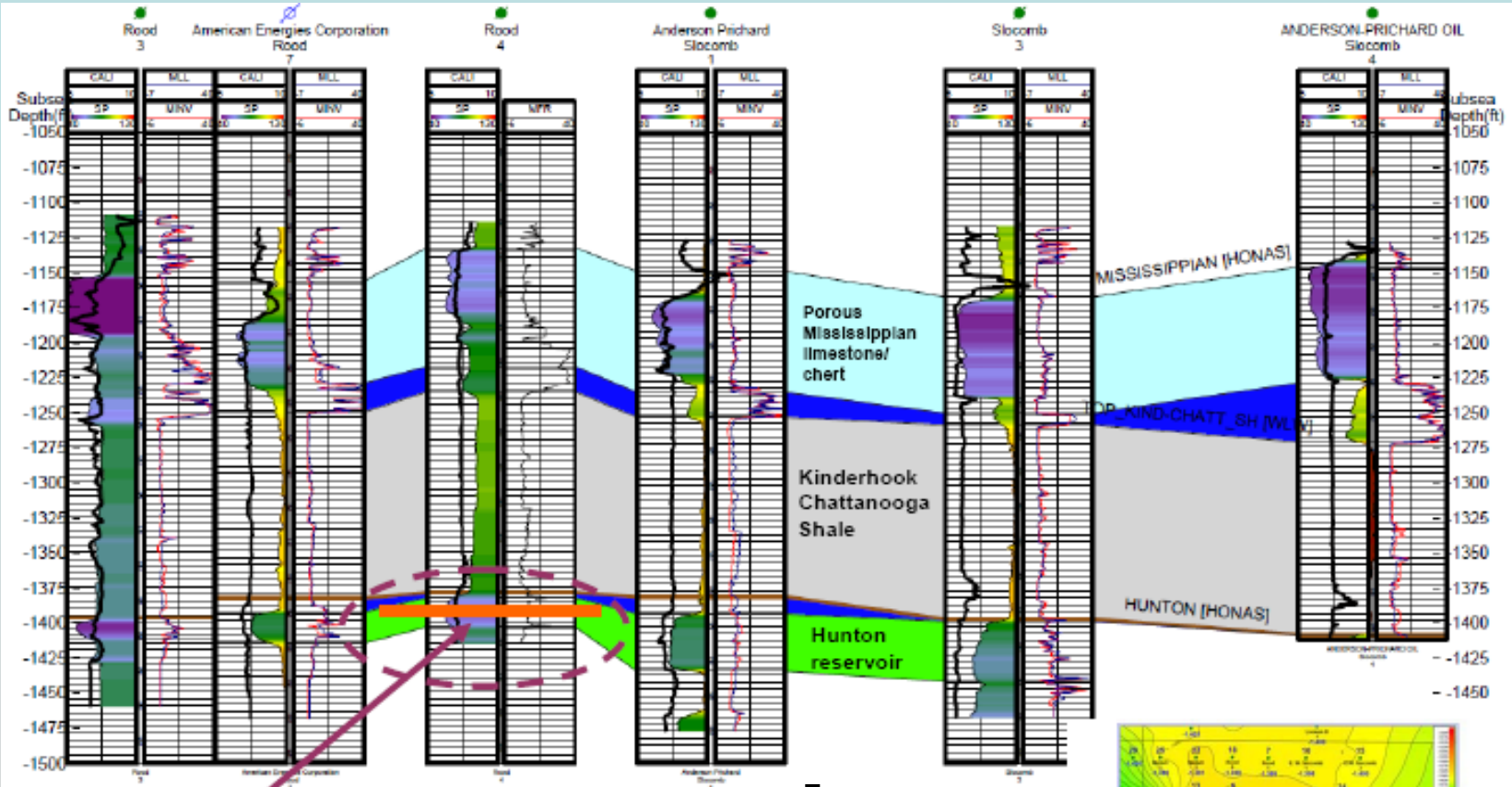


NW-SE Structural Cross Section

-- northward thinning of Hunton reservoir and thick overlying Chattanooga and Kindershook Shale

NW

SE

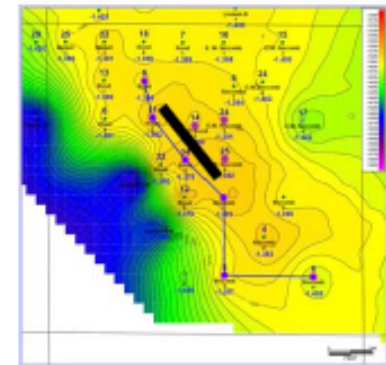


Target zone for lateral
Paralleling cross
section

900 ft

100 ft

SP-Caliper-Microlog curves shown – SP depicted in color delimiting magnitude

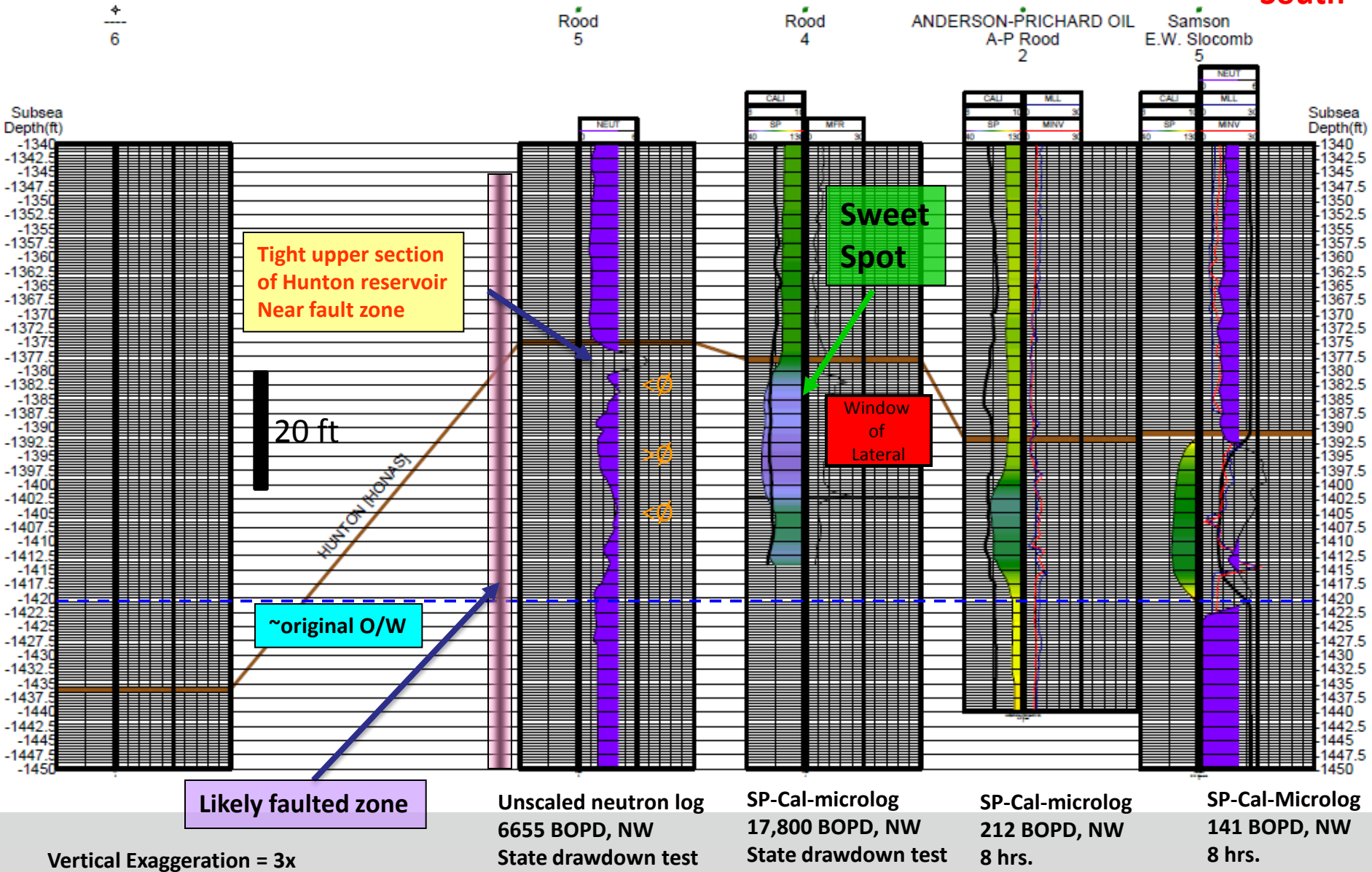


South to Northeast Structural Cross Section

- SP-Caliper-Microlog, neutron count curves shown – SP (variable color) and neutron (all purple)
- Lateral passes through this cross section east of Road #4

North

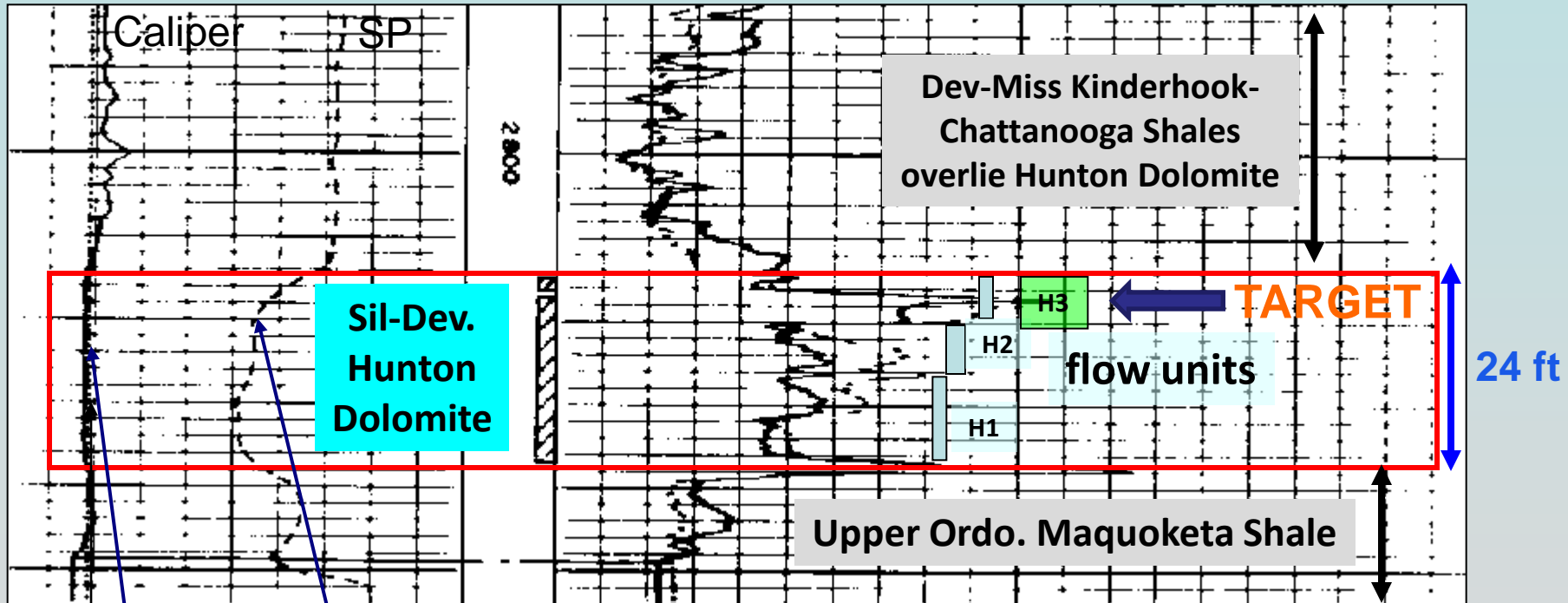
South



Vertical Exaggeration = 3x

Anderson-Prichard AEC Rood #4 se se nw Section 19

Effective ~14 feet thick
Upper H3 zone ~6 feet thick



PHI_{xo} - Porosity from Shallow Resistivity

$$PHI_{x_0} = (A / ((R_{XO} / R_{MF@FT}) * (S_{XO} ^ N))) ^ (1 / M)$$

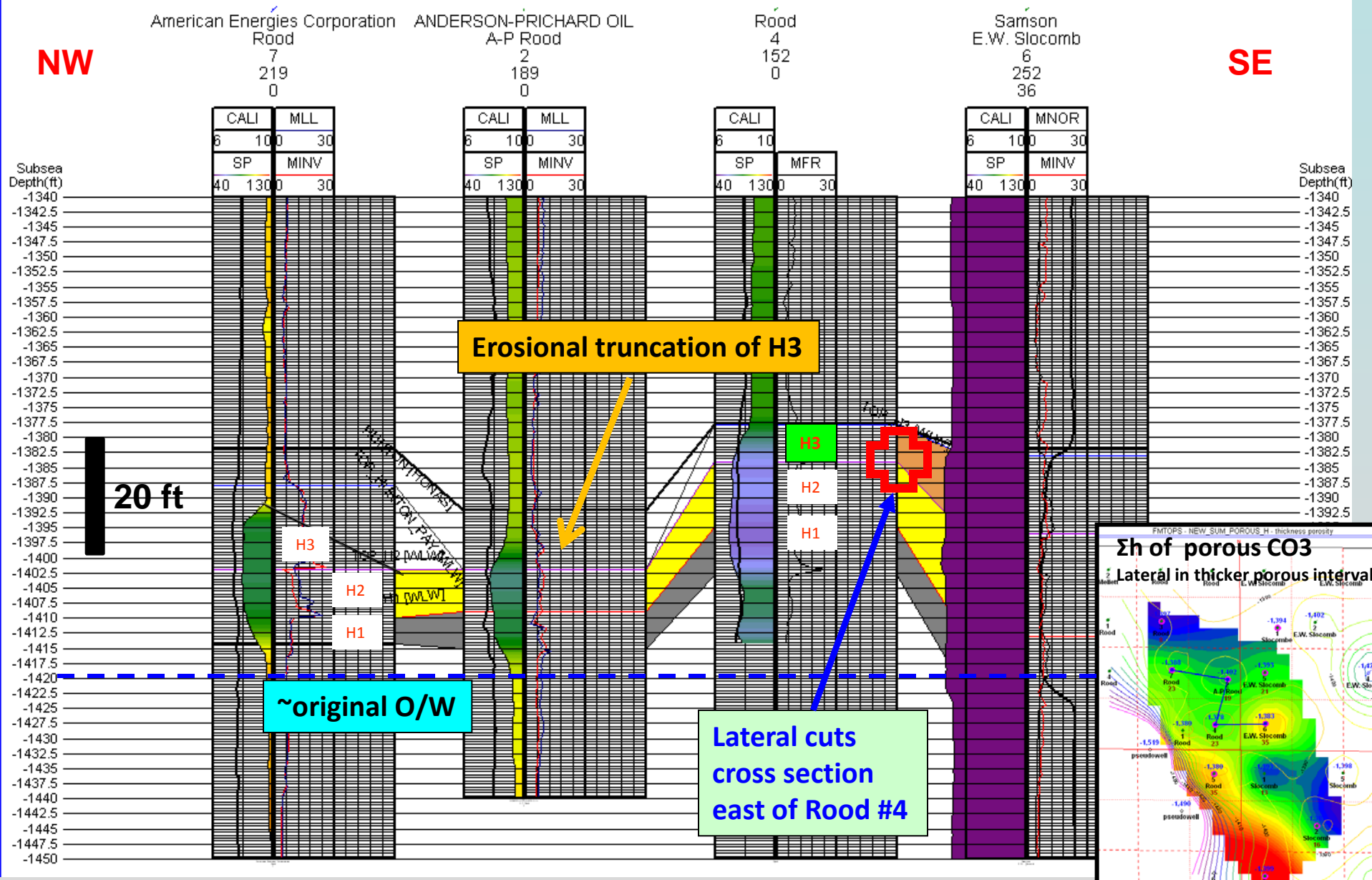
Good SP deflection (dashed line) and mudcake (positive deflection of caliper – solid line) suggest permeable, matrix porosity

Caliper, SP, Microlog

Well completed in 1957

NW-SE Structural Cross Section with flow units (H1, H2, H3) of Hunton dolomite reservoir

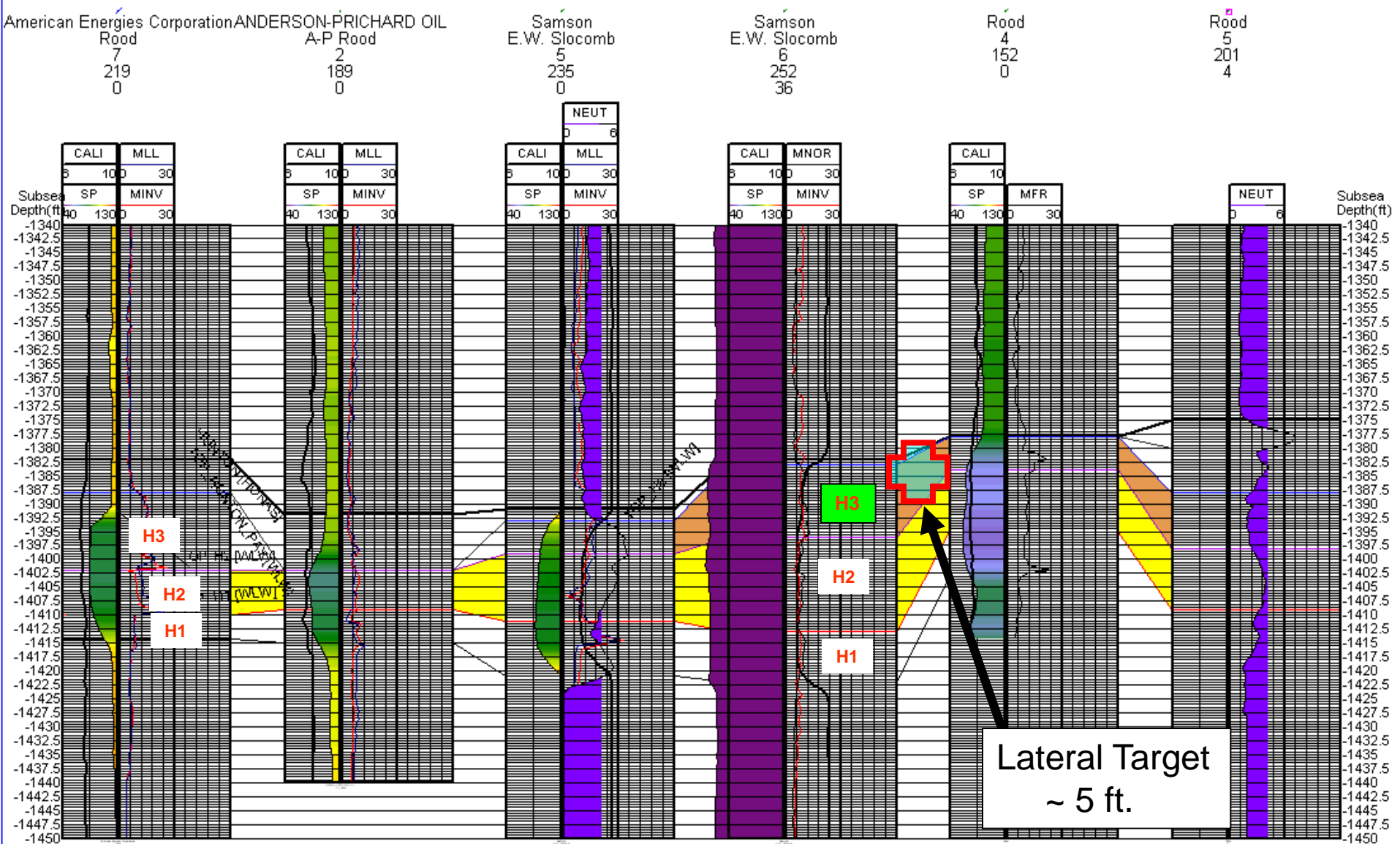
NW-SE Structural Cross Section

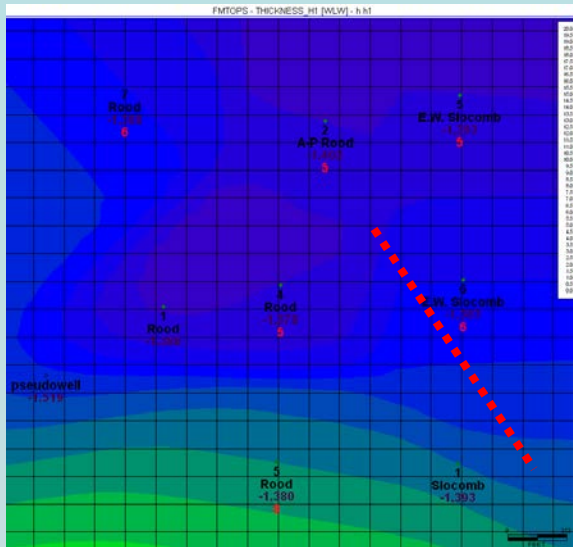


Stratigraphic cross section base of Mississippian

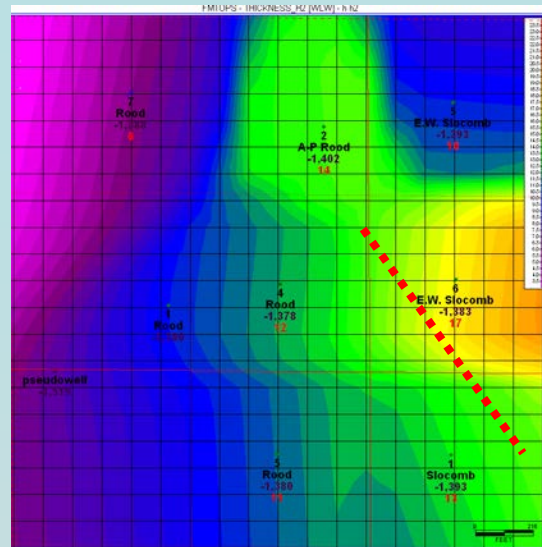
NW

SE

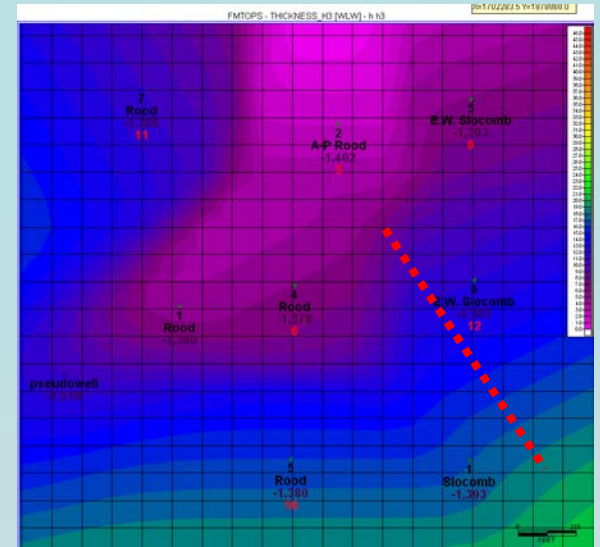




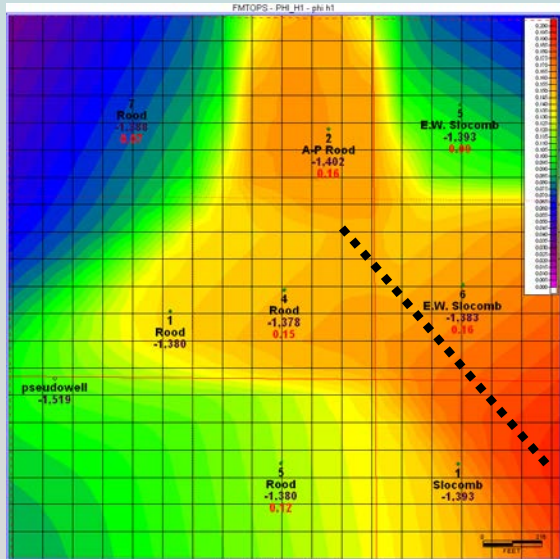
Thickness, H1



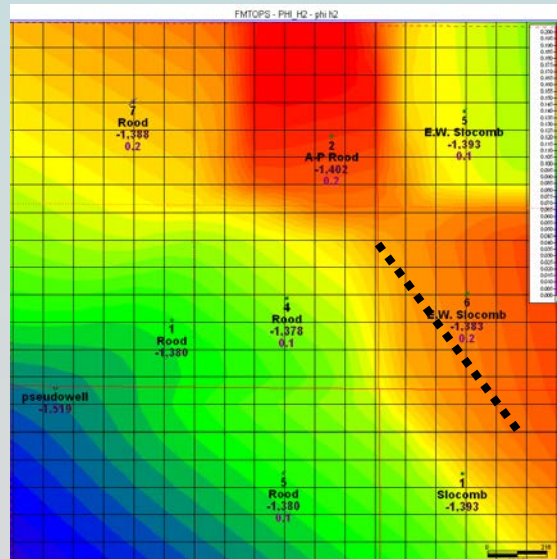
Thickness, H2



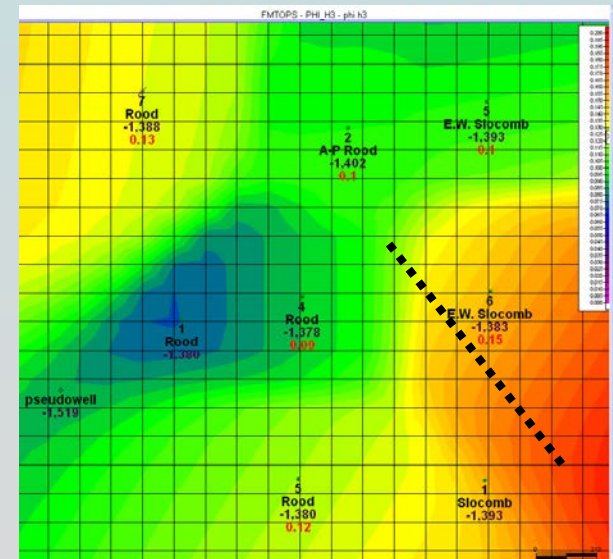
Thickness, H3



Ave porosity, H1



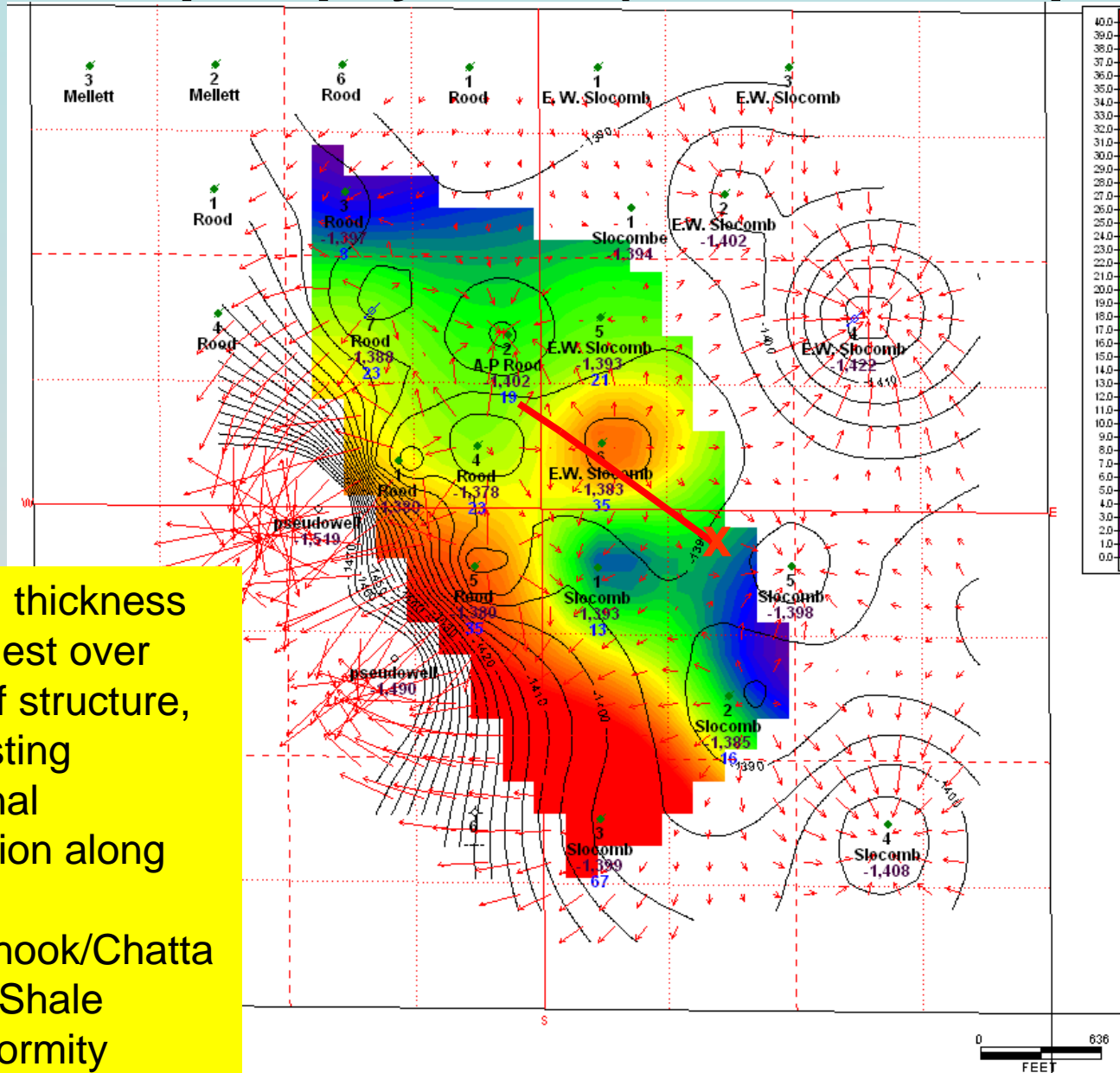
Ave porosity, H2



Ave porosity, H3

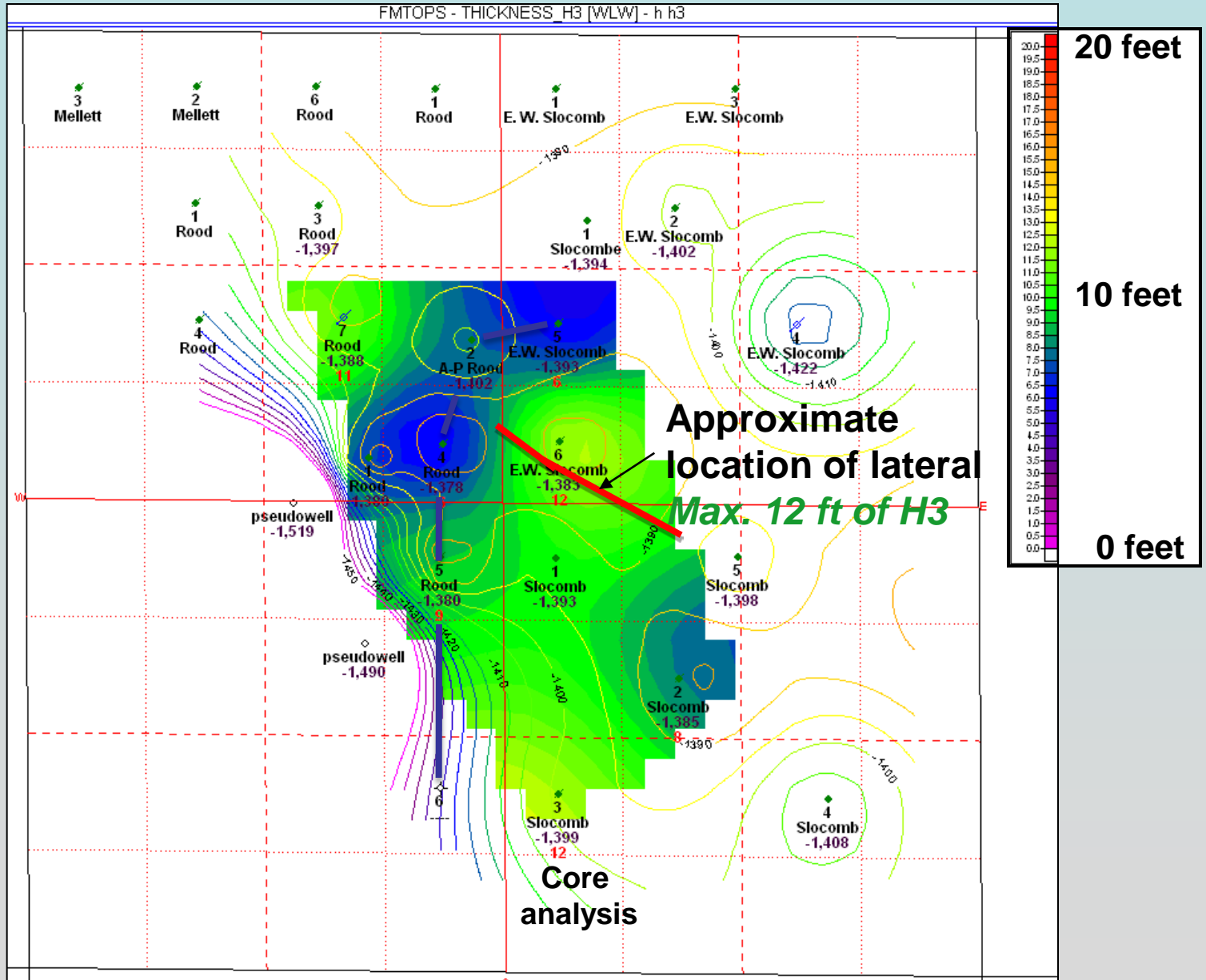
--- Trajectory of lateral

Total thickness of Hunton pay (color fill) overlain by structure top of pay zone (contours & dip vectors)



Overall thickness is highest over crest of structure, suggesting erosional truncation along base Kinderhook/Chattanooga Shale unconformity

Thickness of uppermost H3 layer (color fill) with structure top of pay zone (contours) *Horizontal well is high on east flank of NW-SE trending structure*



Services for Drilling

- Contractor: **C & G Drilling Rig 2**
Eureka, KS
Tim Gullick
620-583-4306
- Mud Services: **Mud-Co / Service Mud Inc.**
Wichita, KS
316-264-2814
- Cement Services: **Consolidated Oilwell Services**
Larry Storm, KS
620-323-3381
- Open Hole Logging: **Weatherford**
Oklahoma City, OK
405-720-4334
Mark Houpe
- Directional Services: **Pan American Drilling Services**
Oklahoma City, OK
405-677-6800
Mark Greene 405-620-7128
- Rental Drill Pipe: **Patterson Rental Tool**
Oklahoma City, OK
405-810-9300
Mark Tayar 405-401-4900
- Electronic Monitoring: **Pason Systems USA**
Lafe Coldwater 580-551-9470
Chase Coldwater 405-334-7525

PRE – SPUD PREPARATION:

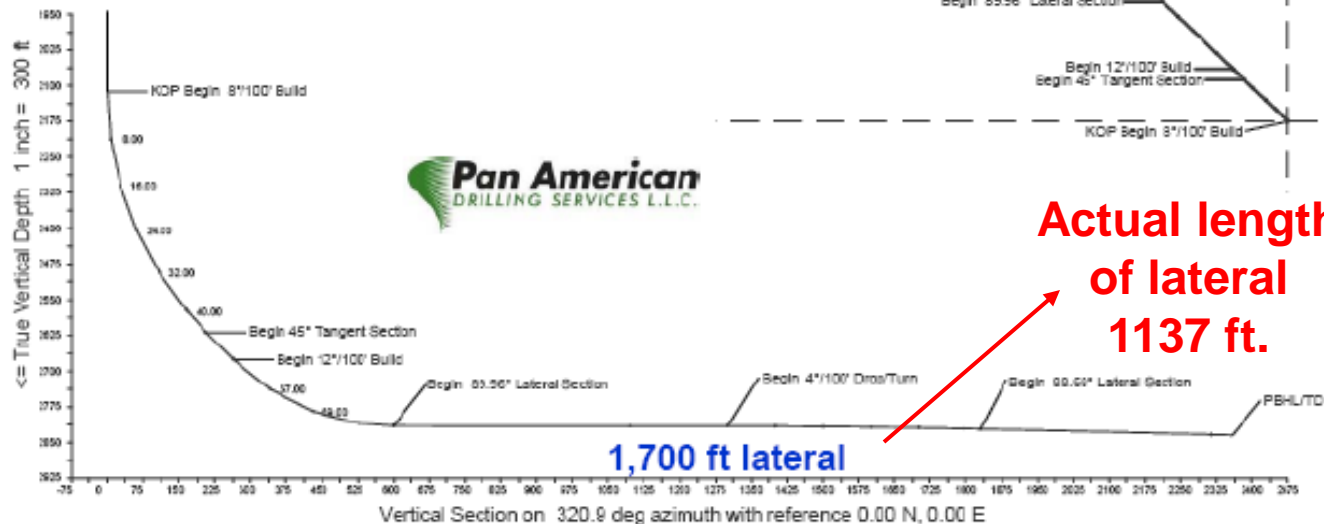
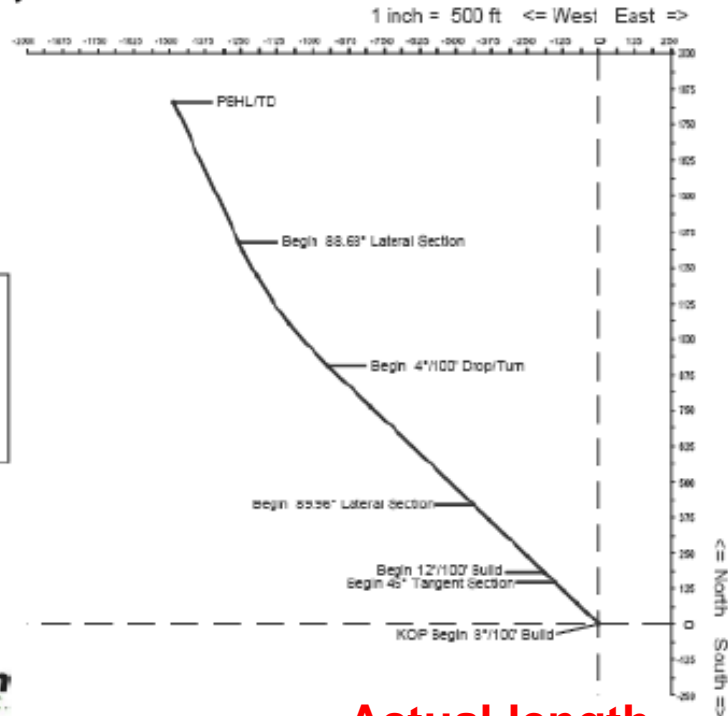
- Construct location, reserve pit, working pits, and road to accommodate rig plus up to 3 additional living quarter trailers.
- Hold pre-spud meeting with operating, rig, and key vendor personnel.
- Review drilling plan, scheduling, and safety policies.
- American Energies expects all operations to be conducted with safety as a priority.
- Operations are to be suspended if necessary to provide safe working conditions.

Horizontal Drilling Plan – Unger Field, Marion County, Kansas

American Energy Corporation

Unger Field

WELL PROFILE DATA rev0							
MD	Inc.	Azi.	TVD	N-S	E-W	DLS	Comment
2113	0.00	313.70	2113	0	0	0.00	KOP Begin 8"1100' Build
2675	45.00	313.70	2675	145	-152	0.00	Begin 45° Tangent Section
2755	45.00	313.70	2755	184	-153	0.00	Begin 12"1100' Build
3130	89.56	313.70	3130	417	-436	11.00	Begin 89.56° Lateral Section
3887	89.56	313.70	3887	506	-948	0.00	Begin 4"1100' Drop/Turn
4371	88.68	336.00	4371	1331	-1231	4.00	Begin 88.68° Lateral Section
4915	88.68	336.00	4915	1630	-1417	0.00	PBHLTD



**Actual length
of lateral
1137 ft.**

1,700 ft lateral

Vertical Section on 320.9 deg azimuth with reference 0.00 N, 0.00 E

Pan American Drilling Services, LLC

Company: American Energy Corporation
 Well: Unger Field
 Location:

Date: 19-Sep-2010
 Rev0
 Page 1
 Job #: 5365

MD (feet)	Inclination (degrees)	Azimuth (degrees)	TVD (feet)	N-S (feet)	E-W (feet)	DLS (deg/100')	VS @ 320.90° Az (feet)	Comments
Surface Location								
2112.62	0.00	313.70	2112.62	0.00	0.00	0.00	0.00	KOP Begin 8°/100' Build
2212.62	8.00	313.70	2212.30	4.82	-5.04	8.00	6.92	
2312.62	16.00	313.70	2310.03	19.17	-20.06	8.00	27.53	
2412.62	24.00	313.70	2403.92	42.78	-44.77	8.00	61.43	
2512.62	32.00	313.70	2492.15	75.19	-78.68	8.00	107.97	
2612.62	40.00	313.70	2572.98	115.76	-121.14	8.00	166.24	
2675.12	45.00	313.70	2619.05	144.93	-151.66	8.00	208.12	Begin 45° Tangent Section
2755.12	45.00	313.70	2675.62	184.01	-192.55	0.00	264.24	Begin 12°/100' Build
2855.12	57.00	313.70	2738.43	237.60	-248.64	12.00	341.20	
2955.12	69.00	313.70	2783.75	299.05	-312.93	12.00	429.44	
3055.12	81.00	313.70	2809.58	365.66	-382.64	12.00	525.09	
3129.76	89.96	313.70	2815.46	417.02	-436.37	12.00	598.84	Begin 89.96° Lateral Section
3629.76	89.96	313.70	2815.84	762.48	-797.83	0.00	1094.90	
3837.48	89.96	313.70	2816.00	906.00	-948.00	0.00	1300.98	Begin 4°/100' Drop/Turn
3937.48	89.71	317.70	2816.29	977.55	-1017.83	4.00	1400.55	
4037.48	89.47	321.69	2817.01	1053.79	-1082.50	4.00	1500.50	
4137.48	89.22	325.68	2818.15	1134.35	-1141.71	4.00	1600.36	
4237.48	88.99	329.67	2819.71	1218.83	-1195.16	4.00	1699.63	
4337.48	88.75	333.67	2821.69	1306.82	-1242.59	4.00	1797.82	
4370.77	88.68	335.00	2822.43	1336.82	-1257.01	4.00	1830.20	Begin 88.68° Lateral Section
4870.77	88.68	335.00	2833.98	1789.84	-1468.27	0.00	2315.01	
4915.09	88.68	335.00	2835.00	1830.00	-1487.00	0.00	2357.98	PBHL/TD

Casing Program

Depth	Hole Size	Casing	Burst psi	Collapse psi
0 – 250'	12 1/4"	9 5/8" 36# J-55 ST&C	1730 psi	770 psi
0 – 3,130'	8 3/4"	7" 23# J-55 LT&C	4980 psi	4320 psi
3,200' – 4,700'	6 1/8"	Open Hole		

Before slotted liner completion

INTERVAL: Surface to 250'

- Drill 12 1/4" hole to 250'. Bottom hole assembly; mill tooth bit, bit sub, and 6 1/4" collars. Spud with 35+ viscosity, pump hi-vis sweeps with cotton see hulls for hole cleaning. Maximize pump flow rate (6 1/4 x 14, 7.06 gal per rev,). Short trip to bit, condition hole for casing.
- Run 9 5/8" 36# J-55 casing with 4 centralizers, utilizing landing joint. Strap weld bottom two connections. Wash casing to bottom and circulate minimum one casing volume prior to cementing. Cement with 140 sx Regular, 2% gel, 3% CaCl, .5% flocele. Drop wiper plug and displace to 220'+/-, shut in and WOC.
- WOC 4-6 hours. Back out landing joint, screw in adapter and nipple up annular BOP. Test annular and casing to 500 psi.

INTERVAL 250' – 2,100' – Straight Hole

- Take surveys at 500' intervals. Desired pump rates in the 400-500 gpm range. At kickoff, circulate hole clean and trip out for directional tools. If hole conditions dictate, be prepared to return to bottom to condition prior to running directional tools.

INTERVAL: 2,100' – 3,130' MD – Build Section

- Pick up 8 ¾" insert bit, bent housing motor (1.8 – 2.12 deg bend), float sub, MWD with gamma ray, monels, 900' drill pipe, 12 drill collars, jars, 3 drill collars, and remainder of drill pipe. Trip in hole taking directional surveys at 500' intervals. Determine actual bottom hole location and make well plan adjustments as needed. Initial build rate will be 8 degrees per 100', increasing to 12 degrees following a 100' tangent at 45 degrees, all at a 313.7 deg. azimuth.
- Maintain 300+ gpm and 45-55 viscosity for hole cleaning. Add LCM only as needed. Should it be necessary to carry LCM through the curve, determine in advance with directional personnel the preferred blend of LCM best suited for optimum tool performance. Difficulty sliding is often related to hole cleaning. Monitor solids at the shaker in an attempt to determine if cuttings removal is efficient for current P-rates. Hi-vis and/or lo-vis sweeps and short trips should help in hole cleaning. Additions of soltex, powdered graphite, and various 'lubricants in a drum' are often required to improve sliding performance.

INTERVAL: 2,100' – 3,130' MD – Build Section

(continued)

- Casing point target is at 3130' MD, 2815' TVD at angle of 89.96 degrees. Condition hole for casing. In the event of excessively tight hole conditions trip out, lay down directional tools, pick up an under gauge reamer at 30' and ream the curve. Lay down 4 ½" drill pipe and collars. Run 7" 23# J-55 casing with guide shoe and float collar on top of first joint. Calculate cement for 1000' fill, or to kickoff point, plus 40% excess. Circulate minimum one casing volume prior to cementing. Cement with 10 bbl fresh water spacer followed by 185 sx Thick Set, 8 lb/sx gypseal, 8 lb/sx salt, 4% gel, 2% CaCl mixed at 14.8 ppg, 1.68 yield. Displace cement with fresh water.
- Pick up BOP, set slips with 7" in full tension. Install 5 ½" pump liners. Nipple up BOP. Test BOP and casing to 500 psi with rig pumps.

INTERVAL: 3,130' – 4,915' MD – Lateral Section

- Pick up 6 1/8" PDC, 4 3/4" - 1.8+/- slow-speed motor, float sub, MWD with focused gamma ray, 2- flex monels, 1500' 3 1/2" 13.3# S-135 drill pipe, 34 joints 3 1/2" heavy-weight DP, jars, 6 joints HWDP, and remainder of 3 1/2". Drill cement and shoe.
- Drill lateral at 200+ gpm. Monitor solids removal versus P-rate and torque and drag changes for indicators of improper hole cleaning. Trip as necessary for pipe swap to insure HWDP stays in the straight hole. Bit records from wells in Woods County indicate relatively short bit runs in the lateral (50 hours in 8 3/4" hole size) due to *chert* content. Expect 30-40 hour runs in 6 1/8" size under similar conditions with IADC 537 or 547 bits. Evaluate dull bit condition for possible PDC run (especially in the front part of the lateral) or diamond enhanced gauge row protection due to increased *chert* composition.
- At total depth, condition hole for logging. If necessary, trip out, lay down directional tools, and make additional conditioning trip prior to drill pipe conveyed logging operation.
- Following logging operations, trip in hole with bit and drill pipe. Displace hole with clean fluid. Trip out laying down drill pipe. Rig down, release rig.

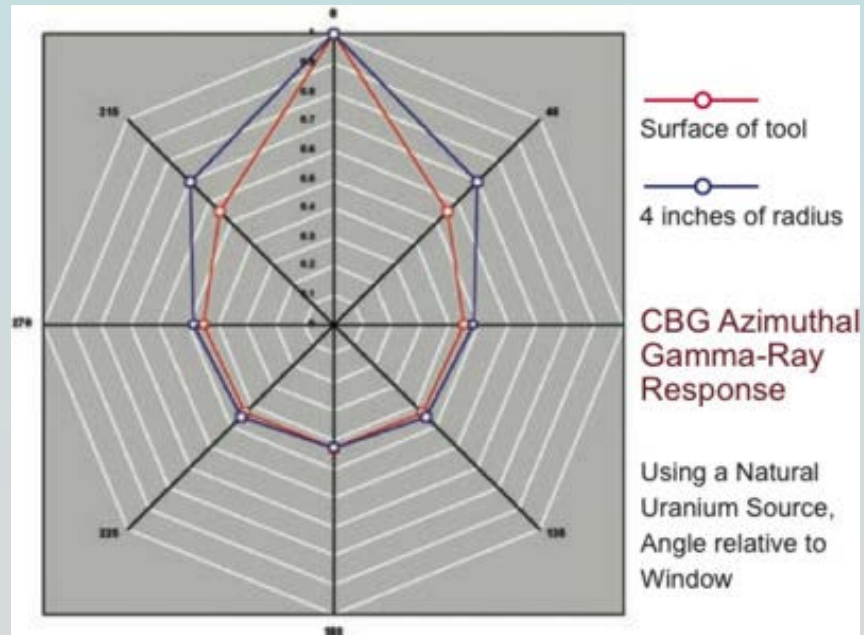
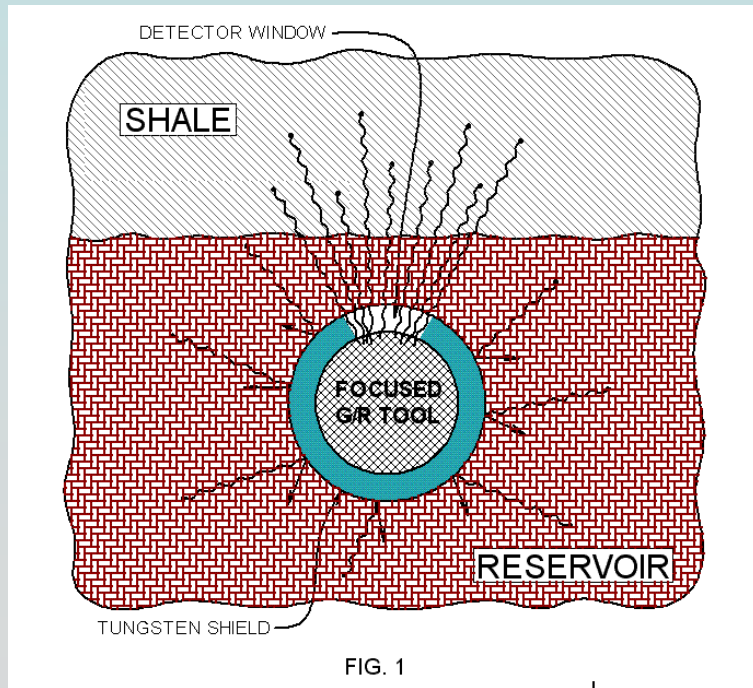
Miscellaneous

- All recommendations (cement, mud, etc) are subject to field adjustments
- All delivery tickets must be priced and signed before AEC will process invoice. Invoices without field signature will be returned to vendor.
- Inventory and report daily fuel usage and deliveries.
- Maintain complete and current rental list.
- Maintain complete drill pipe, drill collar, and casing inventory of all material on location
- Check all casing connections with float equipment, especially the specialty threads, well in advance of running in hole.
- Hold planning meeting with cementer, casing crew, rig pusher, and other critical personnel prior to running the 4 ½" casing.
- Insure safety meetings are held prior to all casing, cementing, and other planned operations. Observe regularly scheduled safety meetings held by the rig personnel. Record all occurrences on daily report. Post emergency phone listing on rig floor, and in pusher and company man trailers.

Azimuthal Gamma Ray ran while drilling to assist geosteering



Focus/azimuthal Gamma (sensor)
-- To avoid shale caprock above reservoir
and shale below reservoir



Operating Principle of Azimuthal Gamma Ray

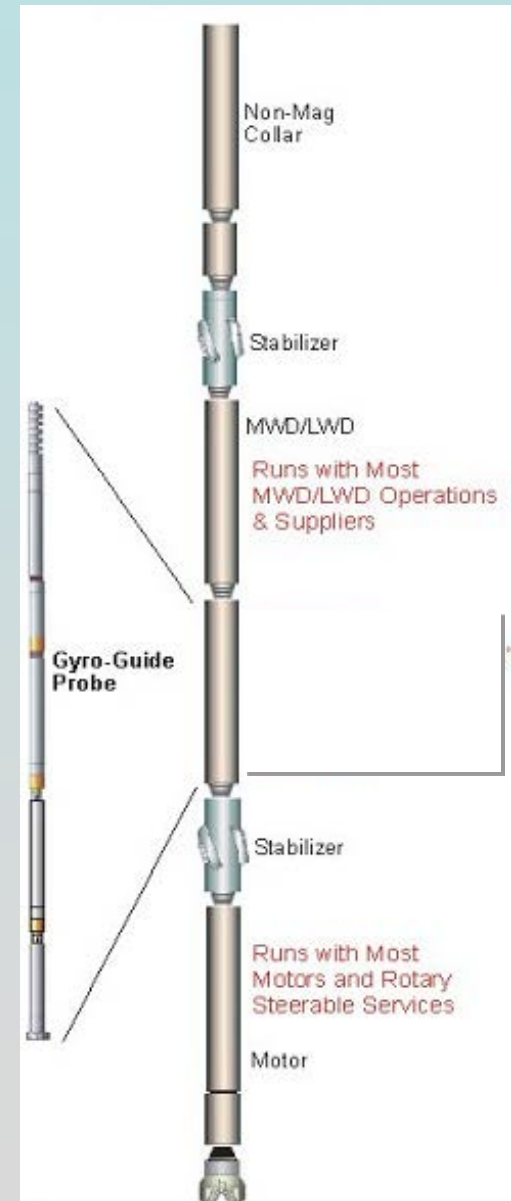
Pan American Focus Gamma Specs	
Application	Geosteering/MWD
Mechanical	
Diameter (O.D.)	1.30"
Length (make up)	13.6"
Weight	3.0 lb.
End Connectors	MDM 15-Pin
Material	Aluminum Alloy/Tungsten
Pressure	NR
Performance	
Sensitivity	0.6 Counts per API
Accuracy	+/- 2% to 300°F. +/- 5% to 350°F.
Maximum API Range (with 5% error)	15000 API
Front/Back Count Ratio	2.4
Angular Resolution (8" hole)	75° / 360°
Thin-Bed Resolution (8" hole diameter, at 50% points)	8.8"
Environmental	
Operating Temperature	-77 to +350 °F
Survival Temperature	400°F.
Max Heat/Cool rate	5°F./Minute
Vibration (3 axis) 50-300 Hz Random spectrum	30 G. RMS
Shock (Z-axis)	500 G., 0.5 mS.
Shock (X or Y-axis)	1000 G., 0.5mS.
Power Requirements	
Input Voltage	17-48 Volts
Input Current	11-8 mA. (constant power)
Maximum Voltage	50 Volts

Shale rocks are typically ten times more radioactive than most reservoir rocks. The driller would like to continue in the reservoir and avoid drilling into the nonproductive shale bed.

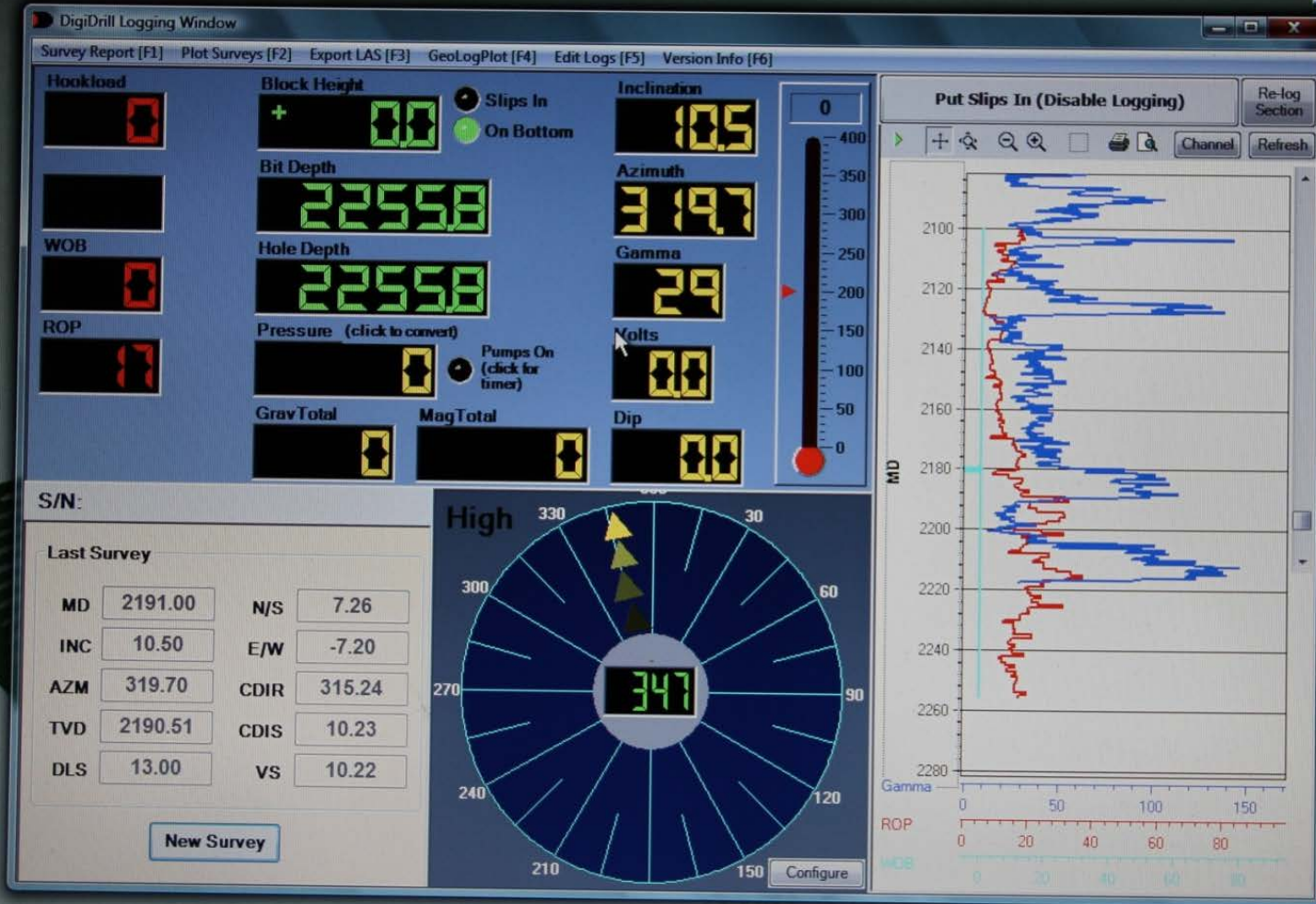
Driller rotates the Probe facing upwards, and records the count-rate from the tool. Gamma-rays coming from the shale layer above the tool easily enter the detector through a window in the tungsten shield. Relatively few gamma-rays typically come from the reservoir rock below.

With the tool window facing down, less counts are recorded because the detector is shielded from the shale rock. In this way, the ratio between “high-side” and “low-side” counts indicates proximity to the shale bed, and the drill-bit can be steered to avoid it.

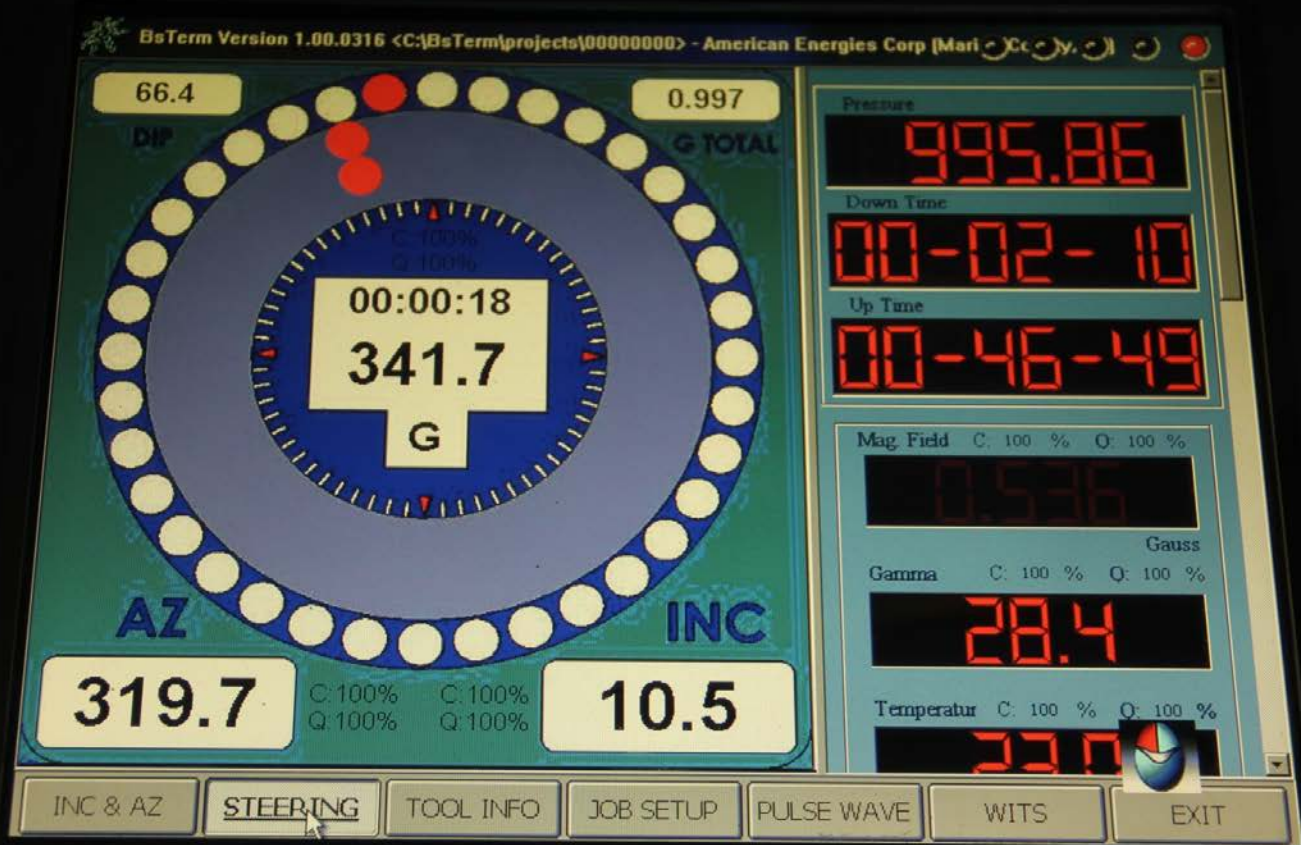
Azimuthal Gamma Ray installed ~30 ft behind the drill bit



Directional drilling with Pason controls – building angle

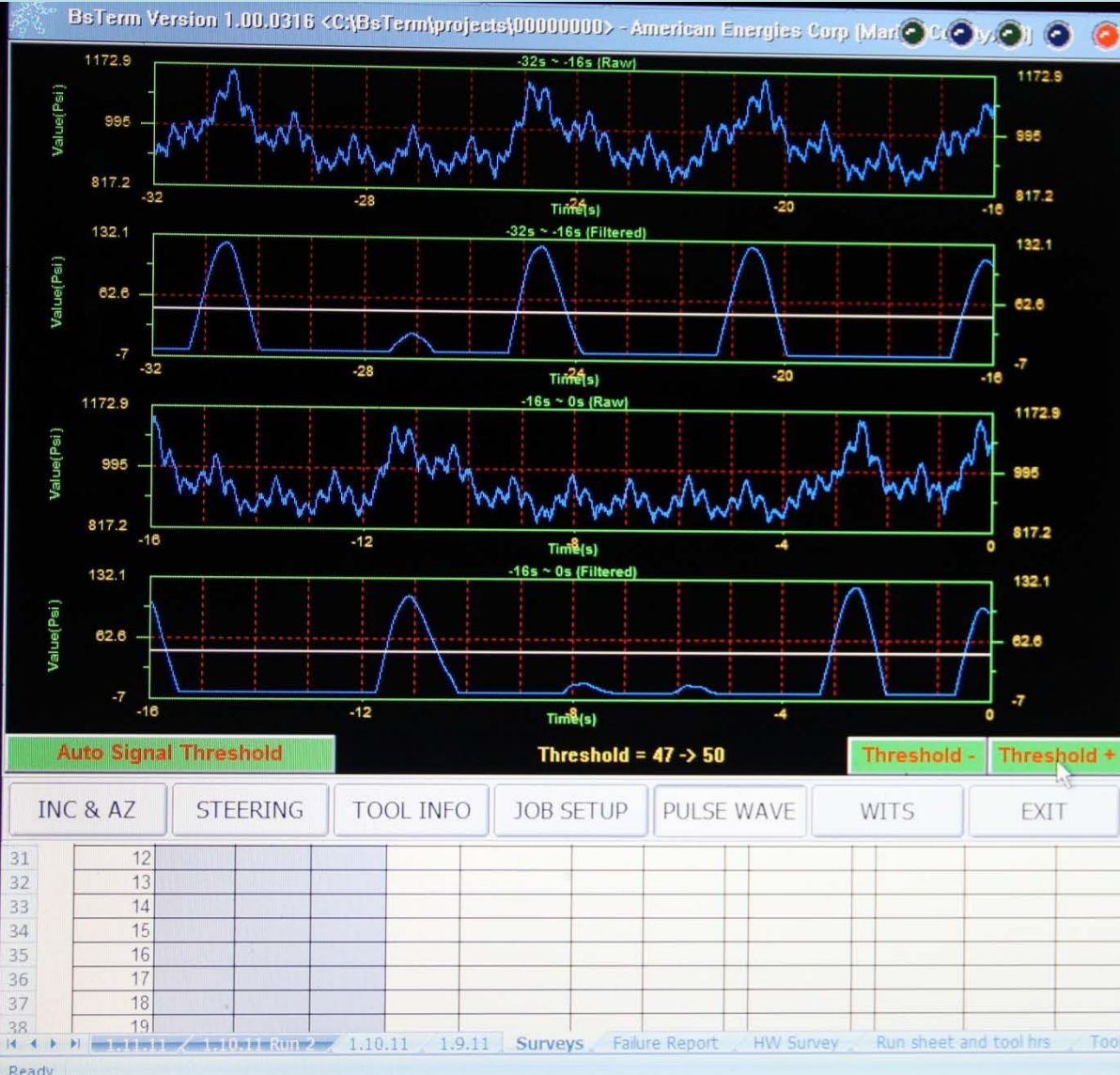


Directional drilling with Pason controls building angle



Directional drilling with Pason controls

-- Monitoring mud pulse wave



Log

Time	Message
01/11/11 17:11:52 225	I1: Data item Gma received, value = 28.0
01/11/11 17:12:10 856	I1: Data item xTfa received, value = 347.2
01/11/11 17:12:28 709	I1: Data item xTfa received, value = 347.2
01/11/11 17:12:54 075	I1: Data item Gma received, value = 29.6
01/11/11 17:13:12 325	I1: Data item xTfa received, value = 338.8
01/11/11 17:13:30 172	I1: Data item xTfa received, value = 343.1
01/11/11 17:13:56 320	I1: Data item Gma received, value = 32.4
01/11/11 17:14:14 175	I1: Data item xTfa received, value = 348.7
01/11/11 17:14:32 811	I1: Data item xTfa received, value = 348.7
01/11/11 17:14:58 172	I1: Data item Gma received, value = 27.6
01/11/11 17:15:16 016	I1: Data item xTfa received, value = 347.2
01/11/11 17:15:34 279	I1: Data item xTfa received, value = 347.2
01/11/11 17:16:00 023	I1: Data item Gma received, value = 28.8
01/11/11 17:16:18 868	I1: Data item xTfa received, value = 347.2
01/11/11 17:16:36 128	I1: Data item xTfa received, value = 345.8
01/11/11 17:17:02 278	I1: Data item Gma received, value = 28.8
01/11/11 17:17:20 124	I1: Data item xTfa received, value = 345.8
01/11/11 17:17:38 978	I1: Data item xTfa received, value = 345.8
01/11/11 17:18:04 130	I1: Data item Gma received, value = 27.6
01/11/11 17:18:22 975	I1: Data item xTfa received, value = 347.2
01/11/11 17:18:40 227	I1: Data item xTfa received, value = 347.2
01/11/11 17:19:06 981	I1: Data item Gma received, value = 21.6
01/11/11 17:19:24 826	I1: Data item xTfa received, value = 344.5
01/11/11 17:19:42 078	I1: Data item xTfa received, value = 345.8
01/11/11 17:20:08 831	I1: Data item Gma received, value = 20.8
01/11/11 17:20:26 889	I1: Data item xTfa received, value = 347.2
01/11/11 17:20:44 130	I1: Data item xTfa received, value = 345.8
01/11/11 17:21:10 087	I1: Data item Gma received, value = 14.0
01/11/11 17:21:28 730	I1: Data item xTfa received, value = 347.2
01/11/11 17:21:46 990	I1: Data item xTfa received, value = 347.2
01/11/11 17:22:12 344	I1: Data item Gma received, value = 10.4
01/11/11 17:22:30 996	I1: Data item Temp received, value = 22.0
01/11/11 17:22:48 246	I1: Data item xTfa received, value = 347.2
01/11/11 17:23:06 093	I1: Data item xTfa received, value = 345.8
01/11/11 17:23:32 050	I1: Data item Gma received, value = 6.8
01/11/11 17:23:50 887	I1: Data item xTfa received, value = 347.2
01/11/11 17:24:08 731	I1: Data item xTfa received, value = 345.8
01/11/11 17:24:34 096	I1: Data item Gma received, value = 7.2

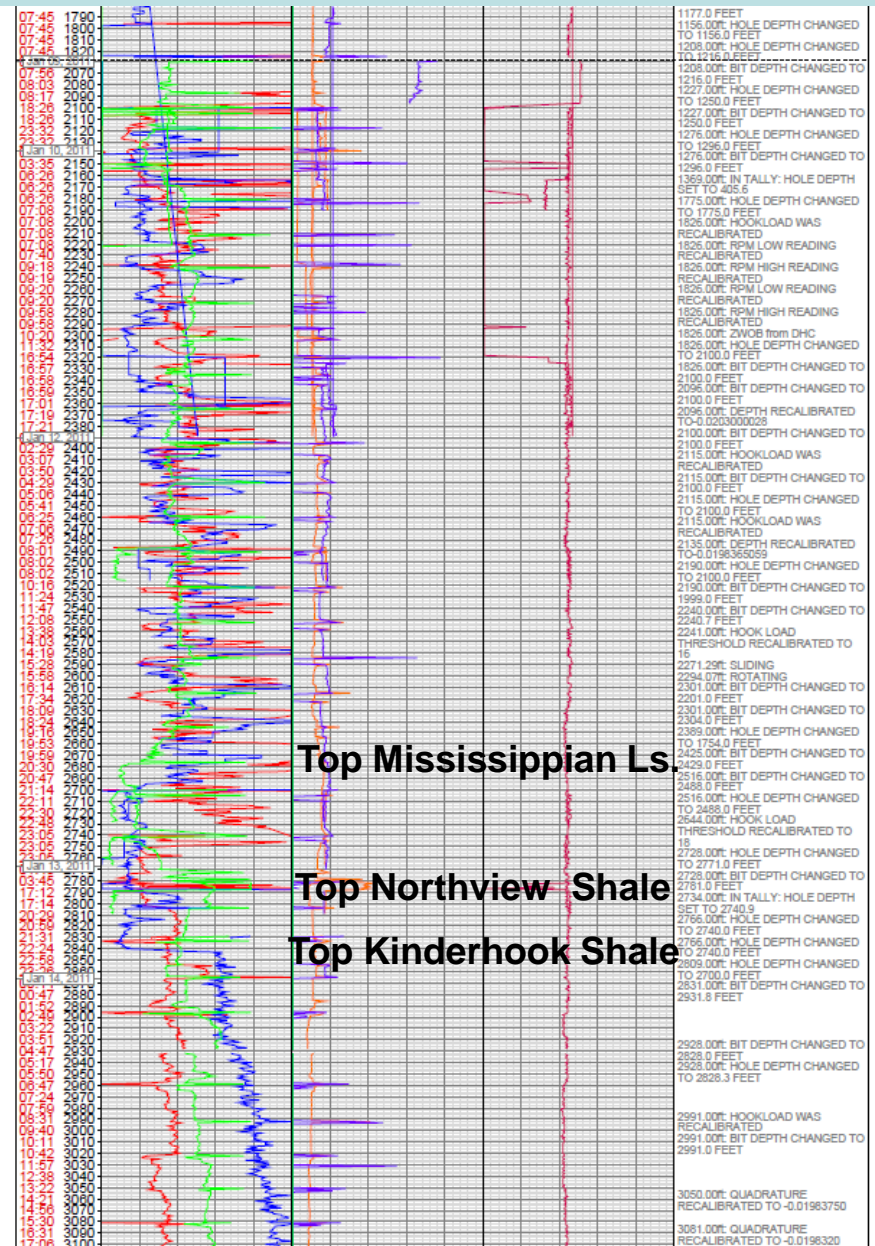
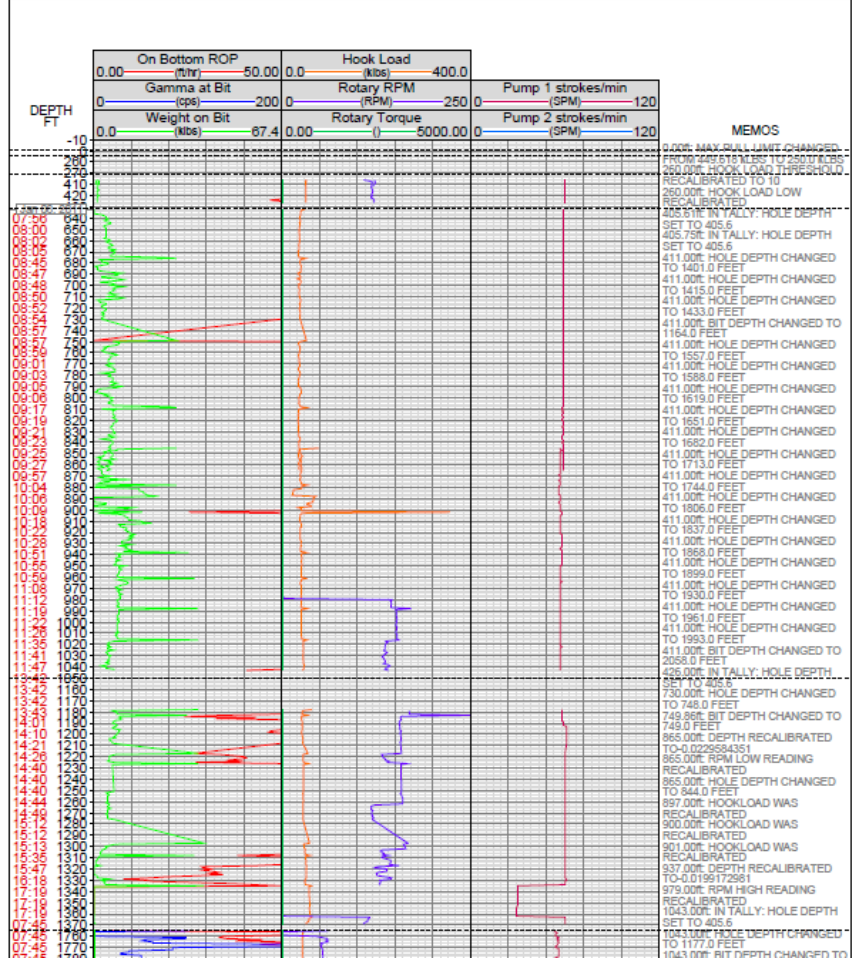
Save Log ... Clear Log Exit

Directional drilling with Pason controls

DataHub EDR Log

Mon Jan 17, 2011 15:13:06
Well Dossier 2705246
Lynn Watney

OPERATOR: American Energies Corporation	CONTRACTOR: C&G Drilling Company, Inc.
WELL: Rood Slocombe 1-19	UNIQUE WELL ID:
FIELD:	SPUD DATE: Jan 07, 2011 10:00
LOCATION: SEC 19-T21S-R3E	RELEASE DATE:
COUNTRY: USA	
RIG: C&G Drig 2	



Top Mississippian Ls.

Top Northview Shale

Top Kinderhook Shale

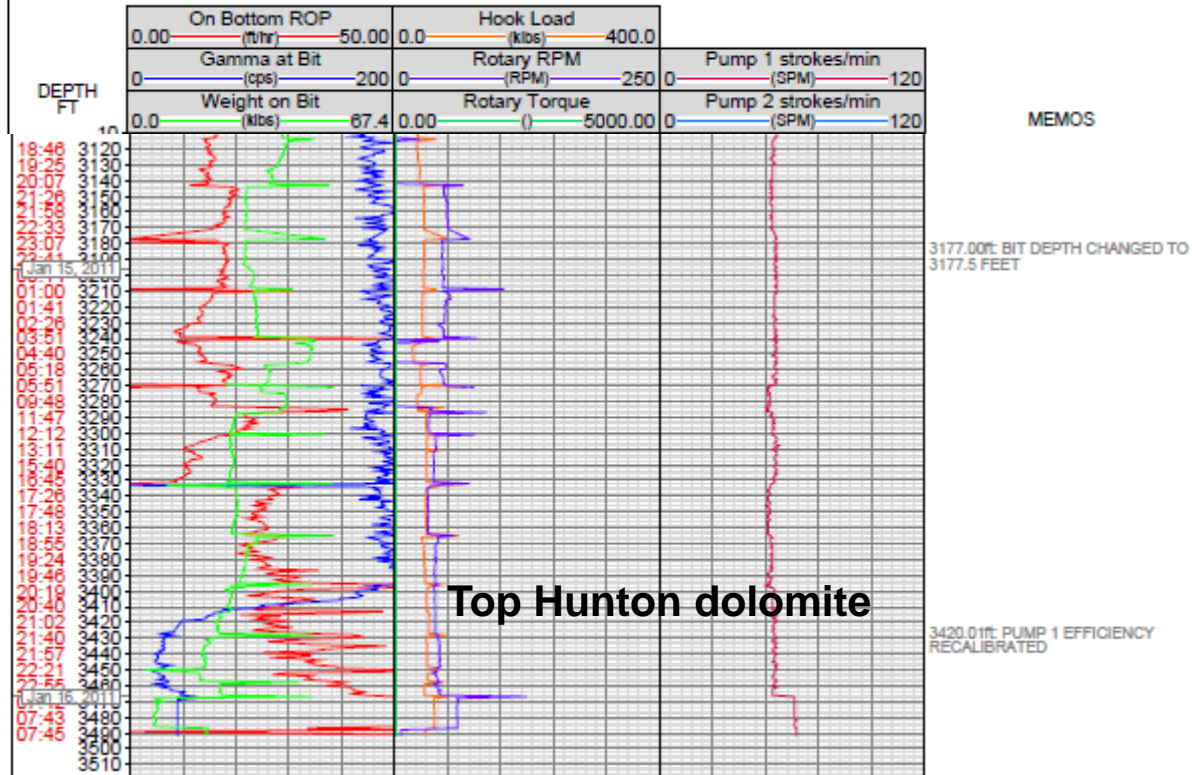
Directional drilling with Pason controls

DataHub EDR Log

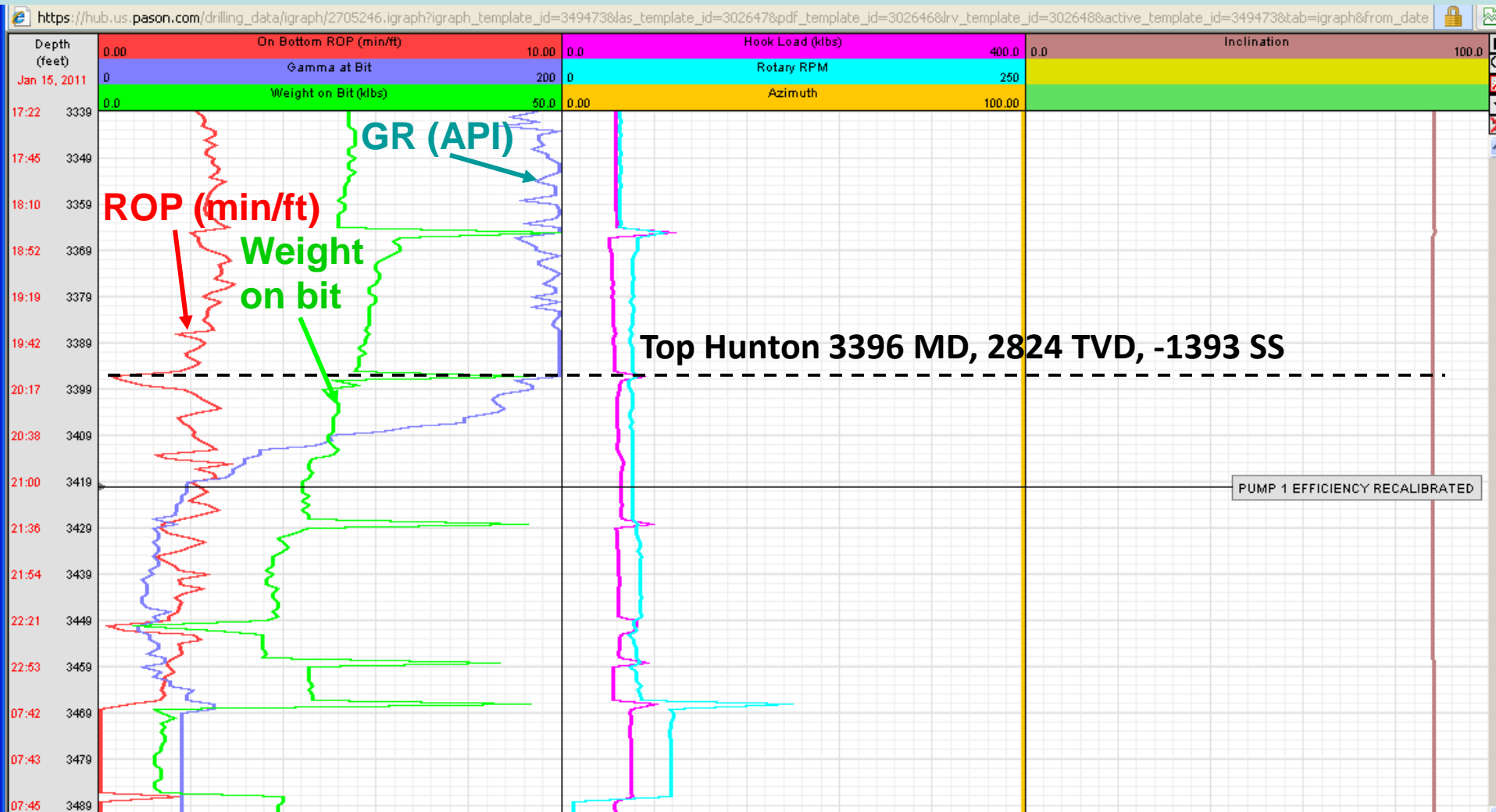
Mon Jan 17, 2011 15:13:06
Well Dossier 2705246
Lynn Watney

OPERATOR: American Energies Corporation
WELL: Rood Slocombe 1-19
FIELD:
LOCATION: SEC 19-T21S-R3E
COUNTRY: USA
RIG: C&G Drig 2

CONTRACTOR: C&G Drilling Company, Inc.
UNIQUE WELL ID:
SPUD DATE: Jan 07, 2011 10:00
RELEASE DATE:

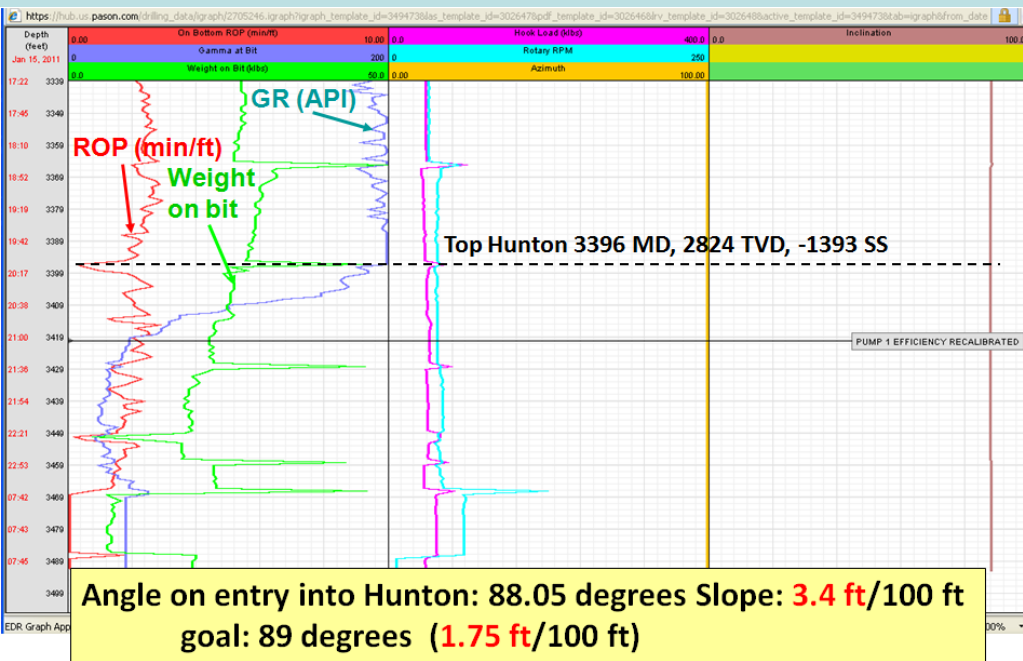


Pason's Real Time Drilling Data Soft Landing in the Hunton Dolomite on 1-17-11



**Angle on entry into Hunton: 88.05 degrees Slope: 3.4 ft/100 ft
goal: 89 degrees (1.75 ft/100 ft) so as not to overshoot**

LAS output for use in mapping software to facilitate geosteering



DEPTH GR	TVD	VS	ROP	
3439.85	18.3	2824.66	952.44	32.27
3440.85	20.87	2824.67	953.43	34.12
3441.85	17.9	2824.68	954.42	32.37
3442.85	19.7	2824.69	955.41	28.56
3443.85	21.95	2824.7	956.41	34.03
3444.85	26.85	2824.71	957.4	35.31
3445.85	22.81	2824.72	958.39	33.7
3446.85	27.48	2824.73	959.38	34.6
3447.85	24.8	2824.74	960.37	35.92
3448.85	29.3	2824.75	961.37	39.05
3449.85	27.65	2824.76	962.36	36.51
3450.85	28.39	2824.77	963.35	39.87
3451.85	22.71	2824.78	964.34	38.1
3452.85	21.92	2824.79	965.33	28.77
3453.85	24.57	2824.8	966.32	28.55
3454.85	37.73	2824.81	967.32	34.26
3455.85	32.02	2824.82	968.31	33.45
3456.85	29.87	2824.84	969.3	33.89
3457.85	37.56	2824.85	970.29	39.14
3458.85	40.04	2824.86	971.28	40.56
3459.85	31.11	2824.87	972.28	38.61
3460.85	32.71	2824.88	973.27	39
3461.85	29.48	2824.89	974.26	41.54
3462.85	26.46	2824.9	975.25	42.09
3463.85	24.21	2824.91	976.24	43.11
3464.85	30.15	2824.92	977.24	43.64
3465.85	32.28	2824.93	978.23	43.33
3466.85	26.02	2824.94	979.22	
3467.85	23.86	2824.95	980.21	
3468.85	19.81	2824.96	981.2	
3469.85	12.77	2824.97	982.19	
3470.85	12.23	2824.98	983.19	
3471.85	13	2824.99	984.18	
3472.85	10.53	2825	985.17	
3473.85	14.16	2825.01	986.16	
3474.85	20.83	2825.02	987.15	
3475.85	19.35	2825.03	988.15	
3476.85	14.33	2825.04	989.14	
3477.85	15.56	2825.06	990.13	52.82
3478.85	18.24	2825.07	991.12	30.7
3479.85	30.27	2825.08	992.11	12.7
3480.85	42.22	2825.09	993.11	19.83

Geologist Doug Davis hard at work running samples



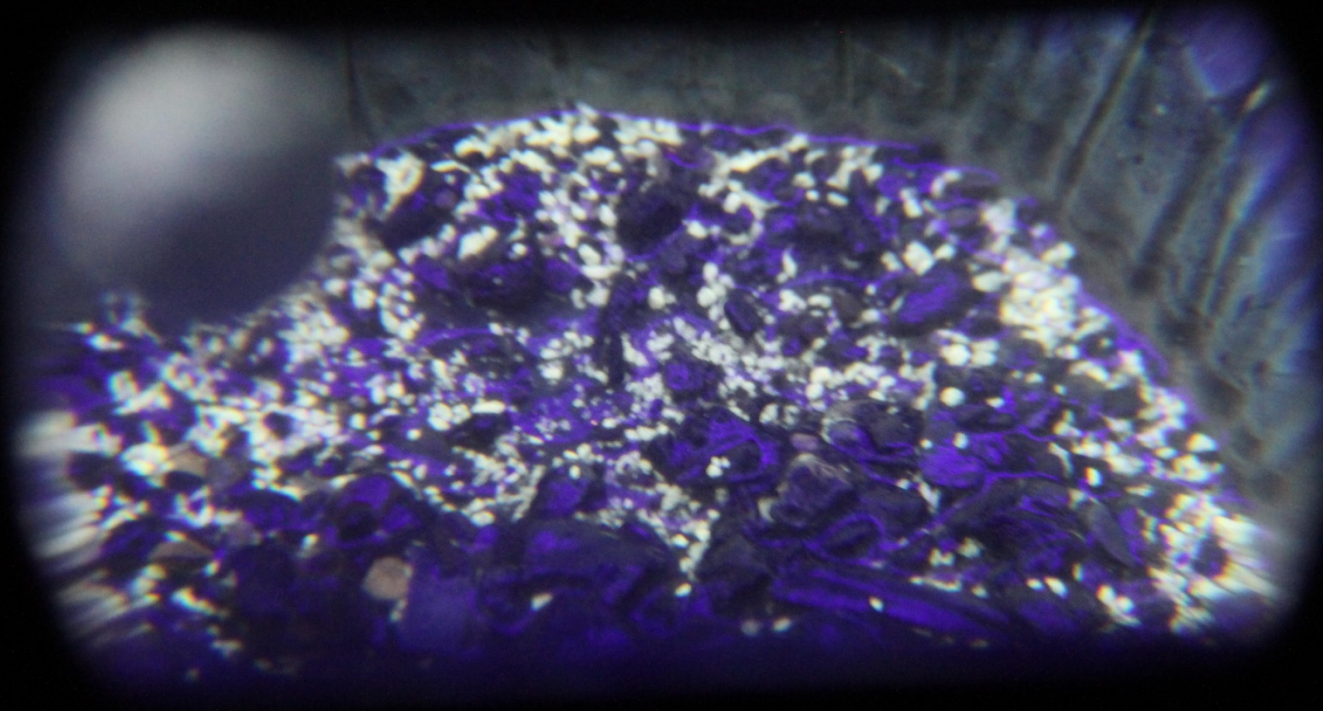
Samples on Deck



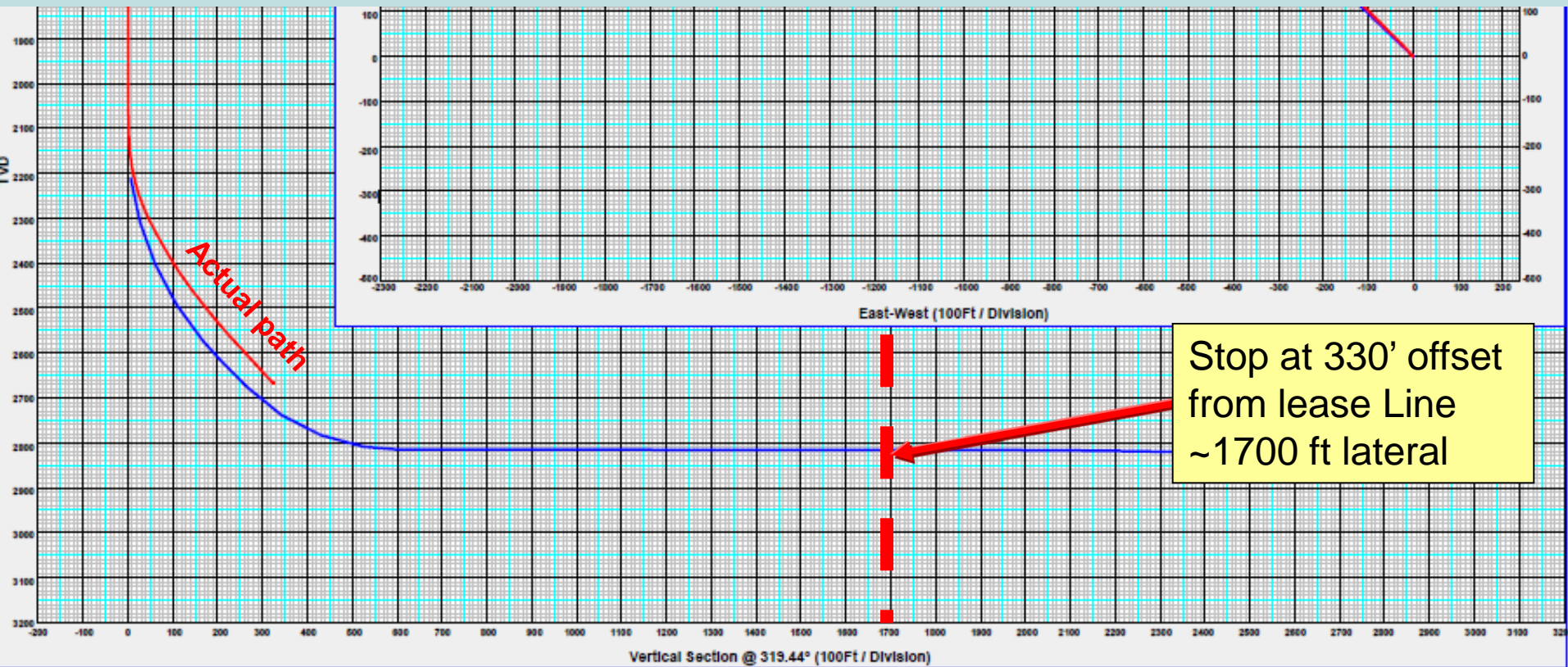
Strong show in Hunton - sucrosic, fine intercrystalline \emptyset dolomite with light brown spotty stain, free oil, fluorescence, cut, odor



**Strong show in Hunton
including fluorescence
under ultraviolet light**



Stop drilling at 330 ft offset from lease line, ~1700 ft



Turn made in 600 ft.

American Energies Corp.

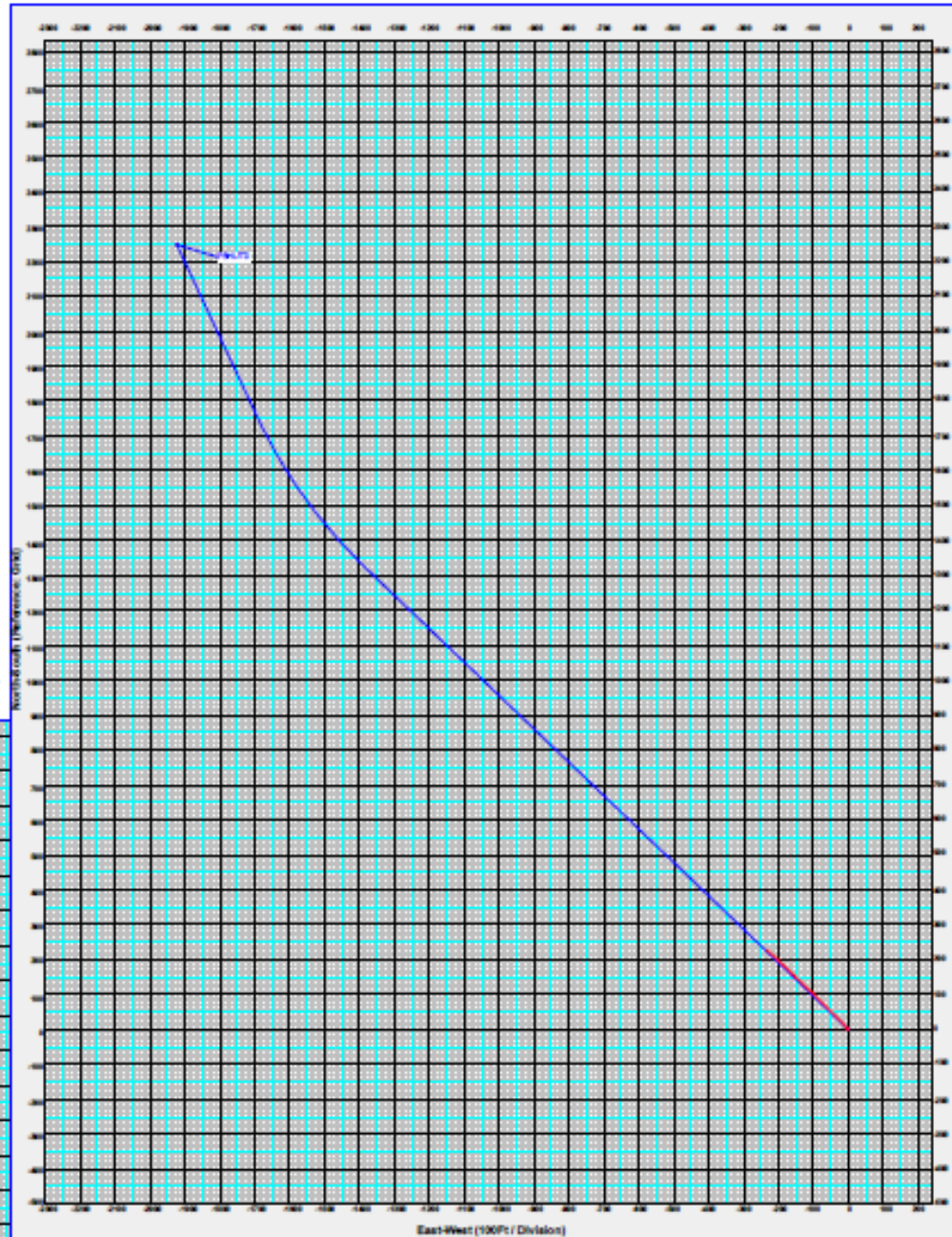
Slocombe Road # 1-19

Marion, Kansas

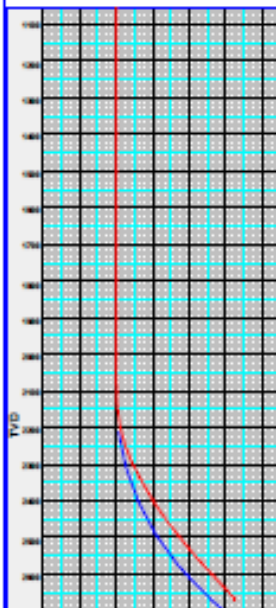
OK11002

January 12, 2011


Plan View



Section View



100ft scale

CEMENTING INFORMATION		No.
No. Sacks	Lead 125 Sks,Tail 100	251
Type	Poz-Mix,Thickset	252
Additives	6% Gel,1/4% CIL-115	253
Fluid Loss	5# Kal-Seal/Sk,1/4% Caf-38	254
Circ before cmtg.	60 min.	255
PUMP PRESSURES:		256
Circulating	350 #	257
Displacing	900 #	258
When plug hit	1400 #	259
Maximum	1400 #	260
Displacin pump	135 BBL	261
Mix & pump time	min.	262
Pipe rotated	NO	263
Pipe Reciprocated	NO	264
Pipe worked during	NO	265
and/or after cementing	NO	266
No. plugs used	1	267
Returns	Full	268
Cement top	1700	269
Shoe	3470 	270
Collar	3425	271
String Wt.	70k	272
Wgt. on hanger	70k	273
SCRATCHERS: Type		274

From	to	275	
Spacing	No.	276	
Jts.left over(inc. landing Jt. or cut off):		277	
No Jts	13 Footage	404	278
Wgt	23 Grade	J-55	279
Cplg	STC	280	
No. Jts Ran	78	281	
Set at	3470	282	
Date & time plug reached bottom:		283	
		284	
		285	
REMARKS:		286	
Bumped Plug @ 22:30,01/16/2011		287	
		288	
Shoe=1.0		289	
1 Jt 7"=45.20		290	
Float=.76		291	
77 Jts 7"=3433.15		292	
Total=3480.11		293	
		294	
Csg Set At 3470'		295	
		296	
1 Centlizer At #3 Jt,One On Jt #38		297	
		298	
		299	
		300	
CLINT KIRK		Total	
COMPANY REPRESENTATIVE			





Day 10 – 1/16/12

Intercept top Hutton Dolomite – “soft landing”

Rig Phone No.: 580-821-4412	MORNING REPORT	DATE: 1/16/2011
To Menu		

OPERATOR: American Energies Corp	LEASE & WELL: Rood-Slocomb #1-19
PROSPECT: 0	COUNTY: Marion STATE: Kansas
RIG: C & G Drilling #2	SPUD DATE: 1/6/2011 DFS: 10 OPER. @ RPT. TIME: T.I.H. F/Reamer Run
DEPTH: 3470	FTG. LAST 24 Hr.s: 199 Ft. AVG. Ft/Hr. 24.9
	REPORT BY: Clint Kirk

Repair Formulas	ACTIVITY LAST 24 HOURS	DESCRIPTIVE HOURLY BREAKDOWN
------------------------	-------------------------------	-------------------------------------

HOURS	DESCRIPTION	ACTIVITY	HOURS	ACC. HR.S
3.0	Circulate Samples 	1.) RU- TD		10.0
0.8	Slide F/ 3271-3283,	2.) DRILLING	8.0	115.0
0.3	Rotary Drlg F/ 3283-3286	3.) REAMING		11.5
1.5	Circulate Samples, Looking F/ Hutton 	4.) CORING		0.0
1.5	Rotary Drlg F/ 3286-3310	5.) CIRC.	7.0	18.0
1.5	Circulate Samples 	6.) TRIP	5.5	18.5
3.5	Rotary Drlg F/3310-3364	7.) SERVICE		5.0
1.0	MWD Surveys	8.) REPAIR		18.5
2.0	Rotary Drlg F/ 3364-3470 (TD On Curve)	9.) CUT DL		0.0
2.5	MWD Surveys	10.) SURVEY	3.5	19.0
1.0	Circulate Samples, Hutton Found 	11.) LOGGING		0.0
4.0	COOH, L/D Directional Tools, SLM Out, .5 Diff In Strap	12.) CSG & CMT		2.0
1.5	P/U Bit Sub, Reamer 30' Up T.I.H.	13.) WOC		10.0
		14.) NU & TEST		0.0
		15.) INSP. BHA		0.0
	Safety Meeting: Tripping Pipe	16.) DST		0.0
		17.) PLUGBACK		0.0
		18.) LOST CIRC.		0.0
		19.) FISHING		11.5
		20.) DIR. WORK		0.0
		21.) drill cement		1.0
		Total Hours =	24.0	240.0

MUD			
WT. IN	9.4	PH	10
WT. OUT		Pf / Mf	.45
VISC.	47	CHLOR.	1800
PV	20	CA	40
YP	10	LCM	1
GELS	8/18	LIME	
FL.	5.6	OWR	
CAKE 32nds	1	ES	
% SOLIDS	7.7		
% WATER	84.3		
% OIL	8		
% SAND	Trc		

PUMPS			
	NO. 1	NO. 2	
SIZE	6.3	14.0	
TYPE	C-EMSCO		
SPM	53		
BPS	0.1698		
PSI	900		
GPM	281.0	0.0	
AVDC			
AVDP			
STKS. SUR TO BIT			
STKS. BIT TO SUR.			
REDUCED PUMP RATE			

BIT RECORD								New Bit			
	BIT NO.	3				BIT NO.	4				
SERIAL NO.	5188067				5186048						
MFG / TYPE	HTC/GXP				HTC/GDX20DX						
SIZE	8 3/4				8 3/4						
JETS	3-24's				3-24's						
IN / OUT	2100/2781				2781/3470						
WOB	8-32				20-34						
RPM	109				40-109						
FEET	681				689						
HOURS	42				37						
DULL	2	2	FC	G							
GRADE	E	1/16	NO	PR							

DEVIATION RECORD Add Survey

DEPTH	INCL.	AZIMUTH	TVD	SEC.	N/S	E/W
3188	87.00	313.00	2816	702.4	500.1	-495
3283	88.10	313.00	2819	796.7	564.7	-565
3314	87.8	313.00	2820	827.5	585.8	-588
3346	87.7	312.6	2822	859.3	607.6	-611
3378	87.9	312.5	2823	891.0	629.2	-635

WEIGHT

STRING WT.	P / U	S / O	TORQUE
78	80	76	

DRILL COLLARS

NO.	11	CONN	4 1/2 XH	O.D.	6.24	I.D.	2.25
NO.		CONN		O.D.		I.D.	

DRILL PIPE

NO.		CONN	4 1/2 XH	O.D.	4.50	I.D.	
NO.		CONN		O.D.		I.D.	

New BHA

BHA

Bit, Motor, Float Sub, UBHO Sub, NMDC, Flex NMDC, 42 Jts
 4 1/2 DP, 5 6 1/4 DC's, 1 Drlg Jars, 7 6 1/4 DC's=1796.04
 2.12 motor .292 Rev/Gal



PREV. CUM =	\$248,355	↓	↓	↓	↓	↓
TOTAL DAILY =	\$27,461					
TOTAL CUM =	\$275,816					
DAILY MUD COSTS =	\$3,043.00	ACC. MUD COSTS =	\$14,574.00			



Day 11 – 1/17/12

Set casing in top Hunton

Rig Phone No.: 580-821-4412	<h1 style="margin: 0;">MORNING REPORT</h1>	DATE: 1/17/2011
To Menu		

OPERATOR: American Energies Corp	LEASE & WELL: Rood-Slocomb #1-19
PROSPECT: 0	COUNTY: Marion STATE: Kansas
RIG: C & G Drilling #2	SPUD DATE: 1/6/2011 DFS: 11 OPER. @ RPT. TIME: WOC
DEPTH: 3470	FTG. LAST 24 Hr.s: 0 Ft. AVG. Ft/Hr. 0.0 REPORT BY: Clint Kirk

Repair Formulas	ACTIVITY LAST 24 HOURS	DESCRIPTIVE HOURLY BREAKDOWN
------------------------	-------------------------------	-------------------------------------

HOURS	DESCRIPTION	ACTIVITY	HOURS	ACC. HR.S
3.0	T.I.H.,W/ Reamer, Wash Thru 3 Spots,Easy Washing	1.) RU- TD		10.0
3.0	Circulate & Condition Hole,Pump 10 SkS Beads & Spot,Drop Mud Wt F/ 9.7-9.3	2.) DRILLING		115.0
5.0	C.O.O.H. To 2100', L/D DP & DC's,Brk Kelly,Hold Safety Meeting	3.) REAMING		11.5
3.5	R/u Csg Crew,P/U Shoe,Tack Weld,1 Jt 7",Float Collar,Tack Weld & Tack 3 rd	4.) CORING		0.0
	Jt,Circulate Float Equipment Run 7",Circulate At 2100',Run Total 78 Jts	5.) CIRC.	4.0	22.0
	Set At 3470',String Wt=70 k	6.) TRIP	8.0	26.5
1.0	Circulate Btm Up,Drop Ball	7.) SERVICE		5.0
1.0	Cement Pump 5 BB Fresh H2O,LeadCmt 125 SkS 60/40 Poz Mix Cmt W/ 6%	8.) REPAIR		18.5
	Gel,1/4%CFL-115,1/4%CAF-38 & 2/10 Of 1% CDI-26@ 12.8/Gel Yield 1.53,Tail	9.) CUT DL		0.0
	In W/ 100SkS Thick Set Cement W/5# Kol-Seal/Sk & 1/4% Cil-115@ 13.6/Gel,	10.) SURVEY		19.0
	Yield 1.69,Shut Down,Release Plug,Displace W/ 135 BBL Fresh Water,Pumped	11.) LOGGING		0.0
	At 6 BBL Min,Good Lift Press,Full Returns,Bumped At 1400 Psi,Pumping Rate	12.) CSG & CMT	4.5	6.5
	900 Psi,Bumped Plug at 22:30 CST,01/16/11	13.) WOC	7.5	17.5
7.5	WOC, Set slips On 7" Full Tention 70 K, L/D 4 1/2 Equipment F/ Floor & Kelly,	14.) NU & TEST		0.0
	P/U 3 1/2 Equipment On Floor,P/U 3 1/2	15.) INSP. BHA		0.0
		16.) DST		0.0
	Safety Meeting: Laying Down Drill Pipe,& Picking Up Drill Pipe	17.) PLUGBACK		0.0
		18.) LOST CIRC.		0.0
		19.) FISHING		11.5
		20.) DIR. WORK		0.0
		21.) drill cement		1.0
Total Hours =			24.0	264.0

MUD				PUMPS				BIT RECORD New Bit									
WT. IN	9.7	PH	9.5		NO. 1		NO. 2			BIT NO. 3				BIT NO. 4			
WT. OUT		Pf / Mf	9.5	SIZE	6.3	14.0			SERIAL NO.	5188067				5186048			
VISC.	50	CHLOR.	2000	TYPE	C-EMSCO				MFG / TYPE	HTC/GXP				HTC/GDX20DX			
PV	23	CA	40	SPM	52				SIZE	8 3/4				8 3/4			
YP	12	LCM	Trc	BPS	0.1698				JETS	3-24's				3-24's			
GELS	9/25	LIME		PSI	900				IN / OUT	2100/2781				2781/3470			
FL.	6.4	OWR		GPM	275.7		0.0	WOB	8-32				20-34				
CAKE 32nds	1	ES		AVDC					RPM	109				40-109			
% SOLIDS	9.8			AVDP					FEET	681				689			
% WATER	85.2			STKS. SUR TO BIT					HOURS	42				37			
% OIL	5			STKS. BIT TO SUR.					DULL	2	2	FC	G	2	2	FC	G
% SAND	Trc			REDUCED PUMP RATE					GRADE	E	1/16	NO	PR	E	1/16	NO	TD

DEVIATION RECORD Add Survey

DEPTH	INCL.	AZIMUTH	TVD	SEC.	N/S	EW
3188	87.00	313.00	2816	702.4	500.1	-495
3283	88.10	313.00	2819	796.7	564.7	-565
3314	87.8	313.00	2820	827.5	585.8	-588
3346	87.7	312.6	2822	859.3	607.6	-611
3378	87.9	312.5	2823	891.0	629.2	-635

WEIGHT

STRING WT.	P / U	S / O	TORQUE
70			

DRILL COLLARS

NO.	CONN	O.D.	I.D.
11	4 1/2 XH	6.24	2.25

DRILL PIPE

NO.	CONN	O.D.	I.D.
	4 1/2 XH	4.50	

PREV. CUM =	\$275,816	↓	↓	↓	↓	↓
	TOTAL DAILY =	\$87,947	↓	↓	↓	
		TOTAL CUM =	\$363,763			
DAILY MUD COSTS =	\$730.00	ACC. MUD COSTS =	\$15,304.00			






Day 12 – 1/18/12

Work on pump and rig up directional tools

Rig Phone No.: 580-821-4412	MORNING REPORT	DATE: 1/18/2011
To Menu		

OPERATOR: American Energies Corp	LEASE & WELL: Rood-Slocomb #1-19
PROSPECT: 0	COUNTY: Marion STATE: Kansas
RIG: C & G Drilling #2	SPUD DATE: 1/6/2011 DFS: 12 OPER. @ RPT. TIME: Condition Mud
DEPTH: 3470	FTG. LAST 24 Hr.s: 0 Ft. AVG. Ft/Hr. 0.0 REPORT BY: Clint Kirk

Repair Formulas	ACTIVITY LAST 24 HOURS	DESCRIPTIVE HOURLY BREAKDOWN
------------------------	-------------------------------	-------------------------------------

HOURS	DESCRIPTION	ACTIVITY	HOURS	ACC. HR.S
4.5	WOC,P/U 3 1/2 	1.) RU- TD		10.0
3.0	P/U DP,Work On Pump 	2.) DRILLING		115.0
2.0	Work On Pump,Set In Rig Up,Test,Fill Pipe At 3000'	3.) REAMING		11.5
1.5	P/U 3 1/2 DP	4.) CORING		0.0
3.5	Tag Cmt at 3420,Drlg Cmt,Float Collar At 3425,Drlg Cmt,Shoe At 3470,Drlg To 3476	5.) CIRC.	2.5	24.5
		6.) TRIP	9.0	35.5
1.0	Circulate Up Cmt	7.) SERVICE		5.0
1.5	T.O.O.H./F Directional,L/D Bit Sub	8.) REPAIR	2.0	20.5
2.5	P/U Directional Tools,Test MWD	9.) CUT DL		0.0
3.0	T.I.H. W/ Directional Equipment 	10.) SURVEY		19.0
1.5	Condition Mud,At 3440'	11.) LOGGING		0.0
		12.) CSG & CMT		6.5
		13.) WOC 	4.5	22.0
	Safety Meeting: Mouse Hole Connections	14.) NU & TEST		0.0
		15.) INSP. BHA		0.0
		16.) DST		0.0
		17.) PLUGBACK		0.0
		18.) LOST CIRC.		0.0
		19.) FISHING		11.5
		20.) DIR. WORK 	2.5	2.5
		21.) drill cement	3.5	4.5
		Total Hours =	24.0	288.0

MUD			
WT. IN		PH	
WT. OUT		Pf / Mf	
VISC.		CHLOR.	
PV		CA	
YP		LCM	
GELS		LIME	
FL.		OWR	
CAKE 32nds		ES	
% SOLIDS			
% WATER	100%		
% OIL			
% SAND			

PUMPS			
	NO. 1	NO. 2	
SIZE	6.3	14.0	
TYPE	C-EMSCO		
SPM	64		
BPS	0.1698		
PSI	816		
GPM	339.3	0.0	
AVDC			
AVDP			
STKS. SUR TO BIT			
STKS. BIT TO SUR.			
REDUCED PUMP RATE			

BIT RECORD								
	BIT NO.	4			BIT NO.	5		
SERIAL NO.	5186048				5180620			
MFG / TYPE	HTC/GDX20DX				HTC/STX-30DX			
SIZE	8 3/4				6 1/8			
JETS	3-24's				3-20's			
IN / OUT	2781/3470				3470/			
WOB	20-34							
RPM	40-109							
FEET	689							
HOURS	37							
DULL	2	2	FC	G				
GRADE	E	1/16	NO	TD				

DEVIATION RECORD Add Survey

DEPTH	INCL.	AZIMUTH	TVD	SEC.	N/S	E/W
3188	87.00	313.00	2816	702.4	500.1	-495
3283	88.10	313.00	2819	796.7	564.7	-565
3314	87.8	313.00	2820	827.5	585.8	-588
3346	87.7	312.6	2822	859.3	607.6	-611
3378	87.9	312.5	2823	891.0	629.2	-635

WEIGHT			
STRING WT.	P / U	S / O	TORQUE

DRILL COLLARS							
NO.	40	CONN	3 1/2 IF	O.D.	4 7/8	I.D.	2.25
NO.		CONN		O.D.		I.D.	

DRILL PIPE							
NO.		CONN	3 1/2IF	O.D.	4 7/8	I.D.	2 9/16
NO.		CONN		O.D.		I.D.	

New BHA		BHA				
Bit, Motor, Float Sub, UBHO Sub, NMDC, Flex NMDC, 58 Jts						
3 1/2 DP, 40 Jts HWDP						

PREV. CUM =	\$363,763	↓	↓	↓	↓	↓
TOTAL DAILY =	\$52,435					
TOTAL CUM =	\$416,198					
DAILY MUD COSTS =	\$2,002.00	ACC. MUD COSTS =	\$17,306.00			

Day 13 – 1/19/12

Drilling out of casing

Rig Phone No.: 580-821-4412 DATE: 1/19/2011

MORNING REPORT

[To Menu](#)

OPERATOR: American Energies Corp LEASE & WELL: Rood-Slocomb #1-19

PROSPECT: 0 COUNTY: Marion STATE: Kansas

RIG: C & G Drilling #2 SPUD DATE: 1/6/2011 DFS: 13 OPER. @ RPT. TIME: Drlg Ahead

DEPTH: 3914 FTG. LAST 24 Hr.s: 444 Ft. AVG. Ft/Hr. 29.6 REPORT BY: Clint Kirk

Repair Formulas	ACTIVITY LAST 24 HOURS	DESCRIPTIVE HOURLY BREAKDOWN
------------------------	-------------------------------	-------------------------------------

HOURS	DESCRIPTION	ACTIVITY	HOURS	ACC. HR.S
2.0	Condition Mud, Build To 50 Vis, 8.9 Wt	1.) RU- TD		10.0
1.0	T.I.H.	2.) DRILLING	15.0	130.0
6.0	Slide Drlg F/ 3470-3488, Rotary Drlg F/ 3488-3545, Slide F/ 3545-3552, Rotary Drlg F/ 3552-3564, Slide F/ 3564-3610, Rotary Drlg F/ 3610-3628, Slide F/ 3628-3635, Rotary F/ 3635-3660, Slide F/ 3660-3670	3.) REAMING		11.5
		4.) CORING		0.0
3.0	MWD Surveys & Gamma	5.) CIRC.	2.0	26.5
		6.) TRIP	1.0	36.5
9.0	Rotary Drlg F/ 3670-3691, Slide F/ 3691-3698, Rotary Drlg F/ 3698-3723, Slide Drlg F/ 3723-3730, Rotary Drlg F/ 3730-3797, Slide F/ 3797-3804, Rotary Drlg F/ 3804-3882, Slide F/ 3882-3889, Rotary Drlg F/ 3882-3914	7.) SERVICE		5.0
		8.) REPAIR		20.5
3.0	MWD Surveys & Gamma	9.) CUT DL		0.0
		10.) SURVEY	6.0	25.0
		11.) LOGGING		0.0
	53 SPM= 214 GPM 5x14=.096 BBL Stk 4.0 GPS	12.) CSG & CMT		6.5
	Mud Wt=9.1 Vis=47	13.) WOC		22.0
	Safety Meeting: Mixing Mud	14.) NU & TEST		0.0
		15.) INSP. BHA		0.0
		16.) DST		0.0
	1 Nut Plug, 1 Cedar Fiber Hr, Sweep Every 190', Or As Needed	17.) PLUGBACK		0.0
		18.) LOST CIRC.		0.0
		19.) FISHING		11.5
		20.) DIR. WORK		2.5
		21.) drill cement		4.5
Total Hours =			24.0	312.0

MUD			
WT. IN	8.9	PH	11
WT. OUT		Pf / Mf	1.45
VISC.	52	CHLOR.	1500
PV	18	CA	60
YP	8	LCM	1
GELS	9/22	LIME	
FL.	7.6	OWR	
CAKE 32nds	1	ES	
% SOLIDS	4.1		
% WATER	91.9		
% OIL	4		
% SAND	trc		

PUMPS				
	NO. 1		NO. 2	
SIZE	6.3	14.0		
TYPE	C-EMSCO			
SPM	53			
BPS	0.1698			
PSI	1430			
GPM	281.0		0.0	
AVDC				
AVDP				
STKS. SUR TO BIT				
STKS. BIT TO SUR.				
REDUCED PUMP RATE				

BIT RECORD								
	BIT NO. 4				BIT NO. 5			
SERIAL NO.	5186048				5180620			
MFG / TYPE	HTC/GDX20DX				HTC/STX-30DX			
SIZE	8 3/4				6 1/8			
JETS	3-24's				3-20's			
IN / OUT	2781/3470				3470/3914			
WOB	20-34				20-24			
RPM	40-109				110-45			
FEET	689				444			
HOURS	37				15			
DULL	2	2	FC	G				
GRADE	E	1/16	NO	TD				

DEVIATION RECORD Add Survey

DEPTH	INCL.	AZIMUTH	TVD	SEC.	N/S	E/W
3704	91.10	303.3	2820	1212	838.3	-884
3736	89.50	302.5	2820	1242	855.7	-911
3768	89.40	302.70	2820	1273	872.9	-938
3799	90.80	302.80	2820	1303	889.7	-964
3831	91.70	303.30	2820	1333	907.1	-991

WEIGHT

STRING WT.	P / U	S / O	TORQUE
51	58	42	

DRILL COLLARS

NO.	CONN	O.D.	I.D.
40	3 1/2 IF	4 7/8	2.25

DRILL PIPE

NO.	CONN	O.D.	I.D.
	3 1/2 IF	4 7/8	2 9/16

New BHA BHA

Bit, Motor, Float Sub, UBHO Sub, NMDC, Flex NMDC, 58 Jts
3 1/2 DP, 40 Jts HWDP

PREV. CUM =	\$416,198	↓	↓		
	TOTAL DAILY =	\$28,588	↓	↓	↓
	TOTAL CUM =	\$444,786			
DAILY MUD COSTS =	\$1,382.00	ACC. MUD COSTS =	\$18,688.00		

Day 14 – 1/20/12

Making hole

Rig Phone No.: 580-821-4412	<h1 style="margin: 0;">MORNING REPORT</h1>	DATE: 1/20/2011
To Menu		

OPERATOR: American Energies Corp	LEASE & WELL: Rood-Slocomb #1-19
PROSPECT: 0	COUNTY: Marion STATE: Kansas
RIG: C & G Drilling #2	SPUD DATE: 1/6/2011 DFS: 14 OPER. @ RPT. TIME: Drlg Ahead
DEPTH: 4296	FTG. LAST 24 Hr.s: 382 Ft. AVG. Ft/Hr. 23.2 REPORT BY: Clint Kirk

Repair Formulas	ACTIVITY LAST 24 HOURS	DESCRIPTIVE HOURLY BREAKDOWN
------------------------	-------------------------------	-------------------------------------

HOURS	DESCRIPTION	ACTIVITY	HOURS	ACC. HR.S
2.0	Rotary Drlg F/ 3914-3934,Slide F/ 3934-3938,Rotary Drlg F/ 3938-3946	1.) RU- TD		10.0
	Slide F/ 3946-3952,Rotary Drlg F/ 3952-3977	2.) DRILLING	16.5	146.5
1.0	MWD Surveys & Gamma	3.) REAMING		11.5
1.0	Wiper Trip To Csg	4.) CORING		0.0
10.5	Slide F/3977-3987,Rotary Drlg F/ 3987-4051,Slide F/ 4051-4061,Rotary Drlg F/ 4061-4105,Slide Drlg F/4105-4111,Rotary Drlg F/4111-4136	5.) CIRC.		26.5
		6.) TRIP	1.0	37.5
2.5	MWD Surveys & Gamma	7.) SERVICE		5.0
1.0	Change Glan Packing On Mud Pump,Rotate & Work Pipe	8.) REPAIR	1.0	21.5
4.0	Rotary Drlg F/ 4136-4168,Slide Drlg F/ 4168-4173,Rotary Drlg F/ 4173-4232, Slide Drlg F/4232-4239,Rotary Drlg F/ 4239-4296	9.) CUT DL		0.0
		10.) SURVEY	5.5	30.5
2.0	MWD Surveys & Gamma	11.) LOGGING		0.0
		12.) CSG & CMT		6.5
		13.) WOC		22.0
	Safety Meeting:Ice Plugs In Drill Pipe	14.) NU & TEST		0.0
		15.) INSP. BHA		0.0
		16.) DST		0.0
		17.) PLUGBACK		0.0
		18.) LOST CIRC.		0.0
		19.) FISHING		11.5
		20.) DIR. WORK		2.5
		21.) drill cement		4.5
Total Hours =			24.0	336.0

MUD			
WT. IN	9.0	PH	10.5
WT. OUT		Pf / Mf	.90
VISC.	43	CHLOR.	1500
PV	16	CA	40
YP	6	LCM	1
GELS	7/15	LIME	
FL.	7.6	OWR	
CAKE 32nds	1	ES	
% SOLIDS	4.9		
% WATER	91.1		
% OIL	4		
% SAND	Trc		

PUMPS			
	NO. 1	NO. 2	
SIZE	6.3	14.0	
TYPE	C-EMSCO		
SPM	54		
BPS	0.1698		
PSI	1430		
GPM	286.3	0.0	
AVDC			
AVDP			
STKS. SUR TO BIT			
STKS. BIT TO SUR.			
REDUCED PUMP RATE			

BIT RECORD								New Bit			
	BIT NO.	4				BIT NO.	5				
SERIAL NO.	5186048				5180620						
MFG / TYPE	HTC/GDX20DX				HTC/STX-30DX						
SIZE	8 3/4				6 1/8						
JETS	3-24's				3-20's						
IN / OUT	2781/3470				3470/4296						
WOB	20-34				20-24						
RPM	40-109				110-45						
FEET	689				826						
HOURS	37				31.5						
DULL	2	2	FC	G							
GRADE	E	1/16	NO	TD							

DEVIATION RECORD Add Survey

DEPTH	INCL.	AZIMUTH	TVD	SEC.	N/S	E/W
4085	87.40	301.10	2817	1576	1042	-1206
4117	88.80	301.00	2818	1606	1058	-1233
4149	89.80	300.80	2818	1636	1075	-1261
4181	89.20	300.20	2818	1667	1091	-1288
4212	89.80	300.40	2810	1696	1106	-1315

WEIGHT

STRING WT.	P / U	S / O	TORQUE
52	52	38	

DRILL COLLARS

NO.	CONN	3 1/2 IF	O.D.	4 7/8	I.D.	2.25
40	CONN	3 1/2 IF	O.D.	4 7/8	I.D.	2.25
	CONN		O.D.		I.D.	

DRILL PIPE

NO.	CONN	3 1/2 IF	O.D.	4 7/8	I.D.	2 9/16
	CONN	3 1/2 IF	O.D.	4 7/8	I.D.	2 9/16
	CONN		O.D.		I.D.	

New BHA

BHA

Bit, Motor, Float Sub, UBHO Sub, NMDC, Flex NMDC, 58 Jts

3 1/2 DP, 40 Jts HWDP

PREV. CUM =	\$444,786	↓	↓	↓	↓	↓
TOTAL DAILY =	\$31,095					
TOTAL CUM =	\$475,881					
DAILY MUD COSTS =	\$3,358.00	ACC. MUD COSTS =	\$22,046.00			

Day 15 – 1/21/12

Loose circulation & recover

Rig Phone No.: 580-821-4412 DATE: 1/21/2011

MORNING REPORT

[To Menu](#)

OPERATOR: American Energies Corp LEASE & WELL: Rood-Slocomb #1-19

PROSPECT: 0 COUNTY: Marion STATE: Kansas

RIG: C & G Drilling #2 SPUD DATE: 1/6/2011 DFS: 15 OPER. @ RPT. TIME: Drlg Ahead

DEPTH: 4588 FTG. LAST 24 Hr.s: 292 Ft. AVG. Ft/Hr. 14.6 REPORT BY: Clint Kirk

Repair Formulas	ACTIVITY LAST 24 HOURS	DESCRIPTIVE HOURLY BREAKDOWN
------------------------	-------------------------------	-------------------------------------

HOURS	DESCRIPTION	ACTIVITY	HOURS	ACC. HR.S
9.5	Slide F/ 4296-4302,Rotary Drlg F/ 4302-4327,Slide F4327-4335,Rotary f/ 4335-4358,Slide f/ 4358-4362,Rotary F/ 4362-4390,Slide F/ 4390-4397,Rotary F/ 4397-4422,Slide F/ 4422-4428 (Loss Full Returns At 4348-4355 Took Drink)	1.) RU- TD		10.0
		2.) DRILLING	20.0	166.5
		3.) REAMING		11.5
2.5	MWD Surveys & Gamma, (Added 75 BBL Live Oil To Mud)	4.) CORING		0.0
10.5	Rotary Drlg F/ 4428-4486,Slide F/ 4486-4493,Rotary F/ 4493-4517,Slide F/4517-4527,Rotary F/ 4527-4581,Slide F/ 4581-4588	5.) CIRC.		26.5
		6.) TRIP		37.5
1.5	MWD Surveys & Gamma	7.) SERVICE		5.0
		8.) REPAIR		21.5
		9.) CUT DL		0.0
		10.) SURVEY	4.0	34.5
		11.) LOGGING		0.0
	Safety Meeting:Forklift Safety	12.) CSG & CMT		6.5
		13.) WOC		22.0
		14.) NU & TEST		0.0
		15.) INSP. BHA		0.0
		16.) DST		0.0
		17.) PLUGBACK		0.0
		18.) LOST CIRC.		0.0
		19.) FISHING		11.5
		20.) DIR. WORK		2.5
		21.) drill cement		4.5
Total Hours =			24.0	360.0

MUD			
WT. IN	9.1	PH	10
WT. OUT		Pf / Mf	.85
VISC.	44	CHLOR.	1500
PV	16	CA	40
YP	8	LCM	Trc
GELS	9/20	LIME	
FL.	7.2	OWR	
CAKE 32nds	1	ES	
% SOLIDS	5.6		
% WATER	91.4		
% OIL	3		
% SAND	trc		

PUMPS			
	NO. 1	NO. 2	
SIZE	6.3	14.0	
TYPE	C-EMSCO		
SPM	52		
BPS	0.1698		
PSI	1420		
GPM	275.7	0.0	
AVDC			
AVDP			
STKS. SUR TO BIT			
STKS. BIT TO SUR.			
REDUCED PUMP RATE			

BIT RECORD								New Bit	
	BIT NO.	4			BIT NO.	5			
SERIAL NO.	5186048				5180620				
MFG / TYPE	HTC/GDX20DX				HTC/STX-30DX				
SIZE	8 3/4				6 1/8				
JETS	3-24's				3-20's				
IN / OUT	2781/3470				3470/4588				
WOB	20-34				20-24				
RPM	40-109				110-45				
FEET	689				1118				
HOURS	37				51.5				
DULL	2	2	FC	G					
GRADE	E	1/16	NO	TD					



DEVIATION RECORD Add Survey

DEPTH	INCL.	AZIMUTH	TVD	SEC.	N/S	EW
4403	91.30	301.60	2823	1876	1202	-1480
4435	90.80	302.50	2822	1907	1219	-1507
4467	91.90	302.40	2822	1937	1237	-1534
4499	91.20	302.40	2821	1968	1254	-1561
4530	89.70	302.00	2820	1997	1270	-1587



Bit turned up, >90°, to move up structure

WEIGHT			
STRING WT.	P / U	S / O	TORQUE
53	63	38	

DRILL COLLARS							
NO.	40	CONN	3 1/2 IF	O.D.	4 7/8	I.D.	2.25
NO.		CONN		O.D.		I.D.	

DRILL PIPE							
NO.		CONN	3 1/2 IF	O.D.	4 7/8	I.D.	2 9/16
NO.		CONN		O.D.		I.D.	

New BHA		BHA	
Bit, Motor, Float Sub, UBHO Sub, NMDC, Flex NMDC, 58 Jts			
3 1/2 DP, 40 Jts HWDP			

MUD

other	\$4,500.00	\$500	\$5,000
PREV. CUM =	\$475,881	↓	↓
TOTAL DAILY =	\$39,630	↓	↓
TOTAL CUM =	\$515,511		
DAILY MUD COSTS =	\$1,959.00	ACC. MUD COSTS =	\$24,005.00

Day 16 – 1/22/12

Out of pay zone into tighter cherty dolomite, pull out to run logs

Rig Phone No.: 580-821-4412	<h1 style="margin: 0;">MORNING REPORT</h1>	DATE: 1/22/2011
To Menu		

OPERATOR: American Energies Corp	LEASE & WELL: Rood-Slocomb #1-19
PROSPECT: 0	COUNTY: Marion STATE: Kansas
RIG: C & G Drilling #2	SPUD DATE: 1/6/2011 DFS: 16 OPER. @ RPT. TIME: Circulate Btm Up
DEPTH: 4613	FTG. LAST 24 Hr.s: 25 Ft. AVG. Ft/Hr. 10.0 REPORT BY: Clint Kirk

Repair Formulas	ACTIVITY LAST 24 HOURS	DESCRIPTIVE HOURLY BREAKDOWN
------------------------	-------------------------------	-------------------------------------

HOURS	DESCRIPTION	ACTIVITY	HOURS	ACC. HR.S
2.5	Rotary Drlg F/ 4588-4613	1.) RU- TD		10.0
1.0	Pump Sweep,Circulate Out	2.) DRILLING	2.5	169.0
1.5	Short Trip To Csg At 3470'	3.) REAMING	0.5	12.0
0.5	Wash & Ream Thru Tight Spots	4.) CORING		0.0
1.5	Circulate & Condition Mud,Pump Sweep,Circulate Out	5.) CIRC.	3.5	30.0
4.0	S.L.M.Out Of Hole,L/D Directional Equipment	6.) TRIP	5.5	43.0
12.0	R/U Weatherford Logging,P/U 40 Jts Dp To Replace HWDP,T.I.H.,Fill Every 10	7.) SERVICE		5.0
	Jts,Wash Thru Tight Spot At 4348'	8.) REPAIR		21.5
1.0	Circulate Btm Up,Pipe Depth=4522,Log Depth=4593	9.) CUT DL		0.0
	Loggers TD=4603'	10.) SURVEY		34.5
		11.) LOGGING	12.0	12.0
	Safety Meeting:Laying Down Tools,Picking Up Tools	12.) CSG & CMT		6.5
		13.) WOC		22.0
		14.) NU & TEST		0.0
		15.) INSP. BHA		0.0
		16.) DST		0.0
		17.) PLUGBACK		0.0
		18.) LOST CIRC.		0.0
		19.) FISHING		11.5
		20.) DIR. WORK		2.5
		21.) drill cement		4.5
Total Hours =			24.0	384.0

MUD			
WT. IN	8.8	PH	9.5
WT. OUT		Pf / Mf	.72
VISC.	47	CHLOR.	1200
PV	22	CA	40
YP	5	LCM	1
GELS	5/20	LIME	
FL.	4.0	OWR	
CAKE 32nds	1	ES	
% SOLIDS	4.8		
% WATER	85.2		
% OIL	10		
% SAND	Trc		

PUMPS				
	NO. 1		NO. 2	
SIZE	6.3	14.0		
TYPE	C-EMSCO			
SPM	53			
BPS	0.1698			
PSI	1430			
GPM	281.0	0.0		
AVDC				
AVDP				
STKS. SUR TO BIT				
STKS. BIT TO SUR.				
REDUCED PUMP RATE				

BIT RECORD										New Bit
	BIT NO. 4				BIT NO. 5					
SERIAL NO.	5186048				5180620					
MFG / TYPE	HTC/GDX20DX				HTC/STX-30DX					
SIZE	8 3/4				6 1/8					
JETS	3-24's				3-20's					
IN / OUT	2781/3470				3470/4613					
WOB	20-34				20-24					
RPM	40-109				110-45					
FEET	689				1143					
HOURS	37				54					
DULL	2	2	FC	G	3	3	FC	A		
GRADE	E	1/16	NO	TD	2	E	ER	TD		

DEVIATION RECORD Add Survey

DEPTH	INCL.	AZIMUTH	TVD	SEC.	N/S	E/W
4467	91.90	302.40	2822	1937	1237	-1534
4499	91.20	302.40	2821	1968	1254	-1561
4530	89.70	302.00	2820	1997	1270	-1587
4562	90.10	302.40	2820	2028	1287	-1614
Ext 4613	90.10	302.40	2820	2077	1315	-1658

PREV. CUM =	\$515,511	↓	↓	↓	↓	↓
TOTAL DAILY =	\$23,023	↓	↓	↓		
TOTAL CUM =	\$538,534					
DAILY MUD COSTS =	\$4,796.00	ACC. MUD COSTS =	\$28,801.00			

WEIGHT

STRING WT.	P / U	S / O	TORQUE
53	63	38	

DRILL COLLARS

NO. 40	CONN	3 1/2 IF	O.D. 4 7/8	I.D. 2.25
NO.	CONN		O.D.	I.D.

DRILL PIPE

NO.	CONN	3 1/2IF	O.D. 4 7/8	I.D. 2 9/16
NO.	CONN		O.D.	I.D.

Without logging and completion costs

Day 17- 1/23/12

Run logs (drillpipe conveyed)

Rig Phone No.: 580-821-4412 DATE: 1/23/2011

MORNING REPORT

[To Menu](#)

OPERATOR: American Energies Corp LEASE & WELL: Rood-Slocomb #1-19

PROSPECT: 0 COUNTY: Marion STATE: Kansas

RIG: C & G Drilling #2 SPUD DATE: 1/6/2011 DFS: 17 OPER. @ RPT. TIME: T.I.H.,After Logs

DEPTH: 4613 FTG. LAST 24 Hr.s: 0 Ft. AVG. Ft/Hr. 0.0 REPORT BY: Clint Kirk

Repair Formulas	ACTIVITY LAST 24 HOURS	DESCRIPTIVE HOURLY BREAKDOWN
------------------------	-------------------------------	-------------------------------------

HOURS	DESCRIPTION	ACTIVITY	HOURS	ACC. HR.S
5.0	T.O.O.H.W/ Logs, Triple Combo, Gamma Ray, Neutron, Density & Induction	1.) RU- TD		10.0
3.0	R/U Logging Tools	2.) DRILLING		169.0
6.0	T.I.H.W/ Imager Cmi, Logging Tool, Fill Every 10Jts	3.) REAMING		12.0
1.0	Circulate	4.) CORING		0.0
1.0	Pump Out, Release Tools	5.) CIRC.	2.0	32.0
6.5	T.O.O.H. Logging, L/D Logging Tools	6.) TRIP	1.5	44.5
1.5	P/U Bit, Bit Sub, T.I.H., L/D 40 Jts DP	7.) SERVICE		5.0
		8.) REPAIR		21.5
		9.) CUT DL		0.0
		10.) SURVEY		34.5
		11.) LOGGING	20.5	32.5
		12.) CSG & CMT		6.5
		13.) WOC		22.0
		14.) NU & TEST		0.0
		15.) INSP. BHA		0.0
		16.) DST		0.0
		17.) PLUGBACK		0.0
		18.) LOST CIRC.		0.0
		19.) FISHING		11.5
		20.) DIR. WORK		2.5
		21.) drill cement		4.5
Total Hours =			24.0	408.0

MUD			
WT. IN	8.9	PH	
WT. OUT		Pf / Mf	
VISC.	46	CHLOR.	
PV		CA	
YP		LCM	
GELS		LIME	
FL.		OWR	
CAKE 32nds		ES	
% SOLIDS			
% WATER			
% OIL	10		
% SAND			

PUMPS				
	NO. 1		NO. 2	
SIZE	6.3	14.0		
TYPE	C-EMSCO			
SPM				
BPS	0.1698			
PSI				
GPM	0.0		0.0	
AVDC				
AVDP				
STKS. SUR TO BIT				
STKS. BIT TO SUR.				
REDUCED PUMP RATE				

BIT RECORD								New Bit	
	BIT NO. 4			BIT NO. 5					
SERIAL NO.	5186048				5180620				
MFG / TYPE	HTC/GDX20DX				HTC/STX-30DX				
SIZE	8 3/4				6 1/8				
JETS	3-24's				3-20's				
IN / OUT	2781/3470				3470/4613				
WOB	20-34				20-24				
RPM	40-109				110-45				
FEET	689				1143				
HOURS	37				54				
DULL	2	2	FC	G	3	3	FC	A	
GRADE	E	1/16	NO	TD	2	E	ER	TD	

DEVIATION RECORD								Add Survey	
DEPTH	INCL.	AZIMUTH	TVD	SEC.	N/S	E/W			
4467	91.90	302.40	2822	1937	1237	-1534			
4499	91.20	302.40	2821	1968	1254	-1561			
4530	89.70	302.00	2820	1997	1270	-1587			
4562	90.10	302.40	2820	2028	1287	-1614			
Ext 4613	90.10	302.40	2820	2077	1315	-1658			

PREV. CUM =	\$538,534	↓	↓	↓	↓	↓
TOTAL DAILY =	\$55,121					
TOTAL CUM =	\$593,655					
DAILY MUD COSTS =		ACC. MUD COSTS =	\$28,801.00			

Day 18 – 1/24/12

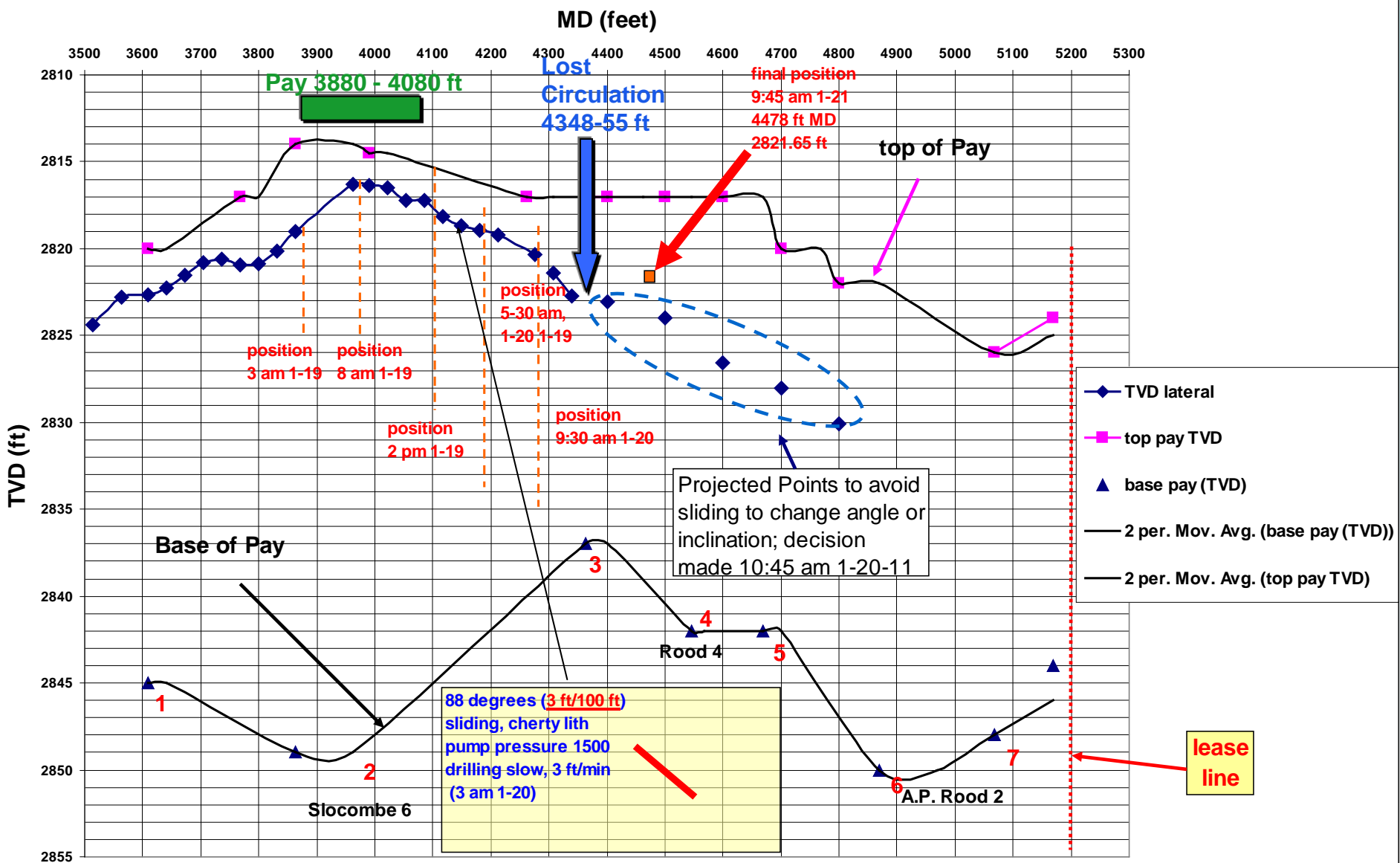
Rig Phone No.: 580-821-4412	<h2>MORNING REPORT</h2>	DATE: 1/24/2011
To Menu		

OPERATOR: American Energies Corp	LEASE & WELL: Rood-Slocomb #1-19
PROSPECT: 0	COUNTY: Marion STATE: Kansas
RIG: C & G Drilling #2	SPUD DATE: 1/6/2011 DFS: 18 OPER. @ RPT. TIME: Rig Down
DEPTH: 4613	FTG. LAST 24 Hr.s: 0 Ft. AVG. Ft/Hr. 0.0 REPORT BY: Clint Kirk

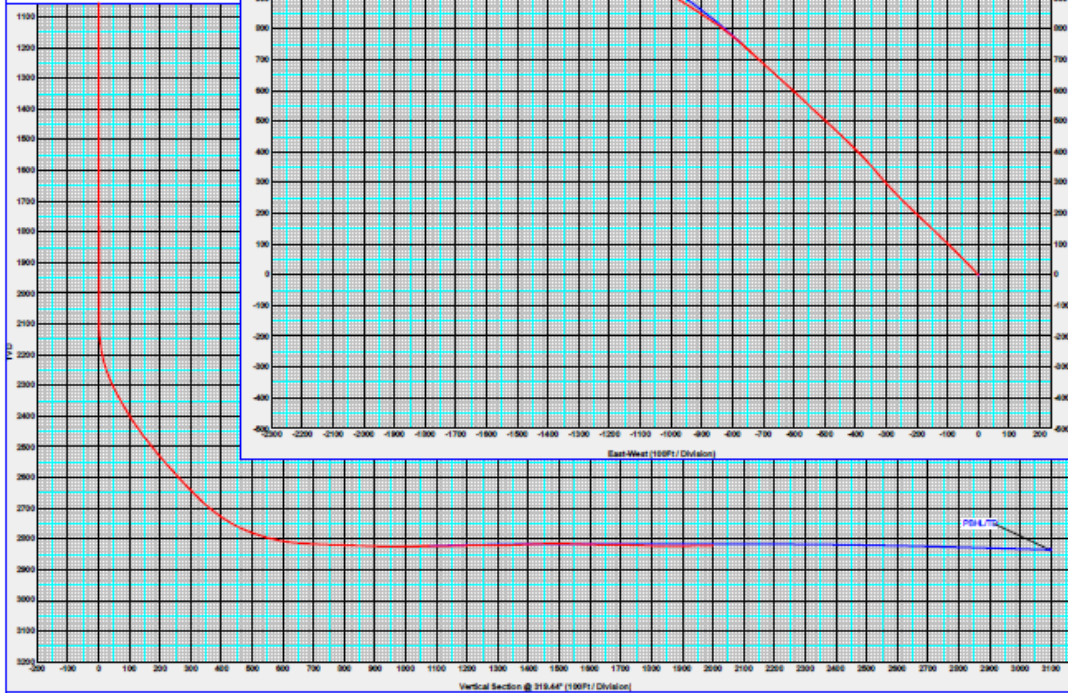
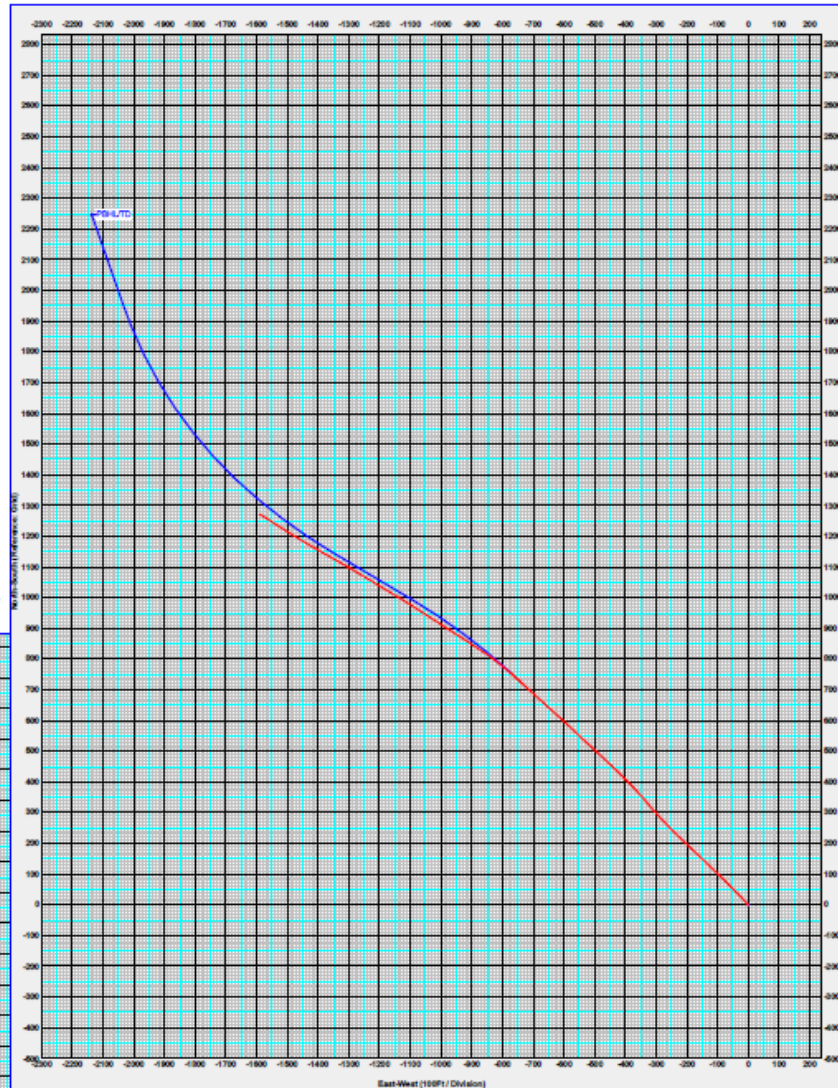
Repair Formulas	ACTIVITY LAST 24 HOURS	DESCRIPTIVE HOURLY BREAKDOWN
------------------------	-------------------------------	-------------------------------------

HOURS	DESCRIPTION	ACTIVITY	HOURS	ACC. HR.S
5.0	T.I.H.,L/D 20 Jts DP,T.I.H. To 4340	1.) RU- TD	11.0	21.0
2.0	Displace Mud Out,W/ 3% KCL Water,180 BBL	2.) DRILLING		169.0
4.0	L.D.D.P.	3.) REAMING		12.0
3.0	Load Out Rental Equipment	4.) CORING		0.0
10.0	Rig Down	5.) CIRC.	2.0	34.0
		6.) TRIP	9.0	53.5
		7.) SERVICE		5.0
	Release Rig At 13;00 PM CST	8.) REPAIR		21.5
		9.) CUT DL		0.0
		10.) SURVEY		34.5
		11.) LOGGING		32.5
		12.) CSG & CMT		6.5
		13.) WOC		22.0
		14.) NU & TEST		0.0
		15.) INSP. BHA		0.0
	Safety Meeting:Laying Down Drill Pipe	16.) DST		0.0
		17.) PLUGBACK		0.0
		18.) LOST CIRC.		0.0
		19.) FISHING		11.5
		20.) DIR. WORK		2.5
		21.) drill cement		4.5
Total Hours =			22.0	430.0

MD vs TVD with location of lateral with respect to top and bottom of Hunton Pay



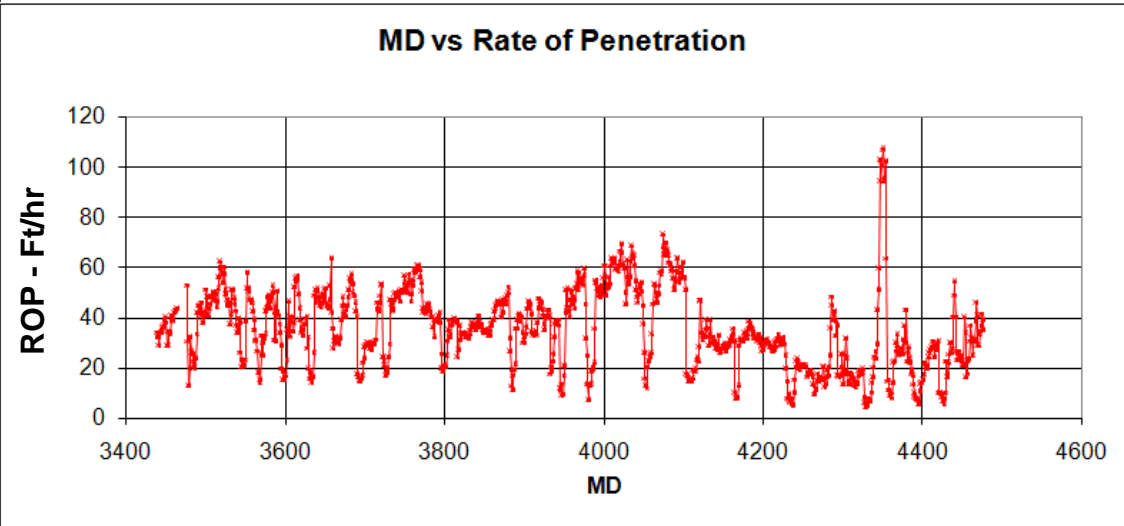
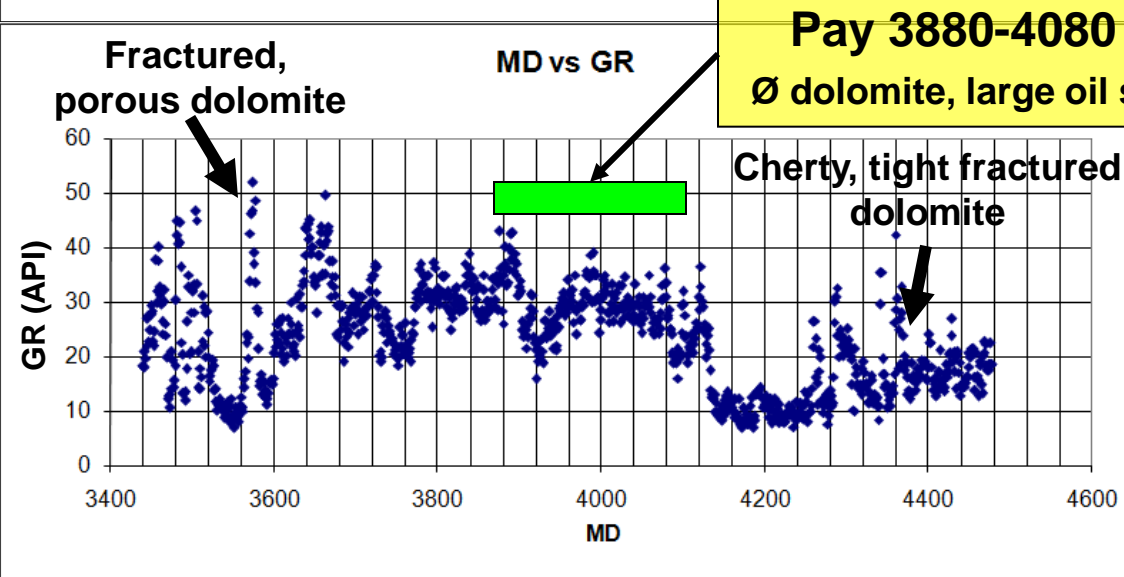
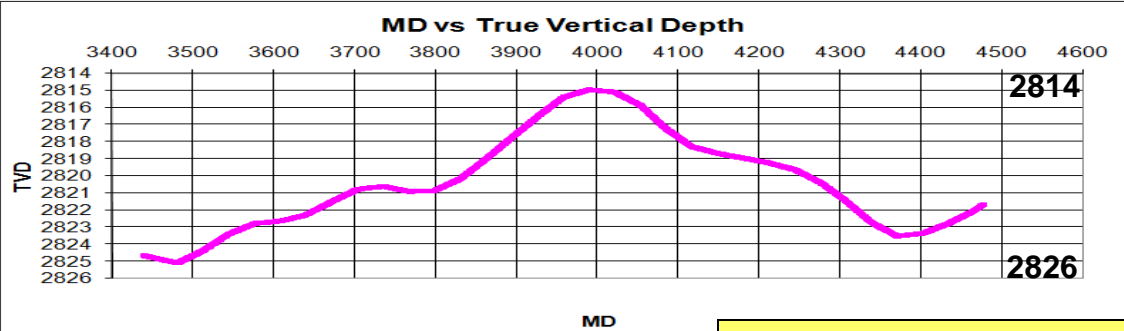
Section View



Vertical Section @ 318.64° (100ft/Division)

Lateral drilled after setting casing in the top of the Hunton

Plots show monitoring while drilling in horizontal



Compact well shuttle deployment of triple combo and CMI logging tools

```

~Version Information
VERS.          2.00                : CWLS Log ASCII
Standard - Version 2.00
WRAP.         NO                   : One line per
depth step
#
~Well Information
#MNEM.UNIT    DATA                : DESCRIPTION
#-----
-----
STRT .FT      3450.000              : Start
STOP .FT      4565.500              : Stop
STEP .FT      0.500                : Step increment
NULL .        -999.250              : Null value
COMP .        AMERICAN ENERGIES CORPORATION : Company
WELL .        SLOCOMBE ROOD 1-19H    : Well
FLD .        WILDCAT                 : Field
CTRY .        USA / KANSAS           : State /
Country
LOC .         1873' FSL & 1444 FEL    : Location
LOC2 .        : Location 2
SRVC .        Weatherford           : Service
company
STAT .        : State
CNTY .        MARION                 : County
API .         15-115-21419-01        : API Number
LIC .        : LAT: & LONG:
DATE .        22-Jan-2011            : Logging date
#
~Curve Information
#MNEM.UNIT    API CODES            : CURVE
DESCRIPTION
#-----
-----
DEPT .FT      00 001 00 00          : Logged depth
CGXT .DEGF    30 660 1 00           : MCG External
Temperature
GRGC .GAPI    30 310 1 00           : Gamma Ray
NPRL .V/V     42 890 1 00           : Limestone
Neutron Por.
CLDC .IN      45 280 1 00           : Density
Caliper
DCOR .G/C3    42 356 1 00           : Density
Correction
DEN .G/C3     42 350 1 00           : Compensated
Density
PDPE .B/E     45 358 1 00           : PE
DPRL .V/V     45 890 10 00          : Limestone
Density Por.
CTAT .MMHO    7 120 44 00           : Array Ind. Two
Cond Ct
R20T .OHMM    7 120 44 00           : Array Ind. Two
res 20
R30T .OHMM    7 120 44 00           : Array Ind. Two
res 30
R40T .OHMM    7 120 44 00           : Array Ind. Two
Res 40
R60T .OHMM    7 120 44 00           : Array Ind. Two
Res 60
R85T .OHMM    7 120 44 00           : Array Ind. Two
Res 85
RTAT .OHMM    7 120 44 00           : Array Ind. Two
Res Rt

```

```

~Parameter Information
#MNEM.UNIT    VALUE                : DESCRIPTION
#-----
-----
RNID .        : Run ID
EREF .FEET    1424.000              : Elevation of
depth reference
DREF .        K.B. @ 6 FEE          : Depth
reference
GL .FEET      1424.000              : Ground
elevation
RUN .         ON                    : Run number
TDD .FEET     4615.000              : TD (driller)
TDL .FEET     4563.000              : TD (logger)
CSGD .FEET    3470.000              : Casing bottom
(driller)
CSGL .FEET    3470.000              : Casing bottom
(logger)
BS .INCHES    6.125                 : Bit size
MUD .         GEL                   : Mud type
MUDD .LB/USG  8.80                  : Mud density
MUDV .CP      47.00                 : Mud viscosity
PH .         9.50                   : Mud pH
FL .ML/30MIN  4.00                  : Mud fluid loss
rate
MUDS .        FLOWLINE              : Mud sample
source
RM .OHM-M     2.30                  : Mud
resistivity
RMT .DEGF     60.0                 : Mud sample
temperature
RMF .OHM-M    1.84                  : Mud filtrate
resistivity
RMFT .DEGF    60.0                 : Mud filtrate
sample temperature
RMC .OHM-M    2.76                  : Mud cake
resistivity
RMCT .DEGF    60.0                 : Mud cake
sample temperature
TMAX .DEGF    98.00                : Max recorder
temperature
TIMC .DAY/HR  : Time
circulation ended
TIML .DAY/HR  : Time logger at
bottom
UNIT .        18006                 : Equipment ID
BASE .        OKC                   : Equipment base
location
ENG .         DAYLON ROWELL         : Recording
engineer
WIT .        CLINT KIRK             : Witnessed by
CSGS .INCHES  9.625                 : Casing size
CSGW .LB/FT   36.00                 : Casing weight

```

Triple Combo tool – GR, CAL, Pe, Øn, Ød, Array Res.

~Other Information

WLS SOFTWARE VERSION 10.07.0791 USED.
 TOOLS RUN ON DRILLPIPE USING COMPACT WELL SHUTTLE DEPLOYMENT
 TECHNIQUE.

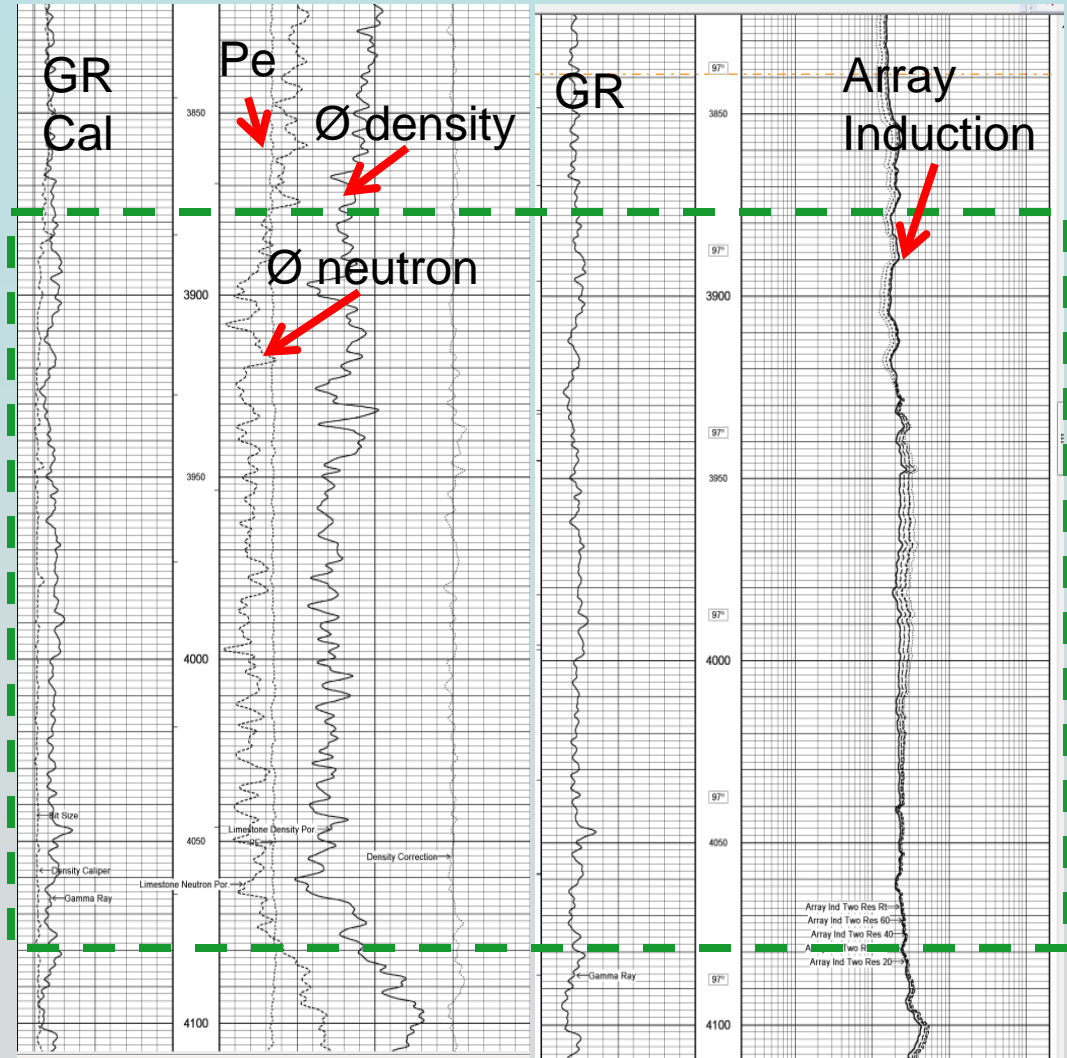
DEPTH MEASURED USING ADVANTAGE RIG DEPTH SYSTEM CORRECTED TO PIPE
 STRAP.
 LOG DEPTH AND CORRELATION WAS SET TO STRAP.

TOOLS DEPLOYED WITH MULE SHOE SITTING AT 4493 FT.
 AFTER DEPLOYMENT LOGGING TOOL WAS AT 4563 FT.

4.5 INCH PRODUCTION CASING USED TO CALCULATE ANNULAR HOLE VOLUMES

OPERATORS: BABY FACE, HOOD
 TRAINEE: JASON WELLBROCK
 S.O.# 3525751
 RIG: C&G #2

~A	DEPT	CGXT	GRGC	NPRL	CLDC	DCOR
DEN	PDPE	DPRL	CTAT	R20T	R30T	
R40T	R60T	R85T	RTAT			
3450.000	97.913	21.545	0.257	6.519	-0.519	
2.489	10.832	0.130	0.039	25971.904	25971.904	
25971.904	25971.904	25971.904	25971.904			
3450.500	97.982	22.471	0.249	6.519	-0.518	
2.484	10.756	0.132	0.038	26170.660	26170.660	

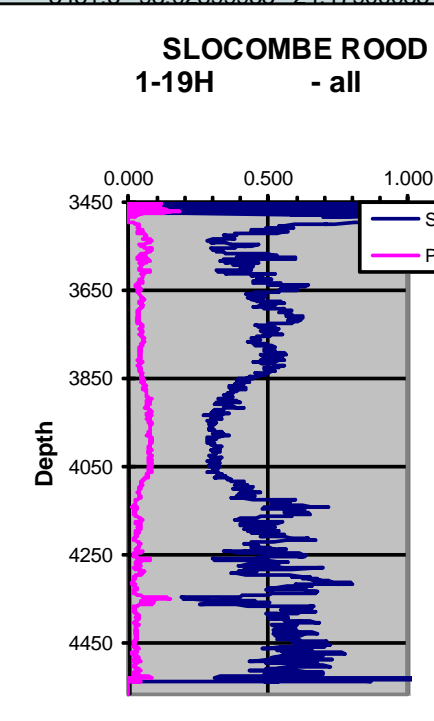
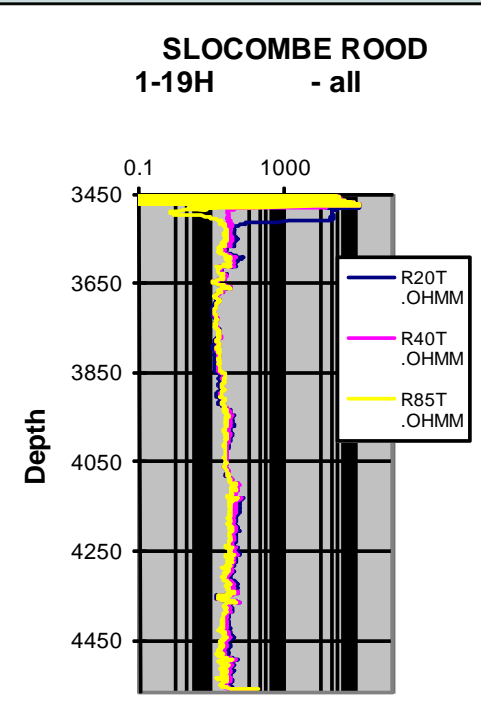
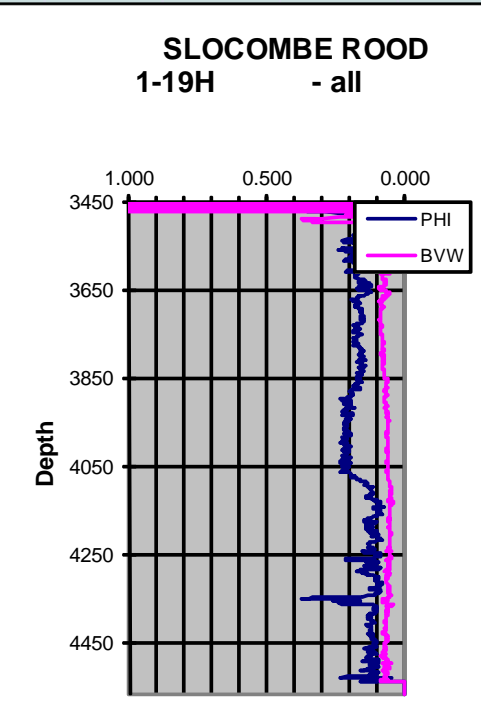
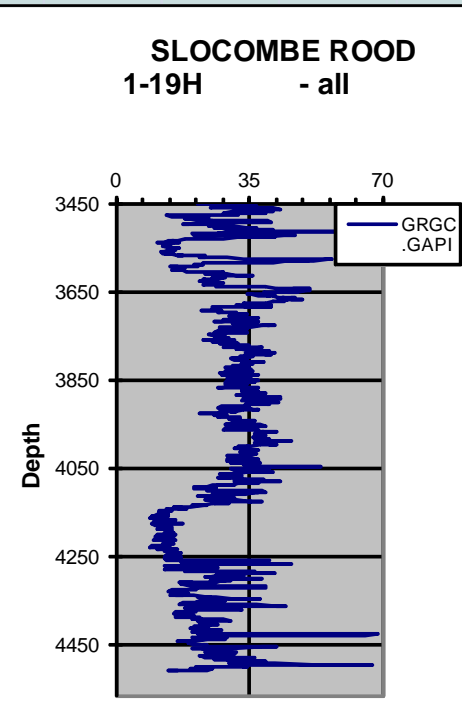


Log analysis via KGS freeware

<http://www.kgs.ku.edu/stratigraphic/PROFILE/applet.html>
 and soon to be released Java version of PfeFFER

Model = Archie

PARAMETERS	ZN	DEPTH	THK	RT	PHI	RWA	RO	MA	SW	BVW	VSH	PAY	
X	1	3450	0.5	25971.9043	0.204	1077.17	2.41	7.83	0.010	0.002	0.128	0.10	
Y	2	3450.5	0.5	26170.6602	0.199	1039.30	2.52	7.73	0.010	0.002	0.139	0.10	
A	1	3	3451	0.5	26381.0078	0.200	1060.48	2.49	7.77	0.010	0.002	0.152	0.10
M	2	4	3451.5	0.5	22056.6191	0.207	946.25	2.33	7.81	0.010	0.002	0.158	0.10
N	2	5	3452	0.5	18813.3398	0.218	892.58	2.11	7.97	0.010	0.002	0.157	0.11
RW	0.1	6	3452.5	0.5	21086.4512	0.227	1087.86	1.94	8.27	0.010	0.002	0.163	0.11
CTHK	1115.5	7	3453	0.5	0.066	0.234	0.00	1.83	-0.29	5.267	1.231	0.178	0
AVPHI	0.16	8	3453.5	0.5	0.063	0.234	0.00	1.83	-0.32	5.386	1.260	0.202	0
FTOIL	74.23	9	3454	0.5	0.184	0.231	0.01	1.88	0.42	3.194	0.737	0.229	0
PAYFEET	637.5	10	3454.5	0.5	9053.26758	0.228	470.23	1.93	7.72	0.015	0.003	0.262	0.11
P	8581	11	3455	0.5	28461.0879	0.224	1430.18	1.99	8.40	0.008	0.002	0.296	0.11
Q	4.4	12	3455.5	0.5	28782.7598	0.222	1423.74	2.02	8.36	0.008	0.002	0.299	0.11
R	2	13	3456	0.5	29122.6484	0.222	1435.08	2.03	8.36	0.008	0.002	0.271	0.11
DMIN	3450	14	3456.5	0.5	29482.4609	0.222	1447.29	2.04	8.36	0.008	0.002	0.229	0.11
DMAX	4565.5	15	3457	0.5	29872.7207	0.222	1468.54	2.03	8.37	0.008	0.002	0.201	0.11
KB		16	3457.5	0.5	30285.8691	0.219	1450.24	2.09	8.31	0.008	0.002	0.192	0.11
TD		17	3458	0.5	30707.8184	0.215	1418.16	2.17	8.22	0.008	0.002	0.182	0.11
BHT		18	3458.5	0.5	31151	0.211	1382.56	2.25	8.12	0.009	0.002	0.167	0.10
ST		19	3459	0.5	31617.3301	0.208	1369.82	2.31	8.07	0.009	0.002	0.162	0.10
RMF		20	3459.5	0.5	32133.7988	0.209	1404.65	2.29	8.10	0.008	0.002	0.172	0.10
RMFT		21	3460	0.5	32678.9766	0.212	1471.47	2.22	8.19	0.008	0.002	0.180	0.11
		22	3460.5	0.5	13227.585	0.217	621.31	2.13	7.71	0.013	0.003	0.186	0.11
CUT-OFFS		23	3461	0.5	0.109	0.220	0.01	2.06	0.06	4.352	0.958	0.221	0
PHICUT	0.1	24	3461.5	0.5	0.12899999	0.223	0.01	2.01	0.17	3.944	0.880	0.284	0
SWCUT	0.5	25	3462	0.5	0.087	0.225	0.00	1.97	-0.09	4.754	1.072	0.346	0
VSHCUT	0.5	26	3462.5	0.5	0.123	0.229	0.01	1.91	0.14	3.942	0.902	0.367	0
BVWCUT	0.1	27	3463	0.5	0.092	0.232	0.00	1.86	-0.06	4.495	1.043	0.353	0
		28	3463.5	0.5	28537.3223	0.233	1547.24	1.84	8.62	0.008	0.002	0.334	0.12



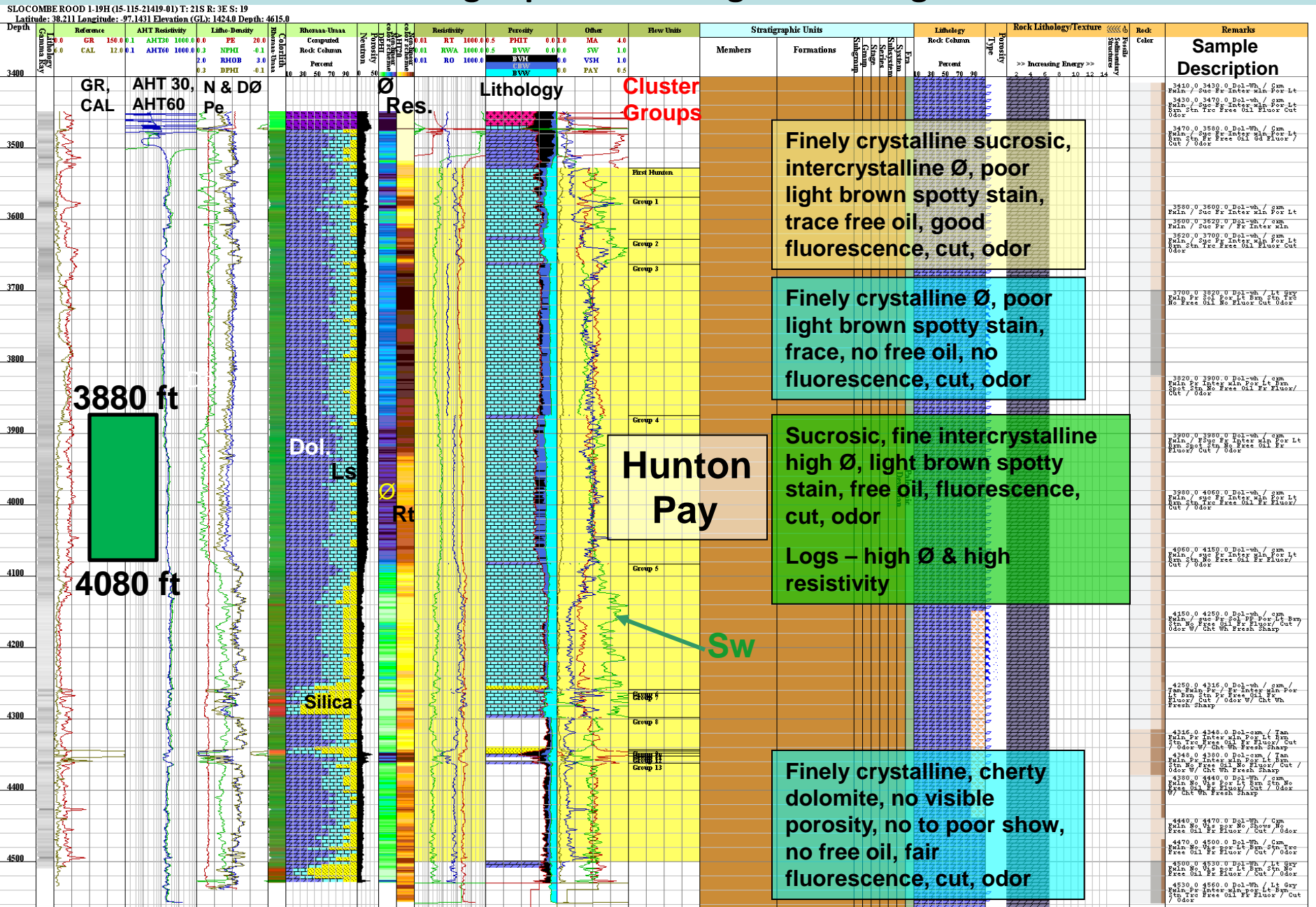
```
geoport - Netop
File Edit Format View Help
15-115-21419-0100 Slocomb-Rood #1-19
American Energies Corp. ; Field: Unger
Sec 19 T21S R3E ; NE-SE-NW-SE
Elevation: GL: 1421.0 ; KB: 1430.0
2450.0; 2554.0; Limestone
2502.0; Marmaton Group
2554.0; 2558.0; Shale
2558.0; 2572.0; Limestone
2572.0; 2580.0; Shale
2580.0; 2596.0; Limestone
2596.0; 2500.0; Shale
2500.0; 2518.0; Limestone
2518.0; 2522.0; Shale
2522.0; 2538.0; Limestone
2538.0; 2546.0; Shale
2546.0; 2550.0; Limestone
2550.0; 2554.0; Shale
2554.0; 2574.0; Limestone
2574.0; 2584.0; Shale
2584.0; 2596.0; Limestone
2596.0; 2610.0; Sh-Gry-grn / Gry
2610.0; 2628.0; Limestone
2628.0; 2640.0; Sh-Blk / Dk Gry / Gry
2632.0; Cherokee Group
2640.0; 2644.0; LS - Crm / Tan, Fxln, Fos, NVP
2644.0; 2648.0; Sh-Mar / Yel / Gry-Grn / Gry / Blk
2648.0; 2652.0; LS - Lt Gry / Tan / Gry-Brn, xln, NVP, NS
2652.0; 2660.0; Sh - Mar / Yel / Gry-Grn / Gry / Blk w / Cht-wh / Crm / Yel, weathered
2660.0; Osagian
2660.0; 2708.0; Cht - Gry / Wh, Translucent, Fresh Sharp
2708.0; 2718.0; LS-wh / Crm, Fxln, NVP, NS w/ Cht - Wh / Trans, Fresh, Sharp
2718.0; 2740.0; Cht-Gry / Wh, Translucent Fresh, Sharp
2740.0; 2750.0; LS-wh / Crm, Fxln, NVP, NS w/ Cht-wh/Trans, Fresh, Sharp
2750.0; 2803.0; LS-wh / Crm / Fxln, NVP, NS
2803.0; Kinderhookian
2803.0; 2840.0; Sh-Gry-Grn / Gry / Dk Gry
2840.0; 2856.0; Sh-Gry / Dk Gry
2856.0; 2870.0; Sh-Gry-Grn / Gry / Dk Gry
2870.0; 2884.0; Sh-Gry / Dk Gry
2884.0; 2896.0; Sh-Gry-Grn / Gry / Dk Gry
2896.0; 2907.0; Sh-Gry / Dk Gry
2907.0; Chattanooga Shale
2907.0; 2938.0; Sh-Gry-Grn / Gry / Dk Gry
2938.0; 2982.0; Sh-Dk Gry
2982.0; 3164.0; Sh-Dk Gry / Blk
3164.0; 3250.0; Sh-Dk Gry / Gry
3250.0; 3264.0; SS-Qtz, Clr, vFnd, Well Sort, Calc, Mica, Friable, Fr/Gd Inter ran Por, NS, NF
3264.0; 3278.0; Sh-Dk Gry / Blk carb
3278.0; 3297.0; Sh-Dk Gry / Gry
3297.0; 3299.0; Sh-Dk Gry / Blk carb
3299.0; 3316.0; Sh-Dk Gry / Gry
3316.0; 3318.0; Sh-Dk Gry / Blk carb
3318.0; 3335.0; Sh-Dk Gry / Gry
3335.0; Hunton Dolomite
3335.0; 3410.0; Dol - Lt Gry / Crm / Tan, Fxln / Suc, Fr Inter xln Por, Lt Brn Stn Trc Free Oil, Fluor, Cut, odor
3410.0; 3430.0; Dol-wh / Crm, Fxln / Suc, Fr Inter xln Por, Lt Brn Stn Fr Free Oil, Gd Fluor / Cut / Odor
3430.0; 3470.0; Dol-wh / crm, Fxln / Suc, Fr Inter xln Por, Lt Brn Stn Trc Free Oil, Fluor, Cut, odor
3470.0; 3580.0; Dol-wh / Crm, Fxln / Suc, Fr Inter xln Por, Lt Brn Stn Fr Free Oil, Gd Fluor / Cut / Odor
3580.0; 3600.0; Dol-wh / crm, Fxln / Suc, Fr Inter xln Por, Lt Brn Stn Trc Free Oil, Fluor, Cut, odor
3600.0; 3620.0; Dol-wh / crm, Fxln / Suc, Pr / Fr Inter xln Por, Lt Brn Stn Trc Free Oil, Fluor, Cut, odor
3620.0; 3700.0; Dol-wh / crm, Fxln / Suc, Pr Inter xln Por, Lt Brn Stn Trc Free Oil, Fluor, Cut, odor
3700.0; 3820.0; Dol-wh / Lt Gry, Fxln Pr Sol Por, Lt Brn Stn Trc No Free Oil, No Fluor, Cut, odor
3820.0; 3900.0; Dol-wh / crm, Fxln, Pr Inter xln Por, Lt Brn Spot Stn No Free Oil, Fr Fluor / Cut / Odor
3900.0; 3980.0; Dol-wh / crm, Fxln / FSuc, Fr Inter xln Por, Lt Brn Spot Stn No Free Oil, Fr Fluor / Cut / Odor
3980.0; 4060.0; Dol-wh / crm, Fxln / suc, Fr Inter xln Por, Lt Brn Stn Trc Free Oil, Fr Fluor / Cut / Odor
4060.0; 4150.0; Dol-wh / crm, Fxln / suc, Pr Inter xln Por, Lt Brn Stn No Free Oil, Fr Fluor / Cut / Odor
4150.0; 4250.0; Dol-wh / crm, Fxln / suc, Pr Sol PP Por, Lt Brn Stn No Free Oil, Fr Fluor / Cut / Odor w/ Cht wh, Fresh, Sharp
4250.0; 4316.0; Dol-wh / crm / Tan, Fxln, Pr / Fr Inter xln Por, Lt Brn Stn Pr Free Oil, Fr Fluor / Cut / Odor w/ Cht wh, Fresh, Sharp
4316.0; 4348.0; Dol-crm / Tan, Fxln, Pr Inter xln Por, Lt Brn Stn Trc Free Oil, Fr Fluor / Cut / Odor w/ Cht wh, Fresh, Sharp
4348.0; 4380.0; Dol-crm / Tan, Fxln, Pr Inter xln Por, Lt Brn Stn No Free Oil, No Fluor / Cut / Odor w/ Cht wh, Fresh, Sharp
4380.0; 4440.0; Dol-wh / crm, Fxln, No Vis Por, Lt Brn Stn No Free Oil, Fr Fluor / Cut / Odor w/ Cht wh, Fresh, Sharp
4440.0; 4470.0; Dol-wh / crm, Fxln, No Vis por, No Shows, No Free Oil, Fr Fluor / Cut / Odor
4470.0; 4500.0; Dol-wh / Crm, Fxln, No Vis por, Lt Brn Stn, Trc Free Oil, Fr Fluor / Cut / Odor
4500.0; 4530.0; Dol-wh / Lt Gry, Fxln, No Vis por, Lt Brn Stn, No Free Oil, Fr Fluor / Cut / Odor
4530.0; 4560.0; Dol-wh / Lt Gry, Fxln, Pr Inter xln por, Lt Brn Stn, Trc Free Oil, Fr Fluor / Cut / Odor
4560.0; 4590.0; Dol-wh / Lt Gry, Fxln, Pr Inter xln por, Lt Brn Stn, No Free Oil, Fr Fluor / Cut / Odor
4590.0; 4613.0; Dol-crm / wh / Lt Gry, Fxln, Pr Inter xln por, Lt Brn Stn, No Free Oil, Fr Fluor / Cut / Odor w/ Cht wh Fresh
```

**Geo-report
imported to
LAS 3.0 file
via Ascii file**

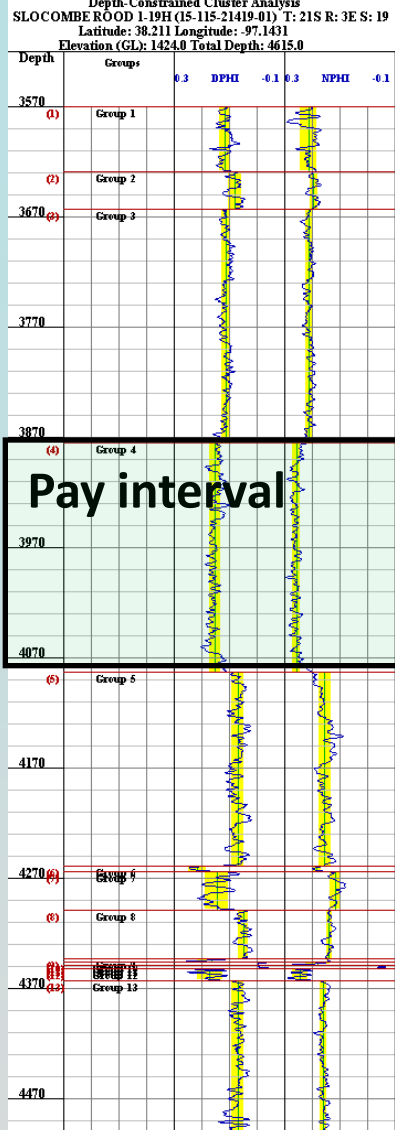
```
~IQ_Geo_Report_Definition
#MNMEM .UNIT VALUE : DESCRIPTION
{FORMAT} | ASSOCIATION
GEOTOP .F : Remarks/Comments/Notes Top
Depth {F}
GEOBASE .F : Remarks/Comments/Notes Bottom
Depth {F}
GEOBED .F : Bed Thickness
{F}
GEODES . : DESCRIPTION
{S}

~IQ_Geo_Report_Data | IQ_Geo_Report_Definition
# GEOTOP GEOBASE GEOBED GEODES
2450.0,2554.0,104.0,"2450.0; 2554.0; Limestone "
2502.0,2502.0,-999.25,"2502.0; Marmaton Group "
2554.0,2558.0,4.0,"2554.0; 2558.0; Shale "
2558.0,2572.0,14.0,"2558.0; 2572.0; Limestone "
2572.0,2580.0,8.0,"2572.0; 2580.0; Shale "
2580.0,2596.0,16.0,"2580.0; 2596.0; Limestone "
2596.0,2500.0,96.0,"2596.0; 2500.0; Shale "
2500.0,2518.0,18.0,"2500.0; 2518.0; Limestone "
2518.0,2522.0,4.0,"2518.0; 2522.0; Shale "
2522.0,2538.0,16.0,"2522.0; 2538.0; Limestone "
2538.0,2546.0,8.0,"2538.0; 2546.0; Shale "
2546.0,2550.0,4.0,"2546.0; 2550.0; Limestone "
2550.0,2554.0,4.0,"2550.0; 2554.0; Shale "
2554.0,2574.0,20.0,"2554.0; 2574.0; Limestone "
2574.0,2584.0,10.0,"2574.0; 2584.0; Shale "
2584.0,2596.0,12.0,"2584.0; 2596.0; Limestone "
2596.0,2610.0,14.0,"2596.0; 2610.0; Sh-Gry-grn / Gry "
2610.0,2628.0,18.0,"2610.0; 2628.0; Limestone "
2628.0,2640.0,12.0,"2628.0; 2640.0; Sh-Blk / Dk Gry / Gry "
2632.0,2632.0,-999.25,"2632.0; Cherokee Group "
2640.0,2644.0,4.0,"2640.0; 2644.0; LS - Crm / Tan, Fxln, Fos,
NVP "
2644.0,2648.0,4.0,"2644.0; 2648.0; Sh-Mar / Yel / Gry-Grn / Gry
/ Blk "
2648.0,2652.0,4.0,"2648.0; 2652.0; LS - Lt Gry / Tan / Gry-Brn,
xln, NVP, NS "
2652.0,2660.0,8.0,"2652.0; 2660.0; Sh - Mar / Yel / Gry-Grn /
Gry / Blk w / Cht-Wh / Crm / Yel, Weathered "
2660.0,2660.0,-999.25,"2660.0; Osagian "
2660.0,2708.0,48.0,"2660.0; 2708.0; Cht - Gry / Wh,
Translucent, Fresh Sharp "
2708.0,2718.0,10.0,"2708.0; 2718.0; Ls-Wh / Crm, Fxln, NVP, NS
w/ Cht - Wh / Trans, Fresh, Sharp "
2718.0,2740.0,22.0,"2718.0; 2740.0; Cht-Gry / Wh, Translucent
Fresh, Sharp "
2740.0,2750.0,10.0,"2740.0; 2750.0; Ls-Wh / Crm, Fxln, NVP, NS
w/ Cht-Wh/Trans, Fresh, Sharp "
2750.0,2803.0,53.0,"2750.0; 2803.0; LS-Wh / Crm / Fxln, NVP, NS
"
```

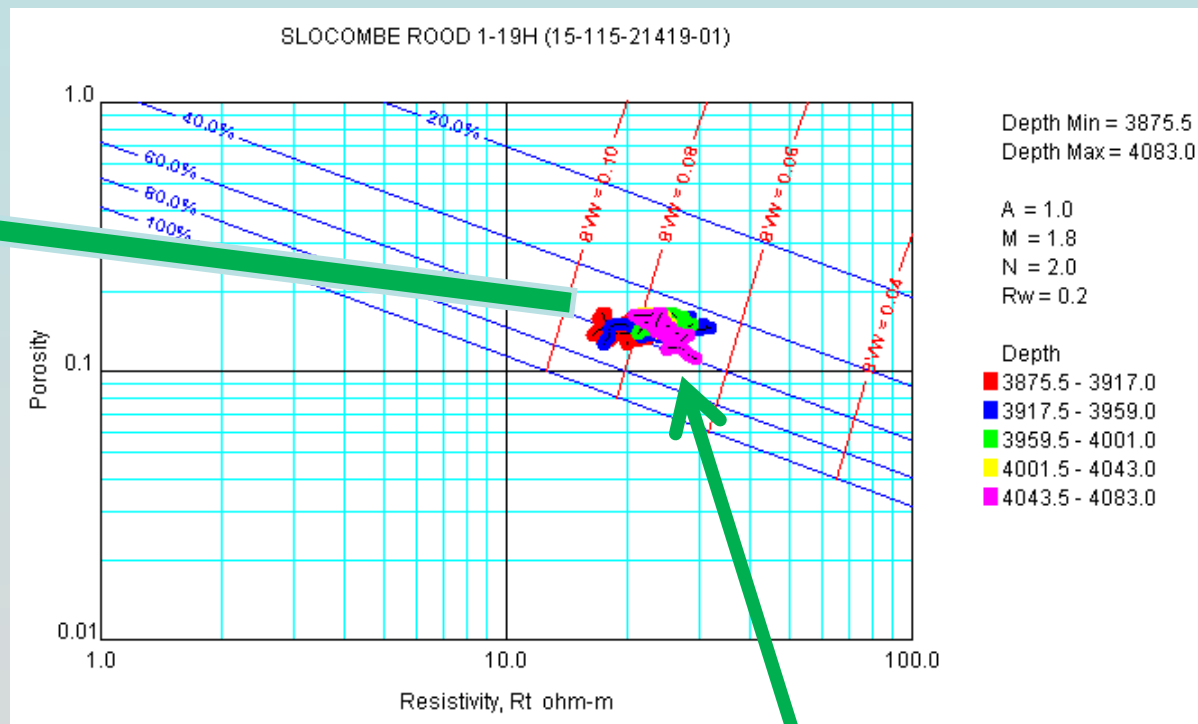
Pay delineation using Java Freeware - using triple-combo log and cuttings



Depth-constrained cluster analysis and Pickett cross plot of pay interval



Pay interval



Cluster Analysis - Group Means

Number of Clusters = 13 R-squared = 16.84 %

Start	End	Group (edit)	DPHI	NPHI
3570.0	3628.5	Group 1	0.113	0.211
3629.0	3663.0	Group 2	0.077	0.192
3663.5	3875.0	Group 3	0.111	0.209
3875.5	4083.0	Group 4	0.15	0.255
4083.5	4259.0	Group 5	0.067	0.152
4259.5	4264.0	Group 6	0.214	0.18
4264.5	4298.5	Group 7	0.142	0.113
4299.0	4343.0	Group 8	0.047	0.136
4343.5	4345.5	Group 9	0.163	0.141
4346.0	4348.5	Group 10	0.37	0.176
4349.0	4352.0	Group 11	0.384	0.337
4352.5	4362.5	Group 12	0.168	0.241
4363.0	4500.0	Group 13	0.067	0.156

DPHI Density porosity
 NPHI Neutron porosity

Ran 4.5" tubing with slotted liner, set packers to produce between 3880 - 4060'

Higher porosity, clustering of points ~near irreducible, Sw = 40-60 %, min. BVW = 0.063, Excellent show

```

#MNMEM .UNIT          VALUE : DESCRIPTION
VERS .                3.0   : CWLS LOG ASCII STANDARD -
VERSION 3.0
WRAP .                NO    : ONE LINE PER DEPTH STEP
DLM .                 COMMA : DELIMITING CHARACTER (SPACE
TAB OR COMMA)


```

Save *flow unit analysis* as LAS 3.0 file

```

~Well
#MNMEM .UNIT          VALUE : DESCRIPTION
{FORMAT} | ASSOCIATION
STRT .F              3450.0 : START DEPTH
{F}
STOP .F              4565.5 : END DEPTH
{F}
STEP .F              0.5    : STEP LENGTH
{F}
NULL .               -999.25 : NULL VALUE
{F}
COMP .               AMERICAN ENERGIES CORPORATION : Company
{S}
WELL .               SLOCOMBE ROOD 1-19H : Well Name
{S}
FLD .                WILDCAT : Field
{S}
SEC .                19      : Section
{I}
TOWN .               21S    : Township (e.g.
42S)                 {S}
RANG .               3E    : Range (e.g.
25E)                 {S}
LOC .                Sec 19 T21S R3E : Location (Sec
Town Range)         {S}
LOC1 .               NE-SE-NW-SE : Location 1
(quarter calls)    {S}
LOC2 .               1873' FSL & 1444 FEL : Location 2
(footages)         {S}
COUN .               MARION : County
{S}
STAT .               KS     : State
{S}
CTRY .               USA   : Country
{S}
PROV .               : Province
{S}
SRVC .               Weatherford : Service
Company             {S}
LIC .                : License Number
{S}
DATE .               22/Jan/2011 : Completion
Date                {DD/MMM/YYYY}
API .                15-115-21419-01 : API-Number
{S}
UWI .                : Unique Well ID
Number              {S}
LATI .DEG           38.211 : Latitude
{F}
LONG .DEG           -97.1431 : Longitude

```

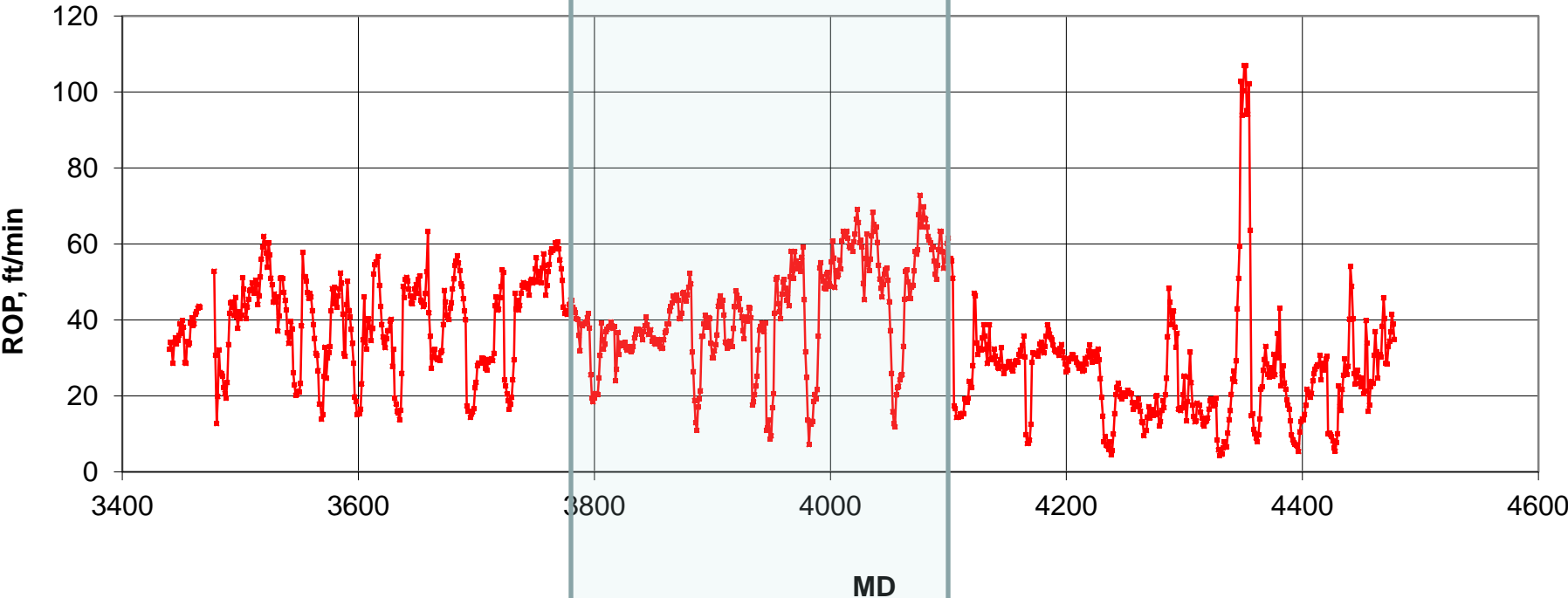


```

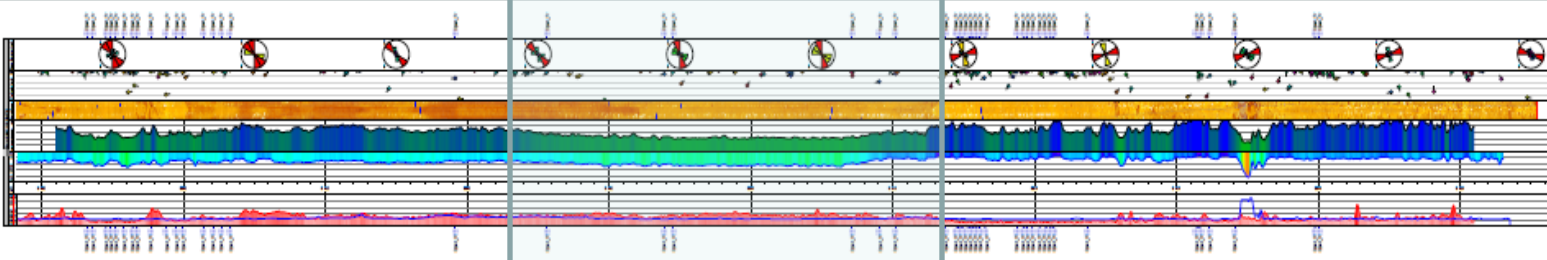
~IQ_Flow_Data | IQ_Flow_Definition
# KEY ZONE STRT STOP ROCK H2O A M N RW RSH PHISH L_RT L_VSH CLEAN
SHALE L_PHIT L_PHI1 L_PHI2 GRAIN FLUID PHI_VSH PHI_SH PHI_SH2 L_
2ND 2_GRAIN 2_FLUID 2_VSH 2_SH C_PHI C_SW C_VSH C_BVW P Q R V_THK
V_FT V_PAY V_PHI V_SW
"110214164312", "First
Hunton", 3529.0, 3570.0, "Limestone", "Archie", 1.0, 1.8, 2.0, 0.2, 0.0, 0.
0, "AHT60", "GR", 0.0, 70.0, "AVERAGE", "NPFI", "RHOB", 2.71, 1.0, "NO", 0.0
, 0.0, "-999.25", -999.25, -
999.25, "NO", 0.0, 0.0, 1.0, 1.0, 1.0, 8581.0, 4.4, 2.0, 41.0, 2.52, 41.0, 0.1
3, 0.54
"110214161948_0", "Group
1", 3570.0, 3629.0, "Limestone", "Archie", 1.0, 1.8, 2.0, 0.2, 0.0, 0.0, "AH
T60", "GR", 0.0, 70.0, "AVERAGE", "NPFI", "RHOB", 2.71, 1.0, "NO", 0.0, 0.0,
"-999.25", -999.25, -
999.25, "NO", 0.0, 0.0, 1.0, 1.0, 1.0, 8581.0, 4.4, 2.0, 59.0, 2.35, 59.0, 0.1
1, 0.66
"110214161948_1", "Group
2", 3629.0, 3663.5, "Limestone", "Archie", 1.0, 1.8, 2.0, 0.2, 0.0, 0.0, "AH
T60", "GR", 0.0, 70.0, "AVERAGE", "NPFI", "RHOB", 2.71, 1.0, "NO", 0.0, 0.0,
"-999.25", -999.25, -
999.25, "NO", 0.0, 0.0, 1.0, 1.0, 1.0, 8581.0, 4.4, 2.0, 34.5, 0.6, 34.5, 0.1,
0.81
"110214161948_2", "Group
3", 3663.5, 3875.5, "Limestone", "Archie", 1.0, 1.8, 2.0, 0.05, 0.0, 0.0, "A
HT60", "GR", 0.0, 70.0, "AVERAGE", "NPFI", "RHOB", 2.71, 1.0, "NO", 0.0, 0.0
, "-999.25", -999.25, -
999.25, "NO", 0.0, 0.0, 1.0, 1.0, 1.0, 8581.0, 4.4, 2.0, 212.0, 14.86, 212.0,
0.11, 0.39
"110214161948_3", "Group
4", 3875.5, 4083.5, "Limestone", "Archie", 1.0, 1.8, 2.0, 0.2, 0.0, 0.0, "AH
T60", "GR", 0.0, 70.0, "AVERAGE", "NPFI", "RHOB", 2.71, 1.0, "NO", 0.0, 0.0,
"-999.25", -999.25, -
999.25, "NO", 0.0, 0.0, 1.0, 1.0, 1.0, 8581.0, 4.4, 2.0, 208.0, 14.64, 208.0,
0.14, 0.51

```

MD vs Rate of Penetration



GR, Ø, Sw, CMI image, fracture occurrence and orientation



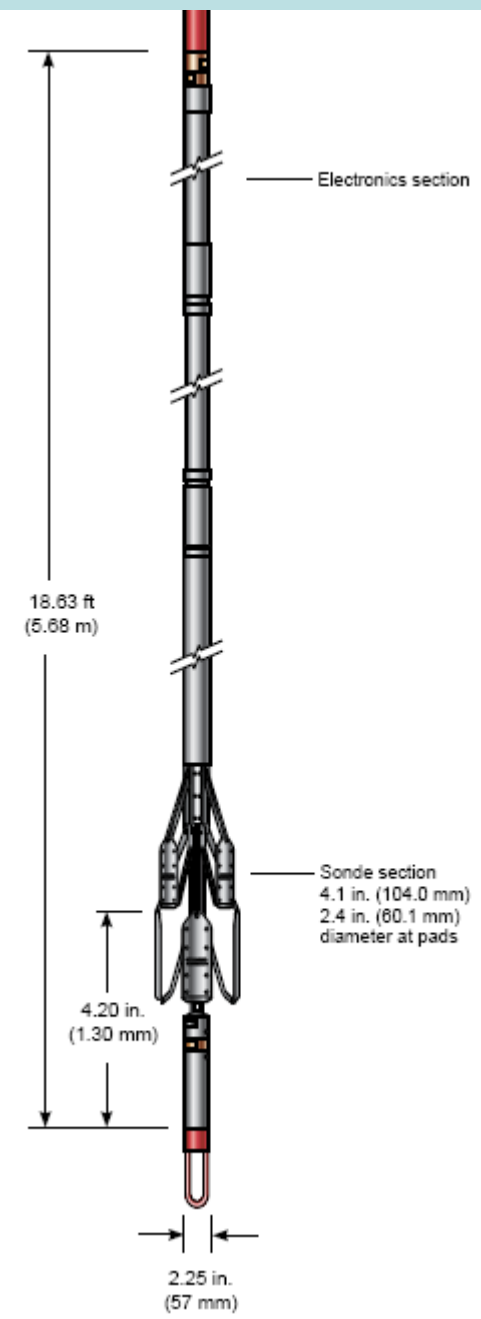
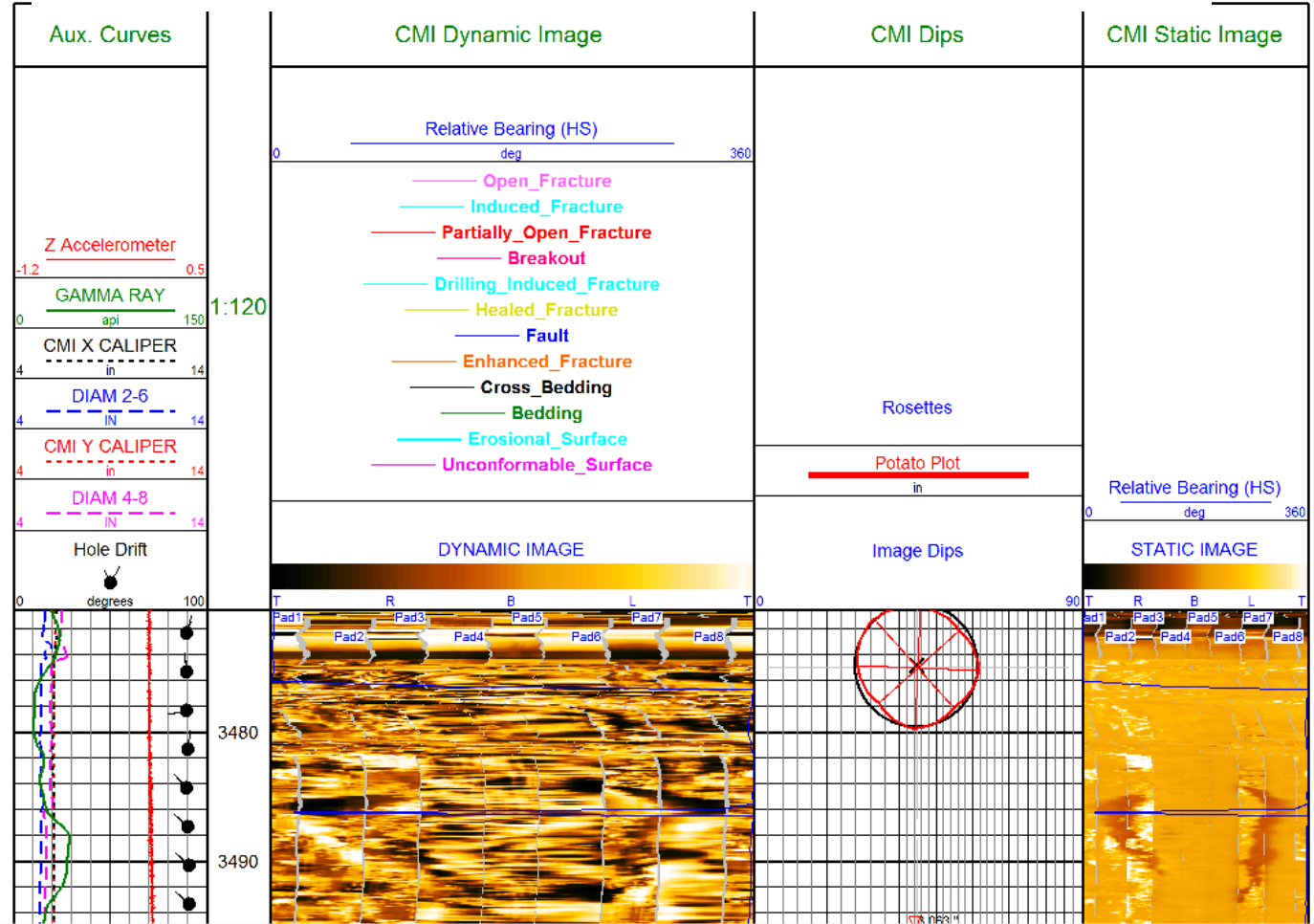
Ran Post-drill (drill pipe conveyed) & Triple Combo

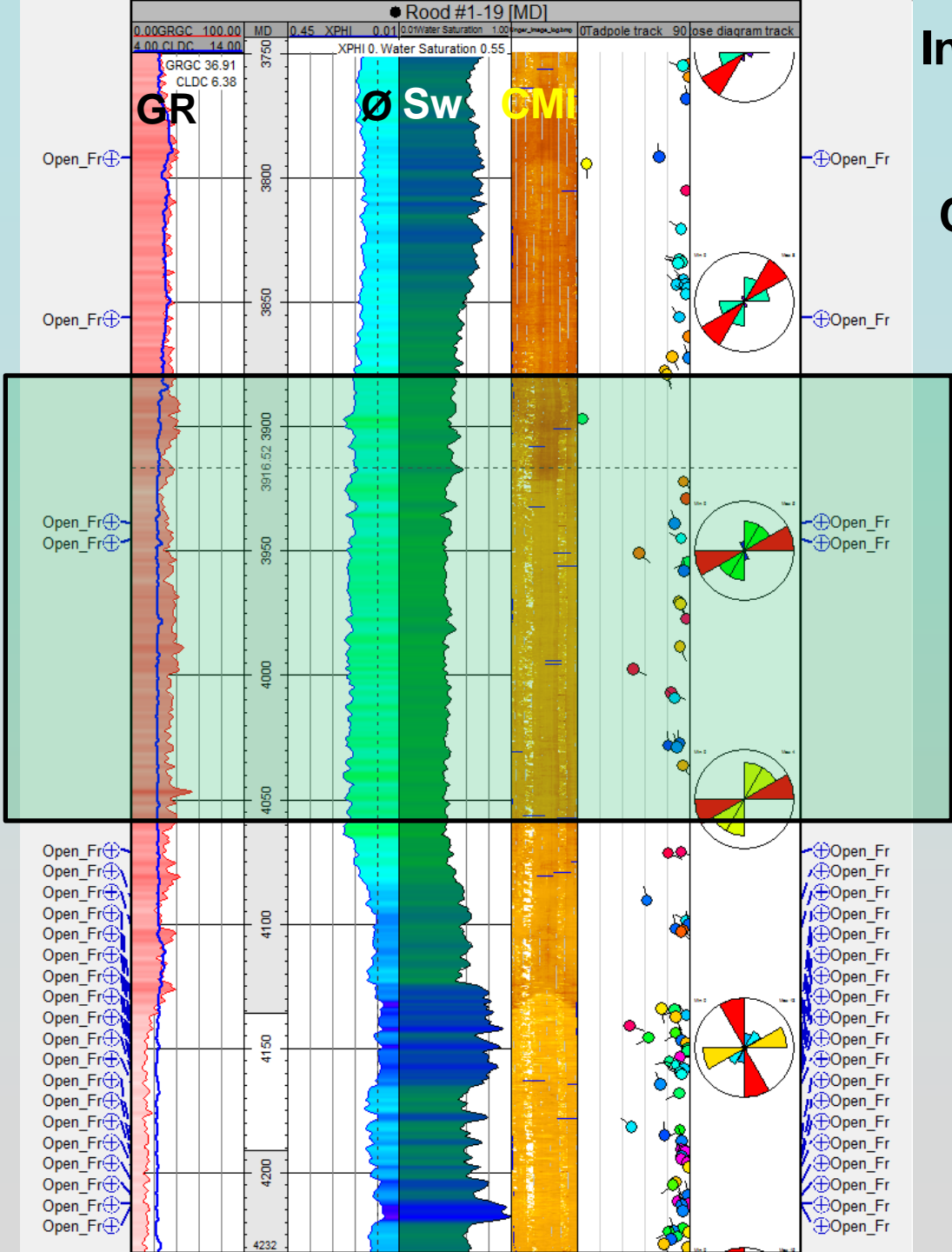


Wireline Services

Open Hole Formation Imaging

Compact™ Microimager (CMI)



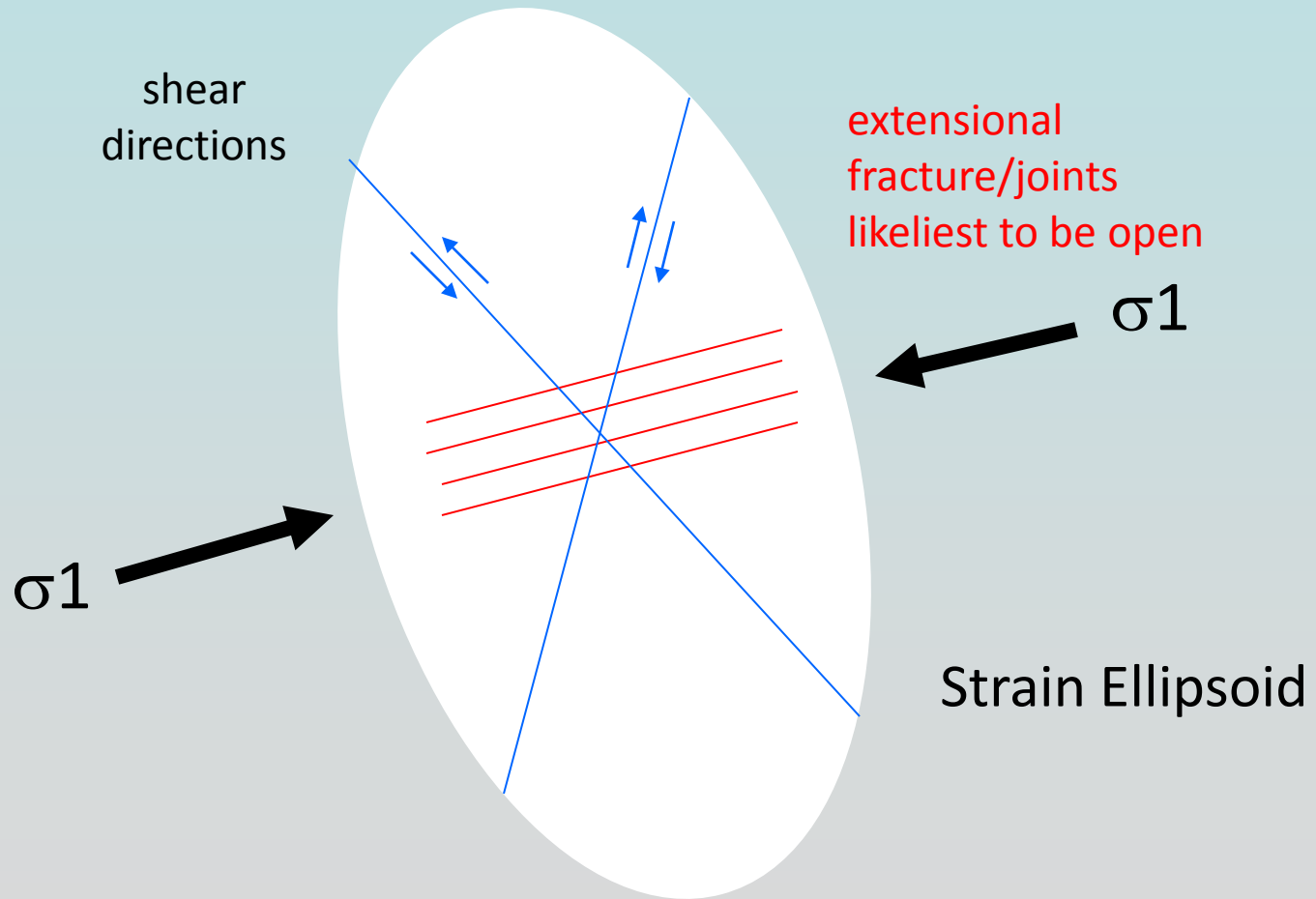


Interpretation of Weatherford's Triple Combo and Compact Micro Imaging (CMI) Log (*fracture log*)

Hunton Pay

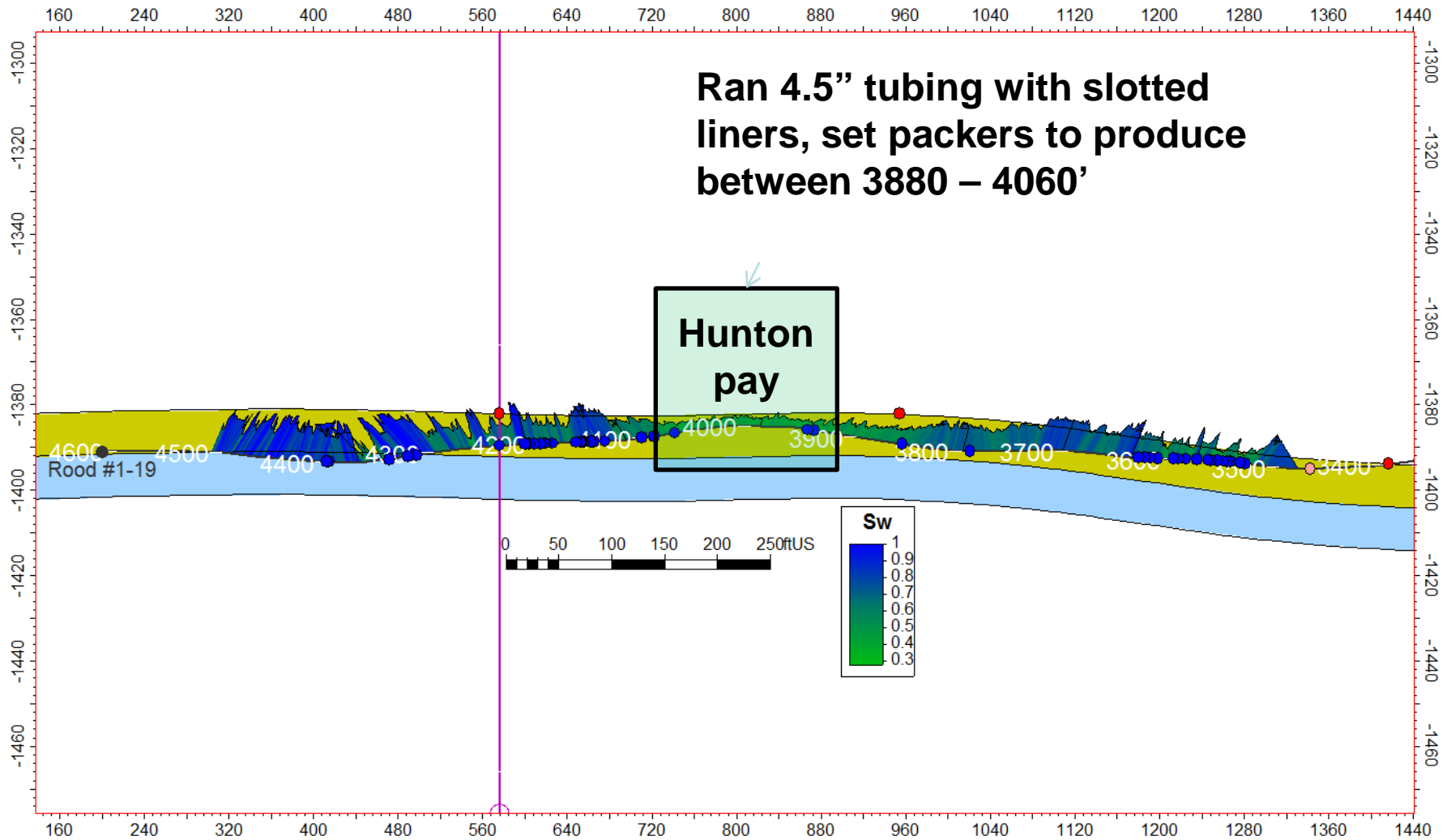
Dominate open fracture set oriented NE


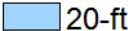
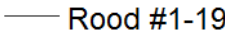

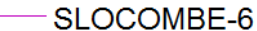
Maximum horizontal stress expected fracture directions



σ_1 is maximum horizontal stress direction

Slocombe-Rood #1-19 Cross Section: Water Saturation & Open Fractures

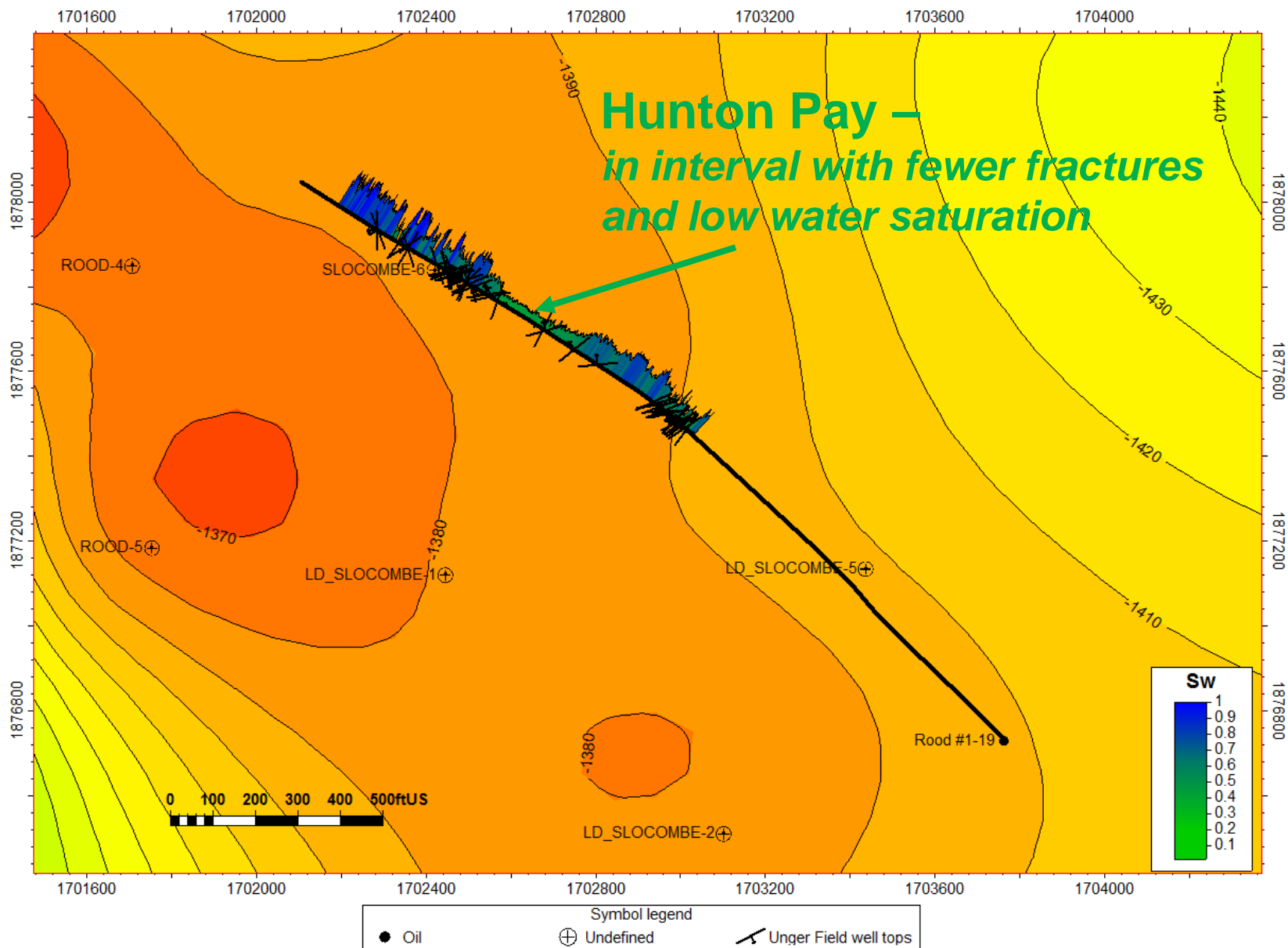


Symbol legend			
			
10-ft	20-ft	Rood #1-19	LD SLOCOMBE-5
			
			SLOCOMBE-6

Petrel presentation along lateral in subsea elevation

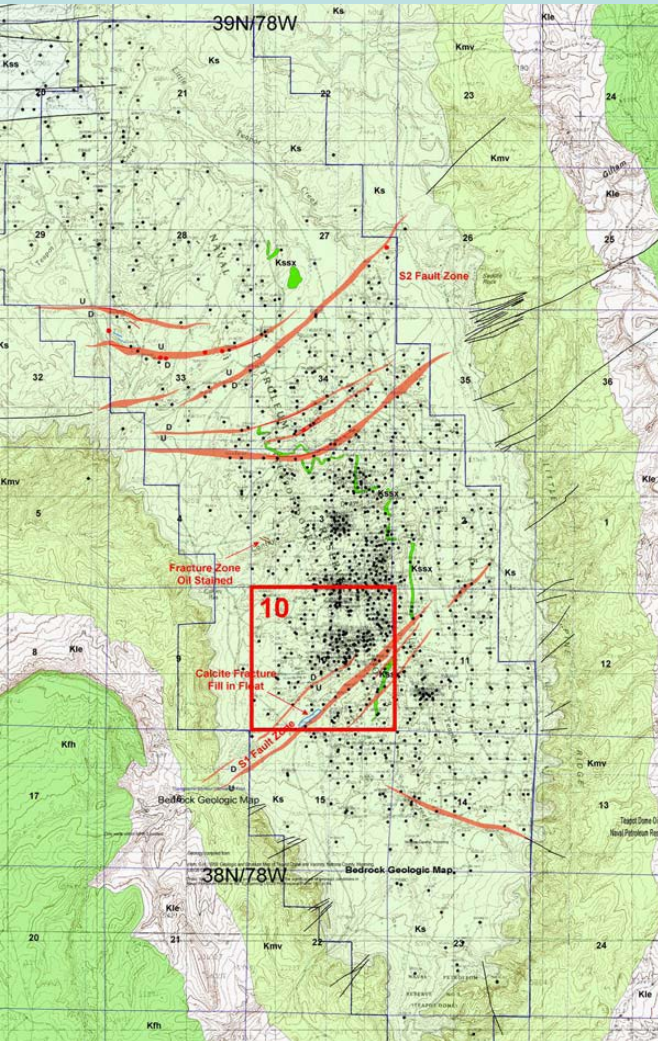
Structure top of Hunton Dolomite

Rood-Slocombe #1-19: Water Saturation & Open Fractures



Teapot Dome, Wyoming

possible analog with main NW-SE fault on west flank and secondary NE trending faults cross cutting structure

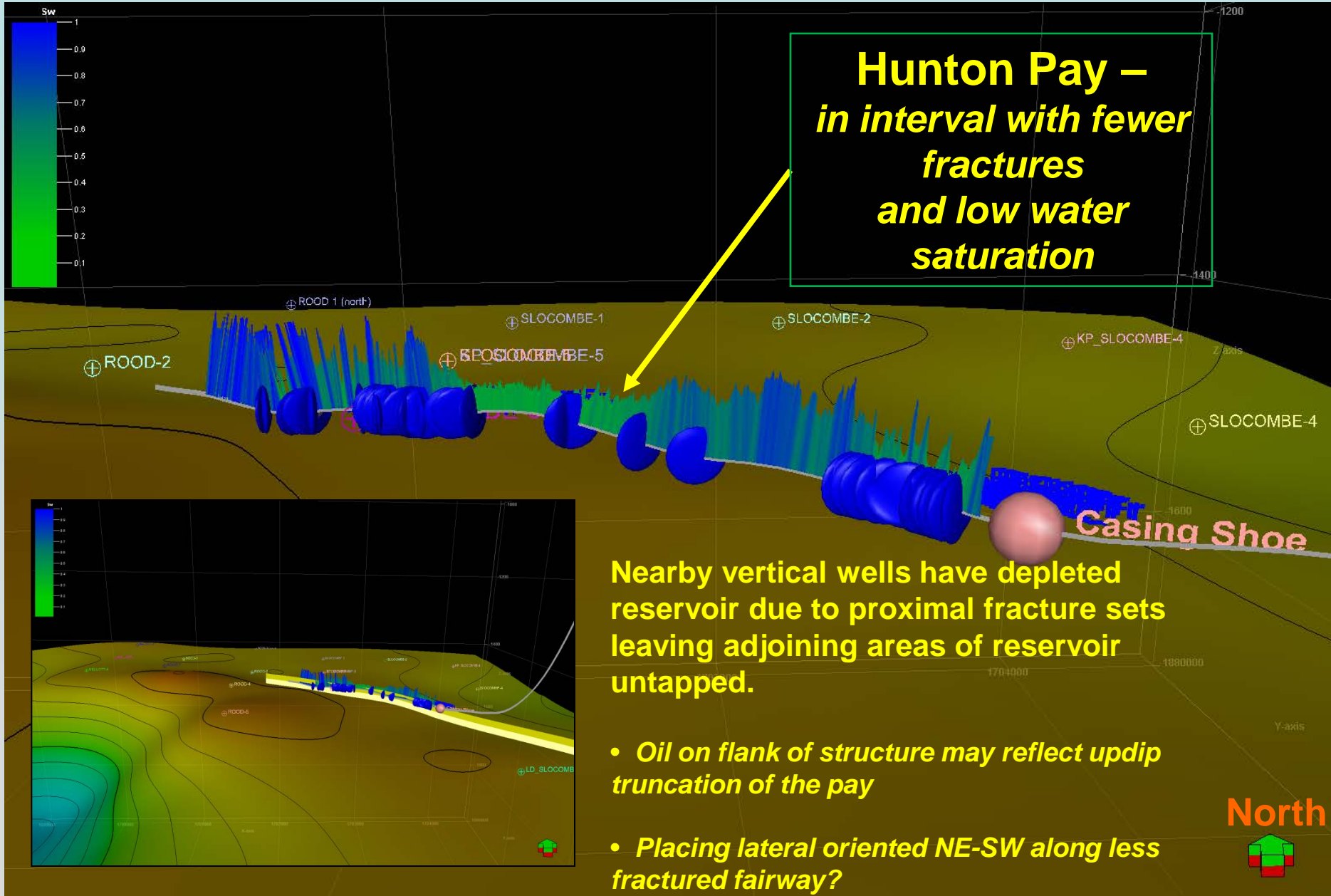


UCRL-JRNL-217774
Lawrence Livermore
Labs
Teapot Dome: Site
Characterization of a
CO₂- Enhanced Oil
Recovery Site in
Eastern Wyoming
By S. J. Friedmann,
V. Stamp
December 16, 2005

Map of NPR-3 surface geology

Contoured time-structure map of basement (Stamp et al. 2004)

Water Saturation and Conductive (Open) Fractures



Production Slotter Liner

American Energies : 2 Stage Isolation Job with 2 Ball Drop Sleeves

Company American Energies Corporation		Other Relative Frac String Information		
Location Slocombe-Rood, Marion County, KS				
Prepared For Alan DeGood	Phone (316) 794-8391	Hanger Setting Depth	2,889	MD (ft)
Service Rep Zac Wilmeth / Scott Earle	Sales Rep William R. (Bill) Mouser	Open Hole Size	6 1/8	(in)
Service Center Oklahoma City, OK	Date March 23, 2011	Total Measured Depth	4,094	MD (ft)



Intermediate Casing		
Size	7	in
Weight	23.00	lbs/ft
Grade	J55	
Burst	4,360	psi
Collapse	3,270	psi
Capacity	0.06360	bbbls/ft

Frac Sleeve Information		
Zone	Ball Seat ID (in)	Ball Size (in)
1	X	Toe Sleeve
2	3.140	3.310 (#18)
3	3.340	3.510 (#19)

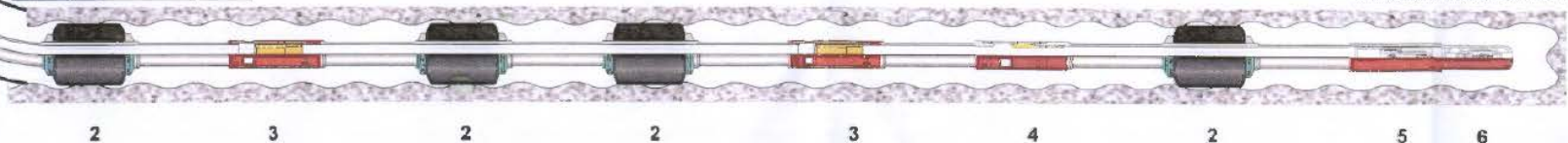
Depth and Displacement Information				
Zone	Packer Depth (ft)	Sleeve Depth (ft)	Sleeve Disp. (bbbls)	Length of Zone (ft)
1	4,083	4,030	53.5	
2	3,896	3,942		
3	3,593	3,540		
4	3,494			

Notes:

- 1 UltraPak HU Seal Bore Packer (Hydraulically Set, 2500 psi)
- 2 ARES isolation Packer (Hydraulically Set, 3000 psi)
- 3 ZoneSelect SingleShot Sleeve
- 4 ZoneSelect TOE Sleeve (Hydraulically Opened, 4088 psi)
- 5 Locking Ball Landing Collar (Permanent Shoe Isolation)
- 6 Float Shoe
- 7 Work String: 3.500" 13.3lb Drill Pipe

Liner		
Size	4 1/2	in
Weight	11.60	lbs/ft
Grade	J55	
Burst	5,350	psi
Collapse	4,960	psi
Capacity	0.01554	bbbls/ft

Tie Back String		
Size	3 1/2	in
Weight	13.30	lbs/ft
Grade	S135	
Burst	24,840	psi
Collapse	21,170	psi
Capacity	0.00742	bbbls/ft



Monday, March 28, 2011

Rig up AEC's Workover Rig #2.


Pick up 3 ½" tubing and reamer – ream to 4250'.

Come out of hole, lay down tubing and reamer.

Rig up and run 4 ½" LTC 11.6# new tubing with packers and slotted liners. 

Set bottom packer with 30,000 lbs.

Pump fluid with ball to activate second packer to produce interval between

3880 – 4060'. 

Set liner in 7" casing @ 2900', 4 ½" is between 2900' and 4060'. PBTD:
4060'.

Fluid needed to set packer:

3 ½" tubing @ 2900' @ .0090 bbls/foot = 26.1 bbls

4 ½" LTC, 11.6#, 1260' @ .0155 bbls/foot = 19.53 bbls

Total 45.63 bbls KCL Water

45.63 bbls of KCL water

Weight of tubing:

4 ½" @ 11.60 lbs/foot X 1260' = 14,616 lbs

3 ½" @ 8.50 lbs/foot X 2,900 = 24,650 lbs

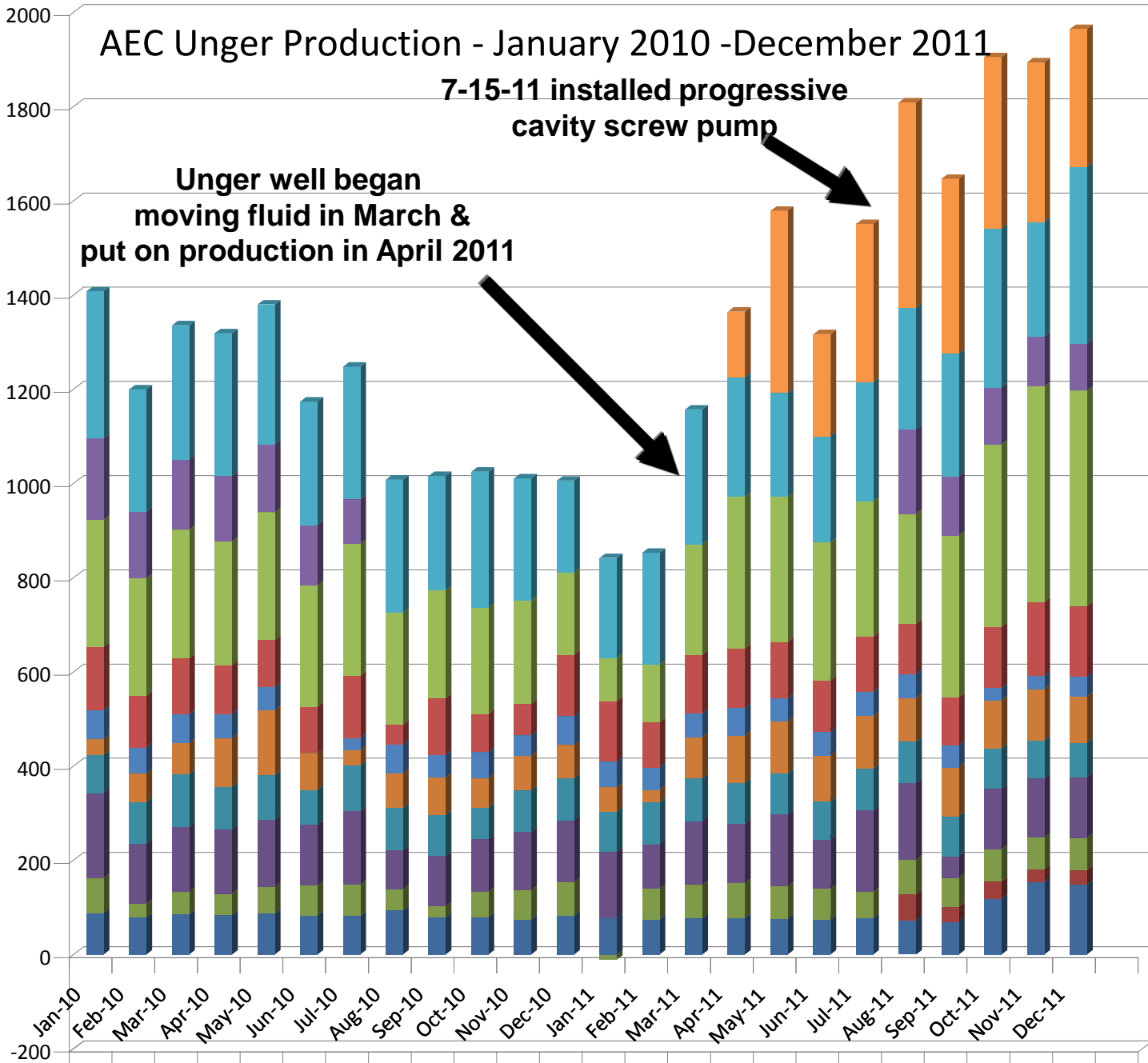
39,266 lbs

We will need 30,000# to set the bottom packer.

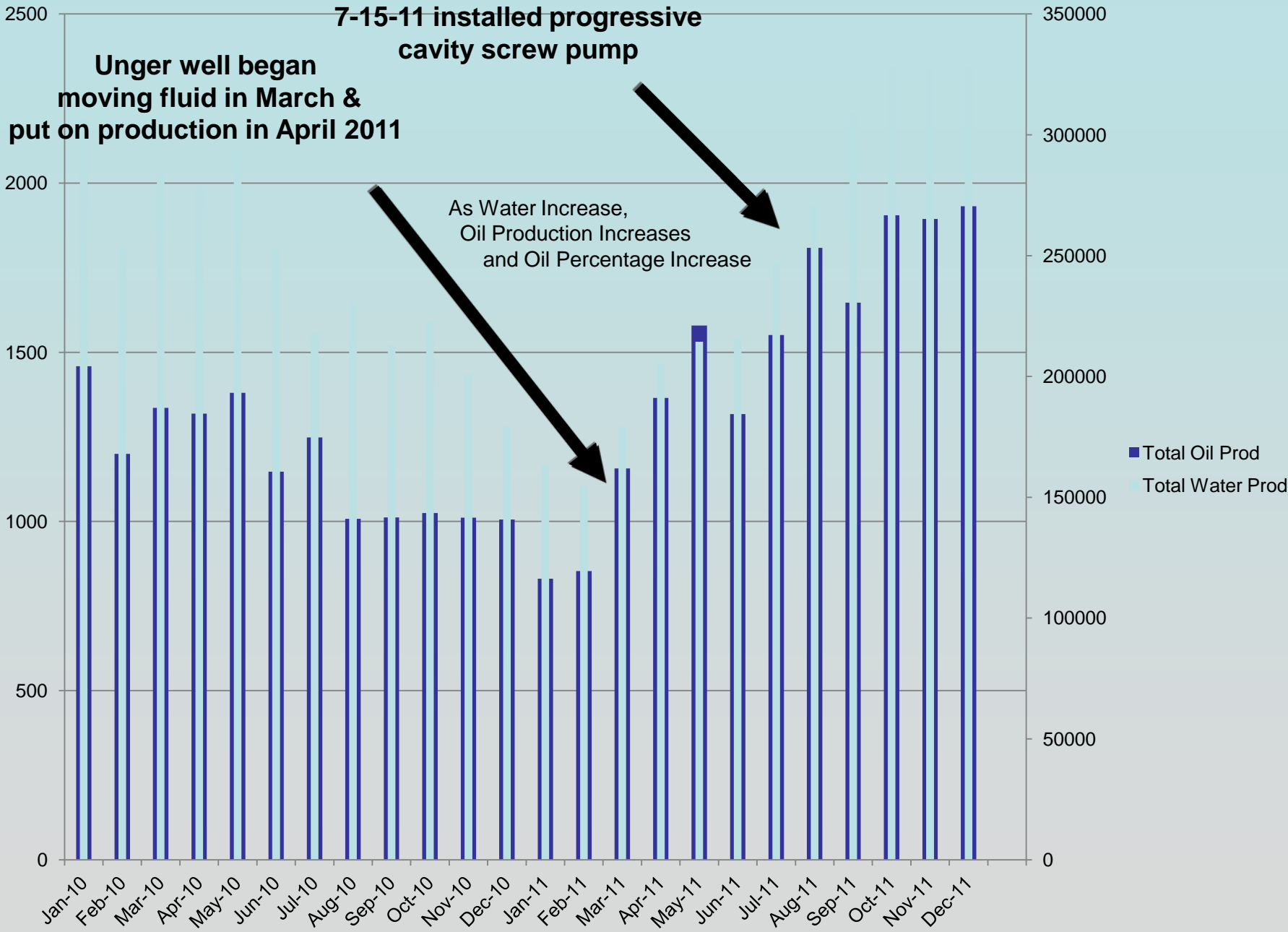
AEC Unger Production - January 2010 - December 2011

7-15-11 installed progressive cavity screw pump

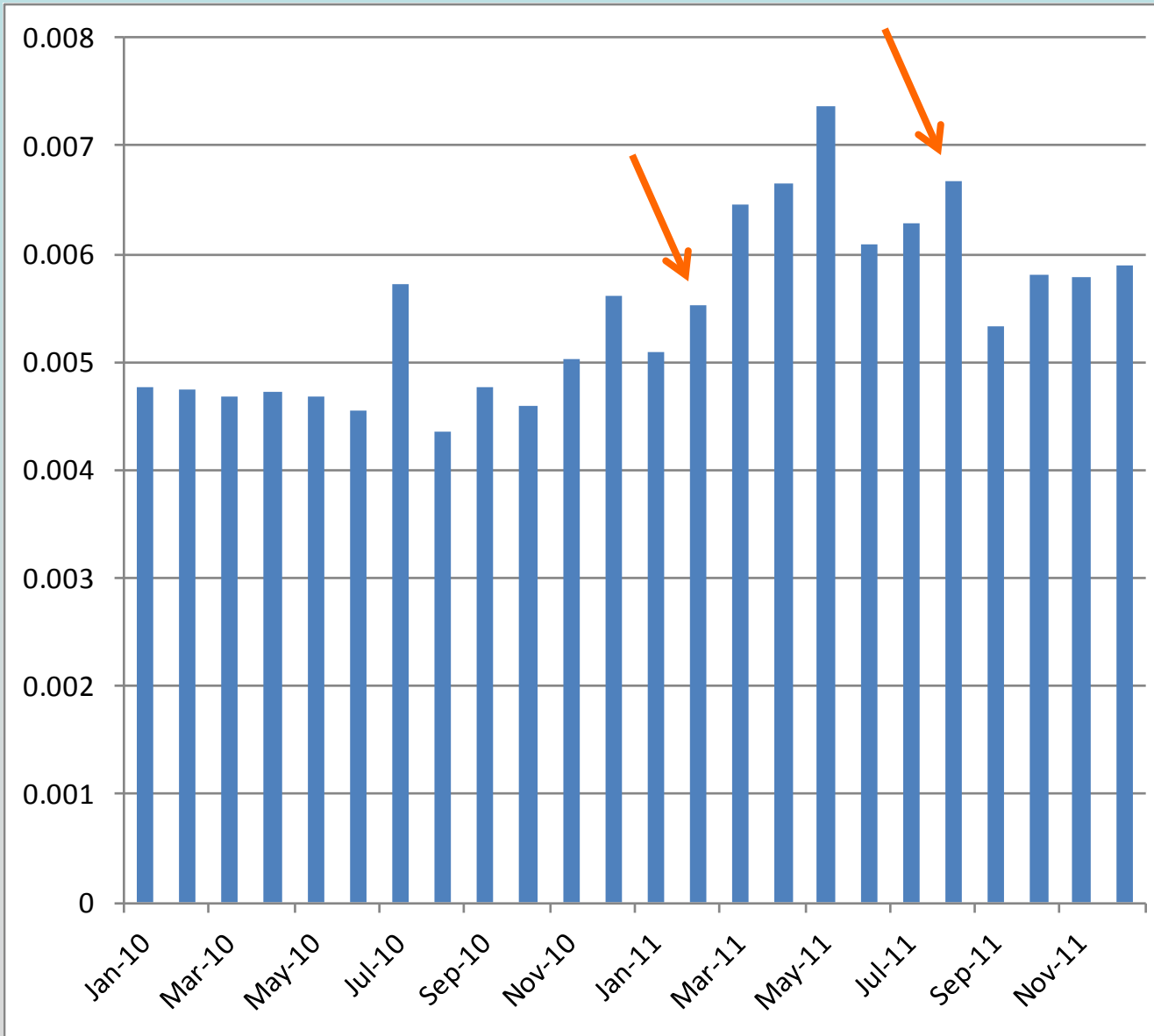
Unger well began moving fluid in March & put on production in April 2011

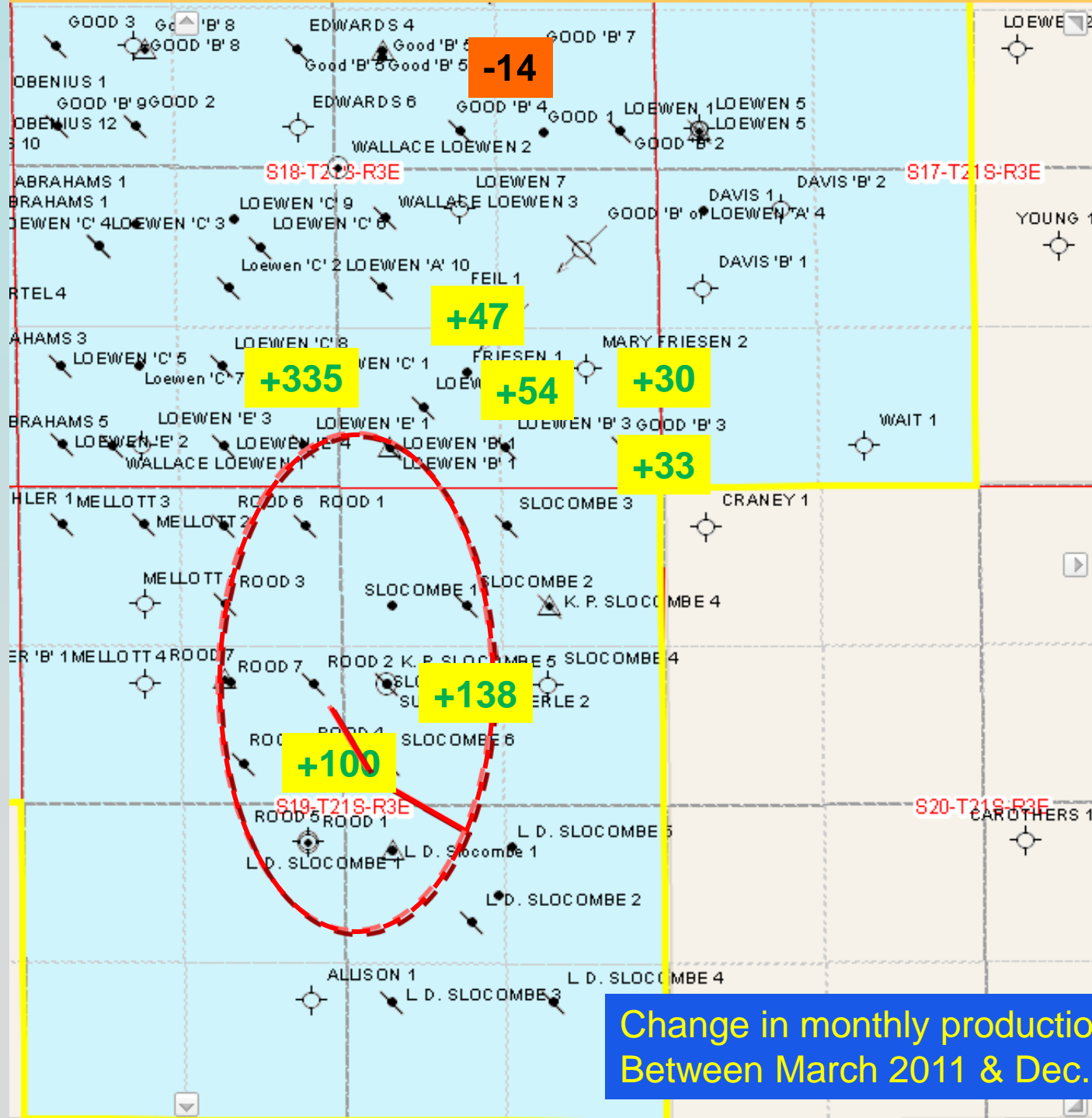


- Slocombe Rood 1-19
- Slocombe
- Rood
- Loewen C9,10
- Lange Friesen
- Kinney
- JK Warkentine 3,7,B2
- Good B 5,7,8
- Good
- Frobenius
- Friesen
- Eberle 2,3



Oil:water ratio, Unger Field





Change in monthly production
Between March 2011 & Dec. 2011

Conclusions

- **Slocombe-Rood 1-19 is modest success to revive old field:**
 - Identified and completed less fractured, undrained drained compartment in sucrosic dolomite lithofacies in flow unit #3 using slotted liner
 - Economically increased oil production from 29 BOPD + 8,400 BWPD in Jan. 2011 to 64 BOPD and 16,600 BWPD in December 2011 (well drill and completion ~\$800k)
 - Weaker edge water drive than previously through with the potential to drawdown the water level and increase oil production.
 - Starting to pump off producing wells in this vicinity of the horizontal well
- **Logging program permitted recognition of pay and optimization of completion design**
 - Selectively isolate untapped dolomite interval
 - Isolated completion from natural fractures
- **Additional opportunities:**
 - Plan to install high volume submersible pump and recomplete Arbuckle disposal well to get rid of water; pump off wells to drain more oil
 - Potentially isolate fracture in pay zone to draw more fluid from matrix
 - Targeting pay and fractures with 3D seismic imaging and drill more horizontals parallel to major NW-oriented fracture set?



Small Producer
Project #07123-04

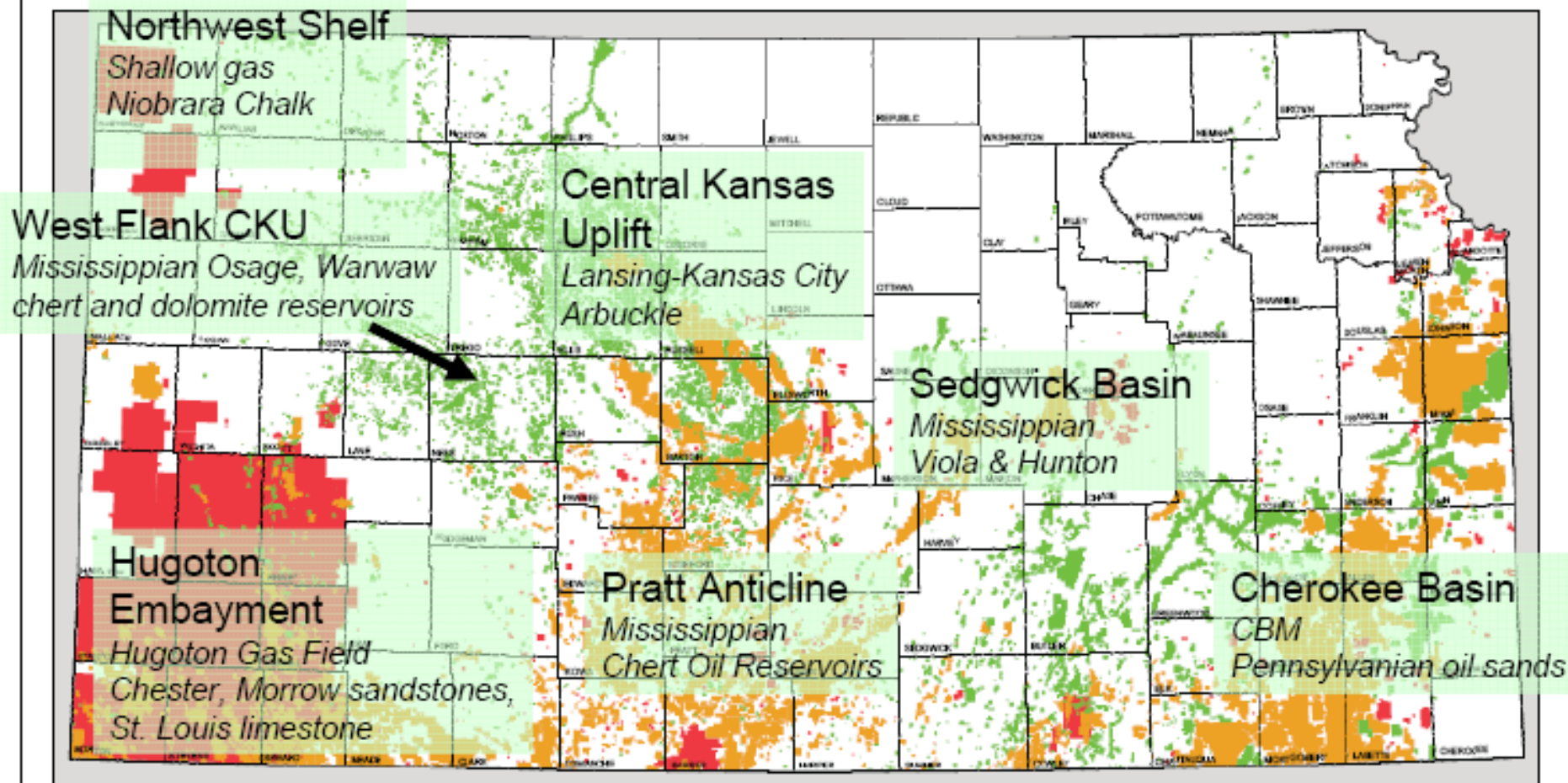


Summary

- Lateral drilled in this project has revealed that 60-year old Unger Field has bypassed production in the cherty dolomitic reservoir.
- Lateral has tapped 200 feet of continuous fully oil saturated matrix porosity consisting of fine intercrystalline dolomite bounded by a tight cherty dolomite on one side and a fractured porous dolomite on the other.
- Imaging log and triple combo logging tools identified and characterized isolated sets of open fractures.
- Fractures are limited in the oil saturated interval and vertical well have not tapped the pay interval due to intervening fractures that are believed to have preferentially produced edge water from downdip.
- Slotted liner completion was used to effectively isolate the pay interval. Installation of the progressive cavity pump has proven moderately effective for the lateral itself that now averages 10 BOPD and 600+ barrels of water.
- Significantly, nearby leases have doubled their oil production from 29 bbls to 64 BOPD. Water production has increased from 8400 to 16,600 BWPD.
- Soon to be installed submersible pump will likely lead to more oil production as water is drawn down by the higher fluid volume.

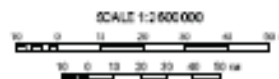
OIL AND GAS FIELDS OF KANSAS

2009



This map was prepared by the staff of the Kansas Geological Survey and is based on Oil and Gas Fields in Kansas (1967) and subsequent revisions with the same name (1975, 1989, 1990, and 1995). Fields are represented according to their status as of June 1, 2009. Listings of fields by location, name, and cumulative production are found in the Survey's interactive oil and gas map viewer located at <http://maps.kgs.ku.edu/oilgas/index.cfm>. For viewer instructions, click on the "Help" tab at the top of the page. Due to frequent data updates, field and production area boundaries may differ slightly from those shown on this map. All fields are shown without differentiation between active and inactive. Areas of natural gas production from coal are not included on this map.

As set forth in Kansas Administrative Rule 81-3-102, field boundaries are determined by the Kansas Corporation Commission after considering the recommendations of the Conservation Division, Kansas Corporation Commission, and the Nomenclature Committee, Kansas Geological Society.



LAMBERT CONFORMAL CONIC PROJECTION
WITH STANDARD PARALLELS AT 33° AND 45°N
CENTRAL MERIDIAN 96°20' W
NORTH AMERICAN DATUM OF 1983

Named Fields

- Oil field
- Gas field
- Oil and gas field

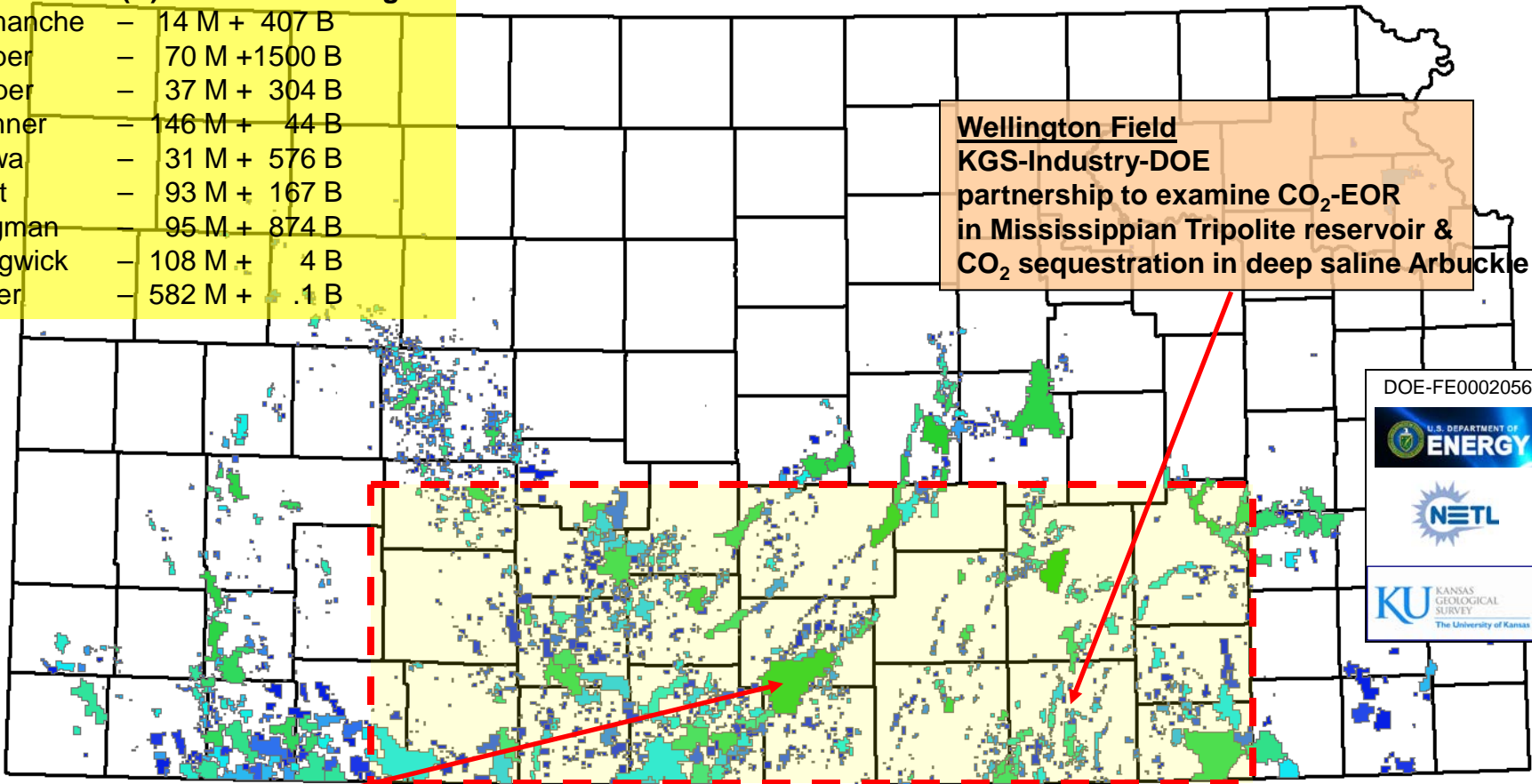
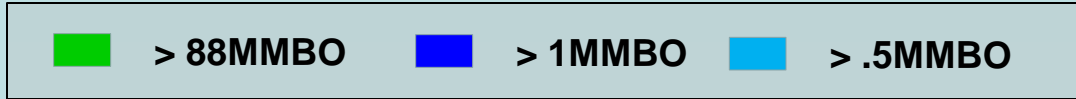
Mississippian Oil and Gas Fields in Kansas

Approximate outline of southern Kansas Mississippian Oil Play & cumulative oil and gas production (BOE)

Cummulative Oil & Gas in southern Kansas

1,180 million (M) bbls oil +
3,880 Billion (B) cu. ft of natural gas

Comanche	-	14 M +	407 B
Barber	-	70 M +	1500 B
Harper	-	37 M +	304 B
Sumner	-	146 M +	44 B
Kiowa	-	31 M +	576 B
Pratt	-	93 M +	167 B
Kingman	-	95 M +	874 B
Sedgwick	-	108 M +	4 B
Butler	-	582 M +	.1 B



DOE-FE0002056

U.S. DEPARTMENT OF ENERGY
NETL
KU KANSAS GEOLOGICAL SURVEY
The University of Kansas

Gerlach, Sept. 2011

Spivey-Grabs Basil is the largest Mississippian oil field in Kansas with 69 MM BO & 841 BCFG
Produces from the tripolite and could benefit from horizontal drilling and, in later maturity, by CO₂-EOR

January 2011 field trip for students and members of industry
Alan DeGood, American Energies Corporation
hearing presentation on MWD- azimuthal gamma ray tool



New life in old oil wells Wichita driller hopes new technique opens oil fields

By DAN VOORHIS

The Wichita Eagle

Published Sunday, Jan. 16, 2011, at 12:05 a.m.

Updated Sunday, Jan. 16, 2011, at 12:56 a.m.

Read more: <http://www.kansas.com/2011/01/16/1676580/ita-driller-hopes-new-technique.html#ixzz1f7KOo7kp>

