

# **Geological Report**

**On**

**Para Et Al Cameron L-73**

**300/L-73-60-10-117-15**

**For**



**Paramount Resources Ltd.**

**Prepared For: Llew Williams**

**Prepared By: M. A. Salam Khan**



8307 Edgevalley Drive, N.W. Calgary, Alberta T3A 4X2 • Res. (403) 248-1507, Cellular (403) 816-1045

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The proposed Para Et Al Cameron L-73 an exploratory well was a part of an extensive exploratory drilling program in the Cameron Hills. The well was proposed to drill vertically as a new delineation well. Paramount Resources Ltd. retained the services of Precision Drilling Rig # 129.

The primary objective is to penetrate the prognosticated oil productive zone in the Sulphur Point Dolomite Section of Sulphur Point Formation. Productions are being drawn from here in some wells.

Secondary targets were to test gas and heavy hydrocarbon possibilities of in the upper limestone section of Sulphur Point and in the Slave Point formation respectively. The Cameron Hills identifies itself with its structure complexity leading to insufficient geological information. The well bore information will validate the seismic picking of the reservoirs and to learn more about the complex reservoir characteristic of the structures.

The well was spudded at 10:00hrs on the February 18, 2007. Drilling of 311mm hole from surface to 436.0m was completed using one rock bit in 34.75 on bottom bit hours. 219.1mm surface casings were run in setting the shoe at 436.0 and cemented as per program.

Partial mudloss was encountered from 569.0m RKB during drilling of 200mm hole and total loss encountered at 613.0m RKB. Blind drilling to 739.0m RKB was continued to drill through the Wabamun formation into the underlying Fort Simpson formation. Three cement plugs consecutively were conducted to prevent mudloss.

200mm hole section was completed using one PDC bit consuming 69.75 on bottom bit hours. Gel Chem mud was used for the surface hole and displaced with Floc water till 856.0m and back to Gel Chem during the last section of drilling.

139.7mm casings were used to case the well for production tests.

The Para Et Al Cameron L-73 well data is a source of geological information of the morphological changes and reservoirs characteristics of the crater of the complex of Cameron Hills. The fractured and faulted (?) section in the Wabamun Formation leads to mudloss through its crater and encountered in all the wells drilled. The geology section in the Strip Log gives a brief representation of the individual stratigraphic formations.

The Sulphur Point Limestone section was 16.5m thick from at 1398.5m to 1415.0m RKB. It is comparatively tight than that of the dolomite section varying with some high porous streaks. It is oily and indicated gas responses. The porosity varies between 4% - 12%. Gas shows maximum 561/222 units were recorded during drilling. Weak odors with traces to patchy fluorescence were noticed.

The Dolomite Section is 14.0m thick and coarser down the section. Remarkable gas shows were not encountered but vuggy porosity and grainy appearance looked bright prospective for oil. Porosity varies from 4% to maximum 14% in some of the strips.

The Slave Point formation was picked up at 1345.5m (570.3m SS) and 40m thick. Gas shows were noticed although the section with maximum 791/222 units and 932/222 units at 1364.50m and 1373.50m respectively. The Slave Point is mainly of buff and tan limestone with porosities varying between 3% - 13% - maximum in some grainy streaks. Weak odor with traces to patchy natural oil fluorescence was noticed in all through the drilled section.

Weak odor of oil was noticed from the beginning of drilling this interval. Traces of light brown oil show was noticed which gradually increased between 1355m to 1370m RKB and faded away with the boundary section of the underline F4 Marker which hardly can be recognized from the drilling parameters and ditch cuttings.

The open hole logging was completed by Weatherford Logging Services.

MAI/MSS/MPD/MDN/MML/ISC/MGS/MTC/MFE/MCG tools were run in. From the ROP and gas data, ditch cuttings and logs the Sulphur Point Dolomite Section does carry positive reservoir properties for production including good oil shows. Limestone section of the Sulphur Point possesses comparatively tight porosity than that of the Dolomite Section. The Slave Point has got good reservoir properties and could be tested for the commercial viability.

Further evaluation and studies are also proposed for the quest of geological interest in the Cameron Hills Field.

# Well Summary

Storage Units: Metric

## Well Information

**Operator:** Paramount Resources Ltd.  
**Well Name:** Para Et Al Cameron L-73  
**Location:** 300/L-73-60-10-117-15  
**UWI:** 300-L-73-6010-117150  
**Pool:** Sulphur Point & Slave Point.  
**Field:** Cameron Hills.  
**State / Province:** Northwest Territory  
**Country:** Canada  
**License Number:** 1159  
**Well Status:** Cased for production testing.

Surface Co-ordinates		Hole Type: Vertical	Fault Indicator:
		Latitude: 60°2'38.3"	Longitude: 117°29'54.3"
N / S:	n/a.		
E / W:	n/a.		
Bottom Hole Co-ordinates	Latitude:	60°2'38.3"	Longitude: 117°29'54.3"
N / S:	n/a.		
E / W:	n/a.		
Elevations		Reference:	MSL
Ground Elevation:	770.80	Kelly Bushing to Ground:	4.00
Kelly Bushing Elevation:	774.80	Cut (-):	0.00
Casing Flange Elevation:	4.00	Fill (+):	0.60
Total Depth	Measured Depth	True Vertical Depth	
Total Depth Driller (Tally) :	1,450.00	1,450.00	
Total Depth Driller (Strap or SLM):	1,450.00	1,450.00	
Total Depth Logger:	1,448.60	1,448.60	

## Miscellaneous Depths

Plugback Depth:	Water Depth Reference:
Sidetrack Depth:	Water Depth:

## Well Summary

Drilling Contractor:	Precision Rig# 129.	Spud Date:	Feb 18, 2007	@ 10:00
Rig Release Date:		Total Depth Date:	Feb 27, 2007	@ 06:00

Cores	#	Formation	Interval	Cut	Recovered	%
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## Casing Summary

Casing Type	Casing Size	Landed Depth	Hole Size
Surface	219.1	436.00	311.0
Production	139.7	1,450.00	200.0

# Daily Drilling Summary

Storage Units:

Metric

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Feb 18, 07	0.00		0.00	0.0	Tear down rig. Rig move to the new Cameron L-73 location. Pre-job safety meeting. Rig up.
Feb 19, 07	184.00		18.50		Pre-job safety meeting. Nipple up diverter line. Pick up a new 311mm bit on drilling assembly. Pre-spud safety meeting. Spud the rig. Drilling from surface to 184.0m. Conduct periodical surveys. Gas trap is sent to Rig# 250. Drilling continued.
Feb 20, 07	425.00		14.70		Continue drilling 311mm surface hole from 184.0m to 425.0m. Conduct periodical surveys. Circulation and mud conditioning. Flow check - static. Round trip prior to RIH of surface casings. Strap out drilling string.
Feb 21, 07	436.00		1.70		RIH to bottom. Drill down to 436.0m. Conduct survey at 436.0m. Mud conditioning MW: 1100kg/m <sup>3</sup> ; FV: 95sec and pH: 9. POOH to run production casings. Pre-job safety meeting. Rig up casing equipments and tools. RIH 32 joints of 219.1mm; 35.72m/kg; IPSCO; J-55 casings of total length. The shoe was set at 436.0m RKB. Circulate through casings. Safety meeting with Sangel cementing hands. Conduct cement job. Cemented with 38 tones of 0.1.0 G + 1.5% CaCl <sub>2</sub> . Plug down at 01:15hrs. 4m <sup>3</sup> cement slurry received on surface. WOC. Safety meeting. Cut and dress casing string continued.
Feb 22, 07	600.00		5.70		Pre-job safety meeting. Nipple down diverter line. Cutting and dressing of casing and welding with the casing bowl. Nipple up BOP stacks. Pressure test BOP stack with Rainbow Pressure testers. Test all manifold valves, chokes, flanges, casing bowl, HCR manual and hydraulic valves, Blind Rams, Kill and check lines, drilling spools, stabbing valve, inside BOPs, Pipe Rams and Annular BOP respectively - ok. RIH with anew PDC bit on drilling BHA to 375.0m. Slip and cut drill lines. Tag cement top at 428.0m. Drill down to 347.0m. Conduct LOT at 7150kPa. LOT gradient 26.2kPa/m. Resume drilling and drill down to 600m with periodical surveys.

# Daily Drilling Summary

Storage Units:

Metric

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Feb 23, 07	739.00		7.50		Record partial mud loss while drilling from 569m. Drilling to 613m - lost circulation. Blind drilling from 613m to 739m i.e. +/-30m inside the Fort Simpson Formation. Conduct periodical surveys. POOH. Flow check at 739m, 708m, 430m and on surface - mud loss. Cut and slip drill line. RIH with open ended drill pipe to bottom. Rig up Sangel cementing equipments. Set cement plug between 510m to 739m. Pump 0.5m3 water and pressure test lines. Pump 0.5m3 water followed with 6m3 cement slurry (7 tones). Displace 1.6m3 slurry with water. POOH by 12 stands. Circulate and clean out cementing string. WOC. RIH and tag cement top at 571m. Preparation for second cement plug.
Feb 24, 07	790.00		7.00		Cement Plug# 2 between 476m to 571m. Pump 0.5m3 water and pressure test cementing lines. Pump 0.5m3 water followed by 3m3 cement slurry of 3.5 tones cement. Displace 1.4m3 with mud. POOH 7stands and clean out the string. WOC. Tag cement at 559m. Conduct cement plug No. 3 between 464m to 559m. Pump 3m3 cement slurry and displace 1.4m3 with mud. POOH to 464m and clean out the string. WOC. Tag cement at 478m. POOH cementing string. RIH with Bit# 2 on drilling BHA. Drill out cement plug. TG at 478m is 123/34 units. Consistent gas shows were recorded during cement drilling. Resume drilling from 739m and drill down to 790.0m. Conduct survey at 749m. Drilling continued.
Feb 25, 07	1,118.00		18.70		Continue drilling from 790.0m to 1118.0m. Conduct periodical surveys. Drilling continued.
Feb 26, 07	1,288.00		18.20		Continue unabated drilling from 1118.0m to 1288.0m with periodical surveys. Drilling continued.
Feb 27, 07	1,450.00		18.00		Continue unabated drilling from 1288.0m to TD - 1450.0m RKB. Circulation and mud conditioning.

# Daily Drilling Summary

Storage Units:

Metric

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Feb 28, 07	1,450.00		0.00	0.0	Wiper trip to shoe. Flow check at 1450m, 1378m, 725m, 436m and 0m - static. Pre-job safety meeting. RIH. Flow check at 725m - static. Reaming from 1358m to 1450m. H2S alert - 15ppm. pH gone down. Mud conditioning to 1180kg/m3 and FV: 85sec. POOH. Flow check at 1450m, 1378m, 725m, 435m and 0m - static. Safety meeting with Weatherford hands. Rig up logging tools and equipments. Logging. Run# 1: RUN#1: MCG/MFE/MTC/MML/MGS/MDN/MSS/MAI tools. RIH with a rock bit continued.

## Casing Data Summary

Storage Units: Metric

**Casing Type:** Surface

**Casing Size:** 219.1      **Hole Size:** 311.0  
**Casing Landed @:** 436.00      **Total Joints:** 32  
**Casing Date:** Feb 20, 2006 @ 20:00      **Plug Down Date:** Feb 21, 2007 @ 01:15

**# of Joints / Length / O.D. / Weight:** 32 joints: 436.48m; 219.1mm; 35.72kg/m; IPSCO; J-55

**Cementing Details:** The casing string was cemented with 38 tones 0.1.0 G + 1.5% CaCl2. 4m3 cement slurry received on surface.

**Remarks:** No hole problem was encountered during RIH of casings.

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**Casing Type:** Production

**Casing Size:** 139.7      **Hole Size:** 200.0  
**Casing Landed @:** 1,450.00      **Total Joints:** 111  
**Casing Date:**      **Plug Down Date:**

**# of Joints / Length / O.D. / Weight:** 111 joints of 139.7mm, 23.07kg/m, IPSCO, J-55 production casings of total length 1459.82m were run in setting the shoe at 1450m RKB.

**Cementing Details:** Conduct cement job with Sangel. Pump lead slurry of 23 tonne Thixlite + 1% SMS followed by tail slurry of 11 tonne Expandomix LWL + 0.1% CFL-3 + 0.2% LTR + 0.2% SPC-II. Displaced with mud. surface.

**Remarks:** 6m3 good cement received on

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**Bit Record Table (IADC Grading System)**

Storage Units: Metric

**\*\* For more detailed Bit Information refer to Bit Record \*\***

Bit #	Make	Type	Size	Depth In	Depth Out	Made	Hours	Avg. P.R.	I.A.D.C. Bit Condition								
									I	O	MDC	Loc	B	G	ODC	RP1	RP2
1	Varel	CH04JM	311.0	0.0	436.0	436.0	35.00	12.5	0	0	NO	A	0	I	NO	TD	TD
2	Varel	MKS65	200.0	436.0	1,450.0	1,014.0	75.25	13.5									

Total Rotating Hours: 110.25

## Wireline Logging Summary

**Storage Units:**

### Metric

**Logging Suite Number:** 1 **Wireline Logging Company:** Weatherford Logging Services. **Engineer:** L. Sutherland  
**District:** GPR **Unit Number:** 13132  
**Witness:** Azim Ahmed

**Was Pressure Control Equipment Utilized:** No **Maximum Deviation:** 1.500 °  
**Was the Logging Job Mechanically Assisted:** No **Hole Size:** 200.0

**Total Lost Time:** 0.00  
**Loggers' Total Down Time:** 0.00  
**Total Job Time (From Rig up to Rig down):** 4.50

	Measured Depth	True Vertical Depth
<b>Casing Depth Driller</b>	436.00	436.00
<b>Casing Depth Logger</b>	435.00	435.00
<b>Total Depth Driller (Tally)</b>	1,450.00	1,450.00
<b>Total Depth Driller (Strap or SLM)</b>	1,450.00	

**General Remarks:** Logging was completed in one run.  
**RUN#1:** MCG/MFE/MTC/MML/MGS/MDN/MSS/MAI tools

**Logging Run #:** 1  
**Date:** Feb 27, 2007

## Drilling Fluid Data

**Drilling Fluid Type:** Gel Chem      **Fluid Density:** 1180.0      **Viscosity:** 85      **pH:** 10.0      **Fluid Loss:** 8.0

**Mud Resistivity (Rm):** 0.54 @ 25.0 ° **Maximum Temperature:** 47.0 °  
**Mud Resistivity (Rm) @ BHT:** 0.36 @ 47.0 ° **Source (Rmf):** Press  
**Mud Filtrate Resistivity (Rmf):** 0.41 @ 25.0 ° **Source (Rmc):** Filter  
**Mud Cake Resistivity (Rmc):** 0.63 @ 25.0 °

## Logging Run Information

**Date on Bottom:** Feb 27, 2007 **Total Depth Logger:** 1,448.60 (MD) **1,448.60 (TVD)**

**Logging Tools:** MCG/MFE/MTC/MML/MGS/MDN/MSS/MAI tools; 1444.30m to 435.0m; no hole problems during logging.

**Remarks:**

- # The well is drilled as a vertical one. and all depth are measured from RKB.
- # The well is drilled by Precision Drilling Rig# 129.
- # Paramount AFE# 07N710028.
- # Logging was completed by Weatherford.
- # 139.7mm production casings were run in.

**Hole Conditions:** Good hole condition.

# Directional Survey Points

Storage Units: Metric

Survey Type: magnetic / single shot

Measured Depth	T.V.D.	Drift Angle (°)	Azimuth (°)	+N / -S Distance	+E / -W Distance	Vertical Section	DogLeg Severity
31.00	0.25	0.250					
59.37	59.37	0.500					
96.16	96.16	0.500					
128.50	128.50	0.500					
156.36	156.36	1.000					
184.61	184.61	0.750					
212.92	212.92	0.750					
241.57	241.57	0.750					
270.13	270.13	0.250					
309.13	309.13	0.500					
338.17	338.17	0.750					
387.33	387.33	0.250					
396.62	396.62	0.750					
425.00	425.00	0.750					
436.00	436.00	1.000					
515.00	515.00	1.000					
661.80	661.80	0.500					
846.60	846.66	1.000					
943.85	943.85	0.750					
1,041.00	1,041.00	1.000					
1,138.73	1,138.73	1.500					
1,183.73	1,183.73	1.500					
1,196.80	1,196.80	1.250					
1,274.00	1,274.00	0.500					
1,450.00	1,450.00	0.500					

## Drilling Fluid Summary

Storage Units: Metric

<b>Drilling Fluid Type:</b>	Gel Chem	<b>From:</b>	0	<b>To:</b>	436
<b>Drilling Fluid Type:</b>	Floc Water	<b>From:</b>	436	<b>To:</b>	856
<b>Drilling Fluid Type:</b>	Gel Chem	<b>From:</b>	856	<b>To:</b>	1,450

## Work Schedule

Storage Units: Metric

<b>Company:</b>	Khan Petroleum Ltd.			
<b>Geologist:</b>	Azim Ahmed			
<b>Work Performed</b>	<b>From:</b>	Feb 18, 2007	<b>To:</b>	Mar 1, 2007
<b>Depths Logged</b>	<b>From:</b>	1,280.0	<b>To:</b>	1,450.0
<b>Remarks:</b>	Rig moved from Cameron J-04 to Cameron L-73 on Feb 17, 2007.			

# Formation Top Summary

Storage Units:

Metric

**Kelly Bushing Elevation:**  
Ground Elevation:

774.80  
770.80

**Casing Flange Elevation:**

4.00

*\*\* All Depths measured from Kelly Bushing Elevation \*\**

Group <i>Formation Member</i>	Prognosis (TVD)	Sample Top (MD)	Sample Top (TVD)	Log Top (MD)	Log Top (TVD)	Subsea	Thickness
<i>Wabamun</i>	554.80			552.00	552.00	222.80	
<i>Fort Simpson</i>	719.80			717.00	717.02	57.78	
<i>Sample Point</i>	1,285.00	1,285.00	1,285.00	1,285.00	1,285.00	-510.20	
<i>Beaverhill LK</i>	1,322.80	1,324.00	1,324.00	1,320.00	1,320.00	-545.20	21.00
<i>Slave Point</i>	1,346.50	1,345.00	1,345.00	1,343.25	1,343.25	-568.45	40.00
<i>F4 Marker</i>	1,388.20	1,385.00	1,385.00	1,386.00	1,386.00	-611.20	8.50
<i>Watt Mountain</i>	1,394.70	1,393.50	1,393.50	1,392.00	1,392.00	-617.20	5.00
<i>Sulphur Pt Ls</i>	1,398.00	1,398.50	1,398.50	1,398.00	1,398.00	-623.20	16.50
<i>Sulphur Pt Dol</i>	1,415.30	1,415.00	1,415.00	1,415.30	1,415.30	-640.50	14.00
<i>Muskeg</i>	1,428.10	1,429.00	1,429.00	1,428.00	1,428.00	-653.20	21.00
<i>Total depth</i>	1,449.80	1,450.00	1,450.00	1,448.60	1,448.60	-673.80	

## Formation Evaluations

Storage Units:

Metric

<b>Kelly Bushing Elevation:</b>	774.80	<b>Casing Flange Elevation:</b>	4.00	
<b>Ground Elevation:</b>	770.80	<i>All Depths Measured from Kelly Bushing Elevation</i>		

**Group:**  
**Formation:** Slave Point  
**Member:**  
**Boundary Type:** conformable  
**Fault Type:** none

**Era:** Paleozoic  
**Series:** Middle  
**Period:** Devonian  
**Stage:**  
**Age (Approx):** 370 Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	1,345.00	1,345.00	-570.20	40.00
Log Top	1,343.25	1,343.25	-568.45	

### Evaluation:

The secondary object of drilling Cameron L-73 was to test the hydrocarbon potentiality in the Slave point. The Slave Point formation was identified at 1345.0m RKB (-570.30m SS) RKB. The formation is overlain by the Upper Devonian Beaverhill Lake. The formation is fully developed with a thickness of 40m. From the consistent ROPs the formation was picked up. ROP varied between 4.3min/ to 9.7min/m and limestone cuttings differentiated from the overlying formation and conformably underlain by the Fort Vermilion (F4) Formation.

In the Para Et Al Cameron L-73 well the Slave Point formation anticipated its typical buff and tan to dark brown limestone, intercalated with fine crystalline dolomite and possibly with thin shale laminae.

The limestone section drilled in the Slave point Formation are generally of buff, off white, light brown, mottled, tan, yellowish brown color with abundant of brownish yellow stained grains. They are firm to crumpled to moderately hard, lumpy to blocky, partly sub blocky and partly chalky. They are predominately cryptocrystalline to microcrystalline, occasionally fine crystalline debris, predominately wackestone to mudstone and locally dolomitic. Commonly the possess intraclasts & occasionally bioclastic debris, loose grains to predominately peloids, calcarenite with traces of fine crystalline dolomite and traces of coarse quartz grain. Traces of granular to nodular pyrites are noticed at some depths. Traces of natural oil fluorescence are noticed with very faint cut.

Down the section are coarser with some very fine crystalline debris and grainstones.

Traces to maximum 40% oil fluorescence are noticed between till 1380.0m. Very weak odor, no visible staining, light brownish yellow natural sample fluorescence, faint cut, no residual ring fluorescence, poor show. Good oil show is noticed in the middle section.

Massive deposition of limestone beds possesses 3% - 6% intercrystalline porosity in all through the drilled section. 5% -13% porosity was noticed between 1354.0m to 1364.0m RKB with a maximum gas show of 819/84 units. 7% -14% porosity are noticed between 1364.0m to 1372.0m RKB.

The section from 1357.0m to 1376.0m RKB is noticeable possessing very good reservoir potentiality and can be tested for production.

### Conclusion:

From the geological point of view the Slave Point Formation in the Cameron Hills is very interesting from the geological view. Usually this formation is not prospective in this area. It is oily and gives gas response but will not be a pay zone. Further investigation and studies are being proposed for the Slave Point formation.

## Formation Evaluations

Storage Units:

Metric

<b>Kelly Bushing Elevation:</b>	774.80	<b>Casing Flange Elevation:</b>	4.00	
<b>Ground Elevation:</b>	770.80	<i>All Depths Measured from Kelly Bushing Elevation</i>		

**Group:**  
**Formation:** Sulphur Pt Ls  
**Member:**  
**Boundary Type:** disconformable  
**Fault Type:** none

**Era:** Paleozoic  
**Series:** Middle  
**Period:** Devonian  
**Stage:**  
**Age (Approx):** 370 Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	1,398.50	1,398.50	-623.70	16.50
Log Top	1,398.00	1,398.00	-623.20	

### Evaluation:

The Sulphur Point Formation conformably separates the overlying Watt Mountain from the underlying Muskeg formation. The limestone part of the formation is picked up with the end of greenish shale Watt Mountain formation.

Inconsistent ROP curve varies from the consistent curve of the overlying and underlying formations. ROPs in the limestone part varied from 2.7min/ to 7.4min/m excepting in the grainy and porous limestone deposit. The limestone part is picked at 1398.50m RKB (-623.70m SS) from the samples, gas show and ROP and later was co-related with the electrical logs. In the log the limestone section is noted at 1398.0m RKB (-623.20m SS). Presence of high gas - maximum 561/222 units is the other criteria for picking up the interval.

The limestone are off white, mottled, light yellow with dark brown stain, light brown and of dark brown color. They are generally firm to crumple to moderately hard, friable, blocky to sub blocky, predominately microcrystalline to crystalline debris. Usually wackestone to packstone are encountered with some very fine crystalline and grainstones debris. Traces to abundant crystalline dolomite are present with traces of coarse quartz grain and rare with anhydrite inclusion. Gray to greenish gray shale fragments is common,

off white, mottled, light yellow with dark brown stain, light to dark brown, firm to crumpled to moderately hard, blocky to sub blocky, smooth to gritty, predominately cryptocrystalline, partly microcrystalline, wackestone to packstone, occasionally grading to very fine crystalline grainstone, locally grading to dolomitic limestone, intraclasts & occasionally bioclastic debris, commonly loose grains to predominately peloids, calcarenite, abundant of very fine crystalline dolomite, traces of coarse quartz grain, traces of anhydrite inclusion, abundant of gray to greenish gray shale fragments, vuggy to fair visible intracrystalline porosity, very faint odor, no visible staining, traces of light brown oil show, light brownish yellow sample fluorescence, faint cut, no residual ring fluorescence, poor show.

Traces to patchy brownish yellow natural fluorescence are noticed - weak odor, no visible staining, traces of light brown oil show, light brownish yellow sample fluorescence, faint cut, no residual ring fluorescence, poor show which possibly indicates presence of heavy hydrocarbon in condensate form.

This limestone part is 16.5m thick. Porosity varies from 3% - 7% excepting some porous streaks where >12% porosity can be noticed. Down the section is coarser and dolomitic

### Conclusion:

The reservoir properties are limited due presence of non porous chalky grains and fine crystalline grains. However, the interval from 1407.0m to 1415.0m RKB identifies itself with good reservoir properties for production. However, further evaluation is needed for the geological interest.

## Formation Evaluations

Storage Units:

Metric

**Kelly Bushing Elevation:**  
Ground Elevation:

774.80  
770.80

Casing Flange Elevation:

4.00

*All Depths Measured from Kelly Bushing Elevation*

**Group:**

**Formation:** Sulphur Pt Dol

**Member:**

**Boundary Type:** disconformable

**Fault Type:** none

**Era:**

Paleozoic

**Series:**

Middle

**Period:**

Devonian

**Stage:**

**Age (Approx):** 370 Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	1,415.00	1,415.00	-640.20	14.00
Log Top	1,415.30	1,415.30	-640.50	

### Evaluation:

The dolomitized part of the Sulphur Point Formation separated from the underlying limestone part from the overlying Muskeg Formation. Presence of dolomite is the main criteria of identifying the dolomite part. In general ROP varied between 6.7min/m to 12.6min/m other than in the fine crystalline porous intercalation where ROP are faster.

The dolomitized part is encountered at 1415.0m RKB (-640.20m SS) which differs a little from that of electrical log at 1415.5m RKB (-640.70m SS).

In the top section the dolomite encountered are off white, light brown, mottled, tan, satiny, creamy and reddish brown color. They are from firm, crumpled to moderately hard, blocky to sub blocky and partly earthy & chalky and ratty. Mainly cryptocrystalline debris, mudstone, partly wackestone, slightly argillaceous, abundant limestone inclusion, locally grading to dolomitic limestone, and rare fossiliferous. Abundant of calcite and anhydrite are noticed down the section with traces of bituminous partings. Shale grains were common.

The middle section is darker and coarser with some good streaks of grainy dolomites. Gas shows were high in all through the drilled section with maximum 606/122 units at 1428m RKB. Porosity varies from 4% - 12% and a little greater in some streaks. Gas show decreases with the increase of chalky and ratty characteristics and presence of anhydrite. The lower section was more of chalky, ratty mudstone and anhydrites. Porosity almost faded away in the lower section whereas 4 - 7% intercrystalline porosity is noticed in the top section with some high percentages.

Live oil flow was noticed at shakers during drilling this section. Weak odor of heavy hydrocarbon was noticed in all through the dolomite section are noticed - weak odor, no visible staining, patchy to even >80% light yellowish brown natural sample fluorescence, faint intensity with light milky cut, feeble milky white residual ring fluorescence - fair to good show

The reservoir properties are limited by the presence of chalky, ratty mudstone dolomite and anhydrite but the middle section from 1414.0m to 1417.0m RKB possesses favorable reservoir properties. This section can be tested for commercial feasibility. Further evaluation and studies are needed for geological interest.

### Conclusion:

The reservoir properties are limited by the presence of chalky, ratty mudstone dolomite and anhydrite but the middle section from 1414.0m to 1417.0m RKB possesses favorable reservoir properties. This section can be tested for commercial feasibility. Further evaluation and studies are needed for geological interest.

## Sample Descriptions

Storage Units: Metric

### Sample Point: 1,285.00 MD, 1,285.00 TVD, -510.20 SSL

1,285.00 to 1,290.00	60%	<b>Shale</b> (5.00)	light gray to dark gray, greenish gray, firm, friable, partly moderately hard to hard, splintery to blocky, micromicaceous, dull earthy texture, mud stone inclusion, smooth to waxy texture in parts, fissile to subfissile, partly platy, carbonaceous, in part calcite grading to argillaceous limestone, abundant of light gray, green gray to tan mcxln limestone inclusion, abundant of dark brown to black minerals, rare silty, very calcareous to shally limestone.
	40%	<b>Limestone</b>	off white, light brown, brownish gray, mottled, in part chalky, firm to crumpled, rare moderately hard, blocky to subblocky, smooth to gritty, partly grainy, cryptocrystalline to microcrystalline debris, predominately mudstone, rare wackestone, calcarenite, commonly dolomitic & locally grading to dolomitic limestone, traces of calcite inclusions, abundant of green gray to light gray shale fragments, local disseminated pyrite, poor intercrystalline visible porosity, no shows.
1,290.00 to 1,295.00	70%	<b>Shale</b> (5.00)	medium gray, gray, greenish gray, firm, friable, partly moderately hard to hard, splintery to blocky, micromicaceous, dull earthy texture, mud stone inclusion, smooth to waxy texture in parts, fissile to subfissile, partly platy, carbonaceous, traces of granular pyrite, abundant of gray to tan limestone inclusion, abundant of dark brown to black minerals, traces of loose coarse quartz grains, rare silty, very calcareous to shally limestone.
	30%	<b>Limestone</b>	off white, light brown, brownish gray, mottled, in part chalky, firm to crumpled, rare moderately hard, blocky to subblocky, smooth to gritty, partly grainy, cryptocrystalline to microcrystalline debris, predominately mudstone, rare wackestone, calcarenite, commonly dolomitic & locally grading to dolomitic limestone, traces of calcite inclusions, abundant of green gray to light gray shale fragments, local disseminated pyrite, poor intercrystalline visible porosity, no shows.
1,295.00 to 1,300.00	70%	<b>Shale</b> (5.00)	medium gray, gray, greenish gray, firm, friable, partly moderately hard to hard, splintery to blocky, micromicaceous, dull earthy texture, mud stone inclusion, smooth to waxy texture in parts, fissile to subfissile, partly platy, carbonaceous, traces of granular pyrite, abundant of gray to tan limestone inclusion, abundant of dark brown to black minerals, traces of loose coarse quartz grains, rare silty, very calcareous to shally limestone.
	30%	<b>Limestone</b>	off white, light brown, brownish gray, mottled, in part chalky, firm to crumpled, rare moderately hard, blocky to subblocky, smooth to gritty, partly grainy, cryptocrystalline to microcrystalline debris, predominately mudstone, rare wackestone, calcarenite, commonly dolomitic & locally grading to dolomitic limestone, traces of calcite inclusions, abundant of shale fragments, local disseminated pyrite, poor intercrystalline visible porosity, no shows.

## Sample Descriptions

Storage Units: Metric

1,300.00 to 1,305.00 (5.00)	70% <b>Shale</b>  medium gray, gray, greenish gray, firm, friable, partly moderately hard to hard, splintery to blocky, micromicaceous, dull earthy texture, mud stone inclusion, smooth to waxy texture in parts, fissile to subfissile, partly platy, carbonaceous, traces of granular pyrite, abundant of gray to tan limestone inclusion, abundant of dark brown to black minerals, traces of loose coarse quartz grains, rare silty, very calcareous to shally limestone.
	30% <b>Limestone</b>  off white, light brown, brownish gray, mottled, in part chalky, firm to crumpled, rare moderately hard, blocky to subblocky, smooth to gritty, partly grainy, cryptocrystalline to microcrystalline debris, predominately mudstone, rare wackestone, calcarenite, commonly dolomitic & locally grading to dolomitic limestone, traces of calcite inclusions, abundant of shale fragments, local disseminated pyrite, poor intercrystalline visible porosity, no shows.
1,305.00 to 1,310.00 (5.00)	80% <b>Shale</b>  gray, dark gray, brownish gray, occasionally greenish gray, moderately hard to hard, partly friable, sub blocky to blocky, smooth to gritty, commonly micromicaceous, partly limy, partly dull earthy texture, rare subfissile, partly platy, rare thinly laminated, occasionally silty, partly carbonaceous, traces of argillaceous limestone, traces of granular pyrite, calcareous.
	20% <b>Limestone</b>  off white, light brown, brownish gray, mottled, tan, in part chalky, firm to crumpled, rare moderately hard, blocky to subblocky, smooth to gritty, partly grainy, cryptocrystalline to microcrystalline debris, predominately mudstone, rare wackestone, calcarenite, commonly dolomitic & locally grading to dolomitic limestone, traces of calcite inclusions, abundant of shale fragments, local disseminated pyrite, traces of loose coarse quartz grains, poor intercrystalline visible porosity, no shows.
1,310.00 to 1,315.00 (5.00)	80% <b>Shale</b>  medium gray, gray, partly greenish gray, firm, friable, partly moderately hard to hard, splintery to blocky, micromicaceous, dull earthy texture, partly clayey & soluble, mud stone inclusion, smooth to waxy texture in parts, fissile to subfissile, partly platy, carbonaceous, traces of granular pyrite, abundant of gray to tan lumpy to blocky limestone, abundant of dark brown to black minerals, traces of loose coarse quartz grains, rare silty, very calcareous to shally limestone, rare dolomitic.
	20% <b>Limestone</b>  off white, light brown, brownish gray, mottled, tan, in part chalky, firm to crumpled, rare moderately hard, blocky to subblocky, smooth to gritty, partly grainy, cryptocrystalline to microcrystalline debris, predominately mudstone, rare wackestone, calcarenite, commonly dolomitic & locally grading to dolomitic limestone, traces of calcite inclusions, abundant of shale fragments, local disseminated pyrite, traces of loose coarse quartz grains, poor intercrystalline visible porosity, no shows.

## Sample Descriptions

Storage Units: Metric

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1,315.00 to 1,320.00 (5.00)	70% <b>Shale</b>	medium gray, gray, partly greenish gray, firm, friable, partly moderately hard to hard, splintery to blocky, micromicaceous, dull earthy texture, mud stone inclusion, smooth to waxy texture in parts, fissile to subfissile, partly platy, carbonaceous, traces of granular pyrite, abundant of gray to tan lumpy to blocky limestone, abundant of dark brown to black minerals, traces of loose coarse quartz grains, rare silty, very calcareous to shally limestone, rare dolomitic.
	30% <b>Limestone</b>	off white, light brown, brownish gray, mottled, tan, in part chalky, firm to crumpled, rare moderately hard, blocky to subblocky, smooth to gritty, partly grainy, cryptocrystalline to microcrystalline debris, predominately mudstone, rare wackestone, calcarenite, commonly dolomitic & locally grading to dolomitic limestone, traces of calcite inclusions, abundant of shale fragments, local disseminated pyrite, traces of loose coarse quartz grains, poor intercrystalline visible porosity, no shows.

### Beaverhill LK: 1,324.00 MD, 1,324.00 TVD, -549.20 SSL

1,320.00 to 1,325.00 (5.00)	80% <b>Shale</b>	light to medium gray, blackish gray, traces greenish gray, moderately hard to hard, partly friable, sub blocky to blocky, commonly micromicaceous & limy, partly dull earthy texture, partly smooth to waxy, partly subfissile, partly platy, rare thinly laminated, partly clayey, occasionally silty, partly carbonaceous, clayey in parts, traces of argillaceous limestone, traces bituminous in part (?), abundant of shale fragments, local disseminated pyrite, traces of loose coarse quartz grains with rare siltstone & sandstone stringers, calcareous. traces of siltstone and sandstone stringers, abundant of argillaceous limestone, calcareous.
	20% <b>Limestone</b>	off white, light brown, brownish gray, mottled, tan, in part chalky, firm to crumpled, rare moderately hard, blocky to subblocky, smooth to gritty, partly grainy, cryptocrystalline to microcrystalline debris, predominately mudstone, rare wackestone, calcarenite, commonly dolomitic & locally grading to dolomitic limestone, traces of calcite inclusions, traces bituminous in part (?), abundant of shale fragments, local disseminated pyrite, traces of loose coarse quartz grains, poor intercrystalline visible porosity, no shows.
1,325.00 to 1,330.00 (5.00)	80% <b>Shale</b>	light to medium gray, dark gray, brownish gray, occasionally greenish gray, moderately hard to hard, partly friable, sub blocky to blocky, smooth to gritty, commonly micromicaceous, partly limy, partly dull earthy texture, rare subfissile, partly platy & rare thinly laminated, occasionally silty, partly carbonaceous, traces off white to gray argillaceous limestone, traces of coarse quartz grain with some siltstone stringers, calcareous.

## Sample Descriptions

Storage Units: Metric

1,325.00 to 1,330.00 (5.00)	20% <b>Limestone</b>	off white, light brown, brownish gray, mottled, tan, in part chalky, firm to crumpled, rare moderately hard, blocky to subblocky, smooth to gritty, partly grainy, cryptocrystalline to microcrystalline debris, predominately mudstone, rare wackestone, calcarenite, commonly dolomitic & locally grading to dolomitic limestone, traces of calcite inclusions, abundant of shale fragments, local disseminated pyrite, traces of loose coarse quartz grains, poor intercrystalline visible porosity, no shows.
1,330.00 to 1,335.00 (5.00)	60% <b>Shale</b>	gray, dark gray, brownish gray, occasionally greenish gray, moderately hard to hard, partly friable, sub blocky to blocky, smooth to gritty, commonly micromicaceous, partly limy, partly dull earthy texture, rare subfissile, partly platy, rare thinly laminated, occasionally silty, partly carbonaceous, traces of argillaceous limestone, traces of granular pyrite, calcareous.
	40% <b>Limestone</b>	off white, light brown, brownish gray, mottled, tan, in part chalky, firm to crumpled, rare moderately hard, blocky to subblocky, smooth to gritty, partly grainy, cryptocrystalline to microcrystalline debris, predominately mudstone, rare wackestone, calcarenite, commonly dolomitic & locally grading to dolomitic limestone, traces of calcite inclusions, traces bituminous in part (?), abundant of shale fragments, local disseminated pyrite, traces of loose coarse quartz grains, poor intercrystalline visible porosity, no shows.
1,335.00 to 1,340.00 (5.00)	60% <b>Shale</b>	gray, dark gray, brownish gray, occasionally greenish gray, moderately hard to hard, partly friable, sub blocky to blocky, smooth to gritty, commonly micromicaceous, partly limy, partly dull earthy texture, rare subfissile, partly platy, rare thinly laminated, occasionally silty, partly carbonaceous, traces of argillaceous limestone, traces of granular pyrite, calcareous.
	40% <b>Limestone</b>	off white, light brown, brownish gray, mottled, tan, in part chalky, firm to crumpled, rare moderately hard, blocky to subblocky, smooth to gritty, partly grainy, cryptocrystalline to microcrystalline debris, predominately mudstone, rare wackestone, calcarenite, commonly dolomitic & locally grading to dolomitic limestone, traces of calcite inclusions, traces bituminous in part (?), abundant of shale fragments, local disseminated pyrite, traces of loose coarse quartz grains, poor intercrystalline visible porosity, no shows.
1,340.00 to 1,345.00 (5.00)	80% <b>Shale</b>	gray, dark gray, brownish gray, occasionally greenish gray, moderately hard to hard, partly friable, sub blocky to blocky, smooth to gritty, commonly micromicaceous, partly limy, partly dull earthy texture, rare subfissile, partly platy & rare thinly laminated, occasionally silty, partly carbonaceous, traces of argillaceous limestone, traces of coarse quartz grain with some siltstone stringers, calcareous.

## Sample Descriptions

Storage Units: Metric

1,340.00 to 1,345.00 20% **Limestone**  
(5.00) off white, light brown, brownish gray, mottled, tan, in part chalky, firm to crumpled, rare moderately hard, blocky to subblocky, smooth to gritty, partly grainy, cryptocrystalline to microcrystalline debris, predominately mudstone, rare wackestone, calcarenite, commonly dolomitic & locally grading to dolomitic limestone, traces of calcite inclusions, traces bituminous in part (?), abundant of shale fragments, local disseminated pyrite, traces of loose coarse quartz grains, poor intercrystalline visible porosity, no shows.

**Slave Point: 1,345.00 MD, 1,345.00 TVD, -570.20 SSL**

1,345.00 to 1,350.00 80% **Limestone**  
(5.00) off white, mottled, tan, creamy, dark brown, occasional dark brown oil stain, firm to crumpled to moderately hard, lumpy to blocky, partly subblocky, partly chalky, predominately cryptocrystalline to microcrystalline, occasionally fine crystalline debris, predominately wackestone to mudstone, locally dolomitic, intraclasts & occasionally bioclastic debris, commonly loose grains to predominately peloids, calcarenite, traces of fine crystalline dolomite, rare calcite infill, dense with trace poor intracrystalline porosity, traces of light brown oil show, no visible staining, very weak odour, light pale brownish yellow natural sample fluorescence, very faint cut, no residual ring fluorescence, poor show.

**20% Shale**

gray, dark gray, brownish gray, occasionally greenish gray, moderately hard to hard, partly friable, sub blocky to blocky, smooth to gritty, commonly micromicaceous, partly limy, partly dull earthy texture, rare subfissile, partly platy, rare thinly laminated, occasionally silty, partly carbonaceous, traces of argillaceous limestone, traces of granular pyrite, calcareous.

1,350.00 to 1,355.00 100%**Limestone**  
(5.00) predominately brown, off white, light yellow with dark brown stain, occasionally tan, dark brown, firm, friable to crumpled to moderately hard, lumpy to blocky, predominately cryptocrystalline to microcrystalline, rare very fine crystalline debris, predominately wackestone, partly mudstone, intraclasts & occasionally bioclastic debris, calcarenite, partly argillaceous, traces of fine crystalline dolomite, rare siltstone stringer & greenish brown shale fragments inclusion, traces of loose coarse quartz grains, good visible intracrystalline porosity, weak odour, no visible staining, patchy golden white natural sample fluorescence, slow faint cut, pale yellowish brown residual ring fluorescence, good show.

1,355.00 to 1,360.00 100%**Limestone**  
(5.00) predominately brown, off white, occasional dark brown oil stain, dark brown, firm, friable to crumpled to moderately hard, lumpy to blocky, predominately cryptocrystalline to microcrystalline, rare very fine crystalline debris, predominately wackestone, partly mudstone, intraclasts & occasionally bioclastic debris, calcarenite, partly argillaceous, traces of fine crystalline dolomite, rare siltstone stringer & greenish brown shale fragments inclusion, traces of loose coarse quartz grains, good visible intracrystalline porosity, weak odour, no visible staining, patchy brownish yellow natural sample fluorescence, slow faint cut, pale yellowish white residual ring fluorescence, good show.

## Sample Descriptions

Storage Units: Metric

1,360.00 to 1,365.00 (5.00)	<b>100%Limestone</b> predominate brown, off white, occasional dark brown oil stain, dark brown, firm, friable to crumpled to moderately hard, lumpy to blocky, predominately cryptocrystalline to microcrystalline, rare very fine crystalline debris, predominately wackestone, partly mudstone, intraclasts & occasionally bioclastic debris, calcarenite, partly argillaceous, traces of fine crystalline dolomite, rare siltstone stringer & greenish brown shale fragments inclusion, traces of loose coarse quartz grains, good visible intracrystalline porosity, weak odour, no visible staining, patchy brownish yellow natural sample fluorescence, slow faint cut, pale yellowish white residual ring fluorescence, good show.
1,365.00 to 1,370.00 (5.00)	<b>100%Limestone</b> brown, tan, off white, greenish brown, light yellow with dark brown stain, dark brown, firm, friable to crumpled to moderately hard, lumpy to blocky, predominately microcrystalline to very fine crystalline debris, partly cryptocrystalline, predominately wackestone, partly mudstone, intraclasts & occasionally bioclastic debris, calcarenite, partly argillaceous, traces of fine crystalline dolomite, local bituminous partings, rare siltstone stringer & greenish brown shale fragments inclusion, traces of loose coarse quartz grains, good visible intracrystalline porosity, weak odour, no visible staining, patchy golden white natural sample fluorescence, slow faint cut, pale yellowish brown residual ring fluorescence, good show.
1,370.00 to 1,375.00 (5.00)	<b>100%Limestone</b> off white, mottled, tan, creamy, dark brown, occasional dark brown oil stain, firm to crumpled to moderately hard, lumpy to blocky, partly subblocky, partly chalky, predominately cryptocrystalline to microcrystalline, occasionally fine crystalline debris, predominately wackestone to mudstone, locally dolomitic, intraclasts & occasionally bioclastic debris, commonly loose grains to predominately peloids, calcarenite, traces of fine crystalline dolomite, rare calcite infill, fair to good visible intracrystalline porosity, weak odour, no visible staining, patchy brownish yellow natural sample fluorescence, slow faint cut, pale yellowish white residual ring fluorescence, good show.
1,375.00 to 1,380.00 (5.00)	<b>100%Limestone</b> brown, off white, greenish brown, dark brown, light yellow with dark brown stain, tan, firm, friable to crumpled to moderately hard, lumpy to blocky, predominately microcrystalline to very fine crystalline debris, partly cryptocrystalline, predominately wackestone, partly mudstone, partly grainy, intraclasts & occasionally bioclastic debris, calcarenite, argillaceous in parts, traces of fine crystalline dolomite, local bituminous partings, rare siltstone stringer & greenish brown shale fragments inclusion, traces of loose coarse quartz grains, good visible intracrystalline porosity, weak odour, no visible staining, traces of golden white natural sample fluorescence, slow faint cut, pale brownish yellow residual ring fluorescence, fair show.

## Sample Descriptions

Storage Units: Metric

1,380.00 to 1,385.00 100%**Limestone**  
(5.00) brown, tan, greenish brown, dark brown, occasional dark brown oil stain, firm, friable to crumpled to moderately hard, lumpy to blocky, predominately microcrystalline to very fine crystalline debris, partly cryptocrystalline, predominately wackestone, partly mudstone, partly grainy, intraclasts & occasionally bioclastic debris, calcarenite, argillaceous in parts, traces of fine crystalline dolomite, local bituminous partings, rare calcite infill, rare siltstone stringer & greenish brown shale fragments inclusion, traces of loose coarse quartz grains, good visible intracrystalline porosity, weak odour, no visible staining, traces of yellowish brown natural sample fluorescence, slow faint cut, pale brownish yellow residual ring fluorescence, fair show.

F4 Marker: 1,385.00 MD, 1,385.00 TVD, -610.20 SSL

1,385.00 to 1,390.00 80% **Limestone**  
(5.00) brown, light yellow with dark brown stain, occasionally tan, dark brown, firm, friable to crumpled to moderately hard, blocky to subblocky, smooth to gritty, predominately microcrystalline to very fine crystalline debris, partly cryptocrystalline, predominately wackestone, partly mudstone, partly argillaceous, traces of fine crystalline dolomite, traces of greenish brown shale fragments, abundant of anhydrite inclusion, loose coarse quartz grains, tight visible intracrystalline porosity, no shows.

20% **Shale**  
medium gray to brownish gray, greenish gray, firm, friable, moderately hard to hard, sub blocky to blocky, commonly micromicaceous, rare dull earthy texture, partly clayey, soft & sticky, rare subfissile, partly platy, occasionally silty, partly carbonaceous, abundant crystalline limestone, traces of fine crystalline dolomite, traces of bituminous (?) fragments, traces of coarse quartz grain, traces of anhydrite inclusion, non to slightly calcareous.

**Watt Mountain: 1,393.50 MD, 1,393.50 TVD, -618.70 SSL**

1,390.00 to 1,395.00 80% **Limestone**  
(5.00) gray, brownish gray, off white, mottled, light yellow with dark brown stain, light brown, dark brown, firm to crumpled to moderately hard, blocky to subblocky, smooth to gritty, predominately microcrystalline to crystalline debris, predominately wackestone to packstone, locally grading to dolomitic limestone, intraclasts & occasionally bioclastic debris, commonly loose grains to predominately peloids, calcarenite, traces of fine crystalline dolomite, traces of coarse quartz grain, traces of anhydrite inclusion, abundant of gray to greenish gray shale fragments, vuggy to fair visible intracrystalline porosity, very faint odour, no visible staining, traces of light brown oil show, light brownish yellow sample fluorescence, faint cut, no residual ring fluorescence, poor show.

20% **Shale**  
gray, greenish gray, moderately hard to hard, partly friable, sub blocky to blocky, commonly micromicaceous, rare dull earthy texture, partly clayey & soft to firm, rare subfissile, partly platy, occasionally silty, partly carbonaceous, abundant crystalline limestone, traces of fine crystalline dolomite, traces of bituminous (?) fragments, non to slightly calcareous.

## Sample Descriptions

Storage Units: Metric

### Sulphur Pt Ls: 1,398.50 MD, 1,398.50 TVD, -623.70 SSL

1,395.00 to 1,400.00 (5.00)	80% <b>Limestone</b> brown, light yellow with dark brown stain, occasionally tan, dark brown, firm, friable to crumpled to moderately hard, blocky to subblocky, smooth to gritty, predominately microcrystalline to very fine crystalline debris, partly cryptocrystalline, predominately wackestone, partly mudstone, partly argillaceous, traces of fine crystalline dolomite, traces of greenish brown shale fragments, abundant of anhydrite inclusion, loose coarse quartz grains, fair visible intracrystalline porosity, traces of light brown oil show, weak odor, light brownish yellow sample fluorescence, faint cut, no residual ring fluorescence, poor show.
20% <b>Shale</b>	gray, greenish gray, green, moderately hard to hard, partly friable, sub blocky to blocky, smooth to gritty, commonly micromicaceous, rare dull earthy texture, rare subfissile, occasionally thinly laminated, occasionally silty, partly carbonaceous, abundant crystalline limestone, traces of fine crystalline dolomite, abundant of bituminous (?) fragments with dark brown to black minerals, traces of coarse quartz grain with granular pyrite, traces of anhydrite inclusion, calcareous.
1,400.00 to 1,405.00 (5.00)	100% <b>Limestone</b> off white, mottled, light yellow with dark brown stain, light to dark brown, firm to crumpled to moderately hard, blocky to subblocky, smooth to gritty, predominately cryptocrystalline, partly microcrystalline, wackestone to packstone, occasionally grading to very fine crystalline grainstone, locally grading to dolomitic limestone, intraclasts & occasionally bioclastic debris, commonly loose grains to predominately peloids, calcarenite, abundant of very fine crystalline dolomite, traces of coarse quartz grain, traces of anhydrite inclusion, abundant of gray to greenish gray shale fragments, vuggy to fair visible intracrystalline porosity, very faint odour, no visible staining, traces of light brown oil show, light brownish yellow sample fluorescence, faint cut, no residual ring fluorescence, poor show.
1,405.00 to 1,410.00 (5.00)	100% <b>Limestone</b> off white, mottled, light yellow with dark brown stain, light to dark brown, firm to crumpled to moderately hard, blocky to subblocky, smooth to gritty, predominately cryptocrystalline, partly microcrystalline, wackestone to packstone, occasionally grading to very fine crystalline grainstone, locally grading to dolomitic limestone, intraclasts & occasionally bioclastic debris, commonly loose grains to predominately peloids, calcarenite, abundant of very fine crystalline dolomite, traces of coarse quartz grain, traces of anhydrite inclusion, abundant of gray to greenish gray shale fragments, vuggy to fair visible intracrystalline porosity, very faint odour, no visible staining, traces of light brown oil show, light brownish yellow sample fluorescence, faint cut, no residual ring fluorescence, poor show.

## Sample Descriptions

Storage Units: Metric

1,410.00 to 1,415.00 60% **Limestone**  
(5.00) off white, mottled, light yellow with dark brown stain, light brown, dark brown, firm to crumpled to moderately hard, blocky to subblocky, predominately microcrystalline to crystalline debris, predominately wackestone to packstone, intraclasts & occasionally bioclastic debris, abundant of fine crystalline dolomite inclusion, traces of coarse quartz grain, fair to good visible intracrystalline porosity, very faint odour, no visible staining, traces of light brown oil show, light brownish yellow sample fluorescence, faint cut, no residual ring fluorescence, poor show.

40% **Dolomite**  
white, off white, mottled, tan, light gray, light brown, blocky to subblocky, smooth to gritty, partly chalky predominately cryptocrystalline debris, predominately mudstone, partly wackestone, slightly argillaceous, rare evidence of fractures surface with bituminous coating, abundant limestone inclusion, fossiliferous, abundant of calcite, traces of loose quartz grains, traces of anhydrite inclusion, vuggy visible intracrystalline porosity, very faint odour, no visible staining, patchy light brown oil show, light brownish yellow sample fluorescence, faint cut, faint milky white residual ring fluorescence, fair to good show.

### Sulphur Pt Dol: 1,415.00 MD, 1,415.00 TVD, -640.20 SSL

1,415.00 to 1,420.00 80% **Dolomite**  
(5.00) off white, light brown, mottled, tan, stainy, creamy, reddish brown, firm to crumpled to moderately hard, blocky to subblocky, smooth to gritty, partly earthy & chalky, ratty, predominately cryptocrystalline debris, mudstone, partly packstone, slightly argillaceous, abundant limestone inclusion, locally grading to dolomitic limestone, calcarenite, fossiliferous, abundant of calcite and anhydrite inclusions, traces of bituminous partings, traces of shale grain, vuggy to good visible intracrystalline porosity, weak odour, no visible staining, patchy light brown oil show, light brownish yellow sample fluorescence, faint cut, faint milky white residual ring fluorescence, poor show.

20% **Limestone**  
light brown, off white, mottled, light yellow with dark brown stain, dark brown, partly tan, firm to crumpled to moderately hard, blocky to subblocky, smooth to gritty, predominately microcrystalline to crystalline debris, predominately wackestone to packstone, locally grading to dolomitic limestone, intraclasts & occasionally bioclastic debris, commonly loose grains to predominately peloids, calcarenite, abundant of fine crystalline dolomite, traces of coarse quartz grain, vuggy to fair visible intracrystalline porosity, very faint odour, no visible staining, traces of light brown oil show, light brownish yellow sample fluorescence, faint cut, no residual ring fluorescence, poor show.

1,420.00 to 1,425.00 100% **Dolomite**  
(5.00) mottled, tan, light gray, light brown, blocky to subblocky, smooth to gritty, partly chalky predominately cryptocrystalline debris, predominately mudstone, partly wackestone, slightly argillaceous, rare evidence of fractures surface with bituminous coating, abundant limestone inclusion, fossiliferous, abundant of calcite, traces of loose quartz grains, traces of anhydrite inclusion, vuggy visible intracrystalline porosity, weak odour, no visible staining, patchy light brown oil show, light brownish yellow sample fluorescence, faint cut, faint milky white residual ring fluorescence. NB: live oil flow noticed at shaker.

## Sample Descriptions

Storage Units: Metric

### **Muskeg: 1,429.00 MD, 1,429.00 TVD, -654.20 SSL**

1,425.00 to 1,430.00 (5.00)	70% <b>Dolomite</b> light brown, mottled, tan, off white, firm to crumpled to moderately hard, blocky to subblocky, smooth to gritty, partly earthy & chalky, ratty, predominately cryptocrystalline debris, predominately mudstone, partly wackestone, slightly argillaceous, abundant limestone & anhydrite inclusion, calcarenite, no visible intracrystalline porosity, no shows.
	30% <b>Anhydrite</b> white, off white, hyaline, tan, irregularly shaped, sharp, angular, abundant of calcite inclusion, atraces of fine crystalline limestone with abundant of of brownish gray to tan dolomite inclusion.
1,430.00 to 1,435.00 (5.00)	50% <b>Anhydrite</b> white, off white, light brown, light gray, white, interbeded with dolomite, inetrbeded with limestone with patchy faint oil stain and black bituminous(?) and black minerals, moderately hard, very hard in parts, blocky, cryptocrystalline to micro crystalline, grading to thomb stone debris.
	50% <b>Dolomite</b> light gray, light brown, mottled, tan, stainy, creamy, reddish brown, firm to crumpled to moderately hard, blocky to subblocky, smooth to gritty, partly earthy & chalky, ratty, predominately cryptocrystalline debris, mudstone, partly packstone, slightly argillaceous, abundant limestone inclusion, locally grading to dolomitic limestone, calcarenite, fossiliferous, abundant of calcite and anhydrite inclusions, traces of bituminous partings with some black minerals, traces of shale grain, tight intracrystalline porosity, no shows.
1,435.00 to 1,440.00 (5.00)	70% <b>Dolomite</b> light brown, mottled, tan, off white, firm to crumpled to moderately hard, blocky to subblocky, smooth to gritty, partly earthy & chalky, ratty, predominately cryptocrystalline debris, predominately mudstone, partly wackestone, slightly argillaceous, abundant anhydrite inclusion with some limestone, calcarenite, no visible intracrystalline porosity, no shows.
	30% <b>Anhydrite</b> white, off white, hyaline, tan, irregularly shaped, sharp, angular, abundant of calcite inclusion, traces of fine crystalline limestone with abundant of of brownish gray to tan dolomite inclusion, traces of greenish brown shale fragments, traces of carbonaceous material.
1,440.00 to 1,445.00 (5.00)	60% <b>Dolomite</b> light brown, mottled, tan, off white, firm to crumpled to moderately hard, blocky to subblocky, smooth to gritty, partly earthy & chalky, ratty, predominately cryptocrystalline debris, predominately mudstone, partly wackestone, slightly argillaceous, abundant anhydrite inclusion with some limestone, calcarenite, no visible intracrystalline porosity, no shows.
	40% <b>Anhydrite</b> white, off white, hyaline, tan, irregularly shaped, sharp, angular, abundant of calcite inclusion, traces of fine crystalline limestone with abundant of of brownish gray to tan dolomite inclusion, traces of greenish brown shale fragments, traces of carbonaceous material.

## Sample Descriptions

Storage Units: Metric

1,445.00 to 1,450.00	60% <b>Dolomite</b> (5.00)	light gray, light brown, mottled, tan, stainy, creamy, reddish brown, firm to crumpled to moderately hard, blocky to subblocky, smooth to gritty, partly earthy & chalky, ratty, predominately cryptocrystalline debris, mudstone, partly packstone, slightly argillaceous, abundant limestone inclusion, locally grading to dolomitic limestone, calcarenite, fossiliferous, abundant of calcite and anhydrite inclusions, traces of bituminous partings with some black minerals, traces of shale grain, tight intracrystalline porosity, no shows.
	40% <b>Anhydrite</b>	white, off white, hyaline, tan, irregularly shaped, sharp, angular, abundant of calcite inclusion, traces of fine crystalline limestone with abundant of of brownish gray to tan dolomite inclusion, traces of greenish brown shale fragments, traces of carbonaceous material.

**Well Information**

**Operator:** Paramount Resources Ltd.

**Well Name:** Para Et Al Cameron L-73

**Location:** 300/L-73-60-10-117-15

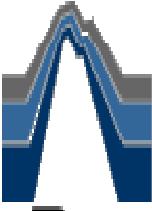
**UWI:** 300-L-73-6010-117150

**Pool:** Sulphur Point & Slave Point.

**Field:** Cameron Hills.

**Province / State:** Northwest Territory

**Country:** Canada



**Paramount**  
*resources ltd.*

**Elevations**

Reference:	MSL	Ground:	770.8 m
Cut(-) / Fill(+):	-0 m	Kelly Bushing:	774.8 m
K.B. to Ground:	4 m	Casing Flange:	4 m

**Total Depth**

Measurement Type	Measured Depth	True Vertical Depth
Drillers TD (Tally)	1450 m	1450 m
Drillers TD (Strap or SLM)	1450 m	1450 m
Loggers TD	1448.6 m	1448.6 m

**Surface Co - Ordinates**

Well Type:	Straight	Longitude:	117°29'54.3"	Latitude:	60°2'38.3"
N / S Co - Ordinates:		n/a.			
E / W Co - Ordinates:		n/a.			

**Bottom Hole Co - Ordinates**

N / S Co - Ordinates:	n/a.	Longitude:	117°29'54.3"	Latitude:	60°2'38.3"
E / W Co - Ordinates:	n/a.				

**Drilling Fluid Summary**

Fluid Type	From	To
Gel Chem	0 m	436 m
Floc Water	436 m	856 m
Gel Chem	856 m	1450 m

**Casing Summary**

Type	Hole Size	Casing Size	Landed At
Surface	311 mm	219.1 mm	436 m
Production	200 mm	139.7 mm	1450 m

**Well Summary**

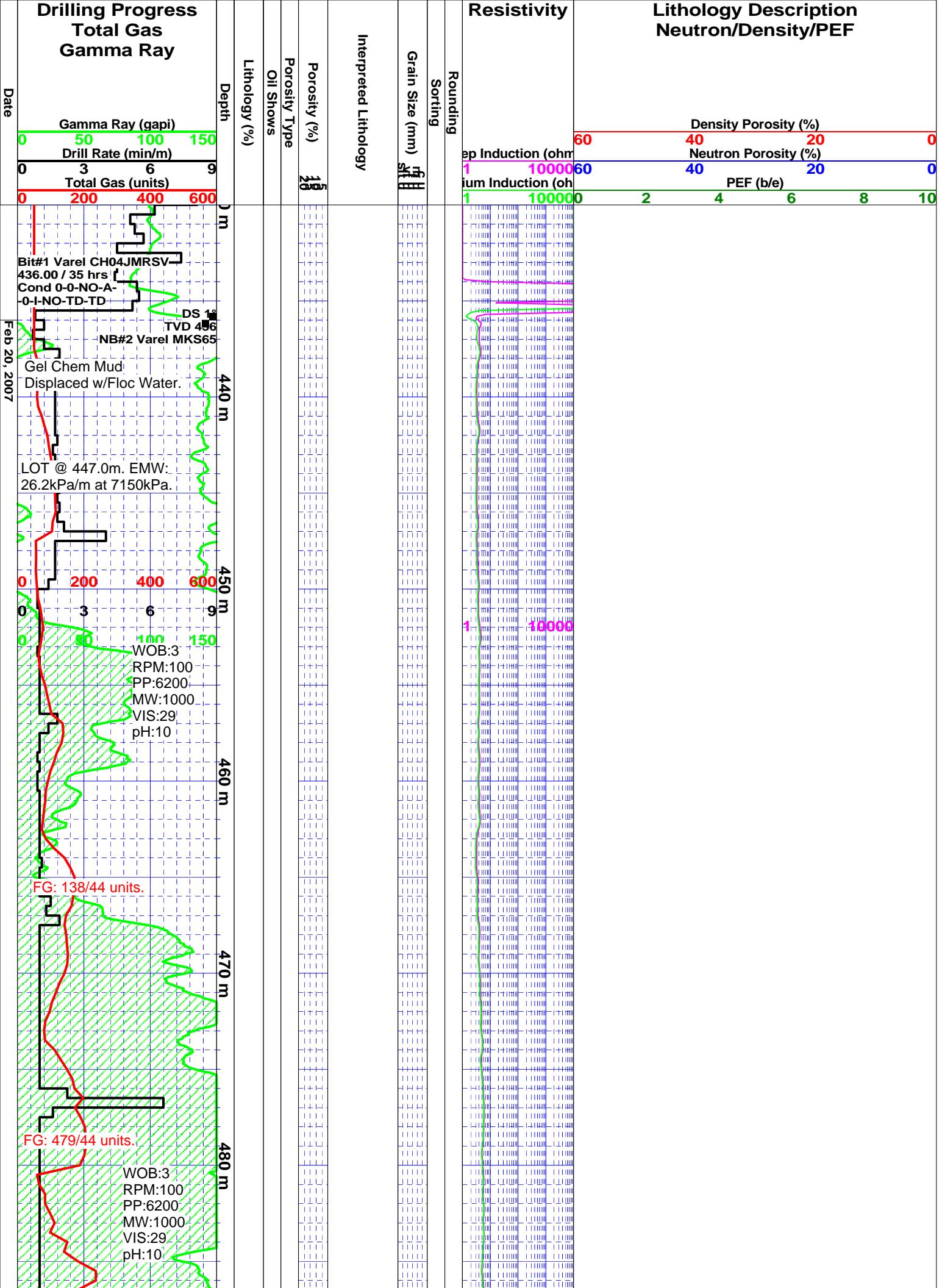
Spud Date:	Feb 18, 2007 @ 10:00hrs	Contractor:	Precision Rig# 129.
TD Date:	Feb 27, 2007 @ 06:00hrs	Rig Release Date:	

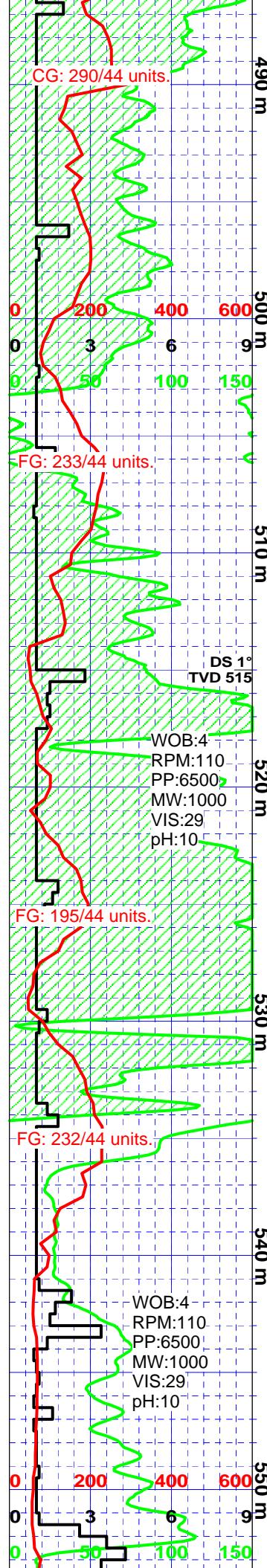
**Work Schedule**

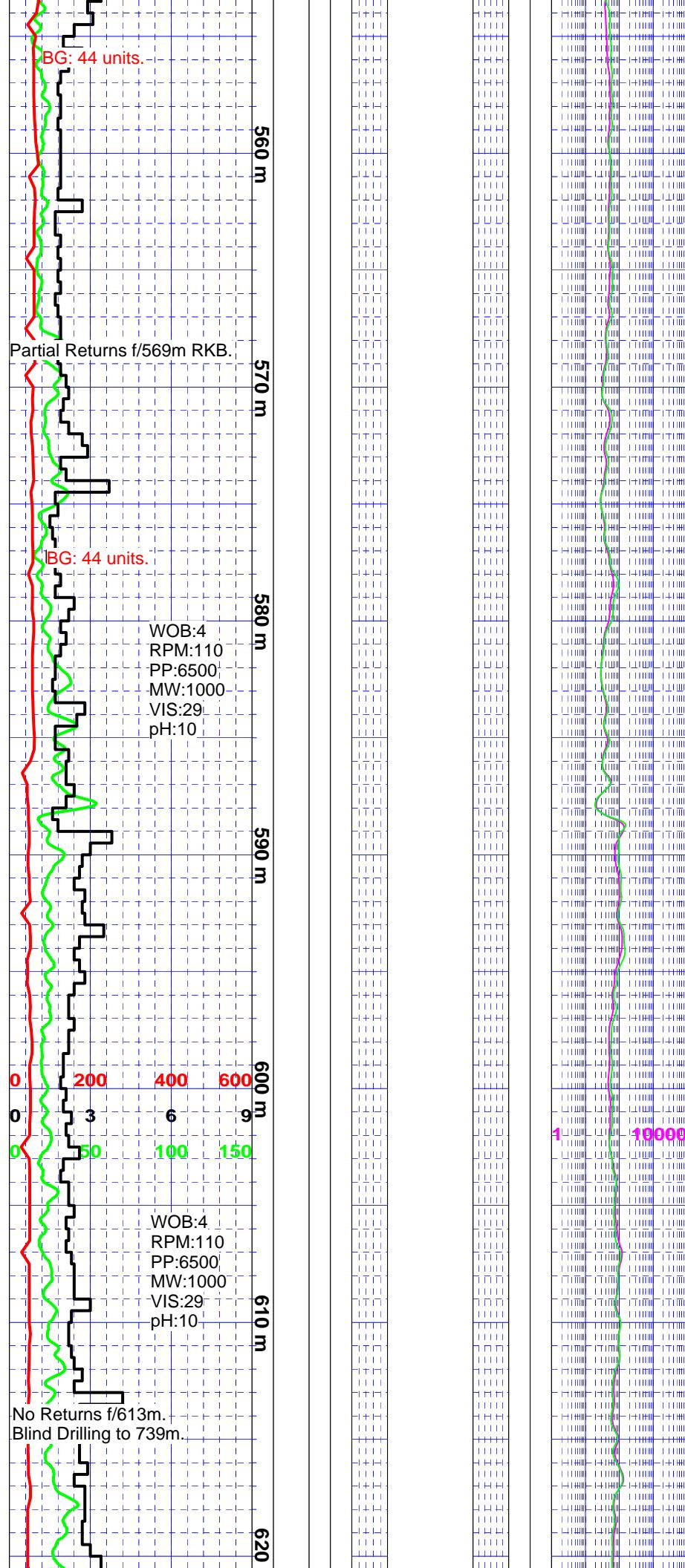
Contractor	Geologist	Log Interval	Dates Logged
Khan Petroleum Ltd.	Azim Ahmed	1280 m - 1450 m	Feb 18, 2007 - Mar 1, 2007

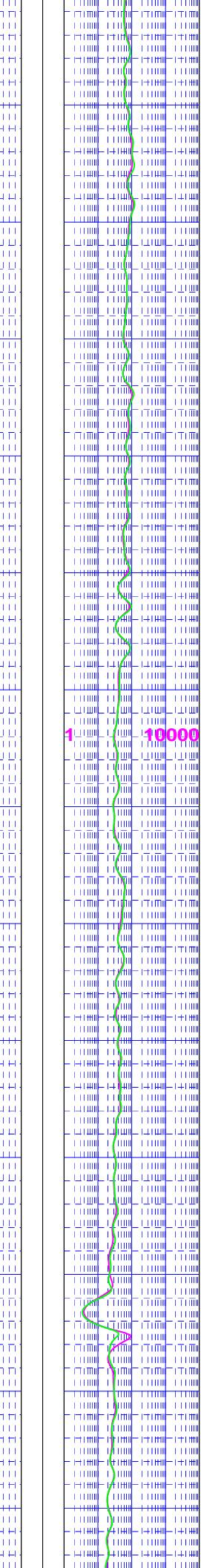
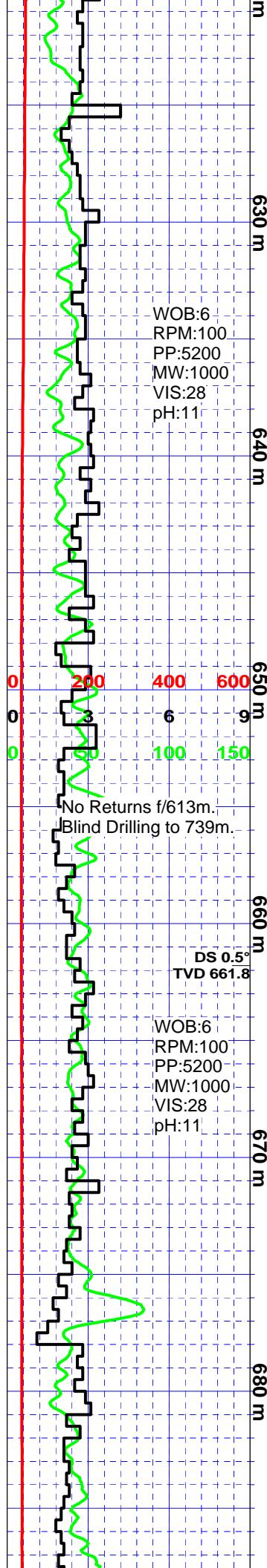
**Remarks**

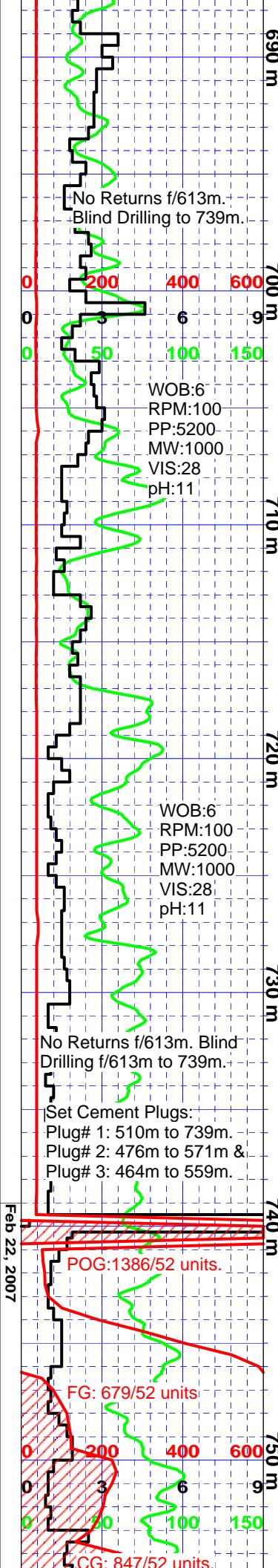
Composite Striplog Presentation - Scales 1:240

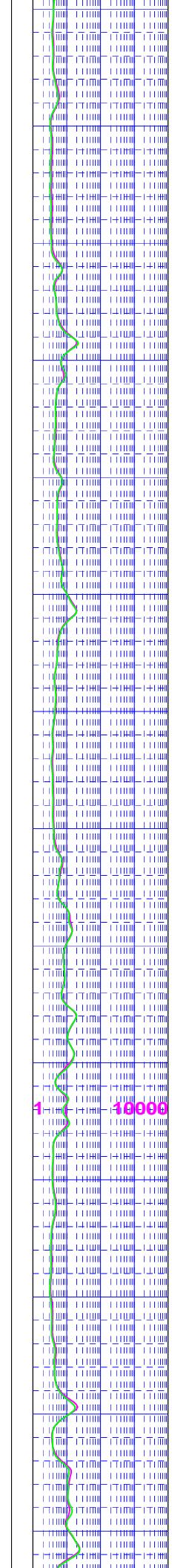
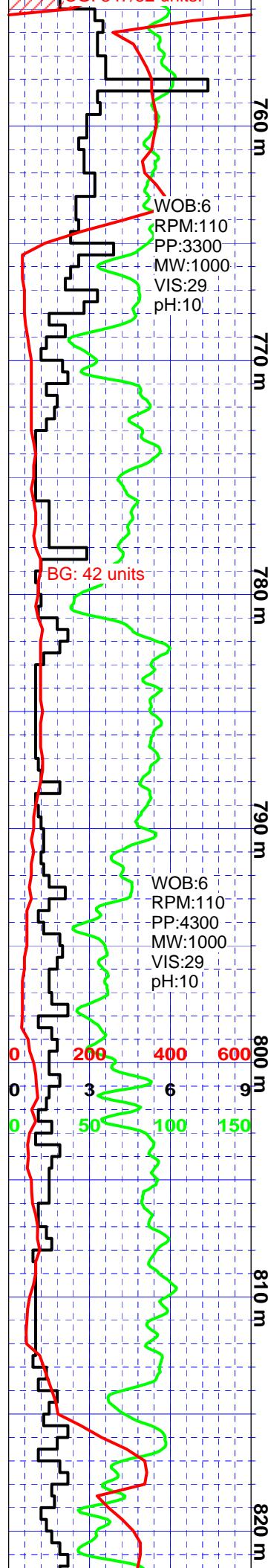


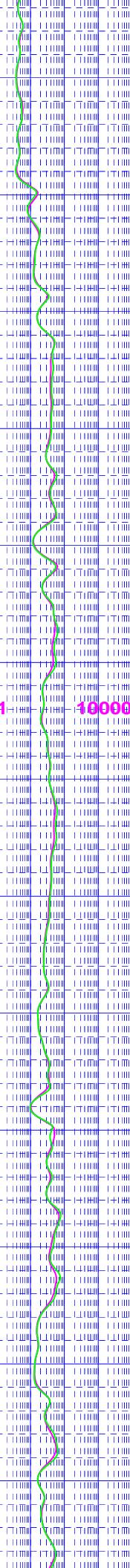
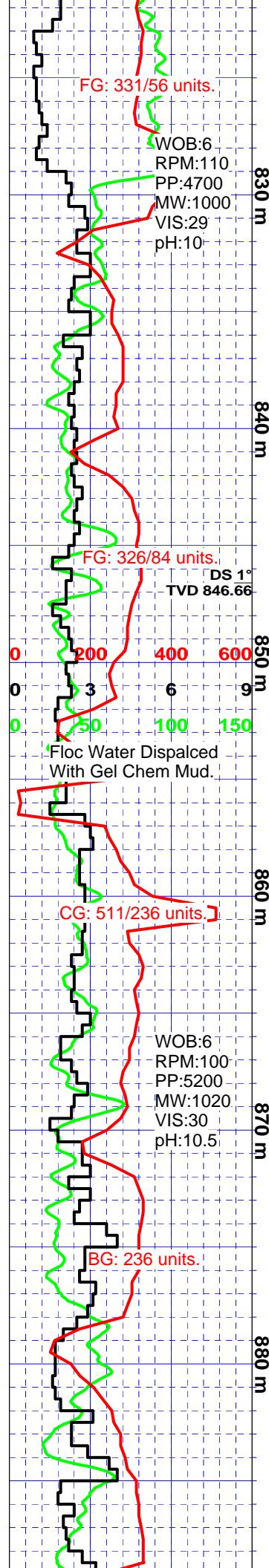


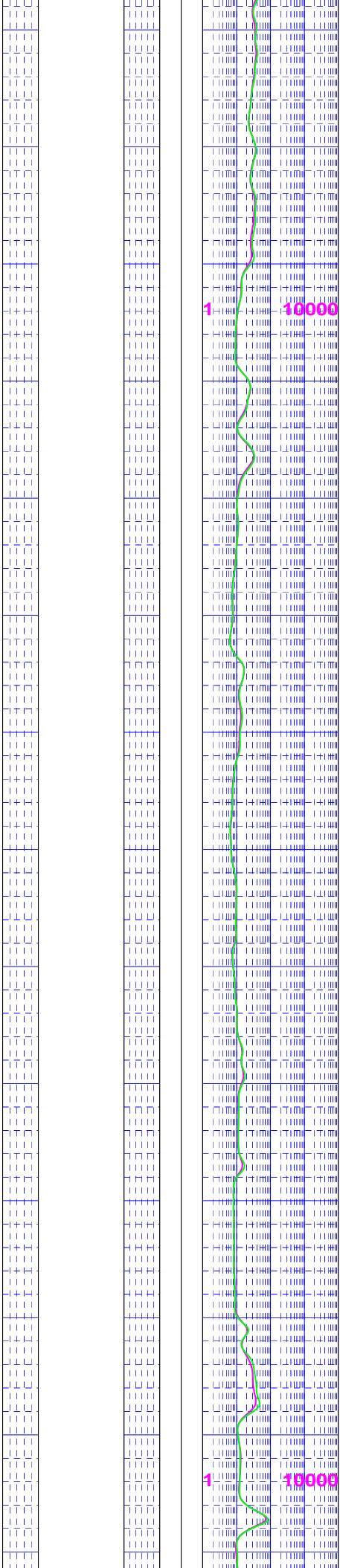
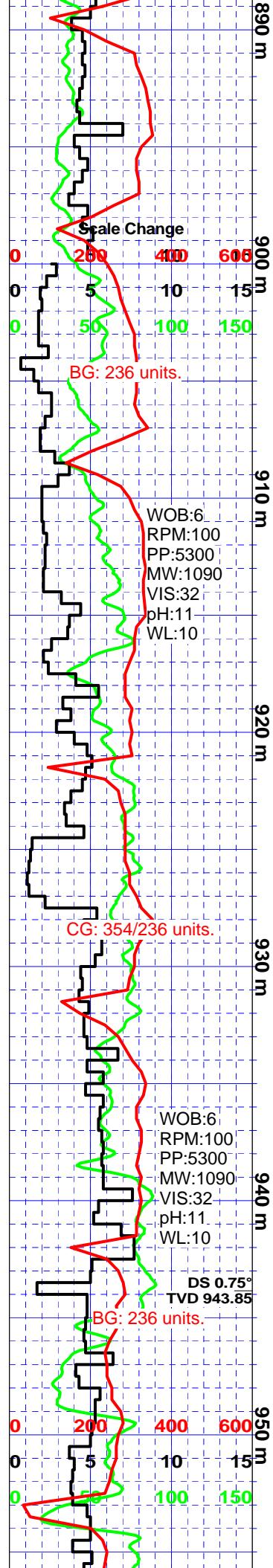


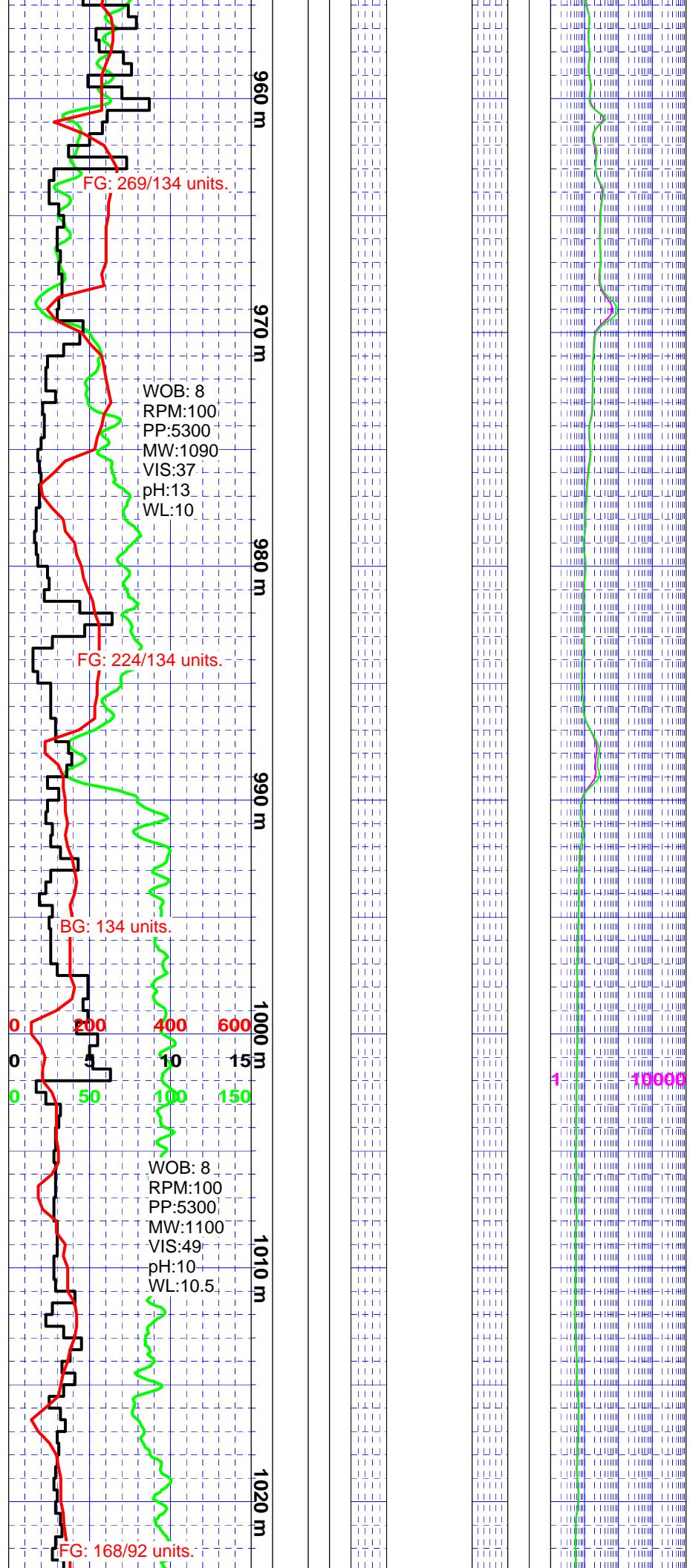


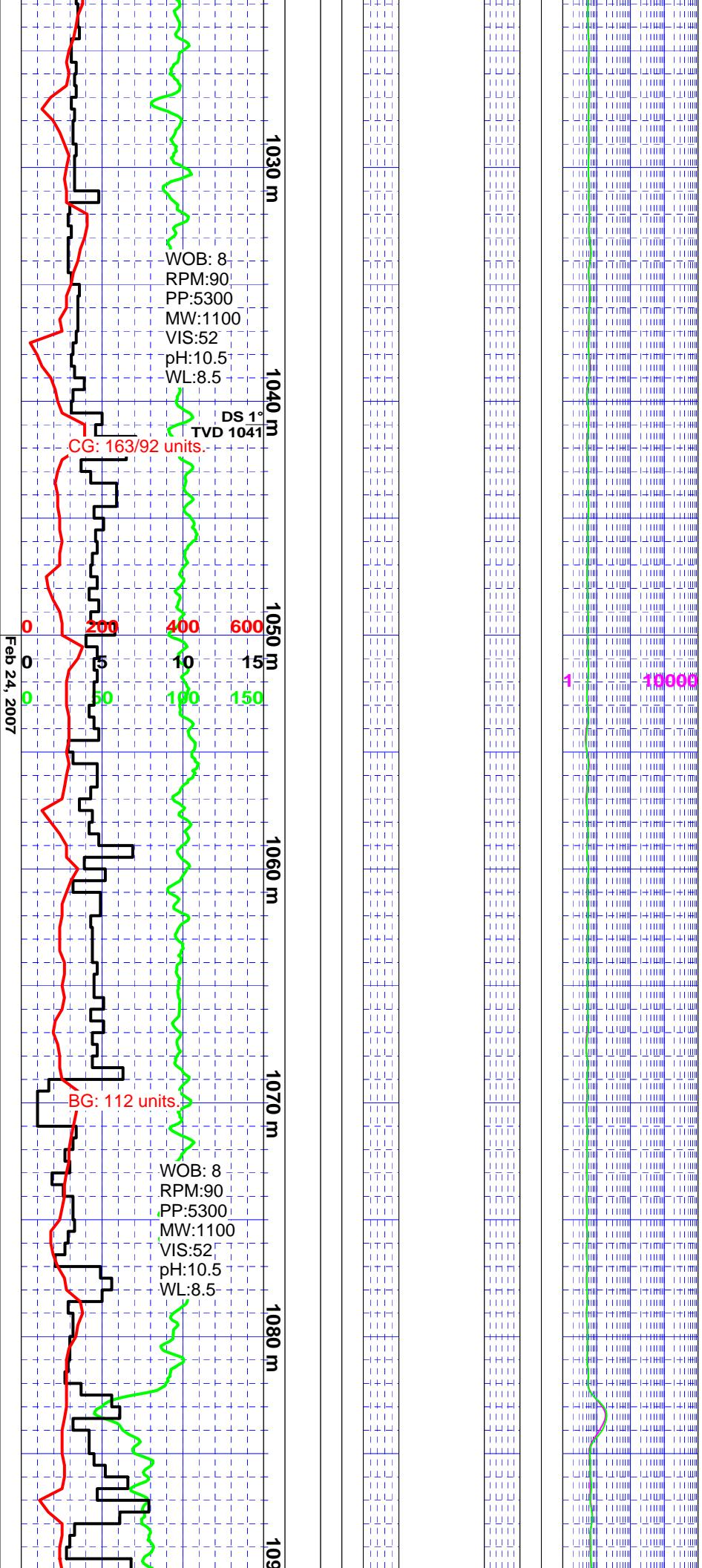


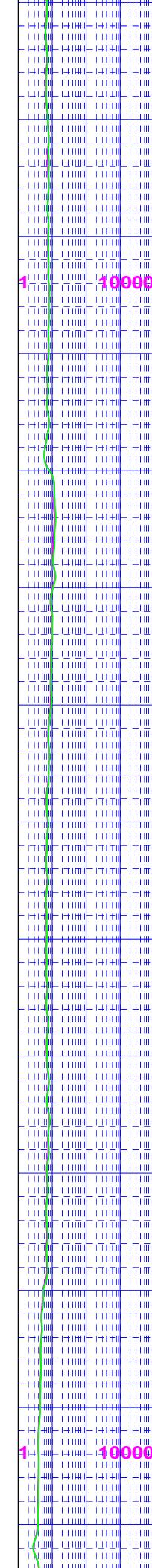
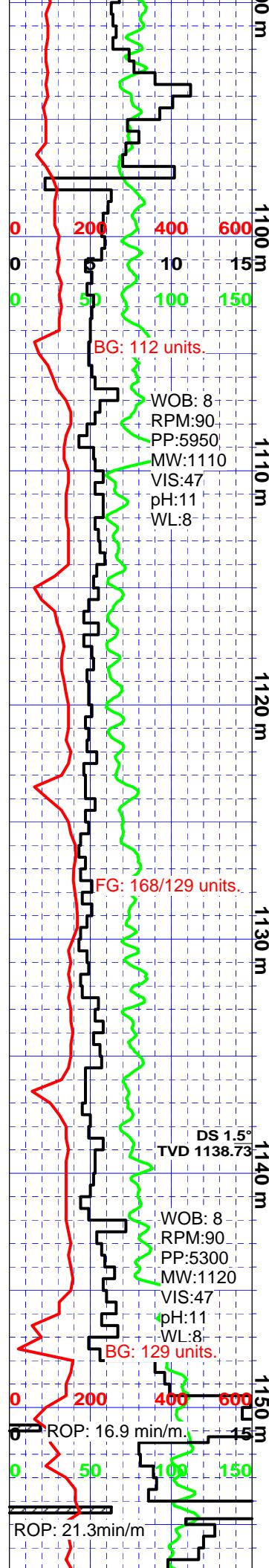




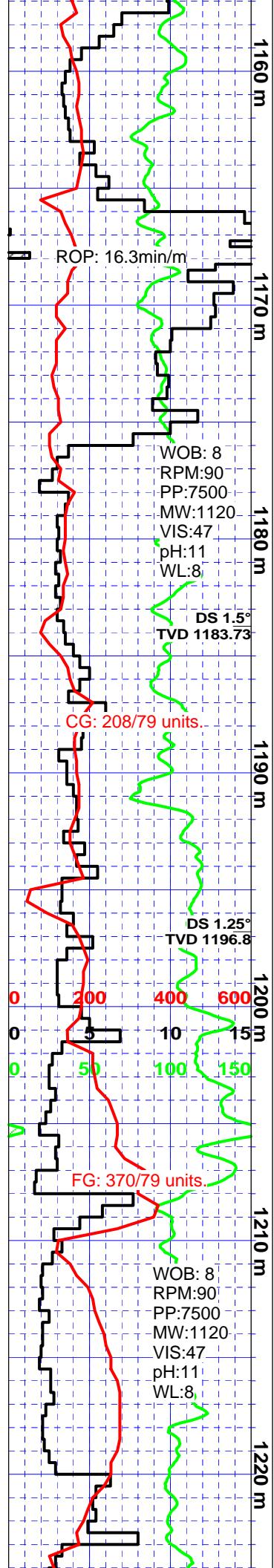


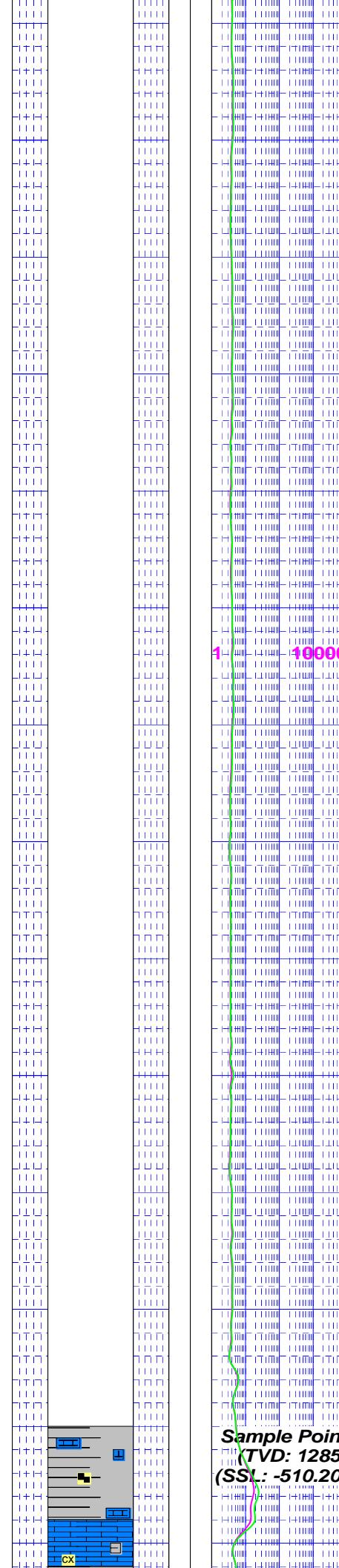
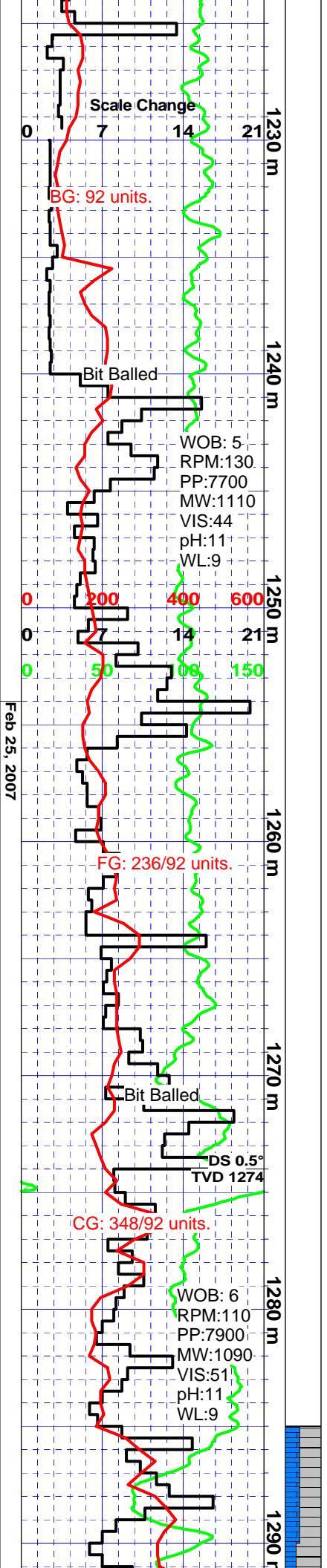




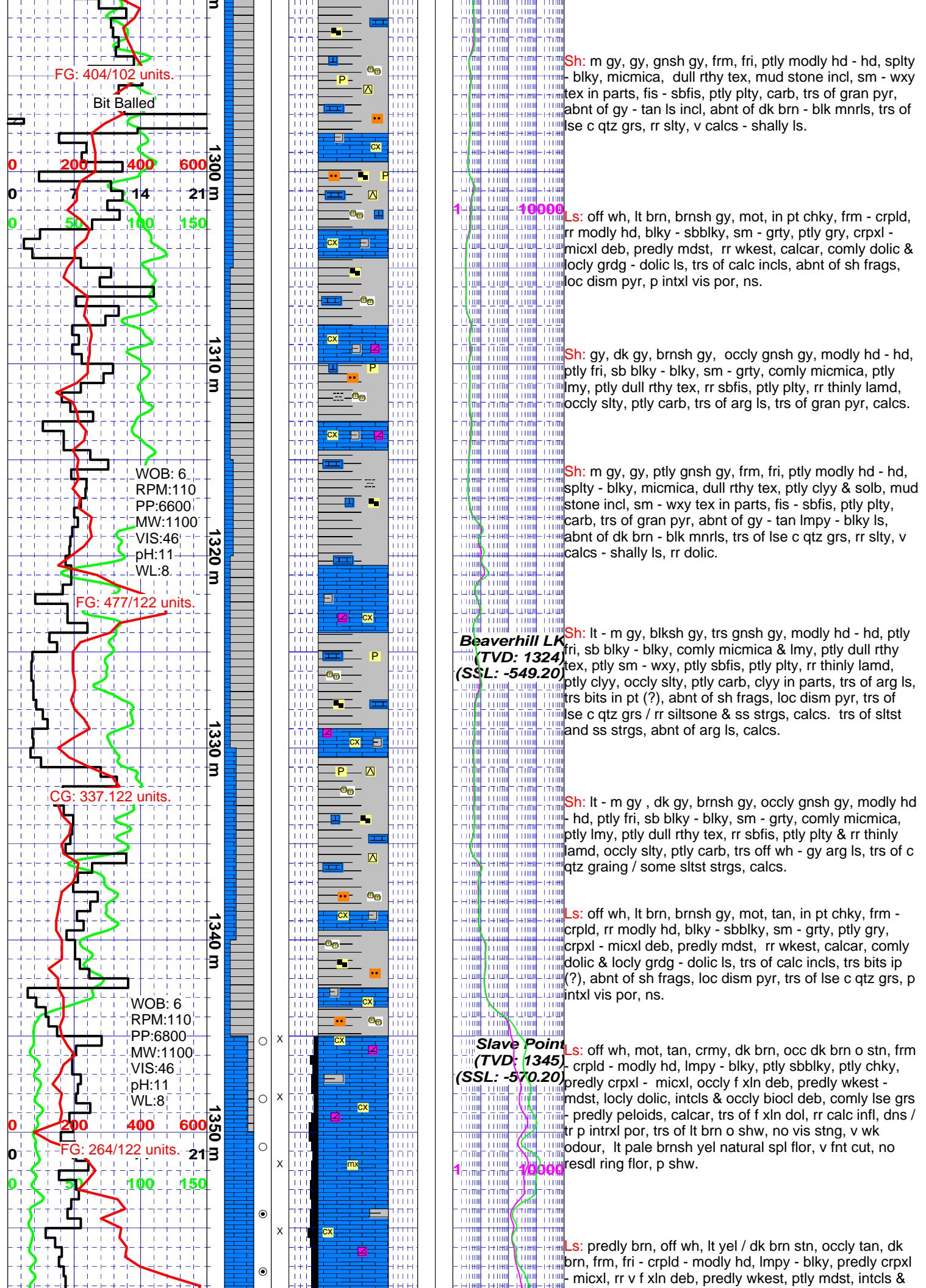


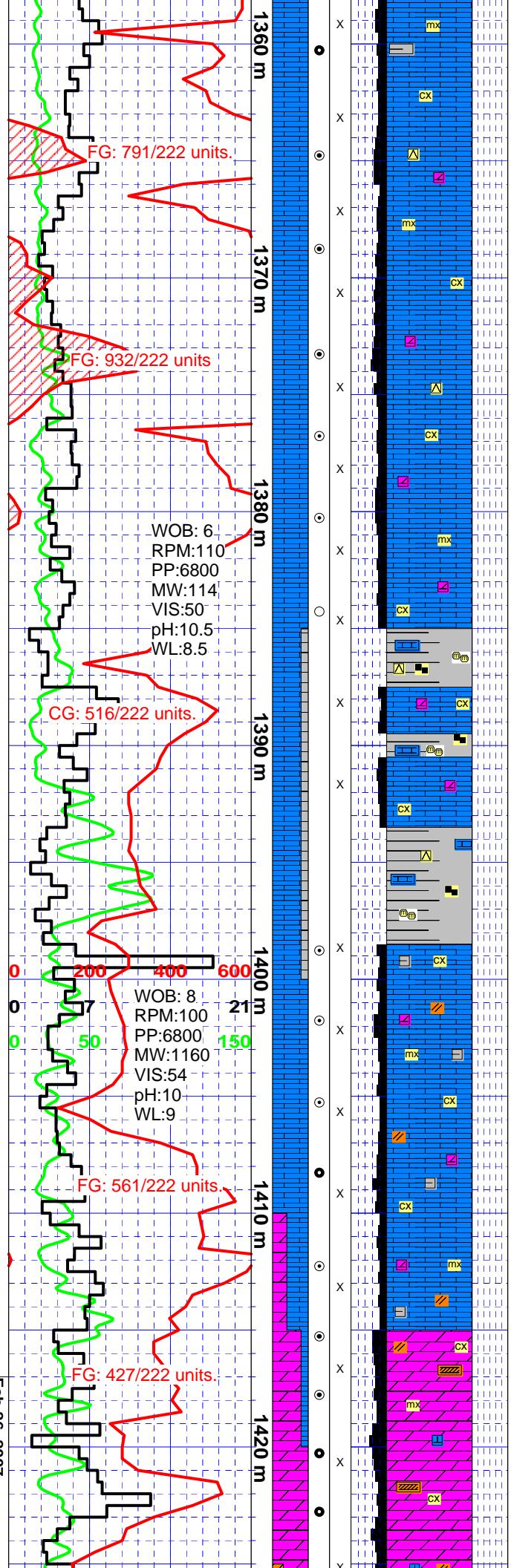
10000





**Sample Point Sh:** It gy - dk gy, gnsh gy, frm, fri, ptly modly hd - hd,  
**(TVD: 1285)** sply - blky, micmica, dull rthy tex, mud stone incl, sm  
**(SSL: -510.20)** wxy tex in parts, fis - sbfis, ptly ptly, carb, in pt calc  
grdg - arg ls, abnt of It gy, gn gy - tan mcxln ls incl,  
abnt of dk brn - blk mnrls, rr slyt, v calcs - shally ls.





1360 m: FG: 791/222 units.

1370 m: FG: 932/222 units.

1380 m: WOB: 6, RPM: 110, PP: 6800, MW: 114, VIS: 50, pH: 10.5, WL: 8.5. CG: 516/222 units.

1390 m: FG: 561/222 units.

1400 m: 200, 400, 600, WOB: 8, RPM: 100, PP: 6800, MW: 1160, VIS: 54, pH: 10, WL: 9. FG: 427/222 units.

1410 m: Sulphur Pt Ls: brn, tan, off wh, gnsh brn, It yel / dk brn stn, dk brn, frm, fri - crpld - modly hd, lmpy - blky, predly micxl - v f xln deb, ptly crpxl, predly wkest, ptly mdst, intcls & occly biocl deb, calcar, ptly arg, trs of f xln dol, loc bits ptgs, rr slst strg & gnsh brn sh frags incl, trs of lse c qtz grs, g vis intrxl por, wk odour, no vis stng, ptch golden wh natural spl flor, slow fnt cut, pale yelsh brn resdl ring flor, g shw.

1420 m: Sulphur Pt Sh: m gy - brnsh gy, gnsh gy, frm, fri, modly hd - hd, (TVD: 1385) sb blky - blky, comly micmica, rr dull rthy tex, ptly clyy, (SSL: -610.20) stf & sticky, rr sbfis, ptly pty, occly sly, ptly carb, abnt xln ls, trs of f xln dol, trs of bits (?) frags, trs of c qtz gr, trs of anhy incl, nn - sly calcs.

1430 m: Wall Mountain Sh: gy, gnsh gy, gn, modly hd - hd, ptly fri, sb blky - blky, sm - gry, comly micmica, rr dull rthy tex, rr sbfis, occly thinly lamd, occly sly, ptly carb, abnt xln ls, trs of f xln dol, abnt of bits (?) frags / dk brn - blk mnrls, trs of c qtz gr / gran pyr, trs of anhy incl, calcs.

1440 m: Sulphur Pt Ls: brn, It yel / dk brn stn, occly tan, dk brn, frm, fri - crpld - modly hd, blky - sbblky, sm - gry, predly micxl - v f xln deb, (TVD: 1398.5) ptly crpxl, predly wkest, ptly mdst, ptly arg, trs of f xln dol, trs of gnsh brn sh frags, abnt of anhy incl, lse c qtz grs, fr vis intrxl por, trs of lt brn o shw, wk od, lt brnsh yel spl flor, fnt cut, no resdl ring flor, p shw.

1450 m: Sulphur Pt Ls: off wh, mot, It yel / dk brn stn, lt - dk brn, frm - crpld modly hd, blky - sbblky, sm - gry, predly crpxl, ptly micxl, wkest - pkst, occly grdg - v f xln grst, locly grdg - dolic ls, intcls & occly biocl deb, comly lse grs - predly peloids, calcar, abnt of gy - gnsh gy sh frags, vugy - fr vis intrxl por, v fnt odour, no vis stng, trs of lt brn o shw, lt brnsh yel spl flor, fnt cut, no resdl ring flor, p shw.

1460 m: Sulphur Pt Dol: off wh, lt brn, mot, tan, stainy, crmy, redsh brn, (TVD: 1415) frm - crpld - modly hd, blky - sbblky, sm - gry, ptly rthy (SSL: -640.20) chky, ratty, predly crpxl deb, mdst, ptly pkst, sly arg, abnt ls incl, locly grdg - dolic ls, calcar, foss, abnt of calc and anhy incl, trs of bits ptgs, trs of sh gr, vugy - fr vis intrxl por, wk odour, no vis stng, ptch lt brn o shw, lt brnsh yel spl flor, fnt cut, fnt mky wh resdl ring flor, p shw.

1470 m: Dol: mot, tan, lt gy, lt brn, blky - sbblky, sm - gry, ptly chky, predly crpxl deb, predly mdst, ptly wkest, sly arg, rr evidence

