

Petro-Canada Resources

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March 11th, 2008

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NEB/ONE

National Energy Board
444 – Seventh Avenue S.W.
Calgary, Alberta
T2P 0X8

Attn: Bharat Dixit

Subject: PC Blackwater Kwijika M-59

Enclosed please find the following data on the subject well:

- End of Well Geological Report (includes Final Strip Log / CD)

Upon receipt of further well data, I will forward to you directly.

Sincerely,

Cathy Vitale
Geological Operations Administrator
Petro-Canada



Oil and Gas

Geological Report

On

Petro - Canada Blackwater Kwijika M-59

NWT



for

Petro Canada Oil & Gas

Prepared for: Larry Krusel
Petro Canada Oil & Gas

Prepared by: Gerald D'eon, P.Geol
DMA Geological Consultants Ltd.
Gary Timmons
Timmons Consulting Ltd.

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Well Summary

Storage Units:

Metric

Well Information

Operator: Petro Canada Oil & Gas
Well Name: Petro-Canada Blackwater Kwijika M-59
Location: M-59
UWI: 300M596440122300
Pool:
Field: Wildcat
State / Province: NWT Central MacKenzie
Country: Canada
License Number: 1165
Well Status: Plugged & Abandoned

Surface Co-ordinates

Hole Type: Vertical
Latitude: 64 38' 45.3"
UTM Northing: 7168837.91

Fault Indicator:
Longitude: 122 40' 56.8" W
UTM Easting: 515172.73

N / S :

E / W :

Int. Casing Co-ordinates

Latitude:

Longitude:

N / S :

E / W :

Bottom Hole Co-ordinates

Latitude:

Longitude:

N / S :

E / W :

Elevations

Ground Elevation: 245.90
Kelly Bushing Elevation: 252.10
Casing Flange Elevation:

Reference: Sea Level
Kelly Bushing to Ground: 5.70
Cut (-):
Fill (+):

Total Depth

Total Depth Driller (Tally) :
Total Depth Driller (Strap or SLM):
Total Depth Logger:

Measured Depth

1,640.00
1,641.30
1,641.00

True Vertical Depth

1,638.42
1,639.72
1,639.42

Miscellaneous Depths

Plugback Depth:
Sidetrack Depth:

Water Depth Reference:
Water Depth:

Well Summary

Drilling Contractor: Akita Sahtu Rig #51
Rig Release Date:

Spud Date: Feb 11, 2008 @ 15:30
Total Depth Date: Mar 4, 2008 @ 09:30

Cores	#	Formation	Interval	Cut	Recovered	%
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Well Summary

Storage Units: Metric

Casing Summary

Casing Type	Casing Size	Landed Depth	Hole Size
Surface	244.5	348.00	311.0
Intermediate	177.8	1,198.00	222.2

Logging Summary

Company	Engineer	Total Depth (MD)	Logging tools
---------	----------	------------------	---------------

Casing Data Summary

Storage Units:

Metric

Casing Type	Casing Size	Casing Landed @	Hole Size
Surface	244.5	348.00	311.0
Intermediate	177.8	1,198.00	222.2

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
1A	Smith	GF5114B	311.0	20.0	350.0	330.0	20.25	16.30	0	8	BT	A	2	I	BT	TD	
1B	HC	HC506Z	222.0	350.0	850.0	500.0	46.25	10.81	6	6	CT	A		I	WT	PR	
2B	Smith	FH28	222.0	850.0	894.0	44.0	8.25	5.33	2	8	RO	H	F	2	BT	PP	
3B	Smith	FH30	222.0	894.0	996.0	102.0	19.50	5.23	2	8	BT	H	E	I	CT	PR	
4B	Hughes	GX-44GD	222.0	996.0	1,200.0	204.0	46.25	4.41	2	5	BT	H	E	I	JD	TD	
1C	Hughes	STR-40D	156.0	1,200.0	1,495.0	295.0	48.25	6.11	4	8	BT	A	E	I	FC	PR	
2C	Smith	XR50	156.0	1,495.0	1,518.0	23.0	6.75	3.41	4	8	BT	H	E	12	FC	PR	
3C	HC	STX-50D	156.0	1,518.0	1,540.0	22.0	8.50	2.59	4	7	BT	H	E	I	FC	PR	
4C	HC	STX-50D	156.0	1,540.0	1,572.0	32.0	12.00	2.67	3	5	FC	A	E	I	BT	PR	
5C	Smith	XR40DP	156.0	1,571.0	1,640.0	69.0	19.75	3.49	2	2	WT	N	E	I	NO	TD	

Total Rotating Hours: 235.75



Logging Report

Page 1

Well Name PC Blackwater Kwijika M-59		Wellsite Geologist(s) Gary Timmons/Gerald D'eon		Specialist(s) / Petrophysicist(s)	Date 23 Feb 2008
Wireline Contractor SCHLUMBERGER CANADA LIMITED	Wireline Engineer(s) J. Rollings/R. Jacobs		Drilling Supervisor Rick Fisher/Ed Daechsel		Conveyance Method Wireline
Requested Arrival Date		Requested Arrival Time		Actual Arrival Date	Actual Arrival Time
Time Rig Up Commenced (mm/dd/yy 00:00) 23 Feb 2008 @ 13:00		Time Rig Down Completed (mm/dd/yy 00:00) 24 Feb 2008 @ 02:00		Driller Depth 1200.0 m	Logger Depth 1201.0 m
				Field Cost \$	
				Difference 1.0 m	

Interruptions in Logging Activities (Conditioning Trips, Hole Problems, Etc.)

Explanation	Interruption Start (mm/dd/yy 00:00)	Interruption End (mm/dd/yy 00:00)
-------------	-------------------------------------	-----------------------------------

Service Summary, Failures and Log Quality

(Failures Must Be Non-Borehole Related)

Wireline Service	Run	Trip	Interval (m)		Total Logged (m)	BHT (°C)	Rig Up Time (00:00)	Rig Down Time (00:00)	Total Time (Hrs)	Lost Time (Hrs)	Calibration Failures?	Depth Control Failures?	Repeat Failures?	Logs Consistent with Offset?	Tool Specific Failures?	Presentation Failures?	Log Quality Rating [1 (poor) to 4 (excellent)]
			Bottom	Top													
FMI-EMS-DSI-GR	1	2	1200.0	247.0	953.0	27	20:00	02:00	6.00						X		
PEX-HRLA-TLD2-HNGS-SP	1	1	1200.3	7.0	1193.3	28	13:00	20:00	7.00								

Time Summary

Total Logging Time (Hrs)	Total Lost Time (Hrs)	Total Interruption Time (Hrs)	Logging Efficiency (%)
13.00			100

Problems and Lost Time Details

SP curve was erratic below 800m, but readings appeared to repeat. Caused by Borehole? FMI caliper above 640 m occasionally would give erratic readings for short intervals (spikes). - images were OK.

Remarks

FMI tool to be taken to Norman Wells with Logging crew for check of caliper problem. Departing Feb 24.
Ran GR-NEUTRON to surface



Logging Report

Page 1

Well Name PC Blackwater Kwijika M-59		Wellsite Geologist(s) Gary Timmons/Gerald D'eon		Specialist(s) / Petrophysicist(s)	Date 04 Mar 2008
Wireline Contractor SCHLUMBERGER CANADA LIMITED	Wireline Engineer(s) J. Rollings/R. Jacobs		Drilling Supervisor Rick Fisher/Ed Daechsel		Conveyance Method Wireline
Requested Arrival Date		Requested Arrival Time	Actual Arrival Date	Actual Arrival Time	Field Cost \$
Time Rig Up Commenced (mm/dd/yy 00:00) 04 Mar 2008 @ 19:00		Time Rig Down Completed (mm/dd/yy 00:00) 06 Mar 2008 @ 11:30		Driller Depth 1640.0 m	Logger Depth 1641.0 m
				Difference 1.0 m	

Interruptions in Logging Activities (Conditioning Trips, Hole Problems, Etc.)

Explanation	Interruption Start (mm/dd/yy 00:00)	Interruption End (mm/dd/yy 00:00)
-------------	-------------------------------------	-----------------------------------

Service Summary, Failures and Log Quality

(Failures Must Be Non-Borehole Related)

Wireline Service	Run	Trip	Interval (m)		Total Logged (m)	BHT (°C)	Rig Up Time (00:00)	Rig Down Time (00:00)	Total Time (Hrs)	Lost Time (Hrs)	Calibration Failures?	Depth Control Failures?	Repeat Failures?	Logs Consistent with Offset?	Tool Specific Failures?	Presentation Failures?	Log Quality Rating [1 (poor) to 4 (excellent)]
			Bottom	Top													
FMI-EMS-DSI-HGNS-MLTB	2	3	1640.0	1198.0	442.0	34	09:00	17:00	8.00								4
MDT	2	4	1563.0	1454.0	109.0	30	17:00	02:45	9.75								4
VSP	2	5	1640.0	200.0	1440.0		02:45	11:30	8.75								
PEX-HRLA-CMR-TLD2-MLTB-SP	2	1	1640.0	1198.0	442.0	34	19:00	03:00	8.00						X		4
MSCT	2	2	1568.5	1493.5	75.0		03:00	09:00	6.00								4

Time Summary

Total Logging Time (Hrs)	Total Lost Time (Hrs)	Total Interruption Time (Hrs)	Logging Efficiency (%)
40.50			100

Problems and Lost Time Details

SP curve very erratic. (Also in prev runs). Microlog tool appears to have failed, will run on trip 3.

Remarks

MDT 13 stations, 6 good tests, 7 dry tests. 4 450 cc samples taken at 1503.6 m

Survey Points

Storage Units:

Metric

Measured Depth	T.V.D.	Drift Angle (°)	Azimuth (°)	+N / -S Distance	+E / -W Distance	Vertical Section	DogLeg Severity
46.00	46.00	0.150					
90.00	90.00	1.000					
123.00	122.90	0.500	73.00	0.00	0.00	0.00	0.00
190.00	189.89	1.000	92.00	0.07	0.86	0.07	0.25
237.00	236.89	0.750	145.00	-0.20	1.45	-0.20	0.52
276.00	275.88	1.750	142.00	-0.88	1.96	-0.88	0.77
341.00	340.80	3.750	143.00	-3.36	3.85	-3.36	0.92
357.00	356.76	4.100	130.20	-4.15	4.61	-4.15	1.76
401.00	400.63	4.700	126.30	-6.23	7.26	-6.23	0.46
420.00	419.57	4.700	127.40	-7.16	8.51	-7.16	0.14
430.00	429.54	4.800	127.40	-7.67	9.16	-7.67	0.30
449.00	448.47	4.800	127.20	-8.63	10.43	-8.63	0.03
459.00	458.44	4.700	128.80	-9.14	11.08	-9.14	0.50
466.00	465.41	4.700	123.70	-9.48	11.54	-9.48	1.79
477.00	476.37	4.700	124.60	-9.98	12.29	-9.98	0.20
487.00	486.34	4.700	126.00	-10.46	12.96	-10.46	0.34
507.00	506.28	4.500	121.60	-11.35	14.29	-11.35	0.61
516.00	515.25	4.100	124.90	-11.72	14.85	-11.72	1.57
546.00	545.18	3.800	125.30	-12.91	16.54	-12.91	0.30
555.00	554.16	3.300	123.70	-13.22	17.00	-13.22	1.70
564.00	563.15	3.300	125.80	-13.52	17.43	-13.52	0.40
573.00	572.13	3.000	124.20	-13.80	17.83	-13.80	1.04
583.00	582.12	3.000	125.80	-14.10	18.26	-14.10	0.25
602.00	601.10	2.600	126.80	-14.65	19.01	-14.65	0.64
611.00	610.09	3.000	127.40	-14.92	19.36	-14.92	1.34
621.00	620.08	2.500	128.10	-15.21	19.74	-15.21	1.50
640.00	639.06	2.500	126.30	-15.71	20.40	-15.71	0.12
650.00	649.05	2.200	131.10	-15.97	20.72	-15.97	1.08
660.00	659.04	1.900	128.60	-16.20	21.00	-16.20	0.94
670.00	669.04	1.700	121.90	-16.38	21.25	-16.38	0.87
679.00	678.03	1.500	126.70	-16.52	21.46	-16.52	0.80
699.00	698.03	1.100	126.70	-16.79	21.82	-16.79	0.60

719.00	718.03	1.100	142.10	-17.06	22.09	-17.06	0.44
736.00	735.02	1.200	141.80	-17.32	22.30	-17.32	0.18
746.00	745.02	1.500	137.90	-17.50	22.46	-17.50	0.94
765.00	764.01	1.200	129.00	-17.81	22.78	-17.81	0.58
775.00	774.01	1.100	128.10	-17.94	22.93	-17.94	0.30
784.00	783.01	1.100	132.60	-18.05	23.07	-18.05	0.29
804.00	803.01	1.100	128.60	-18.30	23.36	-18.30	0.12
813.00	812.00	1.000	120.90	-18.39	23.49	-18.39	0.58
823.00	822.00	1.100	130.40	-18.50	23.64	-18.50	0.60
833.00	832.00	1.100	133.50	-18.63	23.78	-18.63	0.18
843.00	842.00	1.000	124.40	-18.75	23.93	-18.75	0.58
851.00	850.00	0.900	127.40	-18.82	24.03	-18.82	0.42
862.00	861.00	1.200	117.20	-18.93	24.20	-18.93	0.96
871.00	870.00	0.900	91.70	-18.97	24.36	-18.97	1.83
882.00	880.99	1.800	121.80	-19.07	24.59	-19.07	3.05
892.00	890.99	2.500	130.20	-19.29	24.89	-19.29	2.30
902.00	900.98	2.400	125.10	-19.55	25.23	-19.55	0.72
911.00	909.97	2.000	126.70	-19.75	25.51	-19.75	1.35
921.00	919.96	1.800	117.70	-19.93	25.79	-19.93	1.08
931.00	929.96	1.200	107.90	-20.04	26.03	-20.04	1.95
941.00	939.96	1.200	107.50	-20.10	26.23	-20.10	0.03
950.00	948.96	1.300	104.70	-20.15	26.42	-20.15	0.39
959.00	957.95	1.300	103.30	-20.20	26.61	-20.20	0.11
988.00	986.95	0.600	154.10	-20.42	27.00	-20.42	1.07
998.00	996.95	0.800	150.20	-20.52	27.06	-20.52	0.62
1,008.00	1,006.95	0.500	145.30	-20.62	27.12	-20.62	0.91
1,013.00	1,011.95	0.500	145.30	-20.66	27.14	-20.66	0.00
1,017.00	1,015.95	0.500	147.80	-20.69	27.16	-20.69	0.16
1,027.00	1,025.95	0.800	144.90	-20.78	27.22	-20.78	0.91
1,036.00	1,034.95	1.000	139.70	-20.89	27.31	-20.89	0.72
1,046.00	1,044.94	1.300	158.70	-21.06	27.41	-21.06	1.44
1,056.00	1,054.94	1.300	158.30	-21.27	27.49	-21.27	0.03
1,066.00	1,064.94	1.700	164.50	-21.52	27.57	-21.52	1.29
1,076.00	1,074.93	1.700	167.10	-21.81	27.65	-21.81	0.23
1,084.00	1,082.93	1.700	166.90	-22.04	27.70	-22.04	0.02

1,094.00	1,092.93	1.700	168.70	-22.33	27.76	-22.33	0.16
1,104.00	1,102.92	1.600	168.00	-22.61	27.82	-22.61	0.31
1,114.00	1,112.92	1.700	169.60	-22.90	27.88	-22.90	0.33
1,124.00	1,122.91	1.600	172.00	-23.18	27.92	-23.18	0.36
1,134.00	1,132.91	1.600	181.90	-23.46	27.94	-23.46	0.83
1,144.00	1,142.91	1.600	184.70	-23.74	27.92	-23.74	0.23
1,154.00	1,152.90	1.600	188.00	-24.01	27.89	-24.01	0.28
1,164.00	1,162.90	1.600	190.50	-24.29	27.85	-24.29	0.21
1,173.00	1,171.89	1.500	188.20	-24.53	27.81	-24.53	0.39
1,181.00	1,179.89	1.200	192.20	-24.71	27.77	-24.71	1.18
1,203.00	1,201.89	1.100	133.20	-25.08	27.88	-25.08	1.55
1,212.00	1,210.89	1.000	112.80	-25.17	28.01	-25.17	1.28
1,222.00	1,220.89	0.900	40.90	-25.15	28.15	-25.15	3.36
1,232.00	1,230.89	0.400	83.80	-25.08	28.23	-25.08	2.00
1,241.00	1,239.89	0.400	53.20	-25.06	28.29	-25.06	0.70
1,251.00	1,249.89	0.200	151.80	-25.06	28.32	-25.06	1.42
1,270.00	1,268.89	0.500	355.60	-25.00	28.33	-25.00	1.09
1,279.00	1,277.88	0.800	261.00	-24.97	28.27	-24.97	3.26
1,317.00	1,315.88	1.600	212.50	-25.46	27.72	-25.46	0.97
1,356.00	1,354.86	2.200	205.80	-26.60	27.10	-26.60	0.49
1,394.00	1,392.82	2.600	207.00	-28.02	26.39	-28.02	0.32
1,432.00	1,430.79	2.200	224.40	-29.31	25.49	-29.31	0.65
1,471.00	1,469.76	2.500	196.30	-30.66	24.73	-30.66	0.91
1,505.00	1,503.71	3.400	201.50	-32.31	24.15	-32.31	0.83
1,519.00	1,517.69	3.000	191.20	-33.06	23.93	-33.06	1.50
1,528.00	1,526.68	3.500	179.60	-33.56	23.89	-33.56	2.75
1,538.00	1,536.66	3.700	176.00	-34.19	23.91	-34.19	0.91
1,548.00	1,546.64	3.700	176.90	-34.83	23.95	-34.83	0.17
1,558.00	1,556.62	3.500	170.60	-35.46	24.02	-35.46	1.33
1,567.00	1,565.60	3.700	175.70	-36.02	24.08	-36.02	1.26
1,577.00	1,575.58	4.000	172.60	-36.69	24.15	-36.69	1.10
1,587.00	1,585.55	3.900	168.70	-37.36	24.26	-37.36	0.86
1,596.00	1,594.53	3.900	187.70	-37.97	24.28	-37.97	4.29
1,624.00	1,622.46	4.100	188.20	-39.90	24.01	-39.90	0.22

Drilling Fluid Summary

Storage Units:

Metric

Drilling Fluid Type: KCL Polymer

From:

0

To:

1,640

Work Schedule

Storage Units:

Metric

Company: Timmons / DMA Geological
Geologist: G.Timmons / G. Deon, P.Geol

Work Performed **From:** Feb 10, 2008 **To:** Mar 04, 2008
Depths Logged **From:** 0.0 **To:** 1,640.0

Remarks:

Formation Top Summary

Storage Units:

Metric

Kelly Bushing Elevation: 252.10
Ground Elevation: 245.90

Casing Flange Elevation:

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

Group Formation Member	Prognosis (TVD)	Sample Top (MD)	Sample Top (TVD)	Log Top (MD)	Log Top (TVD)	Subsea	Thickness
Quaternary	0.00	0.00	0.00			252.10	
Slater River	58.00	46.00	45.96	38.00	37.97	214.13	
Martin House		210.00	209.89	215.50	215.39	36.71	
Arnica	211.00	215.00	214.89	220.00	219.89	32.21	
Bear Rock	230.00	236.00	235.89	236.50	236.39	15.71	
Mount Kindle	730.00	744.00	743.02	747.50	746.52	-494.42	
Franklin Mountain	931.40	925.00	923.96	933.00	931.96	-679.86	
Saline River	1215.00	1235.50	1234.39	1234.50	1233.39	-981.29	
Saline River Saline River Salt		1277.50	1276.38	1277.00	1275.88	-1023.78	
Mount Cap	1371.40	1404.00	1402.81	1403.00	1401.81	-1149.71	
Mount Clark	1536.40	1489.50	1488.23	1489.50	1488.23	-1236.13	
Tweed Lake	1581.40	1575.00	1573.58	1570.70	1569.29	-1317.19	
Total Depth		1640.00	1638.42	1641.00	1639.42	-1387.32	

Formation Evaluations

Storage Units:

Metric

Kelly Bushing Elevation: 252.10
Ground Elevation: 245.90

Casing Flange Elevation:

*All Depths Measured from Kelly Bushing Elevation***Group:****Formation:** Quaternary**Member:****Boundary Type:** angular unconformable**Fault Type:****Era:****Series:****Period:** Quaternary**Stage:****Age (Approx):** Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	0.00	0.00	252.10	
Log Top				

Evaluation:

The Quaternary section appears to be composed of mostly glacial drift with varying composition. Typical samples contain sandstone light gray, orange, mottled, very fine to coarse grained, occasional very coarse, subangular to subround, medium to poor sorted, quartz grains, orange feldspar, lithic shale grains, occasional chlorite, abundant unconsolidated grains, also occasional well cemented fragments with rounded quartz grains, concol grains with no visible porosity. Some soft sticky clay is present at the shale shakers but washes out during sample preparation.

Highly variable drill rates indicate harder section, (boulder zones?) which are either pushed aside or drilled up.

Mud gas values remained steady at 20 units over the interval.

Conclusion:

There are no reservoir characteristics in the Quaternary.

Group:**Formation:** Slater River**Member:****Boundary Type:** angular unconformable**Fault Type:****Era:****Series:****Period:** Cretaceous**Stage:****Age (Approx):** Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	46.00	45.96	206.14	
Log Top	38.00	37.97	214.13	

Evaluation:

The Slater River Formation consists mainly of shale with rare siltstone zones. The shale is dark gray, blocky to tabular, soft, trace pyritic, trace carbonaceous flakes, with light gray brown marlstone fragments.

The thin siltstone is light gray, siliceous, argillaceous, quartz, argillite grains, dark minerals, trace pyritic, tight, no shows.

The mud gas curve averaged 60-100 units over the interval 60-90 metres, then reduced with depth to a steady background of 20 units over the remainder of the section.

Conclusion:

There are no reservoir parameters or shows in the Slater River section.

Formation Evaluations

Storage Units:

Metric

Kelly Bushing Elevation: 252.10

Ground Elevation: 245.90

Casing Flange Elevation:

*All Depths Measured from Kelly Bushing Elevation***Group:****Formation:** Martin House**Member:****Boundary Type:** conformable**Fault Type:****Era:****Series:****Period:** Cretaceous**Stage:****Age (Approx):** Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	210.00	209.89	42.21	
Log Top	215.50	215.39	36.71	

Evaluation:

The Martin House Formation consists of a single sandstone sample at this location. This sandstone is clear, medium grained to pebbly, siliceous, poorly consolidated in part?, very pyritic in part, (argillaceous material in sand from water soluble shale?), predominately quartz, scattered lithic chert fragments, quartz overgrowths, sub rounded to sub angular, very poorly sorted, / 14-16% intergranular porosity, no shows.

The mud gas curve remained steady at 20 units background over this interval.

Note: The samples from 200-210 were poor to possibly uninterpretable due to a slug of unsheared polymer "goop" going over the shale shakers over this interval. Sample collection was very difficult and the samples, when washed, proved to be almost entirely drilling mud. The top of this Martin House sandstone could be higher than 210 metres but the very poor samples gave no evidence of it.

Conclusion:

There appears to be fair reservoir quality porosity, but no shows in the Martin House. Further wireline evaluation is necessary.

Formation Evaluations

Storage Units:

Metric

Kelly Bushing Elevation: 252.10

Ground Elevation: 245.90

Casing Flange Elevation:

*All Depths Measured from Kelly Bushing Elevation***Group:****Formation:** Arnica**Member:****Boundary Type:** unconformable**Fault Type:****Era:****Series:****Period:** Devonian**Stage:****Age (Approx):** Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	215.00	214.89	37.21	
Log Top	220.00	219.89	32.21	

Evaluation:

The Arnica Formation consists of dolomite at this location. This dolomite is generally mottled light to medium brown, cryptocrystalline to microcrystalline, occasionally with remnant fragmental texture, stylolites, rare trace small vugs, predominately dense, trace coral, trace patchy pyrobitumen.

In the 220-225 sample, two fragments were seen with 2-4% vuggy and intrafossil porosity in coral fragments.

The mud gas curve remained steady at 20 units over this interval.

Conclusion:

The Arnica contains trace amounts of pyrobitumen and very small amounts of intrafossil porosity. No mud gas anomalies are present.

Formation Evaluations

Storage Units:

Metric

Kelly Bushing Elevation: 252.10
Ground Elevation: 245.90

Casing Flange Elevation:

*All Depths Measured from Kelly Bushing Elevation***Group:****Formation:** Bear Rock**Member:****Boundary Type:** conformable**Fault Type:****Era:****Series:****Period:** Devonian**Stage:****Age (Approx):** Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	236.00	235.89	16.21	
Log Top	236.50	236.39	15.71	

Evaluation:

The Bear Rock Formation at this location consists mainly of an evaporitic sequence of anhydrite with interbedded dolomite and minor siltstone and shale. The section can be subdivided into 4 lithological units: 236-426 metres, 426-485 metres, 485-572 metres, and 572-744 metres.

The interval 236-426 metres consists mainly anhydrite, white, beige, cryptocrystalline to microcrystalline, firm, occasionally with dolomite stringers, also silty in part, dense, no shows. No porosity is evident and mud gas is steady at about 20 units.

The interval 420-485 metres consists mainly of dolomite with interbedded anhydrite. The dolomite is light to medium brown, microcrystalline, sucrosic, anhydritic, trace pyritic, stylolites, slightly calcareous in part, with patchy intercrystalline & minor vuggy porosity 12-14%, with occasional pyrobitumen. The anhydrite is as previous. The mud gas ranged up to 50 units peak over a 25 unit background over the interval.

The interval 485-572 metres consists of anhydrite with thin dolomite intbeds. The anhydrite is white, light brown, tan, cryptocrystalline, tabular, firm to hard, dense, occasional dolomitic. No porosity is evident in the dolomite.

The interval 572-744 consists of anhydrite interbedded with dolomite, siltstone, minor shale, and marlstone. The anhydrite is light brown, light gray, cryptocrystalline, dense, with interspersed siltstone. The dolomite is light gray, buff, cryptocrystalline, tabular, hard, dense. The shale is green, light gray, occasionally red, platy to blocky, dolomitic, silty, occasionally grading to dolomitic marlstone.

The mud gas remained relatively steady at 25-35 units over the interval.

Conclusion:

Although there is muted mud gas response and no live oil shows, the dolomite from 425-486 metres contains significant porosity and further evaluation is necessary.

Formation Evaluations

Storage Units:

Metric

Kelly Bushing Elevation: 252.10
Ground Elevation: 245.90

Casing Flange Elevation:

All Depths Measured from Kelly Bushing Elevation

Group:
Formation: Mount Kindle
Member:
Boundary Type: angular unconformable
Fault Type:

Era:
Series:
Period: Silurian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	744.00	743.02	-490.92	
Log Top	747.50	746.52	-494.42	

Evaluation:

The Mount Kindle Formation consists of mainly dolomite. This dolomite is generally light brown, light gray, microcrystalline, trace pyritic, silty lenses, stylolites, clear calcite crystals, with patchy intercrystalline porosity up to 6%, but mostly dense, with occasional bitumen in pores, no live shows. The interval 740-810 metres contains mostly of the observed porosity, although mostly in 1-3 metre thick increments. From 800-915 metres, the dolomites contain occasional remnant fragments of algal mats, crinoids, possible coral? and scattered light gray chert. The base of the section consists of contains gray dolomitic shale.

The mud gas remained steady at 35-40 units over the interval

Conclusion:

The Mount Kindle contains noteable porosity, particularly in the interval 744-831 metres.

Group:
Formation: Franklin Mountain
Member:
Boundary Type: angular unconformable
Fault Type:

Era:
Series:
Period: Ordovician
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	925.00	923.96	-671.86	
Log Top	933.00	931.96	-679.86	

Evaluation:

The Franklin Mountain Formation consists of dolomite, with minor shaly interbeds near the base of the interval. The dolomite is typically light gray, trace buff, trace reddish, microcrystalline, with traces fragmental wackestone texture, oolites, silty, occasionally with minor white chert, no shows.

Several poros intervals occur in this section. The interval 1118-1154 medium contains patchy vuggy, moldic, and leached porosity in ranges of 4-8%. The porosity occurs in remnant fragmental portions of the section. Also, the interval 1167-1171 exhibited trace amounts of vuggy and intercrystalline porosity.

The mud gas curve remained steady at 25-35 units over the interval.

Conclusion:

The Franklin Mountain Formation contains local vuggy porosity but no shows. Further evaluation on wireline data is necessary.

Formation Evaluations

Storage Units:

Metric

Kelly Bushing Elevation: 252.10
Ground Elevation: 245.90

Casing Flange Elevation:

All Depths Measured from Kelly Bushing Elevation

Group:
Formation: Saline River
Member:
Boundary Type: conformable
Fault Type:

Era:
Series:
Period: Cambrian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	1235.50	1234.39	-982.29	
Log Top	1234.50	1233.39	-981.29	

Evaluation:

The Saline River Formation consists of mainly interbedded shale and siltstone, with minor dolomite. The shale is green, medium gray, also local red, platy to blocky, dolomitic, trace disseminated pyrite. The siltstone is light gray, pink, dolomitic, quartz, slightly argillaceous, shaly lenses, tight, no shows. Minor dolomite stringers are light brown to brown, gray, cryptocrystalline, silty, argillaceous, dense, no shows.

The mud gas remained steady at 20 units throughout the interval.

Conclusion:

The Saline River in this interval contains no reservoir parameters or shows.

Group:
Formation: Saline River
Member: Saline River Salt
Boundary Type: conformable
Fault Type:

Era:
Series:
Period: Cambrian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	1277.50	1276.38	-1024.28	
Log Top	1277.00	1275.88	-1023.78	

Evaluation:

The Saline River Salt consists of approximately 126 metres of halite with minor shale interbeds. The shale transparent, pale red, orange, rounded fragments with eroded edges, soft, dense. The shale interbeds are light green to red, slightly dolomitic. Some of the samples in the salt section contain very little salt, even after the mud was salt saturated. This was a curiosity, but the potassium ion content of the mud system rose from 11 to 14% without any mud additives being used. It is possible that part of the section is sylvite and the mineral dissolved in the mud system before arriving at the shale shakers. However, a large gamma reaction (approx 500 units?) is expected with sylvite and this was not evident on the MWD gamma.

The mud gas remained steady at 20 units over the section.

Conclusion:

The Saline River Salt interval does not contain any porosity or shows.

Formation Evaluations

Storage Units:

Metric

Kelly Bushing Elevation: 252.10
Ground Elevation: 245.90

Casing Flange Elevation:

*All Depths Measured from Kelly Bushing Elevation***Group:****Formation:** Mount Cap**Member:****Boundary Type:** conformable**Fault Type:****Era:****Series:****Period:** Cambrian**Stage:****Age (Approx):** Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	1404.00	1402.81	-1150.71	
Log Top	1403.00	1401.81	-1149.71	

Evaluation:

The Mount Cap Formation is composed of predominantly shale with interbeds of dolomite, sandstone, and occasional siltstone. The shale is mostly light green, red, also gray, tabular to fissile, soft to firm, slightly glauconitic, with occasional silty and dolomitic laminations. The dolomite is medium brown, cryptocrystalline, marly, dense, no shows. The siltstone is light gray, reddish, trace greenish, dolomitic, slightly argillaceous, quartz, tight, no shows.

The sandstone, which is at 1450-1459 medium, is light gray, offwhite, transparent, fine grained, range very fine to occasional medium, subround to round, well to medium sorted, firm to friable, common loose grains, clean, quartz grains in siliceous cement, common glauconite, occasional dark minerals, trace pyrite, some secondary quartz overgrowths, patchy 3-7% intergranular porosity, no shows.

The mud gas curve remained steady at 20-25 units over the interval.

Conclusion:

The Mount Cap Formation contains poor intergranular porosity in a sandstone interval from 1450-1459 metres, but contains no shows and has no associated mud gas peaks. This porous sandstone should be checked again on wireline logs.

Formation Evaluations

Storage Units:

Metric

Kelly Bushing Elevation: 252.10
Ground Elevation: 245.90

Casing Flange Elevation:

All Depths Measured from Kelly Bushing Elevation

Group:
Formation: Mount Clark
Member:
Boundary Type: conformable
Fault Type:

Era:
Series:
Period: Cambrian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	1489.50	1488.23	-1236.13	
Log Top	1489.50	1488.23	-1236.13	

Evaluation:

The Mount Clark consists of a massive 79.5 metre sandstone from 1489.5 to 1569m. The contact with the overlying Mount Cap shale is sharp and conformable. The contact with the underlying Proterozoic Dismal Lakes is sharp and an angular unconformity. The basal contact is also marked by altered chlorite in both the overlying Mount Clark sand and underlying Proterozoic shale.

The sandstone is clear, occasionally pink, trace yellow, quartzose, fine grading downwards to very coarse grained, siliceous, very glauconitic at the top, rare trace pyrite, quartz overgrowths, sub rounded to sub angular, well sorted near the top grading downwards to poorly sorted, patchy intergranular porosity 5-10% (1497 to 1505m), predominantly tight, no shows. There are some minor green shale stringers throughout the sand.

Mud gas shows are poor over the entire sand including the porous sections. Mud gas values range from 22 to 31 units background with no peaks.

Conclusion:

The Mount Clark has poor reservoir development, however there is some porosity in the sand. The lack of mud gas and sample shows suggest the formation is wet.

Group:
Formation: Tweed Lake
Member:
Boundary Type: angular unconformable
Fault Type:

Era:
Series:
Period: Proterozoic
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	1575.00	1573.58	-1321.48	
Log Top	1570.70	1569.29	-1317.19	

Evaluation:

The Proterozoic consists of basalt. There is a 5 metre shale overlying the basalt which may be part of the Proterozoic or some type of detrital below the base of the Mount Clark sand.

The basalt is dark gray, occasionally red, speckled, green phenocrysts (chlorite or possible olivine?), transparent elong crystals, iron oxide staining, rare trace pyrite, altered appearance.

Conclusion:

The basalt has no hydrocarbon or reservoir potential.

Sample Descriptions

Storage Units:

Metric

0.00 to 20.00 (20.00)	100% Glacial Till Sandstone, varicolored, medium grained to pebbles, sub rounded, poorly sorted, unconsolidated quartz, pink feldspar, lithic granite fragments, trace pyrite, hornblende, chlorite, occasionally soft clay matrix (water soluble), no visible porosity, no shows.
20.00 to 25.00 (5.00)	100% Glacial Till Sandstone, varicolored, medium grained to pebbles, unconsolidated, medium gray soft clay matrix (water soluble), quartz, feldspar, lithic granite fragments, hornblende, pyritic, sub rounded to sub angular, poorly sorted, no visible porosity, no shows.
25.00 to 30.00 (5.00)	100% Glacial Till Sandstone, varicolored, medium grained to pebbles, poorly consolidated, clay matrix (water soluble), quartz, feldspar, lithic granite fragments, hornblende, chlorite, biotite, sub rounded to sub angular, poorly sorted, no visible porosity, no shows.
30.00 to 35.00 (5.00)	100% Glacial Till Sandstone light gray, orange, mottled, very fine to coarse grained, occasional very coarse, subangular to subround, medium to poor sorted, quartz grains, orange feldspar, lithic shale grains, occasional chlorite, abundant unconsolidated grains, also occasional well cemented fragments with rounded quartz grains, consol grains with no visible porosity.
35.00 to 40.00 (5.00)	100% Glacial Till Sandstone light gray, orange, mottled, very fine to coarse grained, subangular to subround, medium sorted, quartz grains, orange feldspar, lithic shale grains, occasional chlorite, abundant unconsolidated grains, also occasional well cemented fragments with rounded quartz grains, common sticky clay in raw sample.
40.00 to 45.00 (5.00)	80% Glacial Till Sandstone mostly unconsolidated, as above, with abundant sticky clay coating grains. 20% Shale gray, brown, soft, sticky clay, sandy in part.
45.00 to 50.00 (5.00)	80% Shale medium gray, gray, tabular to blocky, soft to firm, slightly pyritic, slightly silty in part, trace micaceous, flat luster. 20% Glacial Till Sandstone as above.
50.00 to 55.00 (5.00)	90% Shale medium gray, gray, tabular to blocky, soft to firm, slightly pyritic, slightly silty in part, trace micaceous, flat luster. 10% Glacial Till as above.

Sample Descriptions

Storage Units:

Metric

55.00 to 60.00 (5.00)	95% Shale gray, tabular to platy, firm, slightly micaceous, local carbonaceous flakes, occasional pyrite, flat luster, as above.
	5% Glacial Till as above.
60.00 to 65.00 (5.00)	90% Shale gray, tabular to platy, firm, slightly micaceous, local carbonaceous flakes, occasional pyrite, flat luster, trace Inoceramus fragments, as above.
	10% Sandstone light gray, transparent, rare orange, fine grained, subround, mostly unconsolidated grains, occasional orange feldspar, trace chlorite, cavings from till section.
65.00 to 70.00 (5.00)	95% Shale gray, tabular to platy, firm, slightly micaceous, local carbonaceous flakes, occasional pyrite, flat luster.
	5% Sandstone as above.
70.00 to 75.00 (5.00)	98% Shale gray, tabular to platy, firm, slightly micaceous, carbonaceous, occasional disseminated pyrite, flat luster.
	2% Sandstone as above.
75.00 to 80.00 (5.00)	100% Shale gray, tabular to platy, firm, slightly micaceous, carbonaceous, occasional disseminated pyrite, flat luster, occasional pyritized worm burrows.
80.00 to 85.00 (5.00)	100% Shale gray, tabular to platy, firm, slightly micaceous, carbonaceous, occasional disseminated pyrite, flat luster, occasional light brown siltstone stringers.
85.00 to 90.00 (5.00)	100% Shale as above.
90.00 to 95.00 (5.00)	95% Shale gray, tabular to platy, firm, slightly micaceous, carbonaceous, occasional disseminated pyrite, flat luster, occasional light brown siltstone stringers.
95.00 to 100.00 (5.00)	100% Shale dark gray, tabular to blocky, pyritic, carbonaceous flakes, rare siltstone stringers, brown, siliceous, quartz, tight, dead oil stain?
100.00 to 105.00 (5.00)	90% Shale dark gray, tabular to platy, pyritic, carbonaceous flakes.
	10% Siltstone brown, siliceous, quartz, pyritic, carbonaceous flakes, tight, dead oil stain?

Sample Descriptions

Storage Units:

Metric

105.00 to 110.00 (5.00)	100% Shale dark gray, blocky, occasionally platy, pyritic, carbonaceous flakes, with brown siltstone stringers.
110.00 to 115.00 (5.00)	100% Shale dark gray, blocky, soft, pyritic, carbonaceous flakes.
115.00 to 120.00 (5.00)	100% Shale dark gray, blocky, soft, pyritic, carbonaceous flakes.
120.00 to 125.00 (5.00)	100% Shale medium to dark gray, blocky, soft, trace pyritic, carbonaceous flakes, possible siderite.
125.00 to 130.00 (5.00)	100% Shale dark gray, blocky to platy, trace disseminated pyrite, carbonaceous flakes.
130.00 to 135.00 (5.00)	100% Shale dark gray, blocky, soft, trace pyritic, trace carbonaceous flakes, trace siderite?.
135.00 to 140.00 (5.00)	100% Shale dark gray, blocky to tabular, soft, trace pyritic, trace carbonaceous flakes, with light gray brown marlstone fragments.
140.00 to 145.00 (5.00)	100% Shale dark gray, blocky, soft, pyritic, sideritic, rare carbonaceous flakes.
145.00 to 150.00 (5.00)	100% Shale dark gray, blocky, soft, trace pyritic, carbonaceous flakes.
150.00 to 155.00 (5.00)	100% Shale dark gray, blocky, soft, trace pyritic.
155.00 to 160.00 (5.00)	70% Shale dark gray, blocky to platy, soft, trace pyritic, trace carbonaceous flakes. 30% Marlstone light brown, blocky, calcareous.
160.00 to 165.00 (5.00)	80% Shale dark gray, blocky, soft, pyritic, sandy, carbonaceous flakes. 20% Siltstone light gray, siliceous, argillaceous, quartz, argillite grains, dark minerals, trace pyritic, tight, no shows.
165.00 to 170.00 (5.00)	100% Shale dark gray, blocky, soft, silty, pyritic, carbonaceous flakes.
170.00 to 175.00 (5.00)	100% Shale dark gray, blocky, soft, silty, pyritic, carbonaceous flakes.

Sample Descriptions

Storage Units:

Metric

175.00 to 180.00 (5.00)	95% Sandstone light to medium gray, silty to very fine grained, siliceous, argillaceous, quartz, dark minerals, glauconitic, argillite grains, carbonaceous flakes, sub rounded, well sorted, tight, no shows.
	5% Shale dark gray, blocky, soft, disseminated pyrite, carbonaceous flakes.
180.00 to 185.00 (5.00)	95% Shale dark gray, blocky, soft, silty, pyritic, carbonaceous flakes.
	5% Sandstone light to medium gray, silty to very fine grained, siliceous, a Rogerella, quartz, dark minerals, glauconitic, trace pyritic, argillite grains, carbonaceous flakes, sub rounded, well sorted, tight, no shows.
185.00 to 190.00 (5.00)	100% Shale dark gray, blocky, soft, pyritic, carbonaceous flakes, with sandstone lenses.
190.00 to 195.00 (5.00)	70% Shale dark gray, blocky, soft, sandy, glauconitic, pyritic, carbonaceous flakes.
	30% Sandstone medium to light gray, silty to very fine grained, siliceous, argillaceous, quartz, dark minerals, glauconitic, very pyritic, argillite grains, sub rounded, well sorted, tight, no shows.
195.00 to 200.00 (5.00)	90% Shale dark gray, blocky, soft, silty, sandy, pyritic, carbonaceous flakes.
	10% Sandstone light to medium gray, silty to very fine grained, siliceous, argillaceous, quartz, dark minerals, glauconitic, pyritic, sub rounded, well sorted, tight, no shows.
200.00 to 205.00 (5.00)	100% No Sample (Polymer blinding off shakers to caught sample is muddy polymer)
205.00 to 210.00 (5.00)	100% No Sample (Polymer blinding off shaker to caught is all muddy polymer)
210.00 to 215.00 (5.00)	95% Sandstone clear, medium grained to pebbles, siliceous, poorly consolidated in part?, very pyritic in part, (argillaceous material in sand from water solitary shale?), predominately quartz, scattered lithic chert fragments, quartz overgrowths, sub rounded to sub angular, very poorly sorted, patchy intergranular porosity 14-16%, no shows.
	5% Shale dark gray, blocky, soft, disseminated pyrite, carbonaceous flakes.

Sample Descriptions

Storage Units:

Metric

215.00 to 220.00 (5.00)	60%	Sandstone clear, medium grained to pebbles, siliceous, very pyritic in part, predominately quartz, trace rare feldspar, quartz overgrowths, sub rounded to sub angular, very poorly sorted, no visible porosity, no shows.
	40%	Dolomite medium to light brown, cryptocrystalline, common disseminated pyrite, trace calcite & pyrite veining, stylolites, trace white chert fragments, rare trace small vugs, predominately dense, no shows.
220.00 to 225.00 (5.00)	95%	Dolomite mottled light to medium brown, cryptocrystalline, fragal, disseminated pyrite, trace coral?, trace intra fossil & minor leached vuggy porosity 2-4%, predominately dense, no shows.
	5%	Sandstone clear, light brown, fine to medium grained, siliceous, very pyritic, quartz, sub rounded, well sorted, tight, no shows.
225.00 to 230.00 (5.00)	100%	Dolomite mottled light to medium brown, cryptocrystalline to microcrystalline, fragal, stylolites, rare trace small vugs, predominately dense, trace patchy pyrobitumen.
230.00 to 235.00 (5.00)	100%	Dolomite mottled light to medium brown, cryptocrystalline, fragal, stylolites, trace pyritic, rare trace small vugs, predominately dense, trace patchy pyrobitumen.
235.00 to 240.00 (5.00)	95%	Anhydrite light brown, translucent, dense, no shows.
	5%	Dolomite medium brown, microcrystalline to cryptocrystalline, fragal, stylolites, dense, no shows.
240.00 to 245.00 (5.00)	95%	Anhydrite translucent, light brown, crystalline, rare dolomite lenses, dense.
	5%	Dolomite medium brown, cryptocrystalline, dense, trace patchy pyrobitumen.
245.00 to 250.00 (5.00)	60%	Anhydrite as above.
	40%	Dolomite light brown, light gray, microcrystalline to cryptocrystalline, slightly silty, with anhydritic patches, rare remnant fragmental texture, dense.
250.00 to 255.00 (5.00)	60%	Anhydrite light gray, transparent, microcrystalline to cryptocrystalline, hard, angular fragments, trace pyrite, dense.
	20%	Dolomite light gray, gray, microcrystalline, firm to hard, slightly silty, anhydritic, dense.

Sample Descriptions

Storage Units:

Metric

250.00 to 255.00 (5.00)	20% Shale gray, tabular to platy, fair, to soft, slightly micaceous, flat luster.
255.00 to 260.00 (5.00)	80% Anhydrite light brown, light gray, microcrystalline to cryptocrystalline, blocky, hard, with occasional dolomite stringers.
	15% Dolomite as above.
	5% Shale as above.
260.00 to 265.00 (5.00)	95% Anhydrite light gray, tan, transparent, microcrystalline to cryptocrystalline, hard, dense, as above.
	5% Dolomite as above.
265.00 to 270.00 (5.00)	85% Anhydrite light gray, tan, gray, microcrystalline to cryptocrystalline, tabular, hard, dense.
	15% Shale gray, tabular to platy, firm, slightly micaceous, flat luster.
270.00 to 275.00 (5.00)	90% Anhydrite light gray, tan, gray, microcrystalline to cryptocrystalline, tabular, hard, dense.
	10% Shale as above.
275.00 to 280.00 (5.00)	90% Anhydrite light gray, tan, gray, microcrystalline to cryptocrystalline, tabular, hard, dense.
	10% Shale as above.
280.00 to 285.00 (5.00)	100% Anhydrite as above.
285.00 to 290.00 (5.00)	95% Anhydrite light gray, tan, gray, microcrystalline to cryptocrystalline, tabular, hard, dense.
	5% Shale gray, minor dark gray, tabular to platy, firm, flat luster, as above.
290.00 to 295.00 (5.00)	95% Anhydrite as above.
	5% Shale as above.

Sample Descriptions

Storage Units:

Metric

295.00 to 300.00 (5.00)	90% Anhydrite light gray, tan, gray, microcrystalline to cryptocrystalline, tabular, hard, dense.
	5% Dolomite light brown, microcrystalline, hard, very anhydritic, dense, no shows.
	5% Shale as above.
300.00 to 305.00 (5.00)	70% Anhydrite light gray, tan, gray, microcrystalline to cryptocrystalline, tabular, hard, dense.
	30% Dolomite gray, mottled brown, microcrystalline, hard, very anhydritic, dense, with rare remnant fragmental texture, dense, no shows.
305.00 to 310.00 (5.00)	80% Anhydrite gray, light brown, cryptocrystalline, occasional dark patches, slightly dolomitic, dense, no shows.
	15% Dolomite light brown, gray, tan microcrystalline to cryptocrystalline, hard, very anhydritic in part, with remnant fragmental texture, dense, no shows.
	5% Shale as above.
310.00 to 315.00 (5.00)	95% Anhydrite as above.
	5% Shale gray, tabular to platy, firm, flat luster.
315.00 to 320.00 (5.00)	98% Anhydrite light brown, gray, cryptocrystalline, occasional dolomitic patches, dense, no shows.
	2% Shale as above.
320.00 to 325.00 (5.00)	80% Anhydrite light brown, translucent, cryptocrystalline, dense.
	20% Shale dark gray, blocky to platy, disseminated pyrite, carbonaceous flakes.
325.00 to 330.00 (5.00)	90% Anhydrite light brown, translucent, cryptocrystalline, dense.
	10% Shale medium to dark gray, blocky, pyritic, trace glauconitic, carbonaceous flakes.
330.00 to 335.00 (5.00)	90% Anhydrite translucent, light brown, cryptocrystalline, pyritic, dense.

Sample Descriptions

Storage Units:

Metric

330.00 to 335.00 (5.00)	5%	Dolomite medium brown, cryptocrystalline, dense, no shows.
	5%	Shale medium to dark gray, blocky, trace pyritic, trace glauconitic, trace carbonaceous flakes.
335.00 to 340.00 (5.00)	95%	Anhydrite light gray, light brown, translucent, cryptocrystalline, dense.
	5%	Shale dark gray, blocky, pyritic, carbonaceous flakes, trace silty, trace glauconitic.
340.00 to 345.00 (5.00)	95%	Anhydrite light gray, light brown, translucent, cryptocrystalline, dense.
	5%	Shale dark gray, blocky, carbonaceous flakes.
345.00 to 350.00 (5.00)	95%	Anhydrite light gray, light brown, cryptocrystalline, trace dolomite lenses, dense, no shows.
	5%	Shale dark gray, blocky, disseminated pyrite, carbonaceous flakes.
350.00 to 355.00 (5.00)	90%	Anhydrite light gray, light brown, cryptocrystalline, tabular, firm to hard, dense, as above.
	10%	Dolomite light gray, gray, cryptocrystalline blocky, hard, anhydritic, dense.
355.00 to 360.00 (5.00)	100%	Anhydrite light gray, light brown, cryptocrystalline, dense, no shows.
360.00 to 365.00 (5.00)	100%	Anhydrite light gray, light brown, cryptocrystalline, dense, no shows.
365.00 to 370.00 (5.00)	80%	Anhydrite light gray, light brown, cryptocrystalline, occasionally slightly argillaceous, occasionally dolomitic, dense.
	20%	Siltstone light gray, dolomitic, slightly argillaceous, very anhydritic, dense, no shows.
370.00 to 375.00 (5.00)	100%	Anhydrite off white, light brown, light gray, microcrystalline to cryptocrystalline, dense, no shows.
375.00 to 380.00 (5.00)	100%	Anhydrite light gray, light brown, cryptocrystalline, slightly argillaceous in part, silty lenses, dense, with dolomite lenses, brown, cryptocrystalline, anhydritic, dense, no shows.

Sample Descriptions

Storage Units:

Metric

380.00 to 385.00 (5.00)	90%	Anhydrite light gray, light brown, cryptocrystalline, dense, no shows.
	10%	Siltstone light gray, dolomitic, very anhydritic, dense, no shows.
385.00 to 390.00 (5.00)	100%	Anhydrite light brown, light gray, cryptocrystalline to microcrystalline, occasionally slightly argillaceous, trace pyritic, dense.
390.00 to 395.00 (5.00)	90%	Anhydrite light gray, light brown, microcrystalline to cryptocrystalline, dolomitic, dense.
	10%	Dolomite light brown, cryptocrystalline, anhydritic, stylolites, no visible porosity, no shows.
395.00 to 400.00 (5.00)	95%	Anhydrite light gray, light brown, microcrystalline to cryptocrystalline, dolomitic, dense, with interspersed siltstone lenses, light gray, dolomitic, argillaceous, anhydritic, quartz, tight, no shows.
	5%	Dolomite light brown, cryptocrystalline, anhydritic, dense, no shows.
400.00 to 405.00 (5.00)	60%	Dolomite light brown, microcrystalline, anhydritic, stylolites, dense, trace patchy pyrobitumen.
	40%	Anhydrite light gray, light brown, microcrystalline, dolomitic, dense, no shows, with trace siltstone lenses.
405.00 to 410.00 (5.00)	70%	Anhydrite light gray, trace brown, cryptocrystalline, dense, with interspersed siltstone lenses.
	30%	Siltstone light gray, dolomitic, argillaceous, anhydritic, quartz, disseminated pyrite, tight, no shows, with interspersed anhydrite.
410.00 to 415.00 (5.00)	100%	Anhydrite light brown, light gray, microcrystalline, with interspersed dolomitic & siltstone lenses.
415.00 to 420.00 (5.00)	70%	Anhydrite light gray, light brown, microcrystalline, dolomitic, stylolites, dense, no shows.
	30%	Dolomite light to dark brown, microcrystalline, anhydritic, stylolites, dense, patchy pyrobitumen.
420.00 to 425.00 (5.00)	95%	Anhydrite light gray, translucent, cryptocrystalline to microcrystalline, stylolites, dense.

Sample Descriptions

Storage Units:

Metric

420.00 to 425.00 (5.00)	5%	Dolomite light brown, cryptocrystalline, anhydritic, dense, no shows.
425.00 to 430.00 (5.00)	95%	Dolomite light brown, microcrystalline, anhydritic, trace pyritic, laminated in part, stylolites, patchy intercrystalline porosity 3-5%, no shows.
	5%	Anhydrite off white, light gray, cryptocrystalline, dense.
430.00 to 435.00 (5.00)	95%	Dolomite light brown, microcrystalline, trace cryptocrystalline, anhydritic, trace pyritic, laminated in part, stylolites, patchy intercrystalline porosity 3-5%, no shows.
	5%	Anhydrite off white, light gray, cryptocrystalline, dense.
435.00 to 440.00 (5.00)	95%	Dolomite light to medium brown, microcrystalline, fragal, anhydritic, stylolites, intercrystalline porosity 8-10%, patchy interstitial pyrobitumen.
	5%	Anhydrite off white, cryptocrystalline, dense.
440.00 to 445.00 (5.00)	95%	Dolomite light brown, microcrystalline, anhydritic, stylolites, patchy intercrystalline porosity 8-10%, rare trace patchy interstitial pyrobitumen.
	5%	Anhydrite off white, cryptocrystalline, dense.
445.00 to 450.00 (5.00)	60%	Dolomite light to medium brown, microcrystalline, sucrosic, anhydritic, trace pyritic, stylolites, slightly calcareous in part, intercrystalline & minor vuggy porosity 12-14%, no shows.
	40%	Anhydrite off white, light gray, microcrystalline to cryptocrystalline, dolomitic, dense.
450.00 to 455.00 (5.00)	100%	Dolomite light to medium brown, microcrystalline, sucrosic, fragmental, anhydritic, trace pyritic, Bryozoa?, Ostracods, rare trace silty lenses, also calcareous in part, patchy intercrystalline & minor vuggy porosity 12-14%, no shows.
455.00 to 460.00 (5.00)	95%	Anhydrite off white, light brown, cryptocrystalline, fragal, inspd with shaly lenses, dense.
	5%	Dolomite medium brown, microcrystalline, anhydritic, dense, no shows.
460.00 to 465.00 (5.00)	70%	Dolomite light to medium brown, microcrystalline, fragmental, anhydritic, stylolites, local calcareous, trace pyritic, no visible porosity, no shows.

Sample Descriptions

Storage Units:

Metric

460.00 to 465.00 (5.00)	30% Anhydrite white, light brown, cryptocrystalline, stylolites, dense.
465.00 to 470.00 (5.00)	50% Dolomite light to medium brown, microcrystalline, fragmental, anhydritic, also local calcareous, stylolites, trace pyritic, no visible porosity, no shows.
	50% Limestone light gray, beige, lime mudstone, slightly dolomitic, occasional fragmental texture, with occasional ostracods, bioclastic rmns, common stylolites, also occasional coarse calcite rhombs, vein infill?, dense.
470.00 to 475.00 (5.00)	55% Dolomite light gray, tabular, microcrystalline to cryptocrystalline, blocky, calcareous in part, with limy stringers, trace stylolites, dense, no shows.
	45% Limestone brown, tan, minor light gray, lime mudstone, with occasional fragmental texture, rare crinoids, common stylolites, dolomitic, dense, no shows.
475.00 to 480.00 (5.00)	95% Dolomite light gray, beige, tabular, microcrystalline, blocky, firm, sucrosic texture, slightly calcareous in part, occasional remnant fragmental texture, also local anhydrite, occasional stylolites, patchy 2-5% intercrystalline porosity, trace bitumen.
	5% Limestone as above.
480.00 to 485.00 (5.00)	90% Dolomite light gray, beige, tabular, microcrystalline to very fine crystalline, blocky, firm, abundant sucrosic texture, slightly calcareous in part, also local anhydritic, patchy 3-7% intercrystalline porosity, rare bitumen.
	10% Sawdust lost circulation material.
485.00 to 490.00 (5.00)	80% Anhydrite white, light brown, tan, cryptocrystalline, tabular, firm to hard, dense, occasional dolomite stringers.
	15% Dolomite as above, mostly dense, no shows.
	5% Limestone brown, tan, minor light gray, lime mudstone, with rare fragmental texture, dolomitic, dense, no shows.
490.00 to 495.00 (5.00)	85% Anhydrite white, light brown, tan, cryptocrystalline, tabular, firm to hard, dense, occasional dolomitic.

Sample Descriptions

Storage Units:

Metric

490.00 to 495.00 (5.00)	15% Dolomite light brown, tan, microcrystalline, firm, sucrosic texture, anhydritic, slightly calcareous, trace -2% intercrystalline porosity, no shows.
495.00 to 500.00 (5.00)	95% Anhydrite as above.
	5% Dolomite as above.
500.00 to 505.00 (5.00)	95% Anhydrite white, light brown, tan, cryptocrystalline, tabular, firm to hard, dense, occasional dolomitic.
	5% Dolomite light brown, gray, cryptocrystalline, tabular, hard, dense, occasional stylolites.
505.00 to 510.00 (5.00)	90% Anhydrite as above.
	10% Shale light green, tabular, dolomitic, grading to argillaceous dolomite.
510.00 to 515.00 (5.00)	100% Anhydrite white, light brown, tan, cryptocrystalline, tabular, firm to hard, dense, occasional dolomitic, local floating rounded quartz grains, dense.
515.00 to 520.00 (5.00)	90% Anhydrite white, light brown, tan, cryptocrystalline, tabular, firm to hard, dense, occasional dolomitic laminations.
	10% Dolomite light gray, tan, cryptocrystalline, hard, anhydritic, rare sandy, dense.
520.00 to 525.00 (5.00)	95% Anhydrite white, light brown, tan, cryptocrystalline, tabular, firm to hard, dense, occasional dolomitic.
	5% Dolomite as above.
525.00 to 530.00 (5.00)	85% Anhydrite white, light brown, tan, cryptocrystalline, tabular, firm to hard, dense, occasional dolomitic stringers.
	15% Dolomite light gray, buff, tan, cryptocrystalline, hard, tabular, anhydritic, dense.
530.00 to 535.00 (5.00)	85% Anhydrite as above.

Sample Descriptions

Storage Units:

Metric

530.00 to 535.00 (5.00)	15% Dolomite light gray, buff, tan, cryptocrystalline, hard, tabular, anhydritic, occasionally sandy, silty, with siltstone stringers, dense.
535.00 to 540.00 (5.00)	90% Anhydrite white, beige, cryptocrystalline to microcrystalline, firm, occasionally with dolomite stringers, dense, no shows.
	10% Dolomite buff, light gray, cryptocrystalline, blocky, very anhydritic, dense.
540.00 to 545.00 (5.00)	90% Anhydrite white, beige, cryptocrystalline to microcrystalline, firm, occasionally with dolomite stringers, dense, no shows.
	10% Dolomite as above, very anhydritic.
545.00 to 550.00 (5.00)	95% Anhydrite as above.
	5% Dolomite as above.
550.00 to 555.00 (5.00)	100% Anhydrite as above.
555.00 to 560.00 (5.00)	60% Dolomite tan, medium brown, cryptocrystalline, anhydritic, stylolites, rare dolomite rhombs (in matrix), dense, no shows.
	35% Anhydrite light gray, white, cryptocrystalline, dense.
	5% Shale green, light gray, blocky, dolomitic.
560.00 to 565.00 (5.00)	50% Dolomite light gray cryptocrystalline, argillaceous, silty, dense, no shows.
	30% Dolomite light brown, microcrystalline, anhydritic, dense, no shows.
	20% Anhydrite light gray, off white, cryptocrystalline, dense.
565.00 to 570.00 (5.00)	60% Anhydrite off white, cryptocrystalline, occasionally inspd with green shaly lenses, dense.
	30% Shale greenish, gray, blocky, dolomitic, anhydritic.

Sample Descriptions

Storage Units:

Metric

565.00 to 570.00 (5.00)	10% Dolomite tan, microcrystalline, anhydritic, dense, no shows.
570.00 to 575.00 (5.00)	70% Marlstone light gray, greenish, dolomitic, anhydritic, trace disseminated pyrite, dense.
	30% Anhydrite off white, cryptocrystalline, dense.
575.00 to 580.00 (5.00)	40% Dolomite light gray, cryptocrystalline, anhydritic, slightly argillaceous, dense, no shows.
	30% Anhydrite off white, light gray, cryptocrystalline, dense.
	30% Marlstone light gray, greenish, dolomitic.
580.00 to 585.00 (5.00)	40% Anhydrite off white, light gray, cryptocrystalline, dense.
	40% Marlstone light gray, greenish, dolomitic, trace pyritic, dense.
	20% Dolomite light gray, cryptocrystalline, argillaceous, anhydritic, dense, no shows.
585.00 to 590.00 (5.00)	80% Anhydrite light gray, brownish, microcrystalline to cryptocrystalline, dolomitic, dense, no shows.
	20% Marlstone greenish, gray, dolomitic, dense, with siltstone lenses, light gray, dolomitic, argillaceous, quartz, tight, no shows.
590.00 to 595.00 (5.00)	80% Anhydrite off white, light gray, cryptocrystalline, dense.
	20% Shale green, platy to blocky, dolomitic, anhydritic, grading to dolomitic marlstone.
595.00 to 600.00 (5.00)	60% Anhydrite light gray, cryptocrystalline, interspersed with shale & marlstone lenses, dense.
	40% Shale greenish, gray, blocky, dolomitic, anhydritic, grading to marlstone.
600.00 to 605.00 (5.00)	40% Dolomite beige, light gray, cryptocrystalline, anhydritic, argillaceous, dense, no shows.
	30% Anhydrite light gray, off white, cryptocrystalline, dense.

Sample Descriptions

Storage Units:

Metric

600.00 to 605.00 (5.00)	30% Marlstone greenish, light gray, blocky to platy, dolomitic, dense.
605.00 to 610.00 (5.00)	40% Marlstone light gray, greenish, dolomitic, anhydritic, silty, dense.
	30% Anhydrite light gray, off white, trace dolomitic, dense.
	30% Dolomite beige, cryptocrystalline, anhydritic, dense, no shows.
610.00 to 615.00 (5.00)	40% Dolomite beige, light gray, cryptocrystalline, Crinoid stems, anhydritic, dense, no shows.
	40% Marlstone light gray, greenish, dolomitic, silty.
	20% Anhydrite light gray, off white, cryptocrystalline, dense.
615.00 to 620.00 (5.00)	40% Anhydrite light gray, cryptocrystalline, interspersed with marly lenses, dense.
	30% Dolomite beige, cryptocrystalline, anhydritic, argillaceous, dense, no shows.
	30% Marlstone light gray, greenish, dolomitic, silty, dense, grading to green shale.
620.00 to 625.00 (5.00)	60% Shale green, light gray, platy to blocky, dolomitic, silty.
	20% Anhydrite light gray, light brown, cryptocrystalline, dense, no shows.
	20% Dolomite beige, light gray, cryptocrystalline, argillaceous, silty, dense, no shows.
625.00 to 630.00 (5.00)	70% Shale red, platy, dolomitic, silty, anhydritic.
	30% Anhydrite light gray, brownish, cryptocrystalline, dense.
630.00 to 635.00 (5.00)	70% Shale red, platy, dolomitic, silty, anhydritic.
	30% Anhydrite light gray, brownish, cryptocrystalline, dense.
635.00 to 640.00 (5.00)	80% Anhydrite light gray, brownish, cryptocrystalline, dense.

Sample Descriptions

Storage Units:

Metric

635.00 to 640.00 (5.00)	20% Shale red, green, platy, dolomitic, anhydritic, silty.
640.00 to 645.00 (5.00)	60% Dolomite light brown, cryptocrystalline, very silty, anhydritic, dense, no shows.
	30% Siltstone light gray, light brown, very dolomitic, quartz, tight, no shows.
	5% Anhydrite light brown, light gray, cryptocrystalline, trace microcrystalline, dolomitic, dense.
	5% Shale red, platy, dolomitic, silty.
645.00 to 650.00 (5.00)	40% Anhydrite light brown, light gray, cryptocrystalline, dense, interspersed with shale & siltstone.
	40% Siltstone green, red, dolomitic, argillaceous, anhydritic, quartz, tight, no shows.
	20% Shale red, green, platy to blocky, dolomitic, silty.
650.00 to 655.00 (5.00)	70% Anhydrite light gray, light brown, cryptocrystalline, dense, with interspersed siltstone lenses.
	30% Siltstone light gray, greenish, dolomitic, argillaceous, quartz, tight, no shows.
655.00 to 660.00 (5.00)	95% Anhydrite off white, light gray, cryptocrystalline to microcrystalline, dense.
	5% Siltstone green, red, dolomitic, argillaceous, quartz, tight, no shows.
660.00 to 665.00 (5.00)	40% Anhydrite light brown, light gray, cryptocrystalline, dense, with interspersed siltstone.
	40% Siltstone greenish, gray, dolomitic, argillaceous, anhydritic, quartz, tight, no shows.
	20% Dolomite tan, cryptocrystalline, Crinoid stems, dense, no shows.
665.00 to 670.00 (5.00)	70% Anhydrite light brown, light gray, cryptocrystalline to microcrystalline, dolomitic, dense, with interspersed siltstone.
	30% Siltstone green, occasionally red, light gray, dolomitic, very argillaceous, anhydritic, tight, no shows.

Sample Descriptions

Storage Units:

Metric

670.00 to 675.00 (5.00)	70% Anhydrite light brown, light gray, cryptocrystalline to microcrystalline, rare trace pyrite, dense, no shows.
	30% Siltstone red, green, light gray, dolomitic, argillaceous, anhydritic, tight, no shows.
675.00 to 680.00 (5.00)	75% Siltstone red, green, light gray, dolomitic, argillaceous, rare disseminated pyrite, tight, no shows.
	20% Dolomite tan, cryptocrystalline, silty, dense, no shows.
	5% Anhydrite light brown, cryptocrystalline, dense.
680.00 to 685.00 (5.00)	40% Anhydrite beige, light gray, cryptocrystalline, dolomitic, dense.
	30% Shale green, red, platy, dolomitic, silty.
	30% Siltstone red, green, light gray, dolomitic, argillaceous, quartz, tight, no shows.
685.00 to 690.00 (5.00)	40% Anhydrite as above.
	30% Dolomite light gray, buff, mottled, cryptocrystalline, slightly silty, anhydritic, trace remnant fragmental texture, dense, no shows.
	30% Siltstone light red, orange, mottled, blocky, firm to hard, sandy, anhydritic, tight, no shows.
690.00 to 695.00 (5.00)	50% Anhydrite light gray, buff, minor orange, cryptocrystalline, hard, silty lenses, dolomitic in part.
	30% Dolomite light gray, buff, mottled, cryptocrystalline, slightly silty, anhydritic, trace remnant fragmental texture, dense, no shows.
	20% Siltstone as above.
695.00 to 700.00 (5.00)	45% Siltstone light gray, green, minor red, very dolomitic, slightly pyritic, anhydrite, dense, no shows.
	35% Dolomite light gray, buff, cryptocrystalline, tabular, hard, dense.

Sample Descriptions

Storage Units:

Metric

695.00 to 700.00 (5.00)	20% Anhydrite as above.
700.00 to 705.00 (5.00)	60% Anhydrite beige, light gray, cryptocrystalline, hard, tabular, dolomitic in part, occasional silty stringers, dense, no shows.
	20% Shale green, tabular, firm, tabular, dolomitic, trace pyritic.
	20% Siltstone as above.
705.00 to 710.00 (5.00)	55% Anhydrite light gray, buff, tan, cryptocrystalline, blocky, hard, dense.
	45% Dolomite gray, buff, light brown, cryptocrystalline, hard, dense, rare 3-6% intercrystalline, moldic porosity, occasional dolomite rhombs in pores, no shows.
710.00 to 715.00 (5.00)	50% Anhydrite white, light brown, buff, cryptocrystalline, blocky, hard, dolomitic, grading to anhydritic dolomite, dense, no shows.
	50% Dolomite light gray, brown, buff, cryptocrystalline, blocky, firm to hard, compact, dense, slightly anhydritic.
715.00 to 720.00 (5.00)	50% Dolomite light brown, tabular, beige, cryptocrystalline, tabular, firm to hard, slightly anhydritic, slightly pyritic, occasional remnant fragmental texture, dense.
	35% Anhydrite as above.
	15% Shale green, gray, tabular, dolomitic, firm, with abundant disseminated pyrite, flat luster.
720.00 to 725.00 (5.00)	70% Dolomite gray, buff, light brown, cryptocrystalline, blocky, anhydritic, rare remnant fragmental texture, dense, no shows.
	30% Anhydrite light brown, gray, mottled, cryptocrystalline, hard, dolomitic, with dolomite stringers, dense, no shows.
725.00 to 730.00 (5.00)	45% Anhydrite light brown, gray, mottled, cryptocrystalline, hard, dolomitic, with dolomite stringers, also soft, chalky texture, rock flour?, dense, no shows.
	35% Dolomite as above.

Sample Descriptions

Storage Units:

Metric

725.00 to 730.00 (5.00)	20% Siltstone light gray, minor pale red, blocky, firm to hard, dolomitic, also anhydritic, tight, no shows.
730.00 to 735.00 (5.00)	65% Dolomite gray, brown, cryptocrystalline, hard, blocky, silty, slightly anhydritic, dense.
	20% Siltstone light gray, minor pale red, blocky, firm to hard, dolomitic, also anhydritic, tight, no shows.
	15% Anhydrite as above.
735.00 to 740.00 (5.00)	75% Dolomite light gray, tan, cryptocrystalline, hard, slightly silty in part, trace remnant fragmental texture, dense.
	15% Anhydrite as above.
	10% Siltstone as above.
740.00 to 745.00 (5.00)	80% Dolomite light brown, gray, beige, cryptocrystalline, tabular, hard, dense, occasional silty stringers.
	10% Shale green, gray, tabular to fissile, occasional disseminated pyrite, very dolomitic.
	10% Siltstone as above.
745.00 to 750.00 (5.00)	85% Dolomite light brown, gray, beige, cryptocrystalline, tabular, hard, patchy 3-7% intercrystalline, vug porosity, with minor bitumen in pores.
	15% Siltstone light gray, rare pale red, blocky, very dolomitic, grading to silty dolomite, tight.
750.00 to 755.00 (5.00)	70% Dolomite as above, mostly dense.
	20% Siltstone light gray, pale orange, blocky, hard, slightly anhydritic, very dolomitic, tight.
	10% Shale green, tabular, dolomitic, occasionally pyritic.
755.00 to 760.00 (5.00)	90% Dolomite light brown, gray, beige, cryptocrystalline, tabular, hard, slightly silty, patchy tr-2% intercrystalline, with minor bitumen in pores.

Sample Descriptions

Storage Units:

Metric

755.00 to 760.00 (5.00)	10% Siltstone light gray, minor pale red, blocky, firm to hard, dolomitic, also anhydritic, tight, no shows.
760.00 to 765.00 (5.00)	95% Dolomite light gray, light brown, microcrystalline, blocky, firm to hard, silty in part, with patchy trace to 2% intercrystalline, vuggy porosity, with occasional bitumen in pores.
	5% Siltstone light gray, gray, blocky, very dolomitic, grading to silty dolomite, tight, no shows.
765.00 to 770.00 (5.00)	98% Dolomite light gray, light brown, microcrystalline, blocky, firm to hard, slightly silty in part, with patchy 4-6% intercrystalline, vuggy porosity, with common dolomite rhombs, with occasional bitumen partly plugging pores.
770.00 to 775.00 (5.00)	95% Dolomite light gray, light brown, microcrystalline to cryptocrystalline, blocky, firm to hard, slightly silty in part, with patchy 1-2% intercrystalline, with common dolomite rhombs, with occasional bitumen partly plugging pores.
	5% Anhydrite light gray, buff, cryptocrystalline, blocky, hard, dense.
775.00 to 780.00 (5.00)	100% Dolomite light gray, light brown, cryptocrystalline, blocky, firm to hard, trace stylolites, local anhydrite patches, with patchy trace intercrystalline porosity, with occasional bitumen partly plugging pores.
780.00 to 785.00 (5.00)	100% Dolomite light brown, light gray, microcrystalline, trace pyritic, silty lenses, stylolites, clear calcite crystals, trace patchy intercrystalline porosity 1-3%, predominately dense, no shows.
785.00 to 790.00 (5.00)	100% Dolomite tan, microcrystalline, trace stylolites, scattered clear calcite crystals, patchy intercrystalline porosity 4-6%, no shows.
790.00 to 795.00 (5.00)	100% Dolomite tan, cryptocrystalline to microcrystalline, rare stylolites, rare trace pyrite, trace clear calcite crystals, no visible porosity, no shows.
795.00 to 800.00 (5.00)	100% Dolomite tan, light brown, microcrystalline to cryptocrystalline, rare stylolites, trace clear calcite crystals, rare patchy vuggy porosity, predominately dense, no shows.
800.00 to 805.00 (5.00)	100% Dolomite tan, cryptocrystalline to microcrystalline, rare stylolites, rare trace pyrite, trace clear calcite crystals, dense, no shows.

Sample Descriptions

Storage Units:

Metric

805.00 to 810.00 (5.00)	100% Dolomite light to medium brown, microcrystalline to cryptocrystalline, stylolites, laminated algae mats?, trace pyritic, trace clear calcite crystals, trace patchy intercrystalline 4-6%, predominately dense, rare trace patchy pyrobitumen.
810.00 to 815.00 (5.00)	100% Dolomite mottled buff, light to medium brown, microcrystalline, fragmental wackestone, bioclastic debris, Ostracods?, oolites, trace pyritic, stylolites, clear calcite crystals, patchy vuggy & intercrystalline porosity 4-6%, no shows.
815.00 to 820.00 (5.00)	100% Dolomite mottled light to medium brown, microcrystalline, fragmental wackestone, oolites, stylolites, trace clear calcite crystals, dense, no shows.
820.00 to 825.00 (5.00)	100% Dolomite medium to light brown, microcrystalline, stylolites, indistinct fossil fragments, rare pyrite, trace clear calcite crystals, dense, no shows.
825.00 to 830.00 (5.00)	100% Dolomite mottled light to medium brown, microcrystalline, bioclastic debris, algae mats, stylolites, Crinoids, vuggy & intercrystalline porosity 4-6%, trace patchy pyrobitumen.
830.00 to 835.00 (5.00)	100% Dolomite mottled light to medium brown, microcrystalline, disseminated pyrite, stylolites, calcite veining, laminated algae mats, patchy intercrystalline & trace moldic porosity 6-8%, no shows.
835.00 to 840.00 (5.00)	100% Dolomite medium brown, microcrystalline to cryptocrystalline, cherty, trace algae mats, stylolites, trace disseminated pyrite, calcite veining, trace clear calcite crystals, dense, no shows.
840.00 to 845.00 (5.00)	100% Dolomite mottled light to medium brown, microcrystalline, fragmental wackestone, trace cherty, trace pyritic, Brachiopods, Crinoids, stylolites, algae mats, dense, no shows.
845.00 to 850.00 (5.00)	100% Dolomite tan, light brown, microcrystalline, trace cherty, trace pyritic, stylolites, calcite veining, bioclastic debris, possible coral?, dense, no shows.
850.00 to 855.00 (5.00)	100% Dolomite tan, light brown, microcrystalline, trace pyritic, stylolites, calcite veining, remnant bioclastic debris, dense, no shows.
855.00 to 860.00 (5.00)	100% Dolomite tan, light brown, microcrystalline, trace pyritic, stylolites, occasional calcite veins, remnant bioclastic debris, slightly silty, dense, no shows.
860.00 to 865.00 (5.00)	100% Dolomite tan, light brown, microcrystalline, trace pyritic, stylolites, occasional calcite veins, remnant bioclastic debris, slightly silty, dense, no shows.

Sample Descriptions

Storage Units:

Metric

865.00 to 870.00 (5.00)	100%	Dolomite tan, light brown, microcrystalline to cryptocrystalline, trace pyritic, stylolites, occasional calcite veins, slightly silty, dense, no shows.
870.00 to 875.00 (5.00)	100%	Dolomite tan, light brown, microcrystalline, occasional remnant fragmental texture, oolites?, trace pyritic, stylolites, slightly silty, dense, no shows.
875.00 to 880.00 (5.00)	100%	Dolomite tan, light brown, microcrystalline to cryptocrystalline, trace pyritic, stylolites, trace cherty, clear calcite crystals, dense, no shows.
880.00 to 885.00 (5.00)	100%	Dolomite light brown, cryptocrystalline, slightly argillaceous, trace pyritic, stylolites, trace cherty, dense, no shows.
885.00 to 890.00 (5.00)	100%	Dolomite tan, light brown, microcrystalline to cryptocrystalline, remnant fragmental texture, indistinct fossil fragments, stylolites, trace pyritic, trace vuggy porosity, predominately dense, no shows.
890.00 to 895.00 (5.00)	100%	Dolomite tan, light brown, microcrystalline to cryptocrystalline, trace remnant fragmental texture, trace pyrite veining, stylolites, trace clear calcite crystals, rare trace vuggy porosity, predominately dense, no shows.
895.00 to 900.00 (5.00)	100%	Dolomite tan, brown, gray, microcrystalline to cryptocrystalline, trace remnant fragmental texture, trace pyrite veining, stylolites, trace clear calcite crystals, predominately dense, no shows.
900.00 to 905.00 (5.00)	100%	Dolomite tan, brown, gray, minor mottled dark gray, microcrystalline, common remnant fragmental texture, corals?, trace pyrite veining, stylolites, trace light gray white speckled chert occasional calcite crystals, predominately dense, no shows.
905.00 to 910.00 (5.00)	100%	Dolomite tan, brown, gray, microcrystalline, common remnant fragmental texture, crinoids?, trace pyrite veining, stylolites, trace light gray white speckled chert, occasional calcite crystals, predominately dense, no shows.
910.00 to 915.00 (5.00)	100%	Dolomite tan, brown, microcrystalline, common remnant fragmental texture, crinoids, trace silty lenses, rare stylolites, trace light gray chert, occasional calcite crystals, predominately dense, no shows.
915.00 to 920.00 (5.00)	55%	Dolomite tan, brown, microcrystalline, occasional remnant fragmental texture, trace silty, rare stylolites, trace light gray chert, occasional calcite crystals, predominately dense, no shows.

Sample Descriptions

Storage Units:

Metric

915.00 to 920.00 (5.00)	25%	Shale gray, minor dark gray, tabular to fissile, flat luster, with common disseminated pyrite, dolomitic.
	20%	Shale light light gray, gray, tabular, firm, with abundant disseminated pyrite, dolomitic.
920.00 to 925.00 (5.00)	60%	Shale gray, light gray, tabular to fissile, flat luster, with disseminated pyrite, slightly dolomitic, as above.
	40%	Dolomite tan, brown, microcrystalline, mosaic texture, trace silty lenses, occasional light gray chert, occasional calcite crystals, predominately dense, no shows.
925.00 to 930.00 (5.00)	70%	Dolomite light gray, tan, microcrystalline, blocky, slightly sandy, trace silty lenses, rare stylolites, trace light gray chert, common pyrite, common coarse calcite crystals, predominately dense, no shows.
	25%	Shale gray, light gray, tabular to blocky, slightly dolomitic,, with occasional disseminated pyrite.
	5%	Sandstone white. light gray, fine grained, subround, medium to poor sorted, quartz grains in dolomitic cement, common pyrite, tight, no shows.
930.00 to 935.00 (5.00)	85%	Dolomite light gray, beige, fine to rare medium crystalline, blocky, occasional stylolites, rare pyrite, trace porosity, with bitumen in pores.
	15%	Shale gray, minor green, fissile, tabular, pyritic, dolomitic, as above.
935.00 to 940.00 (5.00)	90%	Dolomite light gray, beige, microcrystalline to rare medium crystalline, blocky, occasional stylolites, rare pyrite, with rare bitumen.
	10%	Shale gray, green, tabular, pyritic, as above.
940.00 to 945.00 (5.00)	95%	Dolomite light gray, beige, fine to microcrystalline, blocky, occasional stylolites, rare pyrite, as above.
	5%	Shale as above.
945.00 to 950.00 (5.00)	100%	Dolomite light gray, beige, very fine crystalline to microcrystalline, silty, rare green shaly lenses, dense, no shows.

Sample Descriptions

Storage Units:

Metric

950.00 to 955.00 (5.00)	100%	Dolomite light gray, greenish, occasionally light brown, microcrystalline to very fine crystalline, silty, green shaly lenses, dense, no shows.
955.00 to 960.00 (5.00)	100%	Dolomite beige, light brown, light gray, microcrystalline, fragmental wackestone texture, remnant oolites?, very slightly silty, rare green shaly lenses, trace disseminated pyrite, dense, no shows.
960.00 to 965.00 (5.00)	100%	Dolomite buff, light gray, reddish, greenish, microcrystalline, silty, rare pyrite, trace stylolites, patchy shaly lenses (red & green), dense, no shows.
965.00 to 970.00 (5.00)	100%	Dolomite light gray, trace buff, trace reddish, microcrystalline, trace fragmental wackestone texture, trace oolites, trace silty, dense, no shows.
970.00 to 975.00 (5.00)	100%	Dolomite light gray, slightly reddish, slightly greenish, microcrystalline, trace remnant fragmental texture, silty, scattered white chert fragments, dense, no shows.
975.00 to 980.00 (5.00)	100%	Dolomite buff, light gray, trace reddish, microcrystalline, silty, rare stylolites, dense, no shows.
980.00 to 985.00 (5.00)	100%	Dolomite buff, light gray, trace reddish, trace greenish, microcrystalline, rare fragmental texture, trace oolites, silty, trace scattered white chert fragments, rare trace pyrite, dense, no shows.
985.00 to 990.00 (5.00)	100%	Dolomite buff, trace reddish, trace greenish, microcrystalline, very silty in part, common metasomatic white chert (oolitic), dense, no shows.
990.00 to 995.00 (5.00)	100%	Dolomite buff, light brown, trace reddish, trace greenish, microcrystalline, trace remnant fragmental texture, oolites, Crinoids, silty, very slightly argillaceous, trace stylolites, scattered white metasomatic chert, dense, no shows.
995.00 to 1,000.00 (5.00)	100%	Dolomite buff, light brown, trace reddish, trace greenish, microcrystalline, slightly silty, very slightly argillaceous, trace stylolites, scattered white chert, dense, no shows.
1,000.00 to 1,005.00 (5.00)	100%	Dolomite buff, light gray, reddish, greenish, occasionally brown, microcrystalline, trace silty, trace argillaceous, stylolites, dense, no shows.
1,005.00 to 1,010.00 (5.00)	100%	Dolomite light gray, mottled light brown, trace reddish, trace greenish, microcrystalline, trace remnant fragmental texture, oolites, trace silty, trace white chert fragments, rare pyrite, trace stylolites, dense, no shows.

Sample Descriptions

Storage Units:

Metric

1,010.00 to 1,015.00 (5.00)	100%	Dolomite light brown, light gray, trace greenish, trace reddish, microcrystalline, silty, stylolites, trace pyritic, trace white chert fragments, dense, no shows.
1,015.00 to 1,020.00 (5.00)	100%	Dolomite light to medium brown, light gray, microcrystalline, stylolites, trace clear calcite crystals, trace white chert fragments, with interspersed light gray siltstone lenses.
1,020.00 to 1,025.00 (5.00)	100%	Dolomite light brown, light gray, microcrystalline, trace remnant fragmental texture, oolites, silty, common metasomatic oolitic chert fragments, stylolites, disseminated pyrite, dense, no shows.
1,025.00 to 1,030.00 (5.00)	100%	Dolomite light to medium brown, trace light gray, microcrystalline, trace remnant fragmental texture, silty, stylolites, rare trace chert, disseminated pyrite, dense, rare trace interstitial pyrobitumen.
1,030.00 to 1,035.00 (5.00)	100%	Dolomite light to medium brown, light gray, microcrystalline to cryptocrystalline, silty, trace pyritic, stylolites, dense, no shows, with trace siltstone lenses, light gray, dolomitic, quartz, tight, no shows.
1,035.00 to 1,040.00 (5.00)	100%	Dolomite light brown, light to medium gray, microcrystalline, silty, trace disseminated pyrite, stylolites, dense, no shows, with medium gray shaly lenses.
1,040.00 to 1,045.00 (5.00)	100%	Dolomite light to medium brown, light gray, greenish, microcrystalline, trace very fine crystalline, fragmental texture, oolites, silty, argillaceous in part, stylolites, dense, no shows, with green shaly lenses.
1,045.00 to 1,050.00 (5.00)	100%	Dolomite tan, light gray, trace greenish, microcrystalline to cryptocrystalline, fragmental texture, oolites, silty, trace pyritic, dense, no shows, with light to medium gray shaly lenses.
1,050.00 to 1,055.00 (5.00)	98%	Dolomite tan, light gray, trace greenish, microcrystalline to cryptocrystalline, trace stylolites, silty, trace pyritic, dense, no shows, with light to medium gray shaly lenses.
	2%	Siltstone light gray, beige, tabular, firm to hard, slightly sandy, very dolomitic, grading to slt dolomite, tight, no shows.
1,055.00 to 1,060.00 (5.00)	97%	Dolomite tan, light gray, trace greenish, microcrystalline to cryptocrystalline, trace fragmental texture, occasional silty lenses, trace pyrite, dense, no shows, with light green shaly lenses.
	3%	Siltstone light gray, beige, buff, tabular, firm to hard, quartz grains in dolomitic cement, slightly argillaceous, trace pyrite, tight, no shows.

Sample Descriptions

Storage Units:

Metric

1,060.00 to 1,065.00 (5.00)	97%	Dolomite tan, light gray, trace greenish, microcrystalline to cryptocrystalline, trace fragmental texture, occasional silty lenses, local white speckled chert, trace pyrite, dense, no shows, with light green shaly lenses.
	3%	Siltstone light gray, bge, light reddish brown, tabular, firm to hard, quartz grains in dolomitic cement, slightly argillaceous, trace pyrite, tight, no shows.
1,065.00 to 1,070.00 (5.00)	95%	Dolomite tan, light gray, trace greenish, microcrystalline to cryptocrystalline, occasional silty lenses, trace pyrite, dense, no shows, with light green shaly lenses.
	3%	Siltstone as above.
	2%	Shale light green, tabular, dolomitic, firm.
1,070.00 to 1,075.00 (5.00)	95%	Dolomite light gray, tan, cryptocrystalline, occasional silty lenses, trace pyrite, trace fragmental texture, dense, trace stylolites.
	3%	Shale gray, minor dark gray, green, tabular, slightly pyritic, slightly dolomitic.
	2%	Siltstone light gray, beige, buff, tabular, firm to hard, quartz grains in dolomitic cement, slightly argillaceous, trace pyrite, tight, no shows.
1,075.00 to 1,080.00 (5.00)	96%	Dolomite tan, light gray, trace greenish, microcrystalline to cryptocrystalline, occasional silty lenses, trace pyrite, dense, no shows.
	4%	Siltstone light brown, tan, gray, tabular, firm, very dolomitic, grading to silty dolomite, slightly pyritic, slightly argillaceous in part, tight, no shows.
1,080.00 to 1,085.00 (5.00)	91%	Dolomite tan, light gray, microcrystalline, blocky, firm to hard, sucrosic in part, occasional silty lenses, occasional remnant oolites, trace pyrite, dense, no shows.
	5%	Shale gray, minor dark gray, firm, tabular, dolomitic, slightly pyritic.
	4%	Siltstone as above.
1,085.00 to 1,090.00 (5.00)	95%	Dolomite white, tan, light gray, microcrystalline, blocky, firm to hard, rare silty lenses, trace pyrite, trace stylolites, dense, no shows.

Sample Descriptions

Storage Units:

Metric

1,085.00 to 1,090.00 (5.00)	3%	Shale gray, minor light green, tabular, firm, fissile, slightly dolomitic.
	2%	Siltstone as above.
1,090.00 to 1,095.00 (5.00)	98%	Dolomite light gray, light to medium brown, microcrystalline, rare fragmental texture, silty, with occasional silty lenses, slightly argillaceous in part, stylolites, dense, no shows.
	2%	Shale gray, light green, tabular, dolomitic.
1,095.00 to 1,100.00 (5.00)	95%	Dolomite light brown, buff, light gray, microcrystalline, silty, trace disseminated pyrite, trace stylolites, dense, no shows.
	3%	Shale medium gray, greenish, blocky, dolomitic.
	2%	Siltstone light gray, greenish, dolomitic, quartz, tight, no shows, grading to greenish shale.
1,100.00 to 1,105.00 (5.00)	95%	Dolomite light brown, buff, light gray, microcrystalline, remnant fragmental texture, oolites, silty, stylolites, rare trace pyrite, rare trace white chert, dense, no shows.
	5%	Siltstone light gray, very slight trace greenish, very slight trace reddish, dolomitic, quartz, tight, no shows.
1,105.00 to 1,110.00 (5.00)	100%	Dolomite light brown, light gray, microcrystalline, remnant fragmental texture, oolites, silty, pyritic, stylolites, dense, no shows, with silty lenses.
1,110.00 to 1,115.00 (5.00)	100%	Dolomite mottled light brown, light gray, microcrystalline, fragmental texture, oolites, trace pyritic, stylolites, silty, trace cherty, dense, no shows, with silty lenses.
1,115.00 to 1,120.00 (5.00)	100%	Dolomite light brown, light gray, microcrystalline, trace remnant fragmental texture, trace oolites, trace pyritic, stylolites, silty, rare chert, patchy intercrystalline porosity 6-8%, no shows, with silty lenses.
1,120.00 to 1,125.00 (5.00)	100%	Dolomite light brown, buff, microcrystalline, trace cryptocrystalline, fragmental texture, Brachiopods, trace oolites, trace metasomatic chert, trace clear calcite crystals, pyritic, stylolites, trace shaly lenses, patchy intercrystalline & vuggy porosity 6-8%, no shows, with trace silty lenses.

Sample Descriptions

Storage Units:

Metric

1,125.00 to 1,130.00 (5.00)	100%	Dolomite tan, light brown, light gray, cryptocrystalline, trace microcrystalline, trace remnant fragmental texture, trace pyritic, stylolites, leached vuggy porosity 6-8%, (possible coral?), no shows.
1,130.00 to 1,135.00 (5.00)	100%	Dolomite tan, light brown, light gray, cryptocrystalline, silty, pyritic, stylolites, trace patchy leached porosity 8-10% (corals?), predominately dense, no shows, with trace light gray silty lenses.
1,135.00 to 1,140.00 (5.00)	100%	Dolomite light to medium brown, occasionally light gray, cryptocrystalline, occasional remnant fragmental texture, possible oolites?, silty, stylolites, trace pyritic, patchy leached vuggy porosity 8-10% (corals?), predominately dense, no shows, with trace light gray silty lenses.
1,140.00 to 1,145.00 (5.00)	95%	Dolomite tan, light brown, microcrystalline to cryptocrystalline, trace remnant fragmental texture, oolites, silty, stylolites, trace patchy leached vuggy porosity 6-8%, predominately dense, no shows.
	5%	Shale medium gray, blocky to platy, slightly dolomitic, trace pyritic.
1,145.00 to 1,150.00 (5.00)	100%	Dolomite buff, tan, light brown, cryptocrystalline to microcrystalline, trace remnant fragmental texture, oolites, trace pyritic, stylolites, silty, trace patchy leached vuggy porosity 6-8%, predominately dense, no shows, with rare silty & shaly lenses.
1,150.00 to 1,155.00 (5.00)	100%	Dolomite buff, tan, light brown, cryptocrystalline to microcrystalline, trace remnant fragmental texture, oolites, trace pyrite, trace stylolites, silty in part, trace patchy leached vuggy porosity 3-6%, predominately dense, no shows, with rare silty & shaly lenses.
1,155.00 to 1,160.00 (5.00)	100%	Dolomite buff, tan, light brown, microcrystalline, trace remnant fragmental texture, trace pyrite, occasional stylolites, silty lenses, trace patchy leached vuggy porosity 2-4%, predominately dense, no shows, with rare shaly lenses.
1,160.00 to 1,165.00 (5.00)	100%	Dolomite buff, tan, light brown, cryptocrystalline to microcrystalline, trace pyrite, occasional stylolites, mostly dense, no shows.
1,165.00 to 1,170.00 (5.00)	100%	Dolomite buff, tan, light brown, cryptocrystalline to microcrystalline, trace remnant fragmental texture, oolites, trace pyrite, occasional stylolites, sandstone, trace patchy leached vuggy porosity tr-2%, predominately dense, no shows, with rare shaly lenses.
1,170.00 to 1,175.00 (5.00)	100%	Dolomite buff, tan, light brown, cryptocrystalline to microcrystalline, trace pyrite, occasional stylolites, silty, trace patchy leached vuggy & intercrystalline porosity tr-2%, predominately dense, no shows, with rare shaly lenses.

Sample Descriptions

Storage Units:

Metric

1,175.00 to 1,180.00 (5.00)	100%	Dolomite buff, tan, light brown, cryptocrystalline to microcrystalline, trace pyrite, occasional stylolites, trace silty, predominately dense, no shows, with rare light green shaly lenses.
1,180.00 to 1,185.00 (5.00)	100%	Dolomite buff, tan, light brown, cryptocrystalline to microcrystalline, trace pyrite, occasional stylolites, trace silty, occasional remnant fragmental texture, predominately dense, no shows, with rare gray shaly lenses.
1,185.00 to 1,190.00 (5.00)	98%	Dolomite buff, tan, light brown, cryptocrystalline to rare microcrystalline, trace pyrite, occasional stylolites, trace silty, predominately dense, no shows, with rare gray shaly lenses.
	2%	Shale gray, green, tabular, firm, very dolomitic, grading to argillaceous dolomite.
1,190.00 to 1,195.00 (5.00)	98%	Dolomite buff, tan, light brown, microcrystalline, trace pyrite, remnant fragmental texture, occasional oolites, occasional stylolites, trace silty, predominately dense, no shows, with rare gray shaly lenses.
	2%	Shale gray, green, tabular, dolomitic, as above.
1,195.00 to 1,200.00 (5.00)	100%	Dolomite buff, tan, light brown, microcrystalline, trace pyrite, fragmental texture, occasional oolites, occasional stylolites, trace silty, trace patchy 0-2% intercrystalline, vuggy porosity, predominately dense, no shows, with rare gray shaly lenses.
1,200.00 to 1,205.00 (5.00)	100%	Dolomite buff, tan, light brown, microcrystalline, trace pyrite, fragmental texture, occasional stylolites, trace silty, local argillaceous stringers, no shows, with rare gray shaly lenses.
1,205.00 to 1,210.00 (5.00)	100%	Dolomite buff, light brown, light gray, microcrystalline to cryptocrystalline, trace pyrite, occasional stylolites, trace calcareous patches, slightly silty, local argillaceous stringers, no shows, with rare gray shaly lenses.
1,210.00 to 1,215.00 (5.00)	100%	Dolomite buff, brown, light gray, cryptocrystalline, argillaceous to marly in part, silty, trace disseminated pyrite, with light to medium gray shaly lenses.
1,215.00 to 1,220.00 (5.00)	40%	Shale light to medium gray, greenish, blocky, dolomitic.
	40%	Siltstone light gray, dolomitic, quartz, trace calcareous, trace pyritic, tight, no shows.
	20%	Dolomite tan, cryptocrystalline, dense, no shows.

Sample Descriptions

Storage Units:

Metric

1,220.00 to 1,225.00 (5.00)	40%	Dolomite light to medium brown, light gray, cryptocrystalline, stylolites, trace pyritic, argillaceous, silty, dense, no shows.
	30%	Marlstone medium to dark gray, dolomitic, disseminated pyrite.
	20%	Shale green, gray, blocky to platy, dolomitic.
	10%	Siltstone light gray, dolomitic, quartz, tight, no shows.
1,225.00 to 1,230.00 (5.00)	60%	Siltstone light gray, dolomitic, quartz, disseminated pyrite, rare glauconite, tight, no shows.
	30%	Dolomite tan, light brown, cryptocrystalline, pyritic, dense, no shows.
	10%	Marlstone medium gray, dolomitic, disseminated pyrite.
1,230.00 to 1,235.00 (5.00)	50%	Siltstone light gray, dolomitic, quartz, green shaly lenses, disseminated pyrite, tight, no shows, with interspersed green shale.
	30%	Shale green, platy, dolomitic, silty, disseminated pyrite, with interspersed siltstone.
	20%	Dolomite tan, light brown, cryptocrystalline, trace pyritic, dense, no shows.
1,235.00 to 1,240.00 (5.00)	50%	Siltstone light gray, dolomitic, argillaceous, quartz, pyritic, tight, no shows, with interspersed shale.
	40%	Shale green, gray, blocky, dolomitic, silty, disseminated pyrite, with interspersed siltstone.
	10%	Dolomite tan, cryptocrystalline, silty lenses, dense, no shows.
1,240.00 to 1,245.00 (5.00)	40%	Shale green, medium gray, trace red, platy to blocky, dolomitic, trace disseminated pyrite.
	30%	Dolomite light to medium brown, gray, cryptocrystalline, silty, argillaceous, dense, no shows.
	30%	Siltstone light gray, dolomitic, slightly argillaceous, quartz, pyritic, tight, no shows.

Sample Descriptions

Storage Units:

Metric

1,245.00 to 1,250.00 (5.00)	70%	Siltstone pink, light gray, dolomitic, slightly argillaceous, quartz, trace disseminated pyrite, tight, no shows.
	30%	Shale red, green, platy, dolomitic, with silty lenses.
1,250.00 to 1,255.00 (5.00)	60%	Siltstone light gray, pink, dolomitic, quartz, slightly argillaceous, shaly lenses, tight, no shows.
	40%	Shale red, green, medium gray, platy, dolomitic, trace micaceous, with silty lenses.
1,255.00 to 1,260.00 (5.00)	55%	Shale red, maroon, green, platy to blocky, dolomitic, occasionally micaceous.
	40%	Siltstone light gray, reddish, dolomitic, slightly argillaceous, trace shaly lenses, tight, no shows.
	5%	Dolomite buff, cryptocrystalline, silty, pyritic, dense, no shows.
1,260.00 to 1,265.00 (5.00)	50%	Shale green, red, mottled in part, platy, dolomitic, occasionally micaceous, with interspersed siltstone lenses.
	50%	Siltstone light gray, reddish, dolomitic, slightly argillaceous, quartz, tight, no shows, with interspersed shale lenses.
1,265.00 to 1,270.00 (5.00)	60%	Siltstone light gray, reddish, dolomitic, slightly argillaceous, quartz, rare dark specks, tight, no shows.
	40%	Shale red, green, maroon, platy, dolomitic, silty, occasionally micaceous.
1,270.00 to 1,275.00 (5.00)	55%	Siltstone light gray, reddish, dolomitic, slightly argillaceous, quartz, tight, no shows.
	40%	Shale red, green, maroon, mottled in part, platy, dolomitic, occasionally micaceous.
	5%	Dolomite dark brown, cryptocrystalline, slightly argillaceous, dense, no shows.
1,275.00 to 1,280.00 (5.00)	25%	Shale red red, orange, tabular, firm, slightly silty, dolomitic.

Sample Descriptions

Storage Units:

Metric

1,275.00 to 1,280.00 (5.00)	20%	Salt transparent, light gray, tabular fragments, microcrystalline, soft, also impure with shaly intbeds.
	20%	Shale grn light green, red patches, tabular, sft- firm, silty.
	20%	Siltstone light gray, red, tabular, firm, dolomitic, also argillaceous in part, tight, no shows.
	15%	Dolomite as above.
1,280.00 to 1,285.00 (5.00)	65%	Shale grn light green, minor dark green, tabular to fissile, dolomitic, as above.
	20%	Shale pale red, orange, firm, silty in part.
	15%	Salt transparent, tabular, microcrystalline, soft, appears eroded.
1,285.00 to 1,290.00 (5.00)	80%	Shale grn light green, tabular, occasional red patches, soft, as above.
	20%	Shale pale red, orange, tabular, green patches, soft, as above.
1,290.00 to 1,295.00 (5.00)	60%	Shale grn as above.
	20%	Salt transparent, rounded fragments, soft, eroded edges.
	20%	Shale as above.
1,295.00 to 1,300.00 (5.00)	90%	Salt transparent, pale orange, rrd fragments, eroded edges, as above.
	10%	Shale grn as above.
1,300.00 to 1,305.00 (5.00)	90%	Salt transparent, pale orange, rrd fragments, eroded edges, as above.
	10%	Shale grn light grn, minor red patches, tabular, soft to firm, dolomitic.
1,305.00 to 1,310.00 (5.00)	65%	Shale grn light green, firm to soft, tabular, occasional red patches, occasional silty stringers.

Sample Descriptions

Storage Units:

Metric

1,305.00 to 1,310.00 (5.00)	15%	Salt transparent, light brown, as above.
	10%	Shale pale red, soft, stringers in green shale.
	10%	Siltstone light gray, beige, blocky, dolomitic, firm to hard, tight, no shows.
1,310.00 to 1,315.00 (5.00)	80%	Shale grn light green, tabular, soft, occasional red patches, occasional siltstone stringers.
	20%	Siltstone light brown, pale red, orange, blocky, firm to soft, slightly dolomitic, tight, no shows.
1,315.00 to 1,320.00 (5.00)	55%	Shale grn light green, light gray, tabular, soft, with occasional silty stringers.
	35%	Salt transparent, light brown, rrd fragments, very soft, eroded edges.
	10%	Siltstone light gray, light brown, blocky, firm, dolomitic, tight, no shows.
1,320.00 to 1,325.00 (5.00)	75%	Shale grn light green, light gray, minor red patches, soft, blkly, as above.
	25%	Salt transparent, light brown, rrd fragments, very soft, eroded edges.
1,325.00 to 1,330.00 (5.00)	85%	Salt light gray, transparent, minor light brown, coarse rrd fragments, eroded edges, soft, as previous.
	15%	Shale grn light green, occasional red, tabular, soft, flat luster.
1,330.00 to 1,335.00 (5.00)	70%	Shale grn light green, light gray, very soft, sticky clay hydrated in sample, occasional red patches.
	20%	Shale red light red, tabular, very soft, occasional green patches, also occasional reddish patches,
	10%	Siltstone light gray, light brown, very argillaceous, soft.
1,335.00 to 1,340.00 (5.00)	65%	Shale grn light green, light gray, occasional red patches, tabular, soft, sticky when wet, disaggregates in water, occasional silty stringers.

Sample Descriptions

Storage Units:

Metric

1,335.00 to 1,340.00 (5.00)	30%	Shale red as above.
	5%	Salt light gray, transparent, tabular, rounded fragments, eroded edges.
1,340.00 to 1,345.00 (5.00)	90%	Shale green, mottled red, blocky to platy, dolomitic.
	10%	Salt light gray, transparent, tabular, eroded edges.
1,345.00 to 1,350.00 (5.00)	65%	Shale mottled green, red, orange, maroon, blocky to platy, dolomitic.
	30%	Siltstone light gray, reddish, dolomitic, slightly argillaceous, quartz, tight, no shows.
	5%	Salt halite, clear, translucent, crystalline, partially dissolved.
1,350.00 to 1,355.00 (5.00)	65%	Shale mottled green, red, maroon, orange, platy to blocky, dolomitic.
	35%	Salt halite, light gray, off white, translucent, crystalline, eroded edges.
1,355.00 to 1,360.00 (5.00)	90%	Salt halite, clear, translucent, crystalline, eroded edges.
	10%	Shale green, red, platy, dolomitic.
1,360.00 to 1,365.00 (5.00)	90%	Salt halite, clear, translucent, crystalline, eroded edges.
	10%	Shale green, red, platy.
1,365.00 to 1,370.00 (5.00)	90%	Salt halite, clear, occasionally reddish, translucent, crystalline, eroded edges.
	10%	Shale green, red, platy, dolomitic.
1,370.00 to 1,375.00 (5.00)	95%	Salt halite, clear, occasionally reddish, translucent, crystalline, eroded edges.
	5%	Shale green, red, platy, dolomitic.
1,375.00 to 1,380.00 (5.00)	95%	Salt halite, clear, occasionally reddish, translucent, crystalline.

Sample Descriptions

Storage Units:

Metric

1,375.00 to 1,380.00 (5.00)	5%	Shale green, platy, dolomitic.
1,380.00 to 1,385.00 (5.00)	100%	Salt halite, clear, light gray, translucent, crystalline, with shaly lenses.
1,385.00 to 1,390.00 (5.00)	100%	Salt halite, clear, translucent, crystalline, trace red & green shaly lenses.
1,390.00 to 1,395.00 (5.00)	95%	Salt halite, clear, trace reddish, translucent, crystalline.
	5%	Shale green, red, blocky, dolomitic.
1,395.00 to 1,400.00 (5.00)	70%	Salt halite, clear, translucent, light gray, crystalline.
	30%	Shale medium gray, trace green & red, blocky, dolomitic.
1,400.00 to 1,405.00 (5.00)	45%	Shale medium gray, trace green, trace red, platy.
	30%	Anhydrite light gray, light brown, microcrystalline, dense.
	20%	Siltstone light gray, reddish, dolomitic, slightly argillaceous, quartz, tight, no shows.
	5%	Salt halite, clear, translucent, crystalline.
1,405.00 to 1,410.00 (5.00)	45%	Shale medium gray, platy, dolomitic.
	40%	Dolomite medium brown, cryptocrystalline, marly, dense, no shows.
	10%	Anhydrite light gray, light brown, cryptocrystalline, dense.
	5%	Siltstone light to medium gray, dolomitic, argillaceous, quartz, disseminated pyrite, tight, no shows.
1,410.00 to 1,415.00 (5.00)	50%	Shale medium gray, green, trace red, platy, dolomitic.
	40%	Dolomite medium brown, cryptocrystalline, marly, trace pyritic, laminated, dense, no shows.

Sample Descriptions

Storage Units:

Metric

1,410.00 to 1,415.00 (5.00)	10%	Siltstone light gray, greenish, trace reddish, dolomitic, slightly argillaceous, quartz, tight, no shows.
1,415.00 to 1,420.00 (5.00)	50%	Marlstone light to medium brown, dolomitic, anhydritic, silty, trace pyritic, laminated, dense.
	50%	Shale medium gray, trace green, trace red, platy to blocky, dolomitic to marly.
1,420.00 to 1,425.00 (5.00)	70%	Shale medium gray, green, red, platy to blocky, dolomitic, pyritic.
	30%	Siltstone light gray, reddish, trace greenish, dolomitic, slightly argillaceous, quartz, tight, no shows.
1,425.00 to 1,430.00 (5.00)	60%	Shale mottled green, red, medium gray, platy, dolomitic.
	20%	Dolomite light to medium brown, cryptocrystalline, argillaceous, anhydrite lenses, dense, no shows.
	20%	Siltstone light gray, reddish, dolomitic, slightly argillaceous, quartz, tight, no shows.
1,430.00 to 1,435.00 (5.00)	70%	Shale grn light green, red, minor gray patches, tabular to fissile, soft to firm.
	30%	Shale red pale red, red, green patches, sft- firm, fissile, as above.
1,435.00 to 1,440.00 (5.00)	65%	Shale grn light green, red, minor gray patches, tabular to fissile, soft to firm.
	20%	Shale red as above.
	15%	Siltstone light gray, beige, blocky, firm to hard, quartz grains in dolomitic cement, slightly pyritic, tight, no shows.
1,440.00 to 1,445.00 (5.00)	70%	Shale grn light green, red, minor gray patches, tabular to fissile, soft to firm.
	20%	Shale red as above.
	10%	Dolomite light brown, mottled buff, microcrystalline, tabular, firm to hard, occasionally silty, rare remnant fragmental texture, dense, no shows.

Sample Descriptions

Storage Units:

Metric

1,445.00 to 1,450.00 (5.00)	65%	Shale light green, red, minor gray patches, tabular to fissile, soft to firm.
	25%	Dolomite light brown, mottled buff, tabular, microcrystalline matrix, also remnant fragmental texture, oolites?, also occasional dark micro laminations, algal?, slightly silty in part, dense, no shows.
	10%	Shale red as above.
1,450.00 to 1,455.00 (5.00)	55%	Sandstone light gray, offwh, transparent, fine grained, range very fine to occasional medium, subround to round, well to medium sorted, firm to friable, common loose grains, clean, quartz grains in siliceous cement, common glauconite, occasional dark minerals, trace pyrite, some secondary quartz overgrowths, patchy 2-6% intergranular porosity, no shows.
	25%	Shale medium gray, dark gray, tabular to fissile, firm.
	10%	Dolomite as above.
	10%	Shale grn as above.
1,455.00 to 1,460.00 (5.00)	70%	Shale grn light green, gray, tabular to fissile, firm, occasional siltstone stringers.
	30%	Sandstone light gray, offwh, transparent, fine grained, range very fine to occasional medium, subround to round, well to medium sorted, firm to friable, common loose grains, clean, quartz grains in siliceous cement, common glauconite, occasional dark minerals, trace pyrite, some secondary quartz overgrowths, patchy 3-7% intergranular porosity, no shows.
1,460.00 to 1,465.00 (5.00)	96%	Shale grn light green, minor red patches, fissile, firm to soft, flat luster.
	4%	Sandstone as above.
1,465.00 to 1,470.00 (5.00)	80%	Shale grn light green, minor red patches, fissile, firm to soft, flat luster.
	15%	Shale red as above.
	5%	Dolomite light brown, mottled buff, tabular, microcrystalline matrix, also remnant fragmental texture, slightly silty in part, dense, no shows.

Sample Descriptions

Storage Units:

Metric

1,470.00 to 1,475.00 (5.00)	90%	Shale gray, greenish gray, fissile, firm, slightly silty, with occasional siltstone laminations, common green & black glauconite, occasional pyrite, grading to green shale.
	10%	Shale red pale red, green patches, fissile, as above.
1,475.00 to 1,480.00 (5.00)	98%	Shale gray, greenish gray, fissile, firm, slightly silty, with occasional dolomitic laminations, common green glauconite, occasional pyrite, grading to green shale.
1,480.00 to 1,485.00 (5.00)	70%	Shale gray, greenish gray, tabular, firm, occasional red patches.
	20%	Sandstone light gray, beige, very fine grained, rare fine, subround to subangular, medium to well sorted, hard, clean, quartzose, quartz grains in siliceous cement, common pyrite, occasional white specks, local concentrations of glauconite, tight, no shows.
	10%	Shale red pale red, green, fissile, as above.
1,485.00 to 1,490.00 (5.00)	80%	Sandstone clear, quartzose, fine to medium grained, scattered coarse greds, siliceous, very glauconite in part, trace pyritic, quartz overgrowths, sub rounded to sub angular, poorly sorted, rare trace patchy intergranular porosity 2-4%, predominately no visible porosity, no shows.
	20%	Shale green, occasionally red, platy, dolomitic.
1,490.00 to 1,495.00 (5.00)	80%	Sandstone clear, quartzose, very fine to medium grained, scattered coarse grains, siliceous, very glauconitic in part, trace pyritic, quartz overgrowths, sub angular to sub rounded, moderately sorted, tight, no shows.
	20%	Shale green, trace red, platy, dolomitic.
1,495.00 to 1,500.00 (5.00)	80%	Sandstone clear, quartzose, very fine to fine grained, scattered medium grains, quartzose, hard to friable, variable siliceous cement, occasional glauconite, trace pyritic, occasional quartz overgrowths, sub angular to sub rounded, medium to well sorted, patchy 2-4% intergranular porosity in zone with well rounded grains, remainder tight, no shows.
	10%	Dolomite brown, gray, cryptocrystalline to microcrystalline, hard, slightly argillaceous, tabular fragments, dense, no shows.
	10%	Shale gray, minor green, tabular, firm, slightly silty.

Sample Descriptions

Storage Units:

Metric

1,500.00 to 1,505.00 (5.00)	90%	Sandstone clear, white, quartzose, fine to medium grained, subangular to subround, rare well rounded, well sorted, hard to friable, mostly quartz grains in siliceous cement, occasional secondary quartz overgrowths, trace pyrite, abundant loose grains, patchy 5-10% intergranular porosity in zones with well rounded grains, some tight, very hard, no shows.
	10%	Dolomite as above.
1,505.00 to 1,510.00 (5.00)	90%	Sandstone clear, white, quartzose, fine to medium grained, rare coarse, subangular to subround, rare well rounded, medium to well sorted, hard to friable, mostly quartz grains in siliceous cement, occasional secondary quartz overgrowths, trace pyrite, common loose grains, patchy trace intergranular porosity, some tight, very hard, no shows.
	5%	Dolomite brown, cryptocrystalline, hard, argillaceous, cavings?
	5%	Shale as above.
1,510.00 to 1,515.00 (5.00)	75%	Sandstone clear, white, quartzose, very fine to fine grained, rare medium, subangular to subround, well sorted, hard to friable, mostly quartz grains in siliceous cement, minor white clay matrix, occasional secondary quartz overgrowths, trace pyrite, common loose grains, trace intergranular porosity, mostly tight, very hard, no shows.
	25%	Rock flour white, ground up cuttings.
1,515.00 to 1,518.00 (3.00)	70%	Sandstone clear, white, quartzose, very fine to fine grained, occasional medium grains, siliceous, quartz, trace pink grains, trace pyritic, rare glauconite, quartz overgrowths, sub rounded to sub angular, moderately sorted, tight, no shows.
	20%	Rock flour
	10%	Shale green, trace red, platy, dolomitic, disseminated pyrite.
1,518.00 to 1,520.00 (2.00)	83%	Sandstone clear, white, quartzose, very fine to fine grained, occasional medium grains, subround to subangular, quartzose, trace pyritic, occasional quartz overgrowths, rare minor white clay matrix, moderate siliceous cement, clean, trace porosity, mostly tight, no shows.
	10%	Rock flour white, soft, chalky texture.

Sample Descriptions

Storage Units:

Metric

1,518.00 to 1,520.00 (2.00)	3%	Shale medium gray, minor light brown, tabular to fissile, soft.
	2%	Anhydrite light brown, buff, cryptocrystalline, tabular fragments, dense, cavings.
	2%	Dolomite light brown, cryptocrystalline silty, tabular fragments, dense, no shows.
1,520.00 to 1,525.00 (5.00)	92%	Sandstone clear, white, quartzose, fine to medium grained, occasional very fine grains, subround to subangular, well sorted, quartzose, firm to friable, trace pyritic, occasional quartz overgrowths, minor white clay matrix, moderate siliceous cement, clean, trace porosity, mostly tight, no shows.
	5%	Rock Flour white, soft, chalky, ground up cuttings.
	3%	Shale gray, minor dark gray, fissile to tabular, firm, as above.
1,525.00 to 1,530.00 (5.00)	85%	Sandstone clear, white, also light reddish brown, quartzose, fine to medium grained, subround to subangular, well to medium sorted, quartzose, trace pyritic, occasional quartz overgrowths, rare minor white clay matrix, minor amounts red tinge, moderate siliceous cement, clean, trace porosity, mostly tight, no shows.
	10%	Shale grn light green, alos minor light reddish brown, tabular, firm to soft.
	5%	Dolomite gray, brownish gray, cryptocrystalline, hard, slightly argillaceous, dense.
1,530.00 to 1,535.00 (5.00)	90%	Sandstone clear, white, also light reddish brown, quartzose, medium to fine grained, well rrd to subround, medium sorted, quartzose, quartz overgrowths, rare minor white clay matrix, common patchy red tinge, moderate to hard siliceous cement, clean, patchy 3-6% intergranular porosity, mostly tight, no shows.
	8%	Rock flour as above.
	2%	Shale grn light grn, gray, tabular, firm, slightly dolomitic.
1,535.00 to 1,540.00 (5.00)	80%	Sandstone clear, reddish, quartzose, fine to medium grained, siliceous, slightly argillaceous, quartz, quartz overgrowths, sub angular to sub rounded, moderately well sorted, slight trace intergranular porosity 3-6%, predominately tight, no shows.
	20%	Rock Flour

Sample Descriptions

Storage Units:

Metric

1,540.00 to 1,545.00 (5.00)	85%	Sandstone clear, white, also pale orange, fine to medium grained, occasional coarse floating quartz grains, subround to subangular, well to medium sorted, quartzose, trace pyritic, occasional quartz overgrowths, rare minor white clay matrix, moderate siliceous cement, clean, trace porosity, mostly tight, no shows.
	10%	Rock Flour white, soft, chalky texture.
	3%	Shale grn light grn, gray, fissile, slightly dolomitic, as above.
	2%	Dolomite brown, cryptocrystalline, hard, dense.
1,545.00 to 1,550.00 (5.00)	95%	Sandstone clear, white, fine to medium grained, occasional coarse floating quartz grains, subround to well rounded, medium to well sorted, quartz grains in moderate siliceous cement, abundant loose grains, occasional quartz overgrowths, rare minor white clay matrix, clean, trace porosity, mostly tight, no shows.
	5%	Shale grn light grn, minor dark gray, tabular, slightly dolomitic, as above., trace dolomite stringers.
1,550.00 to 1,555.00 (5.00)	85%	Sandstone clear, white, medium grained, with patchy coarse to very coarse floating quartz grains, subround to rounded, medium sorted, quartz grains in hard siliceous cement, occasional quartz overgrowths, rare minor white clay matrix, mostly tight, no shows.
	10%	Rock flour white, soft, chly texture, as above.
	5%	Shale grn light green, green, fissile, firm to hard, as above.
1,555.00 to 1,560.00 (5.00)	94%	Sandstone clear, white, orange, medium grained, with patchy coarse to very coarse floating quartz grains, subround to rounded, medium to well sorted, quartz grains in hard siliceous cement, occasional quartz overgrowths, common loose grains, mostly tight, no shows.
	4%	Rock flour as above.
	2%	Shale grn light green, green, fissile, firm to hard, as above.
1,560.00 to 1,565.00 (5.00)	95%	Sandstone clear, slightly yellow, slightly pink, quartzose, medium to very coarse grained, siliceous, quartz, quartz overgrowths, sub rounded to sub angular, poorly sorted, tight, no shows.

Sample Descriptions

Storage Units:

Metric

1,560.00 to 1,565.00 (5.00)	5%	Shale green, mottled red, platy to blocky.
1,565.00 to 1,570.00 (5.00)	60%	Sandstone clear, reddish, medium to very coarse grained, siliceous, argillaceous, quartz, altered chlorite, trace pyritic, sub rounded to sub angular, poorly sorted, tight, no shows.
	40%	Shale red, blocky, soft, sandy, H2O sensitive, altered chlorite.
1,570.00 to 1,572.00 (2.00)	70%	Shale red, blocky, soft, H2O sensitive, common altered chlorite.
	30%	Sandstone as above.
1,572.00 to 1,575.00 (3.00)	90%	Shale red, blocky, very soft, chlorite, H2O sensitive.
	10%	Sandstone clear, quartzose, medium to coarse grained, siliceous, quartz, quartz overgrowths, sub rounded to sub angular, moderately sorted, tight, no shows.
1,575.00 to 1,580.00 (5.00)	60%	Basalt (possible diabase?), dark gray, speckled, occasionally reddish, green phenocrysts (possible olivine or chlorite?), elongated transparent crystals, iron oxide staining, possible altered.
	30%	Shale red, very micaceous to schisty, soft, H2O sensitive.
	10%	Sandstone reddish, clear, fine to medium grained, siliceous, argillaceous, quartz, chlorite, quartz overgrowths, sub angular to sub rounded, moderately well sorted, tight, no shows.
1,580.00 to 1,585.00 (5.00)	100%	Basalt (possible diabase?), dark gray, speckled, occasionally reddish, green phenocrysts (possible olivine or chlorite?), elongated transparent crystals, iron oxide staining, possible altered.
1,585.00 to 1,590.00 (5.00)	100%	Basalt (possible diabase?), dark gray, speckled, occasionally reddish, green phenocrysts (possible olivine or chlorite?), elongated transparent crystals, iron oxide staining, possible altered.
1,590.00 to 1,595.00 (5.00)	100%	Basalt Basalt: (possible diabase?), dark gray, speckled, occasionally reddish, green phenocrysts (chlorite?), elongated transparent crystals, iron oxide staining, possible altered, also aaps tuffaceous?.

Sample Descriptions

Storage Units:

Metric

1,595.00 to 1,600.00 (5.00)	100%	Basalt Basalt: (possible diabase?), dark gray, speckled, green phenocrysts (chlorite?, with alteration corona?), elongated transparent crystals, iron oxide staining, local white acicular crystals, actinolite?, possible altered.
1,600.00 to 1,605.00 (5.00)	100%	Basalt Basalt: (possible diabase?), dark gray, speckled, green phenocrysts (chlorite?, with alteration corona?), elongated transparent crystals, iron oxide staining, local white acicular crystals, actinolite?, possible altered.
1,605.00 to 1,610.00 (5.00)	100%	Basalt Basalt: (possible diabase?), dark gray, dark green, speckled, green phenocrysts (chlorite?, with alteration corona?), elongated transparent crystals, iron oxide staining, quartz, local white acicular crystals, actinolite?, local phyllite texture, possible altered.
1,610.00 to 1,615.00 (5.00)	100%	Basalt Basalt: (possible diabase?), dark gray, dark green, speckled, green phenocrysts (chlorite?), elongated transparent crystals, iron oxide staining, quartz, local white acicular crystals, actinolite?, local phyllite?, schistose? texture, appears altered.
1,615.00 to 1,620.00 (5.00)	80%	Basalt Basalt: (possible diabase?), dark gray, dark green, speckled, green phenocrysts (chlorite?), elongated transparent crystals, iron oxide staining, quartz, local white acicular crystals, actinolite?, local phyllite?, schistose? texture, appears altered.
	20%	Rhyolite mottled gray, speckled, blocky, firm to hard, quartz crystals in brownish gray crystalline matrix, common chlorite, accic crystals, possible welded tuff appearance, occasional altered coronas, occasional dark minerals, dense.
1,620.00 to 1,625.00 (5.00)	90%	Basalt as above.
	10%	Rhyolite mottled gray, speckled, blocky, firm to hard, quartz crystals in brownish gray crystalline matrix, common chlorite, accic crystals, possible welded tuff appearance, occasional altered coronas, occasional dark minerals, dense.
1,625.00 to 1,630.00 (5.00)	100%	Basalt dark gray, occasionally red, speckled, green phenocrysts (chlorite?), elongated transparent crystals, iron oxide staining, altered appearance.
1,630.00 to 1,635.00 (5.00)	100%	Basalt dark gray, occasionally red, speckled, green phenocrysts (chlorite?, banded in part), scattered transparent elongated crystals, iron oxide staining, rare trace pyrite, altered appearance.
1,635.00 to 1,640.00 (5.00)	40%	Rhyolite? grading to basalt?, light to dark gray, speckled, occasionally reddish, green phenocrysts (chlorite?), elong pink crystals (K-feld?), iron oxide staining, altered appearance.

Sample Descriptions

Storage Units:

Metric

1,635.00 to 1,640.00 (5.00)	30%	Dolomite buff, light brown, trace reddish, cryptocrystalline, trace microcrystalline, dense, no shows.
	30%	Shale green, red, platy, dolomitic, disseminated pyrite.

Sidewall Cores

Storage Units: Metric

Date Run No. 1 Top Depth 1,493.50 Base Depth 1,568.50 Geologist Gary Timmons / Gerald Deon	Service Company Schlumberger Tool Type MSCT Cores Requested 16 Cores Obtained 16 Cores Lost 0
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Core No.	Depth (MD)	Rock Type
% Recovery	Depth (TVD)	Description
1	1,493.50	Sandstone
100	1,492.23	(45mm) clear, light gray, rare trace pink, quartzose, very fine to medium grained, siliceous, slightly argillaceous, trace disseminated pyrite, quartz overgrowths, sub angular to sub rounded, moderately sorted, trace patchy intergranular porosity 6-8%, no shows.

Core No.	Depth (MD)	Rock Type
% Recovery	Depth (TVD)	Description
2	1,501.00	Sandstone
100	1,499.72	(44mm) clear, quartzose, very fine to fine grained, occasional medium grains, siliceous, quartz, trace disseminated pyrite, quartz overgrowths, sub angular to rounded, moderately well sorted, patchy intergranular porosity 8-10%, no shows.

Core No.	Depth (MD)	Rock Type
% Recovery	Depth (TVD)	Description
3	1,509.00	Sandstone
100	1,507.70	(45mm) clear, light gray, quartzose, fine to medium grained, siliceous, very slightly argillaceous, quartz, quartz overgrowths, rounded to sub angular, moderately well sorted, no visible porosity, no shows.

Core No.	Depth (MD)	Rock Type
% Recovery	Depth (TVD)	Description
4	1,515.50	Sandstone
100	1,514.20	(43mm) clear, quartzose, very fine to fine grained, siliceous, quartz, quartz overgrowths, sub rounded to sub angular, well sorted, no visible porosity, no shows.

Core No.	Depth (MD)	Rock Type
% Recovery	Depth (TVD)	Description
5	1,527.00	Sandstone
100	1,525.68	(43mm) clear, pink, quartzose, very fine to fine grained, siliceous, quartz, quartz overgrowths, sub rounded to sub angular, well sorted, no visible porosity, no shows.

Core No.	Depth (MD)	Rock Type
% Recovery	Depth (TVD)	Description
6	1,541.50	Sandstone
100	1,540.15	(50mm) clear, reddish, quartzose, fine to medium grained, siliceous, quartz, quartz overgrowths, sub angular to sub rounded, moderately well sorted, trace patchy

intergranular porosity 6%, no shows.

Core No.	Depth (MD)	Rock Type
% Recovery	Depth (TVD)	Description
7	1,552.00	Sandstone
100	1,550.63	(40mm) clear, trace pink, quartzose, fine to medium grained, with floating very coarse grains, siliceous, quartz, quartz overgrowths, sub angular to sub rounded, poorly sorted, tight, no shows.

Core No.	Depth (MD)	Rock Type
% Recovery	Depth (TVD)	Description
8	1,556.50	Sandstone
100	1,555.12	(45mm) clear, quartzose, fine to medium grained, siliceous, quartz, quartz overgrowths, sub rounded to sub angular, moderately well sorted, tight, no shows.

Core No.	Depth (MD)	Rock Type
% Recovery	Depth (TVD)	Description
9	1,562.50	Conglomerate
100	1,561.11	(45mm) reddish, yellow, light gray, quartz pebble conglomerate (pebbles to 4mm), fine to coarse grained sand matrix, siliceous, slightly argillaceous, quartz overgrowths, sub rounded to rounded, very poorly sorted, patchy intergranular porosity 16-18%, (average log porosity 10%), tight in part, no shows.

Core No.	Depth (MD)	Rock Type
% Recovery	Depth (TVD)	Description
10	1,568.50	Sandstone
100	1,567.10	(48mm) mottled red, greenish, light gray, fine to very coarse grained grading to conglomeratic (pebbles to 5mm), siliceous, argillaceous, quartz, quartz overgrowths, rounded to sub angular, very poorly sorted, tight, no shows.

Core No.	Depth (MD)	Rock Type
% Recovery	Depth (TVD)	Description
11	1,497.00	Sandstone
100	1,495.72	(45mm) clear, light gray, quartzose, very fine to fine grained, trace scattered medium grains, siliceous, slightly argillaceous, disseminated pyrite, quartz overgrowths, sub angular to rounded, moderately well sorted, trace patchy intergranular porosity 6-8%, predominately tight, no shows.

Core No.	Depth (MD)	Rock Type
% Recovery	Depth (TVD)	Description
12	1,507.50	Sandstone
100	1,506.21	(40mm) clear, translucent, quartzose, fine to medium grained, siliceous, quartz, quartz overgrowths, rounded to sub rounded, well sorted, tight, no shows.

Core No.	Depth (MD)	Rock Type
% Recovery	Depth (TVD)	Description

13	1,517.00	Sandstone
100	1,515.69	(44mm) clear, quartzose, fine to medium grained, siliceous, quartz, quartz overgrowths, rounded to sub angular, well sorted, intergranular porosity 10-12%, no shows.

Core No.	Depth (MD)	Rock Type
% Recovery	Depth (TVD)	Description
14	1,532.00	Sandstone
100	1,530.67	(46mm) red, clear, quartzose, fine grained, trace medium grained, siliceous, friable in part, argillaceous, quartz, quartz overgrowths, rounded to sub rounded, well sorted, patchy intergranular porosity 12-14%, no shows.

Core No.	Depth (MD)	Rock Type
% Recovery	Depth (TVD)	Description
15	1,538.00	Sandstone
100	1,536.66	(43mm) clear, reddish, quartzose, very fine to fine grained, siliceous, slightly argillaceous, quartz, quartz overgrowths, sub rounded to sub angular, well sorted, rare trace intergranular porosity 6%, predominately tight, no shows.

Core No.	Depth (MD)	Rock Type
% Recovery	Depth (TVD)	Description
16	1,546.00	Sandstone
100	1,544.64	(47mm) clear, quartzose, fine to medium grained, siliceous, slightly argillaceous, quartz, quartz overgrowths, sub angular to rounded, moderately well sorted, no visible porosity, no shows.

MDT

Storage Units:

Metric

Seq.	Depth	TVD	SSL	HP(Before)	HP(After)	Form. Prs.	EFW	Temp	MDCP	Formation	Comment
1											
1	1562.50	1561.00	-1309.00		20783.0	265.0		24.5	0.000	Mount Clark	Dry Test
2	1535.50	1534.00	-1282.00		20430.0	15261.0		26.4	0.200	Mount Clark	Good Test
3	1563.00	1562.00	-1310.00		20788.0	0.0		27.2		Mount Clark	Dry test
4	1521.30	1520.00	-1268.00		20243.0	0.0		27.9	0.000	Mount Clark	Dry test
5	1519.30	1518.00	-1266.00		20216.0			29.0		Mount Clark	Dry Test
6	1515.60	1514.00	-1262.00		20168.0			28.3		Mount Clark	Dry test
7	1515.00	1514.00	-1262.00		20160.0			28.3		Mount Clark	Dry test
8	1515.00	1514.00	-1262.00		20160.0	15015.0		29.1	0.100	Mount Clark	Good test
9	1503.60	1502.00	-1250.00		20010.0	14878.0		29.2	0.200	Mount Clark	Good Test
10	1501.20	1500.00	-1248.00		19978.0	15851.0		29.3	8.400	Mount Clark	Good Test. Took 4 450 cc spls, expect water.
11	1499.10	1498.00	-1246.00		19943.0	108.0		30.0		Mount Clark	Dry Test
12	1455.70	1454.00	-1202.00		19371.0	14366.0		29.4	1.700	Mount Cap	Good test.
13	1454.10	1453.00	-1201.00		19351.0	14357.0		29.4	0.800	Mount Cap	Good test



Oil and Gas

Wireline Formation Test Samples

Page of	
Run No.	Date (mm/dd/yyyy)
39540	05/03/2008

Well Name				Geologist		Petrophysicist		Specialist Engineer									
PC Blackwater Kwijika M-59				Gerald Deon/Gary Timmons		Brian Glover		Grant Properzi									
Depths (m)				Formation			Deviation (°)	Hole Size (mm)	Log Porosity	Temperature (°C)							
Bottom	1563.0	Top	1454.0	Mount Clark/Mount Cap			4.0	156	6-12	30							
Formation Fluid Type							Drilling Fluid System										
☐ Gas	☐ Condensate	☐ Oil	☒ Water				☐ Oil Based	☒ Water Based	215000	ppm							
Tool Make-Up				Survey Details													
☒ MDT	☐ RCI	Objectives Pressure Survey: ☐ Stratigraphic ☒ Gradients ☐ Fluid Contacts Formation Sampling: ☒ Regular Sampling ☐ PVT Sampling Permeability Estimation: ☒ Horizontal ☐ Anisotropy Others (specify):															
SGTL (Gamma Ray) ☒	Cablehead, TTRM Sub, GR, Power Section & Electronics.																
Power ☒	Single Packer Section																
Pumpout ☒	Draw Down Section																
Sample 1 Gallon X ☒	Pump Thru Section																
Sample 2.75 Gallon X ☐	Fluid Characterization	Sample Survey															
Multi-Sample 6x450 cc ☒	Aux Power Section	Sample Position	1	2	3	4	5	6									
Flow Control ☒	Six Tank Section	Serial No.	1688	2864	2519	2568											
OFA ☒	Tank Control Section	Sampler Type	MPSR	MPSR	MPSR	MPSR											
Hydraulics ☒	Extraction Sub	Sampler Volume (cc)	450	450	450	450											
Single Probe ☐	4 Litre Tank	Date (mm/dd/yyyy)	03/05/2008	03/05/2008	03/06/2008	03/06/2008											
Dual Probe ☒	4 Litre Tank	Time (00:00)	22:25	11:31	0:35	0:35											
Dual Packer ☒	Sample View	Formation	Mount Clark	Mount Clark	Mount Clark	Mount Clark											
6 Gallon Sample ☐	R/C Sensor	Depth (m)	1501.2	1501.2	1501.2	1501.2											
Remarks:		Formation Pressure (kPa)	14851	14851	14851	14851											
		Sampling Temperature (°C)	29.7	29.9	30.0	30.0											
		Hydrostatic Pressure (kPa)	19978	19978	19978	19978											
		Minimum Sampling Pressure (kPa)															
		Clean Up Time (min)															
		Clean Up Volume (cc)															
		Sample Filling Time (s)	2	1.8	2	2											
		Mobility	8.4	8.4	8.4	8.4											
		Expected Type	water	water	water	water											
		Remarks															

Pumped 56746 cc at end of collection of last sample.

Well Information

Operator: **Petro Canada Oil & Gas**

Well Name: **Petro-Canada Blackwater Kwijika M-59**

Location: **M-59**

UWI: **300M596440122300**

Pool:

Field: **Wildcat**

Province / State: **NWT Central MacKenzie**

Country: **Canada**

Elevations

Reference: **Sea Level** Ground: **245.9 m**

Cut(-) / Fill(+): Kelly Bushing: **252.1 m**

K.B. to Ground: **5.7 m** Casing Flange: **m**

**Total Depth**

Measurement Type	Measured Depth	True Vertical Depth
Drillers TD (Tally)	1640 m	1638.42 m
Drillers TD (Strap or SLM)	1641.3 m	1639.72 m
Loggers TD	1641 m	1639.42 m

Well Co - Ordinates

	Longitude	Latitude	Well Type: Straight
Surface Co-Ordinates:	122 40' 56.8" W	64 38' 45.3"	NS: EW:
Int. Casing Co-Ordinates:			NS: EW:
Bottom Hole Co-Ordinates:			NS: EW:
UTM Surface Co-Ordinates:	Northing: 7168837.91	Easting: 515172.73	

Drilling Fluid Summary

Fluid Type	From	To
KCL Polymer	0 m	1640 m

Casing Summary

Type	Hole Size	Casing Size	Landed At
Surface	311 mm	244.5 mm	348 m
Intermediate	222.2 mm	177.8 mm	1198 m

Well Summary

Spud Date: **Feb 11, 2008 @ 15:30hrs** Contractor: **Akita Sahtu Rig #51**

TD Date: **Mar 4, 2008 @ 09:30hrs** Rig Release Date:

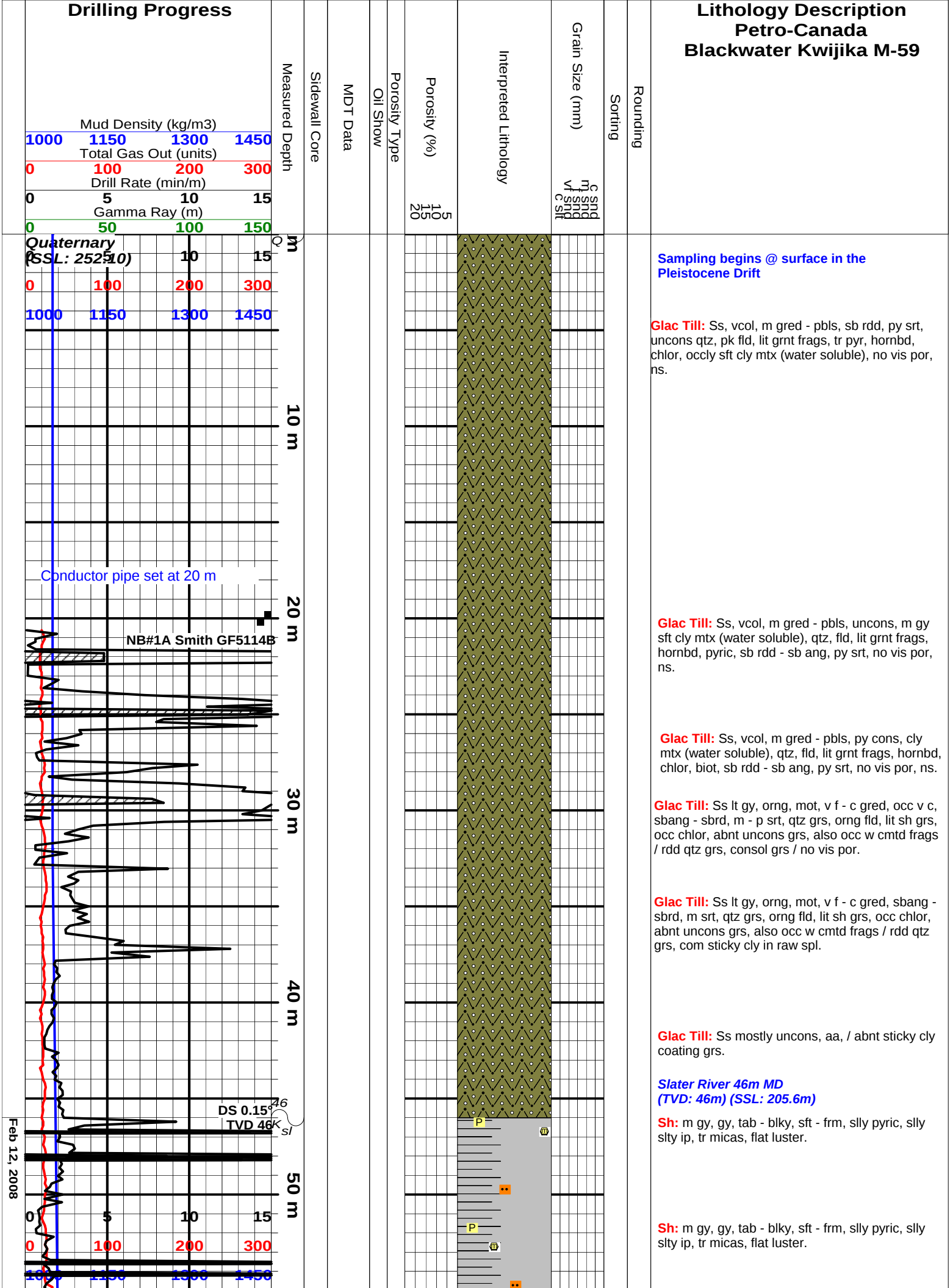
Work Schedule

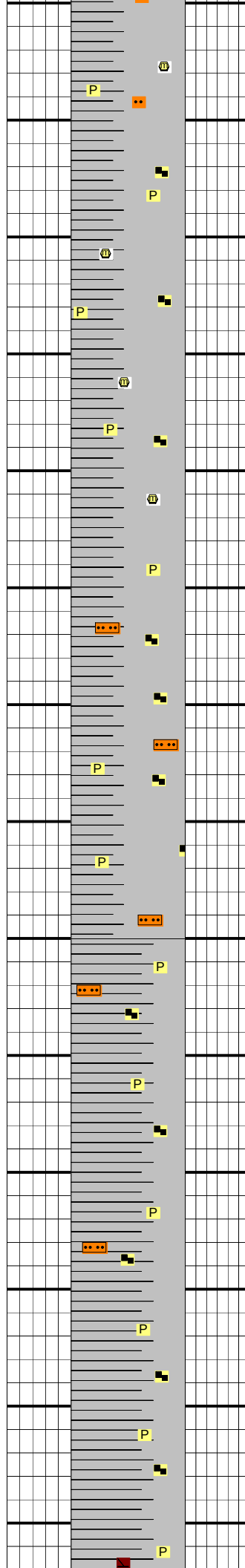
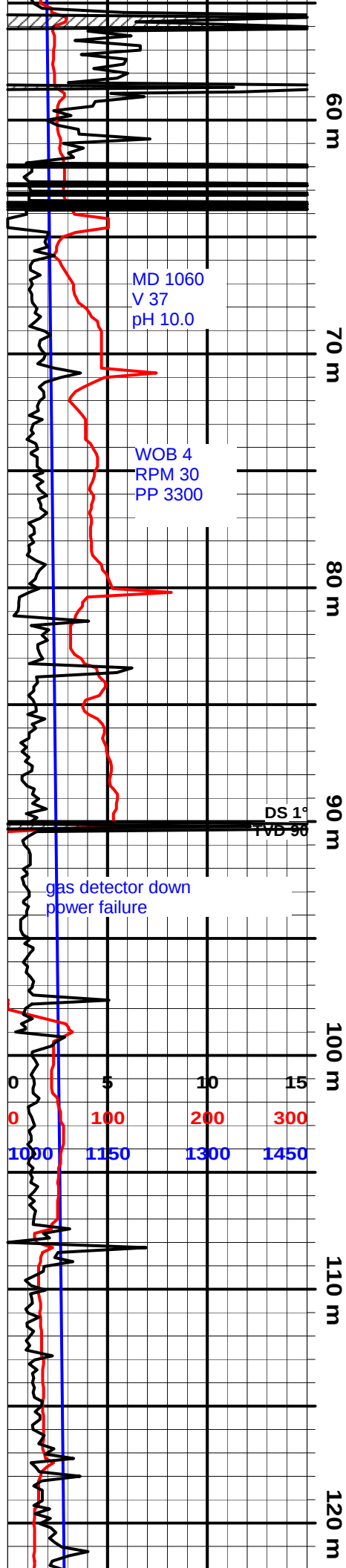
Contractor	Geologist	Log Interval	Dates Logged
Timmons / DMA Geological	G.Timmons / G. Deon, P.Geol	0 m - 1640 m	Feb 10, 2008 - Mar 4, 2008

Remarks

Petro Canada Blackwater M-59

Northwest Territories





Sh: gy, tab - plty, frm, sly micas, occ pyr, flat luster, aa.

Sh: gy, tab - plty, frm, sly micas, loc carb flks, occ pyr, flat luster, tr Inoc frags, aa.

Sh: gy, tab - plty, frm, sly micas, loc carb flks, occ pyr, flat luster.

Sh: gy, tab - plty, frm, sly micas, carb, occ dism pyr, flat luster.

Sh: gy, tab - plty, frm, sly micas, carb, occ dism pyr, flat luster, occ pyrd worm burs.

Sh: gy, tab - plty, frm, sly micas, carb, occ dism pyr, flat luster, occ lt brn sltst strgs.

Sh: aa.

Sh: gy, tab - plty, frm, sly micas, carb, occ dism pyr, flat luster, occ lt brn sltst strgs.

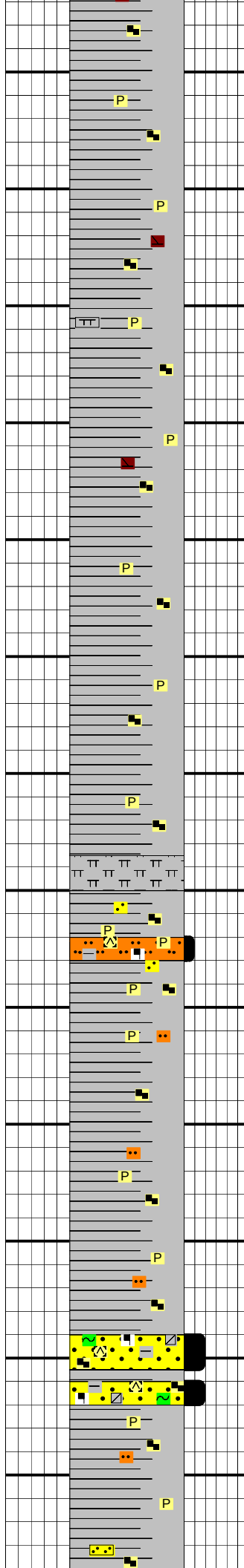
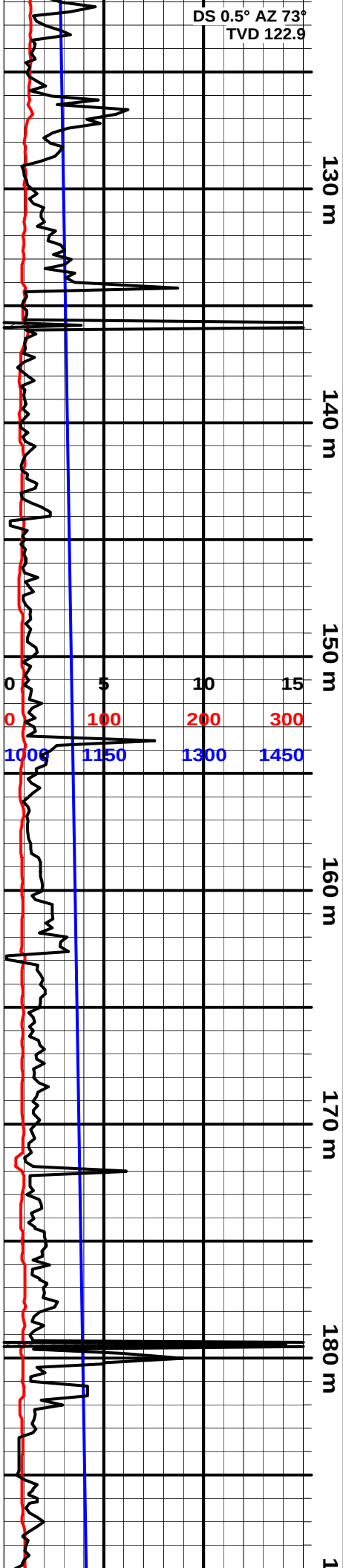
Sh: dk gy, tab - blk, pyric, carb flks, rr sltst strgs, brn sils, qtz, tt, dd o stn?

Sh: dk gy, tab - plty, pyric, carb flks.

Sh: dk gy, blk, occlly plty, pyric, carb flks, / brn sltst strgs.

Sh: dk gy, blk, sft, pyric, carb flks.

Sh: dk gy, blk, sft, pyric, carb flks.



Sh: m - dk gy, blk, sft, tr pyric, carb flks, pos sid.

Sh: dk gy, blk - plty, tr dism pyr, carb flks.

Sh: dk gy, blk, sft, tr pyric, tr carb flks, tr sid?.

Sh: dk gy, blk - tab, sft, tr pyric, tr carb flks, / lt gy brn mrlst frags.

Sh: dk gy, blk, sft, pyric, sidic, rr carb flks.

Sh: dk gy, blk, sft, tr pyric, carb flks.

Sh: dk gy, blk, sft, tr pyric.

Sh: dk gy, blk - plty, sft, tr pyric, tr carb flks.

Mrlst: lt brn, blk, calcs.

Sh: dk gy, blk, sft, pyric, sdy, carb flks.

Sltst: lt gy, sils, arg, qtz, argl grs, dk mnrls, tr pyric, tt, ns.

Sh: dk gy, blk, sft, slty, pyric, carb flks.

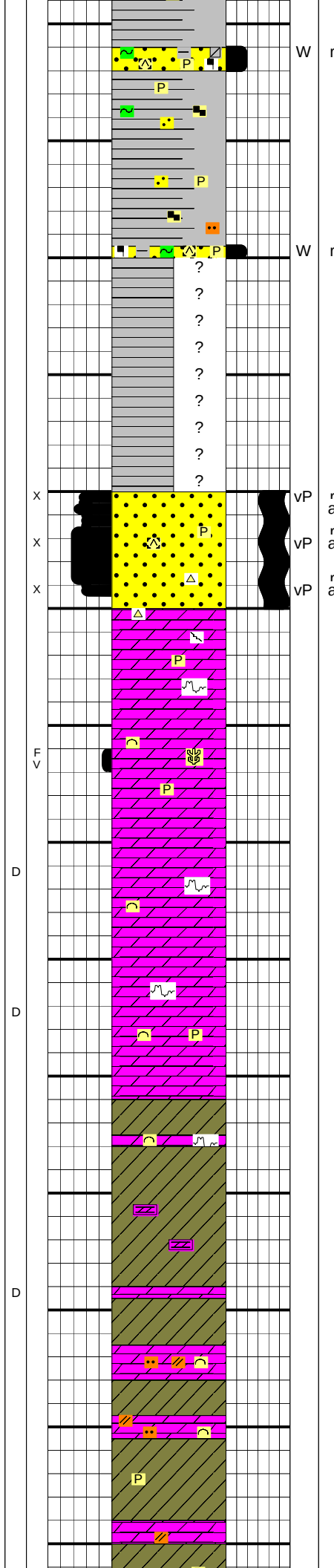
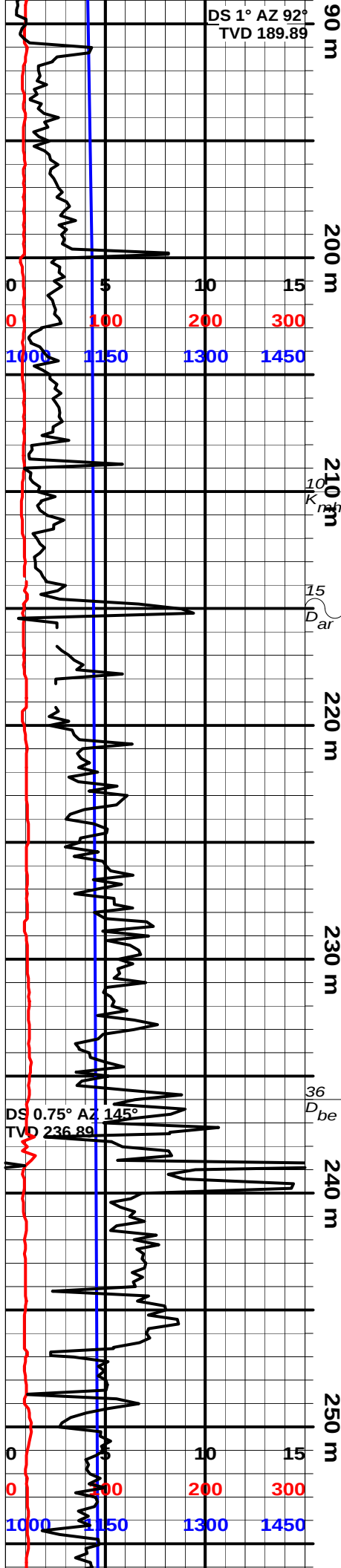
Sh: dk gy, blk, sft, slty, pyric, carb flks.

Sh: dk gy, blk, sft, slty, pyric, carb flks.

Ss: lt - m gy, slty - v f gred, sils, arg, qtz, dk mnrls, glauc, argl grs, carb flks, sb rdd, w srt, tt, ns.

Sh: dk gy, blk, sft, slty, pyric, carb flks.

Sh: dk gy, blk, sft, pyric, carb flks, / ss lns.



Ss: m - lt gy, slty - v f gred, sils, arg, qtz, dk mnrls, glaucic, v pyric, argl grs, sb rdd, w srt, tt, ns.

Sh: dk gy, blkly, sft, sdy, glaucic, pyric, carb flks.

Sh: dk gy, blkly, sft, slty, sdy, pyric, carb flks.

Ss: lt - m gy, slty - v f gred, sils, arg, qtz, dk mnrls, glaucic, pyric, sb rdd, w srt, tt, ns.

No Sample: (Polymer blinding off shaker - caught is all muddy polymer)

No Sample: (Polymer blinding off shaker - caught is all muddy polymer)

Martin House 210m MD
(TVD: 209.99) (SSL: 41.61)

Ss: clr, m gred - pbals, sils, py cons ip?, v pyric ip, (arg matl in sd from water sol sh?), predly qtz, scat lit cht frags, qtz ovghs, sb rdd - sb ang, v py srt, ptch intgran por 14-16%, ns.

Arnica 215m MD
(TVD: 215.00) (SSL: 36.60)

Dol: m - lt brn, crpxl, com dism pyr, tr calc & pyr vng, styls, tr wh cht frags, rr tr s vugs, predly dns, ns.

Dol: mot lt - m brn, crpxl, fragal, dism pyr, tr cor?, tr intra fos & mnrlchd vugy por 2-4%, predly dns, ns.

Dol: mot lt - m brn, crpxl - micxl, fragal, styls, rr tr s vugs, predly dns, tr ptch pyrbit.

Dol: mot lt - m brn, crpxl, fragal, styls, tr pyric, rr tr s vugs, predly dns, tr ptch pyrbit.

Bear Rock MD 236m
(TVD 236m) (SS 15.6m)

Anhy: lt brn, trnsl, dns, ns.

Dol: m brn, micxl - crpxl, fragal, styls, dns, ns.

Anhy: trnsl, lt brn, xln, rr dol lnss, dns.

Dol: m brn, crpxl, dns, tr ptch pyrbit.

Dol: lt brn, lt gy, micxl - crpxl, slly slty, / anhyic ptchs, rr rmnt fragl tex, dns.

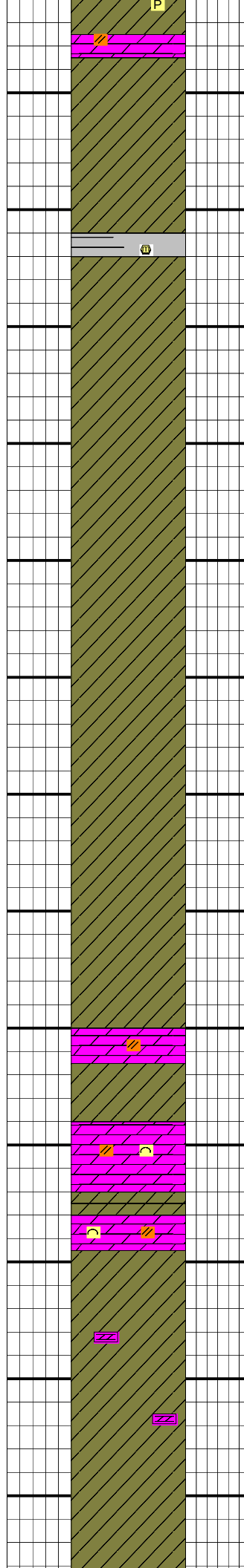
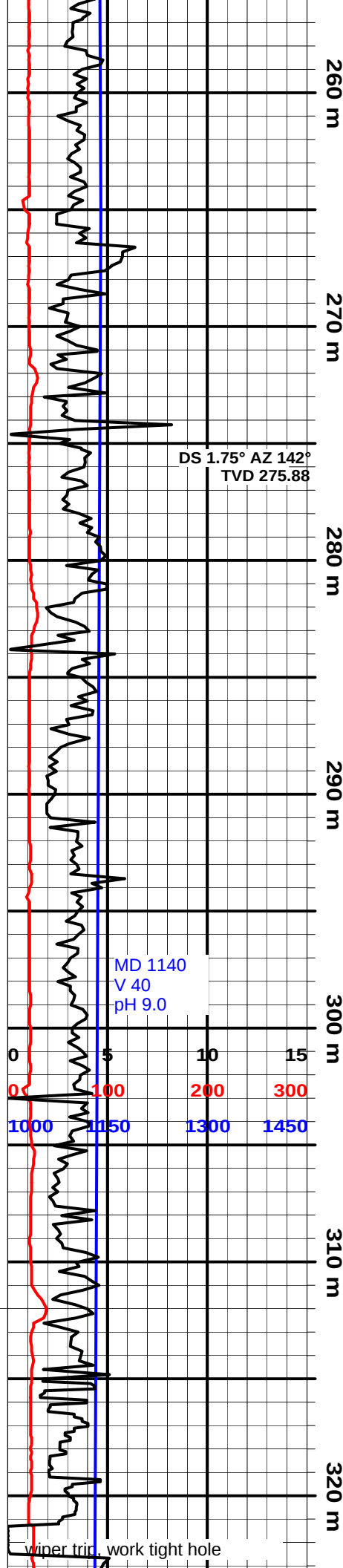
Anhy: aa.

Dol: lt gy, gy, micxl, frm - hd, slly slty, anhyic, dns.

Anhy: lt gy, trnsp, micxl - crpxl, hd, ang frags, tr pyr, dns.

Anhy: lt gy, trnsp, micxl - crpxl, hd, ang frags, tr

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pyl, dns.

Dol: aa.

Anhy: lt gy, tan, trnsp, micxl - crpxl, hd, dns, aa.

Sh: gy, tab - plty, frm, slly micas, flat luster.

Anhy: lt gy, tan, gy, micxl - crpxl, tab, hd, dns.

Anhy: lt gy, tan, gy, micxl - crpxl, tab, hd, dns.

Anhy: lt gy, tan, gy, micxl - crpxl, tab, hd, dns.

Anhy: aa.

Anhy: lt gy, tan, gy, micxl - crpxl, tab, hd, dns.

Anhy: aa.

Anhy: lt gy, tan, gy, micxl - crpxl, tab, hd, dns.

Dol: lt brn, micxl, hd, v anhyic, dns, ns.

Anhy: lt gy, tan, gy, micxl - crpxl, tab, hd, dns.

Dol: gy, mot brn, micxl, hd, v anhyic, dns, / rr
rmnt fragl tex, dns, ns.

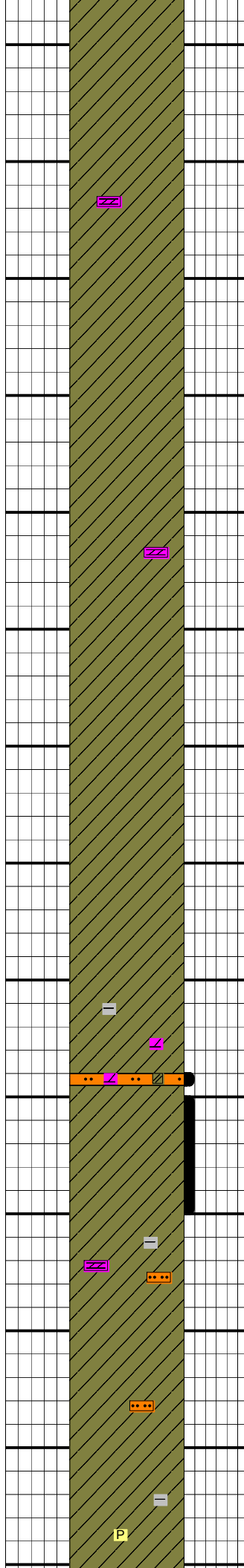
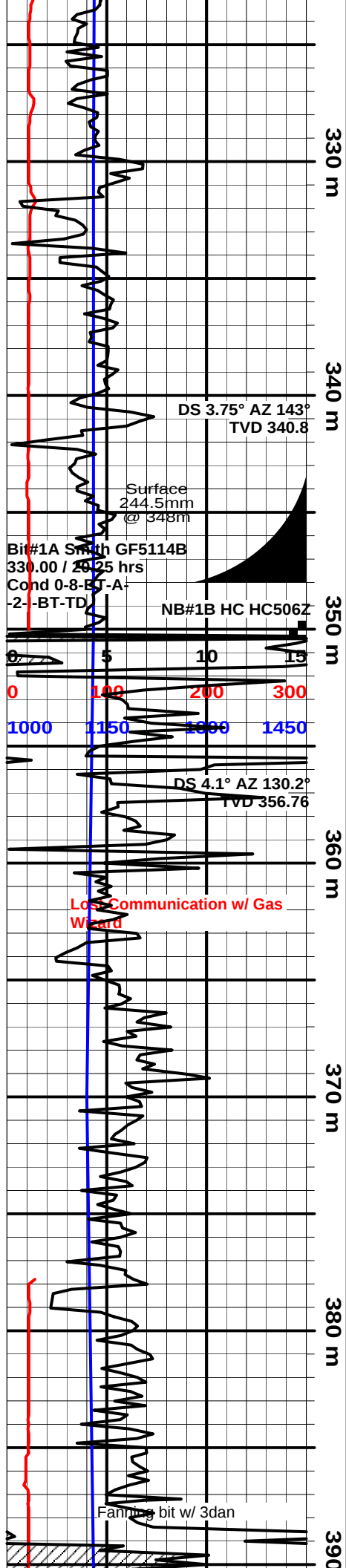
Anhy: gy, lt brn, crpxl, occ dk ptchs, slly dolc,

Dol: lt brn, gy, tan micxl - crpxl, hd, v anhyic ip, /
rmnt fragl tex, dns, ns.

Anhy: aa.

Anhy: lt brn, gy, crpxl, occ dolc ptchs, dns, ns.

Anhy: lt brn, trnsl, crpxl, dns.



Anhy: lt brn, trnsl, crpxl, dns.

Anhy: trnsl, lt brn, crpxl, pyric, dns, tr Dol Inss, m brn, crpxl, dns, ns.

Anhy: lt gy, lt brn, trnsl, crpxl, dns.

Anhy: lt gy, lt brn, trnsl, crpxl, dns.

Anhy: lt gy, lt brn, crpxl, tr dol Inss, dns, ns.

Anhy: lt gy, lt brn, crpxl, tab, frm - hd, dns, aa.

Anhy: lt gy, lt brn, crpxl, dns, ns.

Anhy: lt gy, lt brn, crpxl, dns, ns.

Anhy: lt gy, lt brn, crpxl, occlly slly arg, occlly dolc, dns.

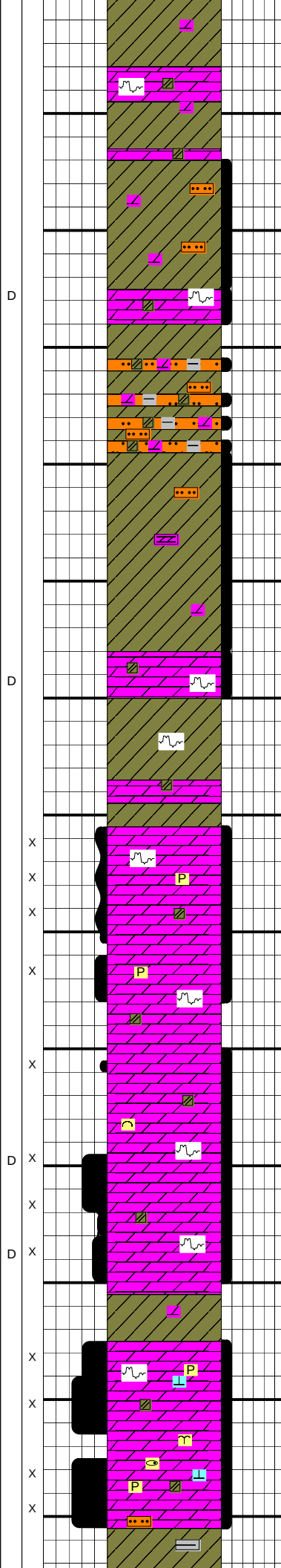
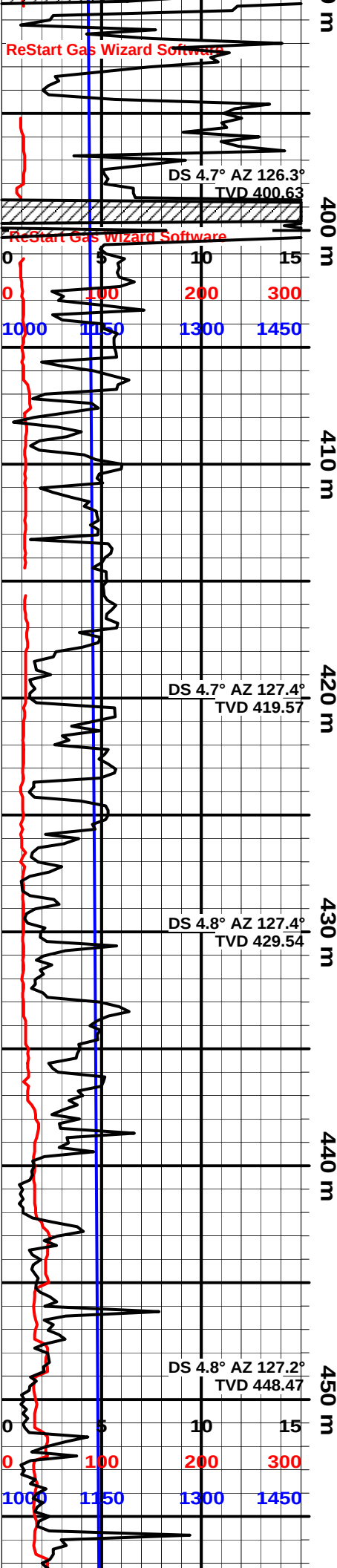
Sltst: lt gy, dolc, slly arg, v anhyic, dns, ns.

Anhy: off wh, lt brn, lt gy, micxl - crpxl, dns, ns.

Anhy: lt gy, lt brn, crpxl, slly arg ip, slty Inss, dns, / dol Inss, brn, crpxl, anhyic, dns, ns.

Anhy: lt gy, lt brn, crpxl, dns, ns, / **Sltst** Inss, lt gy, dolc, v anhyic, dns, ns.

Anhy: lt brn, lt gy, crpxl - micxl, occlly slly arg, tr pyric, dns.



Anhy: lt gy, lt brn, micxl - crpxl, dolc, dns.

Dol: lt brn, crpxl, anhyic, styls, no vis por, ns.

Dol: lt brn, crpxl, anhyic, dns, ns.

Anhy: lt gy, lt brn, micxl - crpxl, dolc, dns, / intspd **sltst** Inss, lt gy, dolc, arg, anhyic, qtz, tt, ns.

Anhy: lt gy, lt brn, micxl, dolc, dns, ns, / tr sltst Inss.

Dol: lt brn, micxl, anhyic, styls, dns, tr ptch pyrbt.

Slstst: lt gy, dolc, arg, anhyic, qtz, dism pyr, tt, ns, / intspd anhy.

Anhy: lt gy, tr brn, crpxl, dns, / intspd **sltst** Inss.

Anhy: lt brn, lt gy, micxl, / intspd **dolc & sltst** Inss.

Anhy: lt gy, lt brn, micxl, dolc, styls, dns, ns.

Dol: lt - dk brn, micxl, anhyic, styls, dns, ptch pyrbt.

Anhy: lt gy, trns, crpxl - micxl, styls, dns.

Dol: lt brn, crpxl, anhyic, dns, ns.

Anhy: off wh, lt gy, crpxl, dns.

Dol: lt brn, micxl, anhyic, tr pyric, lamd ip, styls, ptch intxl por 3-5%, ns.

Dol: lt brn, micxl, tr crpxl, anhyic, tr pyric, lamd ip, styls, ptch intxl por 3-5%, ns.

Dol: lt - m brn, micxl, fragal, anhyic, styls, intxl por 8-10%, ptch intstl pyrbt.

Dol: lt brn, micxl, anhyic, styls, ptch intxl por 8-10%, rr tr ptch intstl pyrbt.

Anhy: off wh, lt gy, micxl - crpxl, dolc, dns.

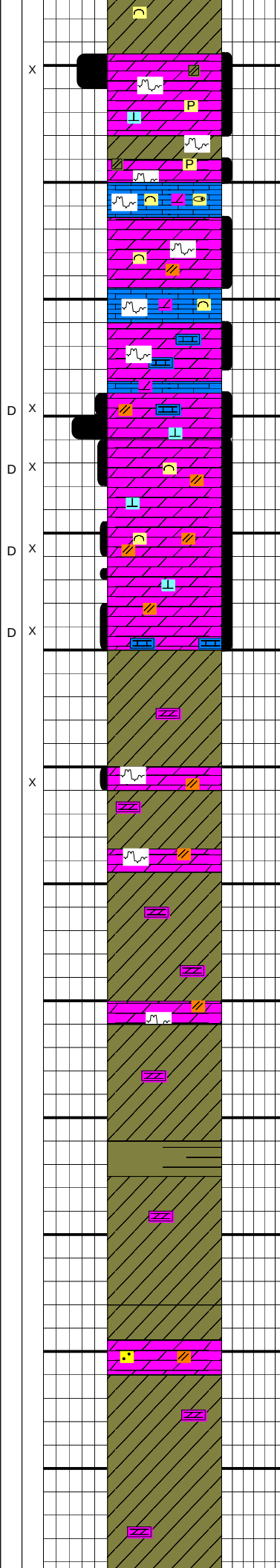
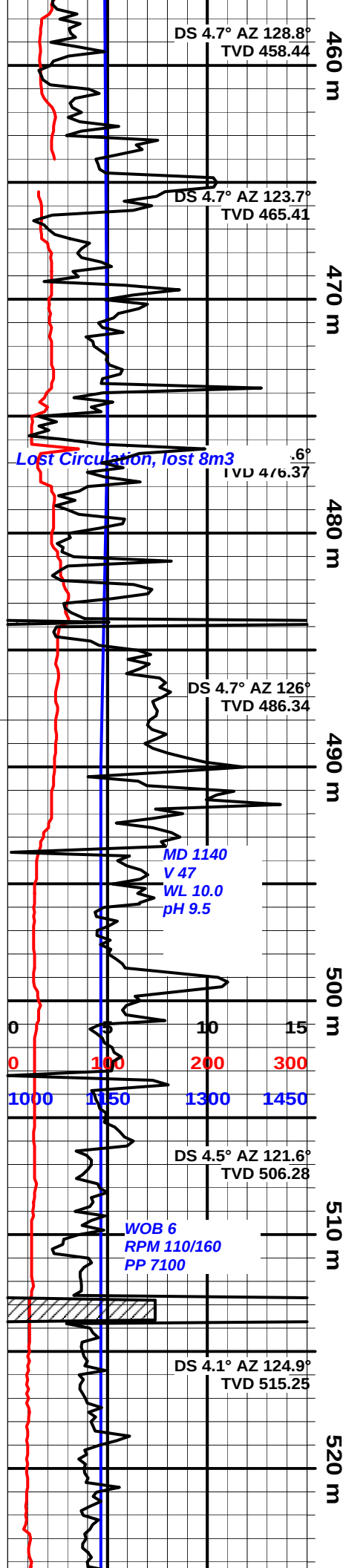
Dol: lt - m brn, micxl, suc, anhyic, tr pyric, styls, sly calcs ip, intxl & mnr vugy por 12-14%, ns.

Dol: lt - m brn, micxl, suc, fragal, anhyic, tr pyric, Bry?, Osts, rr tr slty Inss, also calcs ip, ptch intxl & mnr vugy por 12-14%, ns.

Dol: lt - m brn, micxl, suc, fragal, anhyic, tr pyric, Bry?, Osts, rr tr slty Inss, also calcs ip, ptch intxl & mnr vugy por 12-14%, ns.

Anhy: off wh, lt brn, crpxl, fragal, inspd / shy Inss,

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dns.

Dol: lt - m brn, micxl, fragal, anhyic, styls, loc calcs, tr pyric, no vis por, ns.

Anhy: wh, lt brn, crpxl, styls, dns.

Ls: lt gy, bge, lime mdst, sly dolc, occ fragl tex, / occ osts, biocl rmns, com styls, also occ c calc rhmbs, vein infill?, dns.

Dol: lt - m brn, micxl, fragal, anhyic, also loc calcs, styls, tr pyric, no vis por, ns.

Ls: brn, tan, mnr lt gy, lime mdst, / occ fragl tex, rr crins, com styls, dolc, dns, ns.

Dol: lt gy, tab, micxl - crpxl, blkyl, calcs ip, / limy strgs, tr styls, dns, ns.

Dol: lt gy, bge, tab, micxl, blkyl, frm, suc tex, sly calcs ip, occ rmt fragl tex, also loc anhy, occ styls, ptch 2-5% intxl por, tr bit.

Dol: lt gy, bge, tab, micxl - v f xln, blkyl, frm, abnt suc tex, sly calcs ip, also loc anhyic, ptch 3-7% intxl por, rr bit.

Ls: brn, tan, mnr lt gy, lime mdst, / rr fragl tex, dolc, dns, ns.

Anhy: wh, lt brn, tan, crpxl, tab, frm - hd, dns, occ dol strgs.

Dol: lt brn, tan, micxl, frm, suc tex, anhyic, sly calcs, tr -2% intxl por, ns.

Anhy: wh, lt brn, tan, crpxl, tab, frm - hd, dns, occ dolc.

Anhy: aa.

Dol: lt brn, gy, crpxl, tab, hd, dns, occ styls.

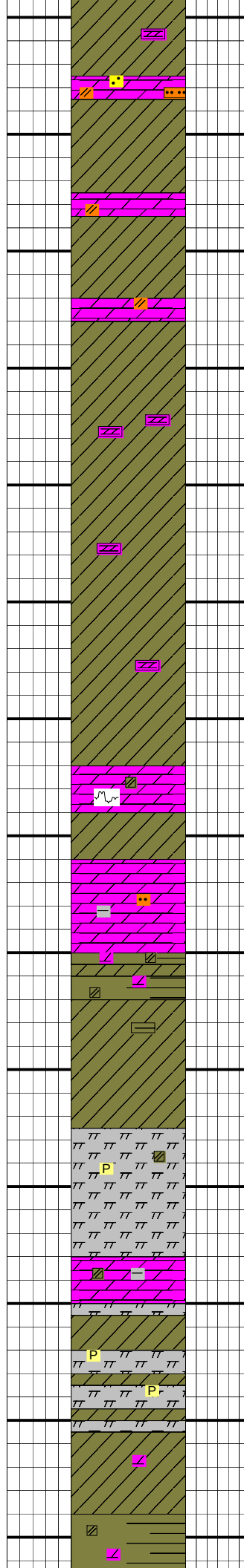
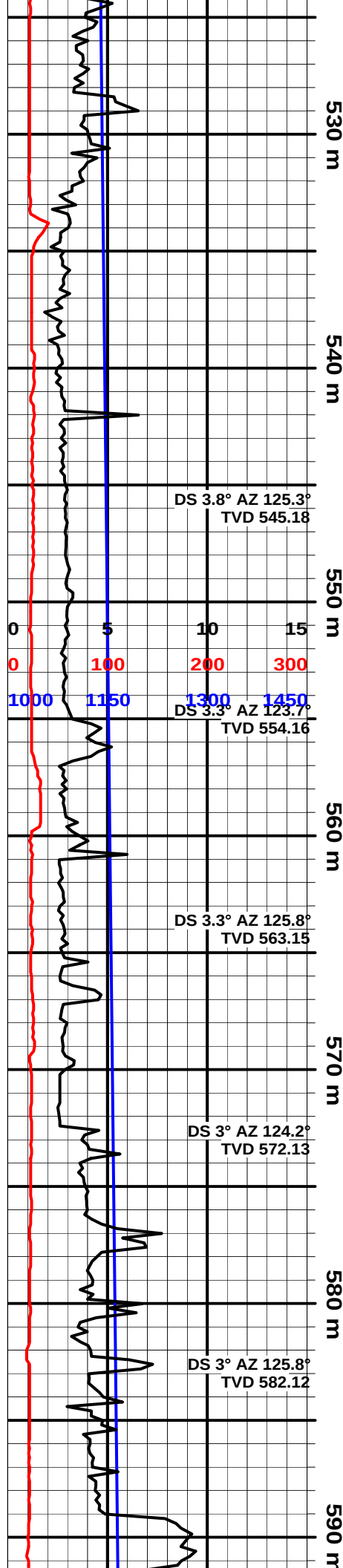
Anhy: aa.

Sh: lt gn, tab, dolc, grdg - arg dol.

Anhy: wh, lt brn, tan, crpxl, tab, frm - hd, dns, occ dolc, loc flotg rdd qtz grs, dns.

Dol: lt gy, tan, crpxl, hd, anhyic, rr sdy, dns.

Anhy: wh, lt brn, tan, crpxl, tab, frm - hd, dns, occ dolc lams.



Anhy: wh, lt brn, tan, crpxl, tab, frm - hd, dns, occ dolc strgs.

Dol: lt gy, bf, tan, crpxl, hd, tab, anhyic, occly sdy, slty, / sltst strgs, dns.

Anhy: aa.

Dol: lt gy, bf, tan, crpxl, hd, tab, anhyic, occly
Anhy: aa.

Dol: bf, lt gy, crpxl, blkly, v anhyic, dns.

Anhy: wh, bge, crpxl - micxl, frm, occly / dol strgs, dns, ns.

Anhy: wh, bge, crpxl - micxl, frm, occly / dol strgs, dns, ns.

Anhy: aa.

Anhy: aa.

Dol: tan, m brn, crpxl, anhyic, styls, rr dol rhmbs (in mtx), dns, ns.

Anhy: lt gy, off wh, crpxl, dns.

Dol: lt gy, crpxl, arg, slty, dns, ns.

Sh: gnsh, gy, blkly, dolc, anhyic.

Anhy: off wh, crpxl, occly inspd / gn shy Inss, dns.

Anhy: off wh, crpxl, dns.

Mrlst: lt gy, gnsh, dolc, anhyic, tr dism pyr, dns.

Mrlst: lt gy, gnsh, dolc.

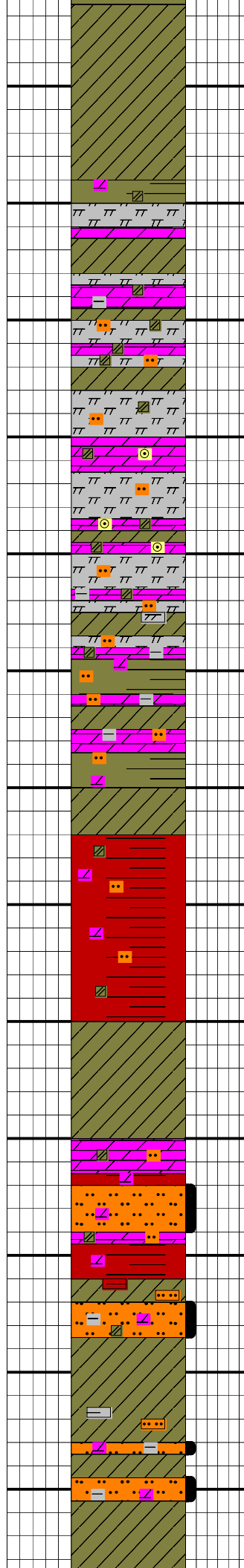
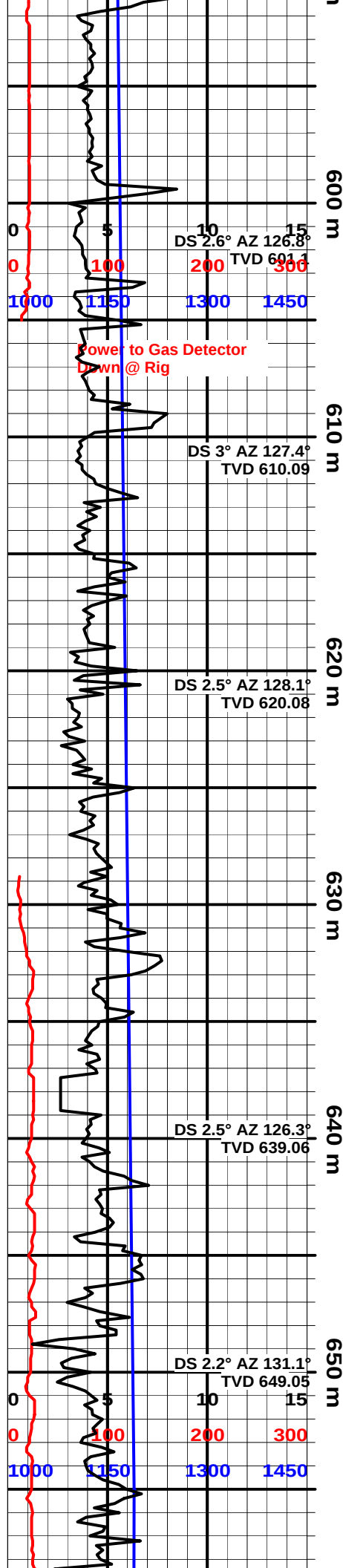
Dol: lt gy, crpxl, anhyic, slly arg, dns, ns.

Anhy: off wh, lt gy, crpxl, dns.

Mrlst: lt gy, gnsh, dolc, tr pyric, dns.

Anhy: lt gy, brnsh, micxl - crpxl, dolc, dns, ns.

Sh: gn, plty - blkly, dolc, anhyic, grdg to dolc mrlst.



Anhy: off wh, lt gy, crpxl, dns.

Anhy: lt gy, crpxl, intspd / sh & mrlst lns, dns.

Sh: gnsh, gy, blk, dolc, anhyic, grdg to mrlst.

Mrlst: gnsh, lt gy, blk - plty, dolc, dns.

Dol: beige, lt gy, crpxl, anhyic, arg, dns, ns.

Anhy: lt gy, off wh, crpxl, dns.

Dol: beige, lt gy, crpxl, anhyic, arg, dns, ns.

Mrlst: lt gy, gnsh, dolc, anhyic, slty, dns.

Dol: beige, crpxl, anhyic, dns, ns.

Anhy: lt gy, off wh, tr dolc, dns.

Mrlst: lt gy, gnsh, dolc, anhyic, slty, dns.

Dol: beige, lt gy, crpxl, Crin stems, anhyic, dns, ns.

Mrlst: lt gy, gnsh, dolc, slty.

Anhy: lt gy, off wh, crpxl, dns.

Mrlst: lt gy, gnsh, dolc, slty, dns, grdg to gn sh.

Dol: beige, crpxl, anhyic, arg, dns, ns.

Anhy: lt gy, crpxl, intspd / mrlst lns, dns.

Sh: gn, lt gy, plty - blk, dolc, slty.

Dol: beige, lt gy, crpxl, arg, slty, dns, ns.

Anhy: lt gy, lt brn, crpxl, dns, ns.

Sh: gn, lt gy, plty - blk, dolc, slty.

Anhy: lt gy, brnsh, crpxl, dns.

Sh: red, plty, dolc, slty, anhyic.

Sh: red, plty, dolc, slty, anhyic.

Anhy: lt gy, brnsh, crpxl, dns.

Dol: lt brn, crpxl, v slty, anhyic, dns, ns.

Sh: red, plty, dolc, slty.

Slst: lt gy, lt brn, v dolc, qtz, tt, ns.

Dol: lt brn, crpxl, v slty, anhyic, dns, ns.

Sh: red, gn, plty - blk, dolc, slty.

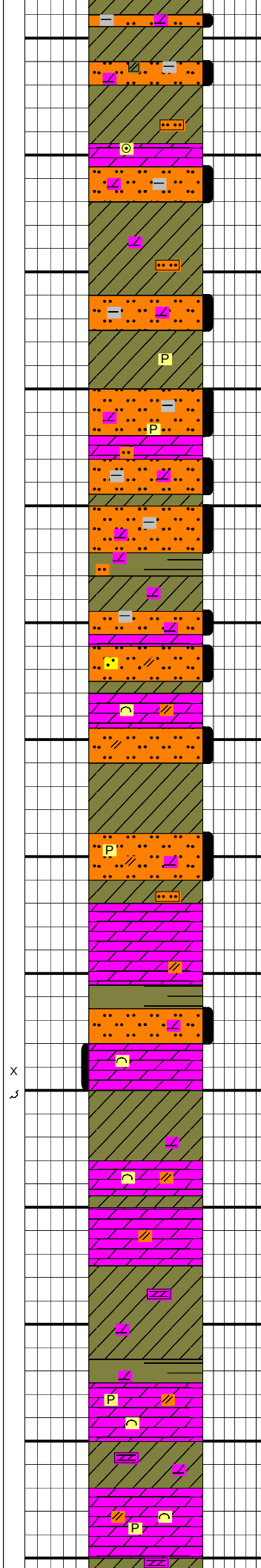
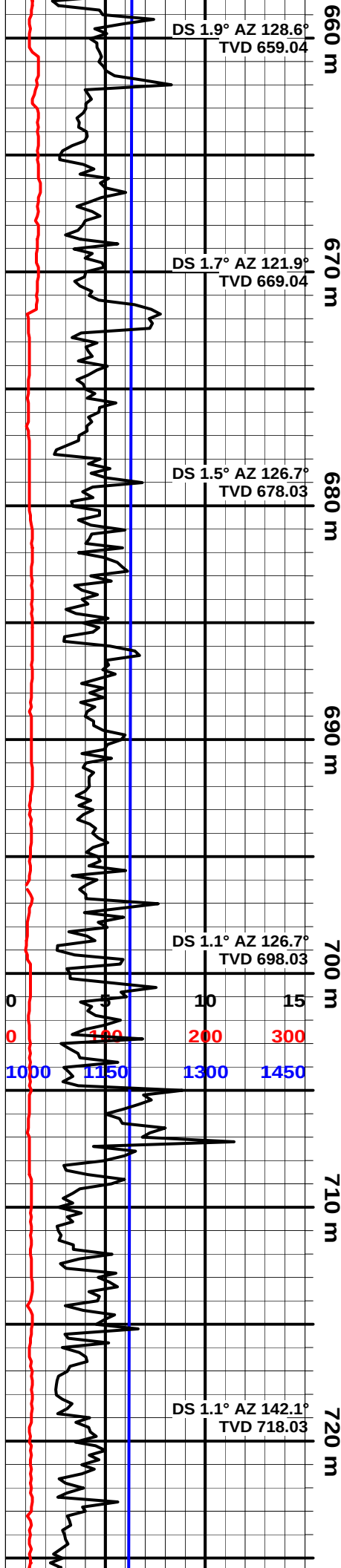
Anhy: lt brn, lt gy, crpxl, dns, intspd / sh & slst.

Slst: gn, red, dolc, arg, anhyic, qtz, tt, ns.

Anhy: lt gy, lt brn, crpxl, dns, / intspd slst lns.

Slst: lt gy, gnsh, dolc, arg, qtz, tt, ns.

Anhy: off wh, lt gy, crpxl - micxl, dns.



Sltst: gn, red, dolc, arg, qtz, tt, ns.

Anhy: lt brn, lt gy, crpxl, dns, / intspd sltst.

Sltst: gnsh, gy, dolc, arg, anhyic, qtz, tt, ns.

Anhy: lt brn, lt gy, crpxl, dns, / intspd sltst.

Dol: tan, crpxl, Crin stems, dns, ns.

Sltst: gn, occly red, lt gy, dolc, v arg, anhyic, tt, ns.

Anhy: lt brn, lt gy, crpxl - micxl, dolc, dns, / intspd sltst.

Sltst: red, gn, lt gy, dolc, arg, qtz, tt, ns.

Anhy: lt brn, lt gy, crpxl - micxl, rr tr pyr, dns, ns.

Sltst: red, gn, lt gy, dolc, arg, rr dism pyr, tt, ns.

Dol: tan, crpxl, slty, dns, ns.

Sltst: red, gn, lt gy, dolc, arg, qtz, tt, ns.

Anhy: lt brn, crpxl, dns.

Sltst: red, gn, lt gy, dolc, arg, qtz, tt, ns.

Sh: gn, red, plty, dolc, slty.

Anhy: beige, lt gy, crpxl, dolc, dns.

Sltst: red, gn, lt gy, dolc, arg, qtz, tt, ns.

Sltst: lt red, orng, mot, blk, frm - hd, sdy, anhyic, tt, ns.

Dol: lt gy, bf, mot, crpxl, slty slty, anhyic, tr rmnt fragl tex, dns, ns.

Sltst: aa.

Anhy: lt gy, bf, mnv orng, crpxl, hd, slty Inss, dolc ip.

Sltst: lt gy, gn, mnv red, v dolc, slty pyric, anhy, dns, ns.

Anhy: lt gy, bf, mnv orng, crpxl, hd, slty Inss, dolc ip.

Dol: lt gy, bf, crpxl, tab, hd, dns.

Sh: gn, tab, frm, tab, dolc, tr pyric.

Sltst: aa.

Dol: gy, bf, lt brn, crpxl, hd, dns, rr 3-6% intxl, moldic por, occ dol rhmbs in pores, ns.

Anhy: lt gy, off wh, tr dolc, dns.

Dol: lt gy, brn, bf, crpxl, blk, frm - hd, compact, dns, slty anhyic.

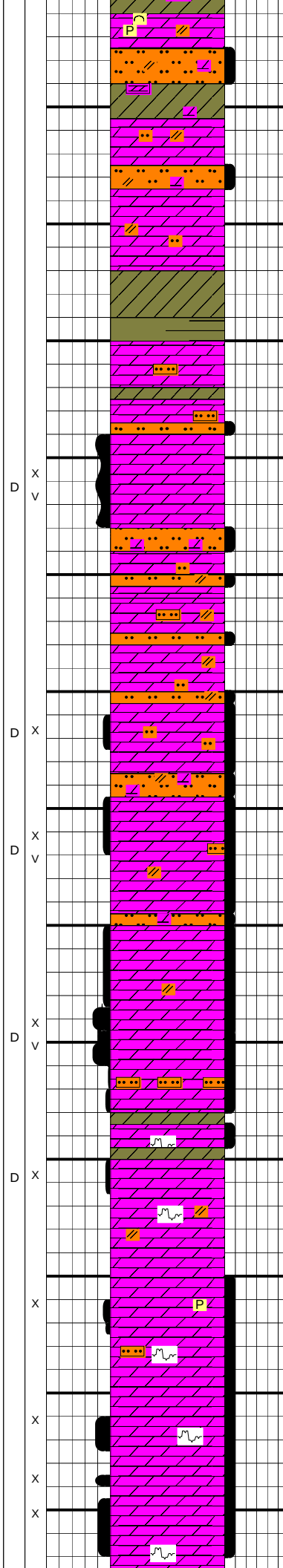
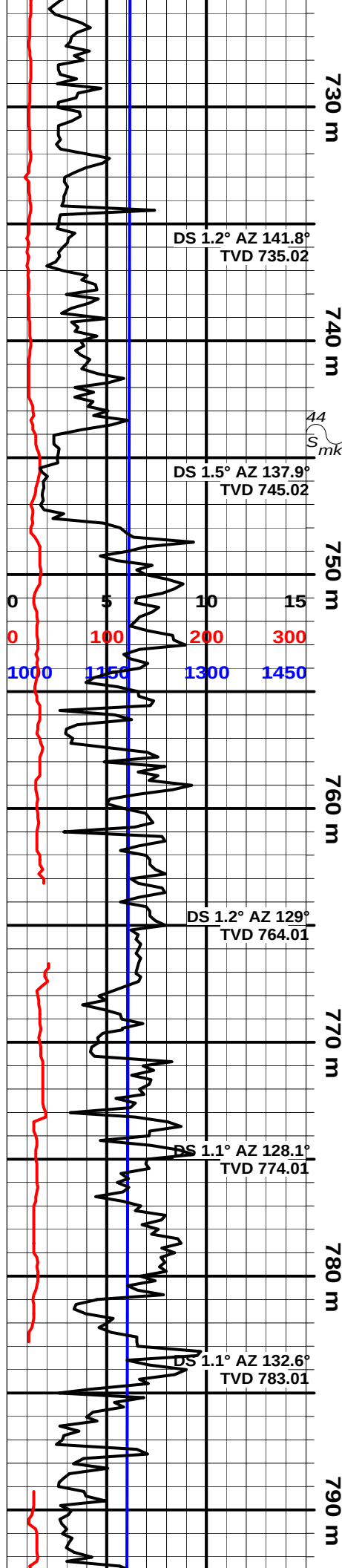
Anhy: wh, lt brn, bf, crpxl, blk, hd, dolc, grdg - anhyic dol, dns, ns.

Dol: lt brn, tab, bge, crpxl, tab, frm - hd, slty anhyic, slty pyric, occ rmnt fragl tex, dns.

Anhy: lt brn, gy, mot, crpxl, hd, dolc, / dol strgs, dns, ns.

Dol: gy, bf, lt brn, crpxl, blk, anhyic, rr rmnt fragl tex, dns, ns.

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Dol: aa.

Sltst: lt gy, mntr pale red, blkly, frm - hd, dolic, also anhyic, tt, ns.

Anhy: lt brn, gy, mot, crpxl, hd, dolic, / dol strgs, also sft, chky tex, rock flour?, dns, ns.

Sltst: lt gy, mntr pale red, blkly, frm - hd, dolic, also anhyic, tt, ns.

Dol: gy, brn, crpxl, hd, blkly, slty, sly anhyic, dns.

Anhy: aa.

Sh : gn, gy, tab - fis, occ dism pyr, v dolic.

Dol: lt brn, gy, bge, crpxl, tab, hd, dns, occ slty strgs.

Mount Kindle MD 744 m
(TVD 743.0m SS -490.9m)

Dol: lt brn, gy, bge, crpxl, tab, hd, ptch 3-7% intxl, vug por, / mntr bit in pores.

Sltst: lt gy, rr pale red, blkly, v dolic, grdg - slty dol, tt.

Sltst: lt gy, pale orng, blkly, hd, sly anhyic, v dolic, tt.

Dol: aa, mostly dns.

Sltst: lt gy, mntr pale red, blkly, frm - hd, dolic, also anhyic, tt, ns.

Dol: lt brn, gy, bge, crpxl, tab, hd, sly slty, ptch tr-2% intxl, / mntr bit in pores.

Sltst: lt gy, gy, blkly, v dolic, grdg - slty dol, tt, ns.

Dol: lt gy, lt brn, micxl, blkly, frm - hd, slty ip, / ptch tr - 2% intxl, vuggy por, / occ bit in pores.

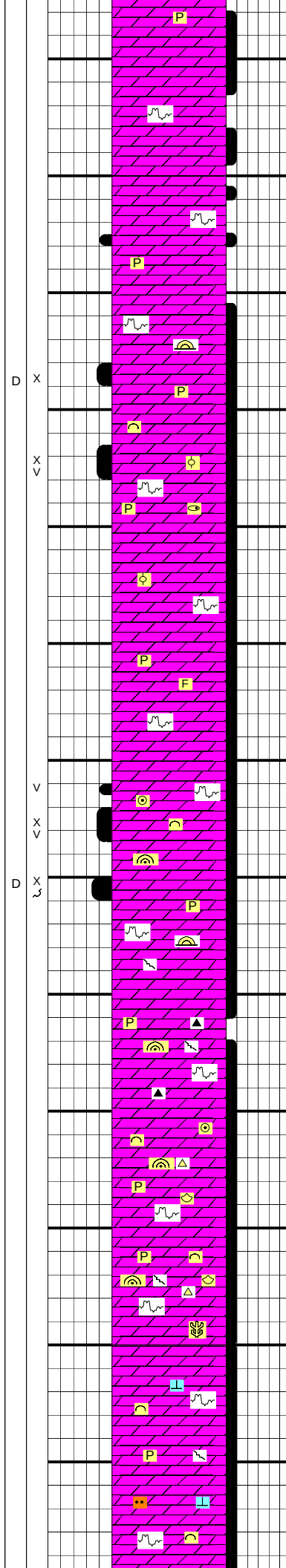
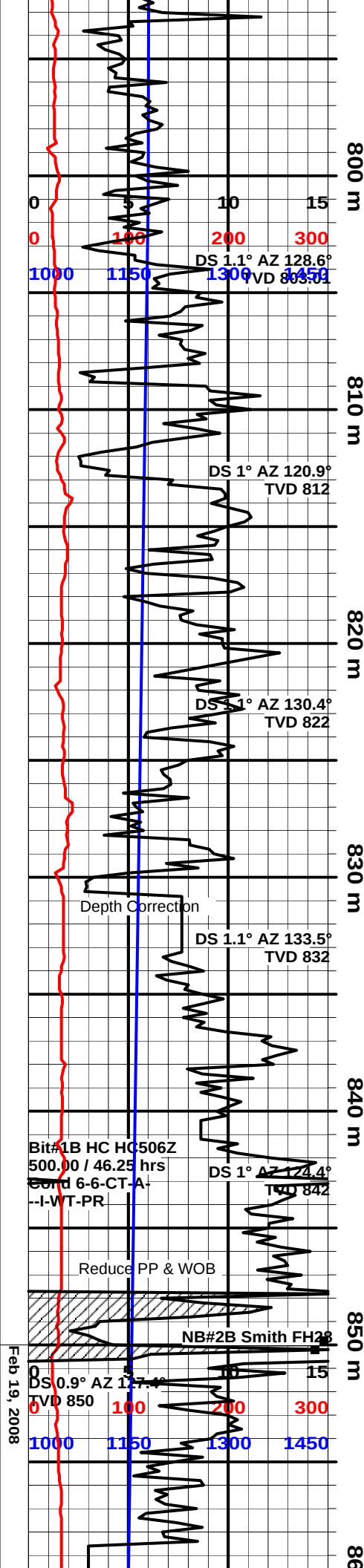
Dol: lt gy, lt brn, micxl, blkly, frm - hd, sly slty ip, / ptch 4-6% intxl, vuggy por, / com dol rhmbs, / occ bit partly plugging pores.

Dol: lt gy, lt brn, micxl - crpxl, blkly, frm - hd, sly slty ip, / ptch 1-2% intxl, / com dol rhmbs, / occ bit partly plugging pores.

Dol: lt gy, lt brn, crpxl, blkly, frm - hd, tr styls, loc anhy ptchs, / ptch tr intxl por, / occ bit partly plugging pores.

Dol: lt brn, lt gy, micxl, tr pyric, slty lnss, styls, clr calc xls, tr ptch intxl por 1-3%, predly dns, ns.

Dol: tan, micxl, tr styls, scat clr calc xls, ptch intxl por 4-6%, ns.



Dol: tan, crpxl - micxl, rr styls, rr tr pyr, tr clr calc xls, no vis por, ns.

Dol: tan, lt brn, micxl - crpxl, rr styls, tr clr calc xls, rr ptch vugy por, predly dns, ns.

Dol: tan, crpxl - micxl, rr styls, rr tr pyr, tr clr calc xls, dns, ns.

Dol: lt - m brn, micxl - crpxl, styls, lamd alg mats?, tr pyric, tr clr calc xls, tr ptch intxl 4-6%, predly dns, rr tr ptch pyrbit.

Dol: mot bf, lt - m brn, micxl, fragl wkest, biocl deb, Osts?, ools, tr pyric, styls, clr calc xls, ptch vugy & intxl por 4-6%, ns.

Dol: mot lt - m brn, micxl, fragl wkest, ools, styls, tr clr calc xls, dns, ns.

Dol: m - lt brn, micxl, styls, indst fos frags, rr pyr, tr clr calc xls, dns, ns.

Dol: mot lt - m brn, micxl, biocl deb, alg mats, styls, Crins, vugy & intxl por 4-6%, tr ptch pyrbit.

Dol: mot lt - m brn, micxl, dism pyr, styls, calc vng, lamd alg mats, ptchy intxl & tr mid por 6-8%, ns.

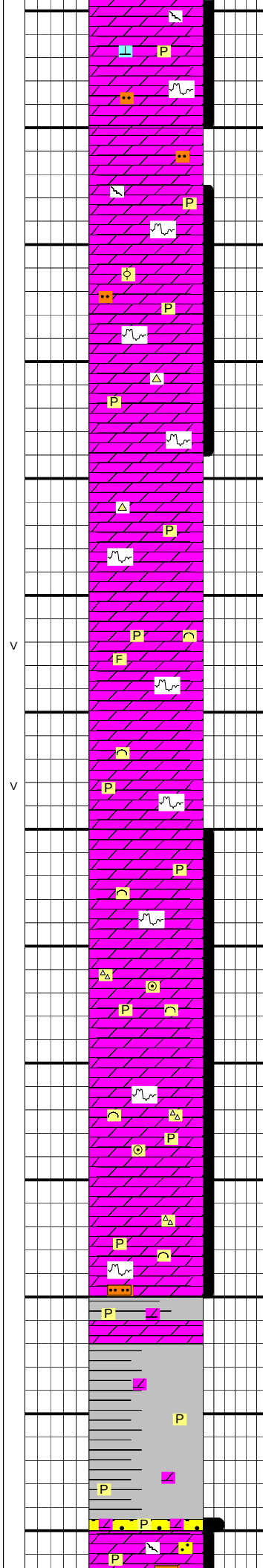
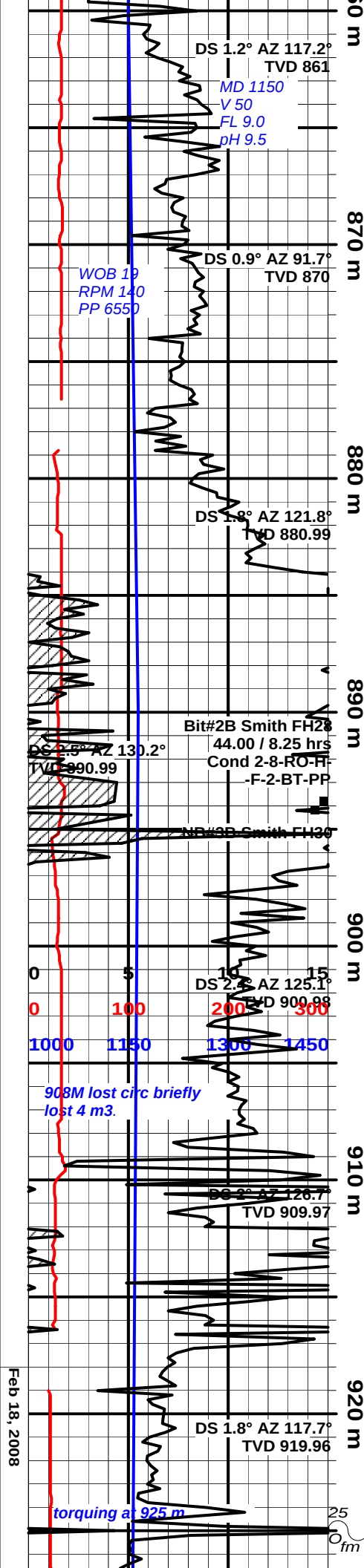
Dol: m brn, micxl - crpxl, chty, tr alg mats, styls, tr dism pyr, calc vng, tr clr calc xls, dns, ns.

Dol: mot lt - m brn, micxl, fragl wkest, tr chty, tr pyric, Bracs, Crins, styls, alg mats, dns, ns.

Dol: tan, lt brn, micxl, tr chty, tr pyric, styls, calc vng, biocl deb, pos cor?, dns, ns.

Dol: tan, lt brn, micxl, tr pyric, styls, calc vng, rmnt biocl deb, dns, ns.

Dol: tan, lt brn, micxl, tr pyric, styls, occ calc vns, rmnt biocl deb, slly slty, dns, ns.



Dol: tan, lt brn, micxl - crpxl, tr pyric, styls, sly slty, calc vng, dns, ns.

Dol: tan, lt brn, micxl - crpxl, tr pyric, styls, occ calc vns, sly slty, dns, ns.

Dol: tan, lt brn, micxl, occ rmnt fragl tex, ools?, tr pyric, styls, sly slty, dns, ns.

Dol: tan, lt brn, micxl - crpxl, tr pyric, styls, tr chty, clr calc xls, dns, ns.

Dol: lt brn, crpxl, sly arg, tr pyric, styls, tr chty, dns, ns.

Dol: tan, lt brn, micxl - crpxl, rmnt fragl tex, indst fos frags, styls, tr pyric, tr vugy por, predly dns, ns.

Dol: tan, lt brn, micxl - crpxl, tr rmnt fragl tex, tr pyr vng, styls, tr clr calc xls, rr tr vugy por, predly dns, ns.

Dol: tan, brn, gy, micxl - crpxl, tr rmnt fragl tex, tr pyr vng, styls, tr clr calc xls, predly dns, ns.

Dol: tan, brn, gy, mnr mot dk gy, micxl, com rmnt fragal tex, cors?, tr pyr vng, styls, tr lt gy wh speed cht occ calc xls, predly dns, no shows.

Dol: tan, brn, gy, micxl, com rmnt fragal tex, crins?, tr pyr vng, styls, tr lt gy wh speed cht, occ calc xls, predly dns, no shows.

Dol: tan, brn, micxl, com rmnt fragal tex, crins, tr slty lns, rr styls, tr lt gy cht, occ calc xls, predly dns, no shows.

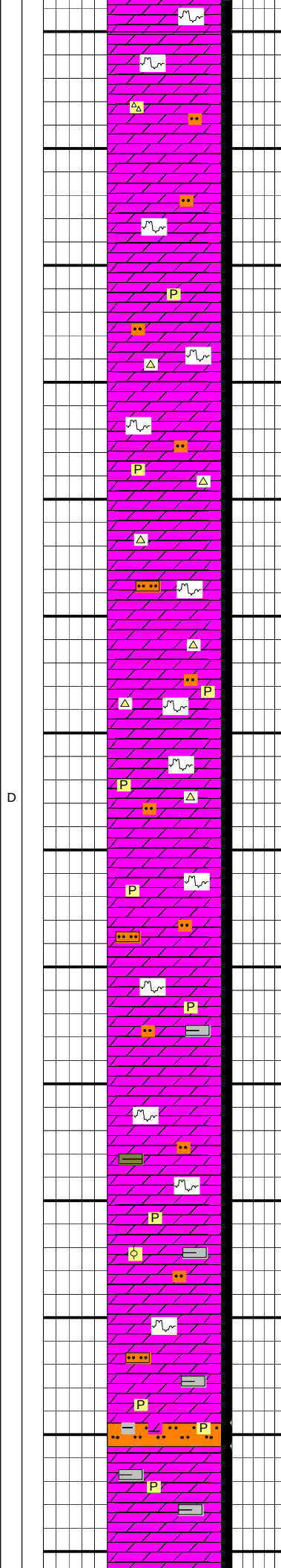
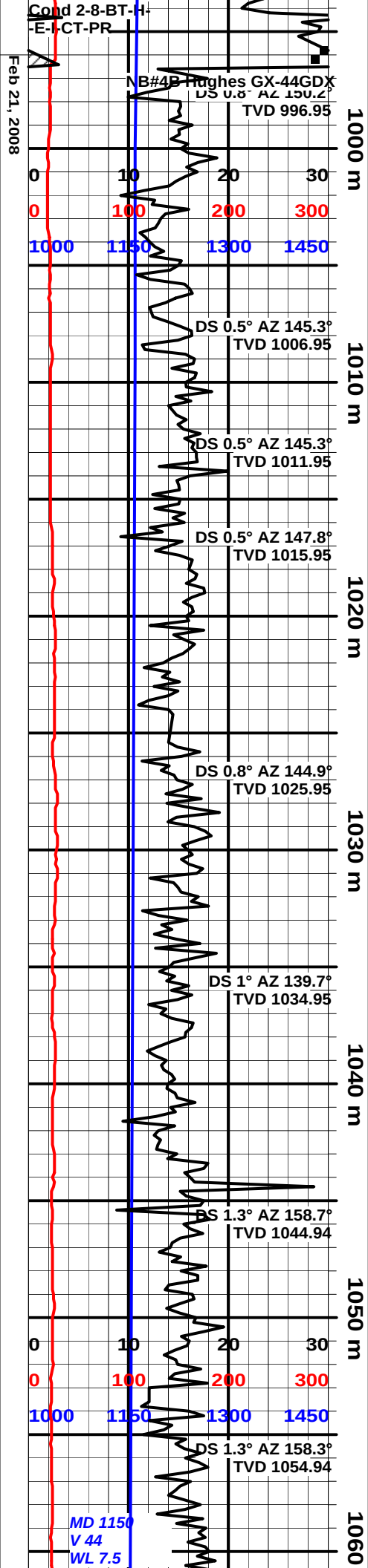
Sh: gy, mnr dk gy, tab - fis, flat luster, / com dism pyr, dolc.

Sh: gy, mnr dk gy, tab - fis, flat luster, / com dism pyr, dolc.

Sh: gy, lt gy, tab - fis, flat luster, / dism pyr, sly dolc, aa.

Franklin Mountain MD 925m
(TVD 924.0m SS -671.9m)

Ss: wh. lt gy, f gred, sbdr, m - p srt, qtz grs in dolc cmt, com pyr, tt, ns.



msm cnt, dns, ns.

Dol: bf, lt brn, tr redsh, tr gnsh, micxl, slly slty, v slly arg, tr styls, scat wh cht, dns, ns.

Dol: bf, lt gy, redsh, gnsh, occly brn, micxl, tr slty, tr arg, styls, dns, ns.

Dol: lt gy, mot lt brn, tr redsh, tr gnsh, micxl, tr rmnt fragl tex, ools, tr slty, tr wh cht frags, rr pyr, tr styls, dns, ns.

Dol: lt brn, lt gy, tr gnsh, tr redsh, micxl, slty, styls, tr pyric, tr wh cht frags, dns, ns.

Dol: lt - m brn, lt gy, micxl, styls, tr clr calc xls, tr wh cht frags, / intspd lt gy sltst Inss.

Dol: lt brn, lt gy, micxl, tr rmnt fragl tex, ools, slty, com msm oolic cht frags, styls, dism pyr, dns, ns.

Dol: lt - m brn, tr lt gy, micxl, tr rmnt fragl tex, slty, styls, rr tr cht, dism pyr, dns, rr tr intstl pyrbt.

Dol: lt - m brn, lt gy, micxl - crpxl, slty, tr pyric, styls, dns, ns, / tr sltst Inss, lt gy, dolc, qtz, tt, ns.

Dol: lt brn, lt - m gy, micxl, slty, tr dism pyr, styls, dns, ns, / m gy shy Inss.

Dol: lt - m brn, lt gy, gnsh, micxl, tr v f xln, fragl tex, ools, slty, arg ip, styls, dns, ns, / gn shy Inss.

Dol: tan, lt gy, tr gnsh, micxl - crpxl, fragl tex, ools, slty, tr pyric, dns, ns, / lt - m gy shy Inss.

Dol: tan, lt gy, tr gnsh, micxl - crpxl, tr styls, slty, tr pyric, dns, ns, / lt - m gy shy Inss.

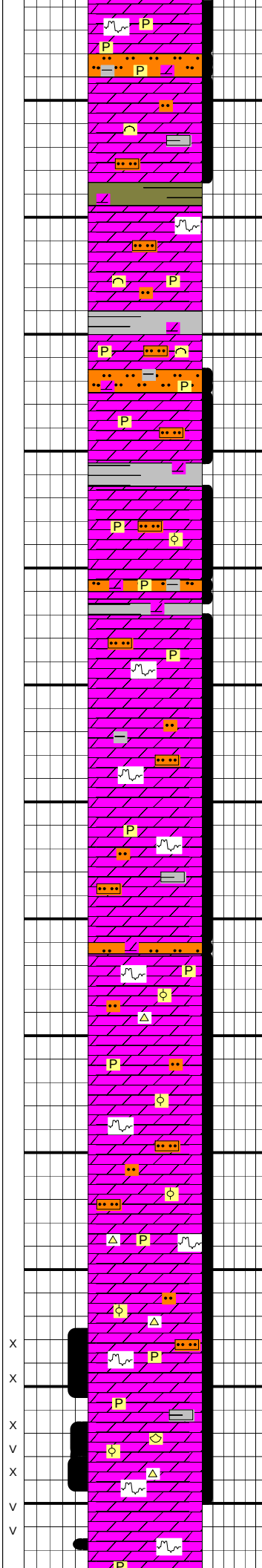
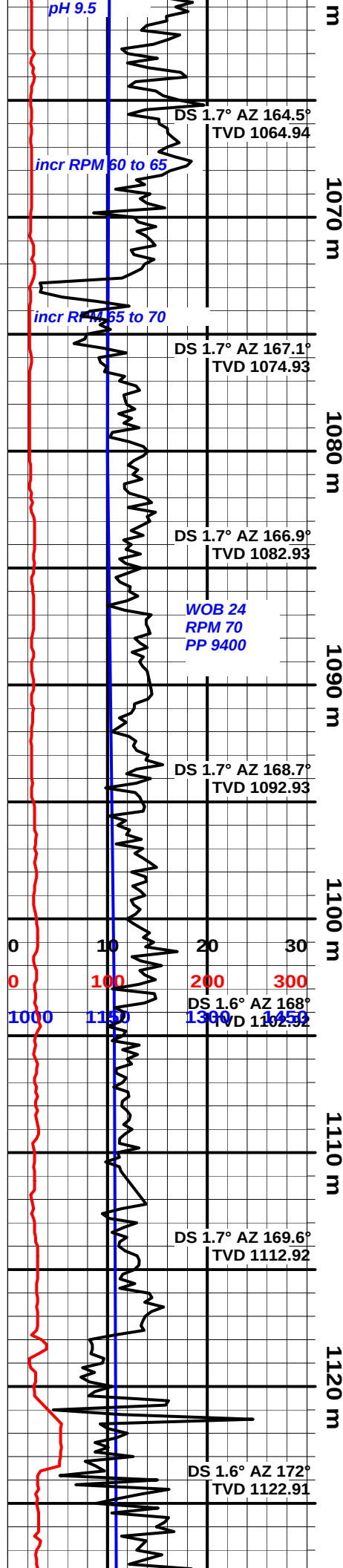
Sltst: lt gy, bge, tab, frm - hd, slly sdy, v dolc, grdg - sltt dol, tt, ns.

Sltst: lt gy, bge, bf, tab, frm - hd, qtz grs in dolc cmt, slly arg, tr pyr, tt, ns.

Dol: tan, lt gy, tr gnsh, micxl - crpxl, tr fragl tex, occ slty Inss, tr pyr, dns, ns, / lt gn shy Inss.

Dol: tan, lt gy, tr gnsh, micxl - crpxl, tr fragl tex,

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Dol: tan, lt gy, tr gnsh, micxl - crpxl, tr fragl tex, occ slty lnss, loc wh specd cht, tr pyr, dns, ns, / lt gn shy lnss.

Sltst: lt gy, bge, lt redsh brn, tab, frm - hd, qtz grs in dolc cmt, slly arg, tr pyr, tt, ns.

Dol: tan, lt gy, tr gnsh, micxl - crpxl, occ slty lnss, tr pyr, dns, ns, / lt gn shy lnss.

Sltst: aa.

Sh: lt gn, tab, dolc, frm.

Dol: lt gy, tan, crpxl, occ slty lnss, tr pyr, tr fragl tex, dns, tr styls.

Sh: gy, mntr dk gy, gn, tab, slly pyric, slly dolc.

Sltst: lt brn, tan, gy, tab, frm, v dolc, grdg - slty dol, slly pyric, slly arg ip, tt, ns.

Dol: tan, lt gy, tr gnsh, micxl - crpxl, occ slty lnss, tr pyr, dns, ns.

Sh: gy, mntr dk gy, frm, tab, dolc, slly pyric.

Dol: tan, lt gy, micxl, blkyl, frm - hd, suc ip, occ slty lnss, occ rmnt ools, tr pyr, dns, ns.

Sltst: aa.

Sh: gy, mntr lt gn, tab, frm, fis, slly dolc.

Dol: wh, tan, lt gy, micxl, blkyl, frm - hd, rr slty lnss, tr pyr, tr styls, dns, ns.

Dol: lt gy, lt - m brn, micxl, rr fragl tex, slty, / occ slty lnss, slly arg ip, styls, dns, ns.

Dol: lt brn, bf, lt gy, micxl, slty, tr dism pyr, tr styls, dns, ns.

Sltst: lt gy, v sl tr gnsh, v sl tr redsh, dolc, qtz, tt, ns.

Dol: lt brn, bf, lt gy, micxl, rmnt fragl tex, ools, slty, styls, rr tr pyr, rr tr wh cht, dns, ns.

Dol: lt brn, lt gy, micxl, rmnt fragl tex, ools, slty, pyric, styls, dns, ns, / slty lnss.

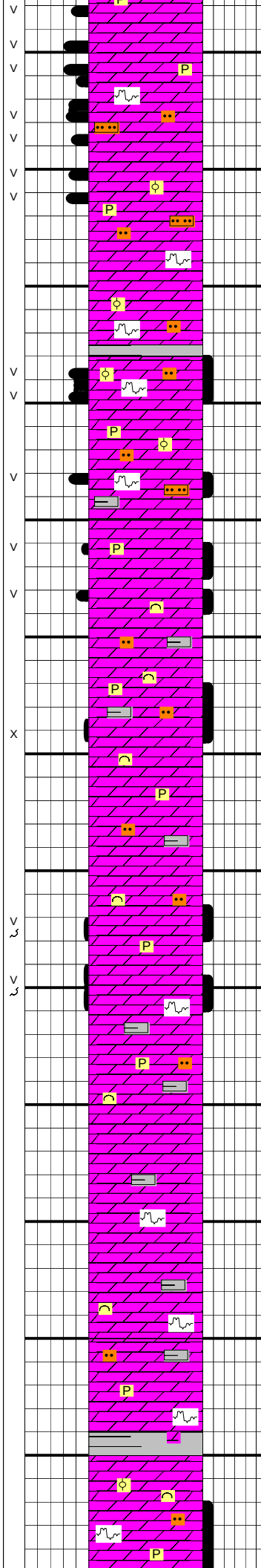
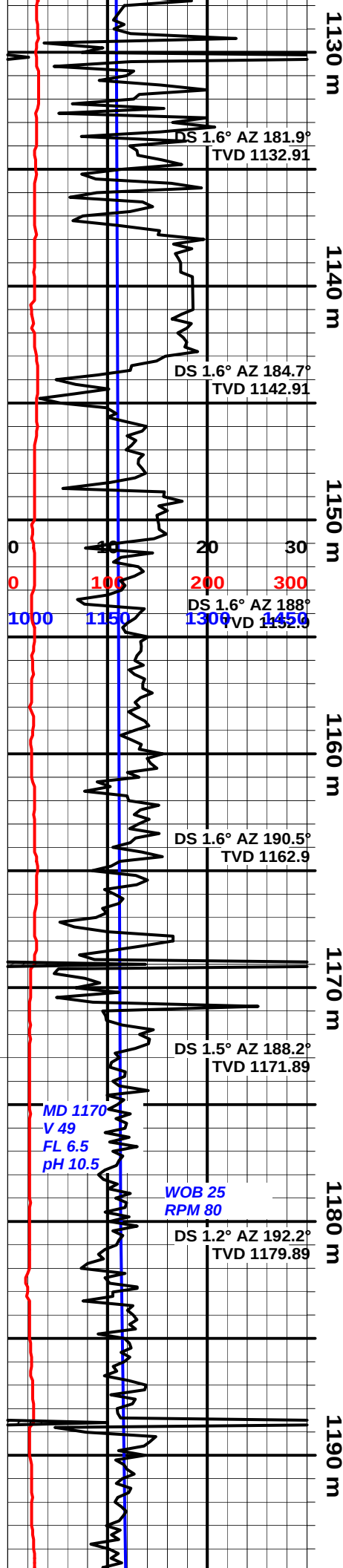
Dol: mot lt brn, lt gy, micxl, fragl tex, ools, tr pyric, styls, slty, tr chty, dns, ns, / slty lnss.

Dol: lt brn, lt gy, micxl, tr rmnt fragl tex, tr ools, tr pyric, styls, slty, rr cht, ptch intxl por 6-8%, ns, / slty lnss.

Dol: lt brn, bf, micxl, tr crpxl, fragl tex, Bracs, tr ools, tr msm cht, tr clr calc xls, pyric, styls, tr shy lnss, ptch intxl & vugy por 6-8%, ns, / tr slty lnss.

Dol: tan, lt brn, lt gy, crpxl, tr micxl, tr rmnt fragl

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tex, tr pyric, styls, lchd vugy por 6-8%, (pos cor?), ns.

Dol: tan, lt brn, lt gy, crpxl, slty, pyric, styls, tr ptch lchd por 8-10% (cors?), predly dns, ns, / tr lt gy slty lns.

Dol: lt - m brn, occly lt gy, crpxl, occ rmnt fragl tex, pos ools?, slty, styls, tr pyric, ptch lchd vugy por 8-10% (cors?), predly dns, ns, / tr lt gy slty lns.

Dol: tan, lt brn, micxl - crpxl, tr rmnt fragl tex, ools, slty, styls, tr ptch lchd vugy por 6-8%, predly dns, ns.

Dol: bf, tan, lt brn, crpxl - micxl, tr rmnt fragl tex, ools, tr pyric, styls, slty, tr ptch lchd vugy por 6-8%, predly dns, ns, / rr slty & shy lns.

Dol: bf, tan, lt brn, crpxl - micxl, tr rmnt fragl tex, ools, tr pyr, tr styls, slty ip, tr ptch lchd vugy por 3-6%, predly dns, ns, / rr slty & shy lns.

Dol: bf, tan, lt brn, micxl, tr rmnt fragl tex, tr pyr, occ styls, slty lns, tr ptch lchd vugy por 2-4%, predly dns, ns, / rr shy lns.

Dol: bf, tan, lt brn, crpxl - micxl, tr pyr, occ styls, mostly dns, ns.

Dol: bf, tan, lt brn, crpxl - micxl, tr rmnt fragl tex, ools, tr pyr, occ styls, ss, tr ptch lchd vugy por tr-2%, predly dns, ns, / rr shy lns.

Dol: bf, tan, lt brn, crpxl - micxl, tr pyr, occ styls, ss, tr ptch lchd vugy & intxl por tr-2%, predly dns, ns, / rr shy lns.

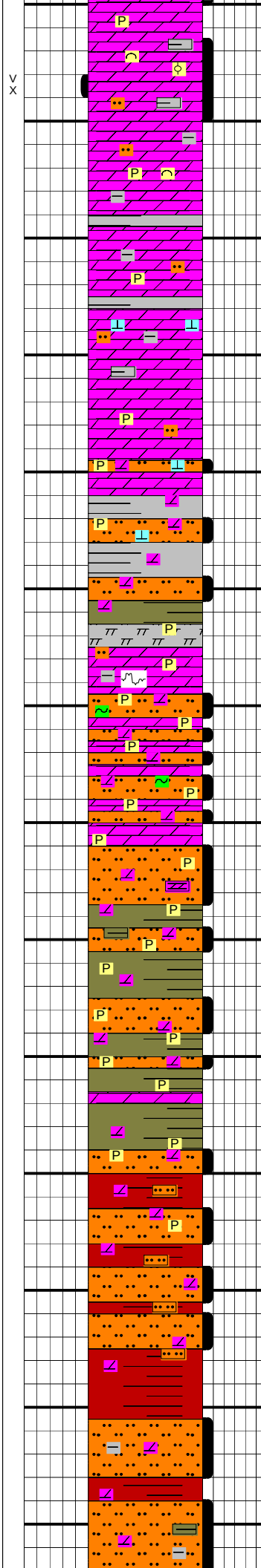
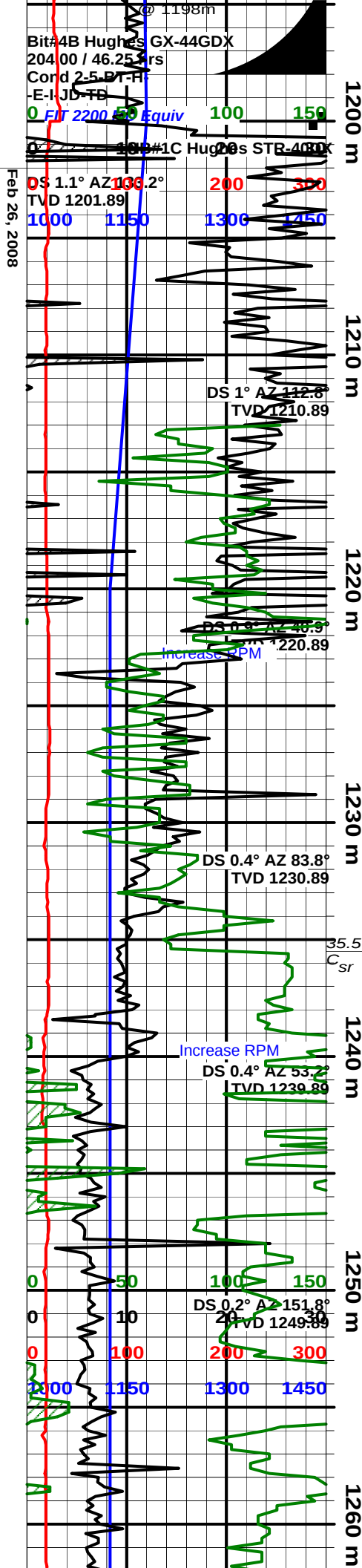
Dol: bf, tan, lt brn, crpxl - micxl, tr pyr, occ styls, tr slty, predly dns, ns, / rr lt gn shy lns.

Dol: bf, tan, lt brn, crpxl - micxl, tr pyr, occ styls, tr slty, occ rmnt fragl tex, predly dns, ns, / rr gy shy lns.

Dol: bf, tan, lt brn, crpxl - rr micxl, tr pyr, occ styls, tr slty, predly dns, ns, / rr gy shy lns.

Sh: gy, gn, tab, frm, v dolc, grdg - arg dol.

Dol: bf, tan, lt brn, micxl, tr pyr, rmnt fragl tex, occ ools, occ styls, tr slty, predly dns, ns, / rr gy shy lns.



Dol: bf, tan, lt brn, micxl, tr pyr, fragl tex, occ ools, occ styls, tr slty, tr ptch 0-2% intxl, vugy por, predly dns, ns, / rr gy shy lnss.

Dol: bf, tan, lt brn, micxl, tr pyr, fragl tex, occ styls, tr slty, loc arg strgs, ns, / rr gy shy lnss.

Dol: bf, lt brn, lt gy, micxl - crpxl, tr pyr, occ styls, tr calcs ptchs, slly slty, loc arg strgs, ns, / rr gy shy lnss.

Dol: bf, brn, lt gy, crpxl, arg - mrly ip, slty, tr dism pyr, / lt - m gy shy lnss.

Sltst: lt gy, dolc, qtz, tr calcs, tr pyric, tt, ns.

Dol: tan, crpxl, dns, ns.

Sh: lt - m gy, gnsh, blkly, dolc.

Sltst: lt gy, dolc, qtz, tr calcs, tr pyric, tt, ns.

Sh: lt - m gy, gnsh, blkly, dolc.

Sltst: lt gy, dolc, qtz, tt, ns.

Sh: gn, gy, blkly - plty, dolc.

Mrlist: m - dk gy, dolc, dism pyr.

Dol: lt - m brn, lt gy, crpxl, styls, tr pyric, arg, slty, dns, ns.

Sltst: lt gy, dolc, qtz, dism pyr, rr glau, tt, ns.

Dol: tan, lt brn, crpxl, pyric, dns, ns.

Sltst: lt gy, dolc, qtz, dism pyr, rr glau, tt, ns.

Dol: tan, lt brn, crpxl, tr pyric, dns, ns.

Sltst: lt gy, dolc, qtz, gn shy lnss, dism pyr, tt, ns, / intspd gn sh.

Sh: gn, plty, dolc, slty, dism pyr, / intspd sltst.

Saline River 1235.5m MD
(TVD: 1234.39) (SSL: -982.29)

Sh: gn, gy, blkly, dolc, slty, dism pyr, / intspd sltst.

Sltst: lt gy, dolc, arg, qtz, pyric, tt, ns, / intspd sh.

Sltst: lt gy, dolc, slly arg, qtz, pyric, tt, ns.

Dol: lt - m brn, gy, crpxl, slty, arg, dns, ns.

Sh: gn, m gy, tr red, plty - blkly, dolc, tr dism pyr.

Sh: red, gn, plty, dolc, / slty lnss.

Sltst: pk, lt gy, dolc, slly arg, qtz, tr dism pyr, tt, ns.

Sh: red, gn, plty, dolc, / slty lnss.

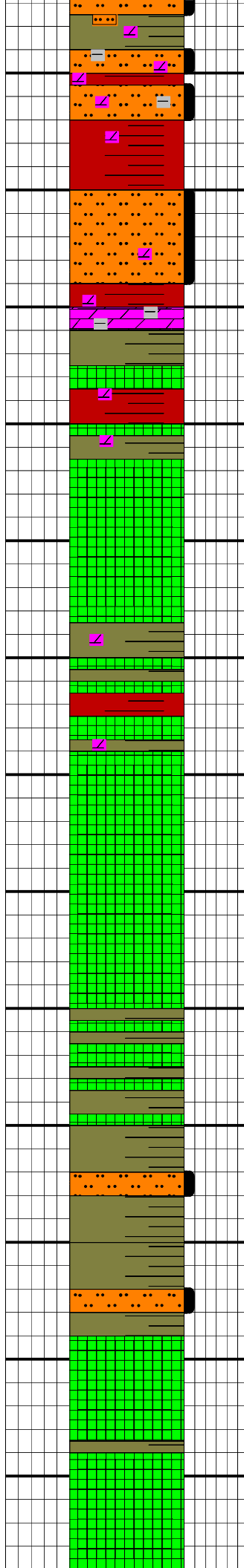
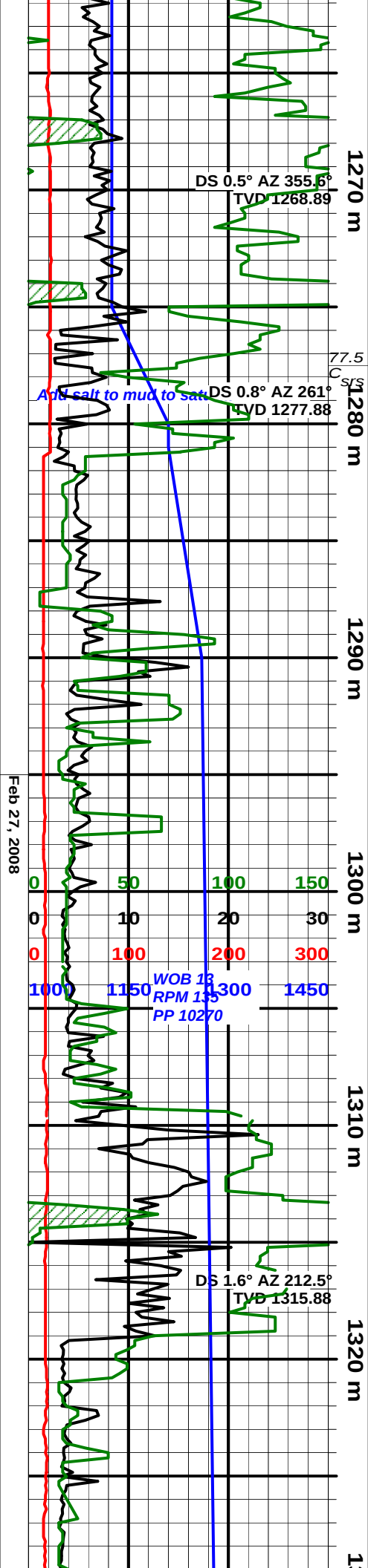
Sltst: lt gy, pk, dolc, qtz, slly arg, shy lnss, tt, ns.

Sh: red, gn, m gy, plty, dolc, tr micas, / slty lnss.

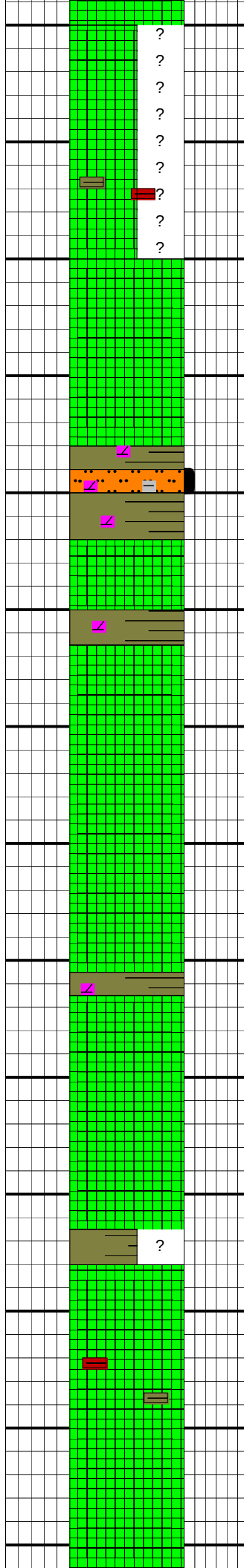
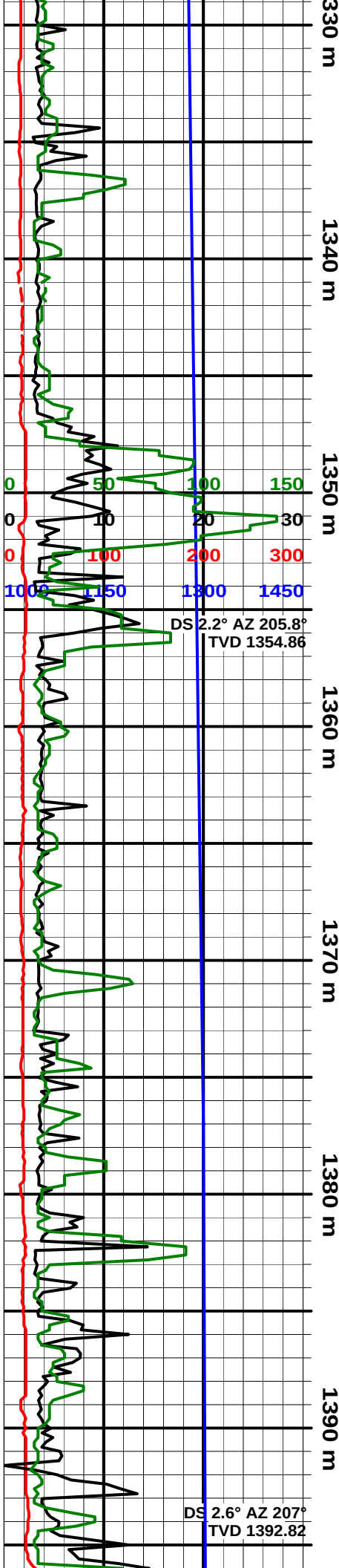
Sltst: lt gy, redsh, dolc, slly arg, tr shy lnss, tt, ns.

Sh: red, mar, gn, plty - blkly, dolc, occly micas.

Sltst: lt gy, redsh, dolc, slly arg, qtz, tt, ns, / intspd sh lnss.



- Sh:** gn, red, mot ip, plty, dolc, occlly micas, / intspd sltst lnss.
- Sltst:** lt gy, redsh, dolc, slly arg, qtz, rr dk specs, tt, ns.
- Sh:** red, gn, mar, plty, dolc, slty, occlly micas.
- Sltst:** lt gy, redsh, dolc, slly arg, qtz, tt, ns.
- Dol:** dk brn, crpxl, slly arg, dns, ns.
- Sh grn:** lt gn, red ptchs, tab, sft- frm, slty.
- Saline River Salt MD 1277.5m
TVD 1276.4 m SS -1024.3 m**
- Sa:** trnsp, lt gy, tab frags, micxl, sft, also impure / shy intbeds.
- Sh red:** red, orng, tab, frm, slly slty, dolc.
- Sa:** trnsp, tab, micxl, sft, apps eroded.
- Sh grn:** lt gn, mnrr dk gn, tab - fis, dolc, aa.
- Sh :** pale red, orng, tab, gn ptchs, sft, aa.
- Sa:** trnsp, rdd frags, sft, eroded edges.
- Sa:** trnsp, pale orng, rrd frags, eroded edges, aa.
- Sa:** trnsp, pale orng, rrd frags, eroded edges, aa.
- Sh grn:** lt gn, frm - sft, tab, occ red ptchs, occ slty strgs.
- Sa:** trnsp, lt brn, aa.
- Sltst:** lt brn, pale red, orng, blkly, frm - sft, slly dolc, tt, ns.
- Sh grn:** lt gn, tab, sft, occ red ptchs, occ sltst strgs.
- Sltst:** lt gy, lt brn, blkly, frm, dolc, tt, ns.
- Sh grn:** lt gn, lt gy, tab, sft, / occ slty strgs.
- Sa:** trnsp, lt brn, rrd frags, v sft, eroded edges.
- Sh grn:** lt gn, lt gy, mnrr red ptchs, sft, blkly, aa.
- Sa:** lt gy, trnsp, mnrr lt brn, c rrd frags, eroded edges, sft, as previous.



Sa: lt gy, trnsp, tab, rdd frags, eroded edges.

mostly sticky sh in spls?

Sa: lt gy, trnsp, tab, eroded edges.

Sa: hal, clr, trnsl, xln, partially dissolved.

Sh: mot gn, red, orng, mar, blkly - plty, dolc.

Sltst: lt gy, redsh, dolc, slly arg, qtz, tt, ns.

Sh: mot gn, red, mar, orng, plty - blkly, dolc.

Sa: hal, lt gy, off wh, trnsl, xln, eroded edges.

Sh: gn, red, plty, dolc.

Sa: hal, clr, trnsl, xln, eroded edges.

Sa: hal, clr, trnsl, xln, eroded edges.

Sa: hal, clr, occly redsh, trnsl, xln, eroded edges.

Sh: gn, red, plty, dolc.

Sa: hal, clr, occly redsh, trnsl, xln, eroded edges.

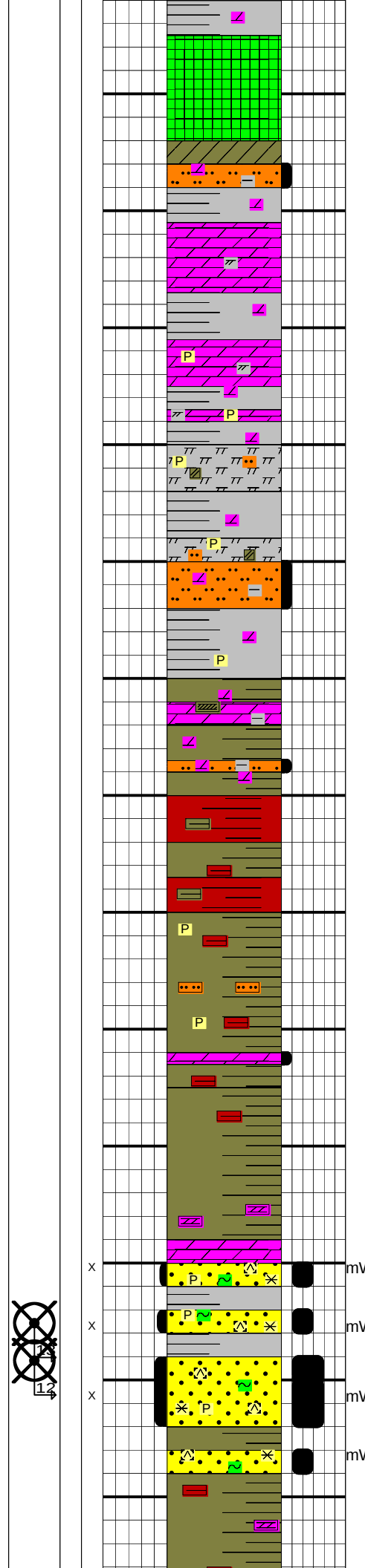
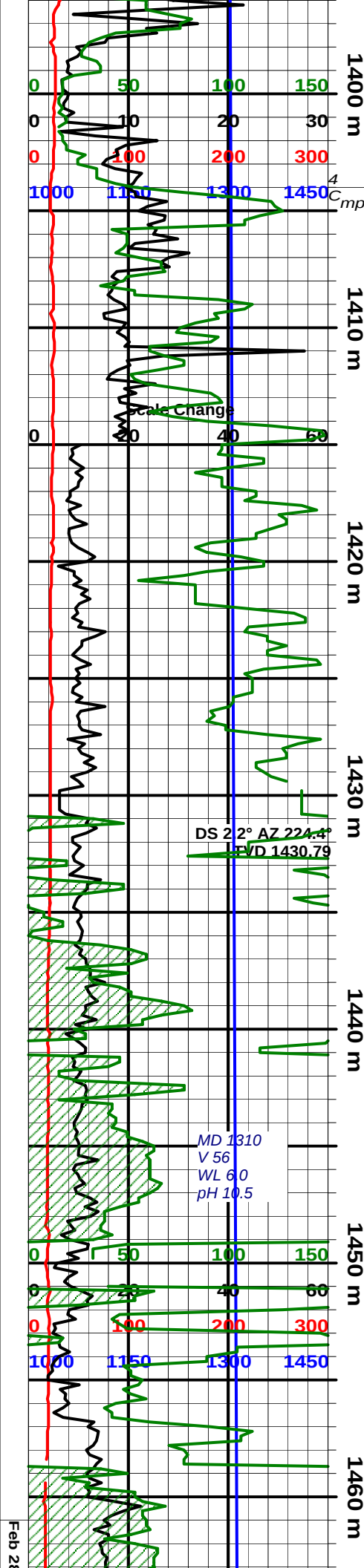
Sa: hal, clr, occly redsh, trnsl, xln.

Sh: gn, plty, dolc.

Sa: hal, clr, lt gy, trnsl, xln, / shy Inss.

Sa: hal, clr, trnsl, xln, tr red & gn shy Inss.

Sa: hal, clr, tr redsh, trnsl, xln.



Sh: m gy, tr gn & red, blkly, dolc.

Sa: hal, clr, trnsl, lt gy, xln.

Anhy: lt gy, lt brn, micxl, dns.

Sltst: lt gy, redsh, dolc, sly arg, qtz, tt, ns.

Mount Cap 1404m MD
(TVD: 1402.82) (SSL: -1150.72)

Sh: m gy, tr gn, tr red, plty.

Dol: m brn, crpxl, mrly, dns, ns.

Sh: m gy, plty, dolc.

Dol: m brn, crpxl, mrly, tr pyric, lamd, dns, ns.

Sh: m gy, gn, tr red, plty, dolc.

Dol: m brn, crpxl, mrly, tr pyric, lamd, dns, ns.

Sh: m gy, gn, tr red, plty, dolc.

Mrlst: lt - m brn, dolc, anhyic, slty, tr pyric, lamd, dns.

Sh: m gy, tr gn, tr red, plty - blkly, dolc - mrly.

Mrlst: lt - m brn, dolc, anhyic, slty, tr pyric, lamd, dns.

Sltst: lt gy, redsh, tr gnsh, dolc, sly arg, qtz, tt, ns.

Sh: m gy, gn, red, plty - blkly, dolc, pyric.

Sh: mot gn, red, m gy, plty, dolc.

Dol: lt - m brn, crpxl, arg, anhy lns, dns, ns.

Sh: mot gn, red, m gy, plty, dolc.

Sltst: lt gy, redsh, dolc, sly arg, qtz, tt, ns.

Sh red: pale red, red, gn ptchs, sft - frm, fis, aa.

Sh grn: lt gn, red, mnr gy ptchs, tab - fis, sft - frm.

Sh grn : lt gn, red, mnr gy ptchs, tab - fis, sft - frm.

Sltst: lt gy, bge, blkly, frm - hd, qtz grs in dolc cmt, sly pyric, tt, ns.

Dol: lt brn, mot bf, micxl, tab, frm - hd, occlly slty, rr rmnt fragl tex, dns, ns.

Sh grn: lt gn, red, mnr gy ptchs, tab - fis, sft - frm.

Dol: lt brn, mot bf, tab, micxl mt, also rmnt fragl tex, ools?, also occ dk mic lams, algal?, sly slty ip, dns, ns.

Ss: lt gy, offwh, trnsp, f gred, rng v f - occ m, sbrd - rd, w - m srt, frm - fri, com loose grs, cln, qtz grs in sils cmt, com glau, occ dk mnrls, tr pyr, some sec qtz ovgrths, ptch 2-6% intgran por, ns.

Ss: lt gy, offwh, trnsp, f gred, rng v f - occ m, sbrd - rd, w - m srt, frm - fri, com loose grs, cln, qtz grs in sils cmt, com glau, occ dk mnrls, tr pyr, some sec qtz ovgrths, ptch 3-7% intgran por, ns.

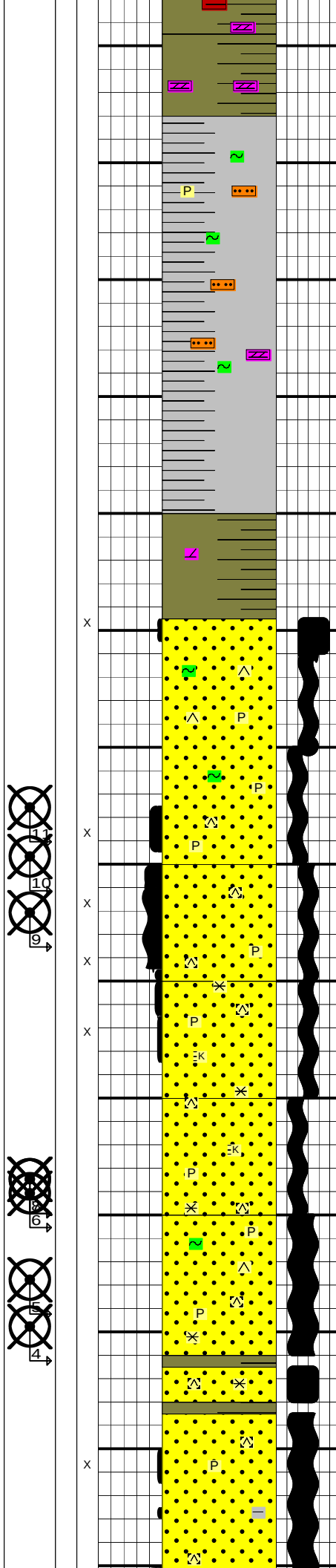
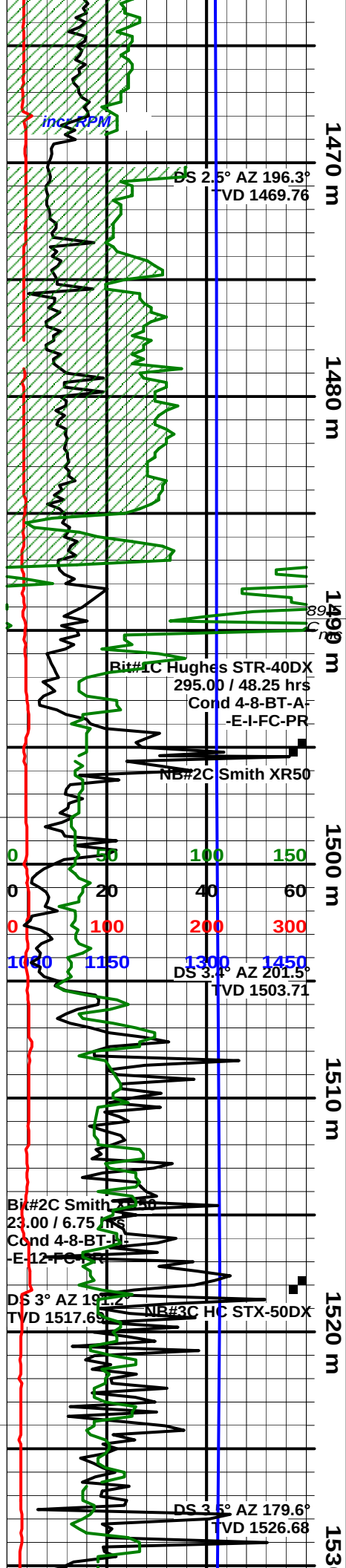
Ss: aa.

Sh grn: lt gn, mnr red ptchs, fis, frm - sft, flat luster.

3, 2008

Feb 29, 2008

Mar 1, 2008



Sh grn: lt gn, mntr red ptchs, fis, frm - sft, flat luster.

Dol: lt brn, mot bf, tab, micxl mtx, also rmnt fragl tex, slly slty ip, dns, ns.

Sh: gy, gnsh gy, fis, frm, slly slty, / occ sltst lams, com gn & blk glau, occ pyr, grdg - gn sh.

Sh: gy, gnsh gy, fis, frm, slly slty, / occ dolc lams, com gn glau, occ pyr, grdg - gn sh.

Sh : gy, gnsh gy, tab, frm, occ red ptchs.

Sh: gn, occly red, plty, dolc.

Mount Clark 1489.5m MD
(TVD: 1488.23) (SSL: -1236.13)

Ss: clr, qtzs, f - m gred, scat c greds, sils, v glau ip, tr pyric, qtz ovghs, sb rdd - sb ang, py srt, rr tr ptch intgran por 2-4%, predly no vis por, ns.

Ss: clr, qtzs, v f - m gred, scat c grs, sils, v glauc ip, tr pyric, qtz ovghs, sb ang - sb rdd, modly srt, tt, ns.

Ss: clr, qtzs, v f - f gred, scat m grs, qtzs, hd - fri, var sils cmt, occ glau, tr pyric, occ qtz ovghs, sb ang - sb rdd, m - w srt, ptch 2-4% intgran por in zn / w rdd grs, remainder tt, no shows.

Ss: clr, wh, qtzs, f - m gred, sbang - sbdd, rr w rdd, w srt, hd - fri, mostly qtz grs in sils cmt, occ sec qtz ovghs, tr pyr, abnt lse grs, ptch 5-10% intgran por in zns / w rdd grs, some tt, v hd, no shows.

Ss: clr, wh, qtzs, f - m gred, rr c, sbang - sbdd, rr w rdd, m - w srt, hd - fri, mostly qtz grs in sils cmt, occ sec qtz ovghs, tr pyr, com lse grs, ptch tr intgran por, some tt, v hd, no shows.

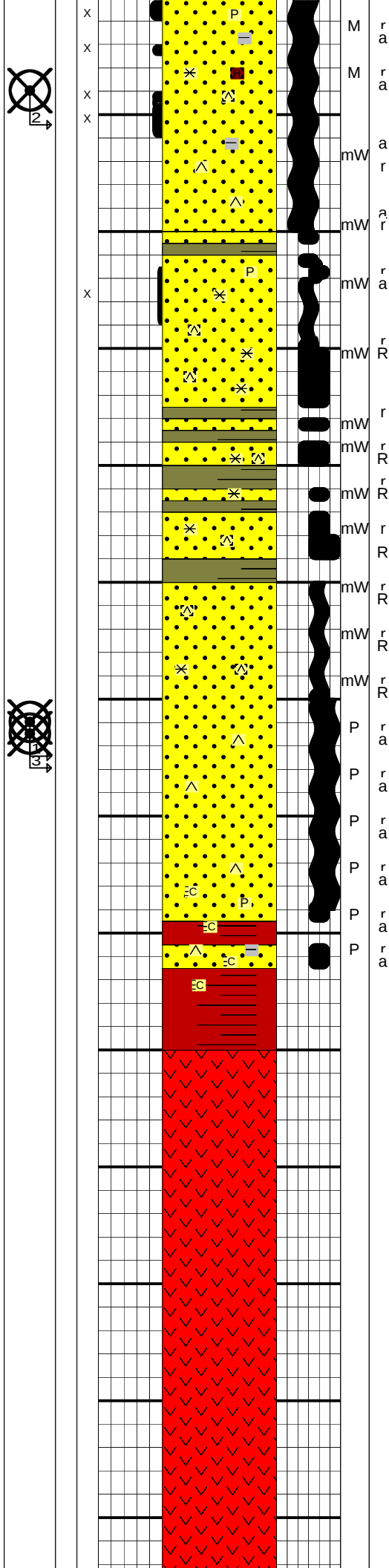
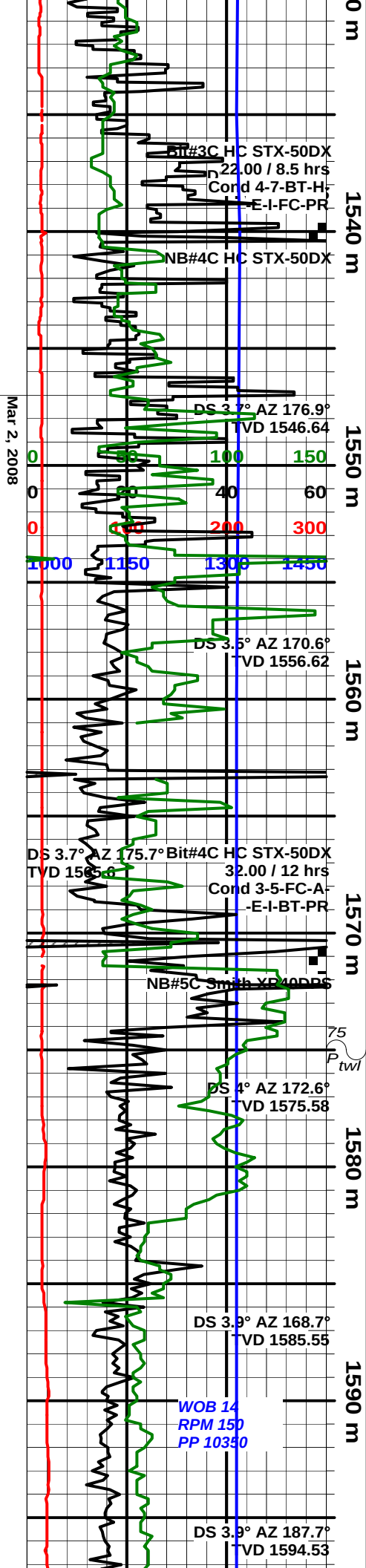
Ss: clr, wh, qtzs, v f - f gred, rr m, sbang - sbdd, w srt, hd - fri, mostly qtz grs in sils cmt, mntr wh cly mtx, occ sec qtz ovghs, tr pyr, com lse grs, tr intgran por, mostly tt, v hd, no shows.

Ss: clr, wh, qtzs, v f - f gred, occ m grs, sils, qtz, tr pk grs, tr pyric, rr glau, qtz ovghs, sb rdd - sb ang, modly srt, tt, ns.

Ss: clr, wh, qtzs, f - m gred, occ v f grs, sbdd - sbang, w srt, qtzs, frm - fri, tr pyric, occ qtz ovghs, mntr wh cly mtx, mod sils cmt, cln, tr por, mostly tt, ns.

Sh grn: lt gn, alos mntr lt redsh brn, tab, frm - sft.

Ss: clr, wh, also lt redsh brn, qtzs, f - m gred, sbdd - sbang, w - m srt, qtzs, tr pyric, occ qtz ovghs, rr mntr wh cly mtx, mntr amounts red tinge, mod sils cmt, cln, tr por, mostly tt, no shows.



Ss: clr, wh, also lt redsh brn, qtzs, m - f gred, w rrd - sbdd, m srt, qtzs, qtz ovghts, rr mnw wh cly mtz, com ptch red tinge, mod - hd sils cmt, cln, ptch 3-6% intgran por, mostly tt, no shows.

Ss: clr, redsh, qtzs, f - m gred, sils, silly arg, qtz, qtz ovghts, sb ang - sb rdd, modly w srt, sl tr intgran por 3-6%, predly tt, ns.

Ss: clr, wh, also pale orng, f - m gred, occ c flotg qtz grs, sbdd - sbang, w - m srt, qtzs, tr pyric, occ qtz ovghts, rr mnw wh cly mtz, mod sils cmt, cln, tr por, mostly tt, no shows.

Ss: clr, wh, f - m gred, occ c flotg qtz grs, sbdd - w rdd, m - w srt, qtz grs in mod sils cmt, abnt lse grs, occ qtz ovghts, rr mnw wh cly mtz, cln, tr por, mostly tt, no shows.

Sh grn: lt gn, gn, fis, frm - hd, aa.

Ss: clr, wh, m gred, / ptch c - v c flotg qtz grs, sbdd - rdd, m srt, qtz grs in hd sils cmt, occ qtz ovghts, rr mnw wh cly mtz, mostly tt, no shows.

Sh grn: lt gn, gn, fis, frm - hd, aa.

Ss: clr, wh, orng, m gred, / ptch c - v c flotg qtz grs, sbdd - rdd, m - w srt, qtz grs in hd sils cmt, occ qtz ovghts, com lse grs, mostly tt, no shows.

Ss: clr, silly yel, silly pk, qtzs, m - v c gred, sils, qtz, qtz ovghts, sb rdd - sb ang, py srt, tt, ns.

Ss: clr, redsh, m - v c gred, sils, arg, qtz, alt chlor, tr pyric, sb rdd - sb ang, py srt, tt, ns.

Sh: red, blkly, sft, H2O sensitive, sdy, alt chlor.

Ss: clr, redsh, m - v c gred, sils, arg, qtz, alt chlor, tr pyric, sb rdd - sb ang, py srt, tt, ns.

Sh: red, blkly, sft, H2O sensitive, com alt chlor.

Sh: red, v micas - schisty, sft, H2O sensitive.

Tweed Lake 1575m MD
(TVD: 1573.58) (SSL: -1321.48)

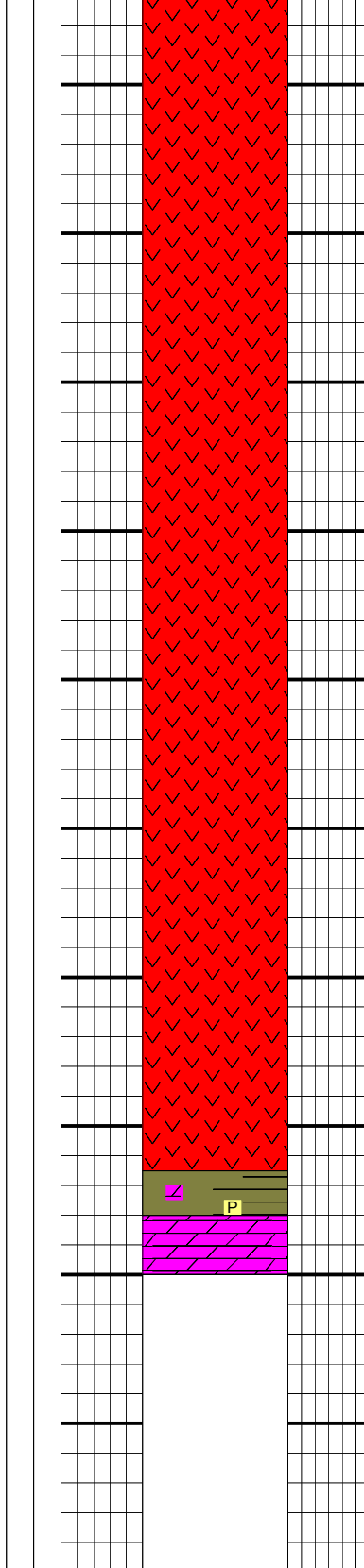
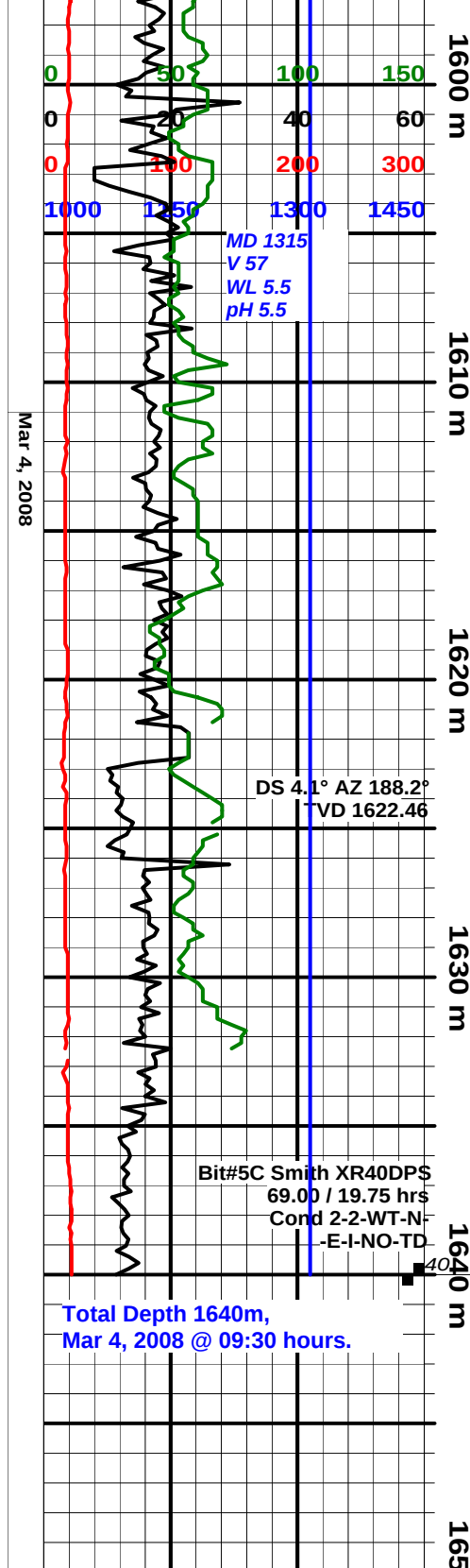
Basalt: (pos diabase?), dk gy, specd, occlly redsh, gn phen (pos olvn or chlor?), elongated trnsp xls, fe oxide stng, pos alt.

Basalt: (pos diabase?), dk gy, specd, occlly redsh, gn phen (pos olvn or chlor?), elongated trnsp xls, fe oxide stng, pos alt.

Basalt: (pos db?), dk gy, specd, occlly redsh, gn phen (chlor?), elongated trnsp xls, fe oxide stng, pos alt.

Basalt: (pos db?), dk gy, specd, occlly redsh, gn phen (chlor?), elongated trnsp xls, fe oxide stng, pos alt, also apps tuffs?

Basalt: (pos db?), dk gy, specd, gn phen (chlor?),



/ altn corona?), elongated trnsp xls, fe oxide stng, loc wh acic xls, actinolite?, pos alt.

Basalt: (pos db?), dk gy, specd, gn phen (chlor?, / altn corona?), elongated trnsp xls, fe oxide stng, loc wh acic xls, actinolite?, pos alt.

Basalt: (pos db?), dk gy, dk gn, specd, gn phen (chlor?, / altn corona?), elongated trnsp xls, fe oxide stng, qtz, loc wh acic xls, actinolite?, loc phyl tex, pos alt.

Basalt: (pos db?), dk gy, dk gn, specd, gn phen (chlor?, / altn corona?), elongated trnsp xls, fe oxide stng, qtz, loc wh acic xls, actinolite?, loc phyl?, schs? tex, apps alt.

Rhy?: mot gy, specd, blkgy, frm - hd, qtz xls in brnsh gy xln mtz, com chlor, accic xls, pos wdd tuff appearance, occ alt coronas, occ dk mnrls, dns.

Basalt: dk gy, occlly red, specd, gn phen (chlor?), elongated trnsp xls, fe oxide stng, alt appearance.

Basalt: dk gy, occlly red, specd, gn phen (chlor?), scat trnsp elongated xls, fe oxide stng, rr tr pyr, alt appearance.

Basalt: dk gy, occlly red, specd, gn phen (chlor?, bndd ip), scat trnsp elongated xls, fe oxide stng, rr tr pyr, alt appearance.

Rhyolite?: grdg to basalt?, lt - dk gy, specd, occlly redsh, gn phen (chlor?), elong pk xls (K-feld?), fe oxide stng, alt appearance.

Sh: gn, red, plty, dolc, dism pyr.

Dol: bf, lt brn, tr redsh, crpxl, tr micxl, dns, ns.

**Well Information**

Operator: Petro Canada Oil & Gas
Well Name: Petro-Canada Blackwater Kwijika M-59
Location: M-59
UWI: 300M596440122300
Pool: _____
Field: Wildcat
Province / State: NWT Central MacKenzie
Country: Canada

Elevations

Reference: Sea Level **Ground:** 245.9 m
Cut(-) / Fill(+): _____ **Kelly Bushing:** 252.1 m
K.B. to Ground: 5.7 m **Casing Flange:** _____ m

Total Depth

Measurement Type	Measured Depth	True Vertical Depth
Drillers TD (Tally)	1640 m	1638.42 m
Drillers TD (Strap or SLM)	1641.3 m	1639.72 m
Loggers TD	1641 m	1639.42 m

Well Co - Ordinates

	Longitude	Latitude	Well Type:
Surface Co-Ordinates:	122 40' 56.8" W	64 38' 45.3"	Straight
Int. Casing Co-Ordinates:			NS: EW:
Bottom Hole Co-Ordinates:			NS: EW:
UTM Surface Co-Ordinates:	Northing: 7168837.91	Easting: 515172.73	

Well Summary

Spud Date: Feb 11, 2008 @ 15:30hrs
TD Date: Mar 4, 2008 @ 09:30hrs
Rig Release Date: _____
Contractor: Akita Sahtu Rig #51

Drilling Fluid Summary

Fluid Type	From	To
KCL Polymer	0 m	1640 m

Casing Summary

Type	Hole Size	Casing Size	Landed
Surface	311 mm	244.5 mm	348 m
Intermediate	222.2 mm	177.8 mm	1198 m

Work Schedule

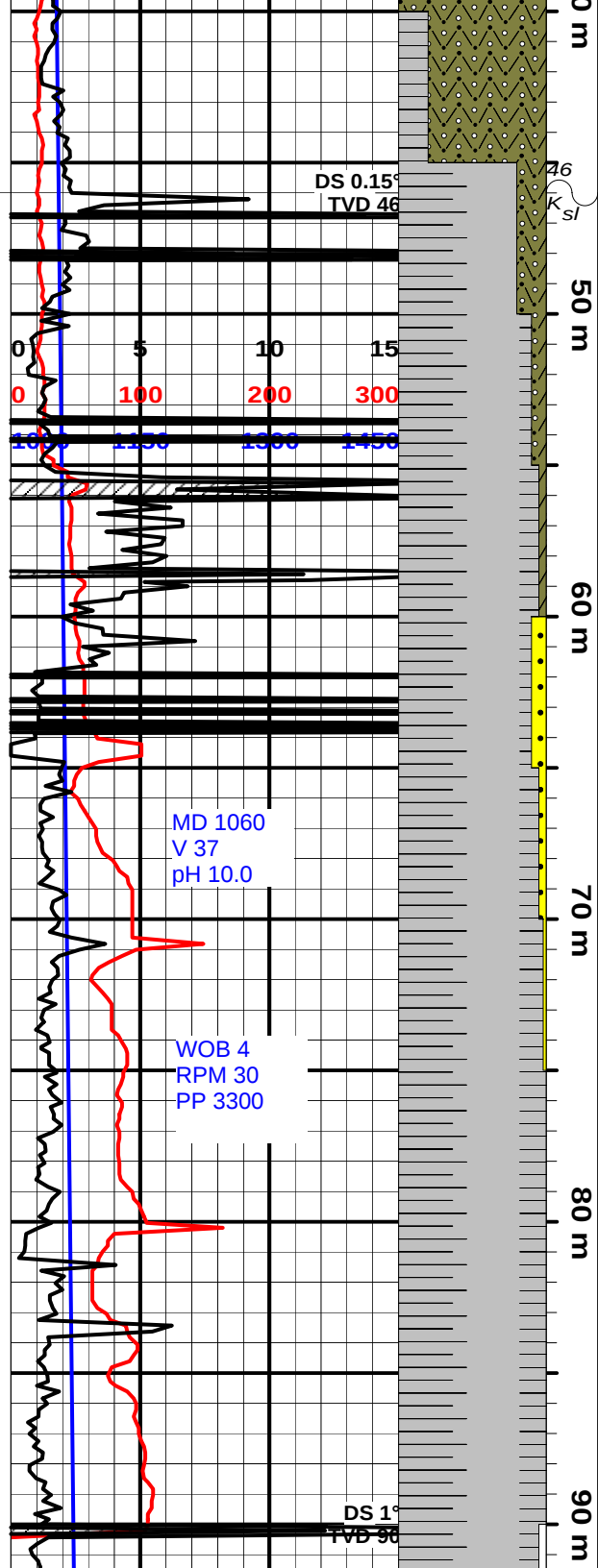
Contractor	Geologist	Log Interval	Dates Logged
Timmons / DMA Geological	G.Timmons / G. Deon, P.Geol	0 m - 1640 m	Feb 10, 2008 - Mar 4, 2008

Remarks

Petro Canada Blackwater M-59
Northwest Territories

Drilling Progress				Lithology	Measured Depth	Sidewall Core	MDT Data	Porosity Type	Oil Show	Porosity (%)	Interpreted Lithology	Grain Size (mm)	Rounding	Lithology Description		Mud Gas									
Mud Density (kg/m3)	Total Gas Out (units)	Drill Rate (min/m)	Gamma Ray (m)											Sampling begins @ surface in the Pleistocene Drift	NC5 (Normal Pentane) (%)	IC5 (Iso Pentane) (%)	NC4 (Normal Butane) (%)	IC4 (Iso Butane) (%)	C3 (Propane) (%)	C2 (Ethane) (%)	C1 (Methane) (%)				
1000	1150	1300	1450	Quaternary (SSL: 252.10)	0	100	200	300	1000	1150	1300	1450	Glac Till: Ss, vcol, m gred - pbls, sb rdd, py srt, uncons qtz, pk fld, lit grnt frags, tr pyr, hornbd, chlor, occly sft cly mtx (water soluble), no vis por, ns.	0.001	10	0.001	10	0.001	10	0.001	10	0.01	100	0.01	100
Conductor pipe set at 20 m																									
NB#1A Smith GF5114B																									
10 m																									
20 m																									
30 m																									
40 m																									

Feb 12, 2008



0 m

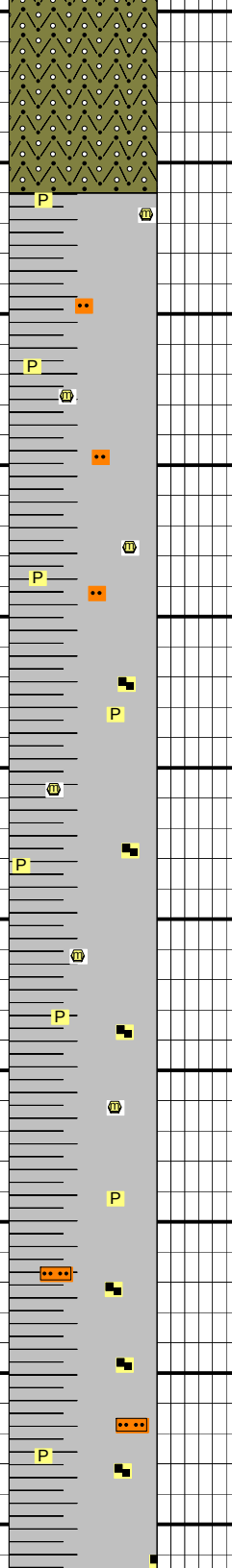
50 m

60 m

70 m

80 m

90 m



Glac Till: Ss mostly uncons, aa, / abnt sticky cly coating grs.

Slater River 46m MD
(TVD: 46m) (SSL: 205.6m)

Sh: m gy, gy, tab - blk, sft - frm, sly pyric, sly sly ip, tr micas, flat luster.

Sh: m gy, gy, tab - blk, sft - frm, sly pyric, sly sly ip, tr micas, flat luster.

Sh: gy, tab - plty, frm, sly micas, occ pyr, flat luster, aa.

Sh: gy, tab - plty, frm, sly micas, loc carb flks, occ pyr, flat luster, tr Inoc frags, aa.

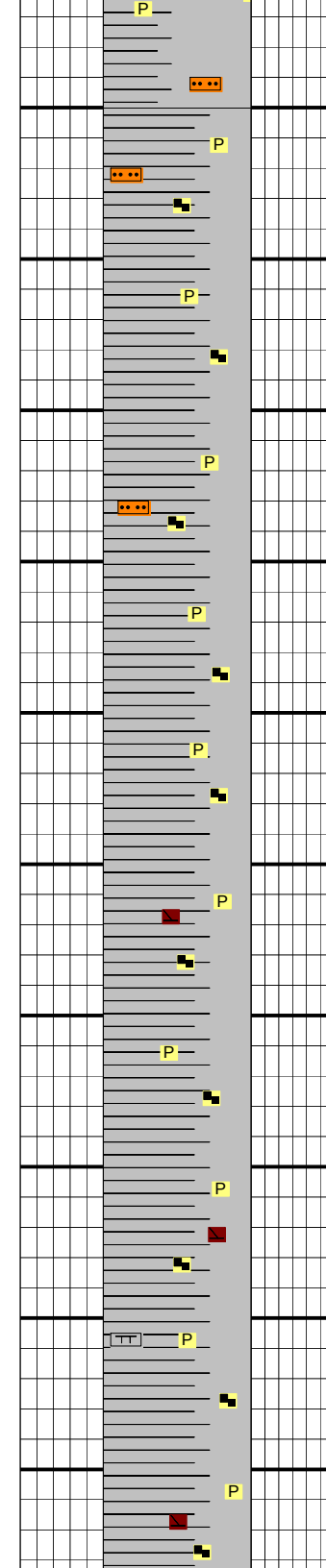
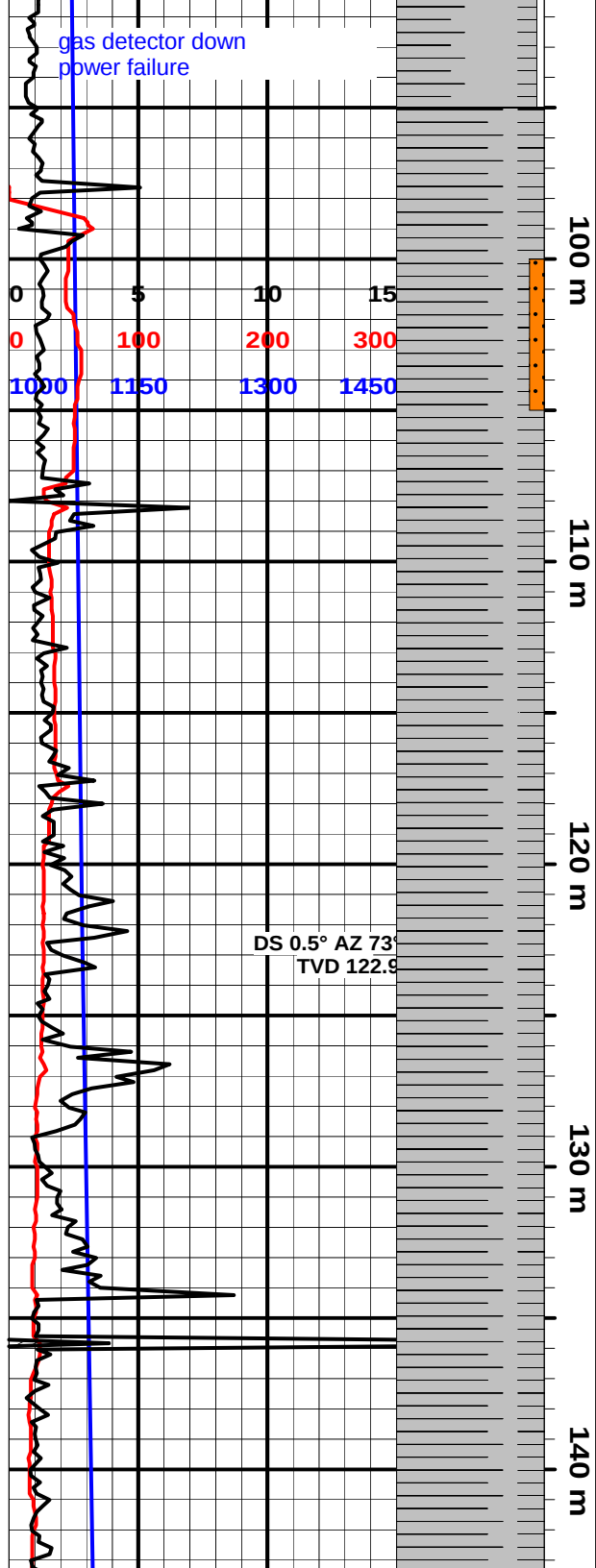
Sh: gy, tab - plty, frm, sly micas, loc carb flks, occ pyr, flat luster.

Sh: gy, tab - plty, frm, sly micas, carb, occ dism pyr, flat luster.

Sh: gy, tab - plty, frm, sly micas, carb, occ dism pyr, flat luster, occ pyrd worm burs.

Sh: gy, tab - plty, frm, sly micas, carb, occ dism pyr, flat luster, occ lt brn sltst strgs.

Sh: aa.



Sh: gy, tab - plty, frm, silly micas, carb, occ dism
pyr, flat luster, occ lt brn sltst strgs.

Sh: dk gy, tab - blkly, pyric, carb flks, rr sltst strgs,
brn, sils, qtz, tt, dd o strn?

Sh: dk gy, tab - plty, pyric, carb flks.

Sh: dk gy, blkly, occly plty, pyric, carb flks, / brn
sltst strgs.

Sh: dk gy, blkly, sft, pyric, carb flks.

Sh: dk gy, blkly, sft, pyric, carb flks.

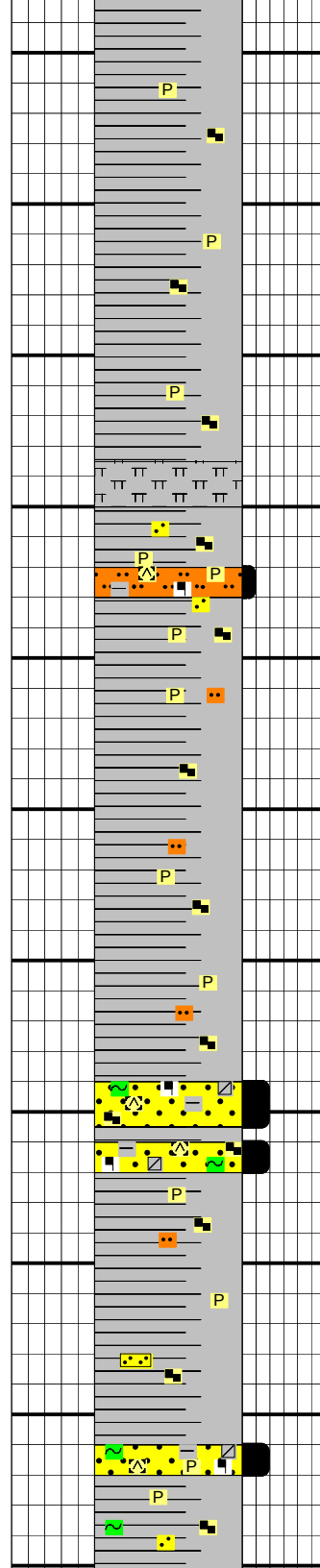
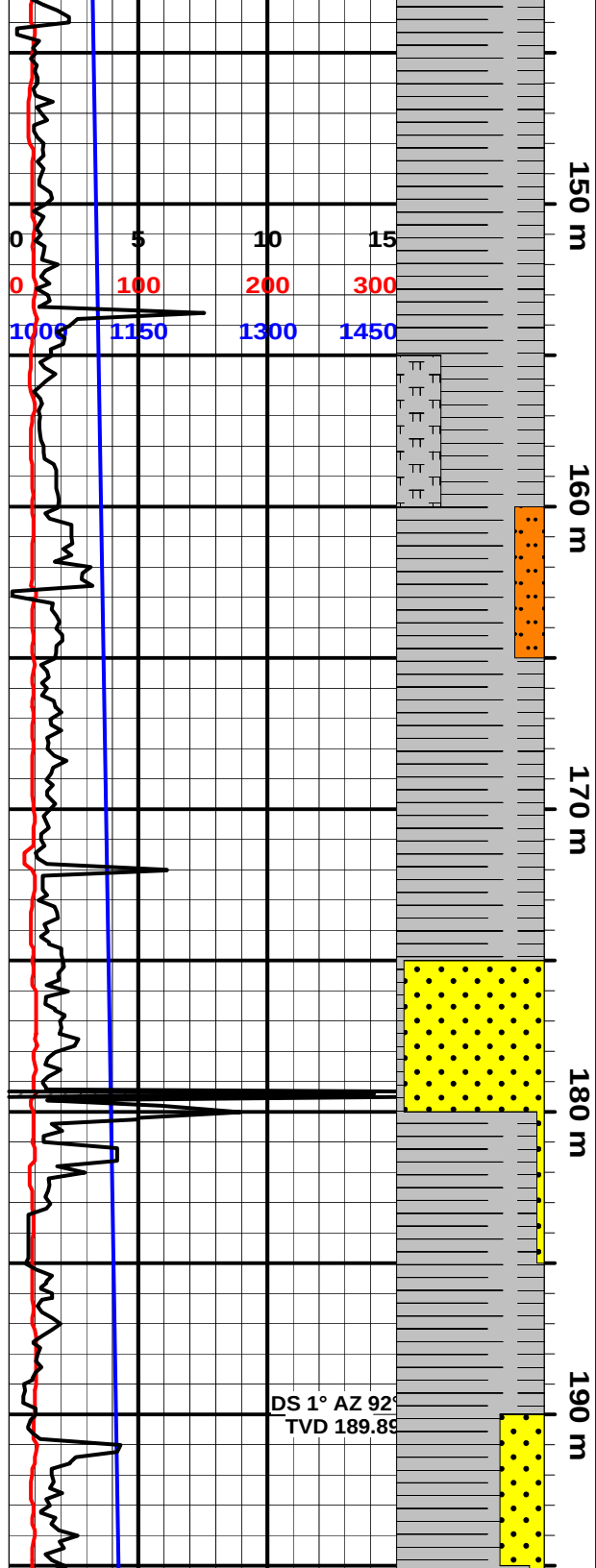
Sh: m - dk gy, blkly, sft, tr pyric, carb flks, pos sid.

Sh: dk gy, blkly - plty, tr dism pyr, carb flks.

Sh: dk gy, blkly, sft, tr pyric, tr carb flks, tr sid?.

Sh: dk gy, blkly - tab, sft, tr pyric, tr carb flks, / lt
gy brn mrlst frags.

Sh: dk gy, blkly, sft, pyric, sidic, rr carb flks.



W r
W r

W r

Sh: dk gy, blk, sft, tr pyric, carb flks.

Sh: dk gy, blk, sft, tr pyric.

Sh: dk gy, blk - plty, sft, tr pyric, tr carb flks.

Mrst: lt brn, blk, calcs.

Sh: dk gy, blk, sft, pyric, sdy, carb flks.

Sltst: lt gy, sils, arg, qtz, argl grs, dk mnrls, tr pyric, tt, ns.

Sh: dk gy, blk, sft, slty, pyric, carb flks.

Sh: dk gy, blk, sft, slty, pyric, carb flks.

Sh: dk gy, blk, sft, slty, pyric, carb flks.

Ss: lt - m gy, slty - v f gred, sils, arg, qtz, dk mnrls, glauc, argl grs, carb flks, sb rdd, w srt, tt, ns.

Sh: dk gy, blk, sft, slty, pyric, carb flks.

Sh: dk gy, blk, sft, pyric, carb flks, / ss Inss.

Ss: m - lt gy, slty - v f gred, sils, arg, qtz, dk mnrls, glauc, v pyric, argl grs, sb rdd, w srt, tt, ns.

Sh: dk gy, blk, sft, sdy, glauc, pyric, carb flks.

0.01 100

0.01 100

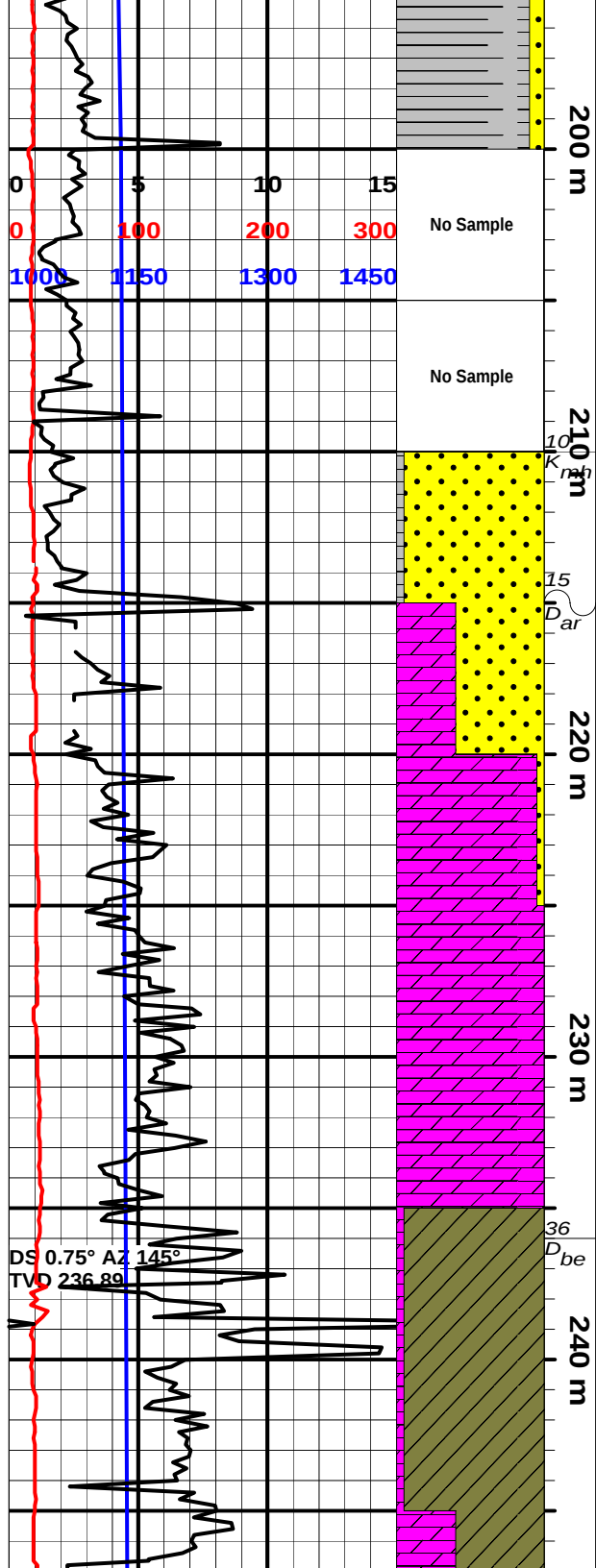
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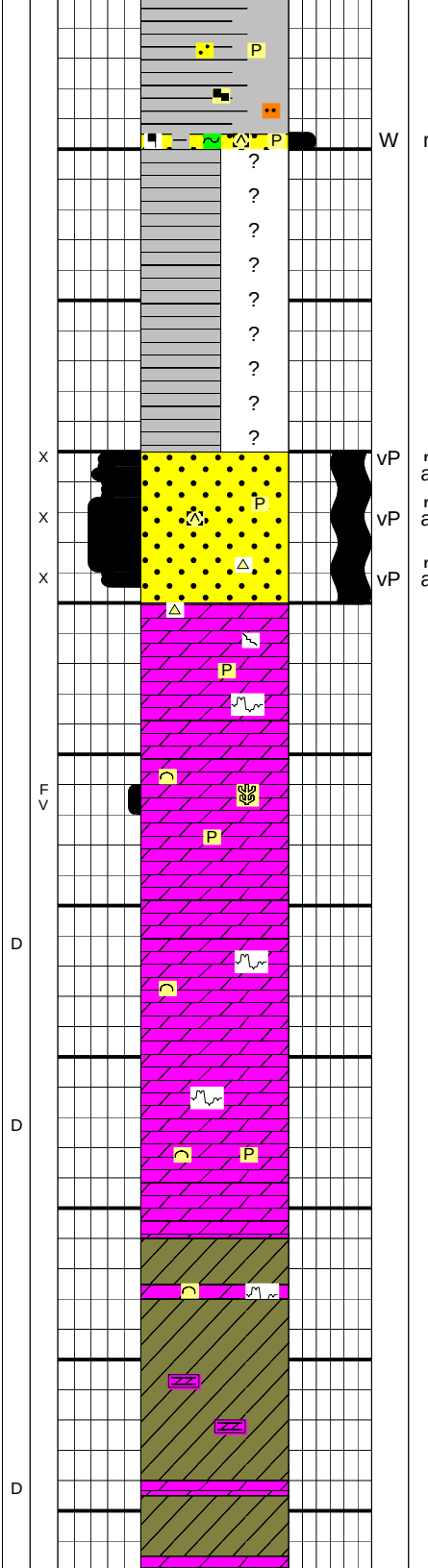
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DS 0.75° AZ 145°
TVD 236.89



Sh: dk gy, blk, sft, slty, sdy, pyric, carb flks.

Ss: lt - m gy, slty - v f gred, sils, arg, qtz, dk mnrls, glauc, pyric, sb rdd, w srt, tt, ns.

No Sample: (Polymer blinding off shaker - caught is all muddy polymer)

No Sample: (Polymer blinding off shaker - caught is all muddy polymer)

Martin House 210m MD
(TVD: 209.99) (SSL: 41.61)

Ss: clr, m gred - pbls, sils, py cons ip?, v pyric ip, (arg matl in sd from water sol sh?), predly qtz, scat lit cht frags, qtz ovghs, sb rdd - sb ang, v py srt, ptch intgran por 14-16%, ns.

Arnica 215m MD
(TVD: 215.00) (SSL: 36.60)

Dol: m - lt brn, crpxl, com dism pyr, tr calc & pyr vng, styls, tr wh cht frags, rr tr s vugs, predly dns, ns.

Dol: mot lt - m brn, crpxl, fragal, dism pyr, tr cor?, tr intra fos & mnrlchd vugy por 2-4%, predly dns, ns.

Dol: mot lt - m brn, crpxl - micxl, fragal, styls, rr tr s vugs, predly dns, tr ptch pyrbt.

Dol: mot lt - m brn, crpxl, fragal, styls, tr pyric, rr tr s vugs, predly dns, tr ptch pyrbt.

Bear Rock MD 236m
(TVD 236m) (SS 15.6m)

Anhy: lt brn, trns, dns, ns.

Dol: m brn, micxl - crpxl, fragal, styls, dns, ns.

Anhy: trns, lt brn, xln, rr dol lns, dns.

Dol: m brn, crpxl, dns, tr ptch pyrbt.

Dol: lt brn, lt gy, micxl - crpxl, slty slty / anhyic

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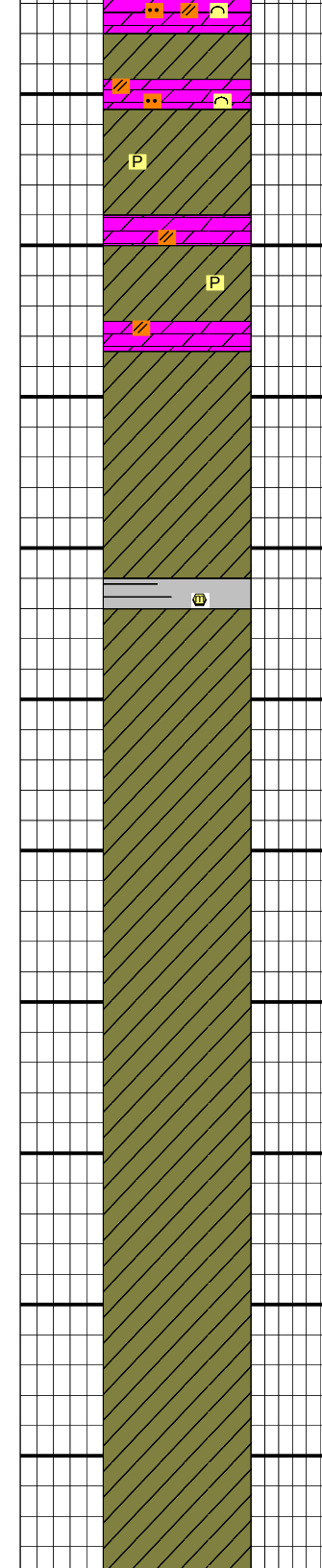
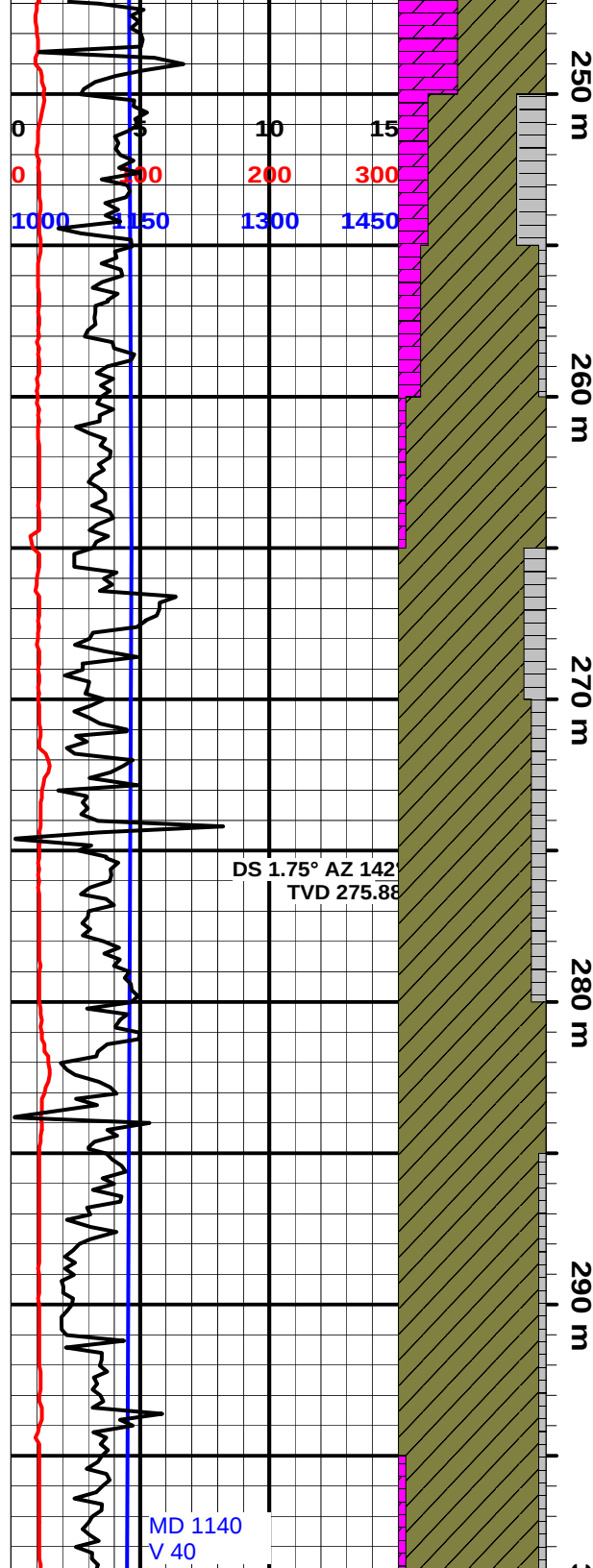
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ptchs, rr rmnt fragl tex, dns.

Anhy: aa.

Dol: It gy, gy, micxl, frm - hd, slly slty, anhyic, dns.

Anhy: lt gy, trnsp, micxl - crpxl, hd, ang frags, tr pyr, dns.

Anhy: lt gy, trnsp, micxl - crpxl, hd, ang frags, tr pyr, dns.

Dol: aa.

Anhy: lt gy, tan, trnsp, micxl - crpxl, hd, dns, aa.

Sh: gy, tab - plty, frm, slly micas, flat luster.

Anhy: lt gy, tan, gy, micxl - crpxl, tab, hd, dns.

Anhy: lt gy, tan, gy, micxl - crpxl, tab, hd, dns.

Anhy: lt gy, tan, gy, micxl - crpxl, tab, hd, dns.

Anhy: aa.

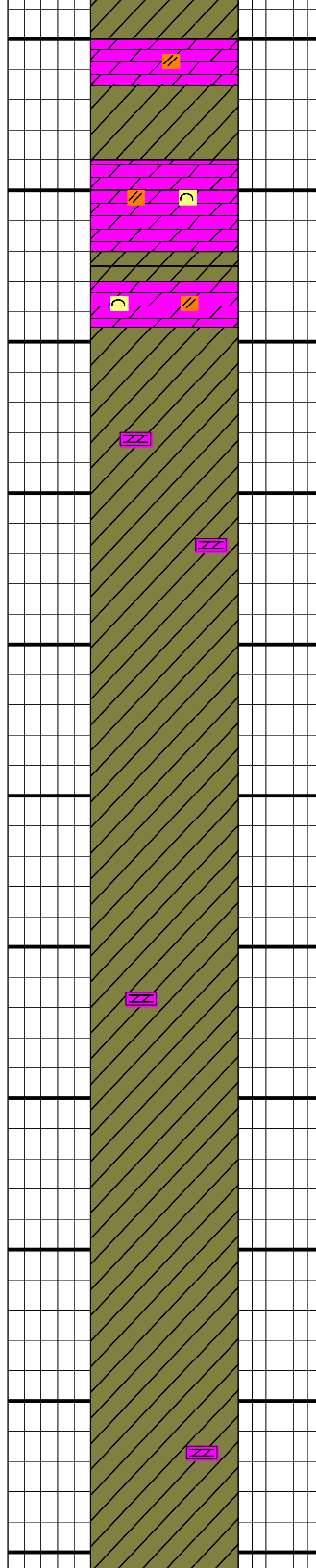
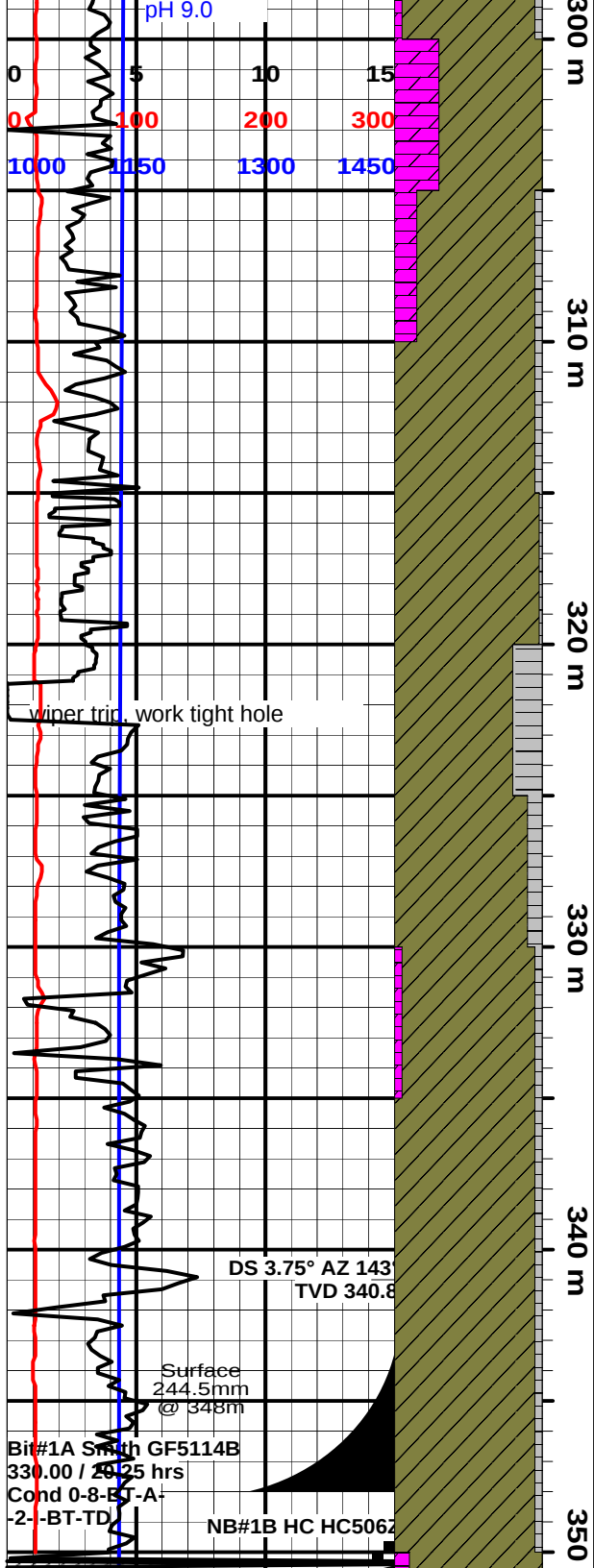
Anhy: lt gy, tan, gy, micxl - crpxl, tab, hd, dns.

Anhy: aa.

Anhy: lt gy, tan, gy, micxl - crpxl, tab, hd, dns.

[illegible]

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Dol: lt brn, micxl, hd, v anhyic, dns, ns.

Anhy: lt gy, tan, gy, micxl - crpxl, tab, hd, dns.

Dol: gy, mot brn, micxl, hd, v anhyic, dns, / rr
rmnt fragl tex, dns, ns.

Anhy: gy, lt brn, crpxl, occ dk ptchs, slly dolc,

Dol: lt brn, gy, tan micxl - crpxl, hd, v anhyic ip, /
rmnt fragl tex, dns, ns.

Anhy: aa.

Anhy: lt brn, gy, crpxl, occ dolc ptchs, dns, ns.

Anhy: lt brn, trnsl, crpxl, dns.

Anhy: lt brn, trnsl, crpxl, dns.

Anhy: trnsl, lt brn, crpxl, pyric, dns, tr Dol Inss, m
brn, crpxl, dns, ns.

Anhy: lt gy, lt brn, trnsl, crpxl, dns.

Anhy: lt gy, lt brn, trnsl, crpxl, dns.

Anhy: lt gy, lt brn, crpxl, tr dol Inss, dns, ns.

0.01 100

0.01 100

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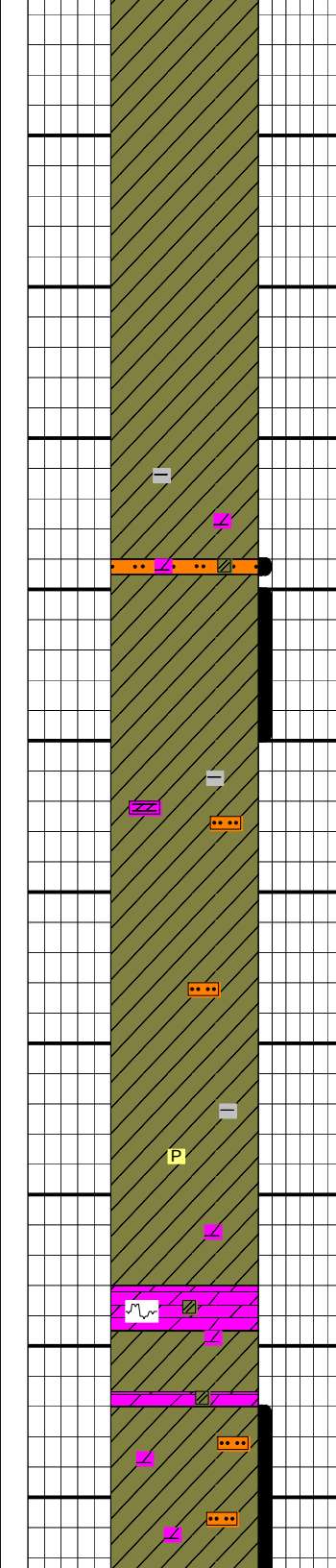
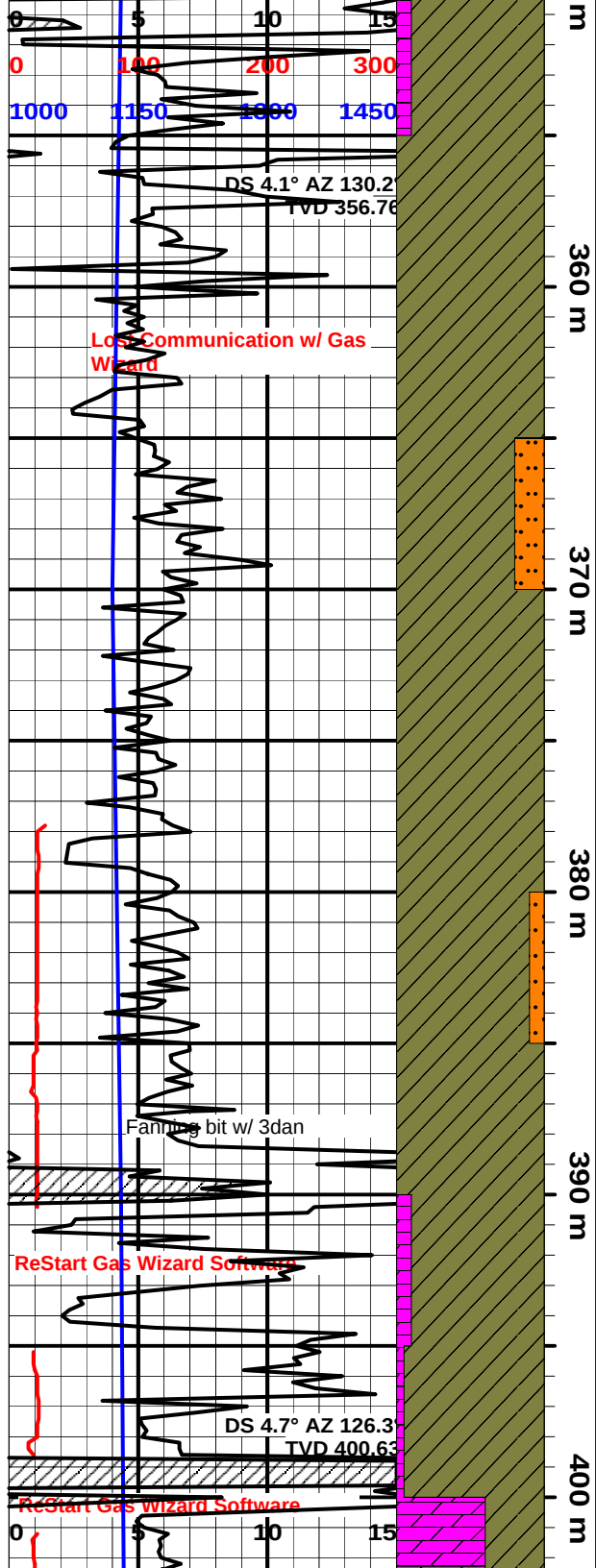
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Anhy: lt gy, lt brn, crpxl, tab, frm - hd, dns, aa.

Anhy: lt gy, lt brn, crpxl, dns, ns.

Anhy: lt gy, lt brn, crpxl, dns, ns.

Anhy: lt gy, lt brn, crpxl, occly slly arg, occly dolc, dns.

Slstst: lt gy, dolc, slly arg, v anhyic, dns, ns.

Anhy: off wh, lt brn, lt gy, micxl - crpxl, dns, ns.

Anhy: lt gy, lt brn, crpxl, slly arg ip, slty lnss, dns, / dol lnss, brn, crpxl, anhyic, dns, ns.

Anhy: lt gy, lt brn, crpxl, dns, ns, / **Slstst** lnss, lt gy, dolc, v anhyic, dns, ns.

Anhy: lt brn, lt gy, crpxl - micxl, occly slly arg, tr pyric, dns.

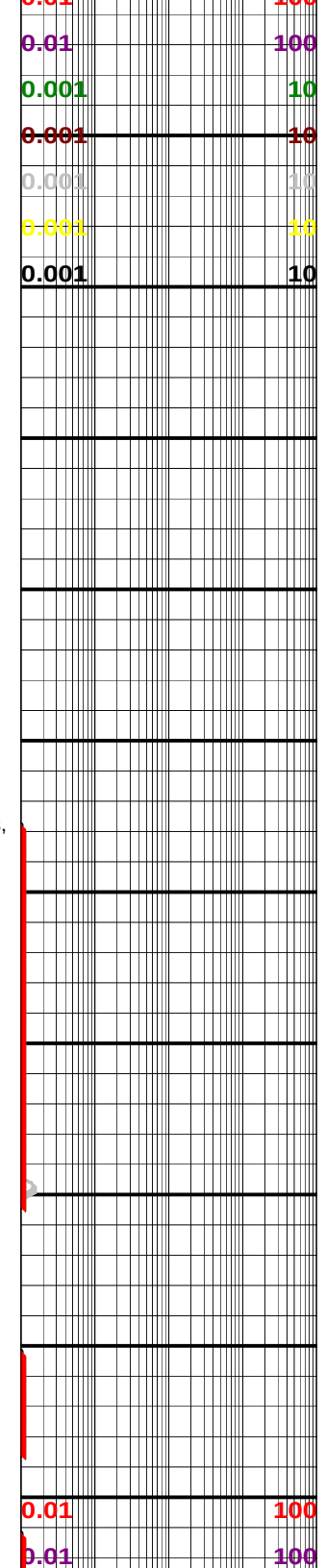
Anhy: lt gy, lt brn, micxl - crpxl, dolc, dns.

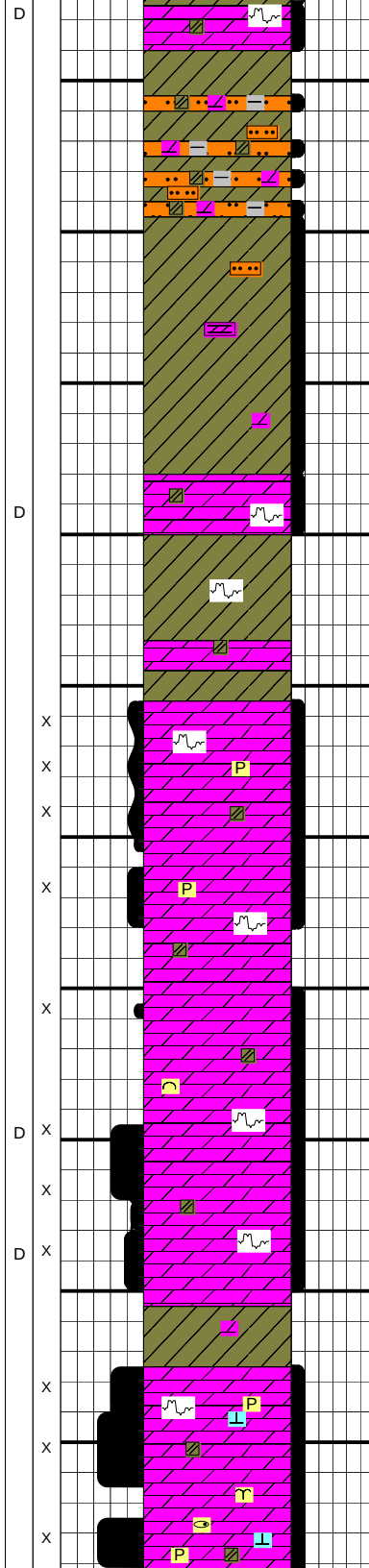
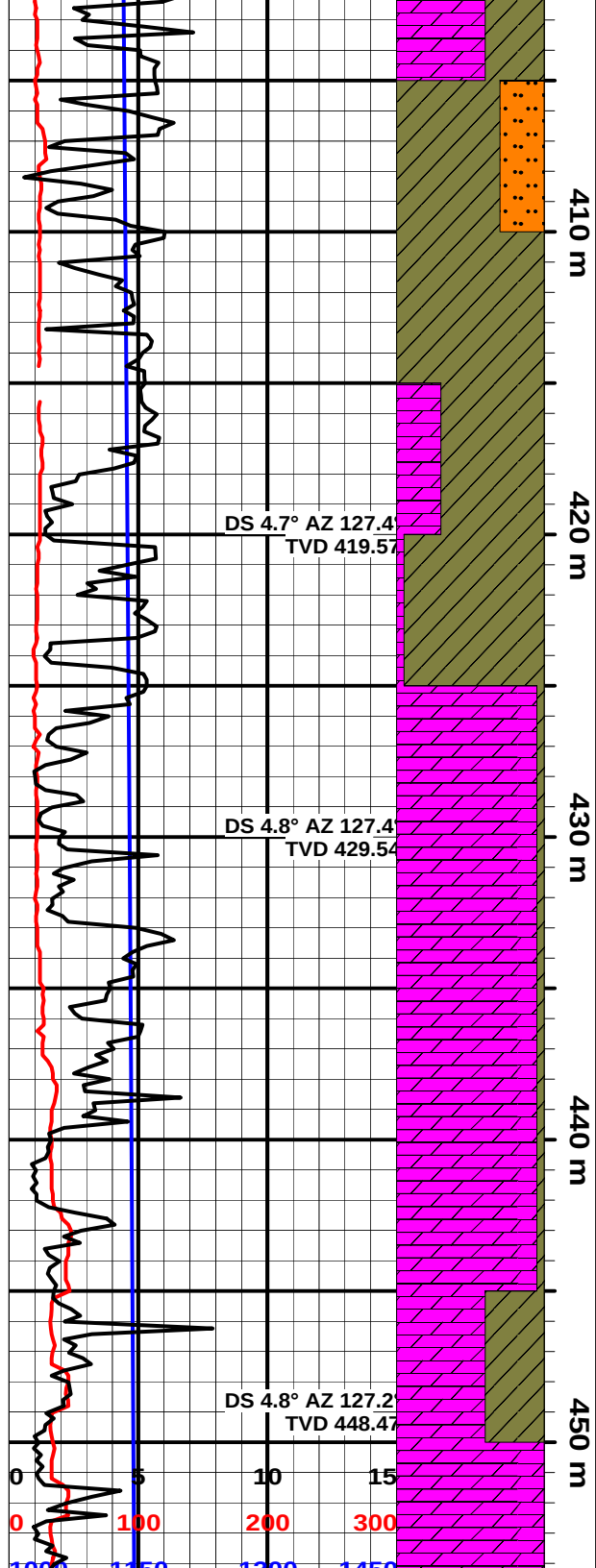
Dol: lt brn, crpxl, anhyic, styls, no vis por, ns.

Dol: lt brn, crpxl, anhyic, dns, ns.

Anhy: lt gy, lt brn, micxl - crpxl, dolc, dns, / intspd **slstst** lnss, lt gy, dolc, arg, anhyic, qtz, tt, ns.

Anhy: lt gy, lt brn, micxl, dolc, dns, ns, / tr slstst lnss.





Dol: lt brn, micxl, anhyic, styls, dns, tr ptch pyrbit.

Slstst: lt gy, dolc, arg, anhyic, qtz, dism pyr, tt, ns, / intspd anhy.

Anhy: lt gy, tr brn, crpxl, dns, / intspd sltst Inss.

Anhy: lt brn, lt gy, micxl, / intspd dolc & sltst Inss.

Anhy: lt gy, lt brn, micxl, dolc, styls, dns, ns.

Dol: lt - dk brn, micxl, anhyic, styls, dns, ptch pyrbit.

Anhy: lt gy, trns, crpxl - micxl, styls, dns.

Dol: lt brn, crpxl, anhyic, dns, ns.

Anhy: off wh, lt gy, crpxl, dns.

Dol: lt brn, micxl, anhyic, tr pyric, lamd ip, styls, ptch intxl por 3-5%, ns.

Dol: lt brn, micxl, tr crpxl, anhyic, tr pyric, lamd ip, styls, ptch intxl por 3-5%, ns.

Dol: lt - m brn, micxl, fragal, anhyic, styls, intxl por 8-10%, ptch intstl pyrbit.

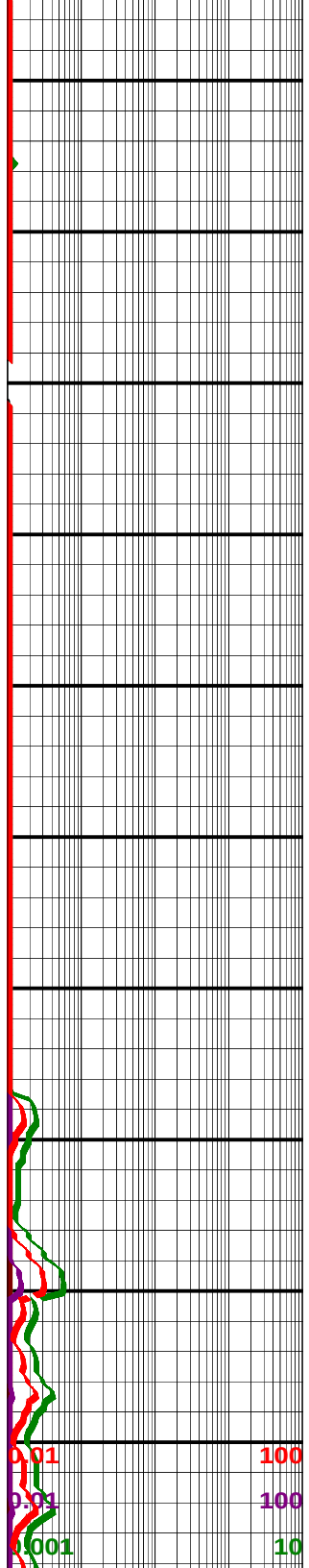
Dol: lt brn, micxl, anhyic, styls, ptch intxl por 8-10%, rr tr ptch intstl pyrbit.

Anhy: off wh, lt gy, micxl - crpxl, dolc, dns.

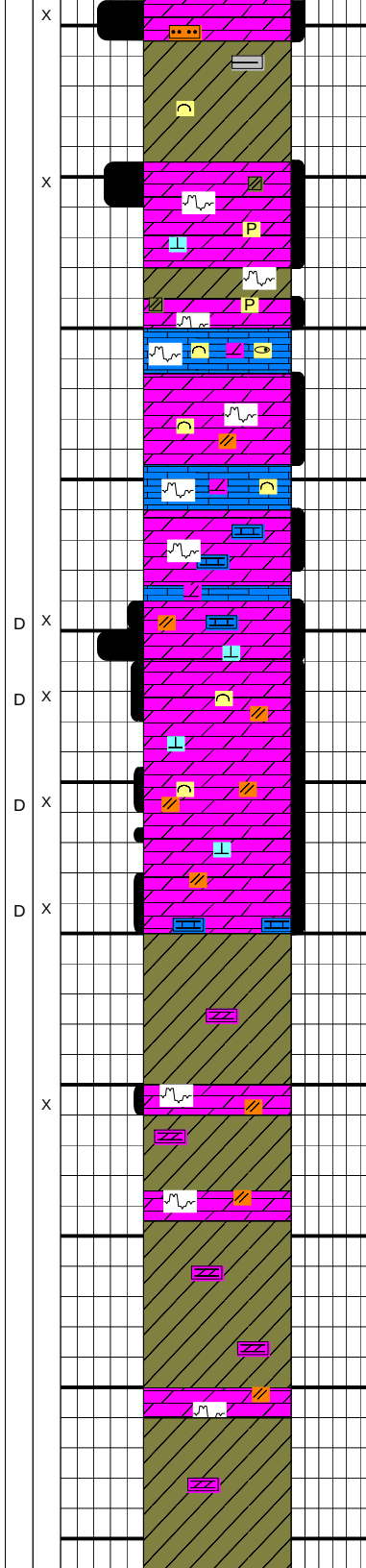
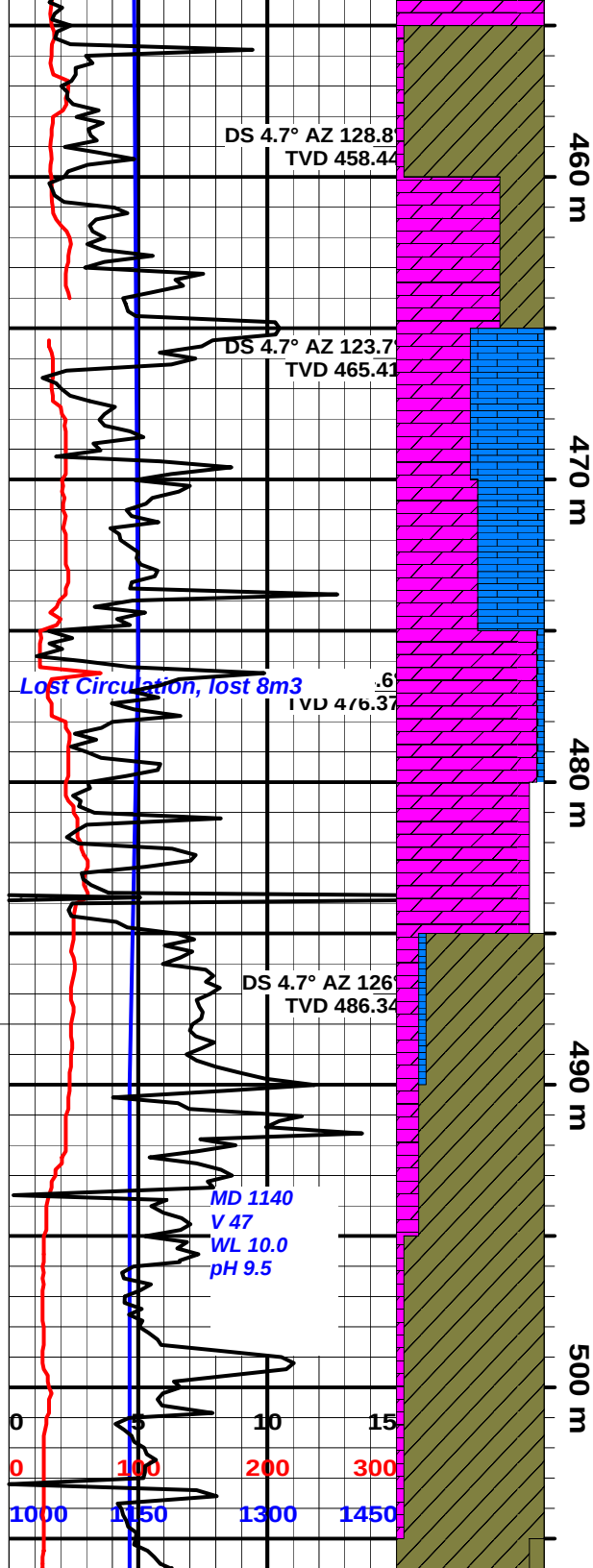
Dol: lt - m brn, micxl, suc, anhyic, tr pyric, styls, sly calcs ip, intxl & mnv vugy por 12-14%, ns.

Dol: lt - m brn, micxl, suc, fragal, anhyic, tr pyric, Bry?, Osts, rr tr sly Inss, also calcs ip, ptch intxl & mnv vugy por 12-14%, ns.

Dol: lt - m brn, micxl, suc, fragal, anhyic, tr pyric,



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Bry?, Osts, rr tr slty lns, also calcs ip, ptch intxl & mnrvugy por 12-14%, ns.

Anhy: off wh, lt brn, crpxl, fragal, inspd / shy lns, dns.

Dol: lt - m brn, micxl, fragal, anhyic, styls, loc calcs, tr pyric, no vis por, ns.

Anhy: wh, lt brn, crpxl, styls, dns.

Ls: lt gy, bge, lime mdst, sly dolc, occ fragl tex, / occ osts, biocl rmns, com styls, also occ c calc rhmbs, vein infill?, dns.

Dol: lt - m brn, micxl, fragal, anhyic, also loc calcs, styls, tr pyric, no vis por, ns.

Ls: brn, tan, mnrv lt gy, lime mdst, / occ fragl tex, rr crins, com styls, dolc, dns, ns.

Dol: lt gy, tab, micxl - crpxl, blkyl, calcs ip, / limy strgs, tr styls, dns, ns.

Dol: lt gy, bge, tab, micxl, blkyl, frm, suc tex, sly calcs ip, occ rmnt fragl tex, also loc anhy, occ styls, ptch 2-5% intxl por, tr bit.

Dol: lt gy, bge, tab, micxl - v f xln, blkyl, frm, abnt suc tex, sly calcs ip, also loc anhyic, ptch 3-7% intxl por, rr bit.

Ls: brn, tan, mnrv lt gy, lime mdst, / rr fragl tex, dolc, dns, ns.

Anhy: wh, lt brn, tan, crpxl, tab, frm - hd, dns, occ dol strgs.

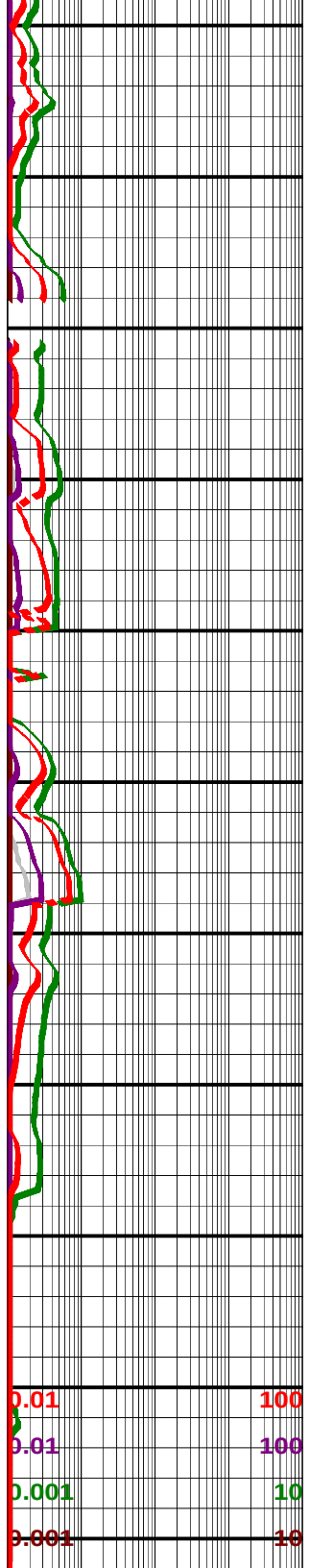
Dol: lt brn, tan, micxl, frm, suc tex, anhyic, sly calcs, tr -2% intxl por, ns.

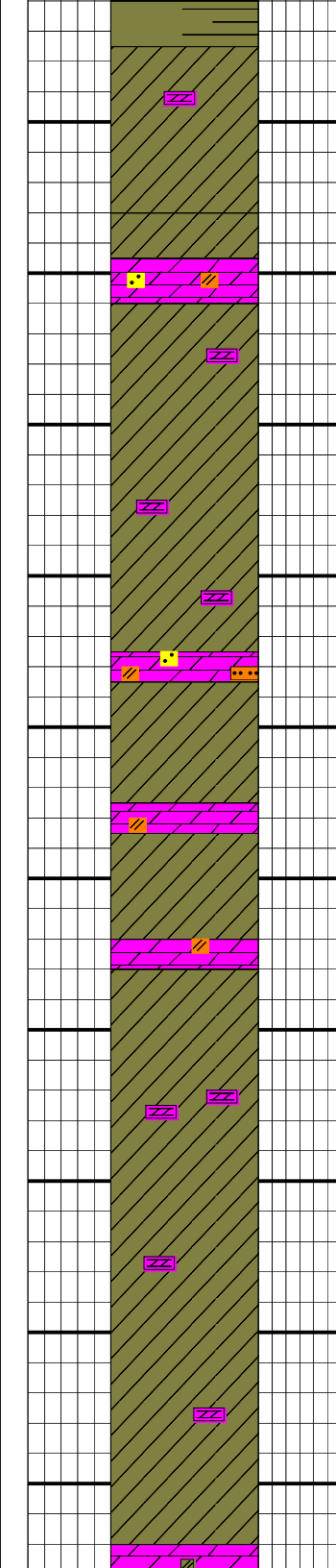
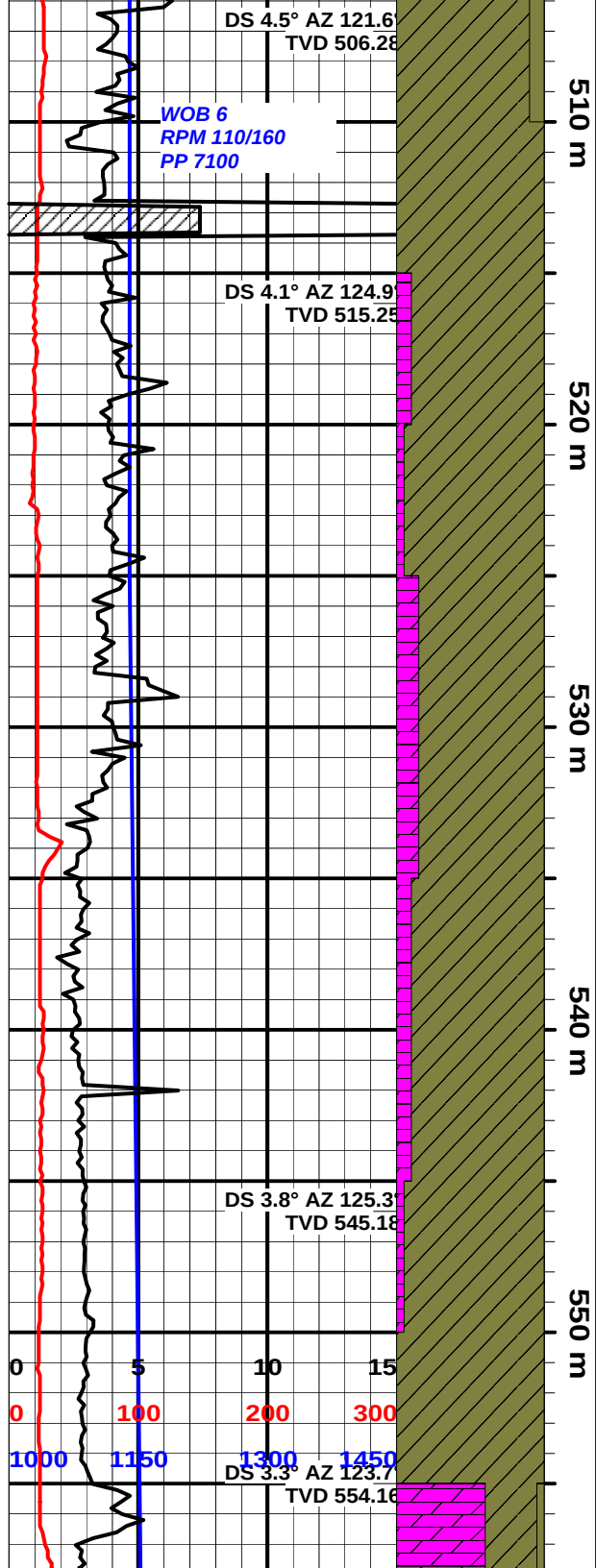
Anhy: wh, lt brn, tan, crpxl, tab, frm - hd, dns, occ dolc.

Anhy: aa.

Dol: lt brn, gy, crpxl, tab, hd, dns, occ styls.

Anhy: aa.





Sh: lt gn, tab, dolc, grd - arg dol.

Anhy: wh, lt brn, tan, crpxl, tab, frm - hd, dns, occ dolc, loc flotg rdd qtz grs, dns.

Dol: lt gy, tan, crpxl, hd, anhyic, rr sdy, dns.

Anhy: wh, lt brn, tan, crpxl, tab, frm - hd, dns, occ dolc lams.

Anhy: wh, lt brn, tan, crpxl, tab, frm - hd, dns, occ dolc strgs.

Dol: lt gy, bf, tan, crpxl, hd, tab, anhyic, occly sdy, slty, / sltst strgs, dns.

Anhy: aa.

Dol: lt gy, bf, tan, crpxl, hd, tab, anhyic, occly
Anhy: aa.

Dol: bf, lt gy, crpxl, blk, v anhyic, dns.

Anhy: wh, bge, crpxl - micxl, frm, occly / dol strgs, dns, ns.

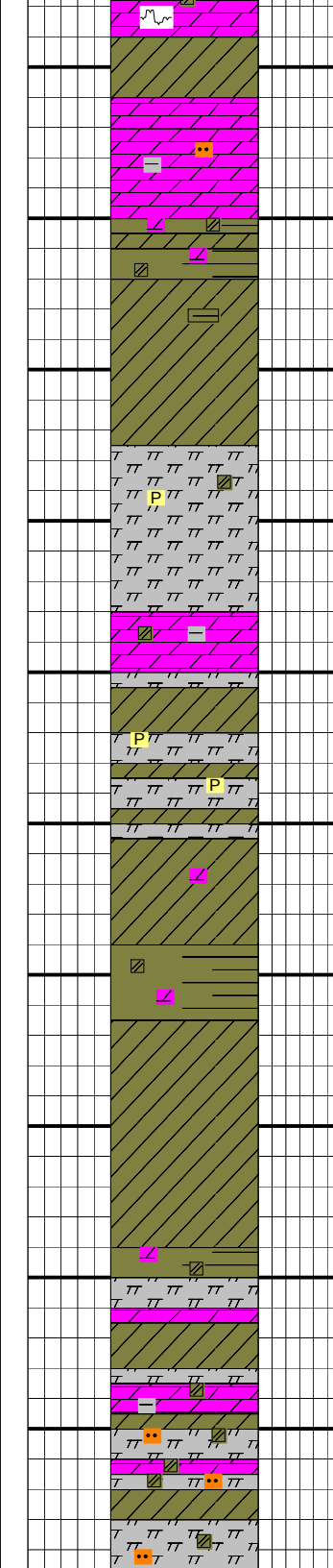
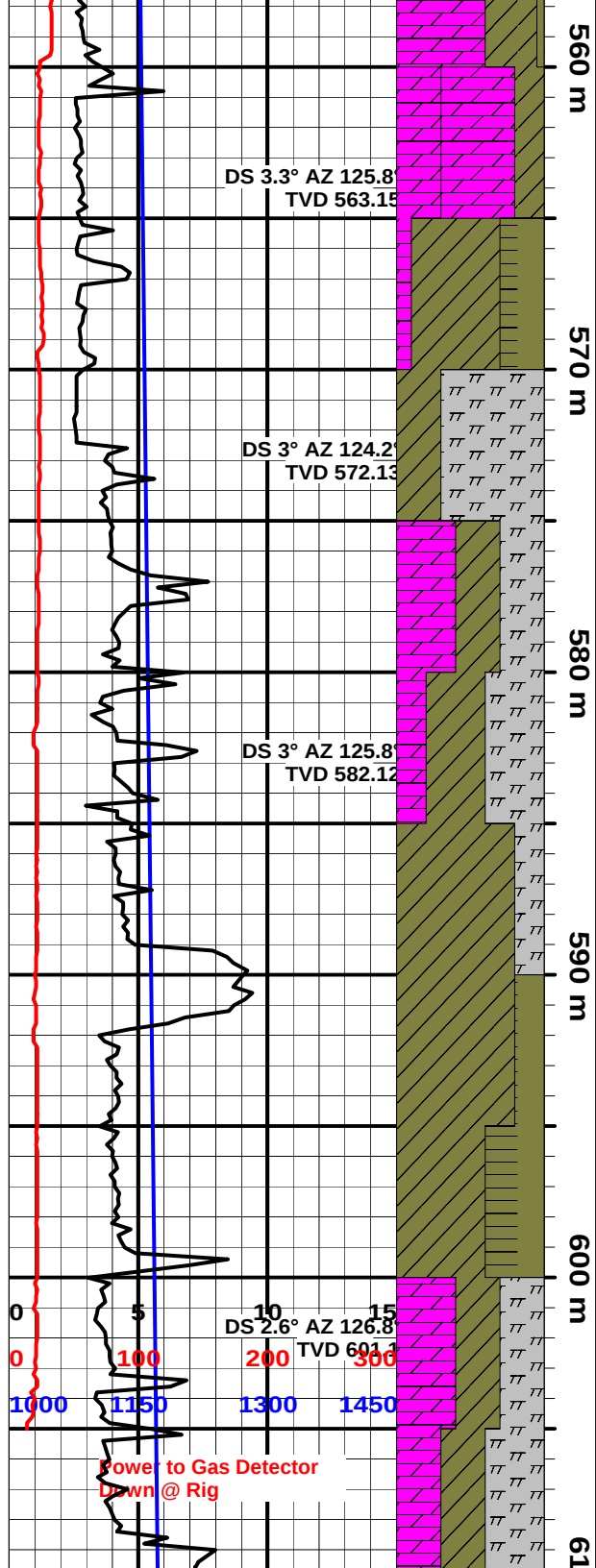
Anhy: wh, bge, crpxl - micxl, frm, occly / dol strgs, dns, ns.

Anhy: aa.

Anhy: aa.

Dol: tan, m brn, crpxl, anhyic, styls, rr dol rhmbs

0.01	100
0.01	100
0.001	10
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0.001	10



(in mtb), dns, ns.

Anhy: lt gy, off wh, crpxl, dns.

Dol: lt gy, crpxl, arg, slty, dns, ns.

Sh: gnsh, gy, blkly, dolc, anhyic.

Anhy: off wh, crpxl, occly inspd / gn shy lns, dns.

Anhy: off wh, crpxl, dns.

Mrlst: lt gy, gnsh, dolc, anhyic, tr dism pyr, dns.

Mrlst: lt gy, gnsh, dolc.

Dol: lt gy, crpxl, anhyic, slly arg, dns, ns.

Anhy: off wh, lt gy, crpxl, dns.

Mrlst: lt gy, gnsh, dolc, tr pyric, dns.

Anhy: lt gy, brnsh, micxl - crpxl, dolc, dns, ns.

Sh: gn, plty - blkly, dolc, anhyic, grdg to dolc mrlst.

Anhy: off wh, lt gy, crpxl, dns.

Anhy: lt gy, crpxl, intspd / sh & mrlst lns, dns.

Sh: gnsh, gy, blkly, dolc, anhyic, grdg to mrlst.

Mrlst: gnsh, lt gy, blkly - plty, dolc, dns.

Dol: beige, lt gy, crpxl, anhyic, arg, dns, ns.

Anhy: lt gy, off wh, crpxl, dns.

Dol: beige, lt gy, crpxl, anhyic, arg, dns, ns.

Mrlst: lt gy, gnsh, dolc, anhyic, slty, dns.

Dol: beige, crpxl, anhyic, dns, ns.

Anhy: lt gy, off wh, tr dolc, dns.

Mrlst: lt gy, gnsh, dolc, anhyic, slty, dns.

0.01 100

0.01 100

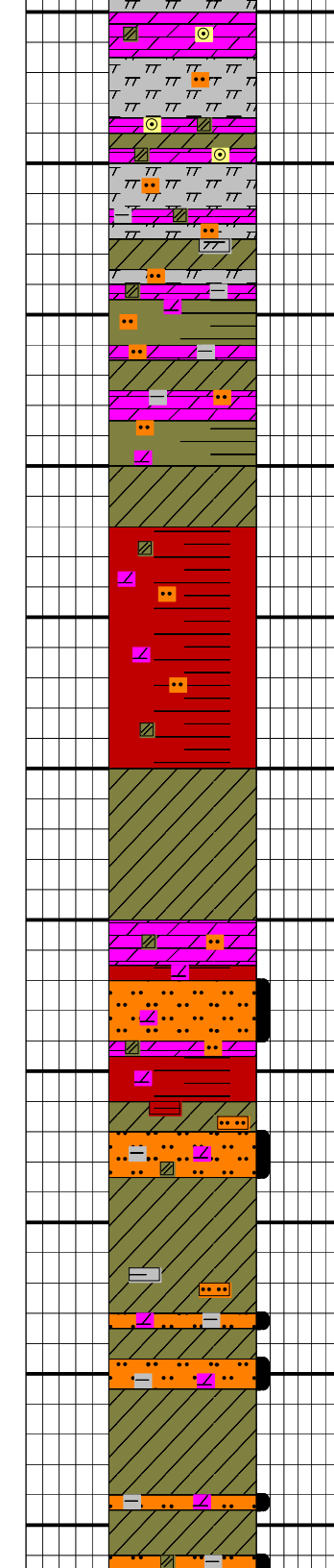
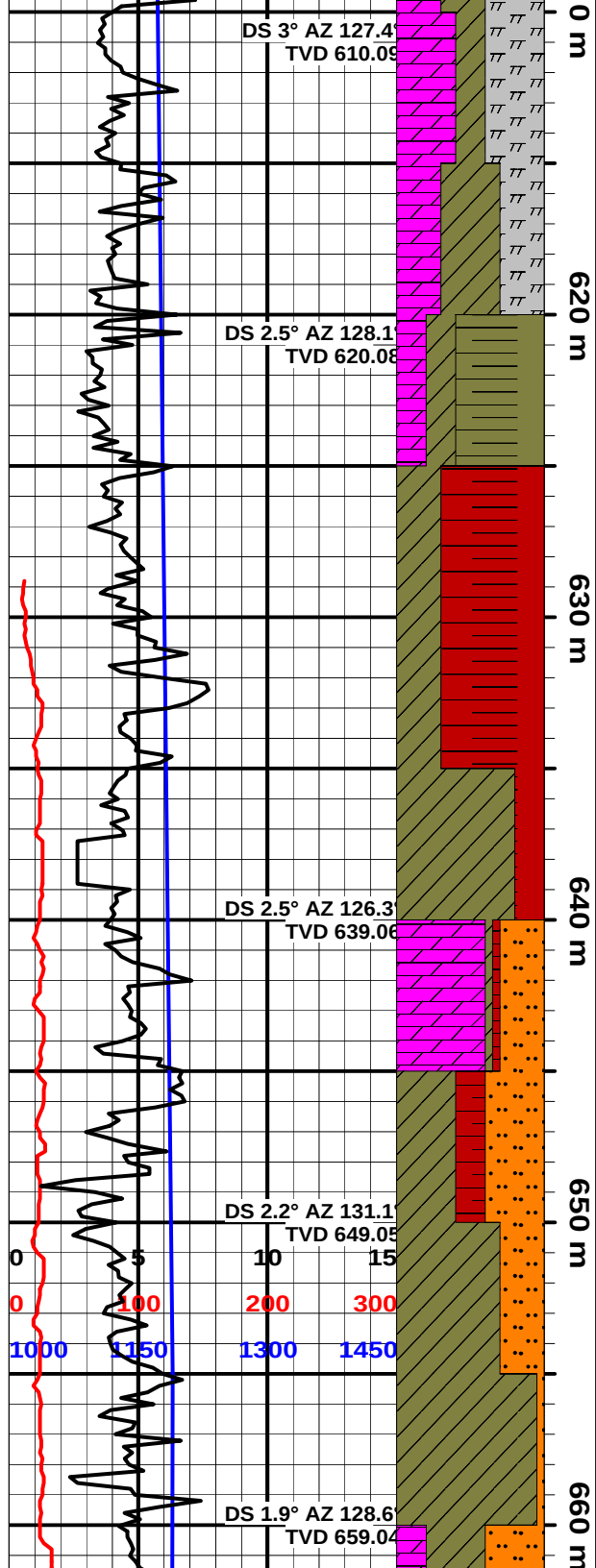
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Dol: beige, lt gy, crpxl, Crin stems, anhyic, dns, ns.

Mrlst: lt gy, gnsh, dolic, slty.

Anhy: lt gy, off wh, crpxl, dns.

Mrlst: lt gy, gnsh, dolic, slty, dns, grdg to gn sh.

Dol: beige, crpxl, anhyic, arg, dns, ns.

Anhy: lt gy, crpxl, intspd / mrly Inss, dns.

Sh: gn, lt gy, plty - blk, dolic, slty.

Dol: beige, lt gy, crpxl, arg, slty, dns, ns.

Anhy: lt gy, lt brn, crpxl, dns, ns.

Sh: gn, lt gy, plty - blk, dolic, slty.

Anhy: lt gy, brnsh, crpxl, dns.

Sh: red, plty, dolic, slty, anhyic.

Sh: red, plty, dolic, slty, anhyic.

Anhy: lt gy, brnsh, crpxl, dns.

Dol: lt brn, crpxl, v slty, anhyic, dns, ns.

Sh: red, plty, dolic, slty.

Slstst: lt gy, lt brn, v dolic, qtz, tt, ns.

Dol: lt brn, crpxl, v slty, anhyic, dns, ns.

Sh: red, gn, plty - blk, dolic, slty.

Anhy: lt brn, lt gy, crpxl, dns, intspd / sh & slstst.

Slstst: gn, red, dolic, arg, anhyic, qtz, tt, ns.

Anhy: lt gy, lt brn, crpxl, dns, / intspd slstst Inss.

Slstst: lt gy, gnsh, dolic, arg, qtz, tt, ns.

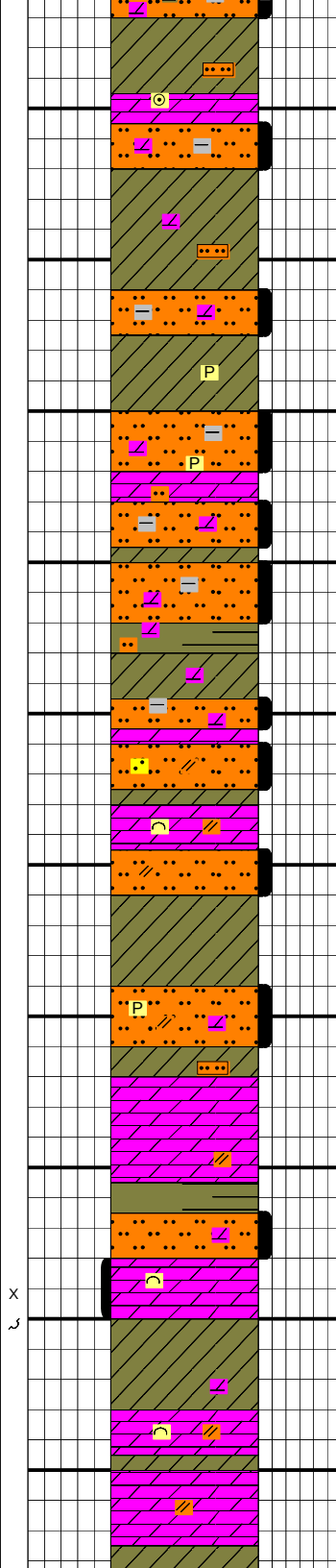
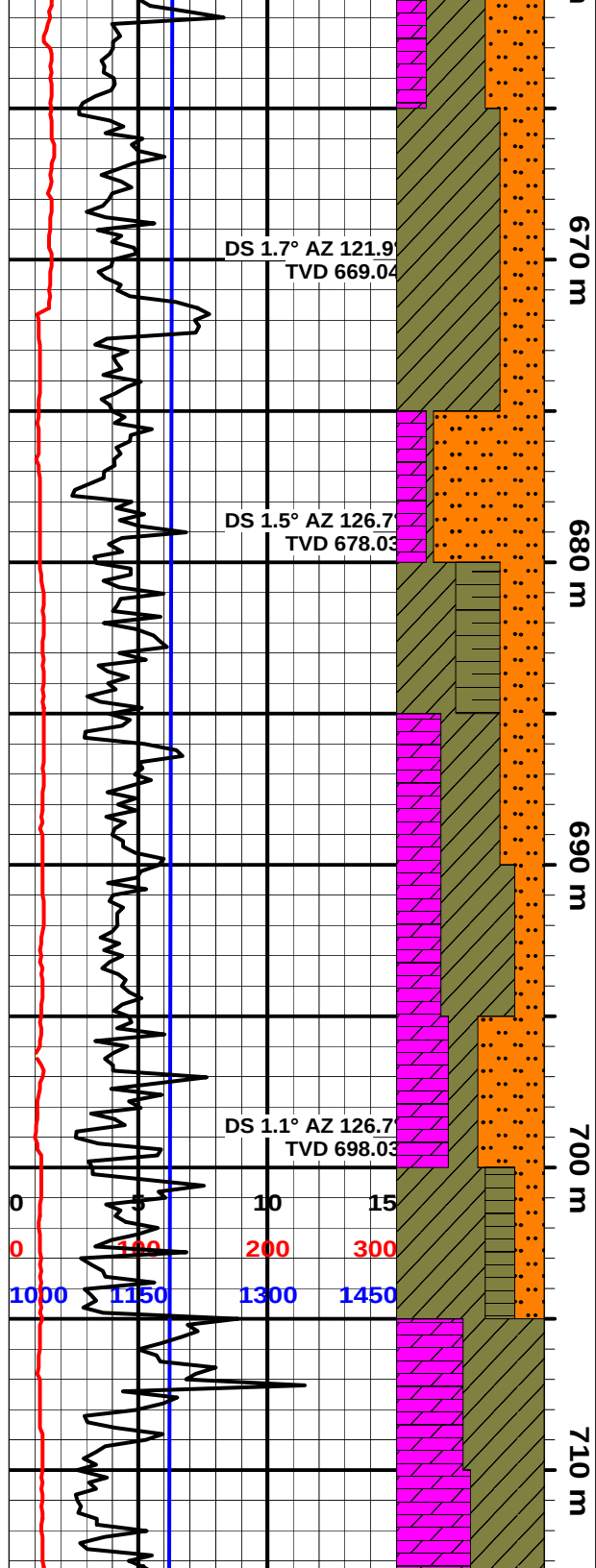
Anhy: off wh, lt gy, crpxl - micxl, dns.

Slstst: gn, red, dolic, arg, qtz, tt, ns.

Anhy: lt brn, lt gy, crpxl, dns, / intspd slstst.

Slstst: gnsh av dolic arg anhyic qtz tt ns

0.01	100
0.01	100
0.001	10
0.001	10
0.001	10
0.001	10
0.001	10



Crst: gn, lt gy, dolc, arg, anhy, qtz, tt, ns.

Anhy: lt brn, lt gy, crpxl, dns, / intspd sltst.

Dol: tan, crpxl, Crin stems, dns, ns.

Sltst: gn, occly red, lt gy, dolc, v arg, anhyic, tt, ns.

Anhy: lt brn, lt gy, crpxl - micxl, dolc, dns, / intspd sltst.

Sltst: red, gn, lt gy, dolc, arg, qtz, tt, ns.

Anhy: lt brn, lt gy, crpxl - micxl, rr tr pyr, dns, ns.

Sltst: red, gn, lt gy, dolc, arg, rr dism pyr, tt, ns.

Dol: tan, crpxl, slty, dns, ns.

Sltst: red, gn, lt gy, dolc, arg, qtz, tt, ns.

Anhy: lt brn, crpxl, dns.

Sltst: red, gn, lt gy, dolc, arg, qtz, tt, ns.

Sh: gn, red, plty, dolc, slty.

Anhy: beige, lt gy, crpxl, dolc, dns.

Sltst: red, gn, lt gy, dolc, arg, qtz, tt, ns.

Sltst: lt red, orng, mot, blk, frm - hd, sdy, anhyic, tt, ns.

Dol: lt gy, bf, mot, crpxl, slly slty, anhyic, tr rmnt fragl tex, dns, ns.

Sltst: aa.

Anhy: lt gy, bf, mn, orng, crpxl, hd, slty lnss, dolc ip.

Sltst: lt gy, gn, mn, red, v dolc, slly pyric, anhy, dns, ns.

Anhy: lt gy, bf, mn, orng, crpxl, hd, slty lnss, dolc ip.

Dol: lt gy, bf, crpxl, tab, hd, dns.

Sh: gn, tab, frm, tab, dolc, tr pyric.

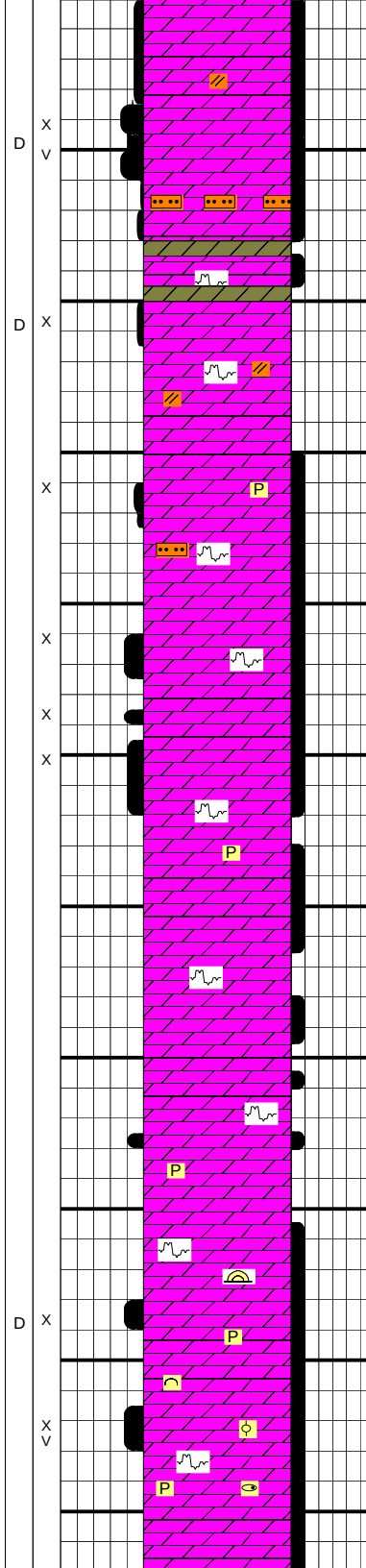
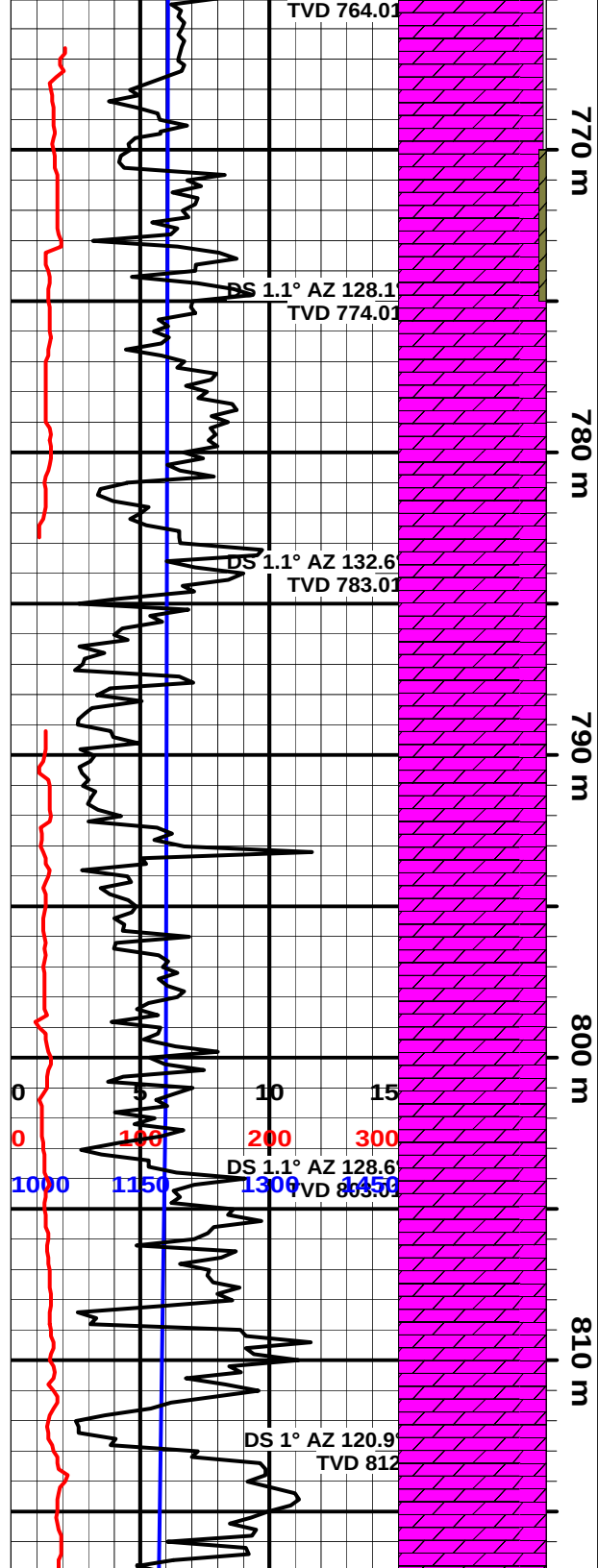
Sltst: aa.

Dol: gy, bf, lt brn, crpxl, hd, dns, rr 3-6% intxl, moldic por, occ dol rhmbs in pores, ns.

Anhy: lt gy, off wh, tr dolc, dns.

Dol: lt gy, brn, bf, crpxl, blk, frm - hd, compact, dns, slly anhyic.

0.01	100
0.01	100
0.001	10
0.001	10
0.001	10
0.001	10



Dol: lt gy, lt brn, micxl, blkyl, frm - hd, slly slty ip, / ptch 4-6% intxl, vuggy por, / com dol rhmbs, / occ bit partly plugging pores.

Dol: lt gy, lt brn, micxl - crpxl, blkyl, frm - hd, slly slty ip, / ptch 1-2% intxl, / com dol rhmbs, / occ bit partly plugging pores.

Dol: lt gy, lt brn, crpxl, blkyl, frm - hd, tr styls, loc anhy ptchs, / ptch tr intxl por, / occ bit partly plugging pores.

Dol: lt brn, lt gy, micxl, tr pyric, slty lnss, styls, clr calc xls, tr ptch intxl por 1-3%, predly dns, ns.

Dol: tan, micxl, tr styls, scat clr calc xls, ptch intxl por 4-6%, ns.

Dol: tan, crpxl - micxl, rr styls, rr tr pyr, tr clr calc xls, no vis por, ns.

Dol: tan, lt brn, micxl - crpxl, rr styls, tr clr calc xls, rr ptch vuggy por, predly dns, ns.

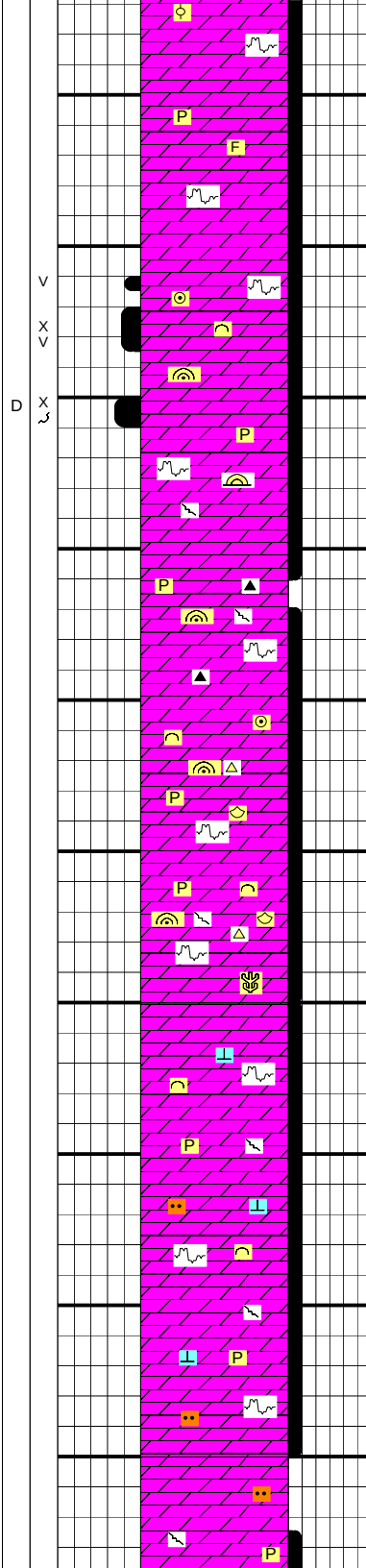
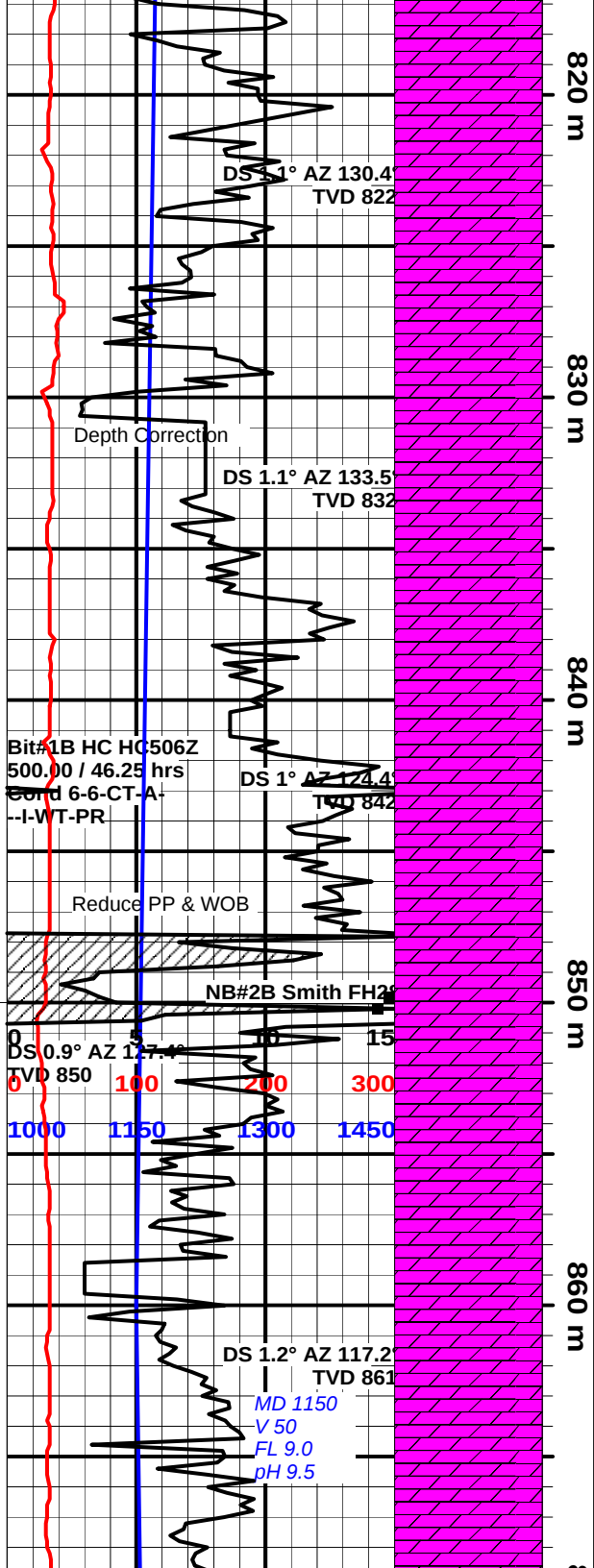
Dol: tan, crpxl - micxl, rr styls, rr tr pyr, tr clr calc xls, dns, ns.

Dol: lt - m brn, micxl - crpxl, styls, lamd alg mats?, tr pyric, tr clr calc xls, tr ptch intxl 4-6%, predly dns, rr tr ptch pyrbt.

Dol: mot bf, lt - m brn, micxl, fragl wkest, biocl deb, Osts?, ools, tr pyric, styls, clr calc xls, ptch vuggy & intxl por 4-6%, ns.

0.01	100
0.01	100
0.001	10
0.001	10
0.001	10
0.001	10
0.001	10

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Dol: mot lt - m brn, micxl, fragl wkest, ools, styls, tr clr calc xls, dns, ns.

Dol: m - lt brn, micxl, styls, indst fos frags, rr pyr, tr clr calc xls, dns, ns.

Dol: mot lt - m brn, micxl, biocl deb, alg mats, styls, Crins, vugy & intxl por 4-6%, tr ptch pyrbit.

Dol: mot lt - m brn, micxl, dism pyr, styls, calc vng, lamd alg mats, ptchy intxl & tr mld por 6-8%, ns.

Dol: m brn, micxl - crpxl, chty, tr alg mats, styls, tr dism pyr, calc vng, tr clr calc xls, dns, ns.

Dol: mot lt - m brn, micxl, fragl wkest, tr chty, tr pyric, Bracs, Crins, styls, alg mats, dns, ns.

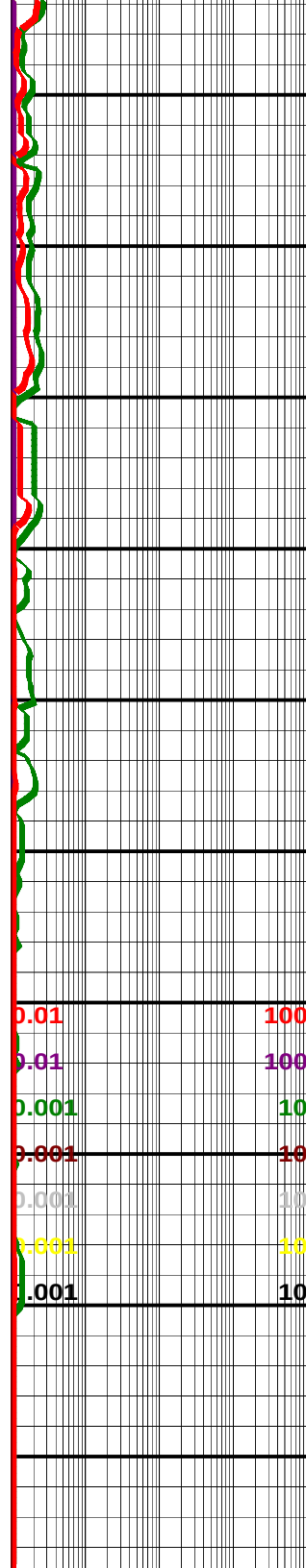
Dol: tan, lt brn, micxl, tr chty, tr pyric, styls, calc vng, biocl deb, pos cor?, dns, ns.

Dol: tan, lt brn, micxl, tr pyric, styls, calc vng, rmnt biocl deb, dns, ns.

Dol: tan, lt brn, micxl, tr pyric, styls, occ calc vns, rmnt biocl deb, sily slty, dns, ns.

Dol: tan, lt brn, micxl - crpxl, tr pyric, styls, sily slty, calc vng, dns, ns.

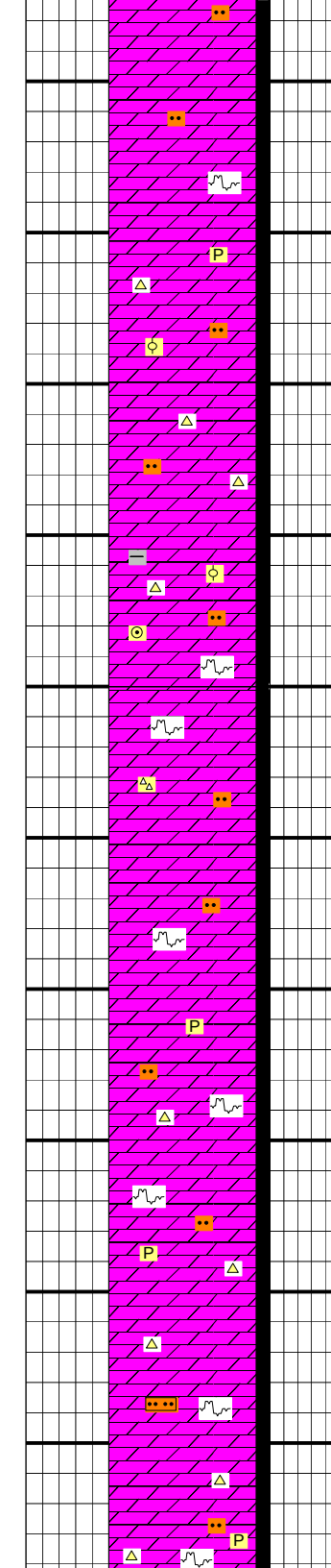
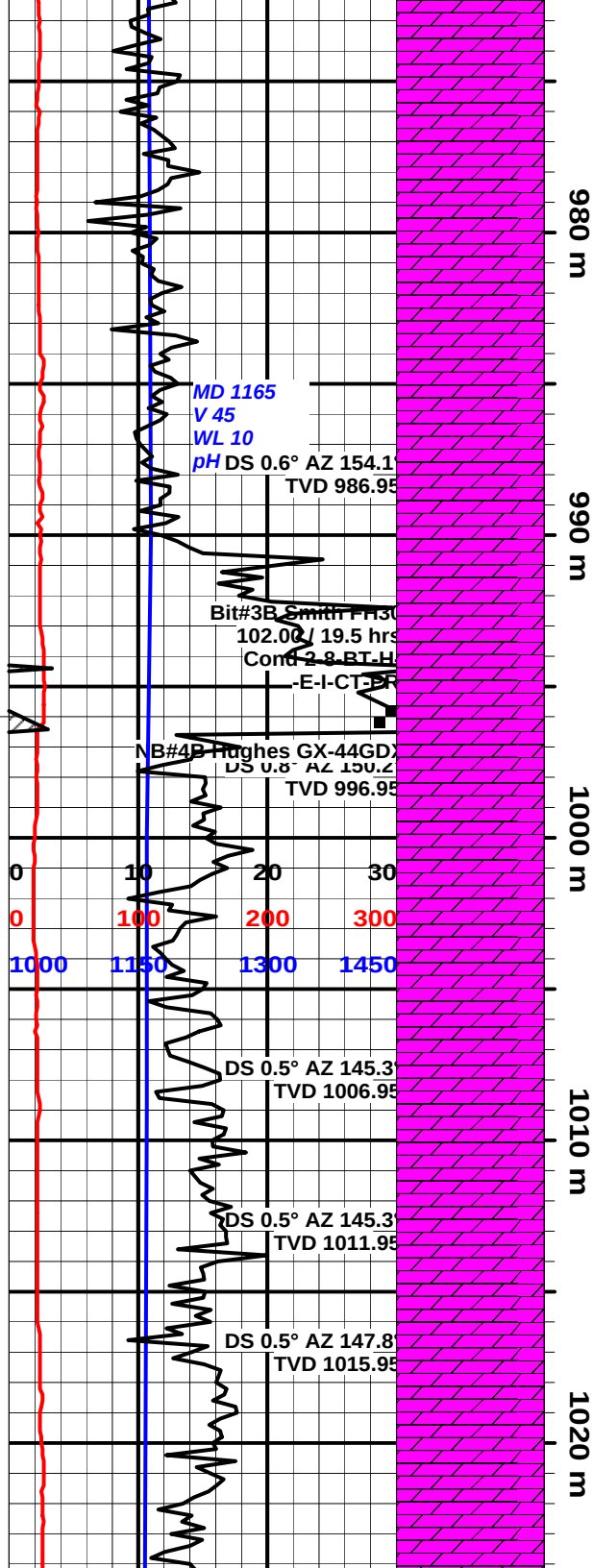
Dol: tan, lt brn, micxl - crpxl, tr pyric, styls, occ calc vns, sily slty, dns, ns.



Dol: It gy, tr bf, tr redsh, micxl, tr fragl wkest tex, tr ools, tr slty, dns, ns.

0.01	100
0.01	100
0.001	10
0.001	10
0.001	10
0.001	10
0.001	10

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Dol: lt gy, sily redsh, sily gnsh, micxl, tr rmnt fragl tex, slty, scat wh cht frags, dns, ns.

Dol: bf, lt gy, tr redsh, micxl, slty, rr styls, dns, ns.

Dol: bf, lt gy, tr redsh, tr gnsh, micxl, rr fragl tex, tr ools, slty, tr scat wh cht frags, rr tr pyr, dns, ns.

Dol: bf, tr redsh, tr gnsh, micxl, v slty ip, com msm wh cht (oolic), dns, ns.

Dol: bf, lt brn, tr redsh, tr gnsh, micxl, tr rmnt fragl tex, ools, Crins, slty, v sily arg, tr styls, scat wh msm cht, dns, ns.

Dol: bf, lt brn, tr redsh, tr gnsh, micxl, sily slty, v sily arg, tr styls, scat wh cht, dns, ns.

Dol: bf, lt gy, redsh, gnsh, occly brn, micxl, tr slty, tr arg, styls, dns, ns.

Dol: lt gy, mot lt brn, tr redsh, tr gnsh, micxl, tr rmnt fragl tex, ools, tr slty, tr wh cht frags, rr pyr, tr styls, dns, ns.

Dol: lt brn, lt gy, tr gnsh, tr redsh, micxl, slty, styls, tr pyric, tr wh cht frags, dns, ns.

Dol: lt - m brn, lt gy, micxl, styls, tr clr calc xls, tr wh cht frags, / intspd lt gy sltst lns.

Dol: lt brn, lt gy, micxl, tr rmnt fragl tex, ools, slty, com msm oolic cht frags, styls, dism pyr, dns, ns.

0.01 100

0.01 100

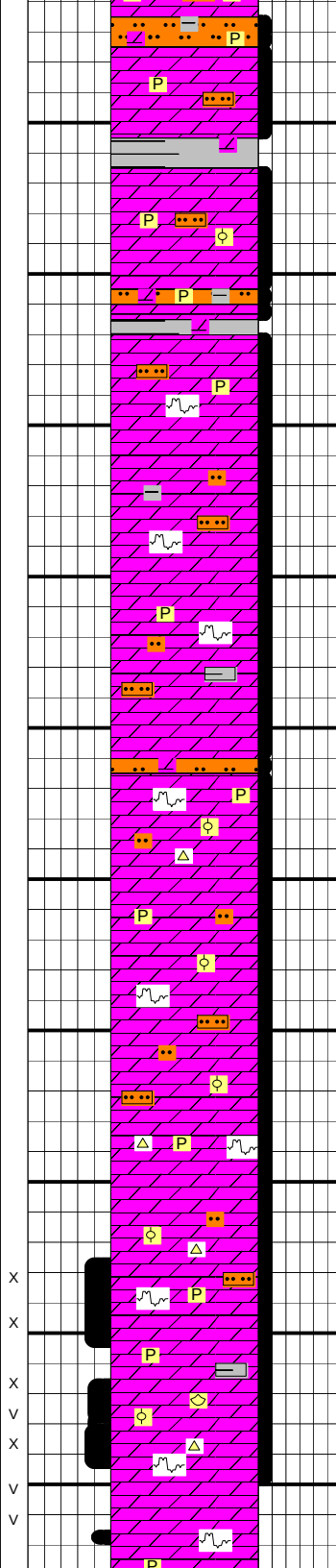
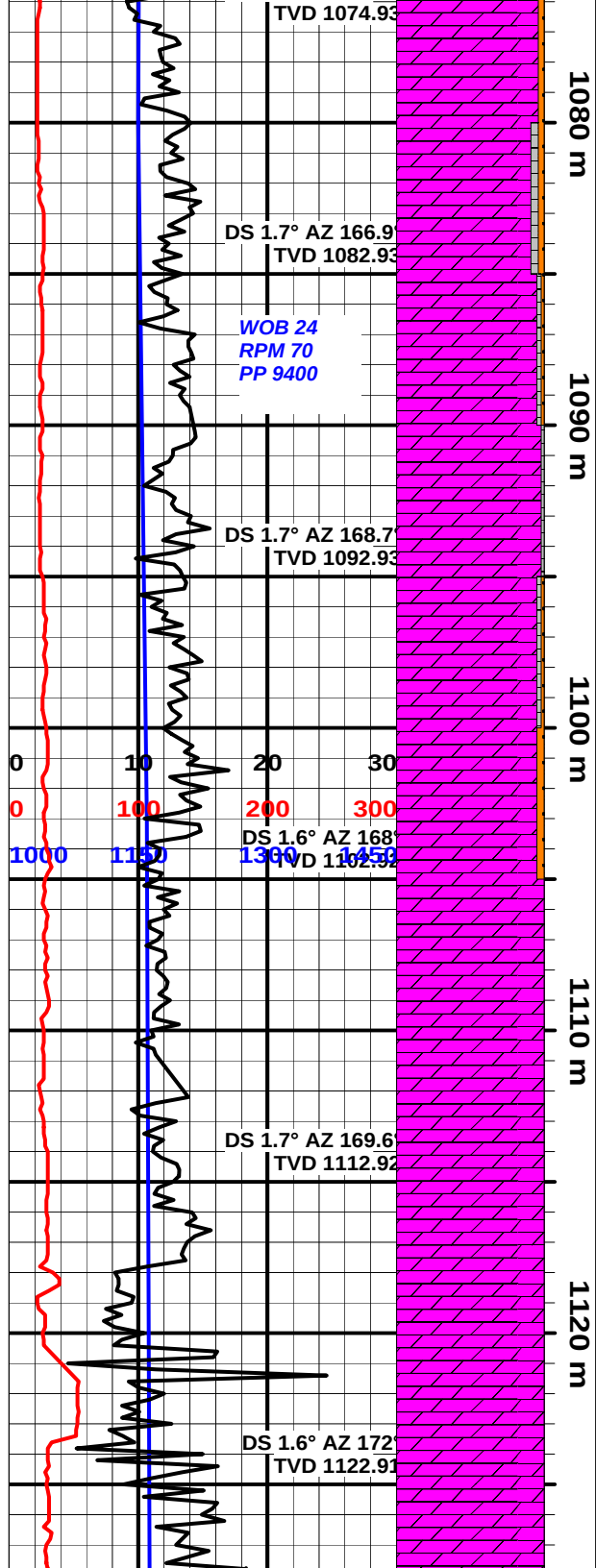
0.001 10

0.001 10

0.001 10

0.001 10

0.001 10



Sltst: lt brn, tan, gy, tab, frm, v dolc, grdg - slty dol, slly pyric, slly arg ip, tt, ns.

Dol: tan, lt gy, tr gnsh, micxl - crpxl, occ slty lns, tr pyr, dns, ns.

Sh: gy, mntr dk gy, frm, tab, dolc, slly pyric.

Dol: tan, lt gy, micxl, blk, frm - hd, suc ip, occ slty lns, occ rmnt ools, tr pyr, dns, ns.

Sltst: aa.

Sh: gy, mntr lt gn, tab, frm, fis, slly dolc.

Dol: wh, tan, lt gy, micxl, blk, frm - hd, rr slty lns, tr pyr, tr styls, dns, ns.

Dol: lt gy, lt - m brn, micxl, rr fragl tex, slty, / occ slty lns, slly arg ip, styls, dns, ns.

Dol: lt brn, bf, lt gy, micxl, slty, tr dism pyr, tr styls, dns, ns.

Sltst: lt gy, v sl tr gnsh, v sl tr redsh, dolc, qtz, tt, ns.

Dol: lt brn, bf, lt gy, micxl, rmnt fragl tex, ools, slty, styls, rr tr pyr, rr tr wh cht, dns, ns.

Dol: lt brn, lt gy, micxl, rmnt fragl tex, ools, slty, pyric, styls, dns, ns, / slty lns.

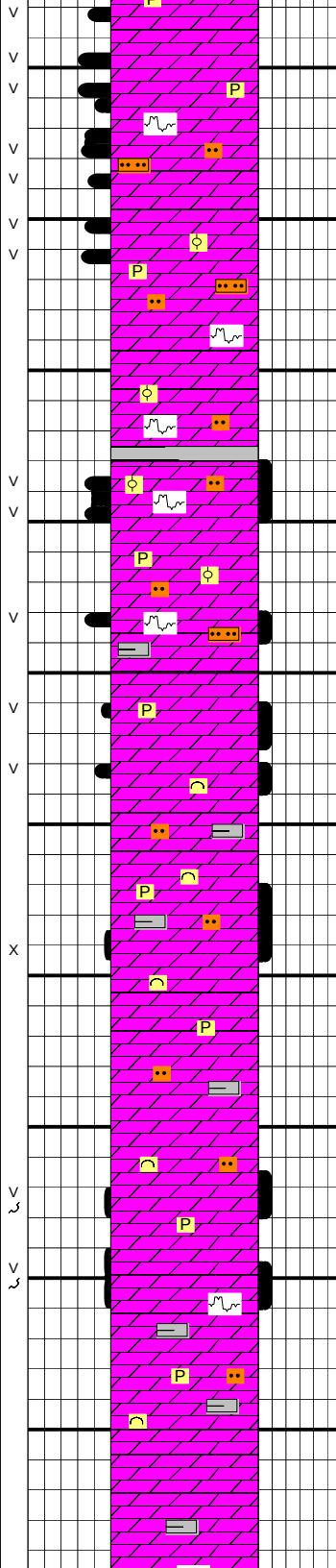
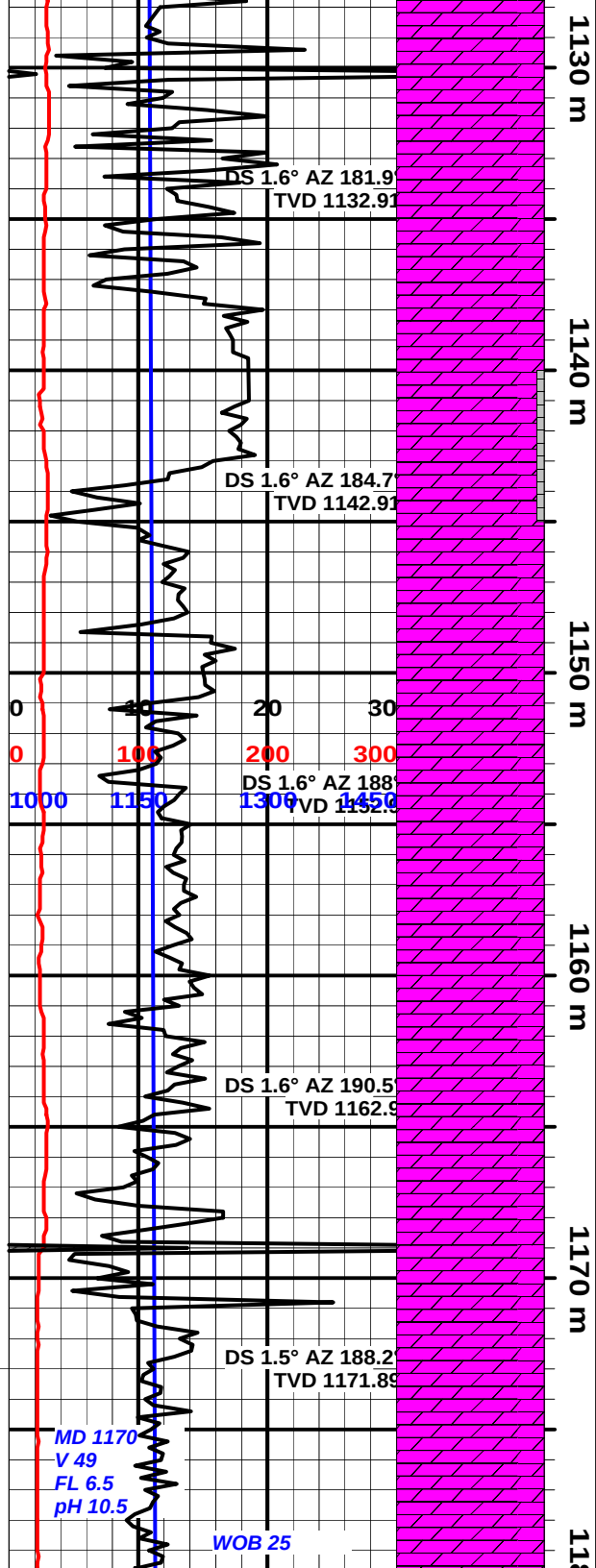
Dol: mot lt brn, lt gy, micxl, fragl tex, ools, tr pyric, styls, slty, tr chty, dns, ns, / slty lns.

Dol: lt brn, lt gy, micxl, tr rmnt fragl tex, tr ools, tr pyric, styls, slty, rr cht, ptch intl por 6-8%, ns, / slty lns.

Dol: lt brn, bf, micxl, tr crpxl, fragl tex, Bracs, tr ools, tr msm cht, tr clr calc xls, pyric, styls, tr shy lns, ptch intl & vugy por 6-8%, ns, / tr slty lns.

Dol: tan, lt brn, lt gy, crpxl, tr micxl, tr rmnt fragl

0.01	100
0.01	100
0.001	10
0.001	10
0.001	10
0.001	10



tex, tr pyric, styls, lchd vugy por 6-8%, (pos cor?), ns.

Dol: tan, lt brn, lt gy, crpxl, slty, pyric, styls, tr ptch lchd por 8-10% (cors?), predly dns, ns, / tr lt gy slty lnss.

Dol: lt - m brn, occly lt gy, crpxl, occ rmnt fragl tex, pos ools?, slty, styls, tr pyric, ptch lchd vugy por 8-10% (cors?), predly dns, ns, / tr lt gy slty lnss.

Dol: tan, lt brn, micxl - crpxl, tr rmnt fragl tex, ools, slty, styls, tr ptch lchd vugy por 6-8%, predly dns, ns.

Dol: bf, tan, lt brn, crpxl - micxl, tr rmnt fragl tex, ools, tr pyric, styls, slty, tr ptch lchd vugy por 6-8%, predly dns, ns, / rr slty & shy lnss.

Dol: bf, tan, lt brn, crpxl - micxl, tr rmnt fragl tex, ools, tr pyr, tr styls, slty ip, tr ptch lchd vugy por 3-6%, predly dns, ns, / rr slty & shy lnss.

Dol: bf, tan, lt brn, micxl, tr rmnt fragl tex, tr pyr, occ styls, slty lnss, tr ptch lchd vugy por 2-4%, predly dns, ns, / rr shy lnss.

Dol: bf, tan, lt brn, crpxl - micxl, tr pyr, occ styls, mostly dns, ns.

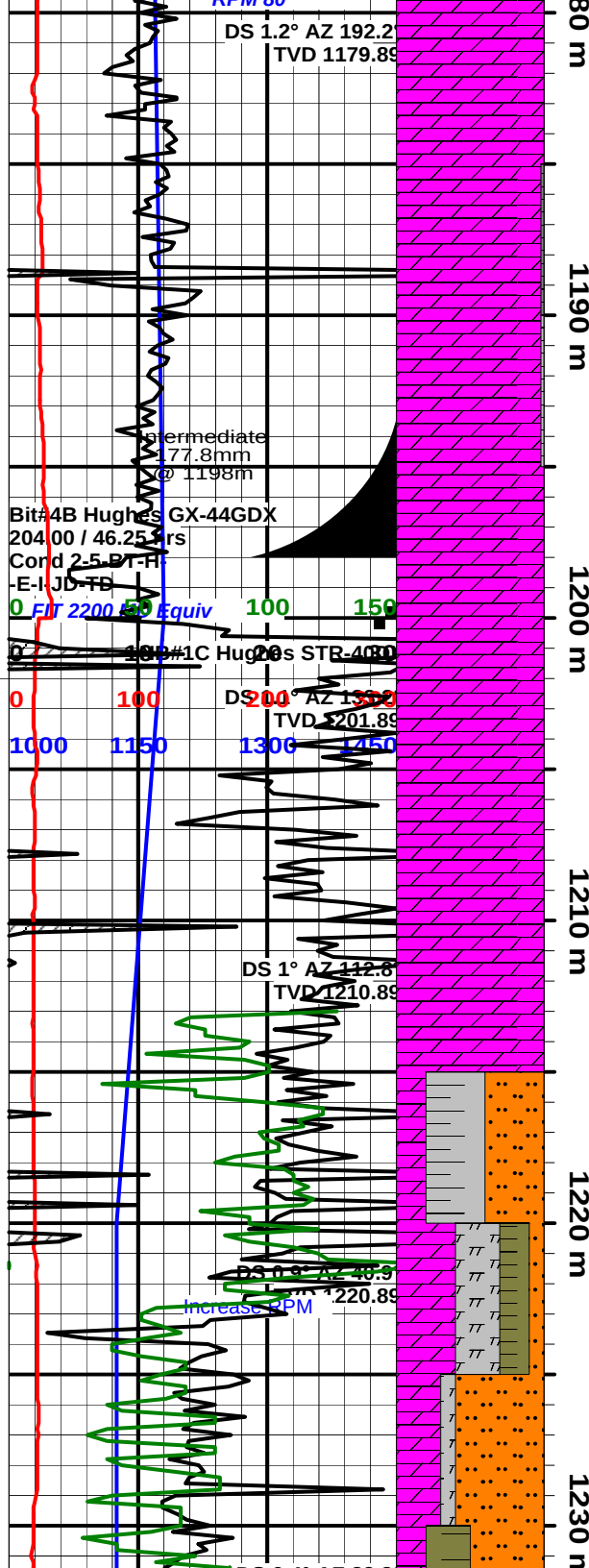
Dol: bf, tan, lt brn, crpxl - micxl, tr rmnt fragl tex, ools, tr pyr, occ styls, ss, tr ptch lchd vugy por tr-2%, predly dns, ns, / rr shy lnss.

Dol: bf, tan, lt brn, crpxl - micxl, tr pyr, occ styls, ss, tr ptch lchd vugy & intxl por tr-2%, predly dns, ns, / rr shy lnss.

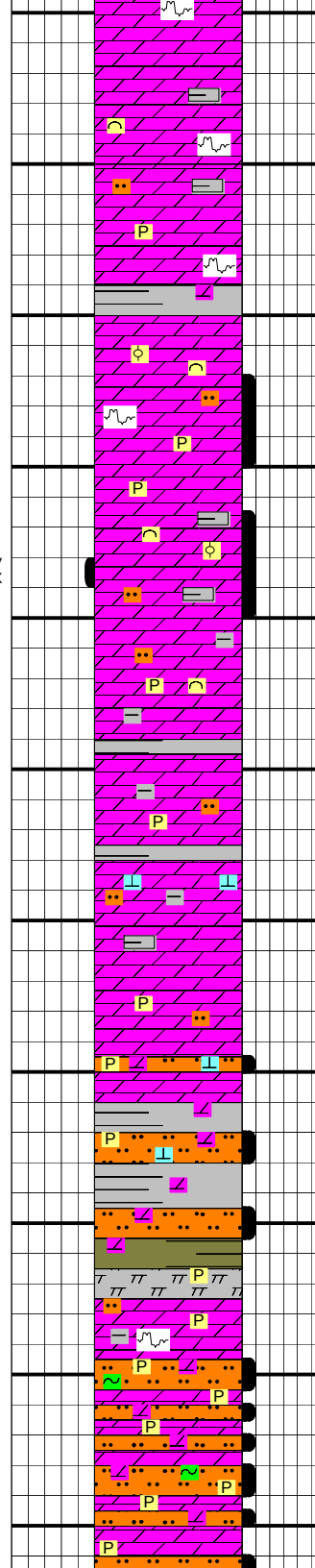
Dol: bf, tan, lt brn, crpxl - micxl, tr pyr, occ styls, tr slty, predly dns, ns, / rr lt gn shy lnss.

0.01	100
0.01	100
0.001	10
0.001	10
0.001	10
0.001	10

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V X



Dol: bf, tan, lt brn, crpxl - micxl, tr pyr, occ styls, tr slty, occ rmnt fragl tex, predly dns, ns, / rr gy shy lnss.

Dol: bf, tan, lt brn, crpxl - rr micxl, tr pyr, occ styls, tr slty, predly dns, ns, / rr gy shy lnss.

Sh: gy, gn, tab, frm, v dolc, grdg - arg dol.

Dol: bf, tan, lt brn, micxl, tr pyr, rmnt fragl tex, occ ools, occ styls, tr slty, predly dns, ns, / rr gy shy lnss.

Dol: bf, tan, lt brn, micxl, tr pyr, fragl tex, occ ools, occ styls, tr slty, tr ptch 0-2% intxl, vugy por, predly dns, ns, / rr gy shy lnss.

Dol: bf, tan, lt brn, micxl, tr pyr, fragl tex, occ styls, tr slty, loc arg strgs, ns, / rr gy shy lnss.

Dol: bf, lt brn, lt gy, micxl - crpxl, tr pyr, occ styls, tr calcs ptchs, slty slty, loc arg strgs, ns, / rr gy shy lnss.

Dol: bf, brn, lt gy, crpxl, arg - mrlly ip, slty, tr dism pyr, / lt - m gy shy lnss.

Sltst: lt gy, dolc, qtz, tr calcs, tr pyric, tt, ns.

Dol: tan, crpxl, dns, ns.

Sh: lt - m gy, gnsh, blkly, dolc.

Sltst: lt gy, dolc, qtz, tr calcs, tr pyric, tt, ns.

Sh: lt - m gy, gnsh, blkly, dolc.

Sltst: lt gy, dolc, qtz, tt, ns.

Sh: gn, gy, blkly - plty, dolc.

Mrlst: m - dk gy, dolc, dism pyr.

Dol: lt - m brn, lt gy, crpxl, styls, tr pyric, arg, slty, dns, ns.

Sltst: lt gy, dolc, qtz, dism pyr, rr glau, tt, ns.

Dol: tan, lt brn, crpxl, pyric, dns, ns.

Sltst: lt gy, dolc, qtz, dism pyr, rr glau, tt, ns.

Dol: tan, lt brn, crpxl, tr pyric, dns, ns.

0.01 100

0.01 100

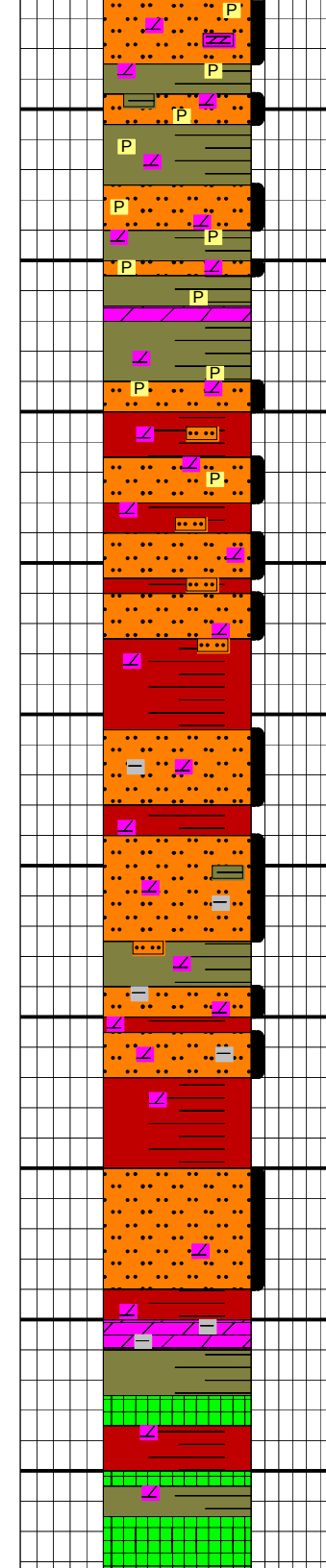
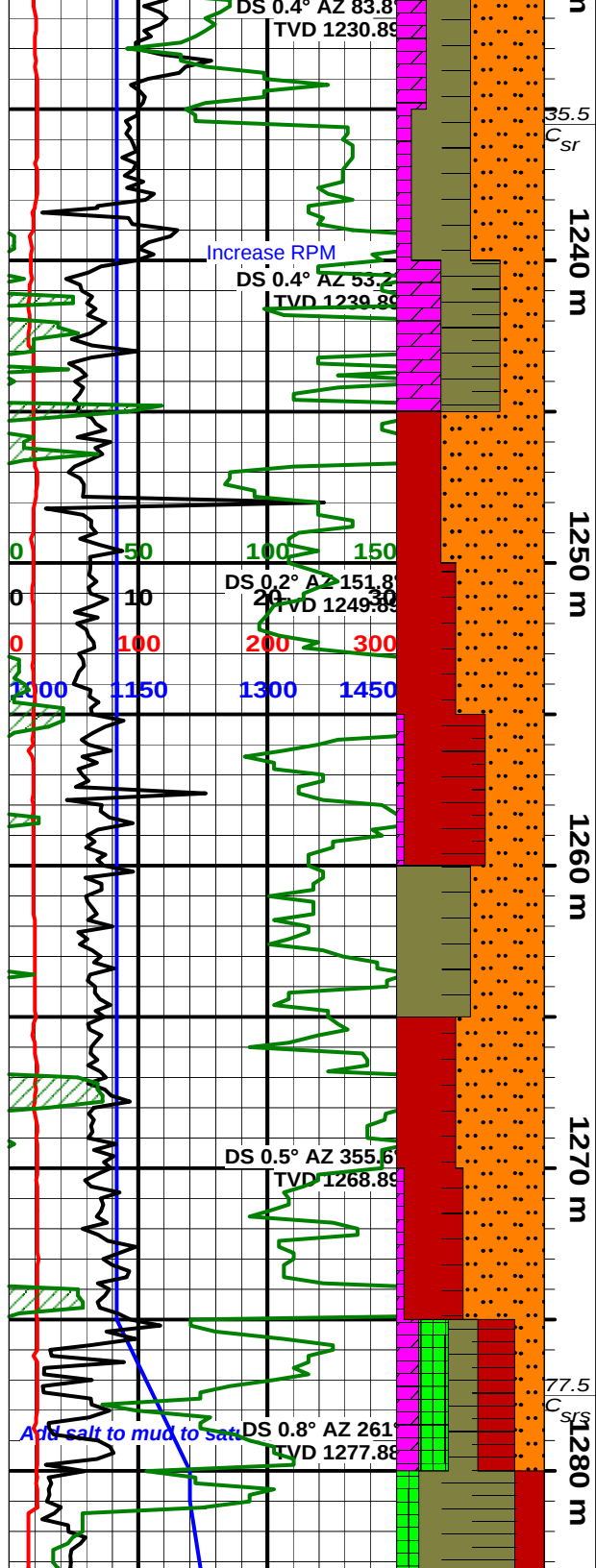
0.001 10

0.001 10

0.001 10

0.001 10

0.001 10



Sltst: lt gy, dolc, qtz, gn shy lnss, dism pyr, tt, ns, / intspd gn sh.

Sh: gn, plty, dolc, slty, dism pyr, / intspd sltst.

Saline River 1235.5m MD
(TVD: 1234.39) (SSL: -982.29)

Sh: gn, gy, blkly, dolc, slty, dism pyr, / intspd sltst.

Sltst: lt gy, dolc, arg, qtz, pyric, tt, ns, / intspd sh.

Sltst: lt gy, dolc, slly arg, qtz, pyric, tt, ns.

Dol: lt - m brn, gy, crpxl, slty, arg, dns, ns.

Sh: gn, m gy, tr red, plty - blkly, dolc, tr dism pyr.

Sh: red, gn, plty, dolc, / slty lnss.

Sltst: pk, lt gy, dolc, slly arg, qtz, tr dism pyr, tt, ns.

Sh: red, gn, plty, dolc, / slty lnss.

Sltst: lt gy, pk, dolc, qtz, slly arg, shy lnss, tt, ns.

Sh: red, gn, m gy, plty, dolc, tr micas, / slty lnss.

Sltst: lt gy, redsh, dolc, slly arg, tr shy lnss, tt, ns.

Sh: red, mar, gn, plty - blkly, dolc, occlly micas.

Sltst: lt gy, redsh, dolc, slly arg, qtz, tt, ns, / intspd sh lnss.

Sh: gn, red, mot ip, plty, dolc, occlly micas, / intspd sltst lnss.

Sltst: lt gy, redsh, dolc, slly arg, qtz, rr dk specs, tt, ns.

Sh: red, gn, mar, plty, dolc, slty, occlly micas.

Sltst: lt gy, redsh, dolc, slly arg, qtz, tt, ns.

Dol: dk brn, crpxl, slly arg, dns, ns.

Sh grn: lt gn, red ptchs, tab, sft- frm, slty.

Saline River Salt MD 1277.5m
TVD 1276.4 m SS -1024.3 m

Sa: trnspl, lt gy, tab frags, micxl, sft, also impure / shy intbeds.

Sh red: red, orng, tab, frm, slly slty, dolc.

Sa: trnspl, tab, micxl, sft, apps eroded.

0.01 100

0.01 100

0.001 10

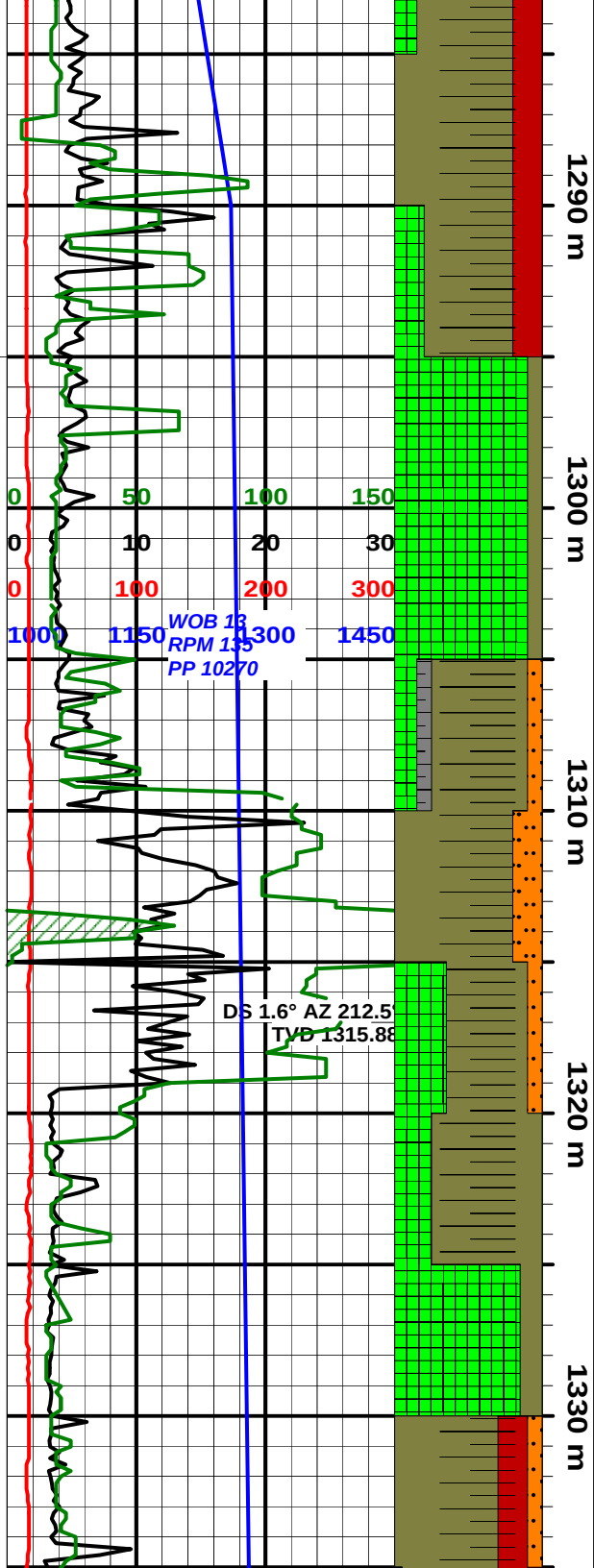
0.001 10

0.001 10

0.001 10

0.001 10

Feb 27, 2008



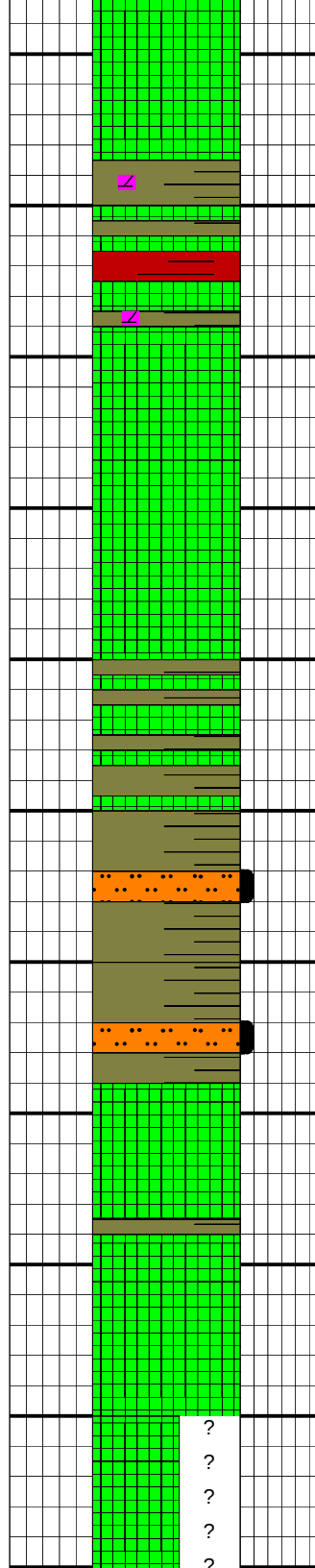
1290 m

1300 m

1310 m

1320 m

1330 m



1290 m

1300 m

1310 m

1320 m

1330 m

Sh grn: lt gn, mntr dk gn, tab - fis, dolc, aa.

Sh : pale red, orng, tab, gn ptchs, sft, aa.

Sa: trnsp, rdd frags, sft, eroded edges.

Sa: trnsp, pale orng, rrd frags, eroded edges, aa.

Sa: trnsp, pale orng, rrd frags, eroded edges, aa.

Sh grn: lt gn, frm - sft, tab, occ red ptchs, occ slty strgs.

Sa: trnsp, lt brn, aa.

Slstst: lt brn, pale red, orng, blk, frm - sft, slly dolc, tt, ns.

Sh grn: lt gn, tab, sft, occ red ptchs, occ slstst strgs.

Slstst: lt gy, lt brn, blk, frm, dolc, tt, ns.

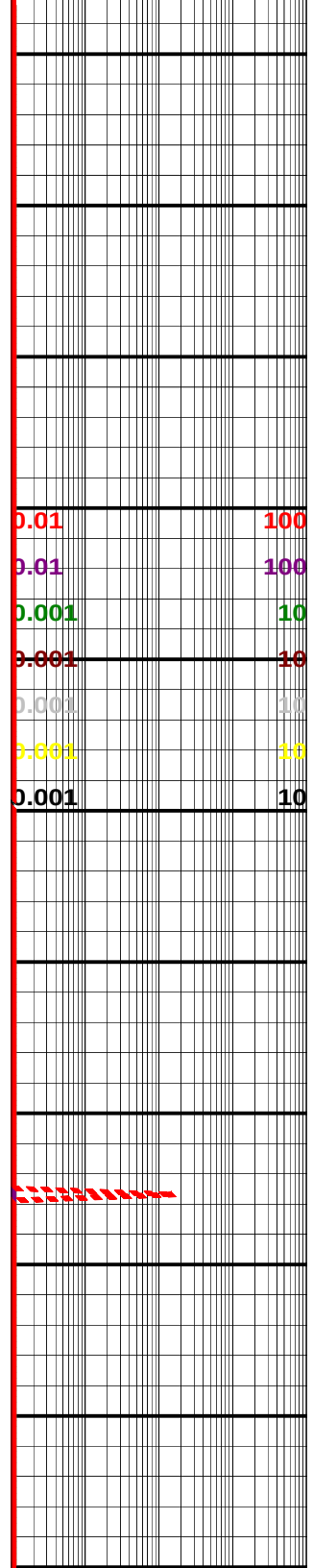
Sh grn: lt gn, lt gy, tab, sft, / occ slty strgs.

Sa: trnsp, lt brn, rrd frags, v sft, eroded edges.

Sh grn: lt gn, lt gy, mntr red ptchs, sft, blk, aa.

Sa: lt gy, trnsp, mntr lt brn, c rrd frags, eroded edges, sft, as previous.

Sa: lt gy, trnsp, tab, rdd frags, eroded edges.



0.01 100

0.01 100

0.001 10

0.001 10

0.001 10

0.001 10

0.001 10

0.001 10

0.001 10

0.001 10

0.001 10

0.001 10

0.001 10

0.001 10

0.001 10

0.001 10

0.001 10

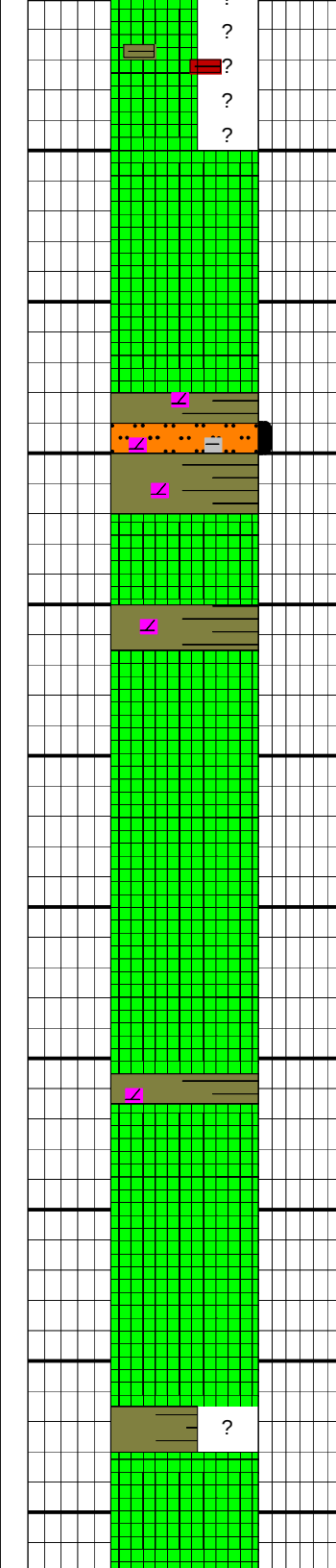
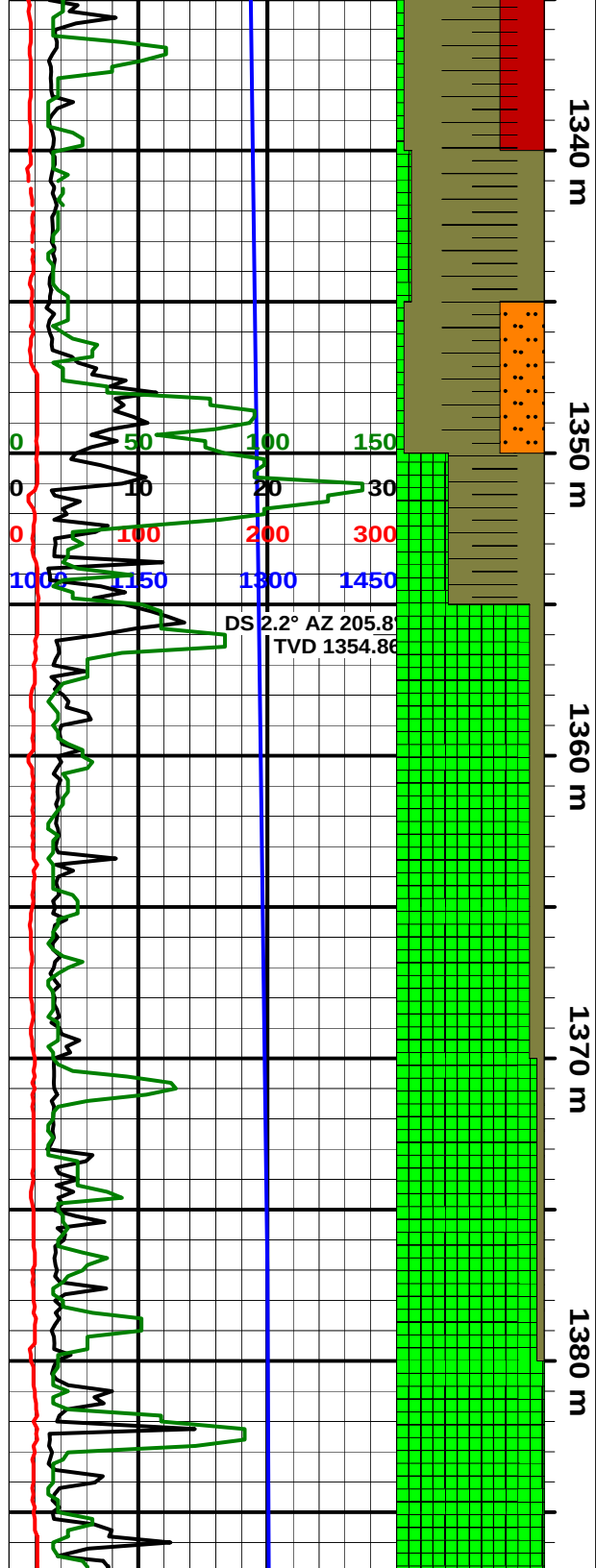
0.001 10

0.001 10

0.001 10

0.001 10

0.001 10



mostly sticky sh in spls?

Sa: lt gy, trnsp, tab, eroded edges.

Sa: hal, clr, trnsl, xln, partially dissolved.

Sh: mot gn, red, orng, mar, blk - plty, dolc.

Slstst: lt gy, redsh, dolc, sly arg, qtz, tt, ns.

Sh: mot gn, red, mar, orng, plty - blk, dolc.

Sa: hal, lt gy, off wh, trnsl, xln, eroded edges.

Sh: gn, red, plty, dolc.

Sa: hal, clr, trnsl, xln, eroded edges.

Sa: hal, clr, trnsl, xln, eroded edges.

Sa: hal, clr, occly redsh, trnsl, xln, eroded edges.

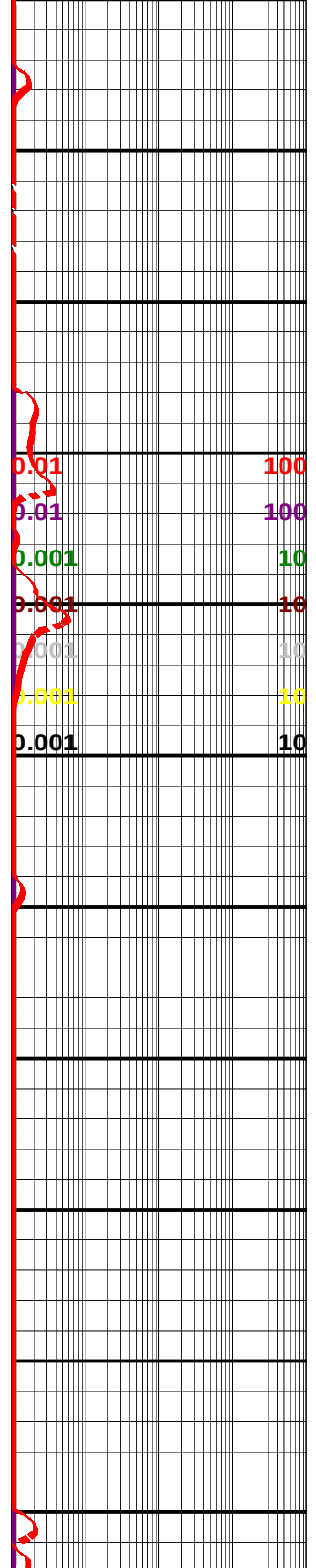
Sh: gn, red, plty, dolc.

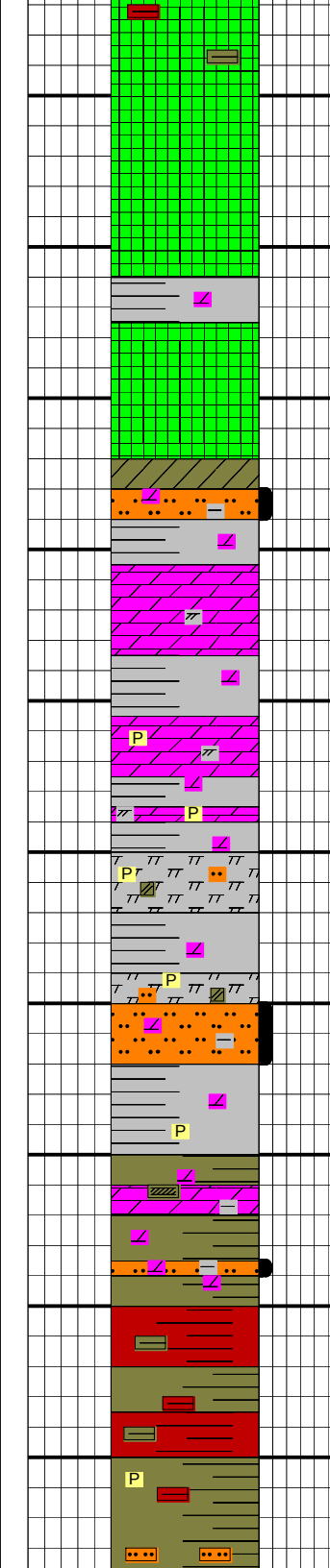
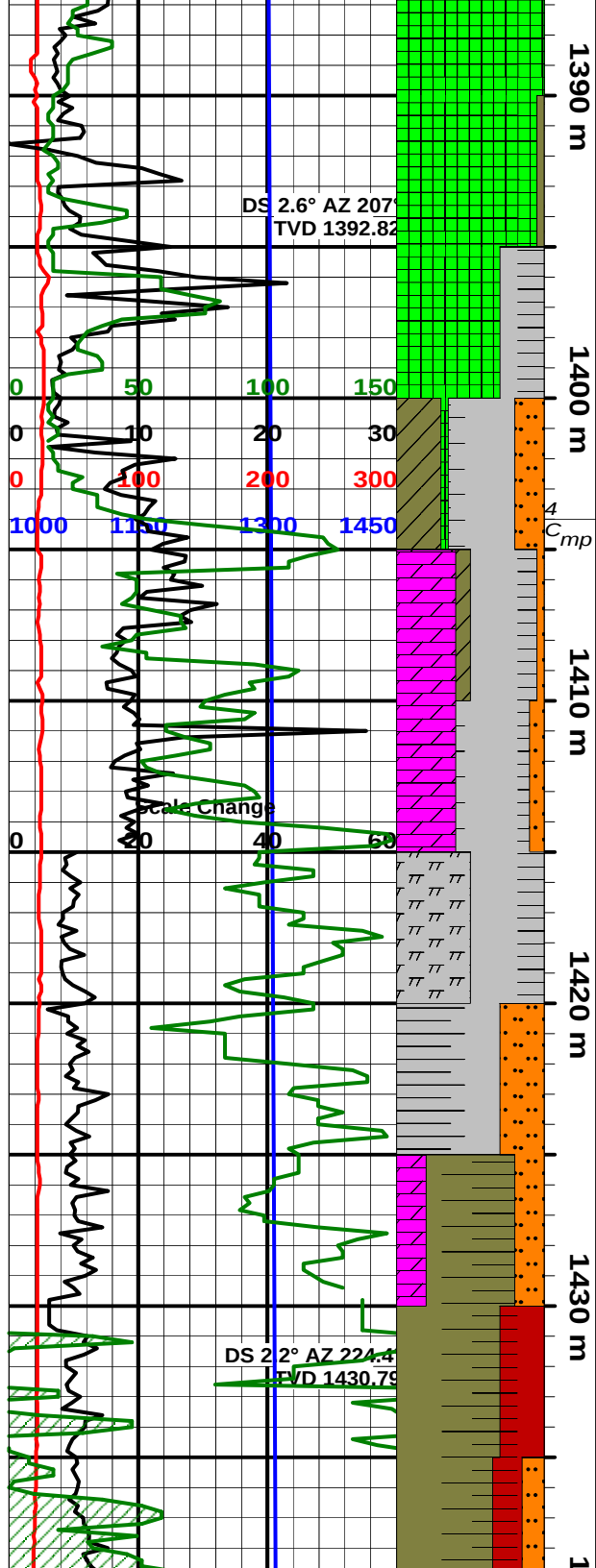
Sa: hal, clr, occly redsh, trnsl, xln, eroded edges.

Sa: hal, clr, occly redsh, trnsl, xln.

Sh: gn, plty, dolc.

Sa: hal, clr, lt gy, trnsl, xln, / shy lns.





Sa: hal, clr, trnsl, xln, tr red & gn shy lnss.

Sa: hal, clr, tr redsh, trnsl, xln.

Sh: m gy, tr gn & red, blk, dolc.

Sa: hal, clr, trnsl, lt gy, xln.

Anhy: lt gy, lt brn, micxl, dns.

Sltst: lt gy, redsh, dolc, sly arg, qtz, tt, ns.

Mount Cap 1404m MD
(TVD: 1402.82) (SSL: -1150.72)

Sh: m gy, tr gn, tr red, plty.

Dol: m brn, crpxl, mrl, dns, ns.

Sh: m gy, plty, dolc.

Dol: m brn, crpxl, mrl, tr pyric, lamd, dns, ns.

Sh: m gy, gn, tr red, plty, dolc.

Dol: m brn, crpxl, mrl, tr pyric, lamd, dns, ns.

Sh: m gy, gn, tr red, plty, dolc.

Mrlst: lt - m brn, dolc, anhyic, sly, tr pyric, lamd, dns.

Sh: m gy, tr gn, tr red, plty - blk, dolc - mrl.

Mrlst: lt - m brn, dolc, anhyic, sly, tr pyric, lamd, dns.

Sltst: lt gy, redsh, tr gnsh, dolc, sly arg, qtz, tt, ns.

Sh: m gy, gn, red, plty - blk, dolc, pyric.

Sh: mot gn, red, m gy, plty, dolc.

Dol: lt - m brn, crpxl, arg, anhy lnss, dns, ns.

Sh: mot gn, red, m gy, plty, dolc.

Sltst: lt gy, redsh, dolc, sly arg, qtz, tt, ns.

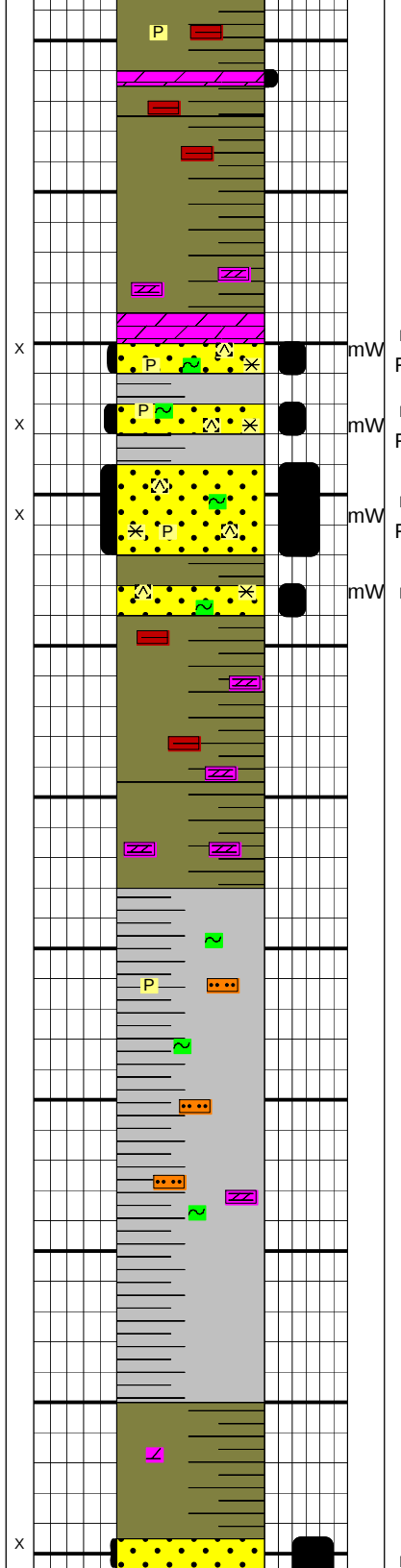
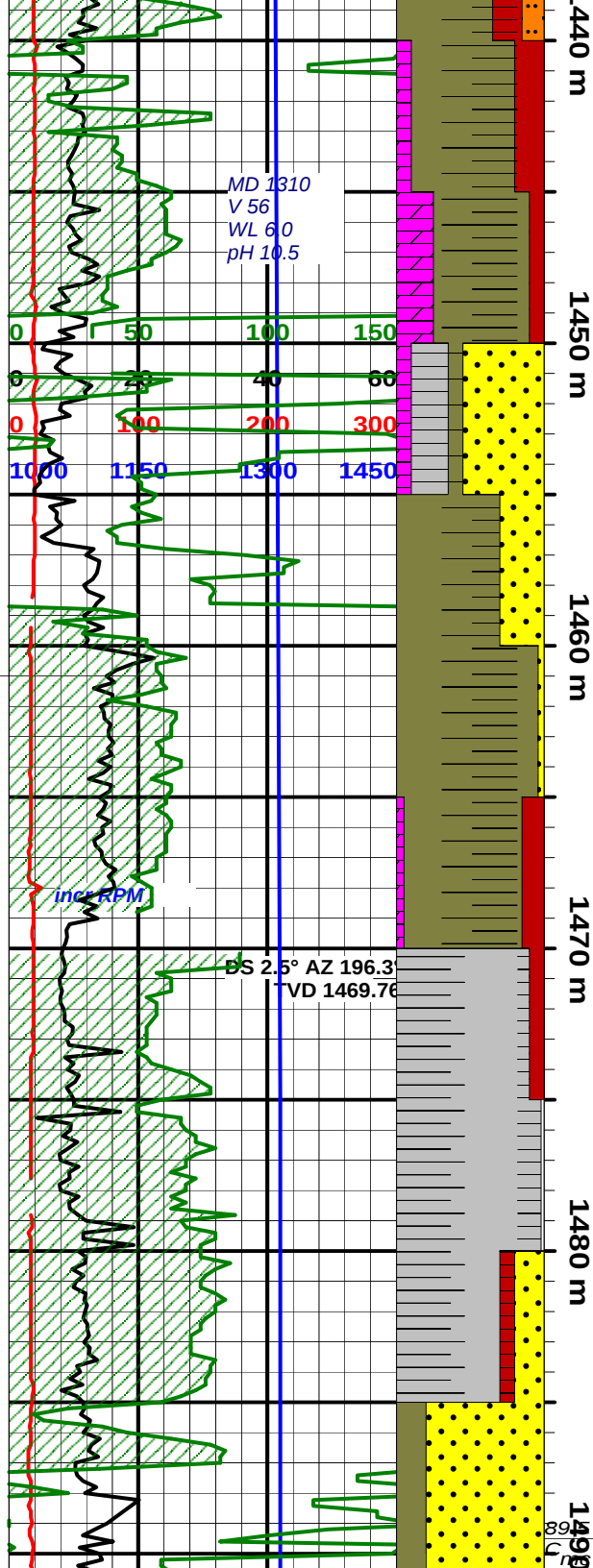
Sh red: pale red, red, gn ptchs, sft - frm, fis, aa.

Sh grn: lt gn, red, mnr gy ptchs, tab - fis, sft - frm.

Sh grn : lt gn, red, mnr gy ptchs, tab - fis, sft - frm.

Sltst: lt gy, bge, blk, frm - hd, qtz grs in dolc

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cmt, silty pyric, tt, ns.

Dol: lt brn, mot bf, micxl, tab, frm - hd, occly slty, rr rmnt fragl tex, dns, ns.

Sh grn: lt gn, red, mntr gy ptchs, tab - fis, sft - frm.

Dol: lt brn, mot bf, tab, micxl mtz, also rmnt fragl tex, ools?, also occ dk mic lams, algal?, silty slty ip, dns, ns.

Ss: lt gy, offwh, trnsp, f gred, rng v f - occ m, sbdr - rd, w - m srt, frm - fri, com loose grs, cln, qtz grs in sils cmt, com glau, occ dk mnrls, tr pyr, some sec qtz ovghts, ptch 2-6% intgran por, ns.

Ss: lt gy, offwh, trnsp, f gred, rng v f - occ m, sbdr - rd, w - m srt, frm - fri, com loose grs, cln, qtz grs in sils cmt, com glau, occ dk mnrls, tr pyr, some sec qtz ovghts, ptch 3-7% intgran por, ns.

Ss: aa.

Sh grn: lt gn, mntr red ptchs, fis, frm - sft, flat luster.

Sh grn: lt gn, mntr red ptchs, fis, frm - sft, flat luster.

Dol: lt brn, mot bf, tab, micxl mtz, also rmnt fragl tex, silty slty ip, dns, ns.

Sh: gy, gnsh gy, fis, frm, silty slty, / occ sltst lams, com gn & blk glau, occ pyr, grdg - gn sh.

Sh: gy, gnsh gy, fis, frm, silty slty, / occ dolc lams, com gn glau, occ pyr, grdg - gn sh.

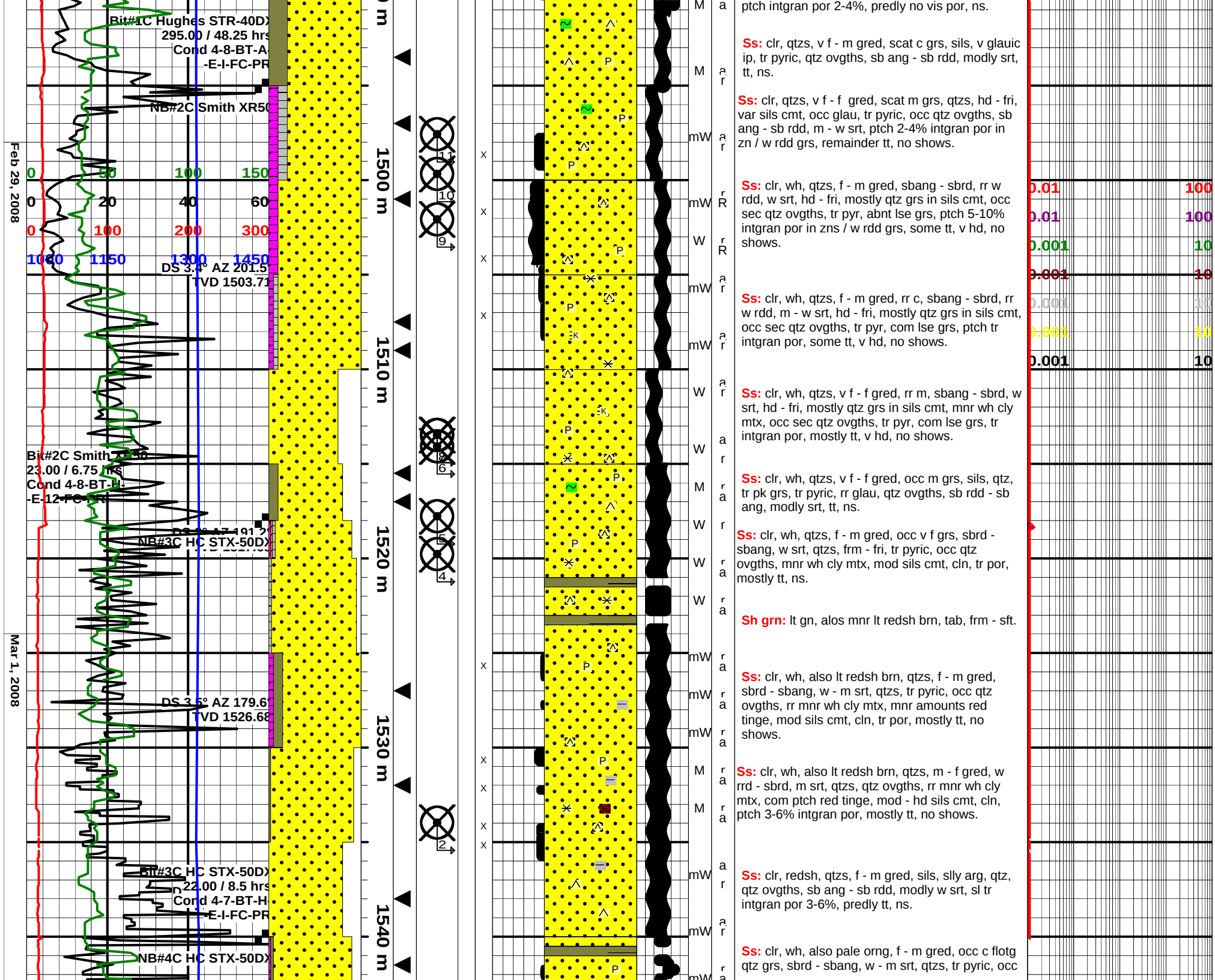
Sh : gy, gnsh gy, tab, frm, occ red ptchs.

Sh: gn, occly red, plty, dolc.

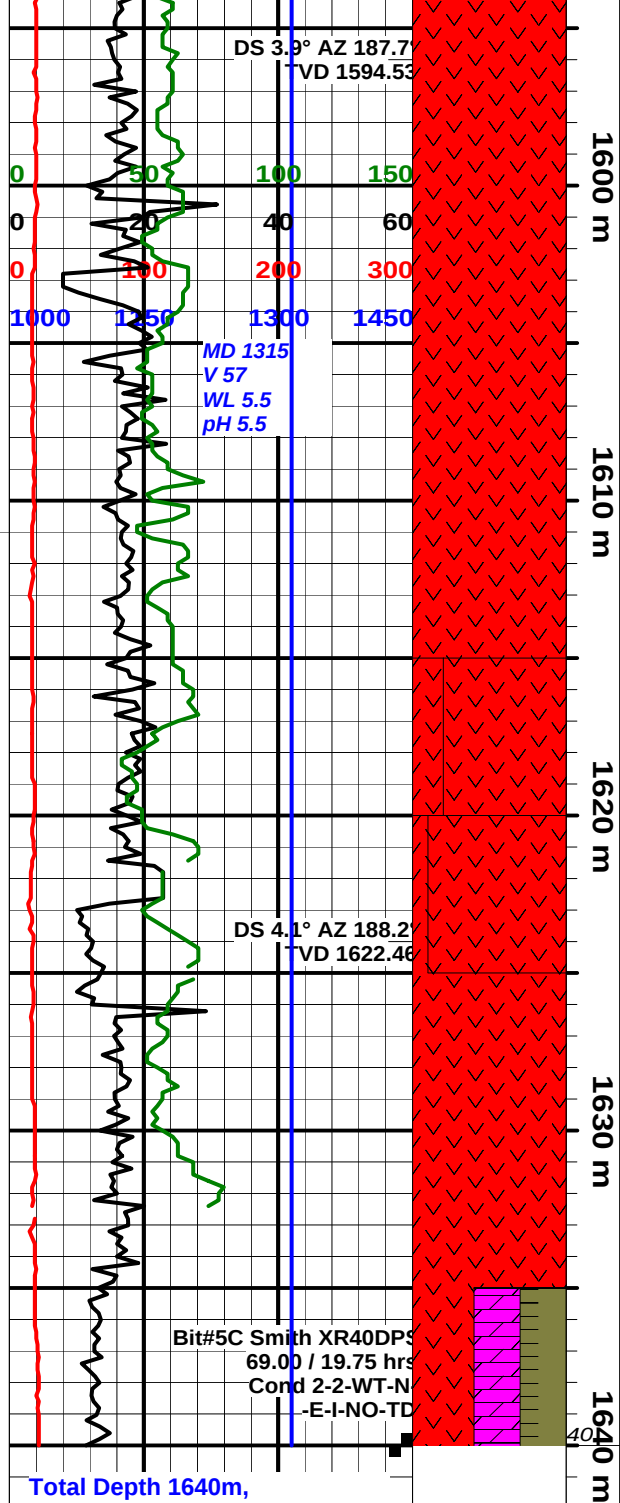
Mount Clark 1489.5m MD (TVD: 1488.23) (SSL: -1236.13)

Ss: clr, qtzs, f - m gred, scat c greds, sils, v glau ip, tr pyric, qtz ovghts, sb rdd - sb ang, py srt, rr tr

0.01	100
0.01	100
0.001	10
0.001	10
0.001	10
0.001	10



Mar 4, 2008



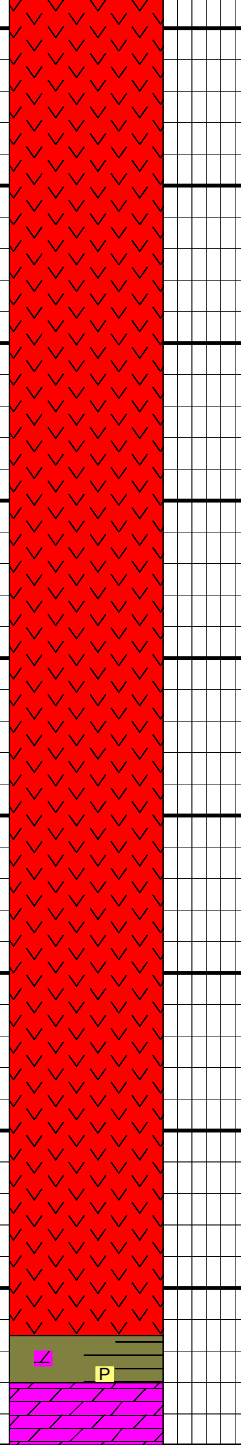
1600 m

1610 m

1620 m

1630 m

1640 m



Basalt: (pos db?), dk gy, specd, gn phen (chlor?, / altn corona?), elongated trnsp xls, fe oxide stng, loc wh acic xls, actinolite?, pos alt.

0.01 100

Basalt: (pos db?), dk gy, specd, gn phen (chlor?, / altn corona?), elongated trnsp xls, fe oxide stng, loc wh acic xls, actinolite?, pos alt.

0.01 100

Basalt: (pos db?), dk gy, dk gn, specd, gn phen (chlor?, / altn corona?), elongated trnsp xls, fe oxide stng, qtz, loc wh acic xls, actinolite?, loc phyl tex, pos alt.

0.001 10

0.001 10

0.001 10

0.001 10

0.001 10

Basalt: (pos db?), dk gy, dk gn, specd, gn phen (chlor?, / altn corona?), elongated trnsp xls, fe oxide stng, qtz, loc wh acic xls, actinolite?, loc phyl?, schs? tex, apps alt.

Rhy?: mot gy, specd, blk, frm - hd, qtz xls in brnsh gy xln mtx, com chlor, accic xls, pos wdd tuff appearance, occ alt coronas, occ dk mnrls, dns.

Basalt: dk gy, occly red, specd, gn phen (chlor?), elongated trnsp xls, fe oxide stng, alt appearance.

Basalt: dk gy, occly red, specd, gn phen (chlor?), scat trnsp elongated xls, fe oxide stng, rr tr pyr, alt appearance.

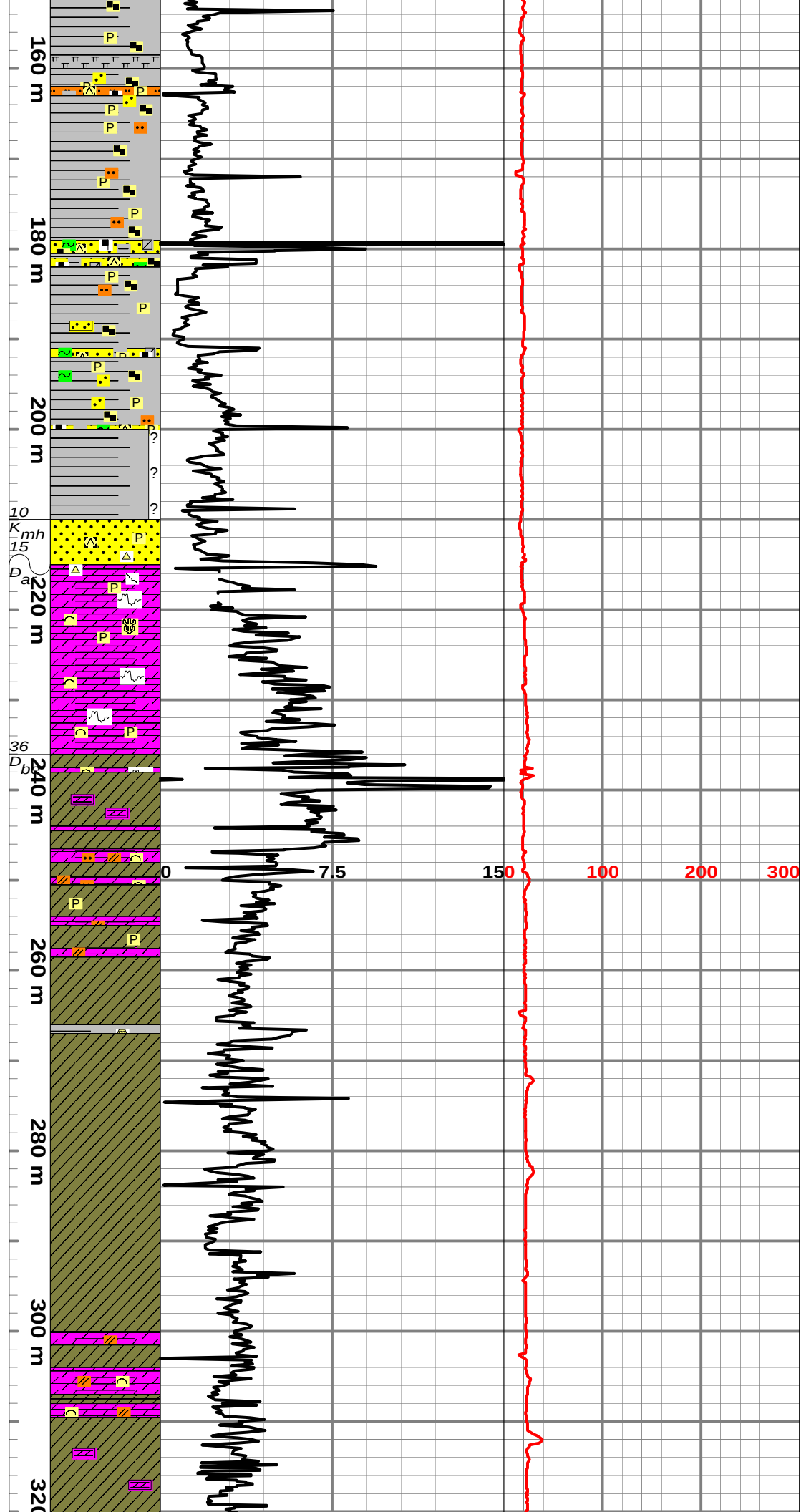
Basalt: dk gy, occly red, specd, gn phen (chlor?, bndd ip), scat trnsp elongated xls, fe oxide stng, rr tr pyr, alt appearance.

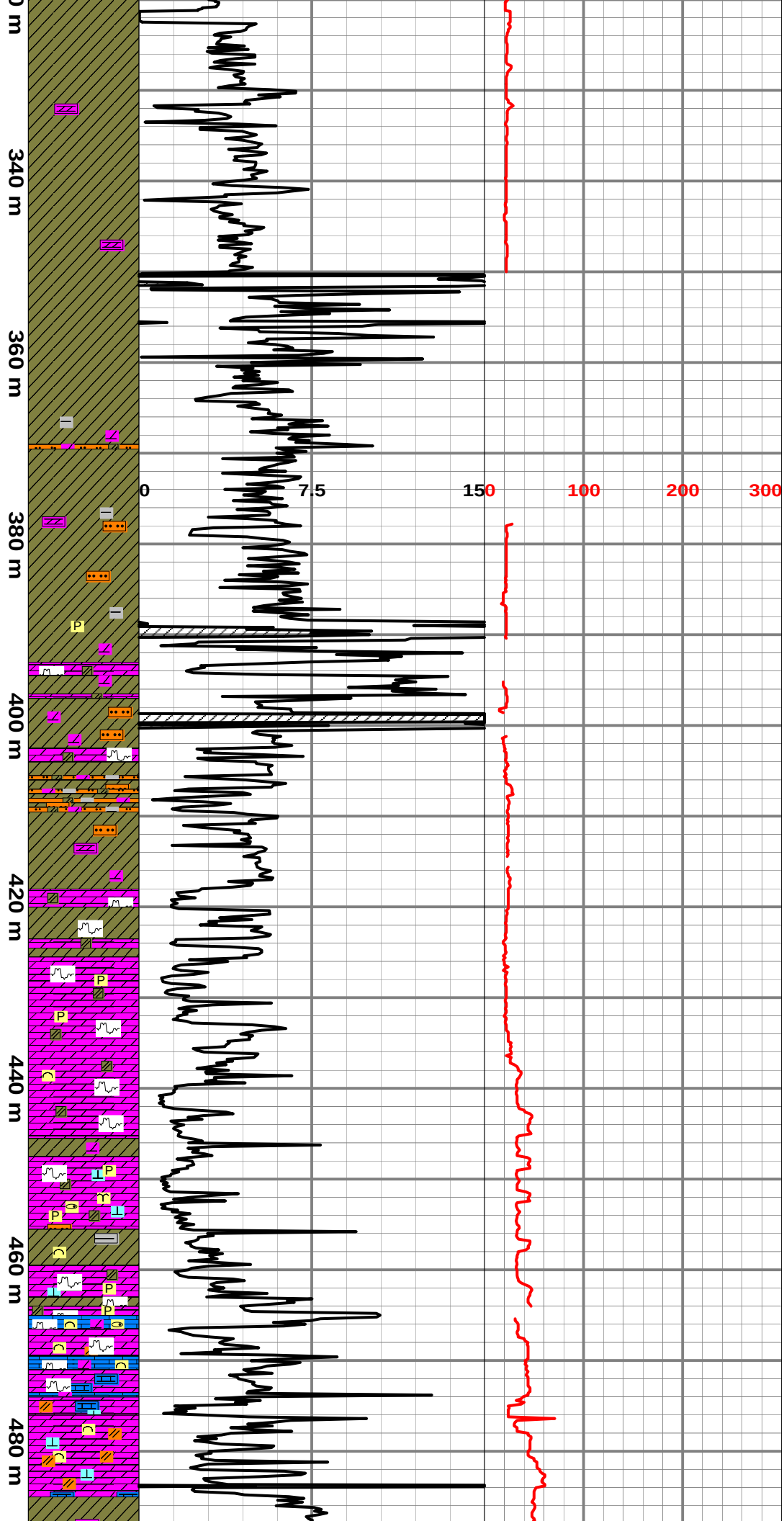
Rhyolite?: grd to basalt?, lt - dk gy, specd, occly redsh, gn phen (chlor?), elong pk xls (K-feld?), fe oxide stng, alt appearance.

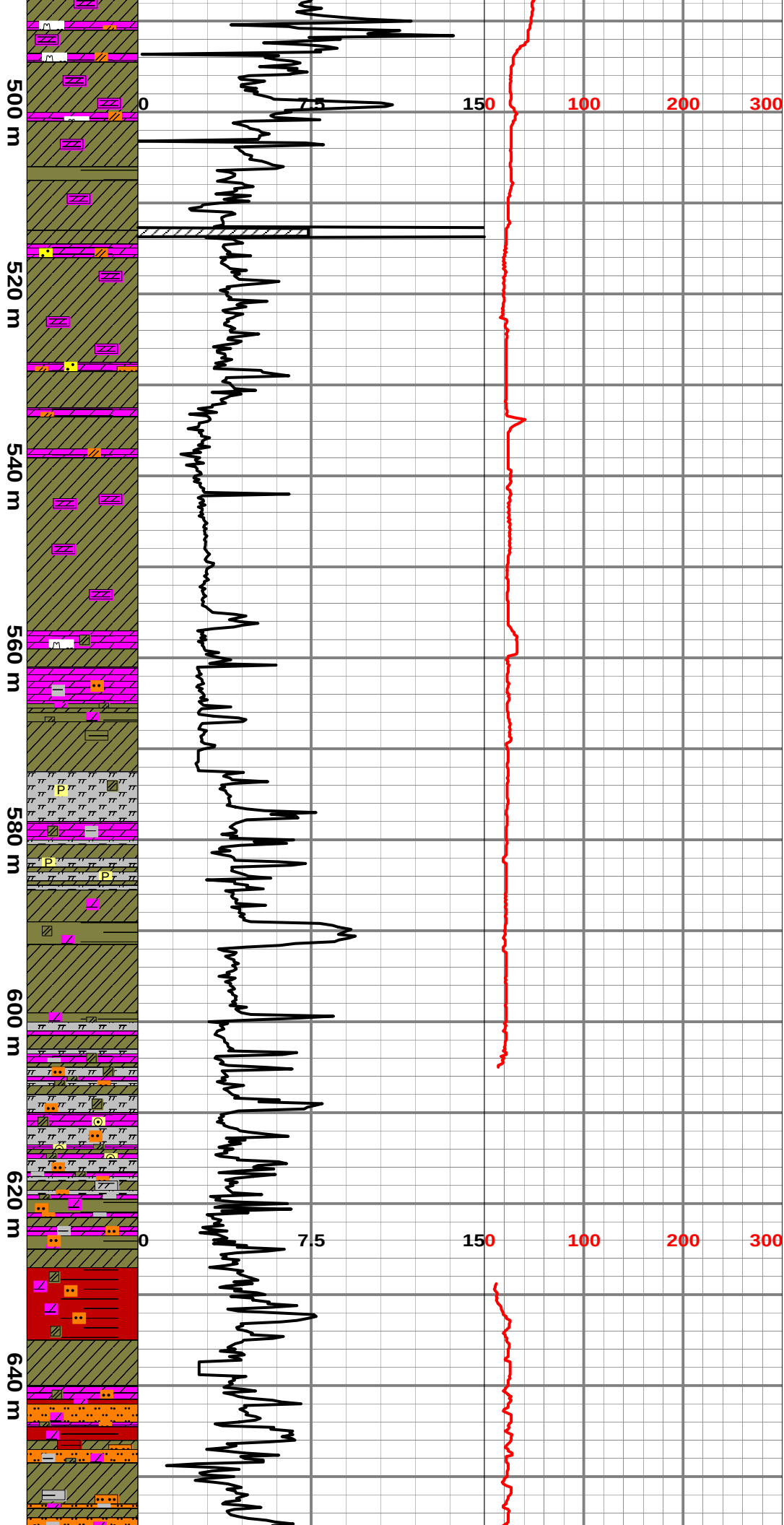
Sh: gn, red, plty, dolc, dism pyr.

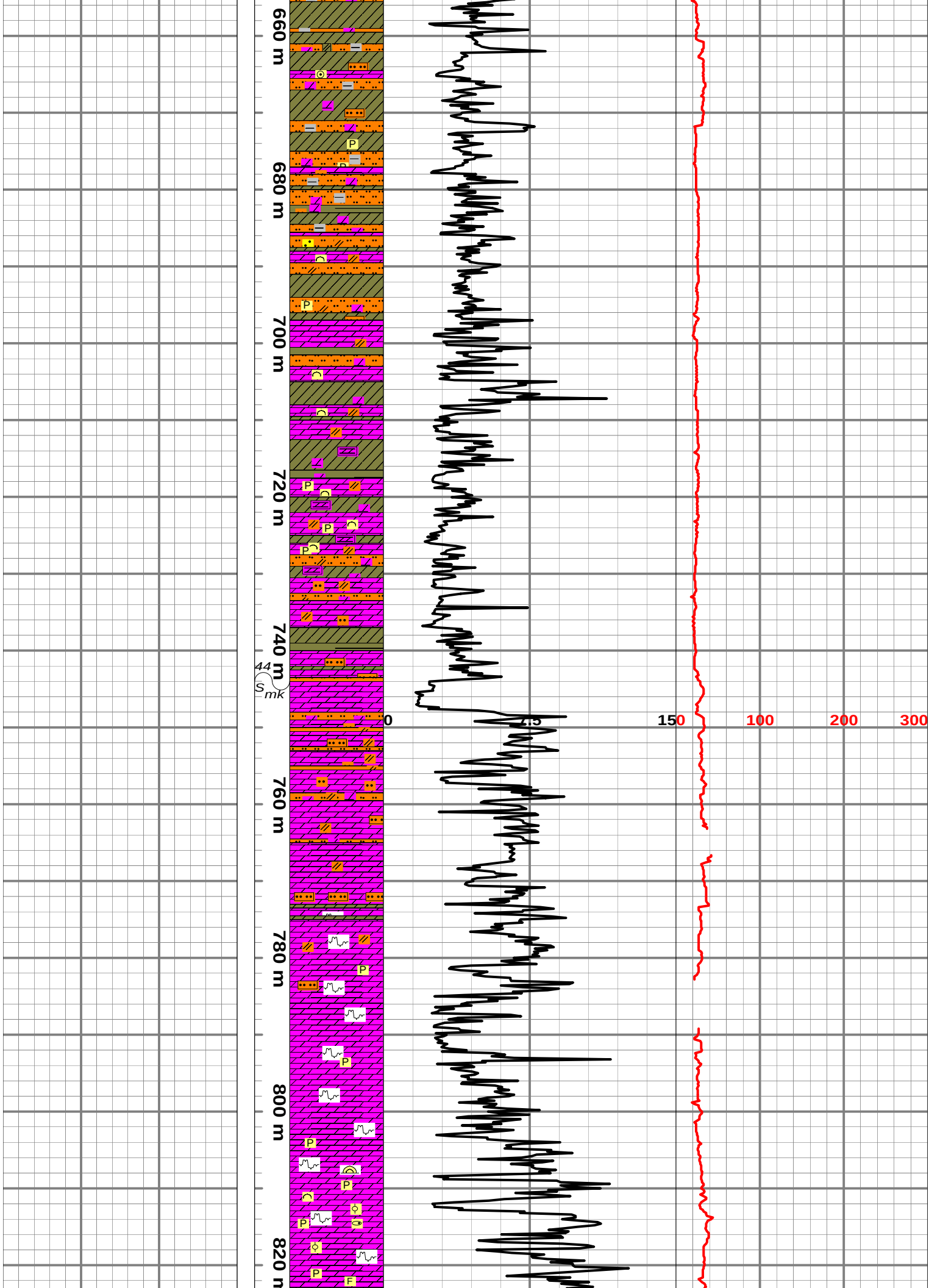
Dol: bf, lt brn, tr redsh, crpxl, tr micxl, dns, ns.

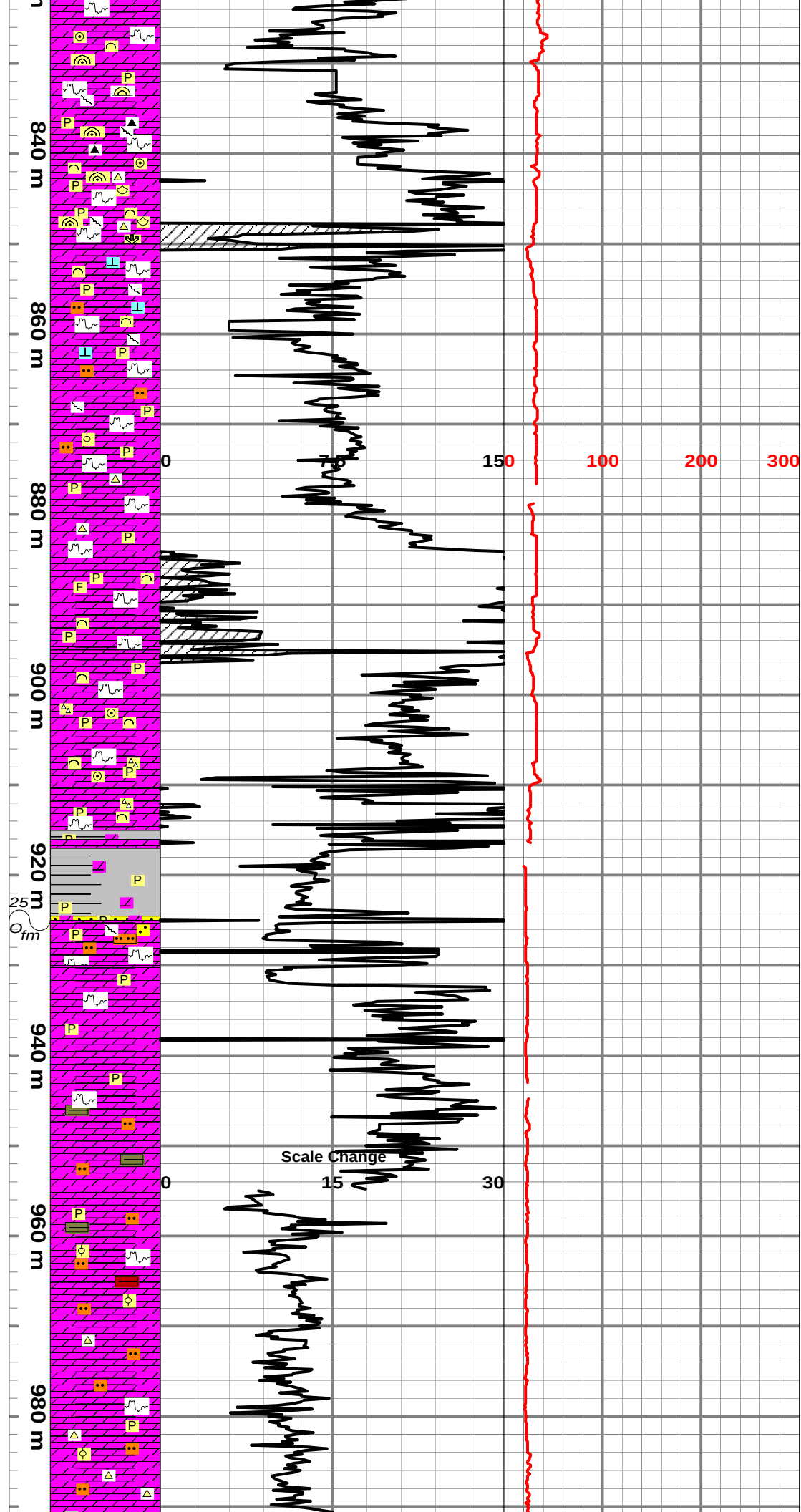
LWD Gamma Ray				Slide - Rotate	Measured Depth	Interpreted Lithology	DRILL RATE		PC Blackwater Kwijika M-5	
Gamma Ray (m)							Drill Rate (min/m)	TOTAL GAS		
0	50	100	150				0	15	300	TOTAL GAS (units)
										100 200 300
					0 m					
					20 m					
					40 m					
					46 m					
					50 m					
					60 m					
					80 m					
					100 m					
					120 m					
					140 m					
					146 m					

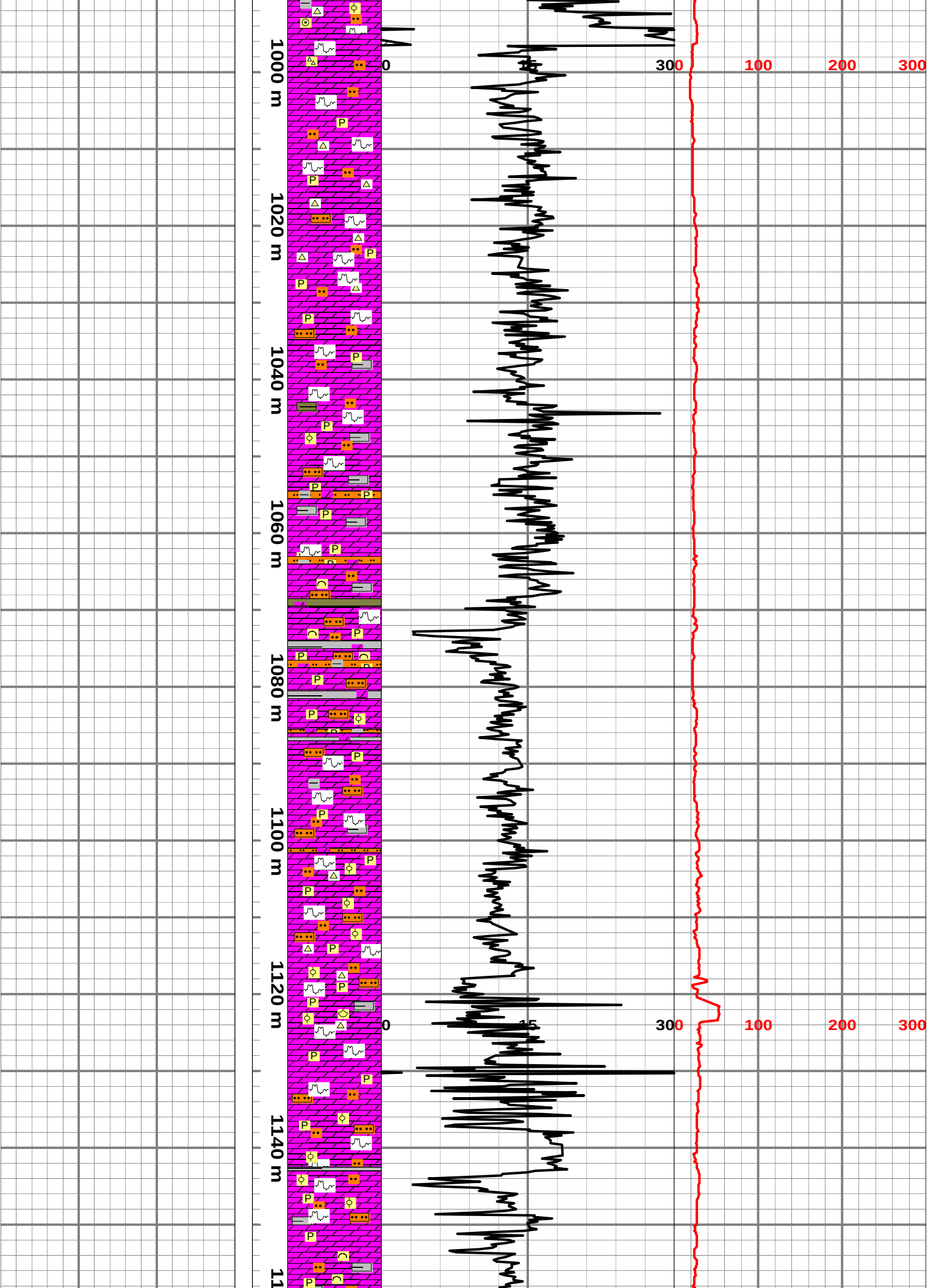


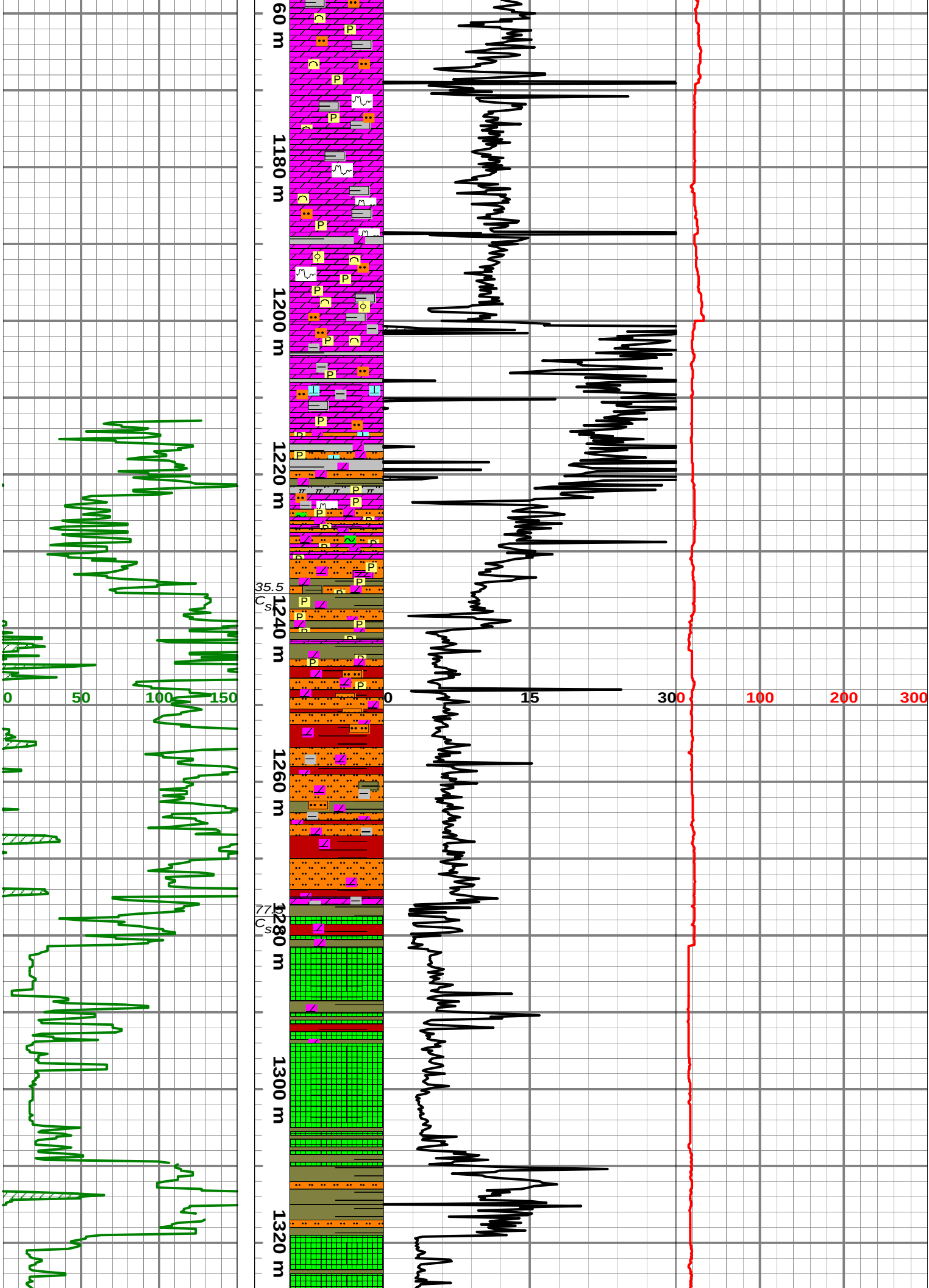


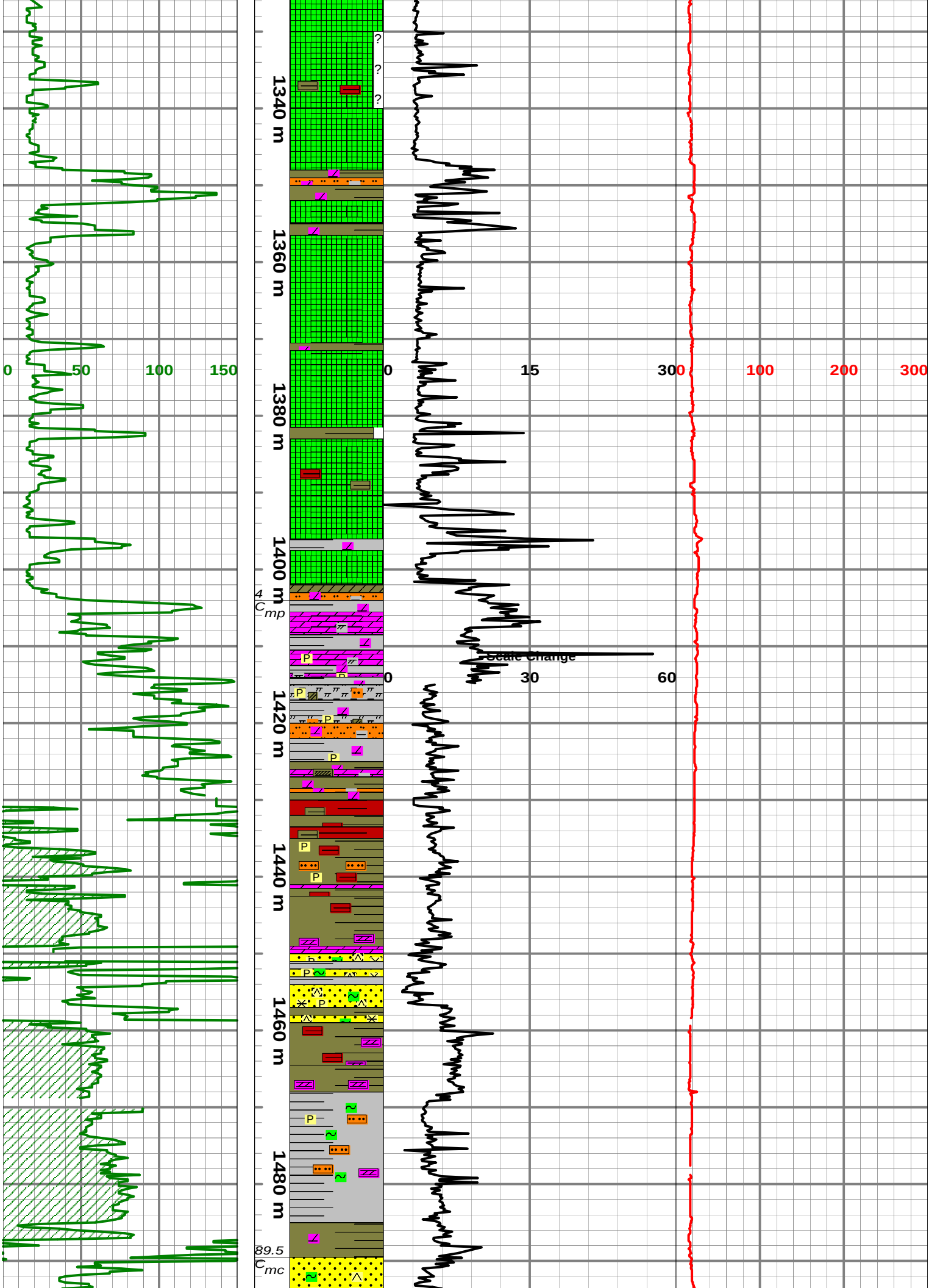


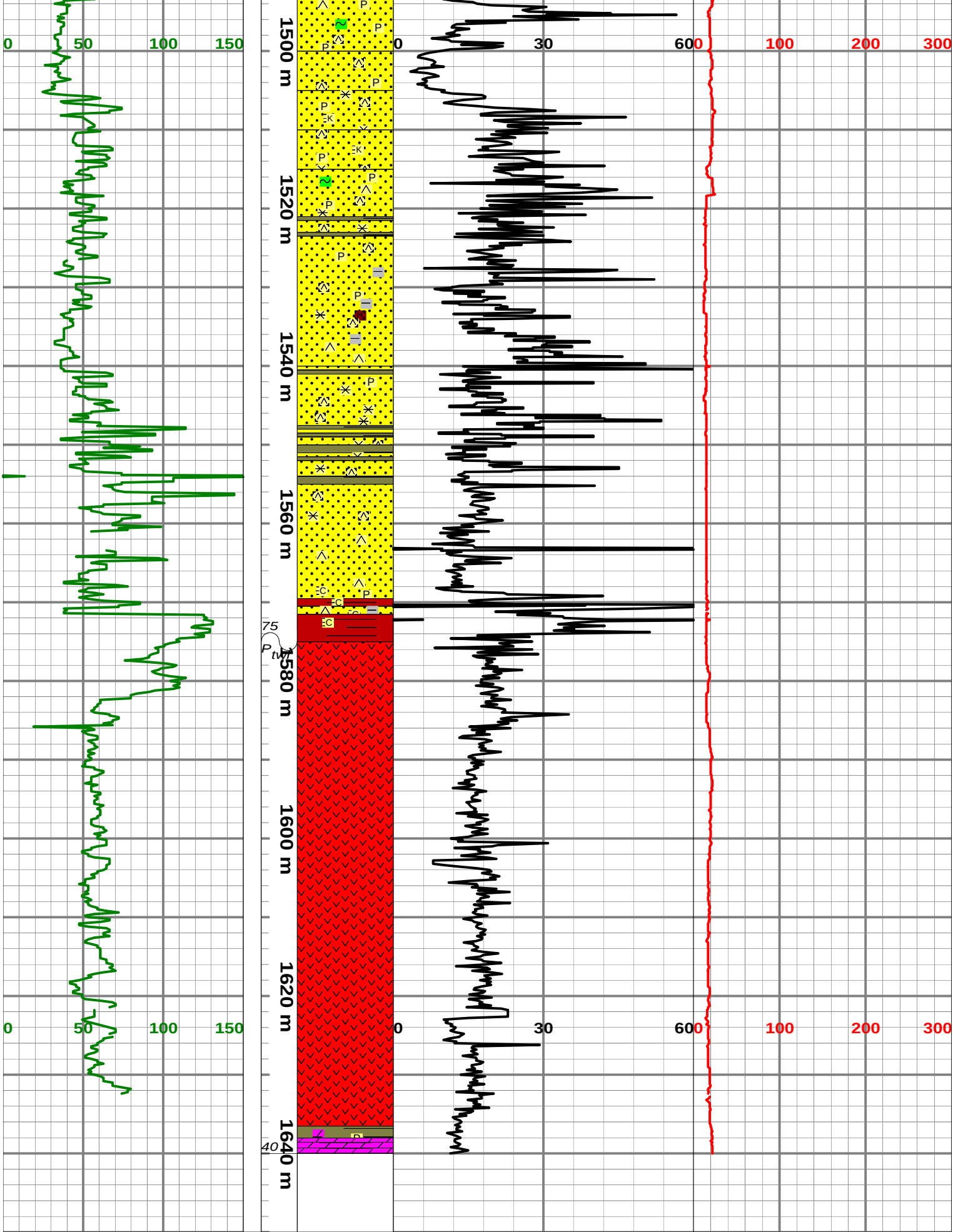














DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 1
Rig: Akita Sahtu 51

Well Name and Location PC Blackwater Kwijika M-59		Geologist(s) Gary Timmons/Gerald D'eon		Date (mm/dd/yy) 12 Feb 2008		Report No. 1		Drilling Day No. 1	
Current Information									
Time 0600		Depth (m MD) 104.0 m		Depth (m TVD) 104.0 m		Progress (m) 104.0m *		Formation Cretaceous	
Formation Leak Off Test Results kg/m ³ @ m				Status Drilling 311mm surface hole @ 20-30m/hr 6:00 Depth 104m					
Rig Akita Sahtu 51	Spud Time (00:00) 15:30	Spud Date 11 Feb 2008	Days From Spud 0.35	Elevation 245.9 m	K.B Elev 252.1 m	AFE Number P787032	Daily Cost \$ 163512	Cost to Date \$ 8769626	
Drilling Fluids Properties									
Check # WBM 1	Chk Time 20:30	Fluid Type h2o	Density 1050kg/m ³	Viscosity 37s/L	Fluid Loss cm ³ /30m	pH 11	Cl 38300.0mg/l		
Summary of Previous 24 Hrs									
Prepare to spud, p/u drilling assembly, spud well @ 1645 hrs, drill ahead 311 mm hole, lots of cleaning shakers while KCL mud is shearing.									
Operation Forecast Next 24 Hrs									
Drill ahead 311 mm hole to 350 m, survey as required									
Bit and Casing Data									
Bit # 1A	Size 311.2 mm	Type GFS11YBODV CPS	Depth In 0 m	Hours 6.25	Last Casing Next Casing		Size 508 mm 245 mm	@ @	Depth MD/TVD 20 m / 20 m 350.0 m / 350.0 m
Rate of Penetration									
Interval (m)	Max ROP (min/m)	Avg ROP (min/m)	Min ROP (min/m)	Description					
20 - 46	1.80	2.00	2.00	Glacial Drift Ss lt gy, orng, mot, v f - c gred, occ v c, sbang - sbrd, m - p srt, qtz grs, orng fld, lit sh grs, occ chlor, abnt uncongs grs, also occ w cmted frags / rdd qtz grs, consol grs / no vis por. Sh gy, tab - plty, frm, silly micas, carb, occ dism pyr, flat luster, occ pyrd worm burs. occ sltst strgs.					
46 - 95	1.00	1.50	2.00						
Hydrocarbon Data									
Depth(m)	Total Gas (hwy)	C1 (hwy)	C2 (hwy)	C3 (hwy)	IC4 (hwy)	NC4 (hwy)	Remarks		
20.0 - 55.0 55.0 - 110.0	20 40-100						incr 40-100 down to 70 m, 100 units to 100 m		
Trip Gas (hwy)	Bkgrd Gas (hwy)	Pump Off (min)	Depth (m)	Conn Gas (hwy)	Bkgrd Gas (hwy)	Pumps Off (min)	Depth (m)	Est Pore Press (hwy)	Depth (m)
Formation Tops									
Formation	Prognosed			Actual			Remarks		
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)			
Quaternary						11.0			
Cretaceous	192.7	59.4	58.0	206.1	46.0	46.0			
Arnica	50.7	200.9	200.0						
Bear Rock	20.7	230.9	230.0						
Mount Kindle	-479.3	730.9	730.0						
Franklin Mountain	-679.3	930.9	930.0						
Saline River	-953.3	1204.9	1204.0						
Saline River Clastic Member	-1089.3	1340.9	1340.0						
Mount Cap	-1119.3	1370.9	1370.0						
Mount Clark SS	-1284.3	1535.9	1535.0						
Proterozoic	-1329.3	1580.9	1580.0						
Total Depth	-1449.3	1700.9	1700.0						
Remarks									
Geology Comments		Chromatograph still being calibrated, not online yet.							



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 2
Rig: Akita Sahtu 51

Well Name and Location PC Blackwater Kwijika M-59		Geologist(s) Gary Timmons/Gerald D'eon		Date (mm/dd/yy) 13 Feb 2008		Report No. 2		Drilling Day No. 2	
Current Information									
Time 0600		Depth (m MD) 322.0 m		Depth (m TVD) 322.0 m		Progress (m) 218m		Formation Bear Rock	
Formation Leak Off Test Results kg/m ³ @ m				Status RIH on Wiper trip					
Rig Akita Sahtu 51	Spud Time (00:00) 15:30	Spud Date 11 Feb 2008	Days From Spud 1.35	Elevation 245.9 m	K.B Elev 252.1 m	AFE Number P787032	Daily Cost \$ 133106	Cost to Date \$ 8902732	
Drilling Fluids Properties									
Check # WBM 2	Chk Time 20:00	Fluid Type h2o	Density 1140kg/m ³	Viscosity 37s/L	Fluid Loss cm ³ /30m	pH 9	Cl 25000.0mg/l		
Summary of Previous 24 Hrs									
Drill ahead 311 mm to 320 m, make wiper trip, tight spots at 240, 308,									
Operation Forecast Next 24 Hrs									
Drill ahead to 350 m, circ hole, trip out, prepare to run & cement 244 mm casing									
Bit and Casing Data									
Bit # 1A	Size 311.2 mm	Type GFS11YBODV CPS	Depth In 0 m	Hours 26.00	Last Casing Size 508 mm		Depth MD/TVD 20 m / 20 m		
					Next Casing 245 mm		350.0 m / 350.0 m		
Rate of Penetration									
Interval (m)	Max ROP (min/m)	Avg ROP (min/m)	Min ROP (min/m)	Description					
95 - 210	1.40	2.00	3.00	Sh: dk gy, blk, sft, slty, pyric, carb flks.					
210 - 215	1.60	2.00	2.60	Ss:clr, m gred - pbls, sils, py cons ip?, v pyric ip, (arg matl in sd from water sol sh?), predly qtz, scat lit cht frags, qtz ovghs, sb rdd - sb ang, v py srt, no vis por, ns.					
214 - 236	4.00	3.00	7.00	Dol: mot lt - m brn, crpxl, fragal, dism pyr, tr cor?, tr intra fos & mnrlchd vugy por 2-4%, predly dns, ns.					
236 - 320	3.00	4.00	5.00	Anhy & thn dol intbeds Anhy 95% lt gy, tan, gy, micxl - crpxl, tab, hd, dns. Dol 5% aa, dns, anhyic.					
Hydrocarbon Data									
Depth(m)	Total Gas (hwy)	C1 (hwy)	C2 (hwy)	C3 (hwy)	IC4 (hwy)	NC4 (hwy)	Remarks		
110.0 - 132.0	40-30	0					reducing with depth		
132.0 - 322.0	20	0					steady gas		
Trip Gas (hwy)	Bkgrd Gas (hwy)	Pump Off (min)	Depth (m)	Conn Gas (hwy)	Bkgrd Gas (hwy)	Pumps Off (min)	Depth (m)	Est Pore Press (hwy)	Depth (m)
Formation Tops									
Formation	Prognosed			Actual			Remarks		
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)			
Quaternary						11.0			
Cretaceous	192.7	59.4	58.0	206.1	46.0	46.0			
Arnica	50.7	201.4	200.0	36.6	215.5	215.0			
Bear Rock	20.7	231.4	230.0	15.6	236.5	236.0			
Mount Kindle	-479.3	730.9	730.0						
Franklin Mountain	-679.3	930.9	930.0						
Saline River	-953.3	1204.9	1204.0						
Saline River Clastic Member	-1089.3	1340.9	1340.0						
Mount Cap	-1119.3	1370.9	1370.0						
Mount Clark SS	-1284.3	1535.9	1535.0						
Proterozoic	-1329.3	1580.9	1580.0						
Total Depth	-1449.3	1700.9	1700.0						



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 3
Rig: Akita Sahtu 51

Well Name and Location PC Blackwater Kwijika M-59		Geologist(s) Gary Timmons/Gerald D'eon		Date (mm/dd/yy) 14 Feb 2008		Report No. 3		Drilling Day No. 3	
Current Information									
Time 0600		Depth (m MD) 350.0 m		Depth (m TVD) 350.0 m		Progress (m) 28m		Formation Bear Rock	
Formation Leak Off Test Results kg/m ³ @ m				Status Prepare to nipple up BOPs- Wait on surface cement					
Rig Akita Sahtu 51	Spud Time (00:00) 15:30	Spud Date 11 Feb 2008	Days From Spud 2.35	Elevation 245.9 m	K.B Elev 252.1 m	AFE Number P787032	Daily Cost \$ 136724	Cost to Date \$ 9039456	
Drilling Fluids Properties									
Check # WBM 3	Chk Time 11:30	Fluid Type h2o	Density 1130kg/m ³	Viscosity 34s/L	Fluid Loss cm ³ /30m	pH 8	Cl 33500.0mg/l		
Summary of Previous 24 Hrs									
Drilled ahead 311 mm hole to 322 m, made wiper trip, worked tight hole from 240-308m, drilled ahead to 350 metres, circulated bottoms up, tripped out, laid down drilling tools, ran 244 mm casing to 350 m, cemented casing, rig out cementers, wait on cement, prepare to nipple up BOP.									
Operation Forecast Next 24 Hrs									
Cut conductor and install casing bowl, Nipple up BOP, pressure test BOP, P/U 222 drilling assembly									
Bit and Casing Data									
Bit # 1A	Size 311.2 mm	Type GFS11YBODV CPS	Depth In 0 m	Hours 45.75	Last Casing 508 mm @ 347 m / 347 m		Next Casing 245 mm @ 350.0 m / 350.0 m		
Bit and Casing Data									
Bit # 1A	Size 311.2 mm	Type GFS11YBODV CPS	Depth In 0 m	Hours 45.75	Last Casing 508 mm @ 347 m / 347 m		Next Casing 245 mm @ 350.0 m / 350.0 m		
Rate of Penetration									
Interval (m)	Max ROP (min/m)	Avg ROP (min/m)	Min ROP (min/m)	Description					
322 - 350	2.00	4.00	7.00	Mostly Anhy: trnsl, lt brn, crpxl, pyric, dns, tr Dol Inss, m brn, crpxl, dns, ns.					
Hydrocarbon Data									
Depth(m)	Total Gas (hwu)	C1 (hwu)	C2 (hwu)	C3 (hwu)	IC4 (hwu)	NC4 (hwu)	Remarks		
322.0 - 350.0	20	0							
Trip Gas (hwu)	Bkgrd Gas (hwu)	Pump Off (min)	Depth (m)	Conn Gas (hwu)	Bkgrd Gas (hwu)	Pumps Off (min)	Depth (m)	Est Pore Press (hwu)	Depth (m)
Formation Tops									
Formation	Prognosed			Actual			Remarks		
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)			
Quaternary						11.0			
Cretaceous	192.7	59.4	58.0	206.1	46.0	46.0			
Martin House				41.6	210.5	210.0			
Arnica	50.7	201.4	200.0	36.6	215.5	215.0			
Bear Rock	20.7	231.4	230.0	15.6	236.5	236.0			
Mount Kindle	-479.3	731.4	730.0						
Franklin Mountain	-679.3	931.4	930.0						
Saline River	-953.3	1205.4	1204.0						
Saline River Clastic Member	-1089.3	1341.4	1340.0						
Mount Cap	-1119.3	1371.4	1370.0						
Mount Clark SS	-1284.3	1536.4	1535.0						
Proterozoic	-1329.3	1581.4	1580.0						
Total Depth	-1449.3	1701.4	1700.0						



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 4
Rig: Akita Sahtu 51

Well Name and Location PC Blackwater Kwijika M-59		Geologist(s) Gary Timmons/Gerald D'eon		Date (mm/dd/yy) 15 Feb 2008		Report No. 4		Drilling Day No. 4	
Current Information									
Time 0600		Depth (m MD) 350.0 m		Depth (m TVD) 350.0 m		Progress (m) 0m		Formation Bear Rock	
Formation Leak Off Test Results kg/m ³ @ m				Pressure test BOPs Status					
Rig Akita Sahtu 51	Spud Time (00:00) 15:30	Spud Date 11 Feb 2008	Days From Spud 3.35	Elevation 245.9 m	K.B Elev 252.1 m	AFE Number P787032	Daily Cost \$ 291706	Cost to Date \$ 9331162	
Drilling Fluids Properties									
Check # WBM 4	Chk Time 9:00	Fluid Type h2o	Density 1120kg/m ³	Viscosity 37s/L	Fluid Loss cm ³ /30m	pH 8	Cl 30500.0mg/l		
Summary of Previous 24 Hrs									
wait on cement, nipple down divertor, install csg bowl, nipple up BOP, pressure test BOP.									
Operation Forecast Next 24 Hrs									
Finish Pressure testing BOP, p/u 222 drilling assembly, trip in hole, drill cement, casing shoe, 5 m new hole, run leakoff test, drill ahead 222 mm hole.									
Formation Tops									
Formation	Prognosed			Actual			Remarks		
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)			
Quaternary						11.0			
Cretaceous	192.7	59.4	58.0	206.1	46.0	46.0			
Martin House				41.6	210.5	210.0			
Arnica	50.7	201.4	200.0	36.6	215.5	215.0			
Bear Rock	20.7	231.4	230.0	15.6	236.5	236.0			
Mount Kindle	-479.3	731.4	730.0						
Franklin Mountain	-679.3	931.4	930.0						
Saline River	-953.3	1205.4	1204.0						
Saline River Clastic Member	-1089.3	1341.4	1340.0						
Mount Cap	-1119.3	1371.4	1370.0						
Mount Clark SS	-1284.3	1536.4	1535.0						
Proterozoic	-1329.3	1581.4	1580.0						
Total Depth	-1449.3	1701.4	1700.0						



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 5
Rig: Akita Sahtu 51

Well Name and Location PC Blackwater Kwijika M-59		Geologist(s) Gary Timmons/Gerald D'eon		Date (mm/dd/yy) 16 Feb 2008		Report No. 5		Drilling Day No. 5	
Current Information									
Time 0600		Depth (m MD) 360.0 m		Depth (m TVD) 360.0 m		Progress (m) 10m		Formation Bear Rock	
Formation Leak Off Test Results kg/m ³ @ m				Status Drill 222mm Hole @ 6-10m/hr- 6:00 Depth 360m					
Rig Akita Sahtu 51	Spud Time (00:00) 15:30	Spud Date 11 Feb 2008	Days From Spud 4.35	Elevation 245.9 m	K.B Elev 252.1 m	AFE Number P787032	Daily Cost \$ 114027	Cost to Date \$ 9445189	
Drilling Fluids Properties									
Check # WBM 5	Chk Time 6:00	Fluid Type h2o	Density 1130kg/m ³	Viscosity 35s/L	Fluid Loss cm ³ /30m	pH 8	Cl 37500.0mg/l		
Summary of Previous 24 Hrs									
Pressure Test surface equipment, BOP, successful, rig out pressure testers, run wear bushing, p/u 222 drilling assembly, (wi PDC bit, mud motor), drill out cement, casing shoe, 5 m new hole, ran PIT, 2300 kg/m ³ equiv with no leak off, Drill ahead 222 mm hole									
Operation Forecast Next 24 Hrs									
Drill ahead 222 mm hole,									
Bit and Casing Data									
Bit # 1B	Size 222.3 mm	Type HC 506ZX	Depth In 350 m	Hours 0.00	Last Casing 508 mm @ 348 m / 348 m		Next Casing 178 mm @ 1200.0 m / 1200.0 m		
Rate of Penetration									
Interval (m)	Max ROP (min/m)	Avg ROP (min/m)	Min ROP (min/m)	Description					
350 - 355	3.00	5.00	8.00	Anhy & Cement					
Hydrocarbon Data									
Depth(m)	Total Gas (u)	C1 (%)	C2 (%)	C3 (%)	IC4 (%)	IC5 (%)	NC4 (%)	NC5 (%)	Remarks
350.0 - 355.0	10								
Trip Gas (hwu)	Bkgrd Gas (hwu)	Pump Off (min)	Depth (m)	Conn Gas (hwu)	Bkgrd Gas (hwu)	Pumps Off (min)	Depth (m)	Est Pore Press (hwu)	Depth (m)
Formation Tops									
Formation	Prognosed			Actual			Remarks		
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)			
Quaternary						11.0			
Cretaceous	192.7	59.4	58.0	206.1	46.0	46.0			
Martin House				41.6	210.5	210.0			
Arnica	50.7	201.4	200.0	36.6	215.5	215.0			
Bear Rock	20.7	231.4	230.0	15.6	236.5	236.0			
Mount Kindle	-479.3	731.4	730.0						
Franklin Mountain	-679.3	931.4	930.0						
Saline River	-953.3	1205.4	1204.0						
Saline River Clastic Member	-1089.3	1341.4	1340.0						
Mount Cap	-1119.3	1371.4	1370.0						
Mount Clark SS	-1284.3	1536.4	1535.0						
Proterozoic	-1329.3	1581.4	1580.0						
Total Depth	-1449.3	1701.4	1700.0						
Remarks									
Geology Comments		Gaswizard down this morning, troubleshooting.							



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 6
Rig: Akita Sahtu 51

Well Name and Location PC Blackwater Kwijika M-59		Geologist(s) Gary Timmons/Gerald D'eon		Date (mm/dd/yy) 17 Feb 2008		Report No. 6		Drilling Day No. 6	
Current Information									
Time 0600		Depth (m MD) 551.0 m		Depth (m TVD) 550.0 m		Progress (m) 191m		Formation Bear Rock	
Formation Leak Off Test Results kg/m ³ @ 350.0 m				Status Drilling 222mm Hole 15-23m/hr- 6:00 Depth 551m					
Rig Akita Sahtu 51	Spud Time (00:00) 15:30	Spud Date 11 Feb 2008	Days From Spud 5.35	Elevation 245.9 m	K.B Elev 252.1 m	AFE Number P787032	Daily Cost \$ 842406	Cost to Date \$ 10287595	
Drilling Fluids Properties									
Check # WBM 6	Chk Time 23:30	Fluid Type h2o	Density 1155kg/m ³	Viscosity 47s/L	Fluid Loss cm ³ /30m	pH 9	Cl 37800.0mg/l		
Summary of Previous 24 Hrs									
Drilled ahead 222 mm hole, lost circ @ 476 m, lost total 8 m3, circ & add LCM, regain circulation, drill ahead 222 mm hole									
Operation Forecast Next 24 Hrs									
Drill ahead 222 mm hole									
Bit and Casing Data									
Bit # 1B	Size 222.3 mm	Type HC 506ZX	Depth In 350 m	Hours 12.00	Last Casing 245 mm @ 348 m / 348 m		Next Casing 178 mm @ 1200.0 m / 1200.0 m		
Rate of Penetration									
Interval (m)	Max ROP (min/m)	Avg ROP (min/m)	Min ROP (min/m)	Description					
355 - 426	5.00	4.00	7.00	Anhy, mnr dol Anhy 85% lt gy, lt brn, crpxl, occly slty arg, occly dolc, dns. Dol 15% lt brn, crpxl, anhyic, styls, no vis por, ns.					
426 - 485	3.00	2.00	5.00	Dol, wi Anhy intbeds Dol 85% lt - m brn, micxl, suc, fragl, anhyic, tr pyric, Bry?, Osts, rr tr slty Inss, also calcs ip, ptch intxl & mnr vugy por, up to 12-14%, ns					
485 - 535	3.00	2.00	5.00	Anhy, mnr Dol Anhy 95% aa, occ slty Dol 5% lt brn, gy, crpxl, tab, hd, dns, occ styls.					
Hydrocarbon Data									
Depth(m)	Total Gas (u)	C1 (%)	C2 (%)	C3 (%)	IC4 (%)	NC4 (%)	IC5 (%)	NC5 (%)	Remarks
355.0 - 435.0	22	0.00000	0.00000						
435.0 - 493.0	46	0.02000	0.00000						
493.0 - 542.0	20	0.00000							
Trip Gas (hwu)	Bkgrd Gas (hwu)	Pump Off (min)	Depth (m)	Conn Gas (hwu)	Bkgrd Gas (hwu)	Pumps Off (min)	Depth (m)	Est Pore Press (hwu)	Depth (m)
				71	40		476.0		
Formation Tops									
Formation	Prognosed			Actual			Remarks		
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)			
Quaternary						11.0			
Cretaceous	192.7	59.4	59.4	206.1	46.0	46.0			
Martin House				42.2	209.9	210.0			
Arnica	50.7	201.4	201.4	37.2	214.9	215.0			
Bear Rock	20.7	231.4	231.4	16.2	235.9	236.0			
Mount Kindle	-479.3	731.4	731.4						
Franklin Mountain	-679.3	931.4	931.4						
Saline River	-953.3	1205.4	1205.4						
Saline River Clastic Member	-1089.3	1341.4	1341.4						
Mount Cap	-1119.3	1371.4	1371.4						
Mount Clark SS	-1284.3	1536.4	1536.4						



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 6
Rig: Akita Sahtu 51

Formation Tops						
Formation	Prognosed			Actual		
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)
Proterozoic	-1329.3	1581.4	1581.4			
Total Depth	-1449.3	1701.4	1701.4			
Remarks						



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 7
Rig: Akita Sahtu 51

Well Name and Location PC Blackwater Kwijika M-59		Geologist(s) Gary Timmons/Gerald D'eon		Date (mm/dd/yy) 18 Feb 2008		Report No. 7		Drilling Day No. 7	
Current Information									
Time 0600		Depth (m MD) 786.0 m		Depth (m TVD) 785.0 m		Progress (m) 235m		Formation Mount Kindle	
Formation Leak Off Test Results kg/m ³ @ m				Status Drill 222mm Hole fr/792m @ 7 to 10m/hr.					
Rig Akita Sahtu 51	Spud Time (00:00) 15:30	Spud Date 11 Feb 2008	Days From Spud 6.35	Elevation 245.9 m	K.B Elev 252.1 m	AFE Number P787032	Daily Cost \$ 122121	Cost to Date \$ 10409716	
Drilling Fluids Properties									
Check # WBM 7	Chk Time 17:00	Fluid Type h2o	Density 1190kg/m ³	Viscosity 47s/L	Fluid Loss cm ³ /30m	pH 10	Cl 36400.0mg/l		
Summary of Previous 24 Hrs									
Drilled ahead 222 mm hole									
Operation Forecast Next 24 Hrs									
drill ahead, poss wiper trip									
Survey									
MD (m)	INCL (deg)	CORR. AZ (°)	TVD (m)	V' SECT (m)	DOGLEG (deg/30m)	N/S (m)	E/W (m)		
660.00	1.90	129.00							
679.00	1.50	127.00							
699.00	1.10	135.00							
719.00	1.10	142.00							
746.00	1.50	138.00							
Bit and Casing Data									
Bit # 1B	Size 222.3 mm	Type HC 506ZX	Depth In 350 m	Hours 32.25	Last Casing Size 245 mm		Depth MD/TVD @ 348 m / 348 m		
					Next Casing 178 mm		@ 1200.0 m / 1200.0 m		
Rate of Penetration									
Interval (m)	Max ROP (min/m)	Avg ROP (min/m)	Min ROP (min/m)	Description					
535 - 570	5.00	6.00	10.00	Anhy wi dol intbeds Anhy 90% wh, bge, crpxl - micxl, frm, occly / dol strgs, dns, ns. Dol 10% lt gy, bf, tan, crpxl, hd, tab, anhyic, occly sdy, sltly, / sltst strgs, dns.					
570 - 744	6.00	8.00	13.00	Anhy, wi intbedded sh, mrlst, sltst, mnr dol Anhy 50% off wh, crpxl, occly inspd / gn shy lnss, dns. Sh 15% red gn, plty, dolic, anhyic. Slstst 15% red, gn, lt gy, dolic, arg, occ dism pyr, tt. Mrlst 10% bge, lt gy, dolic, Dol 10% aa.					
744 - 780	2.00	6.00	9.00	Dol, mnr intbedded sltst Dol 90% lt brn, gy, bge, crpxl, tab, hd, anhyic, occ sltst strgs, mostly dns, but occ ptch 3-7% intxl, vug por, / mnr bit in pores. Slstst 10% aa.					
Hydrocarbon Data									
Depth(m)	Total Gas (u)	C1 (%)	C2 (%)	C3 (%)	IC4 (%)	IC5 (%)	NC4 (%)	NC5 (%)	Remarks
542.0 - 744.0	20-25	0.01000							
744.0 - 773.0	35-43	0.01000							
Trip Gas (hww)	Bkgrd Gas (hww)	Pump Off (min)	Depth (m)	Conn Gas (hww)	Bkgrd Gas (hww)	Pumps Off (min)	Depth (m)	Est Pore Press (hww)	Depth (m)
Formation Tops									
Formation	Prognosed			Actual			Remarks		
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)			
Quaternary						11.0			
Cretaceous	192.7	59.4	59.4	206.1	46.0	46.0			
Martin House				42.2	209.9	210.0			



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 7
Rig: Akita Sahtu 51

Formation Tops							
Formation	Prognosed			Actual			Remarks
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)	
Arnica	50.7	201.4	201.4	37.2	214.9	215.0	
Bear Rock	20.7	231.4	231.4	16.2	235.9	236.0	
Mount Kindle	-479.3	731.4	731.4	-490.9	743.0	744.0	
Franklin Mountain	-679.3	931.4	931.4				
Saline River	-953.3	1205.4	1205.4				
Saline River Clastic Member	-1089.3	1341.4	1341.4				
Mount Cap	-1119.3	1371.4	1371.4				
Mount Clark SS	-1284.3	1536.4	1536.4				
Proterozoic	-1329.3	1581.4	1581.4				
Total Depth	-1449.3	1701.4	1701.4				



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 8
Rig: Akita Sahtu 51

Well Name and Location PC Blackwater Kwijika M-59		Geologist(s) Gary Timmons/Gerald D'eon		Date (mm/dd/yy) 19 Feb 2008		Report No. 8		Drilling Day No. 8	
Current Information									
Time 0600		Depth (m MD) 878.0 m		Depth (m TVD) 877.0 m		Progress (m) 92m		Formation Mount Kindle	
Formation Leak Off Test Results kg/m ³ @ m				Status					
Rig Akita Sahtu 51	Spud Time (00:00) 15:30	Spud Date 11 Feb 2008	Days From Spud 7.35	Elevation 245.9 m	K.B Elev 252.1 m	AFE Number P787032	Daily Cost \$ 138778	Cost to Date \$ 10548494	
Drilling Fluids Properties									
Check # WBM 8	Chk Time 19:00	Fluid Type h2o	Density 1170kg/m ³	Viscosity 43s/L	Fluid Loss cm ³ /30m	pH 9.5	Cl 32000.0mg/l		
Summary of Previous 24 Hrs									
Drilled ahead to 850 m, circ bottoms up, trip out for bit change, trip in, drill ahead 222 mm hole									
Operation Forecast Next 24 Hrs									
Drill ahead 222 mm hole									
Survey									
MD (m)	INCL (deg)	CORR. AZ (°)	TVD (m)	V SECT (m)	DOGLEG (deg/30m)	N/S (m)	E/W (m)		
784.00	1.10	133.00							
804.00	1.10	129.00							
813.00	1.00	121.00							
823.00	1.10	130.00							
851.00	0.90	127.00							
Bit and Casing Data									
Bit # 2B	Size 222.3 mm	Type FH 28 VPS	Depth In 850 m	Hours 0.00	Last Casing 245 mm @ 348 m / 348 m		Next Casing 178 mm @ 1200.0 m / 1200.0 m		
Bit and Casing Data									
Bit # 1B	Size 222.3 mm	Type HC 506ZX	Depth In 350 m	Hours 46.00	Last Casing 245 mm @ 348 m / 348 m		Next Casing 178 mm @ 1200.0 m / 1200.0 m		
Rate of Penetration									
Interval (m)	Max ROP (min/m)	Avg ROP (min/m)	Min ROP (min/m)	Description					
780 - 837	3.00	6.00	11.00	Dol tan, lt brn, micxl - crpxl, tr pyr, occly slty, wi occ algal lams, rmnt ools?. osts, rr rmnt wkest tex, com styls, mostly dns, with occ ptch 3-6% intxl, vuggy por, tr pyrobit.					
837 - 850	7.00	11.00	27.00	Dol aa, mostly dns, wo mnrr lt & dk gy cht Trip for new bit.					
850 - 870	6.00	7.50	9.00	Dol, gy, tan, micxl - crpxl, tab, tr pyr, styls, slly slty, occ tr rmnt fragl tex, dns.					
Hydrocarbon Data									
Depth(m)	Total Gas (u)	C1 (%)	C2 (%)	C3 (%)	IC4 (%)	IC5 (%)	NC4 (%)	NC5 (%)	Remarks
773.0 - 870.0	25-35	0.01000							
Trip Gas (hwu)	Bkgrd Gas (hwu)	Pump Off (min)	Depth (m)	Conn Gas (hwu)	Bkgrd Gas (hwu)	Pumps Off (min)	Depth (m)	Est Pore Press (hwu)	Depth (m)
Formation Tops									
Formation	Prognosed			Actual			Remarks		
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)			
Quaternary						11.0			
Cretaceous	192.7	59.4	59.4	206.1	46.0	46.0			
Martin House				42.2	209.9	210.0			
Arnica	50.7	201.4	201.4	37.2	214.9	215.0			
Bear Rock	20.7	231.4	231.4	16.2	235.9	236.0			
Mount Kindle	-479.3	731.4	731.4	-490.9	743.0	744.0			



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 8
Rig: Akita Sahtu 51

Formation Tops						
Formation	Prognosed			Actual		
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)
Franklin Mountain	-679.3	931.4	931.4			
Saline River	-953.3	1205.4	1205.4			
Saline River Clastic Member	-1089.3	1341.4	1341.4			
Mount Cap	-1119.3	1371.4	1371.4			
Mount Clark SS	-1284.3	1536.4	1536.4			
Proterozoic	-1329.3	1581.4	1581.4			
Total Depth	-1449.3	1701.4	1701.4			
Remarks						



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 9
Rig: Akita Sahtu 51

Well Name and Location PC Blackwater Kwijika M-59		Geologist(s) Gary Timmons/Gerald D'eon		Date (mm/dd/yy) 20 Feb 2008		Report No. 9		Drilling Day No. 9	
Current Information									
Time 0600		Depth (m MD) 947.0 m		Depth (m TVD) 946.0 m		Progress (m) 69m		Formation Franklin Mountain	
Formation Leak Off Test Results kg/m ³ @ m				Status Drill 222mm Hole @ 4-7m/hr- 5:00 Depth 947m					
Rig Akita Sahtu 51	Spud Time (00:00) 15:30	Spud Date 11 Feb 2008	Days From Spud 8.35	Elevation 245.9 m	K.B Elev 252.1 m	AFE Number P787032	Daily Cost \$ 138079	Cost to Date \$ 10686573	
Drilling Fluids Properties									
Check # WBM 9	Chk Time 11:00	Fluid Type h2o	Density 1165kg/m ³	Viscosity 44s/L	Fluid Loss cm ³ /30m	pH 10	Cl 29500.0mg/l		
Summary of Previous 24 Hrs									
trip in with new bit, drill ahead 222 mm hole, drilled to 894 m, torquing up, trip out, change bit, lay down mud motor, trip in drill ahead									
Operation Forecast Next 24 Hrs									
Drill ahead 222 mm hole.									
Survey									
MD (m)	INCL (deg)	CORR. AZ (°)	TVD (m)	V' SECT (m)	DOGLEG (deg/30m)	N/S (m)	E/W (m)		
882.00	1.80	121.00							
892.00	2.50	130.00							
902.00	2.40	125.00							
911.00	2.00	127.00							
921.00	1.80	118.00							
Bit and Casing Data									
Bit # 2B	Size 222.3 mm	Type FH 28 VPS	Depth In 850 m	Hours 8.25	Last Casing 245 mm @ 348 m / 348 m		Next Casing 178 mm @ 1200.0 m / 1200.0 m		
Bit and Casing Data									
Bit # 3B	Size mm	Type FH30	Depth In 894 m	Hours 4.50	Last Casing 245 mm @ 348 m / 348 m		Next Casing 178 mm @ 1200.0 m / 1200.0 m		
Rate of Penetration									
Interval (m)	Max ROP (min/m)	Avg ROP (min/m)	Min ROP (min/m)	Description					
870 - 884	6.00	8.00	10.00	Dol tan, lt brn, micxl - crpxl, rmnt fragl tex, indst fos frags, styls, tr pyric, tr vugy por, predly dns, ns.					
884 - 894	15.00	17.00	20.00	Dol, aa, trip for new bit					
894 - 915	10.00	12.00	16.00	Dol tan, brn, gy, mnrt mot dk gy, micxl, com rmnt fragal tex, cors?, tr pyr vng, styls, tr lt gy wh specd cht occ calc xls, predly dns, no shows.					
915 - 925	6.00	7.00	9.00	Sh gy, lt gy, tab - fis, flat luster, / dism pyr, slly dolc, aa.					
925 - 945	5.00	10.00	15.00	Dol lt gy, bge, f - rr m xln, blk, occ styls, rr pyr, tr por, / bit in pores.					
Hydrocarbon Data									
Depth(m)	Total Gas (u)	C1 (%)	C2 (%)	C3 (%)	IC4 (%)	NC4 (%)	IC5 (%)	NC5 (%)	Remarks
870.0 - 919.0	27-33	0.01000							max 37 u @ 909 m
919.0 - 945.0	20-24								
Trip Gas (hwy)	Bkgrd Gas (hwy)	Pump Off (min)	Depth (m)	Conn Gas (hwy)	Bkgrd Gas (hwy)	Pumps Off (min)	Depth (m)	Est Pore Press (hwy)	Depth (m)
Formation Tops									
Formation	Prognosed			Actual			Remarks		
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)			
Quaternary						11.0			
Cretaceous	192.7	59.4	59.4	206.1	46.0	46.0			
Martin House				42.2	209.9	210.0			



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 9
Rig: Akita Sahtu 51

Formation Tops							
Formation	Prognosed			Actual			Remarks
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)	
Arnica	50.7	201.4	201.4	37.2	214.9	215.0	
Bear Rock	20.7	231.4	231.4	16.2	235.9	236.0	
Mount Kindle	-479.3	731.4	731.4	-490.9	743.0	744.0	
Franklin Mountain	-679.3	931.4	931.4	-671.9	924.0	925.0	
Saline River	-953.3	1205.4	1205.4				
Saline River Clastic Member	-1089.3	1341.4	1341.4				
Mount Cap	-1119.3	1371.4	1371.4				
Mount Clark SS	-1284.3	1536.4	1536.4				
Proterozoic	-1329.3	1581.4	1581.4				
Total Depth	-1449.3	1701.4	1701.4				



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 10
Rig: Akita Sahtu 51

Well Name and Location PC Blackwater Kwijika M-59		Geologist(s) Gary Timmons/Gerald D'eon		Date (mm/dd/yy) 21 Feb 2008		Report No. 10		Drilling Day No. 10	
Current Information									
Time 0600		Depth (m MD) 1006.0 m		Depth (m TVD) 1006.0 m		Progress (m) 59m		Formation Franklin Mountain	
Formation Leak Off Test Results kg/m ³ @ m				Status Drill 222mm Hole @ 3.5-5m/hr- 6:00 Depth 1006m					
Rig Akita Sahtu 51	Spud Time (00:00) 15:30	Spud Date 11 Feb 2008	Days From Spud 9.35	Elevation 245.9 m	K.B Elev 252.1 m	AFE Number P787032	Daily Cost \$ 180654	Cost to Date \$ 10867227	
Drilling Fluids Properties									
Check # WBM 10	Chk Time 11:00	Fluid Type h2o	Density 1160kg/m ³	Viscosity 44s/L	Fluid Loss cm ³ /30m	pH 9.5	Cl 29000.0mg/l		
Summary of Previous 24 Hrs									
drilled ahead to 996m, circ bottoms up, trip out for new bit, trip in, hit tight spot at 702 m, wash/ream to bottom, drill ahead 222 mm hole									
Operation Forecast Next 24 Hrs									
Drill ahead 222 mm hole									
Survey									
MD (m)	INCL (deg)	CORR. AZ (°)	TVD (m)	V SECT (m)	DOGLEG (deg/30m)	N/S (m)	E/W (m)		
921.00	1.80	118.00	920.07	-19.63	3.59	-19.63	26.55		
931.00	1.20	108.00	930.06	-19.73	6.52	-19.73	26.79		
941.00	1.20	107.00	940.06	-19.79	0.21	-19.79	26.99		
950.00	1.30	105.00							
959.00	1.30	103.00							
Bit and Casing Data									
Bit # 4B	Size 222.3 mm	Type GX 44GDX	Depth In 996 m	Hours 0.00	Last Casing 245 mm @ 348 m / 348 m		Next Casing 178 mm @ 1200.0 m / 1200.0 m		
Bit and Casing Data									
Bit # 3B	Size mm	Type FH30 VPS	Depth In 894 m	Hours 19.50	Last Casing 245 mm @ 348 m / 348 m		Next Casing 178 mm @ 1200.0 m / 1200.0 m		
Rate of Penetration									
Interval (m)	Max ROP (min/m)	Avg ROP (min/m)	Min ROP (min/m)	Description					
945 - 990	6.00	4.50	7.00	Dol: bf, lt gy, tr redsh, tr gnsh, micxl, rr fragl tex, tr ools, slty, tr scat wh cht frags, rr tr pyr, dns, ns.					
990 - 1000	12.00	9.00	16.00	Dol: aa, trip for new bit @ 996 m					
Hydrocarbon Data									
Depth(m)	Total Gas (u)	C1 (%)	C2 (%)	C3 (%)	IC4 (%)	NC4 (%)	IC5 (%)	NC5 (%)	Remarks
945.0 - 1000.0	20-26								
Trip Gas (hwu)	Bkgrd Gas (hwu)	Pump Off (min)	Depth (m)	Conn Gas (hwu)	Bkgrd Gas (hwu)	Pumps Off (min)	Depth (m)	Est Pore Press (hwu)	Depth (m)
Formation Tops									
Formation	Prognosed			Actual			Remarks		
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)			
Quaternary						11.0			
Cretaceous	192.7	59.4	59.4	206.1	46.0	46.0			
Martin House				42.2	209.9	210.0			
Arnica	50.7	201.4	201.4	37.2	214.9	215.0			
Bear Rock	20.7	231.4	231.4	16.2	235.9	236.0			
Mount Kindle	-479.3	731.4	731.4	-490.9	743.0	744.0			
Franklin Mountain	-679.3	931.4	931.4	-671.9	924.0	925.0			
Saline River	-953.3	1205.4	1205.4						
Saline River Clastic Member	-1089.3	1341.4	1341.4						



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 10
Rig: Akita Sahtu 51

Formation Tops							
Formation	Prognosed			Actual			Remarks
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)	
Mount Cap	-1119.3	1371.4	1371.4				
Mount Clark SS	-1284.3	1536.4	1536.4				
Proterozoic	-1329.3	1581.4	1581.4				
Total Depth	-1449.3	1701.4	1701.4				



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 11
Rig: Akita Sahtu 51

Well Name and Location PC Blackwater Kwijika M-59		Geologist(s) Gary Timmons/Gerald D'eon		Date (mm/dd/yy) 22 Feb 2008		Report No. 11		Drilling Day No. 11	
Current Information									
Time 0600		Depth (m MD) 1098.0 m		Depth (m TVD) 1097.0 m		Progress (m) 92m		Formation Franklin Mountain	
Formation Leak Off Test Results kg/m ³ @ m				Status Drill 222mm Hole @ 1098 m					
Rig Akita Sahtu 51	Spud Time (00:00) 15:30	Spud Date 11 Feb 2008	Days From Spud 10.35	Elevation 245.9 m	K.B Elev 252.1 m	AFE Number P787032	Daily Cost \$ 147468	Cost to Date \$ 11014695	
Drilling Fluids Properties									
Check # WBM 11	Chk Time 11:00	Fluid Type h2o	Density 1160kg/m ³	Viscosity 43s/L	Fluid Loss cm ³ /30m	pH 10	Cl 31800.0mg/l		
Summary of Previous 24 Hrs									
Drilled ahead 222 mm hole,									
Operation Forecast Next 24 Hrs									
Drill ahead 222 mm hole									
Survey									
MD (m)	INCL (deg)	CORR. AZ (°)	TVD (m)	V SECT (m)	DOGLEG (deg/30m)	N/S (m)	E/W (m)		
1027.00	0.80	145.00	1026.05	-20.49	2.14	-20.49	28.00		
1036.00	1.00	140.00	1035.05	-20.60	2.39	-20.60	28.09		
1046.00	1.30	159.00	1045.05	-20.77	4.81	-20.77	28.19		
1056.00	1.30	158.00	1055.04	-20.98	0.23	-20.98	28.27		
1066.00	1.70	164.00	1065.04	-21.23	4.29	-21.23	28.35		
Bit and Casing Data									
Bit # 4B	Size 222.3 mm	Type GX 44GDX	Depth In 996 m	Hours 19.00	Last Casing 245 mm @ 348 m / 348 m		Next Casing 178 mm @ 1200.0 m / 1200.0 m		
Rate of Penetration									
Interval (m)	Max ROP (min/m)	Avg ROP (min/m)	Min ROP (min/m)	Description					
1000 - 1090	8.00	14.00	18.00	Dol lt - m brn, lt gy, gnsh, micxl, tr v f xln, rr fragl tex, ools, sltylnss, arg ip, styls, dns, ns, / gn shy lnss					
Hydrocarbon Data									
Depth(m)	Total Gas (u)	C1 (%)	C2 (%)	C3 (%)	IC4 (%)	NC4 (%)	IC5 (%)	NC5 (%)	Remarks
1000.0 - 1090.0	26	0.01000							
Trip Gas (hwy)	Bkgrd Gas (hwy)	Pump Off (min)	Depth (m)	Conn Gas (hwy)	Bkgrd Gas (hwy)	Pumps Off (min)	Depth (m)	Est Pore Press (hwy)	Depth (m)
Formation Tops									
Formation	Prognosed			Actual			Remarks		
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)			
Quaternary						11.0			
Cretaceous	192.7	59.4	59.4	206.1	46.0	46.0			
Martin House				42.2	209.9	210.0			
Arnica	50.7	201.4	201.4	37.2	214.9	215.0			
Bear Rock	20.7	231.4	231.4	16.2	235.9	236.0			
Mount Kindle	-479.3	731.4	731.4	-490.9	743.0	744.0			
Franklin Mountain	-679.3	931.4	931.4	-671.9	924.0	925.0			
Saline River	-953.3	1205.4	1205.4						
Saline River Clastic Member	-1089.3	1341.4	1341.4						
Mount Cap	-1119.3	1371.4	1371.4						
Mount Clark SS	-1284.3	1536.4	1536.4						
Proterozoic	-1329.3	1581.4	1581.4						
Total Depth	-1449.3	1701.4	1701.4						



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 12
Rig: Akita Sahtu 51

Well Name and Location PC Blackwater Kwijika M-59		Geologist(s) Gary Timmons/Gerald D'eon		Date (mm/dd/yy) 23 Feb 2008		Report No. 12		Drilling Day No. 12	
Current Information									
Time 0600		Depth (m MD) 1200.0 m		Depth (m TVD) 1199.0 m		Progress (m) 102m		Formation Franklin Mountain	
Formation Leak Off Test Results kg/m ³ @ m				Circulate Hole clean @ 1200m					
Rig Akita Sahtu 51		Spud Time (00:00) 15:30		Spud Date 11 Feb 2008		Days From Spud 11.35		Elevation 245.9 m	
						K.B Elev 252.1 m		AFE Number P787032	
								Daily Cost \$ 95654	
								Cost to Date \$ 11110349	
Drilling Fluids Properties									
Check # WBM 12		Chk Time 11:00		Fluid Type h2o		Density 1160kg/m ³		Viscosity 44s/L	
						Fluid Loss cm ³ /30m		pH 10	
								Cl 33000.0mg/l	
Summary of Previous 24 Hrs									
Drilled ahead to 1200 m, circ bottoms up,									
Operation Forecast Next 24 Hrs									
POOH, start intermed logging suite (2 planned descents), rig out loggers									
Survey									
MD (m)		INCL (deg)		CORR. AZ (°)		TVD (m)		V' SECT (m)	
1134.00		1.60		182.00		1133.01		-23.17	
1144.00		1.60		185.00		1143.01		-23.45	
1154.00		1.60		188.00		1153.00		-23.73	
1164.00		1.60		190.00		1163.00		-24.00	
1173.00		1.50		188.00		1172.00		-24.24	
								DOGLEG (deg/30m) 1.67	
								N/S (m) -23.17	
								E/W (m) 28.69	
								0.84	
								0.84	
								0.56	
								1.26	
								-24.24	
								28.67	
								28.64	
								28.60	
								28.56	
Bit and Casing Data									
Bit # 4B		Size 222.3 mm		Type GX 44GDX		Depth In 996 m		Hours 40.25	
								Last Casing 245 mm	
								Next Casing 178 mm	
								@ 348 m / 348 m	
								@ 1200.0 m / 1200.0 m	
Rate of Penetration									
Interval (m)		Max ROP (min/m)		Avg ROP (min/m)		Min ROP (min/m)		Description	
1090 - 1117		10.00		12.00		15.00		Dol mot lt brn, lt gy, micxl, fragl tex, ools, tr pyric, styls, slty, tr chty, dns, ns, / slty Inss.	
1117 - 1145		7.00		12.00		16.00		Dol lt - m brn, occly lt gy, crpxl, occ rmnt fragl tex, pos ools?, slty, styls, tr pyric, ptch lchd vugy por 8-10% (cors?), predly dns, ns, / tr lt gy slty Inss.	
1145 - 1200		7.00		12.00		14.00		Dol bf, tan, lt brn, crpxl - micxl, tr pyr, occ styls, ss, tr ptch lchd vugy & intxl por tr-2%, predly dns, ns, / rr shy Inss.	
Hydrocarbon Data									
Depth(m)		Total Gas (u)		C1 (%)		C2 (%)		C3 (%)	
1090.0 - 1200.0		25-30		0.01000					
IC4 (%)		IC5 (%)		NC4 (%)		IC5 (%)		NC5 (%)	
Trip Gas (hwy)		Bkgrd Gas (hwy)		Pump Off (min)		Depth (m)		Conn Gas (hwy)	
								Bkgrd Gas (hwy)	
								Pumps Off (min)	
								Depth (m)	
								Est Pore Press (hwy)	
								Depth (m)	
Formation Tops									
Formation		Prognosed			Actual			Remarks	
		Subsea (m)		TVD (m)		MD (m)			
Quaternary								11.0	
Cretaceous		192.7		59.4		59.4		206.1	
Martin House								42.2	
Arnica		50.7		201.4		201.4		37.2	
Bear Rock		20.7		231.4		231.4		16.2	
Mount Kindle		-479.3		731.4		731.4		-490.9	
Franklin Mountain		-679.3		931.4		931.4		-671.9	
Saline River		-953.3		1205.4		1205.4		924.0	
Saline River Clastic Member		-1089.3		1341.4		1341.4		925.0	



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 12
Rig: Akita Sahtu 51

Formation Tops							
Formation	Prognosed			Actual			Remarks
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)	
Mount Cap	-1119.3	1371.4	1371.4				
Mount Clark SS	-1284.3	1536.4	1536.4				
Proterozoic	-1329.3	1581.4	1581.4				
Total Depth	-1449.3	1701.4	1701.4				



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 13
Rig: Akita Sahtu 51

Well Name and Location PC Blackwater Kwijika M-59		Geologist(s) Gary Timmons/Gerald D'eon		Date (mm/dd/yy) 24 Feb 2008		Report No. 13		Drilling Day No. 13	
Current Information									
Time 0600		Depth (m MD) 1200.0 m		Depth (m TVD) 1199.0 m		Progress (m) 0m		Formation Franklin Mountain	
Formation Leak Off Test Results kg/m ³ @ m				Status Pull Wear Bushing & Rig to run 178mm Casing					
Rig Akita Sahtu 51	Spud Time (00:00) 15:30	Spud Date 11 Feb 2008	Days From Spud 12.35	Elevation 245.9 m	K.B Elev 252.1 m	AFE Number P787032	Daily Cost \$ 85801	Cost to Date \$ 11196150	
Drilling Fluids Properties									
Check # WBM 13	Chk Time 11:00	Fluid Type h2o	Density 1180kg/m ³	Viscosity 47s/L	Fluid Loss cm ³ /30m	pH 10	Cl 41600.0mg/l		
Summary of Previous 24 Hrs									
Circulate bottoms up, trip out, rig up loggers and run intermed logging suite, 2 descents, 1) PEX- HRLS-TLD2-HNGS-SP 2) FMI-EMS-DSI-GR Rig out loggers, RIH with drill collars, POOH, laying down drill collars and some drillpipe,									
Operation Forecast Next 24 Hrs									
Trip out, Run 177.8 mm casing, cement casing, wait on cement.									
Survey									
MD (m)	INCL (deg)	CORR. AZ (°)	TVD (m)	'V' SECT (m)	DOGLEG (deg/30m)	N/S (m)	E/W (m)		
1154.00	1.60	188.00	1153.00	-23.73	0.84	-23.73	28.64		
1164.00	1.60	190.00	1163.00	-24.00	0.56	-24.00	28.60		
1173.00	1.50	188.00	1172.00	-24.24	1.26	-24.24	28.56		
1181.00	1.20	192.00	1179.99	-24.43	3.93	-24.43	28.53		
1199.00	1.50	193.10	1197.99	-24.84	1.67	-24.84	28.44		
Bit and Casing Data									
Bit # 4B	Size 222.3 mm	Type GX 44GDX	Depth In 996 m	Hours 46.25	Last Casing 245 mm @ 348 m / 348 m		Next Casing 178 mm @ 1200.0 m / 1200.0 m		
Formation Tops									
Formation	Prognosed			Actual			Remarks		
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)			
Quaternary						11.0			
Cretaceous	192.7	59.4	59.4	206.1	46.0	46.0			
Martin House				42.2	209.9	210.0			
Arnica	50.7	201.4	201.4	37.2	214.9	215.0			
Bear Rock	20.7	231.4	231.4	16.2	235.9	236.0			
Mount Kindle	-479.3	731.4	731.4	-490.9	743.0	744.0			
Franklin Mountain	-679.3	931.4	931.4	-671.9	924.0	925.0			
Saline River	-953.3	1205.4	1205.4						
Saline River Clastic Member	-1089.3	1341.4	1341.4						
Mount Cap	-1119.3	1371.4	1371.4						
Mount Clark SS	-1284.3	1536.4	1536.4						
Proterozoic	-1329.3	1581.4	1581.4						
Total Depth	-1449.3	1701.4	1701.4						



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 14
Rig: Akita Sahtu 51

Well Name and Location PC Blackwater Kwijika M-59		Geologist(s) Gary Timmons/Gerald D'eon		Date (mm/dd/yy) 25 Feb 2008		Report No. 14		Drilling Day No. 14	
Current Information									
Time 0600		Depth (m MD) 1200.0 m		Depth (m TVD) 1199.0 m		Progress (m) 0m		Formation Franklin Mountain	
Formation Leak Off Test Results kg/m ³ @ m				Status Pickup Drillout BHA & 30 jts of HWDP					
Rig Akita Sahtu 51	Spud Time (00:00) 15:30	Spud Date 11 Feb 2008	Days From Spud 13.35	Elevation 245.9 m	K.B Elev 252.1 m	AFE Number P787032	Daily Cost \$ 417605	Cost to Date \$ 11613755	
Drilling Fluids Properties									
Check # WBM 14	Chk Time 12:00	Fluid Type h2o	Density 1180kg/m ³	Viscosity 47s/L	Fluid Loss cm ³ /30m	pH 10	Cl 34500.0mg/l		
Summary of Previous 24 Hrs									
Run 177.8 mm csg, circulate hole, run cement job, pressure test BOP,									
Operation Forecast Next 24 Hrs									
pick up 156 mm drilling assembly, drillpipe, trip in, drill out cement, casing shoe, 5 m new hole, run Leak off test, drill ahead 156 mm hole, while saturating mud system.									
Survey									
MD (m)	INCL (deg)	CORR. AZ (°)	TVD (m)	'V' SECT (m)	DOGLEG (deg/30m)	N/S (m)	E/W (m)		
1154.00	1.60	188.00	1153.00	-23.73	0.84	-23.73	28.64		
1164.00	1.60	190.00	1163.00	-24.00	0.56	-24.00	28.60		
1173.00	1.50	188.00	1172.00	-24.24	1.26	-24.24	28.56		
1181.00	1.20	192.00	1179.99	-24.43	3.93	-24.43	28.53		
1199.00	1.50	193.10	1197.99	-24.84	1.67	-24.84	28.44		
Formation Tops									
Formation	Prognosed			Actual			Remarks		
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)			
Quaternary						11.0			
Cretaceous	192.7	59.4	59.4	206.1	46.0	46.0			
Martin House				42.2	209.9	210.0			
Arnica	50.7	201.4	201.4	37.2	214.9	215.0			
Bear Rock	20.7	231.4	231.4	16.2	235.9	236.0			
Mount Kindle	-479.3	731.4	731.4	-490.9	743.0	744.0			
Franklin Mountain	-679.3	931.4	931.4	-671.9	924.0	925.0			
Saline River	-953.3	1205.4	1205.4						
Saline River Clastic Member	-1089.3	1341.4	1341.4						
Mount Cap	-1119.3	1371.4	1371.4						
Mount Clark SS	-1284.3	1536.4	1536.4						
Proterozoic	-1329.3	1581.4	1581.4						
Total Depth	-1449.3	1701.4	1701.4						



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 15
Rig: Akita Sahtu 51

Well Name and Location PC Blackwater Kwijika M-59		Geologist(s) Gary Timmons/Gerald D'eon		Date (mm/dd/yy) 26 Feb 2008		Report No. 15		Drilling Day No. 15	
Current Information									
Time 0600		Depth (m MD) 1214.0 m		Depth (m TVD) 1213.0 m		Progress (m) 14m		Formation Franklin Mountain	
Formation Leak Off Test Results kg/m ³ @ m				Status Drilling 156mm Hole @ 2-2.5m/hr- 6:00 Depth 1214m					
Rig Akita Sahtu 51	Spud Time (00:00) 15:30	Spud Date 11 Feb 2008	Days From Spud 14.35	Elevation 245.9 m	K.B Elev 252.1 m	AFE Number P787032	Daily Cost \$ 122620	Cost to Date \$ 11736375	
Drilling Fluids Properties									
Check # WBM 14	Chk Time 12:00	Fluid Type h2o	Density 1180kg/m ³	Viscosity 47s/L	Fluid Loss cm ³ /30m	pH 10	Cl 34500.0mg/l		
Summary of Previous 24 Hrs									
Finish Pressure test BOP, p/u 156 mm bit, drilling assembly, trip in hole, drill out cement, casing shoe, drill to 1205 m, ran FIT test, (2200 kg/m ³ equiv), drilled ahead 156 mm hole									
Operation Forecast Next 24 Hrs									
Drill ahead 156 mm hole.									
Survey									
MD (m)	INCL (deg)	CORR. AZ (°)	TVD (m)	V SECT (m)	DOGLEG (deg/30m)	N/S (m)	E/W (m)		
1154.00	1.60	188.00	1153.00	-23.73	0.84	-23.73	28.64		
1164.00	1.60	190.00	1163.00	-24.00	0.56	-24.00	28.60		
1173.00	1.50	188.00	1172.00	-24.24	1.26	-24.24	28.56		
1181.00	1.20	192.00	1179.99	-24.43	3.93	-24.43	28.53		
1199.00	1.50	193.10	1197.99	-24.84	1.67	-24.84	28.44		
Bit and Casing Data									
Bit # 1C	Size 155.6 mm	Type STR-40DX	Depth In 1200 m	Hours 1.25	Last Casing 178 mm @ 1198 m / 1198 m		Next Casing 114 mm @ 1700.0 m / 1700.0 m		
Rate of Penetration									
Interval (m)	Max ROP (min/m)	Avg ROP (min/m)	Min ROP (min/m)	Description					
1200 - 1214	18.00	25.00	32.00	Dol: bf, lt brn, lt gy, micxl - crpxl, tr pyr, occ styls, tr calcs ptchs, slty slty, loc arg strgs, ns, / r gy shy lnss.					
Hydrocarbon Data									
Depth(m)	Total Gas (u)	C1 (%)	C2 (%)	C3 (%)	IC4 (%)	NC4 (%)	IC5 (%)	NC5 (%)	Remarks
1200.0 - 1210.0	15-20								steady gas curve
Trip Gas (hwy)	Bkgrd Gas (hwy)	Pump Off (min)	Depth (m)	Conn Gas (hwy)	Bkgrd Gas (hwy)	Pumps Off (min)	Depth (m)	Est Pore Press (hwy)	Depth (m)
Formation Tops									
Formation	Prognosed			Actual			Remarks		
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)			
Quaternary						11.0			
Cretaceous	192.7	59.4	59.4	206.1	46.0	46.0			
Martin House				42.2	209.9	210.0			
Arnica	50.7	201.4	201.4	37.2	214.9	215.0			
Bear Rock	20.7	231.4	231.4	16.2	235.9	236.0			
Mount Kindle	-479.3	731.4	731.4	-490.9	743.0	744.0			
Franklin Mountain	-679.3	931.4	931.4	-671.9	924.0	925.0			
Saline River	-953.3	1205.4	1205.4						
Saline River Clastic Member	-1089.3	1341.4	1341.4						
Mount Cap	-1119.3	1371.4	1371.4						
Mount Clark SS	-1284.3	1536.4	1536.4						
Proterozoic	-1329.3	1581.4	1581.4						
Total Depth	-1449.3	1701.4	1701.4						



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 16
Rig: Akita Sahtu 51

Well Name and Location PC Blackwater Kwijika M-59		Geologist(s) Gary Timmons/Gerald D'eon		Date (mm/dd/yy) 27 Feb 2008		Report No. 16		Drilling Day No. 16	
Current Information									
Time 0600		Depth (m MD) 1347.0 m		Depth (m TVD) 1346.0 m		Progress (m) 133m		Formation Saline River Salt	
Formation Leak Off Test Results kg/m ³ @ m				Status Drill 156mm Hole- ROP varying fr/4-15m/hr- 6:00 Depth There have been no health, safety or environmental issues in the past 24 hrs.					
Rig Akita Sahtu 51	Spud Time (00:00) 15:30	Spud Date 11 Feb 2008	Days From Spud 15.38	Elevation 245.9 m	K.B Elev 252.1 m	AFE Number P787032	Daily Cost \$ 141583	Cost to Date \$ 11877958	
Drilling Fluids Properties									
Check # WBM 16	Chk Time 12:00	Fluid Type h2o	Density 1285kg/m ³	Viscosity 47s/L	Fluid Loss cm ³ /30m	pH 10.5	Cl 189000.0mg/l		
Summary of Previous 24 Hrs									
Drilled ahead 156 mm hole to 1280m, stop and add salt to mud system to saturate mud, drill ahead to XXXX m									
Operation Forecast Next 24 Hrs									
Drill ahead 156 mm hole.									
Survey									
MD (m)	INCL (deg)	CORR. AZ (°)	TVD (m)	V' SECT (m)	DOGLEG (deg/30m)	N/S (m)	E/W (m)		
1270.00	0.50	356.00	1268.98	-24.88	3.62	-24.88	28.82		
1289.00	0.90	345.00	1287.98	-24.66	2.21	-24.66	28.78		
1299.00	0.60	204.00	1297.98	-24.63	14.17	-24.63	28.74		
1318.00	1.30	42.00	1316.98	-24.56	9.89	-24.56	28.84		
1328.00	1.80	17.00							
Bit and Casing Data									
Bit # 1C	Size 155.6 mm	Type STX-40DX	Depth in 1200 m	Hours 20.00	Last Casing 178 mm @ 1198 m / 1198 m		Next Casing 114 mm @ 1700.0 m / 1700.0 m		
Rate of Penetration									
Interval (m)	Max ROP (min/m)	Avg ROP (min/m)	Min ROP (min/m)	Description					
1214 - 1236	14.00	20.00	26.00	interbedded sltst, dol, mnr sh, mrlst Sltst 35% lt gy, dolic, qtz, dism pyr, rr glau, tt, ns. Dol 35% tan, lt brn, crpxl, tr pyric, dns, ns. Mrlst 15% m - dk gy, dolic, dism pyr. Sh 15% lt - m gy, gnsh, blk, dolic.					
1236 - 1278	5.00	7.00	9.00	Interbedded gn sh, red sh, sltst Sh grn 30% gn, gy, blk, dolic, slty, dism pyr, / intspd sltst. Sh red 20% red, gn, plty, dolic, / slty lnss. Sltst 50% lt gy, pk, dolic, qtz, slty arg, shy lnss, tt, ns.					
1278 - 1235	3.00	4.00	24.00	Mostly Salt, some sh interbeds Sa 80% trnsp, pale orng, rrd frags, eroded edges. Sh 20% lt gn, lt gy, tab, sft, / occ slty strgs.					
Hydrocarbon Data									
Depth(m)	Total Gas (u)	C1 (%)	C2 (%)	C3 (%)	IC4 (%)	NC4 (%)	IC5 (%)	NC5 (%)	Remarks
1210.0 - 1281.0	18-23								steady curve
1281.0 - 1335.0	15-18								
Trip Gas (hwu)	Bkgrd Gas (hwu)	Pump Off (min)	Depth (m)	Conn Gas (hwu)	Bkgrd Gas (hwu)	Pumps Off (min)	Depth (m)	Est Pore Press (hwu)	Depth (m)
Formation Tops									
Formation	Prognosed			Actual			Remarks		
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)			
Quaternary						11.0			
Cretaceous	192.7	59.4	59.4	206.1	46.0	46.0			
Martin House				42.2	209.9	210.0			



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
 Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 16
 Rig: Akita Sahtu 51

Formation Tops							
Formation	Prognosed			Actual			Remarks
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)	
Arnica	50.7	201.4	201.4	37.2	214.9	215.0	
Bear Rock	20.7	231.4	231.4	16.2	235.9	236.0	
Mount Kindle	-479.3	731.4	731.4	-490.9	743.0	744.0	
Franklin Mountain	-679.3	931.4	931.4	-671.9	924.0	925.0	
Saline River	-953.3	1205.4	1205.4	-982.3	1234.4	1235.5	
Saline River Salt				-1024.3	1276.4	1277.5	
Saline River Clastic Member	-1089.3	1341.4	1341.4				
Mount Cap	-1119.3	1371.4	1371.4				
Mount Clark SS	-1284.3	1536.4	1536.4				
Proterozoic	-1329.3	1581.4	1581.4				
Total Depth	-1449.3	1701.4	1701.4				



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 17
Rig: Akita Sahtu 51

Well Name and Location PC Blackwater Kwijika M-59		Geologist(s) Gary Timmons/Gerald D'eon		Date (mm/dd/yy) 28 Feb 2008		Report No. 17		Drilling Day No. 17	
Current Information									
Time 0600		Depth (m MD) 1488.0 m		Depth (m TVD) 1488.0 m		Progress (m) 141m		Formation Mount Cap	
Formation Leak Off Test Results kg/m ³ @ m				Status Drilling 156mm Hole @ 4-6m/hr. Depth @ 06:00 hrs=1488m. No Health, Safety, or environmental issues in the past 24/hrs.					
Rig Akita Sahtu 51	Spud Time (00:00) 15:30	Spud Date 11 Feb 2008	Days From Spud 16.35	Elevation 245.9 m	K.B Elev 252.1 m	AFE Number P787032	Daily Cost \$ 168170	Cost to Date \$ 12046128	
Drilling Fluids Properties									
Check # WBM 17	Chk Time 12:00	Fluid Type h2o	Density 1300kg/m ³	Viscosity 46s/L	Fluid Loss cm ³ /30m	pH 11	Cl 210000.0mg/l		
Summary of Previous 24 Hrs									
Drilling ahead 156 mm hole to 1488 m									
Operation Forecast Next 24 Hrs									
Drill ahead 156 mm hole, poss bit trip									
Survey									
MD (m)	INCL (deg)	CORR. AZ (°)	TVD (m)	V' SECT (m)	DOGLEG (deg/30m)	N/S (m)	E/W (m)		
1346.00	1.90								
1356.00	2.30								
1365.00	1.90								
1384.00	2.20								
1394.00	2.50								
Bit and Casing Data									
Bit # 1C	Size 155.6 mm	Type STX-40DX	Depth in 1200 m	Hours 41.25	Last Casing 178 mm @ 1198 m / 1198 m		Next Casing 114 mm @ 1700.0 m / 1700.0 m		
Rate of Penetration									
Interval (m)	Max ROP (min/m)	Avg ROP (min/m)	Min ROP (min/m)	Description					
1335 - 1404	3.50	4.50	12.00	pred salt wi pos thn sh intebeds, tr anhy Salt 95% clr, reddsh, lt brn, rdd eroded edges, occ red & gn shy lnss. Sh 5% gn, plty, dolc. Anhy tr lt gy, reddsh, dolc, sly arg, dns.					
1404 - 1449	8.00	10.00	13.00	sh wi interbedded thn sltst, dol Sh 96% lt gn, red, gy, tab, occly mrly. tab - fis, sft-firm. Slstst 2% lt gy, reddsh, tr gnsh, dolc, sly arg, tt. Dol 2% m brn, gy, crpxl, tr pyr, arg, lamd.					
1449 - 1459	4.00	6.00	8.00	Ss, wi sh & dol intbeds Ss 80% lt gy, offwh, trnsp, f gred, rng v f - occ m, sbrd - rd, w - m srt, frm - fri, com loose grs, cln, qtz grs in sils cmt, com glau, occ dk mnrls, tr pyr, some sec qtz ovghts, ptch 3-7% intgran por, ns. Dol 10% lt brn, mot bf, crpxl, rr rmnt fragl tex, ools?, occ arg lams, algal?, dns Sh 10% gy, brn, aa.					
1459 - 1480	8.00	10.00	14.00	Sh, mnrl, mostly gy, gnsh gy, fis, frm, sly slty, / occ sltst lams, com gn & blk glau, occ pyr, grdg - gn sh.					
Hydrocarbon Data									
Depth(m)	Total Gas (u)	C1 (%)	C2 (%)	C3 (%)	IC4 (%)	NC4 (%)	IC5 (%)	NC5 (%)	Remarks
1335.0 - 1390.0	15-22	0.00000							
1390.0 - 1444.0	20-31	0.10000							
1444.0 - 1485.0	15-20	0.00000							
Trip Gas (hww)	Bkgrd Gas (hww)	Pump Off (min)	Depth (m)	Conn Gas (hww)	Bkgrd Gas (hww)	Pumps Off (min)	Depth (m)	Est Pore Press (hww)	Depth (m)



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 17
Rig: Akita Sahtu 51

Formation Tops							
Formation	Prognosed			Actual			Remarks
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)	
Quaternary						11.0	
Cretaceous	192.7	59.4	59.4	206.1	46.0	46.0	
Martin House				42.2	209.9	210.0	
Arnica	50.7	201.4	201.4	37.2	214.9	215.0	
Bear Rock	20.7	231.4	231.4	16.2	235.9	236.0	
Mount Kindle	-479.3	731.4	731.4	-490.9	743.0	744.0	
Franklin Mountain	-679.3	931.4	931.4	-671.9	924.0	925.0	
Saline River	-953.3	1205.4	1205.4	-982.3	1234.4	1235.5	
Saline River Salt				-1024.3	1276.4	1277.5	
Saline River Clastic Member	-1089.3	1341.4	1341.4				
Mount Cap	-1119.3	1371.4	1371.4	-1150.7	1402.8	1404.0	
Mount Clark SS	-1284.3	1536.4	1536.4				
Proterozoic	-1329.3	1581.4	1581.4				
Total Depth	-1449.3	1701.4	1701.4				
Remarks							
Geology Comments	MWD Survey tool appears to be giving incrcet azimuths, also inclinations seem erratic.						



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 18
Rig: Akita Sahtu 51

Well Name and Location PC Blackwater Kwijika M-59		Geologist(s) Gary Timmons/Gerald D'eon		Date (mm/dd/yy) 29 Feb 2008		Report No. 18		Drilling Day No. 18	
Current Information									
Time 0600		Depth (m MD) 1517.0 m		Depth (m TVD) 1517.0 m		Progress (m) 29m		Formation	
Formation Leak Off Test Results kg/m ³ @ m				Status Drill ahead 156 mm hole at 1517 m, 2 m/hr					
Rig Akita Sahtu 51	Spud Time (00:00) 15:30	Spud Date 11 Feb 2008	Days From Spud 17.35	Elevation 245.9 m	K.B Elev 252.1 m	AFE Number P787032	Daily Cost \$ 136156	Cost to Date \$ 12182284	
Drilling Fluids Properties									
Check # WBM 17	Chk Time 12:00	Fluid Type h2o	Density 1300kg/m ³	Viscosity 46s/L	Fluid Loss cm ³ /30m	pH 11	Cl 210000.0mg/l		
Summary of Previous 24 Hrs									
Drilled to 1495 m, circ bottoms up, tripped out, changed, bit, mud motor, MWD, trip in, re-surveying some points, drill ahead 156 mm hole									
Operation Forecast Next 24 Hrs									
drill ahead 156 mm hole									
Survey									
MD (m)	INCL (deg)	CORR. AZ (°)	TVD (m)	V SECT (m)	DOGLEG (deg/30m)	N/S (m)	E/W (m)		
1317.00	1.60	212.00	1315.98	-25.47	3.25	-25.47	27.80		
1356.00	2.20	206.00	1354.95	-26.60	1.62	-26.60	27.18		
1394.00	2.60	207.00	1392.92	-28.02	1.06	-28.02	26.47		
1432.00	2.20	224.00	1430.89	-29.32	2.14	-29.32	25.57		
1471.00	2.20	196.00	1469.86	-30.57	2.73	-30.57	24.84		
Bit and Casing Data									
Bit # 1C	Size 155.6 mm	Type STX-40DX	Depth In 1200 m	Hours 48.50	Last Casing 178 mm @ 1198 m / 1198 m		Next Casing 114 mm @ 1700.0 m / 1700.0 m		
Bit and Casing Data									
Bit # 2C	Size 155.6 mm	Type XR50OD	Depth In 1495 m	Hours 0.75	Last Casing 178 mm @ 1198 m / 1198 m		Next Casing 114 mm @ 1700.0 m / 1700.0 m		
Rate of Penetration									
Interval (m)	Max ROP (min/m)	Avg ROP (min/m)	Min ROP (min/m)	Description					
1480 - 1490	10.00	14.00	18.00	Sh gn, occ red, plty, dolc.					
1490 - 1515	5.00	15.00	32.00	Ss: clr, wh, qtzs, f - m gred, sbang - sbdd, rr w rdd, w srt, hd - fri, mostly qtz grs in sils cmt, occ sec qtz ovgrths, tr pyr, abnt lse grs, ptch 5-10% intgran por in zns / w rdd grs, (1498-1507m) some tt, v hd, no shows. Note: 25% rock flour in 1515 spl					
Hydrocarbon Data									
Depth(m)	Total Gas (u)	C1 (%)	C2 (%)	C3 (%)	IC4 (%)	NC4 (%)	IC5 (%)	NC5 (%)	Remarks
1485.0 - 1515.0	15-25								
Trip Gas (hwu)	Bkgrd Gas (hwu)	Pump Off (min)	Depth (m)	Conn Gas (hwu)	Bkgrd Gas (hwu)	Pumps Off (min)	Depth (m)	Est Pore Press (hwu)	Depth (m)
31			1495.0						
Formation Tops									
Formation	Prognosed			Actual			Remarks		
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)			
Quaternary						11.0			
Cretaceous	192.7	59.4	59.4	206.1	46.0	46.0			
Martin House				42.2	209.9	210.0			
Arnica	50.7	201.4	201.4	37.2	214.9	215.0			
Bear Rock	20.7	231.4	231.4	16.2	235.9	236.0			
Mount Kindle	-479.3	731.4	731.4	-490.9	743.0	744.0			
Franklin Mountain	-679.3	931.4	931.4	-671.9	924.0	925.0			



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 18
Rig: Akita Sahtu 51

Formation Tops							
Formation	Prognosed			Actual			Remarks
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)	
Saline River	-953.3	1205.4	1205.4	-982.3	1234.4	1235.5	
Saline River Salt				-1024.3	1276.4	1277.5	
Saline River Clastic Member	-1089.3	1341.4	1341.4				
Mount Cap	-1119.3	1371.4	1371.4	-1150.7	1402.8	1404.0	
Mount Clark SS	-1284.3	1536.4	1536.4				
Proterozoic	-1329.3	1581.4	1581.4				
Total Depth	-1449.3	1701.4	1701.4				



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 19
Rig: Akita Sahtu 51

Well Name and Location PC Blackwater Kwijika M-59		Geologist(s) Gary Timmons/Gerald D'eon		Date (mm/dd/yy) 01 Mar 2008		Report No. 19		Drilling Day No. 19	
Current Information									
Time 0600		Depth (m MD) 1540.0 m		Depth (m TVD) 1539.0 m		Progress (m) 23m		Formation	
Formation Leak Off Test Results kg/m ³ @ m				Status Drilling 156mm Hole @ 2m/hr- 6:00 Depth @ 1540m.					
Rig Akita Sahtu 51	Spud Time (00:00) 15:30	Spud Date 11 Feb 2008	Days From Spud 18.35	Elevation 245.9 m	K.B Elev 252.1 m	AFE Number P787032	Daily Cost \$ 118539	Cost to Date \$ 12300823	
Drilling Fluids Properties									
Check # WBM 19	Chk Time 12:00	Fluid Type h2o	Density 1320kg/m ³	Viscosity 51s/L	Fluid Loss cm ³ /30m	pH 10.5	Cl 250000.0mg/l		
Summary of Previous 24 Hrs									
Drilled ahead 156 mm hole to 1518 m, trip out for new bit, lay down mud motor, trip in, wash/ream from 1505-1518 m, drill ahead 156 mm hole									
Operation Forecast Next 24 Hrs									
Drill ahead									
Survey									
MD (m)	INCL (deg)	CORR. AZ (°)	TVD (m)	V SECT (m)	DOGLEG (deg/30m)	N/S (m)	E/W (m)		
1317.00	1.60	212.00	1315.98	-25.47	3.25	-25.47	27.80		
1356.00	2.20	206.00	1354.95	-26.60	1.62	-26.60	27.18		
1394.00	2.60	207.00	1392.92	-28.02	1.06	-28.02	26.47		
1432.00	2.20	224.00	1430.89	-29.32	2.14	-29.32	25.57		
1471.00	2.20	196.00	1469.86	-30.57	2.73	-30.57	24.84		
Bit and Casing Data									
Bit # 4C	Size 155.6 mm	Type STX-50DX	Depth In 1518 m	Hours 2.25	Last Casing 178 mm @ 1198 m / 1198 m		Next Casing 114 mm @ 1700.0 m / 1700.0 m		
Bit and Casing Data									
Bit # 2C	Size 155.6 mm	Type XR50OD	Depth In 1495 m	Hours 7.50	Last Casing 178 mm @ 1198 m / 1198 m		Next Casing 114 mm @ 1700.0 m / 1700.0 m		
Rate of Penetration									
Interval (m)	Max ROP (min/m)	Avg ROP (min/m)	Min ROP (min/m)	Description					
1515 - 1521	18.00	25.00	40.00	Ss : clr, wh, qtzs, f - m gred, occ v f grs, sbdr - sbang, w srt, qtzs, frm - fri, tr pyric, occ qtz ovgtths, mnrr wh cly mtz, mod sils cmt, cln, tr por, mostly tt, ns.					
1521 - 1525	18.00	22.00	30.00	SS, aa, mostly tt, v rr por, ns.					
1525 - 1535	10.00	16.00	24.00	Ss: clr, wh, also lt redsh brn, qtzs, m - f gred, w rrd - sbdr, m srt, qtzs, qtz ovgtths, rr mnrr wh cly mtz, com ptch red tinge, mod - hd sils cmt, cln, ptch 3-6% intgran por, mostly tt, no shows.					
Hydrocarbon Data									
Depth(m)	Total Gas (u)	C1 (%)	C2 (%)	C3 (%)	IC4 (%)	NC4 (%)	IC5 (%)	NC5 (%)	Remarks
1515.0 - 1535.0	12-20								
Trip Gas (hwu)	Bkgrd Gas (hwu)	Pump Off (min)	Depth (m)	Conn Gas (hwu)	Bkgrd Gas (hwu)	Pumps Off (min)	Depth (m)	Est Pore Press (hwu)	Depth (m)
25			1518.0						
Formation Tops									
Formation	Prognosed			Actual			Remarks		
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)			
Quaternary						11.0			
Cretaceous	192.7	59.4	59.4	206.1	46.0	46.0			
Martin House				42.2	209.9	210.0			
Arnica	50.7	201.4	201.4	37.2	214.9	215.0			
Bear Rock	20.7	231.4	231.4	16.2	235.9	236.0			



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 19
Rig: Akita Sahtu 51

Formation Tops							
Formation	Prognosed			Actual			Remarks
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)	
Mount Kindle	-479.3	731.4	731.4	-490.9	743.0	744.0	
Franklin Mountain	-679.3	931.4	931.4	-671.9	924.0	925.0	
Saline River	-953.3	1205.4	1205.4	-982.3	1234.4	1235.5	
Saline River Salt				-1024.3	1276.4	1277.5	
Saline River Clastic Member	-1089.3	1341.4	1341.4				
Mount Cap	-1119.3	1371.4	1371.4	-1150.7	1402.8	1404.0	
Mount Clark SS	-1284.3	1536.4	1536.4				
Proterozoic	-1329.3	1581.4	1581.4				
Total Depth	-1449.3	1701.4	1701.4				



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 20
Rig: Akita Sahtu 51

Well Name and Location PC Blackwater Kwijika M-59		Geologist(s) Gary Timmons/Gerald D'eon		Date (mm/dd/yy) 02 Mar 2008		Report No. 20		Drilling Day No. 20	
Current Information									
Time 0600		Depth (m MD) 1566.0 m		Depth (m TVD) 1565.0 m		Progress (m) 26m		Formation	
Formation Leak Off Test Results kg/m ³ @ m				Status Drill 156mm hole from 1556m. There have been no health, safety or environmental issues in the past 24 hrs.					
Rig Akita Sahtu 51	Spud Time (00:00) 15:30	Spud Date 11 Feb 2008	Days From Spud 19.35	Elevation 245.9 m	K.B Elev 252.1 m	AFE Number P787032	Daily Cost \$ 149616	Cost to Date \$ 12450439	
Drilling Fluids Properties									
Check # WBM 20	Chk Time 10:00	Fluid Type h2o	Density 1320kg/m ³	Viscosity 49s/L	Fluid Loss cm ³ /30m	pH 10.5	Cl 240000.0mg/l		
Summary of Previous 24 Hrs									
Drilled ahead to 1540 m, circ bottoms up, trip out for new bit, trip in, drill ahead 156 mm hole									
Operation Forecast Next 24 Hrs									
Drill ahead 156 mm hole									
Survey									
MD (m)	INCL (deg)	CORR. AZ (°)	TVD (m)	V' SECT (m)	DOGLEG (deg/30m)	N/S (m)	E/W (m)		
1471.00	2.20	196.00	1469.86	-30.57	2.73	-30.57	24.84		
1500.00	2.50	195.10	1498.84	-31.72	1.04	-31.72	24.53		
1519.00	3.00	191.20	1517.81	-32.61	2.81	-32.61	24.32		
1528.00	3.50	180.00	1526.80	-33.11	8.96	-33.11	24.28		
1538.00	3.70	176.00	1536.78	-33.74	3.21	-33.74	24.30		
Bit and Casing Data									
Bit # 3C	Size 155.6 mm	Type STX-50DX	Depth in 1518 m	Hours 8.50	Last Casing 178 mm @ 1198 m / 1198 m		Next Casing 114 mm @ 1700.0 m / 1700.0 m		
Bit and Casing Data									
Bit # 4C	Size 155.6 mm	Type STX-50DX	Depth in 1541 m	Hours 3.25	Last Casing 178 mm @ 1198 m / 1198 m		Next Casing 114 mm @ 1700.0 m / 1700.0 m		
Rate of Penetration									
Interval (m)	Max ROP (min/m)	Avg ROP (min/m)	Min ROP (min/m)	Description					
1535 - 1540	15.00	30.00	45.00	SS: clr, redsh, qtzs, f - m gred, sils, slly arg, qtz, qtz ovghts, sb ang - sb rdd, modly w srt, sl tr intgran por 3-6%, predly tt, ns					
1540 - 1560	12.00	16.00	28.00	SS, mntr sh strgs. SS 95% clr, wh, orng, m gred, / ptch c - v c flotg qtz grs, sbdr - rdd, m - w srt, qtz grs in hd sils cmt, occ qtz ovghts, com lse grs, mostly tt, no shows. Sh 5% lt gn, gn, fis, frm - hd, sl dolc.					
Hydrocarbon Data									
Depth(m)	Total Gas (u)	C1 (%)	C2 (%)	C3 (%)	IC4 (%)	NC4 (%)	IC5 (%)	NC5 (%)	Remarks
1535.0 - 1555.0	15-20	0.00000							
Trip Gas (hwu)	Bkgrd Gas (hwu)	Pump Off (min)	Depth (m)	Conn Gas (hwu)	Bkgrd Gas (hwu)	Pumps Off (min)	Depth (m)	Est Pore Press (hwu)	Depth (m)
22			1540.0						
Formation Tops									
Formation	Prognosed			Actual			Remarks		
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)			
Quaternary						11.0			
Cretaceous	192.7	59.4	59.4	206.1	46.0	46.0			
Martin House				42.2	209.9	210.0			



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
 Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 20
 Rig: Akita Sahtu 51

Formation Tops							
Formation	Prognosed			Actual			Remarks
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)	
Arnica	50.7	201.4	201.4	37.2	214.9	215.0	
Bear Rock	20.7	231.4	231.4	16.2	235.9	236.0	
Mount Kindle	-479.3	731.4	731.4	-490.9	743.0	744.0	
Franklin Mountain	-679.3	931.4	931.4	-671.9	924.0	925.0	
Saline River	-953.3	1205.4	1205.4	-982.3	1234.4	1235.5	
Saline River Salt				-1024.3	1276.4	1277.5	
Saline River Clastic Member	-1089.3	1341.4	1341.4				
Mount Cap	-1119.3	1371.4	1371.4	-1150.7	1402.8	1404.0	
Mount Clark SS	-1284.3	1536.4	1536.4				
Proterozoic	-1329.3	1581.4	1581.4				
Total Depth	-1449.3	1701.4	1701.4				
Remarks							
Geology Comments	Some Activity on the MWD gamma curve now, but spls are still strongly dominated by ss, as described. mostly 2-4% Sh is most spls, remainder ss.						



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 21
Rig: Akita Sahtu 51

Well Name and Location PC Blackwater Kwijika M-59		Geologist(s) Gary Timmons/Gerald D'eon		Date (mm/dd/yy) 03 Mar 2008		Report No. 21		Drilling Day No. 21	
Current Information									
Time 0600		Depth (m MD) 1571.0 m		Depth (m TVD) 1570.0 m		Progress (m) 5m		Formation	
Formation Leak Off Test Results kg/m ³ @ m				Status RIH w/Bit #5C					
Rig Akita Sahtu 51	Spud Time (00:00) 15:30	Spud Date 11 Feb 2008	Days From Spud 20.35	Elevation 245.9 m	K.B Elev 252.1 m	AFE Number P787032	Daily Cost \$ 99236	Cost to Date \$ 12549675	
Drilling Fluids Properties									
Check # WBM 21	Chk Time 10:00	Fluid Type h2o	Density 1315kg/m ³	Viscosity 46s/L	Fluid Loss cm ³ /30m	pH 11.5	Cl 215000.0mg/l		
Summary of Previous 24 Hrs									
Drilled ahead to 1571m, circ bottom spl, trip out for new bit, weld and repair broken diving board at monkeyboards, continue trip out, p/u mud motor, new bit, trip in									
Operation Forecast Next 24 Hrs									
Drill ahead 156 mm hole									
Survey									
MD (m)	INCL (deg)	CORR. AZ (°)	TVD (m)	V SECT (m)	DOGLEG (deg/30m)	N/S (m)	E/W (m)		
1500.00	2.50	195.10	1498.84	-31.72	1.04	-31.72	24.53		
1519.00	3.00	191.20	1517.81	-32.61	2.81	-32.61	24.32		
1528.00	3.50	180.00	1526.80	-33.11	8.96	-33.11	24.28		
1538.00	3.70	176.00	1536.78	-33.74	3.21	-33.74	24.30		
1548.00	3.70	176.90							
Bit and Casing Data									
Bit # 4C	Size 155.6 mm	Type STX-50DX	Depth In 1540 m	Hours 3.25	Last Casing 178 mm @ 1198 m / 1198 m		Next Casing 114 mm @ 1700.0 m / 1700.0 m		
Rate of Penetration									
Interval (m)	Max ROP (min/m)	Avg ROP (min/m)	Min ROP (min/m)	Description					
1560 - 1569	12.00	16.00	19.00	SS: clr, silly yel, silly pk, qtzs, m - v c gred, sils, qtz, qtz ovghts, sb rdd - sb ang, py srt, tt, ns.					
1569 - 1572	35.00	50.00	75.00	Sh: red, blk, sft, H2O sensitive, com alt chlor.					
Hydrocarbon Data									
Depth(m)	Total Gas (u)	C1 (%)	C2 (%)	C3 (%)	IC4 (%)	NC4 (%)	IC5 (%)	NC5 (%)	Remarks
1555.0 - 1570.0	12-18	0.00000							
Trip Gas (hwy)	Bkgrd Gas (hwy)	Pump Off (min)	Depth (m)	Conn Gas (hwy)	Bkgrd Gas (hwy)	Pumps Off (min)	Depth (m)	Est Pore Press (hwy)	Depth (m)
Formation Tops									
Formation	Prognosed			Actual			Remarks		
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)			
Quaternary						11.0			
Cretaceous	192.7	59.4	59.4	206.1	46.0	46.0			
Martin House				42.2	209.9	210.0			
Arnica	50.7	201.4	201.4	37.2	214.9	215.0			
Bear Rock	20.7	231.4	231.4	16.2	235.9	236.0			
Mount Kindle	-479.3	731.4	731.4	-490.9	743.0	744.0			
Franklin Mountain	-679.3	931.4	931.4	-671.9	924.0	925.0			
Saline River	-953.3	1205.4	1205.4	-982.3	1234.4	1235.5			
Saline River Salt				-1024.3	1276.4	1277.5			
Saline River Clastic Member	-1089.3	1341.4	1341.4						
Mount Cap	-1119.3	1371.4	1371.4	-1150.7	1402.8	1404.0			
Mount Clark SS	-1284.3	1536.4	1536.4						



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 21
Rig: Akita Sahtu 51

Formation Tops							
Formation	Prognosed			Actual			Remarks
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)	
Proterozoic	-1329.3	1581.4	1581.4				
Total Depth	-1449.3	1701.4	1701.4				



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 22
Rig: Akita Sahtu 51

Well Name and Location PC Blackwater Kwijika M-59		Geologist(s) Gary Timmons/Gerald D'eon		Date (mm/dd/yy) 04 Mar 2008		Report No. 22		Drilling Day No. 22	
Current Information									
Time 0600		Depth (m MD) 1630.0 m		Depth (m TVD) 1629.0 m		Progress (m) 59m		Formation	
Formation Leak Off Test Results kg/m ³ @ m				Status Drilling 156mm Hole @ 3-4m/hr- 6:00 Depth					
Rig Akita Sahtu 51	Spud Time (00:00) 15:30	Spud Date 11 Feb 2008	Days From Spud 21.35	Elevation 245.9 m	K.B Elev 252.1 m	AFE Number P787032	Daily Cost \$ -62298	Cost to Date \$ 12487377	
Drilling Fluids Properties									
Check # WBM 22	Chk Time 10:00	Fluid Type h2o	Density 1315kg/m ³	Viscosity 58s/L	Fluid Loss cm ³ /30m	pH 11.5	Cl 215000.0mg/l		
Summary of Previous 24 Hrs									
trip in with new bit, drill ahead 156 mm hole,									
Operation Forecast Next 24 Hrs									
Drill ahead 156 mm hole									
Bit and Casing Data									
Bit # 5C	Size 155.6 mm	Type XR 40 ODPS	Depth In 1571 m	Hours 13.00	Last Casing Next Casing		Size 178 mm 114 mm	@ @	Depth MD/TVD 1198 m / 1198 m 1700.0 m / 1700.0 m
Rate of Penetration									
Interval (m)	Max ROP (min/m)	Avg ROP (min/m)	Min ROP (min/m)	Description					
1572 - 1575	18.00	26.00	40.00	Sh red blk, sft, H2O sensitive, sdy, / alt chlor. Basalt: (poss diab) dk gy, specd, tab - blk, gn phen (chlor? wi alt coronas) elong trnspl xls fe oxide stng, poss alt, also occ welded tuffaceous appearance, also lod phyllite tex, rr loc fabric in xls, dns. Rhy? welded tuff??, mot gy, brn, specd, frm - hd, some qtz xls in brnsh gy xln mtz, con chlor, pos welded shard appearance, occ alt coronas, occ dk mnrls, dns.					
1575 - 1622	12.00	17.00	22.00						
1622 - 1626	10.00	12.00	14.00						
Hydrocarbon Data									
Depth(m)	Total Gas (u)	C1 (%)	C2 (%)	C3 (%)	IC4 (%)	NC4 (%)	IC5 (%)	NC5 (%)	Remarks
1570.0 - 1626.0	14-22	0.00000							
Trip Gas (hwu)	Bkgrd Gas (hwu)	Pump Off (min)	Depth (m)	Conn Gas (hwu)	Bkgrd Gas (hwu)	Pumps Off (min)	Depth (m)	Est Pore Press (hwu)	Depth (m)
Formation Tops									
Formation	Prognosed			Actual			Remarks		
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)			
Quaternary							11.0		
Cretaceous	192.7	59.4	59.4	206.1	46.0		46.0		
Martin House				42.2	209.9		210.0		
Arnica	50.7	201.4	201.4	37.2	214.9		215.0		
Bear Rock	20.7	231.4	231.4	16.2	235.9		236.0		
Mount Kindle	-479.3	731.4	731.4	-490.9	743.0		744.0		
Franklin Mountain	-679.3	931.4	931.4	-671.9	924.0		925.0		
Saline River	-953.3	1205.4	1205.4	-982.3	1234.4		1235.5		
Saline River Salt				-1024.3	1276.4		1277.5		
Saline River Clastic Member	-1089.3	1341.4	1341.4						
Mount Cap	-1119.3	1371.4	1371.4	-1150.7	1402.8		1404.0		
Mount Clark SS	-1284.3	1536.4	1536.4						
Proterozoic	-1329.3	1581.4	1581.4						
Total Depth	-1449.3	1701.4	1701.4						



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
Geologist: Gary Timmons/Gerald D'eon (403 387-2595)

Report # 23
Rig: Akita Sahtu 51

Well Name and Location PC Blackwater Kwijika M-59		Geologist(s) Gary Timmons/Gerald D'eon		Date (mm/dd/yy) 05 Mar 2008		Report No. 23		Drilling Day No. 23	
Current Information									
Time 0600		Depth (m MD) 1640.0 m		Depth (m TVD) 1639.0 m		Progress (m) 10m		Formation Proterozoic	
Formation Leak Off Test Results kg/m ³ @ m				Sidehole cores w/Schlumberger Loggers					
Rig Akita Sahtu 51	Spud Time (00:00) 15:30	Spud Date 11 Feb 2008	Days From Spud 22.35	Elevation 245.9 m	K.B Elev 252.1 m	AFE Number P787032	Daily Cost \$ 94938	Cost to Date \$ 12582315	
Drilling Fluids Properties									
Check # WBM 23	Chk Time 8:00	Fluid Type h2o	Density 1315kg/m ³	Viscosity 56s/L	Fluid Loss cm ³ /30m	pH 10.5	Cl 215000.0mg/l		
Summary of Previous 24 Hrs									
Drilled ahead to 1640 m (TD), circ bottoms up, trip out, strap pipe, (strap =1641.3), lay down BHA, rig up loggers. Start logging suite 2 (Run 1 PEX HRLA-CMR-TLD2-MLTB-SP TD to intermed csg) Run 2 MSCT attempting 16, have cut 12 at 06:00 hrs									
Operation Forecast Next 24 Hrs									
Continue wireline logging suite 2. Hoist tool, recover cores, Start trip 3 FMI-EMS-DSI-HNGS-MLTB, Start trip 4, MDT, then trip 5 VSP.									
Survey									
MD (m)	INCL (deg)	CORR. AZ (°)	TVD (m)	V' SECT (m)	DOGLEG (deg/30m)	N/S (m)	E/W (m)		
1548.00	3.70	176.90	1546.76	-34.38	0.58	-34.38	24.34		
1558.00	3.50	170.60	1556.74	-35.01	4.43	-35.01	24.41		
1567.00	3.70	175.70	1565.72	-35.57	4.19	-35.57	24.47		
1577.00	4.00	172.60	1575.70	-36.24	3.65	-36.24	24.54		
1587.00	3.90	169.00	1585.67	-36.92	2.67	-36.92	24.65		
Bit and Casing Data									
Bit # 5C	Size 155.6 mm	Type XR 40 ODPS	Depth In 1571 m	Hours 21.25	Last Casing 178 mm @ 1198 m / 1198 m		Next Casing 114 mm @ 1640.0 m / 1640.0 m		
Rate of Penetration									
Interval (m)	Max ROP (min/m)	Avg ROP (min/m)	Min ROP (min/m)	Description					
1626 - 1636	12.00	15.00	19.00	Basalt and Rhyolite? Basalt 80% dk gy, occly red, specd, gn phen (chlor?, bnnd ip), scat trnsp elongated xls, fe oxide stng, rr tr pyr, alt appearance. Rhy? 20% lt - dk gy, specd, occly redsh, gn phen (chlor?), elong pk xls (K-feld?), fe oxide stng, alt appearance.					
1636 - 1640	11.00	12.00	14.00	Interbedded sh & dol Sh 40% gn, red, plty, dolic, dism pyr. Dol 60% bf, lt brn, tr redsh, crpxl, tr micxl, dns, ns.					
Hydrocarbon Data									
Depth(m)	Total Gas (u)	C1 (%)	C2 (%)	C3 (%)	IC4 (%)	NC4 (%)	IC5 (%)	NC5 (%)	Remarks
1626.0 - 1640.0	12-18	0.00000							
Trip Gas (hwy)	Bkgrd Gas (hwy)	Pump Off (min)	Depth (m)	Conn Gas (hwy)	Bkgrd Gas (hwy)	Pumps Off (min)	Depth (m)	Est Pore Press (hwy)	Depth (m)
Formation Tops									
Formation	Prognosed			Actual			Remarks		
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)			
Quaternary						11.0			
Cretaceous	192.7	59.4	59.4	206.1	46.0	46.0			
Martin House				42.2	209.9	210.0			
Arnica	50.7	201.4	201.4	37.2	214.9	215.0			
Bear Rock	20.7	231.4	231.4	16.2	235.9	236.0			
Mount Kindle	-479.3	731.4	731.4	-490.9	743.0	744.0			
Franklin Mountain	-679.3	931.4	931.4	-671.9	924.0	925.0			
Saline River	-953.3	1205.4	1205.4	-982.3	1234.4	1235.5			
Saline River Salt				-1024.3	1276.4	1277.5			



DAILY GEOLOGICAL REPORT

Supervisor: Rick Fisher/Ed Daechsel (403-387-2588)
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Report # 23
Rig: Akita Sahtu 51

Formation Tops							
Formation	Prognosed			Actual			Remarks
	Subsea (m)	TVD (m)	MD (m)	Subsea (m)	TVD (m)	MD (m)	
Saline River Clastic Member	-1089.3	1341.4	1341.4				
Mount Cap	-1119.3	1371.4	1371.4	-1150.7	1402.8	1404.0	
Mount Clark SS	-1284.3	1536.4	1536.4	-1236.1	1488.2	1489.5	
Proterozoic	-1329.3	1581.4	1581.4	-1321.5	1573.6	1575.0	
Total Depth	-1449.3	1701.4	1701.4	-1386.3	1638.4	1640.0	
Remarks							
Geology Comments	MLTB appears to have failed, will rerun with backup tool on trip 3. Sp very erratic, as per prev runs.						