HALLIBURTON

SCANNED

QUAD COMBO
HRI/BCS/SDL/DSN
TRUE VERTICAL DEPTH
2"=100'

COMPANY NORTHWEST NATURAL GAS
WELL OM 33D-3-65
FIELD MIST (FLORA POOL STORAGE)
COUNTY COLUMBIA
STATE OR

cation: 1013.04' N 0 05' 24" E FROM THE EAST 1/4
1652.79' N 89 54' 36" W OF SECTION 3. WB&M

vations: K.B.: 1092.3' R.T.: ------ G.L.: 1078.3'

ocessed	JUN-11-2007	**Logs Processed**	QUAD COMBO
nber	5159527	**Date Logged**	JUN-11-2007
Processed	3282'-1572'	**Type Fluid In Hole**	GEL
ed By	G. ROUSSEAU	**Location**	WDLD
ed At	WELLSITE		

--- COMPUTER PROCESSED PRODUCT ---

Fold Here

Service Ticket No.:	**5159527**	**API Serial No.:**	**36-009-00238**	**PGM Version:**	**XL v5.7**

DIRECTIONAL INFORMATION

Maximum Deviation	31.17	deg. @	3103'	KOP	1580'

Remarks:

MAGNETIC DECLINATION 19.1 DEGREES.
RUN 1: HRID-BCSD-FACT, RUN 2: SDLT-DSNT-NGRT.
RUN 1, RUN2 MERGED FOR FINAL PRESENTATION.

CREW: M. EMERSON, I. PYLES, S. FANCHER. RIG: TD DRILLING NO. 101.

HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES OR EXPENSES RESULTING FROM THE USE THEREOF.

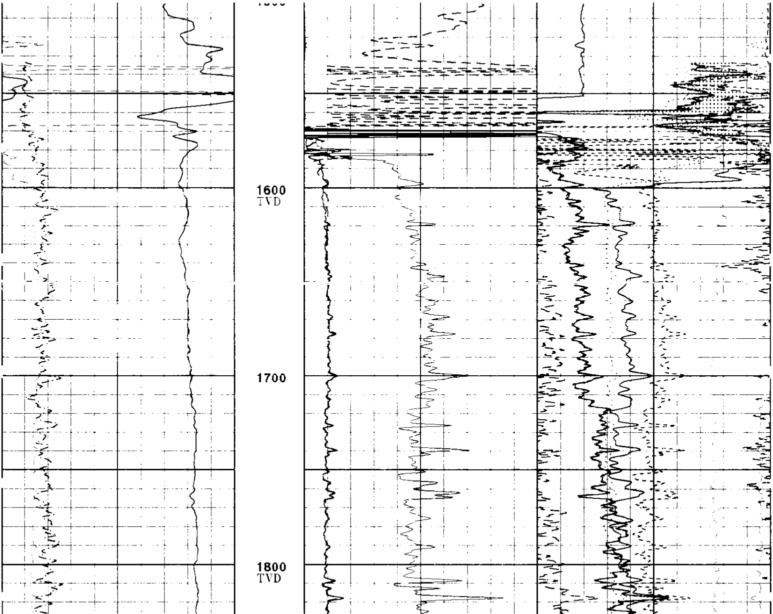
HALLIBURTON

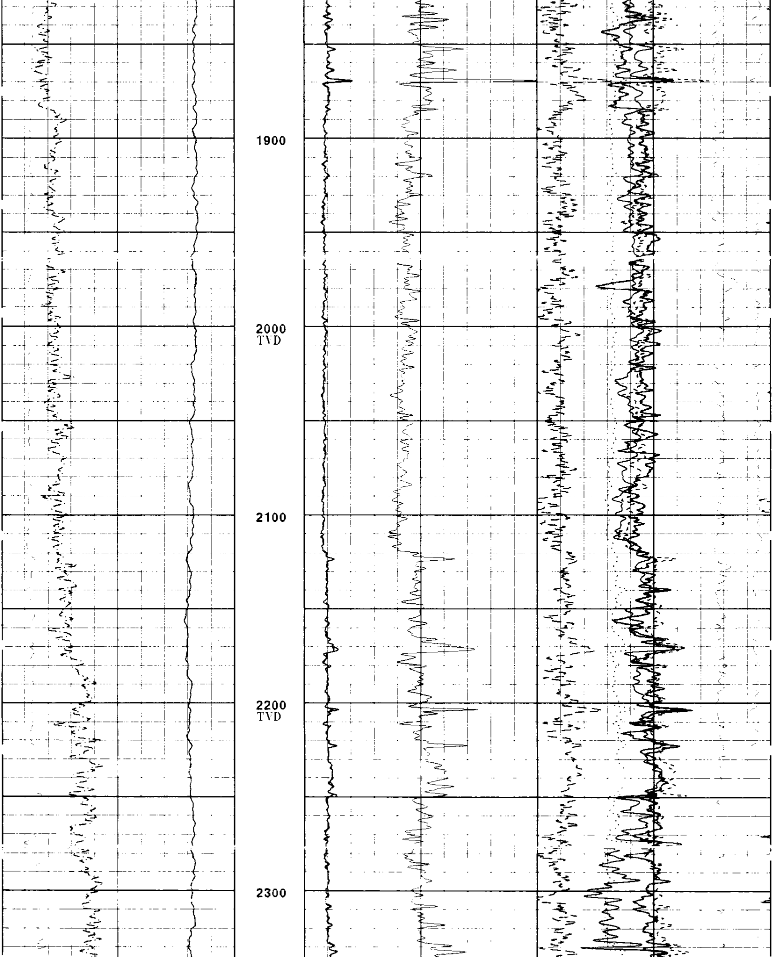
HALLIBURTON

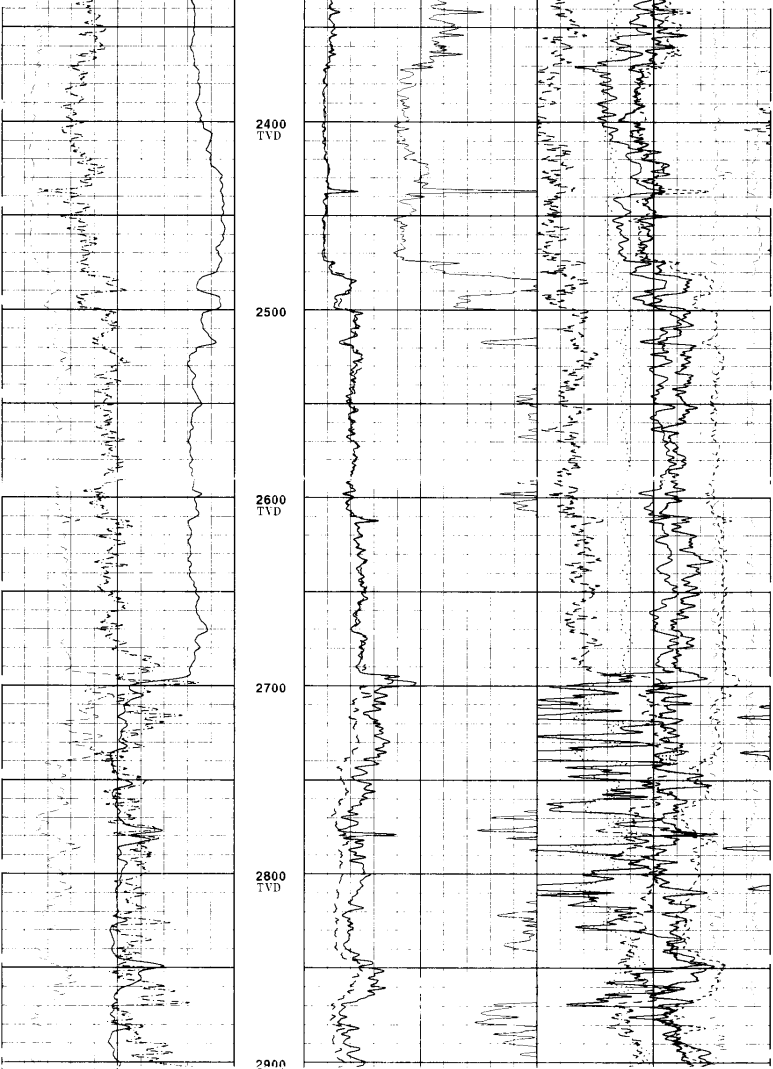
Version No: | hc:3.0
Data File: MER1_tvd.cls
Format File: 2.TVD.spc
Plot Time: 2007-06-11 03:59:28
Top Depth: 1500.68

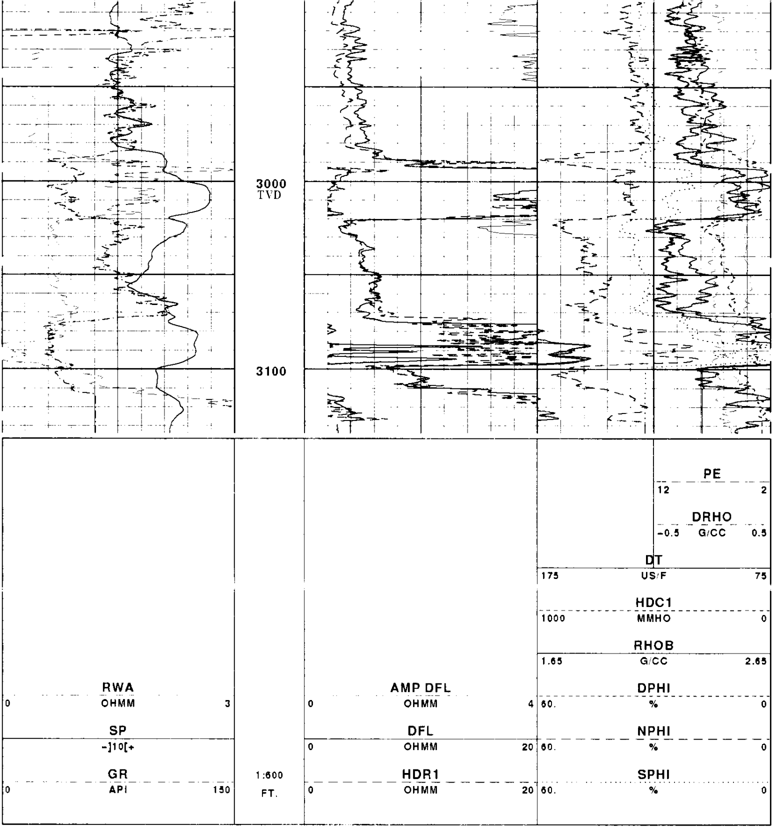
Database Time: 03:52:08 Bottom Depth: 3133.98

GR	1:600 FT.	HDR1	SPHI
0 API 150		0 OHMM 20	60. % 0
SP		DFL	NPHI
-]10[+		0 OHMM 20	60. % 0
RWA		AMP DFL	DPHI
0 OHMM 3		0 OHMM 4	60. % 0
			RHOB
			1.65 G/CC 2.65
			HDC1
			1000 MMHO 0
			DT
			175 US/F 75
			DRHO
			-0.5 G/CC 0.5
			PE
			12 2









HALLIBURTON

Version No: | hc:3.0
Data File: MER1_tvd.cls
Format File: 2.TVD.spc
Plot Time: 2007-06-11 03:59:19
Database Time: 03:52:08

Top Depth: 1500.68
Bottom Depth: 3133.98

RECORD OF TVD SURVEY
Date: 11-Jun-2007 03:52:
Calculated by Desktop Petrophysics TVD, Minimum Curvature Method

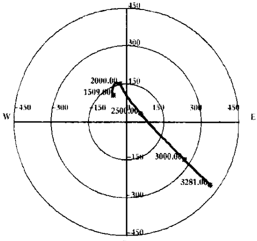
MEAS. DEPTH (FT)	DRIFT ANGLE (DEG)	T.V.D. (FT)	HOLE BEARING (DEG)	COURSE COORDINATES		TOTAL COORDINATES	
				NORTH SOUTH (FT) (FT)	EAST WEST (FT) (FT)	NORTH SOUTH (FT) (FT)	EAST WEST (FT) (FT)
1509.00	9.00	1500.68	335.15	105.58	-52.46	105.58	-52.46
1580.00	9.19	1570.81	346.82	3.95	-1.48	115.67	-57.00
1592.00	9.48	1582.65	353.04	1.91	-0.34	117.58	-57.34
1646.00	11.90	1635.73	15.21	9.79	0.92	127.37	-56.42
1676.00	11.80	1665.09	17.10	5.92	1.71	133.29	-54.71
1708.00	10.50	1696.49	19.90	5.87	1.95	139.16	-52.76
1740.00	9.20	1728.02	26.70	5.03	2.14	144.19	-50.62
1772.00	8.30	1759.65	38.10	4.10	2.57	148.29	-48.05
1804.00	6.90	1791.37	49.80	3.06	2.89	151.35	-45.16
1836.00	6.30	1823.16	67.80	1.90	3.09	153.25	-42.07
1867.00	6.60	1853.97	85.20	0.79	3.35	154.04	-38.72
1900.00	6.50	1886.76	96.50	-0.05	3.75	153.99	-34.97
1941.00	6.40	1927.50	109.20	-1.01	4.46	152.98	-30.51
1962.00	6.40	1948.37	122.10	-1.01	2.10	151.97	-28.41
1994.00	7.10	1980.15	139.34	-2.45	2.80	149.52	-25.61
2026.00	7.19	2011.90	148.19	-3.20	2.34	146.32	-23.27
2058.00	7.60	2043.64	158.98	-3.68	1.81	142.64	-21.46
2089.00	8.26	2074.34	156.24	-3.95	1.63	138.69	-19.83
2121.00	10.24	2105.92	152.87	-4.64	2.22	134.05	-17.61
2153.00	11.86	2137.33	150.42	-5.39	2.92	128.66	-14.69
2183.00	13.22	2166.61	148.79	-5.62	3.30	123.04	-11.39
2216.00	15.00	2198.61	147.21	-6.82	4.27	116.22	-7.12
2249.00	16.99	2230.33	146.95	-7.63	4.94	108.59	-2.18
2282.00	19.10	2261.71	145.47	-8.49	5.69	100.10	3.51
2312.00	20.65	2289.92	144.37	-8.34	5.86	91.76	9.37
2344.00	21.68	2319.76	143.06	-9.31	6.84	82.45	16.21
2376.00	22.90	2349.37	141.90	-9.62	7.39	72.83	23.60
2408.00	24.70	2378.65	141.70	-10.15	7.99	62.68	31.59
2439.00	26.30	2406.63	140.70	-10.40	8.36	52.28	39.95
2471.00	27.30	2435.19	141.00	-11.19	9.11	41.09	49.06
2503.00	28.90	2463.42	140.60	-11.68	9.53	29.41	58.59
2535.00	29.50	2491.35	139.40	-11.96	10.04	17.45	68.63
2566.00	30.00	2518.26	138.20	-11.57	10.13	5.88	78.76
2597.00	30.50	2545.04	136.80	-11.51	10.55	-5.63	89.31
2629.00	30.70	2572.58	135.50	-11.75	11.28	-17.38	100.59
2660.00	30.20	2599.30	136.00	-11.25	10.96	-28.63	111.55
2693.00	30.10	2627.84	136.00	-11.92	11.51	-40.55	123.06
2724.00	30.00	2654.67	135.10	-11.08	10.87	-51.63	133.93
2755.00	29.80	2681.54	135.30	-10.97	10.89	-62.60	144.82
2785.00	29.80	2707.57	135.10	-10.58	10.51	-73.18	155.33
2801.62	29.85	2721.99	135.00	-5.85	5.84	-79.03	161.17
2817.00	29.90	2735.33	134.90	-5.41	5.42	-84.44	166.59
2880.00	30.00	2789.92	135.80	-22.38	22.10	-106.82	188.69
2912.00	30.10	2817.62	135.40	-11.45	11.21	-118.27	199.90
2944.00	30.40	2845.26	135.50	-11.49	11.31	-129.76	211.21
2976.00	30.90	2872.79	134.50	-11.53	11.54	-141.29	222.75
3008.00	31.00	2900.23	134.70	-11.56	11.72	-152.85	234.47
3040.00	31.00	2927.66	135.33	-11.66	11.65	-164.51	246.12
3071.00	30.98	2954.23	134.90	-11.31	11.26	-175.82	257.38
3103.00	31.17	2981.64	133.36	-11.50	11.85	-187.32	269.23
3135.00	31.00	3009.04	134.23	-11.43	11.93	-198.75	281.16
3167.00	31.00	3036.46	133.54	-11.43	11.89	-210.18	293.05
3200.00	31.09	3064.72	134.27	-11.81	12.27	-221.99	305.32
3231.00	31.15	3091.26	134.67	-11.22	11.43	-233.21	316.75
3281.00	31.15	3134.05	134.67	-18.18	18.39	-251.39	335.14

MAGNETIC DECLINATION (Directional Offset) = 0.00
CLOSURE DISTANCE = 418.95 FEET
CLOSURE ANGLE = 126.87 DEGREE

Hole Bearing is corrected for Magnetic Declination (Directional Offset).

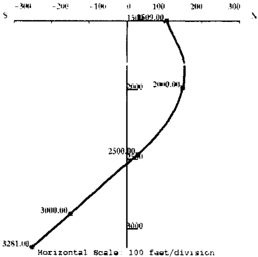
TVD CROSS SECTION LOOKING DOWN

N



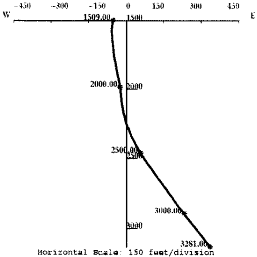
Scale: 150 # feet/division

TVD CROSS SECTION LOOKING WEST



Horizontal Scale: 100 feet/division
Depth Scale: 500 feet/division

TVD CROSS SECTION LOOKING NORTH



Horizontal Scale: 150 feet/division
Depth Scale: 500 feet/division

COMPANY NORTHWEST NATURAL GAS

WELL OM 33D-3-65

FIELD MIST (FLORA POOL STORAGE)

COUNTY COLUMBIA STATE OR

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QUAD COMBO
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TRUE VERTICAL DEPTH
2"=100'