

## PCGK - Pressure Case Gamma

[illegible]

## WELL INFORMATION

<b>MWD Run Number</b>	100	200			
<b>Date run completed</b>	17-May-13	21-May-13			
<b>Rig Bit Number</b>	2	3			
<b>Bit Size (in)</b>	8.750	8.750			
<b>Tool Nominal OD (in)</b>	6.750	6.750			
<b>Log Start Depth (MD, ft)</b>	1,069.00	6,854.00			
<b>Log End Depth (MD, ft)</b>	6,854.00	7,886.00			
<b>Drill or Wipe</b>	Drill	Drill			
<b>Drill/Wipe Start Date and Time</b>	15-May-13 23:36	17-May-13 19:26			
<b>Drill/Wipe End Date and Time</b>	17-May-13 03:00	21-May-13 12:25			
<b>Min Inc (deg) @ Depth (MD, ft)</b>	.13 @ 2,372.00	.81 @ 6,859.00			
<b>Max Inc (deg) @ Depth (MD, ft)</b>	11.54 @ 4,378.00	86.33 @ 7,838.00			
<b>Bit TFA(in2) / Bit Type</b>	1.09 / PDC	1.04 / PDC			
<b>Flow Rate (gpm)</b>	612.54	557.29			
<b>Max AV (fpm) / CV (fpm) @ MWD</b>	563.0 / 109.4	513.0 / 200.0			
<b>Fluid Type</b>	Fresh Water Gel	Fresh Water Gel			
<b>Density (ppg) / Viscosity (spqt)</b>	8.50 / 27.00	10.20 / 41.00			
<b>Filtrate CL (ppm)</b>	1,000.00	2,000.00			
<b>pH / Fluid Loss (mptm)</b>	9.00 / 5	8.90 / 4			
<b>PV (cP) / YP (lbf2)</b>	1 / 3.00	16 / 8.00			
<b>% Solids / % Sand</b>	2.00 / N/A	9.00 / 0.20			
<b>% Oil / Oil:Water Ratio</b>	N/A / N/A	1.00 / N/A			
<b>Rm @ Measured Temp (degF)</b>	N/A @ N/A	N/A @ N/A			
<b>Rmf @ Measured Temp (degF)</b>	N/A @ N/A	N/A @ N/A			
<b>Rmc @ Measured Temp (degF)</b>	N/A @ N/A	N/A @ N/A			
<b>Max Fluid Temp (in) @ Depth (MD, ft)</b>	173.75 @ 2,372.00	122.22 @ 6,859.00			

Max Tool Temp (degF) / Source	172.78 / PCM	189.99 / PCM			
Rm @ Max Tool Temp (degF)	N/A @ 172.78	N/A @ 189.99			
Lead MWD Engineer	Patrick Megee	Patrick Megee			
Customer Representative	Sam Taylor	Sam Taylor			

## SENSOR INFORMATION

### Downhole Processor Information

Tool Type	PCM	PCM			
Software Version	5.84	5.84			
Sub Serial Number	11341336	11341336			
Insert Serial Number	11400850	11680796			
Date and Time Initialized	14-May-13 10:01	17-May-13 03:50			
Date and Time Read	17-May-13 15:46	21-May-13 20:06			
ECMB SW Version	N/A	N/A			

### Directional Sensor Information

Tool Type	PCDC	PCDC			
Distance From Bit (ft)	49.95	46.04			
Software Version	6.21	6.21			
Sub Serial Number	11341336	11341336			
Sonde Serial Number	11297584	11638477			
Sensor ID Number	N/A	N/A			
Toolface Offset (deg)	103.24	102.33			

### Gamma Ray Sensor Information

Tool Type		PCG			
Distance From Bit (ft)		50.99			
Recorded Sample Period (sec)		10			
Software Version		8.15			
Sub Serial Number		11341336			
Insert/Sonde Serial Number		11680968			

## REMARKS

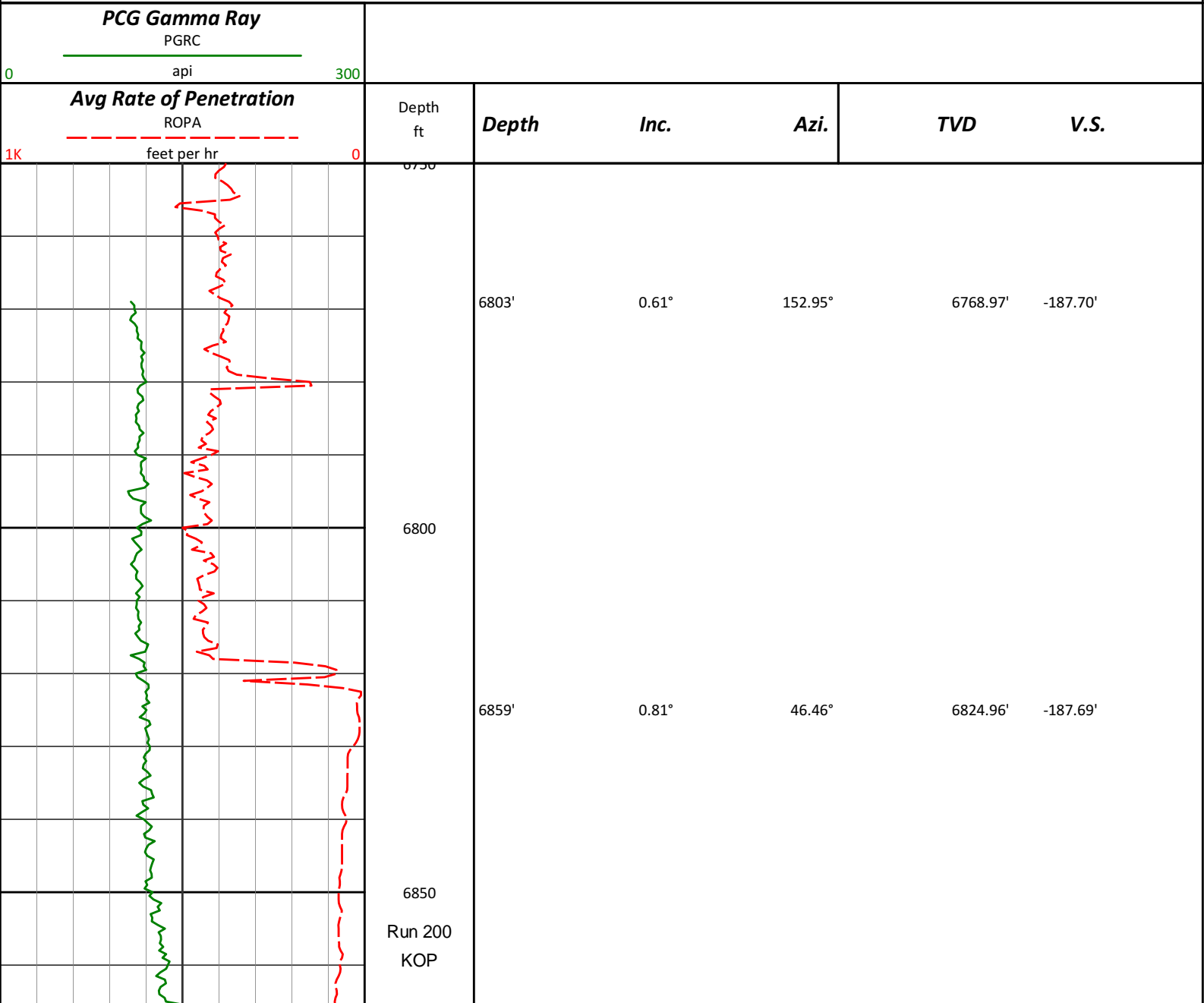
1. All depths are calibrated to the driller's pipe tally and are measured from the rotary table.
2. No depth corrections have been made for pipe stretch or compression.
3. All data presented is recorded (memory data) unless otherwise stated.
4. All main log data was logged while drilling
5. Environmental parameters used to process Gamma Ray are as follows:  
Hole Size: 8.75"  
Mud Density: 8.6 to 10.3 ppg
6. The following smoothing parameters have been applied to the data:  
ROP: 0.5 ft interval, 1.2 ft coercion distance  
All other curves: 0.5 ft interval, 0.6 ft coercion distance
7. Final survey, at 7886', is projection to the bit

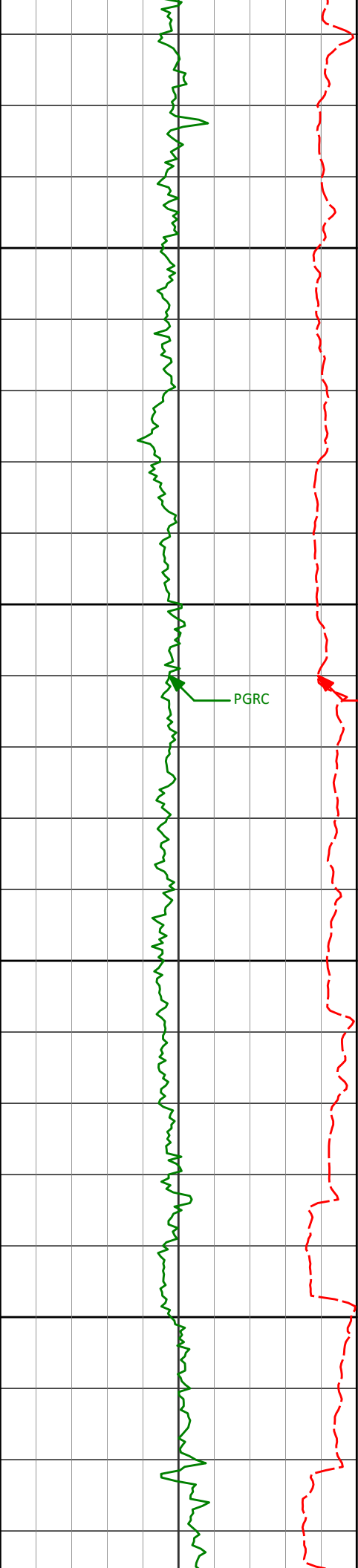
INSITE v7.4.10 Build 39

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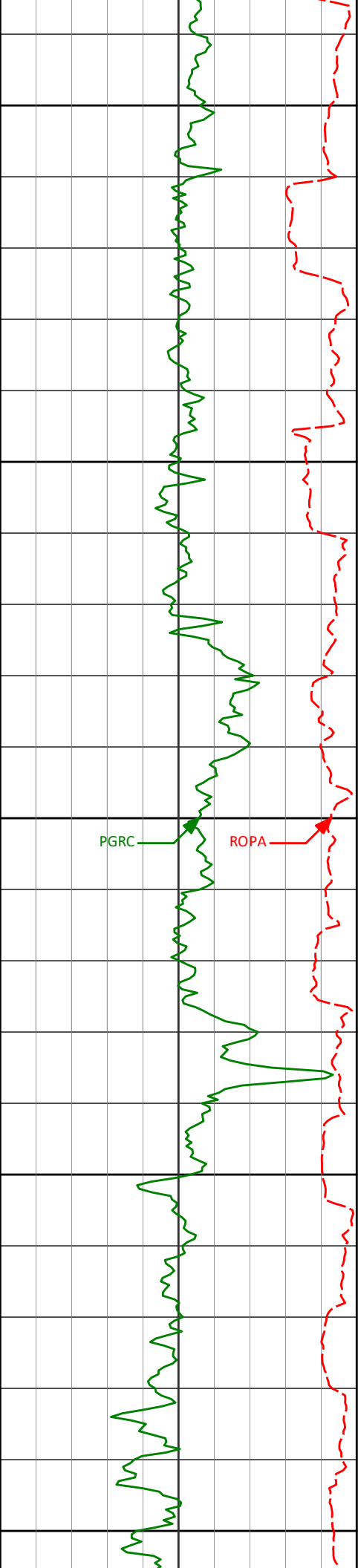
## TVD Main Log 1:240

Anadarko Petroleum Corp.  
Gobbler 27N-23HZ  
Ensign 132  
2N-66W





6907'	7.32°	20.38°	6872.82'	-184.58'
6900				
6955'	13.49°	12.90°	6920.01'	-176.24'
6950				
7003'	20.59°	14.33°	6965.87'	-162.57'
7000				
7050'	27.20°	11.10°	7008.82'	-143.98'
7050				
7098'	31.23°	8.66°	7050.71'	-120.88'



7100

7146'

35.47°

8.66°

7090.79'

-94.77'

7194'

38.68°

6.07°

7129.09'

-66.06'

7150

7241'

42.16°

4.65°

7164.87'

-35.71'

7200

7289'

48.84°

1.31°

7198.50'

-1.54'

PGRC

ROPA

7337'

53.15°

0.06°

7228.70'

35.75'

7250

7385'

56.58°

359.87°

7256.32'

75.00'

7432'

60.14°

359.72°

7280.97'

115.00'

7300

7480'

61.69°

359.71°

7304.30'

156.95'



1001.00	0.36	99.08	1000.98	1.35 N	3.94 E	1.37	TIE-IN
1250.00	0.34	139.06	1249.98	0.67 N	5.20 E	0.70	0.10
1527.00	0.92	98.32	1526.96	0.27 S	7.94 E	-0.23	0.25
1804.00	0.74	116.56	1803.93	1.40 S	11.74 E	-1.33	0.11
2087.00	0.58	122.45	2086.91	2.98 S	14.58 E	-2.90	0.06
2372.00	0.13	214.37	2371.91	4.02 S	15.61 E	-3.94	0.21
2564.00	1.51	122.39	2563.88	5.56 S	17.63 E	-5.46	0.79
2660.00	4.08	119.13	2659.76	7.90 S	21.68 E	-7.78	2.68
2755.00	5.96	117.18	2754.39	11.80 S	29.02 E	-11.64	1.99
2851.00	6.80	117.84	2849.80	16.73 S	38.48 E	-16.52	0.88
2946.00	8.03	113.11	2944.00	21.96 S	49.56 E	-21.69	1.44
3042.00	9.95	118.73	3038.82	28.58 S	63.00 E	-28.24	2.20
3138.00	9.39	118.35	3133.46	36.28 S	77.16 E	-35.86	0.59
3233.00	9.48	118.17	3227.17	43.66 S	90.88 E	-43.16	0.10
3329.00	8.98	116.84	3321.93	50.77 S	104.53 E	-50.21	0.57
3425.00	7.87	113.36	3416.89	56.76 S	117.25 E	-56.13	1.27
3520.00	9.44	114.08	3510.81	62.52 S	130.34 E	-61.81	1.66
3614.00	9.24	112.65	3603.56	68.57 S	144.34 E	-67.79	0.33
3710.00	7.06	110.18	3698.59	73.57 S	156.99 E	-72.72	2.30
3804.00	8.12	115.43	3791.76	78.42 S	168.41 E	-77.51	1.35
3900.00	9.11	122.26	3886.68	85.39 S	180.96 E	-84.41	1.48
3996.00	10.53	117.34	3981.27	93.47 S	195.18 E	-92.41	1.72
4091.00	9.71	111.63	4074.80	100.41 S	210.34 E	-99.27	1.36
4187.00	9.82	118.97	4169.41	107.36 S	225.03 E	-106.14	1.30
4282.00	11.50	116.48	4262.77	115.51 S	240.59 E	-114.20	1.83
4378.00	11.54	117.25	4356.83	124.17 S	257.70 E	-122.78	0.17
4474.00	9.82	114.92	4451.17	132.02 S	273.66 E	-130.54	1.85
4569.00	9.33	110.20	4544.84	138.09 S	288.23 E	-136.53	0.97
4665.00	9.31	113.63	4639.58	143.89 S	302.65 E	-142.25	0.58
4759.00	10.19	118.40	4732.22	150.89 S	316.93 E	-149.18	1.27
4854.00	9.65	118.64	4825.80	158.71 S	331.31 E	-156.91	0.57
4949.00	11.03	121.93	4919.26	167.33 S	346.01 E	-165.46	1.58
5045.00	10.46	125.32	5013.57	177.23 S	360.92 E	-175.27	0.89
5141.00	7.96	114.88	5108.33	185.06 S	374.06 E	-183.04	3.12
5236.00	6.29	112.26	5202.60	189.80 S	384.85 E	-187.72	1.79
5332.00	4.13	101.97	5298.20	192.51 S	393.10 E	-190.38	2.44
5427.00	1.94	78.72	5393.06	192.91 S	398.02 E	-190.75	2.60
5808.00	0.52	323.91	5773.99	190.25 S	403.33 E	-188.06	0.58
6190.00	0.48	292.29	6155.98	188.24 S	400.82 E	-186.07	0.07
6573.00	0.37	125.73	6538.97	188.35 S	400.34 E	-186.18	0.22
6803.00	0.61	152.95	6768.97	189.88 S	401.50 E	-187.70	0.14
6859.00	0.81	46.46	6824.96	189.87 S	401.93 E	-187.69	2.04
6907.00	7.32	20.38	6872.82	186.77 S	403.24 E	-184.58	13.75
6955.00	13.49	12.90	6920.01	178.43 S	405.56 E	-176.24	13.13
7003.00	20.59	14.33	6965.87	164.78 S	408.90 E	-162.57	14.82
7050.00	27.20	11.10	7008.82	146.21 S	413.02 E	-143.98	14.33
7098.00	31.23	8.66	7050.71	123.13 S	417.00 E	-120.88	8.75
7146.00	35.47	8.66	7090.79	97.05 S	420.98 E	-94.77	8.83
7194.00	38.68	6.07	7129.09	68.36 S	424.66 E	-66.06	7.44
7241.00	42.16	4.65	7164.87	38.03 S	427.49 E	-35.71	7.66
7289.00	48.84	1.31	7198.50	3.86 S	429.21 E	-1.54	14.77
7337.00	53.15	0.06	7228.70	33.43 N	429.65 E	35.75	9.20
7385.00	56.58	359.87	7256.32	72.67 N	429.62 E	75.00	7.15
7432.00	60.14	359.72	7280.97	112.68 N	429.48 E	115.00	7.58
7480.00	61.69	359.71	7304.30	154.63 N	429.27 E	156.95	3.23
7528.00	62.95	359.80	7326.60	197.13 N	429.09 E	199.45	2.63
7576.00	68.31	359.03	7346.40	240.84 N	428.64 E	243.15	11.26
7624.00	71.82	358.31	7362.76	285.94 N	427.59 E	288.25	7.45
7672.00	75.13	359.11	7376.41	331.94 N	426.55 E	334.24	7.08
7719.00	78.24	0.27	7387.24	377.67 N	426.31 E	379.97	7.04
7767.00	80.44	1.69	7396.12	424.83 N	427.12 E	427.13	5.43
7838.00	86.33	3.20	7404.29	495.26 N	430.13 E	497.58	8.56
7886.00	90.00	3.30	7405.83	543.15 N	432.85 E	545.48	7.65

CALCULATION BASED ON MINIMUM CURVATURE METHOD

SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT  
TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT

VERTICAL SECTION RELATIVE TO WELL HEAD  
VERTICAL SECTION IS COMPUTED ALONG A DIRECTION OF 0.31 DEGREES (TRUE)  
A TOTAL CORRECTION OF 8.62 DEG FROM MAGNETIC NORTH TO TRUE NORTH HAS BEEN APPLIED

HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.  
HORIZONTAL DISPLACEMENT(CLOSURE) AT 7886.00 FEET  
IS 694.53 FEET ALONG 38.55 DEGREES (TRUE)

Tie-In Data Ties on to Gyros @ 1001'

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