



GAMMA RAY

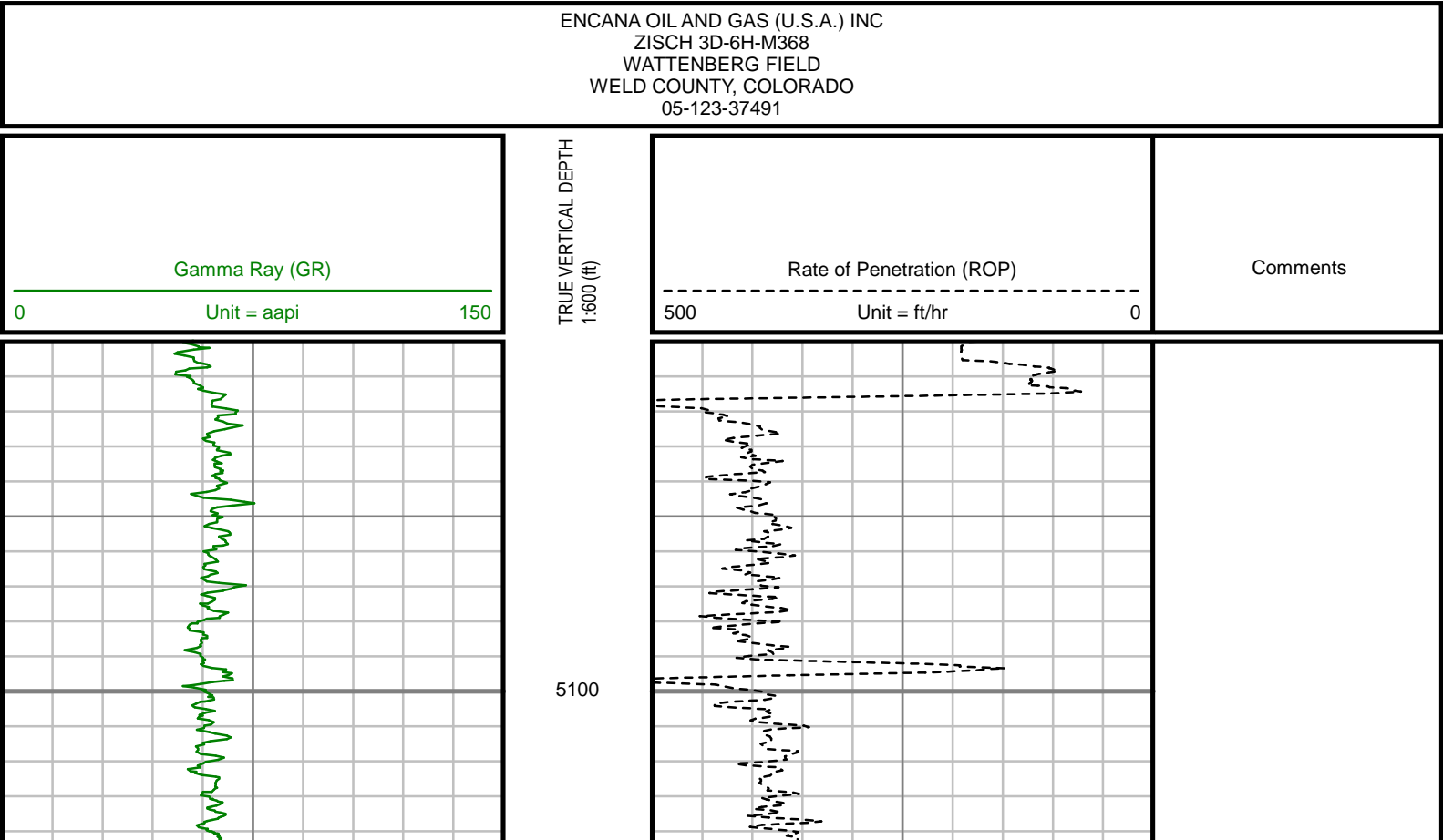
2" = 100' FEET TVD

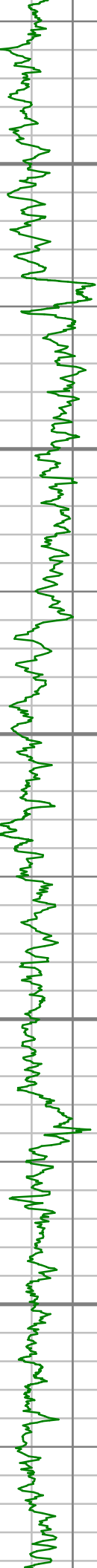
COMPANY : ENCANA OIL & GAS (USA) INC.					
WELL : ZISCH 3D-6H-M368					
FIELD : WATTENBERG					
COUNTY : WELD					
STATE : COLORADO					
COUNTRY : U.S.A.					
UWI : 05-123-37491					
			COMPA NY : ENCA NA OI L & GA S (US A) IN C . WE LL : ZIS CH 3 D -6 H -M 368 FI EL D : WA TTEN BE RG CO UN TY : WE LD ST AT E : CO LO RA DO CO UN TR Y : U .S .A . U WI : 05 -123 -37491		
DEPTH REF. : RKB			OTHER SERVICES		
REF. HEIGHT : 13.000 ft			LAT:40°14'53.376"N LONG:105°3'10.116"W N:1333563.80 ft E:3124831.72 ft		
GROUND LEVEL : 5163.000 ft			SEC:6 TWP:3N RANGE:68W		
			RKB to Ground Level		
			G.L. to MEAN SEA LEVEL		
BOREHOLE RECORD			DEVIATION RECORD		
HOLE SIZE in	FROM ft	TO ft	INCLINATION deg	FROM ft	TO ft
12.25	90.00	850.00	0 - 7	0	850
8.75	850	7714	7 - 86	850	7714
6.125	7714	11647	86 - 90	7714	11647
CASING RECORD					
CASING SIZE in	FROM ft	TO ft			
9.625	0	838			
7	0	7699			
			DRILLING CO.: ENSIGN		
			RLG: 124		
			LMD UNIT NO.: C70-EW4#8DISTRICT:CASPER		
			SPUD DATE: 07/01/2014		
			LMD START DATE: 07/02/2014		
			LMD END DATE: 07/11/2014		
			DEPTH: 5000 ft		
			DEPTH: 11647 ft		
			TOTAL DEPTH: 11647 ft		

Run Data						
RUN NUMBER	1	2	3			
START DATE	07/01/2014	07/02/2014	07/08/2014			
START TIME	2330	0615	2130			
END DATE	07/01/2014	07/05/2014	07/11/2014			
END TIME	1040	0030	0400			
DEPTH IN (ft)	90	850	7714			
DEPTH OUT (ft)	850	7714	11647			
LOG TOP (ft)	-	5000	7659			
LOG BOTTOM (ft)	-	7659	11594			
HOLE SIZE (in)	12.25	8.75	6.125			
MUD DATA @ (ft)	850	6717	8920			
MUD TYPE	WATER-BASED	WATER-BASED	WATER-BASED			
DENSITY (lb / gal)	8.50	10	11			
VISCOSITY (s / qt)	1	15	40			
pH	7.9	7.4	9.6			
FLUID LOSS (cm3 / 30)	-	-	-			
SALINITY (ppm)	-	-	-			
Rm (ohmm @ deg F)	-	-	-			
Rmf (ohmm @ deg F)	-	-	-			
MAX TEMP (deg F)	102	172	219			
Rm @ MAX TEMP (ohmm)	-	-	-			
LWD ENGINEER #1	J. SMITH	J. SMITH	J. SMITH			
LWD ENGINEER #2	T. WHEELER	T. WHEELER	T. WHEELER			
LWD ENGINEER #3	-	-	M. SMITH			
LOG WITNESS #1	M. ROANE	M. ROANE	M. ROANE			
LOG WITNESS #2	-	-	-			

Remarks
ENCANA OIL & GAS (USA) INC. PRODUCTION AFE#
SCIENTIFIC DRILLING INTERNATIONAL JOB# 168476
ALL REFERENCES IN THE DEPTH TRACK ARE AT BIT DEPTH.
ALL DATA IS MEMORY DATA UNLESS STATED OTHERWISE.
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO GAMMA RAY CURVE
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO RATE OF PENETRATION CURVE
RUN # 1: MWD / DIRECTIONAL RUN
SENSORS S/N: CONT = 1011 / MWD EYE = 429
BIT TO SENSOR OFFSET: SURVEY = 58.49 FT.
RUN # 2: MWD/ GAMMA RAY / LOGGING RUN
SENSORS S/N: PULSER = 128-144 / CONT = 0831 / MWD EYE = 0349 / GAMMA RAY = 1074
BIT TO SENSOR OFFSETS: SURVEY = 69.01 FT. / GAMMA RAY = 55.00 FT.
RUN # 3: MWD/ GAMMA RAY / LOGGING RUN
SENSORS S/N: PULSER = 78-276 / CONT = 882 / MWD EYE = 429 / GAMMA RAY = 1194
BIT TO SENSOR OFFSETS: SURVEY = 66.24 FT. / GAMMA RAY = 52.23 FT.
MNEMONICS LIST:
GR = GAMMA RAY
ROP = RATE OF PENETRATION

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions as set out in our current price schedule.





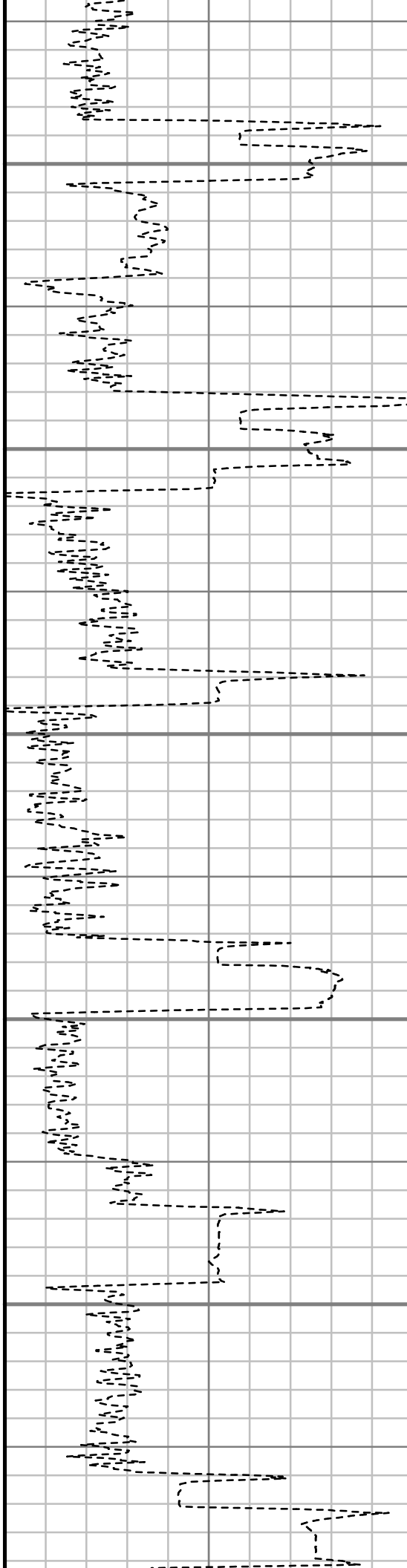
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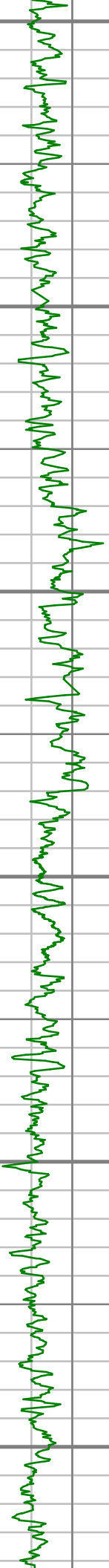
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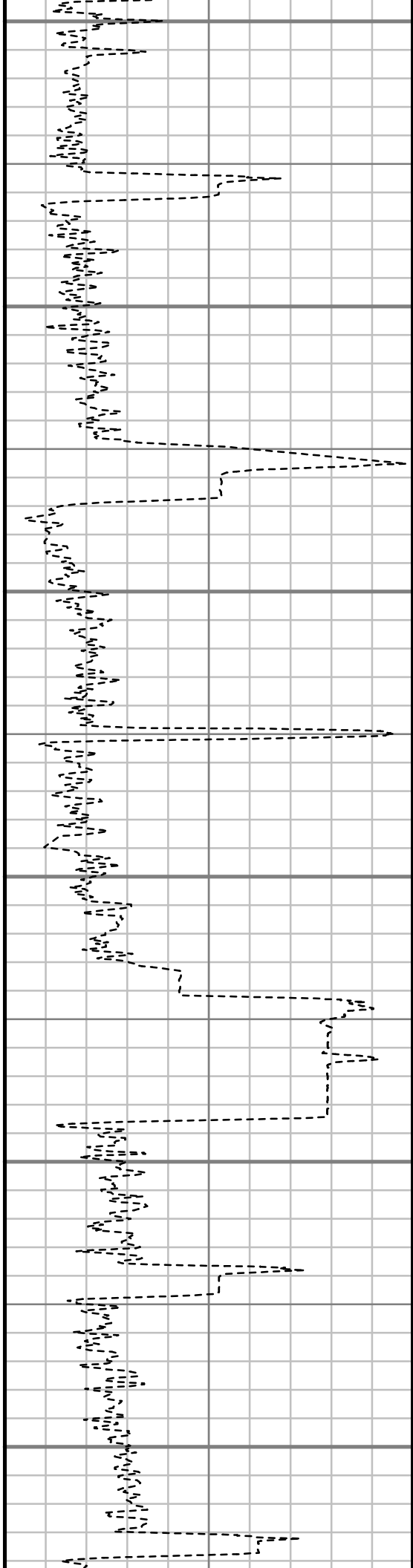
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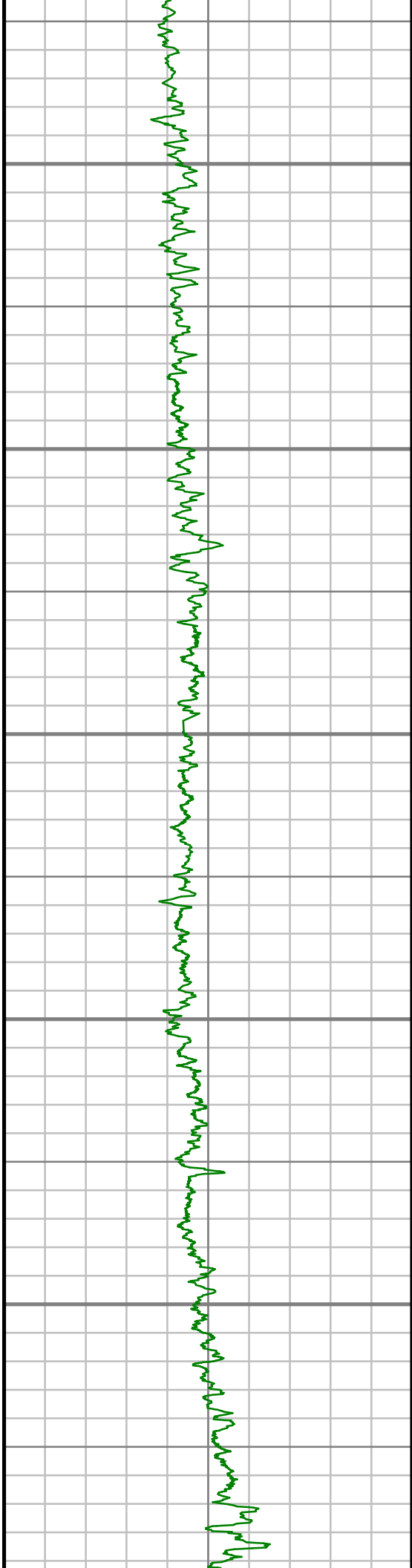
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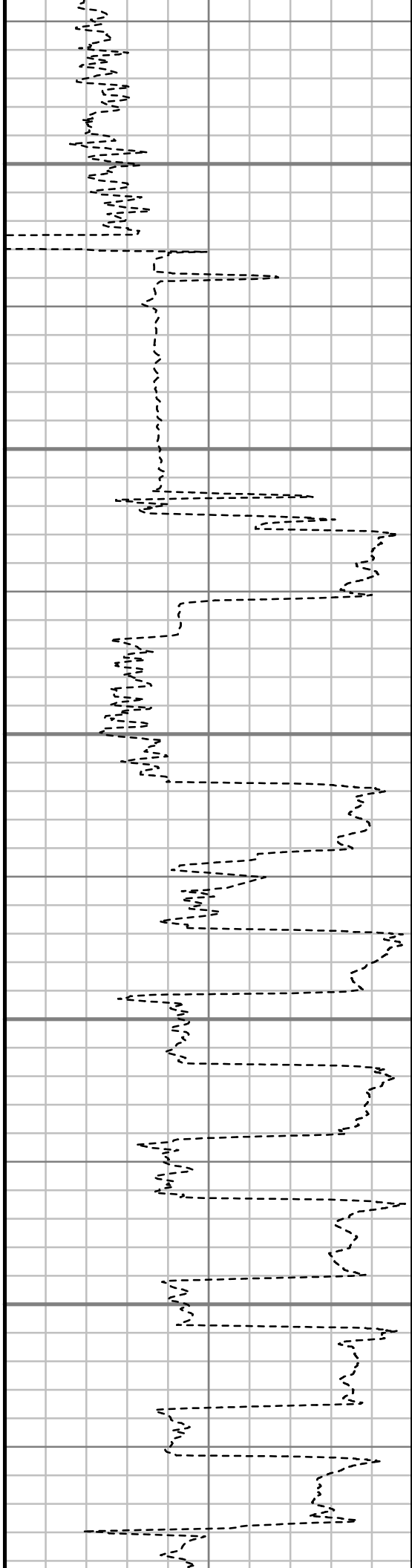
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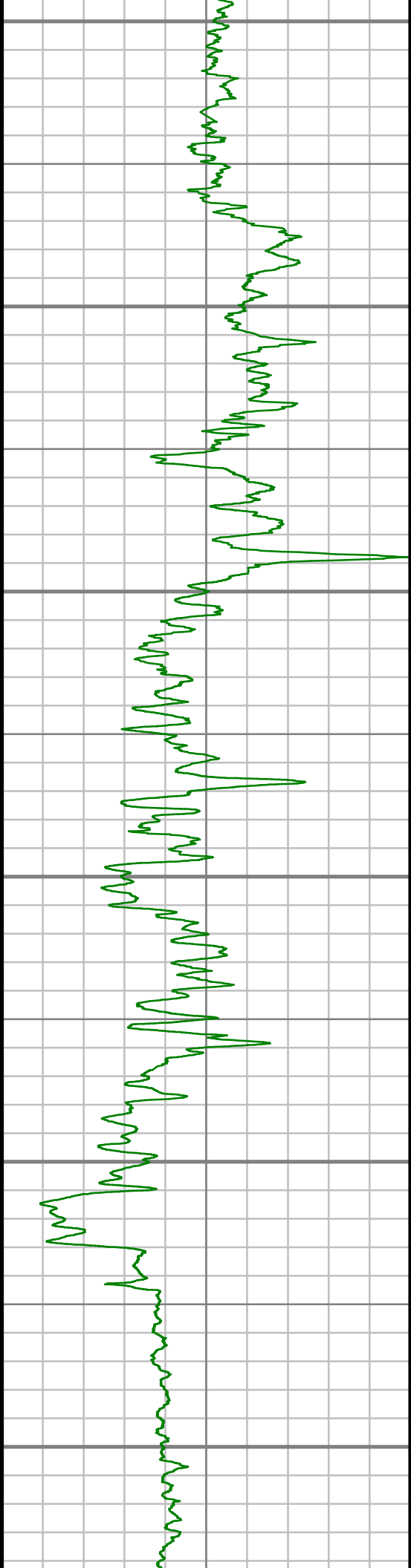
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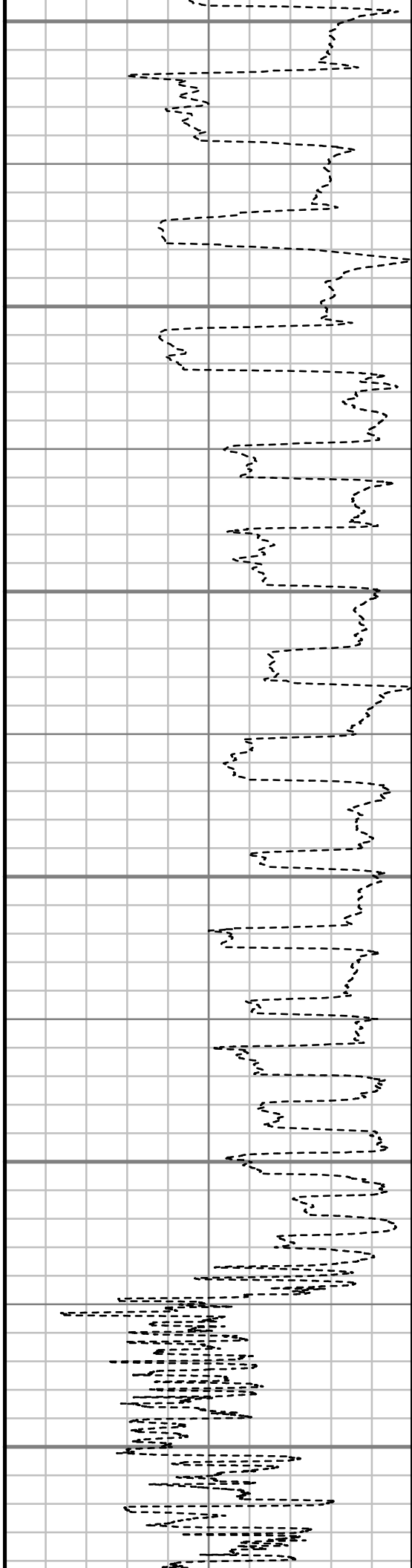
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MWD Survey Report

Well Location	ZISCH
Well Name	ZISCH 3D-6H-M368
Survey Date	6/30/2014
Latitude	40°14'53.376"N
Longitude	105°3'10.116"W
Btotal	52602 nT
Dip	66.77 deg
Magnetic Declination	8.68 deg
North Reference	True North
Grid Correction	None
Depth Reference	RKB (13.00 ft)
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 90.00Azim (deg)
Operator(s)	M. SMITH, T. WHEELER

Well Notes

SURVEYS FROM 100 FT. - 790 FT. WERE ACQUIRED BY VES SURVEYS INTERNATIONAL GYRO.

ALL SURVEYS FROM 928 FT. - 11579 FT. WERE ACQUIRED BY SCIENTIFIC DRILLING INTERNATIONAL MWD.

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	Closure Direction	Closure Distance	DLS
ft	deg	deg	ft	ft	ft	ft	deg	ft	"/100ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid
100.00	0.24	243.99	100.00	-0.19	-0.09	-0.19	243.99	0.21	0.24
200.00	0.80	243.42	200.00	-1.00	-0.49	-1.00	243.64	1.11	0.56
300.00	1.01	244.04	299.98	-2.41	-1.19	-2.41	243.71	2.69	0.21
400.00	1.26	244.69	399.96	-4.20	-2.05	-4.20	244.00	4.68	0.26
500.00	1.49	248.56	499.93	-6.41	-3.00	-6.41	244.94	7.07	0.24
600.00	3.61	254.27	599.83	-10.65	-4.32	-10.65	247.90	11.49	2.13
700.00	5.55	260.18	699.51	-18.44	-6.00	-18.44	251.97	19.39	2.00
790.00	7.04	265.45	788.96	-28.23	-7.18	-28.23	255.73	29.12	1.78
928.00	10.48	263.80	925.33	-49.14	-9.21	-49.14	259.39	50.00	2.50
1116.00	13.69	249.98	1109.18	-87.06	-18.67	-87.06	257.90	89.04	2.29
1302.00	10.47	242.39	1291.05	-122.73	-34.04	-122.73	254.50	127.36	1.92
1488.00	9.89	253.45	1474.14	-153.02	-46.43	-153.02	253.12	159.91	1.09
1675.00	9.99	251.76	1658.33	-183.83	-56.08	-183.83	253.03	192.19	0.16
1860.00	9.19	246.99	1840.74	-212.66	-66.88	-212.66	252.54	222.93	0.61
2046.00	9.53	256.47	2024.28	-241.30	-76.29	-241.30	252.46	253.07	0.85
2232.00	11.08	258.49	2207.28	-273.78	-83.45	-273.78	253.05	286.21	0.86
2418.00	11.09	259.01	2389.81	-308.84	-90.43	-308.84	253.68	321.81	0.05
2604.00	9.56	252.86	2572.80	-341.16	-98.39	-341.16	253.91	355.07	1.01

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	Closure Direction	Closure Distance	DLS
ft	deg	deg	ft	ft	ft	ft	deg	ft	°/100ft
2789.00	7.99	252.31	2755.63	-368.10	-106.83	-368.10	253.82	383.29	0.85
2977.00	8.26	252.50	2941.74	-393.42	-114.86	-393.42	253.73	409.84	0.14
3168.00	7.66	256.82	3130.90	-418.91	-121.89	-418.91	253.78	436.28	0.44
3358.00	9.18	259.14	3318.84	-446.13	-127.63	-446.13	254.03	464.03	0.82
3549.00	11.61	258.17	3506.70	-479.90	-134.44	-479.90	254.35	498.38	1.27
3740.00	12.43	259.56	3693.51	-518.92	-142.10	-518.92	254.69	538.03	0.46
3930.00	7.09	252.37	3880.70	-550.22	-149.36	-550.22	254.81	570.13	2.88
4121.00	6.99	254.45	4070.26	-572.64	-156.04	-572.64	254.76	593.52	0.14
4311.00	3.74	239.75	4259.41	-589.13	-162.27	-589.13	254.60	611.07	1.84
4406.00	1.19	246.21	4354.32	-592.72	-164.23	-592.72	254.51	615.05	2.70
4502.00	0.45	354.13	4450.31	-593.67	-164.25	-593.67	254.53	615.97	1.46
4693.00	0.92	331.11	4641.30	-594.49	-162.16	-594.49	254.74	616.21	0.28
4883.00	1.20	177.58	4831.28	-595.14	-162.80	-595.14	254.70	617.01	1.09
5074.00	1.41	216.27	5022.24	-596.45	-166.69	-596.45	254.39	619.31	0.46
5264.00	1.33	215.82	5212.18	-599.13	-170.36	-599.13	254.13	622.88	0.04
5455.00	1.06	195.35	5403.14	-600.89	-173.85	-600.89	253.86	625.53	0.26
5645.00	1.67	271.34	5593.10	-604.12	-175.48	-604.12	253.80	629.09	0.92
5836.00	0.42	50.73	5784.08	-606.35	-174.97	-606.35	253.90	631.09	1.05

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	Closure Direction	Closure Distance	DLS
ft	deg	deg	ft	ft	ft	ft	deg	ft	°/100ft
6026.00	1.45	283.48	5974.06	-608.14	-173.97	-608.14	254.04	632.54	0.91
6217.00	0.83	28.67	6165.04	-609.82	-172.19	-609.82	254.23	633.66	0.97
6407.00	0.96	287.43	6355.02	-610.67	-170.51	-610.67	254.40	634.03	0.73
6502.00	0.94	107.90	6450.02	-610.68	-170.51	-610.68	254.40	634.04	2.00
6549.00	1.59	90.57	6497.01	-609.66	-170.64	-609.66	254.36	633.09	1.58
6598.00	4.63	88.97	6545.93	-607.01	-170.61	-607.01	254.30	630.53	6.22
6645.00	7.39	87.85	6592.66	-602.09	-170.46	-602.09	254.19	625.75	5.87
6693.00	10.45	91.41	6640.08	-594.65	-170.45	-594.65	254.01	618.60	6.47
6740.00	14.54	89.84	6685.96	-584.48	-170.54	-584.48	253.73	608.86	8.74
6788.00	18.92	88.45	6731.91	-570.67	-170.32	-570.67	253.38	595.54	9.15
6835.00	22.34	85.33	6775.89	-554.15	-169.38	-554.15	253.00	579.45	7.64
6884.00	25.48	83.19	6820.68	-534.39	-167.37	-534.39	252.61	559.99	6.64
6931.00	28.42	85.01	6862.58	-513.21	-165.20	-513.21	252.16	539.15	6.49
6979.00	32.54	88.95	6903.94	-488.91	-163.97	-488.91	251.46	515.68	9.54
7026.00	35.66	91.07	6942.86	-462.57	-164.00	-462.57	250.48	490.78	7.10
7074.00	39.12	91.10	6980.99	-433.43	-164.55	-433.43	249.21	463.62	7.22
7121.00	42.85	90.74	7016.46	-402.62	-165.04	-402.62	247.71	435.13	7.96
7169.00	45.62	89.65	7050.85	-369.14	-165.14	-369.14	245.90	404.39	5.97

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	Closure Direction	Closure Distance	DLS
ft	deg	deg	ft	ft	ft	ft	deg	ft	°/100ft
7216.00	48.86	87.73	7082.76	-334.65	-164.34	-334.65	243.85	372.82	7.53
7264.00	54.07	87.03	7112.65	-297.15	-162.61	-297.15	241.31	338.73	10.92
7311.00	60.13	87.63	7138.16	-257.75	-160.78	-257.75	238.04	303.79	12.93
7359.00	64.35	89.48	7160.52	-215.30	-159.73	-215.30	233.43	268.08	9.43
7406.00	67.05	89.60	7179.86	-172.47	-159.39	-172.47	227.26	234.84	5.74
7455.00	70.13	89.46	7197.74	-126.86	-159.01	-126.86	218.58	203.41	6.29
7502.00	72.26	90.67	7212.89	-82.37	-159.06	-82.37	207.38	179.13	5.16
7550.00	76.35	91.08	7225.87	-36.17	-159.77	-36.17	192.76	163.82	8.56
7597.00	81.16	91.50	7235.03	9.90	-160.81	9.90	176.48	161.12	10.27
7643.00	85.50	91.98	7240.37	55.56	-162.20	55.56	161.09	171.45	9.48
7759.00	89.50	94.17	7245.44	171.25	-168.43	171.25	134.52	240.19	3.93
7855.00	88.49	93.19	7247.13	267.03	-174.58	267.03	123.18	319.04	1.47
7950.00	88.69	92.71	7249.47	361.88	-179.47	361.88	116.38	403.93	0.55
8046.00	87.68	92.22	7252.51	457.74	-183.59	457.74	111.85	493.18	1.17
8141.00	88.79	90.64	7255.43	552.66	-185.95	552.66	108.60	583.11	2.03
8236.00	89.09	90.92	7257.18	647.64	-187.25	647.64	106.13	674.16	0.43
8331.00	88.86	89.96	7258.88	742.62	-187.97	742.62	104.20	766.04	1.04
8426.00	89.33	89.55	7260.39	837.60	-187.57	837.60	102.62	858.35	0.66

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	Closure Direction	Closure Distance	DLS
ft	deg	deg	ft	ft	ft	ft	deg	ft	°/100ft
8522.00	88.42	88.71	7262.27	933.57	-186.11	933.57	101.27	951.94	1.29
8617.00	87.45	88.10	7265.70	1028.47	-183.48	1028.47	100.11	1044.71	1.21
8712.00	88.08	88.21	7269.40	1123.35	-180.42	1123.35	99.12	1137.75	0.68
8807.00	88.65	88.23	7272.10	1218.26	-177.46	1218.26	98.29	1231.12	0.60
8903.00	88.69	87.53	7274.33	1314.17	-173.91	1314.17	97.54	1325.63	0.73
8998.00	88.76	88.34	7276.44	1409.09	-170.48	1409.09	96.90	1419.36	0.85
9093.00	88.45	89.38	7278.75	1504.04	-168.59	1504.04	96.40	1513.46	1.15
9188.00	88.05	90.01	7281.65	1598.99	-168.09	1598.99	96.00	1607.80	0.78
9283.00	89.23	90.51	7283.91	1693.96	-168.52	1693.96	95.68	1702.32	1.35
9379.00	89.33	89.56	7285.12	1789.95	-168.58	1789.95	95.38	1797.87	1.00
9474.00	89.56	89.57	7286.04	1884.95	-167.85	1884.95	95.09	1892.40	0.25
9569.00	89.03	90.29	7287.20	1979.94	-167.73	1979.94	94.84	1987.03	0.95
9665.00	88.02	91.03	7289.68	2075.90	-168.84	2075.90	94.65	2082.75	1.30
9760.00	87.75	90.84	7293.18	2170.82	-170.39	2170.82	94.49	2177.50	0.35
9856.00	87.95	89.68	7296.78	2266.75	-170.83	2266.75	94.31	2273.18	1.23
9951.00	87.58	88.65	7300.48	2361.67	-169.44	2361.67	94.10	2367.74	1.15
10047.00	87.65	89.21	7304.48	2457.57	-167.65	2457.57	93.90	2463.28	0.60
10142.00	88.42	90.00	7307.73	2552.51	-167.00	2552.51	93.74	2557.96	1.16

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	Closure Direction	Closure Distance	DLS
ft	deg	deg	ft	ft	ft	ft	deg	ft	"/100ft
10237.00	89.33	91.24	7309.60	2647.48	-168.03	2647.48	93.63	2652.81	1.61
10333.00	89.46	90.75	7310.61	2743.46	-169.69	2743.46	93.54	2748.70	0.53
10428.00	90.00	90.42	7311.06	2838.45	-170.66	2838.45	93.44	2843.58	0.66
10523.00	88.52	91.14	7312.28	2933.43	-171.95	2933.43	93.35	2938.47	1.73
10618.00	87.01	89.29	7315.98	3028.35	-172.31	3028.35	93.26	3033.25	2.52
10713.00	87.48	89.37	7320.55	3123.24	-171.21	3123.24	93.14	3127.93	0.50
10809.00	86.91	88.17	7325.24	3219.10	-169.16	3219.10	93.01	3223.54	1.38
10904.00	87.99	87.74	7329.47	3313.94	-165.78	3313.94	92.86	3318.09	1.22
10999.00	88.56	88.24	7332.33	3408.84	-162.45	3408.84	92.73	3412.71	0.80
11094.00	89.70	89.04	7333.78	3503.80	-160.20	3503.80	92.62	3507.46	1.47
11190.00	88.79	89.46	7335.05	3599.78	-158.95	3599.78	92.53	3603.29	1.04
11285.00	88.93	89.20	7336.94	3694.76	-157.84	3694.76	92.45	3698.13	0.30
11380.00	88.32	90.24	7339.22	3789.73	-157.38	3789.73	92.38	3792.99	1.26
11476.00	88.76	89.82	7341.66	3885.69	-157.43	3885.69	92.32	3888.88	0.63
11571.00	88.36	89.46	7344.06	3980.66	-156.83	3980.66	92.26	3983.75	0.58
11579.00	88.32	89.03	7344.29	3988.66	-156.72	3988.66	92.25	3991.74	5.39

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	Closure Direction	Closure Distance	DLS
ft	deg	deg	ft	ft	ft	ft	deg	ft	°/100ft

2" = 100' FEET TVD