



## Natural Formation Evaluation

### Gamma Ray

**Company: Whiting Oil & Gas Corp**

**1:240 TVD**

**Well:** **Razor #250-2411**

Field: **Redtail**

Region: Continental US Country: United States

Status: Surface Location:

**FINAL PRINT**

Longitude: 100 70 00.0 W

05-123-42647-00

Permanent Datum (P.D.):	Ground Level	Elevation:	4718.00 ft.
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assured From:	Rig Floor	21.00 ft.	Above P.L.
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Depth Reference:	Driller's Depth	GL:	4718.00 ft.
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GL: 4718.00 ft.

Interval Logged

## Dates

Magnetic Field Reference

Top: 4845.0 ft. Date From: 31/Aug/16 Dip Angle: 67.16 ° Azi Reference North: True

Bottom:	15730.0 ft.	Date To:	04/Sep/16	Total	Mag to Reference
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Spud Date: 31/Aug/16 Field Strength: 52700.0 nT North Correction:

Spud Date:

Field Strength: 52700.0 nT North Correction:

with Correction: 7.15°

## Borehole Record

## Casing Record

[illegible]

## Mud Record

Type	From	To	Hole Size	Interval	Inc / Az (Start)	Inc / Az (End)
Water Based	Surface	15771.0 ft.	13.500 in.	2017.0 ft.	1.0 ° / 96.7 °	5.1 ° / 186.9
			8.500 in.	13853.0 ft.	4.8 ° / 181.1 °	92.0 ° / 1.3
					/	/
					/	/
					/	/
					/	/
					/	/

Acquisition System	Software Version
...	...

Advantage	2.2004	Rig: / Contractor:	Unit 406	/ Unit Drilling
PATS	6.4.1.34	Job No:	8038401	
		District / Unit:	RMA	/ D&E

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## Log Run Summary

LWD Run No.	BHA Run No.	Bit Run No.	Bit Size  (in.)	Bit Type	Bit Gauge  Length  (in.)	Assembly  Type	Logged Interval		Bit Depth Interval		Date / Time		Circ.  Time  (hrs.)
							Top	Bottom	From	To	Start	End	
							(ft.)	(ft.)	(ft.)	(ft.)			
1	1	1	13.500	PDC	4.000	Mud Motor	N/A	N/A	101.0	2118.0	31/Aug/2016 01:50	31/Aug/2016 05:45	3.1
2	2	2	8.500	PDC	4.000	Mud Motor	4845.0	15730.0	2118.0	15771.0	31/Aug/2016 17:05	04/Sep/2016 02:50	68

## Crew

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
	Wellsite	Wellsite		Wellsite	Wellsite		Wellsite	Wellsite
Nathan Leopold	31/Aug/2016	04/Sep/2016	Adam Schlenz	31/Aug/2016	04/Sep/2016			

Witness

Name	LWD Run Number
Chris Blodgett	1,2
Mark Hicks	1,2

Mud Properties Record

Date / Time	LWD Run No.	Measured Depth (ft.)	Mud Type	Density (ppg)	Viscosity (cp)	pH	Fluid Loss (cc)	Oil / Water	Source	Total Chlorides (mg/L)	K+ (%)
01/Sep/2016 08:40	2	6113.0	Water Based Mud	10.4	13	9.1	8.0	1.5/87.0	Flow Line	1200	0.0
02/Sep/2016 06:45	2	8943.0	Water Based Mud	10.6	16	9.3	7.0	2.0/85.0	Flow Line	1000	0.0
03/Sep/2016 08:15	2	14133.0	Water Based Mud	10.6	15	9.0	6.2	3.0/84.0	Flow Line	1700	0.0

Mnemonics

Curve	Description	Units
GRAX	Gamma Ray Apparent 0.5 ft Avg	API
ROPA	Rate Of Penetration 3.0 ft Avg	ft/hr
TCDX	Downhole Temperature	deg F
WOBA	Surface Weight on Bit 1.0 ft Avg	klbs

Equipment and Service Data

LWD Run No.	Tool	Serial Number	Measurement	Bit Offset (ft.)	Max O.D. (in.)	Min I.D. (in.)
1	DIR	12131653	Directional	50.37	8.250	3.250
1	SRIG	12600749	Gamma	46.95	8.250	3.250
2	DIR	12373453	Directional	44.86	6.750	3.250
2	SRIG	12041109	Gamma	41.45	6.750	3.250

Service and Tool Mnemonics

Mnemonic	Name	Description
DIR	Directional	Wellbore directional survey
SRIG	Inclination and Gamma	Probe based gamma ray and inclination module

Comments

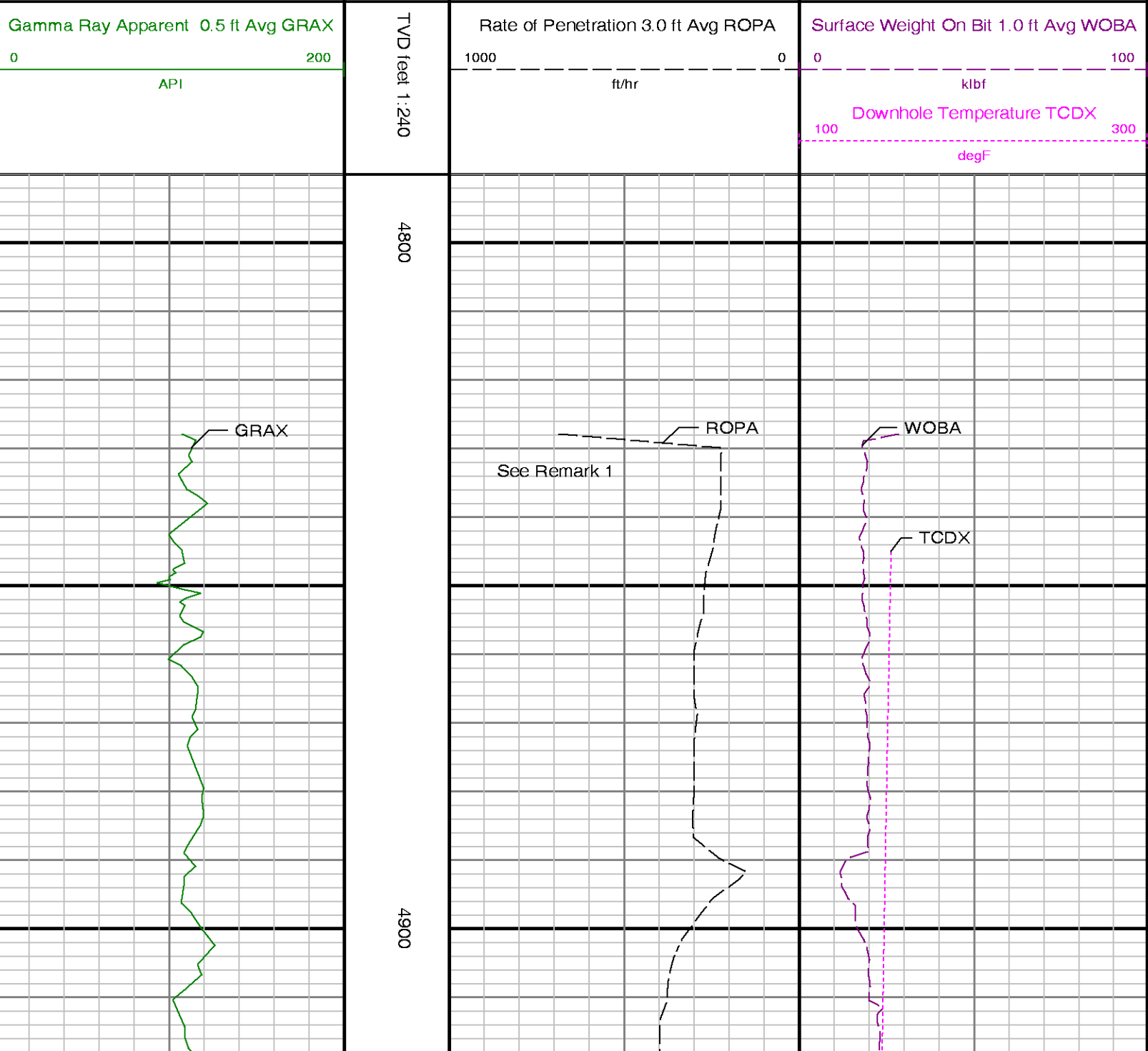
<p>1.) Depth measurements were obtained from a depth control system not supplied or operated by Baker Hughes. Due to the lack of control by Baker Hughes LWD logging engineers, depth calibrations and measurements could not be independently verified and the unverified depths as supplied to Baker Hughes are being used to present logging data.</p> <p>2.) Baker Hughes LWD run 2 utilized 6 3/4 inch NaviGamma services (Gamma Ray and Directional) behind an 8 1/2 inch bit and steerable assembly from 2118 to 15771 ft MD ( 2110 to 5534 ft TVD).</p> <p>3.) Gamma Ray Apparent (GRAX) is presented 0 to 200 API</p> <p>4.) All surveys were corrected by Surcon Survey Management Services.</p>
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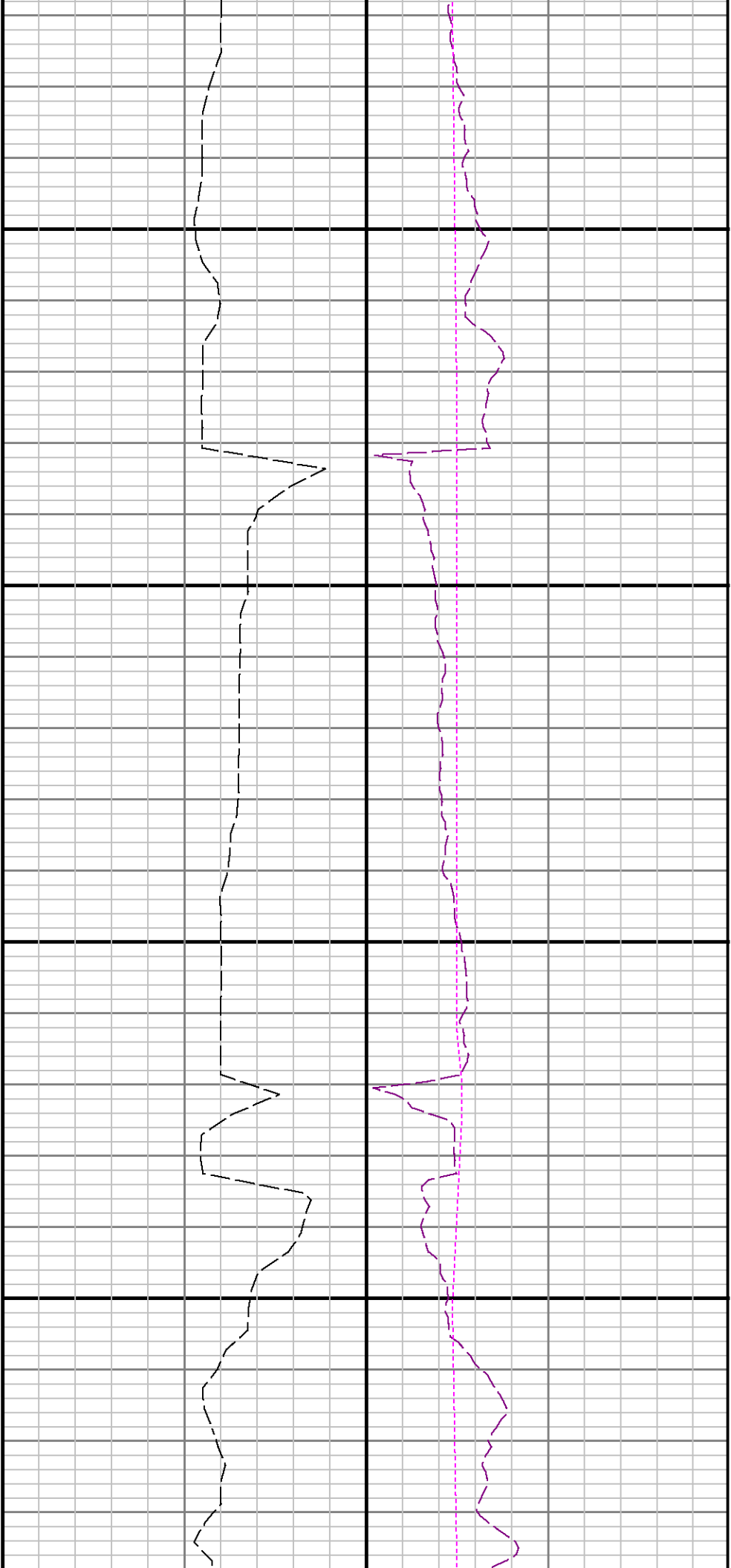
Remarks

Number	Measured Depth (ft.)	Hole Section (in.)	LWD Run No.	Remark
1	4845	8.500	2	Gamma ray logging operations began at 4845 ft MD (4826 ft TVD).
2	15730	8.500	2	There is no gamma ray data from 15730 to 15771 ft MD (5534 ft TVD) due to sensor to bit offset at well TD.



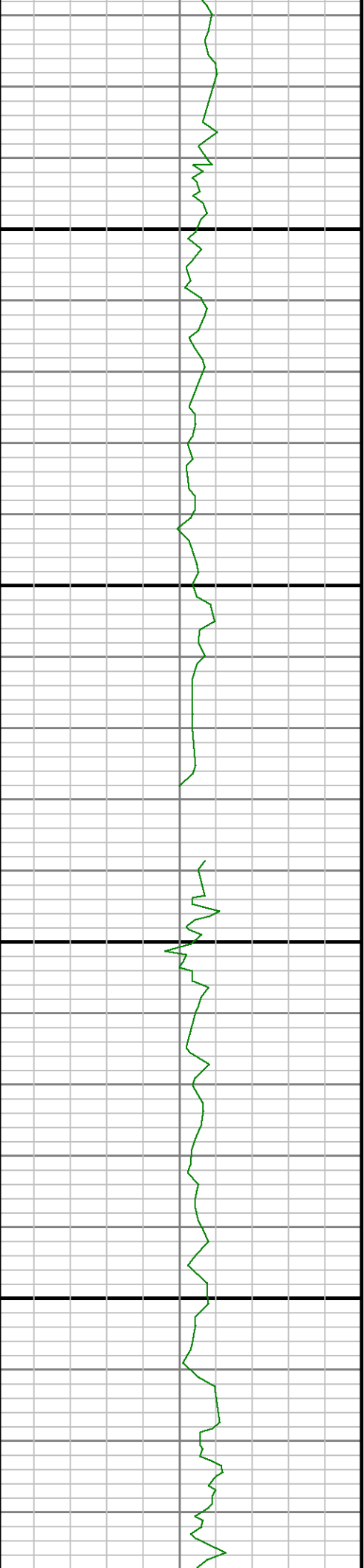
Company : Whiting Oil & Gas Corporation  
 Well : Razor #250-2411  
 Interval : 4790.00 - 5580.00 feet  
 Created : 04/Sep/2016 3:34:57 AM

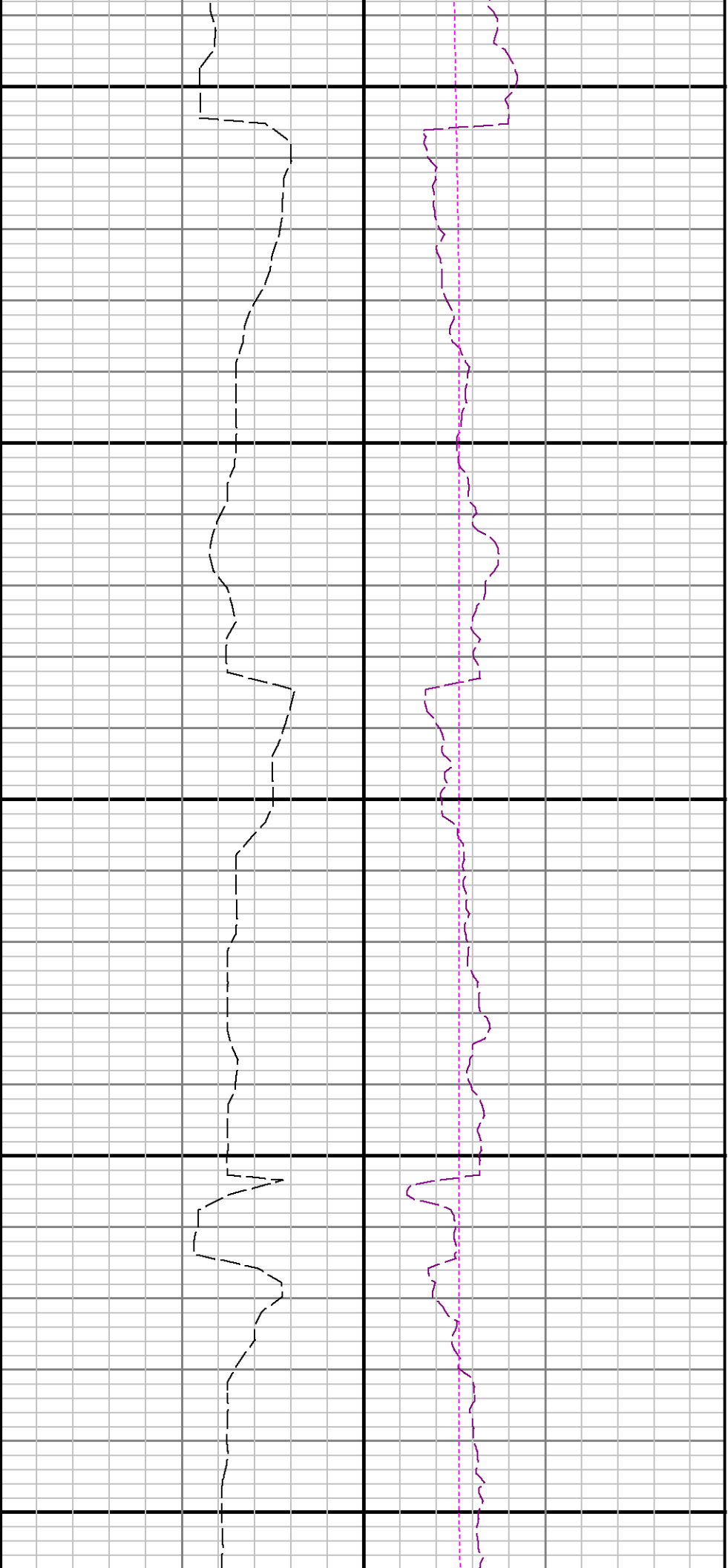




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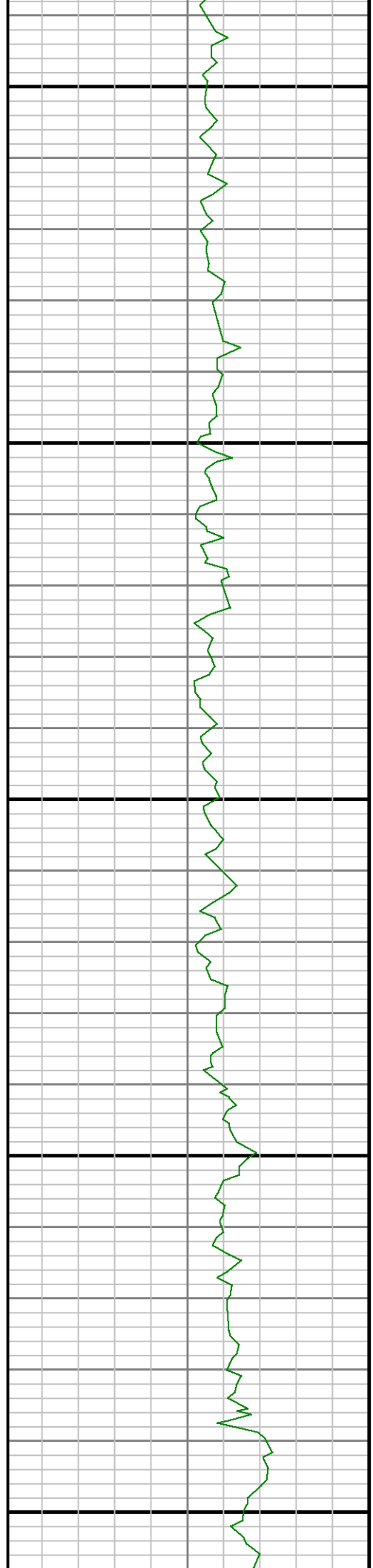
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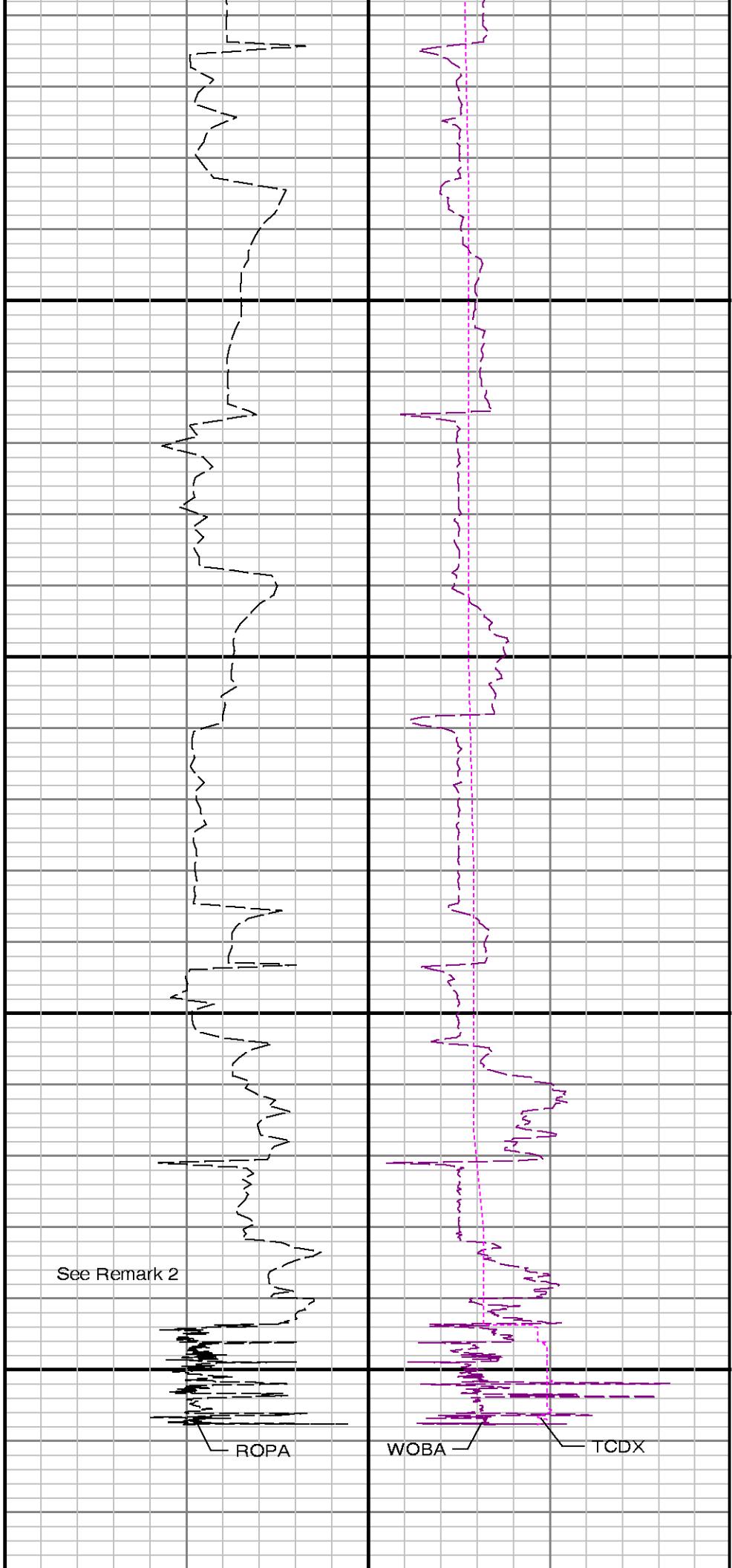




5200

5300





5400

5500

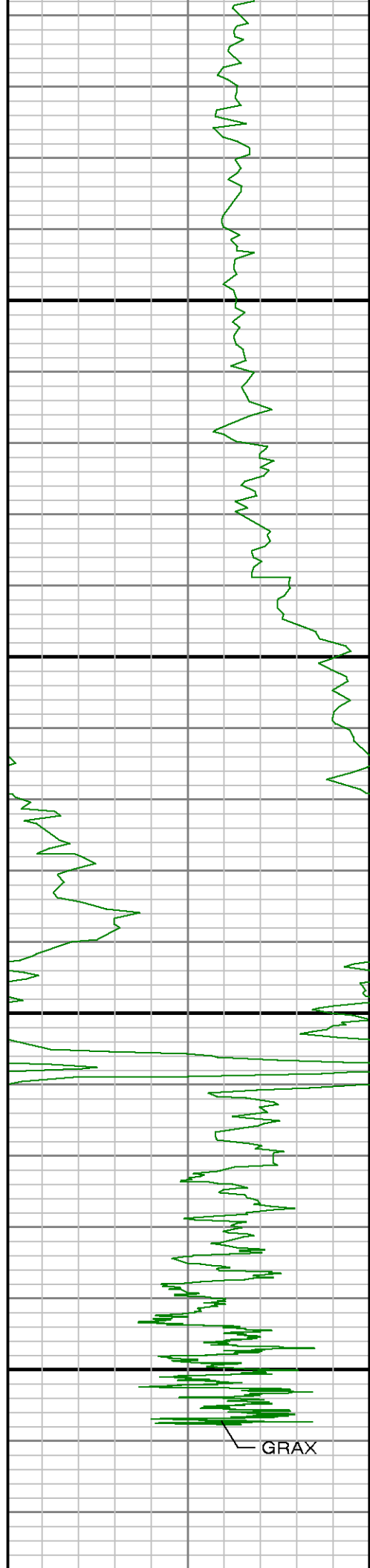
Run 2 <

See Remark 2

ROPA

WOBA

TCDX



GRAX

Gamma Ray Apparent 0.5 ft Avg GRAX	TVD feet 1,240	Rate of Penetration 3.0 ft Avg ROPA	Surface Weight On Bit 1.0 ft Avg WOBA
0200		10000	0100
API		ft/hr	klbf Downhole Temperature TCDX 100300 degF

ADVANTAGE Final Survey Listing												
Operator : Whiting Oil & Gas Corporation Field : Redtail API No : 05-123-42647 Well : Razor #25O-2411 Rig : Unit 406 Job : 8038401 Wellbore : Razor #25O-2411 Orig Hole												
Well Origin												
Latitude		40.8035 deg		Longitude		-103.8102 deg						
North Reference		True		Drill Depth Zero		NULL						
Vertical Datum is		Mean Sea Level		Vertical Datum to DDZ		4718.00 ft						
Vertical Section North		0.00 ft		Vertical Section East		0.00 ft						
Vertical Section Azimuth		359.9800 deg		Vertical Section Depth		0.00ft						
Grid Convergence		0.0000 deg		Magnetic Declination		7.1500 deg						
Total Correction		7.1500 deg		TVD Calculation Method		Minimal Curvature						
D-Row Calculation		Magcorr1		Local Magnetic Field		52700 nT						
Local Magnetic Dip Angle		67.1600 deg		Local Gravity Field		9.800 m/s^2						
Tie	MD	Incl	Azim	North	East	TVD	VS	Incr VS	Crs Len	DLS	Build	Turn
	ft	deg	deg	ft	ft	ft	ft	ft	ft	deg/100ft	deg/100ft	deg/100ft
U	21.00	0.0000	180.4610	0.00	0.00	21.00	0.00	0.00				
	237.00	1.0500	96.6600	-0.23	1.97	236.99	-0.23	1.98	216.00	0.49	0.49	-38.80
	326.00	2.5300	158.8700	-2.16	3.48	325.95	-2.16	4.43	89.00	2.52	1.66	69.90
	417.00	4.4200	179.4100	-7.54	4.24	416.78	-7.54	9.87	91.00	2.46	2.08	22.57
	509.00	5.6700	183.7600	-15.62	3.98	508.42	-15.62	17.95	92.00	1.42	1.36	4.73
	601.00	5.6700	183.8900	-24.69	3.38	599.97	-24.69	27.04	92.00	0.01	0.00	0.14
	692.00	5.4400	180.7900	-33.48	3.01	690.55	-33.49	35.85	91.00	0.42	-0.25	-3.41
	784.00	5.3100	179.9300	-42.10	2.96	782.14	-42.10	44.46	92.00	0.17	-0.14	-0.93
	876.00	5.0700	179.1400	-50.42	3.02	873.76	-50.43	52.79	92.00	0.27	-0.26	-0.86
	967.00	4.7600	178.3200	-58.22	3.19	964.43	-58.22	60.58	91.00	0.35	-0.34	-0.90
	1059.00	4.6400	178.2900	-65.75	3.42	1056.12	-65.75	68.12	92.00	0.13	-0.13	-0.03
	1149.00	6.5300	181.2000	-74.51	3.42	1145.69	-74.51	76.88	90.00	2.12	2.10	3.23
	1241.00	6.3200	182.1900	-84.80	3.12	1237.11	-84.80	87.17	92.00	0.26	-0.23	1.08
	1332.00	6.1700	178.5700	-94.69	3.05	1327.57	-94.69	97.07	91.00	0.46	-0.16	-3.98
	1424.00	6.4700	179.2300	-104.82	3.24	1419.01	-104.82	107.19	92.00	0.34	0.33	0.72
	1516.00	6.1600	177.4000	-114.93	3.53	1510.45	-114.93	117.31	92.00	0.40	-0.34	-1.99
	1608.00	5.2700	176.1700	-124.08	4.04	1601.99	-124.08	126.47	92.00	0.98	-0.97	-1.34
	1699.00	4.2900	174.5300	-131.64	4.64	1692.68	-131.64	134.05	91.00	1.09	-1.08	-1.80
	1791.00	3.7200	172.0800	-138.02	5.38	1784.45	-138.02	140.48	92.00	0.65	-0.62	-2.66
	1882.00	5.5600	179.7600	-145.35	5.81	1875.15	-145.35	147.82	91.00	2.13	2.02	8.44
	1973.00	5.4600	187.4300	-154.05	5.27	1965.73	-154.06	156.54	91.00	0.82	-0.11	8.43
	2064.00	5.1500	186.9400	-162.40	4.21	2056.34	-162.40	164.95	91.00	0.34	-0.34	-0.54
	2221.00	4.8100	181.1400	-175.98	3.23	2212.75	-175.98	178.57	157.00	0.39	-0.22	-3.69
	2315.00	4.7100	181.1100	-183.78	3.08	2306.43	-183.78	186.37	94.00	0.11	-0.11	-0.03
	2409.00	4.3200	179.0400	-191.17	3.06	2400.13	-191.18	193.77	94.00	0.45	-0.41	-2.20
	2503.00	4.6700	175.9800	-198.53	3.39	2493.84	-198.53	201.13	94.00	0.45	0.37	-3.26
	2597.00	4.2500	172.8900	-205.81	4.09	2587.56	-205.81	208.44	94.00	0.51	-0.45	-3.29
	2691.00	6.0800	187.6400	-214.20	3.86	2681.18	-214.20	216.83	94.00	2.39	1.95	15.69
	2785.00	5.6600	186.6600	-223.73	2.66	2774.69	-223.74	226.44	94.00	0.46	-0.45	-1.04
	2879.00	5.0800	181.8600	-232.50	1.99	2868.27	-232.50	235.23	94.00	0.78	-0.62	-5.11
	2973.00	4.1100	177.9400	-240.02	1.97	2961.97	-240.02	242.76	94.00	1.08	-1.03	-4.17
	3068.00	3.6300	175.6500	-246.43	2.32	3056.75	-246.43	249.17	95.00	0.53	0.51	3.41

	3068.00	3.0300	173.6300	-246.43	2.32	3036.73	-246.43	249.17	93.00	0.33	-0.31	-2.41
	3162.00	6.1300	190.4600	-254.33	1.64	3150.41	-254.33	257.10	94.00	2.96	2.66	15.76
	3257.00	6.1300	187.6300	-264.34	0.04	3244.87	-264.34	267.25	95.00	0.32	0.00	-2.98
	3351.00	6.0500	189.1600	-274.21	-1.41	3338.34	-274.21	277.22	94.00	0.19	-0.09	1.63
	3445.00	6.0800	188.9300	-284.02	-2.97	3431.81	-284.02	287.15	94.00	0.04	0.03	-0.24
	3539.00	5.7300	190.0600	-293.56	-4.57	3525.31	-293.55	296.82	94.00	0.39	-0.37	1.20
	3634.00	5.1100	189.7700	-302.39	-6.11	3619.88	-302.39	305.79	95.00	0.65	-0.65	-0.31
	3729.00	4.6900	182.2400	-310.45	-6.98	3714.54	-310.44	313.89	95.00	0.81	-0.44	-7.93
	3823.00	4.2500	176.7900	-317.76	-6.94	3808.25	-317.76	321.21	94.00	0.65	-0.47	-5.80
	3917.00	5.8900	170.5000	-326.00	-5.95	3901.88	-326.00	329.50	94.00	1.84	1.74	-6.69
	4012.00	5.2700	161.7500	-334.95	-3.78	3996.43	-334.95	338.71	95.00	1.11	-0.65	-9.21
	4106.00	4.6700	160.1900	-342.65	-1.13	4090.08	-342.65	346.86	94.00	0.65	-0.64	-1.66
	4200.00	3.9800	158.0500	-349.28	1.39	4183.81	-349.28	353.94	94.00	0.75	-0.73	-2.28
	4294.00	7.2100	170.1000	-358.11	3.62	4277.35	-358.12	363.06	94.00	3.64	3.44	12.82
	4388.00	5.9600	171.7300	-368.76	5.34	4370.73	-368.76	373.84	94.00	1.34	-1.33	1.73
	4482.00	4.7200	173.0000	-377.42	6.51	4464.32	-377.43	382.59	94.00	1.33	-1.32	1.35
	4576.00	3.4600	175.3300	-384.09	7.22	4558.08	-384.09	389.29	94.00	1.35	-1.34	2.48
	4670.00	3.2600	169.9600	-389.55	7.91	4651.92	-389.55	394.79	94.00	0.40	-0.21	-5.71
	4765.00	0.4400	69.6300	-392.08	8.73	4746.87	-392.09	397.45	95.00	3.54	-2.97	-105.61
Tie	MD	Incl	Azim	North	East	TVD	VS	Incr VS	Crs Len	DLS	Build	Turn
	ft	deg	deg	ft	ft	ft	ft	ft	ft	deg/100ft	deg/100ft	deg/100ft
	4859.00	2.0600	17.6300	-390.35	9.58	4840.85	-390.35	399.39	94.00	1.94	1.72	-55.32
	4953.00	11.8700	359.0200	-379.04	9.92	4934.04	-379.05	410.70	94.00	10.57	10.44	-19.80
	5048.00	19.0700	357.9500	-353.73	9.20	5025.54	-353.73	436.02	95.00	7.58	7.58	-1.13
	5142.00	25.0800	356.7700	-318.46	7.53	5112.61	-318.46	471.33	94.00	6.41	6.39	-1.26
	5236.00	34.1400	358.5100	-272.10	5.71	5194.25	-272.11	517.72	94.00	9.68	9.64	1.85
	5330.00	42.0600	357.2700	-214.19	3.52	5268.17	-214.19	575.67	94.00	8.46	8.43	-1.32
	5425.00	49.5300	358.8000	-146.18	1.25	5334.36	-146.18	643.72	95.00	7.95	7.86	1.61
	5519.00	57.0500	0.0800	-70.89	0.55	5390.51	-70.89	719.02	94.00	8.07	8.00	1.36
	5613.00	63.2800	0.2200	10.62	0.77	5437.25	10.62	800.52	94.00	6.63	6.63	0.15
	5707.00	67.8700	1.5600	96.17	2.12	5476.11	96.17	886.08	94.00	5.05	4.88	1.43
	5801.00	73.0000	2.2300	184.66	5.05	5507.58	184.66	974.63	94.00	5.50	5.46	0.71
	5896.00	77.4700	359.9200	276.48	6.76	5531.79	276.48	1066.46	95.00	5.26	4.71	-2.43
	5990.00	88.6500	358.2800	369.63	5.28	5543.13	369.62	1159.62	94.00	12.02	11.89	-1.74
	6084.00	91.3500	357.5000	463.55	1.82	5543.13	463.55	1253.61	94.00	2.99	2.87	-0.83
	6119.00	91.8200	357.9300	498.51	0.42	5542.16	498.51	1288.60	35.00	1.82	1.34	1.23
	6213.00	91.2000	358.9600	592.44	-2.13	5539.68	592.44	1382.56	94.00	1.28	-0.66	1.10
	6308.00	90.1200	356.8600	687.37	-5.59	5538.59	687.37	1477.55	95.00	2.49	-1.14	-2.21
	6402.00	92.1900	357.8100	781.24	-9.96	5536.69	781.24	1571.52	94.00	2.42	2.20	1.01
	6496.00	90.0600	358.9100	875.18	-12.65	5534.85	875.18	1665.50	94.00	2.55	-2.27	1.17
	6590.00	90.8300	358.9400	969.16	-14.41	5534.12	969.16	1759.50	94.00	0.82	0.82	0.03
	6684.00	90.0300	359.7100	1063.15	-15.52	5533.41	1063.15	1853.49	94.00	1.18	-0.85	0.82
	6778.00	90.7400	359.5800	1157.14	-16.10	5532.78	1157.15	1947.49	94.00	0.77	0.76	-0.14
	6872.00	87.6900	359.7700	1251.12	-16.64	5534.07	1251.12	2041.47	94.00	3.25	-3.24	0.20
	6966.00	87.8700	359.7500	1345.05	-17.03	5537.71	1345.05	2135.40	94.00	0.19	0.19	-0.02
	7060.00	88.2800	1.0500	1438.99	-16.37	5540.87	1439.00	2229.34	94.00	1.45	0.44	1.38
	7154.00	89.1100	2.1300	1532.93	-13.77	5543.01	1532.93	2323.32	94.00	1.45	0.88	1.15
	7247.00	92.0900	2.5000	1625.84	-10.01	5542.04	1625.84	2416.30	93.00	3.23	3.20	0.40
	7341.00	89.9400	0.9000	1719.77	-7.22	5540.37	1719.77	2510.28	94.00	2.85	-2.29	-1.70
	7435.00	90.3100	0.0400	1813.77	-6.45	5540.17	1813.77	2604.28	94.00	1.00	0.39	-0.91
	7529.00	91.2300	0.4100	1907.76	-6.08	5538.90	1907.76	2698.27	94.00	1.05	0.98	0.39
	7623.00	88.6800	359.9800	2001.75	-5.76	5538.98	2001.75	2792.26	94.00	2.75	-2.71	-0.46
	7718.00	89.5100	359.8300	2096.73	-5.92	5540.48	2096.74	2887.25	95.00	0.89	0.87	-0.16
	7812.00	88.4000	359.9000	2190.72	-6.14	5542.19	2190.72	2981.23	94.00	1.18	-1.18	0.07
	7906.00	88.4300	359.4300	2284.68	-6.69	5544.79	2284.68	3075.19	94.00	0.50	0.03	-0.50
	8000.00	88.3700	359.5900	2378.64	-7.49	5547.42	2378.64	3169.16	94.00	0.18	-0.06	0.17
	8095.00	88.0900	359.1600	2473.59	-8.53	5550.35	2473.59	3264.11	95.00	0.54	-0.29	-0.45
	8189.00	89.3500	358.9700	2567.55	-10.06	5552.45	2567.55	3358.08	94.00	1.36	1.34	-0.20
	8283.00	87.9100	359.3900	2661.51	-11.41	5554.70	2661.51	3452.05	94.00	1.60	-1.53	0.45
	8378.00	89.8500	2.4400	2756.47	-9.89	5556.55	2756.47	3547.02	95.00	3.80	2.04	3.21
	8472.00	89.4200	2.2600	2850.38	-6.04	5557.15	2850.39	3641.02	94.00	0.50	-0.46	-0.19
	8566.00	89.9700	0.9400	2944.34	-3.41	5557.65	2944.34	3735.01	94.00	1.52	0.59	-1.40
	8660.00	91.6900	0.5100	3038.32	-2.22	5556.29	3038.32	3829.00	94.00	1.89	1.83	-0.46
	8755.00	92.0900	359.8100	3133.27	-1.96	5553.16	3133.27	3923.95	95.00	0.85	0.42	-0.74



	8849.00	92.5000	359.0400	3227.19	-2.90	5549.39	3227.19	4017.87	94.00	0.93	0.44	-0.82
	8943.00	90.5900	358.8300	3321.13	-4.65	5546.86	3321.14	4111.83	94.00	2.04	-2.03	-0.22
	9037.00	89.0200	355.7600	3415.01	-9.08	5547.18	3415.02	4205.82	94.00	3.67	-1.67	-3.27
	9131.00	90.0000	356.7500	3508.81	-15.22	5547.98	3508.81	4299.81	94.00	1.48	1.04	1.05
	9224.00	90.4900	358.6300	3601.73	-18.97	5547.59	3601.73	4392.81	93.00	2.09	0.53	2.02
	9318.00	89.4800	359.9800	3695.72	-20.11	5547.61	3695.72	4486.80	94.00	1.79	-1.07	1.44
	9413.00	90.9900	2.3000	3790.69	-18.22	5547.22	3790.69	4581.79	95.00	2.91	1.59	2.44
Tie	MD ft	Incl deg	Azim deg	North ft	East ft	TVD ft	VS ft	Incr VS ft	Crs Len ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft
	9506.00	91.9700	2.5900	3883.57	-14.25	5544.82	3883.58	4674.76	93.00	1.10	1.05	0.31
	9601.00	92.4700	1.8500	3978.43	-10.58	5541.14	3978.43	4769.69	95.00	0.94	0.53	-0.78
	9696.00	90.7400	1.1700	4073.35	-8.07	5538.48	4073.36	4864.65	95.00	1.96	-1.82	-0.72
	9790.00	89.7800	1.7700	4167.32	-5.66	5538.05	4167.32	4958.65	94.00	1.20	-1.02	0.64
	9884.00	90.8600	2.5200	4261.25	-2.15	5537.53	4261.25	5052.64	94.00	1.40	1.15	0.80
	9979.00	89.7200	1.6300	4356.18	1.29	5537.05	4356.18	5147.64	95.00	1.52	-1.20	-0.94
	10073.00	90.4900	2.0300	4450.14	4.30	5536.87	4450.13	5241.64	94.00	0.92	0.82	0.43
	10168.00	88.3700	359.0700	4545.11	5.21	5537.82	4545.11	5336.62	95.00	3.83	-2.23	-3.12
	10261.00	89.0500	359.1200	4638.07	3.74	5539.91	4638.07	5429.59	93.00	0.73	0.73	0.05
	10356.00	89.5400	358.8300	4733.05	2.04	5541.08	4733.05	5524.59	95.00	0.60	0.52	-0.31
	10450.00	90.3100	358.4100	4827.02	-0.22	5541.20	4827.02	5618.58	94.00	0.93	0.82	-0.45
	10544.00	88.8900	358.5000	4920.98	-2.76	5541.86	4920.99	5712.58	94.00	1.51	-1.51	0.10
	10638.00	89.0500	358.3200	5014.93	-5.37	5543.55	5014.93	5806.56	94.00	0.26	0.17	-0.19
	10731.00	89.8200	358.1000	5107.88	-8.27	5544.47	5107.88	5899.56	93.00	0.86	0.83	-0.24
	10825.00	89.8500	357.5200	5201.81	-11.86	5544.74	5201.82	5993.56	94.00	0.62	0.03	-0.62
	10920.00	90.1200	357.4400	5296.72	-16.04	5544.76	5296.73	6088.56	95.00	0.30	0.28	-0.08
	11015.00	90.9200	357.8800	5391.64	-19.92	5543.90	5391.64	6183.55	95.00	0.96	0.84	0.46
	11106.00	90.1200	357.4200	5482.56	-23.65	5543.08	5482.56	6274.55	91.00	1.01	-0.88	-0.51
	11198.00	88.8600	359.5000	5574.51	-26.12	5543.89	5574.52	6366.54	92.00	2.64	-1.37	2.26
	11287.00	88.8300	1.3200	5663.49	-25.48	5545.69	5663.50	6455.52	89.00	2.04	-0.03	2.04
	11378.00	87.9100	0.8400	5754.43	-23.77	5548.28	5754.44	6546.48	91.00	1.14	-1.01	-0.53
	11470.00	88.3400	2.3700	5846.35	-21.19	5551.29	5846.35	6638.43	92.00	1.73	0.47	1.66
	11562.00	89.9400	1.3800	5938.28	-18.19	5552.67	5938.29	6730.41	92.00	2.05	1.74	-1.08
	11653.00	90.8300	1.0800	6029.26	-16.23	5552.06	6029.26	6821.41	91.00	1.03	0.98	-0.33
	11745.00	90.4900	0.7000	6121.24	-14.80	5551.00	6121.24	6913.40	92.00	0.55	-0.37	-0.41
	11837.00	89.8500	0.2600	6213.24	-14.03	5550.72	6213.24	7005.40	92.00	0.84	-0.70	-0.48
	11928.00	90.0300	1.6800	6304.22	-12.49	5550.82	6304.22	7096.40	91.00	1.57	0.20	1.56
	12020.00	89.3200	1.2800	6396.19	-10.12	5551.34	6396.19	7188.40	92.00	0.89	-0.77	-0.43
	12110.00	91.6000	2.0700	6486.14	-7.49	5550.62	6486.14	7278.39	90.00	2.68	2.53	0.88
	12202.00	91.3800	0.9000	6578.08	-5.10	5548.23	6578.08	7370.35	92.00	1.29	-0.24	-1.27
	12293.00	91.3200	0.4300	6669.04	-4.05	5546.08	6669.04	7461.33	91.00	0.52	-0.07	-0.52
	12385.00	91.2600	359.4400	6761.02	-4.15	5544.01	6761.02	7553.30	92.00	1.08	-0.07	-1.08
	12477.00	91.2600	359.1900	6852.99	-5.25	5541.99	6852.99	7645.28	92.00	0.27	0.00	-0.27
	12569.00	91.5400	358.7500	6944.95	-6.90	5539.74	6944.95	7737.25	92.00	0.57	0.30	-0.48
	12660.00	91.5700	357.8900	7035.87	-9.57	5537.27	7035.88	7828.22	91.00	0.95	0.03	-0.95
	12752.00	91.6600	357.6600	7127.77	-13.14	5534.68	7127.77	7920.18	92.00	0.27	0.10	-0.25
	12843.00	89.5400	0.1200	7218.73	-14.90	5533.72	7218.74	8011.17	91.00	3.57	-2.33	2.70
	12934.00	89.3200	359.9500	7309.73	-14.85	5534.63	7309.73	8102.16	91.00	0.31	-0.24	-0.19
	13025.00	90.6200	1.2600	7400.72	-13.89	5534.68	7400.72	8193.16	91.00	2.03	1.43	1.44
	13117.00	90.1500	0.5900	7492.71	-12.40	5534.06	7492.71	8285.15	92.00	0.89	-0.51	-0.73
	13208.00	90.3700	0.9800	7583.70	-11.15	5533.65	7583.70	8376.15	91.00	0.49	0.24	0.43
	13299.00	90.3100	0.3900	7674.69	-10.07	5533.11	7674.69	8467.15	91.00	0.65	-0.07	-0.65
	13391.00	90.0600	0.3200	7766.69	-9.50	5532.81	7766.69	8559.15	92.00	0.28	-0.27	-0.08
	13482.00	89.5700	359.5600	7857.68	-9.59	5533.10	7857.69	8650.15	91.00	0.99	-0.54	-0.84
	13574.00	90.8600	0.1200	7949.68	-9.85	5532.76	7949.68	8742.15	92.00	1.53	1.40	0.61
	13665.00	90.6500	0.0500	8040.67	-9.71	5531.56	8040.68	8833.14	91.00	0.24	-0.23	-0.08
	13756.00	90.3100	0.3500	8131.67	-9.40	5530.80	8131.67	8924.13	91.00	0.50	-0.37	0.33
	13850.00	90.2500	359.9400	8225.67	-9.16	5530.34	8225.67	9018.13	94.00	0.44	-0.06	-0.44
	13944.00	90.3100	359.8700	8319.67	-9.31	5529.88	8319.67	9112.13	94.00	0.10	0.06	-0.07
	14039.00	90.6200	359.2600	8414.66	-10.04	5529.11	8414.66	9207.13	95.00	0.72	0.33	-0.64
Tie	MD ft	Incl deg	Azim deg	North ft	East ft	TVD ft	VS ft	Incr VS ft	Crs Len ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft
	14133.00	90.0900	359.1900	8508.65	-11.31	5528.52	8508.65	9301.13	94.00	0.57	-0.56	-0.07

14227.00	90.0600	358.6700	8602.63	-13.06	5528.40	8602.64	9395.13	94.00	0.55	-0.03	-0.55
14322.00	90.0300	357.9300	8697.59	-15.88	5528.33	8697.59	9490.13	95.00	0.78	-0.03	-0.78
14416.00	89.4200	0.6500	8791.57	-17.05	5528.78	8791.58	9584.11	94.00	2.97	-0.65	2.89
14510.00	90.0000	0.3500	8885.57	-16.22	5529.25	8885.57	9678.11	94.00	0.69	0.62	-0.32
14604.00	90.8300	359.7200	8979.56	-16.17	5528.57	8979.57	9772.11	94.00	1.11	0.88	-0.67
14699.00	89.2600	1.1300	9074.55	-15.46	5528.50	9074.56	9867.10	95.00	2.22	-1.65	1.48
14794.00	88.5800	1.9300	9169.50	-12.93	5530.29	9169.51	9962.09	95.00	1.11	-0.72	0.84
14888.00	89.3200	1.3800	9263.45	-10.21	5532.01	9263.45	10056.07	94.00	0.98	0.79	-0.59
14982.00	89.9400	1.0900	9357.42	-8.19	5532.62	9357.42	10150.07	94.00	0.73	0.66	-0.31
15077.00	88.0900	1.8000	9452.37	-5.79	5534.25	9452.37	10245.05	95.00	2.09	-1.95	0.75
15170.00	88.4900	1.2900	9545.30	-3.29	5537.03	9545.30	10338.01	93.00	0.70	0.43	-0.55
15265.00	88.9200	0.8600	9640.26	-1.50	5539.17	9640.26	10432.98	95.00	0.64	0.45	-0.45
15359.00	89.8800	0.6700	9734.24	-0.25	5540.16	9734.24	10526.97	94.00	1.04	1.02	-0.20
15453.00	90.8300	0.3100	9828.23	0.56	5539.58	9828.23	10620.97	94.00	1.08	1.01	-0.38
15547.00	89.7800	1.7100	9922.21	2.21	5539.08	9922.21	10714.97	94.00	1.86	-1.12	1.49
15642.00	90.9800	1.6300	10017.17	4.98	5538.45	10017.17	10809.96	95.00	1.27	1.26	-0.08
15723.00	91.9700	1.2600	10098.12	7.02	5536.36	10098.11	10890.94	81.00	1.30	1.22	-0.46
Projection to TD:											
15771.00	91.9700	1.2600	10146.08	8.08	5534.71	10146.07	10938.91	48.00	0.00	0.00	-0.00