



Real Time Log

Natural Formation Evaluation
Gamma Ray

Scale:

Company: Extraction Oil and Gas

1:600

Well: RUBYANA 13NB-31W

Measured Depth

Field: Weld County

County: Continental US State: United States

Status:

FINAL PRINT

Surface Location:

Latitude: 40°28'55.020"N

Longitude: 104°49'59.556"W

Other Services:

API Number:

05123-389-2000

SEC: 13

TWP: 6N

RNG: 67E

Directional
VSS

Permanent Datum (P.D.): Mean Sea Level

Elevation: 4838.00 ft.

Elevations:

N/A

Log Measured From:

Rig Floor

24.00 ft.

Above P.D.

KB:

DF:

4852.00 ft.

Depth Reference:

Driller's Depth

GL:

4838.00 ft.

Interval Logged

Dates

Magnetic Field Reference

Top: 6123.0 ft. Date From: 30/Apr/14

Dip Angle: 66.99 °

Azi Reference North:

True

Bottom: 11648.0 ft. Date To: 05/May/14

Total

Mag to Reference

8.57 °

Spud Date: 30/Apr/14

Field Strength: 52822.7 nT

North Correction:

8.57 °

Borehole Record

Casing Record

Hole Size	From	To	Size	Weight	From	To
13.250 in.	Surface	780.0 ft.	9.625 in.	26.0lb/ft	Surface	768.0 ft.
8.750 in.	780.0 ft.	7478.0 ft.	7.000 in.	36.00 lb/ft	Surface	7340.0 ft.
6.125 in.	7478.0 ft.	11716.0 ft.				

Mud Record

Deviation Record

Type	From	To	Hole Size	Interval	Inc / Az (Start)	Inc / Az (End)
Water Based	780.0 ft.	11716.0 ft.	8.750 in.	6698.0 ft.	0.0 ° / 120.0 °	82.0 ° / 272.9 °
			6.125 in.	4238.0 ft.	87.6 ° / 277.1 °	92.3 ° / 266.6 °
					/	/
					/	/
					/	/
					/	/
					/	/
					/	/

Acquisition System

Software Version

Other

Advantage 2.20U4 Rig: H&P 319 / Helmerich & Payne Drilling Co

PATS 6.4.1.34 Job No: 6339804 / D & E

District / Unit: RMD

INTEQ does not guarantee the accuracy or correctness of interpretations provided in or from this log. Since all interpretations are opinions based on measurements, INTEQ shall under no circumstances be responsible for consequential damages or any other loss, costs, damages or expenses incurred or sustained in connection with the use of any such interpretations. INTEQ disclaims all expressed and implied warranties related to this service. INTEQ's liabilities and obligations shall be governed by INTEQ's Standard Terms and Conditions.

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	2	1	8.750	PDC		Steerable	6123.0	7407.0	6123.0	7478.0	30/Apr/2014 23:30	09/May/2014 22:10	29		
2	2	2	6.125	PDC		Steerable	7407.0	9316.0	7478.0	9388.0	05/May/2014 01:00	07/May/2014 04:23	12		
3	3	3	6.125	PDC		Steerable	9316.0	11648.0	9389.0	11716.0	05/May/2014 01:00	05/May/2014 02:02	16		

Crew

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
	Wellsite	Wellsite		Wellsite	Wellsite		Wellsite	Wellsite
Marcus Boucher	04/30/2014	05/06/2014	David Belek	04/30/2014	05/06/2014			

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 (ppm)	K+ (%)
05/02/2014	16:00	1	6400.0	Water Based	9.9	32	9.0	N/A	0/91	Flowline	1,400	N/A
05/04/2014	16:00	1	9169.0	Water Based	9.4	33	10.0	N/A	0/92	Flowline	1,100	N/A

Mnemonics

Curve	Description	Units
GRAX	Gamma Ray Apparent, 0.5 ft. Avg.	API
GRIX	Gamma Ray Density	points
GRTX	Gamma Ray Time Since Drilled	min.
ROPA	Rate of Penetration, 3.0 ft. Avg.	ft/hr
TCDX	Downhole Temperature	degF
TVD	True Vertical Depth	ft.
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	11866045	Directional	62.58	6.750	3.275
1	SRIG	10595781	Gamma	59.20	6.750	0.000
2	DIR	11638000	Directional	71.87	6.750	0.000
2	SRIG	11703937	Gamma	68.49	4.750	0.000
3	DIR	11638000	Directional	71.87	6.750	0.000
3	SRIG	11703937	Gamma	68.49	4.750	0.000

Service and Tool Mnemonics

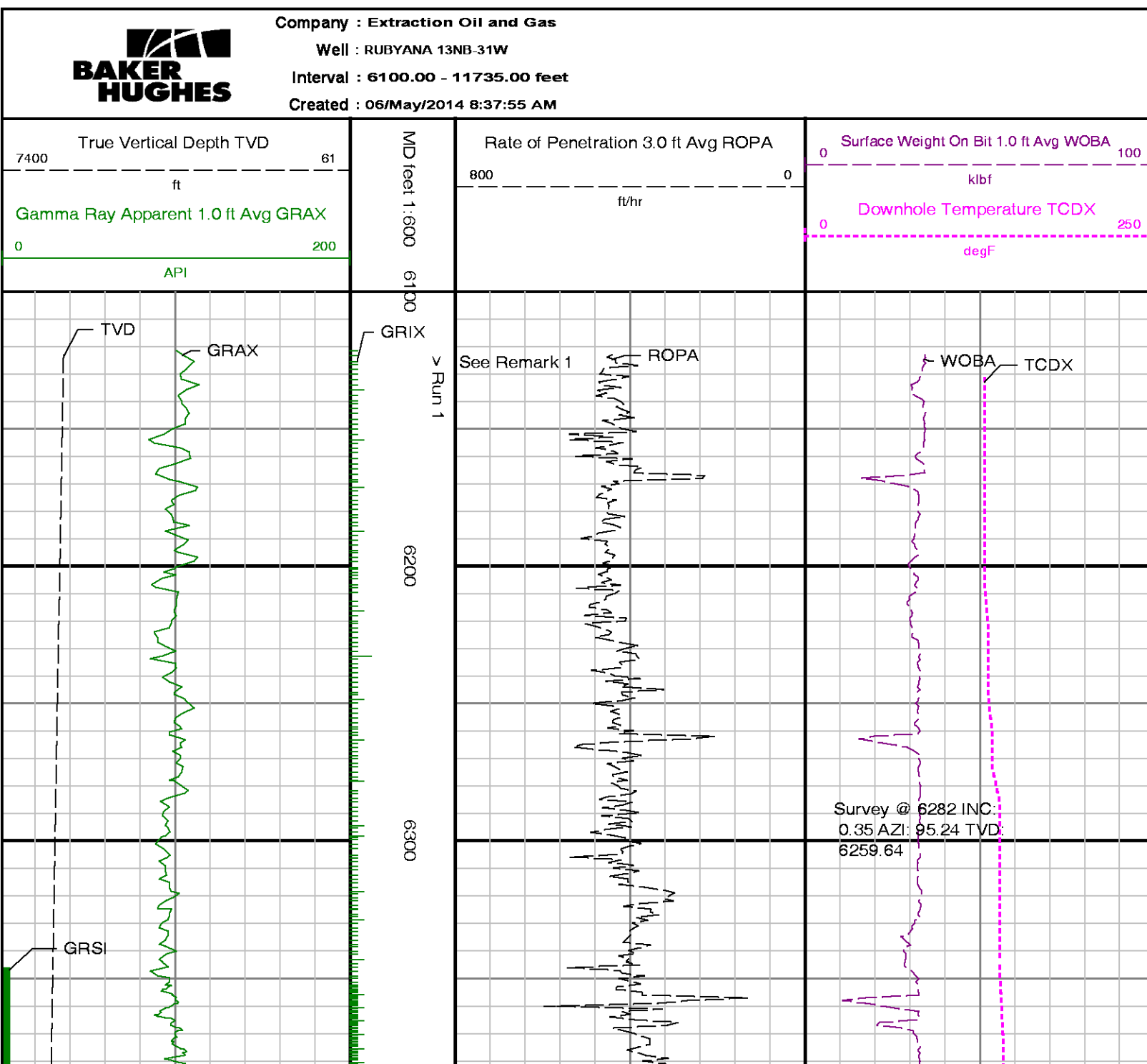
Mnemonic	Name	Description
DIR	Directional	Wellbore directional survey
SRIG	Inclination and Gamma	Probe based gamma ray and inclination module

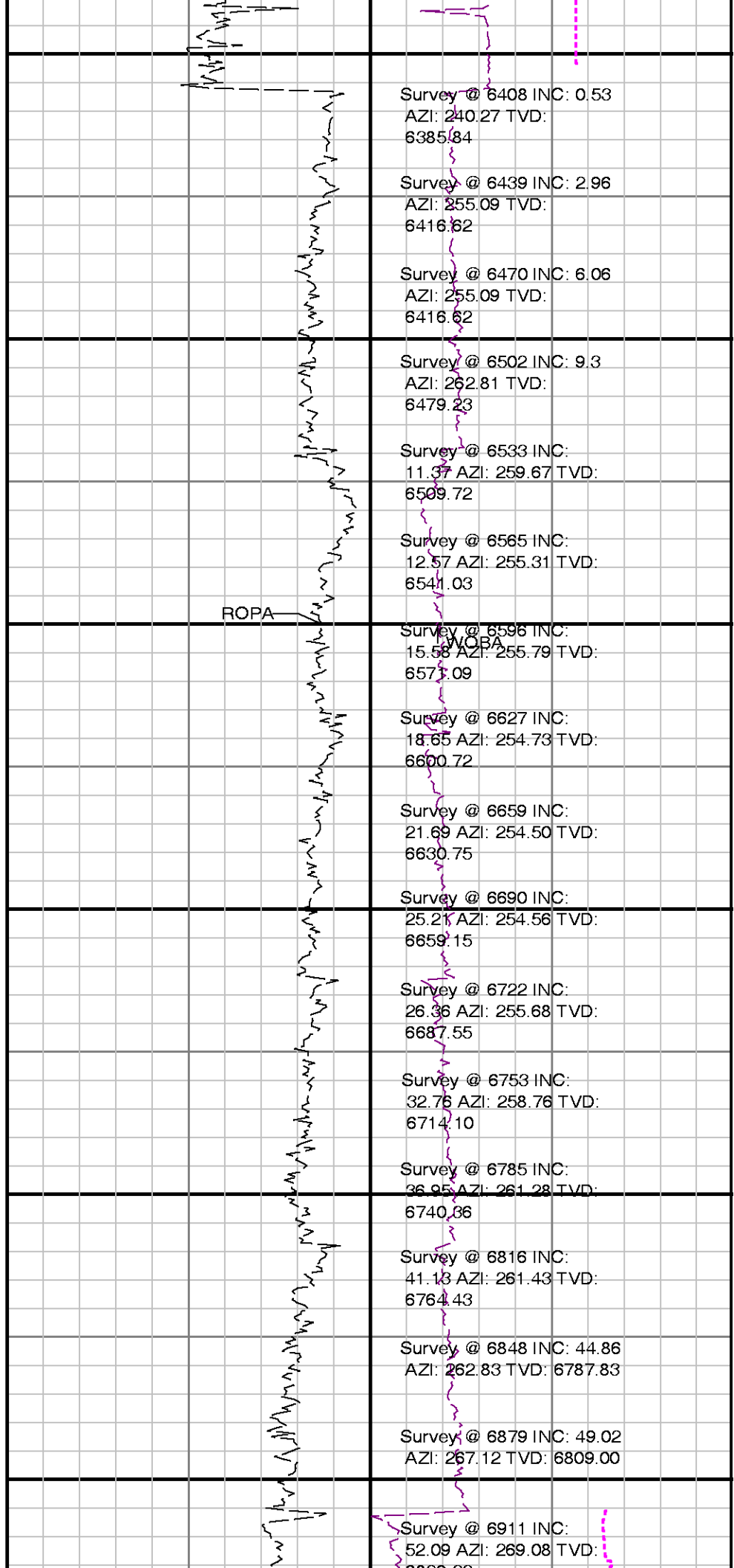
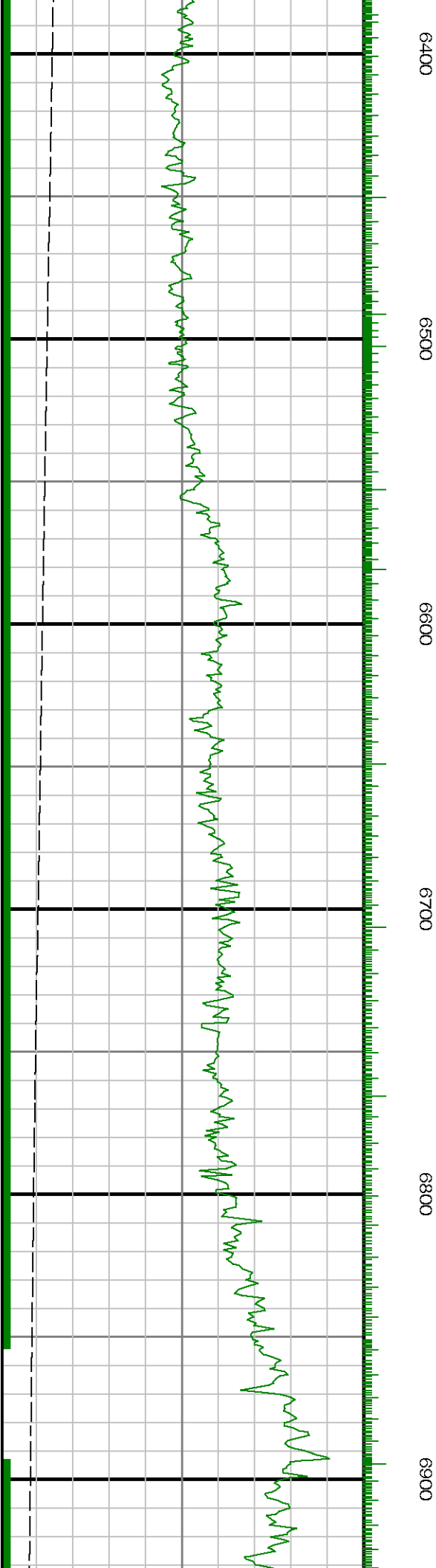
Comments

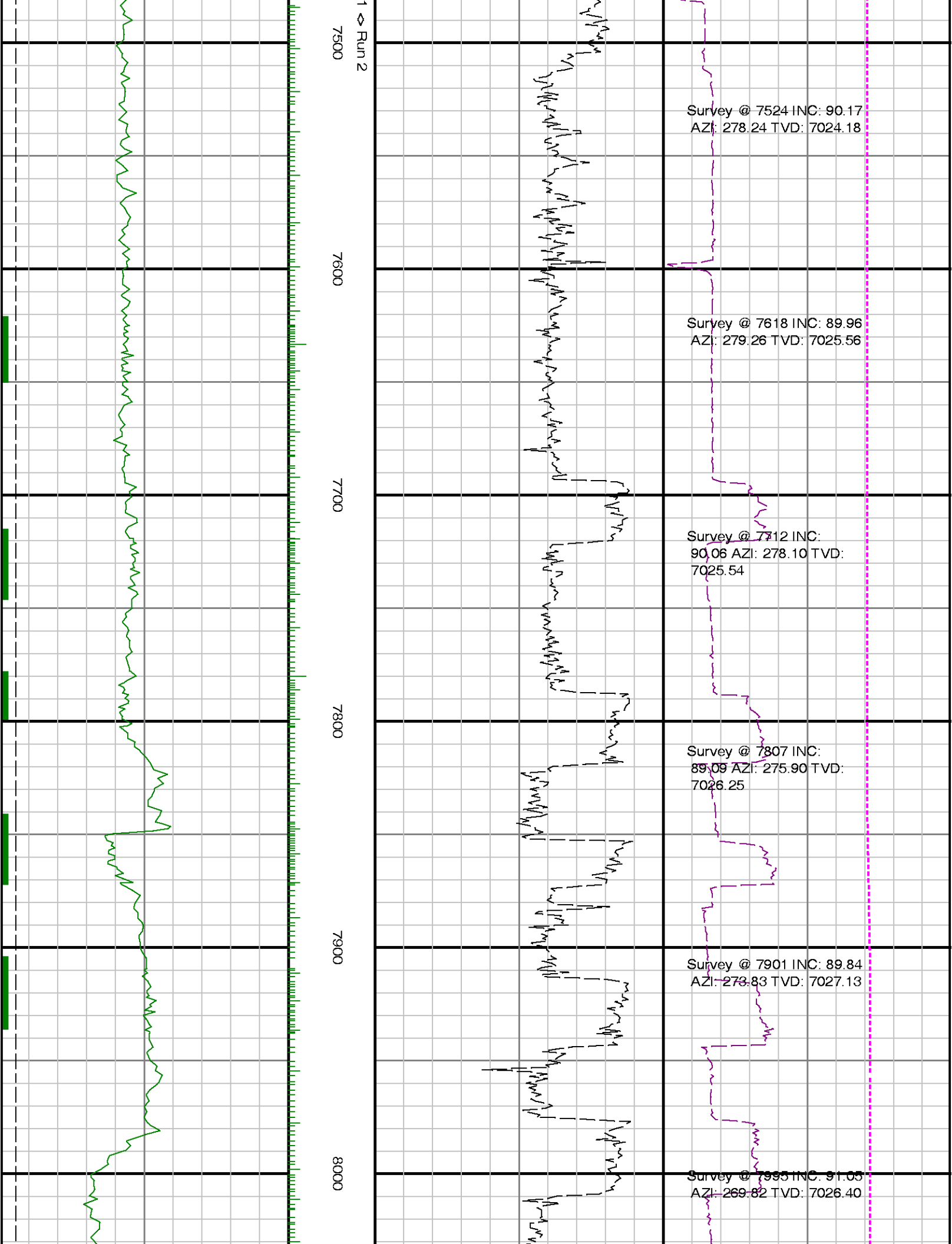
<p>1) Baker Hughes INTEQ run 1 utilized 6 1/2 inch NaviGamma(Gamma Ray and Directional) behind a 8 3/4 inch bit and steerable assembly from 780 feet to 7478 feet MD (775 feet to 7025 feet TVD).</p> <p>Baker Hughes INTEQ runs 2 and 3 utilized 6 1/2 inch NaviGamma(Gamma Ray and Directional) behind a 6 1/8 inch bit and steerable assembly from 6123 feet to 11716 feet MD (6100 feet to 7004 feet TVD).</p> <p>2.) A sliding indicator is shown to the left of track 1 as a heavy green line. The indicator has been depth-shifted to the gamma sensor offset to correspond with data acquired while sliding.</p> <p>3.) Depth measurements were obtained from a depth tracking 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>

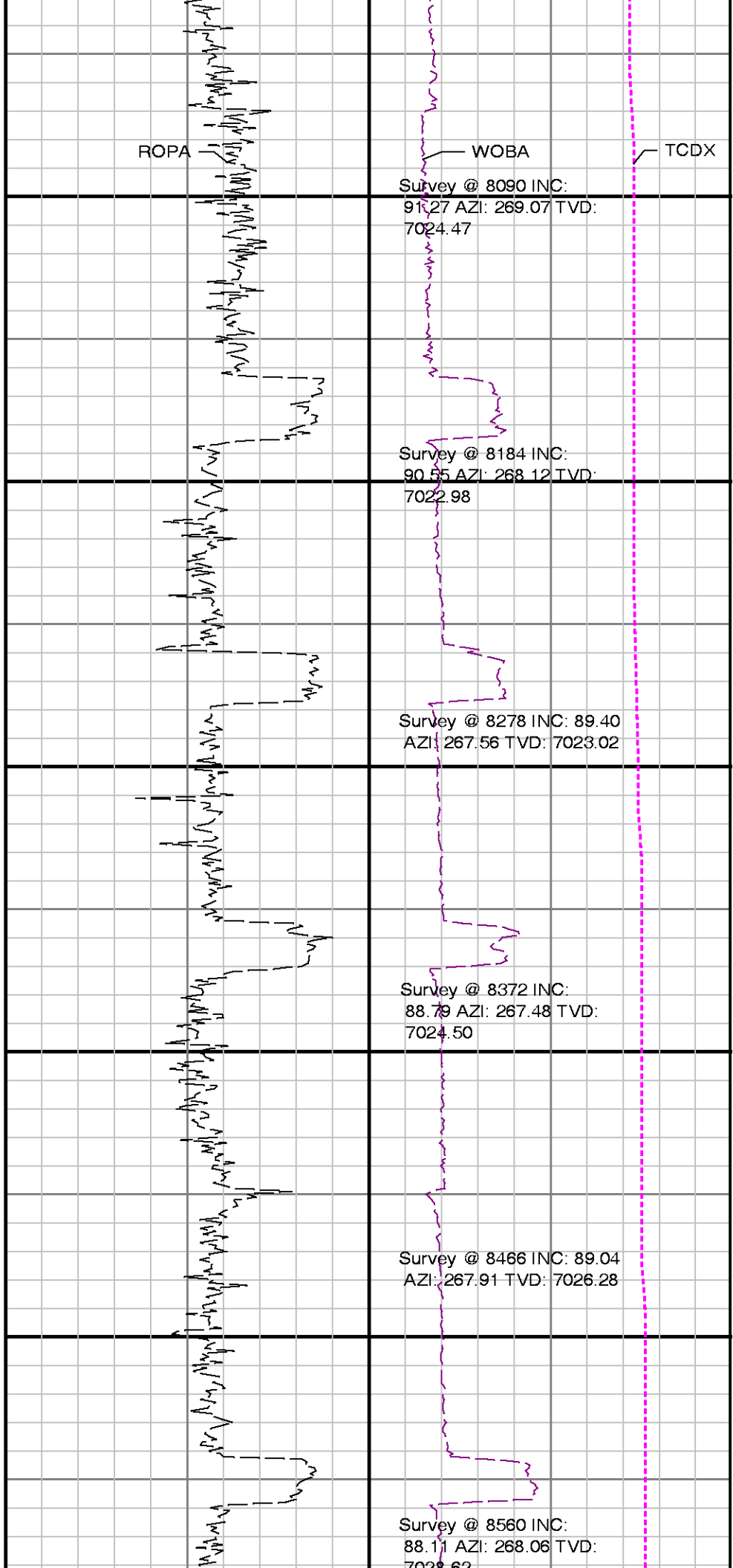
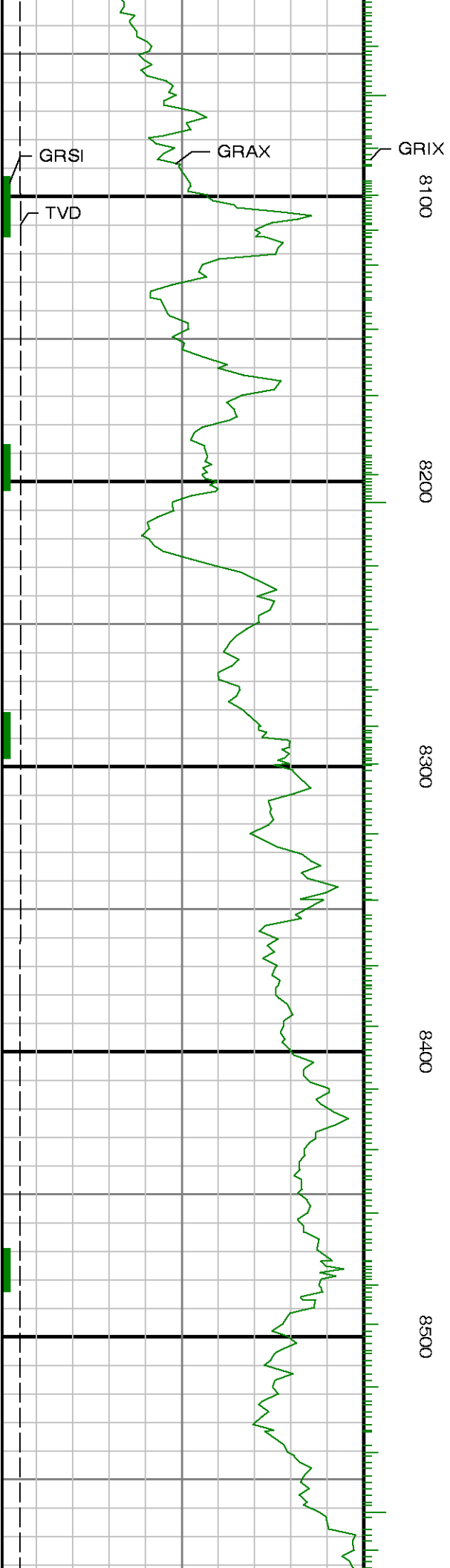
Remarks

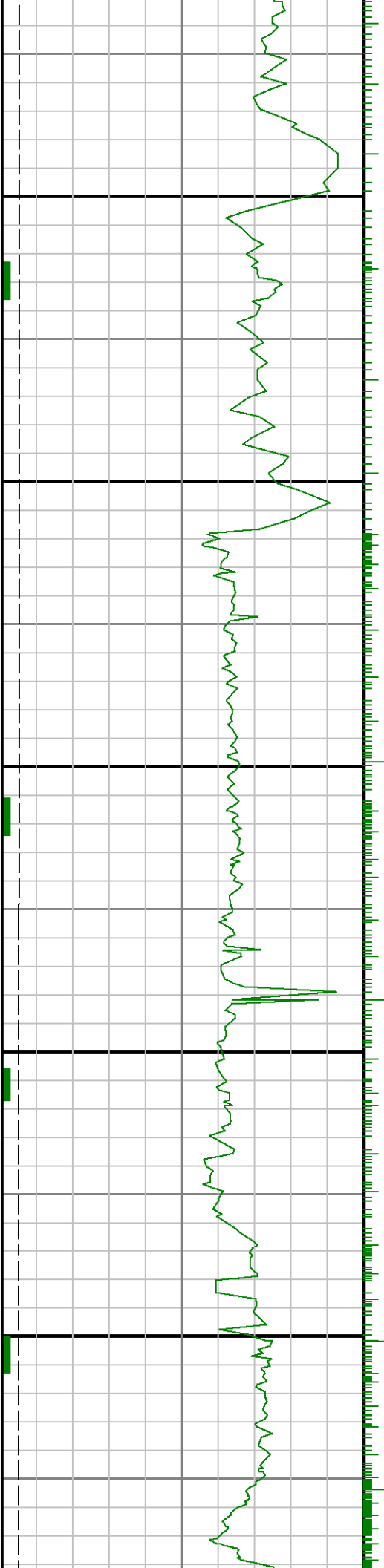
Number	Measured Depth (ft)	Hole Section (in.)	LWD Run No.	Remark
1	6123	8.750	1	The interval from surface to 6100 feet MD (6079 feet TVD) was not logged since logging services began at kick off point.
2	7478	6.125	2	The interval between 7407 to 7478 feet MD (7022 to 7025 feet TVD) was not logged for up to 36 hours due to casing and cementing operations.
3	9389	6.125	3	The interval between 9318 to 9389 feet MD (7049 to 7051 feet TVD) was not logged for up to 11 hours due to POOH for MWD failure.
4	11716	6.125	3	The interval from 11648 to 11716 feet MD (7007 to 7004 feet TVD) was not logged due to to bit sensor offset at TD.











9200

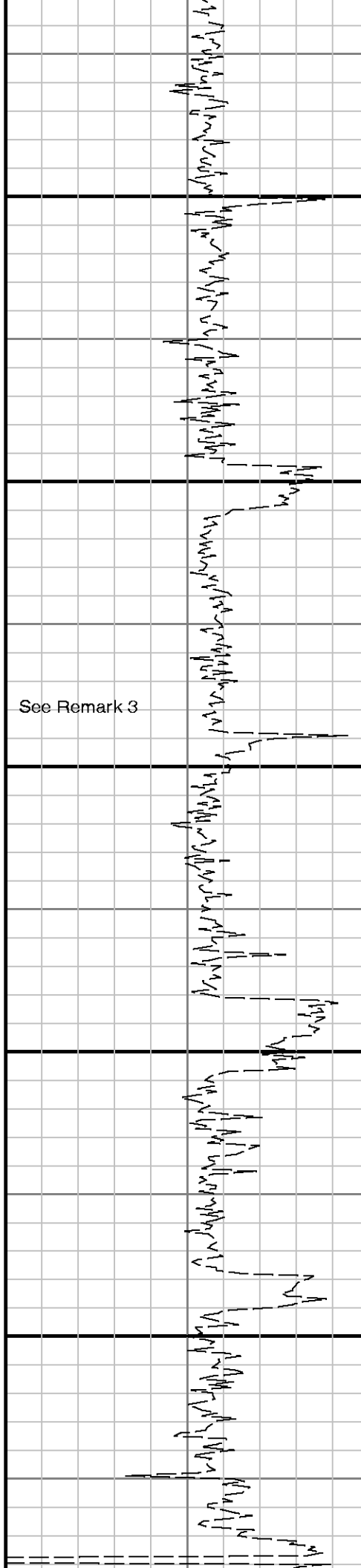
9300

9400

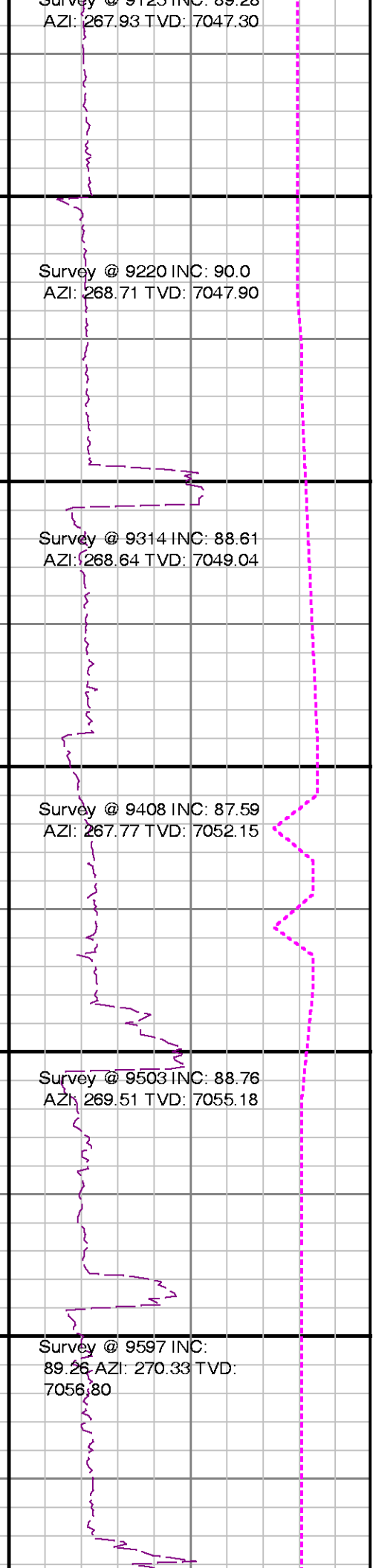
9500

9600

Run 2 \diamond Run 3



See Remark 3



Survey @ 9123 INC: 89.28
AZI: 267.93 TVD: 7047.30

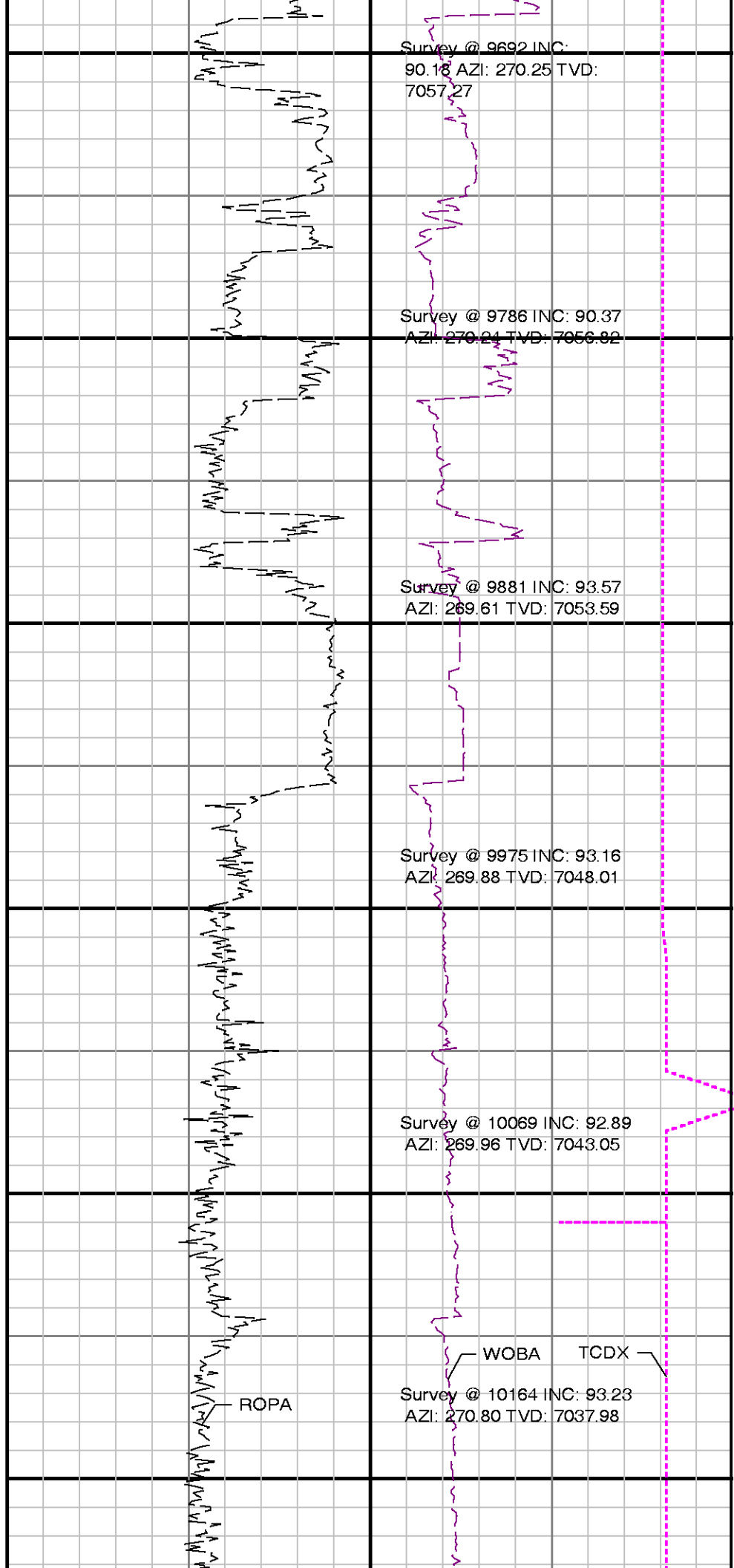
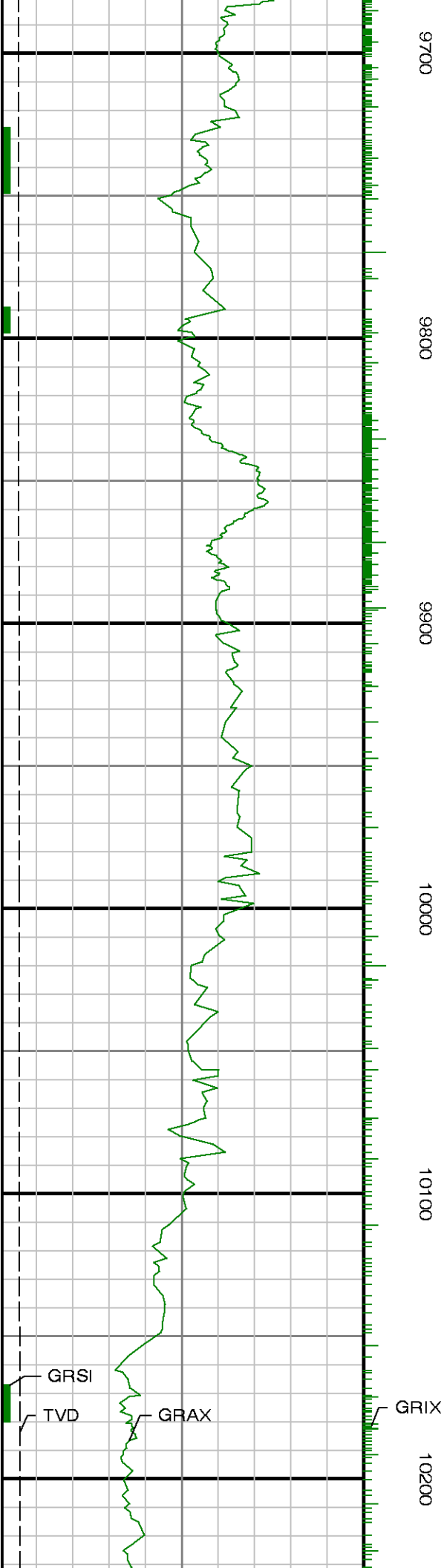
Survey @ 9220 INC: 90.0
AZI: 268.71 TVD: 7047.90

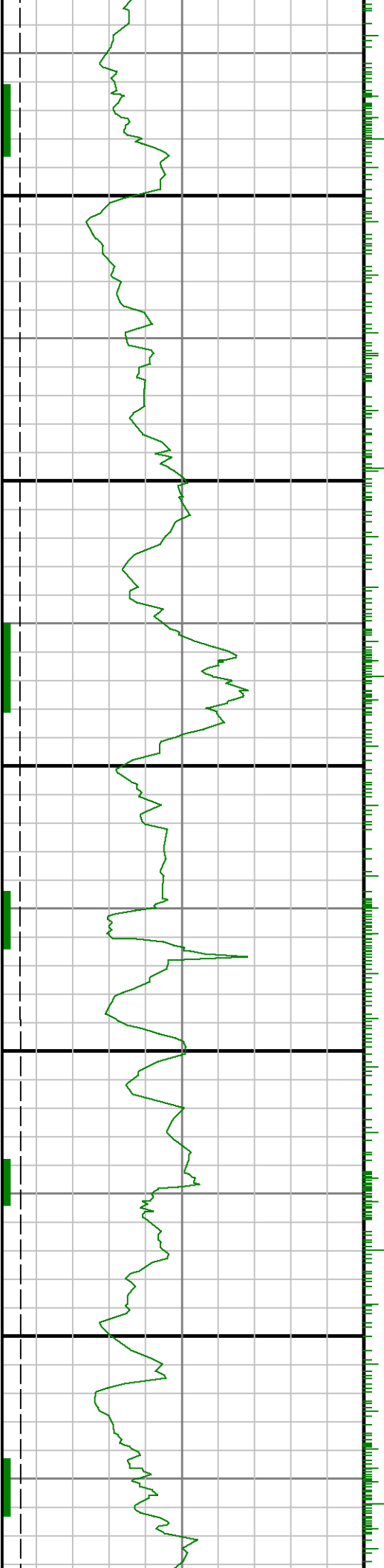
Survey @ 9314 INC: 88.61
AZI: 268.64 TVD: 7049.04

Survey @ 9408 INC: 87.59
AZI: 267.77 TVD: 7052.15

Survey @ 9503 INC: 88.76
AZI: 269.51 TVD: 7055.18

Survey @ 9597 INC:
89.26 AZI: 270.33 TVD:
7056.80





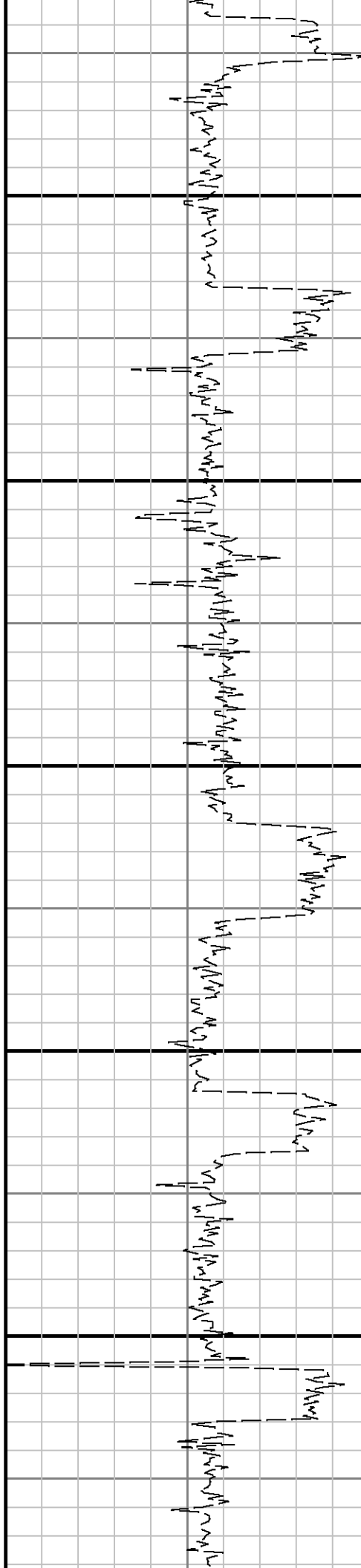
10300

10400

10500

10600

10700



Survey @ 10258 INC: 92.71
AZI: 271.11 TVD: 7033.11

Survey @ 10352 INC:
91.17 AZI: 270.10 TVD:
7029.93

Survey @ 10447 INC:
91.20 AZI: 271.48 TVD:
7027.96

Survey @ 10541 INC:
91.54 AZI: 269.88 TVD:
7025.71

Survey @ 10636 INC:
92.59 AZI: 268.01 TVD:
7022.29

Survey @ 10730 INC: 92.43
AZI: 266.86 TVD: 7018.10

