

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well ☐ Oil Well ☐ Gas Well ☐ Dry ☐ Other b. Type of Completion ☐ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Zones ☐ Hydraulic Fracturing Other: _____						5. Lease Serial No.			
						6. If Indian, Allottee or Tribe Name			
2. Name of Operator Accepted by BLM - 04/01/2022 Petroleum Engineer - BLM						7. Unit or CA Agreement Name and No.			
						8. Well Name and Well No.			
3. Address				3a. Phone No. (Include area code)		9. API Well No.			
4. Location of Well (Report location clearly and in accordance with Federal requirements)* At surface At top prod. interval reported below At total depth						10. Field and Pool or Exploratory			
						11. Sec., T., R., M., on Block and Survey or Area			
						12. County or Parish	13. State		
14. Date Spudded		15. Date T.D. Reached		16. Date Completed ☐ D & A ☐ Ready to Prod.		17. Elevations (DF, RKB, RT, GL)*			
18. Total Depth: MD TVD		19. Plug Back T.D.: MD TVD		20. Depth Bridge Plug Set: MD TVD					
21. Type Electric & Other Mechanical Logs Run (Submit copy of each)				22. Was well cored? ☐ No ☐ Yes (Submit analysis) Was DST run? ☐ No ☐ Yes (Submit report) Directional Survey? ☐ No ☐ Yes (Submit copy)					
23. Casing and Liner Record (Report all strings set in well)									
Hole Size	Size/Grade	Wt. (#ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No. of Sk. & Type of Cement	Slurry Vol. (BBL)	Cement Top*	Amount Pulled
24. Tubing Record									
Size	Dept Set (MD)	Packer Dept (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	
25. Producing Intervals					26. Perforation Record				
Formation		Top		Bottom	Perforated Interval	Size	No. Holes	Perf. Status	
A)									
B)									
C)									
D)									
27. Acid, Fracture, Treatment, Cement Squeeze, Post hydraulic fracturing chemical disclosures on FracFocus.org when required by state or federal regulation									
Depth Interval		Amount, Type of Material and Date of Chemical Disclosure upload on FracFocus.org as applicable							
28. Production - Interval A									
Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
			➔						
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	
			➔						
28a. Production - Interval B									
Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
			➔						
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	
			➔						

*(See instructions and spaces for additional data on page 2)

28b. Production - Interval C

Date First Produced	Test Date	Hours Tested	Test Production ➡	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API.	Gas Gravity	Production Method
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate ➡	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	

28c. Production - Interval D

Date First Produced	Test Date	Hours Tested	Test Production ➡	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API.	Gas Gravity	Production Method
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate ➡	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	

29. Disposition of Gas (Solid, used for fuel, vented, etc.)

30. Summary of Porous Zones (Include Aquifers):

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

31. Formation (Log) Markers

Formation	Top	Bottom	Descriptions, Contents, etc.	Name	Top
					Meas. Depth

32. Additional remarks (include plugging procedure).

33. Indicate which items have been attached by placing a check in the appropriate boxes:

☐ Electrical/Mechanical Logs (1 full set req'd.)

☐ Geologic Report

☐ DST Report

☐ Directional Survey

☐ Sundry Notice for plugging and cement verification

☐ Core Analysis

☐ Other:

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions)*

Name (please print)

Title

Signature

Date

INSTRUCTIONS

GENERAL: This form is designed for submitting a complete and correct well completion/recompletion report and log on all types of wells on Federal and Indian leases to a Federal agency, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal office. If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, and all types electric), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal laws and regulations. All attachments should be listed on this form, see item 33.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal office for specific instructions.

ITEM 17: Indicate which reported elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

ITEM 23: Show how reported top(s) of cement were determined, i.e. circulated (CIR), or calculated (CAL), or cement bond log (CBL), or temperature survey (TS).

NOTICES

The Privacy Act of 1974 and the regulation in 43 CFR 2.48 (d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. et seq.; 43 CFR 3160.

PRINCIPAL PURPOSE: The information is to be used to evaluate the actual operations performed in the drilling, completing and testing of a well on a Federal or Indian lease.

ROUTINE USES: (1) Evaluate the equipment and procedures used during the drilling and completing/recompleting of a well. (2) The review of geologic zones and formation encountered during drilling. (3) Analyze future applications to drill in light of data obtained and methods used. (4)(5) Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this report and disclosure of the information is mandatory once a well drilled on a Federal or Indian lease is completed/recompleted.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM collects this information to allow evaluation of the technical, safety, and environmental factors involved with drilling and completing/recompleting wells on Federal and Indian oil and gas leases.

This information will be used to analyze operations and to compare equipment and procedures actually used with those proposed and approved.

Response to this request is mandatory only if the operator elects to initiate drilling and completing/recompleting operations on an oil and gas lease.

The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

Additional Information

Location information: 00S1

SHL: NWNW / 270 FNL / 1255 FWL / TWSP: 23S / RNG: 29E / SEC: 28 / LAT: 32.2824782 /
LONG: -103.9944195

KOP: SESW / 65 FSL / 2281 FWL / TWSP: 23S / RNG: 29E / SEC: 21 / LAT: 32.283391 / LONG:
-103.9910999

PPP: SESW / 330 FSL / 2304 FWL / TWSP: 23S / RNG: 29E / SEC: 21 / LAT: 32.284121 / LONG:
-103.9910246

EXIT: NENW / 330 FNL / 2301 FWL / TWSP: 23S / RNG: 29E / SEC: 16 / LAT: 32.3115594 /
LONG: -103.9907746

BHL: NENW / 301 FNL / 2299 FWL / TWSP: 23S / RNG: 29E / SEC: 16 / LAT: 32.3116382 /
LONG: -103.9907802

Summary of Porous Zones Information:

Formation: BONE SPRING, Descriptions, Contents, etc: null, Bottom: 6787

Formation: WOLFCAMP, Descriptions, Contents, etc: null, Bottom: 10152

Attachments: 00S1

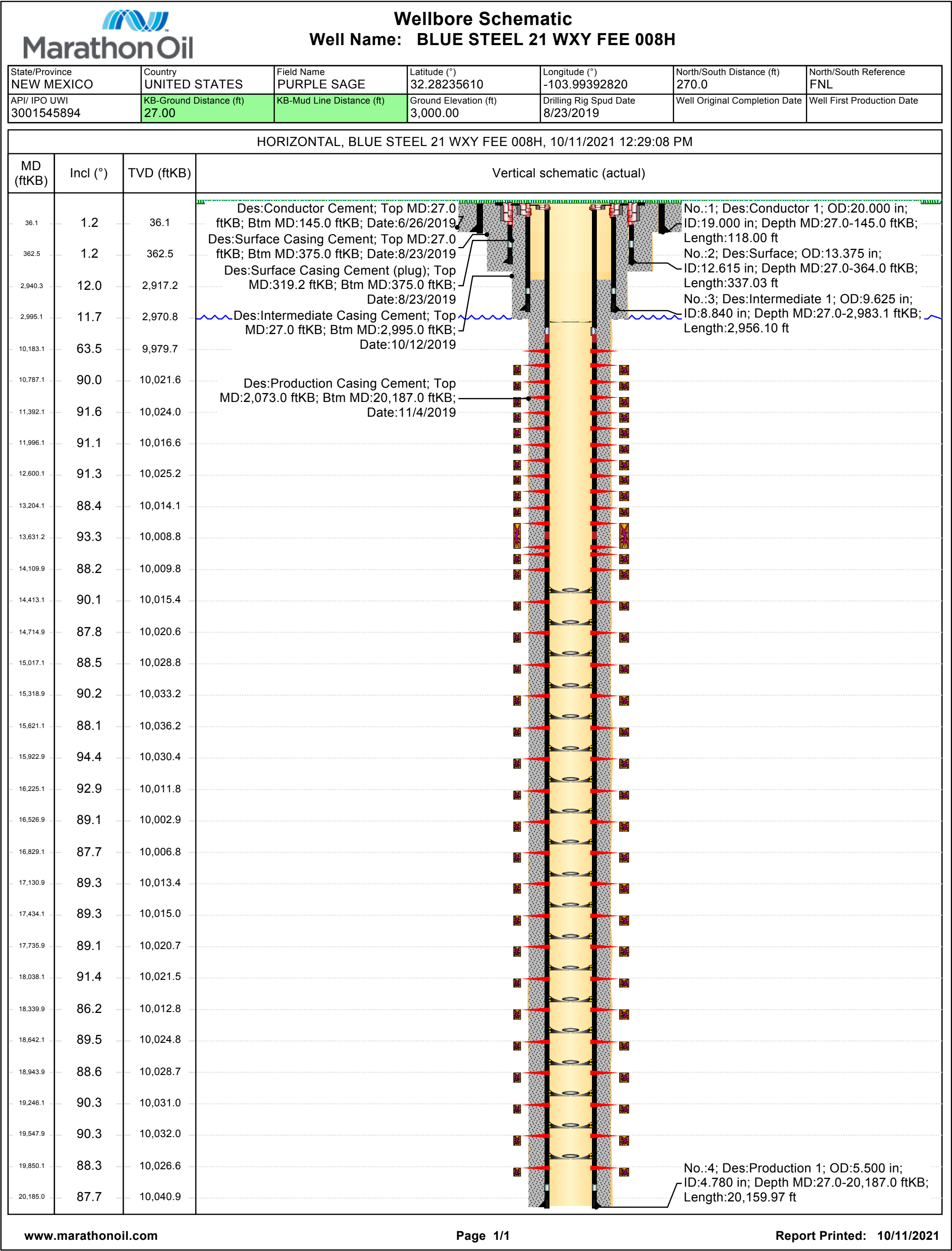
Log Attachments:

1)
Wellbore_Schematic__BLUE_STEEL_21_WXY_FEE_008H__2021_10_11_20211021102232.pdf

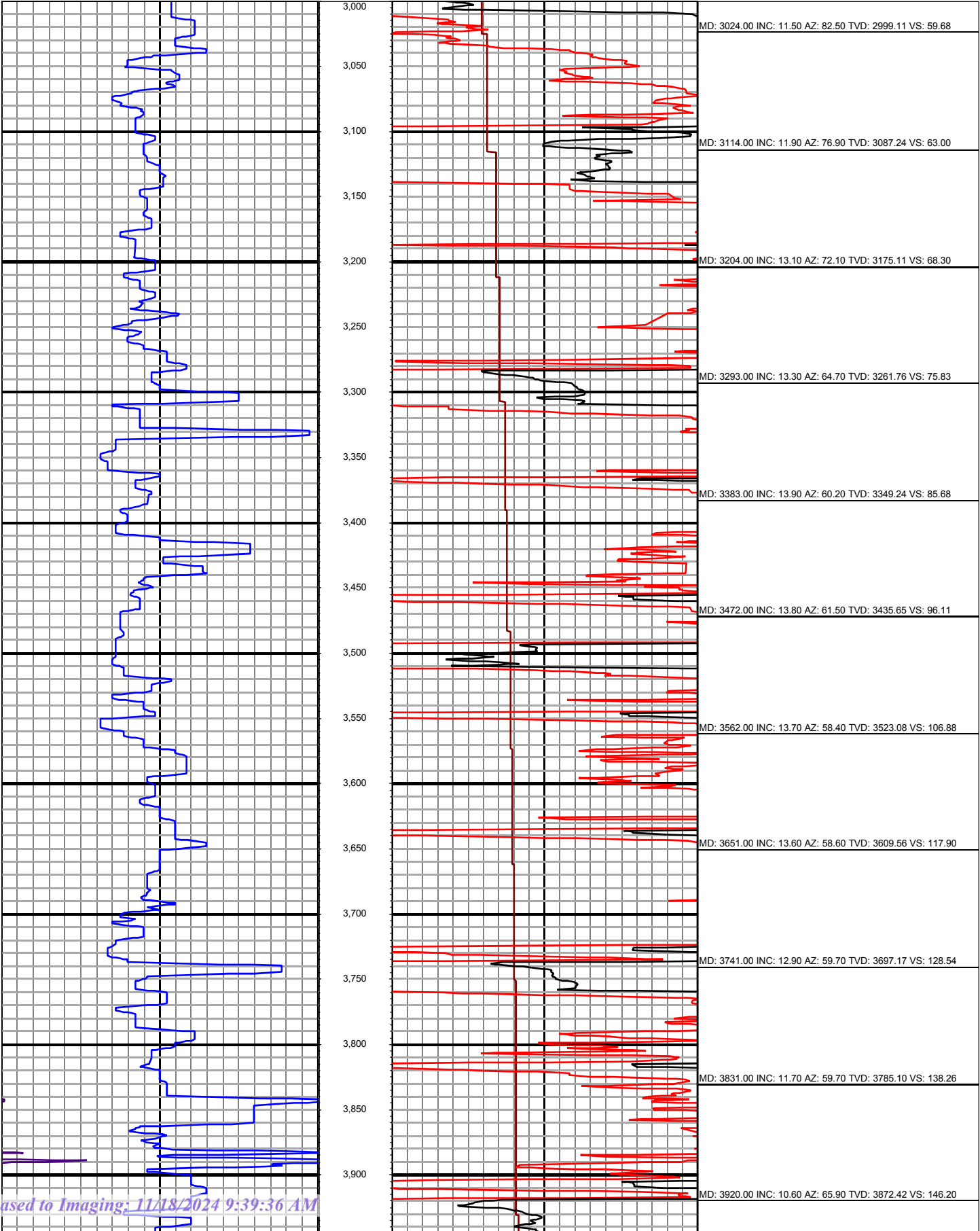
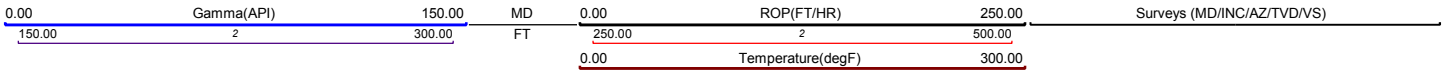
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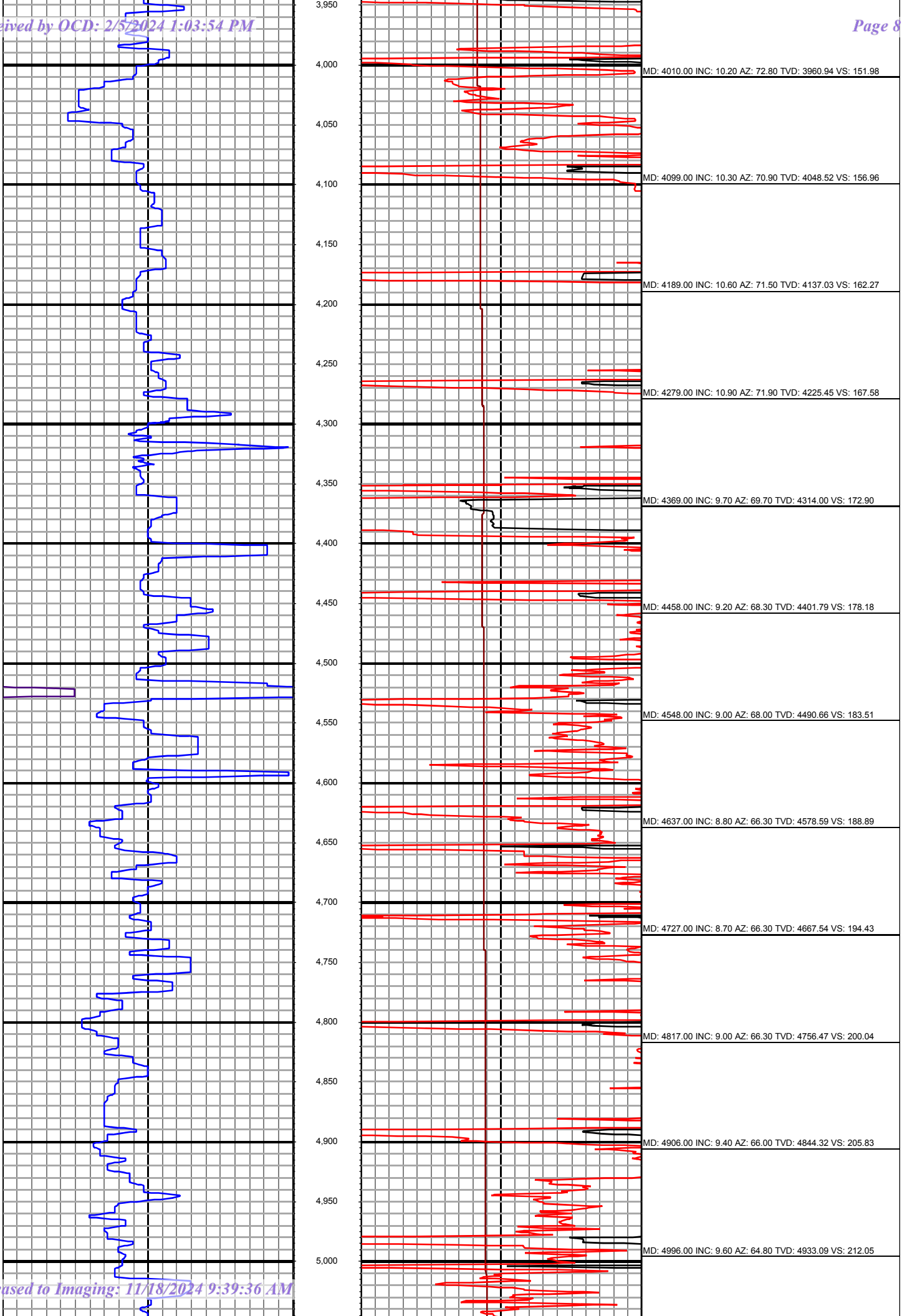
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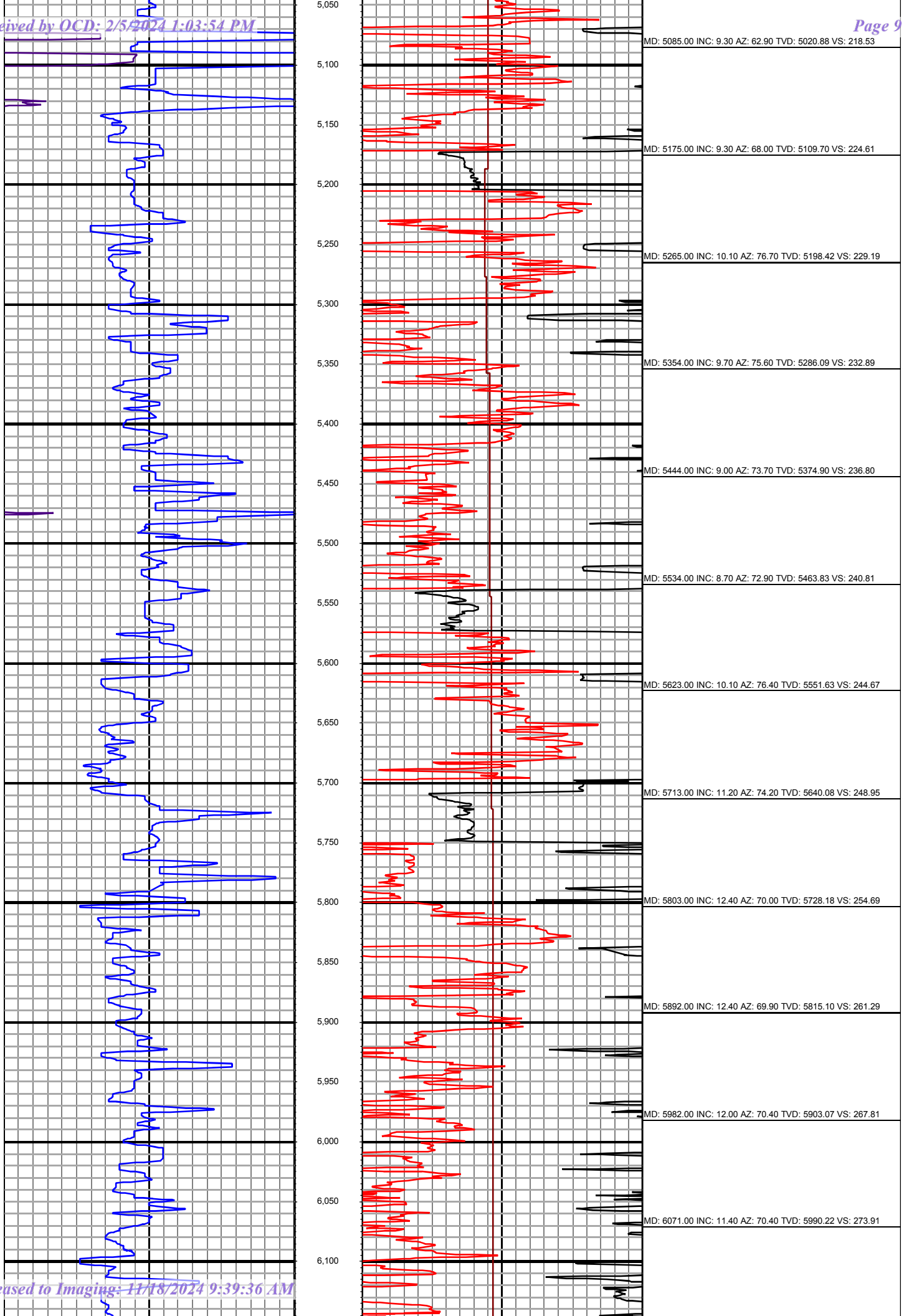
4) Certified_Survey_Report_Blue_Steel_21_WXY_Fee_No._8H_20211021102226.PDF

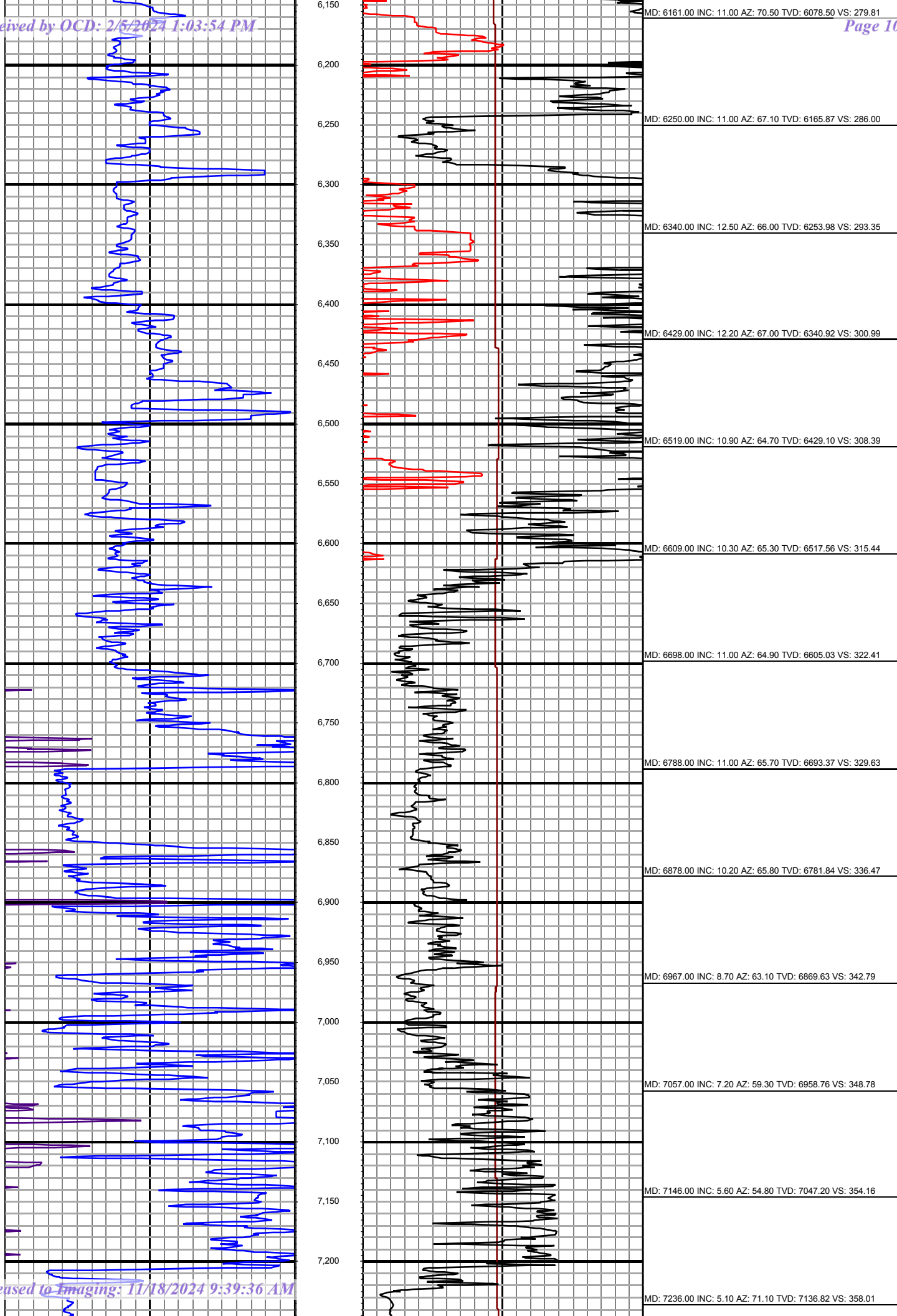


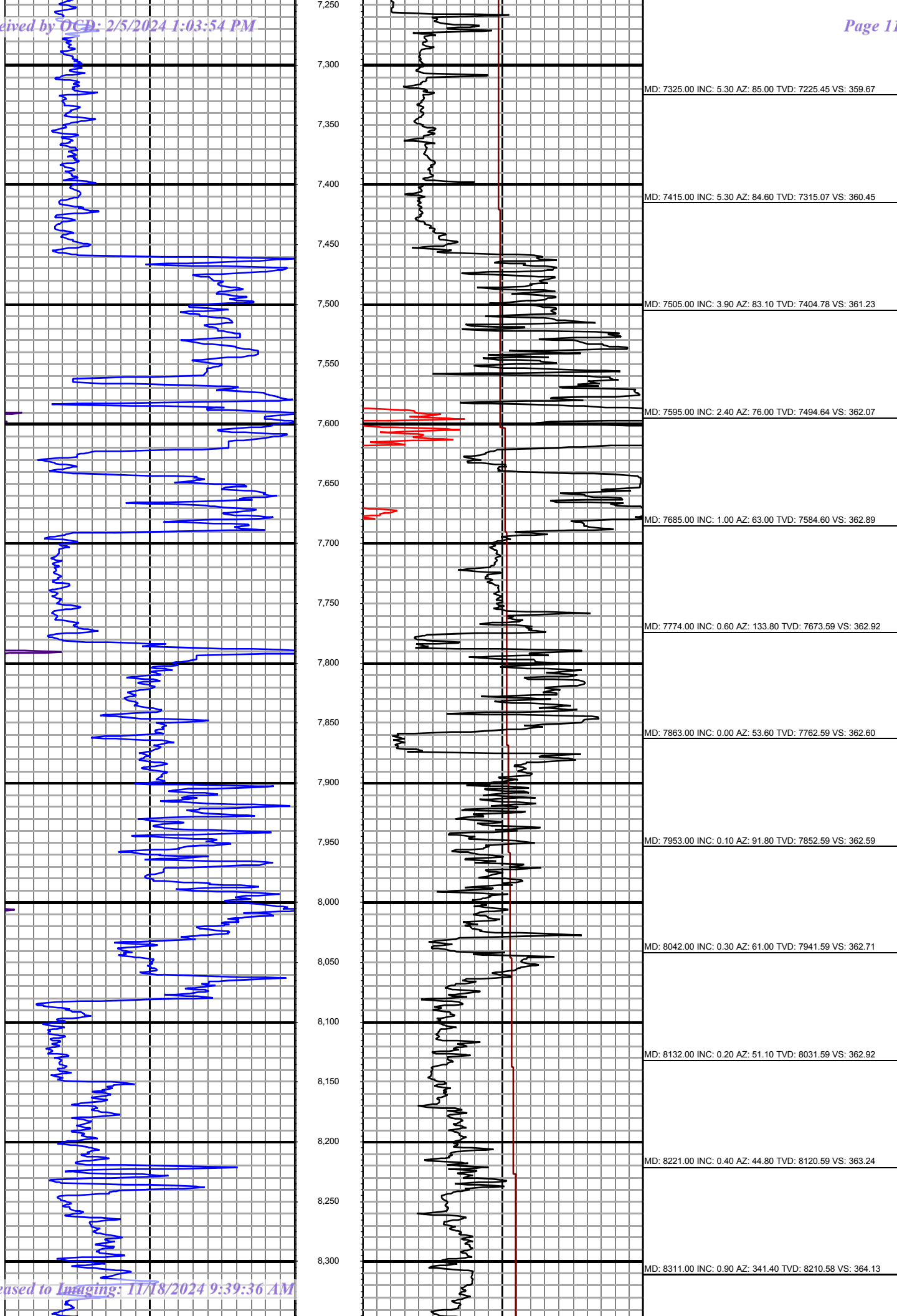
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not except in the case of gross or willful negligence on our part, be liable or responsible for any loss, cost damages or expenses incurred or sustained by anyone resulting from an interpretation made by any of our officers, agents, or employees.

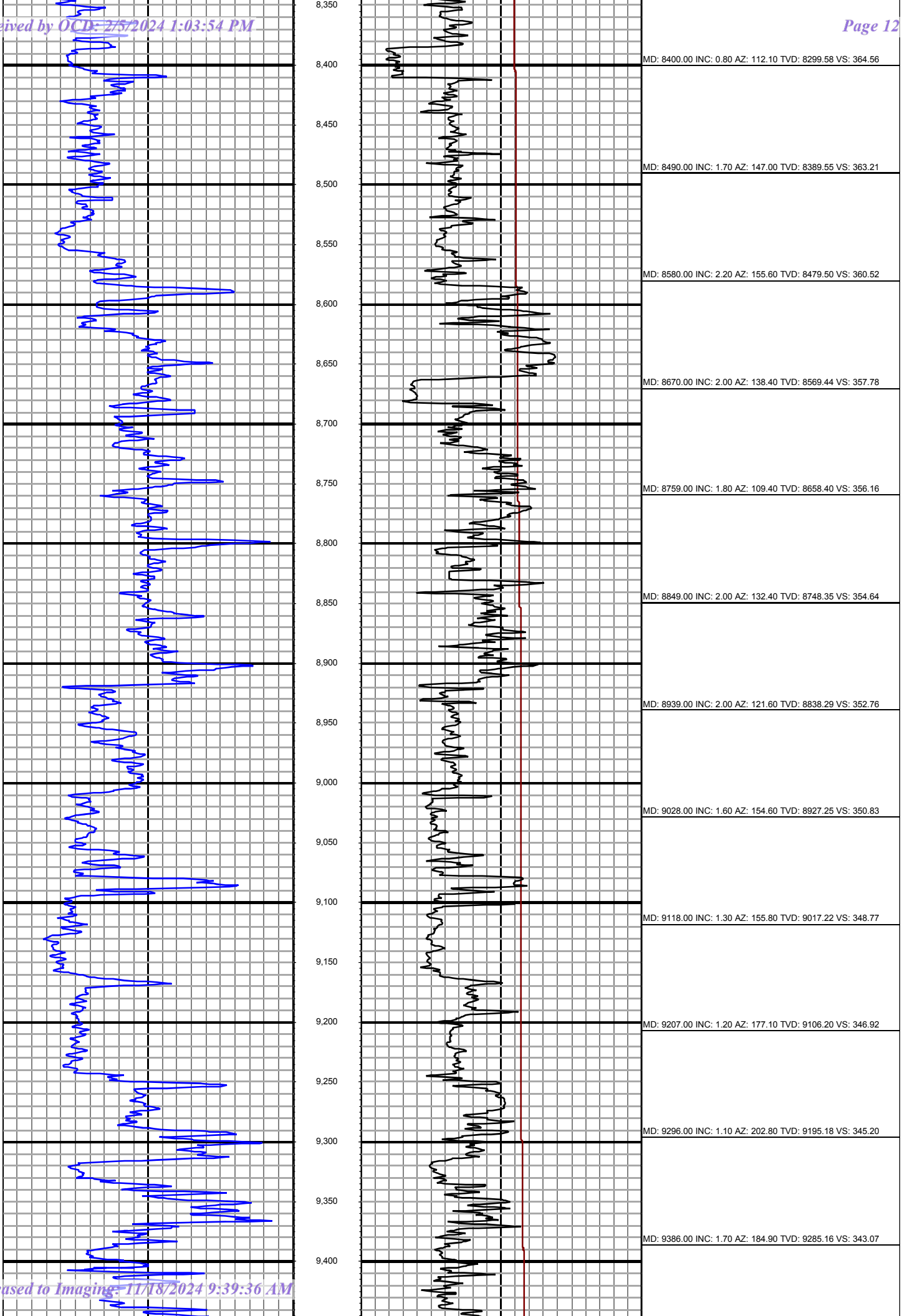


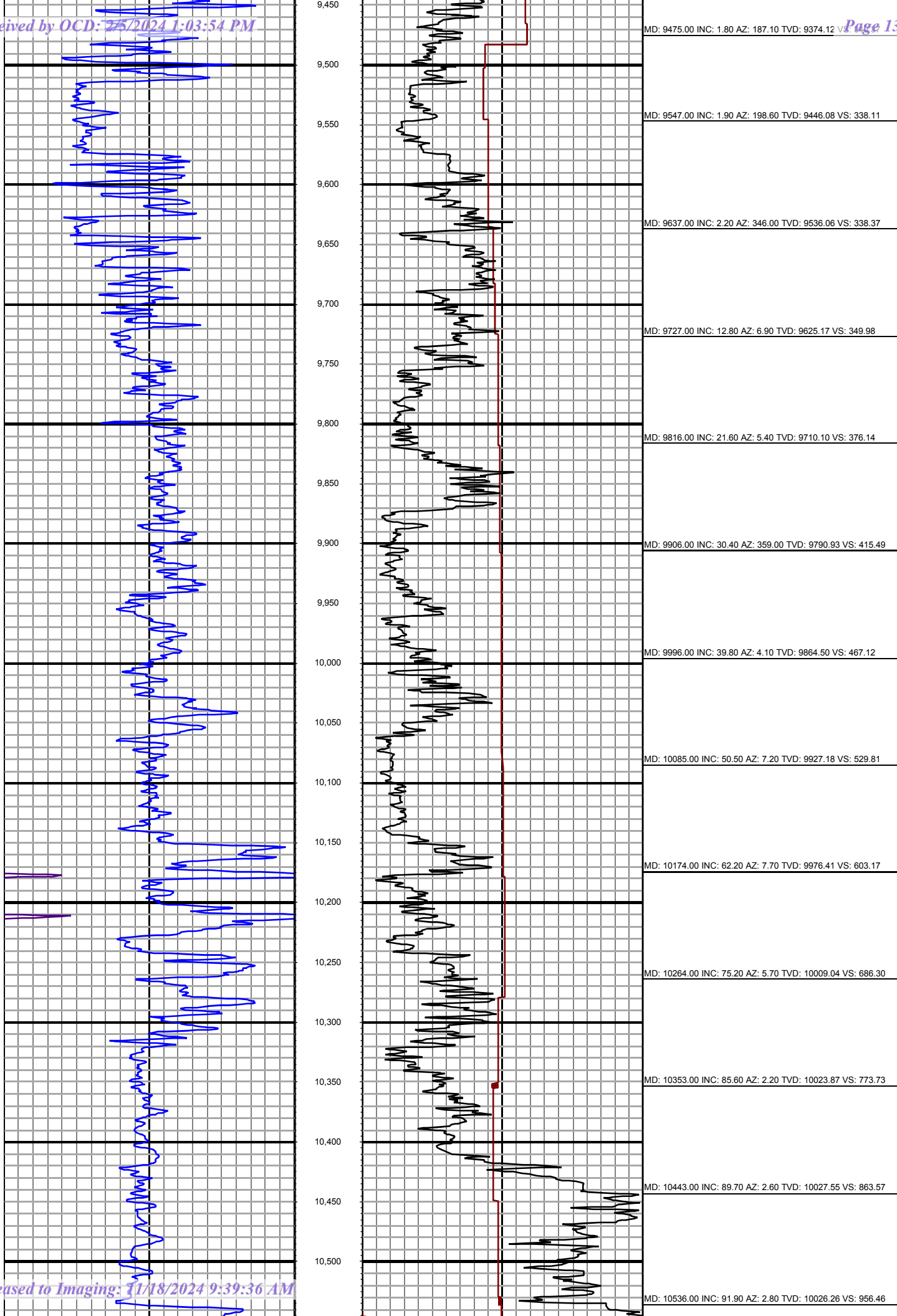


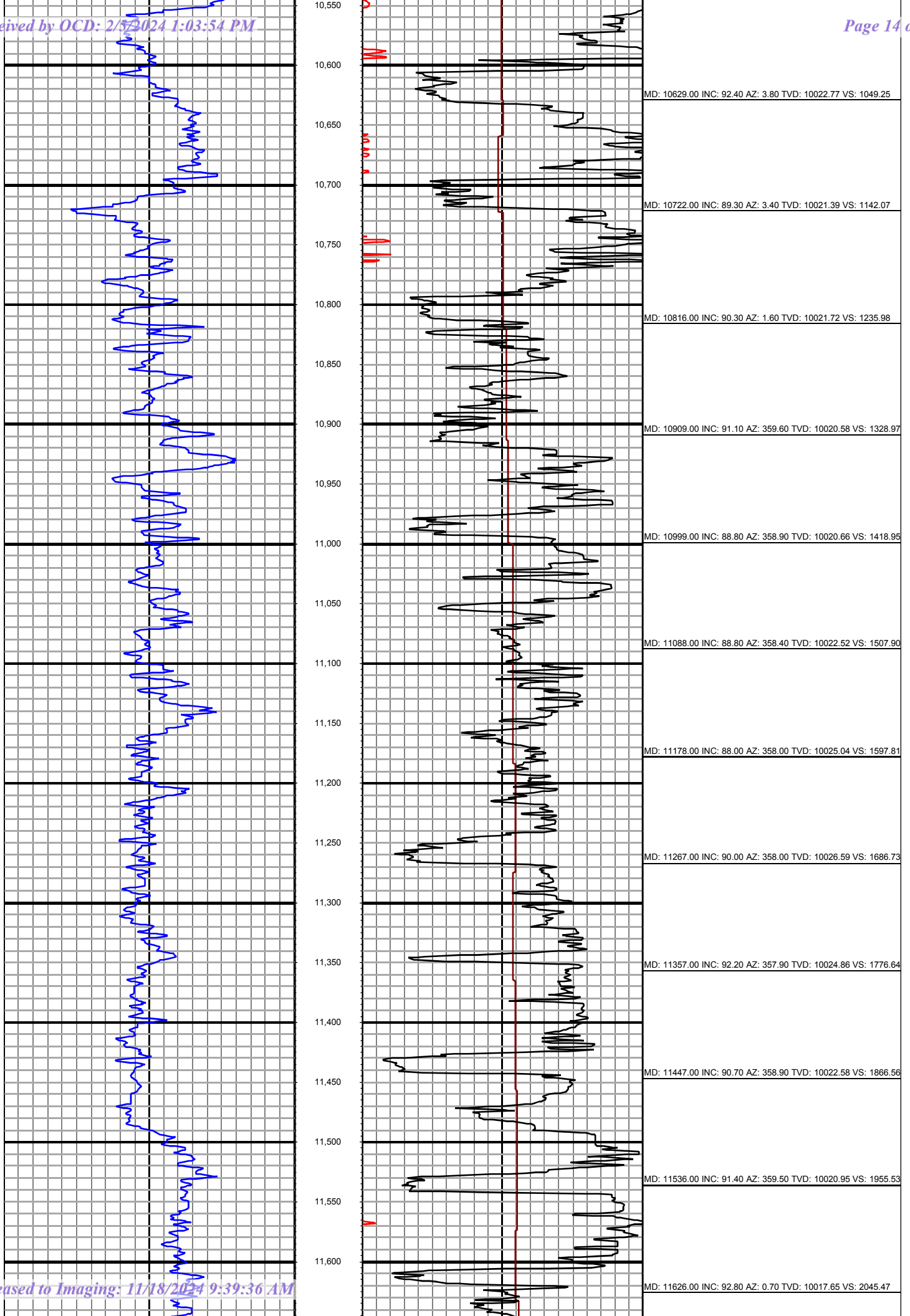


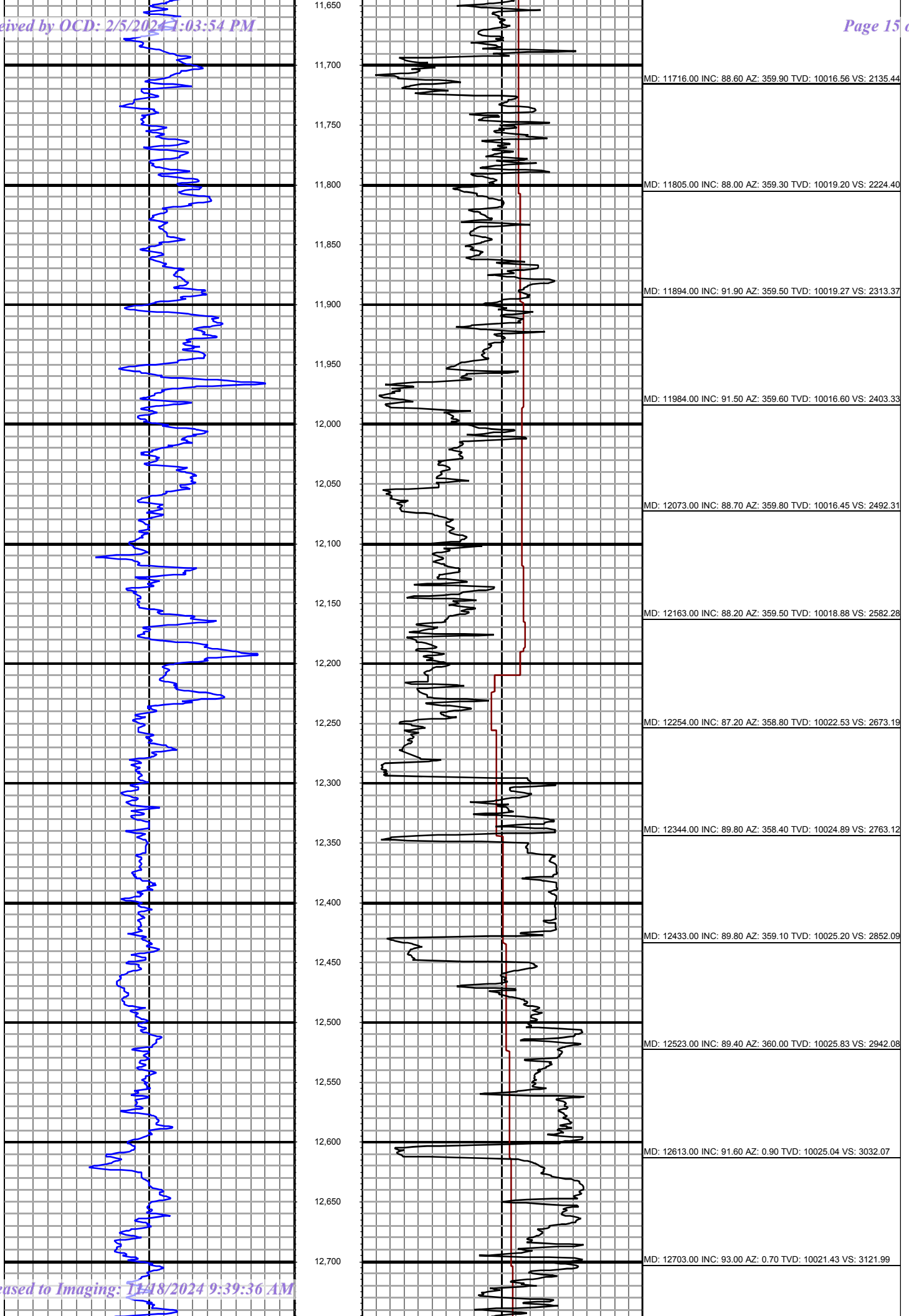


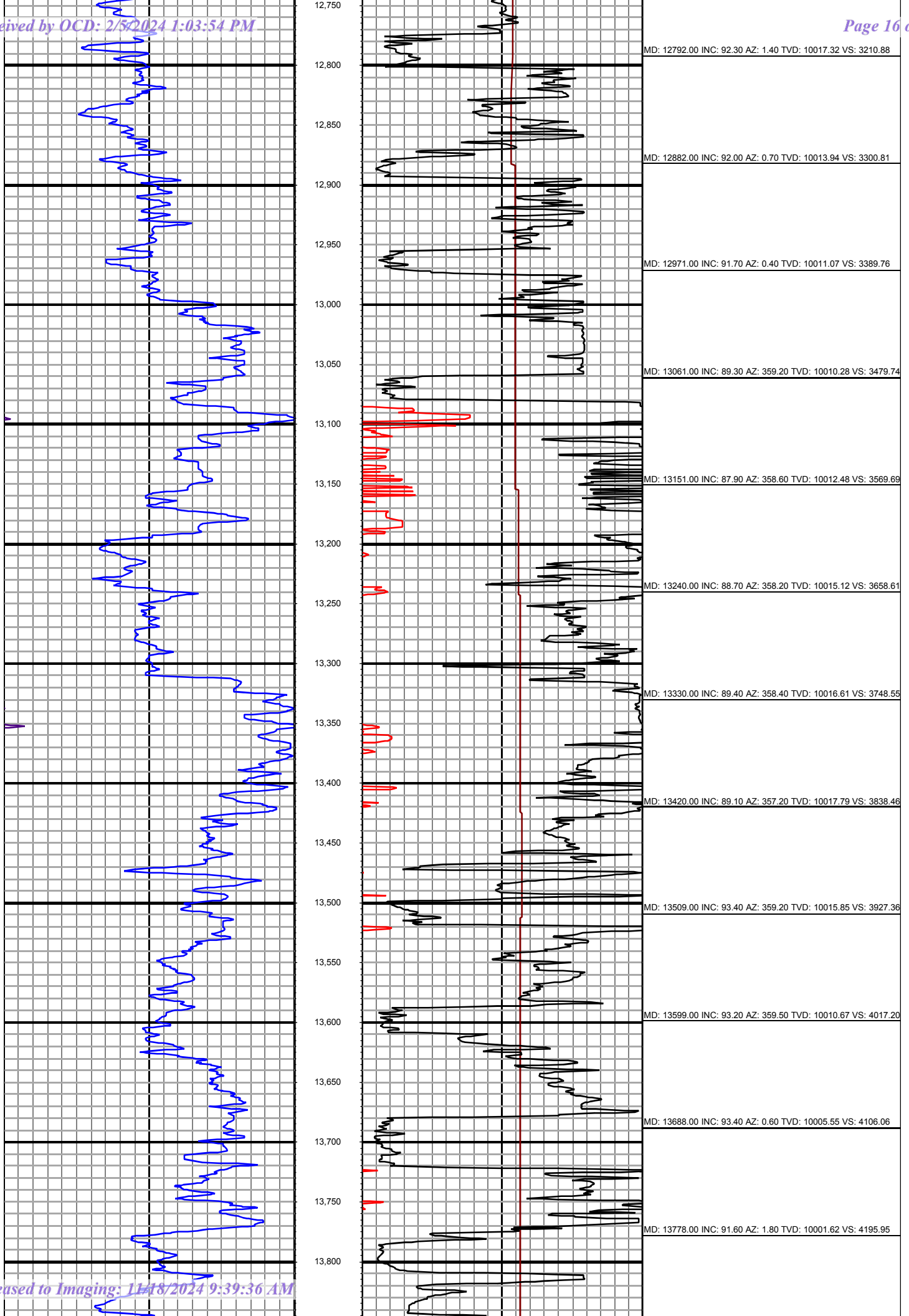


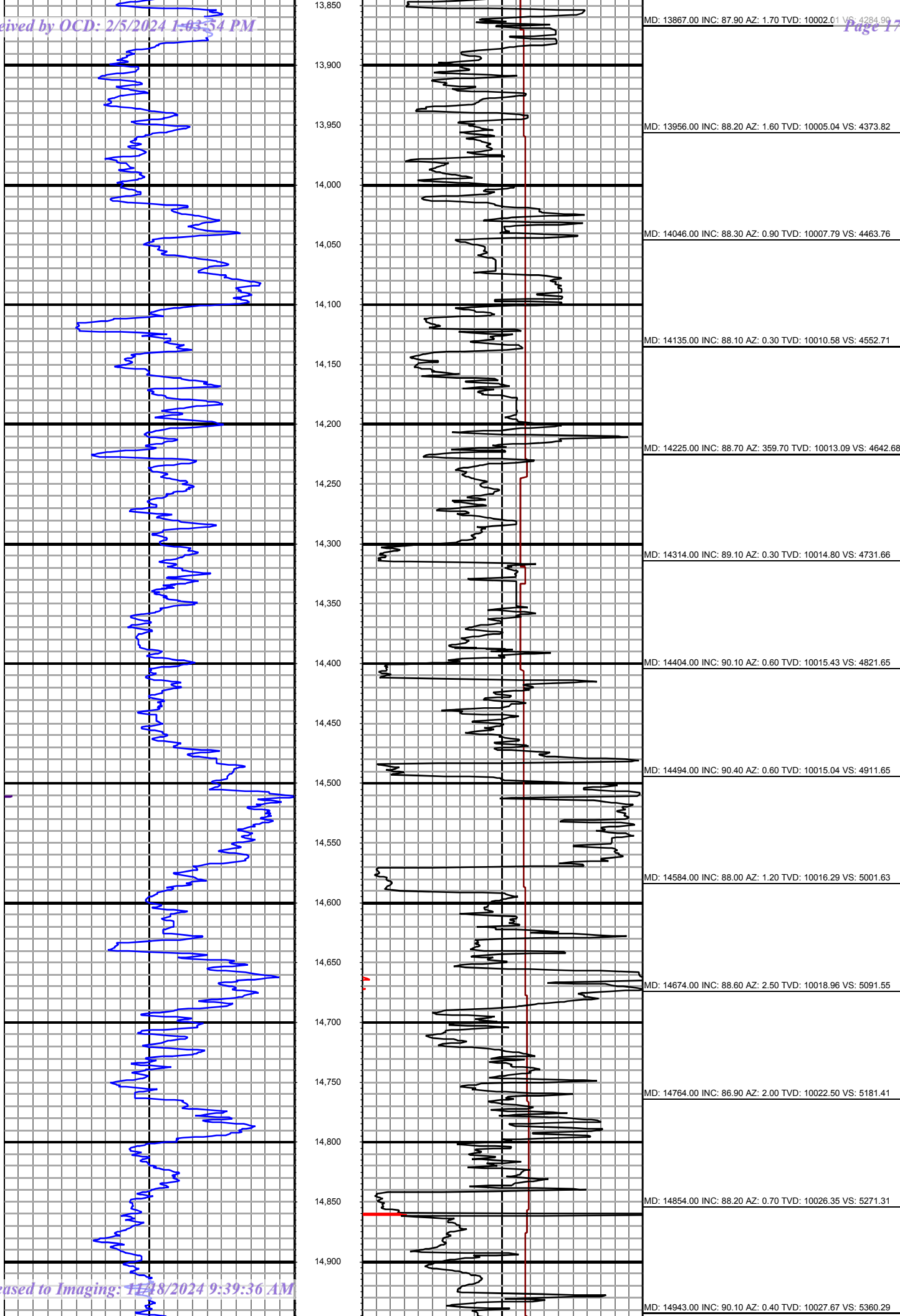


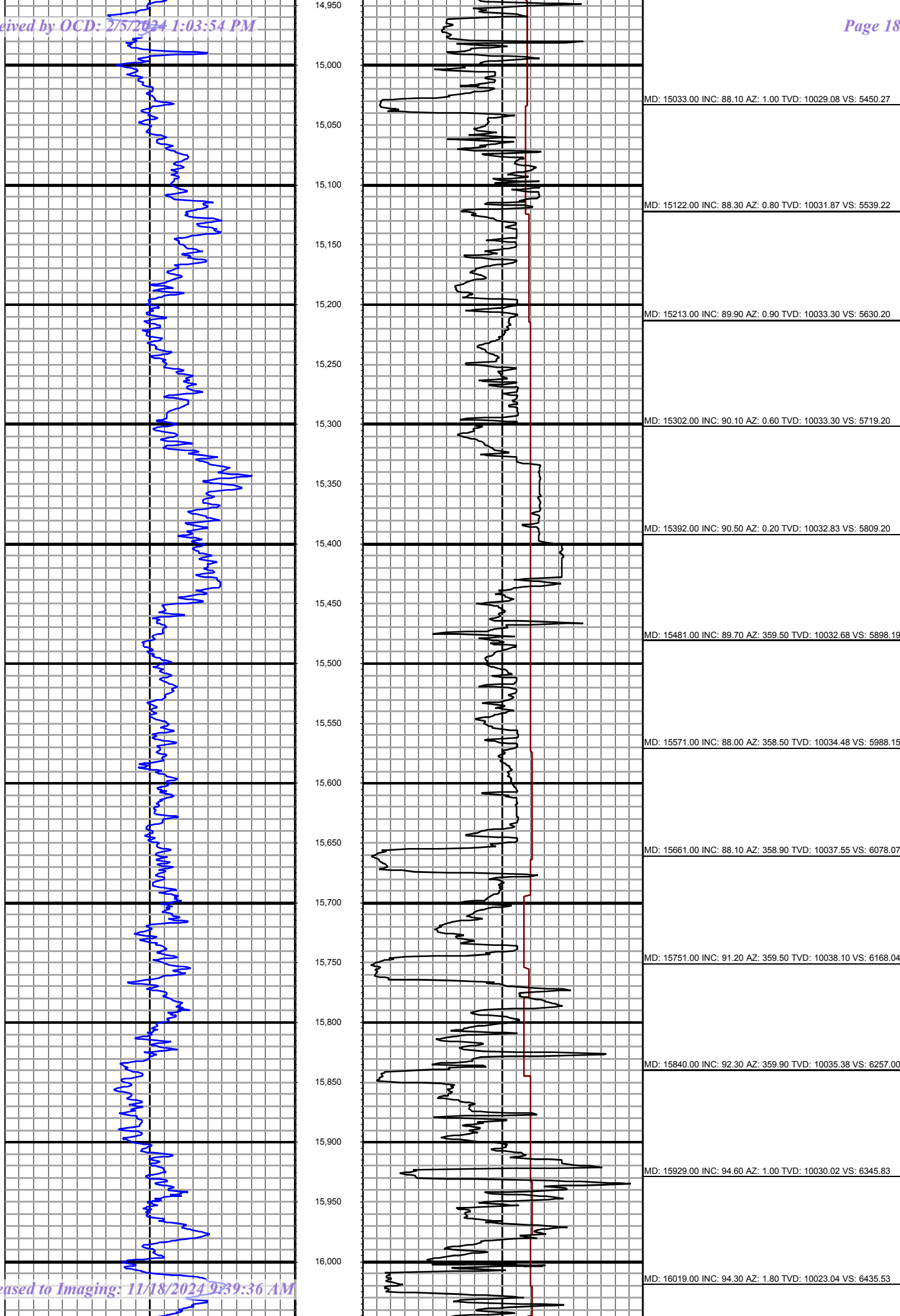


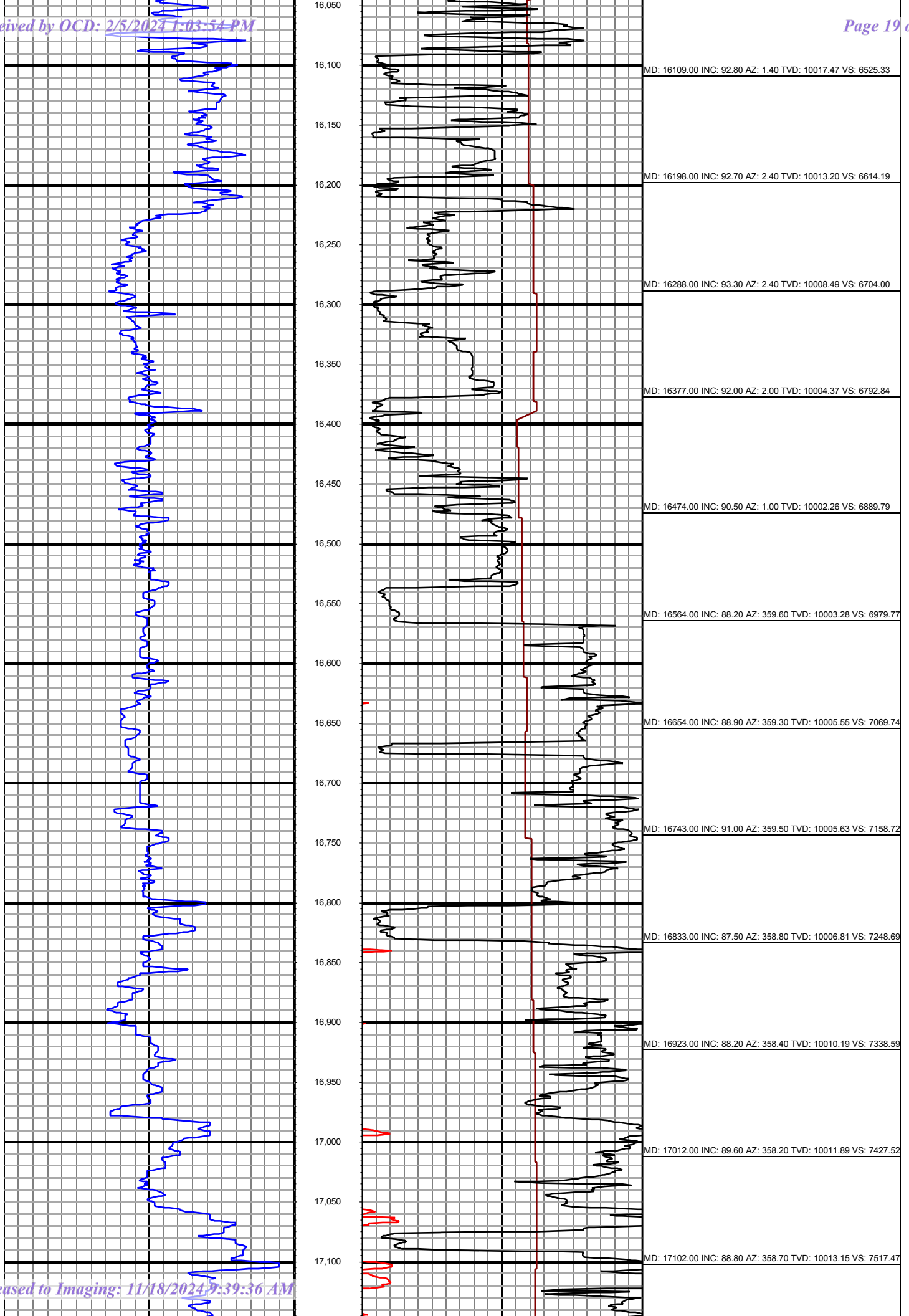


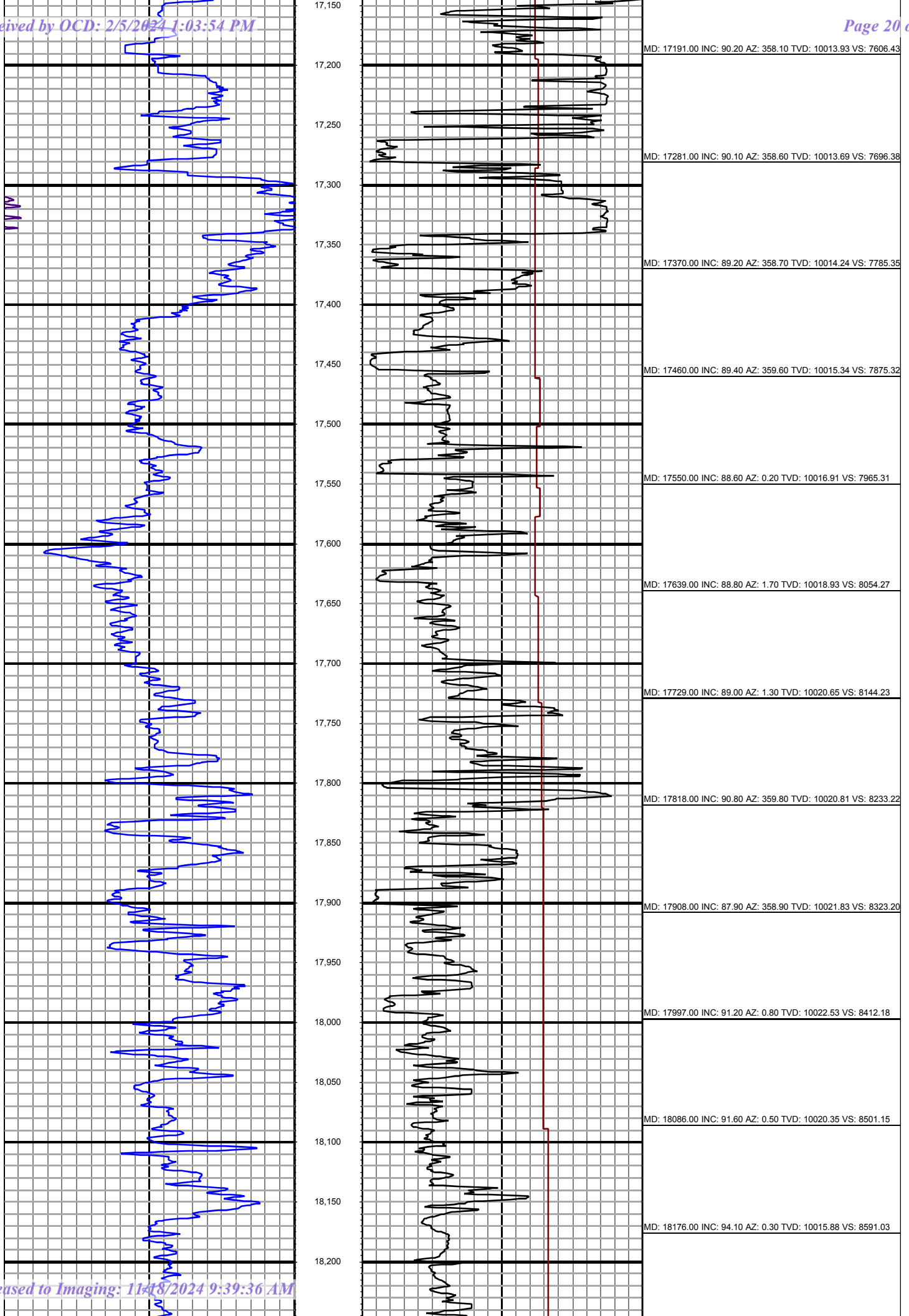


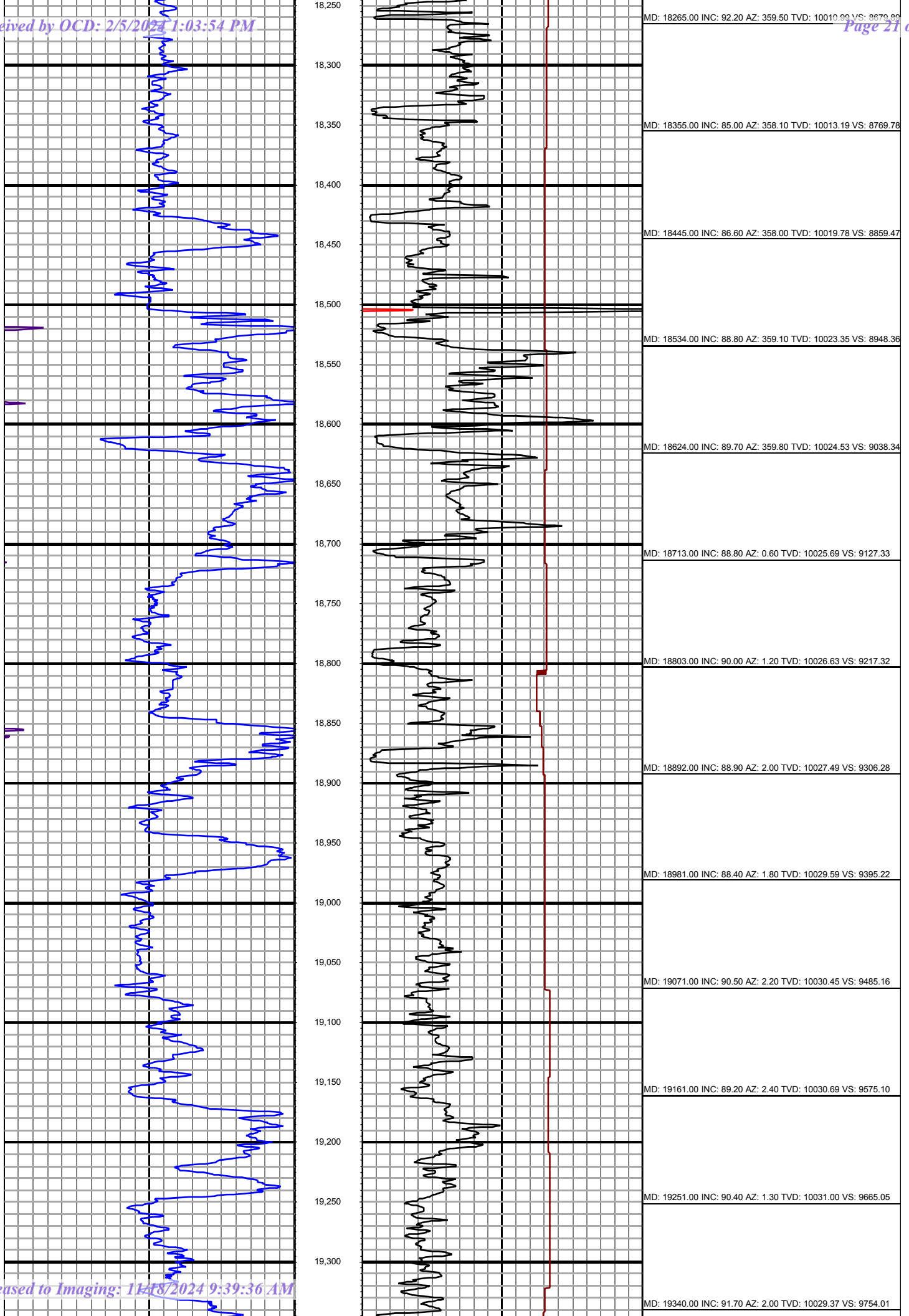


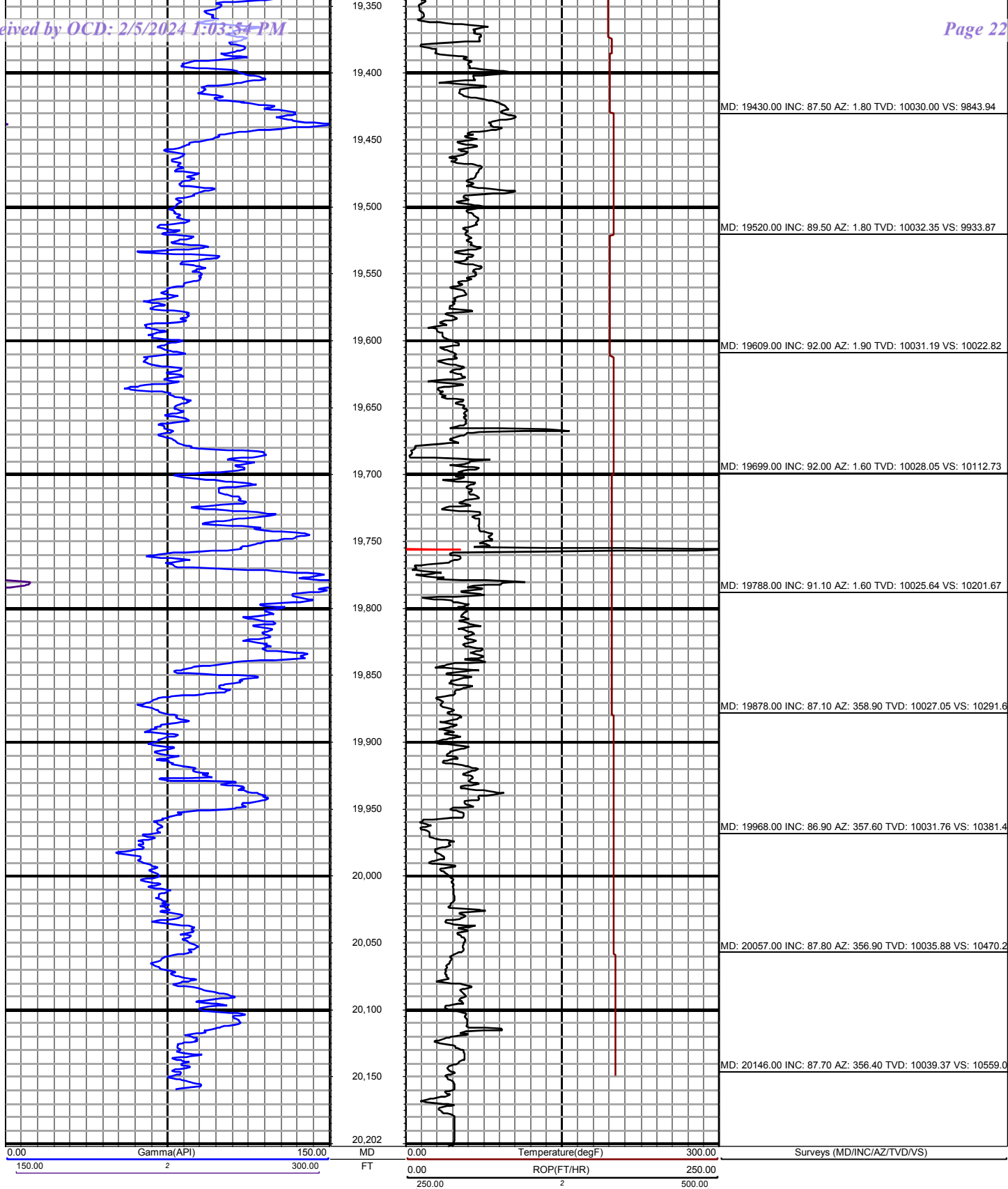












District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION AS-DRILLED PLAT

¹ API Number 30-015-45894	² Pool Code 98220	³ Pool Name Purple Sage (Wolfcamp)
⁴ Property Code 325396	Property Name Blue Steel 21 WXY Fee	
⁷ OGRID No. 372098	⁸ Operator Name MARATHON OIL PERMIAN LLC	⁶ Well Number 8H
		⁹ Elevation 3000'

¹⁰ Surface Location

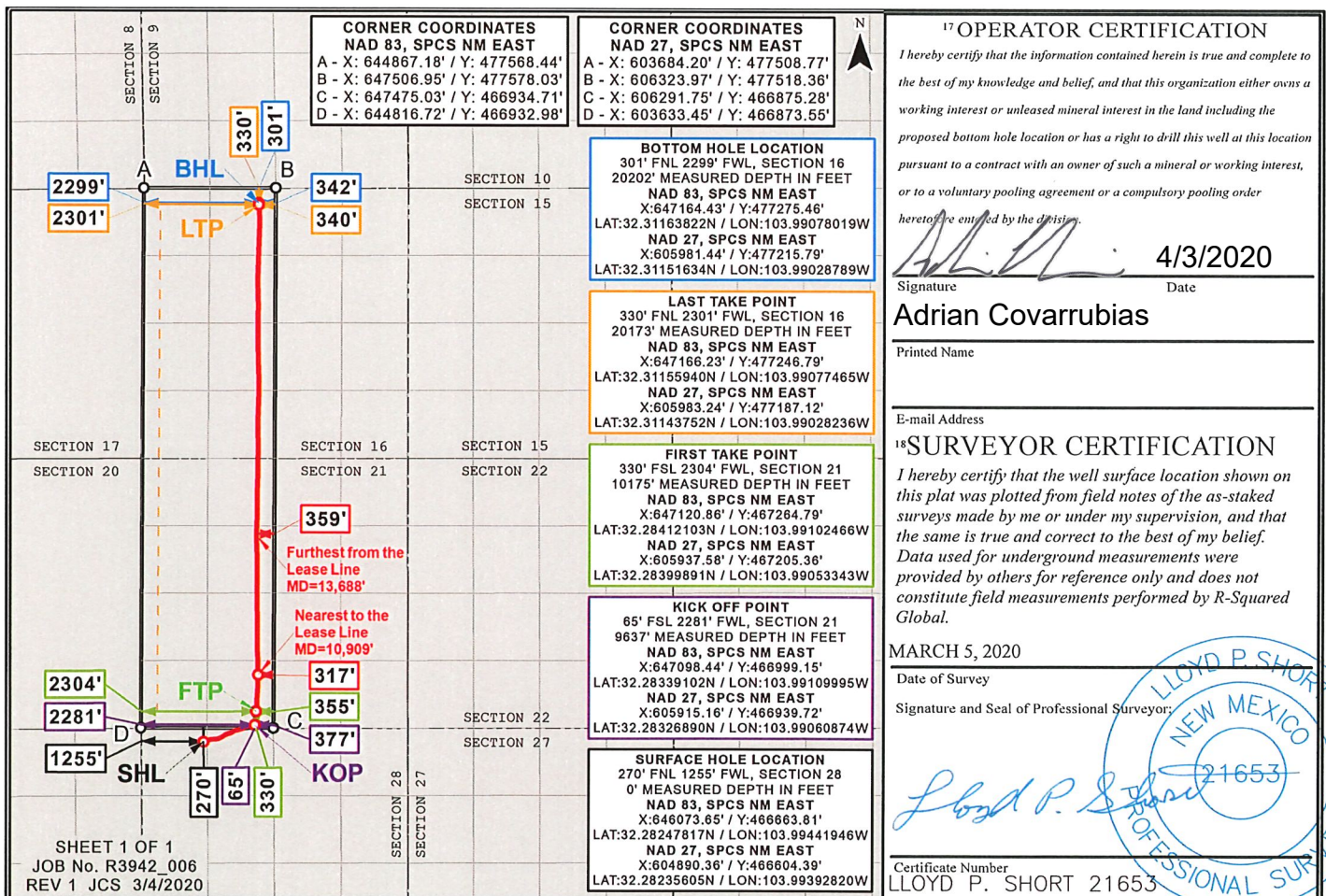
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	28	23S	29E		270	NORTH	1255	WEST	EDDY

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	16	23S	29E		301	NORTH	2299	WEST	EDDY

¹² Dedicated Acres 640.0	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



Distances/areas relative to NAD 83 Combined Scale Factor: 0.999922 Convergence Angle: 0.18084607°



Marathon Oil Corporation

Blue Steel 21 WXY Fee No. 8H
Eddy County, NM

November 21, 2019

Job# LNM1525419
API# 30-015-45894

Survey Completion Report



Survey Certification Letter

November 22, 2019



Operator Name: Marathon Oil
Well Name: Blue Steel 21 WXY Fee No. 8H
County/Parish: Eddy County,
State: NM
Rig Name: Precision 582
Job Number: LNM1525419

This is to certify the surveys performed on the referenced well by Professional Directional Ent., Inc. are true and correct MWD Surveys, data provided as follows:

Surveyor	Surveyed Depths	Projection to Bit	Dates Performed	Type of Survey
ProDirectional	411' MD – 20,146' MD	20,202' MD	10/10/19 – 11/01/19	MWD

Sincerely,

Mike Coats
Regulatory Specialist
Professional Directional

850 Conroe Park West Drive | Conroe, TX 77303 | Phone: 936.441.7266
prodirectional.com



Marathon Oil

**Eddy County, NM
Blue Steel 21 WXY Fee
No. 8H
OH**

Survey: ProDirectional

Survey Report

22 November, 2019





ProDirectional Survey Report



Company:	Marathon Oil	Local Co-ordinate Reference:	Well No. 8H
Project:	Eddy County, NM(NAD 83)	TVD Reference:	Well @ 3027.00usft
Site:	Blue Steel 21 WXY Fee	MD Reference:	Well @ 3027.00usft
Well:	No. 8H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	MWD-162'-20146', PTB: 20202'	Database:	WellPlanner1

Project	Eddy County, NM(NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Blue Steel 21 WXY Fee		
Site Position:		Northing:	466,663.81 usft
From:	Map	Easting:	646,073.65 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32.2824782
		Longitude:	-103.9944195
		Grid Convergence:	0.18 °

Well		No. 8H, LNM1525419				
Well Position	+N/-S	0.00 usft	Northing:	466,663.81 usft	Latitude:	32.2824782
	+E/-W	0.00 usft	Easting:	646,073.65 usft	Longitude:	-103.9944195
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,000.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/1/2019	7.02	60.02	47,900.80

Design	MWD-162'-20146', PTB: 20202'			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	0.17



ProDirectional Survey Report



Company: Marathon Oil
Project: Eddy County, NM(NAD 83)
Site: Blue Steel 21 WXY Fee
Well: No. 8H
Wellbore: OH
Design: MWD-162'-20146', PTB: 20202'

Local Co-ordinate Reference: Well No. 8H
TVD Reference: Well @ 3027.00usft
MD Reference: Well @ 3027.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey Program **Date** 11/22/2019

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
162.00	375.00	Survey #1 (OH)	MWD+IFR1	OWSG MWD + IFR1
411.00	20,202.00	Survey #2 (OH)	MWD+IFR1	OWSG MWD + IFR1

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	466,663.81	646,073.65
162.00	1.20	232.00	161.99	-1.05	-1.04	-1.34	1.70	232.00	466,662.77	646,072.31
259.00	1.00	213.00	258.97	-2.39	-2.38	-2.60	3.52	227.51	466,661.43	646,071.05
351.00	1.20	218.00	350.95	-3.82	-3.81	-3.63	5.26	223.59	466,660.00	646,070.02
375.00	1.20	218.00	374.95	-4.22	-4.21	-3.94	5.76	223.10	466,659.60	646,069.71
411.00	1.50	214.80	410.94	-4.91	-4.89	-4.44	6.61	222.22	466,658.92	646,069.21
Pro MWD First Survey: 411' MD										
502.00	1.30	171.10	501.91	-6.90	-6.89	-4.96	8.49	215.74	466,656.92	646,068.69
592.00	1.90	134.50	591.88	-8.96	-8.94	-3.74	9.69	202.67	466,654.87	646,069.91
685.00	1.50	123.90	684.84	-10.71	-10.70	-1.63	10.83	188.64	466,653.11	646,072.02
779.00	0.80	122.80	778.82	-11.75	-11.75	-0.05	11.75	180.26	466,652.06	646,073.60
871.00	0.80	151.30	870.81	-12.65	-12.66	0.79	12.68	176.41	466,651.15	646,074.44
965.00	0.80	129.00	964.80	-13.64	-13.65	1.62	13.74	173.23	466,650.16	646,075.27
1,057.00	0.80	77.30	1,056.79	-13.90	-13.91	2.74	14.18	168.84	466,649.90	646,076.39
1,147.00	0.80	49.40	1,146.79	-13.35	-13.36	3.83	13.90	163.99	466,650.45	646,077.48
1,236.00	1.60	56.20	1,235.77	-12.25	-12.27	5.34	13.38	156.48	466,651.54	646,078.99
1,326.00	1.40	55.30	1,325.73	-10.92	-10.94	7.29	13.15	146.33	466,652.87	646,080.94
1,416.00	1.60	58.70	1,415.70	-9.63	-9.66	9.26	13.39	136.20	466,654.15	646,082.91
1,505.00	2.90	56.60	1,504.63	-7.74	-7.78	12.21	14.47	122.50	466,656.03	646,085.86
1,595.00	5.20	59.60	1,594.40	-4.41	-4.46	17.63	18.18	104.20	466,659.35	646,091.28
1,684.00	8.00	60.40	1,682.80	0.72	0.64	26.49	26.50	88.61	466,664.45	646,100.14



ProDirectional Survey Report



Company: Marathon Oil
Project: Eddy County, NM(NAD 83)
Site: Blue Steel 21 WXY Fee
Well: No. 8H
Wellbore: OH
Design: MWD-162'-20146', PTB: 20202'

Local Co-ordinate Reference:
TVD Reference: Well No. 8H
MD Reference: Well @ 3027.00usft
North Reference: Well @ 3027.00usft
Survey Calculation Method: Grid
Database: Minimum Curvature
 WellPlanner1

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
1,774.00	8.50	61.90	1,771.87	6.98	6.87	37.80	38.42	79.70	466,670.68	646,111.45	
1,863.00	9.90	63.90	1,859.73	13.48	13.33	50.48	52.21	75.21	466,677.14	646,124.13	
1,953.00	9.40	64.00	1,948.45	20.15	19.96	64.03	67.07	72.69	466,683.77	646,137.68	
2,043.00	9.10	66.10	2,037.28	26.29	26.06	77.14	81.43	71.33	466,689.87	646,150.79	
2,132.00	8.90	65.20	2,125.19	32.07	31.80	89.83	95.29	70.50	466,695.61	646,163.48	
2,222.00	9.20	69.80	2,214.07	37.51	37.21	102.90	109.42	70.12	466,701.02	646,176.55	
2,311.00	11.70	78.20	2,301.59	41.86	41.51	118.41	125.48	70.68	466,705.32	646,192.06	
2,401.00	11.70	79.30	2,389.72	45.47	45.07	136.31	143.57	71.70	466,708.88	646,209.96	
2,491.00	11.40	82.60	2,477.90	48.37	47.91	154.10	161.38	72.73	466,711.72	646,227.75	
2,580.00	11.70	86.70	2,565.10	50.07	49.56	171.83	178.84	73.91	466,713.37	646,245.48	
2,670.00	12.20	85.50	2,653.15	51.40	50.83	190.42	197.09	75.05	466,714.64	646,264.07	
2,760.00	12.80	88.20	2,741.01	52.52	51.89	209.87	216.19	76.11	466,715.70	646,283.52	
2,849.00	12.20	81.80	2,827.91	54.22	53.54	229.03	235.21	76.84	466,717.35	646,302.68	
2,904.00	12.20	80.80	2,881.67	56.02	55.30	240.52	246.80	77.05	466,719.11	646,314.17	
3,024.00	11.50	82.50	2,999.11	59.68	58.89	264.90	271.36	77.47	466,722.70	646,338.55	
3,114.00	11.90	76.90	3,087.24	63.00	62.16	282.83	289.58	77.60	466,725.97	646,356.48	
3,204.00	13.10	72.10	3,175.11	68.30	67.40	301.57	309.02	77.40	466,731.21	646,375.22	
3,293.00	13.30	64.70	3,261.76	75.83	74.88	320.43	329.06	76.85	466,738.69	646,394.08	
3,383.00	13.90	60.20	3,349.24	85.68	84.68	339.17	349.58	75.98	466,748.49	646,412.82	
3,472.00	13.80	61.50	3,435.65	96.11	95.05	357.77	370.19	75.12	466,758.86	646,431.42	
3,562.00	13.70	58.40	3,523.08	106.88	105.76	376.29	390.87	74.30	466,769.57	646,449.94	
3,651.00	13.60	58.60	3,609.56	117.90	116.73	394.19	411.12	73.50	466,780.54	646,467.84	
3,741.00	12.90	59.70	3,697.17	128.54	127.32	411.90	431.13	72.82	466,791.13	646,485.55	
3,831.00	11.70	59.70	3,785.10	138.26	136.99	428.45	449.82	72.27	466,800.80	646,502.10	
3,920.00	10.60	65.90	3,872.42	146.20	144.88	443.72	466.77	71.92	466,808.69	646,517.37	
4,010.00	10.20	72.80	3,960.94	151.98	150.62	458.89	482.97	71.83	466,814.43	646,532.54	
4,099.00	10.30	70.90	4,048.52	156.96	155.56	473.93	498.81	71.83	466,819.37	646,547.58	



ProDirectional Survey Report



Company: Marathon Oil
Project: Eddy County, NM(NAD 83)
Site: Blue Steel 21 WXY Fee
Well: No. 8H
Wellbore: OH
Design: MWD-162'-20146', PTB: 20202'

Local Co-ordinate Reference: Well No. 8H
TVD Reference: Well @ 3027.00usft
MD Reference: Well @ 3027.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
4,189.00	10.60	71.50	4,137.03	162.27	160.81	489.39	515.13	71.81	466,824.62	646,563.04	
4,279.00	10.90	71.90	4,225.45	167.58	166.08	505.33	531.92	71.81	466,829.89	646,578.98	
4,369.00	9.70	69.70	4,314.00	172.90	171.36	520.53	548.01	71.78	466,835.17	646,594.18	
4,458.00	9.20	68.30	4,401.79	178.18	176.59	534.17	562.60	71.71	466,840.40	646,607.82	
4,548.00	9.00	68.00	4,490.66	183.51	181.89	547.38	576.81	71.62	466,845.70	646,621.03	
4,637.00	8.80	66.30	4,578.59	188.89	187.23	560.07	590.54	71.52	466,851.04	646,633.72	
4,727.00	8.70	66.30	4,667.54	194.43	192.74	572.60	604.17	71.40	466,856.55	646,646.25	
4,817.00	9.00	66.30	4,756.47	200.04	198.30	585.28	617.96	71.28	466,862.11	646,658.93	
4,906.00	9.40	66.00	4,844.32	205.83	204.06	598.30	632.14	71.17	466,867.87	646,671.95	
4,996.00	9.60	64.80	4,933.09	212.05	210.24	611.80	646.92	71.04	466,874.05	646,685.45	
5,085.00	9.30	62.90	5,020.88	218.53	216.68	624.92	661.42	70.88	466,880.49	646,698.57	
5,175.00	9.30	68.00	5,109.70	224.61	222.71	638.13	675.88	70.76	466,886.52	646,711.78	
5,265.00	10.10	76.70	5,198.42	229.19	227.25	652.56	691.00	70.80	466,891.06	646,726.21	
5,354.00	9.70	75.60	5,286.09	232.89	230.91	667.42	706.23	70.92	466,894.72	646,741.07	
5,444.00	9.00	73.70	5,374.90	236.80	234.77	681.52	720.82	70.99	466,898.58	646,755.17	
5,534.00	8.70	72.90	5,463.83	240.81	238.75	694.78	734.66	71.04	466,902.56	646,768.43	
5,623.00	10.10	76.40	5,551.63	244.67	242.57	708.80	749.15	71.11	466,906.38	646,782.45	
5,713.00	11.20	74.20	5,640.08	248.95	246.80	724.88	765.74	71.20	466,910.61	646,798.53	
5,803.00	12.40	70.00	5,728.18	254.69	252.49	742.37	784.13	71.22	466,916.30	646,816.02	
5,892.00	12.40	69.90	5,815.10	261.29	259.04	760.32	803.24	71.19	466,922.85	646,833.97	
5,982.00	12.00	70.40	5,903.07	267.81	265.50	778.21	822.26	71.16	466,929.31	646,851.86	
6,071.00	11.40	70.40	5,990.22	273.91	271.55	795.21	840.30	71.15	466,935.36	646,868.86	
6,161.00	11.00	70.50	6,078.50	279.81	277.40	811.69	857.78	71.13	466,941.21	646,885.34	
6,250.00	11.00	67.10	6,165.87	286.00	283.54	827.51	874.74	71.09	466,947.35	646,901.16	
6,340.00	12.50	66.00	6,253.98	293.35	290.84	844.32	893.01	70.99	466,954.65	646,917.97	
6,429.00	12.20	67.00	6,340.92	300.99	298.44	861.78	911.99	70.90	466,962.25	646,935.43	
6,519.00	10.90	64.70	6,429.10	308.39	305.79	878.22	929.94	70.80	466,969.60	646,951.87	



ProDirectional Survey Report



Company: Marathon Oil
Project: Eddy County, NM(NAD 83)
Site: Blue Steel 21 WXY Fee
Well: No. 8H
Wellbore: OH
Design: MWD-162'-20146', PTB: 20202'

Local Co-ordinate Reference: Well No. 8H
TVD Reference: Well @ 3027.00usft
MD Reference: Well @ 3027.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
6,609.00	10.30	65.30	6,517.56	315.44	312.79	893.23	946.41	70.70	466,976.60	646,966.88	
6,698.00	11.00	64.90	6,605.03	322.41	319.71	908.15	962.78	70.61	466,983.52	646,981.80	
6,788.00	11.00	65.70	6,693.37	329.63	326.89	923.75	979.88	70.51	466,990.70	646,997.40	
6,878.00	10.20	65.80	6,781.84	336.47	333.69	938.84	996.38	70.43	466,997.50	647,012.49	
6,967.00	8.70	63.10	6,869.63	342.79	339.97	952.03	1,010.91	70.35	467,003.78	647,025.68	
7,057.00	7.20	59.30	6,958.76	348.78	345.93	962.95	1,023.20	70.24	467,009.74	647,036.60	
7,146.00	5.60	54.80	7,047.20	354.16	351.28	971.30	1,032.87	70.12	467,015.09	647,044.95	
7,236.00	5.10	71.10	7,136.82	358.01	355.10	978.67	1,041.10	70.06	467,018.91	647,052.32	
7,325.00	5.30	85.00	7,225.45	359.67	356.74	986.51	1,049.03	70.12	467,020.55	647,060.16	
7,415.00	5.30	84.60	7,315.07	360.45	357.50	994.79	1,057.08	70.23	467,021.31	647,068.44	
7,505.00	3.90	83.10	7,404.78	361.23	358.26	1,001.97	1,064.09	70.33	467,022.07	647,075.62	
7,595.00	2.40	76.00	7,494.64	362.07	359.08	1,006.83	1,068.95	70.37	467,022.89	647,080.48	
7,685.00	1.00	63.00	7,584.60	362.89	359.89	1,009.36	1,071.60	70.38	467,023.70	647,083.01	
7,774.00	0.60	133.80	7,673.59	362.92	359.92	1,010.39	1,072.58	70.39	467,023.73	647,084.04	
7,863.00	0.00	53.60	7,762.59	362.60	359.60	1,010.73	1,072.79	70.42	467,023.41	647,084.38	
7,953.00	0.10	91.80	7,852.59	362.59	359.60	1,010.80	1,072.86	70.42	467,023.41	647,084.45	
8,042.00	0.30	61.00	7,941.59	362.71	359.71	1,011.09	1,073.17	70.42	467,023.52	647,084.74	
8,132.00	0.20	51.10	8,031.59	362.92	359.92	1,011.41	1,073.55	70.41	467,023.73	647,085.06	
8,221.00	0.40	44.80	8,120.59	363.24	360.24	1,011.75	1,073.97	70.40	467,024.05	647,085.40	
8,311.00	0.90	341.40	8,210.58	364.13	361.13	1,011.75	1,074.27	70.36	467,024.94	647,085.40	
8,400.00	0.80	112.10	8,299.58	364.56	361.56	1,012.10	1,074.75	70.34	467,025.37	647,085.75	
8,490.00	1.70	147.00	8,389.55	363.21	360.20	1,013.41	1,075.52	70.43	467,024.01	647,087.06	
8,580.00	2.20	155.60	8,479.50	360.52	357.51	1,014.85	1,075.98	70.59	467,021.32	647,088.50	
8,670.00	2.00	138.40	8,569.44	357.78	354.76	1,016.61	1,076.73	70.76	467,018.57	647,090.26	
8,759.00	1.80	109.40	8,658.40	356.16	353.14	1,018.96	1,078.42	70.89	467,016.95	647,092.61	
8,849.00	2.00	132.40	8,748.35	354.64	351.61	1,021.45	1,080.27	71.01	467,015.42	647,095.10	
8,939.00	2.00	121.60	8,838.29	352.76	349.73	1,023.95	1,082.03	71.14	467,013.54	647,097.60	



ProDirectional Survey Report



Company:	Marathon Oil	Local Co-ordinate Reference:	Well No. 8H
Project:	Eddy County, NM(NAD 83)	TVD Reference:	Well @ 3027.00usft
Site:	Blue Steel 21 WXY Fee	MD Reference:	Well @ 3027.00usft
Well:	No. 8H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	MWD-162'-20146', PTB: 20202'	Database:	WellPlanner1

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
9,028.00	1.60	154.60	8,927.25	350.83	347.79	1,025.80	1,083.16	71.27	467,011.60	647,099.45	
9,118.00	1.30	155.80	9,017.22	348.77	345.73	1,026.76	1,083.40	71.39	467,009.54	647,100.41	
9,207.00	1.20	177.10	9,106.20	346.92	343.87	1,027.22	1,083.25	71.49	467,007.68	647,100.87	
9,296.00	1.10	202.80	9,195.18	345.20	342.16	1,026.94	1,082.44	71.57	467,005.97	647,100.59	
9,386.00	1.70	184.90	9,285.16	343.07	340.03	1,026.49	1,081.34	71.67	467,003.84	647,100.14	
9,475.00	1.80	187.10	9,374.12	340.37	337.33	1,026.20	1,080.22	71.80	467,001.14	647,099.85	
9,547.00	1.90	198.60	9,446.08	338.11	335.07	1,025.68	1,079.03	71.91	466,998.88	647,099.33	
9,637.00	2.20	346.00	9,536.06	338.37	335.34	1,024.79	1,078.26	71.88	466,999.15	647,098.44	
9,727.00	12.80	6.90	9,625.17	349.98	346.94	1,025.57	1,082.67	71.31	467,010.75	647,099.22	
9,816.00	21.60	5.40	9,710.10	376.14	373.09	1,028.30	1,093.89	70.06	467,036.90	647,101.95	
9,906.00	30.40	359.00	9,790.93	415.49	412.44	1,029.47	1,109.01	68.17	467,076.25	647,103.12	
9,996.00	39.80	4.10	9,864.50	467.12	464.06	1,031.13	1,130.75	65.77	467,127.87	647,104.78	
10,085.00	50.50	7.20	9,927.18	529.81	526.73	1,037.49	1,163.55	63.08	467,190.54	647,111.14	
10,174.00	62.20	7.70	9,976.41	603.17	600.06	1,047.10	1,206.86	60.18	467,263.87	647,120.75	
10,264.00	75.20	5.70	10,009.04	686.30	683.16	1,056.80	1,258.39	57.12	467,346.97	647,130.45	
10,353.00	85.60	2.20	10,023.87	773.73	770.58	1,062.80	1,312.76	54.06	467,434.39	647,136.45	
10,443.00	89.70	2.60	10,027.55	863.57	860.40	1,066.56	1,370.35	51.11	467,524.21	647,140.21	
10,536.00	91.90	2.80	10,026.26	956.46	953.29	1,070.94	1,433.76	48.33	467,617.10	647,144.59	
10,629.00	92.40	3.80	10,022.77	1,049.25	1,046.07	1,076.29	1,500.88	45.82	467,709.88	647,149.94	
10,722.00	89.30	3.40	10,021.39	1,142.07	1,138.86	1,082.13	1,570.99	43.54	467,802.67	647,155.78	
10,816.00	90.30	1.60	10,021.72	1,235.98	1,232.76	1,086.23	1,643.05	41.38	467,896.57	647,159.88	
10,909.00	91.10	359.60	10,020.58	1,328.97	1,325.75	1,087.20	1,714.53	39.35	467,989.56	647,160.85	
10,999.00	88.80	358.90	10,020.66	1,418.95	1,415.73	1,086.02	1,784.31	37.49	468,079.54	647,159.67	
11,088.00	88.80	358.40	10,022.52	1,507.90	1,504.69	1,083.93	1,854.45	35.77	468,168.50	647,157.58	
11,178.00	88.00	358.00	10,025.04	1,597.81	1,594.61	1,081.10	1,926.54	34.14	468,258.42	647,154.75	
11,267.00	90.00	358.00	10,026.59	1,686.73	1,683.54	1,078.00	1,999.09	32.63	468,347.35	647,151.65	
11,357.00	92.20	357.90	10,024.86	1,776.64	1,773.46	1,074.78	2,073.72	31.22	468,437.27	647,148.43	



ProDirectional Survey Report



Company: Marathon Oil
Project: Eddy County, NM(NAD 83)
Site: Blue Steel 21 WXY Fee
Well: No. 8H
Wellbore: OH
Design: MWD-162'-20146', PTB: 20202'

Local Co-ordinate Reference: Well No. 8H
TVD Reference: Well @ 3027.00usft
MD Reference: Well @ 3027.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
11,447.00	90.70	358.90	10,022.58	1,866.56	1,863.39	1,072.27	2,149.88	29.92	468,527.20	647,145.92	
11,536.00	91.40	359.50	10,020.95	1,955.53	1,952.36	1,071.02	2,226.84	28.75	468,616.17	647,144.67	
11,626.00	92.80	0.70	10,017.65	2,045.47	2,042.30	1,071.18	2,306.17	27.68	468,706.11	647,144.83	
11,716.00	88.60	359.90	10,016.56	2,135.44	2,132.27	1,071.65	2,386.42	26.68	468,796.08	647,145.30	
11,805.00	88.00	359.30	10,019.20	2,224.40	2,221.23	1,071.03	2,465.96	25.74	468,885.04	647,144.68	
11,894.00	91.90	359.50	10,019.27	2,313.37	2,310.21	1,070.10	2,546.01	24.85	468,974.02	647,143.75	
11,984.00	91.50	359.60	10,016.60	2,403.33	2,400.16	1,069.39	2,627.62	24.02	469,063.97	647,143.04	
12,073.00	88.70	359.80	10,016.45	2,492.31	2,489.15	1,068.93	2,708.96	23.24	469,152.96	647,142.58	
12,163.00	88.20	359.50	10,018.88	2,582.28	2,579.12	1,068.38	2,791.65	22.50	469,242.93	647,142.03	
12,254.00	87.20	358.80	10,022.53	2,673.19	2,670.03	1,067.03	2,875.35	21.78	469,333.84	647,140.68	
12,344.00	89.80	358.40	10,024.89	2,763.12	2,759.97	1,064.83	2,958.26	21.10	469,423.78	647,138.48	
12,433.00	89.80	359.10	10,025.20	2,852.09	2,848.95	1,062.89	3,040.76	20.46	469,512.76	647,136.54	
12,523.00	89.40	0.00	10,025.83	2,942.08	2,938.94	1,062.18	3,125.00	19.87	469,602.75	647,135.83	
12,613.00	91.60	0.90	10,025.04	3,032.07	3,028.93	1,062.89	3,210.00	19.34	469,692.74	647,136.54	
12,703.00	93.00	0.70	10,021.43	3,121.99	3,118.84	1,064.14	3,295.39	18.84	469,782.65	647,137.79	
12,792.00	92.30	1.40	10,017.32	3,210.88	3,207.73	1,065.77	3,380.15	18.38	469,871.54	647,139.42	
12,882.00	92.00	0.70	10,013.94	3,300.81	3,297.65	1,067.42	3,466.11	17.94	469,961.46	647,141.07	
12,971.00	91.70	0.40	10,011.07	3,389.76	3,386.60	1,068.28	3,551.10	17.51	470,050.41	647,141.93	
13,061.00	89.30	359.20	10,010.28	3,479.74	3,476.59	1,067.96	3,636.92	17.08	470,140.40	647,141.61	
13,151.00	87.90	358.60	10,012.48	3,569.69	3,566.54	1,066.23	3,722.51	16.64	470,230.35	647,139.88	
13,240.00	88.70	358.20	10,015.12	3,658.61	3,655.47	1,063.75	3,807.10	16.23	470,319.28	647,137.40	
13,330.00	89.40	358.40	10,016.61	3,748.55	3,745.42	1,061.08	3,892.82	15.82	470,409.23	647,134.73	
13,420.00	89.10	357.20	10,017.79	3,838.46	3,835.34	1,057.63	3,978.49	15.42	470,499.15	647,131.28	
13,509.00	93.40	359.20	10,015.85	3,927.36	3,924.25	1,054.83	4,063.55	15.05	470,588.06	647,128.48	
13,599.00	93.20	359.50	10,010.67	4,017.20	4,014.10	1,053.81	4,150.12	14.71	470,677.91	647,127.46	
13,688.00	93.40	0.60	10,005.55	4,106.06	4,102.95	1,053.89	4,236.14	14.41	470,766.76	647,127.54	
13,778.00	91.60	1.80	10,001.62	4,195.95	4,192.84	1,055.77	4,323.72	14.13	470,856.65	647,129.42	



ProDirectional Survey Report



Company: Marathon Oil
Project: Eddy County, NM(NAD 83)
Site: Blue Steel 21 WXY Fee
Well: No. 8H
Wellbore: OH
Design: MWD-162'-20146', PTB: 20202'

Local Co-ordinate Reference: Well No. 8H
TVD Reference: Well @ 3027.00usft
MD Reference: Well @ 3027.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
13,867.00	87.90	1.70	10,002.01	4,284.90	4,281.78	1,058.49	4,410.67	13.89	470,945.59	647,132.14	
13,956.00	88.20	1.60	10,005.04	4,373.82	4,370.69	1,061.05	4,497.64	13.65	471,034.50	647,134.70	
14,046.00	88.30	0.90	10,007.79	4,463.76	4,460.63	1,063.01	4,585.54	13.40	471,124.44	647,136.66	
14,135.00	88.10	0.30	10,010.58	4,552.71	4,549.58	1,063.94	4,672.32	13.16	471,213.39	647,137.59	
14,225.00	88.70	359.70	10,013.09	4,642.68	4,639.54	1,063.94	4,759.97	12.92	471,303.35	647,137.59	
14,314.00	89.10	0.30	10,014.80	4,731.66	4,728.52	1,063.94	4,846.74	12.68	471,392.33	647,137.59	
14,404.00	90.10	0.60	10,015.43	4,821.65	4,818.52	1,064.65	4,934.73	12.46	471,482.33	647,138.30	
14,494.00	90.40	0.60	10,015.04	4,911.65	4,908.51	1,065.59	5,022.84	12.25	471,572.32	647,139.24	
14,584.00	88.00	1.20	10,016.29	5,001.63	4,998.48	1,067.01	5,111.10	12.05	471,662.29	647,140.66	
14,674.00	88.60	2.50	10,018.96	5,091.55	5,088.40	1,069.91	5,199.66	11.87	471,752.21	647,143.56	
14,764.00	86.90	2.00	10,022.50	5,181.41	5,178.25	1,073.44	5,288.34	11.71	471,842.06	647,147.09	
14,854.00	88.20	0.70	10,026.35	5,271.31	5,268.14	1,075.56	5,376.82	11.54	471,931.95	647,149.21	
14,943.00	90.10	0.40	10,027.67	5,360.29	5,357.12	1,076.41	5,464.20	11.36	472,020.93	647,150.06	
15,033.00	88.10	1.00	10,029.08	5,450.27	5,447.10	1,077.51	5,552.65	11.19	472,110.91	647,151.16	
15,122.00	88.30	0.80	10,031.87	5,539.22	5,536.05	1,078.91	5,640.20	11.03	472,199.86	647,152.56	
15,213.00	89.90	0.90	10,033.30	5,630.20	5,627.02	1,080.26	5,729.78	10.87	472,290.83	647,153.91	
15,302.00	90.10	0.60	10,033.30	5,719.20	5,716.01	1,081.43	5,817.41	10.71	472,379.82	647,155.08	
15,392.00	90.50	0.20	10,032.83	5,809.20	5,806.01	1,082.05	5,905.98	10.56	472,469.82	647,155.70	
15,481.00	89.70	359.50	10,032.68	5,898.19	5,895.01	1,081.82	5,993.45	10.40	472,558.82	647,155.47	
15,571.00	88.00	358.50	10,034.48	5,988.15	5,984.97	1,080.25	6,081.68	10.23	472,648.78	647,153.90	
15,661.00	88.10	358.90	10,037.55	6,078.07	6,074.90	1,078.21	6,169.84	10.06	472,738.71	647,151.86	
15,751.00	91.20	359.50	10,038.10	6,168.04	6,164.87	1,076.95	6,258.24	9.91	472,828.68	647,150.60	
15,840.00	92.30	359.90	10,035.38	6,257.00	6,253.83	1,076.49	6,345.80	9.77	472,917.64	647,150.14	
15,929.00	94.60	1.00	10,030.02	6,345.83	6,342.66	1,077.18	6,433.48	9.64	473,006.47	647,150.83	
16,019.00	94.30	1.80	10,023.04	6,435.53	6,432.36	1,079.38	6,522.29	9.53	473,096.17	647,153.03	
16,109.00	92.80	1.40	10,017.47	6,525.33	6,522.15	1,081.88	6,611.27	9.42	473,185.96	647,155.53	
16,198.00	92.70	2.40	10,013.20	6,614.19	6,611.00	1,084.83	6,699.41	9.32	473,274.81	647,158.48	



ProDirectional Survey Report



Company: Marathon Oil
Project: Eddy County, NM(NAD 83)
Site: Blue Steel 21 WXY Fee
Well: No. 8H
Wellbore: OH
Design: MWD-162'-20146', PTB: 20202'

Local Co-ordinate Reference: Well No. 8H
TVD Reference: Well @ 3027.00usft
MD Reference: Well @ 3027.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
16,288.00	93.30	2.40	10,008.49	6,704.00	6,700.79	1,088.60	6,788.64	9.23	473,364.60	647,162.25	
16,377.00	92.00	2.00	10,004.37	6,792.84	6,789.63	1,092.01	6,876.89	9.14	473,453.44	647,165.66	
16,474.00	90.50	1.00	10,002.26	6,889.79	6,886.57	1,094.55	6,973.01	9.03	473,550.38	647,168.20	
16,564.00	88.20	359.60	10,003.28	6,979.77	6,976.56	1,095.02	7,061.97	8.92	473,640.37	647,168.67	
16,654.00	88.90	359.30	10,005.55	7,069.74	7,066.52	1,094.15	7,150.73	8.80	473,730.33	647,167.80	
16,743.00	91.00	359.50	10,005.63	7,158.72	7,155.51	1,093.22	7,238.54	8.69	473,819.32	647,166.87	
16,833.00	87.50	358.80	10,006.81	7,248.69	7,245.48	1,091.89	7,327.29	8.57	473,909.29	647,165.54	
16,923.00	88.20	358.40	10,010.19	7,338.59	7,335.39	1,089.69	7,415.89	8.45	473,999.20	647,163.34	
17,012.00	89.60	358.20	10,011.89	7,427.52	7,424.33	1,087.05	7,503.49	8.33	474,088.14	647,160.70	
17,102.00	88.80	358.70	10,013.15	7,517.47	7,514.29	1,084.62	7,592.16	8.21	474,178.10	647,158.27	
17,191.00	90.20	358.10	10,013.93	7,606.43	7,603.25	1,082.13	7,679.87	8.10	474,267.06	647,155.78	
17,281.00	90.10	358.60	10,013.69	7,696.38	7,693.21	1,079.54	7,768.58	7.99	474,357.02	647,153.19	
17,370.00	89.20	358.70	10,014.24	7,785.35	7,782.18	1,077.44	7,856.42	7.88	474,445.99	647,151.09	
17,460.00	89.40	359.60	10,015.34	7,875.32	7,872.17	1,076.11	7,945.38	7.78	474,535.98	647,149.76	
17,550.00	88.60	0.20	10,016.91	7,965.31	7,962.15	1,075.95	8,034.52	7.70	474,625.96	647,149.60	
17,639.00	88.80	1.70	10,018.93	8,054.27	8,051.11	1,077.43	8,122.89	7.62	474,714.92	647,151.08	
17,729.00	89.00	1.30	10,020.65	8,144.23	8,141.07	1,079.78	8,212.36	7.56	474,804.88	647,153.43	
17,818.00	90.80	359.80	10,020.81	8,233.22	8,230.05	1,080.64	8,300.70	7.48	474,893.86	647,154.29	
17,908.00	87.90	358.90	10,021.83	8,323.20	8,320.03	1,079.62	8,389.79	7.39	474,983.84	647,153.27	
17,997.00	91.20	0.80	10,022.53	8,412.18	8,409.01	1,079.38	8,478.01	7.31	475,072.82	647,153.03	
18,086.00	91.60	0.50	10,020.35	8,501.15	8,497.98	1,080.39	8,566.38	7.25	475,161.79	647,154.04	
18,176.00	94.10	0.30	10,015.88	8,591.03	8,587.86	1,081.02	8,655.63	7.17	475,251.67	647,154.67	
18,265.00	92.20	359.50	10,010.99	8,679.89	8,676.72	1,080.86	8,743.78	7.10	475,340.53	647,154.51	
18,355.00	85.00	358.10	10,013.19	8,769.78	8,766.61	1,078.98	8,832.76	7.02	475,430.42	647,152.63	
18,445.00	86.60	358.00	10,019.78	8,859.47	8,856.32	1,075.93	8,921.43	6.93	475,520.13	647,149.58	
18,534.00	88.80	359.10	10,023.35	8,948.36	8,945.21	1,073.68	9,009.41	6.84	475,609.02	647,147.33	
18,624.00	89.70	359.80	10,024.53	9,038.34	9,035.20	1,072.82	9,098.66	6.77	475,699.01	647,146.47	



ProDirectional Survey Report



Company: Marathon Oil
Project: Eddy County, NM(NAD 83)
Site: Blue Steel 21 WXY Fee
Well: No. 8H
Wellbore: OH
Design: MWD-162'-20146', PTB: 20202'

Local Co-ordinate Reference: Well No. 8H
TVD Reference: Well @ 3027.00usft
MD Reference: Well @ 3027.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
18,713.00	88.80	0.60	10,025.69	9,127.33	9,124.19	1,073.13	9,187.08	6.71	475,788.00	647,146.78
18,803.00	90.00	1.20	10,026.63	9,217.32	9,214.17	1,074.54	9,276.61	6.65	475,877.98	647,148.19
18,892.00	88.90	2.00	10,027.49	9,306.28	9,303.13	1,077.02	9,365.26	6.60	475,966.94	647,150.67
18,981.00	88.40	1.80	10,029.59	9,395.22	9,392.05	1,079.97	9,453.94	6.56	476,055.86	647,153.62
19,071.00	90.50	2.20	10,030.45	9,485.16	9,481.99	1,083.12	9,543.65	6.52	476,145.80	647,156.77
19,161.00	89.20	2.40	10,030.69	9,575.10	9,571.91	1,086.73	9,633.41	6.48	476,235.72	647,160.38
19,251.00	90.40	1.30	10,031.00	9,665.05	9,661.86	1,089.63	9,723.11	6.43	476,325.67	647,163.28
19,340.00	91.70	2.00	10,029.37	9,754.01	9,750.81	1,092.19	9,811.79	6.39	476,414.62	647,165.84
19,430.00	87.50	1.80	10,030.00	9,843.94	9,840.74	1,095.18	9,901.49	6.35	476,504.55	647,168.83
19,520.00	89.50	1.80	10,032.35	9,933.87	9,930.66	1,098.00	9,991.17	6.31	476,594.47	647,171.65
19,609.00	92.00	1.90	10,031.19	10,022.82	10,019.60	1,100.88	10,079.89	6.27	476,683.41	647,174.53
19,699.00	92.00	1.60	10,028.05	10,112.73	10,109.50	1,103.62	10,169.56	6.23	476,773.31	647,177.27
19,788.00	91.10	1.60	10,025.64	10,201.67	10,198.43	1,106.11	10,258.24	6.19	476,862.24	647,179.76
19,878.00	87.10	358.90	10,027.05	10,291.63	10,288.39	1,106.50	10,347.72	6.14	476,952.20	647,180.15
19,968.00	86.90	357.60	10,031.76	10,381.45	10,378.23	1,103.76	10,436.75	6.07	477,042.04	647,177.41
20,057.00	87.80	356.90	10,035.88	10,470.24	10,467.03	1,099.49	10,524.62	6.00	477,130.84	647,173.14
20,146.00	87.70	356.40	10,039.37	10,559.01	10,555.81	1,094.29	10,612.38	5.92	477,219.62	647,167.94
Last Survey: 20146' MD										
20,202.00	87.70	356.40	10,041.62	10,614.84	10,611.65	1,090.78	10,667.56	5.87	477,275.46	647,164.43
PTB: 20202' MD										



ProDirectional Survey Report



Company: Marathon Oil
Project: Eddy County, NM(NAD 83)
Site: Blue Steel 21 WXY Fee
Well: No. 8H
Wellbore: OH
Design: MWD-162'-20146', PTB: 20202'

Local Co-ordinate Reference: Well No. 8H
TVD Reference: Well @ 3027.00usft
MD Reference: Well @ 3027.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
411.00	410.94	-4.89	-4.44	Pro MWD First Survey: 411' MD
20,146.00	10,039.37	10,555.81	1,094.29	Last Survey: 20146' MD
20,202.00	10,041.62	10,611.65	1,090.78	PTB: 20202' MD

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

ACKNOWLEDGMENTS

Action 311294

ACKNOWLEDGMENTS

Operator: MARATHON OIL PERMIAN LLC 990 Town & Country Blvd. Houston, TX 77024	OGRID: 372098
	Action Number: 311294
	Action Type: [C-105] Well (Re)Completion (C-105)

ACKNOWLEDGMENTS

☒	I hereby certify that the required Water Use Report has been, or will be, submitted for this wells completion.
☒	I hereby certify that the required FracFocus disclosure has been, or will be, submitted for this wells completion.
☐	I hereby certify that the rules of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

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Phone: (505) 476-3441

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 311294

CONDITIONS

Operator: MARATHON OIL PERMIAN LLC 990 Town & Country Blvd. Houston, TX 77024	OGRID: 372098
	Action Number: 311294
	Action Type: [C-105] Well (Re)Completion (C-105)

CONDITIONS

Created By	Condition	Condition Date
plmartinez	No need for Wellbore Schematic, C-102, and Survey as they are already in the C-104 Completion Packet -No need to include the Well Log with the 3160-4 Completion Report as it was submitted in the Well Logs.	11/18/2024