

Company: Occidental Permian Ltd.

Well: South Hobbs (G/GSA) 28

Field: Hobbs (GSA)

County: Lea State: New Mexico

Corrosion Print

Gamma Ray

Casing Collar Locator

County:	Lea										
Field:	Hobbs (GSA)										
Location:	Section: 5, Township: 19S, Range: 38E.										
Well:	South Hobbs (G/GSA) 28										
Company:	Occidental Permian Ltd.										
Logging Date	Location:										
	Permanent Datum:		Ground Level		Elev.:						
	Log Measured From:		Kelly Bushing		K.B. 3634.00 ft						
	Drilling Measured From:		Kelly Bushing		G.L. 3621.00 ft						
Run Number	API Serial No.	Section:	Township:	Range:							
Depth Driller	30-025-07630	5	19S	38E							
Schlumberger Depth											
Bottom Log Interval											
Top Log Interval											
Casing Fluid Type											
Salinity											
Density											
Fluid Level											
BIT/CASING/TUBING STRING											
Bit Size											
From											
To											
Casing/Tubing Size											
Weight											
Grade											
From											
To											
Max Recorded Temperatures											
Logger on Bottom	Time										
Unit Number	Location:										
Recorded By											
Witnessed By											

Disclaimer

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

Contents

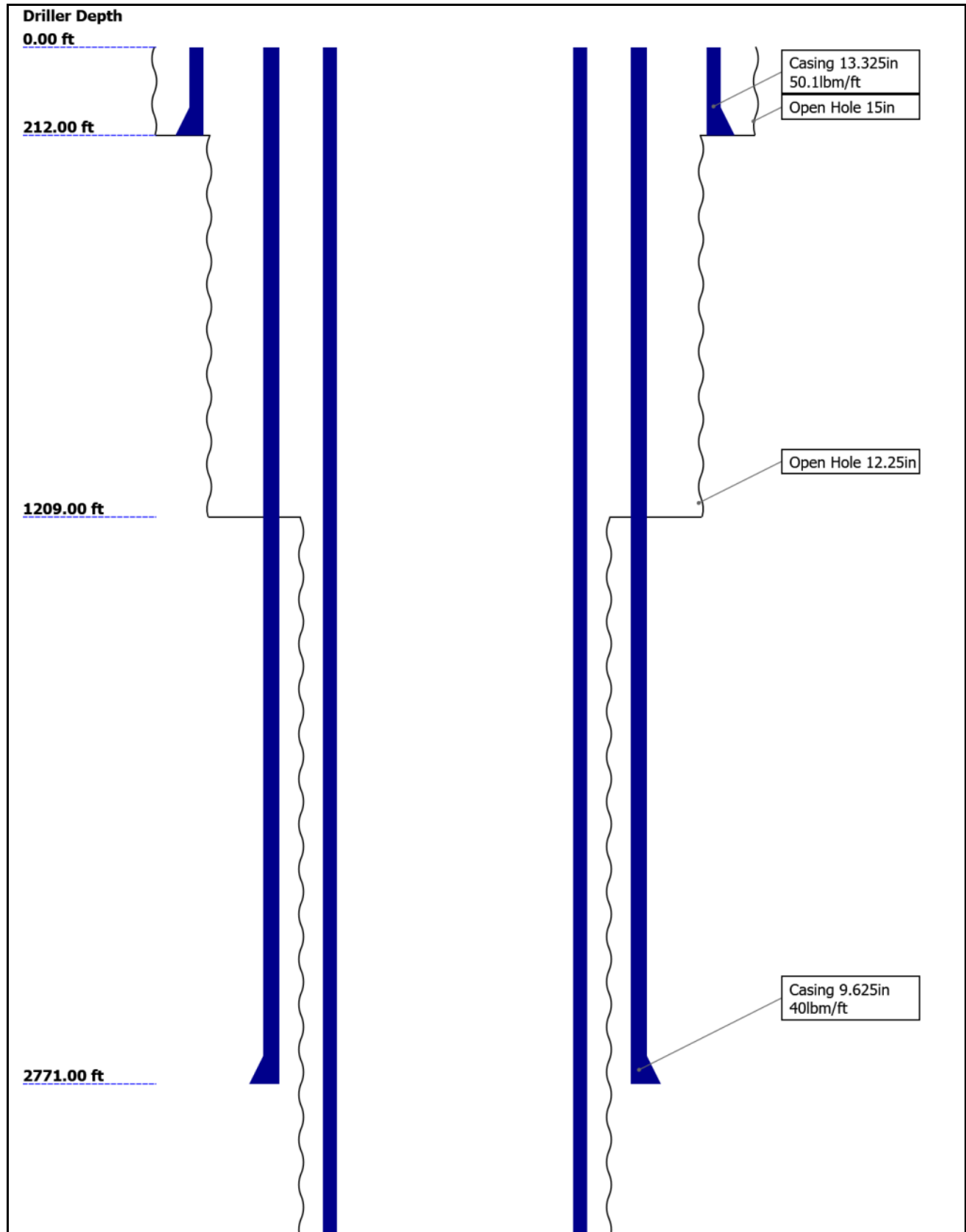
- Header
- Disclaimer
- Contents
- Well Sketch
- Borehole Size/Casing/Tubing Record
- Operational Run Summary
- Remarks and Equipment Summary
- Depth Summary
- USI Fluid Properties Measurement
- 1A
 - Integration Summary
 - Software Version
 - Composite Summary
 - Log (Import (2) of USI Local Comp)
 - Parameter Listing
- 1A
 - Integration Summary

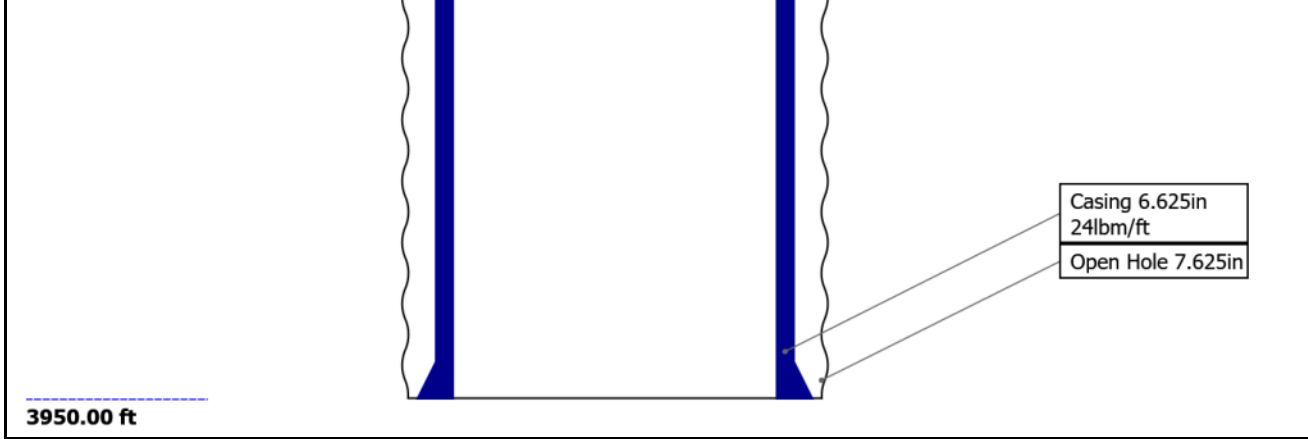
- Log (Import (2) of USI Local Comp)
- Parameter Listing
- 1A
 - Integration Summary
 - Software Version
 - Composite Summary
 - Log (Import (2) of USI Local Comp)
 - Parameter Listing
- 1A
 - Integration Summary
 - Software Version
 - Composite Summary
 - Log (Import (2) of USI Local Comp)
 - Parameter Listing
- 1A
 - Integration Summary
 - Software Version

- 11.2 Software Version
- 11.3 Composite Summary
- 11.4 Log (Import (2) of USI Local Comp)
- 11.5 Parameter Listing
- 12. 1A
 - 12.1 Integration Summary
 - 12.2 Software Version
 - 12.3 Composite Summary

- 15.3 Composite Summary
- 15.4 Log (Import (2) of USI Local Comp)
- 15.5 Parameter Listing
- 16. Xyz (Import of WTX Fluid Slowness v Depth)
- 17. Xyz (Import of WTX Acoustic Impedence v Depth)
- 18. Tail

Well Sketch





Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	15	12.25	7.625			
Top Driller (ft)	0	212	1209			
Top Logger (ft)	0	212	1209			
Bottom Driller (ft)	212	1209	3950			
Bottom Logger (ft)	212	1209	3950			
Casing						
Size (in)	13.325	9.625	6.625			
Weight (lbm/ft)	50.1	40	24			
Inner Diameter (in)	12.618	8.835	5.921			
Grade	N/A	N/A	N/A			
Top Driller (ft)	0	0	0			
Top Logger (ft)	0	0	0			
Bottom Driller (ft)	212	2771	3950			
Bottom Logger (ft)	212	2771	3950			

Operational Run Summary

Parameter (unit)	1A					
Date Log Started	20-Aug-2019					
Time Log Started	16:42:08					
Date Log Finished	21-Aug-2019					
Time Log Finished	15:07:40					
Top Log Interval (ft)	0.00					
Bottom Log Interval (ft)	2610.00					
Total Depth (ft)						
Max Hole Deviation (deg)	0.00					
Azimuth of Max Deviation (deg)	0.00					
Bit Size (in)	7.625					
Logging Unit Number	2191					
Logging Unit Location	Midland					
Recorded By	Duan Kennedy					

Remarks and Equipment Summary					
1A: Toolstring				1A: Remarks	
Equip name	Length		MP name	Offset	Logging Objective: Casing and Cement Evaluation
LEH-QC	29.6				Toolstring ran as per toolsketch.
EDTC-B	27.14				Small hole kit (.75") and Booster kits used for centralization,
EDTH-B					Main Pass logged @1000psi and repeat
EDTG-A					logged @0psi.
EDTC-B					
			CTEM	23.64	
			ACCZ	0.00	
			HV	0.00	
			Gamma	21.77	
			Ray		
			TelStatu	20.64	
			s		
AH-107[2]	20.64				
AH-107[1]	18.64				
USIT-E:1846	16.64				
ECH-MFA:2830					
USAC-A:1846					
USIS-A:940					
USSC-B:791					
IBCS-A:783					
FAR-SENS					
OR:4495					
IBC-TX					
NEAR-SEN					
SOR:4690					
IBC-TX					
USI-SENS					
OR:4715					
IBC-TX					
EMITTER-SENSOR:4612					
IBC-TX					
			USI Sensor	0.84	
			TOOL_ZERO		
Lengths are in ft					
Maximum Outer Diameter = 3.625 in					
Line: Sensor Location, Value: Gating Offset					
All measurements are relative to TOOL_ZERO					

Depth Summary	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	
61	
62	
63	
64	
65	
66	
67	
68	
69	
70	
71	
72	
73	
74	
75	
76	
77	
78	
79	
80	
81	
82	
83	
84	
85	
86	
87	
88	
89	
90	
91	
92	
93	
94	
95	
96	
97	
98	
99	
100	

	1A		
--	----	--	--

Depth Measuring Device

Type	IDW-JA		
Serial Number	6493		
Calibration Date	30-May-2019		
Calibrator Serial Number	IDW-C-57		
Calibration Cable Type	7-32 AS-XS		
Weight Comparison 1	2		

Wheel Correction 1	0		
Wheel Correction 2	0		

Tension Device

Type	CMTD-B/A		
Serial Number	2295		
Calibration Date	15-Aug-2019		
Calibrator Serial Number	13		
Number of Calibration Points	10		
Calibration Root Mean Square Error	7		
Calibration Peak Error	17		

Logging Cable

Type	7-32AS-XS		
Serial Number			
Length	19000.00 ft		
Conveyance Type	Wireline		
Rig Type			

1A:Depth Control Parameters

Log Sequence	First Log In the Well	Depth Control Remarks
Rig Up Length At Surface		Schlumberger depth control procedures followed.
Rig Up Length At Bottom		IDW used as primary depth control device.
Rig Up Length Correction		Zchart used as secondary depth control.
Stretch Correction		Log correlated to down log.
Tool Zero Check At Surface		

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 1	Main[3]:Up	2617.24	13.40

Fluid Velocity = "Automatic".
CFVL equals DFSL channel

Start Depth(ft)	Stop Depth(ft)	Start Value(us/ft)	End Value(us/ft)
-----------------	----------------	--------------------	------------------

Mud Impedance = "Inversion Norm."
IBC Inversion normalization zone is : 663.63m(2177.28ft) to 664.40m(2179.78ft)
MUD_N_INV = 1.20
DFD = 1.12g/cm3(9.35lbm/gal)
CZMD median computed in inversion normalization interval = 2.22 MRayl

Start Depth(ft)	Stop Depth(ft)	Start Value(Mrayl)	End Value(Mrayl)
-----------------	----------------	--------------------	------------------

1A

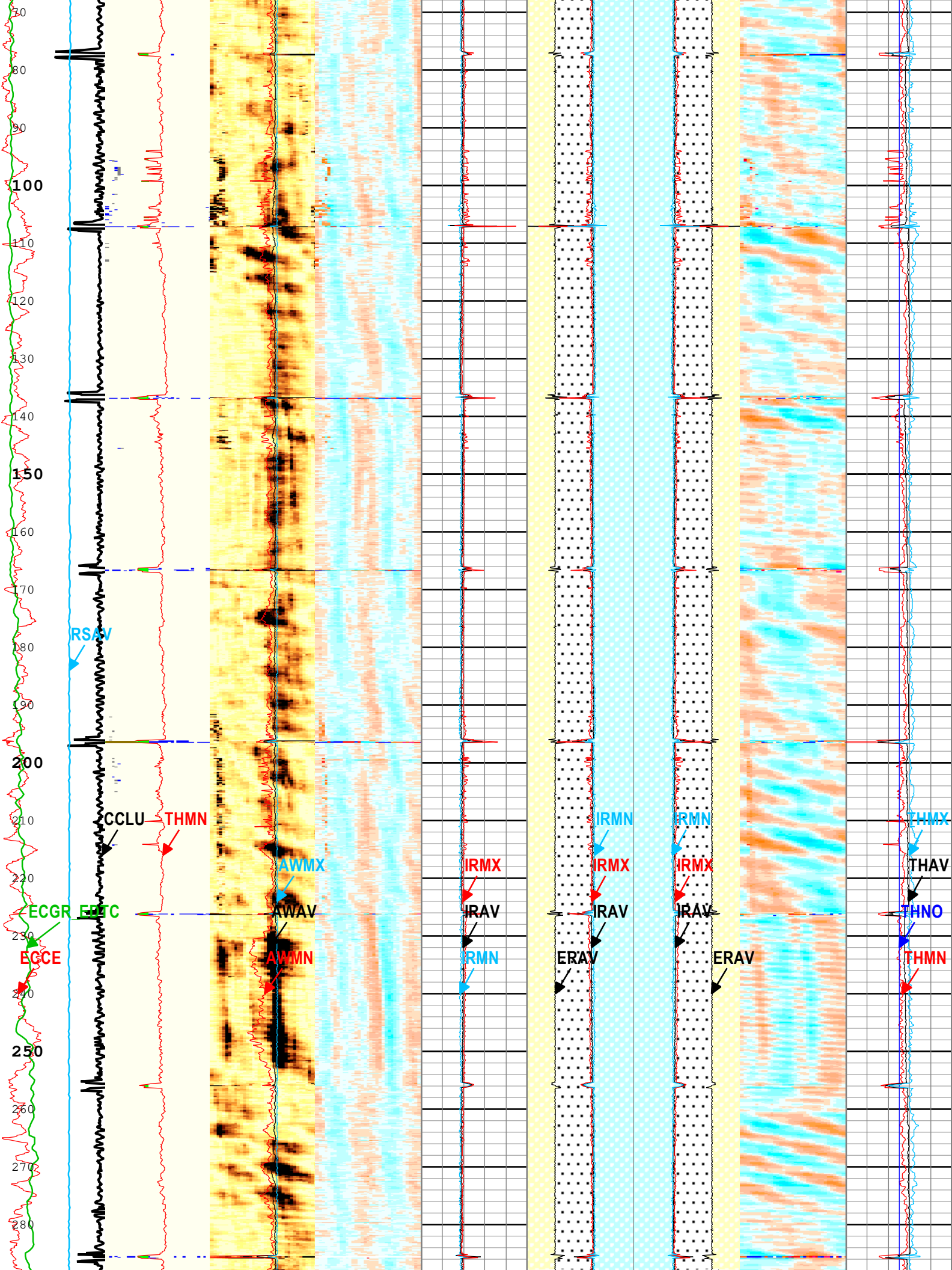
Software Version

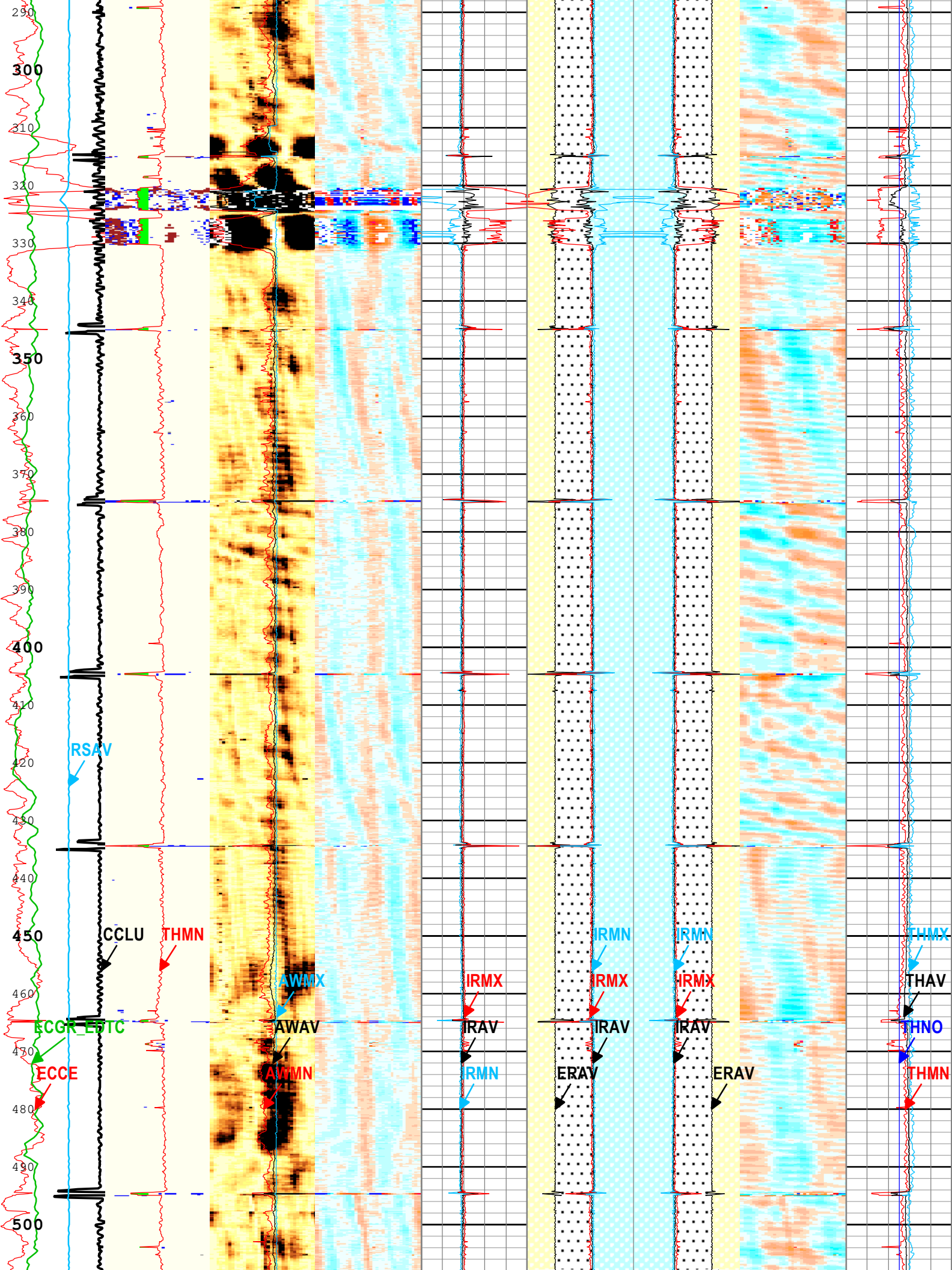
Acquisition System	Version
Maxwell 2019	9.0.106845.3100
Application Patch	Wireline_NPD-PMCT-2019.0_9.0.113037

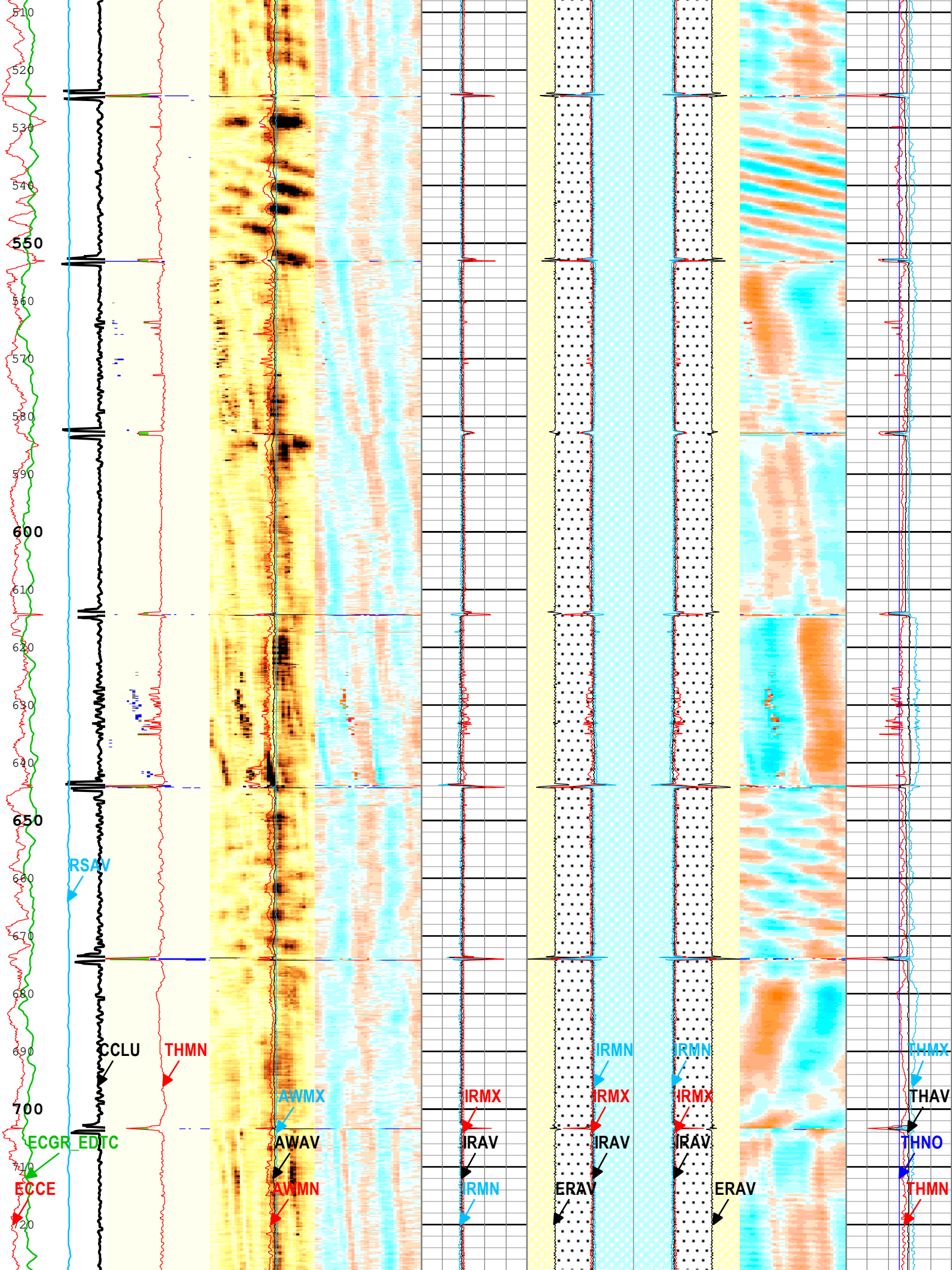
Pass Summary

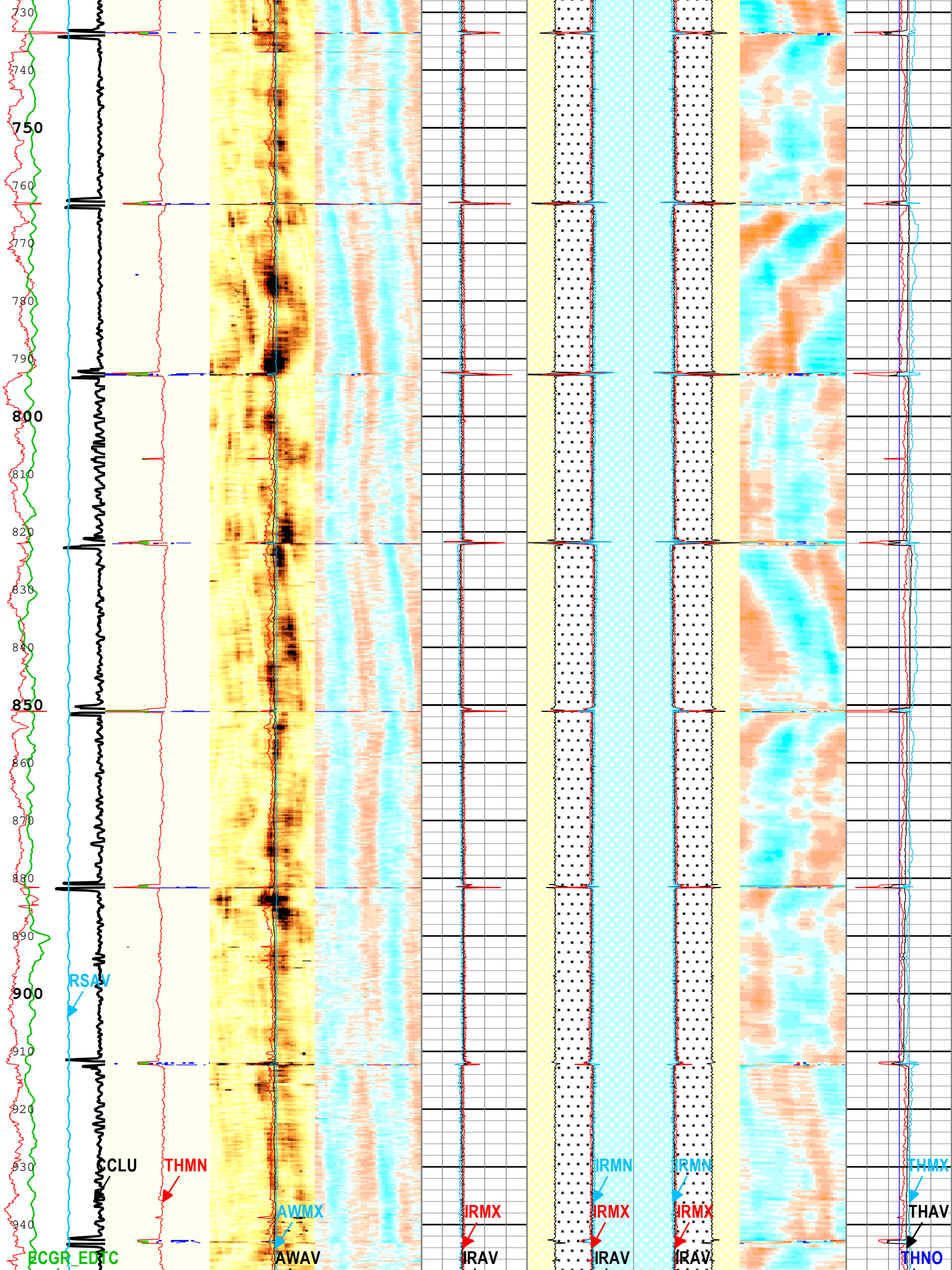
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1A	Main[3]:Up	Up	13.40 ft	2617.24 ft	21-Aug-2019 11:07:40 AM	21-Aug-2019 12:29:30 PM	ON	0.86 ft	Yes

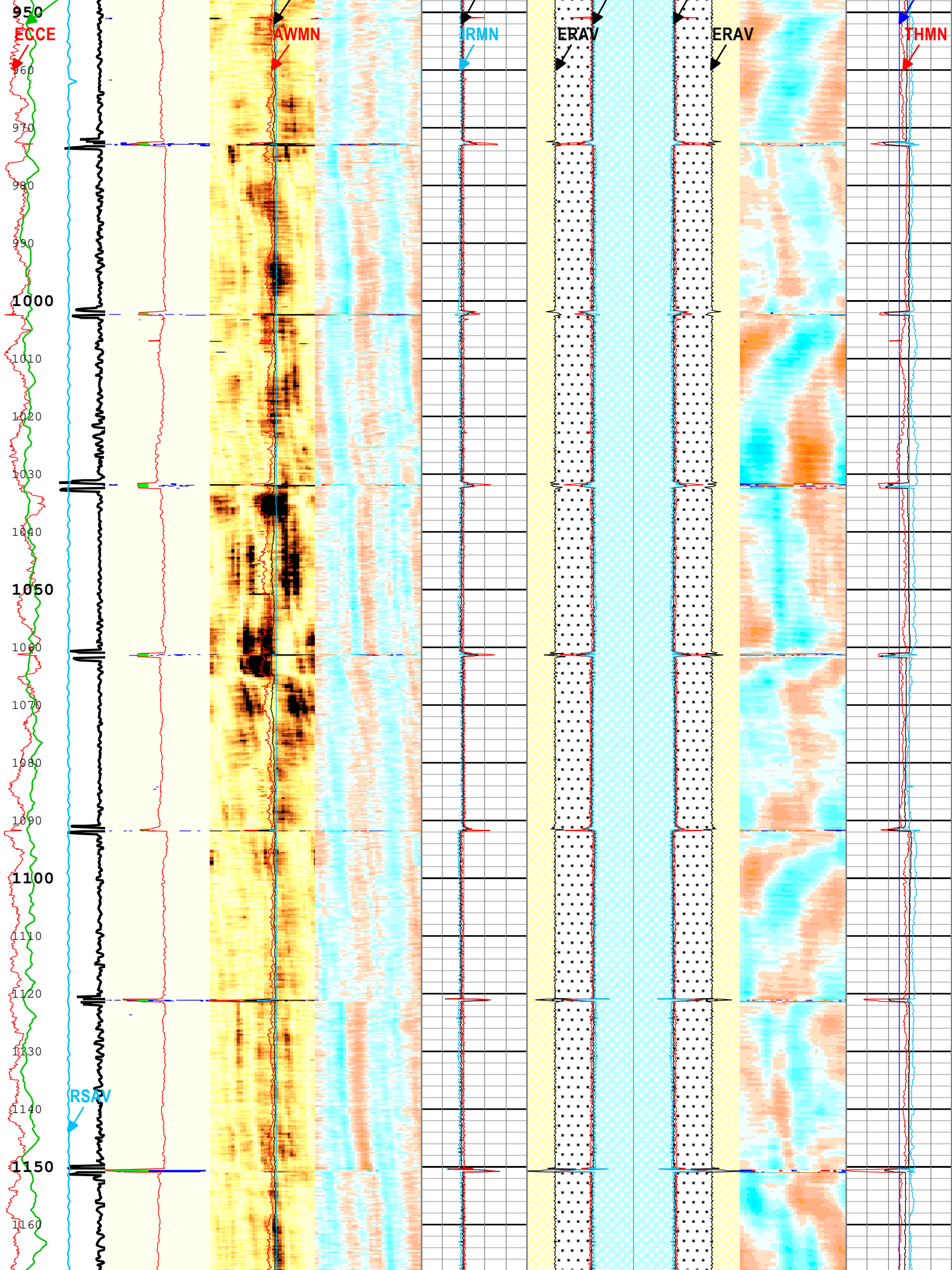
All depths are referenced to toolstring zero

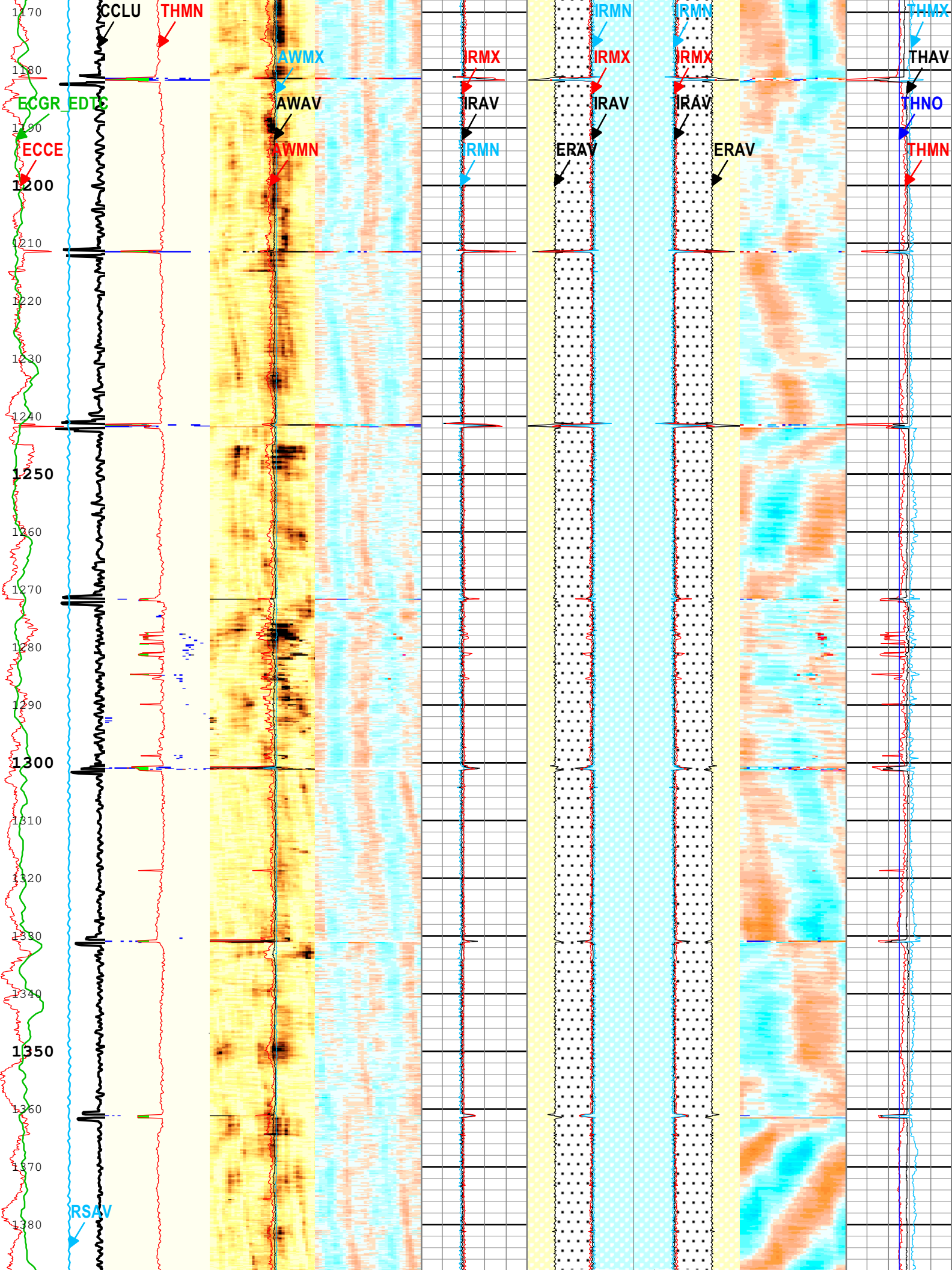


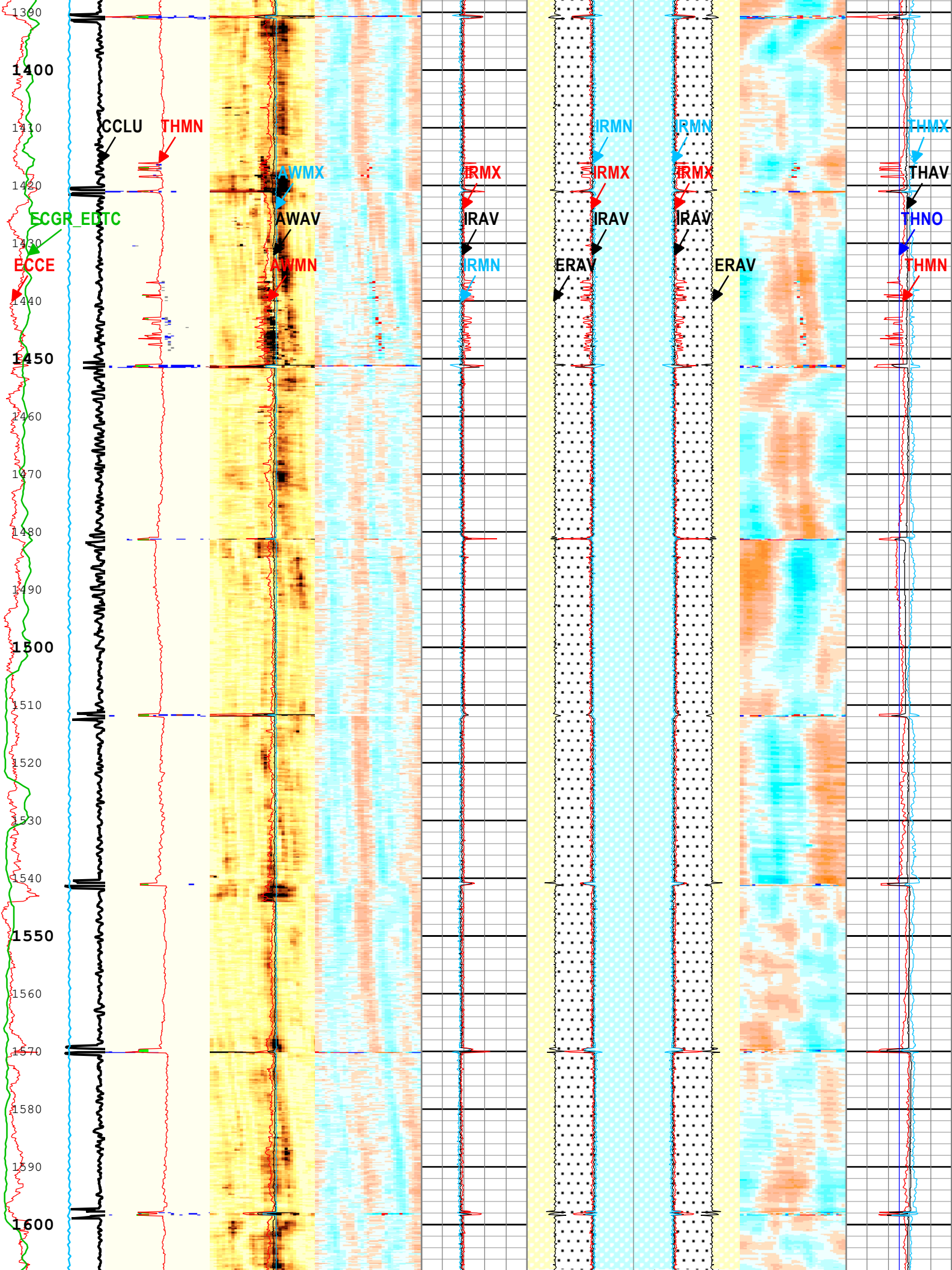


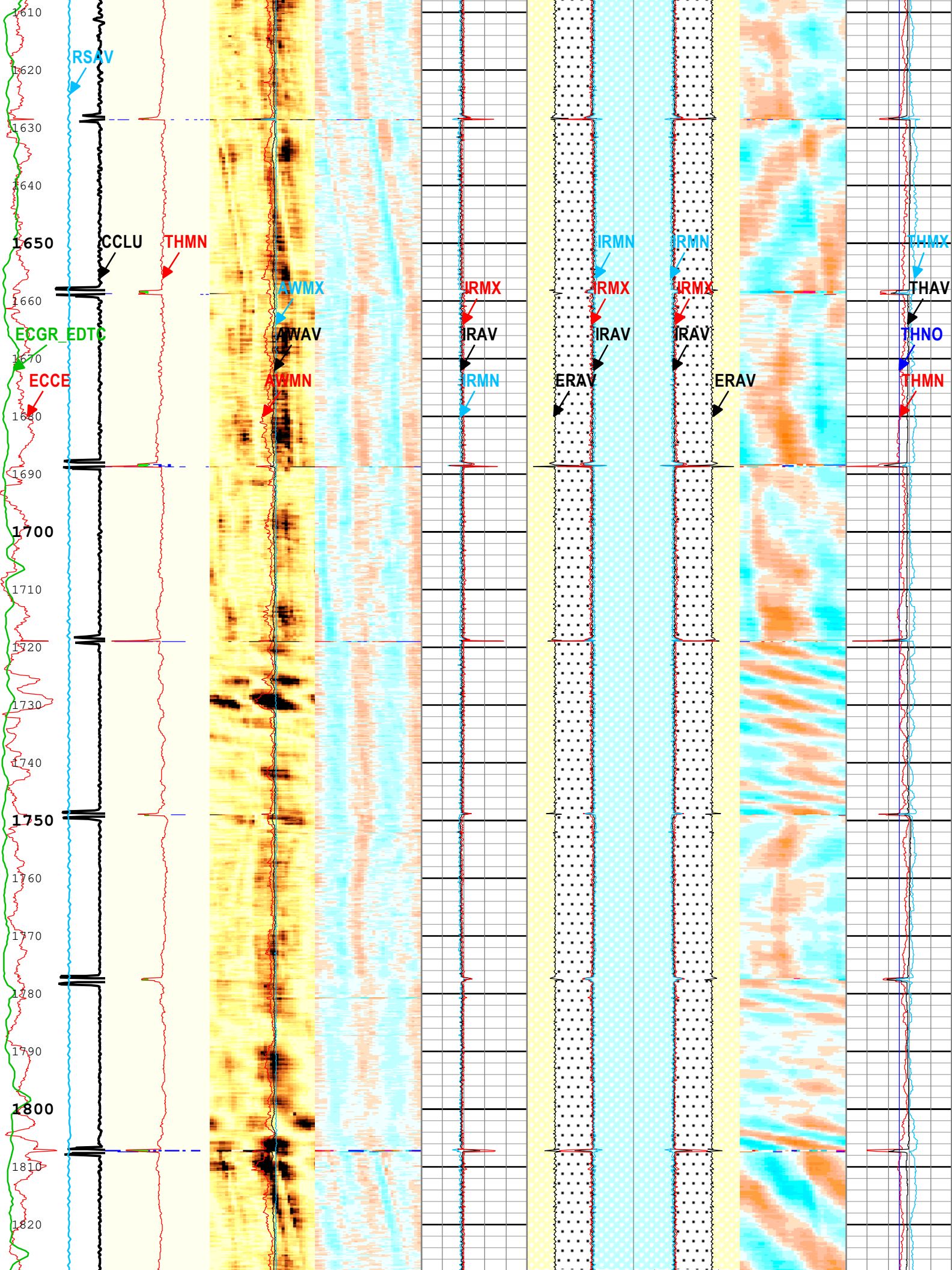


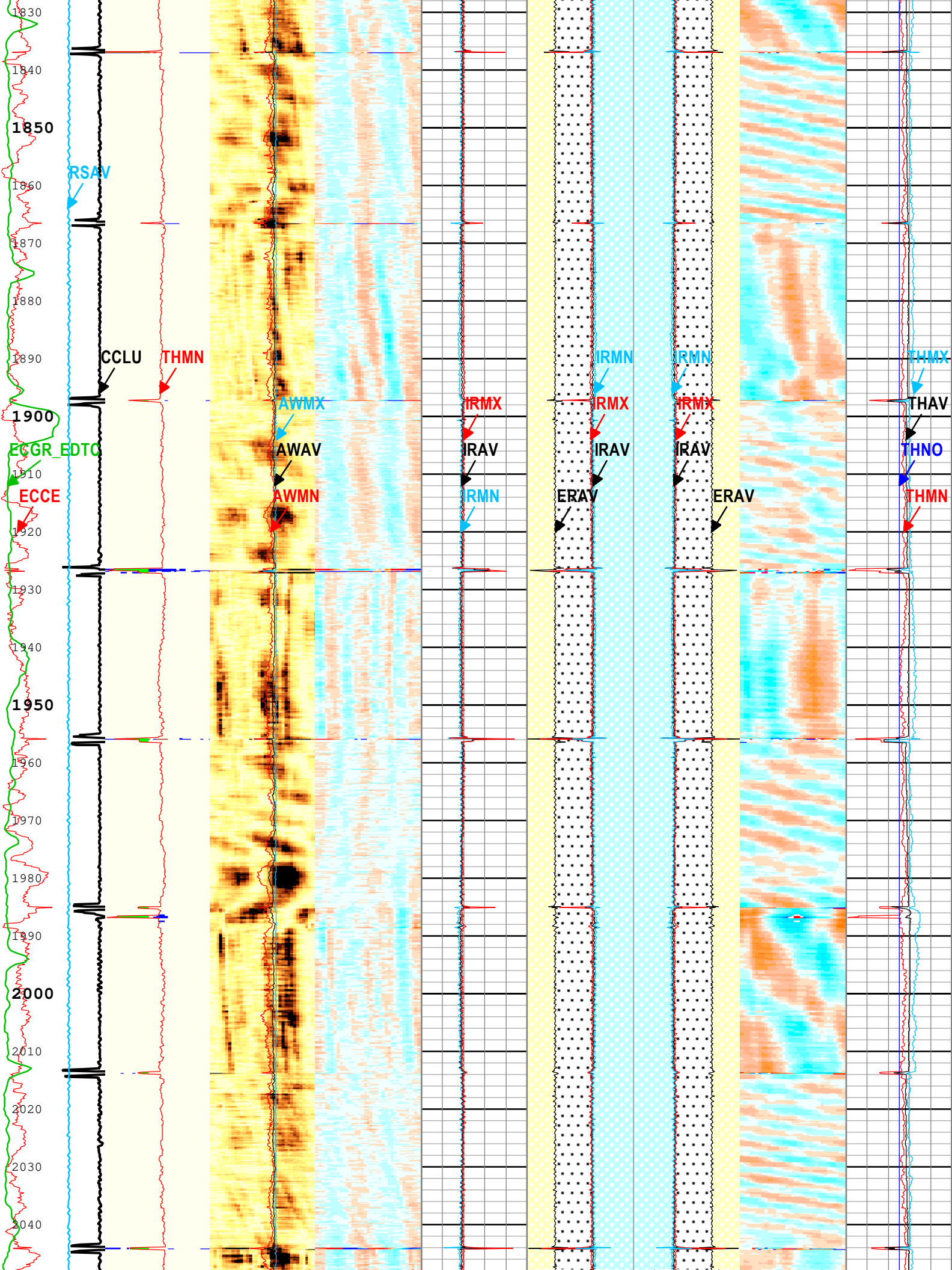


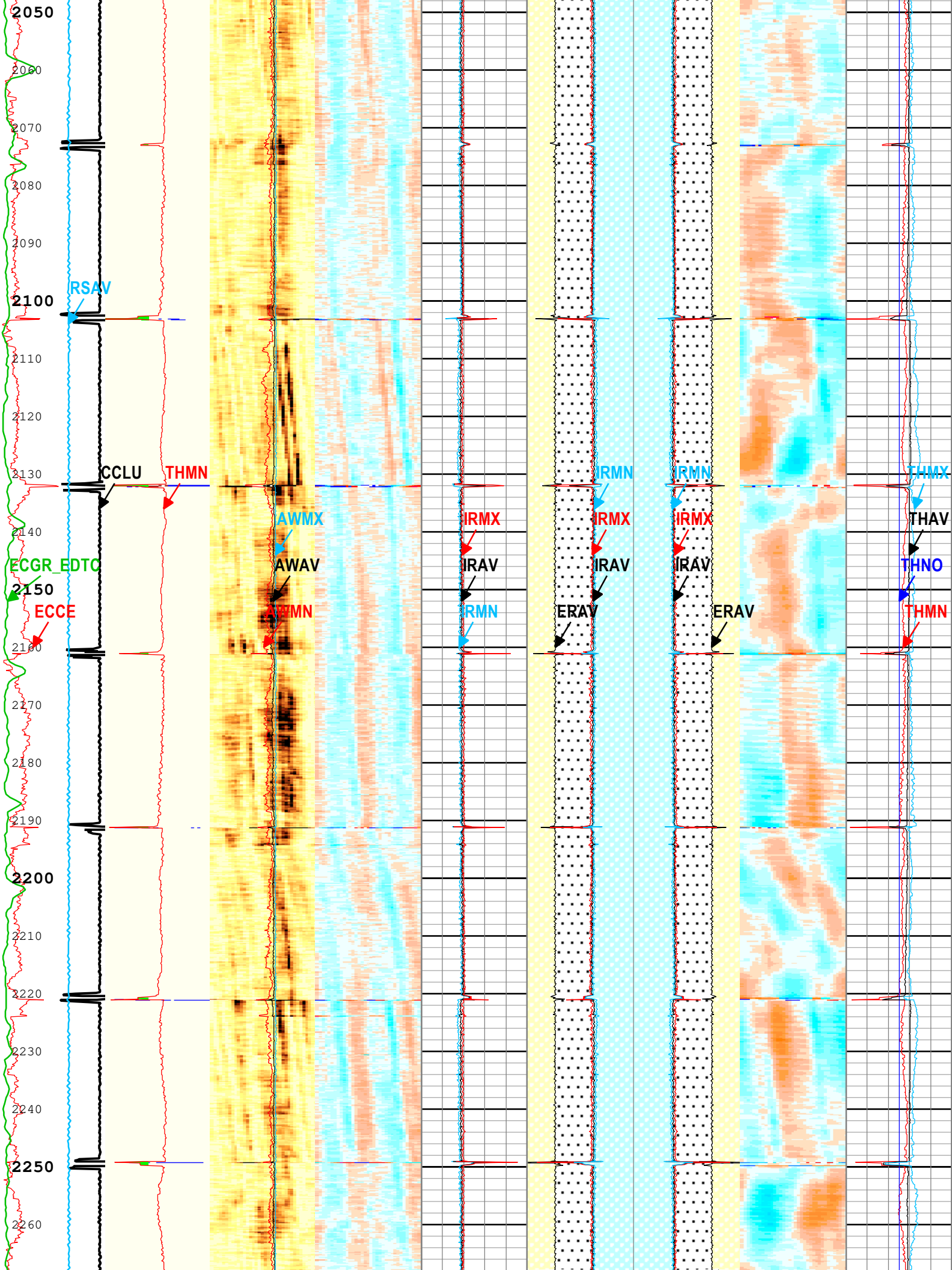


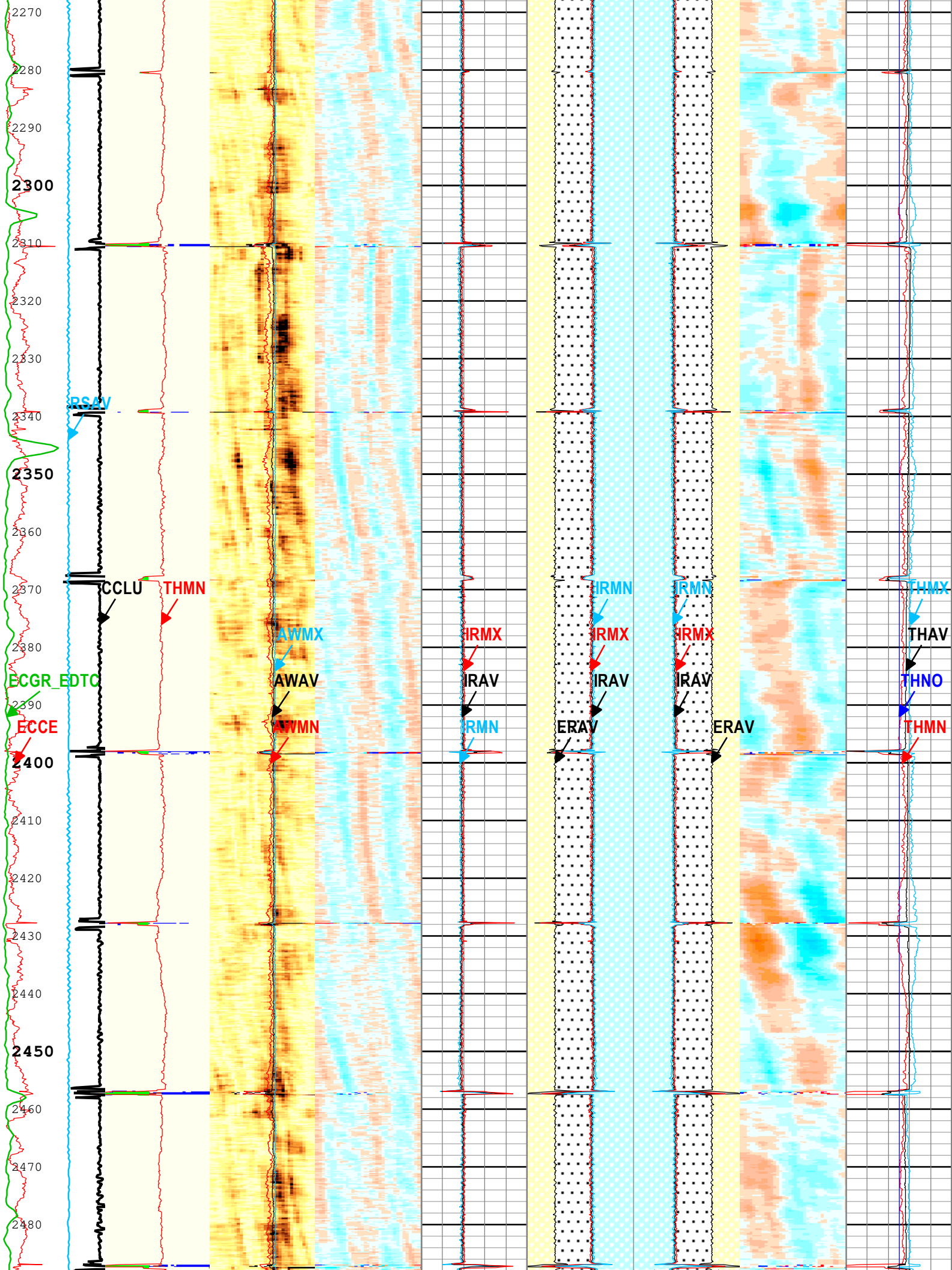












TIME_1900 - Time Marked every 60.00 (s)
USIT Processing Flags (UFLG[0]) USIT-E
1 - UFLG 1 Value within [0.0 - 1.5] - :  UTIM Error
2 - UFLG 2 Value within [1.5 - 2.44] - :  Pulse Origin Not Detected
3 - UFLG 2 Value within [2.44 - 2.5] - :  Spiky Waveform
4 - UFLG 3 Value within [2.5 - 3.5] - :  WINLEN Error
5 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :  Casing Thickness Error
6 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :  Loop Processing Error
Description: USI Corrosion Format: Log (Import (2) of USI Local Comp) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 21-Aug-2019 16:12:53

Channel Processing Parameters				
1A: Parameters				
Parameter	Description	Tool	Value	Unit
BAR1(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CBLO	Casing Bottom (Logger)	WLSESSION	3950	ft
CDEN	Cement Density	USIT-E	0	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.352	in
CYSLGR	Casing Yield Strength - Zoned along logger depths	WLSESSION	0	psi
DFD	Drilling Fluid Density	Borehole	9.35	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10	lbm/gal
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	-14.87	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	Inversion Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	21.86	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.24	
MUD_N_INV	IBC Inversion Mud Normalization Factor	USIT-E	1.2	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-14.7	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.81	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Depth Zone Parameters			
Parameter	Value	Start (ft)	Stop (ft)
BS	15	0	212
BS	12.25	212	1209
	5.000	1209	1209.5

	7.625	1209	2616.5
--	-------	------	--------

All depth are actual.

Tool Control Parameters

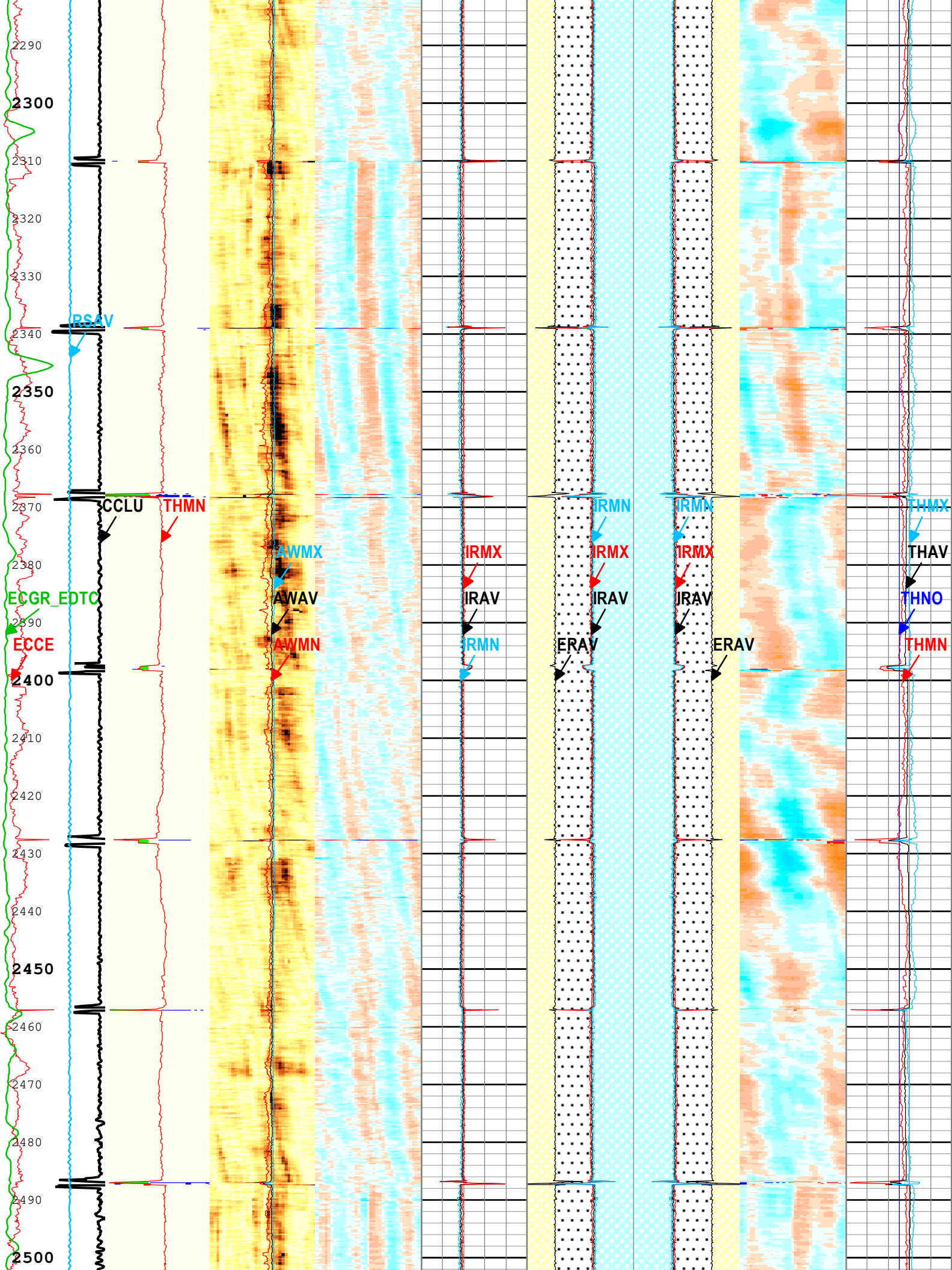
1A: Parameters

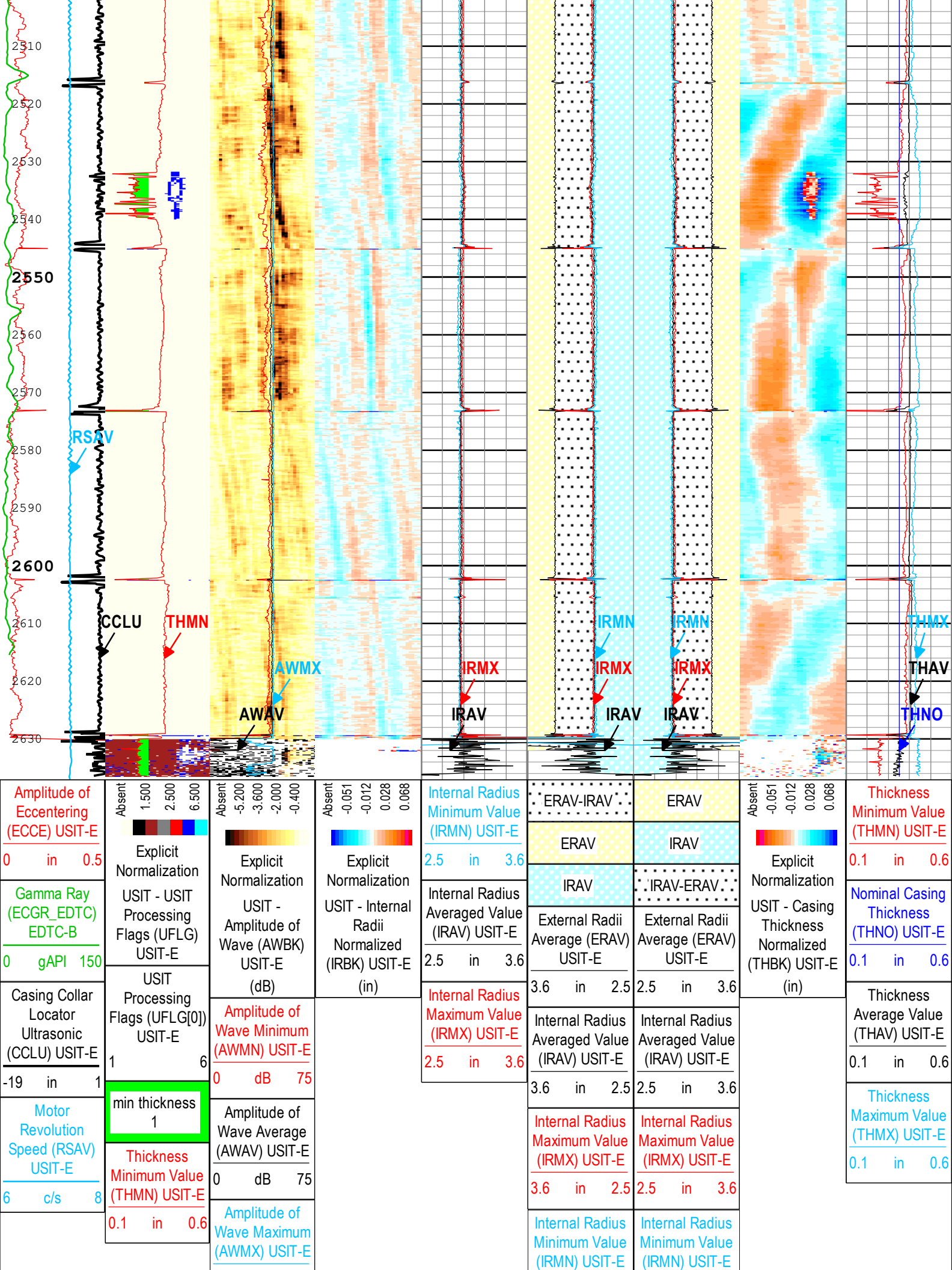
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	54	dB
EMXV	EMEX Voltage	USIT-E	75	V
IBC_ACQTYPE	IBC Acquisition type	USIT-E	DVR 1/4 and 1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	Time Zoned	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	Time Zoned	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	Time Zoned	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	Time Zoned	us
UPAT	USIT Emission Pattern	USIT-E	Pattern 750 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 1.5 in	
U-USIT_UTAN	Transducer Angles	USIT-E	38_DEG	
VRES	Vertical Resolution	USIT-E	1.5 in	
WINB	Window Begin Time	USIT-E	Time Zoned	us
WINE	Window End Time	USIT-E	Time Zoned	us

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
U-USIT_UFWB	127	21-Aug-2019 11:07:40	21-Aug-2019 11:07:57	2617.24	2607.86
U-USIT_UFWB	109.85	21-Aug-2019 11:07:57	21-Aug-2019 11:08:22	2607.86	2594.15
U-USIT_UFWB	117.9	21-Aug-2019 11:08:22	21-Aug-2019 11:09:16	2594.15	2564.25
U-USIT_UFWB	119.99	21-Aug-2019 11:09:16	21-Aug-2019 12:29:30	2564.25	13.4
U-USIT_UFWE	167	21-Aug-2019 11:07:40	21-Aug-2019 11:08:15	2617.24	2597.91
U-USIT_UFWE	171.38	21-Aug-2019 11:08:15	21-Aug-2019 11:16:36	2597.91	2322.16
U-USIT_UFWE	177.55	21-Aug-2019 11:16:36	21-Aug-2019 12:29:30	2322.16	13.4
U-USIT_UNWB	96	21-Aug-2019 11:07:40	21-Aug-2019 11:08:03	2617.24	2604.63
U-USIT_UNWB	90.22	21-Aug-2019 11:08:03	21-Aug-2019 11:09:12	2604.63	2566.1
U-USIT_UNWB	94.87	21-Aug-2019 11:09:12	21-Aug-2019 12:29:30	2566.1	13.4
U-USIT_UNWE	136	21-Aug-2019 11:07:40	21-Aug-2019 11:08:00	2617.24	2606.03
U-USIT_UNWE	148.47	21-Aug-2019 11:08:00	21-Aug-2019 11:16:39	2606.03	2320.58
U-USIT_UNWE	151.38	21-Aug-2019 11:16:39	21-Aug-2019 12:29:30	2320.58	13.4
WINB	19.41	21-Aug-2019 11:07:40	21-Aug-2019 11:07:54	2617.24	2609.3
WINB	47.68	21-Aug-2019 11:07:54	21-Aug-2019 11:09:00	2609.3	2573.12
WINB	50.39	21-Aug-2019 11:09:00	21-Aug-2019 11:09:05	2573.12	2570
WINB	45.78	21-Aug-2019 11:09:05	21-Aug-2019 12:29:30	2570	13.4
WINE	59.41	21-Aug-2019 11:07:40	21-Aug-2019 11:07:53	2617.24	2610.2
WINE	69.28	21-Aug-2019 11:07:53	21-Aug-2019 11:08:05	2610.2	2603.27
WINE	72.64	21-Aug-2019 11:08:05	21-Aug-2019 11:08:23	2603.27	2593.19
WINE	75.71	21-Aug-2019 11:08:23	21-Aug-2019 12:29:30	2593.19	13.4

All depth are at tool zero.





0

dB

75

3.6

in

2.5

2.5

in

3.6

TIME_1900 - Time Marked every 60.00 (s)

USIT Processing Flags (UFLG[0]) USIT-E

- 1 - UFLG 1 Value within [0.0 - 1.5] - :

UTIM Error
- 2 - UFLG 2 Value within [1.5 - 2.44] - :

Pulse Origin Not Detected
- 3 - UFLG 2 Value within [2.44 - 2.5] - :

Spiky Waveform
- 4 - UFLG 3 Value within [2.5 - 3.5] - :

WINLEN Error
- 5 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :

Casing Thickness Error
- 6 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :

Loop Processing Error

Description: USI Corrosion Format: Log (Import (2) of USI Local Comp) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 21-Aug-2019 16:13:09

Channel Processing Parameters

1A: Parameters

Parameter	Description	Tool	Value	Unit
BAR(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	7.625	in
CBLO	Casing Bottom (Logger)	WLSESSION	3950	ft
CDEN	Cement Density	USIT-E	0	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.352	in
CYSTLGR	Casing Yield Strength - Zoned along logger depths	WLSESSION	0	psi
DFD	Drilling Fluid Density	Borehole	9.35	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10	lbm/gal
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	-14.87	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	Inversion Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	21.86	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.24	
MUD_N_INV	IBC Inversion Mud Normalization Factor	USIT-E	1.2	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-14.7	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.81	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Tool Control Parameters

1A: Parameters

Parameter	Description	Tool	Value	Unit
-----------	-------------	------	-------	------

AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	54	dB
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
IBC_ACQTYPE	IBC Acquisition type	USIT-E	DVR 1/4 and 1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	Time Zoned	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	Time Zoned	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	Time Zoned	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	Time Zoned	us
UPAT	USIT Emission Pattern	USIT-E	Pattern 750 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 1.5 in	
U-USIT_UTAN	Transducer Angles	USIT-E	38_DEG	
VRES	Vertical Resolution	USIT-E	1.5 in	
WINB	Window Begin Time	USIT-E	Time Zoned	us
WINE	Window End Time	USIT-E	Time Zoned	us

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	65	21-Aug-2019 10:18:02	21-Aug-2019 10:24:18	2637.66	2444.74
EMXV	70	21-Aug-2019 10:24:18	21-Aug-2019 10:29:13	2444.74	2282.64
U-USIT_UFWB	127	21-Aug-2019 10:18:02	21-Aug-2019 10:19:06	2637.66	2618.82
U-USIT_UFWB	119.67	21-Aug-2019 10:19:06	21-Aug-2019 10:29:13	2618.82	2282.64
U-USIT_UFWE	167	21-Aug-2019 10:18:02	21-Aug-2019 10:19:08	2637.66	2617.98
U-USIT_UFWE	174	21-Aug-2019 10:19:08	21-Aug-2019 10:29:13	2617.98	2282.64
U-USIT_UNWB	96	21-Aug-2019 10:18:02	21-Aug-2019 10:19:02	2637.66	2621.21
U-USIT_UNWB	98.72	21-Aug-2019 10:19:02	21-Aug-2019 10:19:04	2621.21	2619.93
U-USIT_UNWB	93.49	21-Aug-2019 10:19:04	21-Aug-2019 10:29:13	2619.93	2282.64
U-USIT_UNWE	136	21-Aug-2019 10:18:02	21-Aug-2019 10:19:01	2637.66	2621.92
U-USIT_UNWE	143.56	21-Aug-2019 10:19:01	21-Aug-2019 10:29:13	2621.92	2282.64
WINB	19.41	21-Aug-2019 10:18:02	21-Aug-2019 10:18:45	2637.66	2630.54
WINB	35.81	21-Aug-2019 10:18:45	21-Aug-2019 10:29:13	2630.54	2282.64
WINE	59.41	21-Aug-2019 10:18:02	21-Aug-2019 10:18:43	2637.66	2631.11
WINE	86.46	21-Aug-2019 10:18:43	21-Aug-2019 10:29:13	2631.11	2282.64

All depth are at tool zero.

1A

Software Version	
Acquisition System	Version
Maxwell 2019	9.0.106845.3100
Application Patch	Wireline_NPD-PMCT-2019.0_9.0.113037

Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1A	Repeat[5]:Up	Up	2507.56 ft	2564.19 ft	21-Aug-2019 1:24:53 PM	21-Aug-2019 1:29:36 PM	ON	1.16 ft	Yes

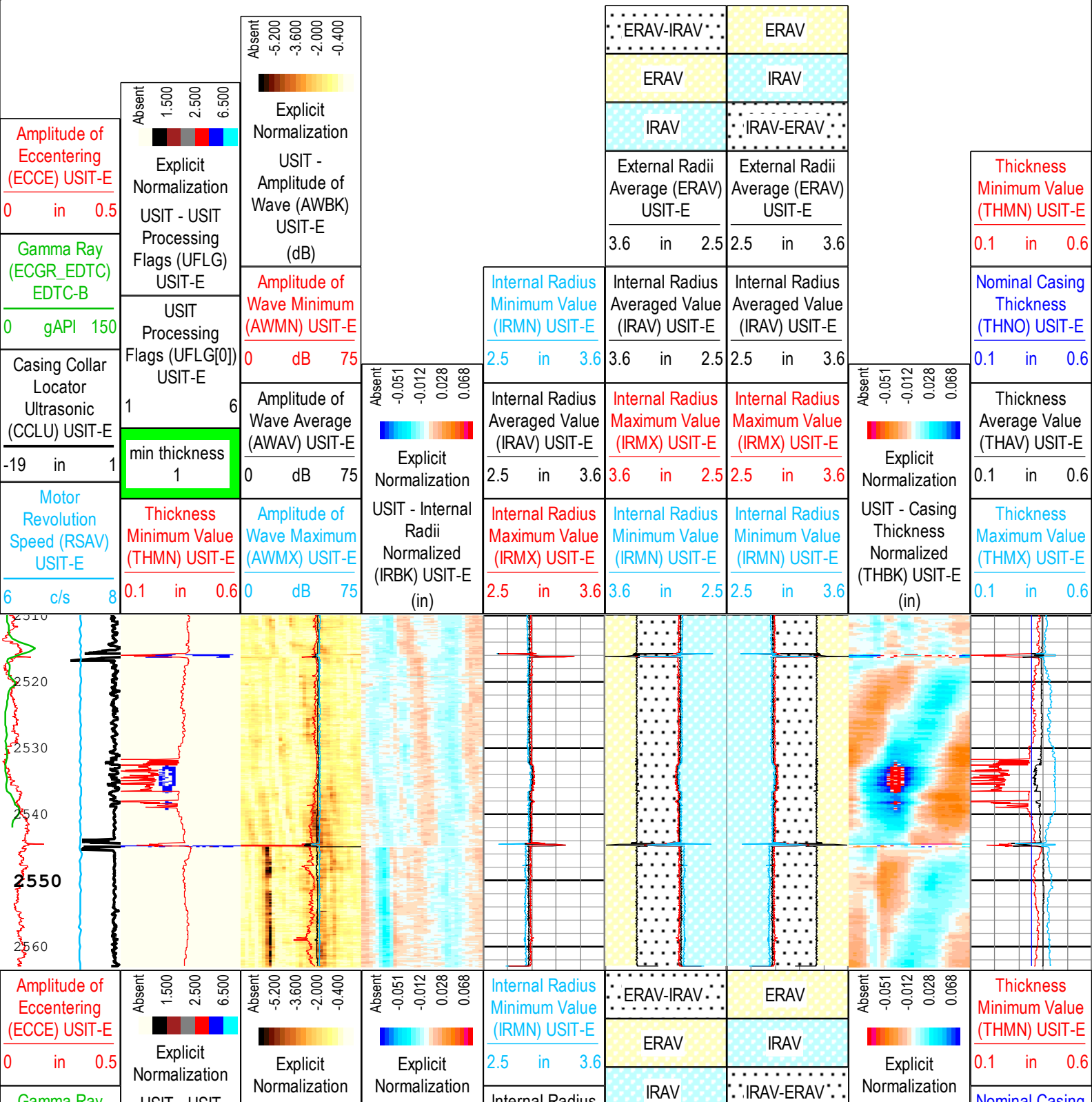
All depths are referenced to toolstring zero

Description: USI Corrosion Format: Log (Import (2) of USI Local Comp) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 21-Aug-2019 16:13:16

USIT Processing Flags (UFLG[0]) USIT-E

1 - UFLG 1 Value within [0.0 - 1.5] - :	 UTIM Error
2 - UFLG 2 Value within [1.5 - 2.44] - :	 Pulse Origin Not Detected
3 - UFLG 2 Value within [2.44 - 2.5] - :	 Spiky Waveform
4 - UFLG 3 Value within [2.5 - 3.5] - :	 WINLEN Error
5 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :	 Casing Thickness Error
6 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :	 Loop Processing Error

TIME_1900 - Time Marked every 60.00 (s)



Gamma Ray (ECGR_EDTC) EDTC-B	USIT - USIT Processing Flags (UFLG) USIT-E	USIT - Amplitude of Wave (AWBK) USIT-E (dB)	USIT - Internal Radii Normalized (IRBK) USIT-E (in)	Internal Radius Averaged Value (IRAV) USIT-E 2.5 in 3.6	External Radii Average (ERAV) USIT-E 3.6 in 2.5	External Radii Average (ERAV) USIT-E 2.5 in 3.6	USIT - Casing Thickness Normalized (THBK) USIT-E (in)	Nominal Casing Thickness (THNO) USIT-E 0.1 in 0.6
0 gAPI 150	USIT Processing Flags (UFLG[0]) USIT-E 1 6	Amplitude of Wave Minimum (AWMN) USIT-E 0 dB 75		Internal Radius Maximum Value (IRMX) USIT-E 2.5 in 3.6	Internal Radius Averaged Value (IRAV) USIT-E 3.6 in 2.5	Internal Radius Averaged Value (IRAV) USIT-E 2.5 in 3.6		Thickness Average Value (THAV) USIT-E 0.1 in 0.6
Casing Collar Locator Ultrasonic (CCLU) USIT-E -19 in 1	min thickness 1	Amplitude of Wave Average (AWAV) USIT-E 0 dB 75		Internal Radius Maximum Value (IRMX) USIT-E 3.6 in 2.5	Internal Radius Maximum Value (IRMX) USIT-E 2.5 in 3.6			Thickness Maximum Value (THMX) USIT-E 0.1 in 0.6
Motor Revolution Speed (RSAV) USIT-E 6 c/s 8	Thickness Minimum Value (THMN) USIT-E 0.1 in 0.6	Amplitude of Wave Maximum (AWMX) USIT-E 0 dB 75		Internal Radius Minimum Value (IRMN) USIT-E 3.6 in 2.5	Internal Radius Minimum Value (IRMN) USIT-E 2.5 in 3.6			

TIME_1900 - Time Marked every 60.00 (s)

USIT Processing Flags (UFLG[0]) USIT-E

- 1 - UFLG 1 Value within [0.0 - 1.5] - :
2 - UFLG 2 Value within [1.5 - 2.44] - :
3 - UFLG 2 Value within [2.44 - 2.5] - :
4 - UFLG 3 Value within [2.5 - 3.5] - :
5 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :
6 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :
- UTIM Error

Pulse Origin Not Detected

Spiky Waveform

WINLEN Error

Casing Thickness Error

Loop Processing Error

Description: USI Corrosion Format: Log (Import (2) of USI Local Comp) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 21-Aug-2019 16:13:16

Channel Processing Parameters				
1A: Parameters				
Parameter	Description	Tool	Value	Unit
BAR(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	7.625	in
CBLO	Casing Bottom (Logger)	WLSESSION	3950	ft
CDEN	Cement Density	USIT-E	0	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CENT)	Cement Type	USIT-E	Regular Cement	
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.352	in
CYSTLGR	Casing Yield Strength - Zoned along logger depths	WLSESSION	0	psi
DFD	Drilling Fluid Density	Borehole	9.35	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10	lbm/gal
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	-14.87	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	Inversion Norm.	

ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	21.86	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.24	
MUD_N_INV	IBC Inversion Mud Normalization Factor	USIT-E	1.2	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-14.7	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.81	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Tool Control Parameters

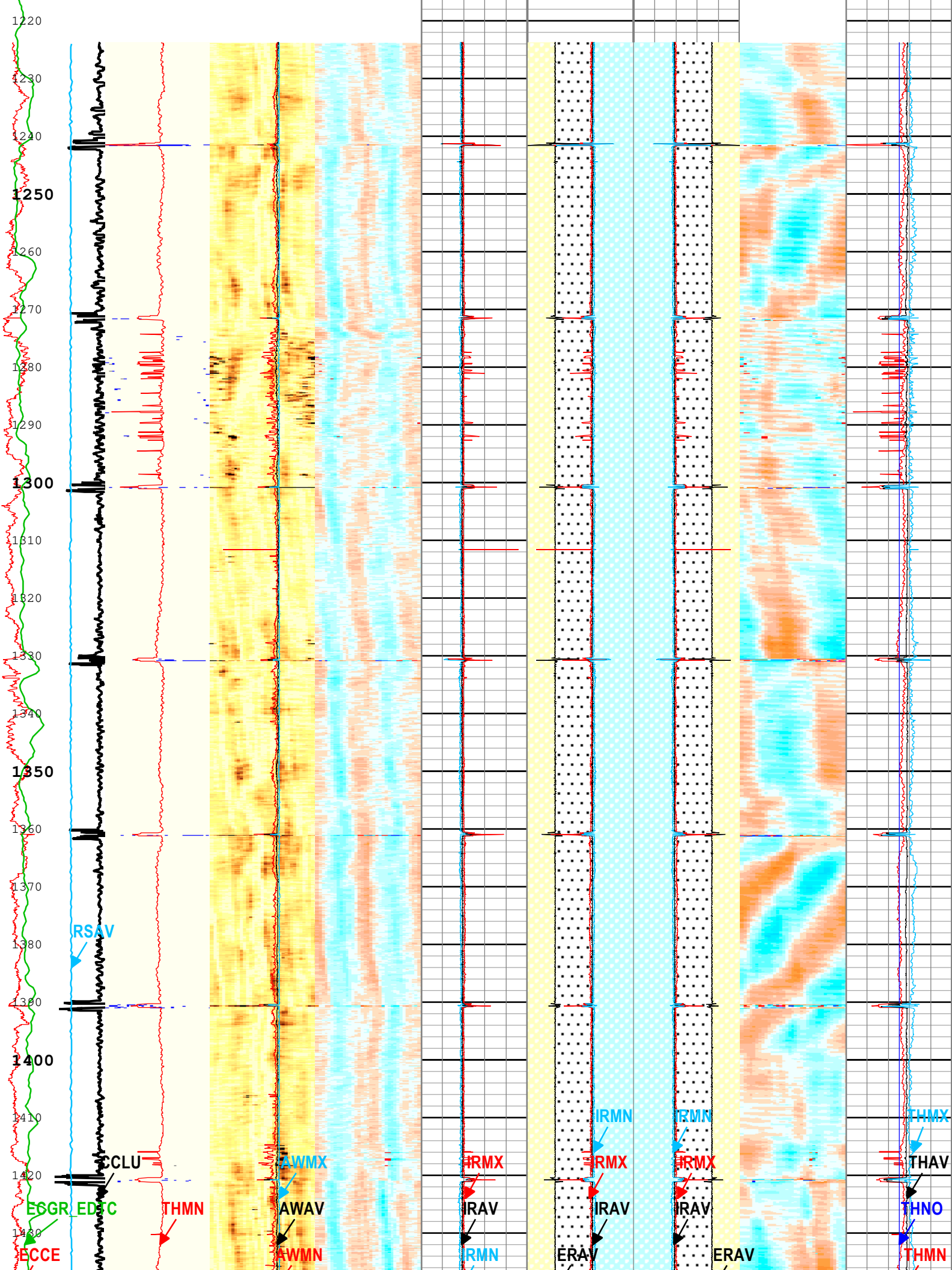
1A: Parameters

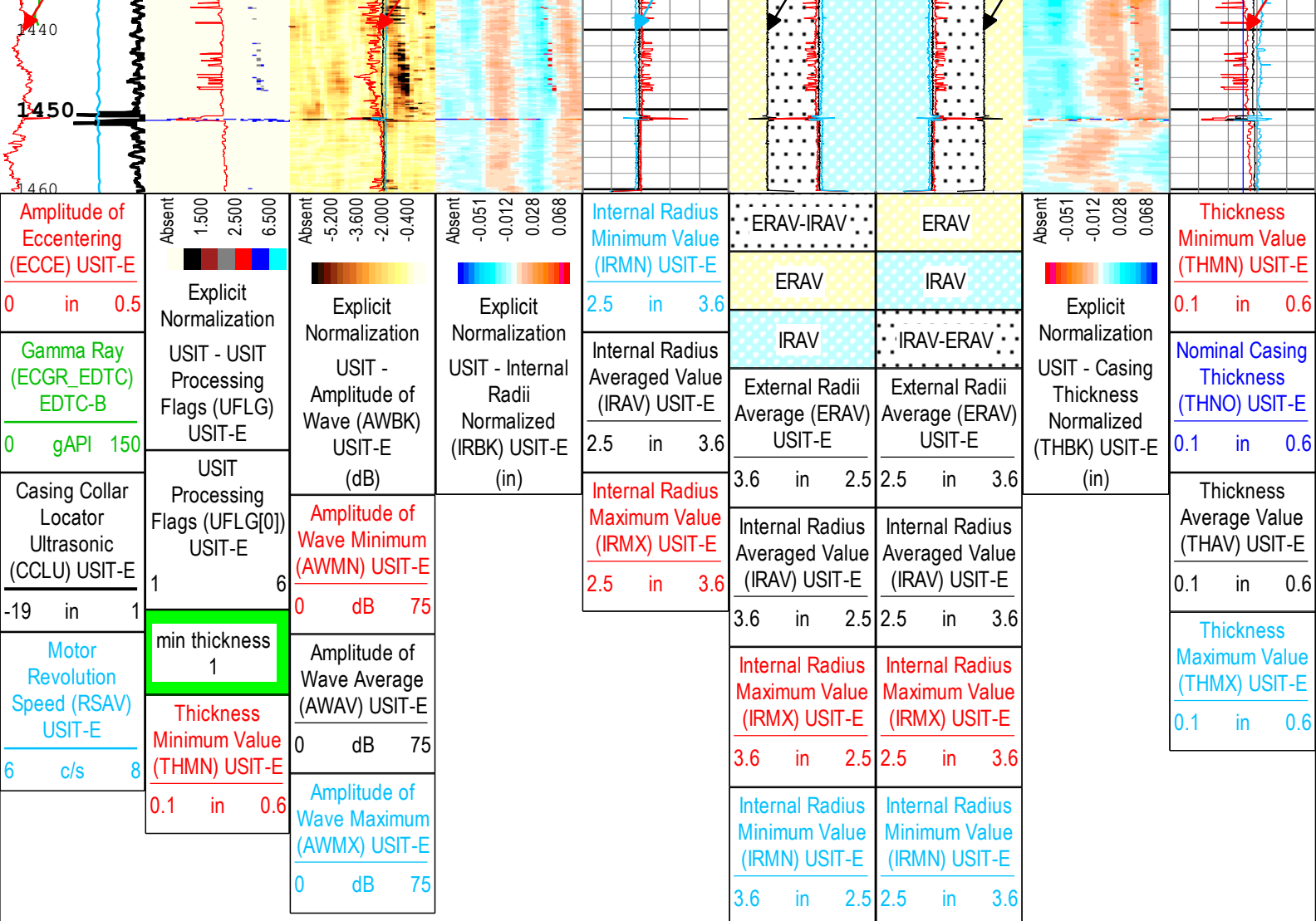
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	54	dB
EMXV	EMEX Voltage	USIT-E	75	V
IBC_ACQTYPE	IBC Acquisition type	USIT-E	DVR 1/4 and 1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	Time Zoned	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	Time Zoned	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	Time Zoned	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	Time Zoned	us
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 0.6 in	
U-USIT_UTAN	Transducer Angles	USIT-E	38_DEG	
VRES	Vertical Resolution	USIT-E	0.6 in	
WINB	Window Begin Time	USIT-E	Time Zoned	us
WINE	Window End Time	USIT-E	Time Zoned	us

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
U-USIT_UFWB	156	21-Aug-2019 13:24:53	21-Aug-2019 13:25:24	2564.19	2561.7
U-USIT_UFWB	110.83	21-Aug-2019 13:25:24	21-Aug-2019 13:25:40	2561.7	2558.64
U-USIT_UFWB	115.42	21-Aug-2019 13:25:40	21-Aug-2019 13:29:36	2558.64	2507.56
U-USIT_UFWE	196	21-Aug-2019 13:24:53	21-Aug-2019 13:25:26	2564.19	2561.38
U-USIT_UFWE	194.94	21-Aug-2019 13:25:26	21-Aug-2019 13:29:36	2561.38	2507.56
U-USIT_UNWB	125	21-Aug-2019 13:24:53	21-Aug-2019 13:25:28	2564.19	2561.03
U-USIT_UNWB	82.36	21-Aug-2019 13:25:28	21-Aug-2019 13:25:41	2561.03	2558.28
U-USIT_UNWB	87.27	21-Aug-2019 13:25:41	21-Aug-2019 13:29:36	2558.28	2507.56
U-USIT_UNWE	165	21-Aug-2019 13:24:53	21-Aug-2019 13:25:29	2564.19	2560.68
U-USIT_UNWE	159.6	21-Aug-2019 13:25:29	21-Aug-2019 13:29:36	2560.68	2507.56
WINB	51.5	21-Aug-2019 13:24:53	21-Aug-2019 13:25:32	2564.19	2560.24
WINB	49.12	21-Aug-2019 13:25:32	21-Aug-2019 13:29:36	2560.24	2507.56
WINE	91.5	21-Aug-2019 13:24:53	21-Aug-2019 13:25:33	2564.19	2559.92
WINE	86.08	21-Aug-2019 13:25:33	21-Aug-2019 13:29:36	2559.92	2507.56

1210





USIT Processing Flags (UFLG[0]) USIT-E				
1 - UFLG 1 Value within [0.0 - 1.5] - :	UTIM Error			
2 - UFLG 2 Value within [1.5 - 2.44] - :	Pulse Origin Not Detected			
3 - UFLG 2 Value within [2.44 - 2.5] - :	Spiky Waveform			
4 - UFLG 3 Value within [2.5 - 3.5] - :	WINLEN Error			
5 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :	Casing Thickness Error			
6 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :	Loop Processing Error			

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Corrosion Format: Log (Import (2) of USI Local Comp) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth

Creation Date: 21-Aug-2019 16:13:23

Channel Processing Parameters				
1A: Parameters				
Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CBLO	Casing Bottom (Logger)	WLSESSION	3950	ft
CDEN	Cement Density	USIT-E	0	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.352	in
CYSTLGR	Casing Yield Strength - Zoned along logger depths	WLSESSION	0	psi
DFD	Drilling Fluid Density	Borehole	9.35	lbm/gal

DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10	lbm/gal
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	-14.87	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	Inversion Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	21.86	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.24	
MUD_N_INV	IBC Inversion Mud Normalization Factor	USIT-E	1.2	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-14.7	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.81	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	12.25	1203	1209
BS	7.625	1209	1460.5

All depth are actual.

Tool Control Parameters

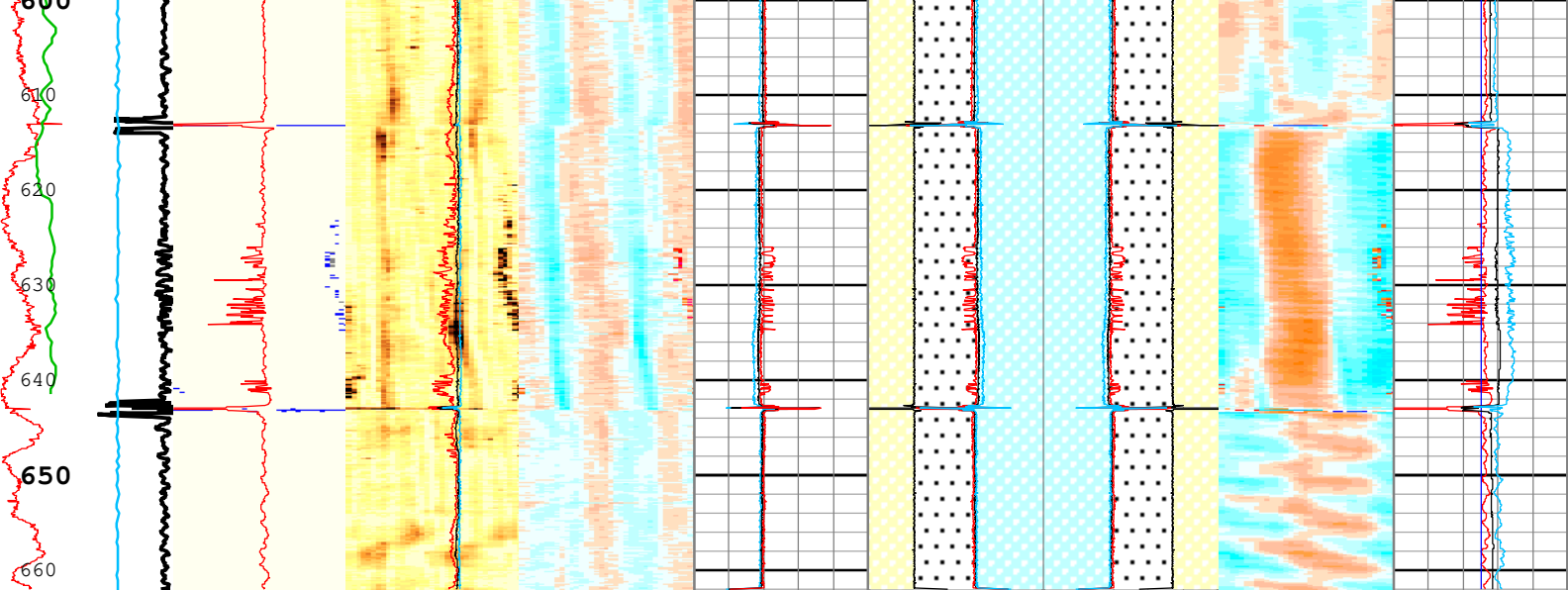
1A: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	54	dB
EMXV	EMEX Voltage	USIT-E	75	V
IBC_ACQTYPE	IBC Acquisition type	USIT-E	DVR 1/4 and 1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	115.42	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	Time Zoned	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	87.27	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	159.6	us
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 0.6 in	
U-USIT_UTAN	Transducer Angles	USIT-E	38_DEG	
VRES	Vertical Resolution	USIT-E	0.6 in	
WINB	Window Begin Time	USIT-E	49.12	us
WINE	Window End Time	USIT-E	86.08	us

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
U-USIT_UFWE	194.94	21-Aug-2019 13:40:15	21-Aug-2019 13:40:31	1461.35	1459.48

Amplitude of Eccentering (ECCE) USIT-E 0 in 0.5		Gamma Ray (ECGR_EDTC) EDTC-B 0 gAPI 150	Casing Collar Locator Ultrasonic (CCLU) USIT-E -19 in 1	Motor Revolution Speed (RSAV) USIT-E 6 c/s 8	Explicit Normalization USIT - USIT Processing Flags (UFLG) USIT-E USIT Processing Flags (UFLG[0]) USIT-E 16 min thickness 1	Explicit Normalization USIT - Amplitude of Wave (AWBK) USIT-E (dB) Amplitude of Wave Minimum (AWMN) USIT-E 0 dB 75 Amplitude of Wave Average (AWAV) USIT-E 0 dB 75 Amplitude of Wave Maximum (AWMX) USIT-E 0 dB 75	Explicit Normalization USIT - Internal Radii Normalized (IRBK) USIT-E (in)	Explicit Normalization USIT - Casing Thickness Normalized (THBK) USIT-E (in)	Explicit Normalization USIT - Thickness Average Value (THAV) USIT-E 0.1 in 0.6	Explicit Normalization USIT - Thickness Maximum Value (THMX) USIT-E 0.1 in 0.6
ERA-V-IRA-V ERA-V IRA-V IRA-V-ERA-V External Radii Average (ERA-V) USIT-E 3.6 in 2.5 Internal Radius Minimum Value (IRMN) USIT-E 2.5 in 3.6 Internal Radius Averaged Value (IRA-V) USIT-E 3.6 in 2.5 Internal Radius Maximum Value (IRMX) USIT-E 3.6 in 2.5 Internal Radius Minimum Value (IRMN) USIT-E 2.5 in 3.6 Internal Radius Minimum Value (IRMN) USIT-E 2.5 in 3.6		ERA-V IRA-V IRA-V-ERA-V External Radii Average (ERA-V) USIT-E 2.5 in 3.6 Internal Radius Averaged Value (IRA-V) USIT-E 2.5 in 3.6 Internal Radius Maximum Value (IRMX) USIT-E 2.5 in 3.6 Internal Radius Minimum Value (IRMN) USIT-E 2.5 in 3.6 Internal Radius Minimum Value (IRMN) USIT-E 2.5 in 3.6								



Amplitude of Eccentering (ECCE) USIT-E 0 in 0.5	Gamma Ray (ECGR_EDTC) EDTC-B 0 gAPI 150	Casing Collar Locator Ultrasonic (CCLU) USIT-E -19 in 1	Motor Revolution Speed (RSAV) USIT-E 6 c/s 8	Internal Radius Minimum Value (IRMN) USIT-E 2.5 in 3.6	ERAV-IRAV ERAV IRAV	ERAV IRAV IRAV-ERAV	Thickness Minimum Value (THMN) USIT-E 0.1 in 0.6
Amplitude of Wave Minimum (AWMN) USIT-E 0 dB 75	Amplitude of Wave Average (AWAV) USIT-E 0 dB 75	Amplitude of Wave Maximum (AWMX) USIT-E 0 dB 75		Internal Radius Maximum Value (IRMX) USIT-E 2.5 in 3.6	Internal Radius Averaged Value (IRAV) USIT-E 3.6 in 2.5	Internal Radius Averaged Value (IRAV) USIT-E 2.5 in 3.6	Thickness Average Value (THAV) USIT-E 0.1 in 0.6
Amplitude of Wave Maximum (AWMX) USIT-E 0 dB 75				Internal Radius Minimum Value (IRMN) USIT-E 3.6 in 2.5	Internal Radius Minimum Value (IRMN) USIT-E 2.5 in 3.6		Thickness Maximum Value (THMX) USIT-E 0.1 in 0.6

USIT Processing Flags (UFLG[0]) USIT-E

- | | |
|---|---------------------------|
| 1 - UFLG 1 Value within [0.0 - 1.5] - : | UTIM Error |
| 2 - UFLG 2 Value within [1.5 - 2.44] - : | Pulse Origin Not Detected |
| 3 - UFLG 2 Value within [2.44 - 2.5] - : | Spiky Waveform |
| 4 - UFLG 3 Value within [2.5 - 3.5] - : | WINLEN Error |
| 5 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - : | Casing Thickness Error |
| 6 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - : | Loop Processing Error |

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Corrosion Format: Log (Import (2) of USI Local Comp) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 21-Aug-2019 16:13:30

Channel Processing Parameters				
1A: Parameters				
Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	

BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	12.25	in
CBLO	Casing Bottom (Logger)	WLSESSION	3950	ft
CDEN	Cement Density	USIT-E	0	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.352	in
CYSTLGR	Casing Yield Strength - Zoned along logger depths	WLSESSION	0	psi
DFD	Drilling Fluid Density	Borehole	9.35	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10	lbm/gal
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	-14.87	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	Inversion Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	21.86	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.24	
MUD_N_INV	IBC Inversion Mud Normalization Factor	USIT-E	1.2	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-14.7	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.81	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Tool Control Parameters

1A: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	54	dB
EMXV	EMEX Voltage	USIT-E	75	V
IBC_ACQTYPE	IBC Acquisition type	USIT-E	DVR 1/4 and 1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	115.42	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	176.5	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	87.27	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	159.6	us
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 0.6 in	
U-USIT_UTAN	Transducer Angles	USIT-E	38_DEG	
VRES	Vertical Resolution	USIT-E	0.6 in	
WINB	Window Begin Time	USIT-E	49.12	us
WINE	Window End Time	USIT-E	86.08	us

Software Version

Acquisition System

Maxwell 2019

Version

9.0.106845.3100

Application Patch

Wireline_NPD-PMCT-2019.0_9.0.113037

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1A	Log[8]:Up	Up	-1.86 ft	503.80 ft	21-Aug-2019 2:09:03 PM	21-Aug-2019 2:48:29 PM	ON	1.16 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Occidental Permian Ltd. Well:South Hobbs (G/SA) 28

1A: Log[8]:Up:S011

Description: USI Corrosion Format: Log (Import (2) of USI Local Comp) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
 Creation Date: 21-Aug-2019 16:13:37

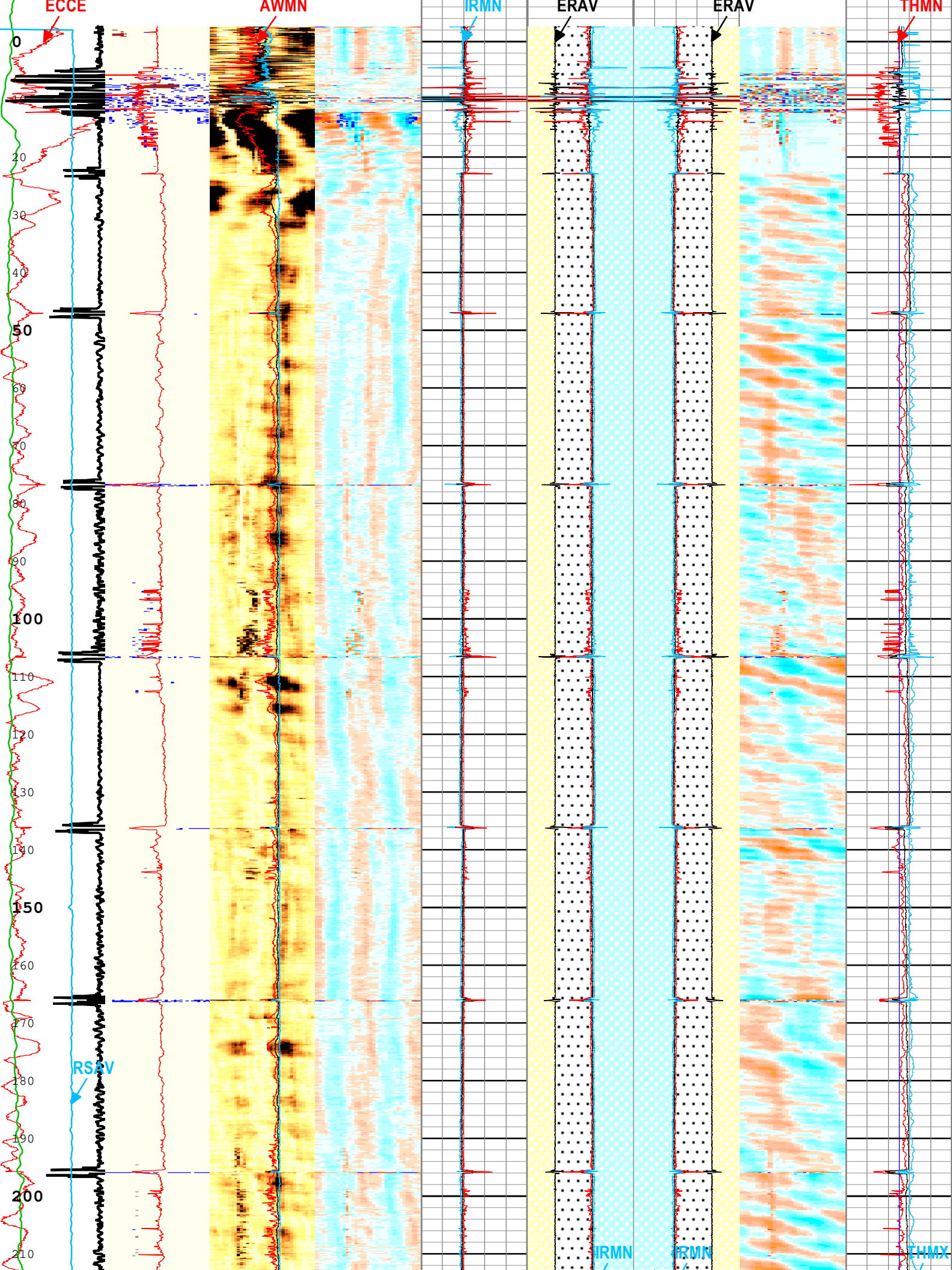
TIME_1900 - Time Marked every 60.00 (s)

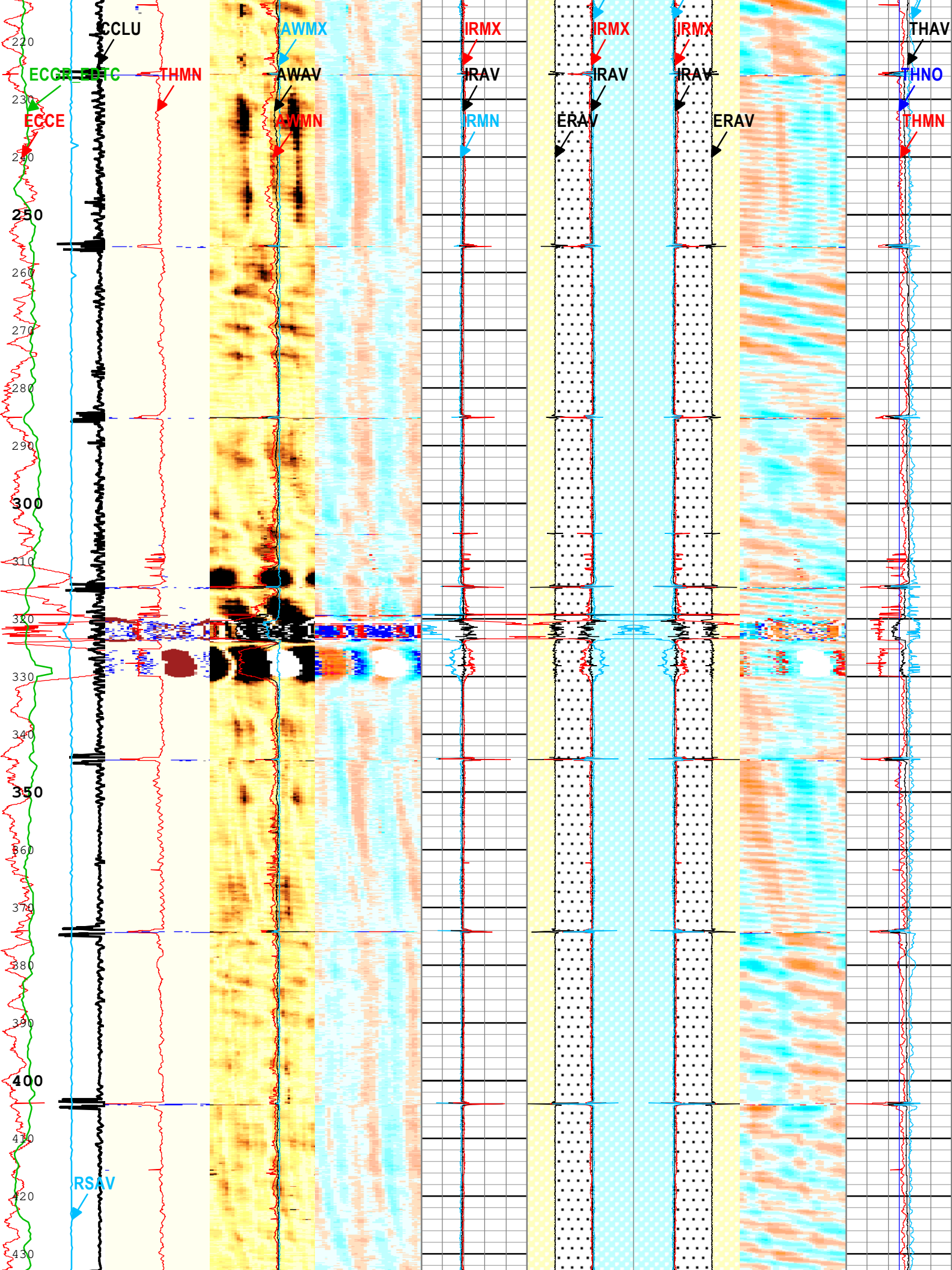
USIT Processing Flags (UFLG[0]) USIT-E

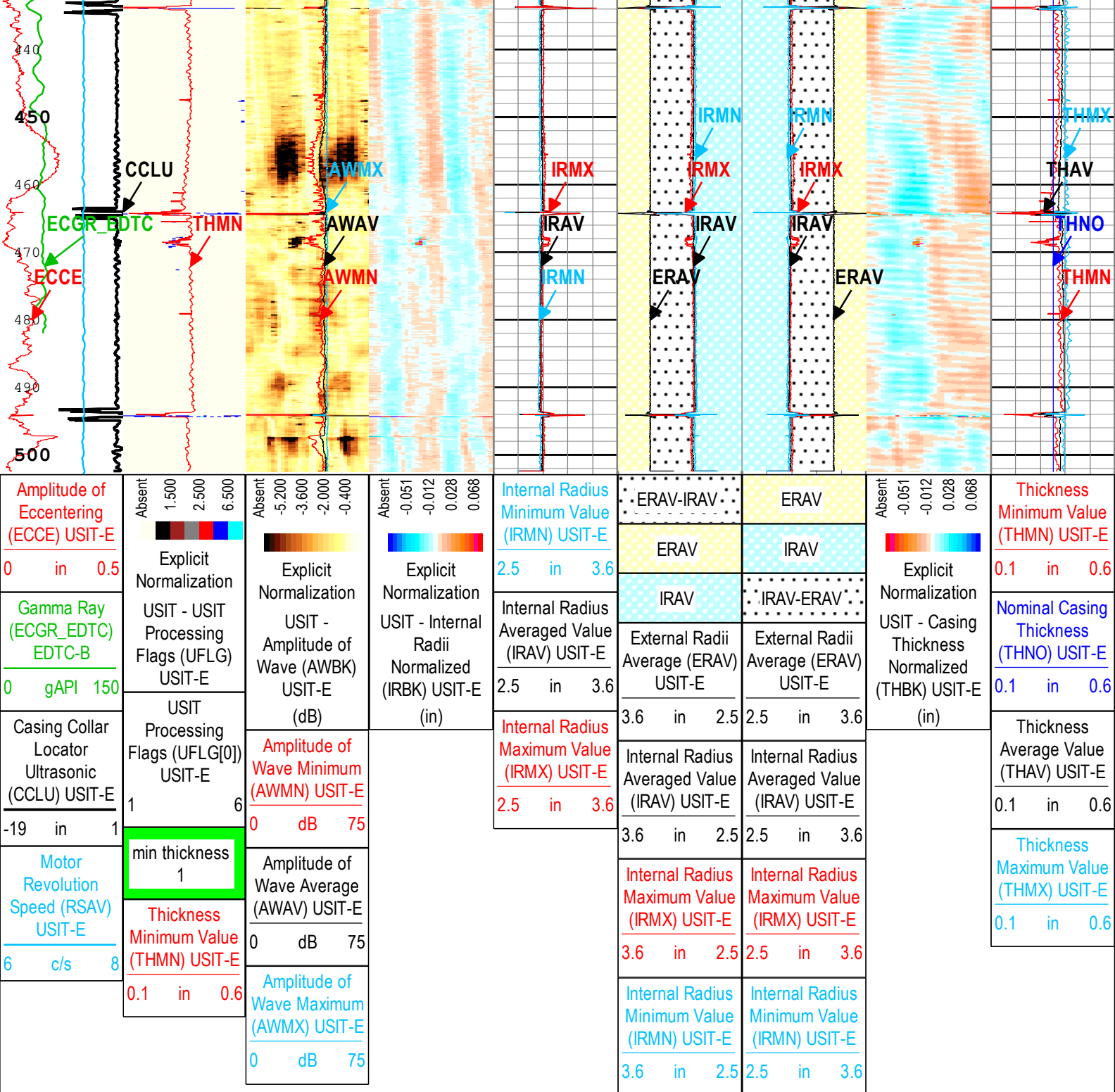
- 1 - UFLG 1 Value within [0.0 - 1.5] - :  UTIM Error
- 2 - UFLG 2 Value within [1.5 - 2.44] - :  Pulse Origin Not Detected
- 3 - UFLG 2 Value within [2.44 - 2.5] - :  Spiky Waveform
- 4 - UFLG 3 Value within [2.5 - 3.5] - :  WINLEN Error
- 5 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - :  Casing Thickness Error
- 6 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - :  Loop Processing Error

			Absent1,5002,5006,500 Explicit Normalization			Absent-5,200-3,600-2,000-0,400 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization						Absent-0.051-0.0120.0280.068 Explicit Normalization		
--	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	--	---	--	--

20
ECGR_EDTC







USIT Processing Flags (UFLG[0]) USIT-E

- | | |
|---|---------------------------|
| 1 - UFLG 1 Value within [0.0 - 1.5] - : | UTIM Error |
| 2 - UFLG 2 Value within [1.5 - 2.44] - : | Pulse Origin Not Detected |
| 3 - UFLG 2 Value within [2.44 - 2.5] - : | Spiky Waveform |
| 4 - UFLG 3 Value within [2.5 - 3.5] - : | WINLEN Error |
| 5 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - : | Casing Thickness Error |
| 6 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - : | Loop Processing Error |

TIME_1900 - Time Marked every 60.00 (s)

Description: USI Corrosion Format: Log (Import (2) of USI Local Comp) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 21-Aug-2019 16:13:37

Channel Processing Parameters

1A: Parameters

Parameter	Description	Tool	Value	Unit
BAR(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
CBLO	Casing Bottom (Logger)	WLSESSION	3950	ft
CDEN	Cement Density	USIT-E	0	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.352	in
CYSTLGR	Casing Yield Strength - Zoned along logger depths	WLSESSION	0	psi
DFD	Drilling Fluid Density	Borehole	9.35	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FD	Fluid Density	USIT-E	10	lbm/gal
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
HEMA	Hematite Presence Flag	Borehole	No	
IBC_FRP_OFFSET	IBC Flexural Offset from Free Pipe	USIT-E	-14.87	dB/m
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	Inversion Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	21.86	us
MUD_N_FRP	Free Pipe Mud Normalization Factor	USIT-E	1.24	
MUD_N_INV	IBC Inversion Mud Normalization Factor	USIT-E	1.2	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	0	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	-14.7	dB/m
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.81	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.6	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Depth Zone Parameters			
Parameter	Value	Start (ft)	Stop (ft)
BS	15	0	212
BS	12.25	212	503
All depth are actual.			

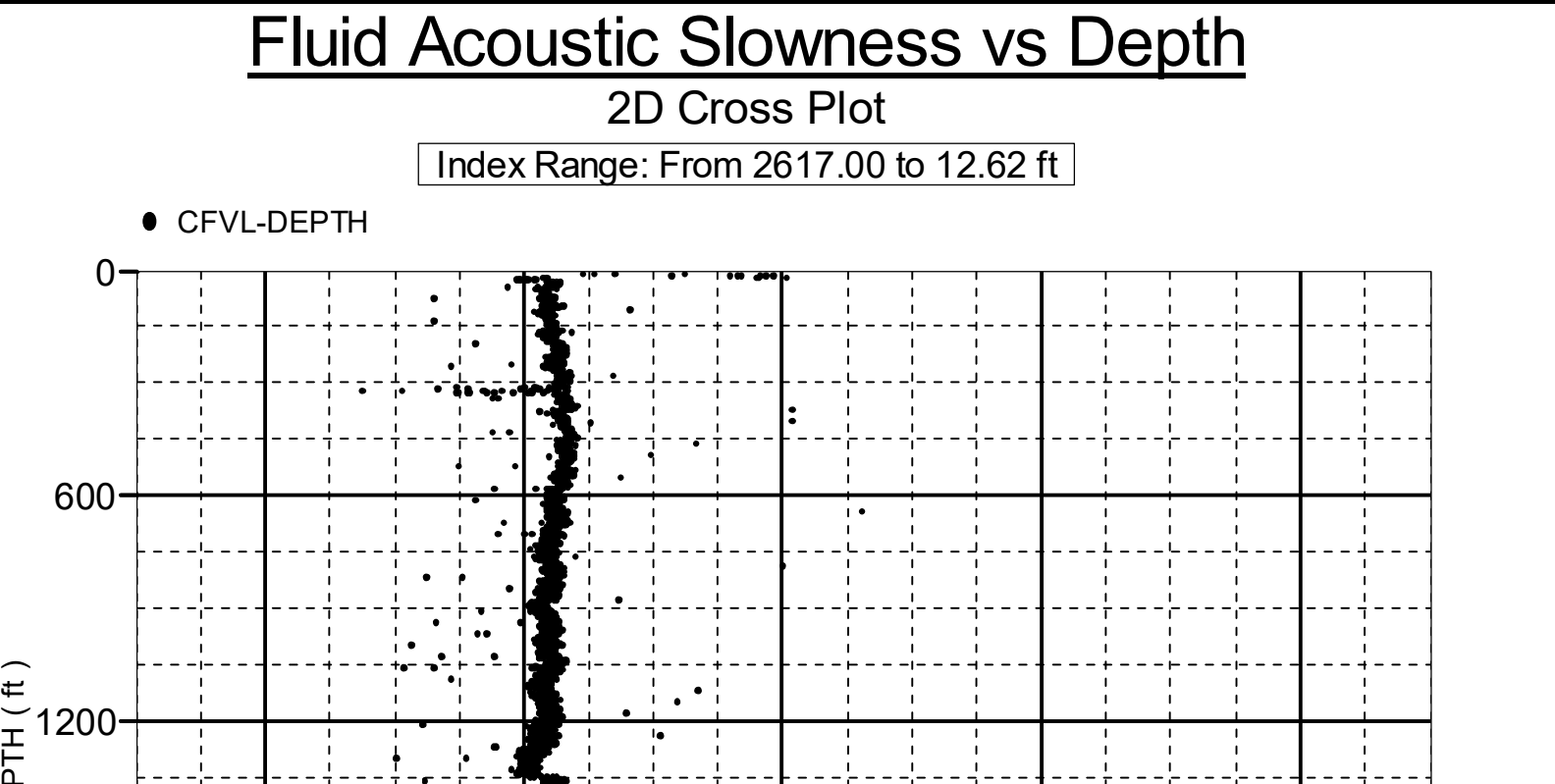
Tool Control Parameters	
-------------------------	--

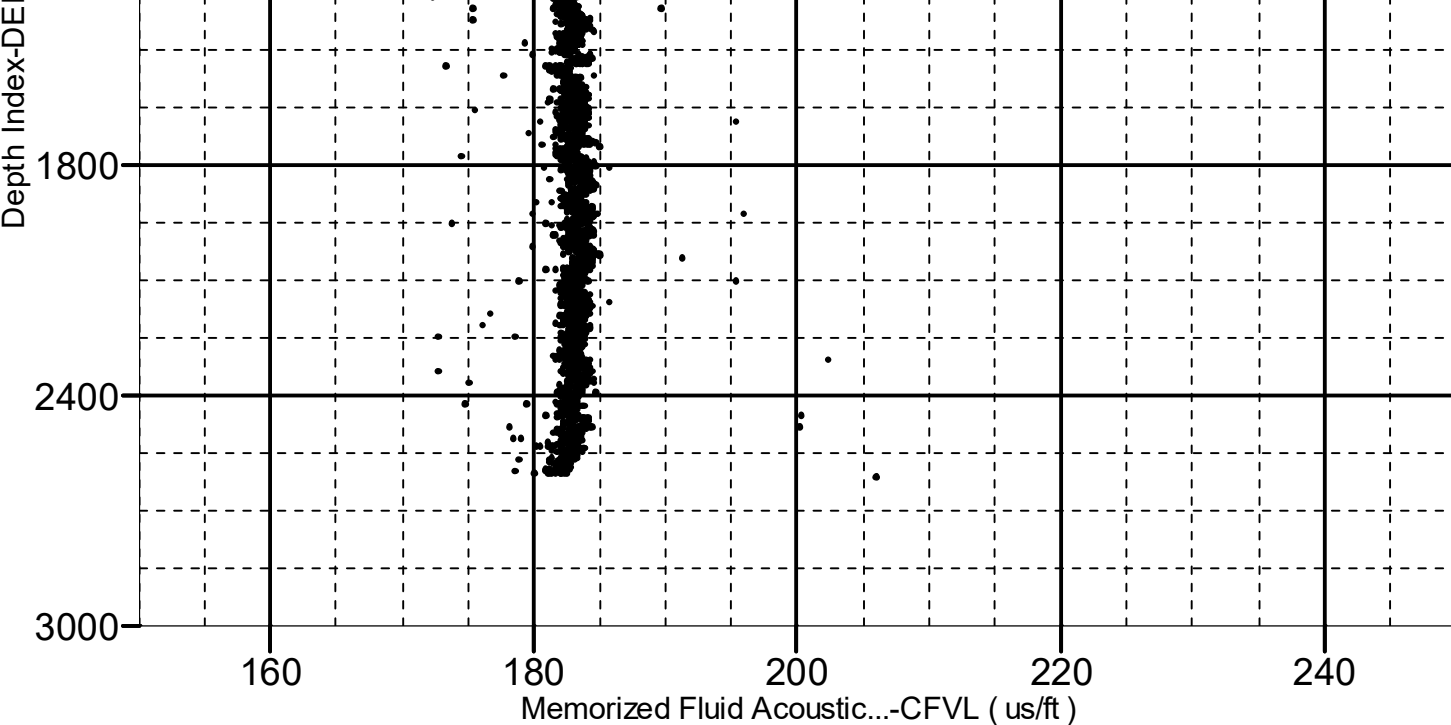
1A: Parameters				
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	54	dB
EMXV	EMEX Voltage	USIT-E	75	V
IBC_ACQTYPE	IBC Acquisition type	USIT-E	DVR 1/4 and 1 MHz	
IBC_FLEXDBP	IBC Flex Duration Before Peak	USIT-E	30	us
ICE2_ACQ	Ultrasonic ICE2 Acquisition	USIT-E	Yes	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	Time Zoned	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	Time Zoned	us
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	Time Zoned	us

U-USIT_UNWE	Near Receiver Window End Time	USIT-E	Time Zoned	us
UPAT	USIT Emission Pattern	USIT-E	Pattern 375 KHz	
UWKMM	USIT Working Mode	USIT-E	10 deg at 0.6 in	
U-USIT_UTAN	Transducer Angles	USIT-E	38_DEG	
VRES	Vertical Resolution	USIT-E	0.6 in	
WINB	Window Begin Time	USIT-E	Time Zoned	us
WINE	Window End Time	USIT-E	Time Zoned	us

Time Zone Parameters					
Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
U-USIT_UFWB	115.42	21-Aug-2019 14:09:03	21-Aug-2019 14:23:33	503.8	314.7
U-USIT_UFWB	118.94	21-Aug-2019 14:23:33	21-Aug-2019 14:48:29	314.7	-1.86
U-USIT_UFWE	176.5	21-Aug-2019 14:09:03	21-Aug-2019 14:47:26	503.8	10.26
U-USIT_UFWE	291.61	21-Aug-2019 14:47:26	21-Aug-2019 14:48:29	10.26	-1.86
U-USIT_UNWB	87.27	21-Aug-2019 14:09:03	21-Aug-2019 14:22:55	503.8	322.99
U-USIT_UNWB	69.76	21-Aug-2019 14:22:55	21-Aug-2019 14:23:30	322.99	315.18
U-USIT_UNWB	82.32	21-Aug-2019 14:23:30	21-Aug-2019 14:23:35	315.18	314.13
U-USIT_UNWB	73.95	21-Aug-2019 14:23:35	21-Aug-2019 14:24:08	314.13	307
U-USIT_UNWB	80.22	21-Aug-2019 14:24:08	21-Aug-2019 14:48:29	307	-1.86
U-USIT_UNWE	159.6	21-Aug-2019 14:09:03	21-Aug-2019 14:47:24	503.8	10.58
U-USIT_UNWE	204.75	21-Aug-2019 14:47:24	21-Aug-2019 14:48:29	10.58	-1.86
WINB	49.12	21-Aug-2019 14:09:03	21-Aug-2019 14:23:07	503.8	320.32
WINB	33.51	21-Aug-2019 14:23:07	21-Aug-2019 14:24:11	320.32	306.25
WINB	39.65	21-Aug-2019 14:24:11	21-Aug-2019 14:48:29	306.25	-1.86
WINE	86.08	21-Aug-2019 14:09:03	21-Aug-2019 14:47:28	503.8	9.86
WINE	117.15	21-Aug-2019 14:47:28	21-Aug-2019 14:48:29	9.86	-1.86
All depth are at tool zero.					

XYZ	Company:Occidental Permian Ltd. Well:South Hobbs (G/SA) 28 1A: Main[3]:Up:S011
-----	---





XYZ

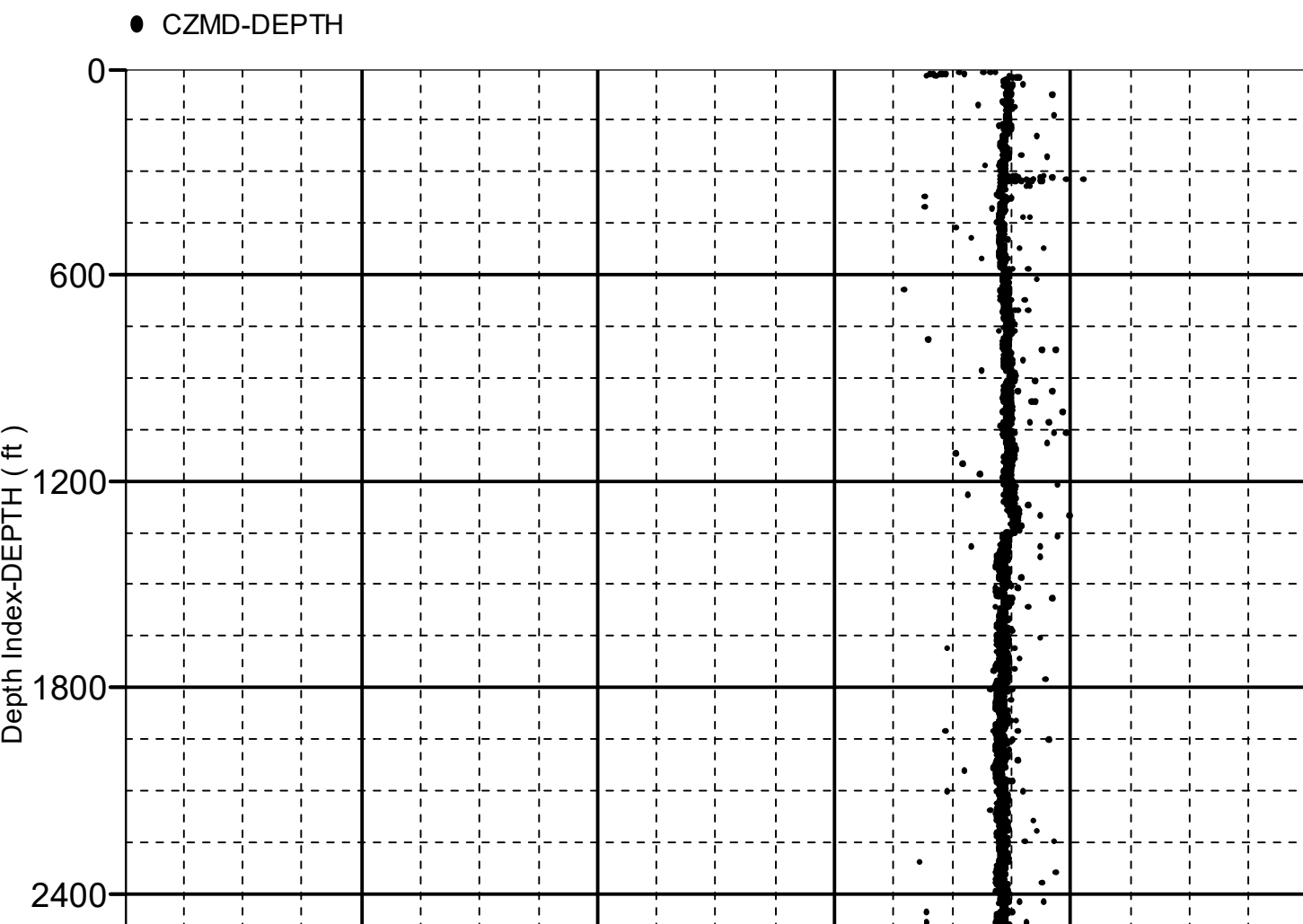
Company:Occidental Permian Ltd. Well:South Hobbs (G/SA) 28

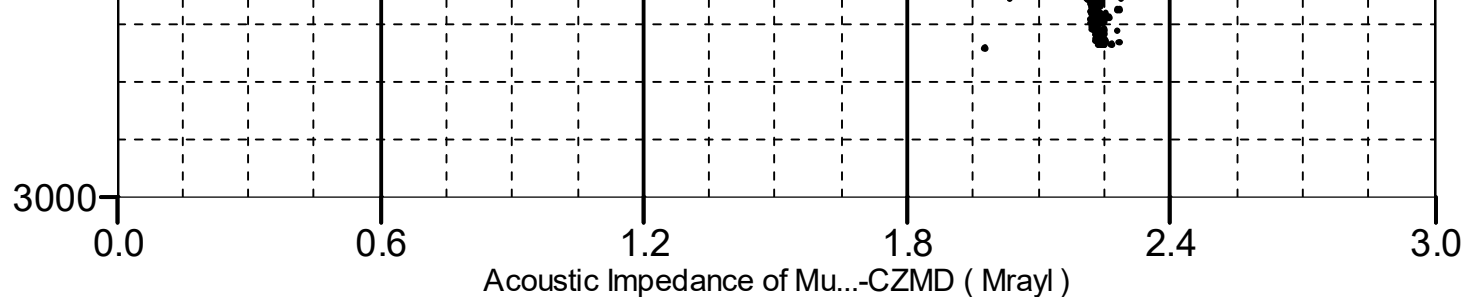
1A: Main[3]:Up:S011

Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 2617.00 to 12.62 ft





Company: Occidental Permian Ltd.

Schlumberger

Well: South Hobbs (G/SA) 28

Field: Hobbs (GSA)

County:	Lea
State:	New Mexico
Corrosion Print	
Gamma Ray	
Casing Collar Locator	