

Company: CRESTONE PEAK RESOURCES

Well: Cosslett # 1D-22H-B168

Field: Wattenberg

County: WELD State: Colorado

CASING BOND LOG
CBL/VDL/GR/CCL

County: WELD
Field: Wattenberg
Location: NWNE 22 1n68w 6 PM
Well: Cosslett # 1D-22H-B168
Company: CRESTONE PEAK RESOURCES

Location:	NWNE 22 1n68w 6 PM 925' FNL 2220' FEL	Elev.: K.B. 5197.00 ft G.L. 5174.00 ft D.F. 5197.00 ft	
	Permanent Datum: Log Measured From: Drilling Measured From:	Ground Level Kelly Bushing Kelly Bushing	Elev.: 23.00 ft above Perm.Datum
API Serial No.	Section:	Township:	Range:
05-123-47677	22	1N	68W

Logging Date 23-Oct-2018 23-Oct-2018

Run Number ONE 1

Depth Driller 535.00 ft 550.00 ft

Schlumberger Depth 535.00 ft 550.00 ft

Bottom Log Interval 524.00 ft

Top Log Interval 33.00 ft 33.00 ft

Casing Fluid Type Water Water

Salinity

Density 8.4 lbm/gal 8.4 lbm/gal

Fluid Level 8.00 ft 8.00 ft

BIT/CASING/TUBING STRING

Bit Size 17.50 in 17.50 in

From 0.00 ft 0.00 ft

To 535.00 ft 550.00 ft

Casing/Tubing Size 13.375 in 13.375 in

Weight 54.5 lbm/ft 54.5 lbm/ft

Grade J55 J55

From 0.00 ft 0.00 ft

To 524.00 ft 550.00 ft

Max Recorded Temperatures

Logger on Bottom Time

Unit Number Location: 2377 2377

Recorded By C.STILES C.STILES

Witnessed By

Disclaimer

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Well Sketch

Driller Depth
0.00 ft





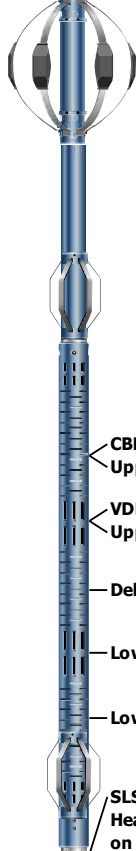
Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	17.5					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	550					
Bottom Logger (ft)	550					
Casing						
Size (in)	13.375					
Weight (lbm/ft)	54.5					
Inner Diameter (in)	12.615					
Grade	J55					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	550					
Bottom Logger (ft)	550					

Remarks and Equipment Summary

ONE: Remarks	1: Remarks	
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ONE: Toolstring				1: Toolstring			
Equip name	Length	MP name	Offset	Equip name	Length	MP name	Offset
LEH-QT LEH-QT	34.12			LEH-QT LEH-QT	34.12		
EDTC-B EDTH-B:9373 EDTG-A EDTC-B	30.64			EDTC-B EDTH-B:9373 EDTG-A EDTC-B	30.64		
		CTEM	27.14			CTEM	27.14
		ACCZ	0.00			ACCZ	0.00
		HV	0.00			HV	0.00
		Gamma Ray	25.27			Gamma Ray	25.27
		TelStatus	24.14			TelStatus	24.14
CAL-YA CAL-YA	24.14			DSLT-H ECH-KH DSLCH SLS-E:1563	24.14		
		CCL	23.35				
DSLT-H ECH-KH DSLCH SLS-E:1563	20.64						

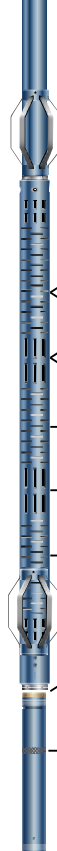


CBL 3ft 8.17
 Upper-Near 8.17
 VDL 5ft 7.17
 Upper-Far 7.17
 Delta-T 5.79
 Lower-Far 4.42
 Lower-Near 3.42
 SLS-E Head Tension 0.00
 TOOL_ZERO

Lengths are in ft
 Maximum Outer Diameter = 6.250 in
 Line: Sensor Location, Value: Gating Offset
 All measurements are relative to TOOL_ZERO

CAL-YA
 CAL-YA

3.5

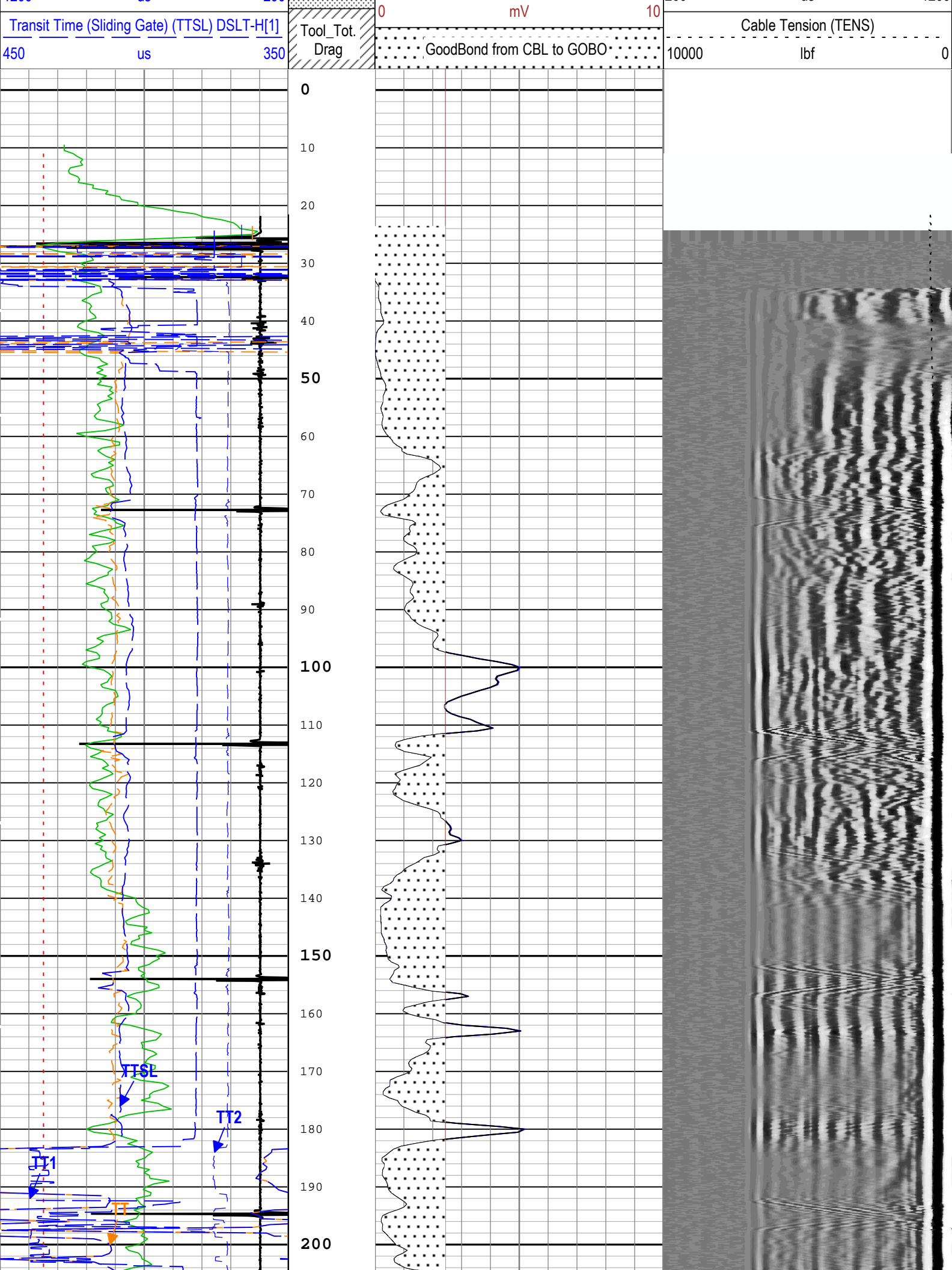


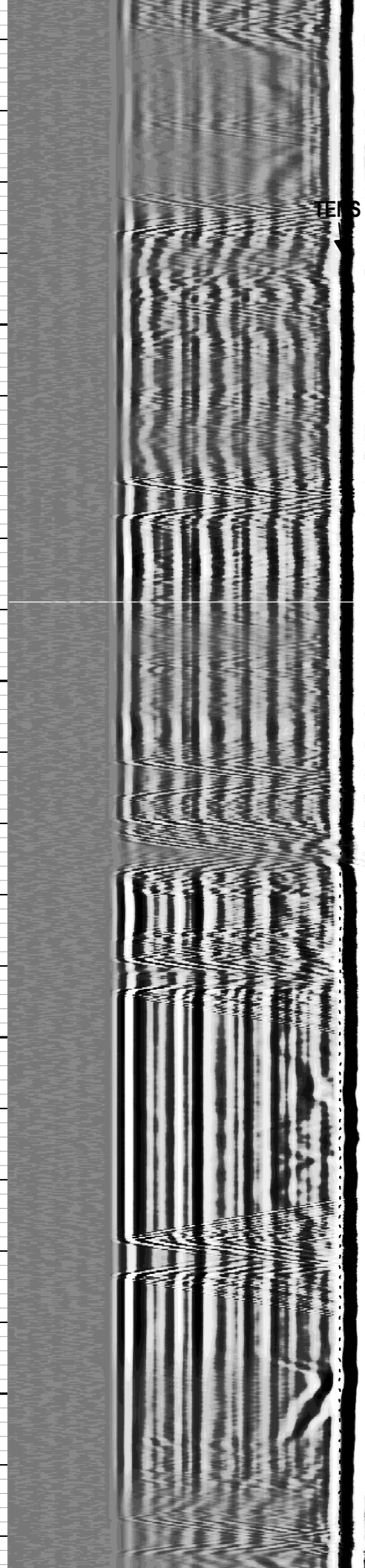
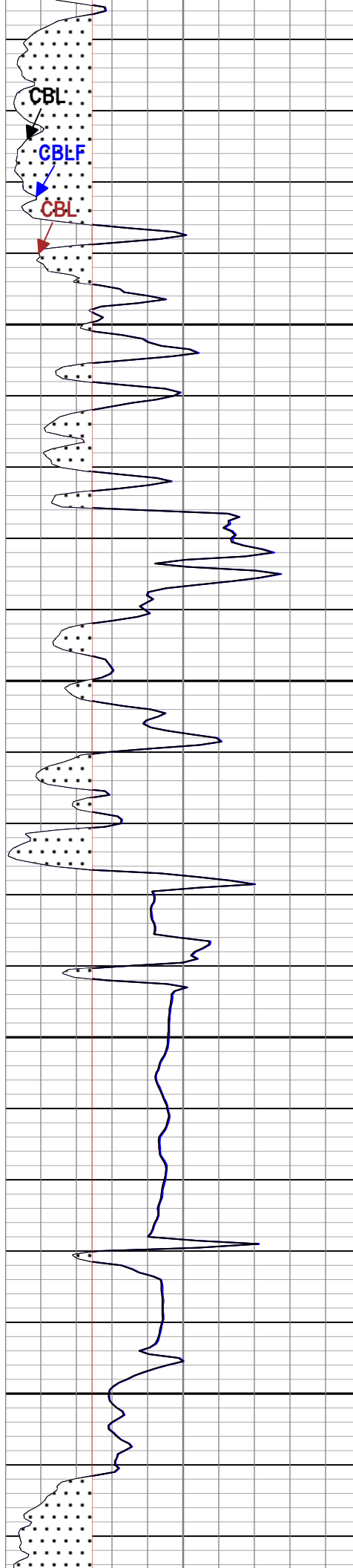
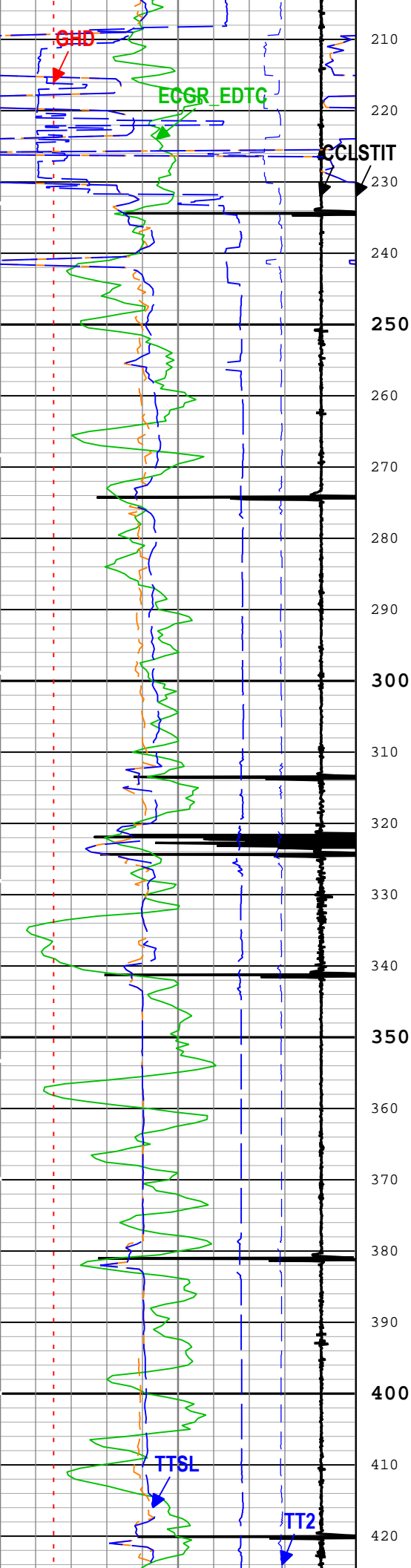
CBL 3ft 11.67
 Upper-Near 11.67
 VDL 5ft 10.67
 Upper-Far 10.67
 Delta-T 9.29
 Lower-Far 7.92
 Lower-Near 6.92
 SLS-E 3.5
 CCL 2.71
 Head Tension
 TOOL_ZERO

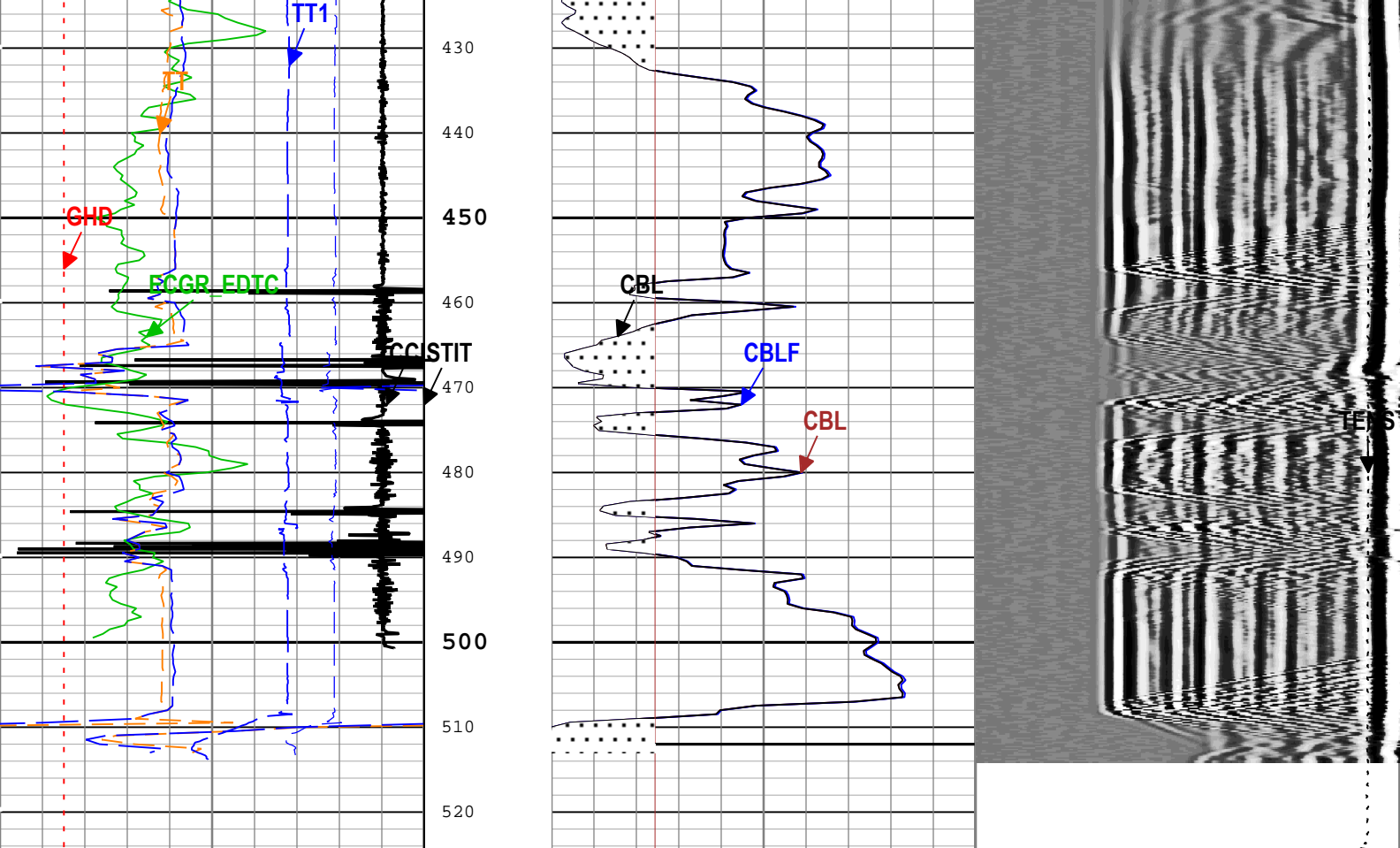
Lengths are in ft
 Maximum Outer Diameter = 6.250 in
 Line: Sensor Location, Value: Gating Offset
 All measurements are relative to TOOL_ZERO


Depth Summary

	ONE	1	
Depth Measuring Device			
Type	IDW-B	IDW-B	
Serial Number			
Calibration Date			
Calibrator Serial Number			
Calibration Cable Type			
Wheel Correction 1	0	0	
Wheel Correction 2	0	0	
Tension Device			
Type	CMTD-B/A	CMTD-B/A	
Serial Number			
Calibration Date			
Calibrator Serial Number			
Number of Calibration Points	0	0	
Logging Cable			
Type	7-46PI-XS	7-46PI-XS	
Serial Number			
Length	20000.00 ft	20000.00 ft	
Conveyance Type	Wireline	Wireline	
Rig Type			
ONE:Depth Control Parameters		Depth Control Remarks	







Casing Collar Locator Amplitude (CCL) CAL-YA[1]		Stuck Tool Indicator, Total (STIT)	CBL Amplitude (CBL) DSLT-H[1]		Min	Amplitude		Max
-9			0 mV 100					
Gamma Ray (ECGR_EDTC) EDTC-B[1]		0 ft 50	CBL Amplitude (Fluid Compensated) (CBLF) DSLH-H[1]		Variable Density Log (VDL) DSLT-H[1]			
0 gAPI 150		Cable Drag	0 mV 100		200	us		1200
Borehole Diameter (GHD) RT		Tool_Tot. Drag	CBL Amplitude (CBL) DSLT-H[1]		Cable Tension (TENS)			
6 in 16			0 mV 100		10000 lbf 0			
Transit Time for CBL (TT) DSLT-H[1]			Good Bond (GOBO)					
450 us 350			0 mV 10					
Transit Time 1 (TT1) DSLT-H[1]			GoodBond from CBL to GOBO					
1200 us 200								
Transit Time 2 (TT2) DSLT-H[1]								
1200 us 200								
Transit Time (Sliding Gate) (TTSL) DSLT-H[1]								
450 us 350								
TIME_1900 - Time Marked every 60.00 (s)								
└─ BIEP - Bond Index Event Pips DSLT-H[1]								

Description: CBL_Fluid_Compensated Format: Log (Sonic Fluid-Compensated CBL with VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 24-Oct-2018 12:18:32

Channel Processing Parameters				
ONE: Parameters				
Parameter	Description	Tool	Value	Unit
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	17.5	in
CBL	Casing Bottom/Logger	WLSESSION	524	#

CBLO	Casing Bottom (Logger)	WLSESSION	324	it
CCL_MULTIPLIER	Casing Collar Locator Multiplier	CAL-YA	3	
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
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)	

1: 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	17.5	in
CBLG	CBL Gate Width	DSLTH	100	us
CBLO	Casing Bottom (Logger)	WLSESSION	550	ft
CBRA	CBL LQC Reference Amplitude in Free Pipe	DSLTH	43	mV
CDEN	Cement Density	EDTC-B	2	g/cm3
DETE	Delta-T Detection	DSLTH	E1	
DFD	Drilling Fluid Density	Borehole	8.4	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)	
GOBO_CURR	Good Bond in Arbitrary Cement	DSLTH	2.43	mV
MAHTR	Manual High Threshold Reference for first arrival detection	DSLTH	120	
MATT_CURR	Maximum Attenuation in Arbitrary Cement	DSLTH	11.3	dB/ft
MCI	Minimum Cemented Interval for Isolation	DSLTH	21.68	ft
MNHTR	Minimum High Threshold Reference for first arrival detection	DSLTH	Time Zoned	
MSA	Minimum Sonic Amplitude	DSLTH	1.19	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	DSLTH	1.19	mV
NMSG	Near Minimum Sliding Gate	DSLTH	Time Zoned	us
SGAD	Sliding Gate Status	DSLTH	Off	
SGDT	Sliding Gate Delta-T	DSLTH	48	us/ft

1Time Zoned Parameters

Pass Log[5]:Up

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
MNHTR	59	23-Oct-2018 19:52:36	23-Oct-2018 20:00:45	524.94	284.84
MNHTR	1056	23-Oct-2018 20:00:45	23-Oct-2018 20:03:11	284.84	210.23
MNHTR	710	23-Oct-2018 20:03:11	23-Oct-2018 20:03:58	210.23	185.77
MNHTR	621	23-Oct-2018 20:03:58	23-Oct-2018 20:04:12	185.77	178.78
MNHTR	389	23-Oct-2018 20:04:12	23-Oct-2018 20:04:15	178.78	177.23
MNHTR	1	23-Oct-2018 20:04:15	23-Oct-2018 20:10:33	177.23	109.34
NMSG	351	23-Oct-2018 19:52:36	23-Oct-2018 19:52:58	524.94	520.4
NMSG	363	23-Oct-2018 19:52:58	23-Oct-2018 20:10:33	520.4	109.34

Pass Log[6]:Up

MNHTR	1	23-Oct-2018 20:10:51	23-Oct-2018 20:14:57	353.33	269.97
MNHTR	549	23-Oct-2018 20:14:57	23-Oct-2018 20:15:01	269.97	267.25
MNHTR	1931	23-Oct-2018 20:15:01	23-Oct-2018 20:15:03	267.25	266
MNHTR	1010	23-Oct-2018 20:15:03	23-Oct-2018 20:15:06	266	264.62
MNHTR	779	23-Oct-2018 20:15:06	23-Oct-2018 20:17:14	264.62	189.02
MNHTR	1	23-Oct-2018 20:17:14	23-Oct-2018 20:25:16	189.02	21.67
NMSG	363	23-Oct-2018 20:12:08	23-Oct-2018 20:25:16	353.33	21.67

All depth are at tool zero.

Tool Control Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	5000	ft/h

1: Parameters

Parameter	Description	Tool	Value	Unit
MODE	DSLTL Acquisition Mode	DSLTL-H	CBL	
RATE	DSLTL Firing Rate	DSLTL-H	15 Hz	
DTFS	DSLTL Telemetry Frame Size	DSLTL-H	536	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	5000	ft/h

Calibration Report

DSLTL-H (Digitizing Sonic Logging Tool - H) Calibration - Run ONE

Primary Equipment :	Sonic Logging Sonde E supports 3'-5'BHC DT and CBL/VDL	SLS-E	1563
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CBL Free Pipe Adjustment - Free Pipe Measurement

Before:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
CBL Amplitude - 0	mV	Before	----	----	----	----	
CBL Reference Amplitude (CBRA) - 0	mV	Before	----	----	----	----	
Measurement Depth - 0	ft	Before	----	----	----	----	

CBL Free Pipe Adjustment - CBL Amplitude Coefficient

Before:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
CBL Adjustment Factor		Before	1.000	0.200	NOT DONE	5.000	
Depth of Before Calibration	ft	Before			NOT DONE		

DSLTL-H (Digitizing Sonic Logging Tool - H) Calibration - Run 1

Primary Equipment :	Sonic Logging Sonde E supports 3'-5'BHC DT and CBL/VDL	SLS-E	1563
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CBL Normalization - CBL Accumulations

Master:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Upper Far Amplitude - 0		Master	----	----	----	----	
Upper Near Raw Amplitude - 0	mV	Master	----	----	----	----	
Lower Far Amplitude - 0		Master	----	----	----	----	
Lower Near Raw Amplitude - 0	mV	Master	----	----	----	----	

CBL Normalization - CBL/VDL Coefficients

Master:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
CBL Correction Factor for UT		Master	3.500	2.700	NOT DONE	4.300	
CBL Correction Factor for LT		Master	2.500	1.700	NOT DONE	4.300	
VDL Ratio between UT and LT for CBLB Mode		Master	1.000		NOT DONE		

CBL Free Pipe Adjustment - Free Pipe Measurement

Before (Measured): 19:44:14 23-Oct-2018							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
CBL Amplitude	mV	Before	60.00	15.00	62.50	174.00	
CBL Reference Amplitude (CBRA)	mV	Before			43.00		
Measurement Depth	ft	Before			376.02		

CBL Free Pipe Adjustment - CBL Amplitude Coefficient

Before (Measured): 19:44:14 23-Oct-2018							
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State (Measured):

10/11/17 10:00:10

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit		
CBL Adjustment Factor		Before	1.000	0.200	0.688	5.000		
Depth of Before Calibration	ft	Before			376.02			

Company: CRESTONE PEAK RESOURCES

Schlumberger

Well: Cosslett # 1D-22H-B168

Field: Wattenberg

County: WELD

State: Colorado

CASING BOND LOG

CBL/VDL/GR/CCL