



PIONEER
Pioneer Energy Services

DUAL COMP POROSITY LOG

Company **COBALT ENERGY, LLC**
Well **SLIPKE TRUST A NO. 1-24**
Field **VAHLING**
County **SHERIDAN** State **KANSAS**

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Location: API #: 15-179-21453-00-00
1570' FSL & 995' FWL
39.513348636
-100.17729072
SEC 24 TWP 6S RGE 26W
Permanent Datum **GROUND LEVEL** Elevation **2610'**
Log Measured From **KELLY BUSHING**
Drilling Measured From **KELLY BUSHING**
Other Services
DIL
MEL
Elevation
K.B. 2615'
D.F. N/A
G.L. 2610'

Date **8/31/2018**

Run Number	ONE
Type Log	CNL/CDL
Depth Driller	3930'
Depth Logger	3930'
Bottom Logged Interval	3901'
Top Logged Interval	3400'
Type Fluid In Hole	CHEMICAL
Salinity, PPM CL	1300
Density	9.1
Level	FULL
Max. Rec. Temp. F	115 DEG/F
Operating Rig Time	2 HOURS
Equipment -- Location	108 HAYS
Recorded By	J. HENRICKSON
Witnessed By	LARRY NICHOLSON

Borehole Record

Casing Record

Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0	345'	8.625"	23#	0	345'
TWO	7.875"	345'	TD				

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All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees.

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.
STUDLEY KANSAS
NORTH TO AA ROAD, 1 WEST, 1/2 NORTH, EAST INTO

Log Measured From: **KELLY BUSHING** 5 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES
www.pioneerenergy.com 785-625-3858

Your Pioneer Energy Services Crew

Engineer: **J. HENRICKSON**
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: **LARRY NICHOLSON**
Secondary Witness:
Secondary Witness:
Secondary Witness:

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in 7.875	degF 115	in 5.5	in 0	g/cc 1	2	g/cc 2.71
NPORSEL	PERFS	SNDERR	SNDERRM	SPSHIFT	SRFTEMP	SZCOR	TDEPTH
Limestone	0	mmho/m 20	mmho/m 0	mV -340	degF 65	Off	ft 3930

Sensor	Offset (ft)	Schematic		Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58			GR-M&W (89-M&W)	3.00	3.50	50.00
CNLSC	37.48			CNT-M&W (tk10-MW)	5.50	3.50	100.00
CNSSC	36.73						
LSD	28.43			CDL-M&W (126-186)	8.50	4.00	250.00
DCAL	28.42			ML-PSI STKBL ML (PSI-01) Stackable Microlog Tools	7.58	4.00	65.00
SSD	27.93						
MCAL	19.83						
MI	19.83						
MN	19.83						
RLL3	15.80						
RLL3F	15.79						
CILD	8.00			DIL-M&W (1987)	18.50	3.50	220.00

CILM

4.70

SP

0.20

Dataset: cobalt_slipke_trust_a_1_24.db: field/well/stackml/pass3.1
Total length: 43.08 ft
Total weight: 685.00 lb
O.D.: 4.00 in

PIONEER

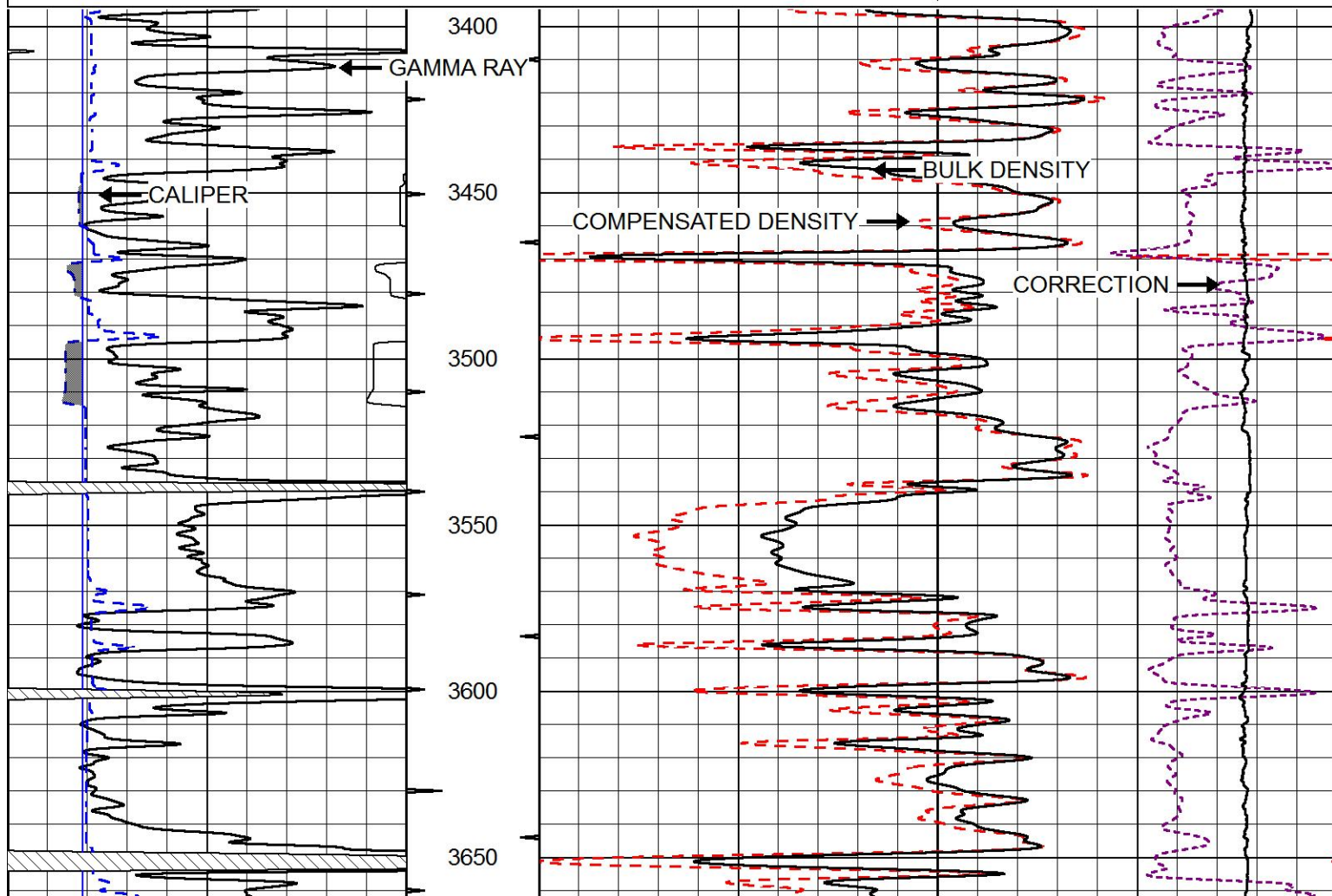
Pioneer Energy Services

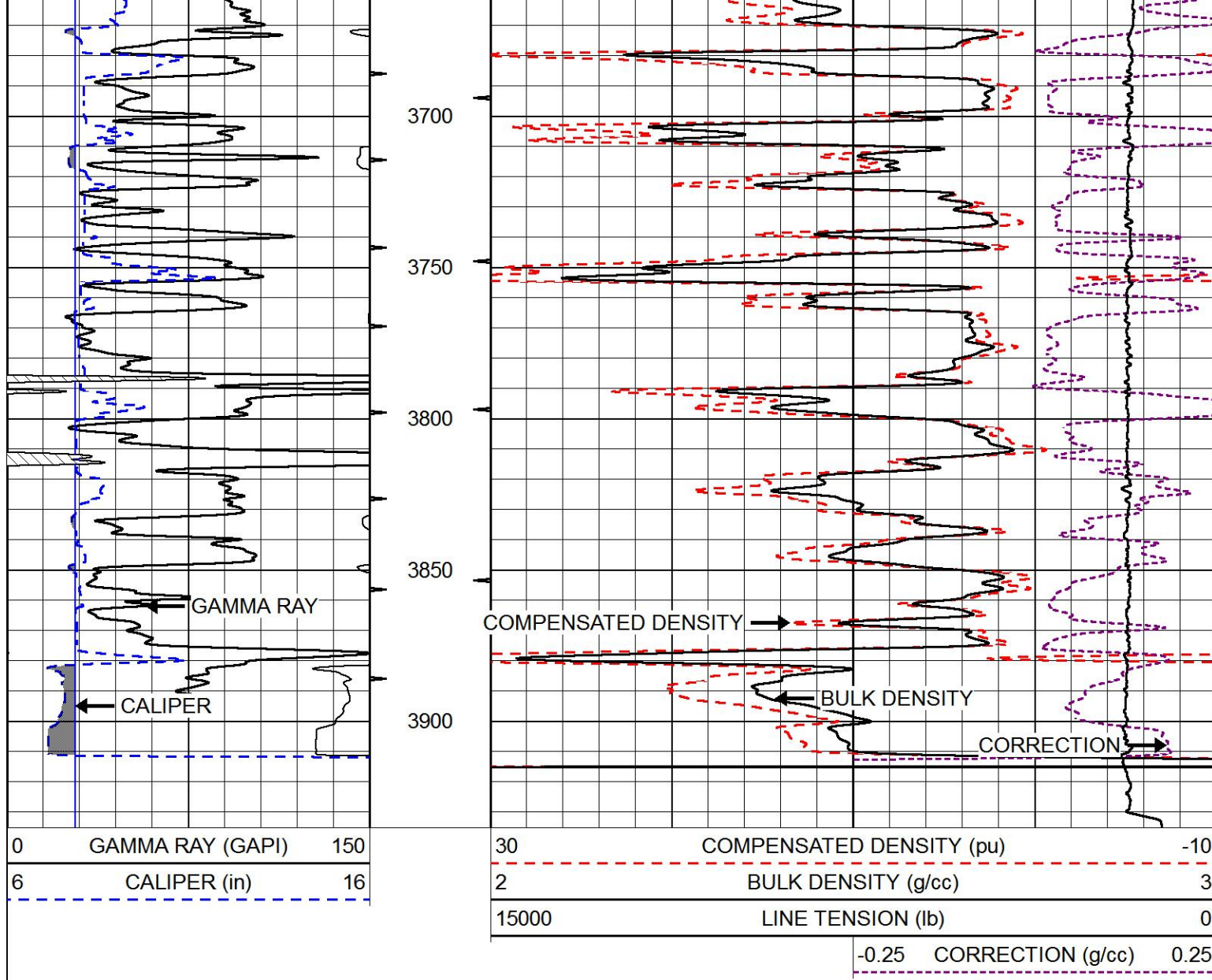
MAIN PASS

Database File cobalt_slipke_trust_a_1_24.db
Dataset Pathname stackml/pass3.1
Presentation Format cdl
Dataset Creation Fri Aug 31 04:09:05 2018
Charted by Depth in Feet scaled 1:600

0	GAMMA RAY (GAPI)	150
6	CALIPER (in)	16

30	COMPENSATED DENSITY (pu)	-10
2	BULK DENSITY (g/cc)	3
15000	LINE TENSION (lb)	0
-0.25	CORRECTION (g/cc)	0.25



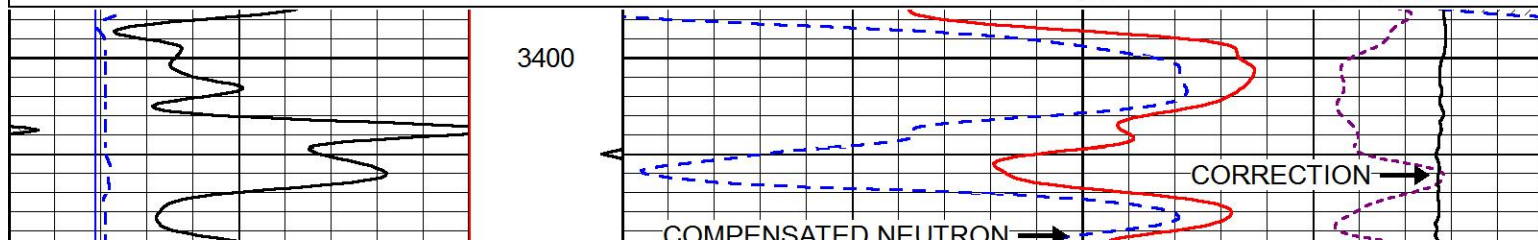


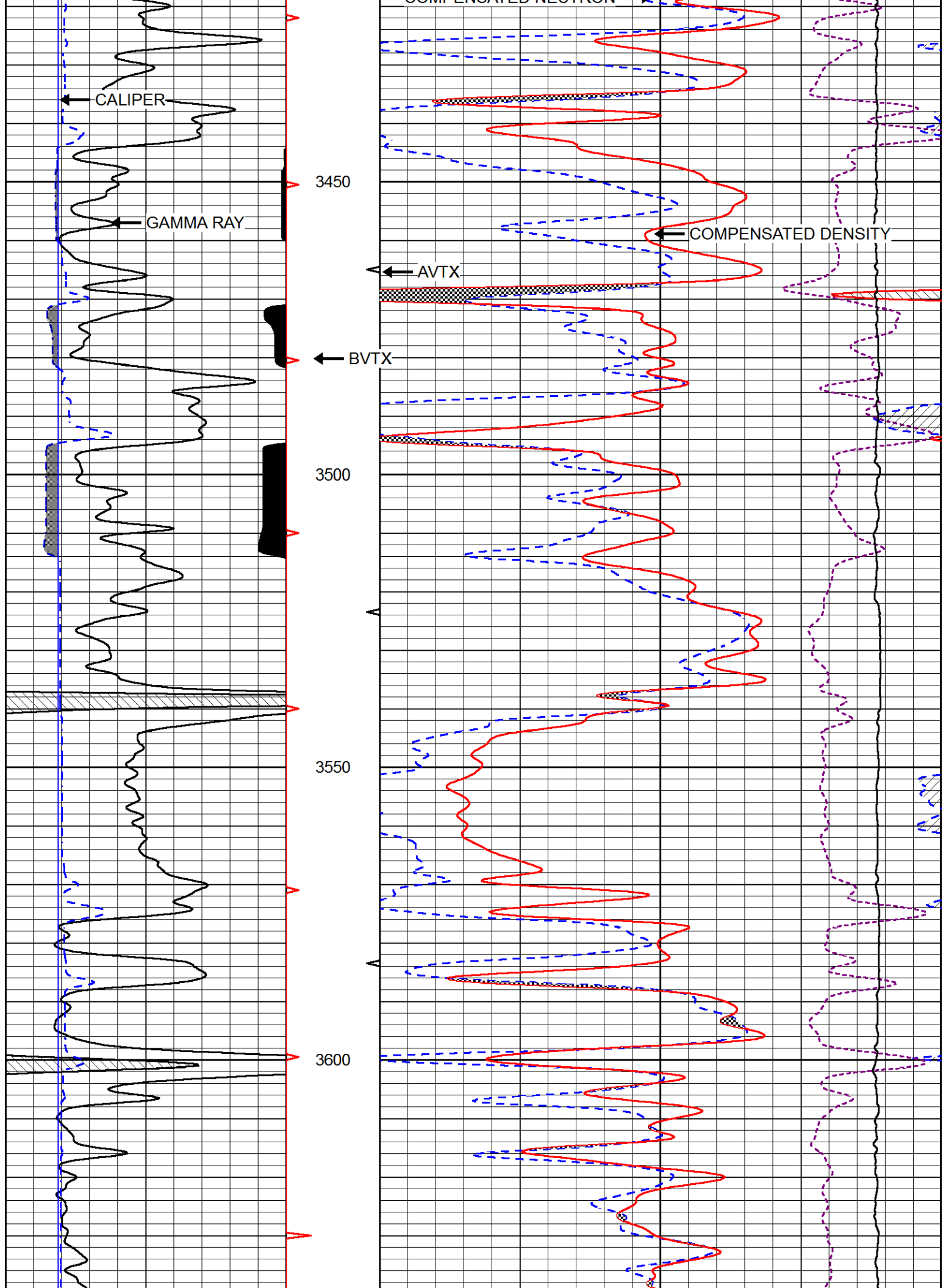
MAIN PASS

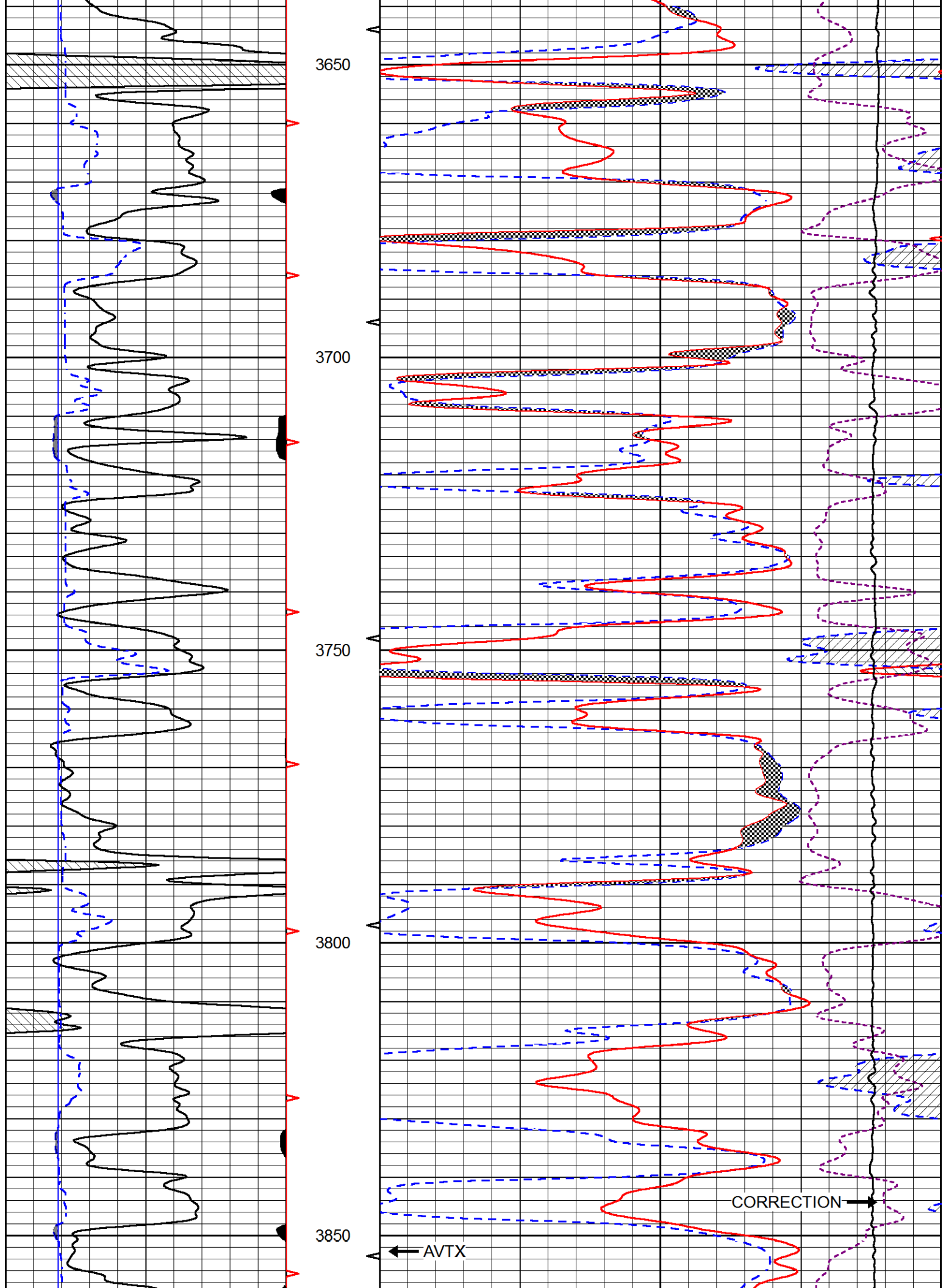
Database File	cobalt_slipke_trust_a_1_24.db
Dataset Pathname	stackml/pass3.1
Presentation Format	cnclspec
Dataset Creation	Fri Aug 31 04:09:05 2018
Charted by	Depth in Feet scaled 1:240

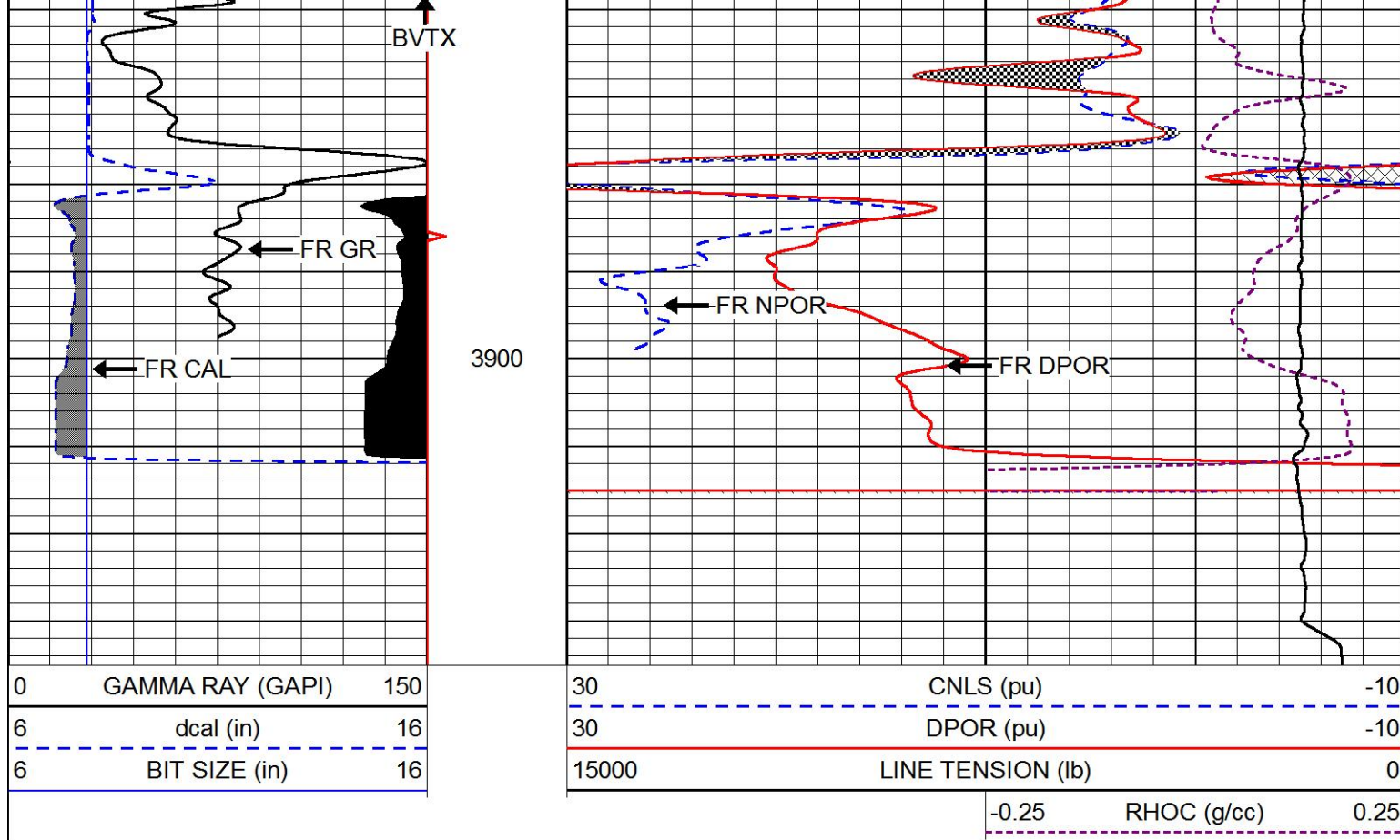
0	GAMMA RAY (GAPI)	150
6	dcal (in)	16
6	BIT SIZE (in)	16

30	CNLS (pu)	-10
30	DPOR (pu)	-10
15000	LINE TENSION (lb)	0
-0.25	RHOC (g/cc)	0.25



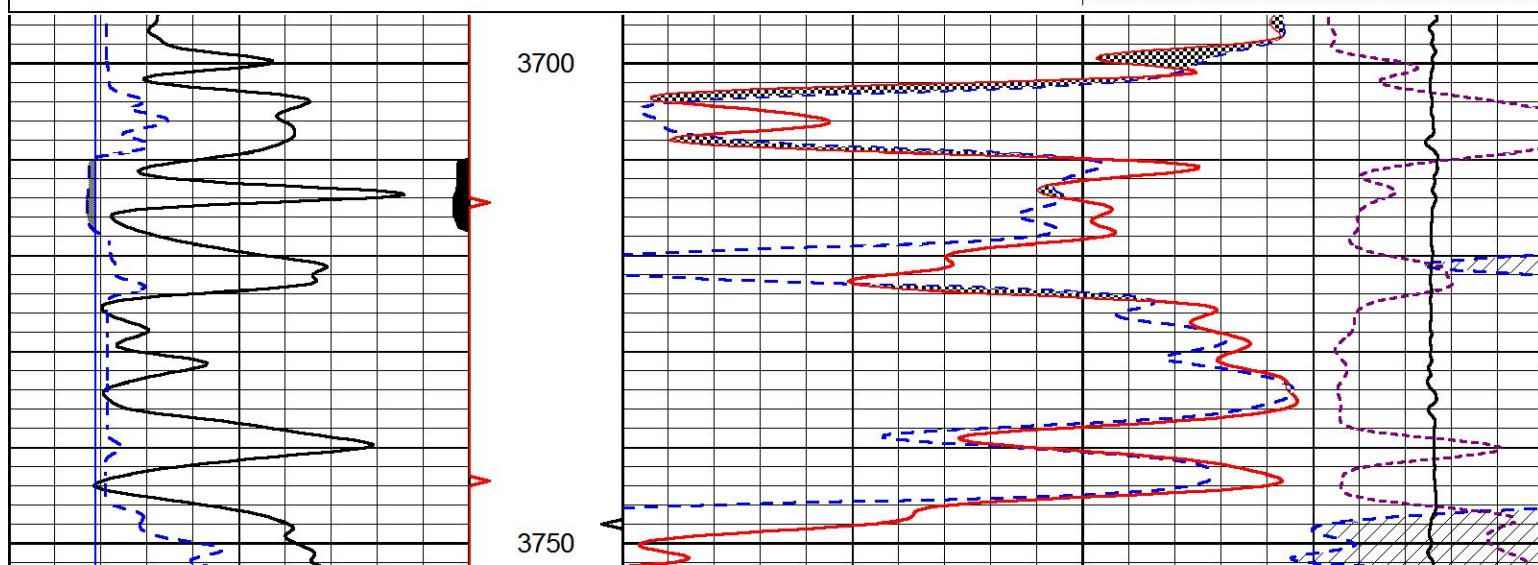
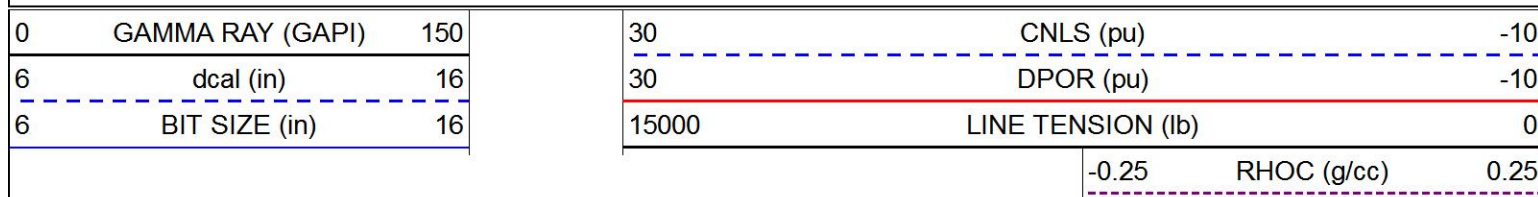


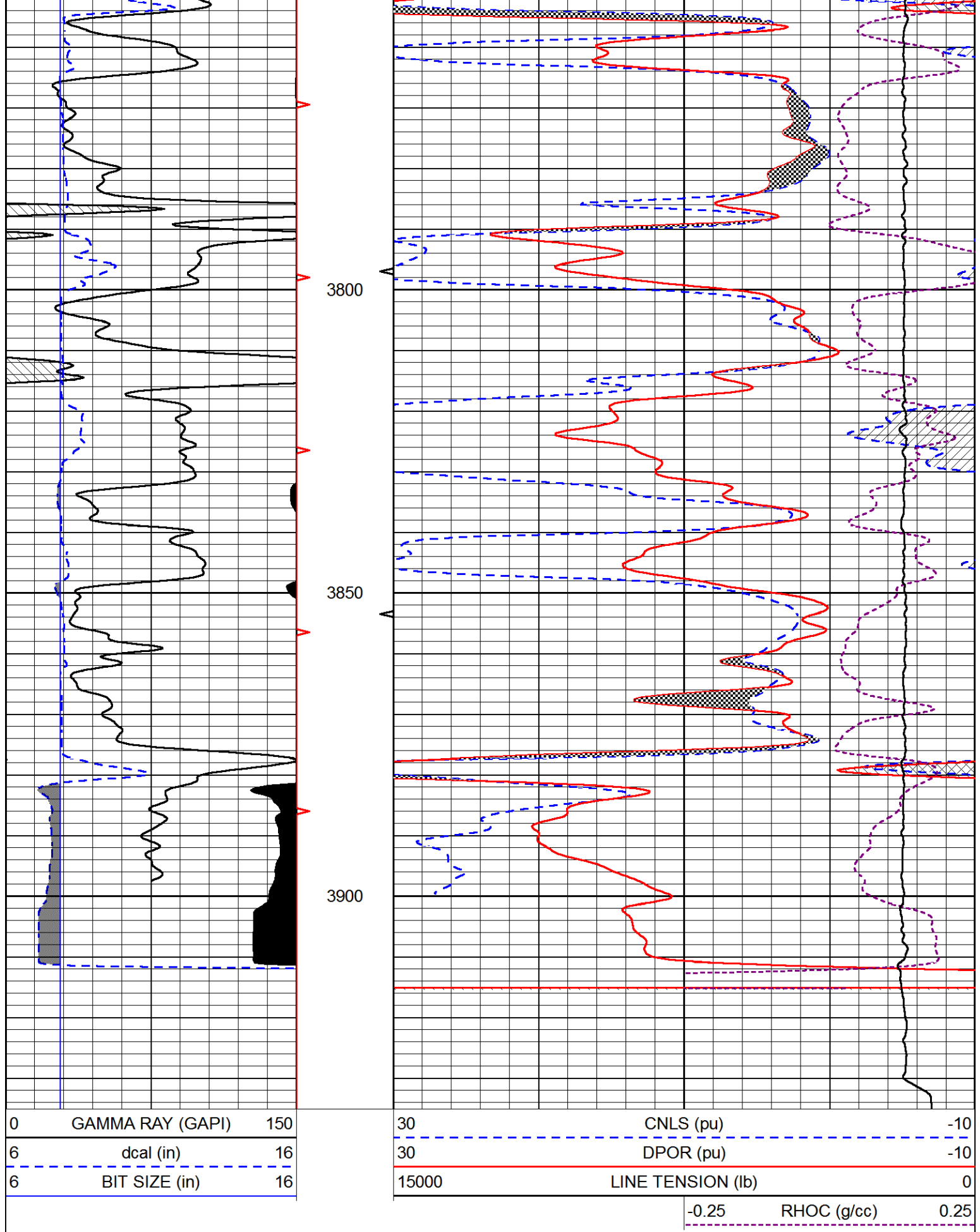




REPEAT SECTION

Database File	cobalt_slipke_trust_a_1_24.db
Dataset Pathname	stackml/pass2.1
Presentation Format	cnlds spec
Dataset Creation	Fri Aug 31 04:09:15 2018
Charted by	Depth in Feet scaled 1:240





Calibration Report

Database File cobalt_slipke_trust_a_1_24.db
Dataset Pathname stackml/pass3.1

Dataset Creation		Fri Aug 31 04:09:05 2018																																													
Dual Induction Calibration Report																																															
Serial-Model: Calibration Performed:				1987-M&W Thu Aug 09 22:42:18 2018																																											
<table><tr><td colspan="2"></td><td colspan="2">Readings</td><td colspan="2">References</td><td colspan="2">Results</td></tr><tr><td>Loop:</td><td>Air</td><td>Loop</td><td></td><td>Air</td><td>Loop</td><td></td><td>Gain Offset</td></tr><tr><td>Deep</td><td>178.615</td><td>710.235</td><td></td><td>0.000</td><td>255.800</td><td>mmho/m</td><td>0.530 -36.500</td></tr><tr><td>Medium</td><td>161.982</td><td>1441.110</td><td></td><td>0.000</td><td>255.800</td><td>mmho/m</td><td>0.440 -110.500</td></tr></table>										Readings		References		Results		Loop:	Air	Loop		Air	Loop		Gain Offset	Deep	178.615	710.235		0.000	255.800	mmho/m	0.530 -36.500	Medium	161.982	1441.110		0.000	255.800	mmho/m	0.440 -110.500								
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Microlog Calibration Report																																															
Serial-Model: Performed:				PSI-01-PSI STKBL ML Thu Mar 31 18:14:32 2016																																											
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Compensated Density Calibration Report																																															
Serial-Model: Source / Verifier: Master Calibration Performed:				126-186-M&W / Wed Aug 29 10:37:15 2018																																											
Master Calibration																																															
		Density		Far Detector		Near Detector																																									
Magnesium	1.755	g/cc		4403.06	6298.47	cps																																									
Aluminum	2.675	g/cc		836.60	3999.09	cps																																									
Spine Angle = 74.70			Density/Spine Ratio = 0.534																																												
		Size		Reading																																											
Small Ring	4.00	in		2.62																																											
Large Ring	16.00	in		1.66																																											
Compensated Neutron Calibration Report																																															
Serial Number: Tool Model: Calibration Performed:				tk10-MW M&W Wed Nov 16 11:21:36 2016																																											
Detector		Readings		Target		Normalization																																									
Short Space		6240.00	cps	1000.00	cps	1.6025																																									
Long Space		460.00	cps	1000.00	cps	1.9500																																									
Gamma Ray Calibration Report																																															
Serial Number:		89-M&W																																													

Tool Model:	M&W
Calibration Performed:	Tue Apr 11 17:08:01 2017

Calibrator Value:	1000.0	GAPI
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Background Reading:	0.0	cps
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Calibrator Reading:	6.2	cps
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Sensitivity:	0.5200	GAPI/cps
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