



PIONEER
Pioneer Energy Services

MICRORESISTIVITY 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
CNL/CDL
DIL
Elevation
K.B. 2615'
D.F. N/A
G.L. 2610'

Date	8/31/2018		
Run Number	ONE		
Depth Driller	3930'		
Depth Logger	3930'		
Bottom Logged Interval	3929'		
Top Log Interval	3400'		
Casing Driller	8.625" @ 345'		
Casing Logger	349'		
Bit Size	7.875"		
Type Fluid in Hole	CHEMICAL		
Salinity, ppm CL	1300		
Density / Viscosity	9.1 54		
pH / Fluid Loss	10.5 6.4		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.80 @ 68		
Rmt @ Meas. Temp	.60 @ 68		
Rmc @ Meas. Temp	1.08 @ 68		
Source of Rmt / Rmc	CHARTS		
Rm @ BHT	.47 @ 115		
Operating Rig Time	2 HOURS		
Max Rec. Temp. F	115 DEGF		
Equipment Number	108		
Location	HAYS		
Recorded By	J. HENRICKSON		
Witnessed By	LARRY NICHOLSON		

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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

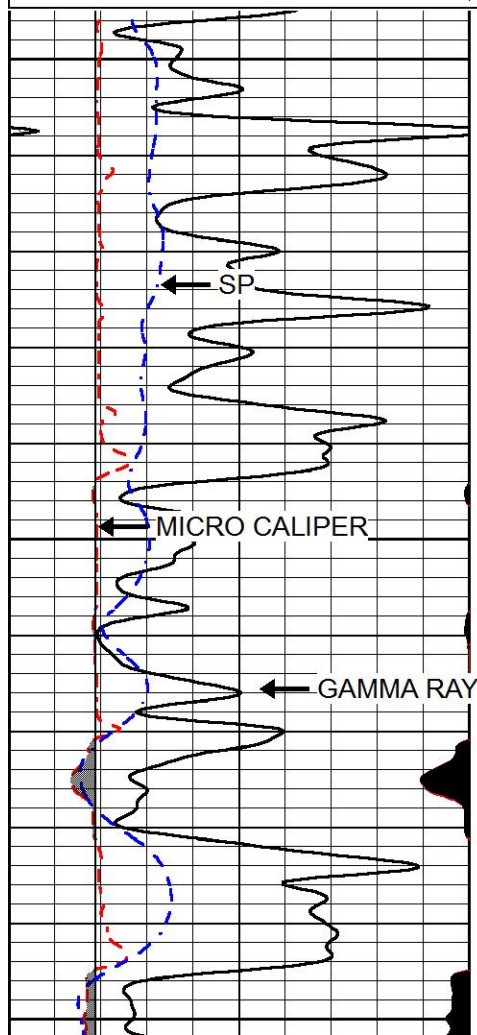


MAIN PASS

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

0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

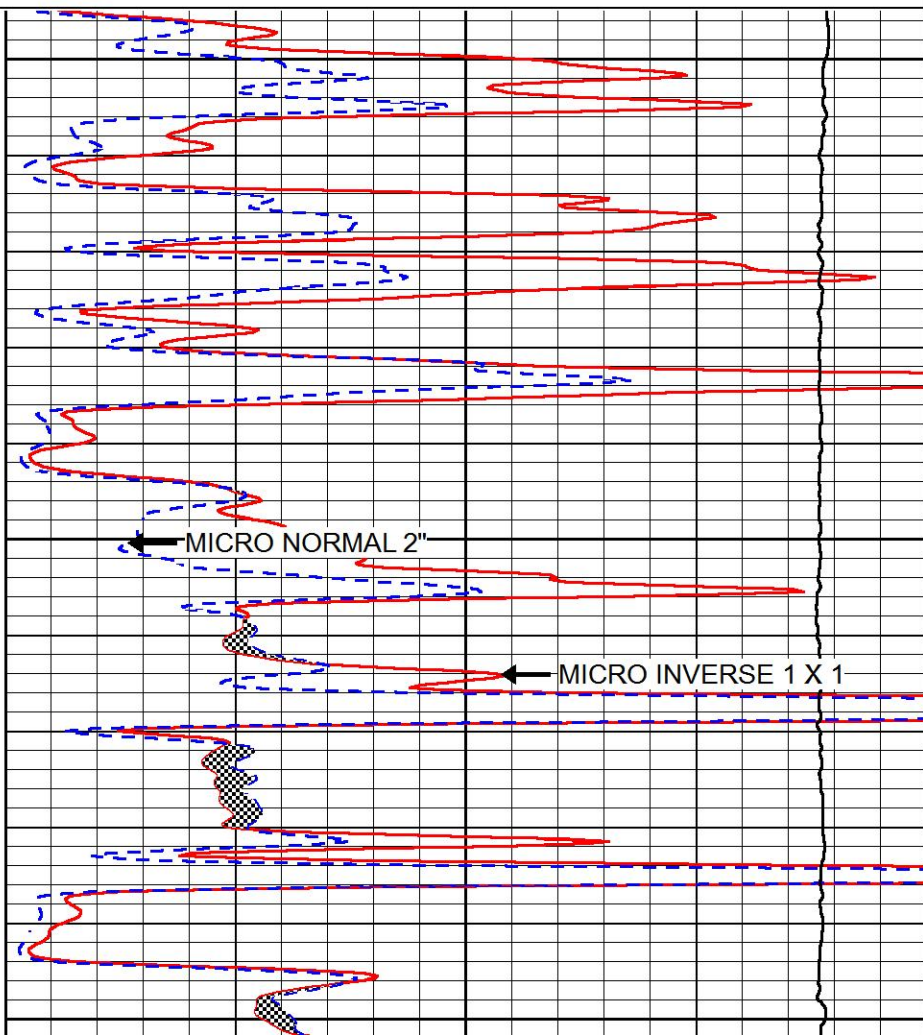
0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0



3400

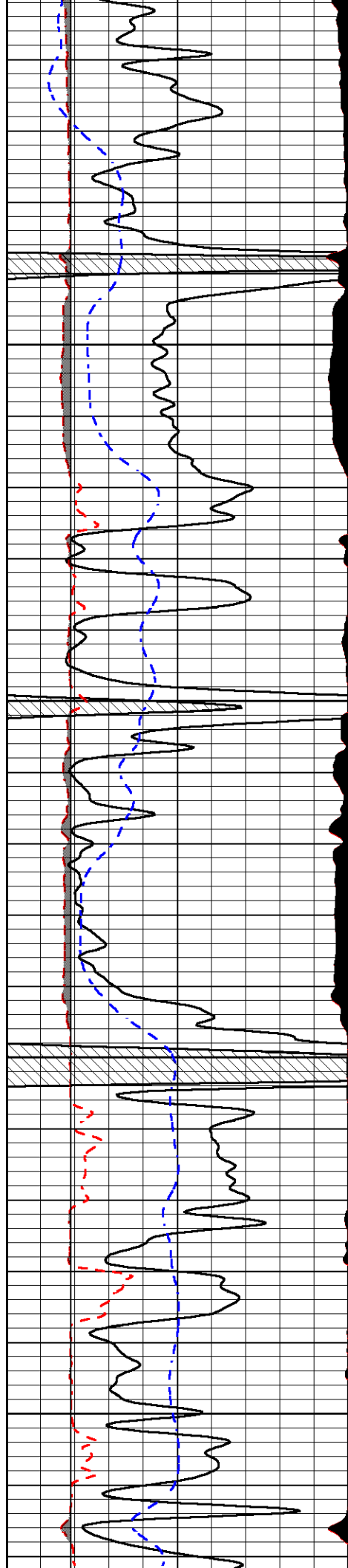
3450

3500



MICRO NORMAL 2"

MICRO INVERSE 1 X 1

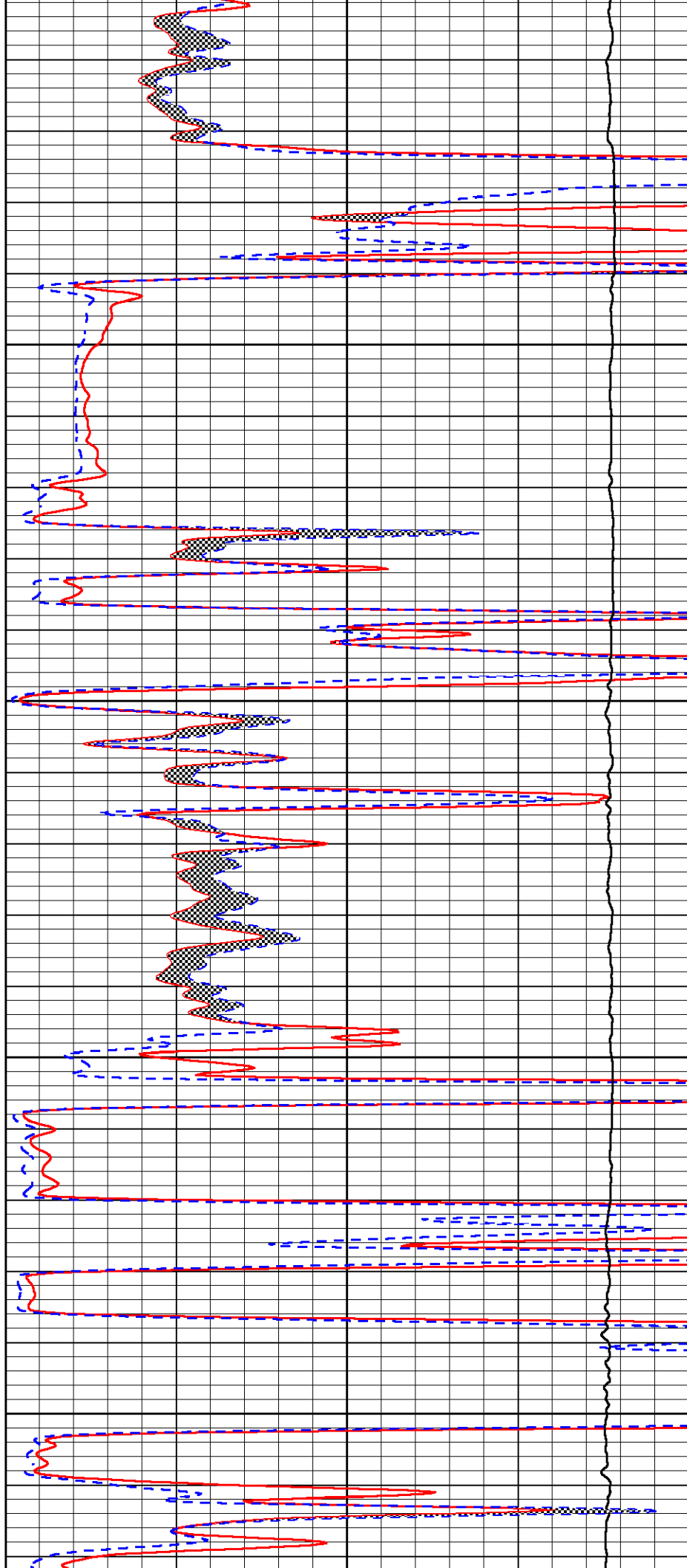


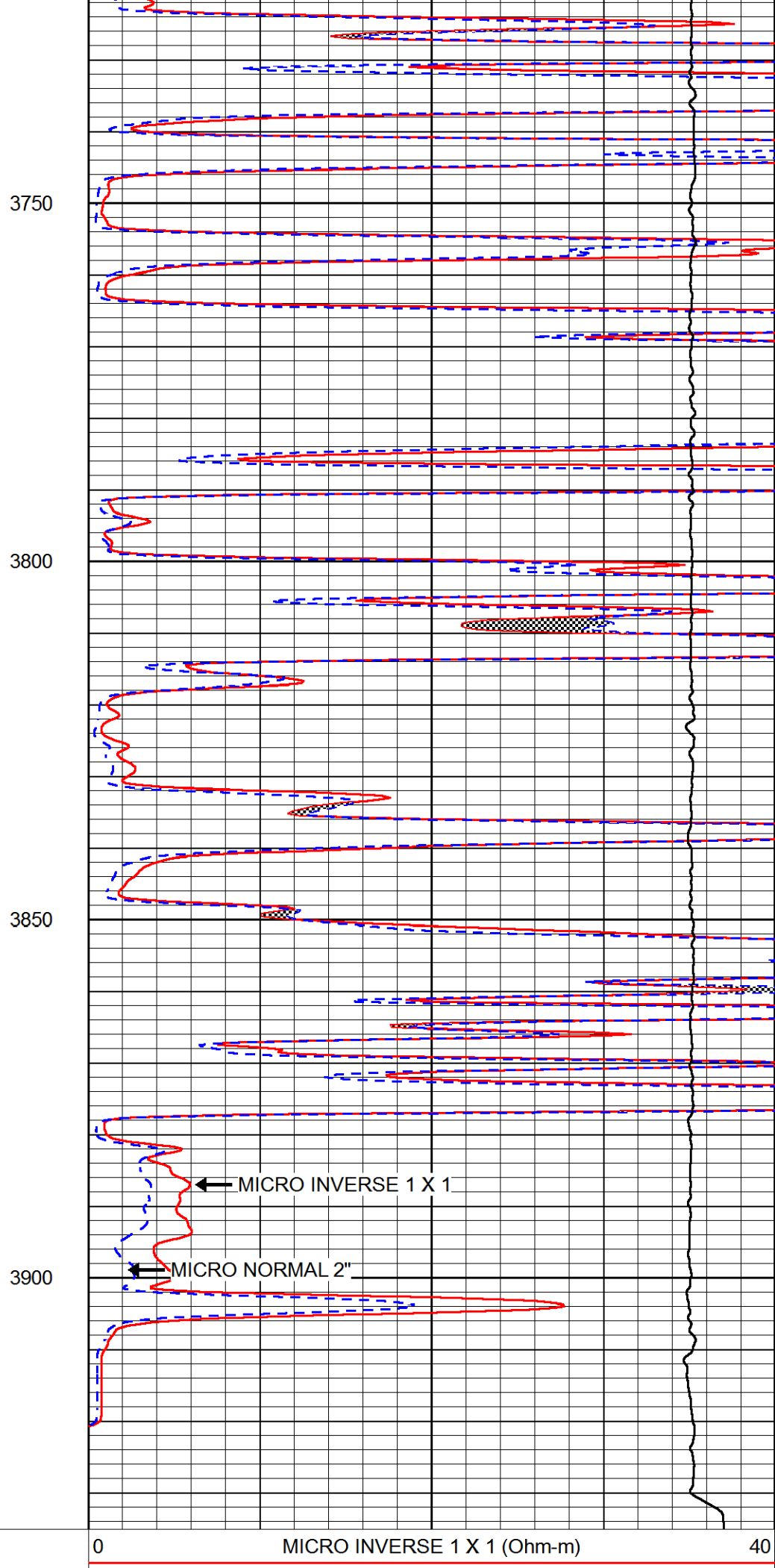
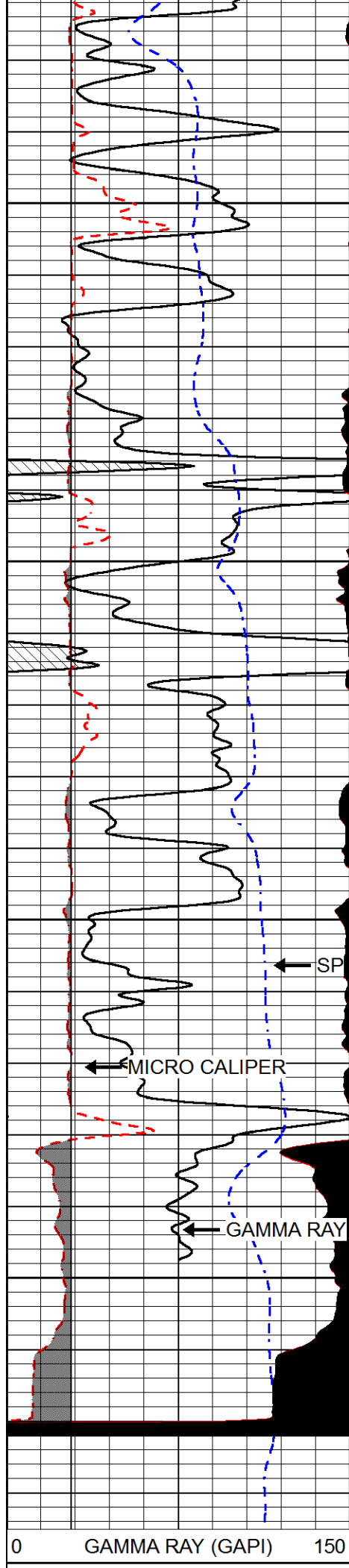
3550

3600

3650

3700





6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0

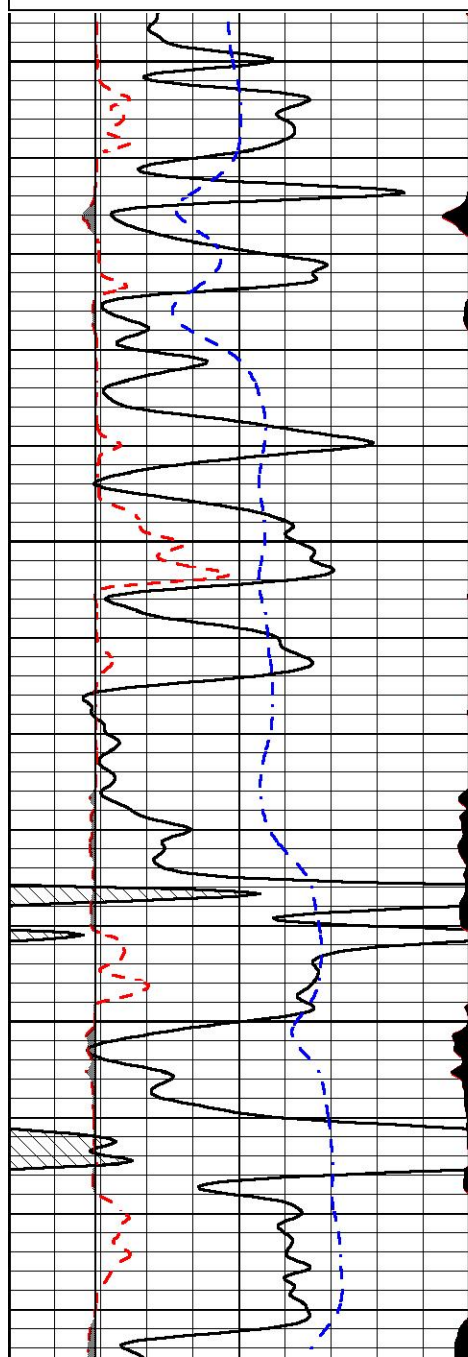


REPEAT SECTION

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

0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

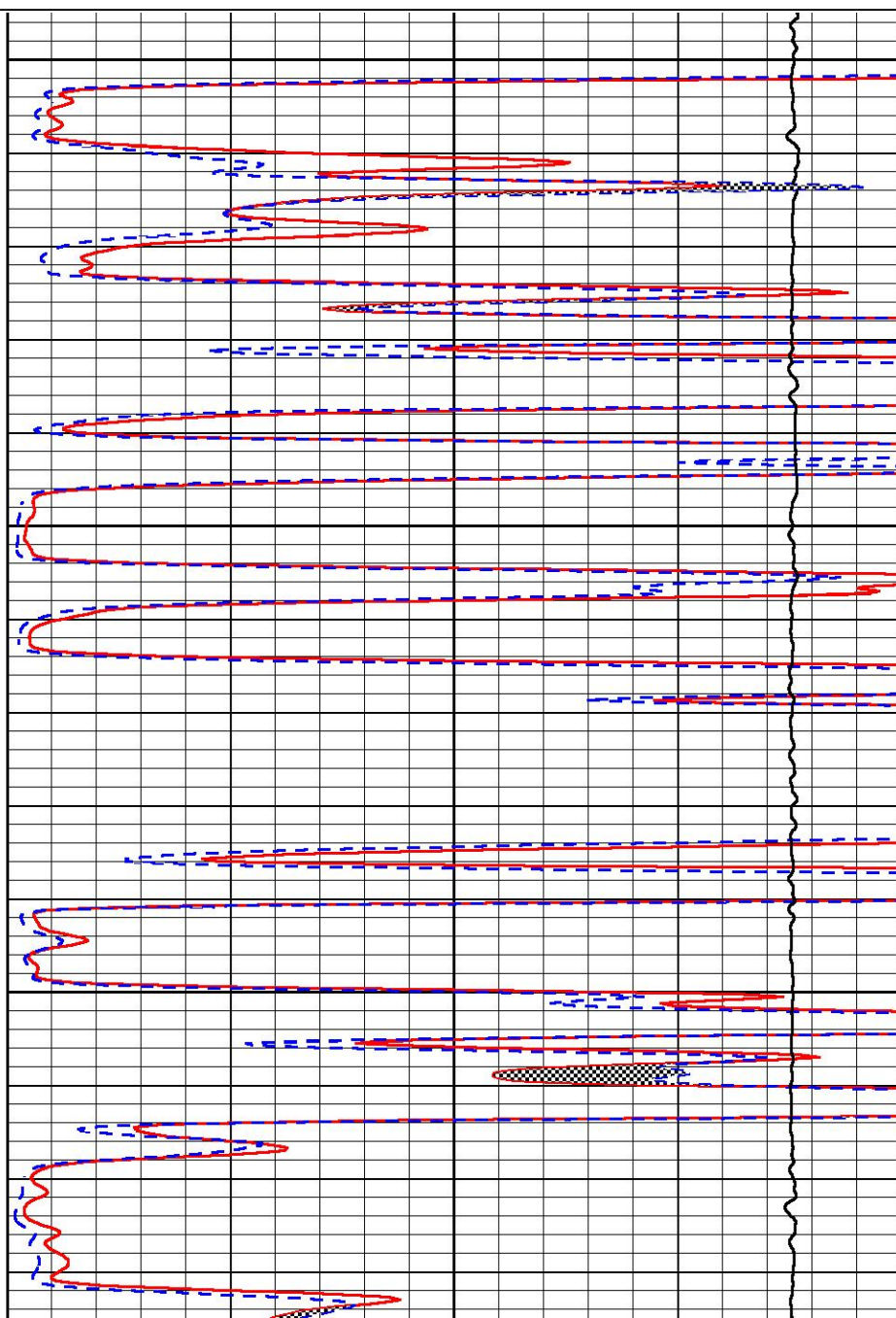
0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0

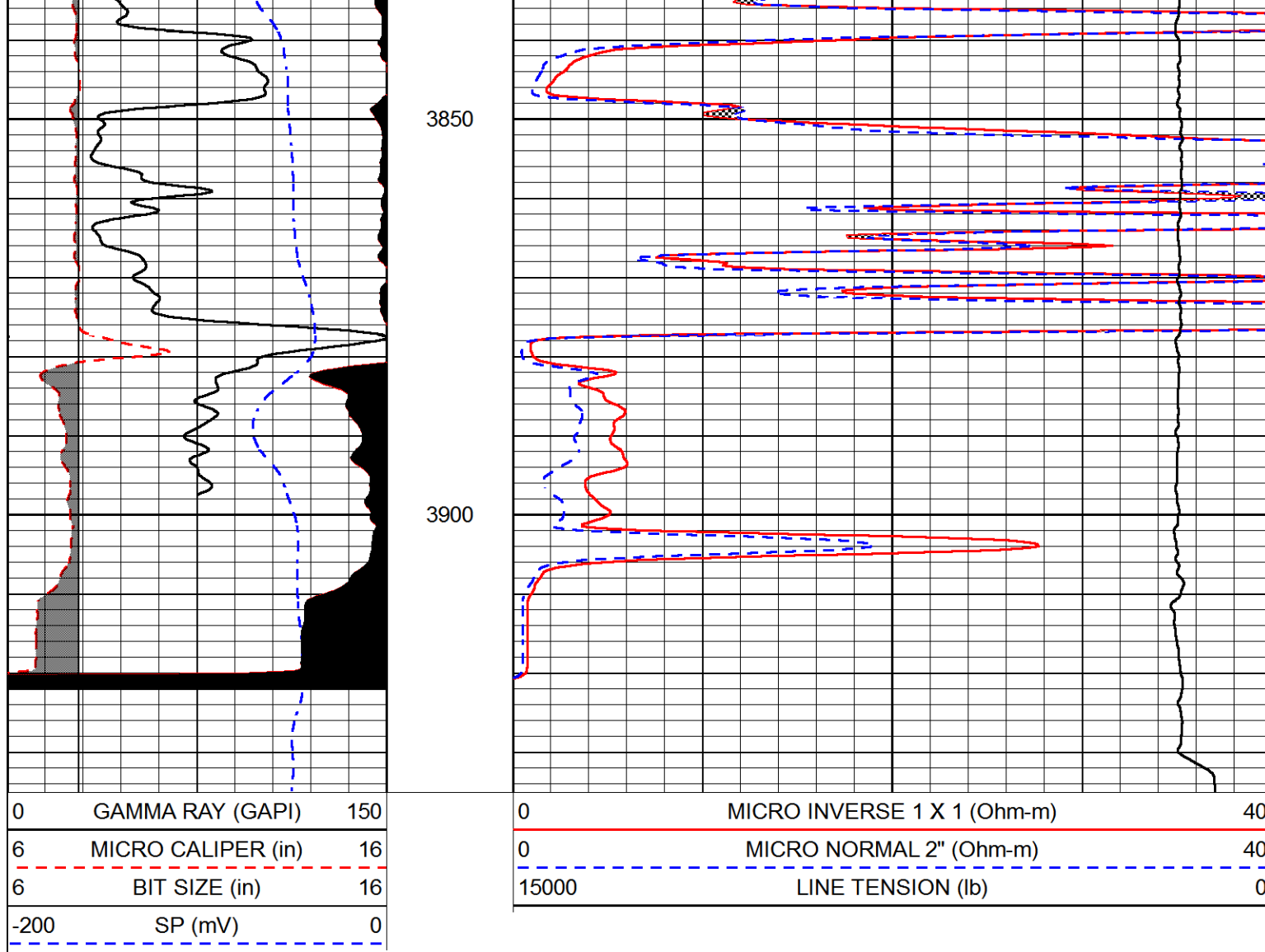


3700

3750

3800





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:	1987-M&W
Calibration Performed:	Thu Aug 09 22:42:18 2018

Loop:	Readings		References			Results	
	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

Microlog Calibration Report

Serial-Model:	PSI-01-PSI STKBL ML
Performed:	Thu Mar 31 18:14:32 2016

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	12500.0000	-1.0000

Normal	0.0000	1.0000	0.0000	1.0000	Ohm-in	12500.0000	1.0000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	20500.0000	-1.0000
Caliper	1.0001	1.1397	6.5000	18.5000	in	86.0000	-82.8500

Compensated Density Calibration Report

Serial-Model:	126-186-M&W
Source / Verifier:	/
Master Calibration Performed:	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:	tk10-MW
Tool Model:	M&W
Calibration Performed:	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
Background Reading:	0.0	cps
Calibrator Reading:	6.2	cps
Sensitivity:	0.5200	GAPI/cps



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