



DUAL COMP POROSITY LOG

Company: RJM COMPANY
 Well: SPRAWKA NO. 1
 Field: TRITSCH
 County: BARTON
 State: KANSAS

Company: RJM COMPANY
 Well: SPRAWKA NO. 1
 Field: TRITSCH
 County: BARTON
 State: KANSAS

Location: API #: 15-009-26197-00-00
 2310' FNL & 330' FWL
 SEC 12 TWP 18S RGE 12W
 Permanent Datum: GROUND LEVEL Elevation 1848'
 Log Measured From: KELLY BUSHING
 Drilling Measured From: KELLY BUSHING
 Other Services: DIL MEL
 Elevation: K.B. 1856', D.F. N/A, G.L. 1848'

Date	1/18/2018
Run Number	ONE
Type Log	CNL/CDL
Depth Driller	3409'
Depth Logger	3408'
Bottom Logged Interval	3400'
Top Logged Interval	2800'
Type Fluid In Hole	CHEMICAL
Salinity, PPM CL	5000
Density	9.1
Level	FULL
Max. Rec. Temp. F	110 DEG/F
Operating Rig Time	3 HOURS
Equipment -- Location	108 HAYS
Recorded By	J. HENRICKSON
Witnessed By	JIM MUSGROVE

Run No.	Bit	Borehole Record		Casing Record	
		From	To	From	To
ONE	12.25"	0	370'	8.625"	23#
TWO	7.875"	370'	TD		

<<< Fold Here >>>

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.
 CLAFLIN KANSAS
 4 WEST TO 90 RD, 1 1/2 SOUTH, EAST INTO

Log Measured From: KELLY BUSHING 8 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: JIM MUSGROVE Secondary Witness: Secondary Witness: Secondary Witness:
---	---

Log Variables






DatabaseC:\ProgramData\Warrior\Data\rm_sprawka_1.db
Dataset field/well/stackml/pass3.1/_vars_

Top - 3352.00 ft

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	110	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	0	0	0	-220	21	Off	3408

3352.00 ft - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	110	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	0	0	0	-220	21	Off	3408

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 CNSSC	37.48 36.73		CNT-M&W (tk10-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (168-986)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSI STKBL ML (PSI-02) Stackable Microlog Tools	7.58	4.00	65.00
RLL3 RLL3F	15.80 15.79					

CILD	8.00
CILM	4.70
SP	0.20

DIL-M&W (PSI 978)

18.50

3.50

220.00

Dataset: rjm_sprawka_1.db: field/well/stackml/pass3.1
 Total length: 43.08 ft
 Total weight: 685.00 lb
 O.D.: 4.00 in

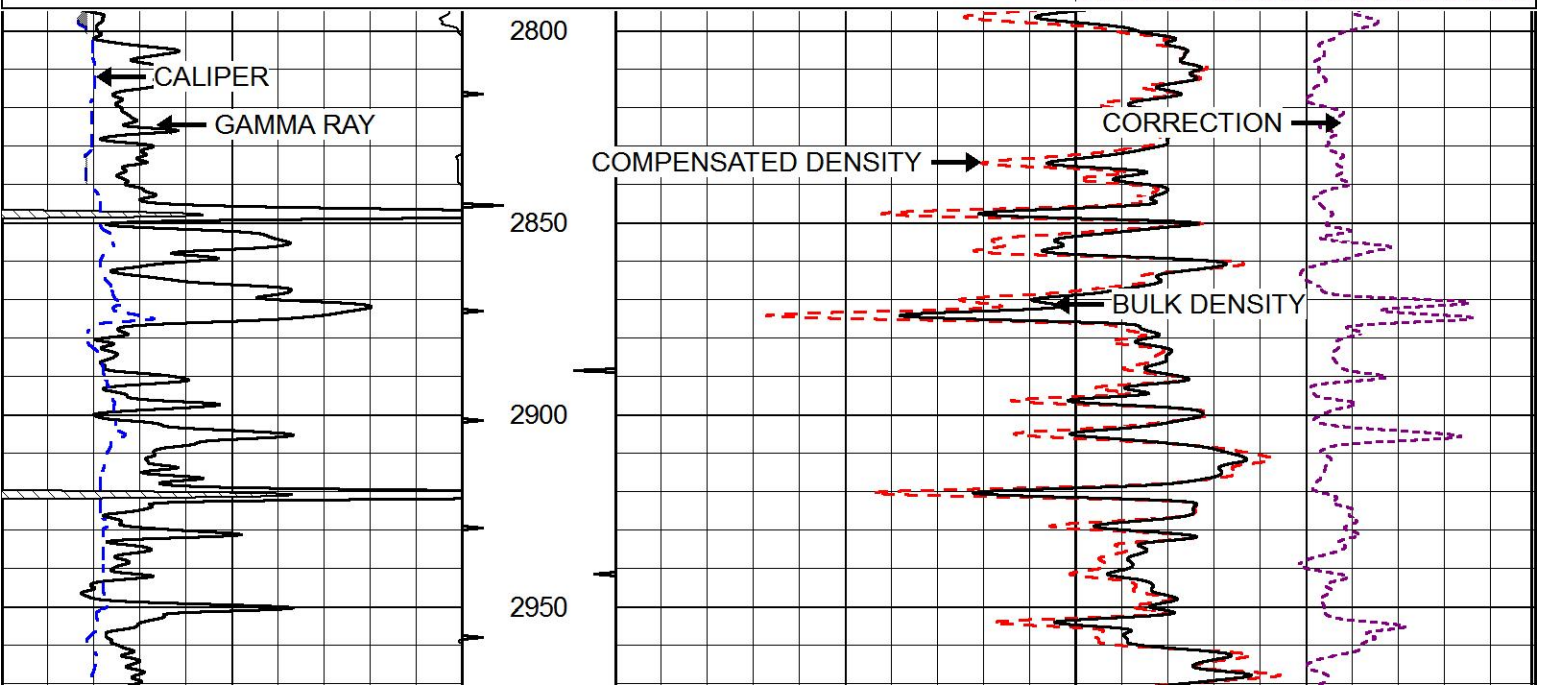


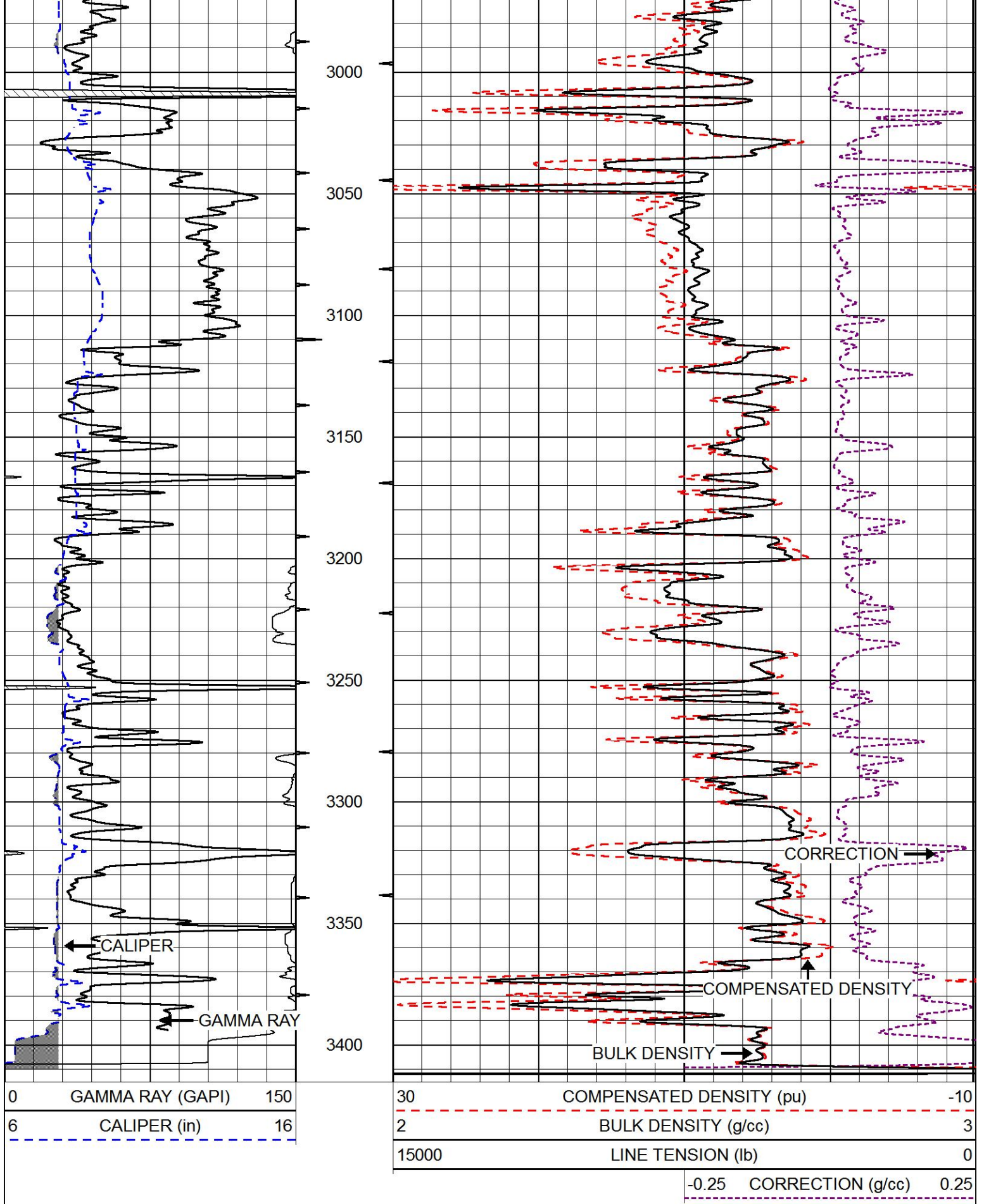
MAIN PASS

Database File: rjm_sprawka_1.db
 Dataset Pathname: stackml/pass3.1
 Presentation Format: cdl
 Dataset Creation: Thu Jan 18 08:38:17 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





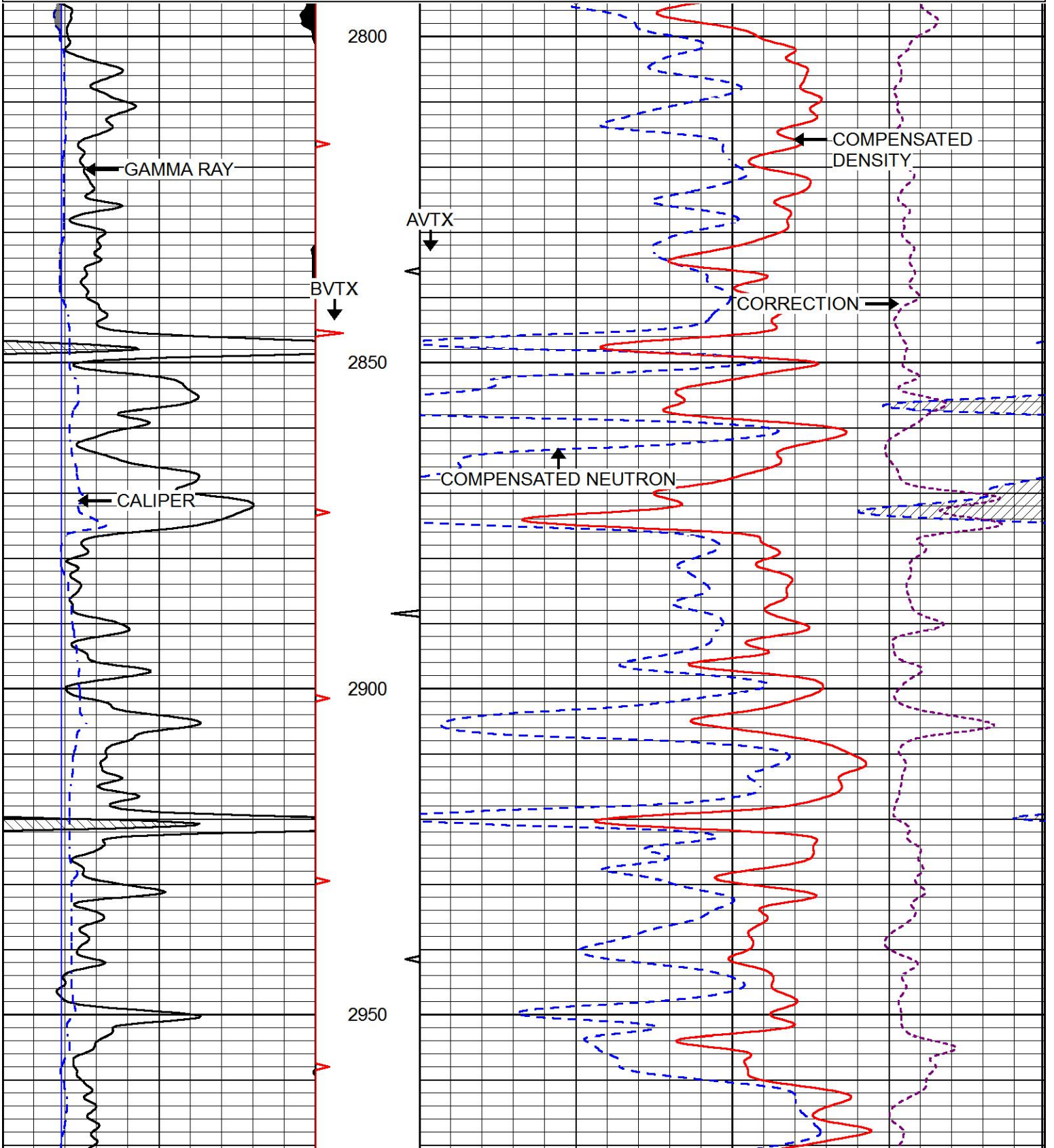
MAIN PASS

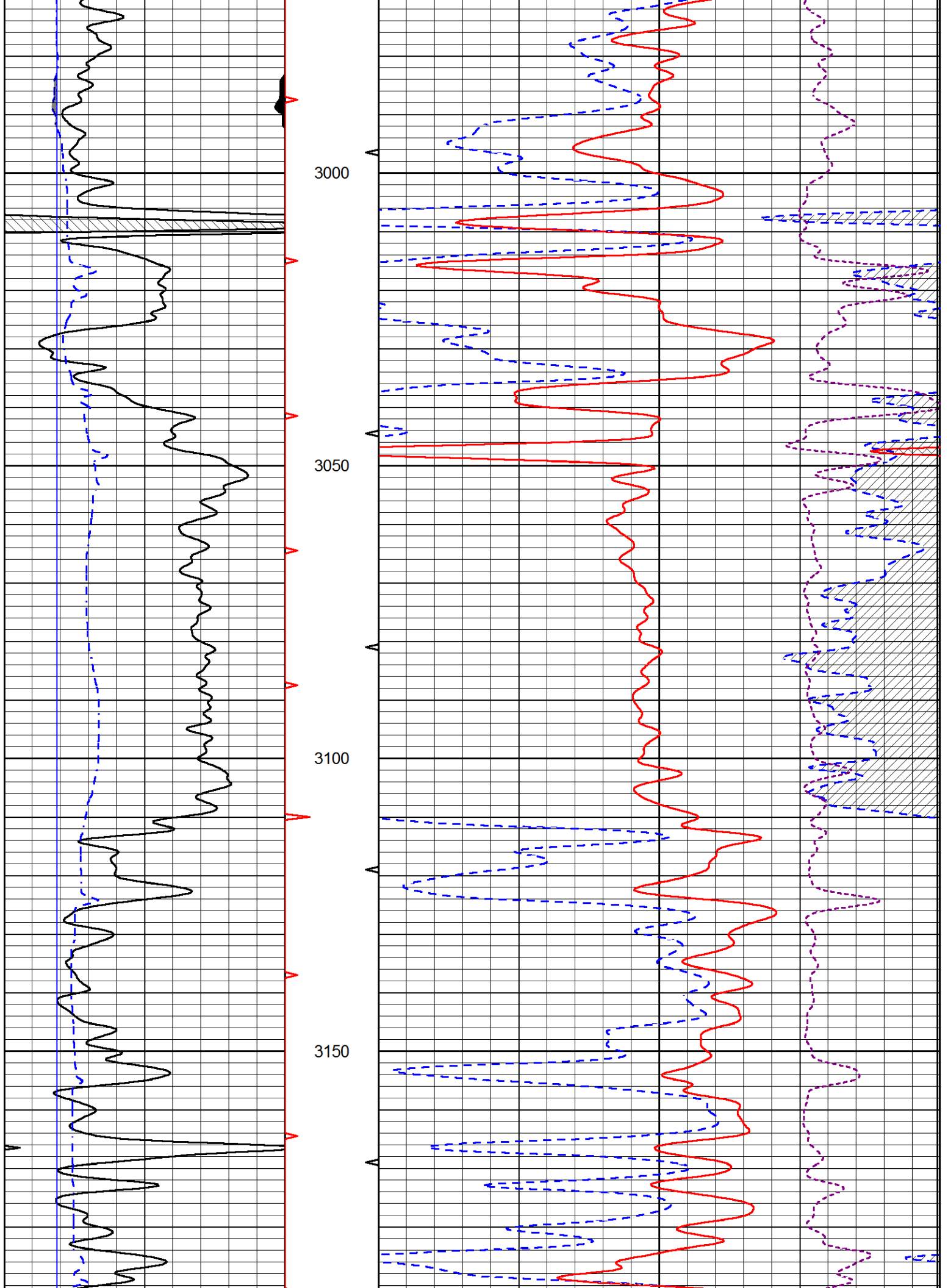
Database File rjm_sprawka_1.db
 Dataset Pathname stackml/pass3.1
 Presentation Format cndlspec
 Dataset Creation Thu Jan 18 08:38:17 2018
 Charted by Depth in Feet scaled 1:240

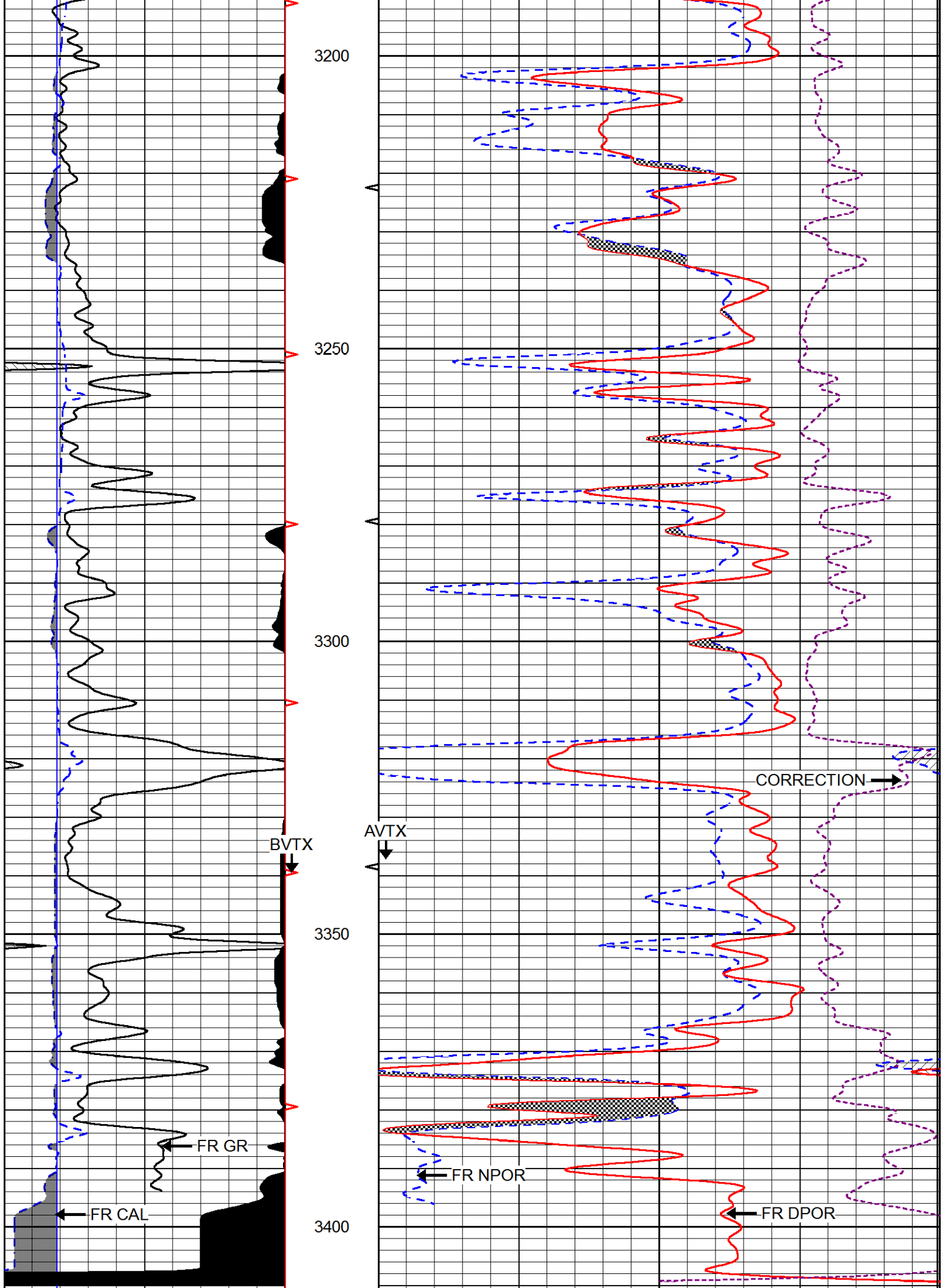
0	GAMMA RAY (GAPI)	150
6	dcal (in)	16
6	BIT SIZE (in)	16

30	CNLS (pu)	-10
30	COMPENSATED DENSITY (2.71 ma) (pu)	-10
15000	LINE TENSION (lb)	0

-0.25	CORRECTION (g/cc)	0.25
-------	-------------------	------







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

30	CNLS (pu)	-10
30	COMPENSATED DENSITY (2.71 ma) (pu)	-10
15000	LINE TENSION (lb)	0
	-0.25 CORRECTION (g/cc)	0.25

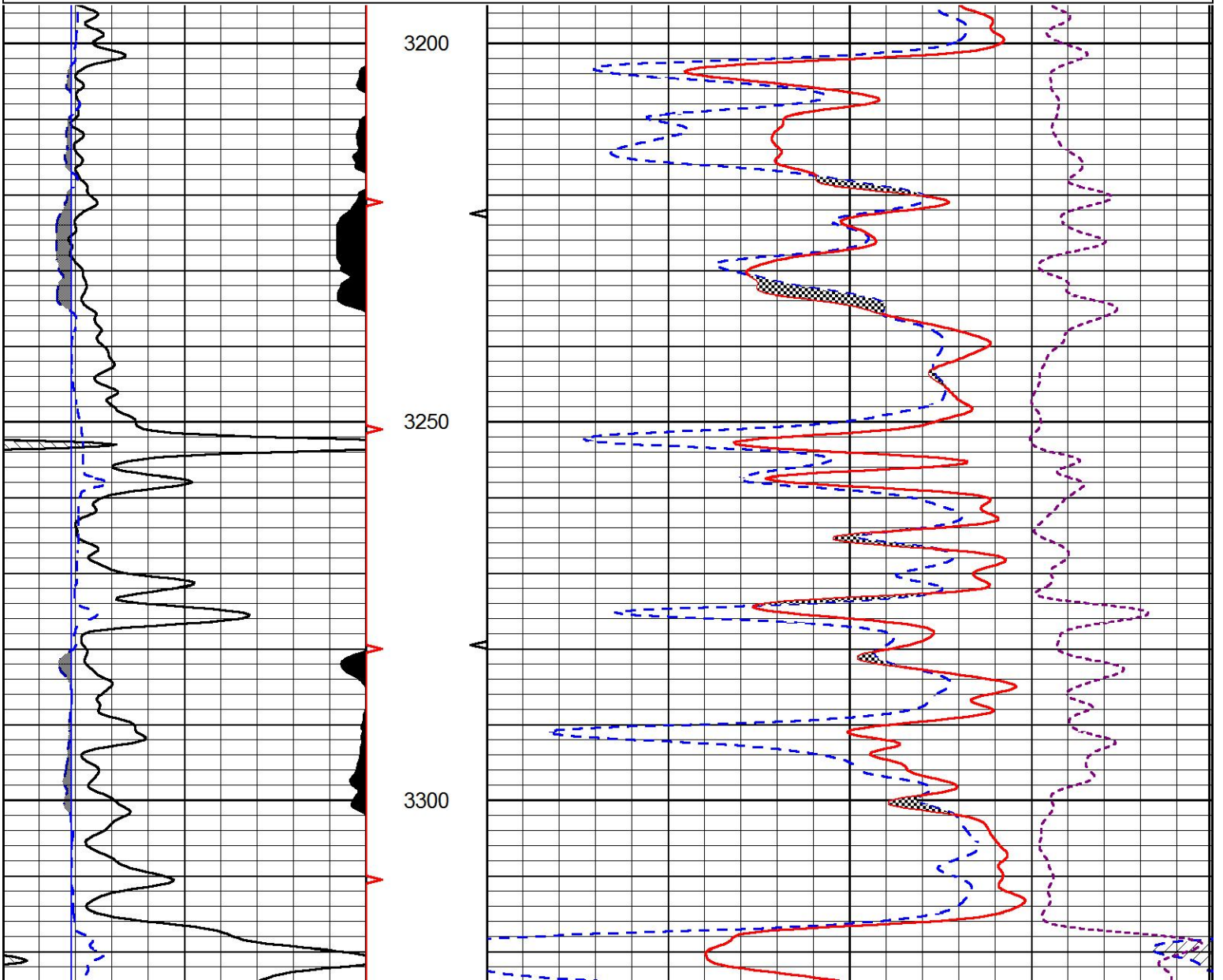


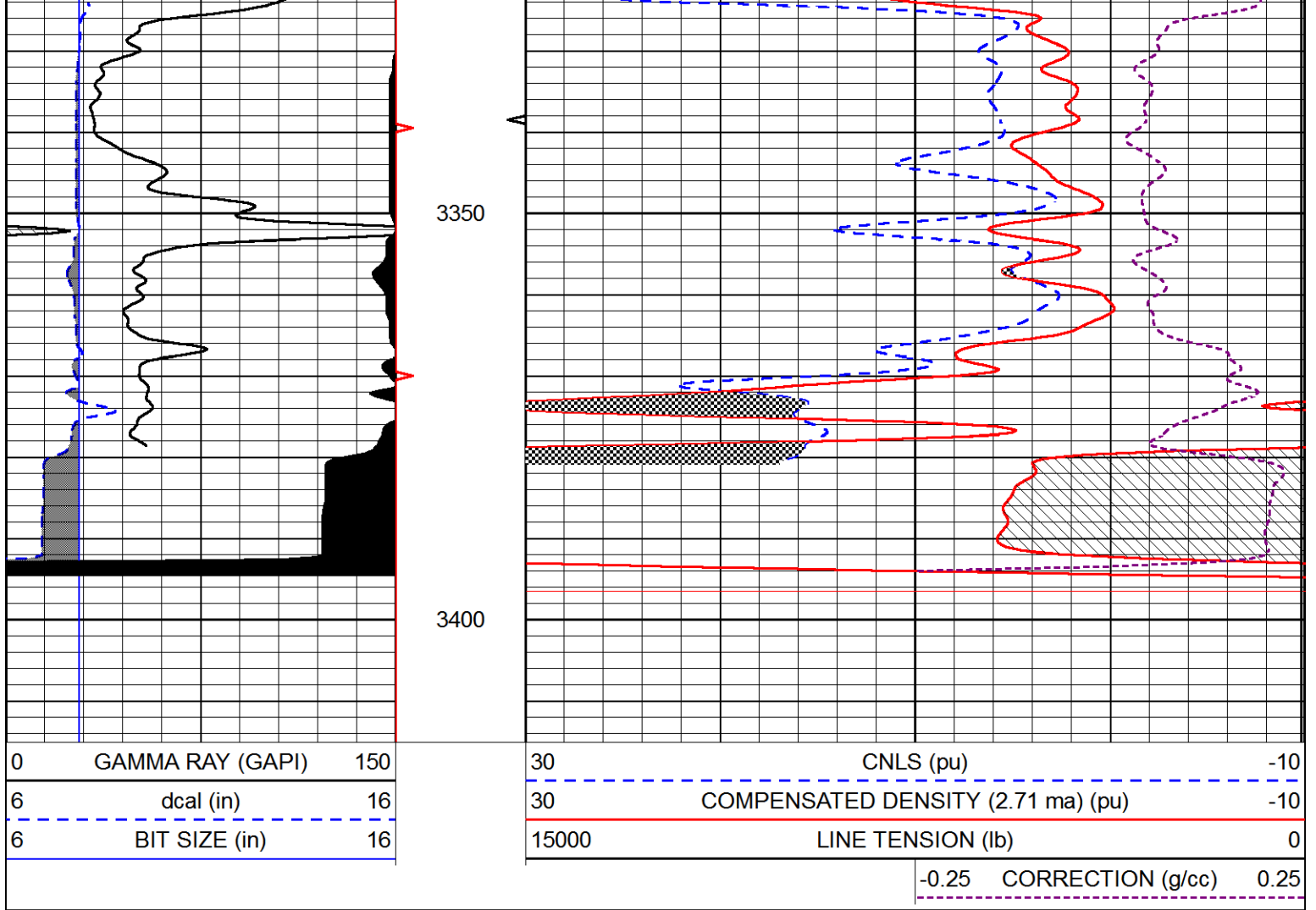
REPEAT SECTION

Database File rjm_sprawka_1.db
 Dataset Pathname stackml/pass2.1
 Presentation Format cndlspec
 Dataset Creation Thu Jan 18 08:38:41 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	COMPENSATED DENSITY (2.71 ma) (pu)	-10
15000	LINE TENSION (lb)	0
	-0.25 CORRECTION (g/cc)	0.25





Calibration Report

Database File rjm_sprawka_1.db
 Dataset Pathname stackml/pass3.1
 Dataset Creation Thu Jan 18 08:38:17 2018

Dual Induction Calibration Report

Serial-Model: PSI 978-M&W
 Calibration Performed: Wed Dec 13 12:45:09 2017

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop	mmho/m	Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.570	-36.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.400	-35.000

Microlog Calibration Report

Serial-Model: PSI-02-PSI STKBL ML
 Performed: Fri Jun 23 01:25:19 2017

	Readings		References			Results	
	Zero	Cal	Zero	Cal	mm	b	
Normal	0.0031	0.0043	0.0000	10.0000	Ohm-m	13000.0000	0.0000
Inverse	0.0000	0.0013	0.0000	10.0000	Ohm-m	15000.0000	-0.3000
Caliper	1.0020	1.0834	5.5000	16.5000	in	135.1560	-131.6500

Compensated Density Calibration Report

Serial-Model: 168-986-M&W
 Source / Verifier: /
 Master Calibration Performed: Tue Apr 11 17:07:47 2017

Master Calibration

	<u>Density</u>		<u>Far Detector</u>	<u>Near Detector</u>	
Magnesium	1.755	g/cc	4691.86	4818.19	cps
Aluminum	2.705	g/cc	859.57	3020.22	cps
	Spine Angle = 74.61		Density/Spine Ratio = 0.540		
	<u>Size</u>		<u>Reading</u>		
Small Ring	4.00	in	1.00		
Large Ring	14.00	in	1.20		

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



PIONEER
 Pioneer Energy Services

Company RJM COMPANY
 Well SPRAWKA NO. 1
 Field TRITSCH
 County BARTON
 State KANSAS