



COMPENSATED DENSITY/NEUTRON LOG

Company ARP OPERATING, LLC.

Well CV #3

Field WILDCAT

County ELLIS State KANSAS

Location: API # : 15-051-26989-0000

1730' FNL & 915' FEL

Other Services
DIL/MEL
SON

SEC 16 TWP 12S RGE 20W

Permanent Datum GROUND LEVEL Elevation 2289
Log Measured From KELLY BUSHING 5' A.G.L
Drilling Measured From KELLY BUSHING

Elevation
K.B. 2294
D.F. 2292
G.L. 2289

Date 11/22/20

Run Number ONE

Depth Driller 4120

Depth Logger 4123

Bottom Logged Interval 4101

Top Log Interval 3400

Casing Driller 8 5/8" @ 218

Casing Logger 218

Bit Size 7 7/8

Type Fluid in Hole CHEMICAL MUD

Density / Viscosity 9.1/54

pH / Fluid Loss 10.5/5.8

Source of Sample FLOWLINE

Rm @ Meas. Temp 1.1 @ 62F

Rmf @ Meas. Temp .83 @ 62F

Rmc @ Meas. Temp 1.32 @ 62F

Source of Rmf / Rmc MEASUREMENT

Rm @ BHT .58 @ 117F

Time Circulation Stopped 2 HOURS

Time Logger on Bottom 111F

Maximum Recorded Temperature 117F

Equipment Number 3802

Location HAYS, KANSAS

Recorded By GUS PFANENSTIEL

Witnessed By SEAN DEENIHAN

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, 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. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

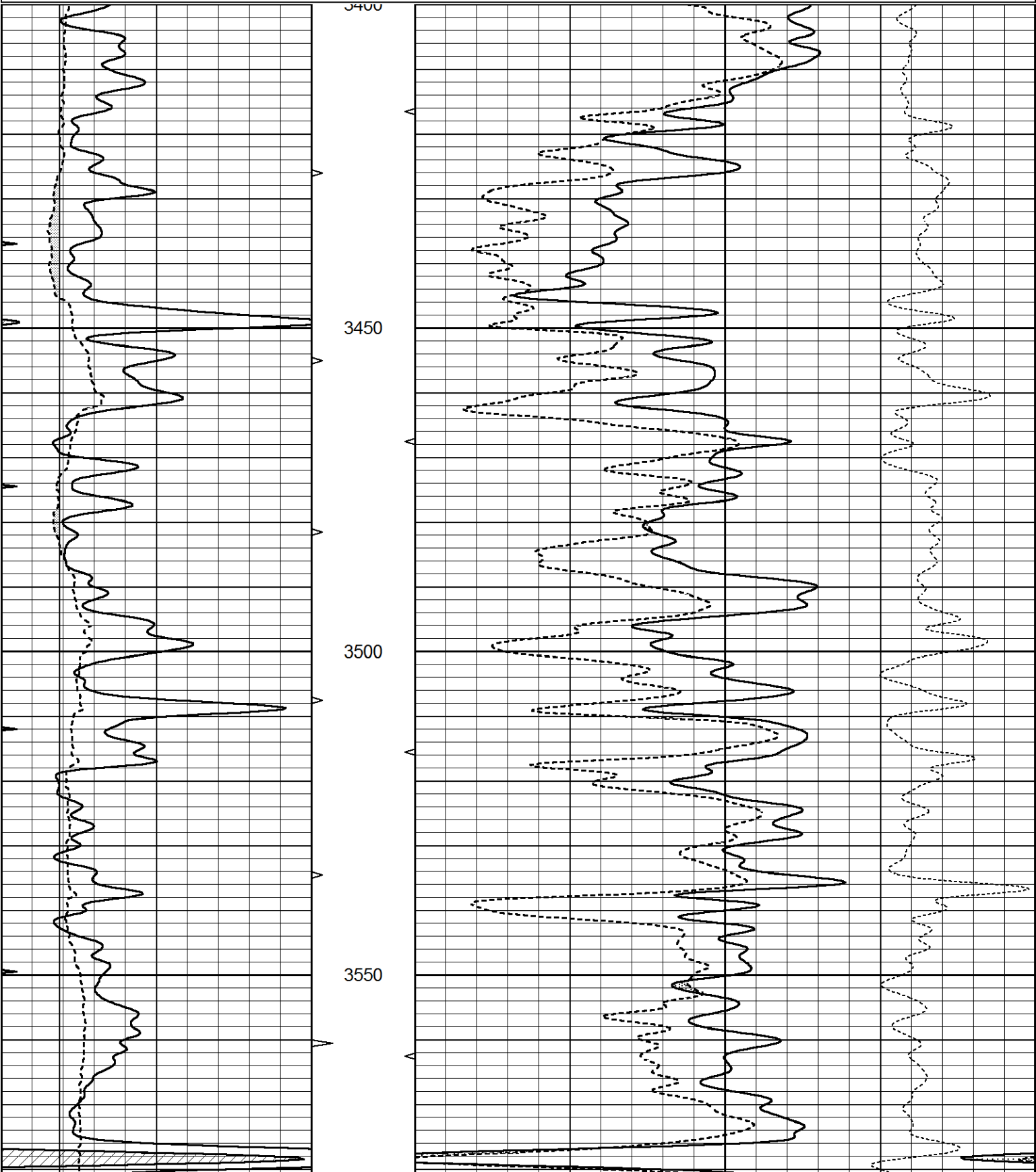
THANK YOU FOR USING ELI WIRELINE SERVICES, HAYS, KS. (785) 628-6395
DIRECTIONS
ELLIS NORTH 5 MILES ON BLACKTOP
WEST INTO.

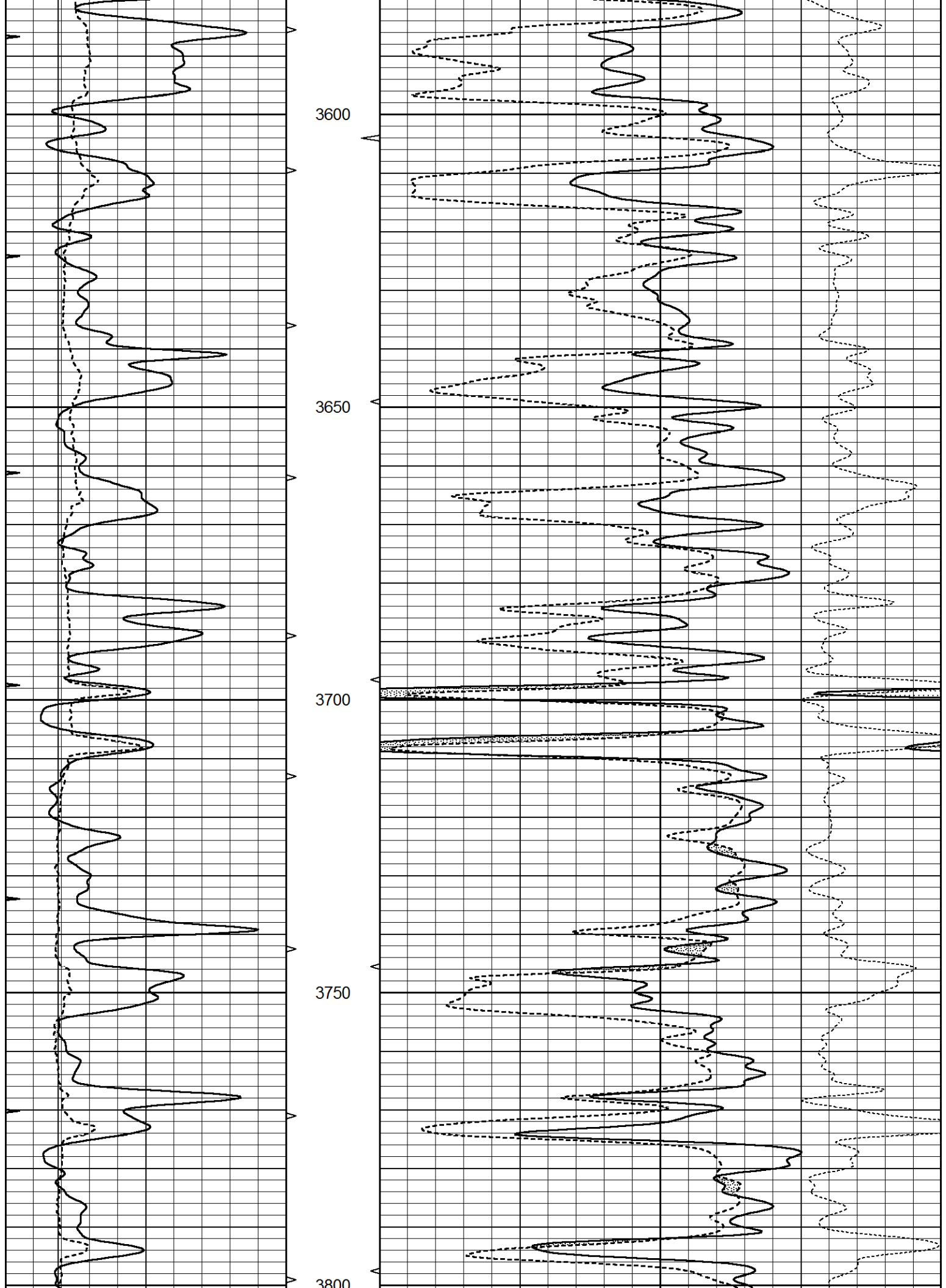


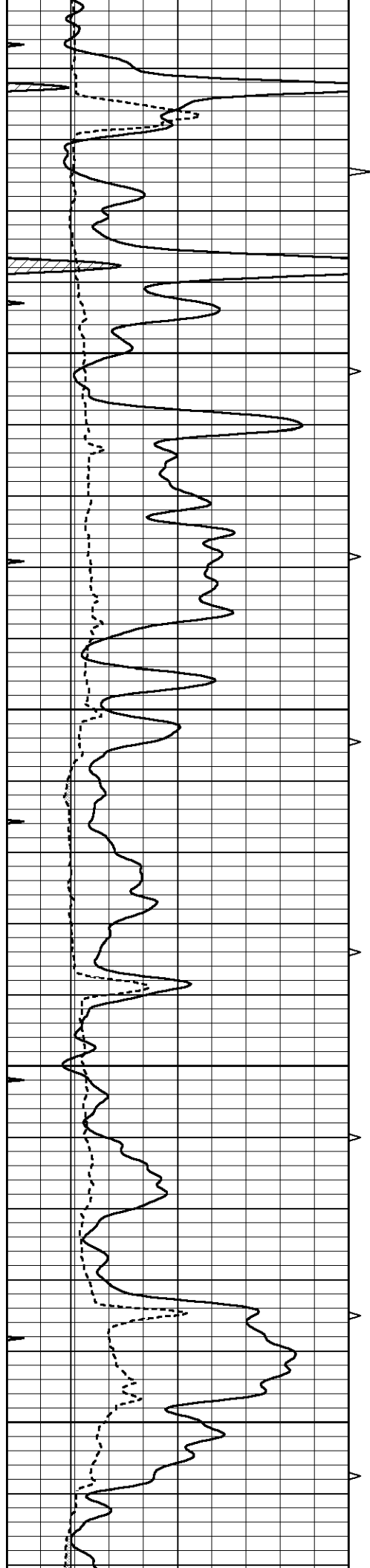
MAIN PASS

Database File	5241ddn.db
Dataset Pathname	pass3.1
Presentation Format	den_neu
Dataset Creation	Sun Nov 22 21:04:32 2020
Charted by	Depth in Feet scaled 1:240

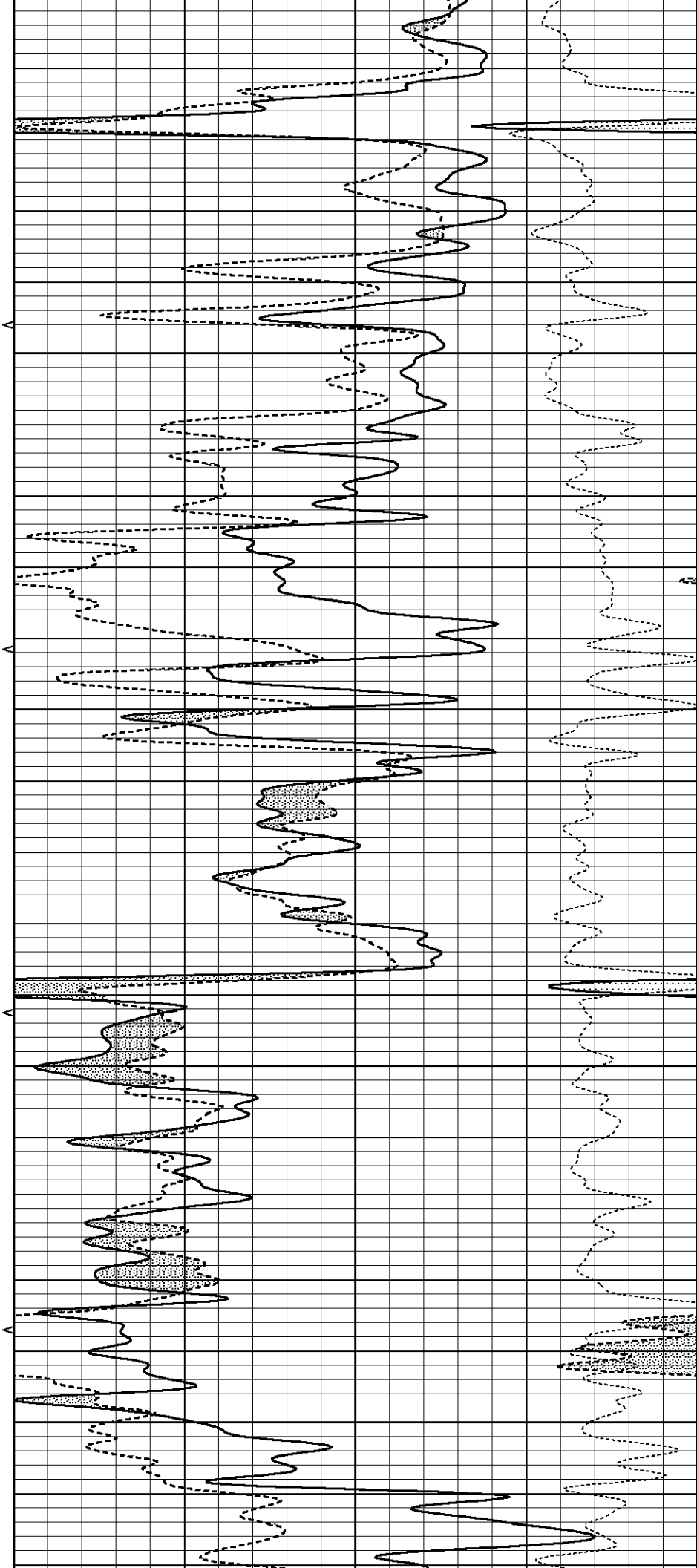
0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)			-10	
6	CALIPER (in)	16	10 (ft3)	0	30	COMPENSATED NEUTRON (pu)			-10
0	MINMK	20	TBHV			-0.25	CORRECTION (g/cc)	0.25	
			0 (ft3)	10					

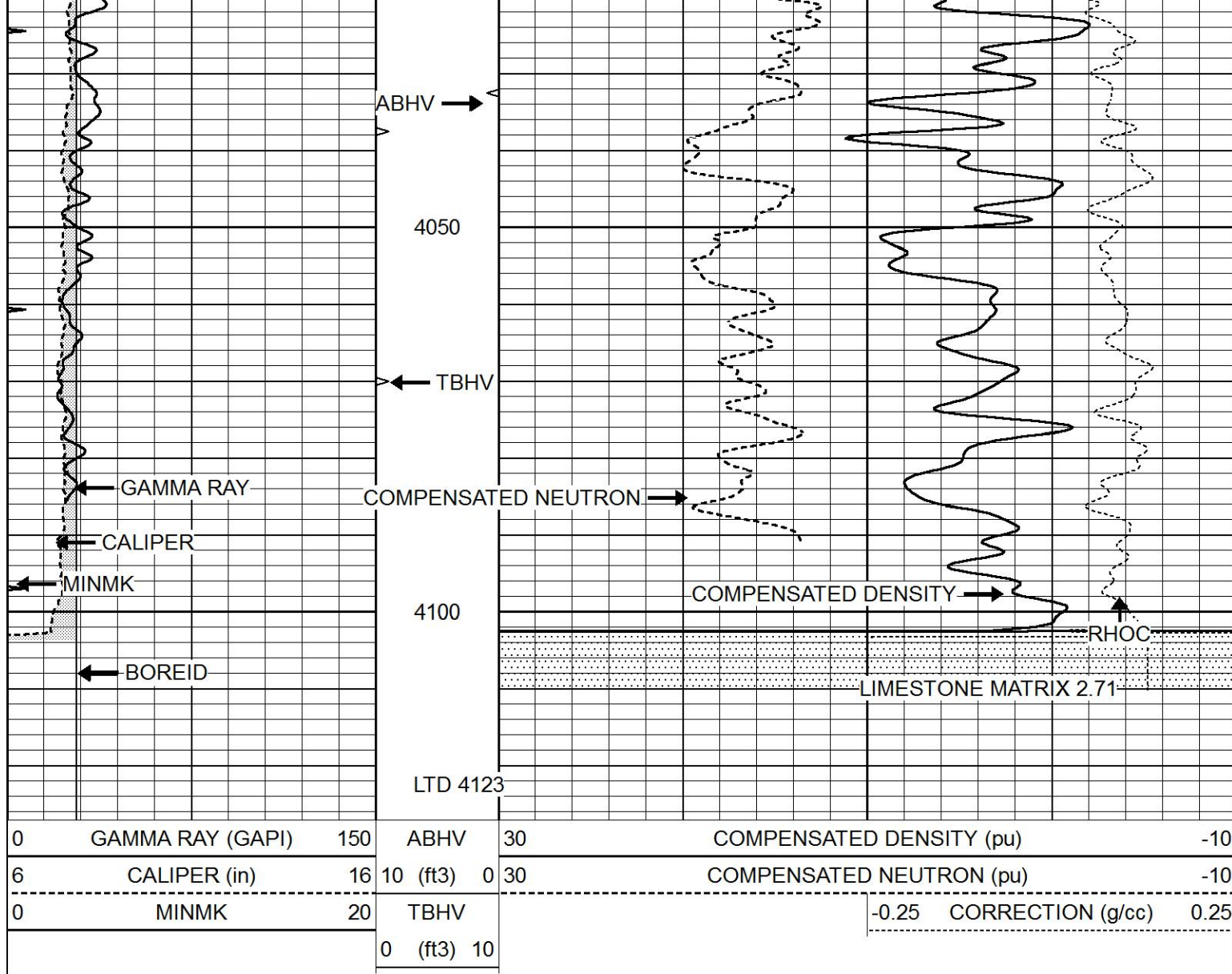






3850
3900
3950
4000

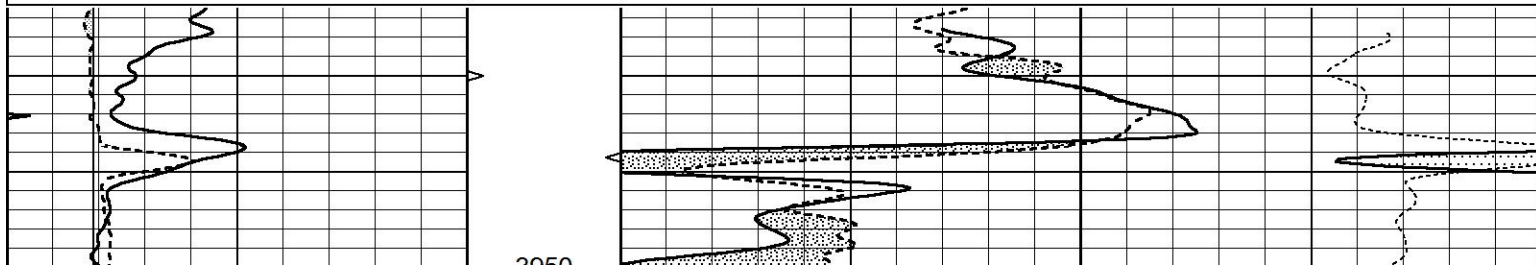


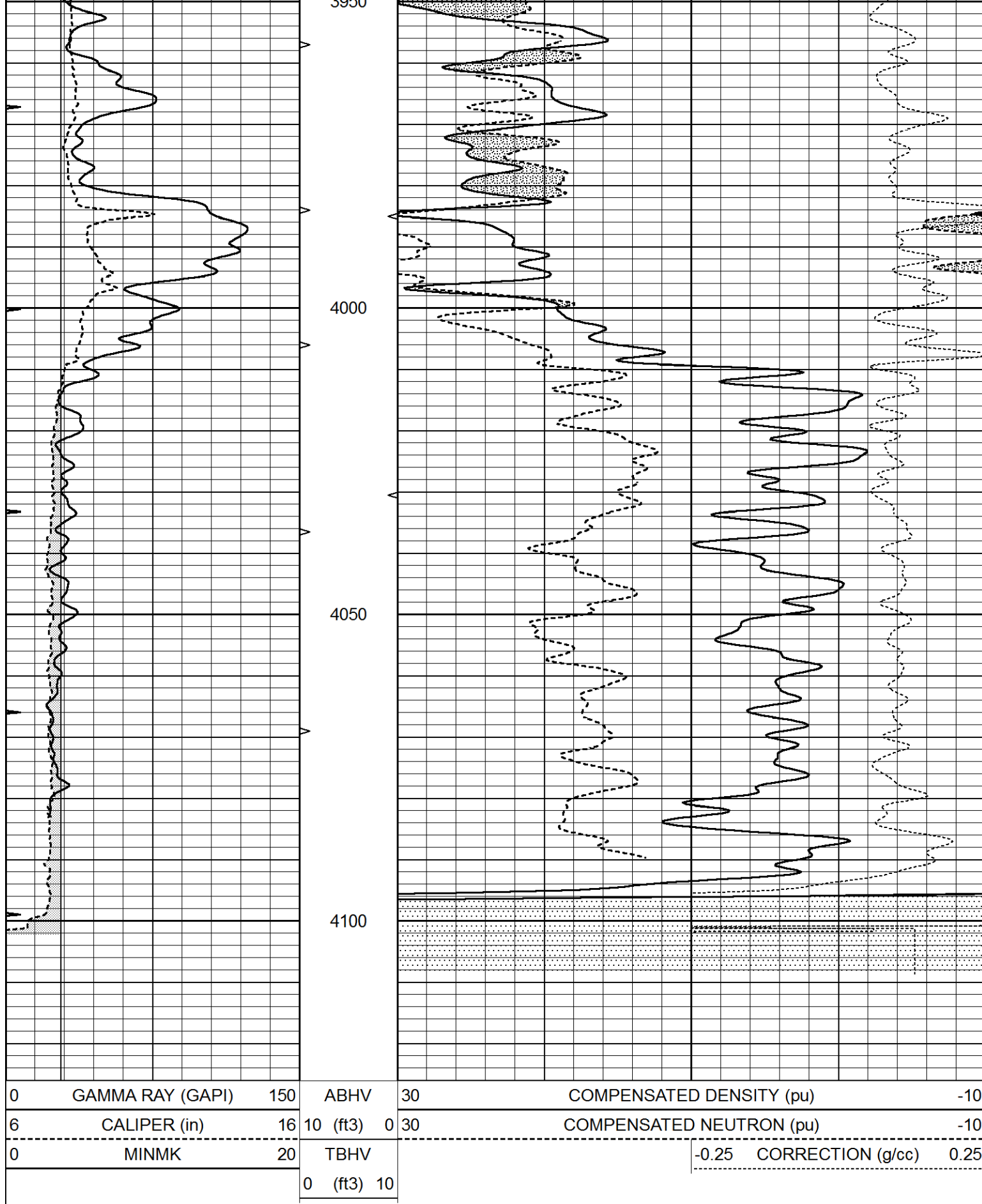


REPEAT SECTION

Database File 5241ddn.db
 Dataset Pathname pass2.1
 Presentation Format den_neu
 Dataset Creation Sun Nov 22 20:24:49 2020
 Charted by Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3) 0	30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	TBHV		-0.25 CORRECTION (g/cc)	0.25
			0 (ft3) 10			





Calibration Report

Database File 5241ddn.db
 Dataset Pathname pass2.1
 Dataset Creation Sun Nov 22 20:24:49 2020

Dual Induction Calibration Report

Serial-Model: FW1410-55-Probe
 Surface Cal Performed: Tue Feb 19 11:44:18 2019
 Downhole Cal Performed: Tue Feb 19 11:44:24 2019
 After Survey Verification Performed: Tue Feb 19 11:44:27 2019

Surface Calibration

Readings				References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.011	0.656	V	1.000	400.000	mmho/m	618.595	-5.524
Medium	-0.000	0.731	V	1.000	464.000	mmho/m	632.856	1.197
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.007	0.649	V	0.000	400.000	mmho/m	623.784	-4.595
Medium	0.004	0.743	V	0.000	464.000	mmho/m	627.284	-2.251

Downhole Calibration

Readings				References			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	-0.824	395.917	mmho/m	-0.976	397.550	mmho/m	1.004	-0.149
Medium	3.565	471.327	mmho/m	3.468	471.590	mmho/m	1.001	-0.099
LL3		7.503	V		1500.000	Ohm-m		
		0.001	V		20.000	Ohm-m		
		-7.481	V		3745.000	mmho-m		

After Survey Verification

Readings				Targets			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	-0.824	395.917	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	3.565	471.327	mmho/m	1.000	0.000
LL3		0.000	Ohm-m		1500.000	Ohm-m		
		0.000	Ohm-m		20.000	Ohm-m		
		0.000	mmho-m		3745.000	mmho-m		

Litho Density Calibration Report

Serial: 140703
 Model: V4_10P
 Source Number: 74GBq-19

Master Calibration

Performed: Fri Oct 30 10:28:51 2020

	Background	Aluminum	Magnesium	
Window 1	542.44	5567.78	24103.74	cps
Window 2	44.66	1254.11	5862.88	cps
Window 4	233.89	1249.47	5395.29	cps
Window 5	561.63	8508.97	16290.56	cps
Window 6	44.30	1445.42	2841.86	cps
Window 8	267.45	2710.48	5092.88	cps
Bulk Density	-	2.6020	1.6830	g/cc
Pe	-	3.0000	2.5070	b/e

LS Alpha: : -1.8545 SS Alpha: : -0.7763 LS CPE: : 1.1359
 LS Beta: : 130052.2542 SS Beta: : 19130.5414 SS CPE: : 1.4655

Before Survey Background Counts Verification

Performed: Wed Dec 31 18:00:00 1969

Window 1 0.00 cps

Window 1	0.00	cps
Window 2	0.00	cps
Window 4	0.00	cps
Window 5	0.00	cps
Window 6	0.00	cps
Window 8	0.00	cps

After Survey Background Counts Verification		Performed: Wed Dec 31 18:00:00 1969
Window 1	0.00	cps
Window 2	0.00	cps
Window 4	0.00	cps
Window 5	0.00	cps
Window 6	0.00	cps
Window 8	0.00	cps

Lithodensity Caliper Calibration		Performed: Fri Oct 30 10:28:51 2020
Results	Readings	References (in)
Low	High	Low High Gain Offset
4306.9	7563.2	8.0 14.0 0.0 -0.5

Before Survey Caliper Verification		Performed:
Reference	Reading	
_____	_____	
Caliper (in)		

After Survey Caliper Verification		Performed:
Reference	Reading	
_____	_____	
Caliper (in)		

Compensated Neutron Calibration Report

Serial Number:	080621PMC
Tool Model:	NABORS

PRE-SURVEY VERIFICATION			
Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

POST-SURVEY VERIFICATION			
Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number:	7
Tool Model:	Probe1
Performed:	Tue Dec 10 10:02:55 2019
Calibrator Value:	1.0 GAPI

Background Reading:

0.0

cps

Calibrator Reading:

1.0

cps

Sensitivity:

0.4800

GAPI/cps