



HIGH DEFINITION INDUCTION LOGSM
COMPENSATED Z-DENS LOGSM
COMPENSATED NEUTRON LOGSM
GAMMA RAY LOGSM
CALIPER LOG

FILE NO: OH145636	COMPANY LARAMIE ENERGY LLC
API NO: 05077105820000	WELL SUP & SHEP FEDERAL 0993-25-14W
	FIELD BUZZARD CREEK
	COUNTY MESA STATE COLORADO

Ver. 4.11 RIG: H&P 522	LOCATION: LAT: 39.244799 N LONG: 107.723413 W SEC <u>25</u> TWP <u>9S</u> RGE <u>93W</u>	OTHER SERVICES NONE
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PERMANENT DATUM LOG MEASURED FROM DRILL. MEAS. FROM	GL ELEVATION 8078 FT 30 FT ABOVE P.D. KB GL 8078 FT	ELEVATIONS: KB 8108 FT DF GL 8078 FT
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DATE	20-NOV-2018				
RUN	1	TRIP	1		
SERVICE ORDER	US145636				
DEPTH DRILLER	1553 FT				
DEPTH LOGGER	1440 FT				
BOTTOM LOGGED INTERVAL	1440 FT				
TOP LOGGED INTERVAL	0 FT				
CASING DRILLER	16 IN	@ 90 FT		@	
CASING LOGGER	90 FT				
BIT SIZE	11 IN				
TYPE OF FLUID IN HOLE	WBM				
DENSITY	9.5 LB/G	60 CP			
PH	9.4	14 C3			
SOURCE OF SAMPLE	TOOL MEASURED				
RM AT MEAS. TEMP.	2.71 OHMM	@ 82.93 DEGF		@	
RMF AT MEAS. TEMP.	2.08 OHMM	@ 82.93 DEGF		@	
RMC AT MEAS. TEMP.	3.33 OHMM	@ 82.93 DEGF		@	
SOURCE OF RMF	RMC	CALCULATED	CALCULATED		
RM AT BHT	2.86 OHMM	@ 85.12 DEGF		@	
TIME SINCE CIRCULATION	5 HOURS				
MAX. RECORDED TEMP.	85.12 DEGF				
EQUIP. NO.	ML-4268	LOCATION	GRAND JCT.		
RECORDED BY	TIM NEWELL				
WITNESSED BY	TYLER HALE				

IN MAKING INTERPRETATIONS OF LOGS OUR EMPLOYEES WILL GIVE THE CUSTOMER THE BENEFIT OF THEIR BEST JUDGEMENT. BUT SINCE ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS, WE CANNOT, AND WE DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION. WE SHALL NOT BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COST, DAMAGES, OR EXPENSES WHATSOEVER INCURRED OR SUSTAINED BY THE CUSTOMER RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR EMPLOYEES.

BOREHOLE RECORD		
BIT SIZE	FROM	TO
11 IN	90 FT	1553 FT

CASING RECORD				
SIZE	WEIGHT	GRADE	FROM	TO
16 IN	65 LB/F		30 FT	90 FT

REMARKS
RUN 1 TRIP 1: CVOL AND BVOL CALCULATED IN CUBIC FEET WITH THE PROPOSED 8.625" CASING
MATRIX: SANDSTONE RHO MATRIX: 2.68 G/CC
NEUTRON RUN DECENTRALIZED
HDIL RUN SLICK WITH MUD CONDUCTIVITY USED FOR PROCESSING
GOT TO 1028' ON THE FIRST ATTEMPT, SO A WIPER TRIP WAS DONE AND GOT TO 1440' ON 2ND ATTEMPT.
DATA SPLICED AT 910'

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	TTRM	3981XA	10435924	FREE
1	1	COMM REMOTE	3514XB	10435562	FREE
1	1	GR	1329XB	10378541	FREE
1	1	CN	2446XA	10560252	DECENTRALIZED
1	1	ZDL	2234XA	10460300	PAD DEVICE
1	1	KNUCKLE	3939XA	12081598	FREE
1	1	HDIL EA	1515EA	10037710	FREE
1	1	HDIL	1515MA	11831570	FREE

MAIN LOG 2"/100FT SCALE

ECLIPS 7.0i ECLIPS General Release Rel 7.0i Thu Jun 08 20:36:10 CDT 2017

Updates: 1

Plotted: Wed Nov 21 06:43:36 2018

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_SS FED 0993_25_14W/p870b04.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 813.933 ft BOTTOM DEPTH: 1446.015 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
TTRM	FILTER ()	medium (1)		TOP	BOTTOM
	FILTER (.h)	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"
Y AXIS CALIPER	FILTER ()	medium (1)		"	"
TENSION	FILTER ()	medium (1)		"	"
GR	FILTER ()	medium (1)		"	"
CALIPER	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"
SP-SPDH	FILTER ()	medium (1)		"	"

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
BIT SIZE	BIT SIZE	11.000	in	TOP	BOTTOM
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	77.0	degF	"	"
	MUD SAMPLE RES	0.821	ohm.m	"	"
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	76.1	degF	"	"
	at BH REF DEPTH	0.0	ft	"	"
	with TEMP GRADIENT	1.200	0.01 degF/ft	"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (mbh*)	11.000	in	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	TOOL MEASURED		"	"

HDIL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
HDIL TEMPERATURE CORRECTION	TEMP CORR SOURCE	USE RXTEMP		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		"	"
	ABC to CALCULATE	MUD CONDUCTIVITY		"	"
	STANDOFF	1.50	in	"	"
	TOOL POSITION	ECCENTERED		"	"
	Rmud MULTIPLIER	1.000		"	"

PARAMETER AND FILTER SUMMARY REPORT

SYMMETRIC FILTER					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
TTRM	FILTER ()	medium (1)		TOP	BOTTOM
	FILTER (.h)	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"
Y AXIS CALIPER	FILTER ()	medium (1)		"	"
TENSION	FILTER ()	medium (1)		"	"
GR	FILTER ()	medium (1)		"	"
CALIPER	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"
SP-SPDH	FILTER ()	medium (1)		"	"

BOREHOLE & CEMENT					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
BIT SIZE	BIT SIZE	11.000	in	TOP	BOTTOM
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	77.0	degF	"	"
	MUD SAMPLE RES	0.821	ohm.m	"	"
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	76.1	degF	"	"
	at BH REF DEPTH	0.0	ft	"	"
	with TEMP GRADIENT	1.200	0.01 degF/ft	"	"
				"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (mbh*)	11.000	in	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	TOOL MEASURED		"	"

HDIL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
HDIL TEMPERATURE CORRECTION	TEMP CORR SOURCE	USE RXTEMP		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		"	"
	ABC to CALCULATE	MUD CONDUCTIVITY		"	"
	STANDOFF	1.50	in	"	"
	TOOL POSITION	ECCENTERED		"	"
	Rmud MULTIPLIER	1.000		"	"

CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:GR	Nov 21 00:26:10 2018	GAMMA RAY
F1:M0C6	Nov 21 00:26:10 2018	FOCUSED CONDUCTIVITY, 60-INCH DOI
F1:M0R2	Nov 21 00:26:10 2018	TRUE FOCUSED RESISTIVITY FOR HDIL, 20-INCH DOI
F1:M0R6	Nov 21 00:26:10 2018	TRUE FOCUSED RESISTIVITY FOR HDIL, 60-INCH DOI
F1:SP	Nov 21 00:26:10 2018	SPONTANEOUS POTENTIAL
F1:TEN	Nov 21 00:26:10 2018	DIFFERENTIAL TENSION

CURVE MEASURE POINT OFFSET							
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
GR	-52.25	M0R2	-8.00	SP	-14.00		
M0C6	-8.00	M0R6	-8.00	TEN	0.00		

Presentation : SysA:/dat1a/LARAMIE_SS_FED_0993_25_14W/HDIL_2IN_MAIN.fvpdf [2"/100' Scale]

Plot Interval : -13.75 - 1444.25 Feet

Data File 1 : F1 : SysA:/dat1a/LARAMIE_SS_FED_0993_25_14W/MAINSPLICE.xtf

Created On : Nov 21 00:26:10 2018

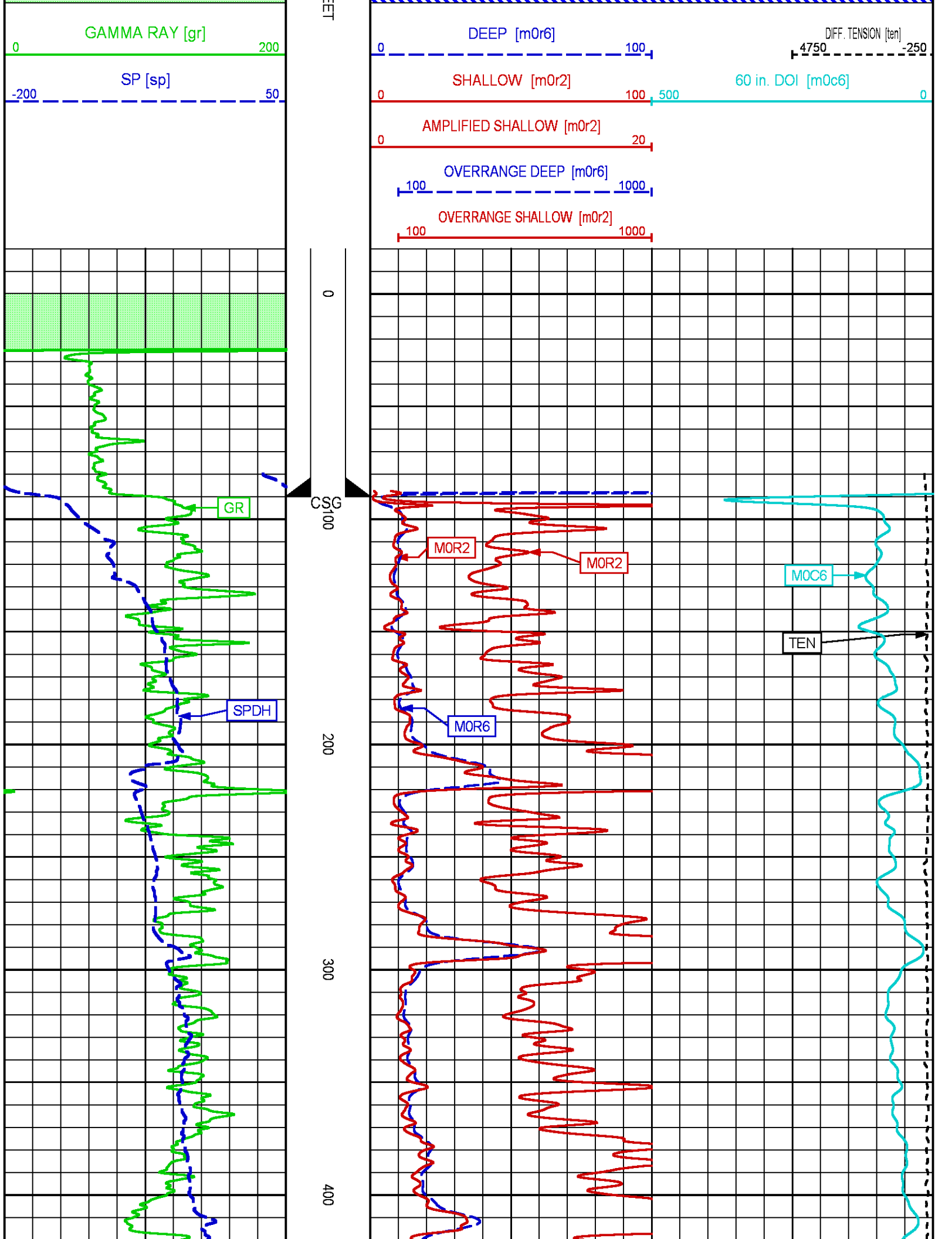
Company : LARAMIE ENERGY LLC

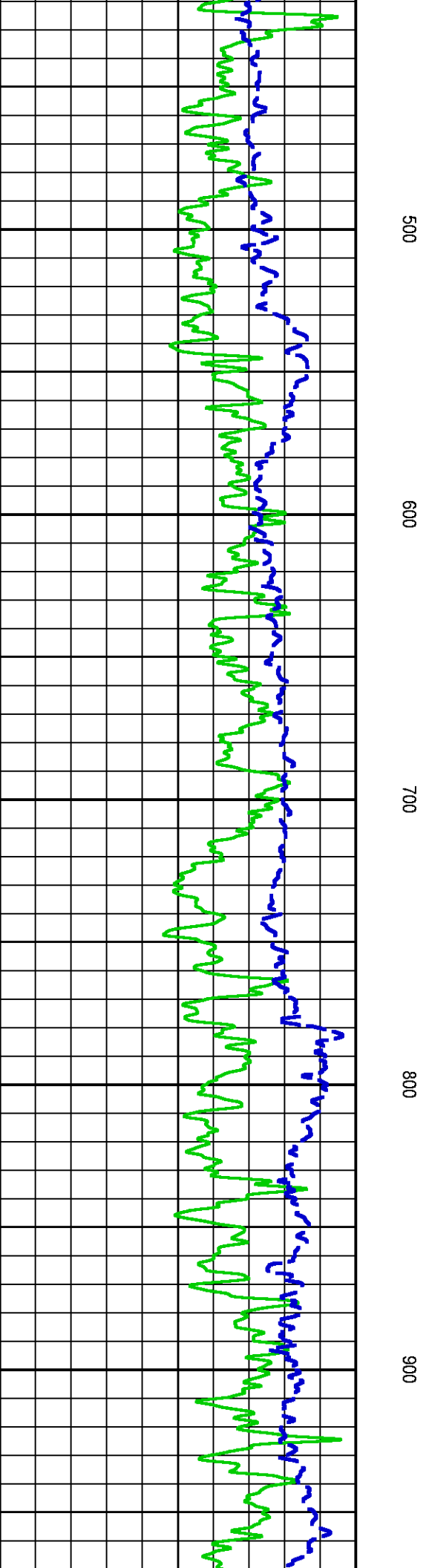
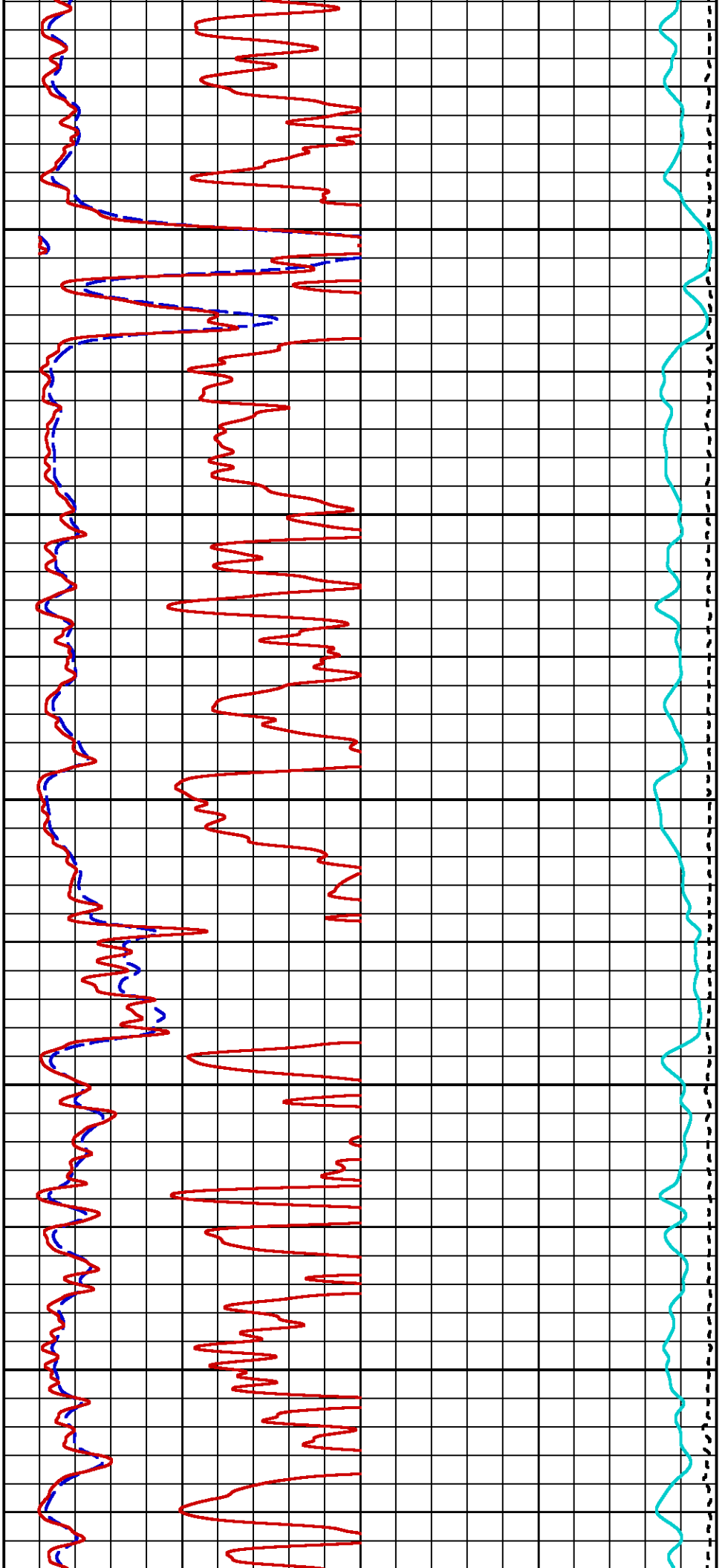
Well : SUP & SHEP FEDERAL 0993-25-14W

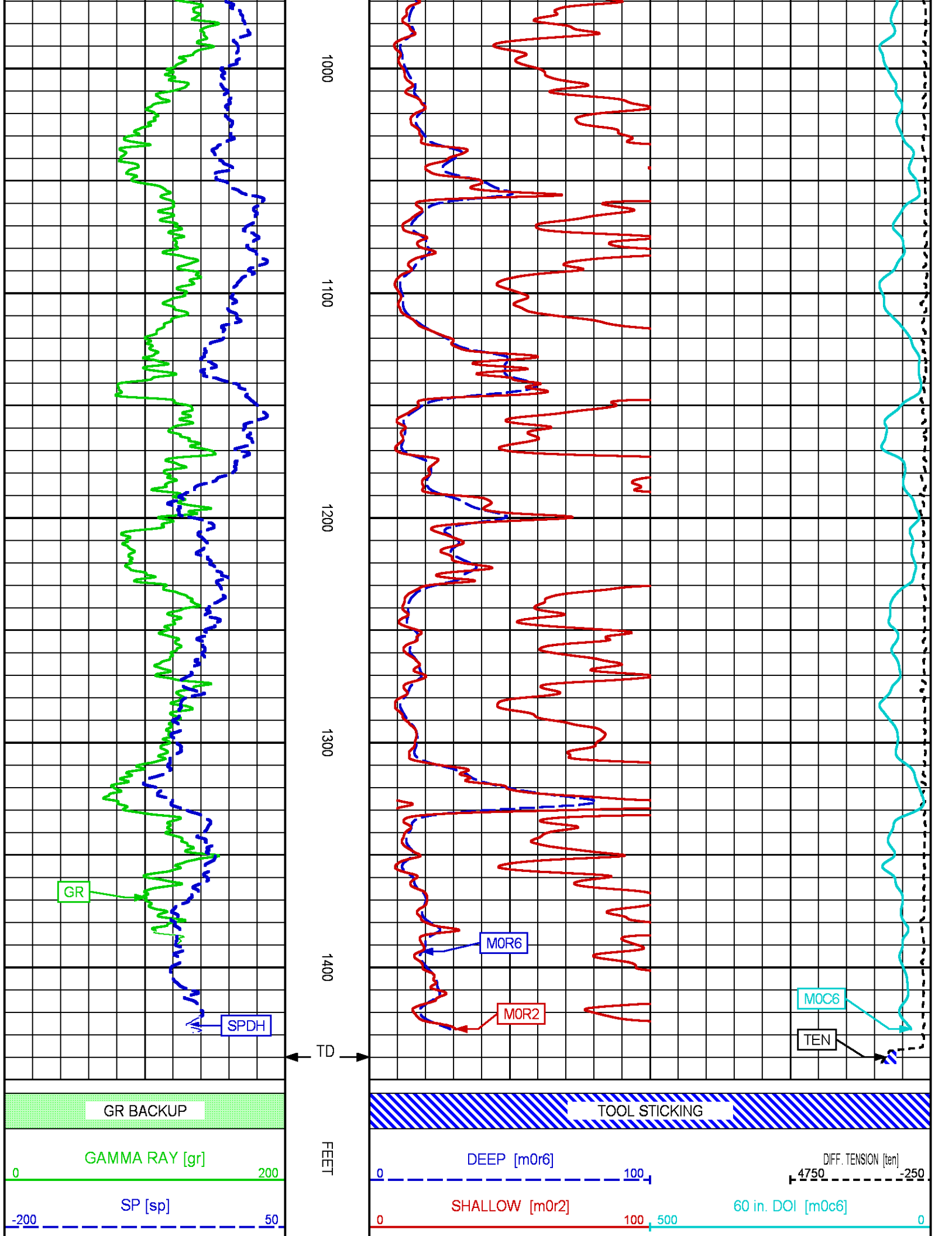
Field : BUZZARD CREEK

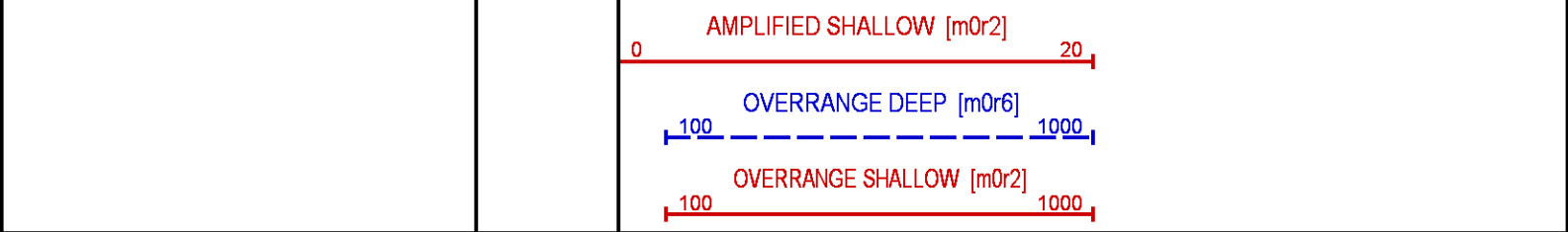
File Interval : -13.75 - 1444.25 Feet

OCT : p870b









MAIN LOG 5"/100FT SCALE

ECLIPS 7.0i ECLIPS General Release Rel 7.0i Thu Jun 08 20:36:10 CDT 2017
Updates: 1
Plotted: Wed Nov 21 06:43:50 2018

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_SS_FED_0993_25_14W/p870b04.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 813.933 ft BOTTOM DEPTH: 1446.015 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
TTRM	FILTER ()	medium (1)		TOP	BOTTOM
	FILTER (.h)	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"
Y AXIS CALIPER	FILTER ()	medium (1)		"	"
TENSION	FILTER ()	medium (1)		"	"
GR	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"
CN	FILTER ()	medium (1)		"	"
CALIPER	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"
ZDL MED RES	FILTER (hrd1*)	medium		"	"
	FILTER (hrd1s*)	medium		"	"
	FILTER (hrd2*)	medium		"	"
	FILTER (hrd2s*)	medium		"	"
	FILTER (soft*)	medium		"	"
SP-SPDH	FILTER ()	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	8.625	in	TOP	BOTTOM
	CASING THICKNESS	0.000	in	"	"
BIT SIZE	BIT SIZE	11.000	in	"	"
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	77.0	degF	"	"
	MUD SAMPLE RES	0.821	ohm.m	"	"
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	76.1	degF	"	"
	at BH REF DEPTH	0.0	ft	"	"
	with TEMP GRADIENT	1.200	0.01 degF/ft	"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (zdbh*)	USE CALIPER		"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	11.000	in	"	"
	FIXED DIAMETER (mbh*)	11.000	in	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	TOOL MEASURED		"	"

CN PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
2446 CN MATRIX	2446 MATRIX	SANDSTONE		TOP	BOTTOM
CN SALINITY CORRECTION	SALINITY CORR (2446)	SAL & BH SIZE ON		"	"
	SALINITY	600	ppm	"	"
CN TOOL STANDOFF	ENABLE STANDOFF CORR	OFF		"	"
	STANDOFF AMOUNT	0.00	in	"	"
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		"	"
	BIT SIZE BEHIND CSNG	7.875	in	"	"

ZDL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
MUD DENSITY	MUD DENSITY	9.50	lbm/gal	TOP	BOTTOM
DENSITY POROSITY	RHOmatrix	2.680	g/cm3	"	"
	RHOfluid	1.000	g/cm3	"	"
ZDL	DENX TRACKING	ON		"	"
TRACKING TIME	Logging Spd for Gain	Over 10 ft/min		"	"

HDIL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
HDIL TEMPERATURE CORRECTION	TEMP CORR SOURCE	USE RXTEMP		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		"	"
	ABC to CALCULATE	MUD CONDUCTIVITY		"	"
	STANDOFF	1.50	in	"	"
	TOOL POSITION	ECCENTERED		"	"
	Rmud MULTIPLIER	1.000		"	"
HDIL High RESISTIVITY Normalization	VRM Norm	ON		"	"

PARAMETER AND FILTER SUMMARY REPORT					
FILE:	/dat1a/LARAMIE_SS_FED_0993_25_14W/p870bR02.prm				
LOGGING MODE:	DEPTH	DIRECTION:	UP		
TOP DEPTH:	51.240 ft	BOTTOM DEPTH:	1034.354 ft		

SYMMETRIC FILTER					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
TTRM	FILTER ()	medium (1)		TOP	BOTTOM
	FILTER (.h)	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"
Y AXIS CALIPER	FILTER ()	medium (1)		"	"
TENSION	FILTER ()	medium (1)		"	"
GR	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"
CN	FILTER ()	medium (1)		"	"
CALIPER	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"
ZDL MED RES	FILTER (hrd1*)	medium		"	"
	FILTER (hrd1s*)	medium		"	"
	FILTER (hrd2*)	medium		"	"
	FILTER (hrd2s*)	medium		"	"
	FILTER (soft*)	medium		"	"
SP-SPDH	FILTER ()	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"

BOREHOLE & CEMENT					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	8.625	in	TOP	BOTTOM
	CASING THICKNESS	0.000	in	"	"
BIT SIZE	BIT SIZE	11.000	in	"	"
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	77.0	degF	"	"
	MUD SAMPLE RES	0.821	ohm.m	"	"
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	76.1	degF	"	"
	at BH REF DEPTH	0.0	ft	"	"
	with TEMP GRADIENT	1.200	0.01 degF/ft	"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		"	"

	CALIPER/FIXED DIA. (mbh*)	USE CALIPER	"	"
	CALIPER/FIXED DIA. (zdbh*)	USE CALIPER	"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	11.000	in	"
	FIXED DIAMETER (mbh*)	11.000	in	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	TOOL MEASURED	"	"

CN PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
2446 CN MATRIX	2446 MATRIX	SANDSTONE		TOP	BOTTOM
CN SALINITY CORRECTION	SALINITY CORR (2446)	SAL & BHSIZE ON		"	"
	SALINITY	600	ppm	"	"
CN TOOL STANDOFF	ENABLE STANDOFF CORR	OFF		"	"
	STANDOFF AMOUNT	0.00	in	"	"
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		"	"
	BIT SIZE BEHIND CSNG	7.875	in	"	"

ZDL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
MUD DENSITY	MUD DENSITY	9.50	lbm/gal	TOP	BOTTOM
DENSITY POROSITY	RHOMatrix	2.680	g/cm3	"	"
	RHOfluid	1.000	g/cm3	"	"
ZDL	DENX TRACKING	ON		"	"
TRACKING TIME	Logging Spd for Gain	Over 10 ft/min		"	"

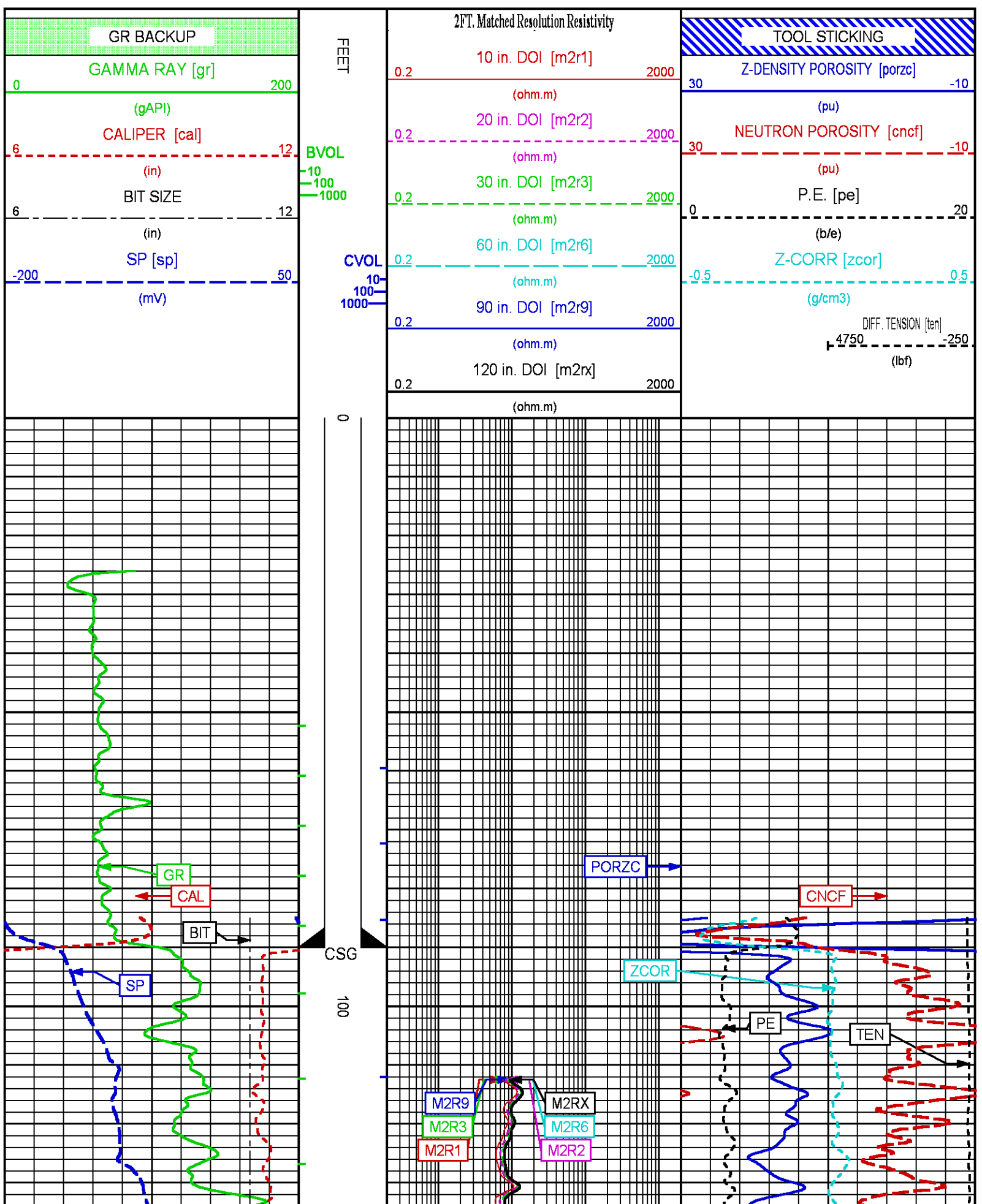
HDIL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
HDIL TEMPERATURE CORRECTION	TEMP CORR SOURCE	USE RXTEMP		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		"	"
	ABC to CALCULATE	MUD CONDUCTIVITY		"	"
	STANDOFF	1.50	in	"	"
	TOOL POSITION	ECCENTERED		"	"
	Rmud MULTIPLIER	1.000		"	"
HDIL High RESISTIVITY Normalization	VRM Norm	ON		"	"

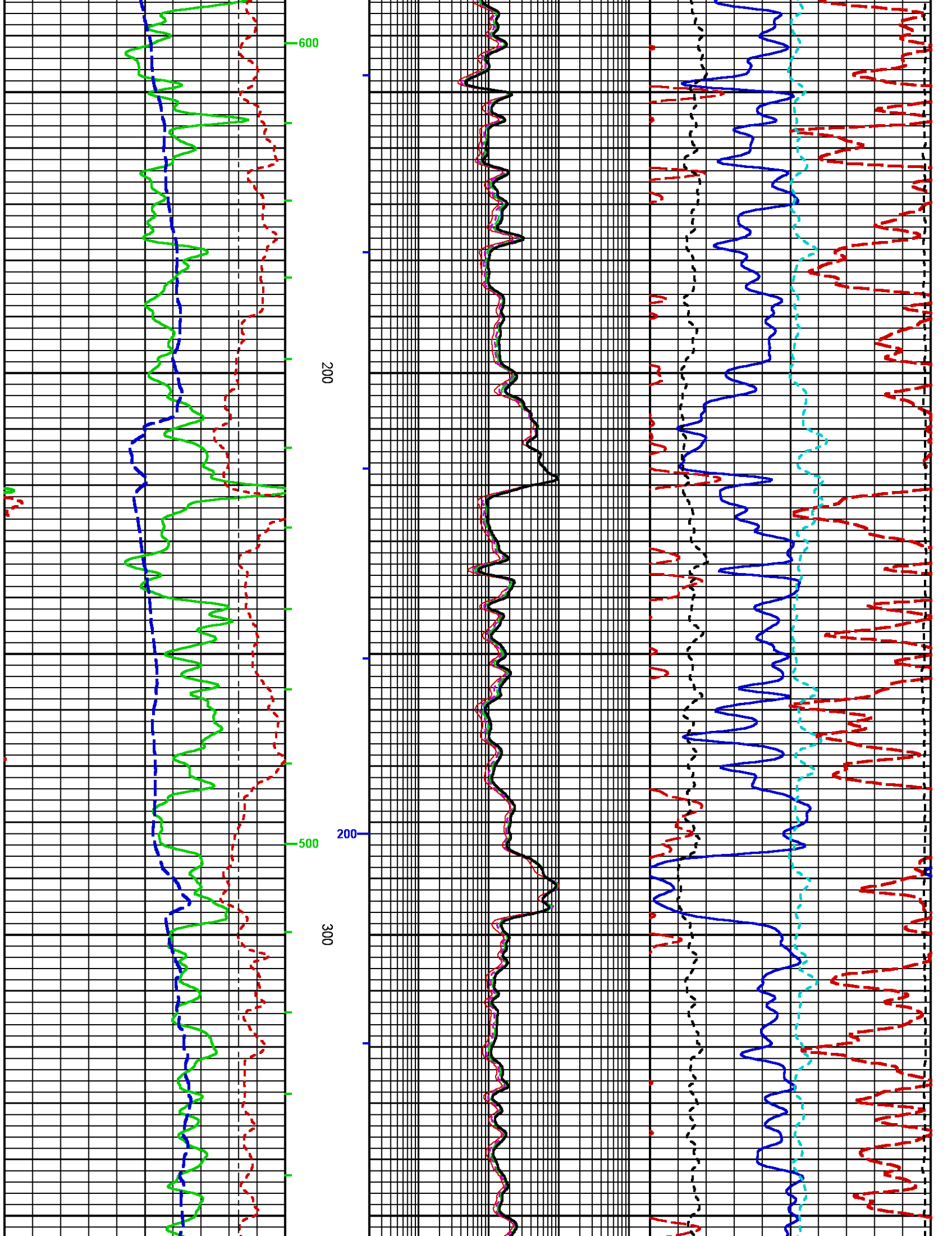
CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Nov 21 00:26:10 2018	BIT SIZE
F1:BVOL	Nov 21 00:26:10 2018	BOREHOLE VOLUME
F1:CAL	Nov 21 00:26:10 2018	CALIPER
F1:CNCF	Nov 21 00:26:10 2018	FIELD NORMALIZED COMPENSATED NEUTRON POROSITY
F1:CVOL	Nov 21 00:26:10 2018	CEMENT VOLUME
F1:GR	Nov 21 00:26:10 2018	GAMMA RAY
F1:M2R1	Nov 21 00:26:10 2018	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F1:M2R2	Nov 21 00:26:10 2018	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 20-INCH DOI
F1:M2R3	Nov 21 00:26:10 2018	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 30-INCH DOI
F1:M2R6	Nov 21 00:26:10 2018	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 60-INCH DOI
F1:M2R9	Nov 21 00:26:10 2018	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 90-INCH DOI
F1:M2RX	Nov 21 00:26:10 2018	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 120-INCH DOI
F1:PE	Nov 21 00:26:10 2018	PHOTO ELECTRIC CROSS-SECTION
F1:PORZC	Nov 21 00:26:10 2018	CORRECTED POROSITY
F1:SP	Nov 21 00:26:10 2018	SPONTANEOUS POTENTIAL
F1:TEN	Nov 21 00:26:10 2018	DIFFERENTIAL TENSION
F1:ZCOR	Nov 21 00:26:10 2018	DENSITY CORRECTION

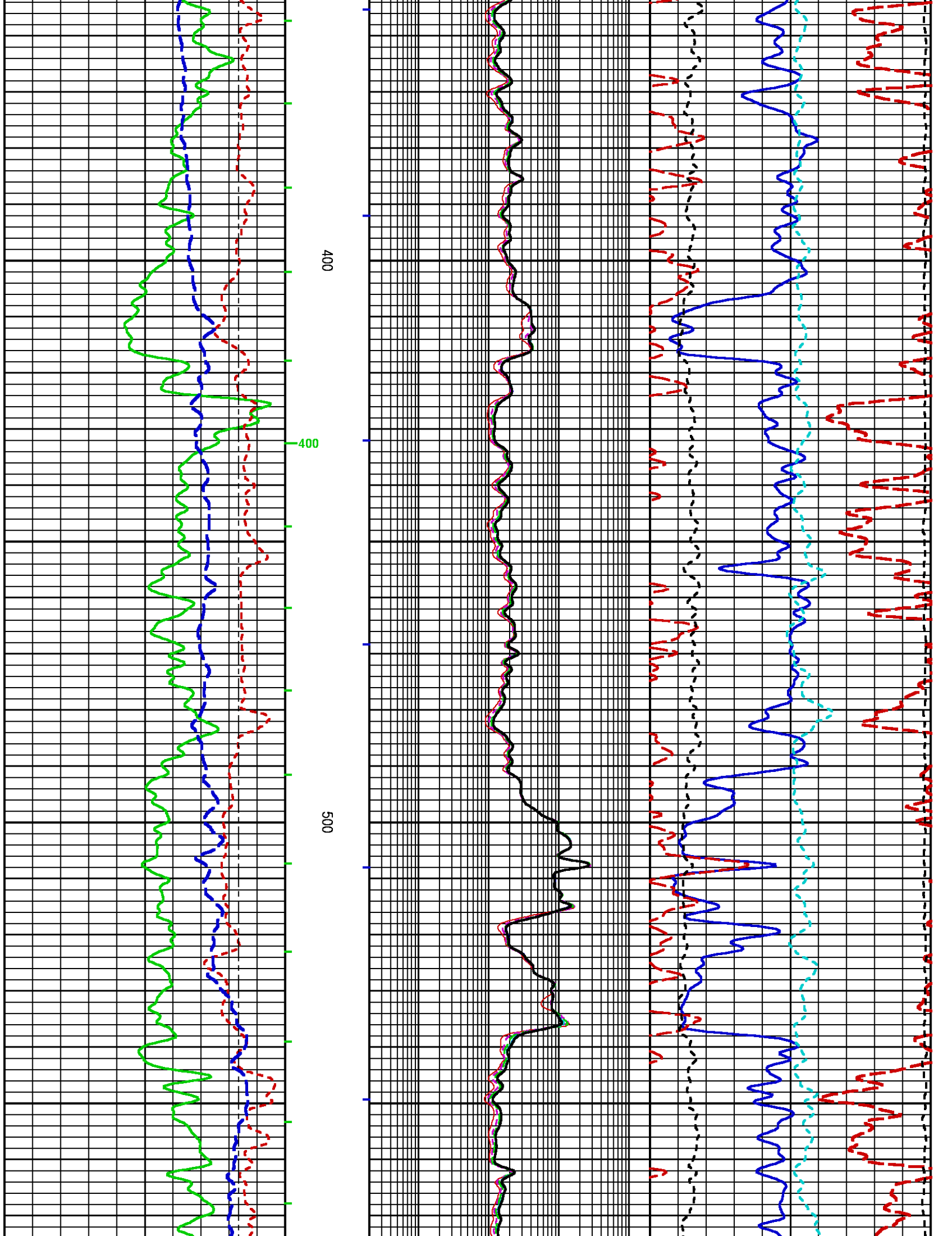
CURVE MEASURE POINT OFFSET							
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
BIT	0.00	M2R1	-8.00	M2R9	-8.00	SP	-14.00
CAL	-35.00	M2R2	-8.00	M2RX	-8.00	TEN	0.00
CNCF	-45.25	M2R3	-8.00	PE	-34.25	ZCOR	-34.25
GR	-52.25	M2R6	-8.00	PORZC	-34.25		

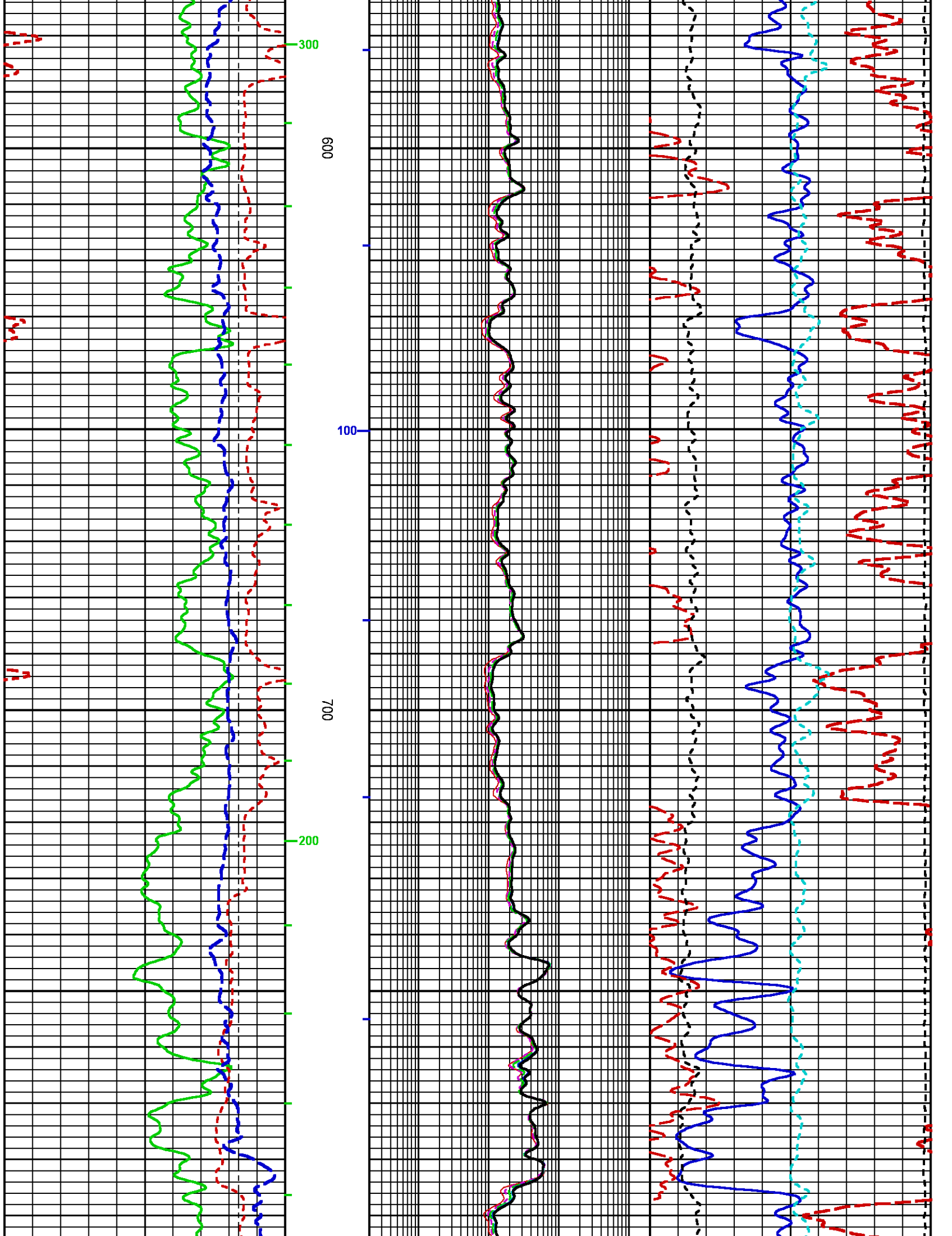
Presentation	: SysA:/dat1a/LARAMIE_SS_FED_0993_25_14W/5IN_MAIN.fvpdf [5"/100' Scale]
Plot Interval	: 0 - 1450 Feet
Data File 1	: F1 : SysA:/dat1a/LARAMIE_SS_FED_0993_25_14W/MAINSPLICE.xtf
Created On	: Nov 21 00:26:10 2018
	: LARAMIE ENERGY LLC

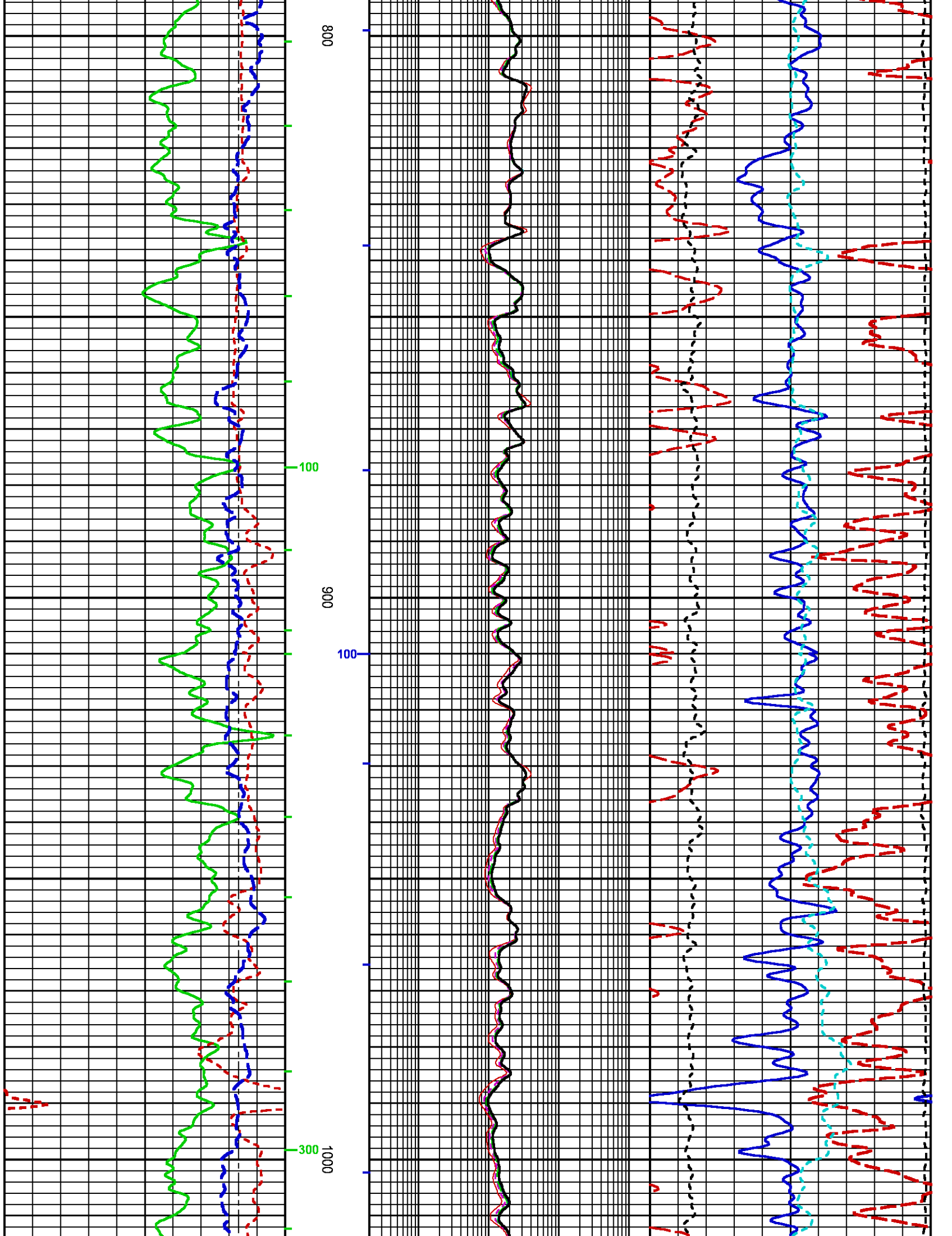
Company : LARAMIE ENERGY LLC
Well : SUP & SHEP FEDERAL 0993-25-14W
Field : BUZZARD CREEK
File Interval : -13.75 - 1444.25 Feet
OCT : p870b

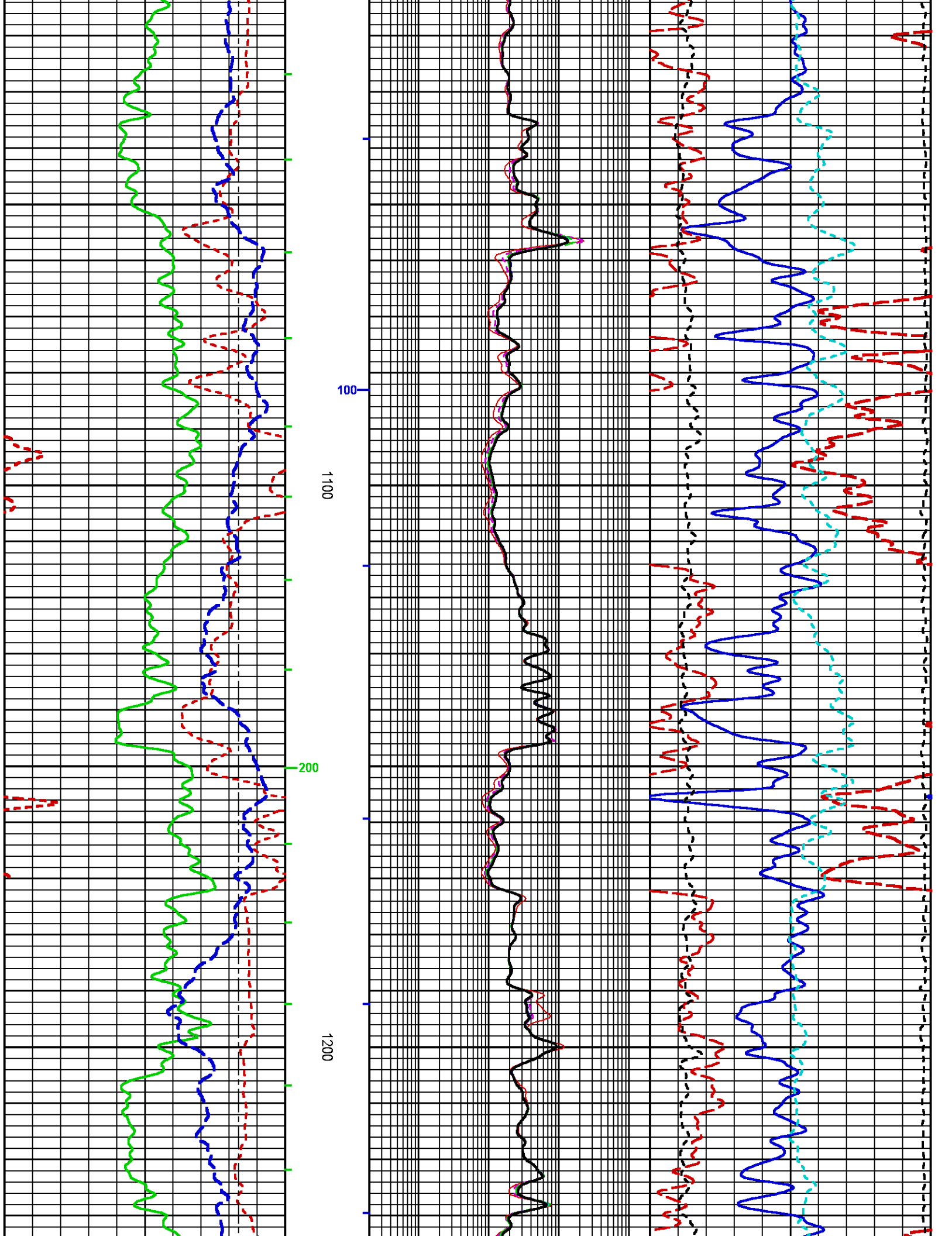


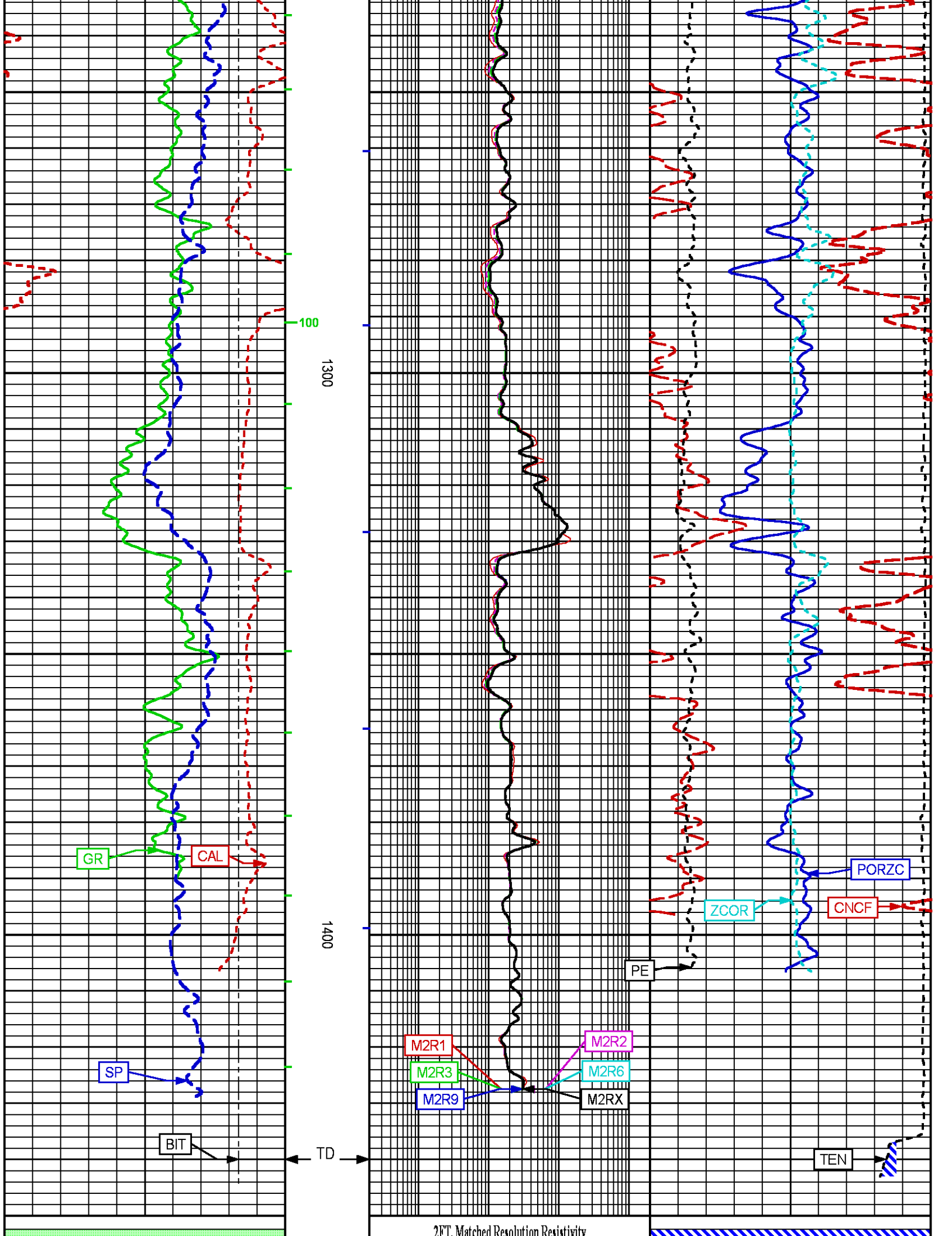


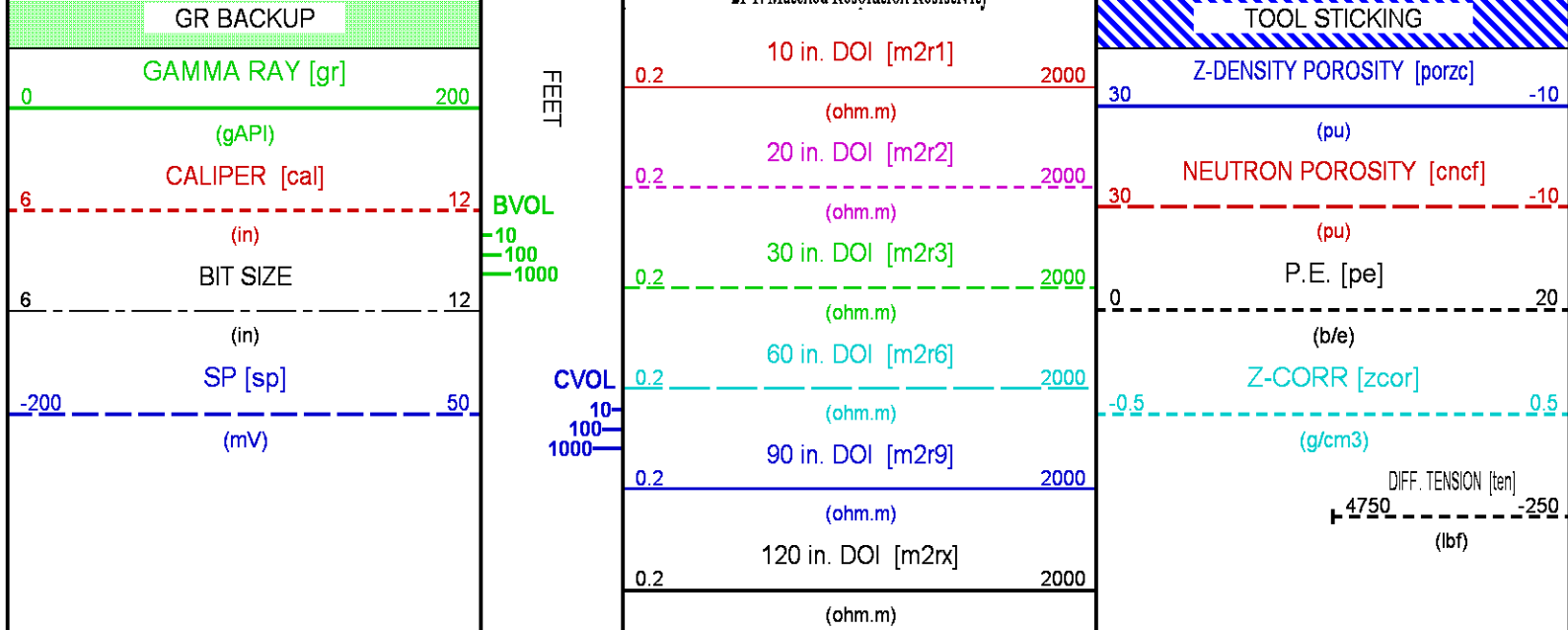












MAIN PASS

ECLIPS 7.0i ECLIPS General Release Rel 7.0i Thu Jun 08 20:36:10 CDT 2017

Updates: 1

Plotted: Wed Nov 21 03:58:13 2018

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_SS_FED_0993_25_14W/p870b02.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 708.000 ft BOTTOM DEPTH: 1033.108 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
TTRM	FILTER ()	medium (1)		TOP	BOTTOM
	FILTER (.h)	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"
Y AXIS CALIPER	FILTER ()	medium (1)		"	"
TENSION	FILTER ()	medium (1)		"	"
GR	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"
CN	FILTER ()	medium (1)		"	"
CALIPER	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"
ZDL MED RES	FILTER (hrd1*)	medium		"	"
	FILTER (hrd1s*)	medium		"	"
	FILTER (hrd2*)	medium		"	"
	FILTER (hrd2s*)	medium		"	"
	FILTER (soft*)	medium		"	"
SP-SPDH	FILTER ()	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	8.625	in	TOP	BOTTOM

BIT SIZE	CASING THICKNESS	0.000	in	"	"
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	63.6	degF	"	"
	MUD SAMPLE RES	0.985	ohm.m	"	"
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	77.0	degF	"	"
	at BH REF DEPTH	0.0	ft	"	"
	with TEMP GRADIENT	1.200	0.01 degF/ft	"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (zdbh*)	USE CALIPER		"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	11.000	in	"	"
	FIXED DIAMETER (mbh*)	11.000	in	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	TOOL MEASURED		"	"

CN PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
2446 CN MATRIX	2446 MATRIX	SANDSTONE		TOP	BOTTOM
CN SALINITY CORRECTION	SALINITY CORR (2446)	SAL & BHSIZE ON		"	"
	SALINITY	600	ppm	"	"
CN TOOL STANDOFF	ENABLE STANDOFF CORR	OFF		"	"
	STANDOFF AMOUNT	0.00	in	"	"
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		"	"
	BIT SIZE BEHIND CSNG	7.875	in	"	"

ZDL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
MUD DENSITY	MUD DENSITY	9.50	lbm/gal	TOP	BOTTOM
DENSITY POROSITY	RHOMatrix	2.680	g/cm3	"	"
	RHOfluid	1.000	g/cm3	"	"
ZDL	DENX TRACKING	ON		"	"
TRACKING TIME	Logging Spd for Gain	Over 10 ft/min		"	"

HDIL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
HDIL TEMPERATURE CORRECTION	TEMP CORR SOURCE	USE RXTEMP		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		"	"
	ABC to CALCULATE	BOREHOLE SIZE		"	"
	STANDOFF	1.50	in	"	"
	TOOL POSITION	ECCENTERED		"	"
	Rmud MULTIPLIER	1.000		"	"
HDIL High RESISTIVITY Normalization	VRM Norm	ON		"	"

CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Nov 20 23:16:34 2018	BIT SIZE
F1:BVOL	Nov 20 23:16:34 2018	BOREHOLE VOLUME
F1:CAL	Nov 20 23:16:34 2018	CALIPER
F1:CNCF	Nov 20 23:16:34 2018	FIELD NORMALIZED COMPENSATED NEUTRON POROSITY
F1:CVOL	Nov 20 23:16:34 2018	CEMENT VOLUME
F1:GR	Nov 20 23:16:34 2018	GAMMA RAY
F1:M2R1	Nov 20 23:16:34 2018	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F1:M2R2	Nov 20 23:16:34 2018	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 20-INCH DOI
F1:M2R3	Nov 20 23:16:34 2018	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 30-INCH DOI
F1:M2R6	Nov 20 23:16:34 2018	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 60-INCH DOI
F1:M2R9	Nov 20 23:16:34 2018	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 90-INCH DOI
F1:M2RX	Nov 20 23:16:34 2018	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 120-INCH DOI
F1:PE	Nov 20 23:16:34 2018	PHOTO ELECTRIC CROSS-SECTION
F1:PORZC	Nov 20 23:16:34 2018	CORRECTED POROSITY
F1:SPDH	Nov 20 23:16:34 2018	SPONTANEOUS POTENTIAL PROCESSED IN COMMON REMOTE
F1:TEN	Nov 20 23:16:34 2018	DIFFERENTIAL TENSION
F1:ZCOR	Nov 20 23:16:34 2018	DENSITY CORRECTION

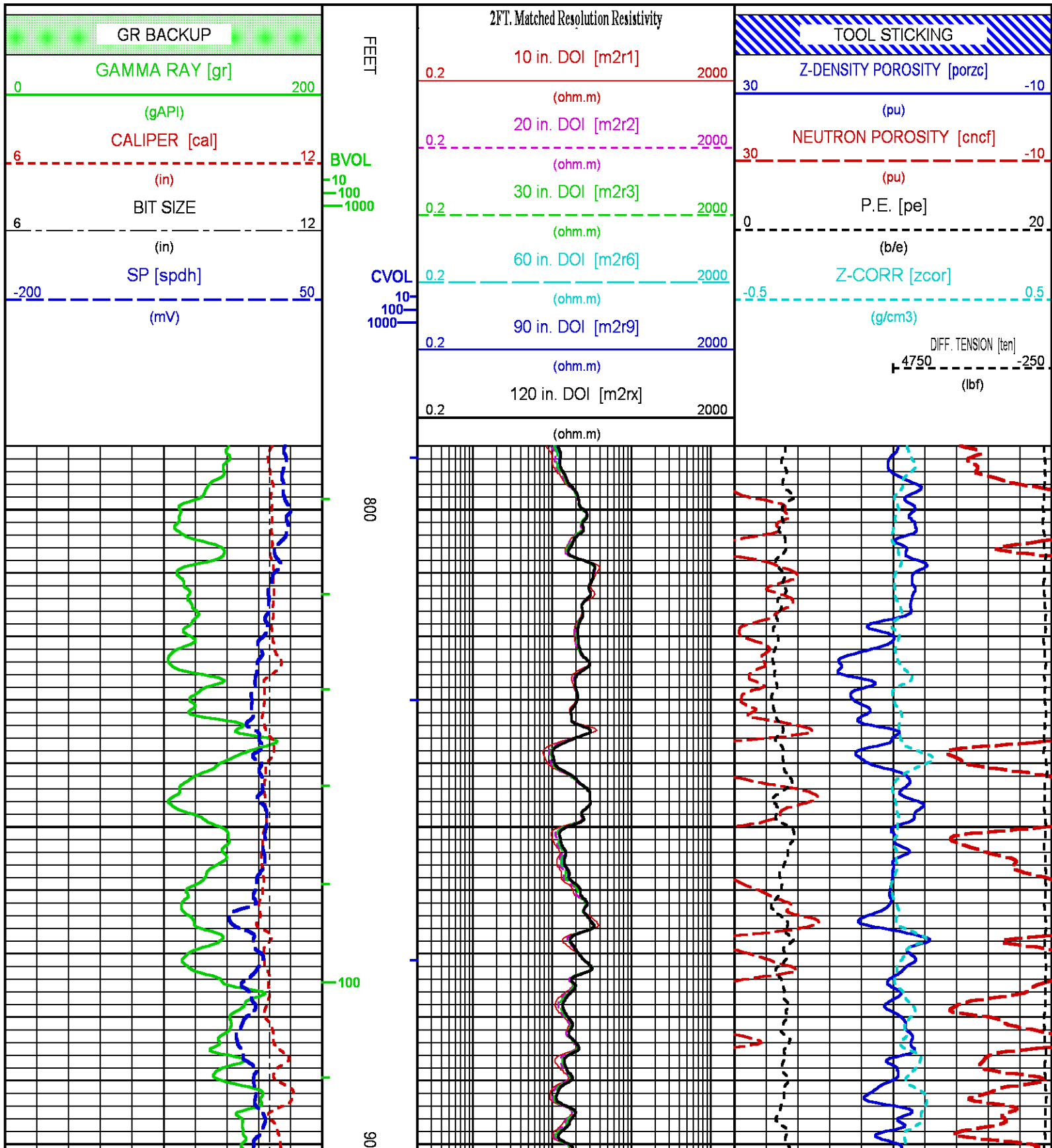
CURVE MEASURE POINT OFFSET

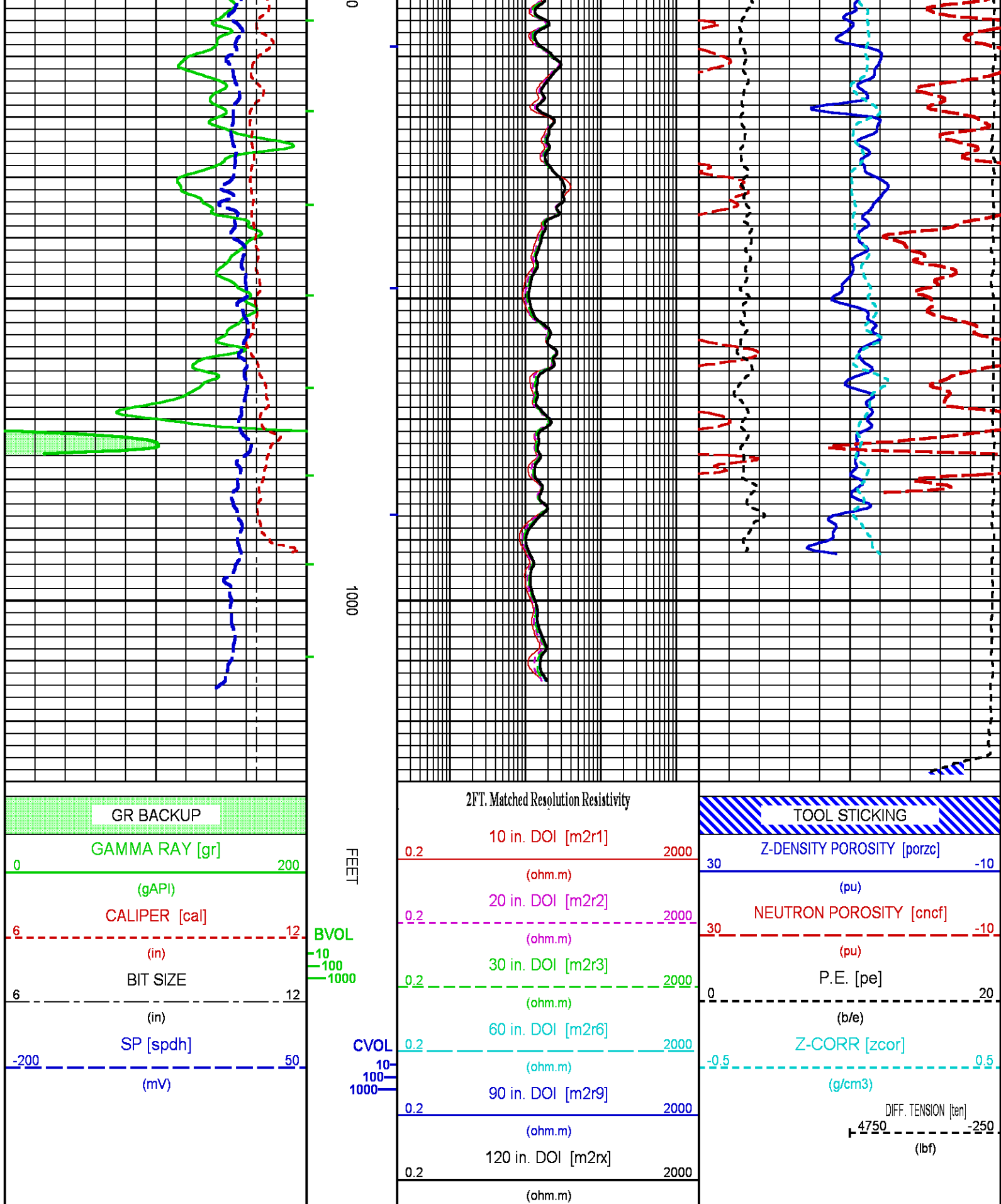
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
BIT	0.00	M2R1	-8.00	M2R9	-8.00	SPDH	-14.00
CAL	-35.00	M2R2	-8.00	M2RX	-8.00	TEN	0.00
CNCF	-33.00	M2R5	-8.00	TEN	-31.00	ZCOR	-31.00

CNCF	-45.25	M2R3	-8.00	PE	-34.25	ZCOR	-34.25
GR	-52.25	M2R6	-8.00	PORZC	-34.25		

Presentation : SysA:/dat1a/LARAMIE_SS_FED_0993_25_14W/5IN_REPEAT.fvpdf [5"/100' Scale]
Plot Interval : 790 - 1030 Feet

Data File 1 : F1 : SysA:/dat1a/LARAMIE_SS_FED_0993_25_14W/REPEAT.xtf
Created On : Nov 20 23:16:34 2018
Company : LARAMIE ENERGY LLC
Well : SUP & SHEP FEDERAL 0993-25-14W
Field : BUZZARD CREEK
File Interval : 642.5 - 1030 Feet
OCT : p870b





GR PRIMARY CALIBRATION SUMMARY

TOOL #: 1329XB 10378541

DATE/TIME PERFORMED: Sat Nov 17 17:41:09 2018

UNIT #: 5753XD 10412898

CALB JIG #: 4702NK BA-869

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	626.33	1502.31	876.0 830.0 960.0	0.171	107.25	257.25	150

GR PRIMARY VERIFICATION SUMMARY

TOOL #: 1329XB 10378541

DATE/TIME PERFORMED: Sat Nov 17 17:45:25 2018

UNIT #: 5753XD 10412898

VERI JIG #: 4702NK BA-869

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	630.89	1519.56	0.171	108.03	260.20	152.17 140.00 160.00

GR BEFORE LOG VERIFICATION SUMMARY

TOOL #: 1329XB 10378541

DATE/TIME PERFORMED: Tue Nov 20 21:26:00 2018

DAYS SINCE CAL: 3

UNIT #: 5753XD 10412898

VERI JIG #: 4702NK BA-869

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	144.22	1041.24	0.171	24.70	178.30	153.60 142.17 162.17

GR AFTER LOG VERIFICATION SUMMARY

TOOL #: 1329XB 10378541

DATE/TIME PERFORMED: Wed Nov 21 06:01:39 2018

DAYS SINCE CAL: 3

UNIT #: 5753XD 10412898

VERI JIG #: 4702NK BA-869

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	136.36	1019.51	0.171	23.35	174.58	151.23 143.60 163.60

CN PRIMARY CALIBRATION SUMMARY

TOOL #: 2446XA 10560252

DATE/TIME PERFORMED: Sat Nov 17 17:58:27 2018

UNIT #: 5753XD 10412898

CALIBRATOR #: 2437XB 112674

SOURCE #: 4717XS SN-981

	MEASURED CPS	DEADTM CORR CPS	DTC SSN/LSN	NOMINAL SSN/LSN	CORRECTION FACTOR	POROSITY (pu)
LSN	620.45	629.83				
SSN	1602.58	1655.65				
RATIO			2.62872	2.75100	1.04652 0.97000 1.07000	
CN						21.358

CN PRIMARY VERIFICATION SUMMARY

TOOL #: 2446XA 10560252

DATE/TIME PERFORMED: Sat Nov 17 18:09:21 2018

UNIT #: 5753XD 10412898 ICE BLOCK #: 4717ND 0D-342

	MEASURED CPS	DEADTM CORR CPS	DTC SSN/LSN	CORRECTION FACTOR	DTC CORR SSN/LSN	POROSITY (pu)
LSN	765.28	779.61				
SSN	2487.56	2617.85				
RATIO			3.35788	1.04652	3.51857	
CN						34.498

CN BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2446XA 10560252 DATE/TIME PERFORMED: Tue Nov 20 21:34:41 2018 DAYS SINCE CAL: 3

UNIT #: 5753XD 10412898 ICE BLOCK #: 4717ND 0D-342

	MEASURED CPS	DEADTM CORR CPS	DTC SSN/LSN	CORRECTION FACTOR	DTC CORR SSN/LSN	POROSITY (pu)
LSN	785.61	800.73				
SSN	2499.79	2631.40				
RATIO			3.28627	1.04652	3.44363	
CN						33.002

32.49836.498

CN AFTER LOG VERIFICATION SUMMARY

TOOL #: 2446XA 10560252 DATE/TIME PERFORMED: Wed Nov 21 05:56:52 2018 DAYS SINCE CAL: 3

UNIT #: 5753XD 10412898 ICE BLOCK #: 4717ND 0D-342

	MEASURED CPS	DEADTM CORR CPS	DTC SSN/LSN	CORRECTION FACTOR	DTC CORR SSN/LSN	POROSITY (pu)
LSN	770.17	784.68				
SSN	2505.77	2638.01				
RATIO			3.36188	1.04652	3.52170	
CN						34.538

31.00235.002

CAL PRIMARY CALIBRATION SUMMARY

TOOL #: 2234XA 10460300 DATE/TIME PERFORMED: Sun Nov 18 10:58:36 2018

UNIT #: 5753XD 10412898

	SMALL RING	LARGE RING	MULT	ADD	SMALL RING (in)	LARGE RING (in)
CALIPER	2050.8	2619.2	0.00792	-8.48610	7.750	12.250

CAL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2234XA 10460300 DATE/TIME PERFORMED: Tue Nov 20 22:01:08 2018 DAYS SINCE CAL: 2

UNIT #: 5753XD 10412898

	I.D.	MULT	ADD	I.D. (in)
CALIPER	3053.2	0.00792	-8.92206	15.250

CAL AFTER LOG VERIFICATION SUMMARY

TOOL #: 2234XA 10460300 DATE/TIME PERFORMED: Wed Nov 21 06:03:36 2018 DAYS SINCE CAL: 2

TOOL #: 2234XA 10460300 DATE/TIME PERFORMED: Wed Nov 21 06:03:38 2018 DAYS SINCE CAL: 2

UNIT #: 5753XD 10412898

	I.D.	MULT	ADD	I.D. (in)
CALIPER	3040.8	0.00792	-8.92206	15.152
				14.750 15.750

ZDL PRIMARY CALIBRATION SUMMARY

TOOL: 2234XA 10460300 DATE/TIME PERFORMED: Sun Nov 18 10:41:53 2018

UNIT: 5753XD 10412898 CALB BLKS: 2225XA Z112390 CS SRC: 4703NT PP16055B

	SS CS PK (Channel)	LS CS PK (Channel)	SS_BKGD (cps)	LS BKGD (cps)		
	224.9	225.4	1084.0	1571.5		
	220.0 230.0	220.0 230.0				
	SS (cps)	LS (cps)	SHR	DEN (g/cm3)	CORR (g/cm3)	PE (b/e)
MG (LO PE)	18860.5	9627.0	0.641	1.699	0.002	2.120
			0.565 0.665			
AL	11119.9	994.3		2.695	-0.007	
AL + SHIM	15266.2	1720.5		2.612	0.157	
MG + SHIM (HI PE)	9156.7	4561.4	0.244			8.290
			0.210 0.270			
RATIO AL + SHIM/AL	1.37	1.73				
	1.32 1.42	1.64 1.84				
RATIO MG/AL	1.70	9.68				
	1.65 1.78	9.40 10.20				

ZDL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2234XA 10460300 DATE/TIME PERFORMED: Tue Nov 20 21:34:55 2018 DAYS SINCE CAL: 2

UNIT #: 5753XD 10412898

	TOTAL (cps)	CSPK (Channel)	HV (V)
LS	1579.1	225.0	1250.0
	1471.5 1671.5	220.0 230.0	1100.0 1550.0
SS	1079.4	225.4	1348.0
	984.0 1184.0	220.0 230.0	1100.0 1550.0
	LV (V)	PAD CURRENT (mA)	
	5.0	77.5	
	4.8 5.2	50.0 120.0	

ZDL AFTER LOG VERIFICATION SUMMARY

TOOL #: 2234XA 10460300 DATE/TIME PERFORMED: Wed Nov 21 06:00:04 2018 DAYS SINCE CAL: 2

UNIT #: 5753XD 10412898

	TOTAL (cps)	CSPK (Channel)	HV (V)
LS	1569.1	224.8	1236.3
	1471.5 1671.5	220.0 230.0	1100.0 1550.0
SS	1079.2	224.4	1328.0
	984.0 1184.0	220.0 230.0	1100.0 1550.0
	LV (V)	PAD CURRENT (mA)	
	5.0	66.5	
	4.8 5.2	50.0 120.0	

TOOL #: 1515MA 11831570

DATE/TIME PERFORMED: Tue Aug 21 10:41:27 2018

UNIT #: 5753XD 10420453

GRCOND ID & DATE: DFAULT 0618102

ZERO DATA(mv)	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 R	-0.008 -0.200 0.200	0.001 -0.100 0.100	0.002 -0.100 0.100	-0.000 -0.100 0.100	-0.002 -0.100 0.100	0.000 -0.100 0.100	-0.001 -0.100 0.100	-0.003 -0.100 0.100
Coil 0 Q	0.011 -1.000 1.000	0.014 -0.200 0.200	0.004 -0.100 0.100	0.002 -0.100 0.100	0.003 -0.100 0.100	0.002 -0.100 0.100	0.001 -0.100 0.100	0.001 -0.100 0.100
Coil 1 R	-0.003 -0.200 0.200	0.004 -0.100 0.100	0.005 -0.100 0.100	0.004 -0.100 0.100	0.001 -0.100 0.100	0.001 -0.100 0.100	-0.002 -0.100 0.100	-0.001 -0.100 0.100
Coil 1 Q	0.002 -1.000 1.000	0.002 -0.200 0.200	0.000 -0.100 0.100	0.003 -0.100 0.100	0.003 -0.100 0.100	0.003 -0.100 0.100	0.001 -0.100 0.100	-0.000 -0.100 0.100
Coil 2 R	0.007 -0.200 0.200	0.003 -0.100 0.100	0.001 -0.100 0.100	-0.002 -0.100 0.100	-0.001 -0.100 0.100	0.001 -0.100 0.100	0.004 -0.100 0.100	0.006 -0.100 0.100
Coil 2 Q	-0.007 -1.000 1.000	-0.002 -0.200 0.200	0.003 -0.100 0.100	-0.000 -0.100 0.100	-0.004 -0.100 0.100	-0.004 -0.100 0.100	-0.005 -0.100 0.100	-0.003 -0.100 0.100
Coil 3 R	0.017 -0.100 0.100	0.005 -0.100 0.100	0.003 -0.100 0.100	0.009 -0.100 0.100	0.005 -0.100 0.100	0.001 -0.100 0.100	-0.001 -0.100 0.100	0.002 -0.100 0.100
Coil 3 Q	-0.019 -0.500 0.500	-0.018 -0.200 0.200	-0.007 -0.100 0.100	0.001 -0.100 0.100	-0.001 -0.100 0.100	0.002 -0.100 0.100	0.003 -0.100 0.100	-0.001 -0.100 0.100
Coil 4 R	0.001 -0.200 0.200	0.003 -0.200 0.200	0.004 -0.200 0.200	-0.003 -0.200 0.200	-0.000 -0.200 0.200	0.002 -0.200 0.200	-0.002 -0.200 0.200	0.006 -0.200 0.200
Coil 4 Q	-0.007 -1.000 1.000	0.008 -0.400 0.400	0.002 -0.200 0.200	0.004 -0.200 0.200	-0.003 -0.200 0.200	-0.003 -0.200 0.200	-0.003 -0.200 0.200	-0.004 -0.200 0.200
Coil 5 R	-0.011 -0.400 0.400	0.005 -0.400 0.400	0.010 -0.400 0.400	0.005 -0.400 0.400	0.002 -0.400 0.400	0.002 -0.400 0.400	-0.006 -0.400 0.400	-0.004 -0.400 0.400
Coil 5 Q	0.002 -2.000 2.000	-0.002 -0.800 0.800	0.004 -0.400 0.400	0.013 -0.400 0.400	0.010 -0.400 0.400	0.015 -0.400 0.400	0.007 -0.400 0.400	0.008 -0.400 0.400
Coil 6 R	-0.039 -1.000 1.000	-0.012 -1.000 1.000	-0.009 -1.000 1.000	-0.009 -1.000 1.000	-0.008 -1.000 1.000	-0.005 -1.000 1.000	0.008 -1.000 1.000	0.008 -1.000 1.000
Coil 6 Q	0.007 -5.000 5.000	-0.004 -2.000 2.000	0.001 -1.000 1.000	0.019 -1.000 1.000	-0.016 -1.000 1.000	-0.005 -1.000 1.000	-0.009 -1.000 1.000	-0.005 -1.000 1.000

ELEC. GAINS	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 M	126.60 100.00 150.00	125.49 100.00 150.00	123.35 98.00 150.00	120.02 96.00 140.00	115.78 92.00 140.00	110.30 87.00 130.00	104.11 82.00 120.00	96.56 76.00 110.00
Coil 0 P	7.427 6.000 9.000	23.460 19.000 28.000	39.249 32.000 47.000	55.011 44.000 66.000	70.727 57.000 85.000	86.534 70.000 100.000	102.169 82.000 120.000	117.860 95.000 140.000
Coil 1 M	219.95 180.00 270.00	217.36 180.00 270.00	212.41 170.00 260.00	205.02 170.00 250.00	195.86 160.00 250.00	184.57 160.00 230.00	172.32 150.00 220.00	157.93 140.00 200.00
Coil 1 P	7.938 6.000 9.000	24.968 19.000 28.000	41.697 32.000 48.000	58.296 45.000 67.000	74.733 57.000 86.000	91.127 70.000 110.000	107.231 83.000 120.000	123.269 96.000 140.000
Coil 2 M	448.57 360.00 540.00	443.69 360.00 540.00	434.32 350.00 530.00	420.01 340.00 510.00	402.31 330.00 500.00	380.21 310.00 470.00	355.32 300.00 440.00	326.48 270.00 410.00
Coil 2 P	7.927 6.000 9.000	24.983 19.000 29.000	41.743 32.000 48.000	58.421 45.000 67.000	74.993 58.000 87.000	91.519 71.000 110.000	107.804 84.000 130.000	124.113 96.000 140.000
Coil 3 M	714.85 590.00 880.00	707.32 580.00 870.00	693.15 570.00 850.00	671.59 550.00 830.00	644.76 530.00 800.00	610.49 500.00 760.00	572.60 470.00 710.00	527.33 440.00 650.00
Coil 3 P	7.856 6.000 10.000	24.826 20.000 29.000	41.516 33.000 49.000	58.125 46.000 69.000	74.648 59.000 89.000	91.178 72.000 110.000	107.474 85.000 130.000	123.845 98.000 150.000
Coil 4 M	1134.8 900.0 1400.0	1122.6 900.0 1300.0	1099.5 900.0 1300.0	1064.4 850.0 1300.0	1021.0 800.0 1200.0	966.6 800.0 1200.0	906.8 750.0 1100.0	836.5 700.0 1000.0
Coil 4 P	7.873 6.000 10.000	24.817 20.000 30.000	41.478 33.000 50.000	58.028 46.000 70.000	74.450 60.000 90.000	90.844 73.000 110.000	106.979 86.000 130.000	123.109 99.000 150.000
Coil 5 M	2308.4 1900.0 2800.0	2286.2 1800.0 2800.0	2243.7 1800.0 2700.0	2176.9 1800.0 2600.0	2092.4 1700.0 2500.0	1983.7 1600.0 2400.0	1861.1 1500.0 2200.0	1714.5 1400.0 2100.0
Coil 5 P	8.080 6.000 10.000	25.455 20.000 31.000	42.613 34.000 51.000	59.707 48.000 72.000	76.779 62.000 93.000	93.859 76.000 110.000	110.755 89.000 130.000	127.658 100.000 150.000
Coil 6 M	5980.4 4700.0 7100.0	5900.6 4700.0 7000.0	5750.0 4600.0 6900.0	5529.4 4400.0 6600.0	5259.3 4200.0 6400.0	4935.4 4000.0 6000.0	4587.8 3700.0 5600.0	4192.4 3400.0 5100.0
Coil 6 P	8.283 7.000 10.000	26.395 22.000 32.000	44.076 36.000 54.000	61.568 51.000 76.000	78.794 65.000 98.000	95.908 80.000 120.000	112.662 94.000 140.000	129.326 110.000 160.000

AM Factor	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 R	508 -200 800	-108 -500 200	-175 -600 100	-192 -600 50	-198 -500 20	-200 -500 20	-200 -500 20	-200 -500 20
Coil 0 Q	1050 -3000 6000	411 -1000 2000	217 -1000 1200	117 -500 900	51 -400 700	3 -400 600	-38 -400 500	-73 -400 400
Coil 1 R	547 -450 650	74 20 130	14 -30 60	-5 -50 40	-14 -55 30	-19 -60 20	-22 -60 10	-24 -60 10
Coil 1 Q	1031 0 2500	419 0 900	261 0 600	187 0 450	143 0 350	114 0 300	93 0 250	77 0 250
Coil 2 R	180.6 140.0 230.0	26.8 0.0 51.0	7.1 -10.0 25.0	0.8 -15.0 15.0	-2.4 -16.0 10.0	-4.2 -16.0 7.0	-5.2 -16.0 5.0	-5.8 -16.0 3.0
Coil 2 Q	370.2 0 700.0	152.2 0 300.0	88.4 0 170.0	71.8 0 140.0	62.2 0 120.0	51.5 0 100.0	48.4 0 90.0	46.2 0 80.0

Coil 2 Q	<div><div>370.2</div><div>-200.01000.0</div></div>	<div><div>152.2</div><div>0.0350.0</div></div>	<div><div>98.4</div><div>0.0220.0</div></div>	<div><div>74.8</div><div>0.0160.0</div></div>	<div><div>62.3</div><div>0.0130.0</div></div>	<div><div>54.3</div><div>0.0110.0</div></div>	<div><div>49.4</div><div>0.0100.0</div></div>	<div><div>46.2</div><div>0.090.0</div></div>
Coil 3 R	<div><div>48.2</div><div>37.062.0</div></div>	<div><div>6.0</div><div>0.012.0</div></div>	<div><div>1.2</div><div>-3.06.0</div></div>	<div><div>-0.5</div><div>-4.04.0</div></div>	<div><div>-1.1</div><div>-5.02.0</div></div>	<div><div>-1.6</div><div>-5.01.0</div></div>	<div><div>-2.0</div><div>-6.01.0</div></div>	<div><div>-2.7</div><div>-6.01.0</div></div>
Coil 3 Q	<div><div>156.6</div><div>-140.0280.0</div></div>	<div><div>61.3</div><div>-40.0100.0</div></div>	<div><div>41.3</div><div>-20.070.0</div></div>	<div><div>33.7</div><div>-10.060.0</div></div>	<div><div>30.2</div><div>-10.050.0</div></div>	<div><div>29.0</div><div>-10.050.0</div></div>	<div><div>28.8</div><div>-10.050.0</div></div>	<div><div>28.6</div><div>-10.050.0</div></div>
Coil 4 R	<div><div>10.65</div><div>2.0018.00</div></div>	<div><div>0.79</div><div>-3.006.00</div></div>	<div><div>-0.43</div><div>-3.503.00</div></div>	<div><div>-0.89</div><div>-3.902.00</div></div>	<div><div>-1.03</div><div>-4.202.00</div></div>	<div><div>-1.08</div><div>-4.502.00</div></div>	<div><div>-1.32</div><div>-4.702.00</div></div>	<div><div>-1.23</div><div>-5.002.00</div></div>
Coil 4 Q	<div><div>37.95</div><div>-100.00100.00</div></div>	<div><div>17.33</div><div>-30.0050.00</div></div>	<div><div>14.55</div><div>-20.0040.00</div></div>	<div><div>14.44</div><div>-10.0040.00</div></div>	<div><div>15.61</div><div>-10.0040.00</div></div>	<div><div>17.22</div><div>-10.0045.00</div></div>	<div><div>19.04</div><div>-10.0050.00</div></div>	<div><div>20.96</div><div>-10.0060.00</div></div>
Coil 5 R	<div><div>2.60</div><div>-2.005.80</div></div>	<div><div>0.03</div><div>-3.202.40</div></div>	<div><div>-0.55</div><div>-4.503.10</div></div>	<div><div>-0.82</div><div>-4.703.20</div></div>	<div><div>-0.78</div><div>-4.803.20</div></div>	<div><div>-0.99</div><div>-5.003.30</div></div>	<div><div>-0.92</div><div>-5.203.40</div></div>	<div><div>-0.97</div><div>-5.403.50</div></div>
Coil 5 Q	<div><div>22.13</div><div>-60.0070.00</div></div>	<div><div>10.77</div><div>-20.0030.00</div></div>	<div><div>9.99</div><div>-20.0030.00</div></div>	<div><div>10.96</div><div>-20.0035.00</div></div>	<div><div>12.54</div><div>-20.0045.00</div></div>	<div><div>14.24</div><div>-20.0050.00</div></div>	<div><div>16.21</div><div>-20.0060.00</div></div>	<div><div>18.25</div><div>-30.0070.00</div></div>
Coil 6 R	<div><div>-1.62</div><div>-4.801.00</div></div>	<div><div>-0.63</div><div>-5.703.80</div></div>	<div><div>-0.46</div><div>-6.504.90</div></div>	<div><div>-0.66</div><div>-6.905.40</div></div>	<div><div>-0.64</div><div>-7.305.80</div></div>	<div><div>-0.64</div><div>-7.506.00</div></div>	<div><div>-0.75</div><div>-7.706.10</div></div>	<div><div>-0.73</div><div>-7.906.30</div></div>
Coil 6 Q	<div><div>-4.87</div><div>-30.0030.00</div></div>	<div><div>0.56</div><div>-20.0025.00</div></div>	<div><div>3.49</div><div>-20.0035.00</div></div>	<div><div>6.11</div><div>-30.0050.00</div></div>	<div><div>8.37</div><div>-35.0060.00</div></div>	<div><div>10.70</div><div>-40.0070.00</div></div>	<div><div>12.94</div><div>-50.0080.00</div></div>	<div><div>15.16</div><div>-60.00100.00</div></div>

MM Factor	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 M	<div><div>0.999</div><div>0.9001.100</div></div>	<div><div>0.996</div><div>0.9001.100</div></div>	<div><div>0.993</div><div>0.9001.100</div></div>	<div><div>0.992</div><div>0.9001.100</div></div>	<div><div>0.991</div><div>0.9001.100</div></div>	<div><div>0.990</div><div>0.9001.100</div></div>	<div><div>0.989</div><div>0.9001.100</div></div>	<div><div>0.990</div><div>0.9001.100</div></div>
Coil 0 P	<div><div>0.059</div><div>-2.0002.000</div></div>	<div><div>0.198</div><div>-2.0002.000</div></div>	<div><div>0.263</div><div>-2.0002.000</div></div>	<div><div>0.233</div><div>-2.0002.000</div></div>	<div><div>0.170</div><div>-2.0002.000</div></div>	<div><div>0.163</div><div>-2.0002.000</div></div>	<div><div>0.088</div><div>-2.0002.000</div></div>	<div><div>0.050</div><div>-2.0002.000</div></div>
Coil 1 M	<div><div>1.000</div><div>0.9001.100</div></div>	<div><div>0.999</div><div>0.9001.100</div></div>	<div><div>0.995</div><div>0.9001.100</div></div>	<div><div>0.995</div><div>0.9001.100</div></div>	<div><div>0.993</div><div>0.9001.100</div></div>	<div><div>0.992</div><div>0.9001.100</div></div>	<div><div>0.992</div><div>0.9001.100</div></div>	<div><div>0.992</div><div>0.9001.100</div></div>
Coil 1 P	<div><div>0.089</div><div>-2.0002.000</div></div>	<div><div>0.210</div><div>-2.0002.000</div></div>	<div><div>0.275</div><div>-2.0002.000</div></div>	<div><div>0.280</div><div>-2.0002.000</div></div>	<div><div>0.242</div><div>-2.0002.000</div></div>	<div><div>0.206</div><div>-2.0002.000</div></div>	<div><div>0.143</div><div>-2.0002.000</div></div>	<div><div>0.121</div><div>-2.0002.000</div></div>
Coil 2 M	<div><div>1.011</div><div>0.9001.100</div></div>	<div><div>1.008</div><div>0.9001.100</div></div>	<div><div>1.007</div><div>0.9001.100</div></div>	<div><div>1.006</div><div>0.9001.100</div></div>	<div><div>1.005</div><div>0.9001.100</div></div>	<div><div>1.006</div><div>0.9001.100</div></div>	<div><div>1.004</div><div>0.9001.100</div></div>	<div><div>1.003</div><div>0.9001.100</div></div>
Coil 2 P	<div><div>0.025</div><div>-2.0002.000</div></div>	<div><div>0.056</div><div>-2.0002.000</div></div>	<div><div>0.069</div><div>-2.0002.000</div></div>	<div><div>0.094</div><div>-2.0002.000</div></div>	<div><div>0.101</div><div>-2.0002.000</div></div>	<div><div>0.063</div><div>-2.0002.000</div></div>	<div><div>0.044</div><div>-2.0002.000</div></div>	<div><div>0.060</div><div>-2.0002.000</div></div>
Coil 3 M	<div><div>1.013</div><div>0.9001.100</div></div>	<div><div>1.012</div><div>0.9001.100</div></div>	<div><div>1.011</div><div>0.9001.100</div></div>	<div><div>1.010</div><div>0.9001.100</div></div>	<div><div>1.010</div><div>0.9001.100</div></div>	<div><div>1.009</div><div>0.9001.100</div></div>	<div><div>1.009</div><div>0.9001.100</div></div>	<div><div>1.010</div><div>0.9001.100</div></div>
Coil 3 P	<div><div>0.013</div><div>-2.0002.000</div></div>	<div><div>-0.031</div><div>-2.0002.000</div></div>	<div><div>-0.042</div><div>-2.0002.000</div></div>	<div><div>-0.078</div><div>-2.0002.000</div></div>	<div><div>-0.130</div><div>-2.0002.000</div></div>	<div><div>-0.224</div><div>-2.0002.000</div></div>	<div><div>-0.351</div><div>-2.0002.000</div></div>	<div><div>-0.349</div><div>-2.0002.000</div></div>
Coil 4 M	<div><div>1.018</div><div>0.9001.100</div></div>	<div><div>1.017</div><div>0.9001.100</div></div>	<div><div>1.016</div><div>0.9001.100</div></div>	<div><div>1.015</div><div>0.9001.100</div></div>	<div><div>1.015</div><div>0.9001.100</div></div>	<div><div>1.014</div><div>0.9001.100</div></div>	<div><div>1.013</div><div>0.9001.100</div></div>	<div><div>1.012</div><div>0.9001.100</div></div>
Coil 4 P	<div><div>0.040</div><div>-2.0002.000</div></div>	<div><div>0.042</div><div>-2.0002.000</div></div>	<div><div>0.043</div><div>-2.0002.000</div></div>	<div><div>0.065</div><div>-2.0002.000</div></div>	<div><div>0.050</div><div>-2.0002.000</div></div>	<div><div>0.052</div><div>-2.0002.000</div></div>	<div><div>0.023</div><div>-2.0002.000</div></div>	<div><div>-0.000</div><div>-2.0002.000</div></div>
Coil 5 M	<div><div>1.041</div><div>0.9001.100</div></div>	<div><div>1.041</div><div>0.9001.100</div></div>	<div><div>1.041</div><div>0.9001.100</div></div>	<div><div>1.040</div><div>0.9001.100</div></div>	<div><div>1.039</div><div>0.9001.100</div></div>	<div><div>1.040</div><div>0.9001.100</div></div>	<div><div>1.039</div><div>0.9001.100</div></div>	<div><div>1.038</div><div>0.9001.100</div></div>
Coil 5 P	<div><div>0.001</div><div>-2.0002.000</div></div>	<div><div>-0.132</div><div>-2.0002.000</div></div>	<div><div>-0.139</div><div>-2.0002.000</div></div>	<div><div>-0.210</div><div>-2.0002.000</div></div>	<div><div>-0.308</div><div>-2.0002.000</div></div>	<div><div>-0.460</div><div>-2.0002.000</div></div>	<div><div>-0.476</div><div>-2.0002.000</div></div>	<div><div>-0.583</div><div>-2.0002.000</div></div>
Coil 6 M	<div><div>1.023</div><div>0.9001.100</div></div>	<div><div>1.024</div><div>0.9001.100</div></div>	<div><div>1.022</div><div>0.9001.100</div></div>	<div><div>1.021</div><div>0.9001.100</div></div>	<div><div>1.019</div><div>0.9001.100</div></div>	<div><div>1.025</div><div>0.9001.100</div></div>	<div><div>1.025</div><div>0.9001.100</div></div>	<div><div>1.023</div><div>0.9001.100</div></div>
Coil 6 P	<div><div>0.018</div><div>-2.0002.000</div></div>	<div><div>0.140</div><div>-2.0002.000</div></div>	<div><div>0.074</div><div>-2.0002.000</div></div>	<div><div>0.160</div><div>-2.0002.000</div></div>	<div><div>-0.007</div><div>-2.0002.000</div></div>	<div><div>-0.097</div><div>-2.0002.000</div></div>	<div><div>-0.080</div><div>-2.0002.000</div></div>	<div><div>-0.241</div><div>-2.0002.000</div></div>
	PARMS	TCID 0	TCID 1	Cal Temp (degF)	T Factor			
	IDs	1.679	0.869	70.4	1.04			

HDIL BEFORE LOG VERIFICATION SUMMARY

TOOL #:	1515MA 11831570	DATE/TIME PERFORMED:	Tue Nov 20 22:16:56 2018	DAYS SINCE CAL:	91
UNIT #:	5753XD 10412898				

ZERO DATA(mv)	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 R	<div><div>-0.009</div><div>-0.2000.200</div></div>	<div><div>-0.002</div><div>-0.1000.100</div></div>	<div><div>-0.001</div><div>-0.1000.100</div></div>	<div><div>0.000</div><div>-0.1000.100</div></div>	<div><div>-0.000</div><div>-0.1000.100</div></div>	<div><div>0.000</div><div>-0.1000.100</div></div>	<div><div>-0.001</div><div>-0.1000.100</div></div>	<div><div>-0.002</div><div>-0.1000.100</div></div>
Coil 0 Q	<div><div>0.000</div><div>-1.0001.000</div></div>	<div><div>0.000</div><div>-0.2000.200</div></div>	<div><div>-0.002</div><div>-0.1000.100</div></div>	<div><div>-0.001</div><div>-0.1000.100</div></div>	<div><div>0.000</div><div>-0.1000.100</div></div>	<div><div>0.002</div><div>-0.1000.100</div></div>	<div><div>0.000</div><div>-0.1000.100</div></div>	<div><div>0.000</div><div>-0.1000.100</div></div>
Coil 1 R	<div><div>-0.022</div><div>-0.2000.200</div></div>	<div><div>-0.008</div><div>-0.1000.100</div></div>	<div><div>-0.001</div><div>-0.1000.100</div></div>	<div><div>-0.003</div><div>-0.1000.100</div></div>	<div><div>-0.003</div><div>-0.1000.100</div></div>	<div><div>-0.002</div><div>-0.1000.100</div></div>	<div><div>-0.003</div><div>-0.1000.100</div></div>	<div><div>-0.005</div><div>-0.1000.100</div></div>
Coil 1 Q	<div><div>0.003</div><div>-1.0001.000</div></div>	<div><div>0.001</div><div>-0.2000.200</div></div>	<div><div>-0.002</div><div>-0.1000.100</div></div>	<div><div>-0.003</div><div>-0.1000.100</div></div>	<div><div>-0.001</div><div>-0.1000.100</div></div>	<div><div>0.001</div><div>-0.1000.100</div></div>	<div><div>-0.000</div><div>-0.1000.100</div></div>	<div><div>0.000</div><div>-0.1000.100</div></div>
Coil 2 R	<div><div>0.013</div><div>-0.2000.200</div></div>	<div><div>-0.001</div><div>-0.1000.100</div></div>	<div><div>-0.007</div><div>-0.1000.100</div></div>	<div><div>-0.001</div><div>-0.1000.100</div></div>	<div><div>-0.002</div><div>-0.1000.100</div></div>	<div><div>-0.001</div><div>-0.1000.100</div></div>	<div><div>0.003</div><div>-0.1000.100</div></div>	<div><div>0.005</div><div>-0.1000.100</div></div>
Coil 2 Q	<div><div>-0.008</div><div>-1.0001.000</div></div>	<div><div>-0.000</div><div>-0.2000.200</div></div>	<div><div>-0.003</div><div>-0.1000.100</div></div>	<div><div>-0.001</div><div>-0.1000.100</div></div>	<div><div>-0.002</div><div>-0.1000.100</div></div>	<div><div>-0.008</div><div>-0.1000.100</div></div>	<div><div>-0.002</div><div>-0.1000.100</div></div>	<div><div>-0.002</div><div>-0.1000.100</div></div>
Coil 3 R	<div><div>-0.009</div><div>-0.1000.100</div></div>	<div><div>-0.005</div><div>-0.1000.100</div></div>	<div><div>-0.000</div><div>-0.1000.100</div></div>	<div><div>-0.004</div><div>-0.1000.100</div></div>	<div><div>-0.002</div><div>-0.1000.100</div></div>	<div><div>-0.003</div><div>-0.1000.100</div></div>	<div><div>-0.004</div><div>-0.1000.100</div></div>	<div><div>-0.004</div><div>-0.1000.100</div></div>
Coil 3 Q	<div><div>-0.007</div><div>-0.5000.500</div></div>	<div><div>-0.004</div><div>-0.2000.200</div></div>	<div><div>-0.005</div><div>-0.1000.100</div></div>	<div><div>-0.006</div><div>-0.1000.100</div></div>	<div><div>-0.002</div><div>-0.1000.100</div></div>	<div><div>0.001</div><div>-0.1000.100</div></div>	<div><div>-0.001</div><div>-0.1000.100</div></div>	<div><div>-0.003</div><div>-0.1000.100</div></div>
Coil 4 R	<div><div>-0.018</div><div>-0.2000.200</div></div>	<div><div>-0.002</div><div>-0.1000.100</div></div>	<div><div>-0.002</div><div>-0.1000.100</div></div>	<div><div>-0.007</div><div>-0.1000.100</div></div>	<div><div>-0.002</div><div>-0.1000.100</div></div>	<div><div>-0.003</div><div>-0.1000.100</div></div>	<div><div>-0.003</div><div>-0.1000.100</div></div>	<div><div>-0.006</div><div>-0.1000.100</div></div>

Coil 4 R	-0.018 -0.200 0.200	-0.008 -0.200 0.200	-0.002 -0.200 0.200	-0.007 -0.200 0.200	-0.002 -0.200 0.200	0.003 -0.200 0.200	0.003 -0.200 0.200	0.006 -0.200 0.200
Coil 4 Q	-0.005 -1.000 1.000	-0.005 -0.400 0.400	-0.005 -0.200 0.200	-0.001 -0.200 0.200	-0.009 -0.200 0.200	-0.007 -0.200 0.200	-0.007 -0.200 0.200	-0.005 -0.200 0.200
Coil 5 R	-0.020 -0.400 0.400	-0.005 -0.400 0.400	0.002 -0.400 0.400	0.006 -0.400 0.400	0.001 -0.400 0.400	0.005 -0.400 0.400	-0.009 -0.400 0.400	-0.013 -0.400 0.400
Coil 5 Q	-0.012 -2.000 2.000	-0.002 -0.800 0.800	0.008 -0.400 0.400	-0.001 -0.400 0.400	-0.000 -0.400 0.400	0.003 -0.400 0.400	0.004 -0.400 0.400	-0.003 -0.400 0.400
Coil 6 R	-0.021 -1.000 1.000	-0.011 -1.000 1.000	-0.012 -1.000 1.000	-0.018 -1.000 1.000	-0.011 -1.000 1.000	0.008 -1.000 1.000	0.004 -1.000 1.000	0.004 -1.000 1.000
Coil 6 Q	-0.026 -5.000 5.000	-0.013 -2.000 2.000	0.004 -1.000 1.000	0.007 -1.000 1.000	-0.019 -1.000 1.000	-0.009 -1.000 1.000	-0.016 -1.000 1.000	-0.005 -1.000 1.000

ELEC. GAINS	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 M	126.86 100.00 150.00	125.74 100.00 150.00	123.66 98.00 150.00	120.28 96.00 140.00	116.07 92.00 140.00	110.56 87.00 130.00	104.36 82.00 120.00	96.83 76.00 110.00
Coil 0 P	7.364 6.000 9.000	23.282 19.000 28.000	38.980 32.000 47.000	54.640 44.000 66.000	70.273 57.000 85.000	85.946 70.000 100.000	101.526 82.000 120.000	117.144 95.000 140.000
Coil 1 M	220.79 180.00 270.00	218.21 180.00 270.00	213.33 170.00 260.00	205.81 170.00 250.00	196.72 160.00 250.00	185.40 160.00 230.00	173.00 150.00 220.00	158.71 140.00 200.00
Coil 1 P	7.538 6.000 9.000	24.677 19.000 28.000	41.349 32.000 48.000	57.864 45.000 67.000	74.215 57.000 86.000	90.482 70.000 110.000	106.500 83.000 120.000	122.509 96.000 140.000
Coil 2 M	449.92 360.00 540.00	445.01 360.00 540.00	435.72 350.00 530.00	421.29 340.00 510.00	403.71 330.00 500.00	381.43 310.00 470.00	356.59 300.00 440.00	327.76 270.00 410.00
Coil 2 P	7.868 6.000 9.000	24.794 19.000 29.000	41.457 32.000 48.000	58.014 45.000 67.000	74.474 58.000 87.000	90.859 71.000 110.000	107.092 84.000 130.000	123.281 96.000 140.000
Coil 3 M	713.66 590.00 880.00	706.30 580.00 870.00	692.59 570.00 850.00	670.77 550.00 830.00	643.83 530.00 800.00	609.97 500.00 760.00	572.10 470.00 710.00	526.92 440.00 650.00
Coil 3 P	7.003 6.000 10.000	24.341 20.000 29.000	40.990 33.000 49.000	57.513 46.000 69.000	73.907 59.000 89.000	90.290 72.000 110.000	106.475 85.000 130.000	122.706 98.000 150.000
Coil 4 M	1141.5 900.0 1400.0	1129.0 900.0 1300.0	1106.3 900.0 1300.0	1070.9 850.0 1300.0	1027.5 800.0 1200.0	973.0 800.0 1200.0	912.8 750.0 1100.0	842.3 700.0 1000.0
Coil 4 P	7.842 6.000 10.000	24.713 20.000 30.000	41.300 33.000 50.000	57.797 46.000 70.000	74.158 60.000 90.000	90.462 73.000 110.000	106.551 86.000 130.000	122.622 98.000 150.000
Coil 5 M	2314.4 1900.0 2800.0	2291.8 1800.0 2800.0	2249.7 1800.0 2700.0	2183.0 1800.0 2600.0	2098.5 1700.0 2500.0	1990.0 1600.0 2400.0	1866.8 1500.0 2200.0	1720.5 1400.0 2100.0
Coil 5 P	8.030 6.000 10.000	25.318 20.000 31.000	42.366 34.000 51.000	59.387 48.000 72.000	76.349 62.000 93.000	93.342 76.000 110.000	110.182 89.000 130.000	126.997 100.000 150.000
Coil 6 M	6003.5 4700.0 7100.0	5922.7 4700.0 7000.0	5775.4 4600.0 6900.0	5552.7 4400.0 6600.0	5282.8 4200.0 6400.0	4958.5 4000.0 6000.0	4609.2 3700.0 5600.0	4215.3 3400.0 5100.0
Coil 6 P	8.226 7.000 10.000	26.318 22.000 32.000	43.983 36.000 54.000	61.435 51.000 76.000	78.652 65.000 98.000	95.700 80.000 120.000	112.468 94.000 140.000	129.121 110.000 160.000

HDIL AFTER LOG VERIFICATION SUMMARY

TOOL #:

1515MA 11831570

DATE/TIME PERFORMED:

Wed Nov 21 05:55:49 2018

DAYS SINCE CAL:

91

UNIT #:

5753XD 10412898

ZERO DATA(mv)	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 R	-0.002 -0.089 0.071	0.002 -0.062 0.058	0.003 -0.031 0.029	0.001 -0.030 0.030	-0.001 -0.030 0.030	-0.001 -0.030 0.030	-0.002 -0.031 0.029	-0.002 -0.032 0.028
Coil 0 Q	0.001 -0.040 0.040	0.003 -0.120 0.120	0.000 -0.032 0.028	0.002 -0.031 0.029	0.002 -0.030 0.030	0.001 -0.028 0.032	-0.001 -0.030 0.030	-0.001 -0.030 0.030
Coil 1 R	-0.017 -0.102 0.058	-0.004 -0.058 0.042	0.000 -0.031 0.029	-0.003 -0.033 0.027	-0.005 -0.033 0.027	-0.006 -0.032 0.028	-0.006 -0.033 0.027	-0.006 -0.035 0.025
Coil 1 Q	0.004 -0.397 0.403	0.005 -0.099 0.101	-0.000 -0.032 0.028	0.000 -0.033 0.027	0.002 -0.031 0.029	0.002 -0.029 0.031	-0.002 -0.030 0.030	-0.004 -0.030 0.030
Coil 2 R	0.021 -0.057 0.083	0.004 -0.031 0.029	-0.006 -0.037 0.023	-0.002 -0.031 0.029	-0.003 -0.032 0.028	-0.003 -0.031 0.029	0.001 -0.027 0.033	0.004 -0.025 0.035
Coil 2 Q	-0.004 -0.358 0.342	0.003 -0.100 0.100	-0.002 -0.033 0.027	0.002 -0.031 0.029	-0.003 -0.032 0.028	-0.008 -0.038 0.022	-0.005 -0.032 0.028	-0.003 -0.032 0.028
Coil 3 R	-0.015 -0.049 0.031	-0.013 -0.045 0.035	-0.013 -0.040 0.040	-0.009 -0.044 0.036	-0.008 -0.042 0.038	-0.008 -0.043 0.037	-0.007 -0.044 0.036	-0.008 -0.044 0.036
Coil 3 Q	-0.007 -0.207 0.193	-0.011 -0.084 0.076	-0.001 -0.045 0.035	-0.005 -0.046 0.034	-0.005 -0.042 0.038	-0.003 -0.039 0.041	-0.002 -0.041 0.039	-0.001 -0.043 0.037
Coil 4 R	-0.025 -0.078 0.042	-0.007 -0.068 0.052	-0.013 -0.062 0.058	-0.014 -0.067 0.053	-0.014 -0.062 0.058	-0.005 -0.057 0.063	-0.003 -0.057 0.063	-0.002 -0.054 0.066
Coil 4 Q	-0.003 -0.305 0.295	0.005 -0.105 0.095	-0.005 -0.065 0.055	-0.010 -0.061 0.059	-0.010 -0.069 0.051	-0.009 -0.067 0.053	-0.008 -0.067 0.053	-0.005 -0.065 0.055
Coil 5 R	-0.003 -0.140 0.100	-0.000 -0.125 0.115	0.013 -0.118 0.122	0.012 -0.114 0.126	-0.001 -0.119 0.121	-0.004 -0.115 0.125	-0.008 -0.129 0.111	-0.013 -0.133 0.107
Coil 5 Q	0.000 -0.612 0.588	0.002 -0.252 0.248	0.002 -0.112 0.128	0.002 -0.121 0.119	0.002 -0.120 0.120	0.006 -0.117 0.123	0.007 -0.116 0.124	-0.001 -0.123 0.117
Coil 6 R	0.016 -0.321 0.279	-0.012 -0.311 0.289	-0.037 -0.312 0.288	-0.022 -0.318 0.282	-0.010 -0.311 0.289	0.003 -0.292 0.308	-0.003 -0.296 0.304	-0.001 -0.296 0.304
Coil 6 Q	-0.009 1.526 1.474	0.026 0.613 0.587	0.002 0.286 0.304	0.008 0.293 0.307	-0.025 0.318 0.281	0.002 0.308 0.291	-0.014 0.316 0.284	-0.010 0.305 0.295

ELEC. GAINS	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 M	126.86 124.32 129.40	125.73 123.22 128.25	123.64 121.19 126.14	120.25 117.87 122.68	116.00 113.74 118.39	110.46 108.35 112.77	104.29 102.27 106.45	96.59 94.89 98.77
Coil 0 P	7.373 4.364 10.364	23.303 20.282 26.282	38.985 35.980 41.980	54.668 51.640 57.640	70.323 67.273 73.273	86.013 82.946 88.946	101.552 98.526 104.526	117.169 114.144 120.144
Coil 1 M	220.75 216.37 225.20	218.15 213.84 222.57	213.26 209.06 217.60	205.65 201.69 209.93	196.61 192.79 200.65	185.20 181.70 189.11	172.87 169.54 176.46	158.14 155.54 161.89
Coil 1 P	7.547 4.538 10.538	24.697 21.677 27.677	41.362 38.349 44.349	57.900 54.864 60.864	74.261 71.215 77.215	90.551 87.482 93.482	106.573 103.500 109.500	122.551 119.509 125.509
Coil 2 M	449.91 440.92 458.92	444.99 436.11 453.91	435.61 427.00 444.43	421.11 412.86 429.71	403.56 395.64 411.79	381.04 373.80 389.06	356.44 349.46 363.73	327.22 321.20 334.31
Coil 2 P	7.876 4.868 10.868	24.808 21.794 27.794	41.467 38.457 44.457	58.054 55.014 61.014	74.499 71.474 77.474	90.919 87.859 93.859	107.134 104.092 110.092	123.330 120.281 126.281
Coil 3 M	713.41 699.39 727.93	706.01 692.18 720.43	692.06 678.74 706.44	670.19 657.35 684.18	643.38 630.95 656.71	609.29 597.77 622.17	571.24 560.66 583.54	525.97 516.38 537.46
Coil 3 P	7.014 4.003 10.003	24.359 21.341 27.341	40.997 37.990 43.990	57.534 54.513 60.513	73.935 70.907 76.907	90.350 87.290 93.290	106.548 103.475 109.475	122.751 119.706 125.706
Coil 4 M	1141.6 1118.7 1164.4	1129.0 1106.4 1151.6	1106.2 1084.2 1128.4	1070.5 1049.5 1092.3	1027.0 1006.9 1048.0	972.0 953.5 992.4	911.8 894.6 931.1	841.0 825.4 859.1
Coil 4 P	7.849 4.842 10.842	24.733 21.713 27.713	41.308 38.300 44.300	57.831 54.797 60.797	74.198 71.158 77.158	90.527 87.462 93.462	106.598 103.551 109.551	122.669 119.622 125.622
Coil 5 M	2314.2 2268.1 2360.7	2291.4 2246.0 2337.6	2249.1 2204.7 2294.7	2182.0 2139.3 2226.6	2097.6 2056.5 2140.4	1987.8 1950.2 2029.8	1864.9 1829.5 1904.2	1716.9 1686.1 1754.9
Coil 5 P	8.037 5.030 11.030	25.334 22.318 28.318	42.374 39.366 45.366	59.417 56.387 62.387	76.392 73.349 79.349	93.410 90.342 96.342	110.226 107.182 113.182	127.044 123.997 129.997
Coil 6 M	6002.9 5883.5 6123.6	5921.5 5804.3 6041.2	5772.2 5659.9 5890.9	5548.9 5441.7 5663.8	5280.6 5177.1 5388.4	4954.9 4859.3 5057.6	4603.7 4517.0 4701.4	4206.8 4131.0 4299.6
Coil 6 P	8.252 5.226 11.226	26.344 23.318 29.318	43.987 40.983 46.983	61.471 58.435 64.435	78.690 75.652 81.652	95.766 92.700 98.700	112.532 109.468 115.468	129.124 126.121 132.121

INSTRUMENT CONFIGURATION

Source File: /dat1a/LARAMIE_SS_FED_0993_25_14W/MSLAM-tdg

CABLEHEAD

Diameter : 3.38"
 Length : 5.50"
 Weight : 24 lbs
 Series : CABL338
 Mnemonic : CBLH
 Measure Point: 2.75': CABLEHEAD TOP

TTRM SUB

Diameter : 3.63"
 Length : 3.83"
 Weight : 62 lbs
 Series : 3981XA
 Mnemonic : TTRM
 Measure Point: 1.38': TEMP MP
 Measure Point: 1.13': RM MP

73.88'

CABLEHEAD TOP 71.13'

TEMP MP 65.93'

RM MP 65.68'

WTS COMMON REMOTE

Diameter : 3.63"
Length : 6.36'
Weight : 126 lbs
Series : 3514XB
Mnemonic : WTS

DIGITAL SPECTRALOG

Diameter : 3.63"
Length : 7.31'
Weight : 130 lbs
Series : 1329XB
Mnemonic : DSL
Measure Point: 1.60': GR MP

GR MP — 52.48'

COMPENSATED NEUTRON

Diameter : 3.63"
Length : 7.59'
Weight : 150 lbs
Series : 2446XA
Mnemonic : CN
Measure Point: 2.63': LSN MP
Measure Point: 2.24': SSN MP

LSN MP — 45.92'

SSN MP — 45.52'

Z-DENSILOG

Diameter : 4.88"
Length : 11.22'
Weight : 360 lbs
Series : 2234XA
Mnemonic : ZDL
Measure Point: 3.19': CAL MP
Measure Point: 2.47': LSD MP
Measure Point: 2.07': SSD MP

CAL MP — 35.26'

LSD MP — 34.54'

SSD MP — 34.14'

KNUCKLE JOINT (DOUBLE)

Diameter : 3.38"
Length : 4.65'
Weight : 90 lbs
Series : 3939XA
Mnemonic : KNJT

HIGH DEFINITION INDUCTION TOOL

Diameter : 3.62"
Length : 27.13'
Weight : 415 lbs
Series : 1515XA
Mnemonic : HDIL
Measure Point: 13.91': SP MP
Measure Point: 7.44': XMTR MP

SP MP — 14.19'

XMTR MP 7.72'

BULL PLUG 3 3/8

0.00'

TOTAL LENGTH: 73.88'
TOTAL WEIGHT: 1374 lbs
MAX DIAMETER: 0'4.88"

**BAKER
HUGHES**
a GE company



ECLIPS

COMPANY

LARAMIE ENERGY LLC

WELL

SUP & SHEP FEDERAL 0993-25-14W

FIELD

BUZZARD CREEK

COUNTY

MESA

STATE COLORADO

FILE NO:

OH145636

API NO:

05077105820000

LOCATION:

LAT: 39.244799 N

LONG: 107.723413 W

ELEVATIONS:

KB 8108 FT

DF

GL 8078 FT

RIG: H&P 522

SEC 25 TWP 9S RGE 93W

DATE

20-NOV-2018