



FILE NO: _____
 COMPANY: **CHESAPEAKE APPALCHIA, LLC.**
 WELL: **JAMES MESSENGER WTZ 3H U**
 FIELD: **WETZEL**
 COUNTY: **WETZEL** STATE: **WEST VIRGINIA**

API NO: **47-103-02973**
 Ver. **3.87**
 SCALE: **5"1100'**
 LOCATION: STATE TOWNSHIP: **PROCTOR**
 QUAD: **WILEYVILLE**
 LAT **39.673693 N** LONG **80.690861 W**
 OTHER SERVICES: **NONE**

PERMANENT DATUM: **GL** ELEVATION: **1495 FT**
 LOG MEASURED FROM: **KB** **22 FT** ABOVE P.D.
 DRILL. MEAS. FROM: **KB**
 ELEVATIONS:
KB 1517 FT
DF 1517 FT
GL 1495 FT

DATE	16-APR-2014	
RUN	TRIP	1
SERVICE ORDER	US082285J	
DEPTH DRILLER	822 FT	
DEPTH LOGGER	803 FT	
BOTTOM LOGGED INTERVAL	801 FT	
TOP LOGGED INTERVAL	0 FT	
CASING DRILLER	24 IN @ 130 FT	
CASING LOGGER	130 FT	
BIT SIZE	22 IN	
TYPE OF FLUID IN HOLE	GEL	
DENSITY	8.6 LB/G	45 S
PH	-	
SOURCE OF SAMPLE	TOOL MEASURED	
RM AT MEAS. TEMP.	5.87 OHMM @ 75 DEGF	
RMF AT MEAS. TEMP.	4.58 OHMM @ 75 DEGF	
RMC AT MEAS. TEMP.	7.92 OHMM @ 75 DEGF	
SOURCE OF RMF	CALC	
RM AT BHT	7.5 OHMM @ 57.2 DEGF	
TIME SINCE CIRCULATION	6 HRS	
MAX. RECORDED TEMP.	57.83 DEGF	
EQUIP. NO.	LOCATION	CANTON, OH
RECORDED BY	S. PATEL	
WITNESSED BY	NICK DOWNS	

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
26 IN	0 FT	130 FT
22 IN	130 FT	822 FT

CASING RECORD				
SIZE	WEIGHT	GRADE	FROM	TO
24 IN	-	-	0 FT	130 FT
20 IN	-	-	0 FT	-

REMARKS

RUN 1 TRIP 1: CREW: S. PATEL, R. BARNETT, P. SPEELMAN
 RIG: NOMAC 337

OPERATION 1: GR-WGI-CN-ZDL-HDIL RAN IN COMBINATION

DENSITY POROSITY (PORZ) = 2.71 G/CC
 NEUTRON POROSITY (CNC) = LIMESTONE MATRIX
 COMPENSATED NEUTRON (CNC) IS CALIPER CORRECTED
 DENSITY CURVE (ZDEN)

(CAL) = SINGLE AXIS CALIPER FROM DENSITY TOOL
 (CVOL) CEMENT VOLUME CALCULATED FOR 20" CASING
 (BVOL) = TOTAL BOREHOLE VOLUME FROM CALIPER

COMPENSATED NEUTRON RAN DECENTRALIZED

FLUID LEVEL: SURFACE

ADDITIONAL CUSTOMER COMMENTS:
BOREHOLE RUGOSITY AND WASHOUTS WILL EFFECT POROSITY.

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
2	1	DHPA	4430XA	370977	FREE
2	1	TTRM	3981XA	183784	FREE
2	1	COM REMOTE	3514XA	173204	FREE
2	1	GR	1329XA	185486	FREE
2	1	WGI	4253XA	10198253	FREE
2	1	KNUCKLE	3939XA	166784	FREE
2	1	CROSSOVER	3527EA/FA	12211690/10597261	FREE
2	1	CN	2436XA	10489644	DECENTRALIZED
2	1	ZDL	2223XA	10152208	DECENTRALIZED
2	1	KNUCKLE	3930XA	10197359	FREE
2	1	HDIL	1530XA	402505	FREE

MAIN LOG 5"/100FT SCALE

ECLIPS 6.2i ECLIPS General Release Rel 6.2i Wed Jun 12 12:21:40 CDT 2013

Patches: 5

Plotted: Wed Apr 16 04:22:10 2014

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CHESAPEAKE/JAMES_MESSENGER_WTZ_3H_R1/CHK_R2_TC02.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 20.250 ft BOTTOM DEPTH: 812.310 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
TENSION	FILTER ()	medium (1)		TOP	BOTTOM
GR	FILTER ()	medium (1)		"	"
CALIPER	FILTER	medium (1)		"	"
CN MED RES	FILTER ()	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)		"	"

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	17.500	in	TOP	BOTTOM
	CASING THICKNESS	0.500	in	"	"
CALIPER SELECTION	X-Y VS MULTI-ARM SEL	MULTI-ARM CAL		"	"
BIT SIZE	BIT SIZE	22.000	in	"	"
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	77.0	degF	"	"
	MUD SAMPLE RES	1.000	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		"	"

BOREHOLE CORR DIAMETER	CALIPER/FIXED DIA. (mbh*)	USE CALIPER	"	"
	FIXED DIAMETER (cnbh*)	22.000	in	"
	FIXED DIAMETER (mbh*)	22.000	in	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	TOOL MEASURED	"	"

ACCELERATION PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
ACCEL CORR SWITCH	ACCEL DEPTH CORR	CORRECTION ON		TOP BOTTOM

CN PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
CN MATRIX	2436 MATRIX	LIMESTONE		TOP BOTTOM
CN BOREHOLE CORRECTION	SALINITY	0	ppm	" "
	BOREHOLE CORRECTION	ON		" "
CN TOOL STANDOFF	ENABLE STANDOFF CORR	OFF		" "
	STANDOFF AMOUNT	0.00	in	" "
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		" "
	BIT SIZE BEHIND CSNG	26.000	in	" "

ZDL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
DENSITY POROSITY	Air Filled Borehole	NO		TOP BOTTOM
	RHOmatrix	2.710	g/cm3	" "
	RHOfluid	1.000	g/cm3	" "

HDIL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
HDIL TEMPERATURE CORRECTION	TEMP CORRECTION	ON		TOP BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		" "
	ABC to CALCULATE	MUD CONDUCTIVITY		" "
	STANDOFF	4.50	in	" "
	TOOL POSITION	ECCENTERED		" "
	Rmud MULTIPLIER	1.000		" "

CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Apr 16 02:29:21 2014	BIT SIZE
F1:BVOL	Apr 16 02:29:21 2014	BOREHOLE VOLUME
F1:CAL	Apr 16 02:29:21 2014	CALIPER
F1:CNC	Apr 16 02:29:21 2014	BOREHOLE SIZE CORRECTED COMPENSATED NEUTRON POROSITY
F1:CVOL	Apr 16 02:29:21 2014	CEMENT VOLUME
F1:GR	Apr 16 02:29:21 2014	GAMMA RAY
F1:M2R1	Apr 16 02:29:21 2014	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F1:M2R2	Apr 16 02:29:21 2014	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 20-INCH DOI
F1:M2R3	Apr 16 02:29:21 2014	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 30-INCH DOI
F1:M2R6	Apr 16 02:29:21 2014	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 60-INCH DOI
F1:M2R9	Apr 16 02:29:21 2014	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 90-INCH DOI
F1:PE	Apr 16 02:29:21 2014	PHOTO ELECTRIC CROSS-SECTION
F1:PORZ	Apr 16 02:29:21 2014	POROSITY FOR SELECTABLE MATRIX
F1:SPDH	Apr 16 02:29:21 2014	SPONTANEOUS POTENTIAL PROCESSED IN COMMON REMOTE
F1:TEN	Apr 16 02:29:21 2014	DIFFERENTIAL TENSION
F1:ZCOR	Apr 16 02:29:21 2014	DENSITY CORRECTION
F1:ZDEN	Apr 16 02:29:21 2014	FORMATION BULK DENSITY

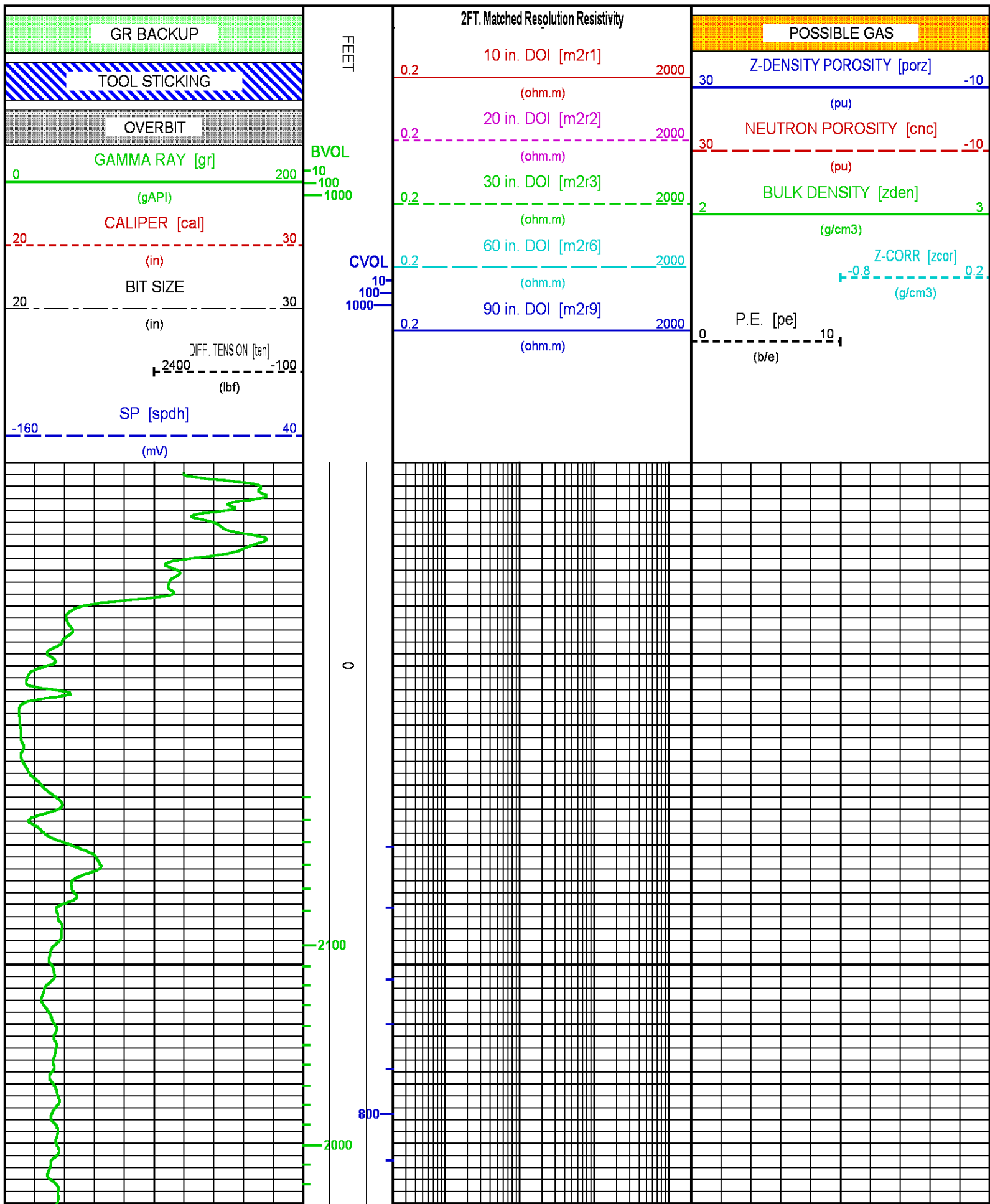
CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
BIT	0.00	M2R1	2.75	M2R9	2.75	TEN	0.00
CAL	18.12	M2R2	2.75	PE	18.00	ZCOR	18.00
CNC	27.38	M2R3	2.75	PORZ	18.00	ZDEN	18.00
GR	53.62	M2R6	2.75	SPDH	1.25		

Presentation : sys1:/dat1a/CHESAPEAKE/JAMES_MESSENGER_WTZ_3H_R1/TC_MN.fvpdf [5"/100' Scale]
Plot Interval : -32.25 - 810.25 Feet

Data File 1 : F1 : sys1:/dat1a/CHESAPEAKE/JAMES_MESSENGER_WTZ_3H_R1/CHK_R2_TC02.xtf
Created On : Apr 16 02:29:21 2014

Created On : Apr 16 02:29:21 2014
 Company : CHESAPEAKE APPALCHIA, LLC.
 Well : JAMES MESSENGER WTZ 3H U
 Field : WETZEL
 File Interval : -45.75 - 814 Feet
 OCT : CHK_R2_T



GR BACKUP

TOOL STICKING

OVERBIT

GAMMA RAY [gr]

(gAPI)

CALIPER [cal]

(in)

BIT SIZE

(in)

DIFF. TENSION [ten]

2400 -100

(lbf)

SP [spdh]

(mV)

FEET

BVOL

10

100

1000

CVOL

10

100

1000

0

2000

800

2000

2FT. Matched Resolution Resistivity

10 in. DOI [m2r1]

0.2

2000

(ohm.m)

20 in. DOI [m2r2]

0.2

2000

(ohm.m)

30 in. DOI [m2r3]

0.2

2000

(ohm.m)

60 in. DOI [m2r6]

0.2

2000

(ohm.m)

90 in. DOI [m2r9]

0.2

2000

(ohm.m)

POSSIBLE GAS

Z-DENSITY POROSITY [porz]

30

-10

(pu)

NEUTRON POROSITY [cnc]

30

-10

(pu)

BULK DENSITY [zden]

2

3

(g/cm3)

Z-CORR [zcor]

-0.8

0.2

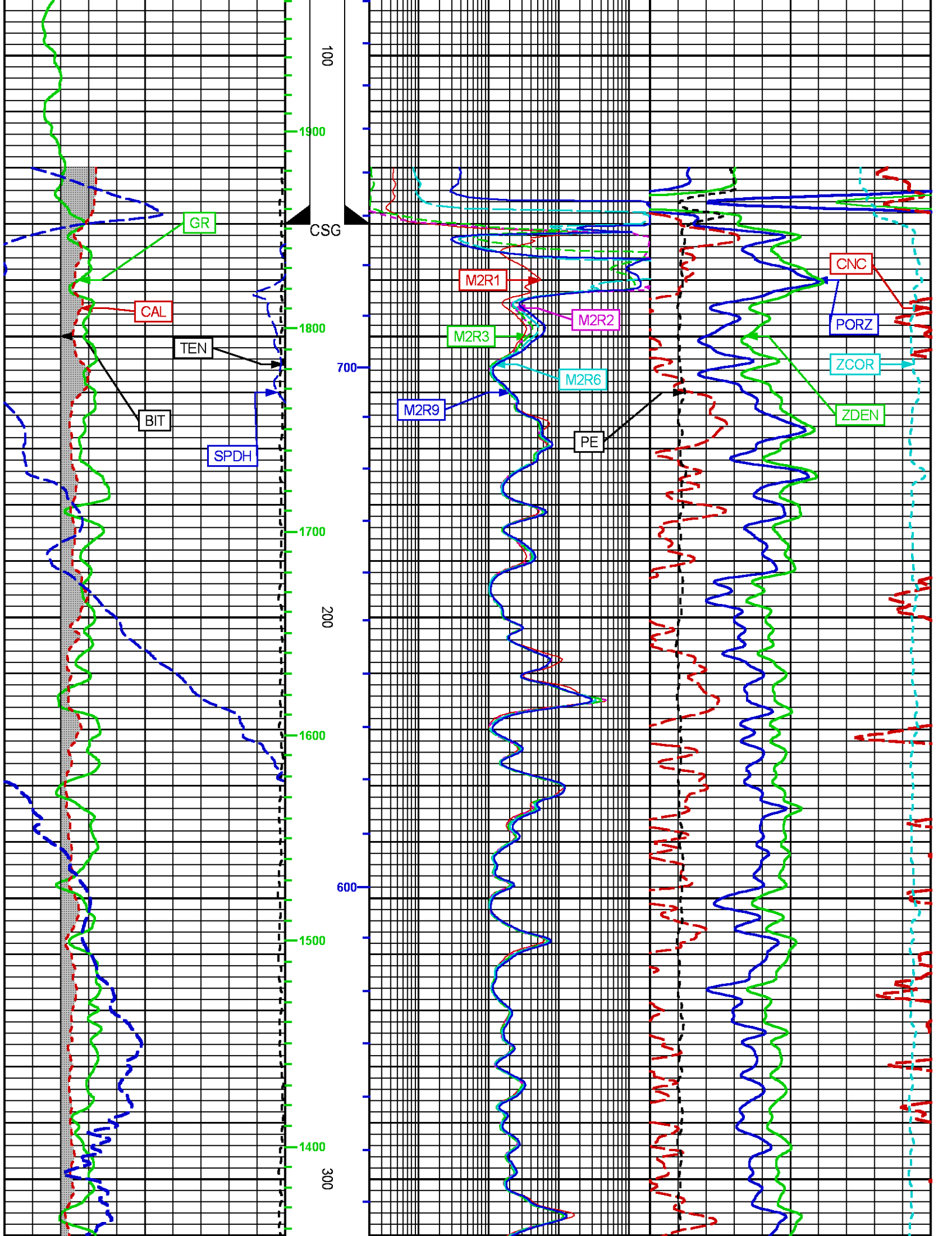
(g/cm3)

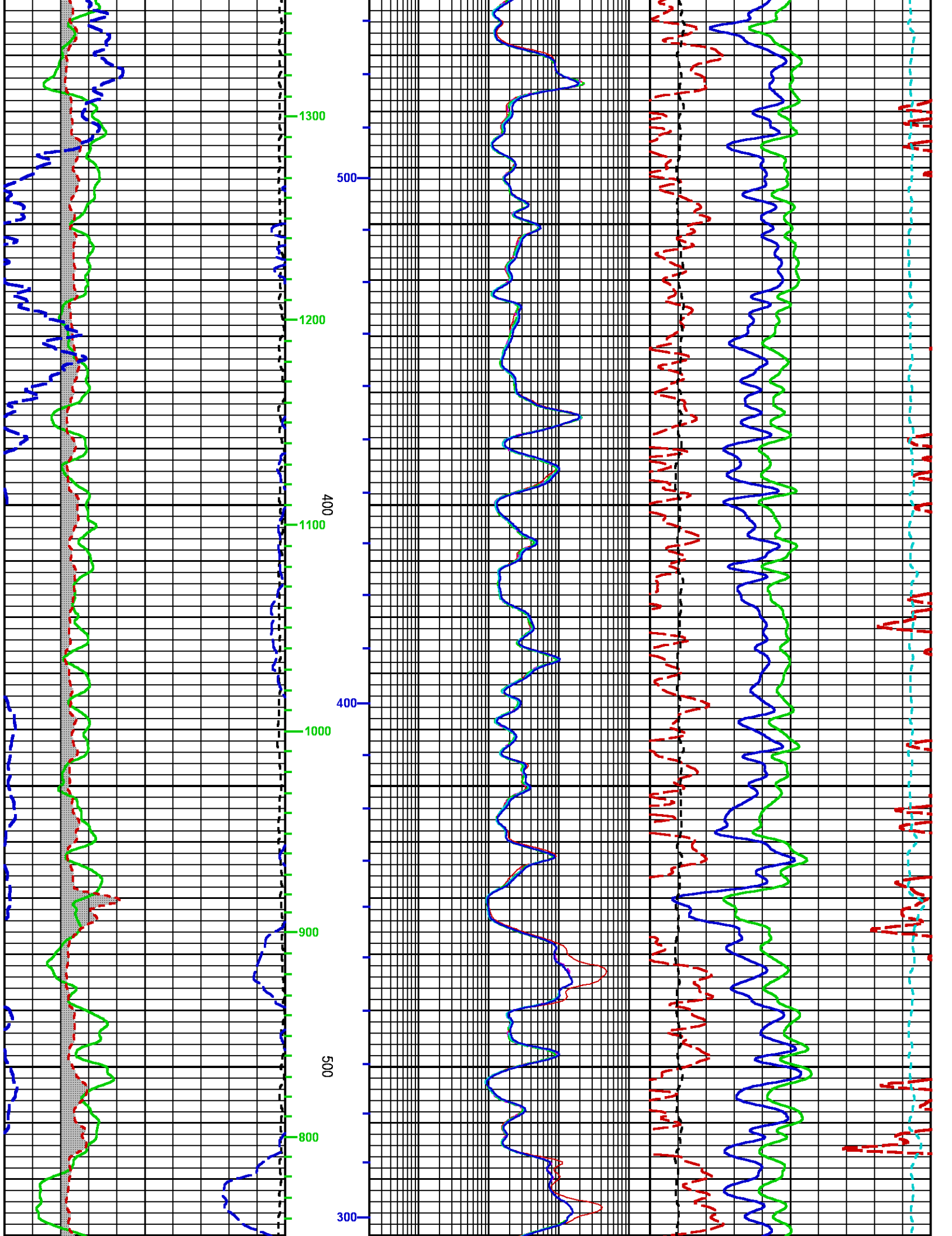
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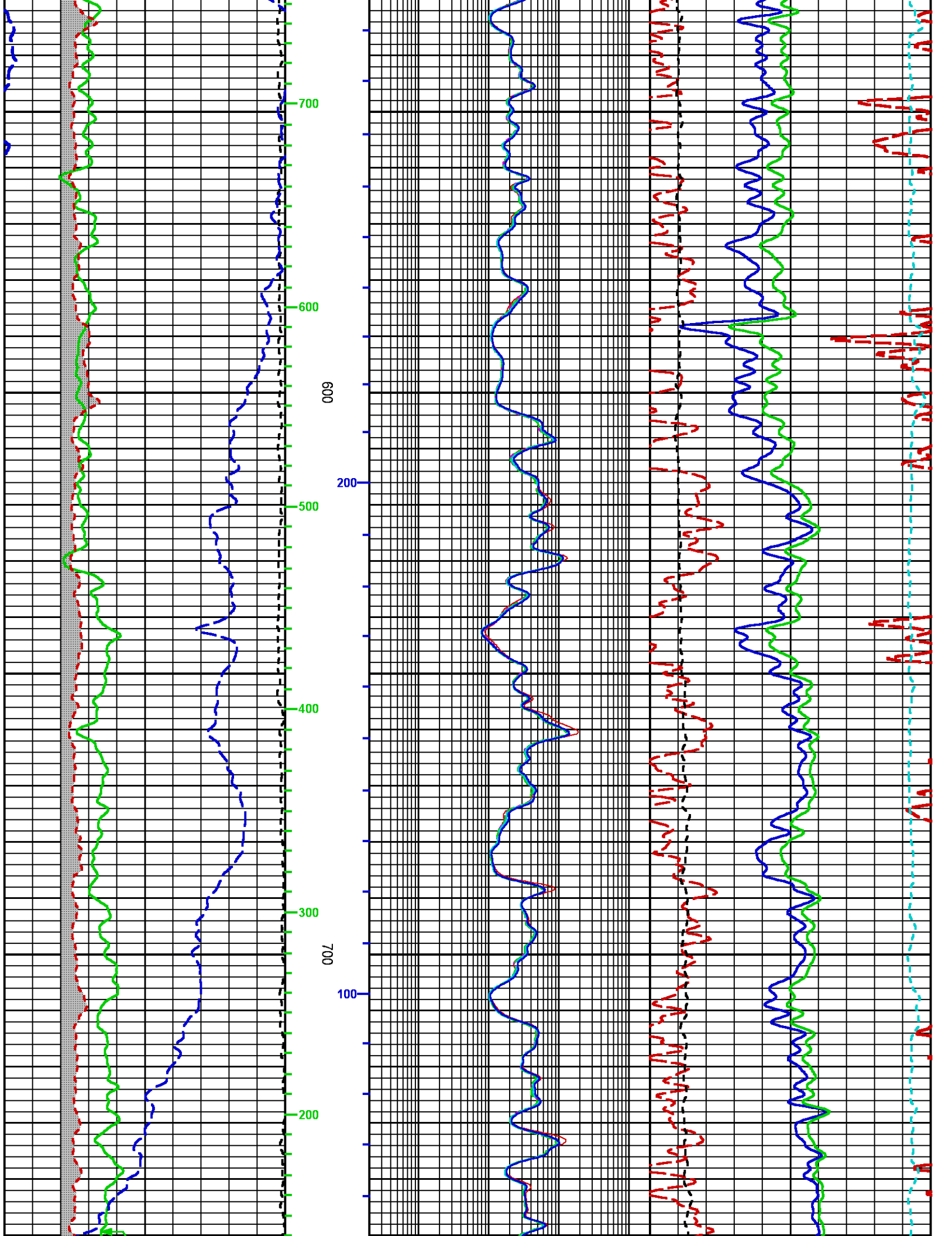
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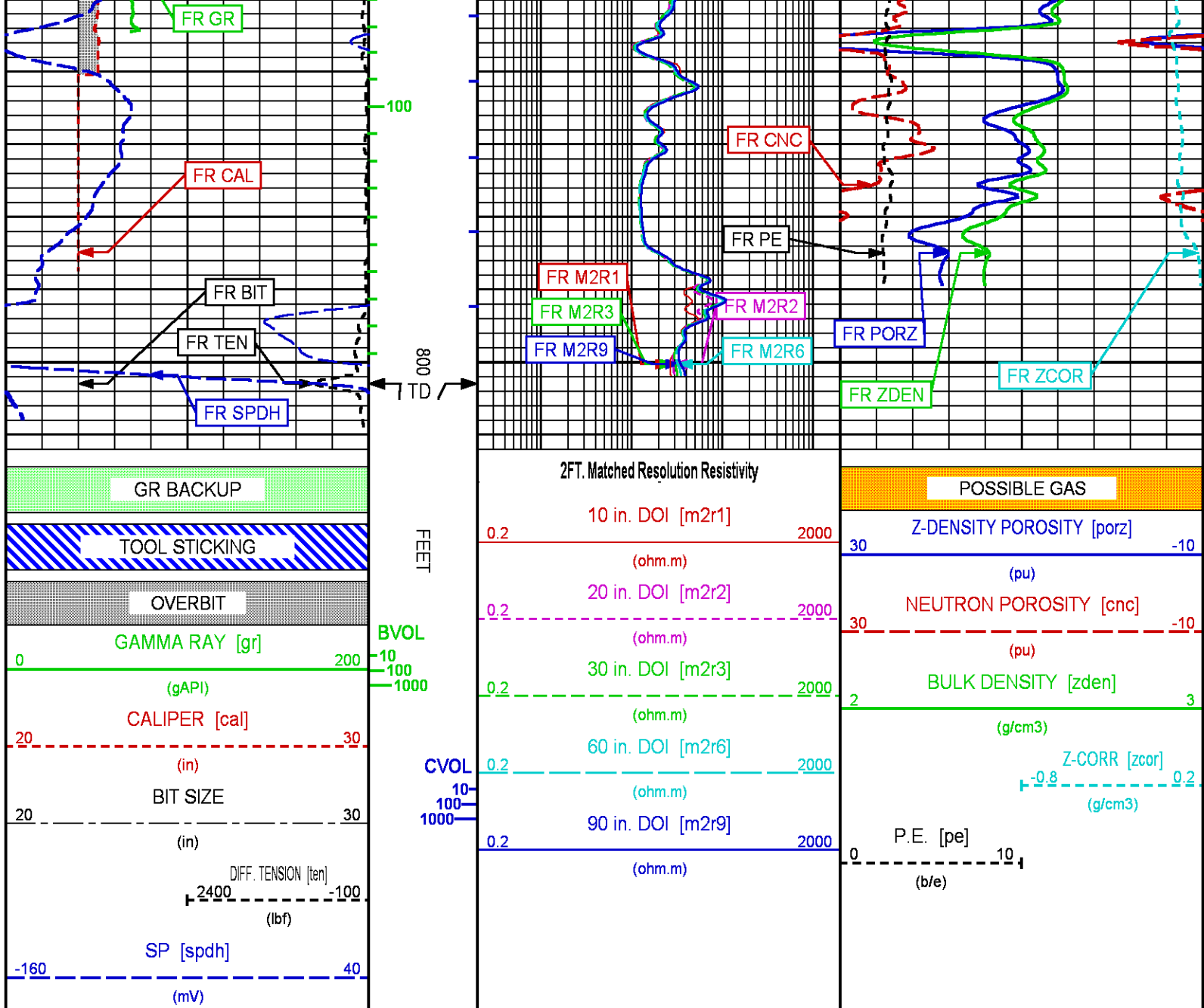
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(b/e)









REPEAT LOG

ECLIPS 6.2i ECLIPS General Release Rel 6.2i Wed Jun 12 12:21:40 CDT 2013

Patches: 5

Plotted: Wed Apr 16 04:19:51 2014

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CHESAPEAKE/JAMES_MESSENGER_WTZ_3H_R1/CHK_R2_TC01.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 524.250 ft BOTTOM DEPTH: 813.500 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
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TENSION	FILTER ()	medium (1)	TOP	BOTTOM
GR	FILTER ()	medium (1)	"	"
CALIPER	FILTER	medium (1)	"	"
CN MED RES	FILTER ()	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)	"	"

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	17.500	in	TOP	BOTTOM
	CASING THICKNESS	0.500	in	"	"
CALIPER SELECTION	X-Y VS MULTI-ARM SEL	MULTI-ARM CAL		"	"
BIT SIZE	BIT SIZE	22.000	in	"	"
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	77.0	degF	"	"
	MUD SAMPLE RES	1.000	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		"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	22.000	in	"	"
	FIXED DIAMETER (mbh*)	22.000	in	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	TOOL MEASURED		"	"

ACCELERATION PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
ACCEL CORR SWITCH	ACCEL DEPTH CORR	CORRECTION ON		TOP	BOTTOM

CN PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CN MATRIX	2436 MATRIX	LIMESTONE		TOP	BOTTOM
CN BOREHOLE CORRECTION	SALINITY	0	ppm	"	"
	BOREHOLE CORRECTION	ON		"	"
CN TOOL STANDOFF	ENABLE STANDOFF CORR	OFF		"	"
	STANDOFF AMOUNT	0.00	in	"	"
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		"	"
	BIT SIZE BEHIND CSNG	26.000	in	"	"

ZDL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
DENSITY POROSITY	Air Filled Borehole	NO		TOP	BOTTOM
	RHOmatrix	2.710	g/cm3	"	"
	RHOfluid	1.000	g/cm3	"	"

HDIL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
HDIL TEMPERATURE CORRECTION	TEMP CORRECTION	ON		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		"	"
	ABC to CALCULATE	MUD CONDUCTIVITY		"	"
	STANDOFF	4.50	in	"	"
	TOOL POSITION	ECCENTERED		"	"
	Rmud MULTIPLIER	1.000		"	"

CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Apr 16 02:00:45 2014	BIT SIZE
F1:BVOL	Apr 16 02:00:45 2014	BOREHOLE VOLUME
F1:CAL	Apr 16 02:00:45 2014	CALIPER
F1:CNC	Apr 16 02:00:45 2014	BOREHOLE SIZE CORRECTED COMPENSATED NEUTRON POROSITY
F1:CVOL	Apr 16 02:00:45 2014	CEMENT VOLUME
F1:GR	Apr 16 02:00:45 2014	GAMMA RAY

F1:M2R1 Apr 16 02:00:45 2014
 F1:M2R2 Apr 16 02:00:45 2014
 F1:M2R3 Apr 16 02:00:45 2014
 F1:M2R6 Apr 16 02:00:45 2014
 F1:M2R9 Apr 16 02:00:45 2014
 F1:PE Apr 16 02:00:45 2014
 F1:PORZ Apr 16 02:00:45 2014
 F1:SPDH Apr 16 02:00:45 2014
 F1:TEN Apr 16 02:00:45 2014
 F1:ZCOR Apr 16 02:00:45 2014
 F1:ZDEN Apr 16 02:00:45 2014

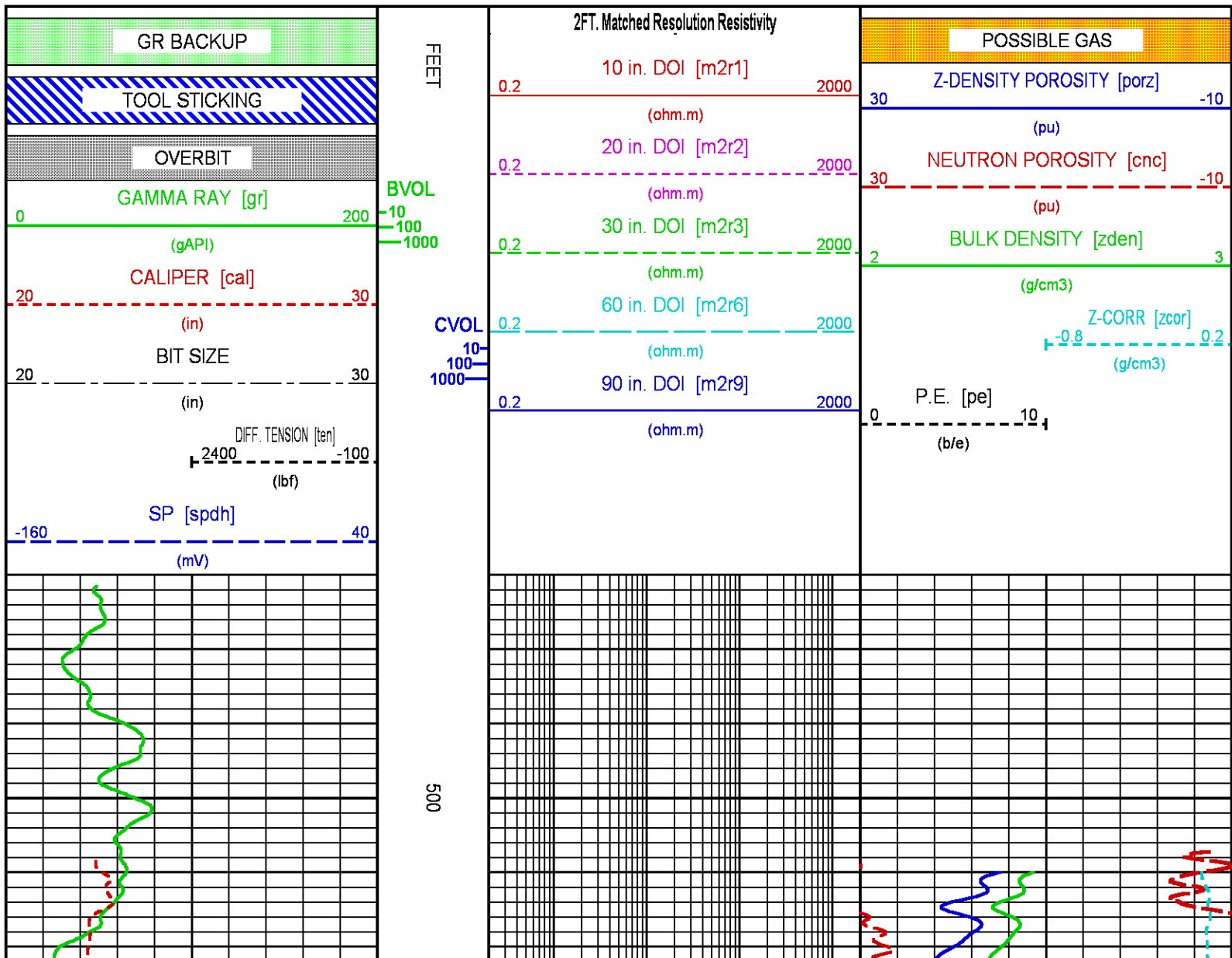
VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
 VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 20-INCH DOI
 VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 30-INCH DOI
 VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 60-INCH DOI
 VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 90-INCH DOI
 PHOTO ELECTRIC CROSS-SECTION
 POROSITY FOR SELECTABLE MATRIX
 SPONTANEOUS POTENTIAL PROCESSED IN COMMON REMOTE
 DIFFERENTIAL TENSION
 DENSITY CORRECTION
 FORMATION BULK DENSITY

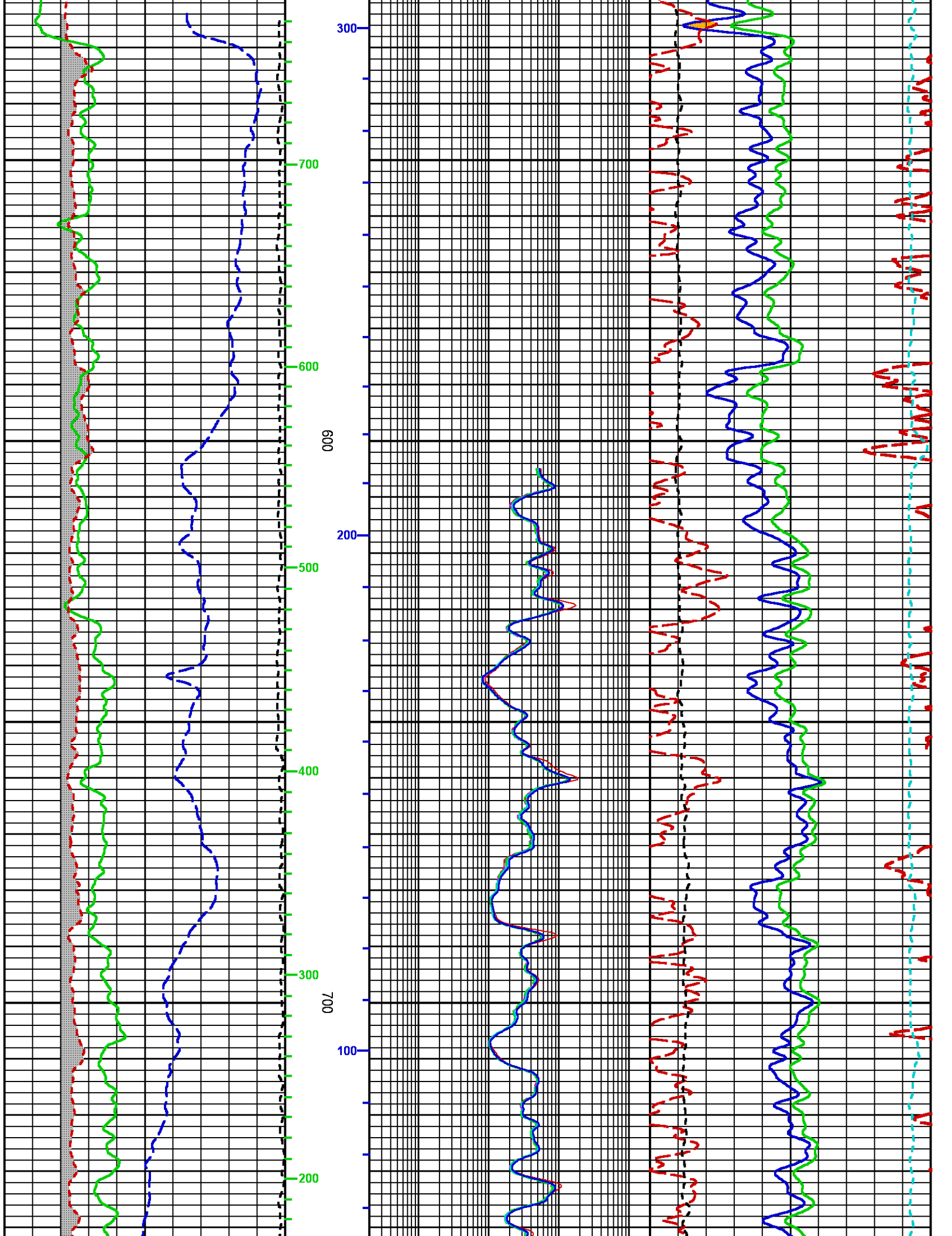
CURVE MEASURE POINT OFFSET

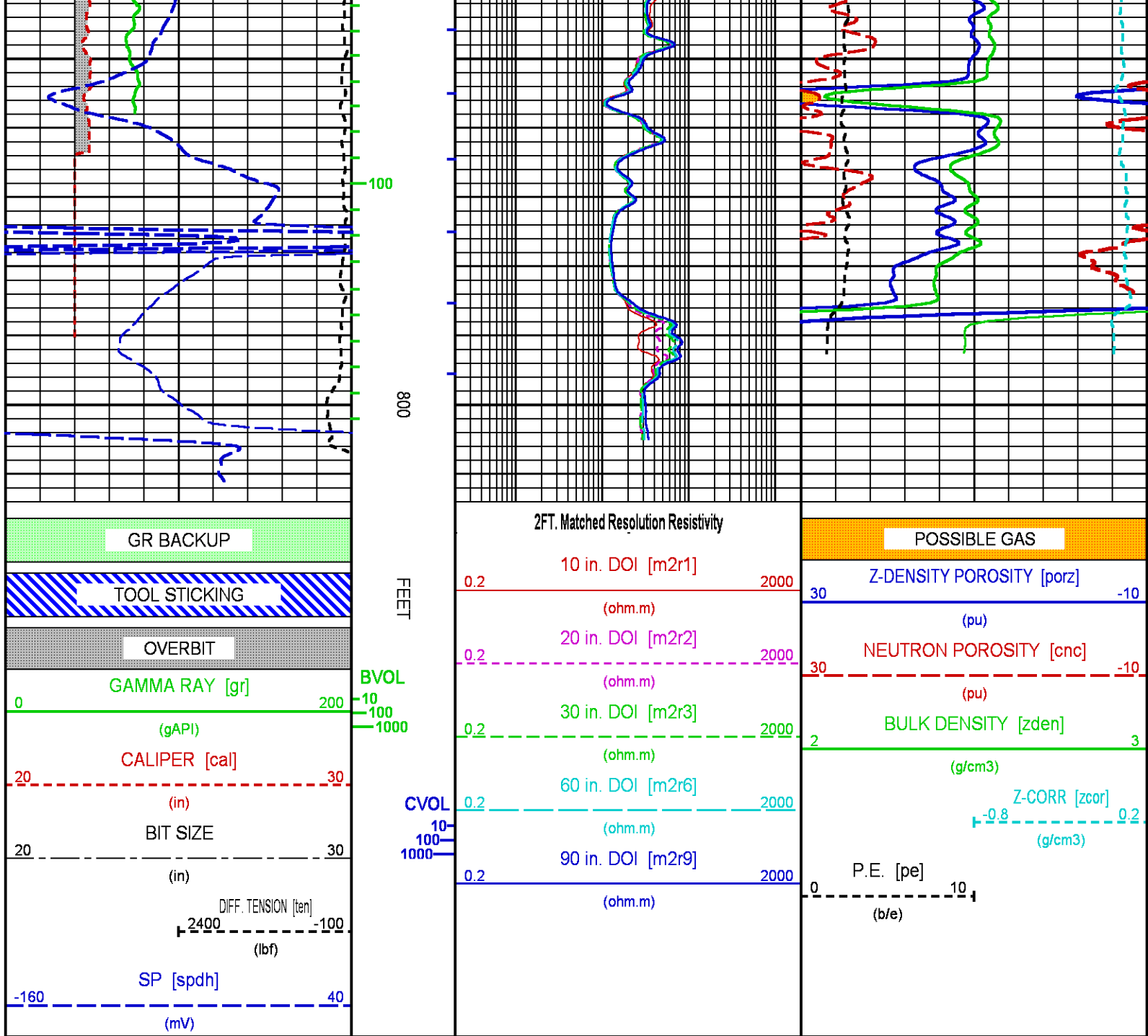
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
BIT	0.00	M2R1	2.75	M2R9	2.75	TEN	0.00
CAL	18.12	M2R2	2.75	PE	18.00	ZCOR	18.00
CNC	27.38	M2R3	2.75	PORZ	18.00	ZDEN	18.00
GR	53.62	M2R6	2.75	SPDH	1.25		

Presentation : sys1:/dat1a/CHESAPEAKE/JAMES_MESSENGER_WTZ_3H_R1/TC_RPT.fvpdf [5"/100' Scale]
Plot Interval : 471.5 - 813.5 Feet

Data File 1 : F1 : sys1:/dat1a/CHESAPEAKE/JAMES_MESSENGER_WTZ_3H_R1/CHK_R2_TC01.xtf
Created On : Apr 16 02:00:45 2014
Company : CHESAPEAKE APPALCHIA, LLC.
Well : JAMES MESSENGER WTZ 3H U
Field : WETZEL
File Interval : 458 - 817.25 Feet
OCT : CHK_R2_T







CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/CHESAPEAKE/JAMES_MESSENGER_WTZ_3H_R1/CHK_R2_TC.tp1

GR PRIMARY CALIBRATION SUMMARY

TOOL #: 1329XA 185486

DATE/TIME PERFORMED: Fri Mar 7 11:37:11 2014

UNIT #: 3885TD Z4257

CALB JIG #: 4702NK VI-499-N

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	207.33	1146.27	938.9	0.160	33.12	183.12	150
			830.0 960.0				

GR PRIMARY VERIFICATION SUMMARY

TOOL #: DATE/TIME PERFORMED:

UNIT #: VERI JIG #:

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	235.96	1158.42	0.160	37.70	185.06	147.37
						140.00 160.00

WGI PRIMARY CALIBRATION SUMMARY

TOOL #: DATE/TIME PERFORMED:

UNIT #:

DIAMETER	SM RING (in)	LG RING (in)	TEMPERATURE (degF)
	7.000	21.800	65.035

COS/SIN/ ANGLE DATA	SM RING COS (mV)	SM RING SIN (mV)	LG RING COS (mV)	LG RING SIN (mV)	OFFSET COS (mV)	OFFSET SIN (mV)	OFFSET ANG (deg)
ARM 1 LOWER	-1133.7	578.9	1178.7	-521.7	22.5 -500.0 500.0	28.6 -500.0 500.0	-10.871
ARM 1 UPPER	1653.2	-602.5	-1675.0	360.2	-10.9 -500.0 500.0	-121.1 -500.0 500.0	6.197
ARM 2 LOWER	835.9	-1534.4	-905.7	1414.2	-34.9 -500.0 500.0	-60.1 -500.0 500.0	10.527
ARM 2 UPPER	73.9	-1663.0	-147.0	1726.1	-36.5 -500.0 500.0	31.6 -500.0 500.0	13.211
ARM 3 LOWER	704.6	-1524.2	-750.7	1579.2	-23.0 -500.0 500.0	27.5 -500.0 500.0	11.072
ARM 3 UPPER	643.2	-1576.8	-779.1	1532.2	-67.9 -500.0 500.0	-22.3 -500.0 500.0	11.126
ARM 4 LOWER	-896.4	-1445.6	858.9	1482.7	-18.7 -500.0 500.0	18.6 -500.0 500.0	16.678
ARM 4 UPPER	1511.6	-867.8	-1555.1	744.1	-21.8 -500.0 500.0	-61.9 -500.0 500.0	7.357
ARM 5 LOWER	-23.2	-1685.3	-154.7	1689.4	-88.9 -500.0 500.0	2.1 -500.0 500.0	13.361
ARM 5 UPPER	-218.6	1658.4	683.0	-1582.0	232.2 -500.0 500.0	38.2 -500.0 500.0	-5.971
ARM 6 LOWER	-262.2	1628.0	596.5	-1573.7	167.2 -500.0 500.0	27.1 -500.0 500.0	-5.917

ARM 6 UPPER

-1505.5

-763.6

1425.0

970.3

-40.3

103.4

19.523

-500.0

500.0

-500.0

500.0

WGI BEFORE LOG VERIFICATION SUMMARY

TOOL #: 4253XA 10198253

DATE/TIME PERFORMED: Wed Apr 16 01:39:13 2014

DAYS SINCE CAL: 10

UNIT #: 3880TA ML4290

DIAMETER	TRUE ID (in)	CHAD (in)	MIND (in)	MAXD (in)	TEMPERATURE (degF)
	23.250	23.336	23.208	23.437	43.941
		23.050 23.450			

	RADIUS (in)	RADIUS (in)	DIAMETER (in)
ARM 1 & 4	13.243	10.180	23.423
ARM 2 & 5	12.416	10.796	23.213
ARM 3 & 6	10.665	12.389	23.054

CN PRIMARY CALIBRATION SUMMARY

TOOL #: 2436XA 10489644

DATE/TIME PERFORMED: Tue Mar 18 09:28:40 2014

UNIT #: 5700XX 000001

CALIBRATOR #: 2437XB 114695

SOURCE #: 4718XA SN-994

SSN DT CPS	LSN DT CPS	SSN/LSN	MCF	CNRATIO	CN PU
5034.40	874.73	5.75541	0.99680	5.73700	25.241
			0.95000 1.05000		

CN BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2436XA 10489644

DATE/TIME PERFORMED: Wed Apr 16 01:38:24 2014

DAYS SINCE CAL: 28

UNIT #: 3880TA ML4290

CALIBRATOR #: INTRNL N/A

SSN DT CPS	LSN DT CPS	SSN/LSN	TEMP (degF)	HV (V)	LV (V)
992.41	994.44	0.99797	43.9	1344.0	4.636
		0.95000 1.05000	280.4	1250.0 1450.0	4.300 5.000

CAL PRIMARY CALIBRATION SUMMARY

TOOL #: 2223XA 10152208

DATE/TIME PERFORMED: Tue Mar 18 10:50:57 2014

UNIT #: 3880TA ML4290

	SIZE (in)	VALUE	MULTIPLIER	ADD
SMALL RING (Arm)	6.000	709.6		
LARGE RING (Arm)	16.000	2732.0	0.00494	2.49130
PAD CLOSED		4.0	0.00250	-0.01000

ZDL PRIMARY CALIBRATION SUMMARY

TOOL: 2223XA 10152208

DATE/TIME PERFORMED: Tue Mar 18 12:09:03 2014

UNIT: 3880TA ML4290

CALB BLKS: 2225XA 094304_FL

CS SRC: QCJjød 16108B

PAD TYPE: PADTYP 7.5" PAD

	SS CS PK (Channel)	LS CS PK (Channel)	SS_BKGD (cps)	LS BKGD (cps)		
	224.8 <small>220.0 230.0</small>	225.3 <small>220.0 230.0</small>	1381.6	1427.7		
	SS (cps)	LS (cps)	SHR	DEN (g/cm3)	CORR (g/cm3)	PE (b/e)
MG (LO PE)	29137.1	10709.1	0.761 <small>0.720 0.890</small>	1.681	0.001	1.930
AL	18120.1	1191.7		2.662	-0.021	
AL + SHIM	24065.7	2028.1		2.557	0.098	
MG + SHIM (HI PE)	14605.0	5288.1	0.301 <small>0.280 0.380</small>			8.700
RATIO AL + SHIM/AL	1.33 <small>1.30 1.40</small>	1.70 <small>1.60 1.80</small>				
RATIO MG/AL	1.61 <small>1.58 1.70</small>	8.99 <small>8.55 9.55</small>				

ZDL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2223XA 10152208

DATE/TIME PERFORMED: Wed Apr 16 01:38:45 2014

DAYS SINCE CAL: 28

UNIT #: 3880TA ML4290

	TOTAL (cps)	CSPK (Channel)	HV (V)
LS	3342.1 <small>3332.1 3352.1</small>	224.8 <small>220.0 230.0</small>	1401.2 <small>1250.0 1550.0</small>
SS	22355.0 <small>22344.8 22364.8</small>	224.1 <small>220.0 230.0</small>	1359.9 <small>1250.0 1550.0</small>

LV (V)		PAD CURRENT (mA)	
5.0		73.6	
4.8	5.2	50.0	120.0

HDIL PRIMARY CALIBRATION SUMMARY

TOOL #: 1530XA 402505

DATE/TIME PERFORMED: Fri Oct 18 14:15:01 2013

UNIT #: 3880TA ML4290

GRCOND ID & DATE: 0 1018 1

ZERO DATA(mv)	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 R	-0.0128 -0.2000 0.2000	0.0040 -0.1000 0.1000	0.0015 -0.1000 0.1000	-0.0008 -0.1000 0.1000	0.0010 -0.1000 0.1000	-0.0009 -0.1000 0.1000	-0.0010 -0.1000 0.1000	0.0001 -0.1000 0.1000
Coil 0 Q	0.0125 -0.5000 0.5000	0.0044 -0.2000 0.2000	-0.0012 -0.1000 0.1000	0.0002 -0.1000 0.1000	0.0005 -0.1000 0.1000	-0.0006 -0.1000 0.1000	0.0003 -0.1000 0.1000	0.0002 -0.1000 0.1000
Coil 1 R	-0.0149 -0.2000 0.2000	0.0044 -0.1000 0.1000	-0.0009 -0.1000 0.1000	-0.0008 -0.1000 0.1000	0.0021 -0.1000 0.1000	0.0002 -0.1000 0.1000	-0.0001 -0.1000 0.1000	-0.0002 -0.1000 0.1000
Coil 1 Q	0.0155 -0.5000 0.5000	0.0019 -0.2000 0.2000	-0.0039 -0.1000 0.1000	0.0003 -0.1000 0.1000	-0.0004 -0.1000 0.1000	0.0002 -0.1000 0.1000	-0.0001 -0.1000 0.1000	-0.0000 -0.1000 0.1000
Coil 2 R	-0.0145 -0.2000 0.2000	-0.0021 -0.1000 0.1000	0.0040 -0.1000 0.1000	-0.0018 -0.1000 0.1000	-0.0021 -0.1000 0.1000	0.0010 -0.1000 0.1000	-0.0029 -0.1000 0.1000	-0.0001 -0.1000 0.1000
Coil 2 Q	0.0144 -0.5000 0.5000	0.0086 -0.2000 0.2000	-0.0044 -0.1000 0.1000	-0.0011 -0.1000 0.1000	0.0032 -0.1000 0.1000	-0.0020 -0.1000 0.1000	0.0040 -0.1000 0.1000	0.0014 -0.1000 0.1000
Coil 3 R	-0.0340 -0.3000 0.3000	0.0130 -0.1000 0.1000	0.0008 -0.1000 0.1000	0.0003 -0.1000 0.1000	-0.0001 -0.1000 0.1000	-0.0058 -0.1000 0.1000	-0.0015 -0.1000 0.1000	0.0046 -0.1000 0.1000
Coil 3 Q	0.0053 -0.5000 0.5000	0.0111 -0.2000 0.2000	-0.0069 -0.1000 0.1000	0.0017 -0.1000 0.1000	0.0049 -0.1000 0.1000	-0.0039 -0.1000 0.1000	-0.0037 -0.1000 0.1000	0.0055 -0.1000 0.1000
Coil 4 R	-0.1629 -0.5000 0.5000	0.0053 -0.2000 0.2000	0.0158 -0.2000 0.2000	-0.0071 -0.2000 0.2000	0.0080 -0.2000 0.2000	-0.0029 -0.2000 0.2000	-0.0031 -0.2000 0.2000	-0.0051 -0.2000 0.2000
Coil 4 Q	-0.0264 -1.0000 1.0000	0.0575 -0.4000 0.4000	-0.0160 -0.2000 0.2000	0.0011 -0.2000 0.2000	0.0105 -0.2000 0.2000	0.0034 -0.2000 0.2000	0.0097 -0.2000 0.2000	-0.0032 -0.2000 0.2000
Coil 5 R	-0.2848 -1.2000 1.2000	0.0000 -0.4000 0.4000	0.0340 -0.4000 0.4000	-0.0131 -0.4000 0.4000	0.0172 -0.4000 0.4000	0.0038 -0.4000 0.4000	-0.0028 -0.4000 0.4000	0.0121 -0.4000 0.4000
Coil 5 Q	-0.0953 -1.5000 1.5000	0.0862 -0.8000 0.8000	-0.0395 -0.4000 0.4000	-0.0039 -0.4000 0.4000	-0.0029 -0.4000 0.4000	-0.0321 -0.4000 0.4000	0.0048 -0.4000 0.4000	-0.0039 -0.4000 0.4000

ELEC. GAINS	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 M	160.91 136.00 186.00	159.47 134.00 184.00	156.56 131.00 181.00	152.20 126.00 176.00	146.36 122.00 170.00	139.23 118.00 161.00	130.75 112.00 150.00	121.11 105.00 139.00
Coil 0 P	7.649 6.000 9.000	25.964 21.000 30.000	43.696 35.000 50.000	61.382 49.000 71.000	79.061 63.000 91.000	96.756 77.000 109.000	114.457 92.000 130.000	132.134 106.000 151.000
Coil 1 M	289.40 238.00 328.00	286.53 235.00 325.00	280.80 230.00 320.00	272.30 225.00 312.00	261.06 218.00 302.00	247.48 208.00 288.00	231.47 196.00 266.00	213.56 184.00 244.00
Coil 1 P	7.888 6.000 9.000	26.518 21.000 30.000	44.583 35.000 51.000	62.568 49.000 71.000	80.530 63.000 92.000	98.469 78.000 112.000	116.348 93.000 130.000	134.180 107.000 151.000
Coil 2 M	579.92 479.00 659.00	574.51 474.00 654.00	563.51 463.00 643.00	547.10 450.00 622.00	525.30 432.00 602.00	498.54 412.00 572.00	466.91 390.00 540.00	431.21 359.00 499.00
Coil 2 P	7.829 6.000 9.000	26.409 21.000 31.000	44.428 35.000 51.000	62.386 49.000 71.000	80.342 63.000 92.000	98.298 76.000 115.000	116.224 92.000 135.000	134.065 105.000 155.000

Coil 3 P	0.023	0.004	0.123	0.158	0.197	0.257	0.248
	-1.500 1.500	-1.500 1.500	-1.500 1.500	-1.500 1.500	-1.500 1.500	-1.500 1.500	-1.500 1.500
Coil 4 M	1.002	1.003	1.003	1.002	1.002	1.002	1.000
	0.900 1.100	0.900 1.100	0.900 1.100	0.900 1.100	0.900 1.100	0.900 1.100	0.900 1.100
Coil 4 P	-0.025	0.034	0.104	0.123	0.190	0.210	0.244
	-1.500 1.500	-1.500 1.500	-1.500 1.500	-1.500 1.500	-1.500 1.500	-1.500 1.500	-1.500 1.500
Coil 5 M	1.010	1.011	1.010	1.010	1.010	1.008	1.007
	0.900 1.100	0.900 1.100	0.900 1.100	0.900 1.100	0.900 1.100	0.900 1.100	0.900 1.100
Coil 5 P	-0.026	0.069	0.145	0.194	0.266	0.355	0.378
	-1.500 1.500	-1.500 1.500	-1.500 1.500	-1.500 1.500	-1.500 1.500	-1.500 1.500	-1.500 1.500

PARMS TCID 0 TCID 1 Cal Temp T Factor
(degF)
IDs 2.785 0.809 64.4 1.00

HDIL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 1530XA 402505 DATE/TIME PERFORMED: Wed Apr 16 01:46:19 2014 DAYS SINCE CAL: 179

UNIT #: 3880TA ML4290

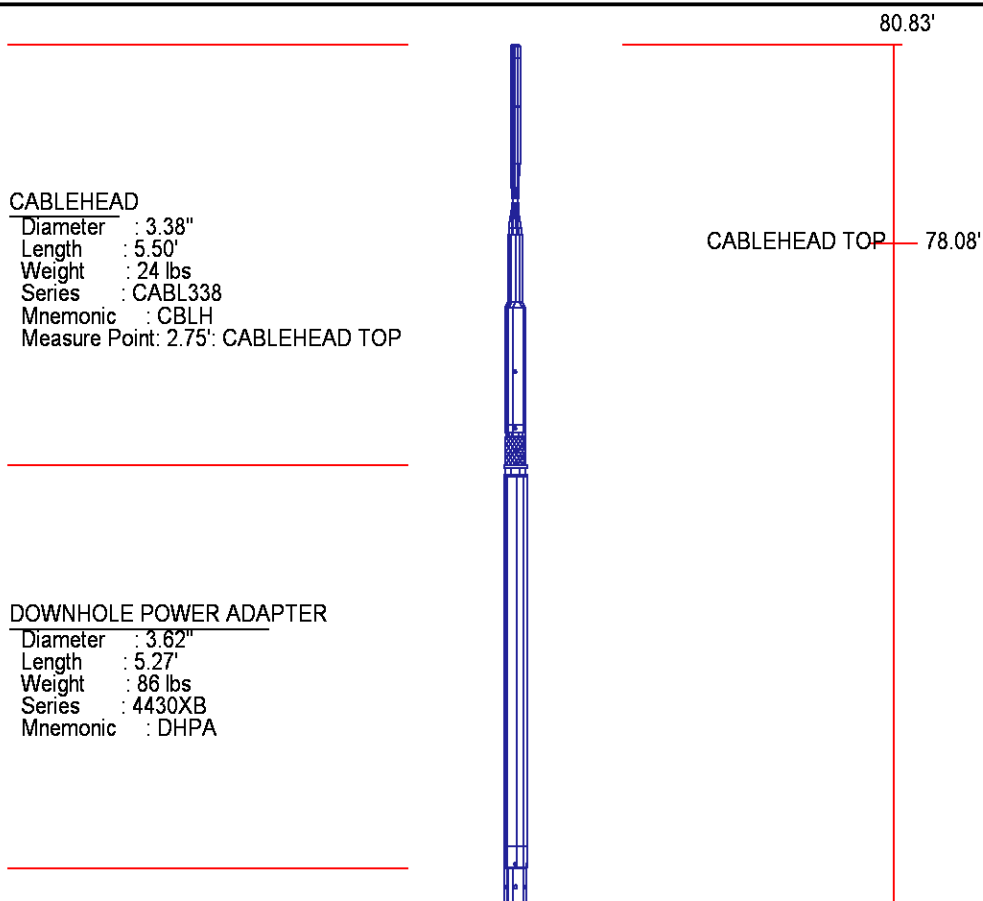
ZERO DATA(mv)	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 R	-0.012	0.003	0.001	-0.000	0.001	0.001	0.000	0.001
	-0.200 0.200	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100
Coil 0 Q	0.009	0.002	-0.003	0.001	0.002	0.001	-0.001	0.001
	-0.500 0.500	-0.200 0.200	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100
Coil 1 R	-0.014	0.003	0.001	-0.001	0.005	0.000	-0.002	0.000
	-0.200 0.200	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100
Coil 1 Q	0.010	0.003	-0.002	0.001	0.001	-0.000	-0.000	-0.001
	-0.500 0.500	-0.200 0.200	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100
Coil 2 R	-0.015	0.003	-0.000	0.002	0.003	0.000	0.002	0.003
	-0.200 0.200	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100
Coil 2 Q	0.007	0.005	-0.002	0.001	-0.000	-0.001	-0.004	-0.002
	-0.500 0.500	-0.200 0.200	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100
Coil 3 R	-0.034	-0.006	0.005	-0.003	0.003	-0.007	-0.003	0.002
	-0.300 0.300	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100
Coil 3 Q	0.000	0.016	-0.005	-0.000	0.006	-0.004	0.000	0.002
	-0.500 0.500	-0.200 0.200	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100
Coil 4 R	-0.167	-0.001	0.021	-0.002	0.004	0.005	0.008	0.008
	-0.500 0.500	-0.200 0.200	-0.200 0.200	-0.200 0.200	-0.200 0.200	-0.200 0.200	-0.200 0.200	-0.200 0.200
Coil 4 Q	-0.021	0.061	-0.025	0.002	0.007	-0.011	0.004	0.001
	-1.000 1.000	-0.400 0.400	-0.200 0.200	-0.200 0.200	-0.200 0.200	-0.200 0.200	-0.200 0.200	-0.200 0.200
Coil 5 R	-0.292	-0.009	0.018	-0.014	0.019	-0.008	-0.008	0.002
	-1.200 1.200	-0.400 0.400	-0.400 0.400	-0.400 0.400	-0.400 0.400	-0.400 0.400	-0.400 0.400	-0.400 0.400
Coil 5 Q	-0.087	0.114	-0.034	-0.004	0.014	-0.010	0.018	0.002
	-1.500 1.500	-0.800 0.800	-0.400 0.400	-0.400 0.400	-0.400 0.400	-0.400 0.400	-0.400 0.400	-0.400 0.400

ELEC. GAINS	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 M	160.86	159.42	156.49	152.11	146.31	139.13	130.66	120.97
	136.00 186.00	134.00 184.00	131.00 181.00	126.00 176.00	122.00 170.00	118.00 161.00	112.00 150.00	105.00 139.00
Coil 0 P	7.625	25.946	43.680	61.360	79.042	96.727	114.416	132.062
	-1.000 12.000	19.000 30.000	35.000 50.000	49.000 71.000	63.000 91.000	77.000 110.000	92.000 130.000	105.000 151.000

Coil 1 M	289.44 237.00 327.00	286.58 235.00 325.00	280.81 230.00 320.00	272.27 225.00 312.00	261.09 218.00 302.00	247.43 208.00 288.00	231.42 196.00 266.00	213.44 184.00 244.00
Coil 1 P	7.867 -1.000 12.000	26.501 19.000 30.000	44.562 35.000 51.000	62.545 49.000 71.000	80.500 63.000 92.000	98.424 77.000 112.000	116.312 92.000 132.000	134.114 105.000 153.000
Coil 2 M	579.88 479.00 659.00	574.44 474.00 654.00	563.44 463.00 643.00	546.94 450.00 622.00	525.15 432.00 602.00	498.38 412.00 572.00	466.73 390.00 540.00	430.85 359.00 499.00
Coil 2 P	7.804 -1.000 12.000	26.388 19.000 31.000	44.396 35.000 51.000	62.352 49.000 71.000	80.297 63.000 92.000	98.228 77.000 114.000	116.143 92.000 135.000	133.973 105.000 156.000
Coil 3 M	922.60 772.00 1080.00	914.14 764.00 1050.00	896.80 752.00 1030.00	871.04 728.00 1010.00	837.19 700.00 970.00	795.59 665.00 925.00	746.98 628.00 868.00	692.20 589.00 799.00
Coil 3 P	7.604 -2.000 13.000	25.841 19.000 31.000	43.485 35.000 52.000	61.055 49.000 72.000	78.605 63.000 93.000	96.130 77.000 114.000	113.640 92.000 135.000	131.071 105.000 156.000
Coil 4 M	1448.6 1210.0 1700.0	1437.2 1205.0 1690.0	1412.8 1180.0 1650.0	1376.5 1140.0 1590.0	1327.5 1120.0 1530.0	1265.0 1070.0 1450.0	1190.4 1000.0 1350.0	1104.1 942.0 1240.0
Coil 4 P	7.814 -2.000 13.000	26.280 19.000 31.000	44.242 35.000 52.000	62.193 49.000 73.000	80.195 63.000 93.000	98.269 78.000 114.000	116.405 92.000 135.000	134.525 105.000 156.000
Coil 5 M	2994.4 2450.0 3450.0	2964.2 2420.0 3400.0	2900.5 2410.0 3320.0	2808.8 2350.0 3200.0	2687.5 2280.0 3080.0	2543.1 2150.0 2950.0	2376.7 2020.0 2750.0	2193.8 1870.0 2570.0
Coil 5 P	7.906 -2.000 13.000	26.837 19.000 31.000	45.144 35.000 52.000	63.296 49.000 73.000	81.369 63.000 94.000	99.367 79.000 114.000	117.269 93.000 135.000	135.017 106.000 156.000

INSTRUMENT CONFIGURATION

Source File: /dat1a/CHESAPEAKE/JAMES_MESSENGER_WTZ_3H_R1/CHK_R2_TC~2.tdg



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

TEMP MP — 67.61'
RM MP — 67.36'

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 : 1329XA
Mnemonic : DSL
Measure Point: 1.60': GR MP

GR MP — 54.15'

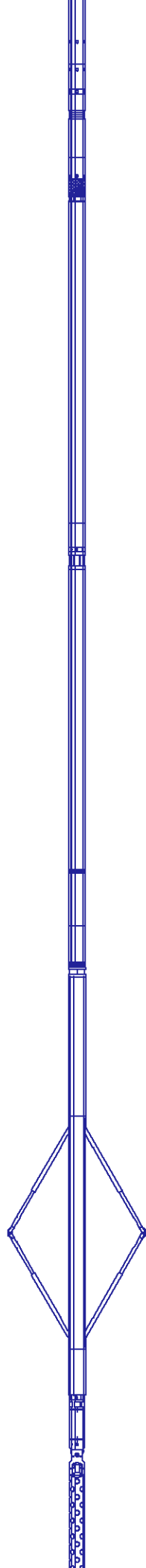
WELL GEOMETRY INSTRUMENT

Diameter : 3.62"
Length : 7.61'
Weight : 100 lbs
Series : 4253XA
Mnemonic : WGI
Measure Point: 2.85': RADII MP

RADII MP — 47.78'

KNUCKLE JOINT (DOUBLE)

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



Mnemonic : KNJ1

WTS FOCUS TELEMETRY TRANSFORMER SUB

Diameter : 3.63"
Length : 5.44'
Weight : 67 lbs
Series : 3526EB
Mnemonic : ADAP

WTS FOCUS POWER ADAPTOR

Diameter : 3.63"
Length : 3.62'
Weight : 156 lbs
Series : 3526FB
Mnemonic : ADAP

FOCUS COMPENSATED NEUTRON

Diameter : 3.13"
Length : 4.81'
Weight : 65 lbs
Series : 2436XA
Mnemonic : CN
Measure Point: 1.92': LSN MP
Measure Point: 1.46': SSN MP

LSN MP — 28.33'
SSN MP — 27.88'

FOCUS Z-DENSILOG

Diameter : 3.75"
Length : 9.58'
Weight : 200 lbs
Series : 2223XA
Mnemonic : ZDL
Measure Point: 4.33': CR1 MP
Measure Point: 1.69': LSD / CR2 MP
Measure Point: 1.29': SSD MP

CR1 MP — 21.17'

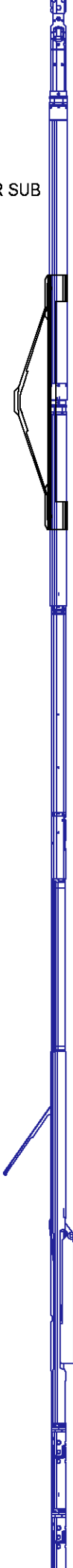
LSD / CR2 MP — 18.52'
SSD MP — 18.13'

FOCUS KNUCKLE JOINT

Diameter : 3.13"
Length : 1.50'
Weight : 30 lbs
Series : 3930XA

FOCUS KNUCKLE JOINT

Diameter : 3.13"
Length : 1.50'
Weight : 30 lbs



Weight : 30 lbs
 Series : 3930XA

FOCUS HIGH DEFINITION INDUCTION TOOL


Diameter : 3.13"
 Length : 13.33'
 Weight : 115 lbs
 Series : 1530XA
 Mnemonic : HDIL
 Measure Point: 7.17': COIL 5 MP
 Measure Point: 5.67': COIL 4 MP
 Measure Point: 4.17': COIL 3 MP
 Measure Point: 3.67': COIL 2 MP
 Measure Point: 3.17': COIL 1 MP
 Measure Point: 2.67': COIL 0 MP
 Measure Point: 1.14': SP MP

COIL 5 MP — 7.67'
 COIL 4 MP — 6.17'
 COIL 3 MP — 4.67'
 COIL 2 MP — 4.17'
 COIL 1 MP — 3.67'
 COIL 0 MP — 3.17'
 SP MP — 1.64'
 0.00'



FOCUS PINEAPPLE / CABBAGE

TOTAL LENGTH: 80.83'
 TOTAL WEIGHT: 1298 lbs
 MAX DIAMETER: 0'6.13"

	COMPANY <u>CHESAPEAKE APPALCHIA, LLC.</u> WELL <u>JAMES MESSENGER WTZ 3H U</u> FIELD <u>WETZEL</u> COUNTY <u>WETZEL</u> STATE <u>WEST VIRGINIA</u>	FILE NO: <hr/> API NO: <u>47-103-02973</u>
	LOCATION: STATE TOWNSHIP: PROCTOR QUAD: WILEYVILLE LAT <u>39.673693 N</u> LONG <u>80.690861 W</u>	ELEVATIONS: KB 1517 FT DF 1517 FT GL 1495 FT DATE <u>16-APR-2014</u>