Weatherford®

CML MESSENGER SHUTTLE ARRAY INDUCTION ELECTRIC LOG

COMPANY	VESS OIL CORP.
WELL	MCCORD 'A' 20H
FIELD	BEMIS SHUTTS
PROVINCE/COUNTY	ELLIS
COUNTRY/STATE	USA / KANSAS
LOCATION	1680' FNL & 788' FEL

40 Years of Wireline 1979 2019

SEC	TWP	RGE	Other Services
26	11S	17W	MPD/MDN CMI
			CXD

API Number 15-051-26218.010
Permit Number

Permanent Datum G.L., Elevation 2091 feet
Log Measured From K.B. @ 9.6 FEET above Permanent Datum
Drilling Measured From K.B.

Elevations:	feet
KB	2100.60
DF	2099.00
GL	2091.00

Date	23-NOV-2011			
Run Number	ONE			
Depth Driller	5805.00	feet		
Depth Logger	5805.00	feet		
First Reading	5780.00	feet		
Last Reading	3740.00	feet		
Casing Driller	3740.00	feet		
Casing Logger	3740.00	feet		
Bit Size	6.125	inches		
Hole Fluid Type	CHEM			
Density / Viscosity	9.20 lb/USg		63.00 CP	
PH / Fluid Loss	10.50		6.80 ml/30Min	
Sample Source	FLOWLINE			
Rm @ Measured Temp	0.80 @ 55.0	ohm-m		
Rmf @ Measured Temp	0.64 @ 55.0	ohm-m		
Rmc @ Measured Temp	0.96 @ 55.0	ohm-m		
Source Rmf / Rmc	CALC		CALC	
Rm @ BHT	0.41 @105.0	ohm-m		
Time Since Circulation	6 HOURS			
Max Recorded Temp	105.00	deg F		
Equipment Name	COMPACT			
Equipment / Base	18006		OKC	
Recorded By	D. ROWELL			
Witnessed By	R. MARTIN		MARTIN	
S.O.# / AFE	3534253			

BOREHOLE RECORD

Last Edited: 23-NOV-2011 10:42

Bit Size inches	Depth From feet	Depth To feet
6.125	3740.00	5805.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
INTERMED	7.000	0.00	3740.00	26.00

REMARKS

WLS LOGGING SOFTWARE VERSION 11.02.3186 WAS USED

ALL LOGS WERE SET TO DEPTH WITH MWD GAMMA RAY

DRILL PIPE DEPTH DURING DEPLOYMENT: 5680
LOGGING TOOL DEPTH AFTER DEPLOYMENT: 5780

LAT: 39.06994 N
LONG: 99.16968 W

OPERATORS: M FISHER, J. TURNER
S.O: 3534253
RIG: MAVERICK 106

2 INCH MAIN LOG DSC

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: G:\Data\Vess McCord A 20H\Mccord A 20H plotted\GOOD RTAP.dta
System Versions: Processed with 11.03.4044 Plotted with 12.03.5032

Plotted on 02-DEC-2011 16:23
Recorded on 22-NOV-2011 23:03

Timing Marks
every 60.0 sec

MGS Gamma Ray
API
0 75 150
150 225 300

Depth In Feet

Replay Scale 1:600

Array Ind. Four Cond Ct
mmhos
1000 750 500 250 0

Array Ind. Four Res 20
ohm metres
0 50 100
0 500 1000

Array Ind. Four Res Rt
ohm metres
0 50 100
0 500 1000

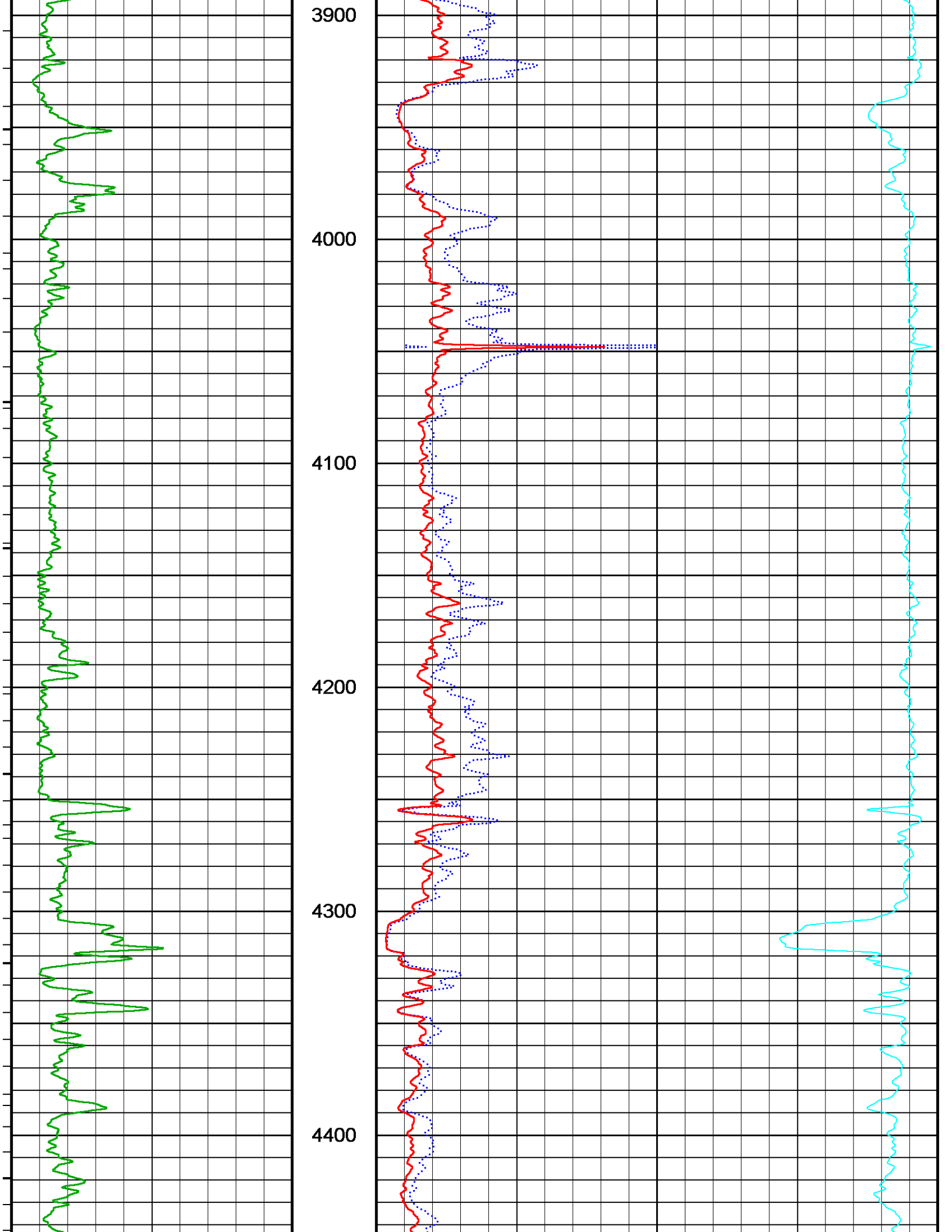
3600

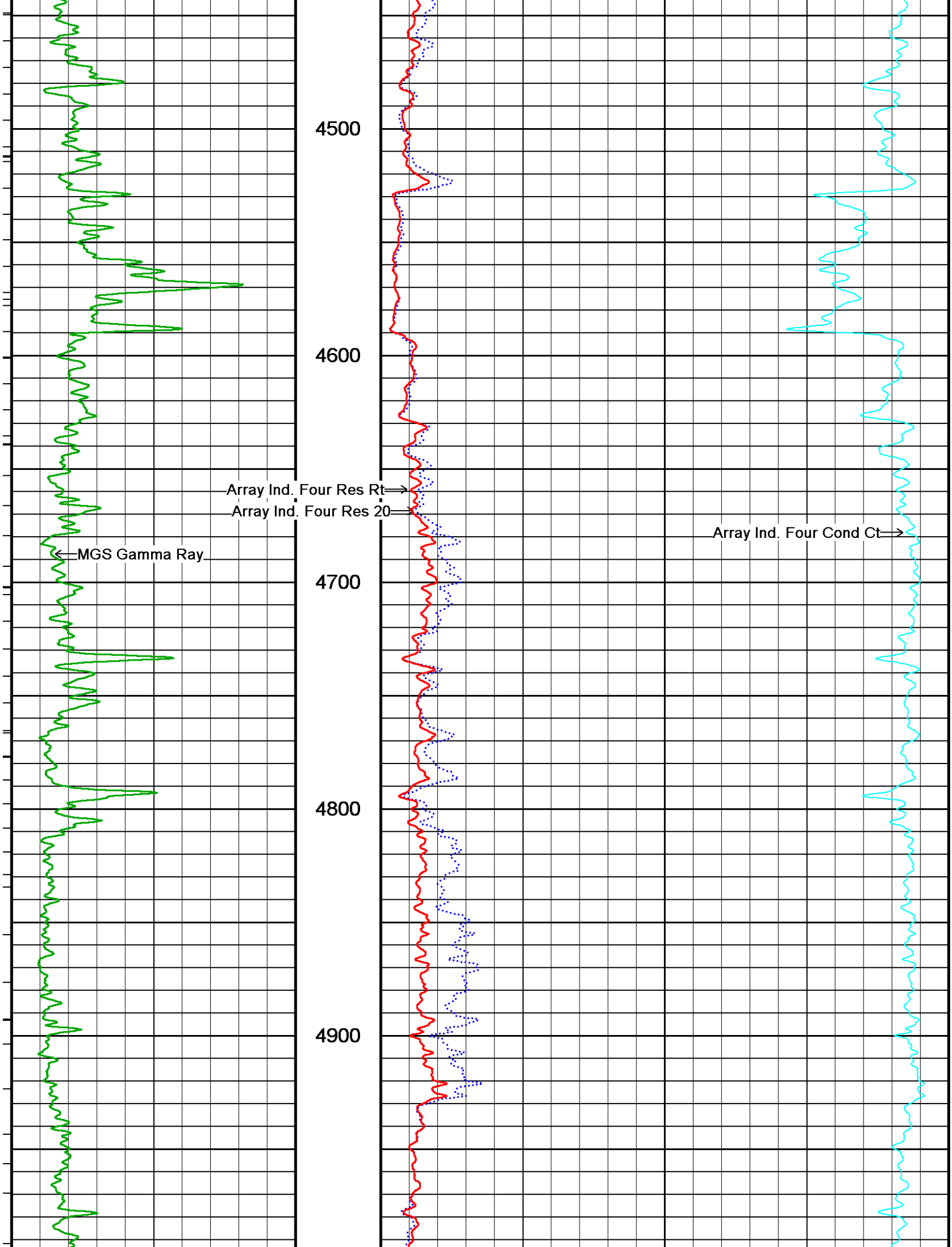
3700

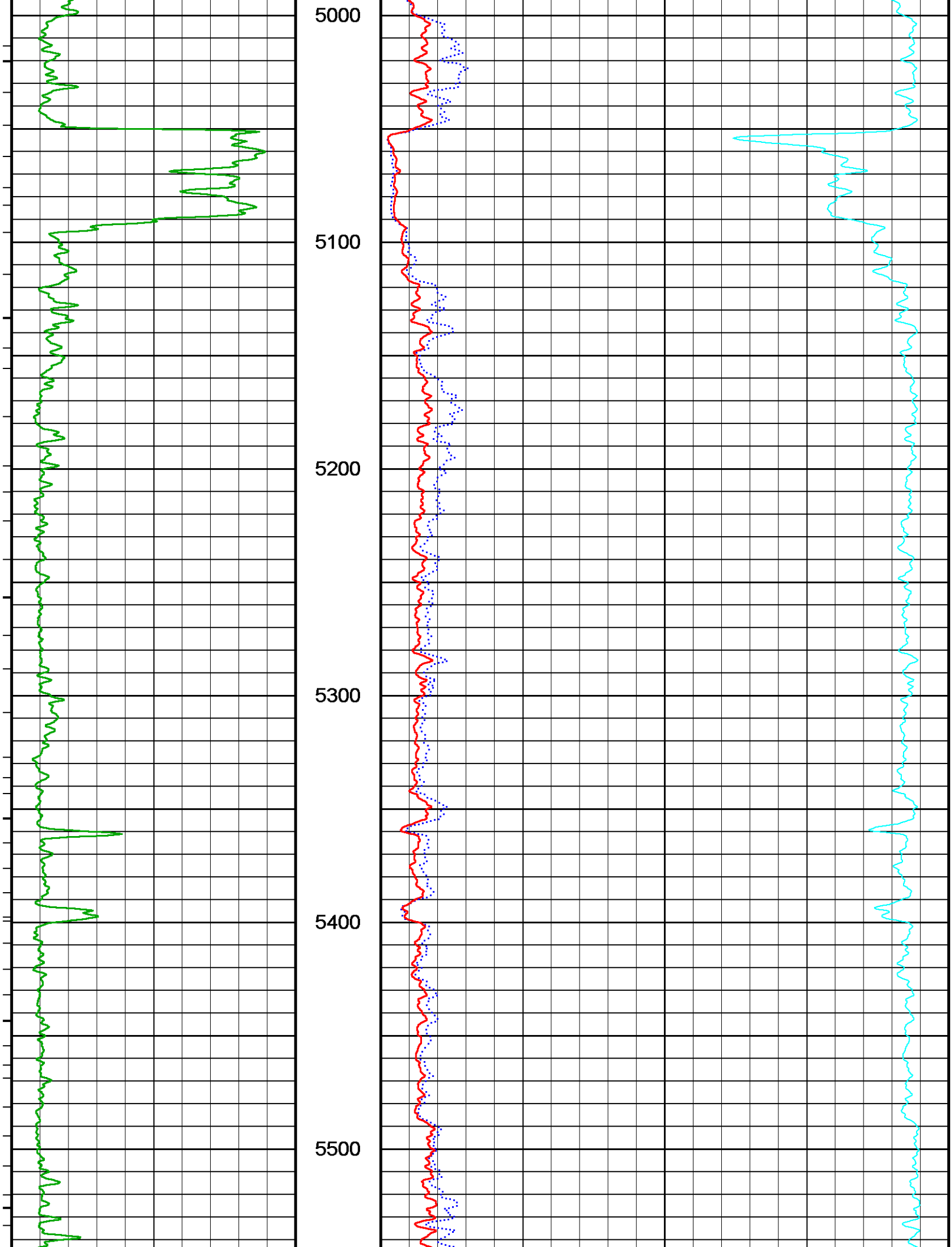
MGS Gamma Ray

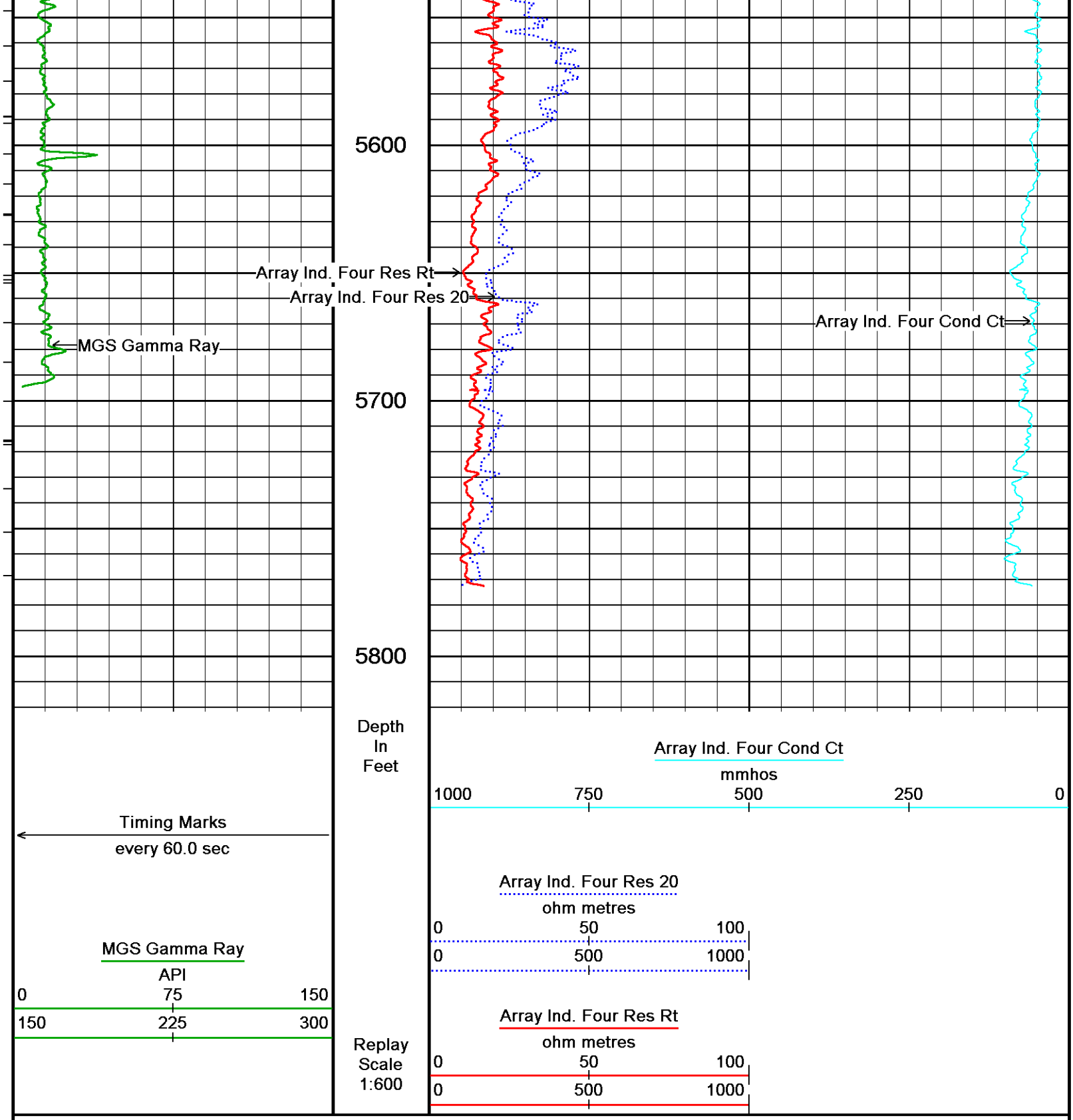
Casing Shoe

3800


3900
4000
4100
4200
4300
4400


4500
4600
4700
4800
4900
Array Ind. Four Res Rt
Array Ind. Four Res 20
Array Ind. Four Cond Ct
MGS Gamma Ray


5000
5100
5200
5300
5400
5500



Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 02-DEC-2011 16:23
Filename: G:\Data\Vess McCord A 20H\Mccord A 20H plotted\GOOD RTAP.dta
Recorded on 22-NOV-2011 23:03
System Versions: Processed with 11.03.4044 Plotted with 12.03.5032

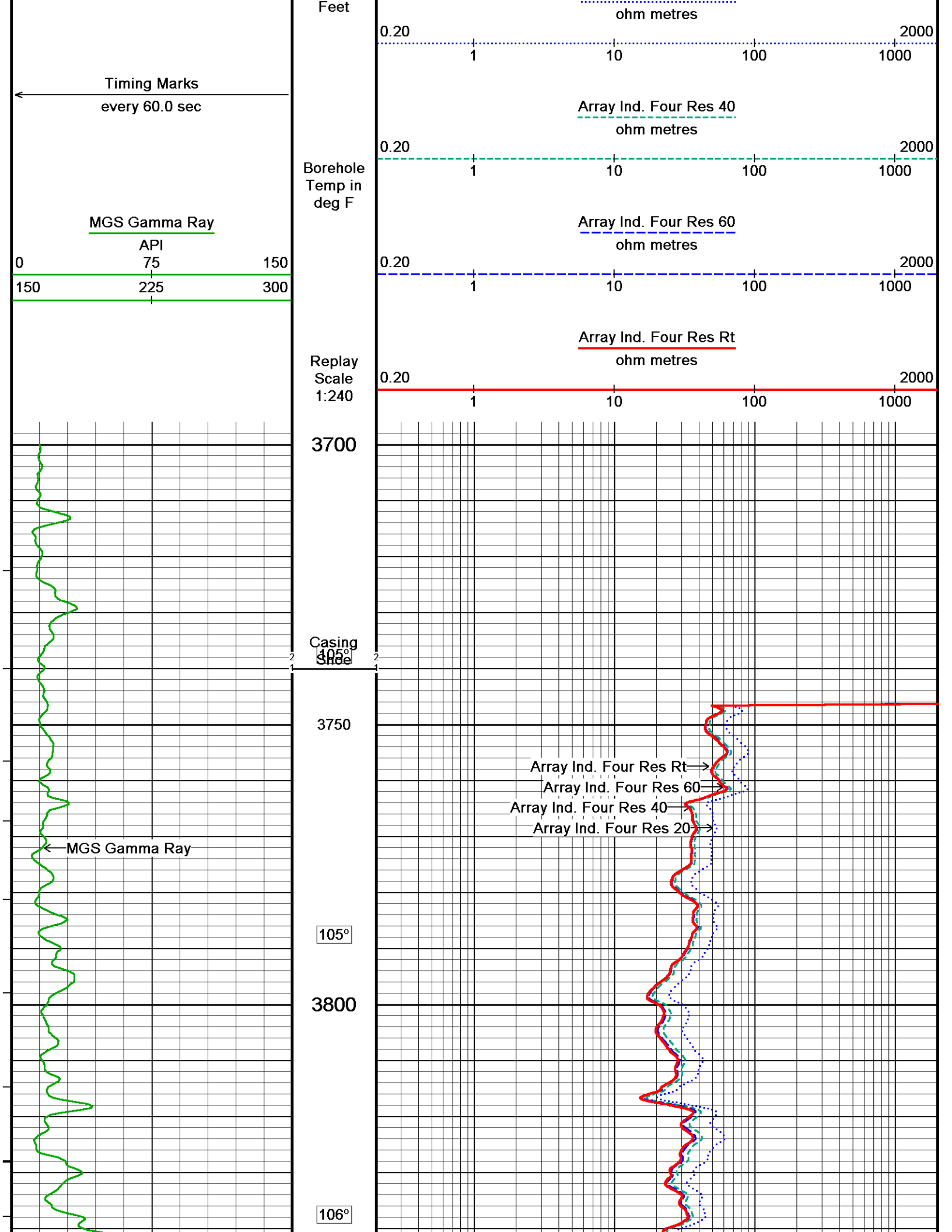
2 INCH MAIN LOG DSC

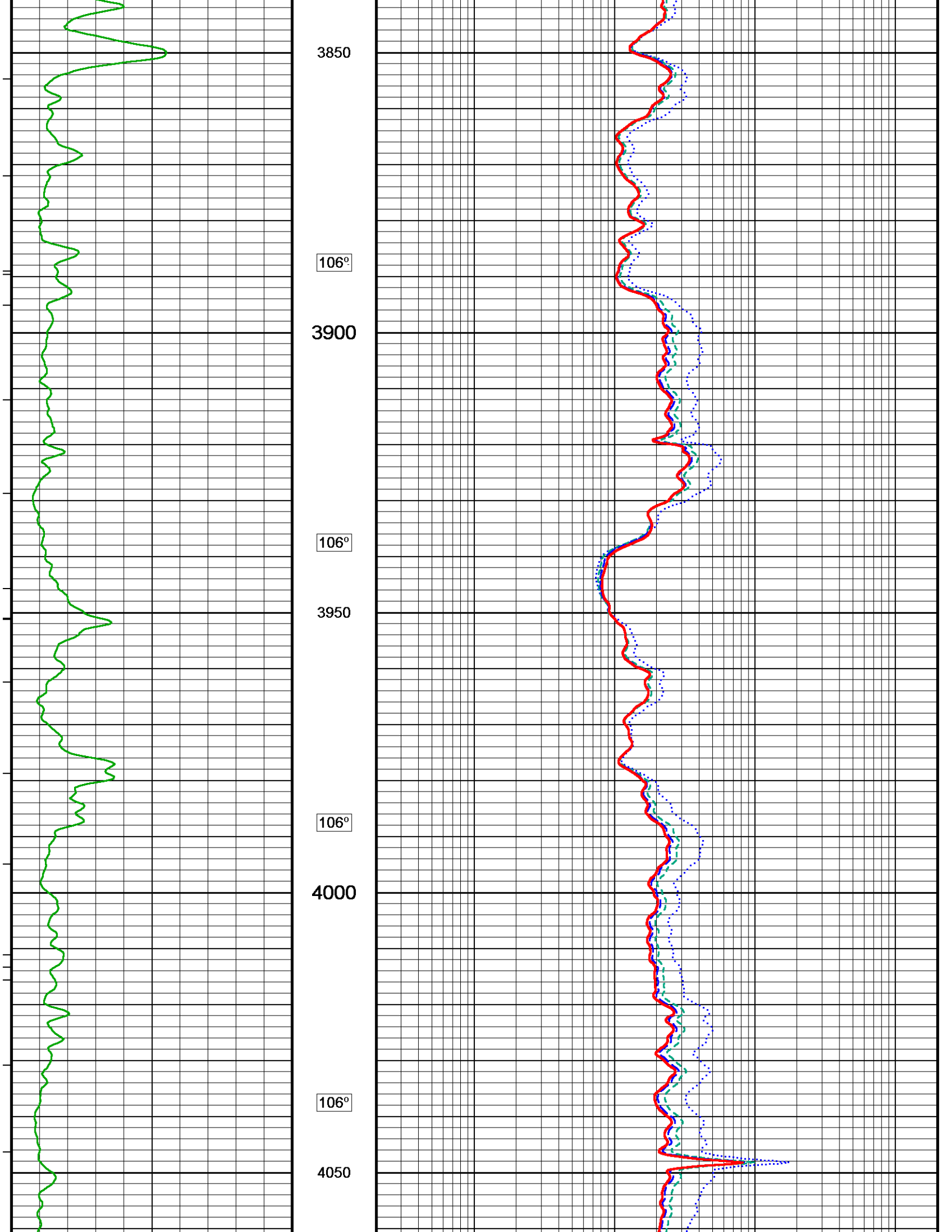
5 INCH MAIN LOG DSC

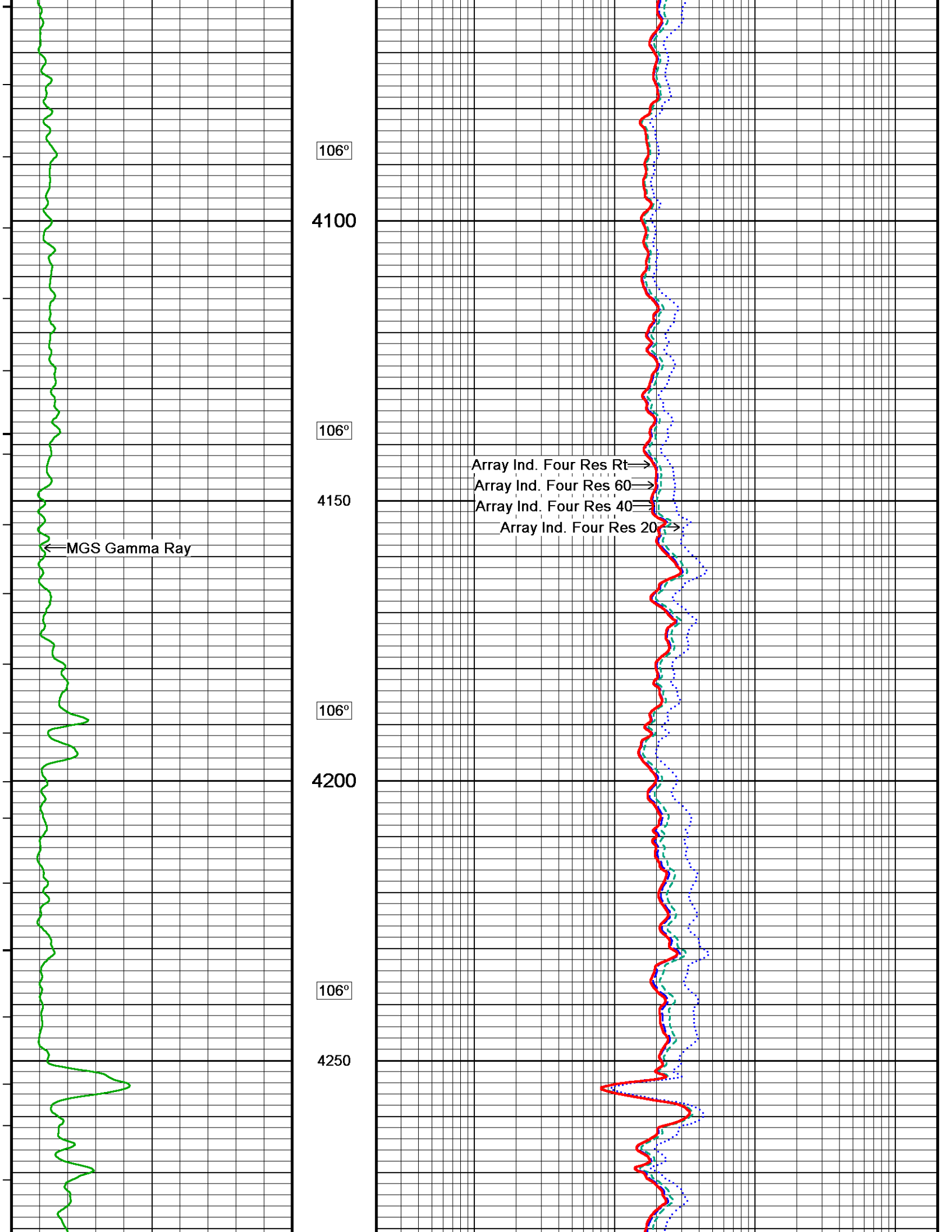
Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 02-DEC-2011 16:23
Filename: G:\Data\Vess McCord A 20H\Mccord A 20H plotted\GOOD RTAP.dta
Recorded on 22-NOV-2011 23:03
System Versions: Processed with 11.03.4044 Plotted with 12.03.5032

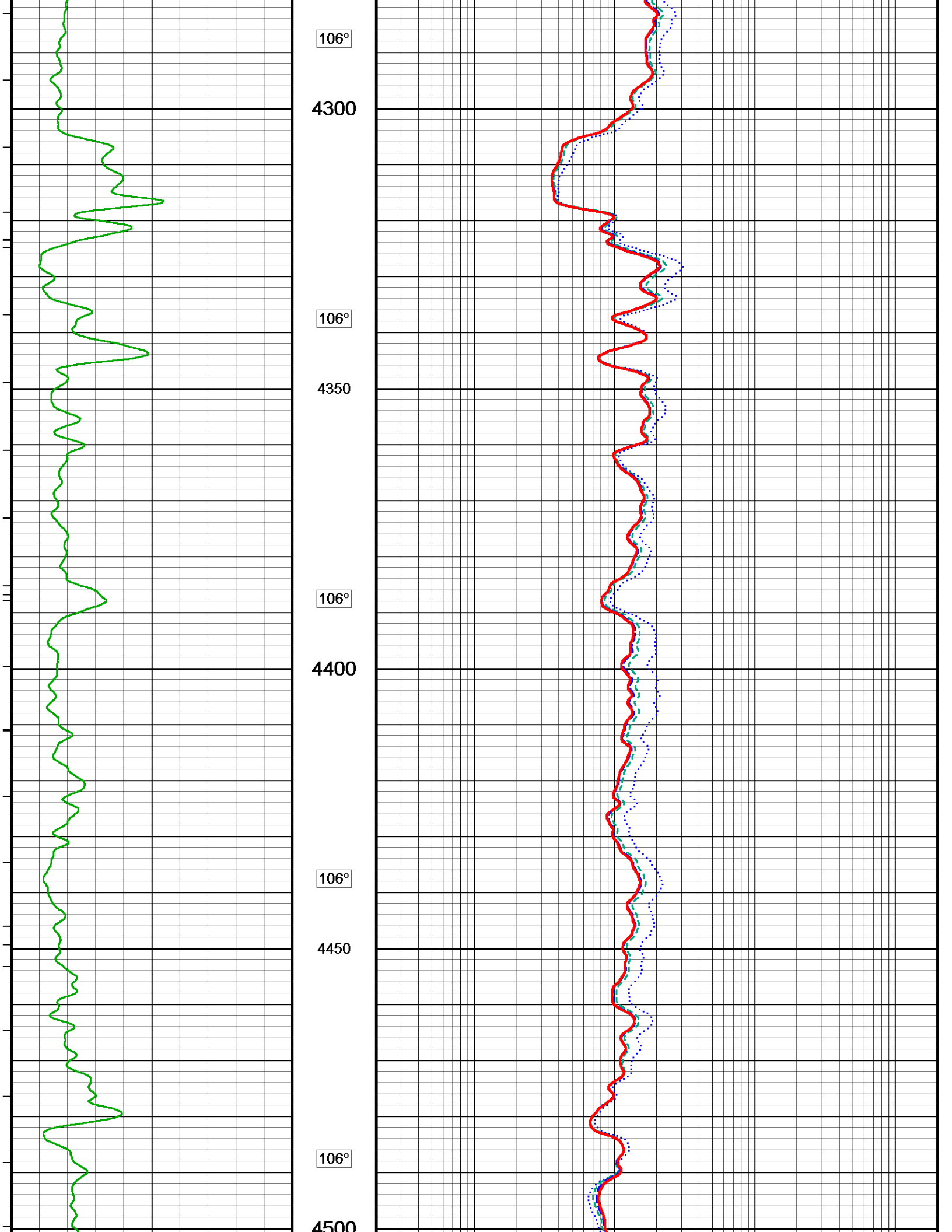
Depth
In

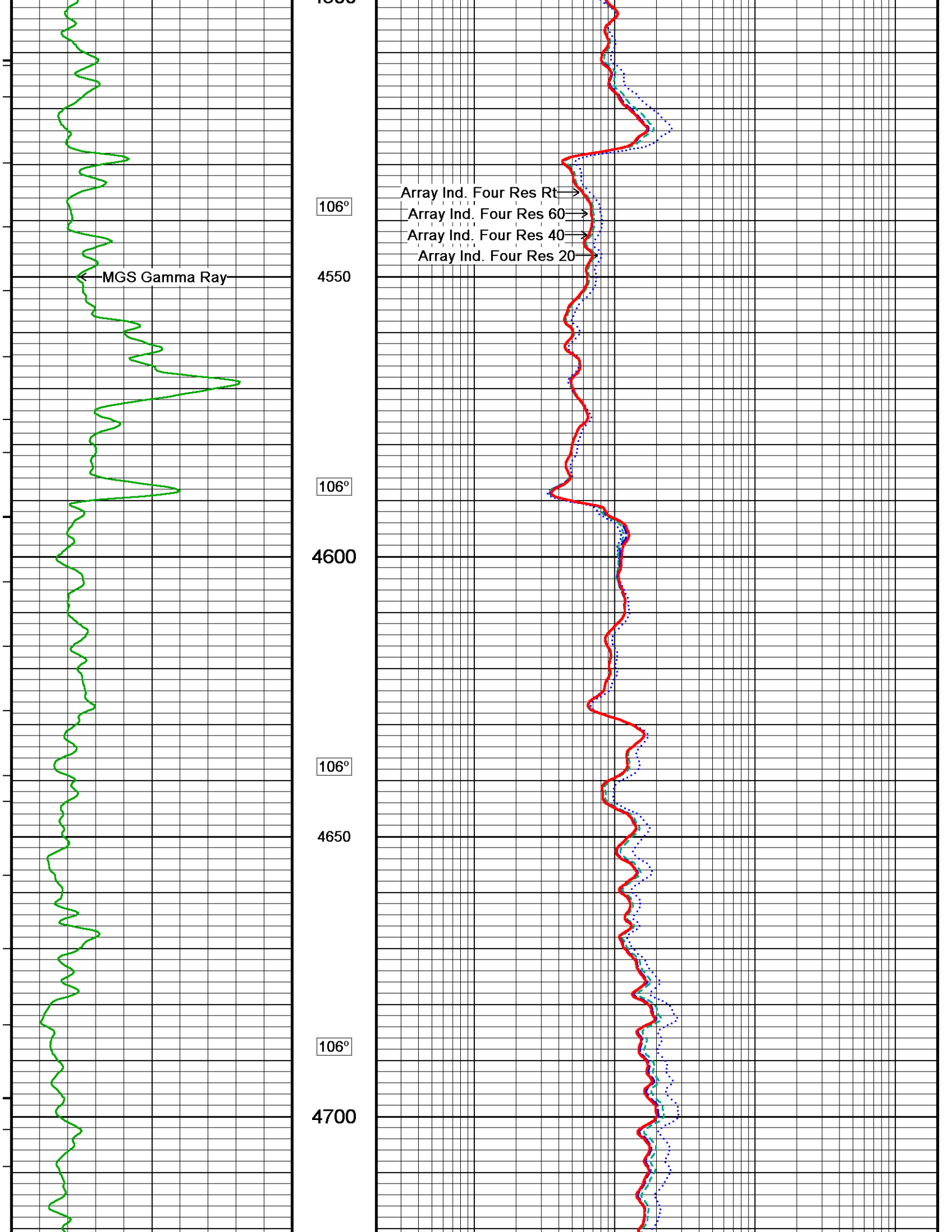
Array Ind. Four Res 20

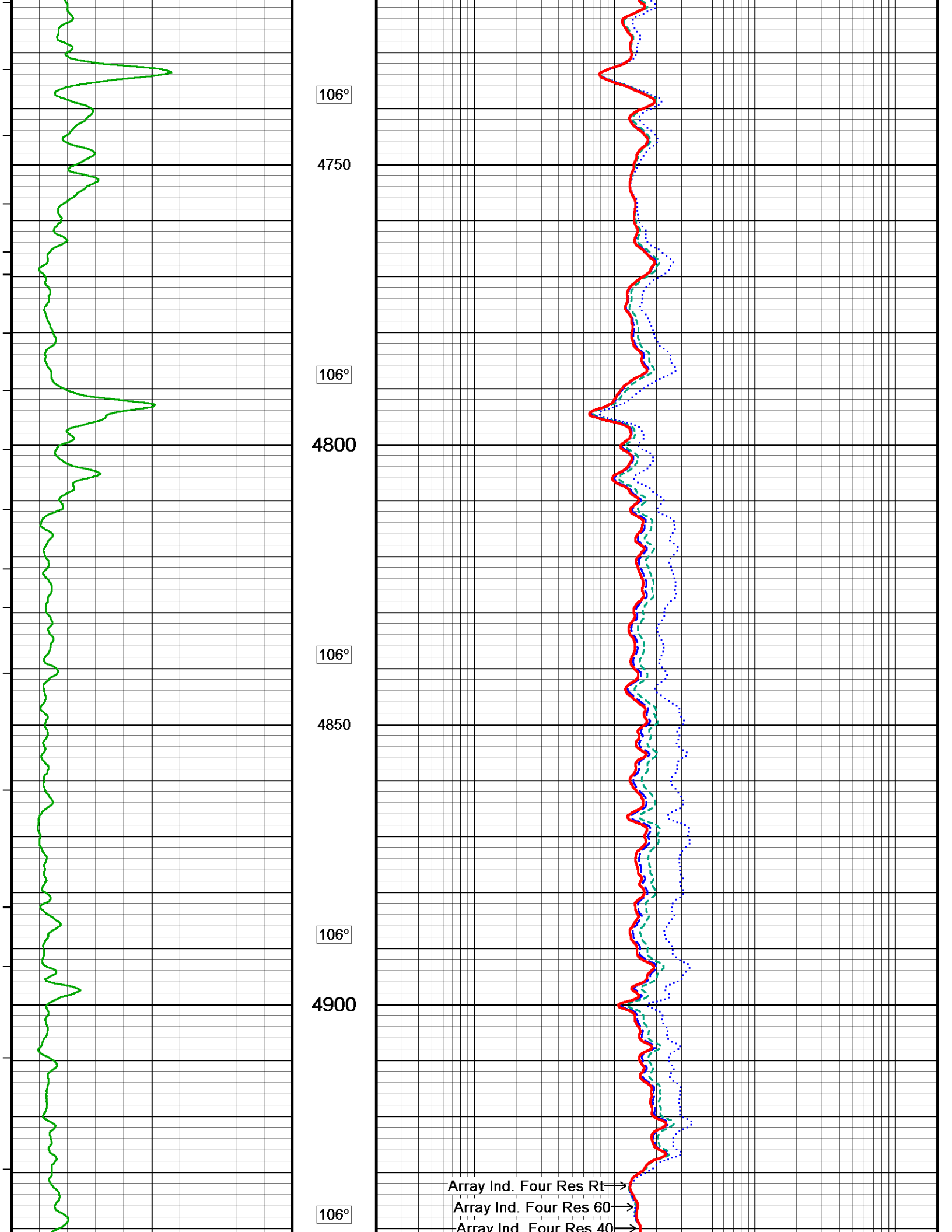

Feet
Timing Marks
every 60.0 sec
MGS Gamma Ray
API
0
75
150
150
225
300
Borehole Temp in deg F
Replay Scale 1:240
ohm metres
0.20
1
10
100
1000
2000
Array Ind. Four Res 20
Array Ind. Four Res 40
Array Ind. Four Res 60
Array Ind. Four Res Rt
3700
3750
3800
Casing Shoe
105°
106°
MGS Gamma Ray
Array Ind. Four Res Rt
Array Ind. Four Res 60
Array Ind. Four Res 40
Array Ind. Four Res 20

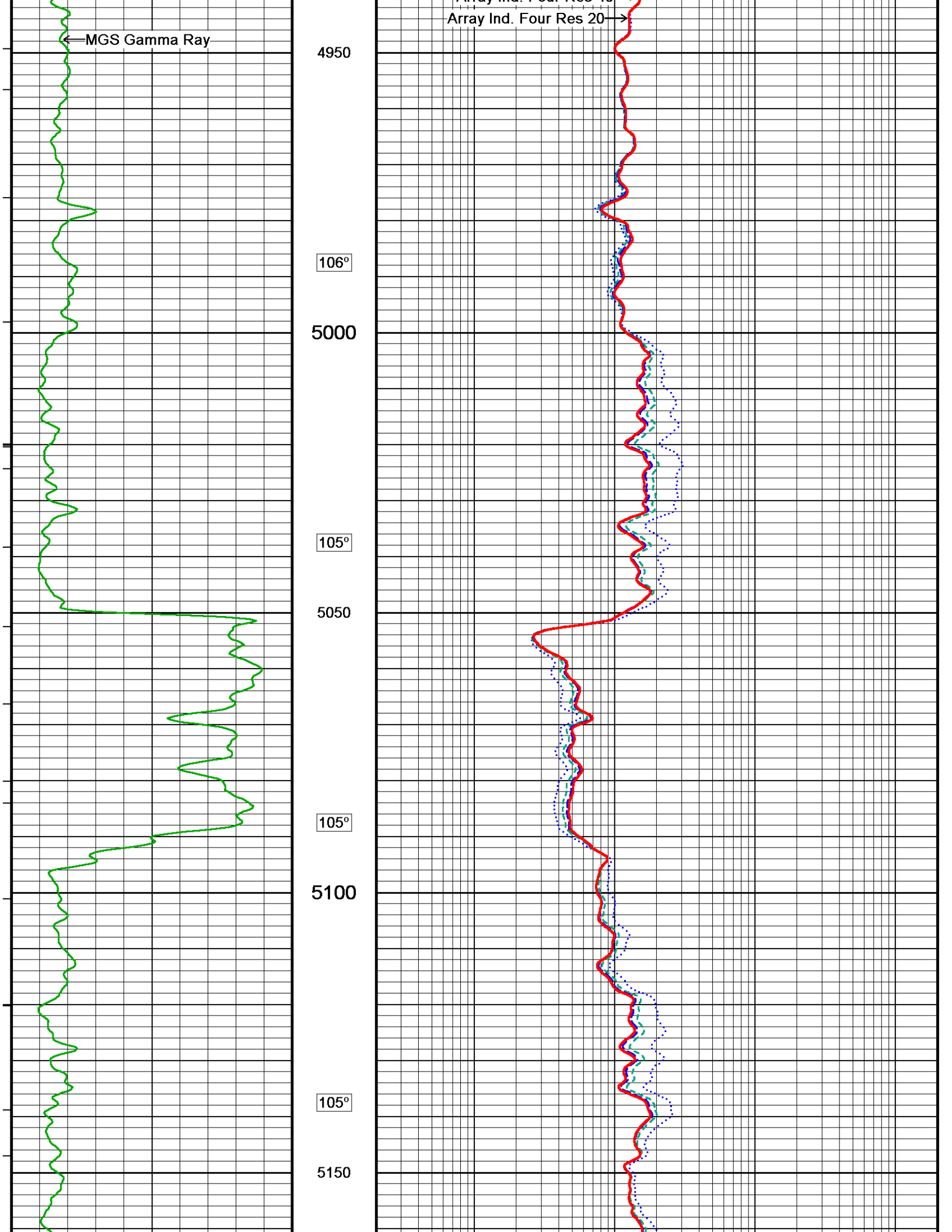

3850
106°
3900
106°
3950
106°
4000
106°
4050

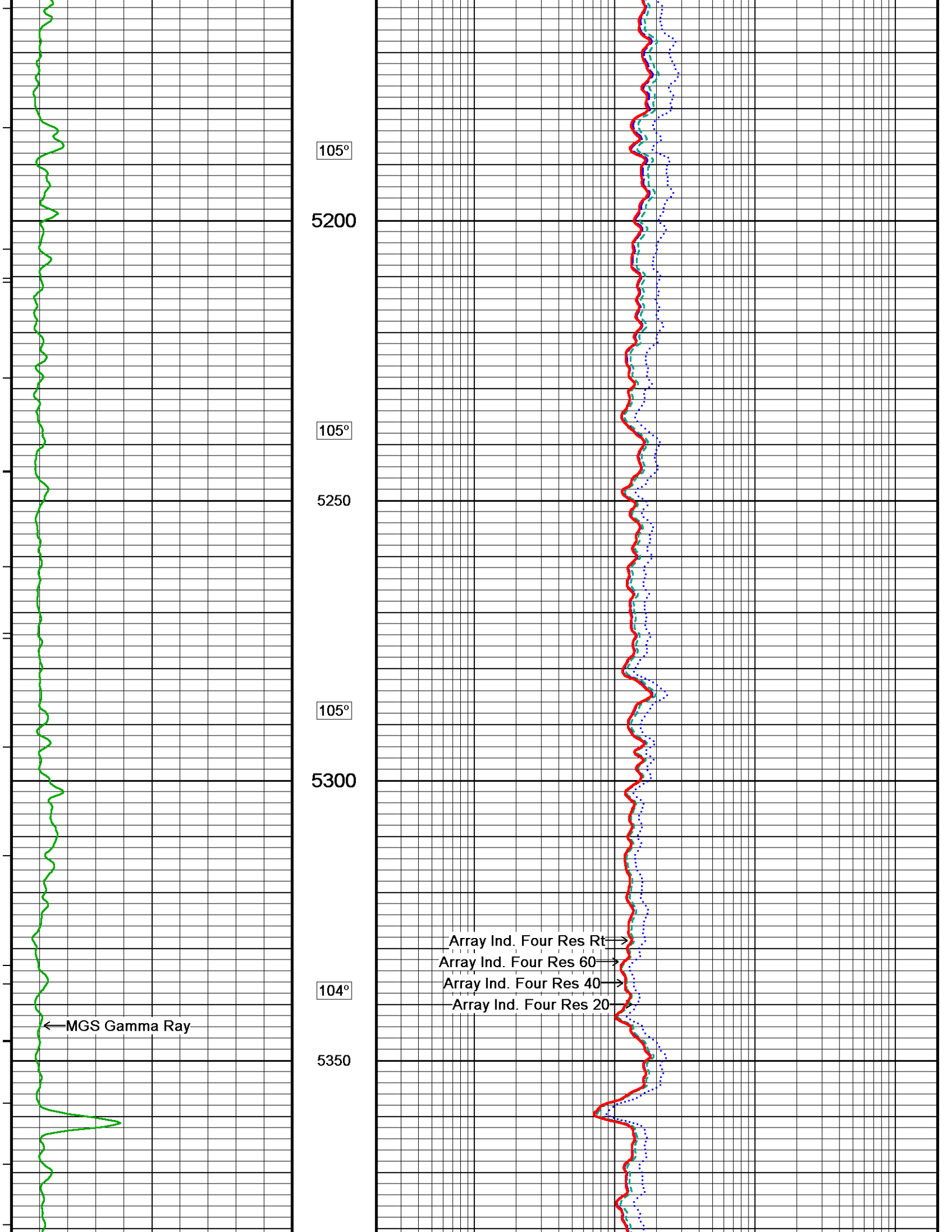

106°
4100
106°
4150
106°
4200
106°
4250
MGS Gamma Ray
Array Ind. Four Res Rt
Array Ind. Four Res 60
Array Ind. Four Res 40
Array Ind. Four Res 20

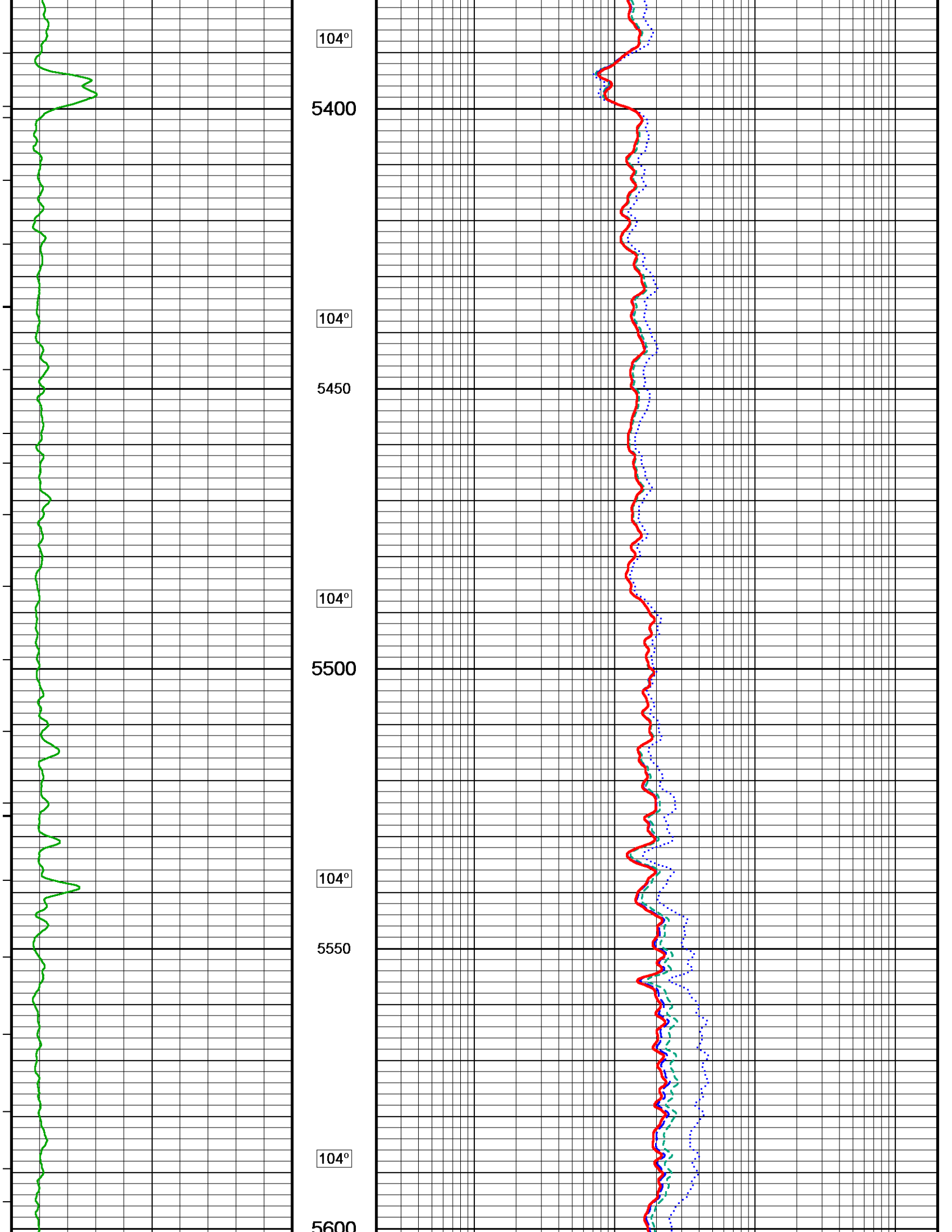

106°
4300
106°
4350
106°
4400
106°
4450
106°
4500

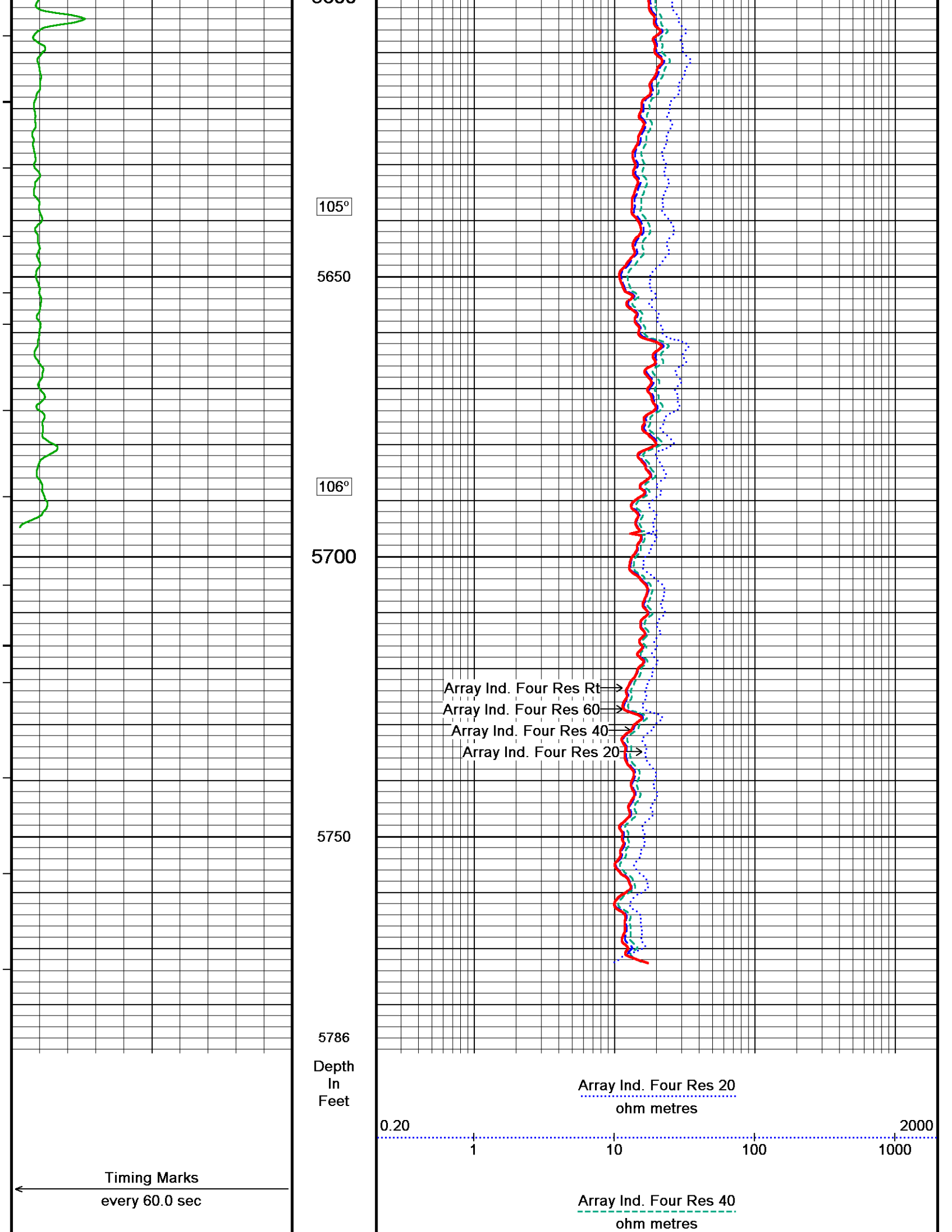

Array Ind. Four Res Rt
Array Ind. Four Res 60
Array Ind. Four Res 40
Array Ind. Four Res 20
106°
MGS Gamma Ray
4550
106°
4600
106°
4650
106°
4700

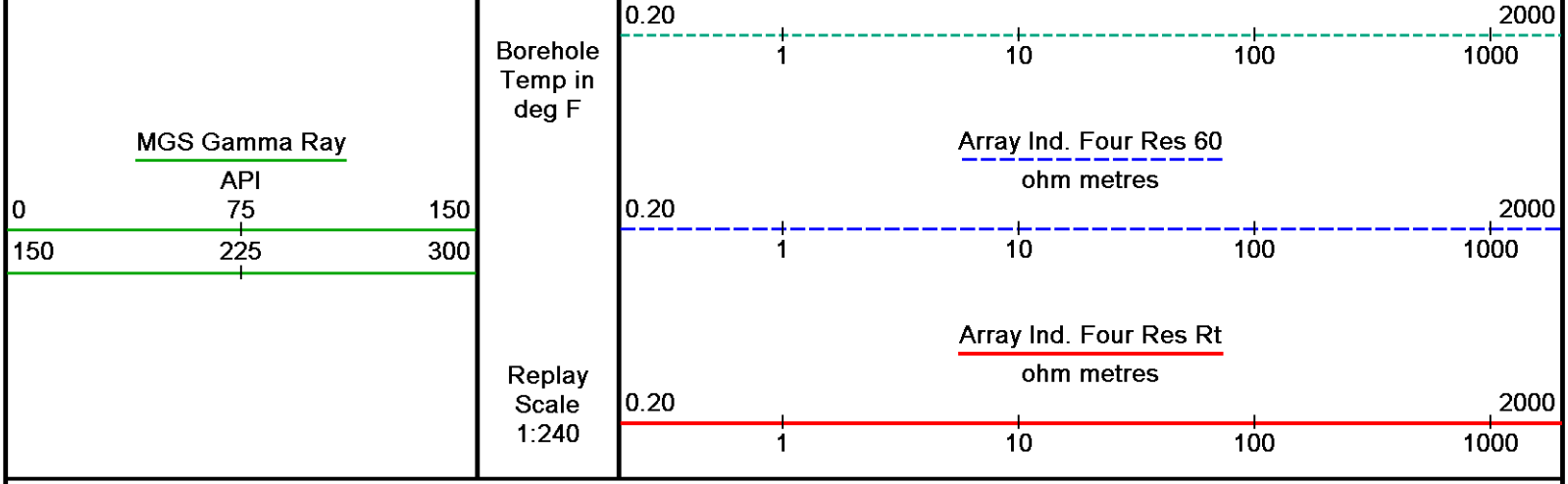

106°
4750
106°
4800
106°
4850
106°
4900
106°
Array Ind. Four Res Rt
Array Ind. Four Res 60
Array Ind. Four Res 40


MGS Gamma Ray
Array Ind. Four Res 20
4950
106°
5000
105°
5050
105°
5100
105°
5150


105°
5200
105°
5250
105°
5300
104°
5350
←MGS Gamma Ray
Array Ind. Four Res Rt→
Array Ind. Four Res 60→
Array Ind. Four Res 40→
Array Ind. Four Res 20→


104°
5400
104°
5450
104°
5500
104°
5550
104°
5600


105°
5650
106°
5700
5750
5786
Depth
In
Feet
Array Ind. Four Res Rt
Array Ind. Four Res 60
Array Ind. Four Res 40
Array Ind. Four Res 20
Array Ind. Four Res 20
ohm metres
0.20
2000
1
10
100
1000
Timing Marks
every 60.0 sec
Array Ind. Four Res 40
ohm metres



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 02-DEC-2011 16:23
Filename: G:\Data\Vess McCord A 20H\Mccord A 20H plotted\GOOD RTAP.dta — Recorded on 22-NOV-2011 23:03
System Versions: Processed with 11.03.4044 Plotted with 12.03.5032

5 INCH MAIN LOG DSC

BEFORE SURVEY CALIBRATION

G:\Data\Vess McCord A 20H\Mccord A 20H plotted\GOOD RTAP.dta

General Constants All 000

Last Edited on 23-NOV-2011,11:17

General Parameters		
Mud Resistivity	0.800	ohm-metres
Mud Resistivity Temperature	55.000	degrees F
Water Level	0.000	feet
Density/Neutron Processing	Wet Hole	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Method	Single Caliper	
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	N/A	
Annular Volume Diameter	4.500	inches
Caliper for Differential Caliper	MIE Caliper X	
Rwa Parameters		
Porosity used	Limestone Density Por.	
Resistivity used	Array Ind. Four Res Rt	
RWA Constant A	0.610	
RWA Constant M	2.150	

Down-hole Tension Calibration SMS 0

Field Calibration on 29-MAR-2011 00:00

Reading No	Measured	Calibrated (lbs)
1	15152.07	0.00
2	19175.97	2000.00

MMS Parameters MMS-E.B 167

Last Edited on 21-NOV-2011 19:06

Logging Parameters		
Firmware Version	2v40	
Caliper Open On	MAI	
Caliper Open Delay	0.0	minutes
Caliper Closed On	Unknown	
Caliper Closed Delay	N/A	minutes
Sample Rate	1.00	seconds
Use Deep Sleep	No	
Delay Deep Sleep	N/A	
Deep Sleep Wake Time	N/A	minutes
Deep Sleep Wake on Temperature	N/A	
Deep Sleep Wake Temperature	N/A	degrees C
Deep Sleep Wake on Pressure	N/A	
Deep Sleep Wake Pressure	N/A	psi
MMI Pad Pressure	8.0	

Release Parameters

Pulse Duration Base Level	10.0	seconds
Pulse Duration Transition Time	10.0	seconds
Pulse Duration Status Pulse From	20.0	seconds
Pulse Duration Caliper Close From	55.0	seconds
Pulse Duration Caliper Open From	60.0	seconds
Pulse Duration Release Pulse From	110.0	seconds
Pulse Duration Release Pulse To	280.0	seconds
Pulse Release Duration	240.0	seconds
Pulse Discriminator Pressure Band	32.0	seconds
Pulse Pressure Discriminator	106.0	seconds
Use Negative Pulsing	No	
Good Status Reply Open Hole	65535.0	seconds
Good Status Reply Cased Hole	20.0	seconds
Bad Status Reply	60.0	seconds
Status Pulse To	30.0	seconds
Caliper Close To	0.0	seconds
Caliper Open To	70.0	seconds

Configuration

MMS,MGS,MDN,MPD,MPD,MIM,MIE,MAI

Gamma Calibration MGS-C.J 136

Field Calibration on 17-NOV-2011 08:02

	Measured	Calibrated (API)
Background	40	28
Calibrator (Gross)	1043	724
Calibrator (Net)	1004	696

Gamma Constants MGS-C.J 136

Last Edited on 22-NOV-2011,23:02

Gamma Calibrator Number	36	
Mud Density	1.10	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

High Resolution Temperature Calibration MGS-C.J 136

Field Calibration on 17-NOV-2011,08:02

	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	100.00	100.00

High Resolution Temperature Constants MGS-C.J 136

Last Edited on

Pre-filter Length	11

SP Calibration MGS-C.J 136

Field Calibration on 30-MAR-2011 09:03

	Measured	Calibrated (mV)
Reference 1	102.2	98.7
Reference 2	-94.7	-98.3

Neutron Calibration MDN-B.J 388

Base Calibration on 12-OCT-2011 08:45
Field Check on 17-NOV-2011 08:09

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	2961	90	3714	110
Ratio	33.000		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	2455	3622
Ratio	0.678	

Field Check

	Calibrated (cps)	
	2497	3633
Ratio	0.687	

Neutron Constants MDN-B.J 388

Last Edited on 18-NOV-2011,13:52

Neutron Source Id	P31112B	
Neutron Jig Number	N639	
Epithermal Neutron	No	
Caliper Source for Processing	Density Caliper	
Stand-off	0.00	inches
Mud Density	1.00	gm/cc
Limestone Sigma	7.10	cu
Sandstone Sigma	4.26	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	Constant Value	
Formation Pressure	0.00	kpsi
Temperature Source	None	
Temperature	20.00	degrees F
Mud Salinity	0.00	kppm
Salinity Correction	0	
Formation Fluid Salinity Source	Constant Value	
Formation Fluid Salinity	0.00	kppm
Barite Mud Correction	Not Applied	

Magnetometer Parameters MIE-A.A 209

Date Of Last Magnetometer Calibration 26-NOV-2010,12:01

	X Magnetometer	Y Magnetometer	Z Magnetometer
Slope	-1.000000	-1.001951	-1.007691
Offset	0.007782	-0.016800	0.011730

Magnetometer Constants MIE-A.A 209

Last Edited on

Magnetometer Calibrator Number 000

Accelerometer Parameters MIE-A.A 209

Date Of Last Accelerometer Calibration 25-NOV-2010,12:19

	X Accelerometer	Y Accelerometer	Z Accelerometer
Slope	-1.113214	-1.109979	-1.101653
Offset	0.005467	0.005399	0.010368

Accelerometer Constants MIE-A.A 209

Last Edited on 25-NOV-2010,12:25

Accelerometer Calibrator Number 000

Accelerometer Temperature Characterisation

X Accelerometer

Serial Number	826			
Calibration Date	01-Jan-1998			
	B0	B1	B2	B3
Bias(g)	0.00000e+000	2.32377e-005	-1.87334e-008	9.07324e-011
	SF0	SF1	SF2	SF3
Scale Factor(mA/g)	3.00000e+000	2.71389e-004	4.55326e-007	4.58364e-010

Y Accelerometer

Serial Number	617			
Calibration Date	11-May-2008			
	B0	B1	B2	B3
Bias(g)	0.00000e+000	1.76675e-005	6.93464e-010	2.98691e-011
	SF0	SF1	SF2	SF3
Scale Factor(mA/g)	3.00000e+000	2.56882e-004	5.72598e-007	2.37496e-010

Z Accelerometer

Serial Number	844			
Calibration Date	01-Jan-1998			
	B0	B1	B2	B3
Bias(g)	0.00000e+000	-1.21769e-005	-1.46867e-008	-6.44015e-011
	SF0	SF1	SF2	SF3
Scale Factor(mA/g)	3.00000e+000	2.73539e-004	4.65657e-007	2.88996e-010

Caliper Calibration MIE-A.A 209

Base Calibration on 25-NOV-2010 07:56
Field Calibration on 17-NOV-2011 07:55

Base Calibration

Reading No	Pads 1-5 Meas.	Pads 3-7 Meas.	Calibrator Size (in)
1	26963	26793	5.96
2	36961	37191	7.97
3	46401	44803	9.84

3	46401	44863	9.84	
4	58072	58409	11.91	
5	0	0	0.00	

Reading No	Pad 2 Meas.	Pad 4 Meas.	Pad 6 Meas.	Pad 8 Meas.	Calibrator Size (in)
1	24829	25688	24937	24692	5.96
2	33487	34230	33721	33433	7.97
3	40559	41186	42962	42856	9.84
4	51771	52426	51758	51697	11.91
5	0	0	0	0	0.00

Field Calibration

Measured Pads 1-5 Caliper(in)	Measured Pads 3-7 Caliper(in)	Actual Caliper(in)
6.06	5.97	5.96

Measured Pad 2 Caliper(in)	Measured Pad 4 Caliper(in)	Measured Pad 6 Caliper(in)	Measured Pad 8 Caliper(in)	Actual Caliper(in)
3.01	2.98	3.02	3.04	5.96

Caliper Constants MIE-A.A 209

Last Edited on 25-NOV-2010,07:57

Caliper Difference for BRKT	0.120	inches

Navigation Constants MIE-A.A 209

Last Edited on 17-NOV-2011,09:51

Magnetic Declination	4.80	degrees	East

Imager Pad Check MIE-A.A 209

Field Check on

Pad 1	Pad Not Tested	Pad 5	Pad Not Tested
Pad 2	Pad Not Tested	Pad 6	Pad Not Tested
Pad 3	Pad Not Tested	Pad 7	Pad Not Tested
Pad 4	Pad Not Tested	Pad 8	Pad Not Tested

Compact Micro Imager Constants MIE-A.A 209

Last Edited on 17-NOV-2011,09:51

Sonde Configuration	Imager Mode	degrees
Arm-Pad Kit	0	
Centre Pad 1 Rotational Offset	0.00	
Image/Borehole Ovality Reference	Azimuth of Pad 1	degrees
Non Active Buttons	Omit	feet
Search Angle	45.00	feet
Correlation Interval	3.28	mAmp
Correlation Step	1.64	mAmp
Current Offset	0.0000	
Squasher Start	0.0500	
Image Processing	Enabled	

High Resolution Temperature Calibration MAI-B.J 391

Field Calibration on 19-OCT-2011 10:50

	Measured	Calibrated(Deg F)
Lower	10.00	50.00
Upper	100.00	212.00

High Resolution Temperature Constants MAI-B.J 391

Last Edited on

Pre-filter Length	11

Induction Calibration MAI-B.J 391

Base Calibration on 19-OCT-2011 10:50
Field Check on 17-NOV-2011 07:39

Base Calibration

Test Loop Calibration

Channel	Measured Low	Measured High	Calibrated (mmho/m) Low	Calibrated (mmho/m) High
1	17.1	473.5	9.3	966.2
2	6.0	381.9	7.6	821.4
3	3.8	262.4	5.2	566.0
4	2.3	133.8	2.6	279.2

Array Temperature	76.6	Deg F

Channel	Base Check (mmho/m) Low	Base Check (mmho/m) High	Field Check (mmho/m) Low	Field Check (mmho/m) High
1	0.0	0.0	11.7	3820.4
2	0.0	0.0	29.8	3516.4

2	0.0	0.0	25.8	3516.4	
3	0.0	0.0	27.0	3009.6	
4	0.0	0.0	18.4	2063.4	
Deep	0.0	0.0	15.2	1956.4	
Medium	0.0	0.0	40.3	3959.2	
Shallow	0.0	0.0	46.4	5212.7	
Array Temperature		0.0		52.3	Deg F

Induction Constants MAI-B.J 391

Last Edited on 23-NOV-2011,10:03

Induction Model	RtAP-WBM	
Caliper for Borehole Corr.	Density Caliper	
Hole Size for Borehole Correction	N/A	inches
Tool Centred	No	
Stand-off Type	Fins	
Stand-off	0.50	inches
Number of Fins on Stand-off	6.0000	
Stand-off Fin Angle	60.00	degrees
Stand-off Fin Width	0.5000	inches
Borehole Corr. Rm Source	Temperature Corr	
Temp. for Rm Corr.	MGS External Temperature	
Squasher Start	0.0020	mhos/metre
Squasher Offset	N/A	mhos/metre

Borehole Normalisation

DRM1	0.0000	DRC1	0.0000
DRM2	0.0000	DRC2	0.0000
MRM1	0.0000	MRC1	0.0000
MRM2	0.0000	MRC2	0.0000
SRM1	0.0000	SRC1	0.0000
SRM2	0.0000	SRC2	0.0000

Calibration Site Corrections

Channel 1	0.00	mmhos/metre
Channel 2	0.00	mmhos/metre
Channel 3	0.00	mmhos/metre
Channel 4	0.00	mmhos/metre

Apparent Porosity and Water Saturation Constants

Archie Constant (A)	1.00	
Cementation Exponent (M)	2.00	
Saturation Exponent (N)	2.00	
Saturation of Water for Apor	100.00	percent
Resistivity of Water for Apor and Sw	0.05	ohm-m
Resistivity of Mud Filtrate for Sw	0.00	ohm-m
Source for Rt	0.00	
Source for Rxo	0.00	

Caliper Calibration MPD-C.J 393

Base Calibration on 14-NOV-2011 06:09
Field Calibration on 17-NOV-2011 07:45

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14534	4.01
2	24031	5.96
3	32482	7.98
4	40112	9.86
5	48560	11.88
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
6.00	5.96

Photo Density Calibration MPD-C.J 393

Base Calibration on 19-OCT-2011 09:31
Field Check on 17-NOV-2011 07:52

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	58016	27308	59869	31110
Reference 2	24483	2694	24557	2522

Field Check at Base

1260.5 1380.6

Field Check

1245.1 1363.2

PE Calibration

Base Calibration

	WS	Measured WH	Ratio	Calibrated Ratio
Background	235	1137		
Reference 1	23358	57816	0.408	0.369
Reference 2	6927	24347	0.288	0.271

Field Check at Base

235.4 1137.5

Field Check

230.6 1122.1

Density Constants MPD-C.J 393

Last Edited on 22-NOV-2011,23:02

Density Source Id	p31112b	
Nylon Calibrator Number	18006	
Aluminium Calibrator Number	18006	
Density Shoe Profile	4 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.10	gm/cc
Mud Density Z/A Multiplier	1.11	
Mud Filtrate Density	1.00	gm/cc
Dry Hole Mud Filtrate Density	1.00	gm/cc
DNCT	0.03	gm/cc
CRCT	0.00	gm/cc
Density Z/A Correction	Hybrid	

Matrix density (gm/cc)	Depth (m)
2.71	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	

DOWNHOLE EQUIPMENT

G:\Data\Vess McCord A 20H\Mccord A 20H plotted\TC CMI TOOLSTRING.dta

RUNNING TOOL
MLK-A 1 LG: 4.87 ft WT: 30.9 lb OD: 2.24 in

EMPTY EXT BATTERY
MLK-A 2 LG: 14.23 ft WT: 30.9 lb OD: 2.24 in

EMPTY EXT BATTERY
MLK-A 3 LG: 14.23 ft WT: 30.9 lb OD: 2.24 in

SKJ-D Compact Knuckle Joint
SKJ-D 30 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

MBS-G.A 200v Compact Battery Sub
MBS-G.A 112 LG: 16.66 ft WT: 132.3 lb OD: 2.24 in

Compact Memory Sub E.B
MMS-E.B 167 LG: 5.20 ft WT: 37.5 lb OD: 2.24 in

Compact Tool Isolator sub

Compact Tool Isolator sub.
MTI-B.A 63 LG: 1.54 ft WT: 13.2 lb OD: 2.24 in

Compact Short Gamma
MGS-C.J 136 LG: 3.41 ft WT: 24.3 lb OD: 2.24 in

SKJ-E.A Compact Knuckle Joint
SKJ-E.A 140 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

SHA-J.A Compact Swivel Head Adaptor
SHA-J.A 208 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

MIS-A.A Compact Inline Bowspring sub
MIS-A.A 259 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

Compact Neutron
MDN-B.J 388 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-C.J 393 LG: 9.59 ft WT: 90.4 lb OD: 2.24 in

MIS-A.A Compact Inline Bowspring sub
MIS-A.A 277 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

SHA-J.A Compact Swivel Head Adaptor
SHA-J.A 451 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

SKJ-E.A Compact Knuckle Joint
SKJ-E.A 207 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

MIS-E.B Compact Inline Standoff sub
MIS-E.B 572 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

SKJ-E.B Compact Knuckle Joint
SKJ-E.B 479 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

MIS-A.A Compact Inline Bowspring sub
MIS-A.A 62 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

Compact MMI Memory Section
MIM-A.A 209 LG: 4.65 ft WT: 26.5 lb OD: 2.24 in

Compact MMI Electrode Section
MIE-A.A 209 LG: 13.96 ft WT: 99.2 lb OD: 4.09 in

MIS-D.A Compact Inline Bowspring sub
MIS-D.A 590 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

MIS-E.A Compact Inline Standoff sub
MIS-E.A 184 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

Compact Induction
MAI-B.J 391 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 144.53 ft Weight: 919.3 lb

84.71 ft	GRGM - MGS Gamma Ray
82.72 ft	GSXT - MGS External Temperature
69.01 ft	NPRL - Limestone Neutron Por.
61.77 ft	CLDC - Density Caliper
59.84 ft	DPRL - Limestone Density Por.
59.84 ft	DEN - Compensated Density
59.84 ft	DCOR - Density Correction
59.77 ft	PDPE - PE
20.89 ft	IECX - MIE Caliper X
20.89 ft	IECY - MIE Caliper Y
20.37 ft	IMGR - MMI Image
20.37 ft	ITLT - Borehole Tilt
2.58 ft	VEC0 - Shallow Induction
2.58 ft	CILD - Deep Conductivity
2.58 ft	RILM - Medium Induction
2.58 ft	RILD - Deep Induction
Tool Zero	(0.13ft from bottom)

All measurements relative to tool zero.

COMPANY	VESS OIL CORP.
WELL	MCCORD 'A' 20H
FIELD	BEMIS SHUTTS

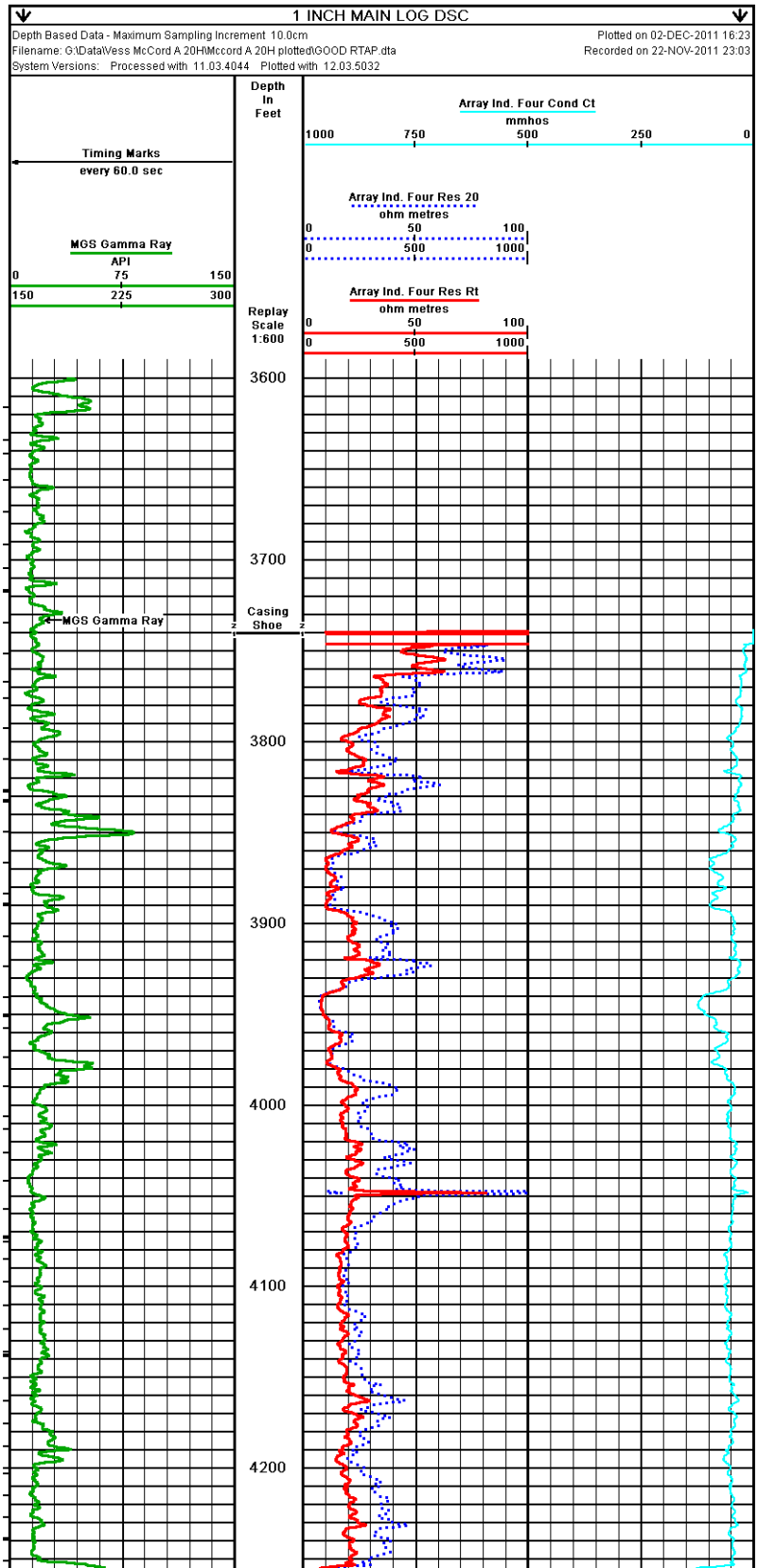
PROVINCE/COUNTY	ELLIS
COUNTRY/STATE	USA / KANSAS

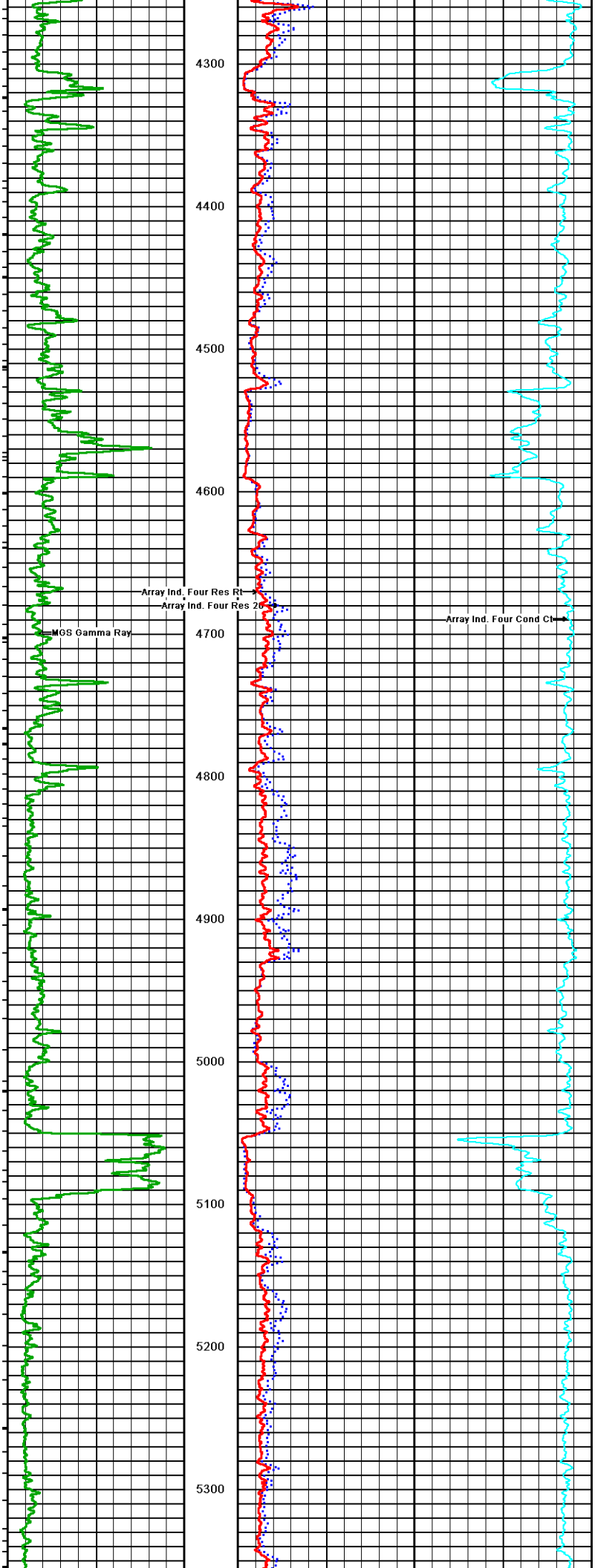
Elevation Kelly Bushing	2100.60	feet	First Reading	5780.00	feet
Elevation Drill Floor	2099.00	feet	Depth Driller	5805.00	feet
Elevation Ground Level	2091.00	feet	Depth Logger	5805.00	feet

Weatherford®

CML MESSENGER SHUTTLE
ARRAY INDUCTION
ELECTRIC LOG

40 Years of Wireline 1970 2010

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4400
4500
4600
Array Ind. Four Res Rt
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MGS Gamma Ray
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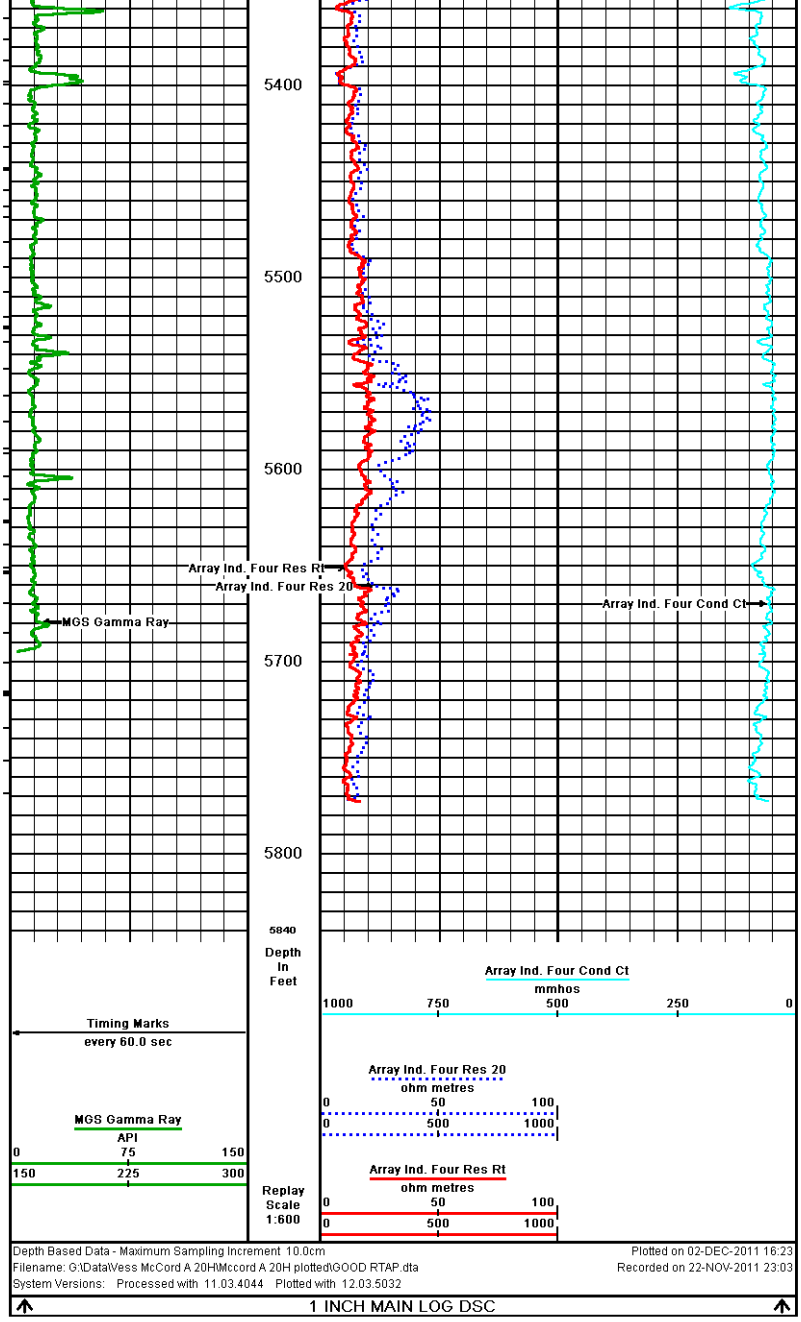

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 02-DEC-2011 16:23
Filename: G:\Data\Vess McCord A 20H\Mccord A 20H plotted\GOOD RTAP.dta
Recorded on 22-NOV-2011 23:03
System Versions: Processed with 11.03.4044 Plotted with 12.03.5032

1 INCH MAIN LOG DSC

COMPANY	VESS OIL CORP.
WELL	MCCORD 'A' 20H
FIELD	BEMIS SHUTTS
PROVINCE/COUNTY	ELLIS
COUNTRY/STATE	USA / KANSAS

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Elevation Drill Floor	2099.00	feet	Depth Driller	5805.00	feet
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ARRAY INDUCTION
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40 Years of Wireline