

BEFORE SURVEY CALIBRATION

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General Constants All 000

Last Edited on 18-DEC-2011 21:36

General Parameters
 Mud Resistivity 1.000 ohm-metres
 Mud Resistivity Temperature 75.000 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 5.500 inches
 Caliper for Differential Caliper Density Caliper

Rwa Parameters
 Porosity used Limestone Density Por.
 Resistivity used Array Ind. One Res Rt
 RWA Constant A 0.610
 RWA Constant M 2.150

Down-hole Tension Calibration SMS 0

Field Calibration on 14-OCT-2011 16:32

Reading No	Measured	Calibrated (lbs)
1	14312.35	0.00
2	14895.53	205.00

High Resolution Temperature Calibration MCG-D.J 431

Field Calibration on 16-DEC-2011 15:22

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

High Resolution Temperature Constants MCG-D.J 431

Last Edited on

Pre-filter Length 11

SP Calibration MCG-D.J 431

Field Calibration on 16-DEC-2011 15:22

	Measured	Calibrated (mV)
Reference 1	100.0	100.0
Reference 2	-100.0	-100.0

Gamma Calibration MCG-D.J 431

Field Calibration on 18-DEC-2011 05:11

	Measured	Calibrated (API)
Background	51	35
Calibrator (Gross)	1898	1296
Calibrator (Net)	1847	1261

Gamma Constants MCG-D.J 431

Last Edited on 18-DEC-2011 21:33

Gamma Calibrator Number 46
 Mud Density 1.11 gm/cc
 Caliper Source for Processing Density Caliper
 Tool Position Eccentred
 Concentration of KCl 0.00 kppm

Micro Laterolog Calibration MMR-A.A 6

Base Calibration on 15-SEP-2008 11:36

Field Check on 15-SEP-2008 11:53

Base Calibration
 Measured Calibrated (ohm-m)

	Ref 1	Ref 2	Ref 1	Ref 2
	0.0	9889.3	0.0	1.0
	Base Check (ohm-m)		Field Check (ohm-m)	
	4.0		3.2	

Micro Laterolog Constants MMR-A.A 6

Last Edited on 15-SEP-2008 15:57

Pad Type	6 in 2.25 in OD Solid Rubber B32069			
Micro Laterolog K Factor	0.0100			
Standoff Offset	0.0000	inches		
Mudcake Thickness Correction Constants				
Mud Cake Source	Differential Caliper			
Mud Cake Thickness	N/A			inches
Mud Cake Thickness Caliper	MMR Caliper			
Mud Cake Resistivity	0.1500			ohm-m
Mud Cake Resistivity Source	Constant Value			
Tempr. Source for Rmc Corr.	0			

Micro Normal and Micro Inverse Calibration MMR-A.A 6

Base Calibration on 29-SEP-2011 11:11

Field Check on 18-DEC-2011 05:04

Base Calibration					
		Measured		Calibrated (ohm-m)	
Channel	Resistor 1	Resistor 2	Resistor 1	Resistor 2	
Micro Normal	12.0	59.8	2.6	12.8	
Micro Inverse	15.6	77.2	1.7	8.4	
Field Calibration					
Channel	Base Check (ohm-m)		Field Check (ohm-m)		
Micro Normal	38.9		38.9		
Micro Inverse	19.9		19.9		

Micro Normal and Micro Inverse Constants MMR-A.A 6

Last Edited on 29-OCT-2011 10:57

Pad Type	8-12 in Soft Rubber Inflatable 006-9011-159			
Micro Normal K Factor	0.5110			
Micro Inverse K Factor	0.3380			
Standoff Offset	0.0000	inches		

Caliper Calibration MMR-A.A 6

Base Calibration on 29-SEP-2011 11:19

Field Calibration on 18-DEC-2011 05:20

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	13293	5.97
2	16511	7.99
3	19695	9.86
4	23612	11.93
5	0	0.00
6	N/A	N/A
Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	8.11	7.98

Neutron Calibration MDN-A.A 10

Base Calibration on 12-MAY-2011 19:29

Field Check on 18-DEC-2011 05:17

Base Calibration				
	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	3130	98	3714	110
Ratio	31.818		33.764	
Field Calibrator at Base				
			Calibrated (cps)	
			1248	1792
Ratio	0.696			

Field Check	Calibrated (cps)
Ratio	1220 1778 0.686

Neutron Constants MDN-A.A 10

Last Edited on 18-DEC-2011 21:33

Neutron Source Id	P14033B
Neutron Jig Number	13226
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	N/A degrees F
Mud Salinity	0.00 kppm
Formation Fluid Salinity Source	Constant Value
Formation Fluid Salinity	0.00 kppm
Barite Mud Correction	Not Applied

FE Calibration MFE-A.A 65

Base Calibration on 04-OCT-2011 14:00

Field Check on 18-DEC-2011 04:59

Base Calibration	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	959.5	126.8
Base Check		281.4
Field Check		281.2

FE Constants MFE-A.A 65

Last Edited on 18-DEC-2011 21:32

Running Mode	No Sleeve
MFE K Factor	0.1268
Caliper Source for FE correction	Density Caliper
Caliper Value for FE correction	N/A inches
Rm Source for FE correction	Temperature Corr
Temp. for Rm Corr.	MCG External Temperature
Stand-off	0.5 inches

High Resolution Temperature Calibration MAI-A.A 102

Field Calibration on 16-DEC-2011 15:24

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

High Resolution Temperature Constants MAI-A.A 102

Last Edited on

Pre-filter Length	11
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Induction Calibration MAI-A.A 102

Base Calibration on 24-FEB-2011 20:51

Field Check on 18-DEC-2011 04:57

Base Calibration				
Test Loop Calibration	Measured	Calibrated (mmho/m)		
Channel	Low	High	Low	High
1	17.3	481.3	9.3	966.2
2	5.4	377.6	7.6	821.4
3	2.4	255.3	5.2	566.0
4	1.5	133.4	2.6	279.2
Array Temperature	78.4		80.5	

Array Temperature 76.4 Deg F

Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	0.0	0.0	12.6	3808.9
2	0.0	0.0	32.5	3606.9
3	0.0	0.0	31.7	3125.4
4	0.0	0.0	20.7	2087.4
Deep	0.0	0.0	19.0	2000.4
Medium	0.0	0.0	47.3	4181.4
Shallow	0.0	0.0	48.9	5374.9
Array Temperature	0.0		59.7	Deg F

Induction Constants MAI-A.A 102

Last Edited on 18-DEC-2011 21:32

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.	MCG External Temperature		
Squasher Start	0.0060	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-A 3

Base Calibration on 04-OCT-2011 15:09
Field Calibration on 18-DEC-2011 05:22

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	20208	3.98
2	28784	5.95
3	37424	7.97
4	45392	9.84
5	54503	11.91
6	N/A	N/A

Field Calibration	Measured Caliper (in)	Actual Caliper (in)
	7.70	7.97

Photo Density Calibration MPD-A 3 Base Calibration on 21-SEP-2011 15:08
Field Check on 18-DEC-2011 05:03

Density Calibration	Measured		Calibrated (sdu)	
Base Calibration	Near	Far	Near	Far
Reference 1	47357	25239	60364	31945
Reference 2	20102	2812	25079	2547

Field Check at Base
1315.7 1670.4

Field Check
1297.1 1627.3

PE Calibration	Measured			Calibrated
Base Calibration	WS	WH	Ratio	Ratio
Background	242	1164		
Reference 1	19956	47156	0.429	0.399
Reference 2	5535	19946	0.282	0.273

Field Check at Base
241.8 1163.6

Field Check
235.3 1158.5

Density Constants MPD-A 3 Last Edited on 18-DEC-2011 21:33

Density Source Id	260	
Nylon Calibrator Number	633	
Aluminium Calibrator Number	633	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.11	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	0.00	gm/cc
CRCT	0.00	gm/cc
Density Z/A Correction	Hybrid	

Matrix Density (gm/cc)	Depth (ft)
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
0.00	0.00

DOWNHOLE EQUIPMENT
C:\DOCUME~1\CHAEFE~1\FUT\LOCALS~1\Temp\Weatherford PreView0\WMU 6 WIW.dta

Compact Gamma Ray Adapter
SHA-F 45 LG: 2.74 ft WT: 26.5 lb OD: 2.24 in

Compact Comms Gamma
MCG-D.J 431 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-Resistivity
MMR-A.A 6 LG: 8.59 ft WT: 81.6 lb OD: 4.88 in

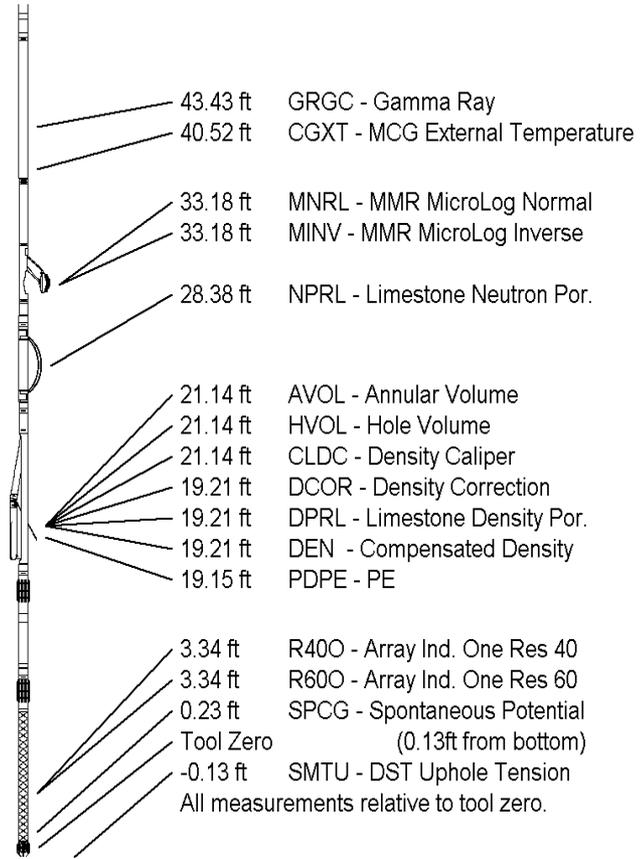
Compact Neutron
MDN-A.A 10 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-A.3 LG: 9.53 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric
MFE-A.A 65 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Induction
MAI-A.A 102 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 51.46 ft Weight: 410.1 lb



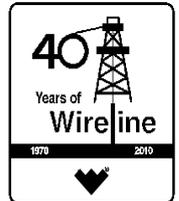
COMPANY FUTURE PETROLUEM COMPANY
WELL WMU #6 WIW
FIELD MADDIX NORTH
PROVINCE/COUNTY COWLEY
COUNTRY/STATE U.S.A. / KANSAS

Elevation Kelly Bushing	1273.00	feet	First Reading	3214.00	feet
Elevation Drill Floor	1271.00	feet	Depth Driller	3217.00	feet
Elevation Ground Level	1264.00	feet	Depth Logger	3217.00	feet



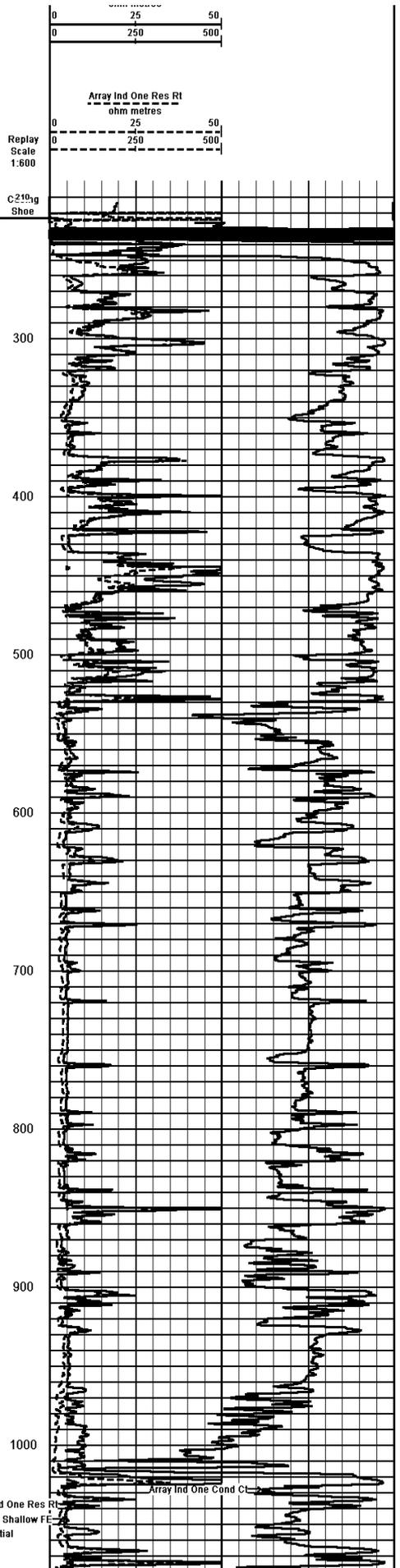
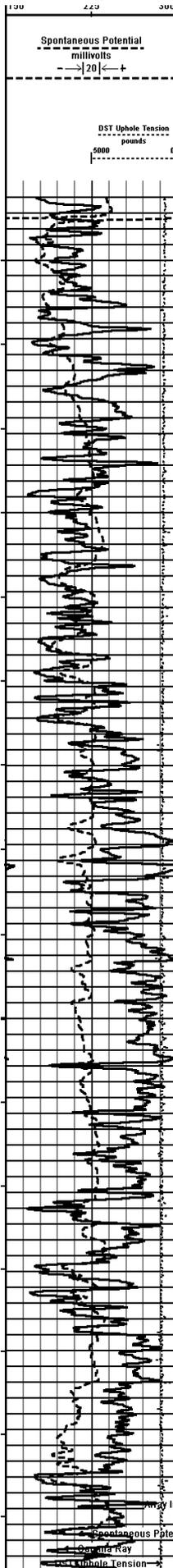
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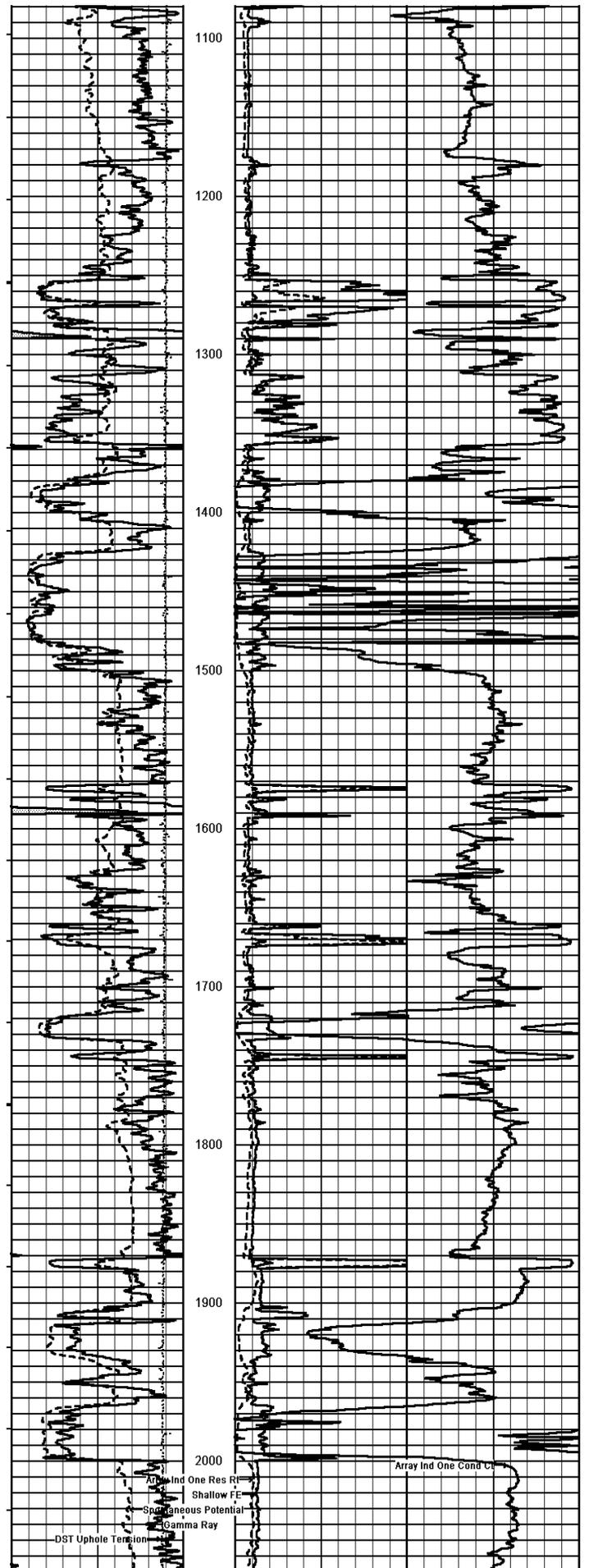
ARRAY INDUCTION
SHALLOW FOCUSED
ELECTRIC LOG

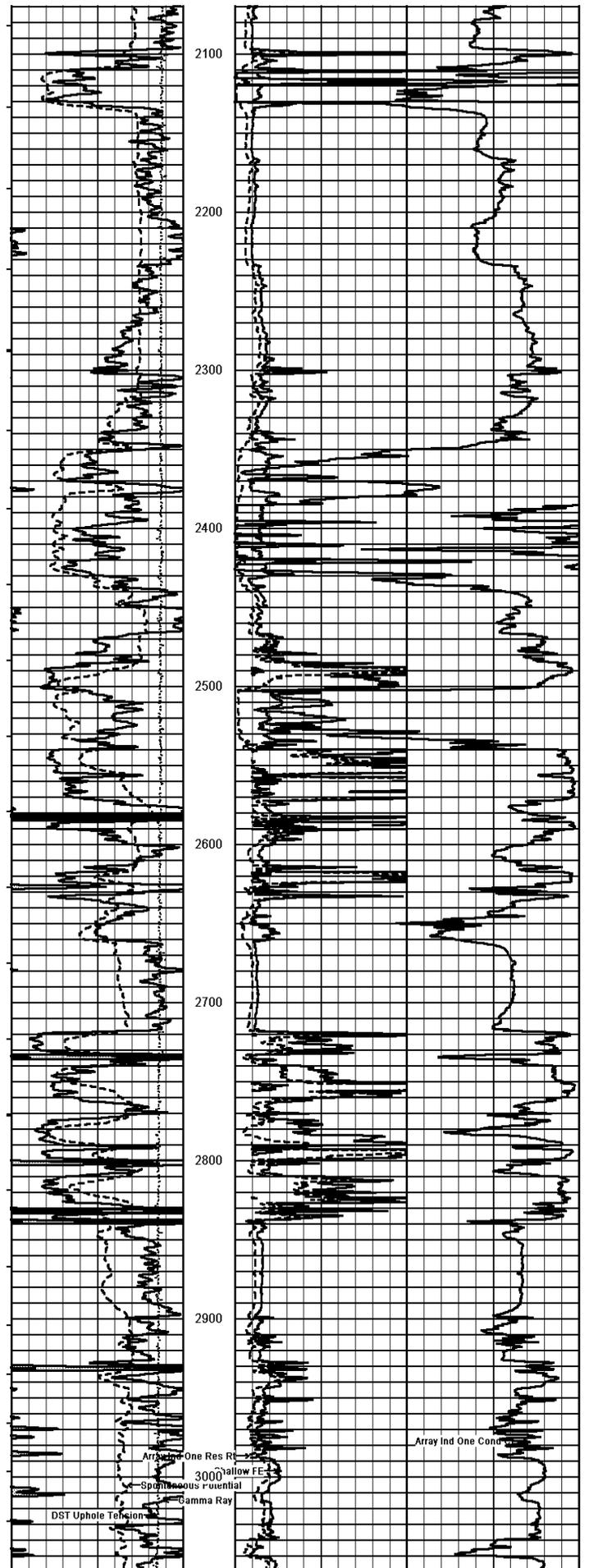


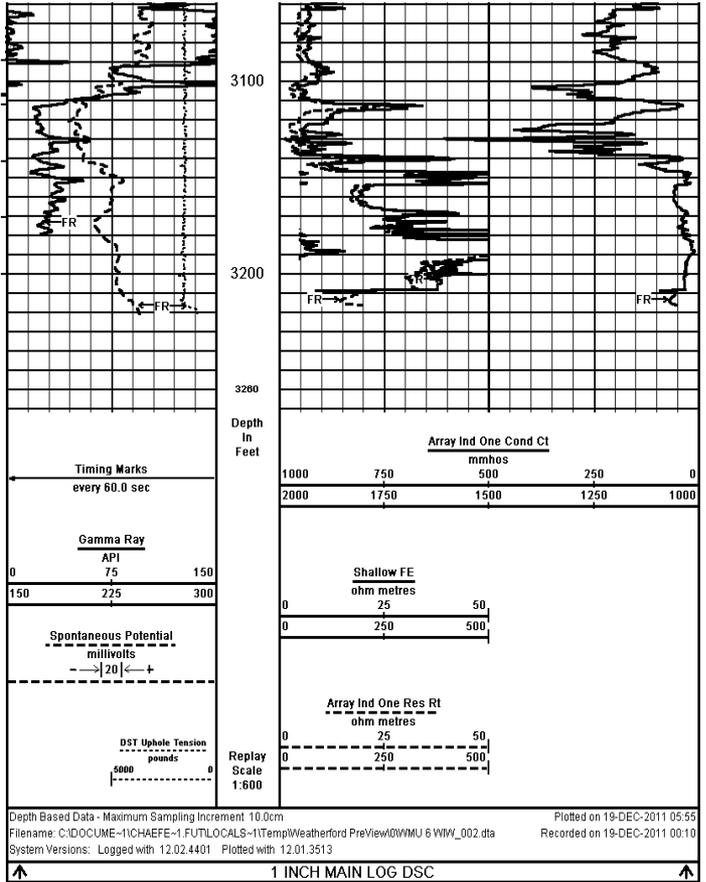
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions in our price schedule.

1 INCH MAIN LOG DSC							
Depth Based Data - Maximum Sampling Increment 10.0cm			Plotted on 19-DEC-2011 05:55				
Filename: C:\DOCUME~1\CHAEFE~1\FUTLOCALS~1\Temp\Weatherford PreView\OWMU 6 WIW_002.dta			Recorded on 19-DEC-2011 00:10				
System Versions: Logged with 12.02.4401			Plotted with 12.01.3513				
Timing Marks every 60.0 sec	Gamma Ray API 0 75 150	Depth In Feet	Array Ind One Cond Ct				
			1000	750	500	250	0
			2000	1750	1500	1250	1000
			Shallow FE ohm metres				









COMPANY	FUTURE PETROLUEM COMPANY				
WELL	WMU #6 WIW				
FIELD	MADDIX NORTH				
PROVINCE/COUNTY	COWLEY				
COUNTRY/STATE	U.S.A. / KANSAS				
Elevation Kelly Bushing	1273.00	feet	First Reading	3214.00	feet
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ARRAY INDUCTION
SHALLOW FOCUSED
ELECTRIC LOG

