



Weatherford[®]

**COMPENSATED SONIC
WITH INTEGRATED TRANSIT TIME**

COMPANY

CITATION OIL & GAS CORP.

WELL

SCHMITT # 8-11

FIELD

FAIRPORT

PROVINCE/COUNTY

ELLIS

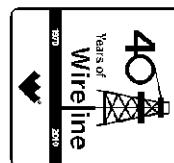
COUNTRY/STATE

U.S.A. / KANSAS

LOCATION

293' FNL & 3455' FEL

NE NW NE NW



SEC

TWP

RGE

Other Services

12

13S

16W

MPD/MDN

API Number

15-051-26153

MAI/MFE

Permit Number

MML

Permanent Datum G.L., Elevation 1940 feet

Log Measured From KB

Drilling Measured From K.B.

Elevations:

feet

KB 1948.00
DF 1946.00
GL 1940.00

Date 28-FEB-2012

Run Number ONE

Depth Driller 3460.00 feet

Depth Logger 3461.00 feet

First Reading 3448.00 feet

Last Reading 1015.00 feet

Casing Driller 1015.00 feet

Casing Logger 1015.00 feet

Bit Size 7.875 inches

Hole Fluid Type CHEMICAL

Density / Viscosity 8.80 lb/USg 42.00 CP

PH / Fluid Loss 11.00 6.80 ml/30Min

Sample Source FLOWLINE

Rm @ Measured Temp 1.04 @ 70.0 ohm-m

Rmf @ Measured Temp 0.83 @ 70.0 ohm-m

Rmc @ Measured Temp 1.25 @ 70.0 ohm-m

Source Rmf / Rmc CALC CALC

Rm @ BHT 0.84 @ 88.0 ohm-m

Time Since Circulation 4 HOURS

Max Recorded Temp 88.00 deg F

Equipment Name COMPACT

Equipment / Base 13057 LIB

Recorded By A. GIAMBALVO

Witnessed By JOSH KULL

S.O. / JOB # 3534614

LB12-048

BOREHOLE RECORD

Last Edited: 28-FEB-2012 10:48

Bit Size
inches
7.875

Depth From
feet
1015.00

Depth To
feet
3461.00

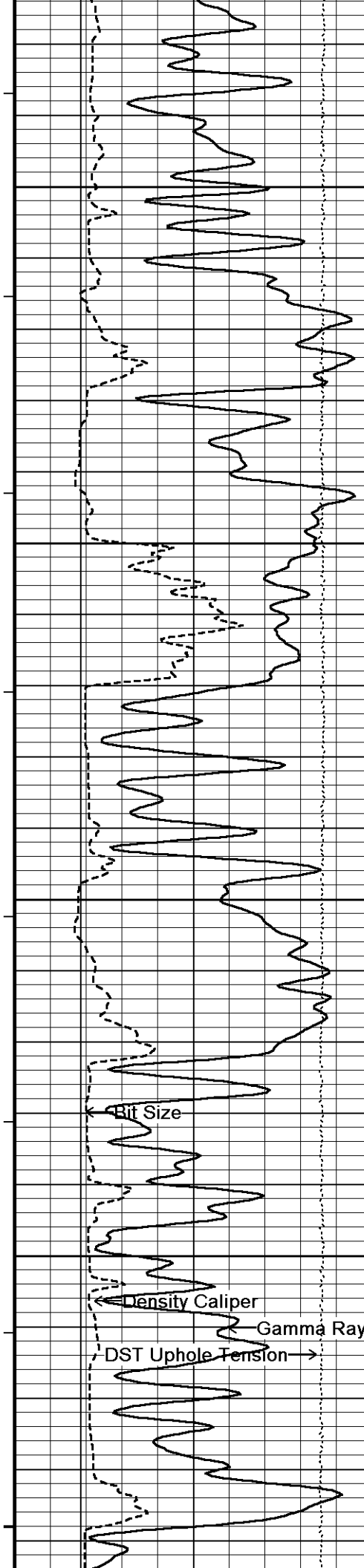
CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	8.00	1015.00	24.00

REMARKS

Tools Ran: MCG, MML, MDN, MPD, SKJ, MFE, MSS, MAI.
Hardware Used: MDN Dual Eccentralizer used. MPD 8 inch profile plate used. MFE, MSS and MAI 0.5 inch standoffs used.
2.71 g/cc Limestone Density Matrix used to calculate porosity.
Sonic porosity calculated using a Limestone scale (47.5 usec/ft).
All intervals logged and scaled per customer's request.
Annular volume with 5.5 inch production casing calculated = 869 cu. ft.
Total hole volume from TD to surface casing = 1258 cu. ft.
Service order #3534614
Rig: Duke Drilling Rig #2
Engineer: A. Giambalvo
Operator(s): N. Adame

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 wilful 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.



83°

2500

83°

2550

83°

2600

84°

2650

84°

Bit Size

Density Caliper

Gamma Ray

DST Uphole Tension

Wyllie Lime. Sonic Por.

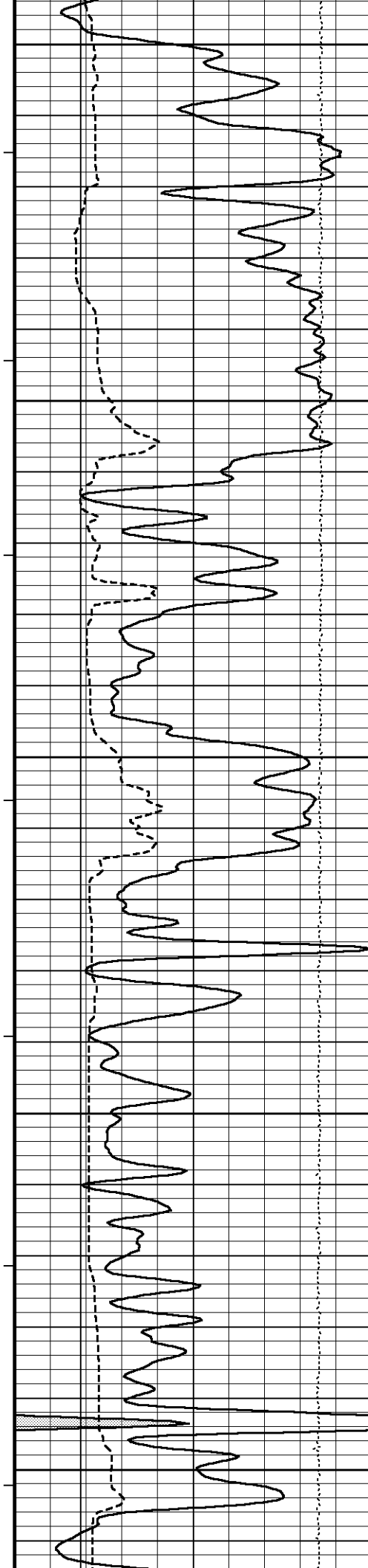
3-5' Compensated Sonic

6' Transit Time

5' Transit Time

4' Transit Time

3' Transit Time



2700

85°

2750

85°

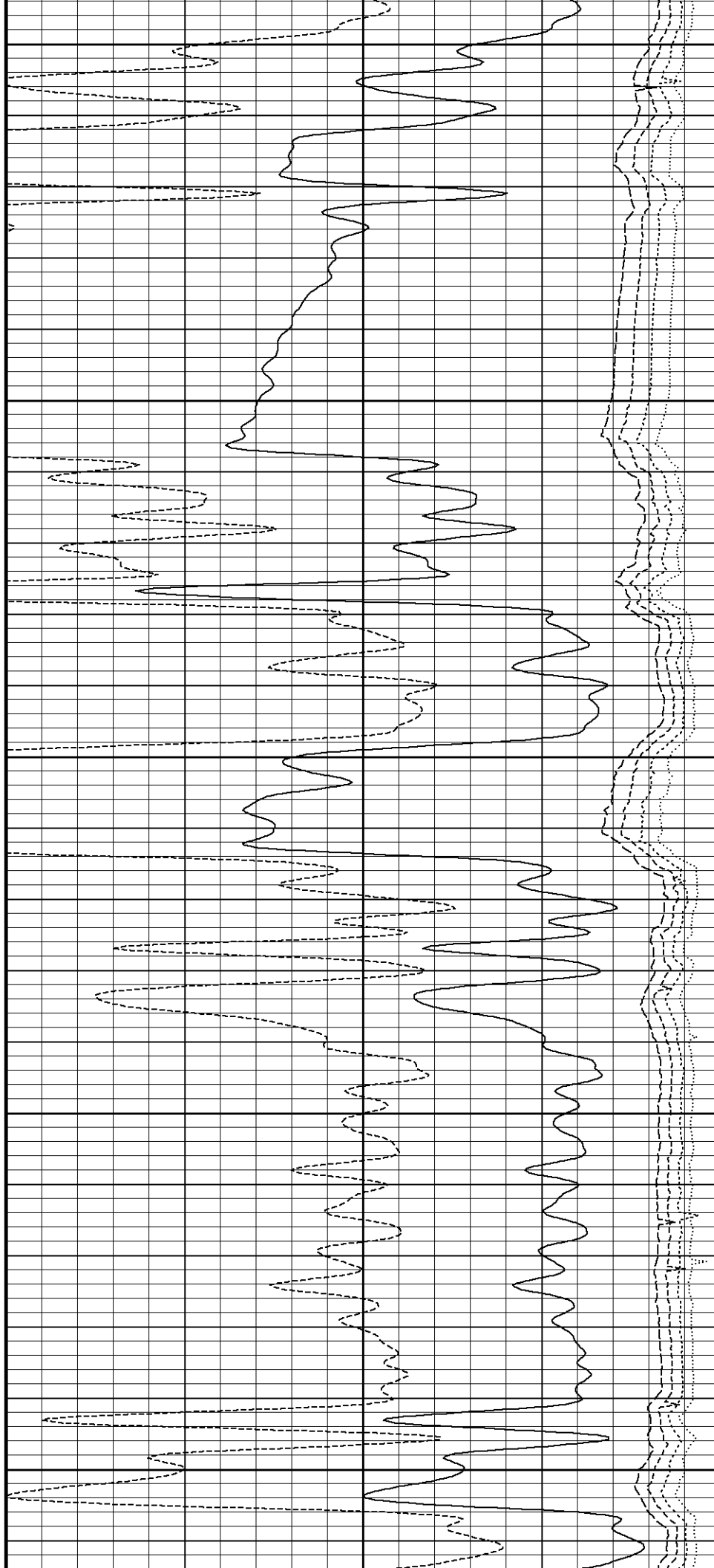
2800

85°

2850

86°

2900





86°

2950

86°

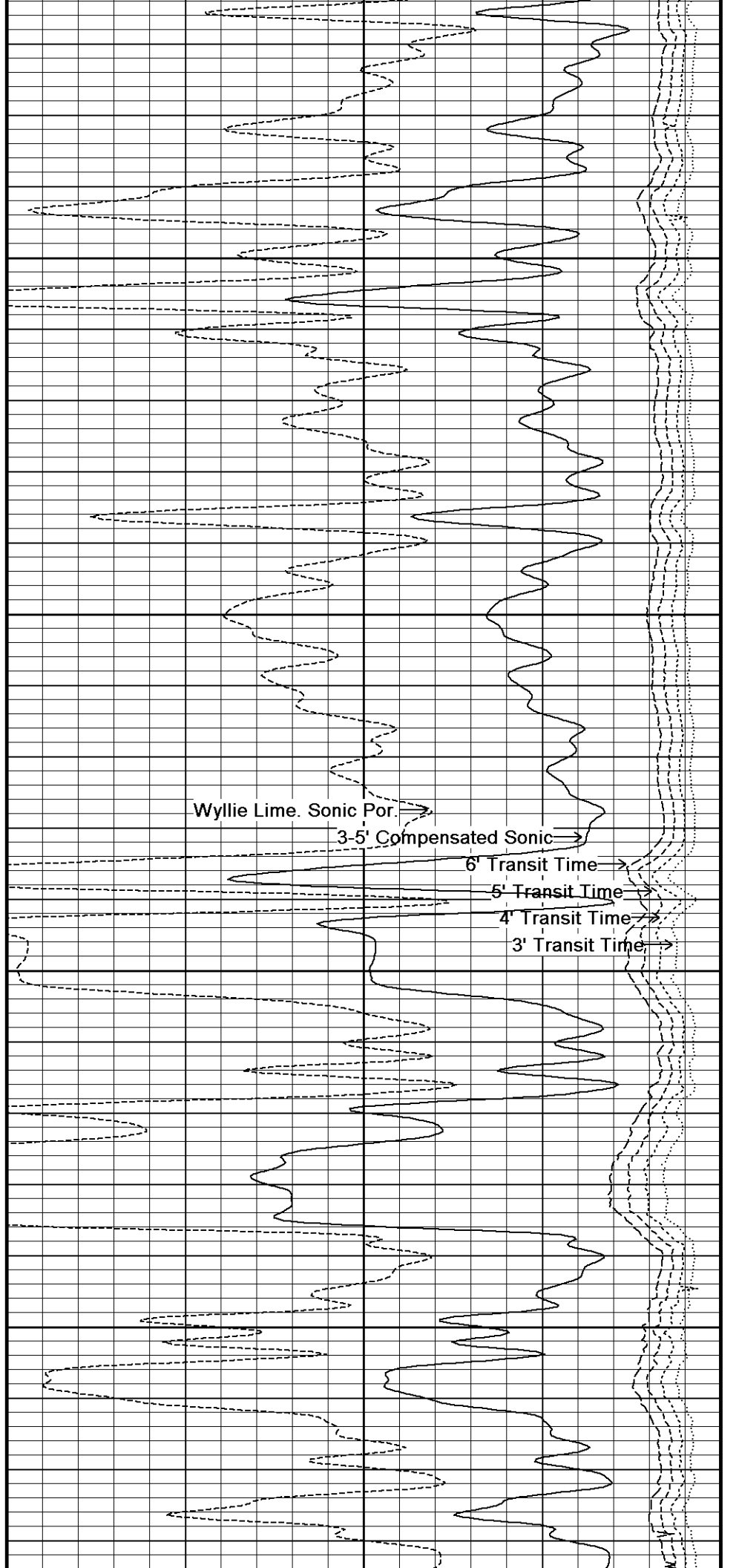
3000

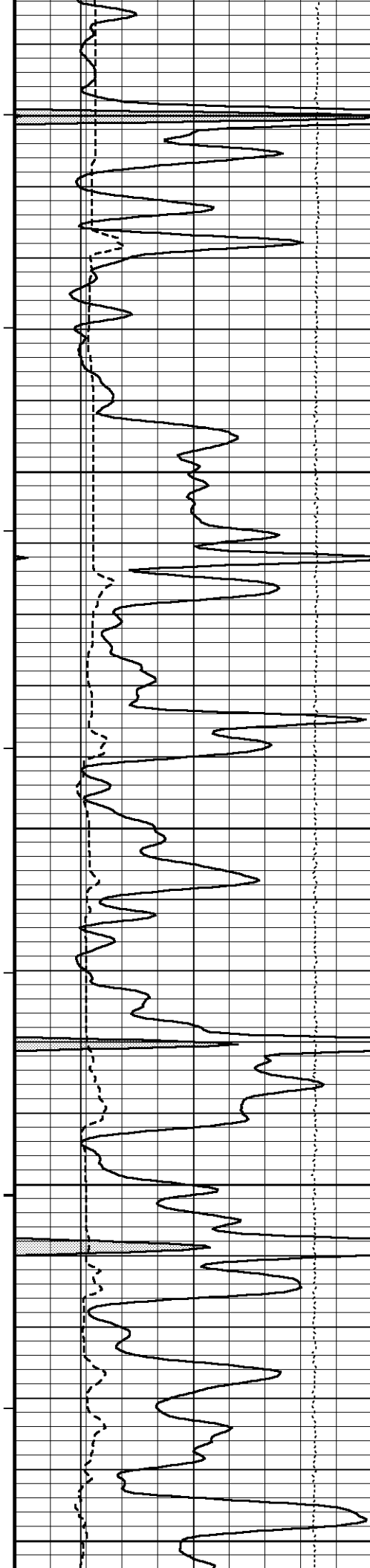
86°

3050

86°

3100





87°

3150

87°

3200

87°

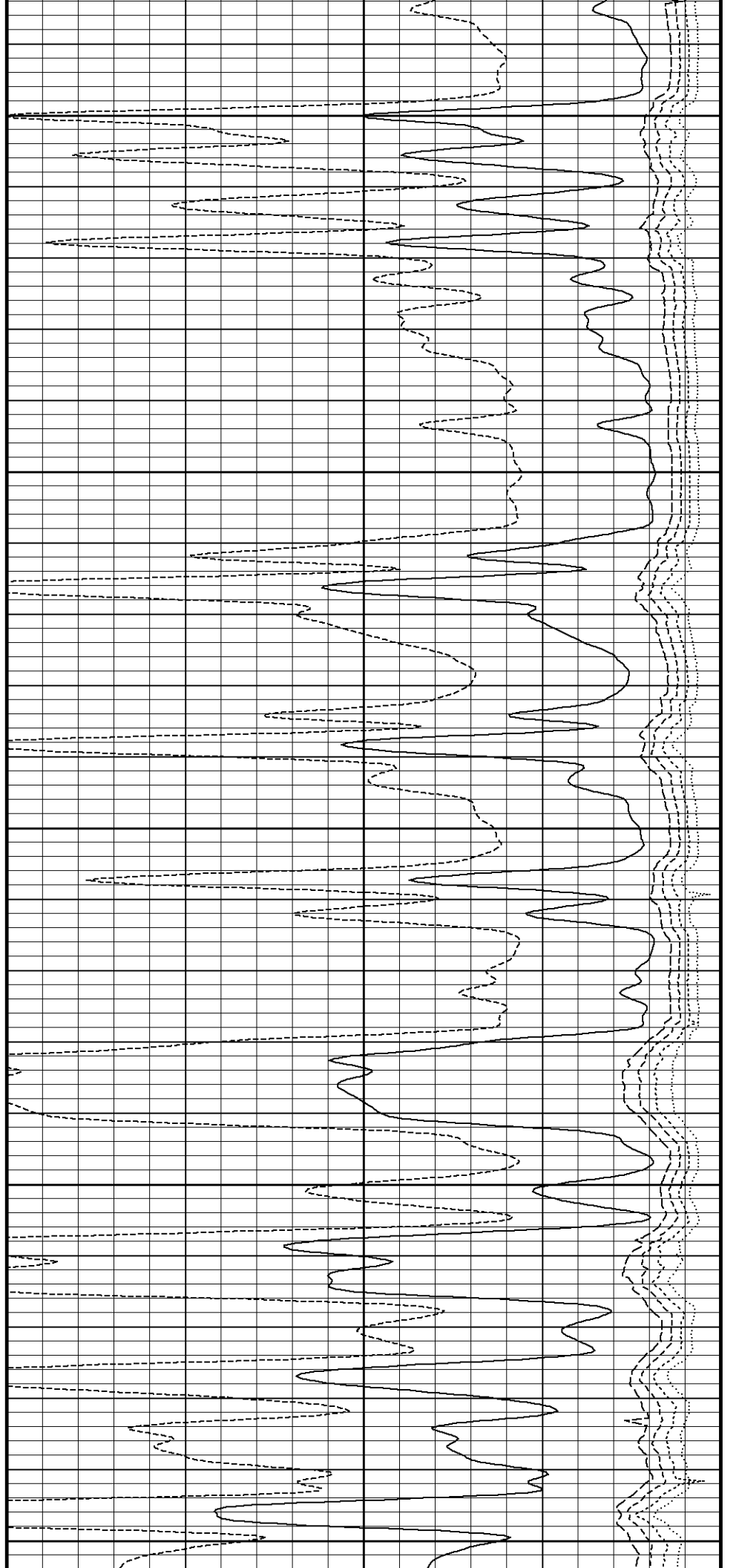
3250

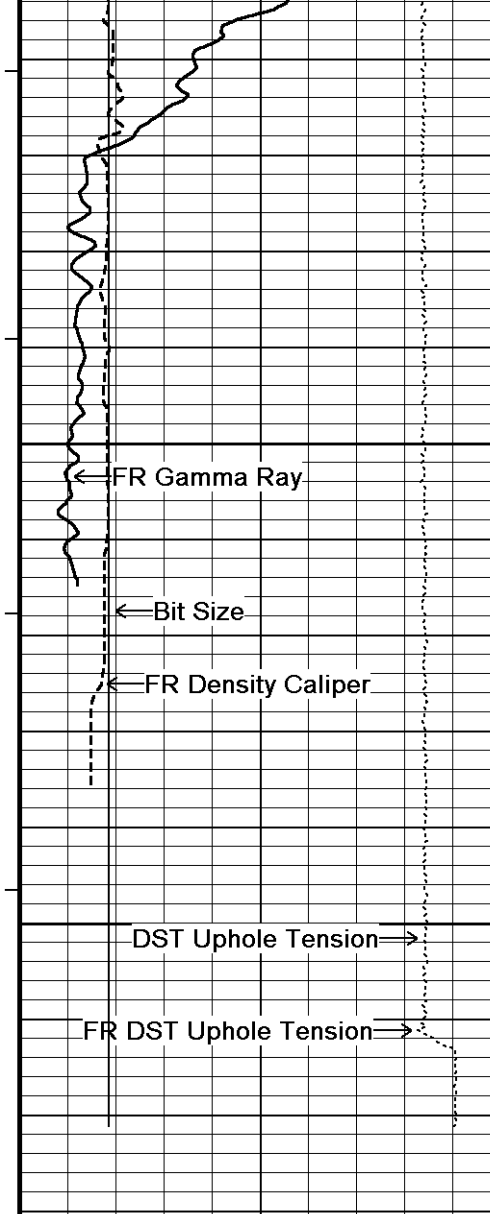
88°

3300

88°

3350





88°

3400

3450

3478

Depth
in
Feet

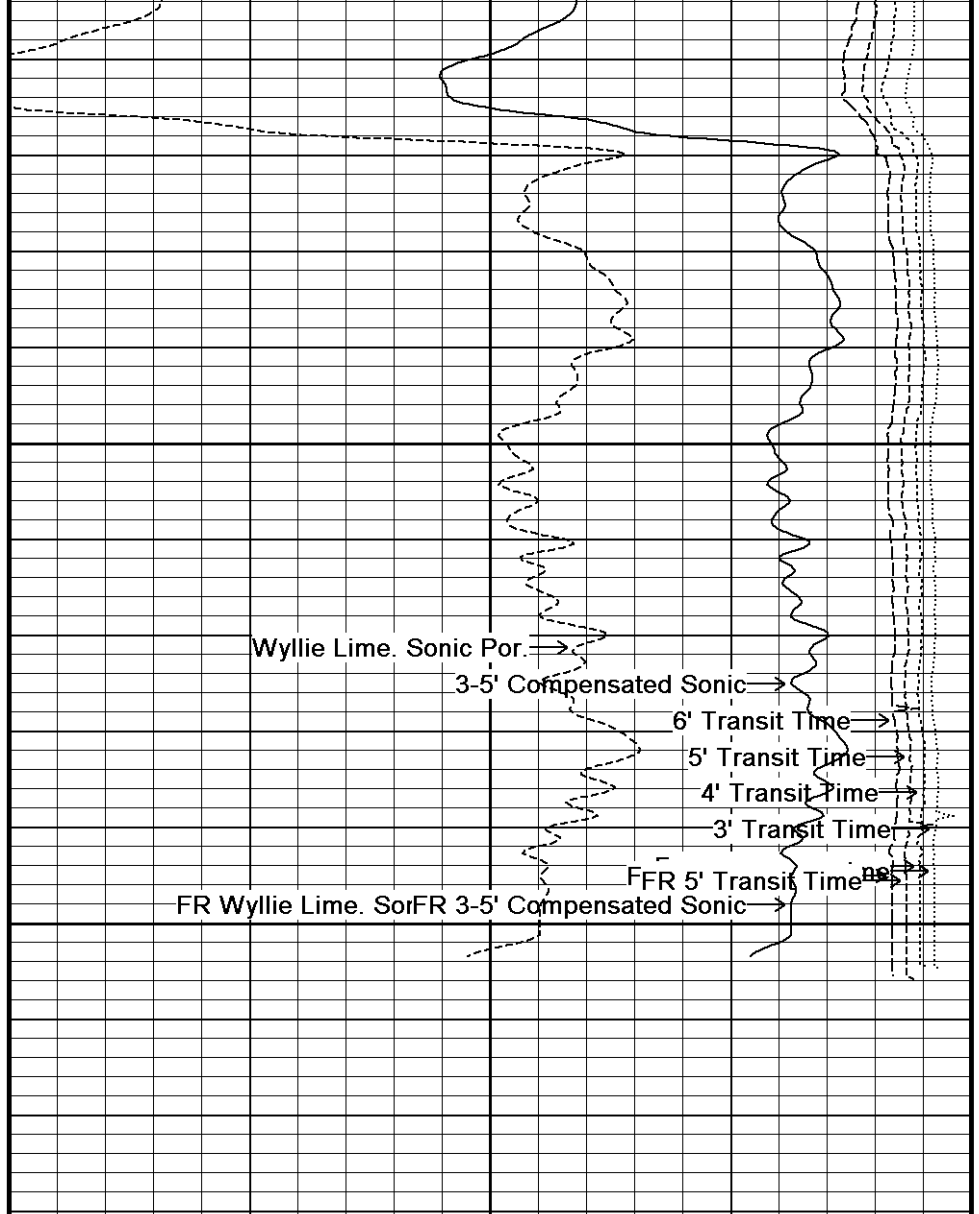
← Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150

Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

Borehole
Temp in
deg F



Wyllie Lime. Sonic Por. →

3-5' Compensated Sonic →

6' Transit Time →

5' Transit Time →

4' Transit Time →

3' Transit Time →

FFR 5' Transit Time →

FR Wyllie Lime. Sor →

FR 3-5' Compensated Sonic →

3-5' Compensated Sonic
microsec/foot

140 115 90 65 40

Wyllie Lime. Sonic Por.
percent

30 20 10 0 -10

3' Transit Time
microseconds

1100 100

4' Transit Time
microseconds

1100 100

5' Transit Time
microseconds

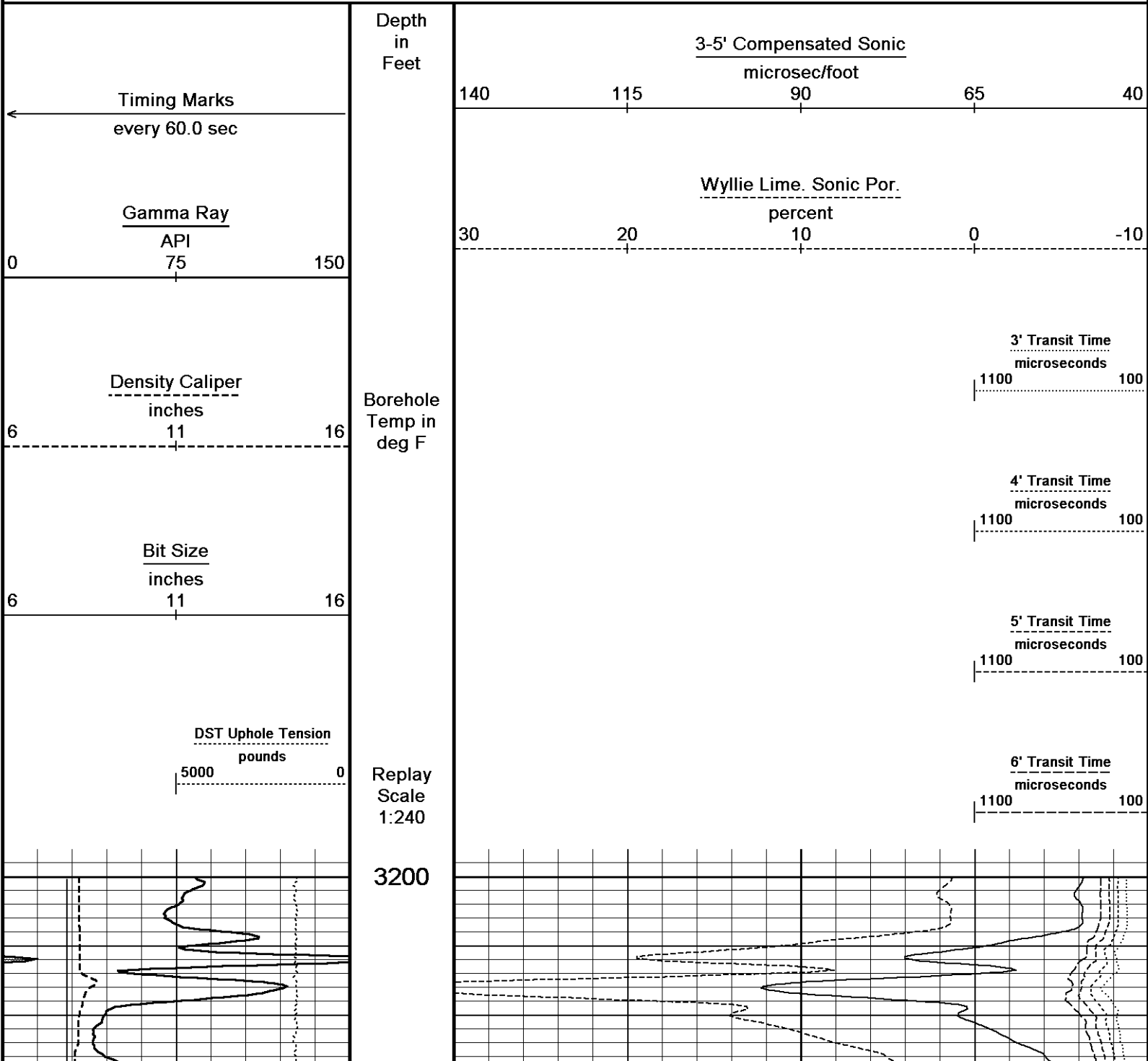


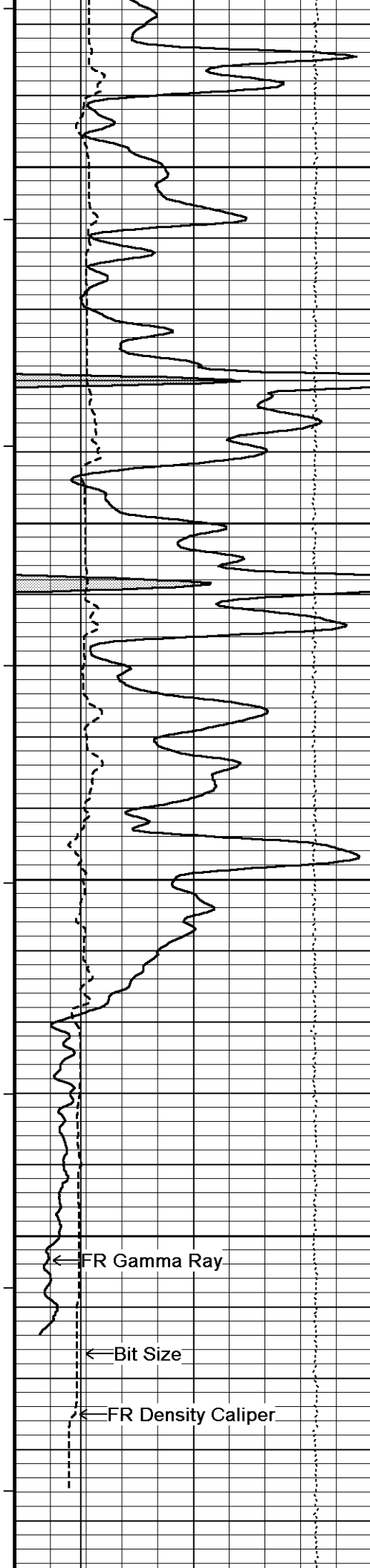
Depth Based Data - Maximum Sampling Increment 10.0cm Filename: C:\Minimus 11.03.4044\Data\Citation Schmitt # 8-11\Citation Schmitt # 8-11_003.dta System Versions: Logged with 11.03.4044 Plotted with 11.03.4044	Plotted on 28-FEB-2012 11:23 Recorded on 28-FEB-2012 09:19
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↑	5 INCH MAIN PASS	↑
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↓	5 INCH REPEAT PASS	↓
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Depth Based Data - Maximum Sampling Increment 10.0cm Filename: C:\Minimus 11.03.4044\Data\Citation Schmitt # 8-11\Citation Schmitt # 8-11_002.dta System Versions: Logged with 11.03.4044 Plotted with 11.03.4044	Plotted on 28-FEB-2012 11:23 Recorded on 28-FEB-2012 08:59
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86°

3250

87°

3300

87°

3350

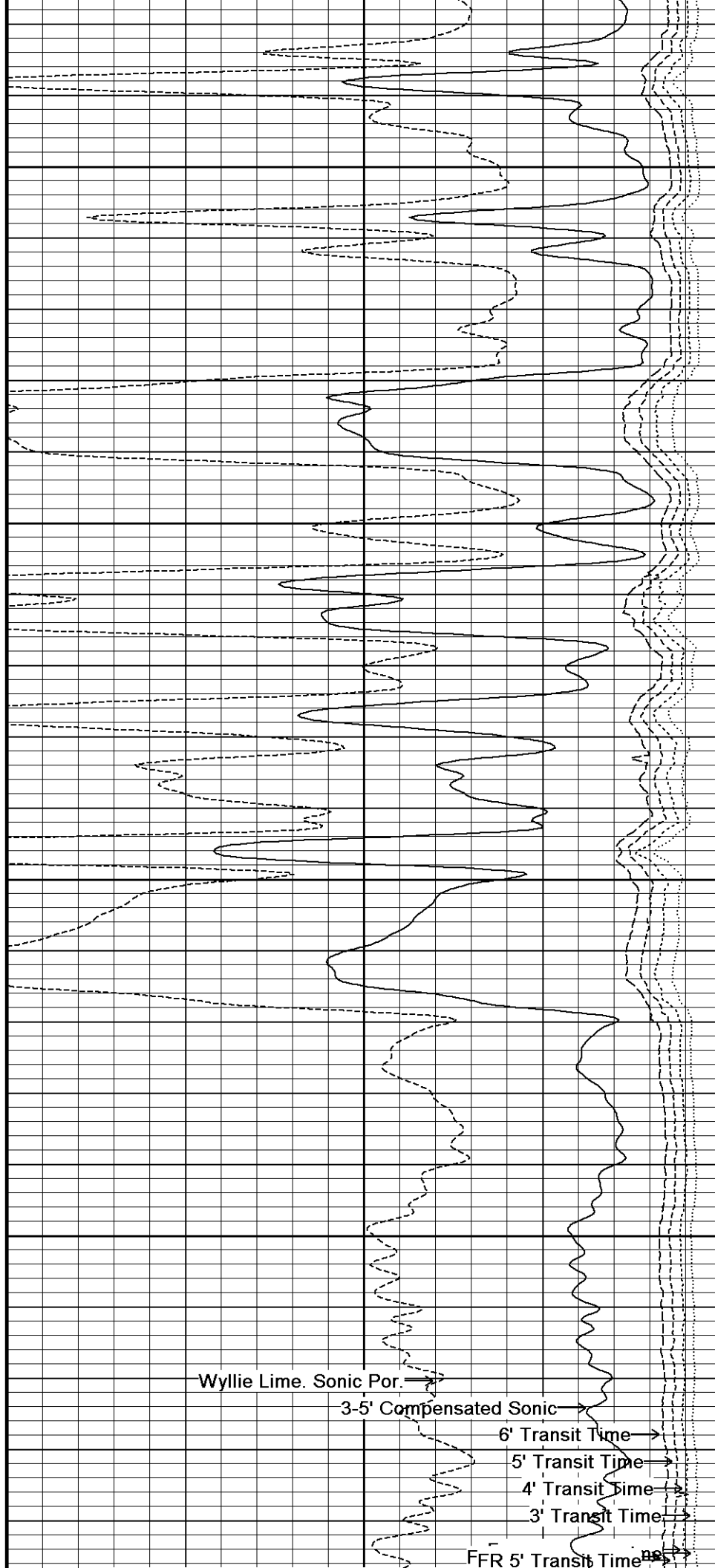
87°

3400

← FR Gamma Ray

← Bit Size

← FR Density Caliper



Wyllie Lime. Sonic Por. →

3-5' Compensated Sonic →

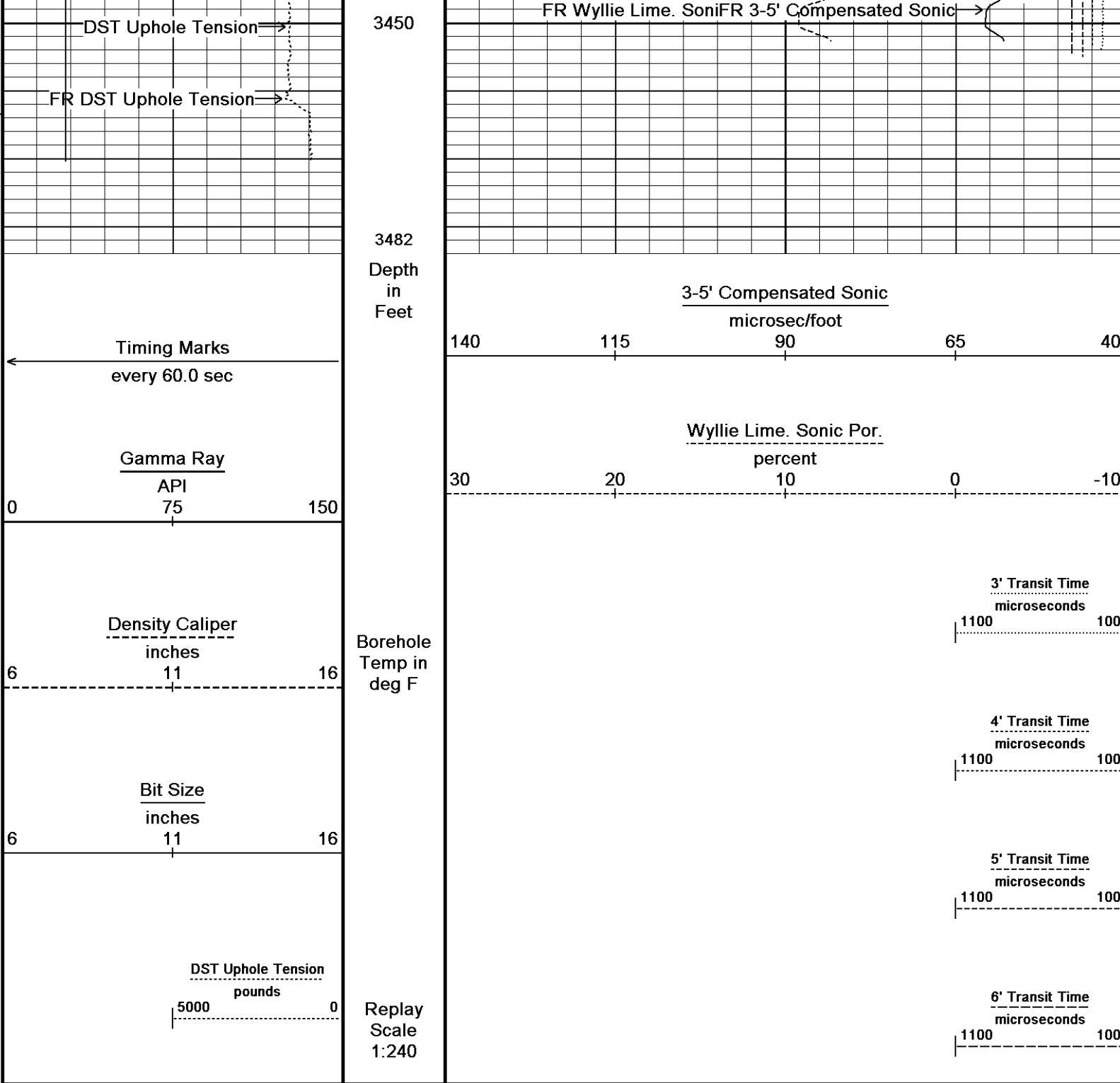
6' Transit Time →

5' Transit Time →

4' Transit Time →

3' Transit Time →

FFR 5' Transit Time →



Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 11.03.4044\Data\Citation Schmitt # 8-11\Citation Schmitt # 8-11_002.dta
System Versions: Logged with 11.03.4044 Plotted with 11.03.4044

5 INCH REPEAT PASS

BEFORE SURVEY CALIBRATION
C:\Minimus 11.03.4044\Data\Citation Schmitt # 8-11\Citation Schmitt # 8-11_003.dta

General Constants All 000 Last Edited on 28-FEB-2012,07:50

General Parameters		
Mud Resistivity	1.040	ohm-metres
Mud Resistivity Temperature	70.000	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 24-DEC-2011 19:14
Reading No	Measured	Calibrated (lbs)	
1	13180.10	0.00	
2	14049.87	408.00	

Gamma Calibration MCG-D.K 442			Field Calibration on 27-FEB-2012 09:38
	Measured	Calibrated (API)	
Background	69	47	
Calibrator (Gross)	1134	772	
Calibrator (Net)	1065	725	

Gamma Constants MCG-D.K 442			Last Edited on 28-FEB-2012,07:50
Gamma Calibrator Number	grc38		
Mud Density	1.06	gm/cc	
Caliper Source for Processing	Density Caliper		
Tool Position	Eccentred		
Concentration of KCl	0.00	kppm	

SP Calibration MCG-D.K 442			Field Calibration on 06-FEB-2012 10:17
	Measured	Calibrated (mV)	
Reference 1	101.0	100.0	
Reference 2	-99.9	-100.0	

High Resolution Temperature Calibration MCG-D.K 442			Field Calibration on 02-DEC-2011,12:34
	Measured	Calibrated(Deg F)	
Lower	50.00	50.00	
Upper	75.00	75.00	

High Resolution Temperature Constants MCG-D.K 442			Last Edited on 25-SEP-2011,21:25
Pre-filter Length	11		

Caliper Calibration MML-A 4			Base Calibration on 13-FEB-2012 09:03 Field Calibration on 27-FEB-2012 09:30
Base Calibration			
Reading No	Measured	Calibrator Size (in)	
1	15017	5.98	
2	18447	7.97	
3	21786	9.86	
4	25801	11.92	
5	0	0.00	
6	N/A	N/A	
Field Calibration			
	Measured Caliper (in)	Actual Caliper (in)	
	6.07	5.98	

Micro Normal and Micro Inverse Calibration MML-A 4			Base Calibration on 13-FEB-2012 09:11 Field Check on 27-FEB-2012 09:28
Base Calibration			
	Measured	Calibrated (ohm-m)	
Channel	Resistor 1 Resistor 2	Resistor 1 Resistor 2	
Micro Normal	12.2 60.2	2.6 12.8	
Micro Inverse	15.7 78.3	1.7 8.4	
Channel	Base Check (ohm-m)	Field Check (ohm-m)	
Micro Normal	32.1	32.1	

Micro Normal	02.1	02.1
Micro Inverse	16.3	16.3
Micro Normal and Micro Inverse Constants MML-A 4		Last Edited on 27-FEB-2012,09:27
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	N/A	inches
Neutron Calibration MDN-A.B 65		Base Calibration on 13-FEB-2012 14:25 Field Check on 27-FEB-2012 09:42
Base Calibration		
	Measured	Calibrated (cps)
	Near Far	Near Far
	3053 95	3714 110
Ratio	32.113	33.764
Field Calibrator at Base		
	Calibrated (cps)	
	1672	2379
Ratio	0.703	
Field Check		
	Calibrated (cps)	
	1684	2404
Ratio	0.701	
Neutron Constants MDN-A.B 65		Last Edited on 28-FEB-2012,07:50
Neutron Source Id	14035B	
Neutron Jig Number	5824NE	
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	Constant Value	
Temperature	68.00	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 55		Base Calibration on 13-FEB-2012 09:17 Field Check on 27-FEB-2012 09:20
Base Calibration		
	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	951.6	126.8
Base Check	281.6	
Field Check	281.6	
FE Constants MFE-A.A 55		Last Edited on 28-FEB-2012,07:51
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
Sonic Constants MSS-C.K 330		Last Edited on 28-FEB-2012,07:51
Maximum Boundary Contrast	100.00	micro-sec/ft
Fluid Transit Time	189.00	micro-sec/ft
Limestone Transit Time	47.50	micro-sec/ft
Sandstone Transit Time	55.50	micro-sec/ft
Dolomite Transit Time	42.50	micro-sec/ft

Dolomite Transit Time	43.50	micro-sec/ft
Sonic used for Porosities	3-5' Compensated Sonic	
Correction for Sonde Skew	Applied	
Cycle Stretch Algorithm	Applied	
MN3FT	N/A	micro-sec
MX3FT	N/A	micro-sec
Hunt-Raymer Constant	83.13	micro-sec/ft

Sonde Mode	Compensated
Hole Type	Open Hole

Sonde Parameters

	Measured	Calibrated
Offset	N/A	0.0000
Free Pipe	N/A	N/A
Peak Amplitude Source	N/A	

Waveform	Start Time (micro-sec)	Width (micro-sec)	Pre Gain	Start Gain	Discriminator (mV)
3'	N/A	N/A	N/A	N/A	N/A
4'	N/A	N/A	N/A	N/A	N/A
5'	N/A	N/A	N/A	N/A	N/A
6'	N/A	N/A	N/A	N/A	N/A

Processed Fixed Gate Parameters

Waveform Used For Processing	N/A			
Start Time (micro-sec)	End Time (micro-sec)	Discriminator (mV)	N/A	
N/A	N/A	N/A		
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	

Full Waveform Parameters

Use 3' Waveform to derive TR	N/A	
Use 4' Waveform to derive TR	N/A	
Use 5' Waveform to derive TR	N/A	
Use 6' Waveform to derive TR	N/A	
3' Waveform Discriminator Level	N/A	mV
4' Waveform Discriminator Level	N/A	mV
5' Waveform Discriminator Level	N/A	mV
6' Waveform Discriminator Level	N/A	mV
3' Waveform Filter	N/A	
4' Waveform Filter	N/A	
5' Waveform Filter	N/A	
6' Waveform Filter	N/A	
Semblance Level	N/A	
Semblance Window Width	N/A	micro-sec
Sonic 1 Despiker	N/A	N/A
Sonic 2 Despiker	N/A	N/A

High Resolution Temperature Calibration	MAI-A.A 45	Field Calibration on 12-JAN-2012,13:36
	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	100.00	100.00

High Resolution Temperature Constants	MAI-A.A 45	Last Edited on 12-JAN-2012,11:13
Pre-filter Length	11	

Induction Calibration	MAI-A.A 45	Base Calibration on 12-JAN-2012,13:34	Field Check on 27-FEB-2012 09:19	
Base Calibration				
Test Loop Calibration	Measured	Calibrated (mmho/m)		
Channel	Low	High	Low	High
1	14.4	472.6	9.3	966.2
2	5.7	374.0	7.6	821.4
3	3.4	261.2	5.2	566.0
4	2.5	133.9	2.6	279.2

Array Temperature	79.4	Deg F
Channel	Base Check (mmho/m)	Field Check (mmho/m)
	Low High	Low High
1	0.0 0.0	18.4 3850.6
2	0.0 0.0	31.6 3628.7
3	0.0 0.0	28.6 3048.9
4	0.0 0.0	18.3 2078.8
Deep	0.0 0.0	16.0 1910.9
Medium	0.0 0.0	42.5 4059.9
Shallow	0.0 0.0	49.5 5482.0
Array Temperature	0.0	60.9 Deg F

Induction Constants MAI-A.A 45

Last Edited on 28-FEB-2012,07:51

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	8.0000
Stand-off Fin Angle	45.00 degrees
Stand-off Fin Width	0.5000 inches
Borehole Corr. Rm Source	Temperature Corr
Temp. for Rm Corr.	MCG External Temperature
Squasher Start	0.0020 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-B 64

Base Calibration on 13-FEB-2012 10:56
Field Calibration on 27-FEB-2012 09:26

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	13425	3.99
2	22192	5.98
3	30768	7.97
4	39024	9.86
5	48432	11.92
6	N/A	N/A
Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	5.91	5.98

Photo Density Calibration MPD-B 64

Base Calibration on 13-FEB-2012 11:14
Field Check on 27-FEB-2012 09:25

Density Calibration		Measured		Calibrated (sdu)	
Base Calibration		Near	Far	Near	Far
Reference 1		47670	25060	59556	30836
Reference 2		19597	2525	24941	2541
Field Check at Base					
		1199.0	1386.9		
Field Check					
		1204.9	1393.5		

PE Calibration					
Base Calibration		Measured		Calibrated	
	WS	WH	Ratio	Ratio	
Background	218	1072			
Reference 1	18017	47489	0.383	0.371	
Reference 2	5304	19465	0.276	0.272	
Field Check at Base					
	218.3	1071.8			
Field Check					
	216.5	1076.6			

Density Constants MPD-B 64

Last Edited on 28-FEB-2012,07:50

Density Source Id	254	
Nylon Calibrator Number	DNCE695	
Aluminium Calibrator Number	DACD698	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.06	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	

DOWNHOLE EQUIPMENT

C:\Minimus 11.03.4044\Data\Citation Schmitt # 8-11\Citation Schmitt # 8-11_003.dta

MCB-A.A 11B Tension Cablehead
MCB-A.A 175 LG: 2.40 ft WT: 19.8 lb OD: 2.24 in

MCB-A.A 11B Tension Cablehead
MCB-A.A 175 LG: 2.40 ft WT: 19.8 lb OD: 2.24 in

Compact Comms Gamma
MCG-D.K 442 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Comms Gamma
MCG-D.K 442 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-log



57.56 ft GRGC - Gamma Ray
57.56 ft GRGC - Gamma Ray
54.65 ft CGXT - MCG External Temperature
54.65 ft CGXT - MCG External Temperature

MML-A 4 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

Compact Micro-log
MML-A 4 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

Compact Neutron
MDN-A.B 65 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Neutron
MDN-A.B 65 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-B 64 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Density/Caliper
MPD-B 64 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

SKJ-D.A Compact Knuckle Joint
SKJ-D.A 37 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

SKJ-D.A Compact Knuckle Joint
SKJ-D.A 37 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

Compact Focussed Electric
MFE-A.A 55 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Focussed Electric
MFE-A.A 55 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Sonic
MSS-C.K 330 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

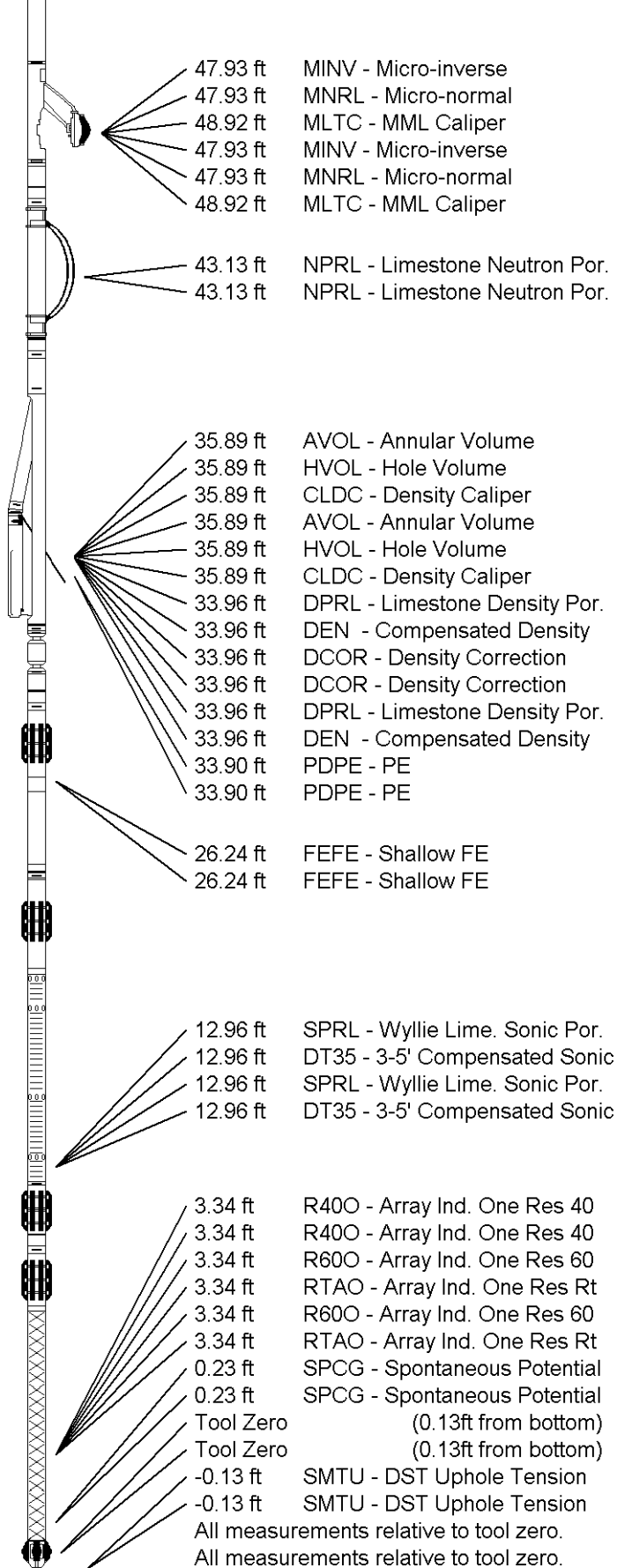
Compact Sonic
MSS-C.K 330 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

Compact Induction
MAI-A.A 45 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Compact Induction
MAI-A.A 45 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 65.24 ft Weight: 500.4 lb

Total Length: 65.24 ft Weight: 500.4 lb



COMPANY	CITATION OIL & GAS CORP.
WELL	SCHMITT # 8-11
FIELD	FAIRPORT
PROVINCE/COUNTY	ELLIS
COUNTRY/STATE	U S A / KANSAS

COUNTY/STATE: OREGON / WAGAS

Elevation Kelly Bushing	1948.00	feet	First Reading	3448.00	feet
Elevation Drill Floor	1946.00	feet	Depth Driller	3460.00	feet
Elevation Ground Level	1940.00	feet	Depth Logger	3461.00	feet



Weatherford®

COMPENSATED SONIC
WITH INTEGRATED TRANSIT TIME

