Confidentiality Requested: Yes No

# KANSAS CORPORATION COMMISSION **OIL & GAS CONSERVATION DIVISION**

1074228

Form ACO-1 August 2013 Form must be Typed Form must be Signed All blanks must be Filled

#### WELL COMPLETION FORM WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License #	API No. 15
Name:	Spot Description:
Address 1:	
Address 2:	Feet from Dorth / South Line of Section
City: State: Zip:+	Feet from East / West Line of Section
Contact Person:	Footages Calculated from Nearest Outside Section Corner:
Phone: ()	
CONTRACTOR: License #	GPS Location: Lat:, Long:
Name:	(e.g. xx.xxxx) (e.gxxx.xxxxx)
Wellsite Geologist:	Datum: NAD27 NAD83 WGS84
Purchaser:	County:
Designate Type of Completion:	Lease Name: Well #:
New Well Re-Entry Workover	Field Name:
	Producing Formation:
	Elevation: Ground: Kelly Bushing:
Gas D&A ENHR SIGW	Total Vertical Depth: Plug Back Total Depth:
OG GSW Temp. Abd.     CM (Coal Bed Methane)	Amount of Surface Pipe Set and Cemented at: Feet
Cathodic Other (Core, Expl., etc.):	Multiple Stage Cementing Collar Used?
If Workover/Re-entry: Old Well Info as follows:	If yes, show depth set: Feet
Operator:	If Alternate II completion, cement circulated from:
	feet depth to:w/sx cmt.
Original Comp. Date: Original Total Depth:	
Deepening Re-perf. Conv. to ENHR Conv. to SWD	Drilling Fluid Management Plan
Plug Back   Conv. to GSW   Conv. to Producer	(Data must be collected from the Reserve Pit)
	Chloride content: ppm Fluid volume: bbls
Commingled Permit #:	Dewatering method used:
Dual Completion Permit #:	
SWD         Permit #:           ENHR         Permit #:	Location of fluid disposal if hauled offsite:
ENHR         Permit #:           GSW         Permit #:	Operator Name:
	Lease Name: License #:
Spud Date or Date Reached TD Completion Date or	Quarter Sec TwpS. R East West
Recompletion Date Reached TD Recompletion Date of Recompletion Date	County: Permit #:

#### AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

### Submitted Electronically

KCC Office Use ONLY
Confidentiality Requested
Date:
Confidential Release Date:
Wireline Log Received
Geologist Report Received
UIC Distribution
ALT I II III Approved by: Date:

	Page Two	1074228
Operator Name:	_ Lease Name:	Well #:
Sec TwpS. R East _ West	County:	
INCTRUCTIONS. Chow important tang of formations papatrated D	stail all aaroa Bapart all final	agniag of drill atoms toots giving interval tootod, time tool

**INSTRUCTIONS:** Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken (Attach Additional Shi	e etc)	Yes No	L	og Formatio	n (Top), Depth an	d Datum	Sample
Samples Sent to Geolog	,	Yes No	Nam	e		Тор	Datum
Cores Taken Electric Log Run		☐ Yes ☐ No ☐ Yes ☐ No					
List All E. Logs Run:							
		CASING Report all strings set-c	RECORD Ne		on, etc.		
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
		ADDITIONAL	CEMENTING / SQL	JEEZE RECORD			
Purpose: Perforate	Depth Top Bottom	Type of Cement	# Sacks Used		Type and Pe	ercent Additives	
Protect Casing Plug Back TD							
Plug Off Zone							
Did you perform a hydraulic	fracturing treatment of	on this well?		Yes	No (If No, skip	o questions 2 an	d 3)
		raulic fracturing treatment ex		? Yes		o question 3)	
Was the hydraulic fracturing	g treatment informatio	n submitted to the chemical o	disclosure registry?	Yes	No (If No, fill o	out Page Three o	of the ACO-1)

Shots Per Foot				RD - Bridge Plu Each Interval Pe		e			ement Squeeze Record I of Material Used)	Depth
TUBING RECORD:	Siz	e:	Set At:		Packe	r At:	Liner F		No	
Date of First, Resumed	I Producti	on, SWD or ENHF	۲.	Producing Me	thod:	ping	Gas Lift	Other (Explain)		
Estimated Production Per 24 Hours		Oil Bb	ls.	Gas	Mcf	Wate	ər	Bbls.	Gas-Oil Ratio	Gravity
		10								
DISPOSITI					METHOD		TION: Comp.	Commingled	PRODUCTION INTER	IVAL:
Vented Solo		Jsed on Lease -18.)		Other <i>(Specify)</i> _		(Submit /	ACO-5)	(Submit ACO-4)		

Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202

# ALLIED CEMENTING CO., LLC. 037762 Federal Tax 1.D.# 20-5975804

			Federal Ta	ax I.D.	# 20-5975804					
REMIT TO P.O. I RUSS		NSAS 676	65				SERV	ICE PC		dseful.
DATE []-15-[]	SEC.	TWP. 34s	range 14w	CAI	LLED OUT	ON LOCA	TION		gan	JOB FINISH
LEASE Z-Bar	WELL #	17-6	LOCATION Acto	118	41/4E %	NIZE		BOIL		STATE
OLD OR NEW (C			3/11 4	1 1/2	Esmite	V, AU,		10011		us
				<i>,</i>						
CONTRACTOR	Southu	IND DA	llang		OWNER M	+MEX	doro	tion		·····
HOLE SIZE 12"	<i>ц</i>	T.D	. 920'		CEMENT					
CASING SIZE 8	5/8	DE	PTH 921		AMOUNT OF					
TUBING SIZE			PTH		2505x 63	5:35:6%	0173	1.00 +	14 # 6	loseol
DRILL PIPE			PTH		150 5m A.	+3%-60+3	2/150	[	. ·	
TOOL PRES. MAX 90			PTH			<b>CO</b> 00 1		12	2	
	10 ps;				COMMON_	50 8ack	S		2.25	2437.5
MEAS. LINE CEMENT LEFT I	NCSC /	SH	OE JOINT 40'		POZMIX	2 00 011-		@	0.	
PERFS.	11 (30. 9	<u> </u>				3 sacks			1.25	63.78
DISPLACEMENT	56%	blell- 0			CHLORIDE ]	SACKS			3.20	756.60
- OF BREDRILIN		10 00	······		ASCALWType 1-F	1-100-	VS	@	<u> </u>	2750 0
	EQI	UIPMENT			Floseal 631	nunde n	₩	@_15		_3750.0
			n		Lucia us	Jun (L)		 @	1. IU	
PUMP TRUCK			+Th) mesch					@		
# 471/302	HELPER	Ronb	fler					~		
BULK TRUCK			11/002					@		
# 363/290	DRIVER	Ucura	W. (6. B.)			20080		@		·
BULK TRUCK	DRIVER							@		
#	DRIVER				HANDLING	416		@ 6	1.25	9360X
					MILEAGE	Hlex. 11×4	-IO			1830.4
	RE	<b>MARKS</b> :						-	TOTAL.	\$9944.3
Bck James	hall +	brough								
pinp 3 bbls	H20 ale	ad t				S	SERVIO	CE		
MIX 2505K	Kod cer	net								
MIR 1503N	tail com	+ Shute	am Release ply	'g_	DEPTH OF J	OB 920	•			
0130 56	12645#	20 pump	duy Scoper togo	0007	PUMP TRUC					1125.00
plus h	ele,		:		EXTRA FOO		620		.95	589.00
	mon dic	are late	•		MILEAGE		80	0		540.0
					MANIFOLD		00	@		<u></u>
			7		light vehic	'll	X	0 4	100	390.00
CUARCE TO.	nam	Cy . I .	ha				· · · · · ·	_@		·
CHARGE TO:		•	Non					-	TOTAL	2844.0
			ZIP							
			<i>L</i> IF		85/8	PLUG & I	FLOAT	EQUI	PMEN	<b>T</b>
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					1- Rubber			@		
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TERMS AND	ONDITI	ONS" lists	d on the reverse si	ide	SALES TAX	(If Any)	<u></u>			
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SIGNATURE	A	,h	Vratel			net :	911,C	08.80	YR	

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DA	S=C
energy	services, L.P.

# TREATMENT REPORT

Customer	ONI EXI	OLGKAT,	4.1	Lease No.					Date	а		21 SP 8
Lease	2-3AR			Well #	7-6			2		11- 23	- 11	
Field Order #	Station	PRA TT	- k	5		Casing 1/	De	pth	Count	11	3	State
Type Job	W 41/2	1	ŚT.	139	×		Format	ion		Legal	Description	4-14
PIPE	DATA	PERFO	RATIN	IG DATA		FLUID US	ED			TREATMENT	RESUM	E
Casing Size	Tubing Size	Shots/Ft			Acid				RATE	PRESS	ISIP	
Depth_	Depth	From	т	)	Pre	Pad		Мах		r.	5 Min.	
/olume 1/2	Volume	From	Тс	0	Pad	C		Min			10 Min.	
Max Press	Max Press	From	Т	)	Frac	;		Avg	-		15 Min.	
Well Connection	Annulus Vol.	From	Тс	þ				HHP Used	ł	17	Annulus	s Pressure
Plug Depths	Packer Depth	From	То	)	Flus	h		Gas Volur	ne	2	Total Lo	ad
Customer Repre	esentative			Station	n Mana	iger Di	ILE	Scott	Trea	ater 2060	at the	las
Service Units	27900 3:	3708 2	20920	1983	11	17862						
Driver Names S	alling		i.	Phi	12							
Time		Tubing ressure	Bbls. P	umped	F	Rate				Service Log		
4:45 4	m		ii. 1				an.	he. Se	of ty	meet	v.	
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10244	NE Hiway	/ 61 • P.C	). Bo	x 8613 •	Pra	tt. KS 67	124-8	613 • (620	0) 672	2-1201 • Fa	ax (620)	672-538



#### 10244 NE Hwy. 61 P.O. Box 8613 Pratt, Kansas 67124 Phone 620-672-1201

# FIELD SERVICE TICKET 1718 05060 A

FHESOL		PING & WIRELINE					DATE TICKET NO.	
DATE OF //- 23-11		DISTRICT Pratt			NEW NELL			CUSTOMER ORDER NO.:
CUSTOMER M &	M	EXPLORATION .	Inc		LEASE Z-	Bar		17-6 WELL NO.
ADDRESS					COUNTY B	grBe	STATE	155
CITY		STATE 5			SERVICE CR	EW M	elson Phye	Syllivan
AUTHORIZED BY					JOB TYPE:	CNU	At lovesting	
EQUIPMENT#	HRS	EQUIPMENT#	HRS	EQL	JIPMENT#	HRS	TRUCK CALLED	DATE AM TIME
33705 20920	- its	m.	023		<u> 1997 - 1997</u>		ARRIVED AT JOB	11-24-11 8 4-45
37900	40	m					START OPERATION	11-24 11 AM 9:40
31/00							FINISH OPERATION	1124-11-AM 10:25
							RELEASED	1124-11 AM 11:00
							MILES FROM STATION TO	

CONTRACT CONDITIONS: (This contract must be signed before the job is commenced or merchandise is delivered).

The undersigned is authorized to execute this contract as an agent of the customer. As such, the undersigned agrees and acknowledges that this contract for services, materials, products, and/or supplies includes all of and only those terms and conditions appearing on the front and back of this document. No additional or substitute terms and/or conditions shall become a part of this contract without the written consent of an officer of Basic Energy Services LP.

(WELL OWNER, OPERATOR, CONTRACTOR OR AGENT) ITEM/PRICE REF. NO. MATERIAL, EQUIPMENT AND SERVICES USED UNIT QUANTITY UNIT PRICE \$ AMOUNT 300 5 COMENT SK FLabe 1h 75 rolle SALT b 3 10 64 DE 1410 276 124 14 <00 20 16 600 24 250 24 16.51 ea 8 0 4 gal DL M 30 Mi 2 TM 11 205 44 300 140 545 50F 5/4 84 003

Sec. 1	CHEMICAL	ACID	DATA:
and the second		1.1.1	
Sec. Sec.			
17.50			
all years			

	SUB TOTAL	NI IC
SERVICE & EQUIPMENT	%TAX ON \$	19,10
MATERIALS	%TAX ON \$	
That	for TOTAL	

SIGNED:

THE ABOVE MATERIAL AND SERVICE ORDERED BY CUSTOMER AND RECEIVED BY:

(WELL OWNER OPERATOR CONTRACTOR OR AGENT)

REPRESENTATIVE

FIELD SERVICE ORDER NO.

CLOUD LITHO - Abilene, TX

SERVICE

12 **BIG BUCKETS RATHOLE DRILLING** NO 4791 P.O. Box 5252 ORDERED BY Enid, Oklahoma 73702 Phone (580) 233-9850 Date. Fax (580) 233-4588 aleration Sur Bill To Lease Address Legal County T Rig DESCRIPTION AMOUNT Furnish Men & Equipment To, Materials Furnished 6.62 00 65 20 00 Operator 5 Approved By Total STATE TAX 4.30% 0.00 We appreciate your business! Total \$6,500.00

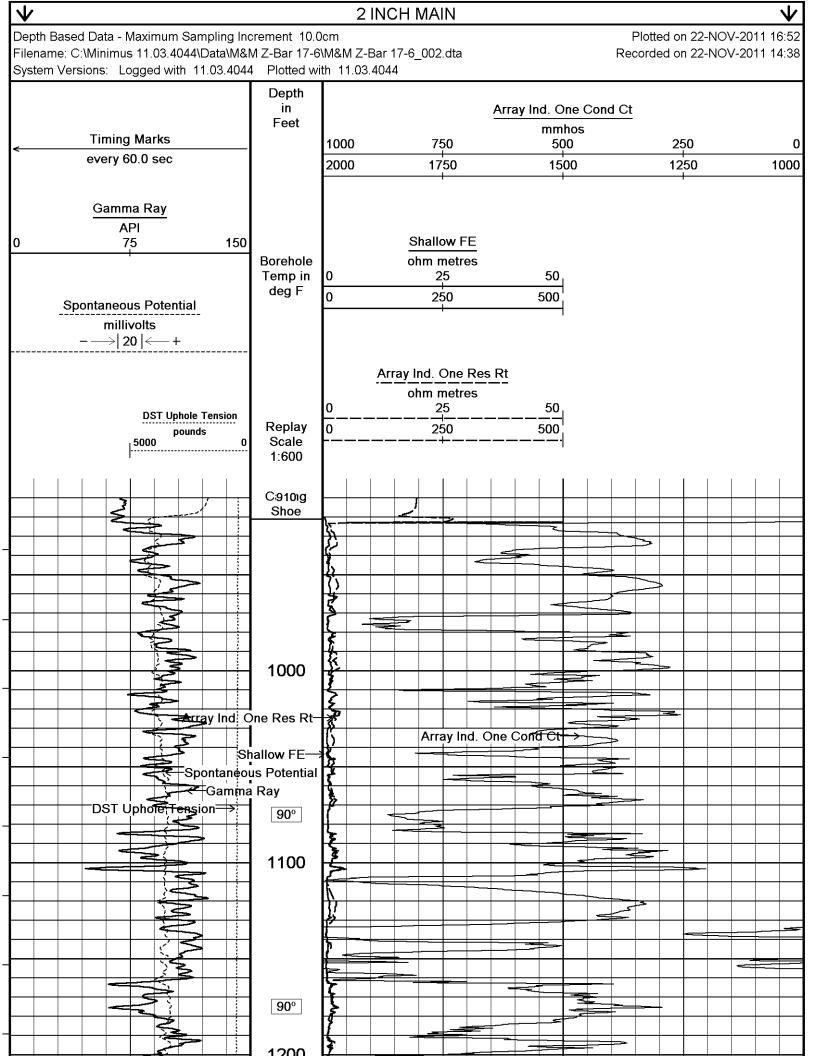
¢			ARRAY INDUCTION	INDUC	CTION	
	ġ)		SHALLOW FOCUSSED	N FOC	USSED	
vveatnertord	ora		ELEC	ELECTRIC LOG	_0G	
COMPANY M.	&M EXP	LORAT	M&M EXPLORATION, INC.			
	Z-BAR #17-6	7-6				) ≱∎
	AETNA NE	111				5 ₩
PROVINCE/COUNTY B/	BARBER				Ye .	Wireline
COUNTRY/STATE U.	U.S.A. / KANSAS	ANSAS			0.61	2010
LOCATION 19	1955' FNL & 1895' FWL	& 189	5' FWL		ſ	
N	NW/4					
SEC TWP R	RGE	Other Services	vices			
17 34S 1.	14W	MPD/MDN	Z	MML		
API Number 15-007-23791	791					
Permit Number						
Permanent Datum G.L., Elevation 1645 feet	evation 164	5 feet			Elevations:	feet
Log Measured From KB						1657.00
Drilling Measured From K.B	B				פֿק	1645.00
Date	22-NOV-2011	2011				
Run Number	ONE					
Depth Driller	5050.00		feet			
Depth Logger	5050.00		feet			
First Reading	5047.00		feet			
Last Reading	921.00		feet			
Casing Driller	920.00		feet			
Casing Logger	921.00		feet			
Bit Size	7.875		inches			
Hole Fluid Type	CHEMICAL	AL				
Density / Viscosity	9.00 lt	lb/USg	45.00 CP			
PH / Fluid Loss	10.50		8.00 ml/30Min			
Sample Source	FLOWLINE	Ē				
Rm @ Measured Temp	0.85 @ 76.0	76.0	ohm-m			
Rmf @ Measured Temp	0.68 @ 76.0	76.0	ohm-m			
Rmc @ Measured Temp	1.02 @	76.0	ohm-m			
Source Rmf / Rmc	CALC		CALC			
Rm @ BHT	0.58 @111.0	11.0	ohm-m			
Time Since Circulation	4 HOURS	S				
Max Recorded Temp	111.00		deg F			
Equipment Name	COMPACT	CT				
Equipment / Base	13025		LIB			
Recorded By	L. SCOTT	Т				
Witnessed By	BETH BROCK	ROCK				
S.O.# / JOB#	3531207			LB11-298		

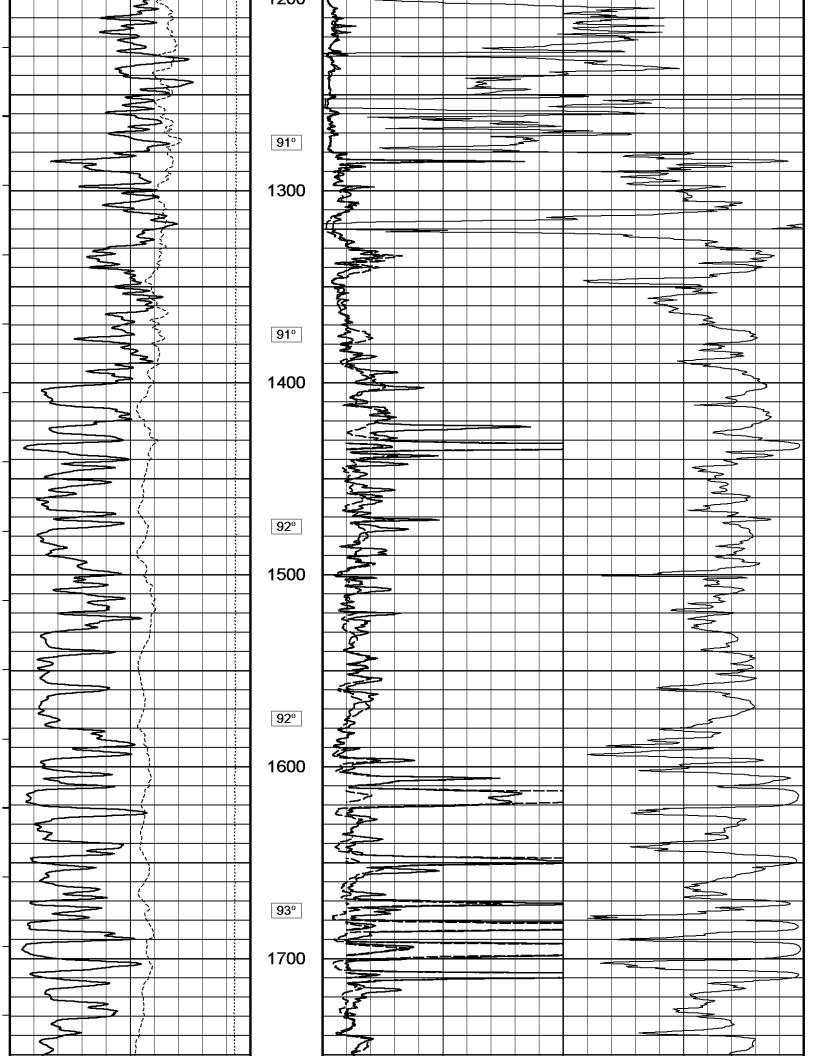
	BOREHOLE RECORD Last Edited: 22-NOV-2011 14:2							
	Bit Size	Depth From		Depth To				
inches feet feet			feet					
	7.875 921.00 5050.00			5050.00				
	CASING RECORD							
Туре	Size	Depth From	Shoe De	epth Weight				
	inches	feet	feet					
SURFACE	8.625	0.00	921	.00 24.00				

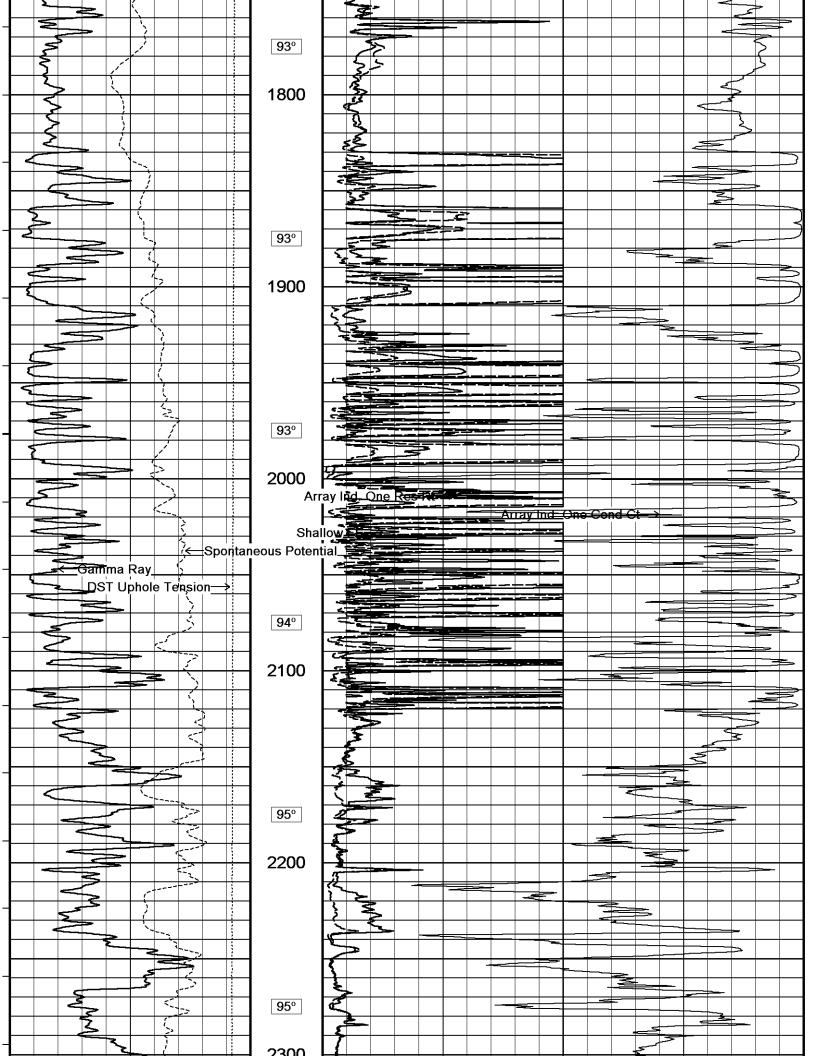
### REMARKS

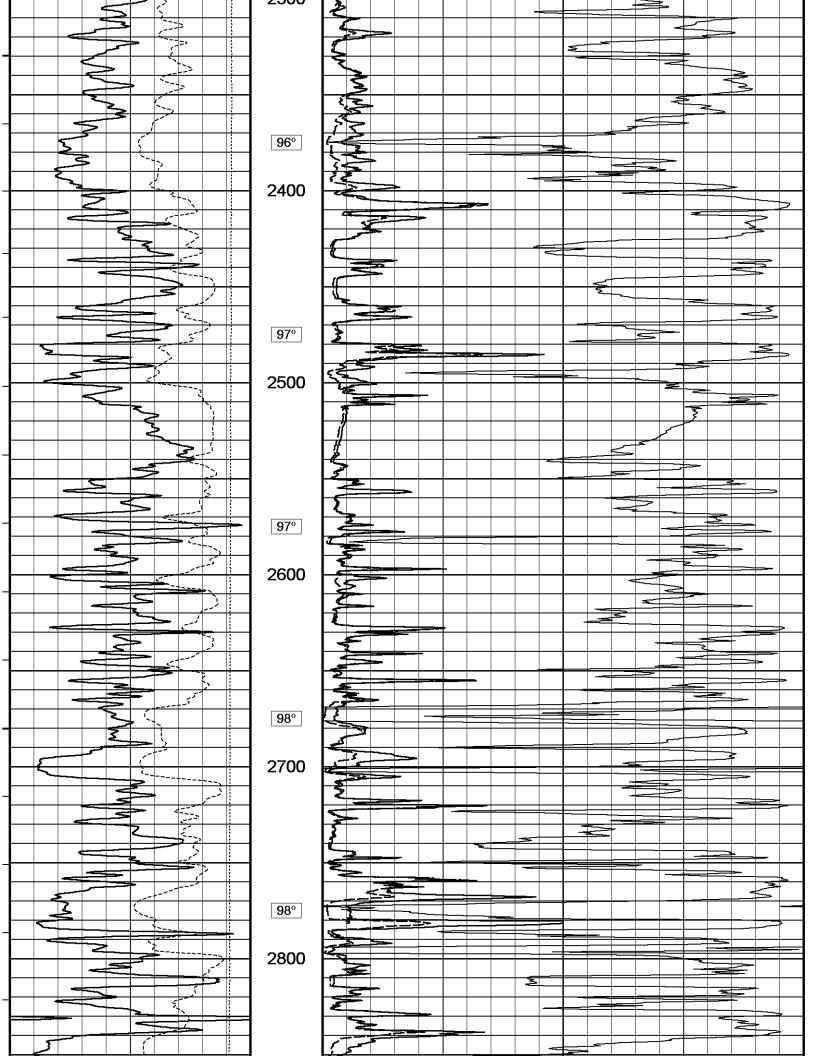
Tools Used: MPD, MCG, MDN, MFE, MAI, MML Hardware: MPD: 8 inch profile plate used. MAI and MFE: 0.5 Inch standoffs used. MDN: Dual Bowspring used. 2.71 G/CC Limestone density matrix used to calculate porosity. Borehole rugosity, tight pulls, and washouts will affect data quality. All intervals logged and scaled per customer's request. Annular volume with 4.5 inch production casing = 280 cu. ft. Service order #3531207 Rig: Southwind #70 Engineer(s): L. Scott Operator(s): M. Stegman

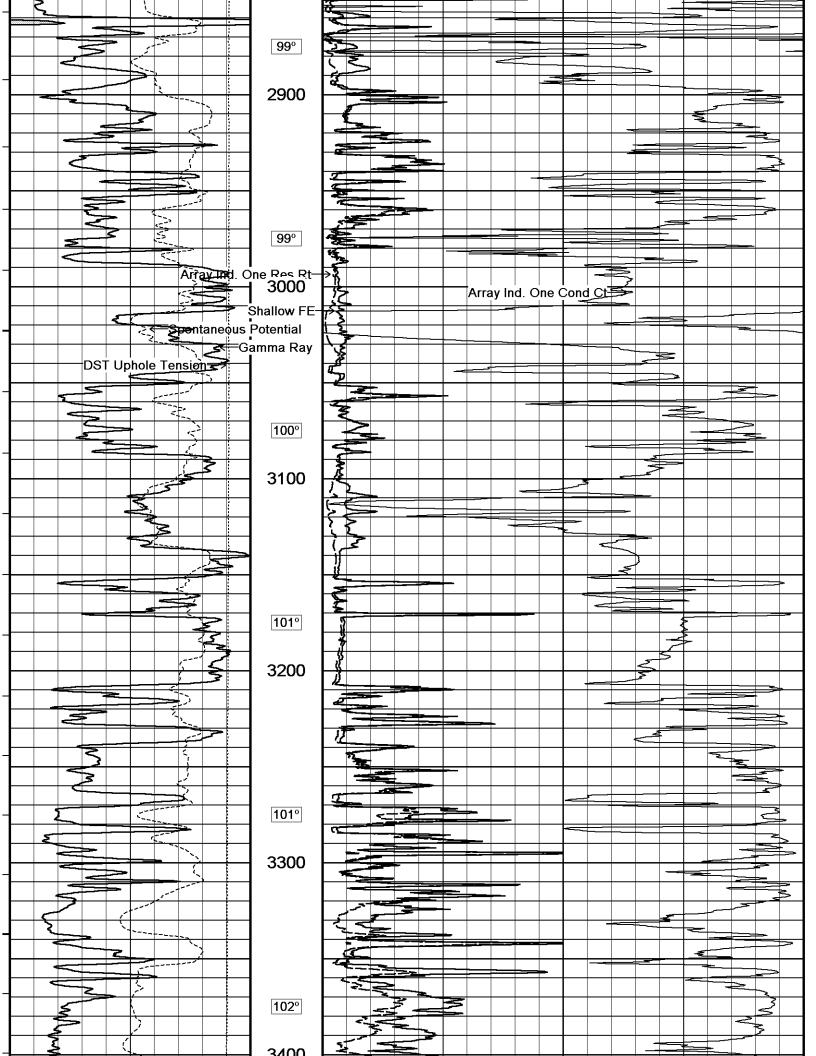
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, 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.

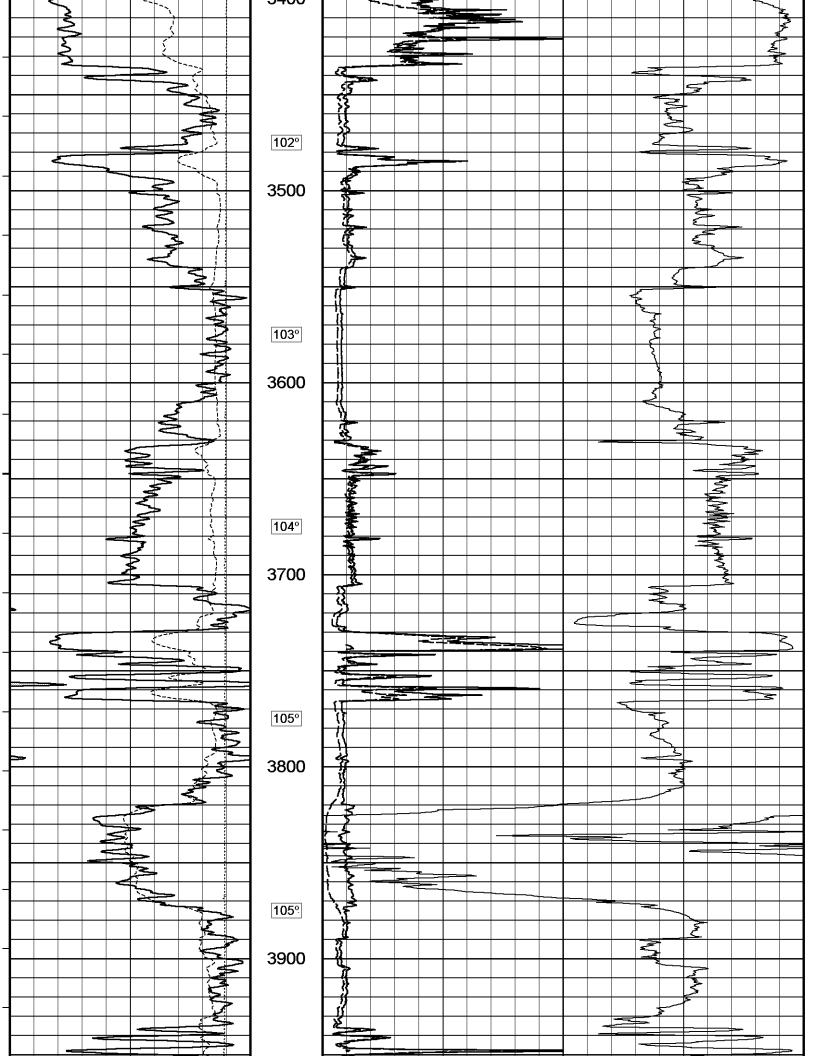


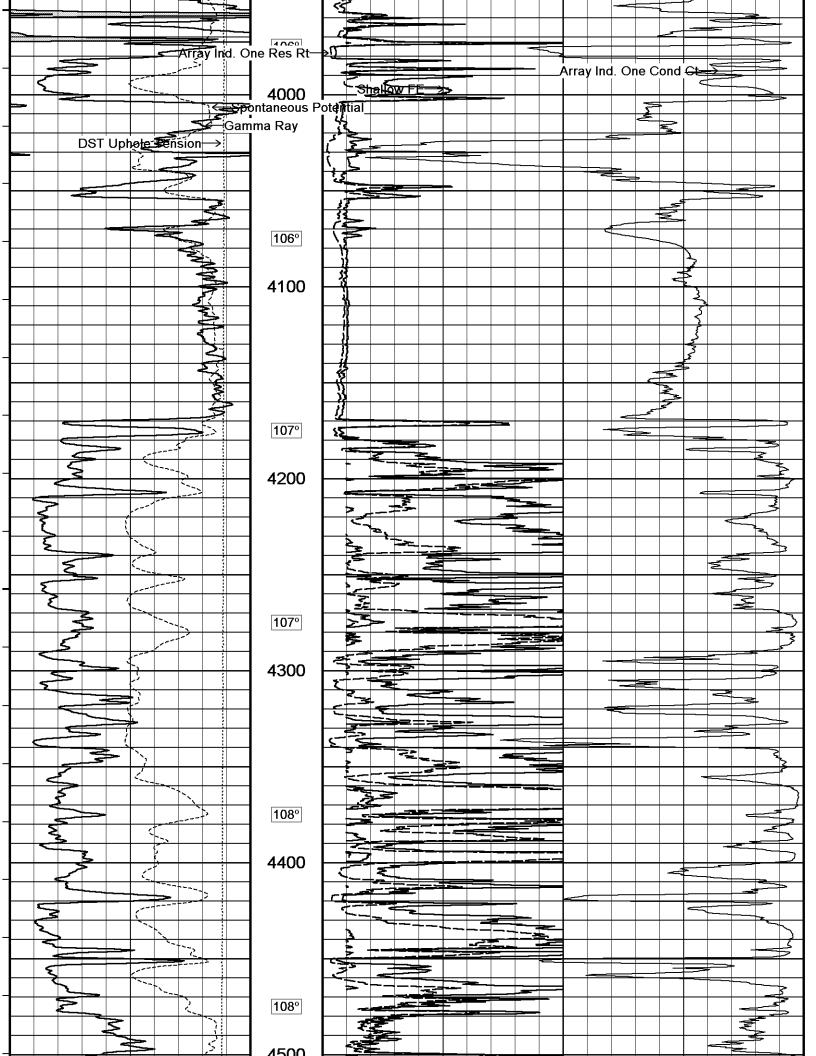


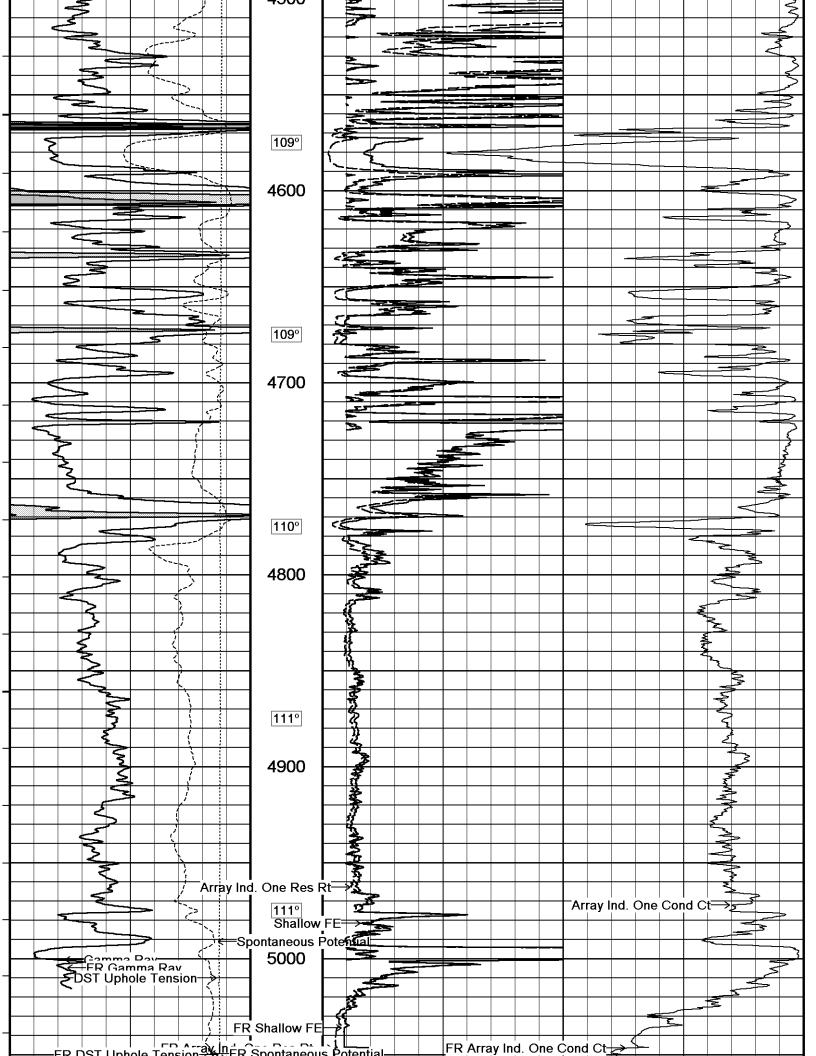


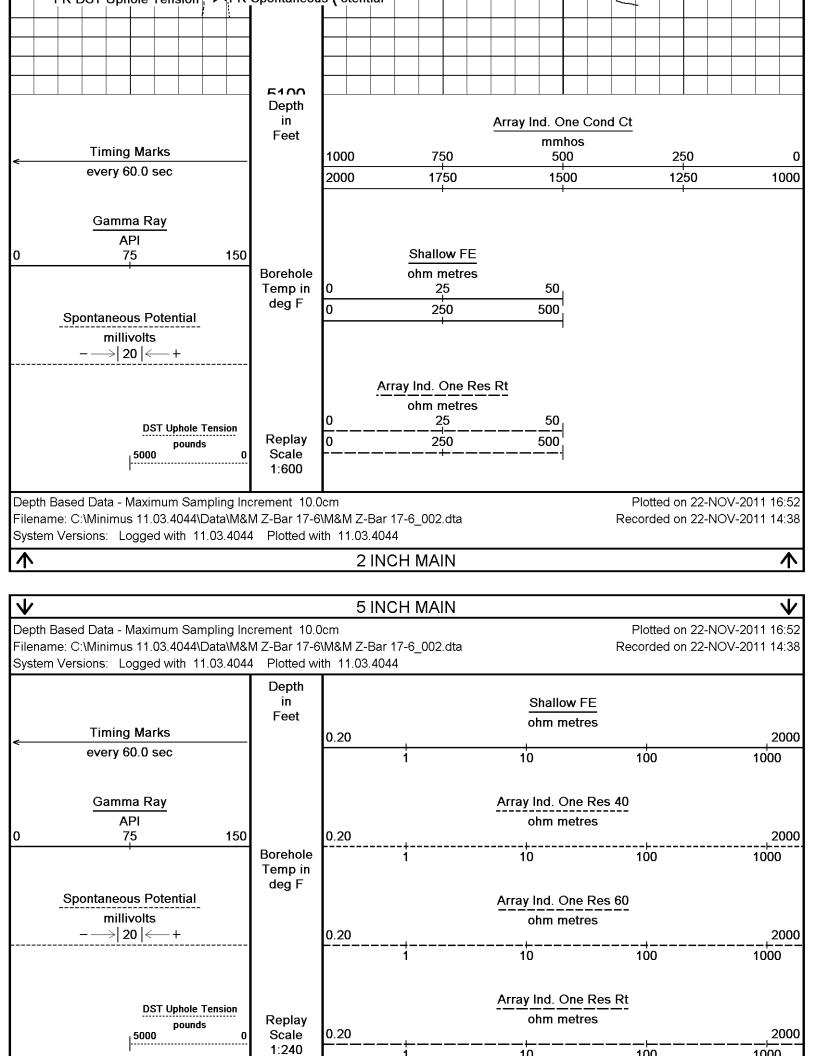


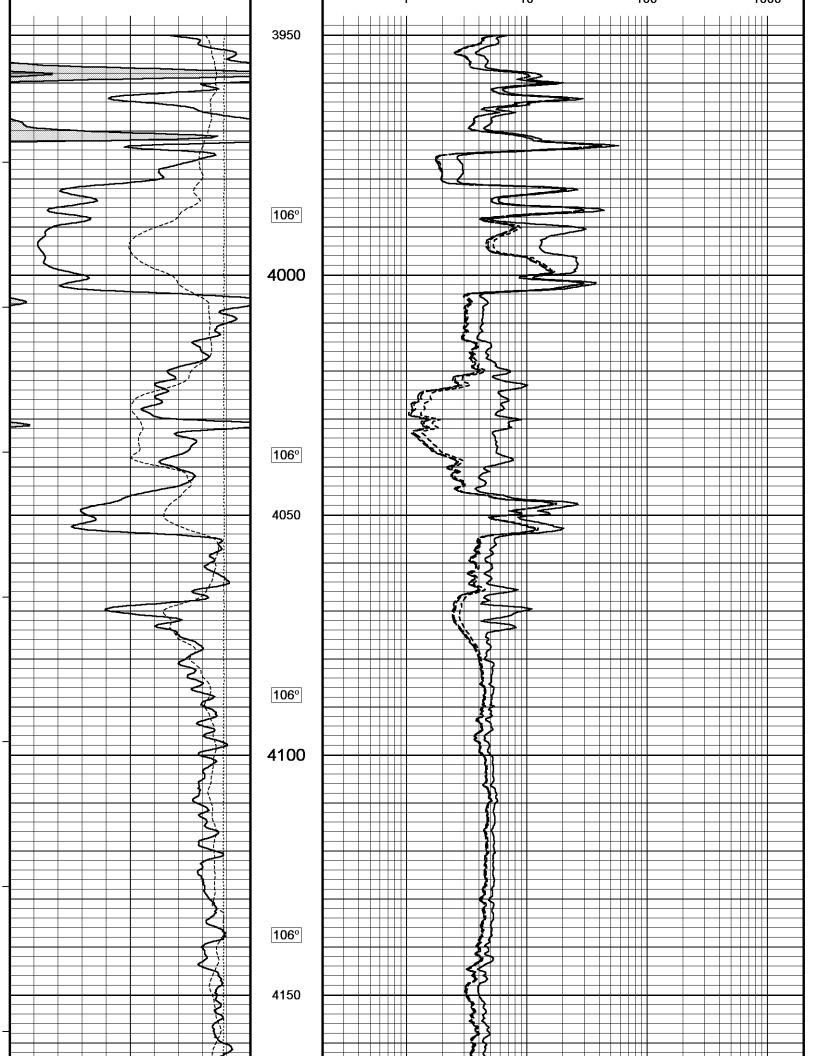


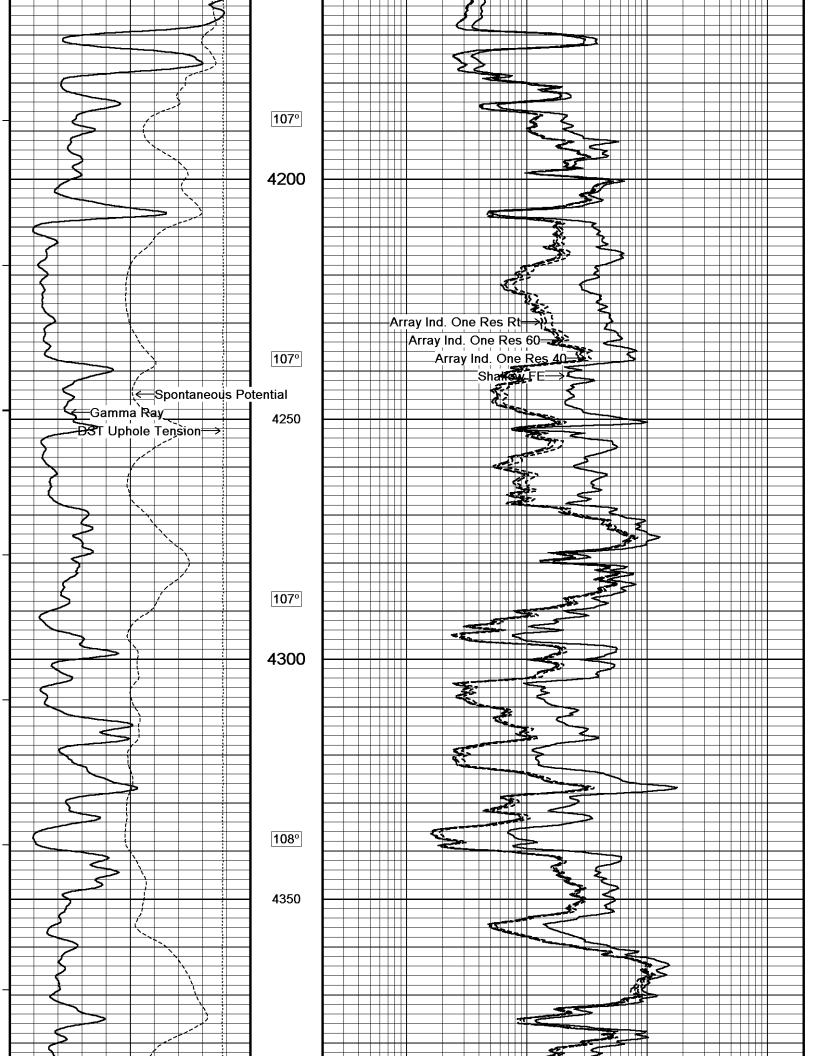


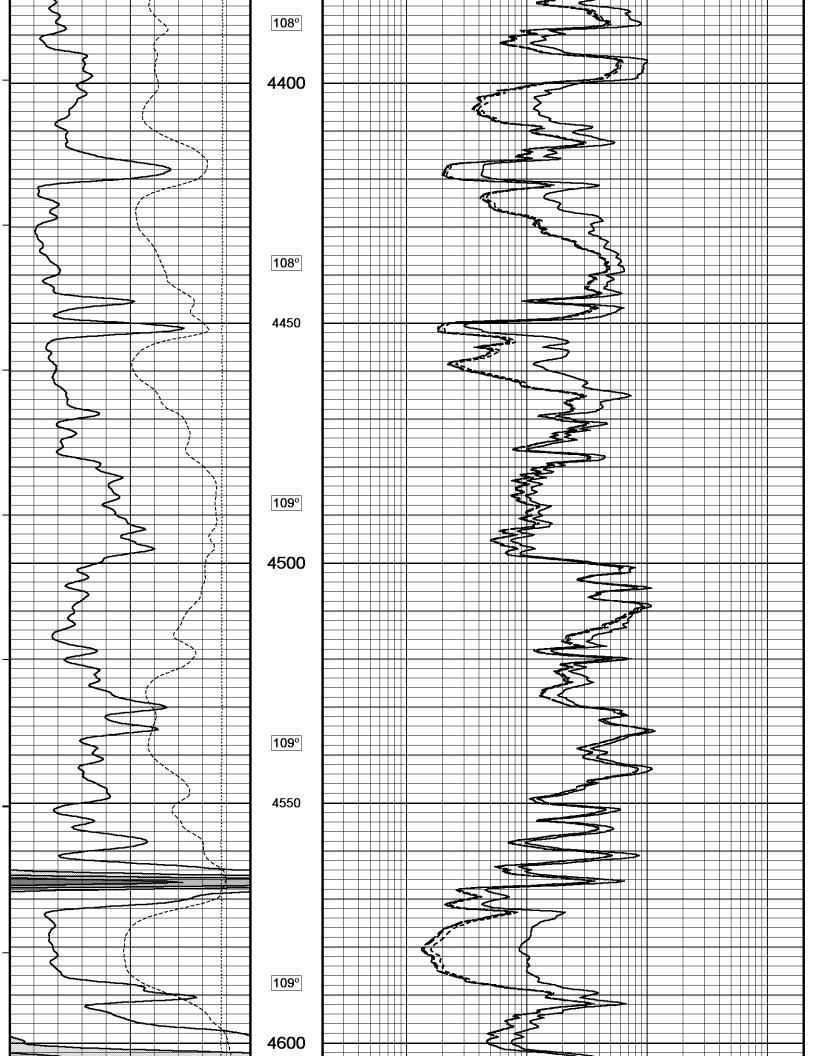


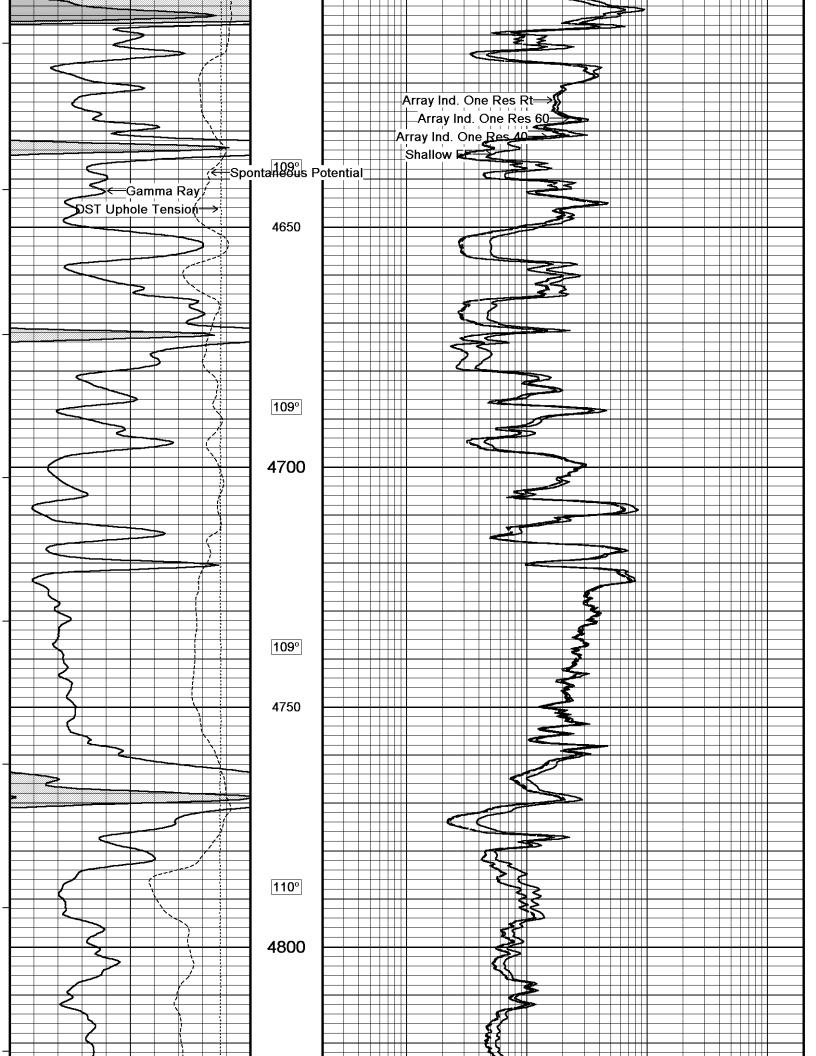


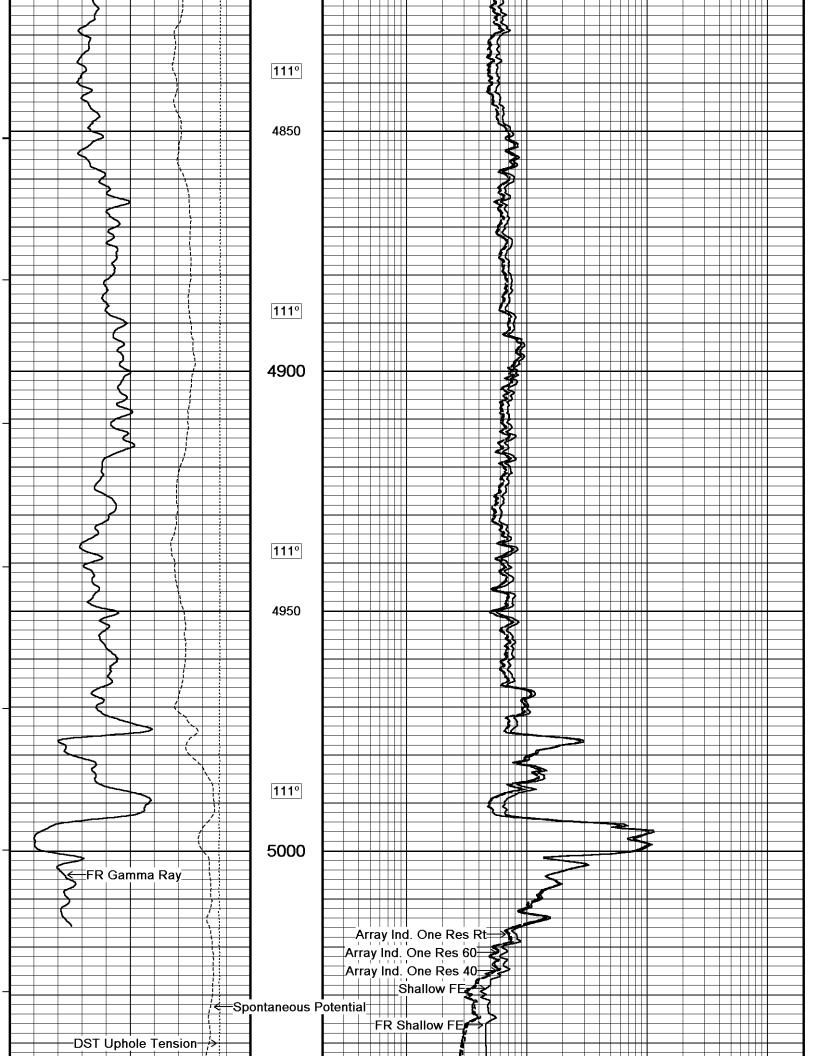


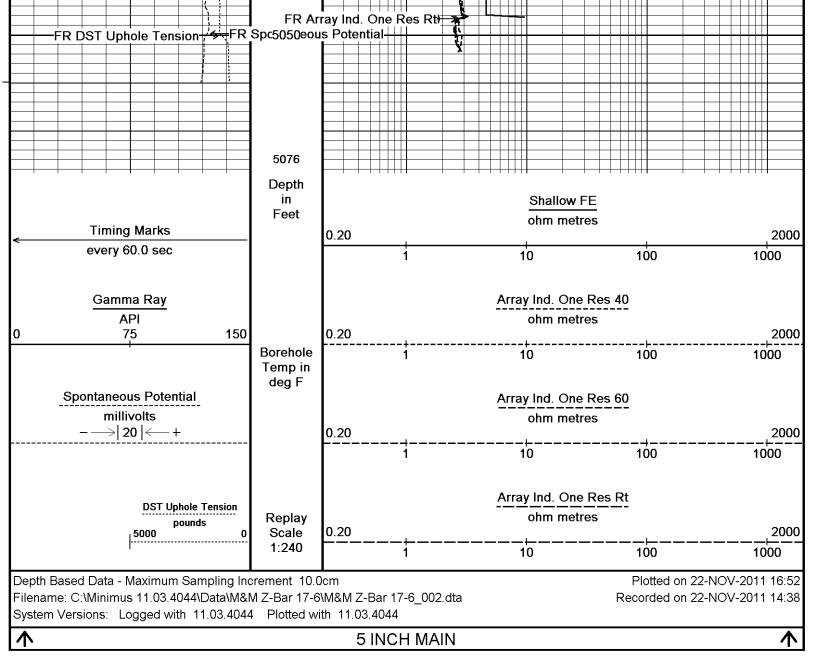


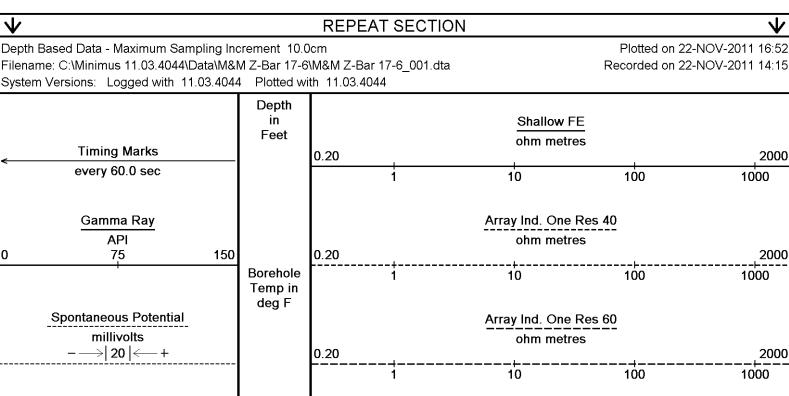


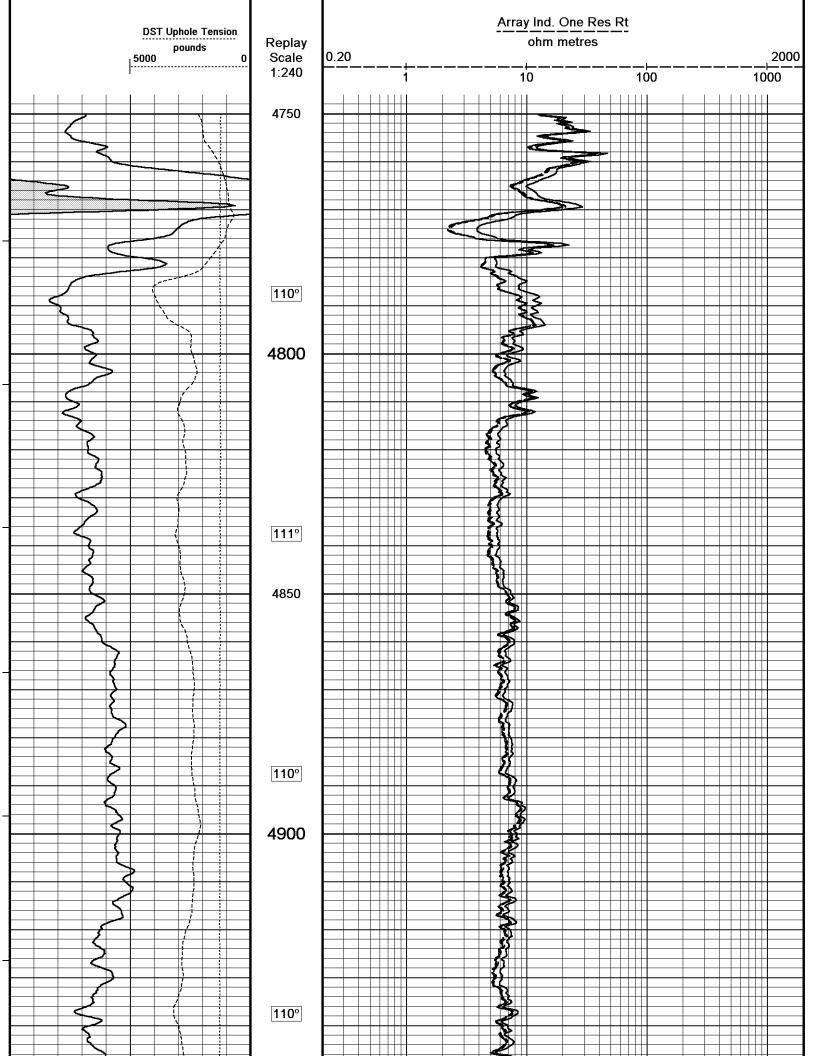


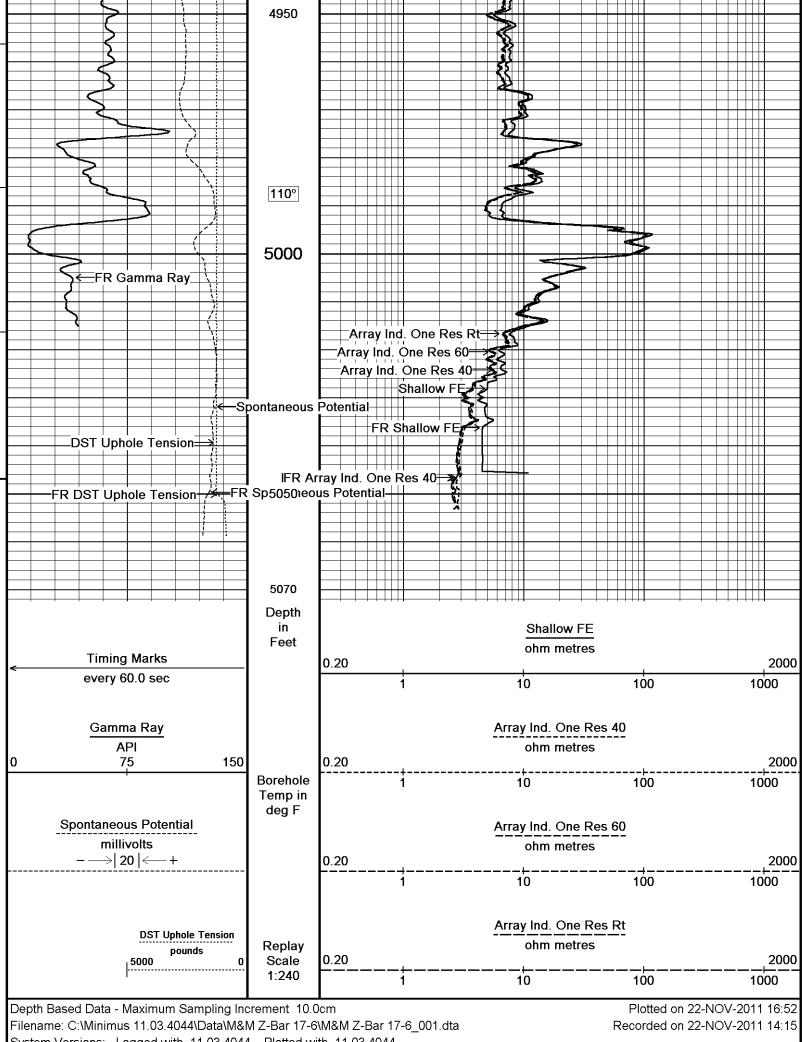












System Versions: Logged with 11.03.4044 Plotted with 11.03.4044

# REPEAT SECTION

	BEFORE SUF	RVEY CALIBRATION	
Down hale Tension Colibration Al		C:\Minimus 11.03.40	044\Data\M&M Z-Bar 17-6\M&M Z-Bar 17-6.dt
Down-hole Tension Calibration All	1000		Field Calibration on 30-JUN-2010
Reading No	Measured	Calibrated (lbs)	
1	14112.01	10.00	
2	15164.79	427.00	
General Constants All 000			Last Edited on 22-NOV-2011,10:5
General Parameters			
Mud Resistivity	0.850	ohm-metres	
Mud Resistivity Temperature	76.000	degrees F	
Water Level	0.000	feet	
Density/Neutron Processing	Wet Hole		
Hole/Annular Volume and Differen			
HVOL Method	Single Caliper		
HVOL Caliper 1	Density Caliper		
HVOL Caliper 2	N/A		
Annular Volume Diameter	4.500	inches	
Caliper for Differential Caliper	Density Caliper		
Rwa Parameters			
Porosity used	Base Density Porosity		
Resistivity used	Array Ind. One Res Rt		
RWA Constant A	1.000		
RWA Constant M	2.000		
Down-hole Tension Calibration SM	 MS 0		
Reading No	Measured	Calibrated (lbs)	Field Calibration on 10-SEP-2011 04:3
	-2243.52	Calibrated (lbs) 0.00	
2	-2243.52 -2203.03	480.60	
High Resolution Temperature Cali			
			Field Calibration on 02-AUG-2011,17:1
•	Measured	Calibrated(Deg F)	
Lower	50.00 75.00	50.00 75.00	
		70.00	
High Resolution Temperature Con	stants MCG-C 139		Last Edited o
Pre-filter Length	11		
SP Calibration MCG-C 139			
	Measured	Calibrated (mV)	Field Calibration on 29-AUG-2011 09:
Reference 1	103.7	Calibrated (mv) 100.0	
Reference 2	-96.7	-100.0	
Gamma Calibration MCG-C 139			
			Field Calibration on 22-NOV-2011 03:2
	Measured	Calibrated (API)	
Background	77	52	
Calibrator (Gross)	1148	777	
Calibrator (Net)	1071	725	
Gamma Constants MCG-C 139			Last Edited on 22-NOV-2011,08:2
Gamma Calibrator Number	grc38		
Mud Density	1.08	gm/cc	
Caliper Source for Processing	Density Caliper		
Tool Position	Eccentred		
Concentration of KCI	0.00	kppm	
Micro Normal and Micro Inverse Ca	alibration MML-A 16		Base Calibration on 15-NOV-2011 08: Field Check on 22-NOV-2011 03:

Base Calibration

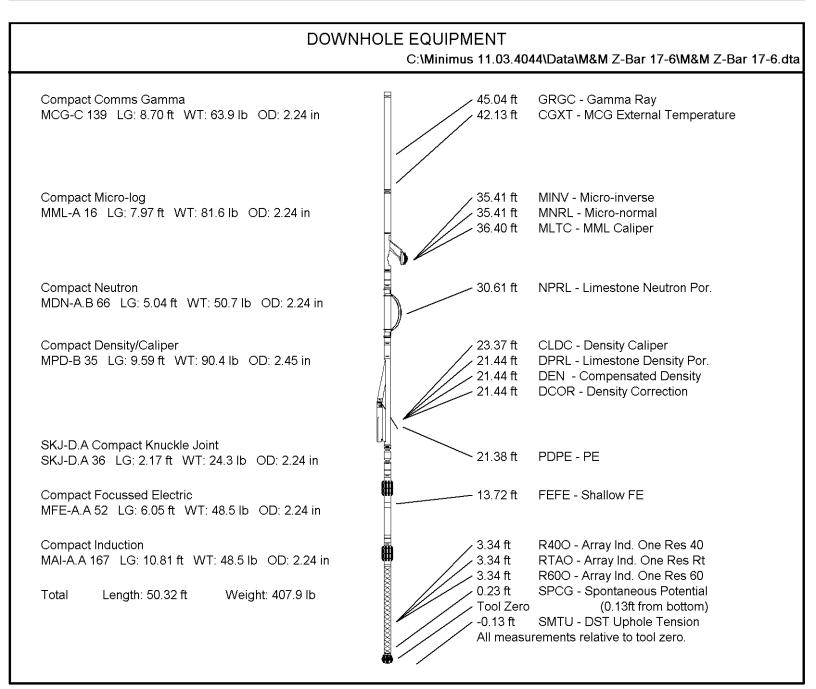
 $\mathbf{\Lambda}$ 

Micro Normal         12.1         60.2         2.6         12.8           Micro Inverse         15.7         78.4         1.7         8.4           Channel         Base Check (ohm-m)         Field Check (ohm-m)         32.1           Micro Normal         32.1         32.1           Micro Normal A Micro Inverse Constants MML-A 16         Last Edited on 15-NOV-2011,15           Ped Type         8-12 in Soft Rubber Inflatable 006-9011-159         Micro Normal K Factor         0.3380           Standoff Offset         NA         inches         Base Calibration on 15-NOV-2011 06           Base Calibration MML-A 16         Base Calibration on 22-NOV-2011 03         Base Calibration on 22-NOV-2011 03           Base Calibration Offset         NA         Inches         Field Calibration on 22-NOV-2011 03           Base Calibration         Measured         Calibrator Size (in)         Field Calibration on 22-NOV-2011 03           Calibration         Measured Caliper (in)         6.02         5.98         Field Check on 22-NOV-2011 04           Field Calibration         Measured Caliper (in)         Actual Caliper (in)         Field Check on 22-NOV-2011 04           Base Calibration         Measured Caliper (in)         Actual Caliper (in)         Field Check on 22-NOV-2011 04           Base Calibration on 17-OCT-2011 14		Measured	Calibrated (ohm-m)	
Micro Inverse         15.7         78.4         1.7         8.4           Channel         Base Check (ohm-m) Micro Normal Micro Normal and Micro Inverse         15.3         16.3           Micro Inverse         15.3         16.3         16.3           Micro Normal and Micro Inverse         0.5110         Last Edited on 15-NOV-2011,15           Pad Type         8-12 in Soft Rubber Inflabib 006-901-159         Inches         Last Edited on 15-NOV-2011,15           Micro Inverse K Factor         0.3300         Standoff Offset         0.310         Reading No           Caliper Calibration MML-A 16         Base Calibration on 22 NOV-2011 08 Field Calibration on 22 NOV-2011 03         Base Calibration on 22 NOV-2011 03           Reading No         Measured         Calibrator Size (in) 1         14184         5.88           2         17582         7.37         3.4         2.000           3         26868         18.22         7.97           3         26868         18.22         7.97           3         26868         18.22         7.97           4         28868         18.22         7.97           5         NA         N/A         N/A           Field Calibration         Measured         Calibratod (cps)	Channel	Resistor 1 Resistor 2	Resistor 1 Resistor 2	
Channel       Base Check (ohm-m) Micro Normal       Field Check (ohm-m) 32.1       Status         Micro Normal and Micro Inverse Constants       MLA 16       Last Edited on 15-NOV-2011,15         Pad Type       8-12 in Soft Rubber Inflatable 006:9011-159 Micro Normal K Factor       0.5110 Micro Normal K Factor       Last Edited on 15-NOV-2011,05         Standoff Offset       N/A       inches       Ease Calibration on 15-NOV-2011 08 Field Calibration on 22-NOV-2011 03 Field Calibration on 22-NOV-2011 03         Base Calibration       Measured 1 11552       Calibration Size (in) 1 117552       Field Calibration on 22-NOV-2011 03 Field Calibration on 17-OCT-2011 14 Field Calibration         Ped Calibration       Measured Caliper (in) 6.02       5.98       Base Calibration on 17-OCT-2011 14 Field Check on 22-NOV-2011 03 8         Base Calibration       Measured Caliper (in) 6.02       5.98       Base Calibration on 17-OCT-2011 14 Field Check on 22-NOV-2011 03         Base Calibration       Measured Caliper (in) 6.02       5.98       Base Calibration on 17-OCT-2011 14 Field Check on 22-NOV-2011 03         Ratio       0.036       97       3714       110         Base Calibration and Base       Calibrated (cps)       1647       2339         Ratio       0.039       1647       2339       104         Field Check       Calibrated (cps)       1647       2339       103				
Micro Normal         32.1         32.1           Micro Inverse         16.3         16.3           Micro Normal and Micro Inverse Constants         MML-A 16         Last Edited on 15-NOV-2011, 15           Pad Type         8-12 in Soft Rubber Inflatable 006-9011-159         Inter Normal K Factor         0.3380           Standorf Offset         0.3380         Standorf Offset         Difference           Caliper Calibration         Maximum         Calibration Size (m)         Field Calibration on 22 NOV-2011 03           Reading No         Measured         Calibrator Size (m)         Field Calibration on 22 NOV-2011 03           Reading No         Measured         Calibration Size (m)         Field Calibration on 22 NOV-2011 03           S         1         17582         7 7 7         Field Calibration on 22 NOV-2011 03           Field Calibration         Measured Calibration NUA         NUA         NUA         NUA           Field Calibration         Measured Calibration (m)         6.02         5.98         Event Size (m)           Neutron Calibration MDN-A.B 66         Base Calibration on 17-OCT-2011 14         Field Check on 22-NOV-2011 03           Near Far         Near Far         Near Far         Size (Far)         Size (Far)           Neutron Calibration at Base         Calibratof (cps)		10.7 70.4	1.7 0.4	
Micro Inverse         15.3         16.3           Micro Normal and Micro Inverse Constants MML-A 16         Last Edited on 15-NOV-2011,15           Pad Type         8.12 in Soft Rubbor Inflatable 006 9011-159         Autor Normal K Factor         0.310           Micro Inverse K Factor         0.3300         Standoff Offset         N/A         inches           Caliper Calibration         Male Converse K Factor         0.3300         Standoff Offset         Base Calibration on 15-NOV-2011 08           Bese Calibration         Measured         Calibrator Size (in)         Sig         Sig         Sig           1         17582         7.97         Sig         Sig         Sig         Sig           3         205936         9.86         1.92         Sig         Sig         Sig         O <td></td> <td></td> <td></td> <td></td>				
Micro Normal and Micro Inverse Constants         MML-A 16         Last Edited on 15-NOV-2011,15           Pad Type         8-12 in Soft Rubber Inflatable 006-9011-159         0.5110           Micro Normal K Factor         0.5310           Standoff Offset         NVA         inches           Caliper Calibration MML-A 16         Base Calibration on 15-NOV-2011 08           Base Calibration         Reading No         Measured           1         14184         5.58           2         17582         7.57           3         20398         9.86           4         24896         11.02           5         NVA         NVA           6         NVA         NVA           Field Calibration MDN-A.B 66         Base Calibration on 17-OCT-2011 14           Field Calibrator at Base         Calibrated (cps)           Near         Far         Nar           Notron Collibrator at Base         Calibrated (cps)           Ratio         31.796         33.764           Field Calibrator at Base         Calibrated (cps)           Ratio         0.698         Last Edited on 22-NOV-2011,03           Neutron Constants MDN-A.B 66         Last Edited on 22-NOV-2011,03           Neutron Source Id         P581258 <td></td> <td></td> <td></td> <td></td>				
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         Caliper Calibration ML-A 16       Base Calibration on 15-NOV-2011 08         Base Calibration       Field Calibration on 22-NOV-2011 03         Reading No       Masured         2       17582         3       20836         4       24886         4       24886         5       0         0.00       6         6       N/A         NVA       N/A         Field Calibration on 17-OCT-2011 14         Field Calibration MDN-A.B 66       Base Calibration on 17-OCT-2011 14         Base Calibration MDN-A.B 66       Base Calibrated (cps)         Near       Far         Year       Far         Year       Far         Attio       3.764         Field Calibrated (cps)       Near         Near       Far         Ratio       0.704         Field Calibrated (cps)       1647         Ratio       0.698         Neutron Constants MDN-A.B 66       Last Edited on 22-NOV-2011,03         <				
Micro Normal K Factor         0.5110           Micro Normal K Factor         0.3330           Standoff Offset         N/A           Inter Calibration MML-A 16         Base Calibration on 15-NOV-2011 08           Base Calibration         Field Calibration on 22-NOV-2011 03           Reading No         Measured         Calibrator Size (in)           1         1184         5.89           2         17582         7.97           3         20836         9.86           4         24886         11.92           5         0         0.000           6         N/A         N/A           Field Calibration         Measured Caliper (in)         Actual Calibration on 17-OCT-2011 14           Base Calibration         Measured Calibrated (cps)         Base Calibration on 17-OCT-2011 14           Base Calibration         Measured Calibrated (cps)         Near           Netron Calibration at Base         Calibrated (cps)         1659           Ratio         31.796         33.764         2388           Field Calibrator at Base         Calibrated (cps)         2388           Ratio         0.639         2398         238           Neutron Constants MDN-A.B 66         Last Edited on 22-NOV-2011.03	Micro Normal and Micro Inv	erse Constants MML-A	16	Last Edited on 15-NOV-2011,15:23
Micro Inverse K Factor         0.380 N/A           Standoff Offset         N/A           Caliper Calibration MML-A 15         Base Calibration on 15-NOV-2011 05 Field Calibration on 22-NOV-2011 03           Reading No         Measured           1         14184           2         17552           3         20336           4         24886           5         0           5         0           6         N/A           N/A         N/A           Field Calibration         Measured Caliper (in)           6.02         5.98           Neutron Calibration MDN-A.B 66         Base Calibration on 17-OCT-2011 14           Base Calibration         Measured           Near         Far           3086         97           31.796         33.764           Field Calibrator at Base         Calibrated (cps)           1647         2359           Ratio         0.704           Field Check         Calibrated (cps)           1647         2359           Ratio         0.698           Neutron Constants MDN-A B 66         Last Edited on 22-NOV-2011,03           Neutron Constants MDN-A B 66         Last Edited on 22-NOV-201	Pad Type 8-12 ir	n Soft Rubber Inflatable 00	6-9011-159	
Standoff Offset         N/A         inches           Caliper Calibration MML-A 16         Base Calibration on 15-NOV-2011 06 Field Calibration on 22-NOV-2011 03           Base Calibration         Calibrator Size (in)           1         14184           2         7.97           3         20836           4         24886           5         0           0         0.00           6         N/A           Field Calibration         Measured Caliper (in)           6         N/A           6         N/A           8         0           0.00         5.98           Neutron Calibration MDN-A.B 66         Base Calibrated (cps)           Near         Far           Near         Far           Far         Near           Far         Near           Far         Near           Faito         0.704           Field Calibrator at Base         Calibrated (cps)           Ratio         0.704           Field Check         Calibrated (cps)           Ratio         0.704           Field Check         Calibrated (cps)           Ratio         0.000           <				
Caliper Calibration MML-A 16       Base Calibration on 15-NOV-2011 08         Base Calibration       Reading No       Measured       Calibrator Size (in)         1       14184       5.98         2       17582       7.97         3       20336       9.86         4       24896       11.92         5       0       0.000         6       N/A       N/A         Field Calibration       Measured Caliper (in)       6.02       5.98         Neutron Calibration MDN-A.B 66       Base Calibration on 17-OCT-2011 14       Field Check on 22-NOV-2011 03         Base Calibration       Measured       Calibrated (cps)       Far         Near       Far       Near       Far         3086       97       33.764       Field Check on 22-NOV-2011 03         Ratio       0.704       100       25.88         Ratio       0.704       Field Check       Calibrated (cps)         Ratio       0.698       Last Edited on 22-NOV-2011,03         Neutron Source Id       P58125B       Last Edited on 22-NOV-2011,03         Neutron Source Id       P58125B       Last Edited on 22-NOV-2011,03         Neutron Source Id       P58125B       Last Edited on 22-NOV-2011,03				
Base Calibration       Field Calibrator Size (in)         1       14184       5.98         2       17582       7.97         3       20336       9.86         4       24866       11.92         5       0       0.00         6       N/A       N/A         Field Calibration       Measured Caliper (in)       6.02       5.98         Neutron Calibration       Measured Caliper (in)       Actual Caliper (in)       Field Check on 22-NOV-2011 03         Base Calibration       Measured Calibrated (ops)       Near       Far       Near         Near       Far       Near       Far       Near       Far         3086       97       3714       110       Field Calibrator at Base       Calibrated (ops)         Field Calibrator at Base       Calibratod (ops)       1659       2358         Ratio       0.704       1647       259         Ratio       0.698       Last Edited on 22-NOV-2011,03         Neutron Source Id       P58125B       Last Edited on 22-NOV-2011,03         Neutron Source Id       P58125B       Last Edited on 22-NOV-2011,03         Neutron Source Id       P58125B       Last Edited on 22-NOV-2011,03         Neutron Source	Standon Onset		N/A Inches	
Base Calibration         Reading No       Measured       Calibrator Size (in)         1       14184       5.98         2       17582       7.97         3       20036       9.86         4       24886       11.92         5       0       0.00         6       N/A       N/A         Field Calibration       Measured Caliper (in)       Actual Caliper (in)         6.02       5.98         Neutron Calibration MDN-A.B 66       Base Calibration on 17-OCT-2011 14         Field Calibration       Measured       Calibrated (ops)         Near       Far       Near         73086       97       3714       110         Ratio       31.796       33.764         Field Calibrator at Base       Calibrated (ops)         Ratio       0.704       1647         Field Check       Calibrated (ops)         Ratio       0.698       Last Edited on 22-NOV-2011,03         Neutron Source Id       P581258       Last Edited on 22-NOV-2011,03         Neutron Source Id       P581258       Last Edited on 22-NOV-2011,03         Neutron Source Id       P581258       Last Edited on 22-NOV-2011,03         Neutron Source Id	Caliper Calibration MML-A	16		Base Calibration on 15-NOV-2011 08:38
Reading No       Measured       Calibrator Size (in)         1       14/184       5.98         2       17/582       7.97         3       20383       9.86         4       24886       11.92         5       0       0.00         6       N/A       N/A         Field Calibration       Measured Caliper (in)       Actual Caliper (in)         6       N/A       N/A         Neutron Calibration MDN-A.B 66       Base Calibration on 17-OCT-2011 14         Base Calibration       Measured       Calibrated (cps)         Near       Far       Near       Far         3086       97       37/14       110         Ratio       31.796       33.764       Sign 2358         Ratio       1647       2359       2358         Ratio       0.698       Last Edited on 22-NOV-2011,03         Neutron Constants MDN-A.B 66       Last Edited on 22-NOV-2011,03         Neutron Source Id       P58125B       Last Edited on 22-NOV-2011,03         Neutron Source Id       P58125B       Last Edited on 22-NOV-2011,03         Neutron Source Id       P58125B       Last Edited on 22-NOV-2011,03         Neutron Source Id       P58125B <td< td=""><td>Base Calibration</td><td></td><td></td><td>Field Calibration on 22-NOV-2011 03.14</td></td<>	Base Calibration			Field Calibration on 22-NOV-2011 03.14
2     17582     7.97       3     20536     9.86       4     24886     11.92       5     0     0.00       6     N/A     N/A       Field Calibration       Measured Caliper (in) 6.02       Base Calibration on 17-OCT-2011 14 Field Check on 22-NOV-2011 03       Measured Calibrated (cps) Near Far Near Far 3026       Near Far 3026       3026       97       Artio       Calibrated (cps) Near Far Near Far 3026       State Calibrated (cps) 1659       Ratio       0.704       Field Check Calibrated (cps) 1647       Ratio       Neutron Constants MDN-A.B 66       Last Edited on 22-NOV-2011.03       Neutron Source Id       PS81256       Neutron Source Id       PS8126	Reading No	Measured		
3     20836     9.86       4     24886     11.92       5     0     0.00       6     N/A     N/A       Net Calibration       Measured Caliper (in)       6.02     5.98       Neutron Calibration MDN-A.B 66       Base Calibration on 17-OCT-2011 14       Base Calibration on 17-OCT-2011 14       Base Calibration on 17-OCT-2011 10       Measured Calibrated (cps)       Near       Near       Far       Far       Far       Far       Far       Far       Far       Far       Far       Far <td></td> <td></td> <td></td> <td></td>				
4       24886       11.92         5       0       0.00         6       N/A       N/A         Field Calibration         Measured Caliper (in)         6.02         Neutron Calibration MDN-A.B 66         Base Calibration on 17-OCT-2011 14         Field Check on 22-NOV-2011 03         Mear Far         Near Far         Ratio         0.704         Field Check         Calibrated (cps)         Ratio         Neutron Constants MDN-A.B 66         Last Edited on 22-NOV-2011,03         Neutron Source Id         PSitad-Off         Neutron Source Id       PS8125B <td></td> <td></td> <td></td> <td></td>				
5       0       0.00         6       N/A       N/A         Field Calibration       Measured Caliper (in)       6.02       5.98         Neutron Calibration MDN-A.B.66       Base Calibration on 17-OCT-2011 14 Field Check on 22-NOV-2011 03         Base Calibration       Measured       Calibrated (cps)         Near       Far       Near       Far         3086       97       37.14       110         Ratio       31.796       33.764       Field Calibrator at Base       Calibrated (cps)         Field Check       Calibrated (cps)       1659       2358         Ratio       0.704       1659       2358         Ratio       0.698       Last Edited on 22-NOV-2011,03         Neutron Constants MDN-A.B 66       Last Edited on 22-NOV-2011,03         Neutron Source Id       P58125B       S24NE         Neutron Source Id       P58125B       Neutron Constants MDN-A.B 66         Neutron Sigma       7.10       cu         Sandstone Sigma       7.10       cu         Sandstone Sigma       4.26       cu         Dolomite Sigma       4.26       cu         Temperature Source       None       No         Formation Pressure       N/A				
6     N/A     N/A       Field Calibration     Measured Caliper (in) 6.02     Actual Caliper (in) 5.98       Neutron Calibration MDN-A.B 66     Base Calibration on 17-OCT-2011 14 Field Check on 22-NOV-2011 03       Base Calibration     Measured Near     Calibrated (cps) 7 3714       Ratio     31.796     33.764       Field Calibrator at Base     Calibrated (cps) 1659     2358       Ratio     0.704       Field Check     Calibrated (cps) 1647     2359       Ratio     0.698     Last Edited on 22-NOV-2011,03       Neutron Constants MDN-A.B 66     Last Edited on 22-NOV-2011,03       Neutron Source Id     P58125B     Last Edited on 22-NOV-2011,03       Neutron Source Id     P58125B     Last Edited on 22-NOV-2011,03       Neutron Source If     0.00     inches       Pipthermal Neutron     No     Caliport Site       Caliper Source for Processing     Density Calipor       Stand-off     0.00     inches       Mud Density     1.00     gm/cc       Limestone Sigma     4.26     cu       Dolomite Sigma     4.26     cu       Dolomite Sigma     4.70     cu       Sandstone Sigma     4.26     cu       Dolomite Sigma     4.70     cu       Formation Pressure Source     None   <				
Measured Caliper (in)       Actual Caliper (in)       Actual Caliper (in)         6.02       5.98         Neutron Calibration MDN-A.B 66       Base Calibration on 17-OCT-2011 14         Base Calibration       Field Check on 22-NOV-2011 03         Near       Far       Near         3086       97       3714         Ratio       31.796       33.764         Field Calibrator at Base       Calibrated (cps)         Ratio       0.704         Field Check       Calibrated (cps)         1647       2359         Ratio       0.698         Neutron Constants MDN-A.B 66       Last Edited on 22-NOV-2011,03         Neutron Jig Number       5824NE         Epithermal Neutron       Density Caliper         Stand-off       0.00         Mud Density       1.00         Jondensity       0.00         Limestone Sigma       4.25         Constant Value       Formation Pressure         Formation Pressure       Non         Formation Fluid Salinity       0.00         Mud Dainity       0.00         Formation Fluid Salinity Source       Constant Value         Formation Fluid Salinity Source       Constant Value         Format		=		
Measured Caliper (in)       Actual Caliper (in)       Actual Caliper (in)         6.02       5.98         Neutron Calibration MDN-A.B 66       Base Calibration on 17-OCT-2011 14         Base Calibration       Field Check on 22-NOV-2011 03         Near       Far       Near         3086       97       3714         Ratio       31.796       33.764         Field Calibrator at Base       Calibrated (cps)         Ratio       0.704         Field Check       Calibrated (cps)         1647       2358         Ratio       0.698         Neutron Source Id       P58125B         Neutron Jig Number       5824NE         Epithermal Neutron       Density Caliper         Stand-off       0.00         Mud Density       1.00         Jonesting       0.00         Formation Pressure       NA         Kpsi       Constant Value         Formation Pressure       NA         Kpsi       Constant Value         Formation Fluid Salinity       0.00         Kation Jig Number       68.00         Galiper Sigma       4.26         Cultorino Pressure       None         Formation Pressure				
6.02     5.98       Neutron Calibration MDN-A.B 66     Base Calibration on 17-OCT-2011 14 Field Check on 22-NOV-2011 03       Base Calibration     Far       Near     Far       3086     97       3086     97       31.796     33.764       Field Calibrator at Base     Calibrated (cps)       Ratio     0.704       Field Calibrator at Base     Calibrated (cps)       Ratio     0.704       Field Check     Calibrated (cps)       Ratio     0.704       Field Check     Calibrated (cps)       Ratio     0.698       Neutron Constants MDN-A.B 66     Last Edited on 22-NOV-2011,03       Neutron Source Id     P58125B       Neutron Jig Number     5824NE       Epithermal Neutron     No       Caliper Source for Processing     Density Caliper       Stand-off     0.00       Sandstone Sigma     7.10       Gramation Pressure Source     None       Formation Pressure Source     Constant Value       Formation Pressure Source     Constant Value       Formation Fluid Salinity     0.00       Mud Salinity     0.00       Mud Salinity     0.00       Base Calibration on 15-NOV-2011 08       Field Check on 22-NOV-2011 08	Field Calibration	Managera d Oplinger (in)	Astual Calines (in)	
Neutron Calibration MDN-A.B.66       Base Calibration on 17-OCT-2011 14         Base Calibration       Measured       Calibrated (cps)         Near       Far       Near       Far         3086       97       3714       110         Ratio       31.796       33.764         Field Calibrator at Base       Calibrated (cps)       1659       2358         Ratio       0.704       1647       2359         Ratio       0.698       Last Edited on 22-NOV-2011,03         Neutron Constants MDN-A.B 66       Last Edited on 22-NOV-2011,03         Neutron Source Id       P58125B         Neutron Source Id       P58125B         Neutron Source Id       P58125B         Neutron Source for Processing       Density Caliper         Stand-off       0.00         Mud Density       1.00         James A.70       cu         Sandstone Sigma       4.70         Formation Pressure Source       None         Formation Pressure Source       Constant Value         Temperature Source       Constant Value         Temperature Source       Constant Value         Temperature Source       Constant Value         Formation Fluid Salinity       0.00       kppm <td></td> <td></td> <td></td> <td></td>				
Field Check on 22-NOV-2011 03         Base Calibration       Measured Near       Calibrated (cps) Far       Far       Near       Far         Ratio       30.86       97       3714       110       100         Ratio       31.796       33.764       100       100       100         Field Calibrator at Base       Calibrated (cps)       1659       2358       100       100         Ratio       0.704       1647       2359       1047       2359       1047       2359         Ratio       0.698       Last Edited on 22-NOV-2011,03       1047       2359       1047       2359         Neutron Constants MDN-A.B 66       Last Edited on 22-NOV-2011,03       100 <td></td> <td></td> <td>0.00</td> <td></td>			0.00	
Base Calibration       Measured       Calibrated (cps)         Near       Far       Near       Far         3086       97       3714       110         Ratio       31.796       33.764         Field Calibrator at Base       Calibrated (cps)         Ratio       0.704         Field Check       Calibrated (cps)         Ratio       0.704         Field Check       Calibrated (cps)         Ratio       0.698         Neutron Constants MDN-A.B 66       Last Edited on 22-NOV-2011,03         Neutron Source Id       P58125B         Neutron Jig Number       5824NE         Epithermal Neutron       No         Caliper Source for Processing       Density Caliper         Stand-off       0.00         Mud Density       1.00         Limestone Sigma       7.10         Formation Pressure       N/A         Formation Pressure       N/A         Formation Pressure       N/A         Respire       Constant Value         Temperature       68.00       degrees F         Mud Salinity       0.00       kppm         Formation Fluid Salinity Source       Constant Value         Formation Flui	Neutron Calibration MDN-A	4.B 66		
Near     Far     Near     Far       3086     97     3714     110       Ratio     31.796     33.764       Field Calibrator at Base     Calibrated (cps)       Ratio     1659     2356       Ratio     0.704       Field Check     Calibrated (cps)       Ratio     1647     2359       Ratio     0.698       Neutron Constants MDN-A.B 66     Last Edited on 22-NOV-2011,03       Neutron Source Id     P58125B     Last Edited on 22-NOV-2011,03       Nuld Density     1.00     gm/cc       Limestone Sigma     7.10     cu       Sandstone Sigma     4.26     cu       Dolomite Sigma     4.70     cu       Formation Pressure     No4     kpsi       Temperature Source     Constant Value       Temperature     68.00     degre	Base Calibration			
3086       97       3714       110         Ratio       31.796       33.764         Field Calibrator at Base       Calibrated (cps)         Ratio       0.704         Field Check       Calibrated (cps)         field Check       Calibrated (cps)         field Check       Calibrated (cps)         Ratio       0.698         Neutron Constants MDN-A.B 66       Last Edited on 22-NOV-2011,03         Neutron Source Id       P58125B         Neutron Jig Number       5824NE         Epithermal Neutron       No         Caliper Source for Processing       Density Caliper         Stand-off       0.00         Mud Density       1.00         Limestone Sigma       7.10         cu       Sandstone Sigma         4.26       cu         Dolomite Sigma       4.70         Temperature Source       None         Formation Pressure       Constant Value         Temperature Source       Constant Value         Temperature       68.00       degrees F         Mud Salinity       0.00       kppm         Formation Fluid Salinity       0.00       kppm         Ferd Check on 22-NOV-2011 08       Field Che				
Ratio       31.796       33.764         Field Calibrator at Base       Calibrated (cps)         Ratio       0.704         Field Check       Calibrated (cps)         Ratio       0.698         Neutron Constants MDN-A.B 66       Last Edited on 22-NOV-2011,03         Neutron Source Id       P58125B         Neutron Source Id       P58125B         Neutron Source Id       P58120F         Neutron Jig Number       5824NE         Epithermal Neutron       No         Caliper Source for Processing       Density Caliper         Stand-off       0.00         Mud Density       1.00         Limestone Sigma       4.26         Arron       cu         Dolomite Sigma       4.26         Formation Pressure Source       None         Formation Pressure Source       None         Formation Pressure Source       None         Formation Pressure Source       None         Formation Pressure Source       Constant Value         Temperature       68.00       degrees F         Mud Salinity       0.00       kppm         Formation Fluid Salinity Source       Constant Value         Formation Fluid Salinity       0.00				
Field Calibrator at Base       Calibrated (cps) 1659       2358 2358         Ratio       0.704         Field Check       Calibrated (cps) 1647       2359         Ratio       0.698         Neutron Constants MDN-A.B 66       Last Edited on 22-NOV-2011,03         Neutron Source Id       P58125B         Neutron Jig Number       5824NE         Epithermal Neutron       No         Caliper Source for Processing       Density Caliper         Stand-off       0.00         Mud Density       1.00         Limestone Sigma       7.10         cu       Dolomite Sigma         4.26       cu         Dolomite Sigma       4.70         Formation Pressure Source       None         Formation Pressure Constant Value       Temperature S68.00         Formation Fluid Salinity       0.00       kppm         Formation Fluid Salinity       0.00       kppm         Fer Calibration MFE-A.A 52       Base Calibration on 15-NOV-2011 08         Field Check on 22-NOV-2011 08       Field Check on 22-NOV-2011 08	Ratio			
1659       2358         Ratio       0.704         Field Check       Calibrated (cps)         1647       2359         Ratio       0.698         Neutron Constants MDN-A.B 66       Last Edited on 22-NOV-2011,03         Neutron Source Id       P58125B         Neutron Jig Number       5824NE         Epithermal Neutron       No         Caliper Source for Processing       Density Caliper         Stand-off       0.00         Mud Density       1.00         Limestone Sigma       4.70         Sandstone Sigma       4.70         Dolomite Sigma       4.70         Formation Pressure Source       None         Formation Pressure       N/A         Kpsi       Temperature Source         Constant Value       Temperature Source         Temperature Source       Constant Value         Temperature Source       Constant Value         Formation Fluid Salinity       0.00         Kppm       Base Calibration on 15-NOV-2011 08         Field Check on 22-NOV-2011 03       Field Check on 22-NOV-2011 03				
Ratio       0.704         Field Check       Calibrated (cps) 1647         Ratio       0.698         Neutron Constants MDN-A.B 66       Last Edited on 22-NOV-2011,03         Neutron Source Id       P58125B         Neutron Jig Number       5824NE         Epithermal Neutron       No         Caliber 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       4.26       cu         Formation Pressure Source       None       Formation Pressure Source         Formation Pressure       N/A       kpsi         Temperature Source       Constant Value       Formation Fluid Salinity         Formation Fluid Salinity       0.00       kppm         Formation Fluid Salinity       0.00       kppm         Fe Calibration MFE-A.A 52       Base Calibration on 15-NOV-2011 08         Field Check on 22-NOV-2011 03       Field Check on 22-NOV-2011 03	Field Calibrator at Base			
Field Check       Calibrated (cps) 1647       2359         Ratio       0.698         Neutron Constants MDN-A.B 66       Last Edited on 22-NOV-2011,03         Neutron Source Id       P58125B         Neutron Jig Number       5824NE         Epithermal Neutron       No         Caliper Source for Processing       Density Caliper         Stand-off       0.00         Mud Density       1.00         Limestone Sigma       7.10         Sandstone Sigma       4.26         Dolomite Sigma       4.70         Formation Pressure       N/A         Kpsi       Temperature Source         Formation Pressure       Constant Value         Temperature       68.00       degrees F         Mud Salinity       0.00       kppm         Formation Fluid Salinity 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 52       Base Calibration on 15-NOV-2011 08	Datia			
1647       2359         Ratio       0.698         Neutron Constants MDN-A.B 66       Last Edited on 22-NOV-2011,03         Neutron Jig Number       5824NE         Epithermal Neutron       No         Caliper Source for Processing       Density Caliper         Stand-off       0.00         Mud Density       1.00         Limestone Sigma       7.10         Sandstone Sigma       4.26         Cu       Dolomite Sigma         Formation Pressure Source       None         Formation Pressure Source       None         Formation Pressure Constant Value       Temperature         Temperature       68.00       degrees F         Mud Salinity       0.00       kppm         Formation Fluid Salinity       0.00       kppm         Formation Fluid Salinity       0.00       kppm         Formation Fluid Salinity       0.00       kppm         Barite Mud Correction       Not Applied       Base Calibration on 15-NOV-2011 08         Field Check on 22-NOV-2011 03       Field Check on 22-NOV-2011 03	Ratio		0.704	
Ratio0.698Neutron Constants MDN-A.B 66Last Edited on 22-NOV-2011,03Neutron Source IdP58125BNeutron Jig Number5824NEEpithermal NeutronNoCaliper Source for ProcessingDensity CaliperStand-off0.00inchesMud DensityMud Density1.00Limestone Sigma7.10cuSandstone Sigma4.26cuDolomite Sigma4.26Formation Pressure SourceNoneFormation Pressure SourceN/AKpsiTemperature SourceConstant ValueTemperature SourceTemperature68.00Mud Salinity0.00KppmFormation Fluid Salinity SourceConstant ValueFormation Fluid Salinity0.00Ratine Mud CorrectionNot AppliedBase Calibration on 15-NOV-2011 08Field Check on 22-NOV-2011 03	Field Check		Calibrated (cps)	
Neutron Constants MDN-A.B 66       Last Edited on 22-NOV-2011,03         Neutron Source Id       P58125B         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       None       Formation Pressure Source         Formation Pressure 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       Base Calibration on 15-NOV-2011 08         Field Check on 22-NOV-2011 03       Field Check on 22-NOV-2011 03				
Neutron Source Id       P58125B         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       None       Formation Pressure Source         Formation Pressure       N/A       kpsi         Temperature Source       Constant Value       Temperature         Temperature       68.00       degrees F         Mud Salinity       0.00       kppm         Formation Fluid Salinity Source       Constant Value         Formation Fluid Salinity       0.00       kppm         Fer Calibration MFE-A.A 52       Base Calibration on 15-NOV-2011 08         Field Check on 22-NOV-2011 03       Field Check on 22-NOV-2011 03	Ratio		0.698	
Neutron Jig Number5824NEEpithermal NeutronNoCaliper Source for ProcessingDensity CaliperStand-off0.00Mud Density1.00Limestone Sigma7.10cuSandstone Sigma4.26cuDolomite Sigma4.26cuDolomite Sigma4.70cuFormation Pressure SourceNoneFormation PressureN/AKpsiTemperature SourceTemperature SourceConstant ValueTemperature68.00degrees FMud Salinity0.00kppmFormation Fluid Salinity SourceConstant ValueFormation Fluid Salinity0.00Barite Mud CorrectionNot AppliedFE Calibration MFE-A.A 52Base Calibration on 15-NOV-2011 08 Field Check on 22-NOV-2011 03	Neutron Constants MDN-A	.B 66		Last Edited on 22-NOV-2011,03:21
Neutron Jig Number5824NEEpithermal NeutronNoCaliper Source for ProcessingDensity CaliperStand-off0.00Mud Density1.00Limestone Sigma7.10cuSandstone Sigma4.26cuDolomite Sigma4.26cuDolomite Sigma4.70cuFormation Pressure SourceNoneFormation PressureN/AKpsiTemperature SourceTemperature SourceConstant ValueTemperature68.00degrees FMud Salinity0.00kppmFormation Fluid Salinity SourceConstant ValueFormation Fluid Salinity0.00Barite Mud CorrectionNot AppliedFE Calibration MFE-A.A 52Base Calibration on 15-NOV-2011 08 Field Check on 22-NOV-2011 03	Neutron Source Id	P58	125B	
Epithermal NeutronNoCaliper Source for ProcessingDensity CaliperStand-off0.00inchesMud Density1.00gm/ccLimestone Sigma7.10cuSandstone Sigma4.26cuDolomite Sigma4.70cuFormation Pressure SourceNoneFormation Pressure SourceN/AKpsiTemperature SourceConstant ValueTemperature SourceConstant ValueTemperature SourceConstant ValueFormation Fluid Salinity0.00KppmFormation Fluid SalinityBasite Mud CorrectionNot AppliedFE Calibration MFE-A.A 52Base Calibration on 15-NOV-2011 08Field Check on 22-NOV-2011 03Field Check on 22-NOV-2011 03				
Stand-off0.00inchesMud Density1.00gm/ccLimestone Sigma7.10cuSandstone Sigma4.26cuDolomite Sigma4.70cuFormation Pressure SourceNoneFormation PressureN/AkpsiTemperature SourceConstant ValueTemperature68.00degrees FMud Salinity0.00kppmFormation Fluid Salinity SourceConstant ValueFormation Fluid Salinity0.00kppmFormation Fluid Salinity0.00kppmFer Calibration MFE-A.A 52Base Calibration on 15-NOV-2011 08Field Check on 22-NOV-2011 03Field Check on 22-NOV-2011 03	Epithermal Neutron		No	
Mud Density1.00gm/ccLimestone Sigma7.10cuSandstone Sigma4.26cuDolomite Sigma4.70cuFormation Pressure SourceNoneFormation PressureN/AkpsiTemperature SourceConstant ValueTemperature68.00degrees FMud Salinity0.00kppmFormation Fluid Salinity SourceConstant ValueFormation Fluid Salinity0.00kppmFormation Fluid Salinity0.00kppmFe Calibration MFE-A.A 52Base Calibration on 15-NOV-2011 08 Field Check on 22-NOV-2011 03		sing Density Ca		
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Sandstone Sigma       4.26       cu         Dolomite Sigma       4.70       cu         Formation Pressure Source       None       Formation Pressure         Formation Pressure       N/A       kpsi         Temperature Source       Constant Value       Formation Pressure         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       Base Calibration on 15-NOV-2011 08         FE Calibration MFE-A.A 52       Base Calibration on 22-NOV-2011 03				
Dolomite Sigma4.70cuFormation Pressure SourceNoneFormation PressureN/AKpsiTemperature SourceConstant ValueTemperature68.00Mud Salinity0.00Formation Fluid Salinity SourceConstant ValueFormation Fluid Salinity0.00Barite Mud CorrectionNot AppliedFE Calibration MFE-A.A 52Base Calibration on 15-NOV-2011 08Field Check on 22-NOV-2011 03				
Formation Pressure       N/A       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       Base Calibration on 15-NOV-2011 08         FE Calibration MFE-A.A 52       Base Calibration on 15-NOV-2011 03	Dolomite Sigma			
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       Base Calibration on 15-NOV-2011 08         FE Calibration MFE-A.A 52       Base Calibration on 15-NOV-2011 03		e		
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       Base Calibration on 15-NOV-2011 08         FE Calibration MFE-A.A 52       Base Calibration on 15-NOV-2011 03		<b>^-</b> •	•	
Mud Salinity       0.00       kppm         Formation Fluid Salinity Source       Constant Value         Formation Fluid Salinity       0.00       kppm         Barite Mud Correction       Not Applied       Base Calibration on 15-NOV-2011 08         FE Calibration MFE-A.A 52       Base Calibration on 15-NOV-2011 03				
Formation Fluid Salinity Source       Constant Value         Formation Fluid Salinity       0.00       kppm         Barite Mud Correction       Not Applied       Base Calibration on 15-NOV-2011 08         FE Calibration MFE-A.A 52       Base Calibration on 15-NOV-2011 08         Field Check on 22-NOV-2011 03       Field Check on 22-NOV-2011 03			-	
Barite Mud Correction     Not Applied       FE Calibration MFE-A.A 52     Base Calibration on 15-NOV-2011 08 Field Check on 22-NOV-2011 03	Formation Fluid Salinity Sc	ource Constant V	/alue	
FE Calibration MFE-A.A 52 Field Check on 22-NOV-2011 03				
Field Check on 22-NOV-2011 03	Barite Mud Correction	Not Ap	plied	
	FE Calibration MFE-A.A 52			Base Calibration on 15-NOV-2011 08:59
	Base Calibration			Field Check on 22-NOV-2011 03:03
Measured Calibrated (ohm-m)				
Reference 1         0.0         0.0	Reference 1	0.0	0.0	

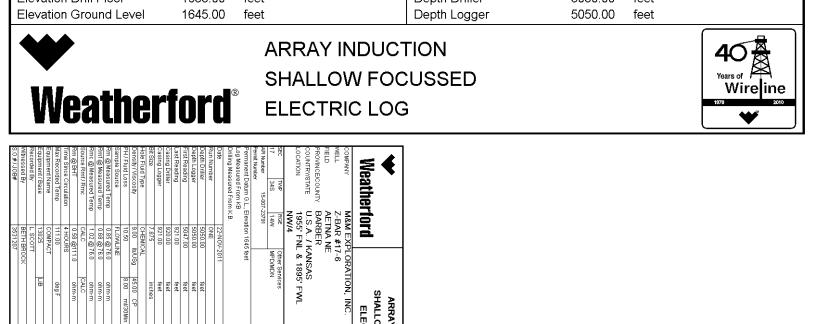
Reference 2		965.0	1:	26.8	
Base Check			28	30.1	
Field Check			28	80.0	
FE Constants MFE-A.A 52					Last Edited on 22-NOV-2011,03:02
Running Mode MFE K Factor Caliper Source for FE correc Caliper Value for FE correc Rm Source for FE correctio Temp. for Rm Corr. Stand-off	tion n T	No Sleeve 0.1268 Density Caliper N/A emperature Corr nal Temperature 0.5	inches inches		
High Resolution Temperatur	e Calibration	MAI-A.A 167			Field Calibration on 28-OCT-2011,10:01
Lower Upper		Measured 1.00 11.00		g F) 3.80 1.80	
High Resolution Temperatur	e Constants	MAI-A.A 167			Last Edited on
Pre-filter Length		11			
Induction Calibration MAI-A	A 167				Base Calibration on 11-MAR-2011,09:58 Field Check on 22-NOV-2011 03:01
Base Calibration					
Test Loop Calibration		Measured	Calibrated (		
Channel	Low	High	Low	High	
1	17.3	474.2	9.3	966.2	
2	6.3	388.4	7.6	821.4	
3	3.3	259.4	5.2	566.0	
4	1.9	133.0	2.6	279.2	
	1.0			270.2	
Array Temperature			Deg F		
Channel	Base Check	• •	Field Check (		
	Low	High	Low	High	
1	0.0	0.0	12.9	3840.0	
2	0.0	0.0	29.5	3477.3	
3	0.0	0.0	29.0	3053.1	
4	0.0	0.0	19.7	2081.6	
Deer	0.0	0.0	40.5	0040.0	
Deep	0.0	0.0	18.5	2048.8	
Medium	0.0	0.0	42.2	3991.3	
Shallow	0.0	0.0	43.0	5055.0	
Array Temperatu	ге	0.0		70.8	Deg F
Induction Constants MAI-A./	A 167				Last Edited on 22-NOV-2011,02:59
Induction Model		RtAP-WBM			
Caliper for Borehole Corr.		Density Caliper			
Hole Size for Borehole Corr	ection	N/A	inches		
Tool Centred		No			
Stand-off Type		Fins	·		
Stand-off	<b>.</b>	0.50	inches		
Number of Fins on Stand-of	Т	8.0000			
Stand-off Fin Angle		45.00	degrees		
Stand-off Fin Width		0.5000	inches		
Borehole Corr. Rm Source		emperature Corr			
Temp. for Rm Corr.	MCG Exter	nal Temperature	-		
Squasher Start Squasher Offset		0.0020 N/A	mhos/met mhos/met		
Borehole Normalisation					
DRM1	0.0000	DRC1		ſ	0.000
DRM2	0.0000	DRC1			0.0000
MRM1	0.0000	MRC1			0.0000
MRM1 MRM2	0.0000	MRC1			).0000
SRM1	0.0000	SRC1			0.000
SRM2	0.0000	SRC2		(	0.0000

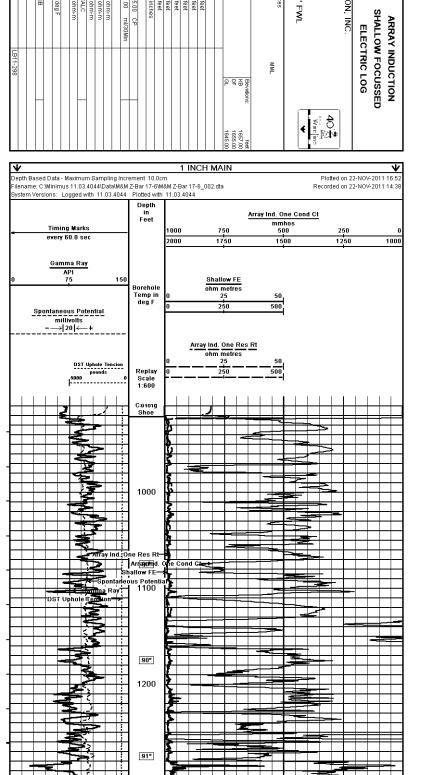
Calibration Site Correct Channel 1 Channel 2 Channel 3 Channel 4	ions		0.0 0.0 0.0 0.0	)0 mr )0 mr	nhos/metre nhos/metre nhos/metre nhos/metre	
Apparent Porosity and V Archie Constant (A) Cementation Exponent (A) Saturation Exponent (N) Saturation of Water for A Resistivity of Water for A Resistivity of Mud Filtra Source for Rt Source for Rxo	(M) ) Apor Apor ar	nd Sw	nstants 1.0 2.0 2.0 100.0 0.0 0.0 0.0 0.0	)0 )0 pe )5 oh )0 oh )0 oh	rcent m-m m-m	
Caliper Calibration MPD	)-B 35					Base Calibration on 15-NOV-2011 10:23
Base Calibration Reading No 1 2 3 4 5 6		Μ	easured 20351 30291 40582 50158 60743 N/A	Calibrat	or Size (in) 3.99 5.98 7.97 9.86 11.92 N/A	Field Calibration on 22-NOV-2011 03:04
Field Calibration	М	easured Cali	per (in) 5.94	Actual	Caliper (in) 5.98	
Photo Density Calibration	n MPC	р-В 35	0.04		0.00	Base Calibration on 15-NOV-2011 10:46
Density Calibration Base Calibration Reference 1 Reference 2		Me Near 57280 23374	easured Far 27020 2567	Calib Near 59556 24941	rated (sdu) Far 30836 2541	Field Check on 22-NOV-2011 03:12
Field Check at Base		1159.9	1374.4			
Field Check		1152.3	1369.5			
PE Calibration Base Calibration Background Reference 1 2 Reference 2	WS 207 21400 6184	Meas WH 1024 57084 23227	ured Ratio 0.378 0.269		Calibrated Ratio 0.371 0.272	
Field Check at Base	206.8	1023.7				
Field Check	206.6	1018.1				
Density Constants MPD						Last Edited on 22-NOV-2011,08:25
Density Source Id Nylon Calibrator Number Aluminium Calibrator Ni Density Shoe Profile Caliper Source for Proc PE Correction to Densit Mud Density Mud Density Z/A Multipl Mud Filtrate Density Dry Hole Mud Filtrate D	umber essing y lier	D	p50557 dnce69 dacd69 8 inc ensity Calipe Not Applie 1.0 1.1	95 98 er ed 98 gm 11 90 gm	n/cc n/cc n/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		



COMPANY	M&M EXPLORATI	ON, INC.		
WELL	Z-BAR #17-6			
FIELD	AETNA NE			
PROVINCE/COUNTY	BARBER			
COUNTRY/STATE	U.S.A. / KANSAS			
Elevation Kelly Bushing 1657.00	feet	First Reading	5047.00	feet
Elevation Drill Floor 1655.00	feet	Depth Driller	5050.00	feet





45.00 CP 8.00 ml/30Min

feet feet feet feet feet inches

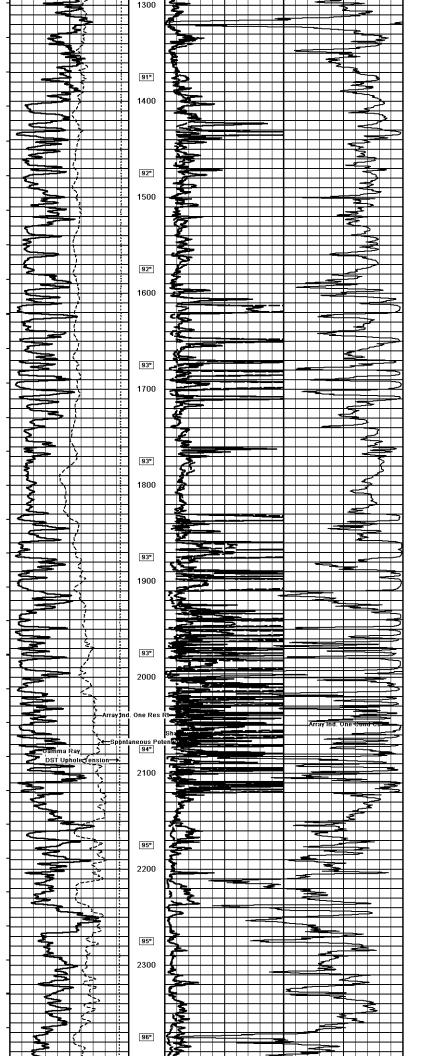
MML

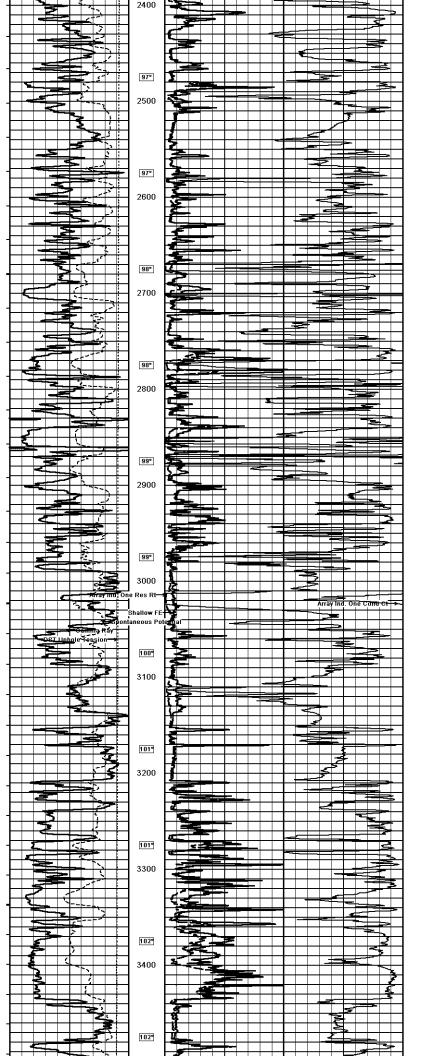
우무즙풍

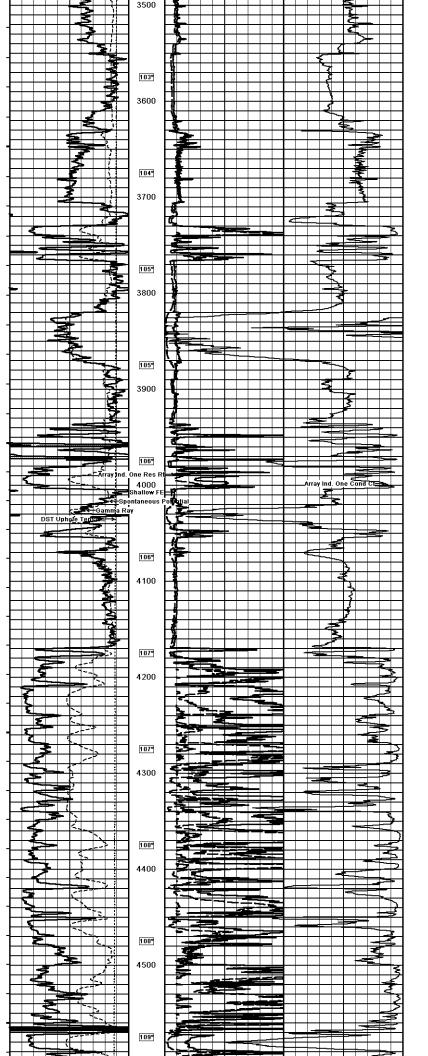
ohm-m ohm-m cALC ohm-m

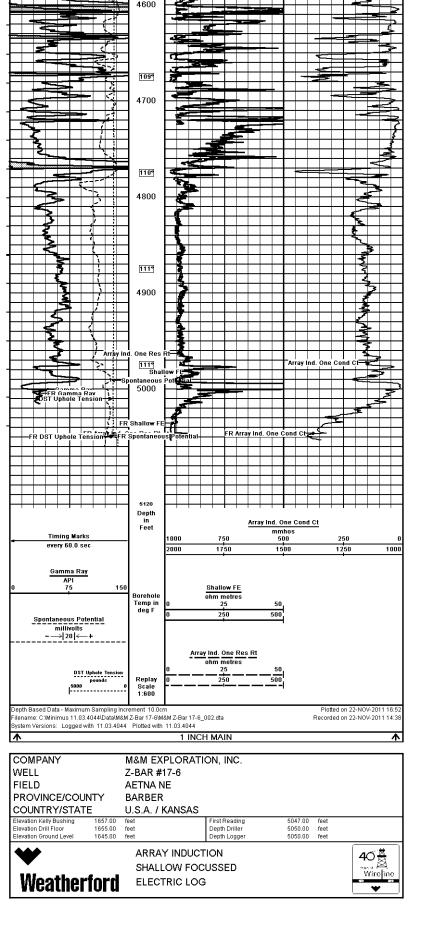
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EB1









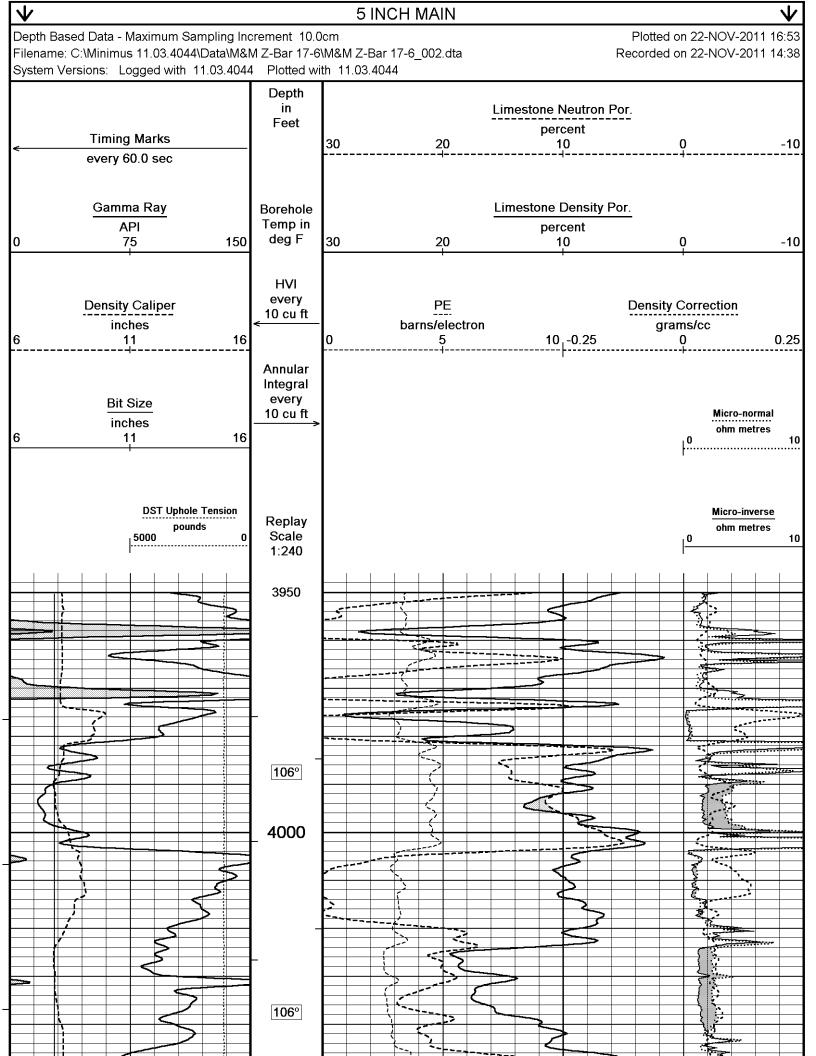
¢			COMPACT PHOTO DENSITY	ΡΗΟΤΟ Ι	DENSITY	
	ź		COMPENSATED NEUTRON	ATED NE	UTRON	
vveathertord	Ord		MICRORESISTIVITY LOG	SISTIVIT	-Y LOG	
	I&M EXP	LORA <sup>-</sup>	M&M EXPLORATION, INC.			
	Z-BAR #17-6	-6			<b>_</b> ]	
FIELD A	AETNA NE	111			4	
PROVINCE/COUNTY B	BARBER				Yea	Wireline
COUNTRY/STATE U	U.S.A. / KANSAS	ANSAS	0,		187	602
LOCATION 1	1955' FNL & 1895' FWL	& 189	5' FWL		ſ	
Z	NW/4					
C TWP	RGE	Other Services	rvices			
17 34S 1	14W	<b>MAI/MFE</b>				
API Number 15-007-23791	3791					
Permit Number						
Permanent Datum G.L., Elevation 1645 feet	levation 164	5 feet		<u>с п</u>	Elevations:	feet
Log Measured From KB					ΠΦ	1657.00
Drilling Measured From K.B	B			ច្ន	<b></b> -	1645.00
Date	22-NOV-2011	2011				
Run Number	ONE					
Depth Driller	5050.00		feet			
Depth Logger	5050.00		feet			
First Reading	5028.00		feet			
Last Reading	3950.00		feet			
Casing Driller	920.00		feet			
Casing Logger	921.00		feet			
Bit Size	7.875		inches			
Hole Fluid Type	CHEMICAL	AL				
Density / Viscosity	9.00 lb	lb/USg	45.00 CP			
PH / Fluid Loss	10.50		8.00 ml/30Min			
Sample Source	FLOWLINE	Ē				
Rm @ Measured Temp	0.85 @ 76.0	76.0	ohm-m			
Rmf @ Measured Temp	0.68 @ 76.0	76.0	ohm-m			
Rmc @ Measured Temp	1.02 @ 7	76.0	ohm-m			
Source Rmf / Rmc	CALC		CALC			
Rm @ BHT	0.58 @111.0	11.0	ohm-m			
Time Since Circulation	4 HOURS	0				
Max Recorded Temp	111.00		deg F			
Equipment Name	COMPACT	Ĥ				
Equipment / Base	13025		LIB			
Recorded By	L. SCOTT	-				
Witnessed By	BETH BROCK	ROCK				
S.O.# / JOB#	3531207			LB11-298		

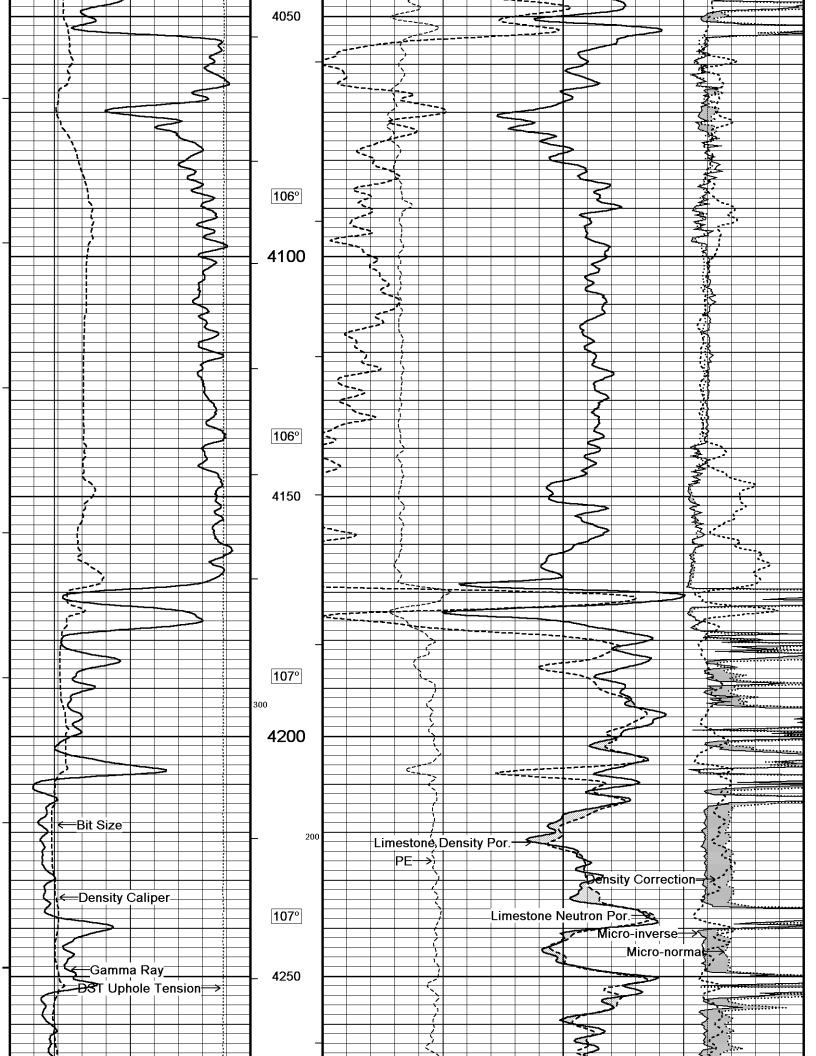
	BOREHOLE RECORD Last Edited: 22-NOV-2011							
	Bit Size	Depth From		Depth To				
	inches	feet		feet				
	7.875	921.00		5050.00				
	CASING RECORD							
Туре	Size	Depth From	Shoe Dept	h Weight				
	inches	feet	feet	pounds/ft				
SURFACE	8.625	0.00	921.00	24.00				

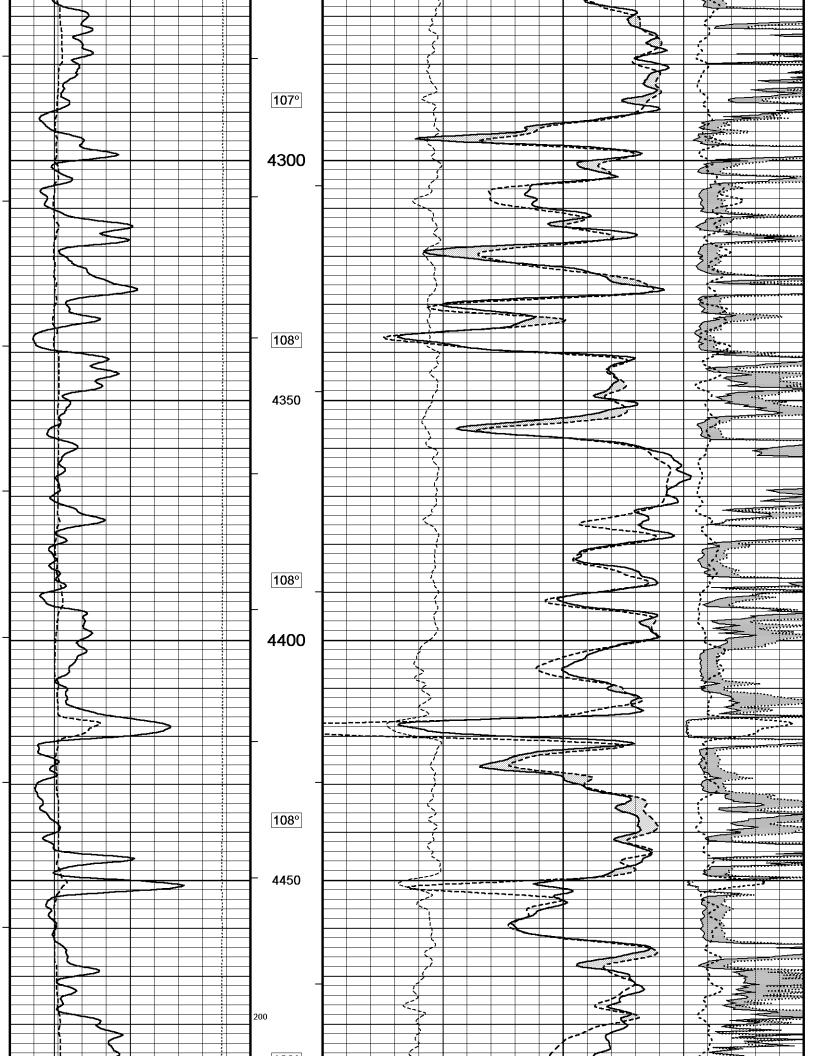
# REMARKS

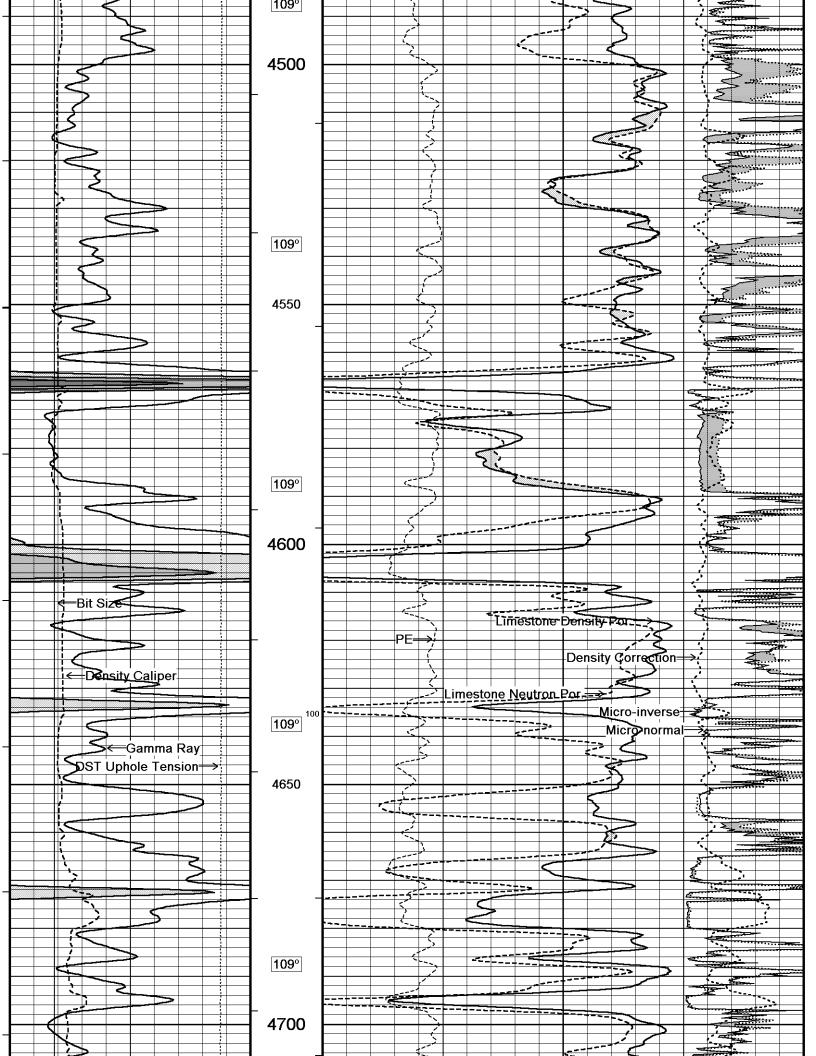
Tools Used: MPD, MCG, MDN, MFE, MAI, MML Hardware: MPD: 8 inch profile plate used. MAI and MFE: 0.5 Inch standoffs used. MDN: Dual Bowspring used. 2.71 G/CC Limestone density matrix used to calculate porosity. Borehole rugosity, tight pulls, and washouts will affect data quality. All intervals logged and scaled per customer's request. Annular volume with 4.5 inch production casing = 280 cu. ft. Service order #3531207 Rig: Southwind #70 Engineer(s): L. Scott Operator(s): M. Stegman

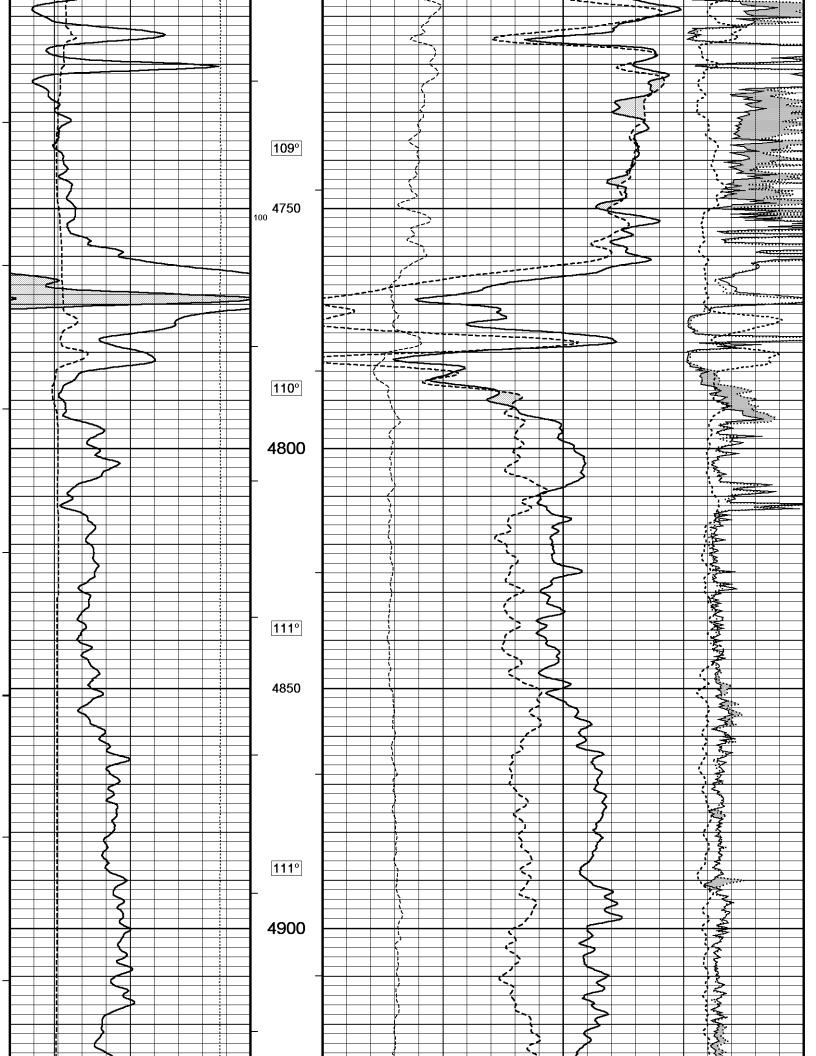
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, 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.

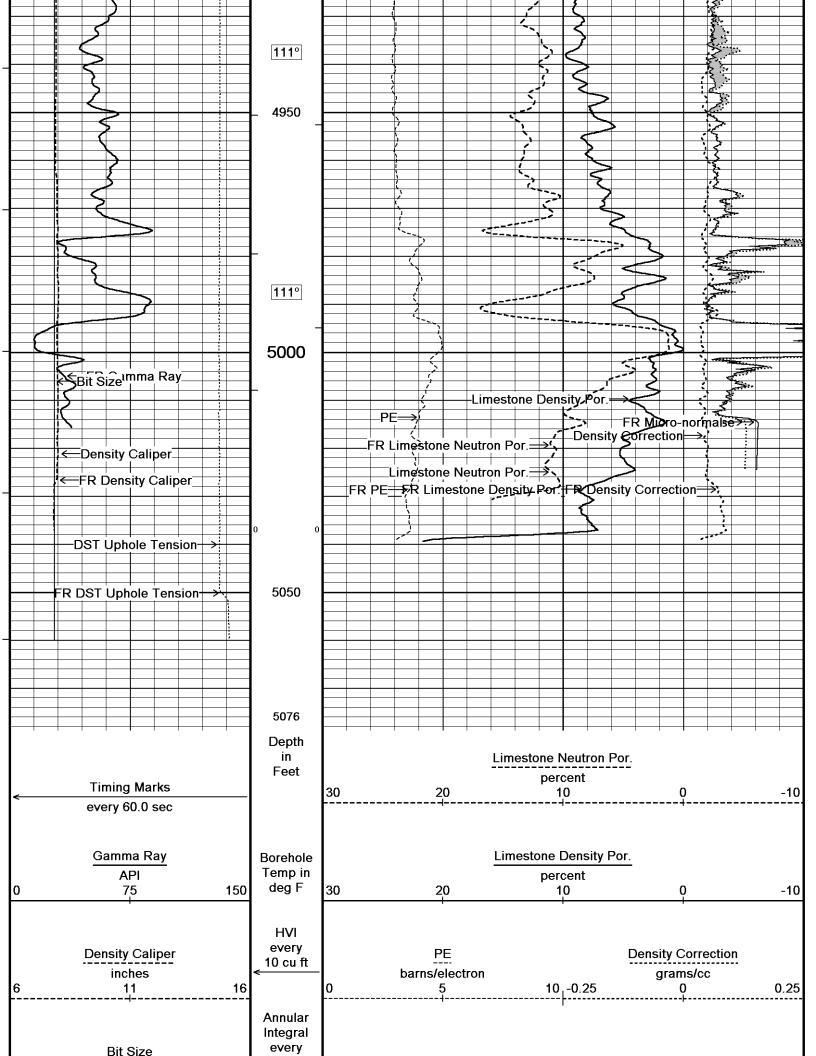


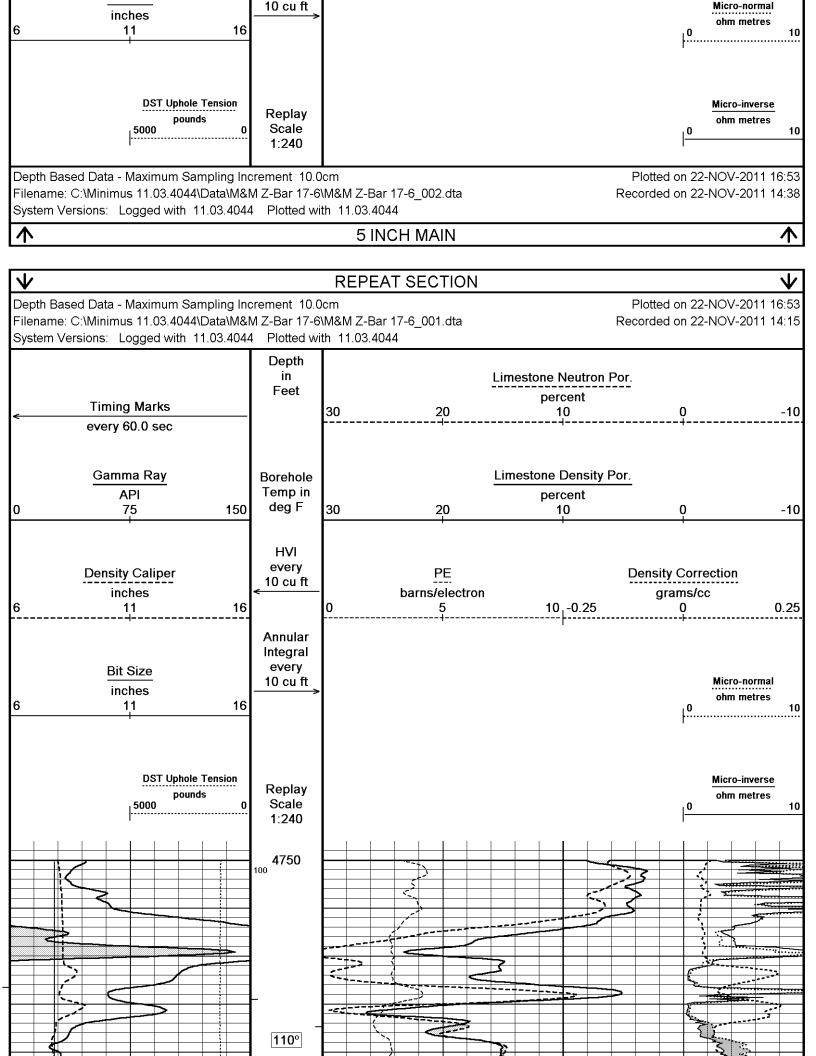


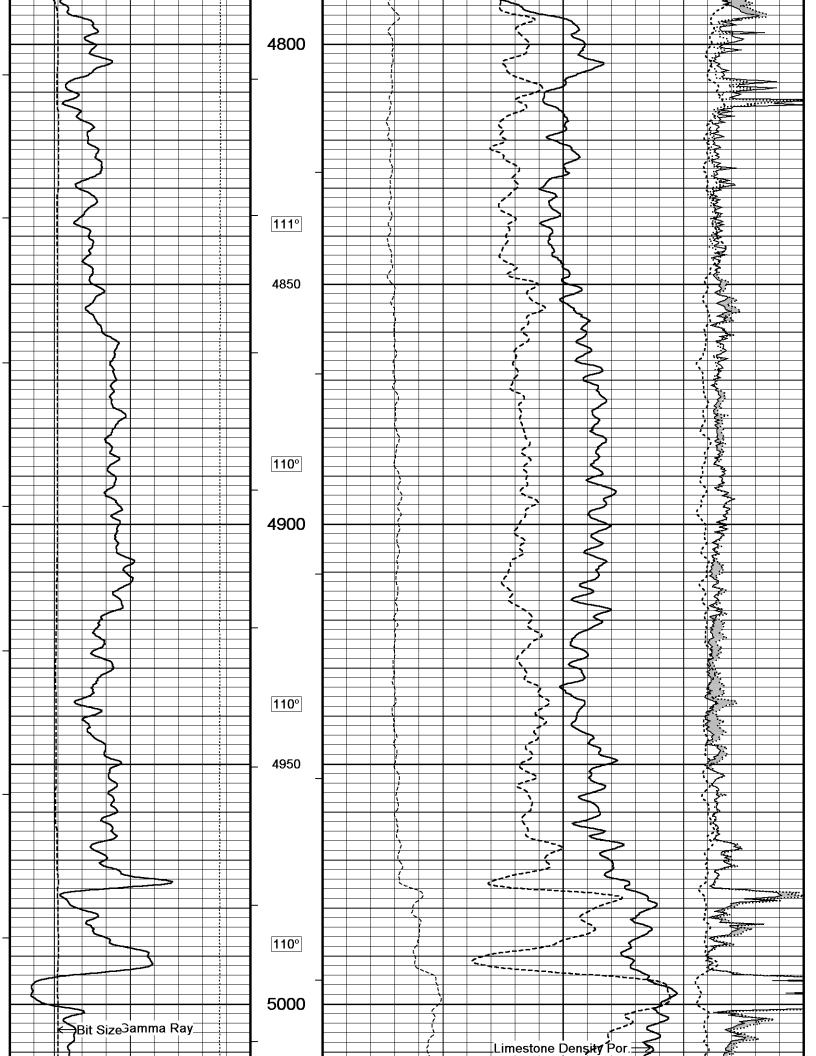


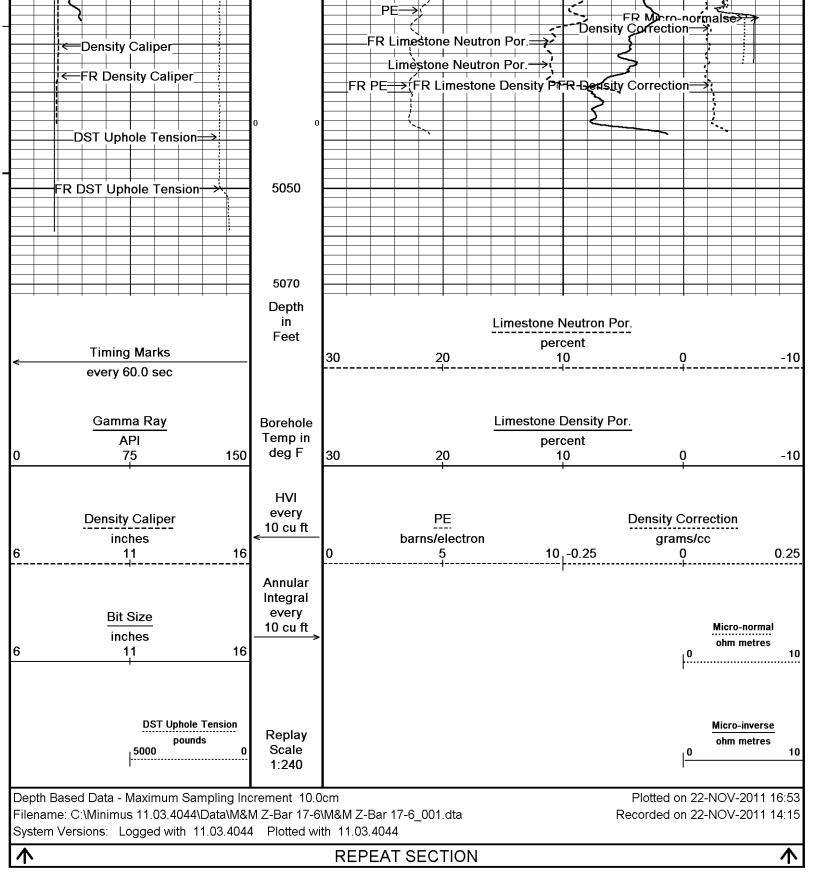




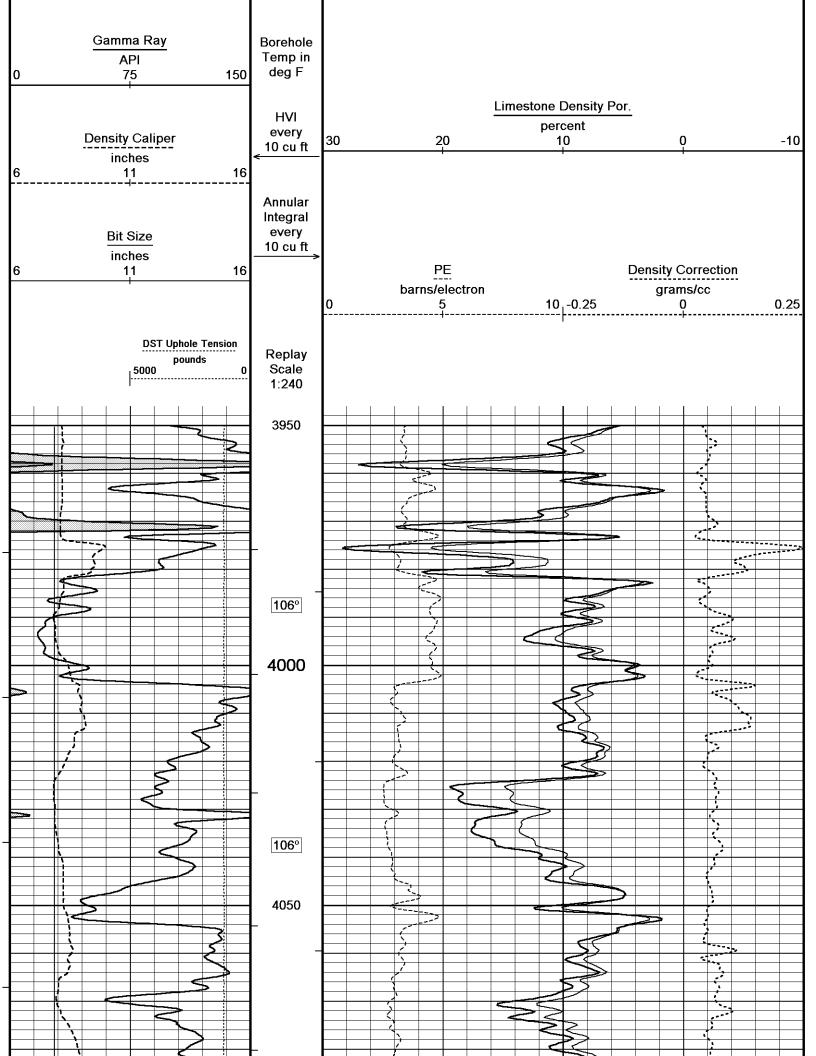


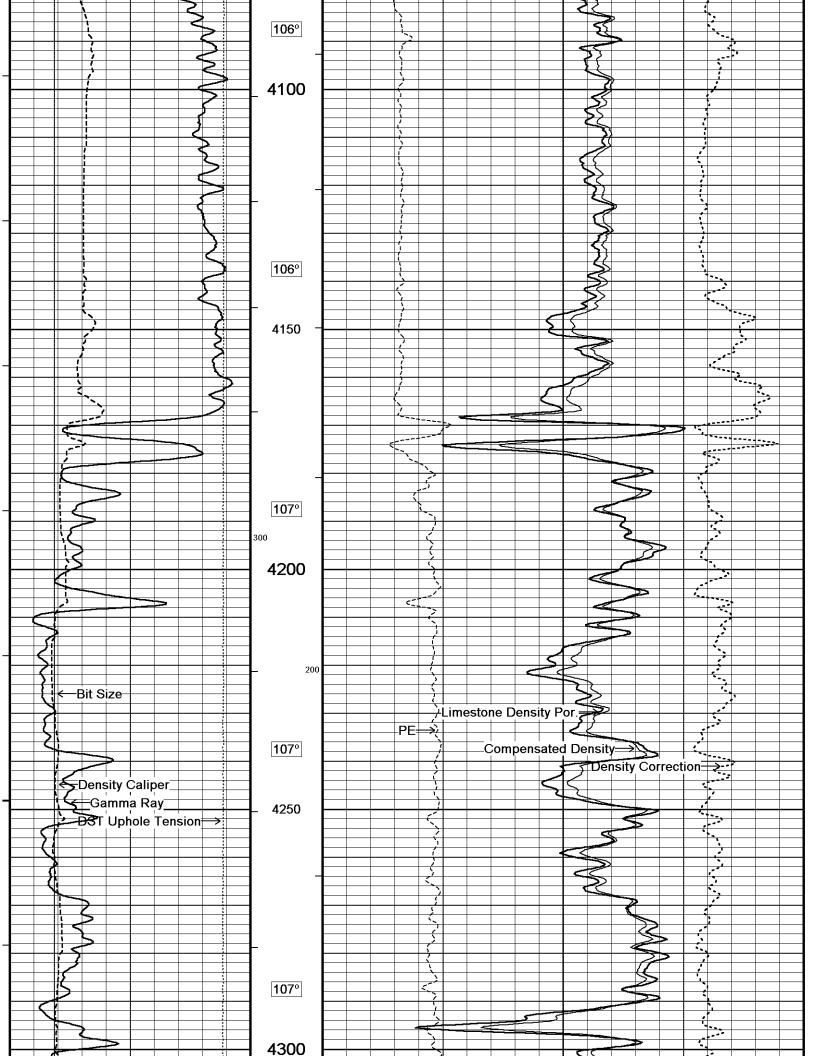


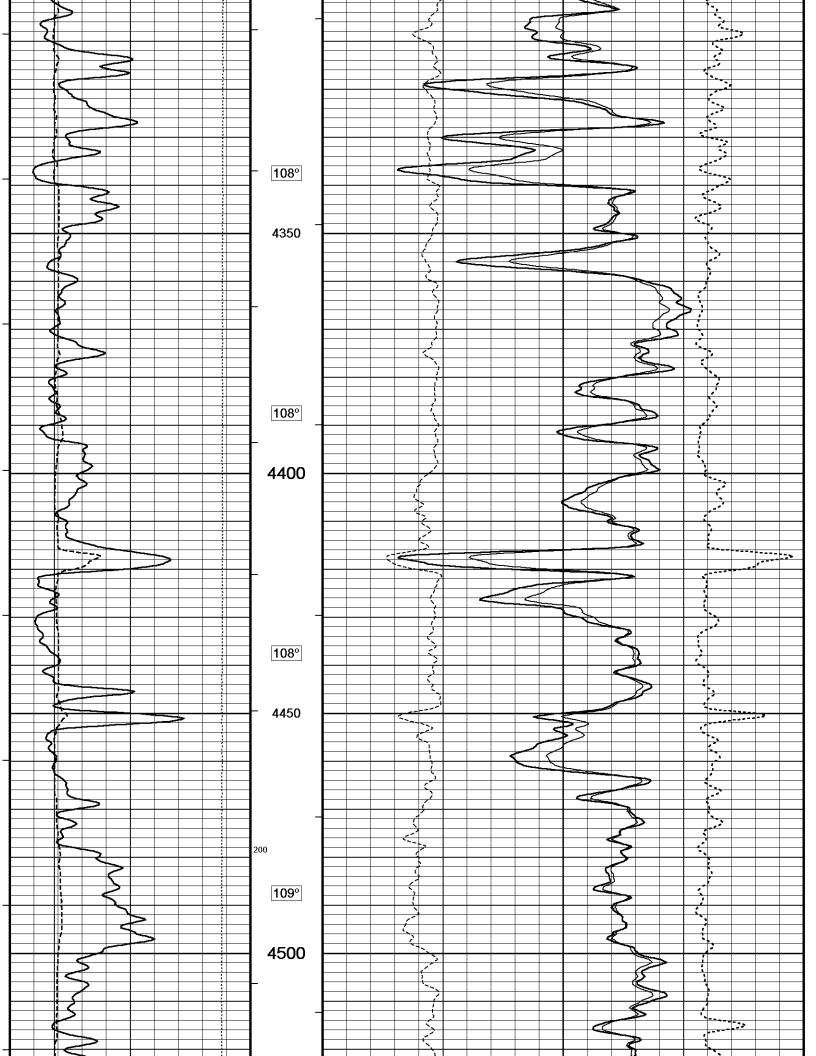


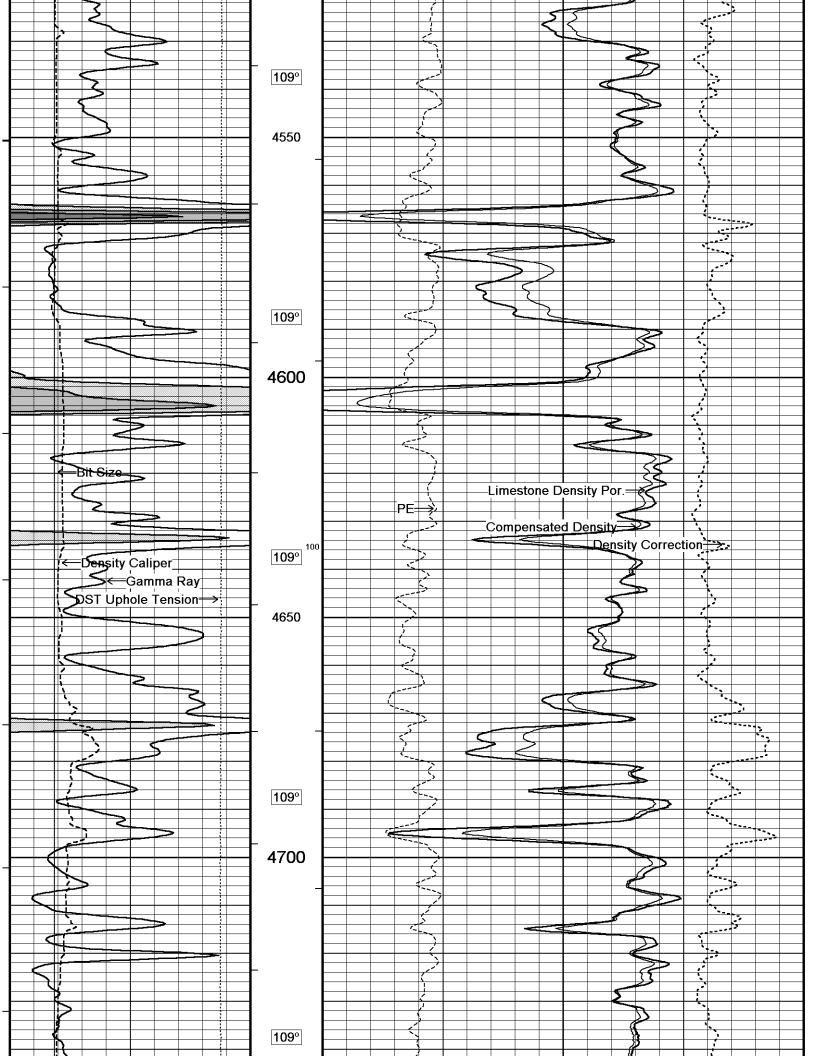


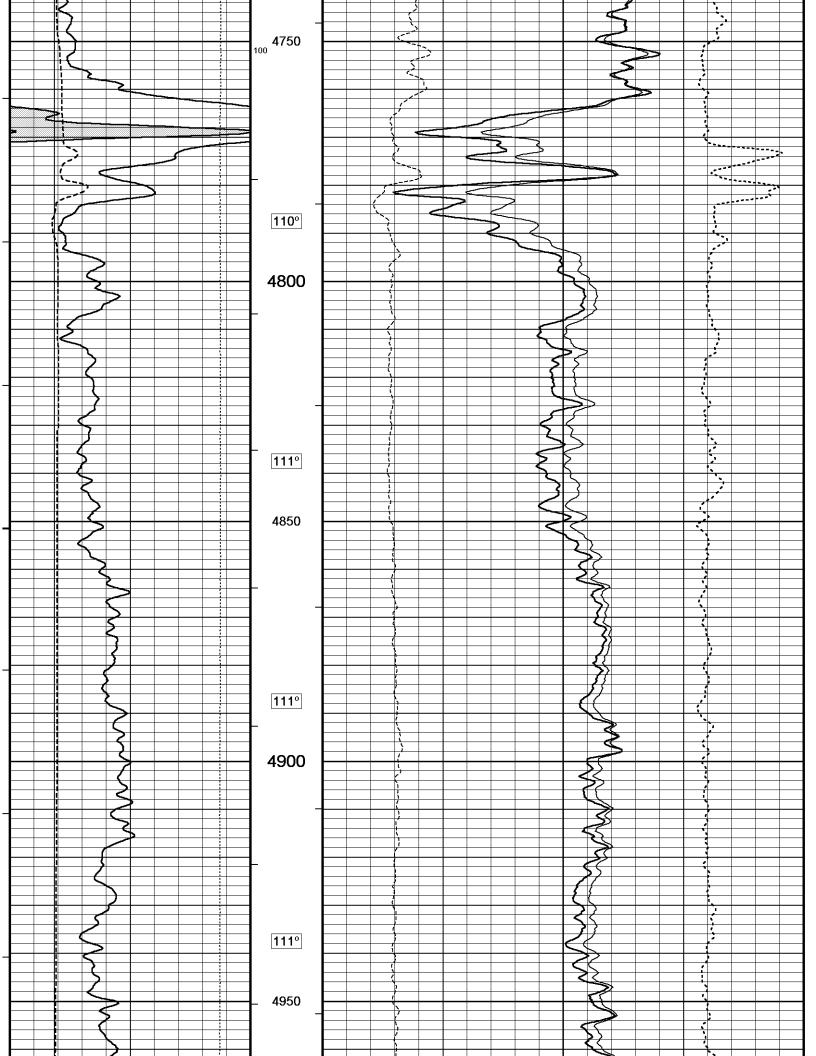
$\checkmark$		5 INCH MA	N			$\mathbf{v}$
Depth Based Data - Maximum Sampl Filename: C:\Minimus 11.03.4044\Dat System Versions: Logged with 11.03	a\M&M Z-Bar 17-6\	M&M Z-Bar 17-6_002	dta		Plotted on 22-NOV- corded on 22-NOV-	
Timing Marks every 60.0 sec	Depth in Feet	2 2.	25	Compensated Density grams/cc 2.50	2.75	3

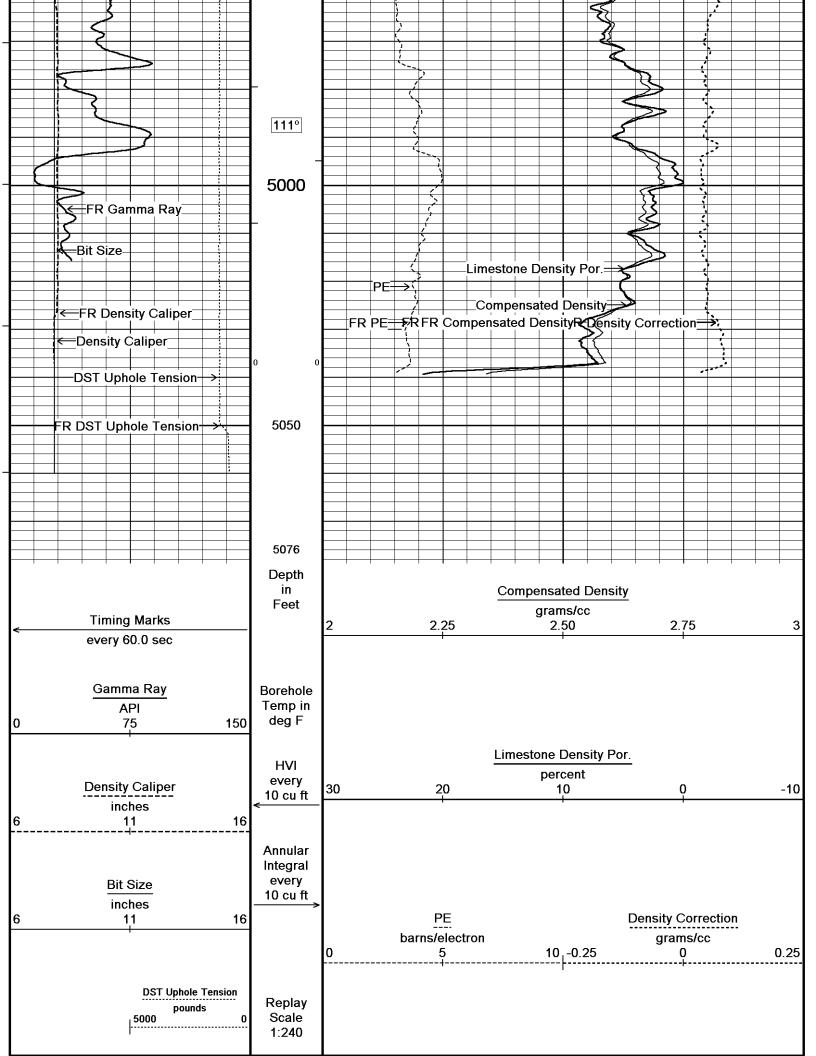












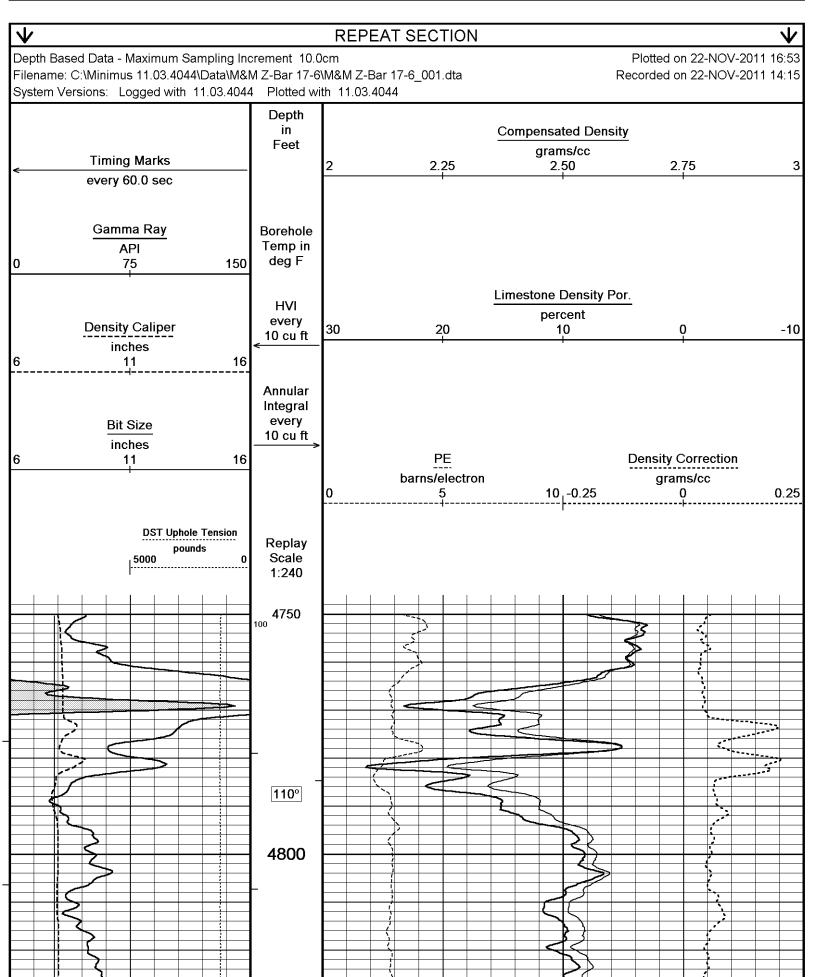
Depth Based Data - Maximum Sampling Increment 10.0cm Filename: C:\Minimus 11.03.4044\Data\M&M Z-Bar 17-6\M&M Z-Bar 17-6\_002.dta System Versions: Logged with 11.03.4044 Plotted with 11.03.4044

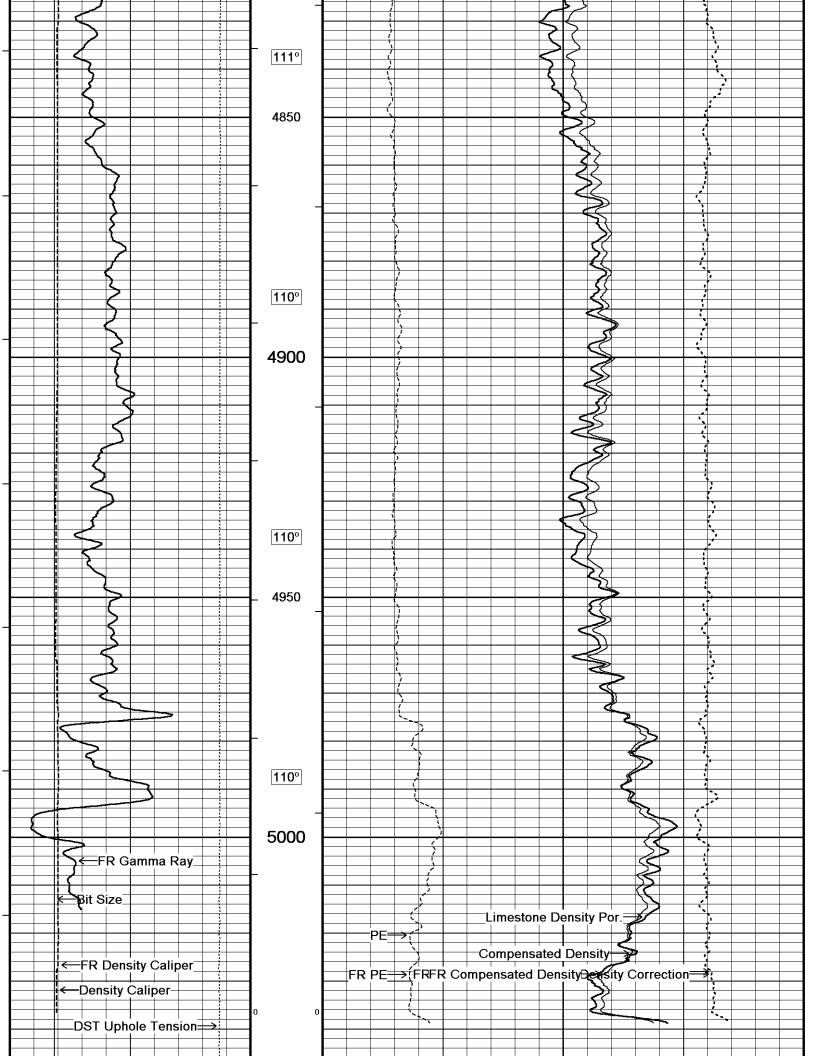
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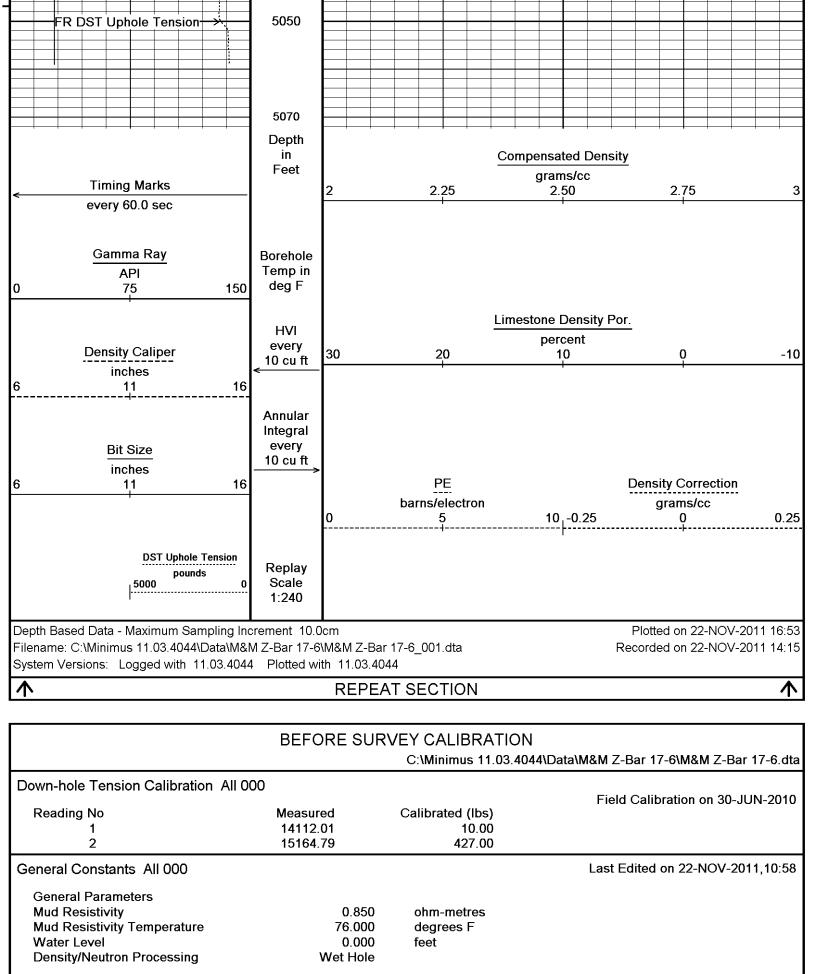
**5 INCH MAIN** 

Plotted on 22-NOV-2011 16:53 Recorded on 22-NOV-2011 14:38

 $\mathbf{\Lambda}$ 







Hole/Annular Volume and Differential Caliper ParametersHVOL MethodSingle CaliperHVOL Caliper 1Density CaliperHVOL Caliper 2N/AAnnular Volume Diameter4.500

inches

Caliper for Differential Caliper	Density Cali	per	
Rwa Parameters			
Porosity used	Base Density Poro	sity	
Resistivity used	Array Ind. One Res		
RWA Constant A RWA Constant M		000 000	
		000	
Down-hole Tension Calibration S	MS U		Field Calibration on 10-SEP-2011 04:32
Reading No 1	Measured -2243.52	Calibrated (lbs) 0.00	
2	-2243.32	480.60	
High Resolution Temperature Cal	ibration MCG-C 13	9	
	Measured	Calibrated(Deg F)	Field Calibration on 02-AUG-2011,17:13
Lower	50.00	50.00	
Иррег	75.00	75.00	
High Resolution Temperature Co	nstants MCG-C 139	)	Last Edited on
Pre-filter Length		11	
SP Calibration MCG-C 139			
	Measured	Calibrated (mV)	Field Calibration on 29-AUG-2011 09:25
Reference 1	103.7	100.0	
Reference 2	-96.7	-100.0	
Gamma Calibration MCG-C 139			
			Field Calibration on 22-NOV-2011 03:21
Background	Measured 77	Calibrated (API) 52	
Calibrator (Gross)	1148	52 777	
Calibrator (Net)	1071	725	
Gamma Constants MCG-C 139			Last Edited on 22-NOV-2011,08:25
Gamma Calibrator Number	ar	c38	
Mud Density	•	.08 gm/cc	
Caliper Source for Processing	Density Cali		
Tool Position	Eccent		
Concentration of KCI		0.00 kppm	
Micro Normal and Micro Inverse C	Calibration MML-A 1	6	Base Calibration on 15-NOV-2011 08:45 Field Check on 22-NOV-2011 03:13
Base Calibration			
Channel Resi	Measured stor 1 Resistor 2	Calibrated (ohm-m) Resistor 1 Resistor 2	
Micro Normal	12.1 60.2	2.6 12.8	
Micro Inverse	15.7 78.4	1.7 8.4	
Channel Bas Micro Normal	e Check (ohm-m) 32.1	Field Check (ohm-m) 32.1	
Micro Inverse	16.3	16.3	
Micro Normal and Micro Inverse C	Constants MML-A 1	6	Last Edited on 15-NOV-2011,15:23
Pad Type 8-12 in Soft I	Rubber Inflatable 006	-9011-159	
Micro Normal K Factor	·····	0.5110	
Micro Inverse K Factor		0.3380	
Standoff Offset		N/A inches	
Caliper Calibration MML-A 16			Base Calibration on 15-NOV-2011 08:38 Field Calibration on 22-NOV-2011 03:14
Base Calibration			
Reading No	Measured	Calibrator Size (in)	
1	14184 17582	5.98 7.97	
2 3	20836	9.86	
4	24886	11.92	
5	0	0.00	
6	N/A	N/A	

Field Calibration			
	Measured Caliper (in) 6.02	Actual Caliper (in) 5.98	
Neutron Calibration MDN-A.		0.00	Base Calibration on 17-OCT-2011 14:32
Base Calibration			Field Check on 22-NOV-2011 03:26
Dase Calibration	Measured	Calibrated (cps)	
	Near Far	Near Far	
Datia	3086 97	3714 110 33.764	
Ratio	31.796	33.764	
Field Calibrator at Base		Calibrated (cps) 1659 2358	
Ratio		0.704	
Field Check		Calibrated (cps) 1647 2359	
Ratio		0.698	
Neutron Constants MDN-A.B	8 66		Last Edited on 22-NOV-2011,03:21
Neutron Source Id	P58125E		
Neutron Jig Number	5824NE		
Epithermal Neutron	No Density Coline		
Caliper Source for Processin Stand-off	ig Density Calipe 0.00		
Mud Density	1.00		
Limestone Sigma	7.10	U U	
Sandstone Sigma	4.26		
Dolomite Sigma	4.70	) cu	
Formation Pressure Source	None	)	
Formation Pressure	N/A	· ····	
Temperature Source	Constant Value		
Temperature	68.00		
Mud Salinity	0.00		
Formation Fluid Salinity Sou			
Formation Fluid Salinity Barite Mud Correction	0.00 Not Applied		
FE Calibration MFE-A.A 52			Base Calibration on 15-NOV-2011 08:59
Base Calibration			Field Check on 22-NOV-2011 03:03
	Measured	Calibrated (ohm-m)	
Reference 1	0.0	<b>`</b> 0.Ó	
Reference 2	965.0	126.8	
Base Check		280.1	
Field Check		280.0	
FE Constants MFE-A.A 52		200.0	Last Edited on 22-NOV-2011,03:02
			Last Luited on 22-1100-2011,03.02
Running Mode	No Sleeve		
MFE K Factor	0.1268 Density Calina		
Caliper Source for FE correc Caliper Value for FE correcti			
Rm Source for FE correction			
Temp. for Rm Corr.	MCG External Temperature		
Stand-off	. 0.5		
High Resolution Temperature	Calibration MAI-A.A 167		Field Calibratian on 20 OCT 2044 40-04
	Measured	Calibrated(Deg F)	Field Calibration on 28-OCT-2011,10:01
Lower	1.00	33.80	
Upper	11.00	51.80	
High Resolution Temperature			Last Edited on
Pre-filter Length	11	l	
Induction Calibration MAI-A.A	A 167		Base Calibration on 11-MAR-2011,09:58

Induction Calibration MAI-A.A 167

Base Calibration on 11-MAR-2011,09:58

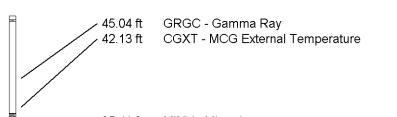
Description         Measured (17,3)         Calibrated (mmhorm) (mmhorm)           1         1,3         47,2         9,3         965,2           1         1,3         47,2         9,3         965,2           3         3,3         259,4         5,2         566,0           4         1         9         130,0         2,6         279,2           Array Temperature         76,8         Dog F         Field Check (mmhorm)         Field Check (mmhorm)           1         0,0         0,0         1,2,3         3407,0         2           2         0,0         0,0         1,2,3         3407,0         2         3           3         0,0         0,0         1,2,3         3407,0         2         3         0           3         0,0         0,0         42,2         365,1         4         0         0         4,2,3         565,0         1           Deep         0,0         0,0         42,0         565,0         1         1,0,2,5         1         1,0,2,5         1         1,0,2,5         1         1,0,2,5         1         1,0,2,5         1         1,0,2,5         1         1,0,2,5         1,0,2,5         1,0,2,5	Base Calibration					Field Check on 22-N	IOV-2011 03:01
Channel         Low         High           1         17.3         474.2         3.3         396.2           2         6.3         386.4         7.6         821.4           3         3.3         259.4         5.2         560.0           4         1.3         133.0         2.8         279.2           Array Tomperature         7.6.8         Deg F         Channel         Base Check (nmhorm)           1         0.0         0.0         2.9         347.7.3           3         0.0         0.0         2.9         347.7.3           3         0.0         0.0         1.8.5         2048.8           Medium         0.0         0.0         1.8.5         2048.8           Medium         0.0         0.0         43.0         5055.0           Array Temperature         0.0         70.8         Deg F           Induction Constants MAI-AA 167         Last Edited on 22 NOV-2011.02:9           Induction Stand off         0.500         inches           Stand-off Type         Fins         5           Stand-off Type         Fins         6           Stand-off Novich         0.0000         Brc2         0.0000			Managurad	Colibrated	(mmho(m)		
1         17.3         474.2         9.3         965.2           2         6.3         386.4         7.6         62.1.4           3         3.3         259.4         5.2         568.0           4         1.9         13.0         2.6         27.9.2           Array Tomparaturo         76.8         Dog F         Channel         Base Check (mmho/m)           1         0.0         0.0         12.8         3440.0           2         0.0         0.0         12.8         3440.0           3         0.0         0.0         12.8         3440.0           4         0.0         0.0         18.5         2048.8           Medium         0.0         0.0         18.5         2048.8           Induction Constants         MAI-A 167         Last Edited on 22-NOV-2011.02:59           Induction Model         Comport Promehile Correction         No         inches           Stand-off         0.50         inches         Stand-off           Stand-off         0.500         inches         Stand-off           Stand-off         0.000         DRC2         0.0000           Stand-off         0.000         DRC2         0.0000 <td></td> <td>Low</td> <td></td> <td></td> <td></td> <td></td> <td></td>		Low					
2         6.3         388.4         7.6         821.4           3         3.3         2259.4         5.2         566.0           4         1.9         133.0         2.6         279.2           Array Temperature         76.8         Deg F           Channel         Base Check (mmho/m)         Field Check (mmho/m)         1           1         0.0         0.0         2.9         340.0           2         0.0         0.0         2.9         340.0           3         0.0         0.0         1.8.5         2048.8           Moduim         0.0         0.0         4.3         5055.0           Array Temperature         0.0         70.8         Dog F           Induction Constants MAI-AA 167         Last Edited on 22-NOV-2011.02:59           Induction Constants MAI-AA 167         Last Edited on 22-NOV-2011.02:59           Induction Constants MAI-AA 167         Last Edited on 22-NOV-2011.02:59           Induction Model         RUAP-WBM         Caliper for Borchole Corr.           Stand-off Type         Fins         Stand-off         8.000           Stand-off Type         0.0000         mhos/metre         Stand-off           Squasher Offset         N/A         mh							
3         3.3         259.4         5.2         566.0           4         1.9         133.0         2.6         275.2           Array Temperature         76.8         Deg F           Channel         Base Check (mmho/m)         Field Check (mmho/m)           1         0.0         0.0         12.9         3840.0           2         0.0         0.0         2.95         3477.3           3         0.0         0.0         2.95         3477.3           3         0.0         0.0         1.8.5         2048.8           Modulin         0.0         0.0         43.0         5055.0           Array Temperature         0.0         70.8         Deg F           Induction Constants MAI-AA 167         Last Edited on 22-NOV-2011,02.59           Induction Stand-off         0.50         inches           Stand-off Type         Fins         5           Stand-off Tipe         0.50         inches           Stand-off Tip Width         0.0000         Berchiole Corre           Stand-off Tip Width         0.0000         Berchiole Corre           Stand-off Tip Width         0.0000         Berchiole Nore Rm Source           Stand-off Tip Width         0.0							
4         1.9         133.0         2.6         279.2           Array Temperature         76.8         Deg F         Field Check (mmholm)           1         0.0         0.0         12.9         3840.0           2         0.0         0.0         2.9.0         365.1           3         0.0         0.0         12.9         3840.0           2         0.0         0.0         2.9.0         365.1           3         0.0         0.0         18.5         2048.8           Medium         0.0         0.0         43.0         5055.0           Array Temperature         0.0         70.8         Deg F           Induction Constants MAI-AA 167         Last Edited on 22-NOV-2011,02:59           Induction Rodel         RIAP-WBM         Caliper for Enrohele Correction         N/A           Tool Centred         NO         100.000         100.000           Stand-off Tip Angle         40.000         diggrees         100.000           Stand-off Tip Molith         0.0000         0.0000         0.0000           DRMN         0.0000         DRC1         0.0000         0.0000           Stand-off Tip Molith         0.0000         DRC2         0.0000							
Array Temporature         76.8         Deg F           Channel         Base Check (mmho/m)         Field Check (mmho/m)         High           1         0.0         0.0         12.9         3840.0           2         0.0         0.0         29.5         3477.3         3           3         0.0         0.0         29.5         3477.3         3           4         0.0         0.0         18.5         2048.8         Medium           Medium         0.0         0.0         43.0         565.0         Array Temporature         0.0         70.8         Deg F           Induction Constants MAI-AA 167         Last Edited on 22-NOV-2011,02.59         Inductor for Deroholo Correction         No         Inches         No         Stand-off							
Channel         Base Check (mmho/m)         Field Check (mmho/m)           1         0.0         0.0         12.9         3840.0           2         0.0         0.0         29.5         3477.3           3         0.0         0.0         29.0         365.1           4         0.0         0.0         18.5         2048.8           Medium         0.0         0.0         42.2         3991.3           Shellow         0.0         0.0         42.2         3991.3           Induction Constants MAI-AA 167         Last Edited on 22.NOV-2011,02:59           Induction Model         RXP-WBM           Stand-off Fin Son Stand-off         8.0000           Stand-off Fin Source         Temperature           Stand-off Fin Molth         0.500           Borehole Corr.         MCG External Temperature           Squasher Start         0.0000           Stand-off Fin Molth         0.0000 </td <td>+</td> <td>1.5</td> <td></td> <td>2.0</td> <td>215.2</td> <td></td> <td></td>	+	1.5		2.0	215.2		
Low         High 1         Low         High 129           2         0.0         0.0         295         3477.3           3         0.0         0.0         290         368.1           4         0.0         0.0         197         2081.6           Deep         0.0         0.0         18.5         2088.8           Medium         0.0         0.0         42.2         3981.3           Shallow         0.0         0.0         43.0         5055.0           Array Temperature         0.0         0.0         43.0         5055.0           Induction Constants MAI-AA 167         Last Edited on 22 NOV-2011.02.59           Induction Model         RtAP-WBM         Caliper for Derehole Correction         Na           Tool Centred         NA         inches         Stand-off in Angle         45.00           Stand-off In Magle         45.00         degrees         inches         Stand-off in Magle         50.00           Squasher Offset         N/A         mhos/metre         Mos/metre         Stand-off in Magle         0.0000           Squasher Offset         N/A         mhos/metre         0.0000         Stand-off in Magle         0.0000           Brehole Normalisation <td>Array Temperature</td> <td></td> <td>76.8</td> <td>Deg F</td> <td></td> <td></td> <td></td>	Array Temperature		76.8	Deg F			
Low         High 1         Low         High 12.9           2         0.0         0.0         29.5         3477.3           3         0.0         0.0         29.0         3653.1           4         0.0         0.0         19.7         2081.6           Deep         0.0         0.0         18.5         2084.8           Medium         0.0         0.0         42.2         3981.3           Shallow         0.0         0.0         43.0         5055.0           Array Temperature         0.0         70.8         Deg F           Induction Constants MAI-AA 167         Last Edited on 22-NOV-2011.02.59           Induction Model         RtAP-WBM         Caliper for Dorehole Correction         Na           Tool Centred         No         Stand-off         0.50         inches           Stand-off In Angle         45.00         degrees         stand-off         stand-off           Stand-off In Multh         0.0000         DRC1         0.0000         DRC2         0.0000           Stand-off In Multh         0.0000         DRC2         0.0000         DRC1         D.0000           Stand-off In Multh         0.0000         DRC2         0.0000         DRC2							
1         0.0         0.0         12.9         3840.0           2         0.0         0.0         29.5         3477.3	Channel				• •		
2         0.0         0.0         29.5         3477.3           3         0.0         0.0         19.7         2081.6           Deep         0.0         0.0         42.2         2391.3           Shalow         0.0         0.0         43.0         5055.0           Array Temperature         0.0         70.8         Deg F           Induction Constants MAI-A 167         Last Edited on 22-NOV-2011.02.59           Induction Model         RtAP-WBM         inches           Calipor for Borehole Corr.         Density Calipor         inches           Hold Size for Borehole Correction         N/A         inches           Stand-off fin Angle         45.00         degrees           Stand-off Fin Angle         45.00         degrees           Squesher Offset         N/A         mhos/metre           Squesher Offset         N/A         mhos/metre           Squesher Offset         N/A         mhos/metre           Squesher Offset         N/A         mhos/metre           Graves first         0.0000         DRC1         0.0000           MRM1         0.0000         DRC2         0.0000           MRM2         0.0000         MRC2         0.0000 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>							
3         0.0         0.0         29.0         3053.1           4         0.0         0.0         19.7         2081.6           Deep         0.0         0.0         42.2         391.3           Array Temperature         0.0         70.8         Deg F           Induction Constants MAI-A 167         Last Edited on 22-NOV-2011,02:59           Induction Constants MAI-A 167         Last Edited on 22-NOV-2011,02:59           Induction Grostants MAI-A 167         Last Edited on 22-NOV-2011,02:59           Induction Grostants MAI-A 167         Last Edited on 22-NOV-2011,02:59           Induction Grostants MAI-A 167         Last Edited on 22-NOV-2011,02:59           Stand-Off         Bondo           Stand-Off         0.000           Stand-Off         0.000           Stand-Off         0.000           Barden Fin Angle         45.00           degrees         inches           Squasher Offset         N/A           Squasher Start         0.0000           DRM1         0.0000         DRC2           DRM1         0.0000         DRC2           DRM2         0.0000         DRC2           SRM3         0.0000         DRC2           Squasher Start							
4         0.0         0.0         19.7         2081.6           Deep         0.0         0.0         18.5         2048.8           Medium         0.0         0.0         42.2         3981.3           Shallow         0.0         0.0         43.0         5055.0           Array Temperature         0.0         70.8         Deg F           Induction Constants MAI-A.A 167         Last Edited on 22-NOV-2011,02:59           Induction Model         RMAP-WBM Caliper for Borehole Correction         NA           Tool Centred         NA         inches           Stand-off         0.000         digrees           Stand-off Fin Angle         4.5.00         degrees           Stand-off Fin Molth         0.0000         inches           Borehole Corr. RN Source         Temperature Corr         mhos/metre           Squasher Offset         NA         mhos/metre           Squasher Offset         NA         mhos/metre           Squasher Offset         NA         mhos/metre           DRMI         0.0000         DRC2         0.0000           MRM2         0.0000         SRC1         0.0000           MRM2         0.000         SRC2         0.0000 <tr< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr<>							
Deep Medium         0.0         0.0         18.5         2048.8           Medium         0.0         0.0         42.2         3991.3           Array Temperature         0.0         70.8         Deg F           Induction Constants MAI-AA 167         Last Edited on 22-NOV-2011,02:98           Induction Model         RIAP-WBM Catiper for Borehole Corr. Density Catiper         Last Edited on 22-NOV-2011,02:98           Induction Model         RIAP-WBM Catiper for Borehole Corr. Density Catiper         Last Edited on 22-NOV-2011,02:98           Stand-off Tipe         Fins         Inches         Fins           Stand-off Tipe         Fins         Fins         Fins           Stand-off Tip Angle         45.00         degrees         Inches           Squasher Start         MCG External Temperature         moloc/metre         Moloc/metre           Squasher Offset         N/A         minos/metre         0.0000           DRM1         0.0000         BRC1         0.0000           MRM2         0.0000         BRC2         0.0000           SRM3         0.0000         SRC2         0.0000           MRM1         0.0000         BRC2         0.0000           MRM2         0.0000         SRC2         0.0000							
Medium         0.0         0.0         42.2         3991.3           Shallow         0.0         0.0         43.0         5055.0           Array Temperature         0.0         70.8         Deg F           Induction Constants MAI-A.A 167         Last Edited on 22-NOV-2011,02:59           Induction Model         RtAP-WBM         East Edited on 22-NOV-2011,02:59           Stand-off Fin Sorten East Participation         District Participation         East Edited on 22-NOV-2011,02:59           Stand-off Fin Angle         45.00         degrees         East Edited on 22-NOV-2011,02:59           Stand-off Fin Midth         0.500         inches         East Edited on 22-NOV-2011,02:59           Stand-off Fin Midth         0.500         inches         East Edited on 22-NOV-2011,02:59           Squasher Offset         N/A         mhos/metre         East Edited on 22-NOV-2011           Borehole Corr.         MCG External Temperature Corr         East 0,000         East	4	0.0	0.0	19.7	2081.6		
Shallow         0.0         0.0         43.0         5055.0           Array Temperature         0.0         70.8         Deg F           Induction Constants MAI-AA 167         Last Edited on 22-NOV-2011,02:59           Induction Model         RAP-WBM Caliper for Borshole Corr         Density Caliper           Hole Size for Borshole Correction         NA         inches           Stand-off Type         Firs         stand-off           Stand-off Fin Angle         0.50         inches           Stand-off Fin Angle         0.500         inches           Borehole Corr. Rm Source         Temperature Corr         mhos/metre           Squasher Offset         N/A         mhos/metre           Borehole Normalisation         DRM1         0.0000         DRC1         0.0000           DRM2         0.0000         DRC1         0.0000         SRM2         0.0000           SRM2         0.0000         SRC2         0.0000         SRC1         0.0000           SRM2         0.0000         SRC2         0.0000         SRC1         0.0000           SRM2         0.0000         SRC2         0.0000         SRC1         0.0000           Channel 3         0.000         mmhos/metre         Stautarion expone	Deep	0.0	0.0	18.5	2048.8		
Array Temperature         0.0         70.8         Deg F           Induction Constants MAI-A.A 167         Last Edited on 22-NOV-2011,02:59           Induction Model         RtAP-WBM           Caliger for Borehole Corr.         Density Caliper           Hole Size for Borehole Corr.         Density Caliper           Stand-off         0.50           Stand-off Fins on Stand-off         0.000           Stand-off Fin Angle         45.00           Stand-off Fin Nource         Temperature Corr           Temp, for Rn Corr.         MCG External Temperature           Squasher Start         0.0020           Borehole Normalisation         DRK1           DRM1         0.0000           DRM2         0.0000           SRM2         0.0000           Chainel 1         0.000           Chainel 2         0.0000           SRM2         0.0000           SRM2         0.0000           SRM2         0.0000           Chainel 3         0.00           Chainel 4         0.00           Channel 3         0.00           Chainel 4         0.00           Channel 5         0.000           Channel 4         0.00           <	Medium	0.0	0.0	42.2	3991.3		
Induction Constants MALAA 167     Last Edited on 22-NOV-2011,02:59       Induction Model     RtAP-WBM       Caliper for Borehole Corr.     Density Caliper       Hole Size for Borehole Correction     NA       inches     No       Stand-off     0.50       Number of Fins on Stand-off     8.0000       Stand-off Fin Angle     45.00       Borehole Corr.     Celeprese       Stand-off Fin Mydth     0.5000       Borehole Corr.     MCG External Temperature       Squasher Start     0.0000       DRM1     0.0000       DRM2     0.0000       MKM1     0.0000       MRM2     0.0000       SRM2     0.0000       SRM2     0.0000       Channel 1     0.00       Channel 2     0.00       Channel 3     0.00       Channel 4     0.00       Archic Constant (A)     1.00       Cementation Exponent (M)     2.00       Saturation of	Shallow	0.0	0.0	43.0	5055.0		
Induction Constants MALAA 167     Last Edited on 22-NOV-2011,02:59       Induction Model     RtAP-WBM       Caliper for Borehole Corr.     Density Caliper       Hole Size for Borehole Correction     NA       inches     No       Stand-off     0.50       Number of Fins on Stand-off     8.0000       Stand-off Fin Angle     45.00       Borehole Corr.     Celeprese       Stand-off Fin Mydth     0.5000       Borehole Corr.     MCG External Temperature       Squasher Start     0.0000       DRM1     0.0000       DRM2     0.0000       MKM1     0.0000       MRM2     0.0000       SRM2     0.0000       SRM2     0.0000       Channel 1     0.00       Channel 2     0.00       Channel 3     0.00       Channel 4     0.00       Archic Constant (A)     1.00       Cementation Exponent (M)     2.00       Saturation of	Array Temperat	ture	0.0		70.8	Dea F	
Induction Model RUAP-WBM Caliper for Borehole Correction NA Hole Size for Borehole Correction NA Stand-off Type Fins Stand-off Type 6 Stand-off Tin Angle 4.5.0.0 degrees Stand-off Fin Magle 4.5.0.0 degrees Stand-off Fin Magle 4.5.0.0 degrees Stand-off Fin Magle 4.5.0.0 degrees Stand-off Fin Width 0.5000 inches Borehole Corr. Rm Source Temperature Corr Temp. for Rm Corr. MCC External Temperature Squasher Offset N/A mhos/metre Squasher Offset N/A mhos/metre Borehole Normalisation DRM1 0.0000 DRC1 0.0000 MRM2 0.0000 MRC1 0.0000 MRM2 0.0000 MRC2 0.0000 SRM2 0.0000 SRC2 0.0000 SRM2 0.0000 SRC2 0.0000 Calibration Site Corrections Channel 1 0.00 mmhos/metre Channel 2 0.00 mmhos/metre Channel 4 0.00 mmhos/metre Apparent Porosity and Water Saturation Constants Archie Constant (A) 1.00 Calibration Exponent (M) 2.00 Saturation Exponent (M) 2.00 Saturation Fix Apor and Sw 0.05 ohm-m Resistivity of Water for Apor and Sw 0.05 ohm-m Resistivity of Water for Apor and Sw 0.05 ohm-m Resistivity of Muter Fix Apor and Sw 0.05 ohm-m Resist			0.0		. 0.0	-	
Caliper for Borehole Corr.     Density Caliper       Hole Size for Borehole Correction     NA       inches     NA       Tool Centred     No       Stand-off Type     Fins       Stand-off Fin Angle     45.00       Stand-off Fin Mangle     45.00       Borehole Corr.     Mschart Berner       Stand-off Fin Mangle     45.00       Borehole Corr.     Temperature Corr       Squasher Offset     N/A       mhos/metre     Squasher Start       Squasher Offset     N/A       mRM1     0.0000       DRM2     0.0000       DRM1     0.0000       DRM2     0.0000       MRM2     0.0000       SRM2     0.0000       SRM2     0.0000       SRM2     0.0000       Calibration Site Corrections     mmhos/metre       Channel 1     0.00       Channel 2     0.00       Channel 3     0.00       Costautal(A)     1.00       Creant Appoint (N)     2.00       Saturation Ste Corrections     mmhos/metre       Channel 3     0.00       Channel 4     0.00       Apparent Porosity and Water Saturation Constants       Archie Constant (A)     1.00       Camental Sin Exponent (N) <td>Induction Constants MAI-A</td> <td>.A 167</td> <td></td> <td></td> <td></td> <td>Last Edited on 22-N</td> <td>IOV-2011,02:59</td>	Induction Constants MAI-A	.A 167				Last Edited on 22-N	IOV-2011,02:59
Caliper for Borehole Corr.     Density Caliper       Hole Size for Borehole Correction     NA       inches     NA       Tool Centred     No       Stand-off Type     Fins       Stand-off Fin Angle     45.00       Stand-off Fin Mangle     45.00       Borehole Corr.     Mschart Berner       Stand-off Fin Mangle     45.00       Borehole Corr.     Temperature Corr       Squasher Offset     N/A       mhos/metre     Squasher Start       Squasher Offset     N/A       mRM1     0.0000       DRM2     0.0000       DRM1     0.0000       DRM2     0.0000       MRM2     0.0000       SRM2     0.0000       SRM2     0.0000       SRM2     0.0000       Calibration Site Corrections     mmhos/metre       Channel 1     0.00       Channel 2     0.00       Channel 3     0.00       Costautal(A)     1.00       Creant Appoint (N)     2.00       Saturation Ste Corrections     mmhos/metre       Channel 3     0.00       Channel 4     0.00       Apparent Porosity and Water Saturation Constants       Archie Constant (A)     1.00       Camental Sin Exponent (N) <td>Induction Model</td> <td></td> <td></td> <td>I</td> <td></td> <td></td> <td></td>	Induction Model			I			
Hole Size for Borehole Correction         N/A         inches           Tool Centred         No           Stand-off         No           Stand-off         0.50           Stand-off         0.50           Stand-off         0.50           Stand-off         8.0000           Stand-off         16.000           Stand-off         16.000           Barehole Corr. Rm Source         Temperature Corr           Ferm, For Rom Corr.         MCG External Temperature           Squasher Start         0.0020           Borehole Normalisation         0           DRM1         0.0000         DRC2           DRM2         0.0000         MRC1           D0000         MRC1         0.0000           SRM2         0.0000         MRC2           Ostood         SRC2         0.0000           SRM2         0.0000         SRC2           Channel 1         0.00         mmhos/metre           Channel 3         0.00         mmhos/metre           Channel 4         0.00         mmhos/metre           Channel 4         0.00         mmhos/metre           Channel 4         0.00         mmhos/metre           Cha							
Tool Centred         No           Stand-off Type         Fins           Stand-off Tin Angle         0.50           Number of Fins on Stand-off         8.0000           Stand-off Fin Angle         4.00           Borehole Corr. Rn Source         Temperature Corr           Squasher Offset         N/A           mhos/metre         Squasher Offset           Borehole Normalisation         DRC1           DRM1         0.0000           DRM1         0.0000           DRM1         0.0000           MRM2         0.0000           SRM2         0.0000           SRM2         0.0000           SRM2         0.0000           SRM2         0.0000           SRM2         0.0000           SRM2         0.0000           Channel 1         0.00           Channel 1         0.00           Channel 3         0.00           Saturation Exponent (M)         2.00           Saturation Sthe Corrections         Channel 3           Channel 3         0.00           Saturation Strat (A)         2.00           Saturation Strat (A)         2.00           Saturation Stre Corpont (M)         2.00		rraction					
Stand-off         Fins           Stand-off         0.50           Number of Fins on Stand-off         8.0000           Stand-off Fin Midh         0.5000           Borehole Corr. Rm Source         Temperature Corr           Temp. for Rm Corr.         MCG External Temperature           Squasher Start         0.0020           Borehole Normalisation         0.0000           DRM1         0.0000           DRM2         0.0000           MR1         0.0000           MR2         0.0000           SRM1         0.0000           SRM1         0.0000           SRM1         0.0000           SRM2         0.0000           Channel 1         0.000           Channel 1         0.000           Channel 3         0.000           Channel 4         1.00           Apparent Porosity and Water Saturation Constants           Archie Constant (A)         1.00           Cementation Export (N)         2.00           Saturation Of Water for Apor         1000.00           Saturation Of Water for Apor         1000.00           Saturation Of Water for Apor         1000.00           Saturation Export (M)         2.00		riection					
Stand-off         0.50         inches           Number of Fins on Stand-off         8.0000         inches           Stand-off Fin Angle         45.00         degrees           Stand-off Fin Magle         0.5000         inches           Borehole Corr. RN Source         Temperature Corr         mhos/metre           Squasher Offset         N/A         mhos/metre           Borehole Normalisation         DRC1         0.0000           DRM1         0.0000         DRC2         0.0000           MKN1         0.0000         MRC2         0.0000           MRN2         0.0000         MRC2         0.0000           SRM1         0.0000         SRC1         0.0000           SRM2         0.0000         SRC1         0.0000           Channel 1         0.00         mmhos/metre           Channel 1         0.00         mmhos/metre           Channel 3         0.00         mmhos/metre           Apparent Porosity and Water Saturation Constants         Archie Constant (A)         1.00           Cementation Exponent (M)         2.00         Saturation of Water for Apor         100.00           Saturation Grapent (MPD-B 35         Base Calibration on 15-NOV-2011 10:23         Field Calibration on 22-NOV-2011 10:24							
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           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         MRX1         0.0000           MRM2         0.0000         SRC1         0.0000         SRM1         0.0000           SRM2         0.0000         SRC2         0.0000         SRC2         0.0000           Calibration Site Corrections         Channel 1         0.00         mmhos/metre         Channel 1         0.00           Channel 1         0.00         mmhos/metre         Channel 3         0.00         mmhos/metre           Channel 2         0.000         mmhos/metre         Startation of Water Saturation Constants         Archie Constant (A)         1.00           Cementation Exponent (M)         2.00         saturation of Water for Apor         100.00         percent           Resistivity of Water firster for Sw							
Stand-off Fin Angle         45.00         degrees           Stand-off Fin Width         0.5000         inches           Borehole Corr. Rn Source         Temperature Corr           Squasher Offset         N/A         mhos/metre           Borehole Normalisation         0.0020         mhos/metre           DRM1         0.0000         DRC1         0.0000           MRM2         0.0000         MRC2         0.0000           MRM1         0.0000         MRC1         0.0000           SRM2         0.0000         MRC2         0.0000           SRM2         0.0000         SRC1         0.0000           SRM2         0.0000         SRC2         0.0000           Channel 1         0.00         mmhos/metre         0.0000           Channel 2         0.00         mmhos/metre         0.000           Channel 4         0.00         mmhos/metre         0.00           Apparent Porosity and Water Saturation Constants         4         0.00         mmhos/metre           Apparent Porosity and Water Saturation Constants         4         0.00         mmhos/metre           Calibration Exponent (M)         2.00         2.00         Saturation on 15-NOV-2011 10:23           Base Calibration M		off					
Stand-off Fin With         0.5000         inches           Borehole Corr. Rm Source         Temperature Corr         mhos/metre           Squasher Start         0.0020         mhos/metre           Squasher Start         0.0000         DRM           Borehole Normalisation         0.0000         DRC1         0.0000           DRM1         0.0000         DRC2         0.0000           MRM         0.0000         MRC2         0.0000           MRM2         0.0000         MRC2         0.0000           SRM2         0.0000         SRC1         0.0000           SRM1         0.0000         SRC2         0.0000           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 (M)         2.00           Saturation Exponent (M)         0.00         ohm-m         Resistivity of Mud Fitrate for Sw         0.00           Source for Rt         0.00         0.00 </td <td></td> <td>011</td> <td></td> <td></td> <td></td> <td></td> <td></td>		011					
Borehole Corr. Rm Source Temp. for Rm Corr. Squasher Start         Temperature Out MCG External Temperature           Squasher Offset         N/A           Borehole Normalisation         0.0020           DRM1         0.0000           DRM2         0.0000           MRM2         0.0000           MRM2         0.0000           MRM2         0.0000           MRM2         0.0000           SRM1         0.0000           SRM2         0.0000           Calibration Site Corrections         0.0000           Channel 1         0.00           Channel 3         0.00           Channel 4         0.00           Apparent Porosity and Water Saturation Constants         Archie Constant (A)           Archie Constant (A)         1.00           Cementation Exponent (M)         2.00           Saturation Exponent (M)         2.00           Saturation Exponent (M)         0.00           Source for Rt							
Temp, for Rm Corr.         MCG External Temperature           Squasher Start         0.0020         mhos/metre           Squasher Offset         N/A         mhos/metre           Borehole Normalisation         0.0000         DRC1         0.0000           DRM1         0.0000         DRC2         0.0000           MRM1         0.0000         MRC2         0.0000           MRM2         0.0000         MRC2         0.0000           SRM1         0.0000         SRC1         0.0000           Calibration Site Corrections         0.000         mhos/metre           Channel 1         0.00         mmhos/metre           Channel 3         0.000         mmhos/metre           Channel 4         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           Cerementation Exponent (N)         2.00         saturation of Water for Apor         100           Saturation of Water for Apor         0.00         ohm-m         Seistivity of Mude Filtrate for Sw         0.00           Source for Rxo         0.00         calibrator Si		ч г					
Squasher Start         0.0020         mhos/metre           Borehole Normalisation							
Squasher Offset         N/A         mhos/metre           Borehole Normalisation         0.0000         DRM1         0.0000           DRM1         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         0.00         mmhos/metre           Channel 1         0.00         mmhos/metre           Channel 3         0.00         mmhos/metre           Channel 4         0.00         mmhos/metre           Apparent Porosity and Water Saturation Constants         1.00           Archie Constant (A)         1.00           Cementation Exponent (M)         2.00           Saturation of Water for Apor         100.00           Saturation of Water for Apor and Sw         0.05           Source for Rt         0.00           Source for Rxo         0.00           Calibration MPD-B 35         Base Calibration on 15-NOV-2011 10:23           Base Calibration         Calibrator Size (in)           1         20351		MICO EXICI			atro		
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         SRC2         0.0000           SRM2         0.0000         SRC2         0.0000           Calibration Site Corrections         Channel 1         0.00         mmhos/metre           Channel 1         0.00         mmhos/metre         Channel 3         0.00           Channel 3         0.00         mmhos/metre         Channel 4         0.00         mmhos/metre           Apparent Porosity and Water Saturation Constants         Archic Constant (A)         1.00         cementation Exponent (M)         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         surve for Rx         0.00         Saturation on 15-NOV-2011 10:23           Base Calibration         Calibrator Size (in)         1         20351         3.99         2         30291         5.98         3         40582							
DRM1         0.0000         DRC1         0.0000           DRM2         0.0000         DRC2         0.0000           MRM1         0.0000         MRC1         0.0000           MRM2         0.0000         MRC2         0.0000           SRM2         0.0000         SRC2         0.0000           Calibration Site Corrections         Channel 1         0.000         mmhos/metre           Channel 1         0.00         mmhos/metre         0.000           Channel 3         0.00         mmhos/metre         0.00           Channel 4         0.00         mmhos/metre         0.00           Channel 4         0.00         mmhos/metre         0.00           Channel 4         0.00         mmhos/metre         0.00           Apparent Porosity and Water Saturation Constants         Archie Constant (A)         1.00           Cementation Exponent (N)         2.00         Saturation of Water for Apor         100.00           Saturation Fxponent (N)         2.00         Saturation Saturation Fxponent (N)         2.00           Source for Rt         0.00         o.00         source for Rt         0.00           Source for Rxo         0.00         sase Calibration on 15-NOV-2011 10.23         Field Calibration o							
DRM1         0.0000         DRC1         0.0000           DRM2         0.0000         DRC2         0.0000           MRM1         0.0000         MRC1         0.0000           MRM2         0.0000         MRC2         0.0000           SRM2         0.0000         SRC2         0.0000           Calibration Site Corrections         Channel 1         0.000         mmhos/metre           Channel 1         0.00         mmhos/metre         0.000           Channel 3         0.00         mmhos/metre         0.00           Channel 4         0.00         mmhos/metre         0.00           Channel 4         0.00         mmhos/metre         0.00           Channel 4         0.00         mmhos/metre         0.00           Apparent Porosity and Water Saturation Constants         Archie Constant (A)         1.00           Cementation Exponent (N)         2.00         Saturation of Water for Apor         100.00           Saturation Fxponent (N)         2.00         Saturation Saturation Fxponent (N)         2.00           Source for Rt         0.00         o.00         source for Rt         0.00           Source for Rxo         0.00         sase Calibration on 15-NOV-2011 10.23         Field Calibration o	Borehole Normalisation						
DRM2         0.0000         DRC2         0.0000           MRM1         0.0000         MRC1         0.0000           SRM1         0.0000         SRC2         0.0000           SRM2         0.0000         SRC2         0.0000           Calibration Site Corrections         0.000         mmhos/metre           Channel 1         0.00         mmhos/metre           Channel 3         0.00         mmhos/metre           Channel 4         0.00         mmhos/metre           Channel 3         0.00         mmhos/metre           Channel 4         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 (M)         2.00           Saturation Exponent (M)         2.00         saturation Exponent (M)         2.00           Source for Rt         0.00         ohm-m         Source for Rt         0.00           Source for Rt         0.00         0.00         see Calibration on 15-NOV-2011 10:23           Base Calibration         Measured         Calibrator Size (in)         1           1		0.0000	DRC1		0	.0000	
MRM1         0.0000         MRC1         0.0000           MRM2         0.0000         MRC2         0.0000           SRM1         0.0000         SRC2         0.0000           SRM2         0.0000         SRC2         0.0000           Calibration Site Corrections         0.000         mmhos/metre           Channel 1         0.00         mmhos/metre           Channel 3         0.00         mmhos/metre           Channel 4         0.00         mmhos/metre           Channel 3         0.00         mmhos/metre           Channel 4         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           Saturation Exponent (M)         2.00         Saturation Exponent (M)         2.00           Saturation Exponent (N)         2.00         Saturation Exponent (N)         2.00           Source for Rt         0.00         ohm-m         Source for Rt         0.00           Source for Rt         0.00         0.00         calibration on 15-NOV-2011 10:23           Field Calibration         1         203							
MRM2         0.0000         MRC2         0.0000           SRM1         0.0000         SRC1         0.0000           SRM2         0.0000         SRC2         0.0000           Calibration Site Corrections         0.000         mmhos/metre           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 (N)         2.00         Saturation For Apor         100.00 percent           Resistivity of Water for Apor         100.00 ohm-m         Source for Rt         0.00           Source for Rt         0.00         ohm-m         Source for Rx         0.00           Source for Rxo         0.00         ohm-m         Sese Calibration on 15-NOV-2011 10:23         Field Calibration on 22-NOV-2011 03:04           Base Calibration         Measured         Calibrator Size (in)         1         20351         3.99         2         30291         5.98         3         405652         7.97         4         4         50158         9.86         50158							
SRM20.0000SRC20.0000Calibration Site Corrections0.000mmhos/metreChannel 10.00mmhos/metreChannel 20.00mmhos/metreChannel 30.00mmhos/metreChannel 40.00mmhos/metreApparent Porosity and Water Saturation ConstantsArchie Constant (A)1.00Cementation Exponent (M)2.00Saturation Exponent (M)2.00Saturation Exponent (N)2.00saturation of Water for Apor100.00Saturation of Water for Apor and Sw0.05ohm-mResistivity of Water for Apor and Sw0.00ohm-mSource for Rt0.000.00Source for Rxo0.00Caliper CalibrationMPD-B 35Base Calibration on 15-NOV-2011 10:23 Field Calibration on 22-NOV-2011 03:04Base Calibration1203513.992302915.983405827.974501589.86	MRM2	0.0000	MRC2		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 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       0.00         Source for Rxo       0.00       Staration on 15-NOV-2011 10:23         Field Calibration MPD-B 35       Base Calibration on 15-NOV-2011 10:23         Reading No       Measured       Calibrator Size (in)         1       20351       3.99         2       30291       5.98         3       40582       7.97         4       50158       9.86	SRM1	0.0000	SRC1		0	.0000	
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Reading No         Measured         Calibrator Size (in)           1         20351         3.99           2         30291         5.98           3         40582         7.97           4         50158         9.86	Base Calibration					Field Calibration on 22-N	IOV-2011 03:04
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3         40582         7.97           4         50158         9.86	-						
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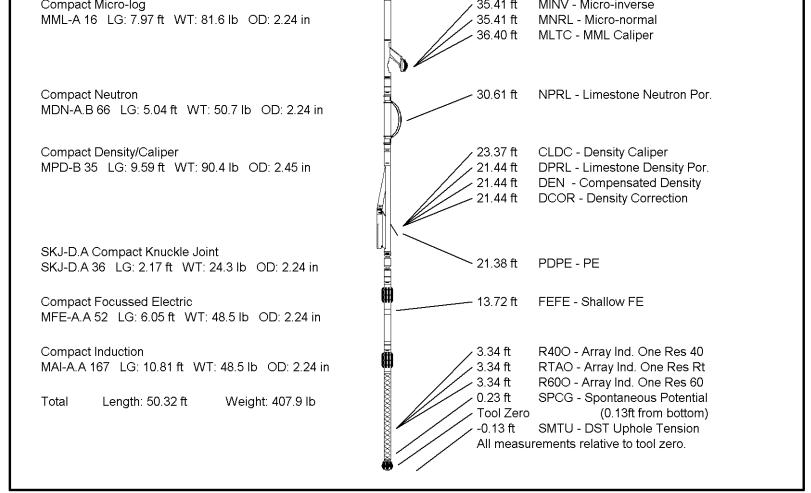
6			N/A		N/A	
Field Calibration	14-		in (in)	A studie	)_li=(i=)	
	we	asured Cal	5.94	Actual C	Caliper (in) 5.98	
Photo Density Calibration MPD-B 35						Base Calibration on 15-NOV-2011 10:46 Field Check on 22-NOV-2011 03:12
Density Calibration Base Calibration		Me Near	easured Far	Calibra Near	ated (sdu) Far	
Reference 1 Reference 2		57280 23374	27020 2567	59556 24941	30836 2541	
Field Check at Base		1159.9	1374.4			
Field Check		1152.3	1369.5			
PE Calibration Base Calibration Background Reference 1 2 Reference 2	WS 207 21400 6184	Meas WH 1024 57084 23227	0.378	,	Calibrated Ratio 0.371 0.272	
Field Check	206.8	1023.7				
	206.6	1018.1				Last Edited on 22 NOV 2011 08:25
Density Constants MPD Density Source Id Nylon Calibrator Number Aluminium Calibrator Nu Density Shoe Profile Caliper Source for Proc PE Correction to Densit Mud Density Mud Density Z/A Multipl Mud Filtrate Density Dry Hole Mud Filtrate D DNCT CRCT Density Z/A Correction	er umber essing y lier	C	p505578 dnce699 dacd698 8 incl Density Calipe Not Applied 1.08 1.17 1.00 0.00 0.00 Hybrid	5 3 1 3 gm. 3 gm. ) gm. ) gm. ) gm.	/cc /cc /cc	Last Edited on 22-NOV-2011,08:25
Matrix Density (gm/cc) 2.71 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0			Depth (ft 0.00 0.00 0.00 0.00 0.00 0.00	) ) ) ) )		

## DOWNHOLE EQUIPMENT

C:\Minimus 11.03.4044\Data\M&M Z-Bar 17-6\M&M Z-Bar 17-6.dta

Compact Comms Gamma MCG-C 139 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in





COMPANY		M&M EXPLORA	TION, INC.			
WELL		Z-BAR #17-6				
FIELD		AETNA NE				
PROVINCE/COL	JNTY	BARBER				
COUNTRY/STA <sup>-</sup>	ГЕ	U.S.A. / KANSAS	6			
Elevation Kelly Bushing	1657.00	feet	First Reading	5028.00	feet	
Elevation Drill Floor	1655.00	feet	Depth Driller	5050.00	feet	
Elevation Ground Level	1645.00	feet	Depth Logger	5050.00	feet	
		COMPACT PH	OTO DENSITY			40 👼
COMPENSATED NEUTRON						

Rt. Box H May, Ok. 7385(1 580/689-2272

Scale 1:240 (5"=100') Imperial Measured Depth Log

License Number: 15-00-72391 Surface Coordinates: 1955' FNL & 1895' FWL, NW/4

Well Name: M & M Exploration Location: 17-T34S-R14W Spud Date: 11/14/2011

Z-Bar 17-6 Barber County. KS Region: Aetna NE Drilling Completed: 11/22/2011

Bottom Hole As Above Coordinates: K.B. Elevation (ft): 1657' Ground Elevation (ft): 1645' Logged Interval (ft): 3900' To: 5050' Total Depth (ft): 5050' Formation: Pennsylvanian & Mississppian Type of Drilling Fluid: Chemical Mud Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 www.WellSight.com

## **OPERATOR**

Company: M & M Exploration, Inc. Address: Attn: Mike Austin 4257 Main Stree, Suite 230 Westminster, Co. 80031

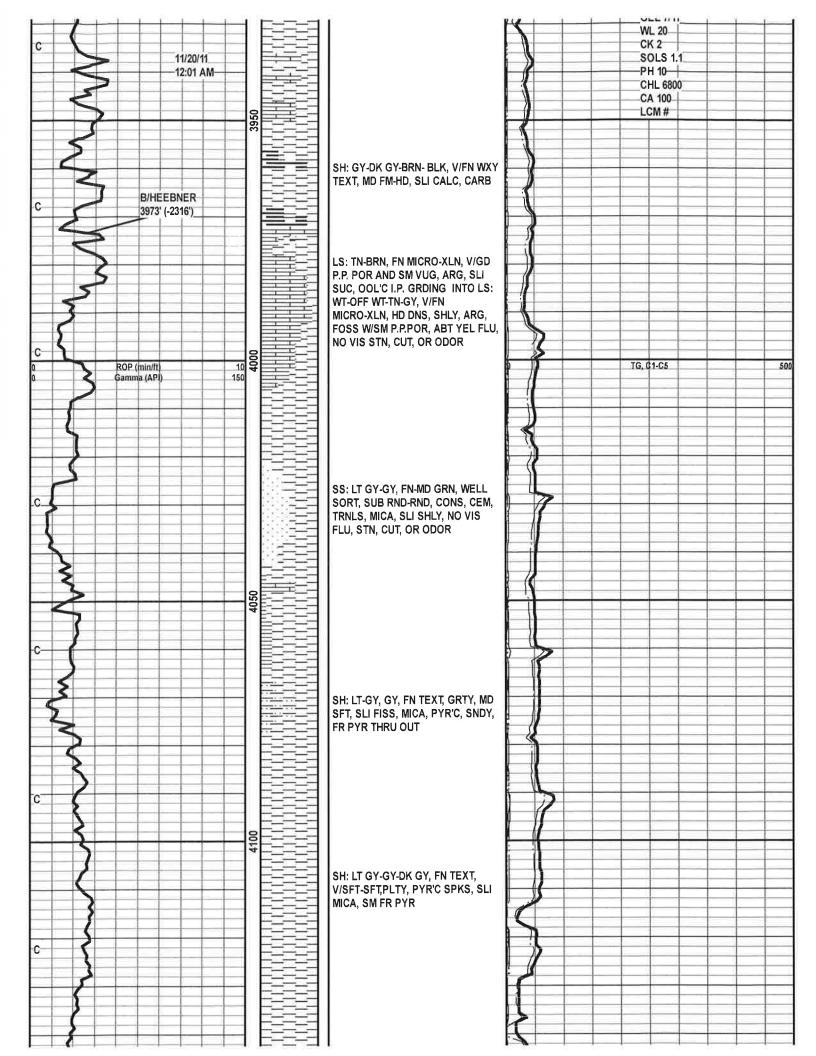
## GEOLOGIST

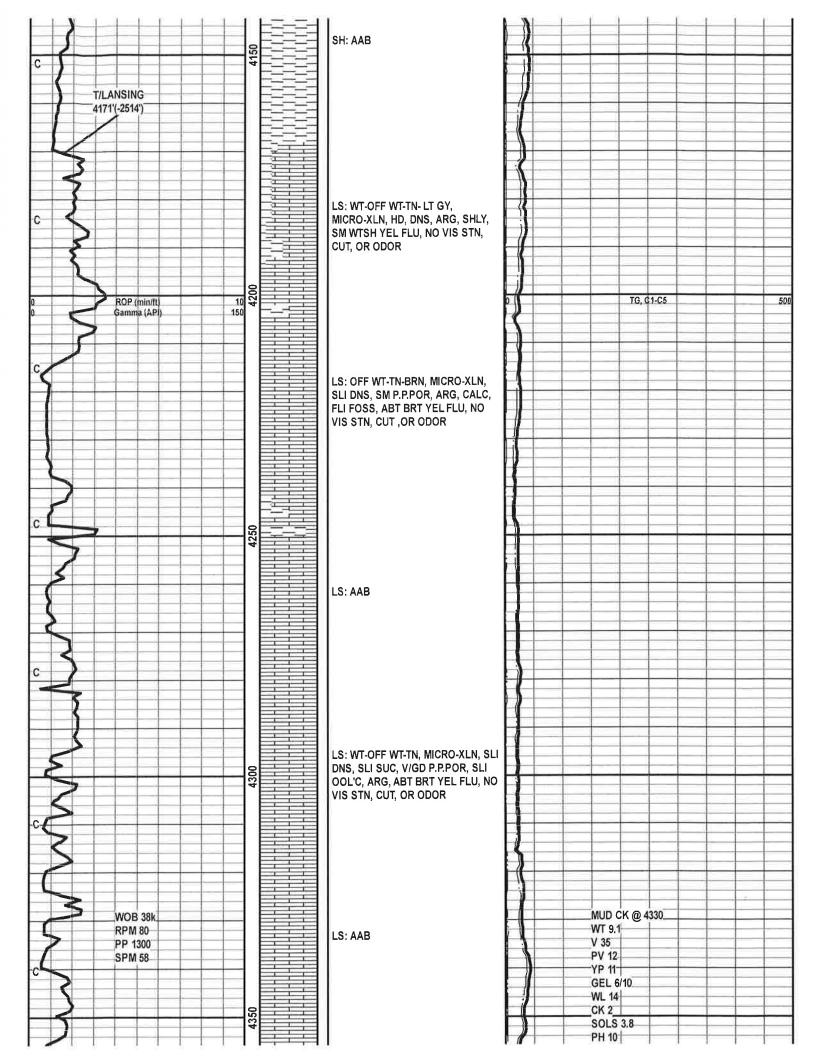
Name: Mike Pollok Company: Map Exploration, Inc. Address: P.O. Box 106 Purcell, Ok 73080

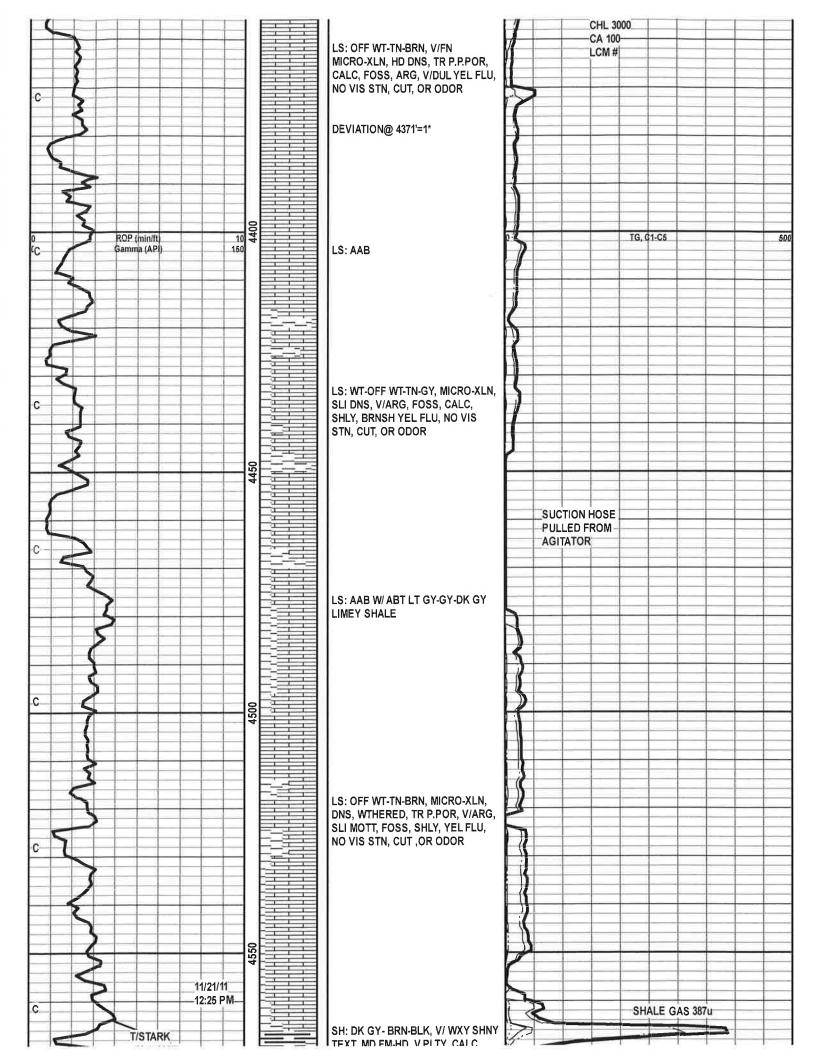
Comments

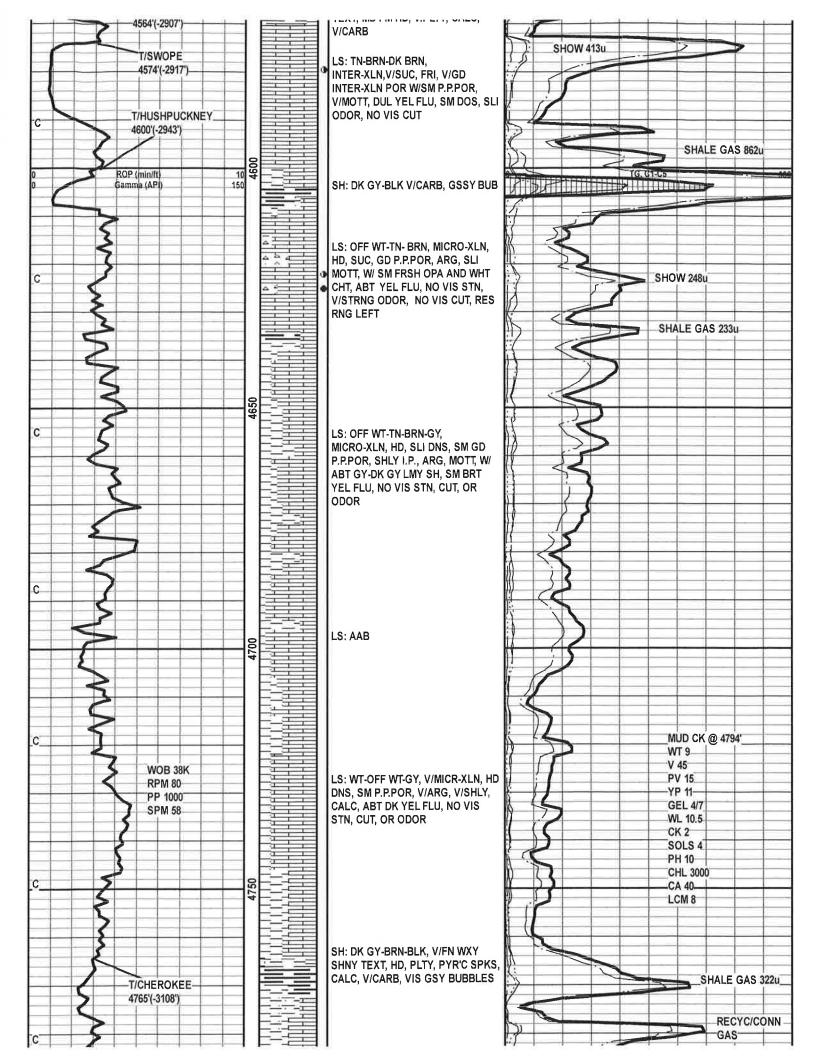
Southwind Rig #70 Mudlogging Unit #5 Mudlogger: Beth Brock

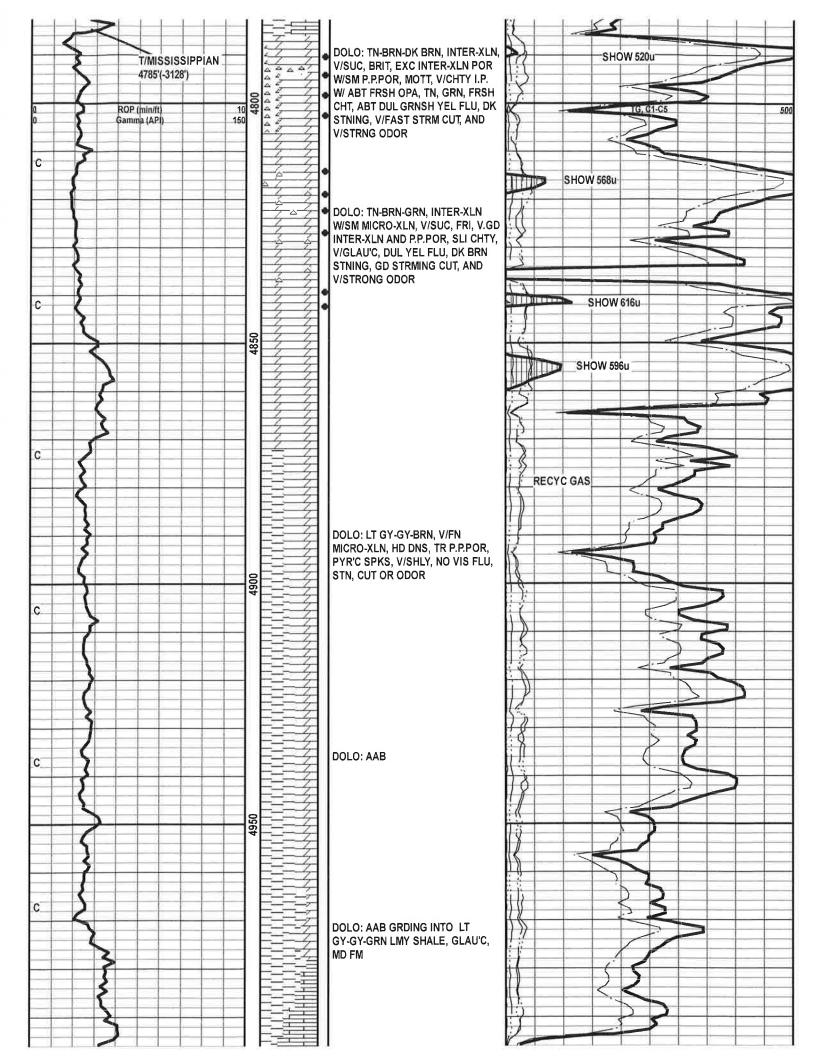
Anhy Bent Bent Brec Cht Clyst Coal	Congl Dol Gyp **** Igne Lmst Meta	ROCK TYPES TTTT Mrist Sait Shale Shcol Shgy Sitst	Ss Till sdy sh calc sh shale carb sh
(	1941 — Annold Many Constanting	ACCESSORIES	TARGET CONTRACTOR AND AND A DESCRIPTION OF THE PERSON
MINERAL         ∅       Anhy         ∅       Arggrn         □       Arg         □       Arg         □       Bent         □       Bit         ③       Brecfrag         □       Calc         □       Carb         △       Chtdk         △       Chtlt         □       Dol         +       Feldspar         ●       Ferrpel         △       Ferr         ○       Glau         ▷       Gyp         □       Hvymin         ▷       Kaol         □       Marl	<ul> <li>Minxl</li> <li>Nodule</li> <li>Phos</li> <li>Pyr</li> <li>Salt</li> <li>Sandy</li> <li>Silt</li> <li>Sil</li> <li>Sulphur</li> <li>Tuff</li> </ul> FOSSIL <ul> <li>Algae</li> <li>Algae</li> <li>Amph</li> <li>Belm</li> <li>Belm</li> <li>Bioclst</li> <li>Bryozoa</li> <li>Cephal</li> <li>Coral</li> </ul>	☑Crin☑EchinKFish֎ForamFFossil☑Gastro☑Oolite☑Oolite☑Pelec☑Pellet☑Plant☑StromSTRINGER☑Anhy▲argBent☑Coal☑Dol	Gyp Ls Mrst Sltstrg Ssstrg TEXTURE B Boundst C Chalky C Cryxln E Earthy F Finexln G Grainst Lithogr M Microxln M Mudst P Packst W Wackest
	nin Briteko (h. 1908). Bis Matoria A	OTHER SYMBOLS	
POROSITY TYPEEEarthy□FenestFFracture⊠Inter☑Moldic□Organic▶Pinpoint☑Vuggy	SORTING 네 Well M Moderate P Poor ROUNDING R Rounded 다 Subrnd 집 Subang	<ul> <li>Angular</li> <li>OIL SHOWS</li> <li>Even</li> <li>Spotted</li> <li>Ques</li> <li>Dead</li> </ul>	INTERVALS Core Dst EVENTS Rft Sidewall
Curve Track 1 ROP (min/ft) Gamma (API)	Lithology	Geological Descriptions	TG, C1-C5         TG (units)         C1 (units)         C2 (units)         C3 (units)         C4 (units)         C5 (units)
C DRILLING 7 7/8" W/BIT #	21 10 8 BE 21 150 390	GAN 1 MAN MUDLOGGING @ 04	TG 61-C5 50
WOB 36k RPM 80 PP 1100 SPM 58		: LT GY-GY, FN TEXT, SLI GRTY, FT-SFT, SLI MICA, SLI GLAU'C	MUD CK @ 3642 WT 9.0 V 33 PV 12 YP 10 CEL 7/41











с- о	ROP (min/ft) 11 Gamma (API) 12	1/22/11 2:15 PM <sup>10</sup> 50		C3 C1-C5	500
	- And		LS: WT-OFF WT-TN, V/FN MICRO-XLN, DNS, SLI CHLKY, ARG, SM YEL FLU, NO VIS STN, CUT, OR ODOR		
RTD @	2 5050' ON 11/22/11 @ 4:00 AM		SHORT TRIP UP TO COLLARS, RIH, CIRC 1 1/2 HR, DROP SURVEY, TOH FOR ELOGS		

Conservation Division Finney State Office Building 130 S. Market, Rm. 2078 Wichita, KS 67202-3802



Phone: 316-337-6200 Fax: 316-337-6211 http://kcc.ks.gov/

Mark Sievers, Chairman Ward Loyd, Commissioner Thomas E. Wright, Commissioner Sam Brownback, Governor

March 08, 2012

Mike Austin M & M Exploration, Inc. 4257 MAIN ST., #230 WESTMINSTER, CO 80031

Re: ACO1 API 15-007-23791-00-00 Z Bar 17-6 NW/4 Sec.17-34S-14W Barber County, Kansas

**Dear Production Department:** 

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully, Mike Austin