COMPANY	NORTHWEST NATURAL GAS
WELL	9B 128-20-9B
FIELD	WEST COLUMBIA PRO. STORAGE
COUNTY	COLUMBIA STATE OR

HALLIBURTON — HIGH RES. INDUCTION BORDHOLE COMP. SONIC GAMMA

DATE	10-Jan-00				
RUN NO.	ONE				
TYPE LOG	DIL	SDL	DSN	SGR	
BOTTOM (DRILLER)	2107				
BOTTOM (LOGGER)	2106				
TOP (LOGGER)	0				
BIT SIZE	7.875				
TYPE FLUID IN HOLE	FRESH				
DENSITY	8.4				
VISCOSITY	28				
PH	9.5				
FLUID LOSS	8.4				
SOURCE OF SAMPLE	FLOWLINE				
RM @ MEAS. TEMP.	.085 @ 70				
RMF @ MEAS. TEMP.	.064 @ 70				
RMC @ MEAS. TEMP.	.112 @ 70				
RM @ BHT	.056 @ 100				
RMF @ BHT	.047 @ 100				
RMC @ BHT	.084 @ 100				
TIME SINCE CIRC.	12:15				
TIME LOGGER ON BOTTOM	16:00				
LOGGING UNIT NO.	10				
LOGGING ENGINEER	BRIGHT				
WITNESS	CHAN				

RUN NO.	ONE				
DATE	10-Jan-00				
TYPE LOG	DIL	SDL	DSN	SGR	
DEPTH DRILLER	2107				
DEPTH LOGGER	2106				
BTM. LOG INTERVAL	2104				
TOP LOG INTERVAL	0				
CASING DRILLER SIZE AT DEPTH	7.875 @ 0				
TYPE FLUID IN HOLE	FRESH				
DENSITY	8.4				
VISCOSITY	28				
PH	9.5				
FLUID LOSS	8.4				
SOURCE OF SAMPLE	FLOWLINE				
RM @ MEAS. TEMP.	.085 @ 70				
RMF @ MEAS. TEMP.	.064 @ 70				
RMC @ MEAS. TEMP.	.112 @ 70				
RM @ BHT	.056 @ 100				
RMF @ BHT	.047 @ 100				
RMC @ BHT	.084 @ 100				
TIME CIRC.	12:15				
TIME LOGGER ON BOTTOM	16:00				
UNIT NUMBER	10				
LOGGER	BRIGHT				
WITNESS	CHAN				

RECORDED LIVE

EQUIPMENT DATA							
SONDE		ACOUSTIC		DENSITY		VOLTMETER	
Type Sn.	DSN	Type Ac.	DSI	Type Ds.		Type Vm.	
Serial No.	1187	Serial No.	1187	Serial No.		Serial No.	
Pad Type		Pad Type		Pad Type		Mode No.	
Centralizer	3.875"	Cntr/Cart.	TURBO	Centralizer		Centralizer	
Caliper Arm No.	1187	Cntr/Cart.	1187	Caliper Arm No.		Caliper Arm No.	
Type	GR	Type		Type		Type	
Serial No.	1187	Spkr. Ch. No.	10	Serial No.		Serial No.	
Gamma Source	1A	Pitch Cor.	0.0	Gamma Source		Gamma Source	

CORRECTIONS									
GENERAL		SONDE		ACOUSTIC		DENSITY		VOLTMETER	
Rm	Rmf	Rmc	Bit Size	Mud Wt.	Fluid Loss	Rm	Rmf	Rm	Rmf
.085	.064	.112	7.875	8.4	8.4	.056	.047		
DSN	DSI	A	B	TD	TS	RS			
		1.0	0.0	2107	0.0	16.0			

OPERATIONAL INFORMATION

RECORD CIRCULATION	14:00	FREQ. ⊥	100	FREQ. ∥	50

REMARKS

AVERAGE HOLE VOLUME CALCULATED USING 7.825" CASING.
HOLD BACK FINAL PART DUE TO CONDENSATION.

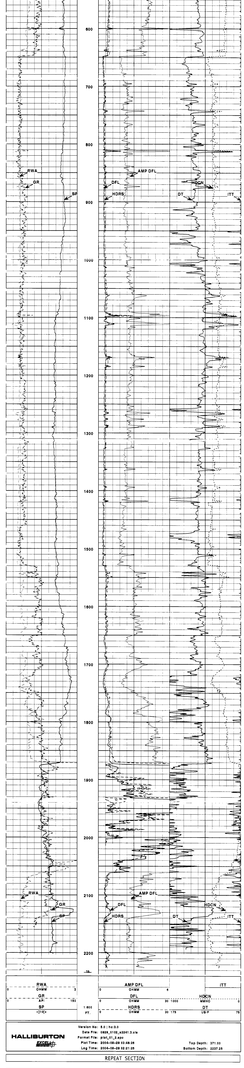
CREW: D. MCDONOUGH, C. BRIGHT & CHAN. REC: TAYLOR DRILLING NO. 5

THE INTERPRETATIONS OF DATA PROVIDED BY HALLIBURTON ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND ARE ESTIMATES ONLY. THEY ARE BASED ON ASSUMPTIONS REGARDING FORMATION CHARACTERISTICS, TOOL PERFORMANCE AND OTHER MATTERS AFFECTING THE INTERPRETATION. HALLIBURTON CANNOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION, AND WE SHALL NOT BE LIABLE FOR ANY LOSS, DAMAGE OR EXPENSE RESULTING FROM THE USE THEREOF.

HALLIBURTON

Version No: 8.2.1.4.0.0
Job File: 0008_0100_0001.3.dis
Format File: ahi_2_4.sum
Plot Time: 2000-08-08 02:01:20
Log Time: 2000-08-08 02:01:20

Top Depth: 371.00
Bottom Depth: 2107.24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