COMPANY: **Enerfin Resources Northwest**

WELL: **C.C. 32-28-75 (Hadrasaur)**

FIELD: **Mist Gas**

COUNTY: **Columbia** **STATE:** **Oregon**

COUNTY: Columbia
Field: Mist Gas
Location: 1818.7' S & 2231.71' W from
Well: C.C. 32-28-75 (Hadrasaur)
Company: Enerfin Resources Northwest

Schlumberger

Array Induction
BHC Sonic
SP/GR

LOCATION			
1818.7' S & 2231.71' W from the NE corner of Section 28		Elev.:	K.B. 1337.74 ft G.L. 1327.74 ft D.F.
Permanent Datum:	Ground Level	Elev.:	1327.74 ft
Log Measured From:	Kelly Bushing	10.0 ft	above Perm. Datum
Drilling Measured From:	Kelly Bushing		

API Serial No.	SECTION	TOWNSHIP	RANGE
	28	5W	5W

Logging Date		31-JUL-1999			
Run Number		1			
Depth Driller		2863 ft			
Schlumberger Depth		2860 ft			
Bottom Log Interval		2852 ft			
Top Log Interval					
Casing Driller Size @ Depth		7.000 in @	570 ft	@	
Casing Schlumberger		570 ft			
Bit Size		6.250 in			
Type Fluid In Hole		Accu-gauge			
MUD Density	Viscosity	9.3 lbm/gal	47 s		
MUD Fluid Loss	PH	5.6 cm3	9.5		
MUD Source Of Sample		Flowline			
RM @ Measured Temperature		0.720 ohm.m @	80 degF	@	
RMF @ Measured Temperature		0.780 ohm.m @	62 degF	@	
RMC @ Measured Temperature		0.890 ohm.m @	63 degF	@	
Source RMF	RMC	Press	Press		
RM @ MRT	RMF @ MRT	0.554 @ 106	0.476 @ 106	@	@
Maximum Recorded Temperatures		106 degF			
Circulation Stopped	Time	31-JUL-1999	1:00		
Logger On Bottom	Time		12:45		
Unit Number	Location	3152	Sacramento		
Recorded By		Clayton Campbell			
Witnessed By		Dave Huggins			

	Run 1	Run 2	Run 3

Logging Date			
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Driller Size @ Depth		@	@
Casing Schlumberger			
Bit Size			
Type Fluid In Hole			
MUD Density	Viscosity		
MUD Fluid Loss	PH		
MUD Source Of Sample			
RM @ Measured Temperature		@	@
RMF @ Measured Temperature		@	@
RMC @ Measured Temperature		@	@
Source RMF	RMC		
RM @ MRT	RMF @ MRT	@ @	@
Maximum Recorded Temperatures			
Circulation Stopped	Time		
Logger On Bottom	Time		
Unit Number	Location		
Recorded By			
Witnessed By			

Run 4

ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND WE CANNOT, AND DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATIONS, AND WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILLFUL NEGLIGENCE ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, DAMAGES OR EXPENSES INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO CLAUSE 4 OF OUR GENERAL TERMS AND CONDITIONS AS SET OUT IN OUR CURRENT PRICE SCHEDULE.

OTHER SERVICES1	OTHER SERVICES2
OS1:	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
0.5 inch standoffs used on Array Induction	
2 centralizers used on sonic sonde	
Cement Volume calculated assuming 2.875 inch production casing	
Logs calculated on Sandstone matrix; 2.65 g/cc 56 us/ft	
Rig: Taylor Drilling Inc. #7	

RUN 1		RUN 2	
SERVICE ORDER #	6075774	SERVICE ORDER #	
PROGRAM VERSION	9C0-413	PROGRAM VERSION	
FLUID LEVEL		FLUID LEVEL:	

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

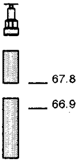
EQUIPMENT DESCRIPTION

RUN 1	RUN 2

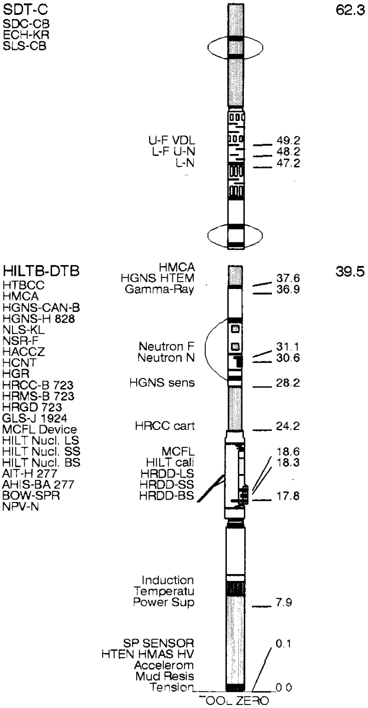
SURFACE EQUIPMENT

GSR-U/Y
NCT-B
CNB-AB
NCS-VB
STM-C
WITV (CTS)-A

DOWNHOLE EQUIPMENT



LEH-QT LEH-QT 1080		73.7
TCC-B ECH-KC TCC-B	TelStatus CTEM	70.8
SGT-L SGH-K SGC-SA SGD-TAA	Gamma Ray	67.8



MAXIMUM STRING DIAMETER 4.63 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Input DLIS Files

DEFAULT	HILTC .016	FN:1	PRODUCER	31-Jul-1999 16:09	2874.0 FT	391.5 FT

Output DLIS Files

DEFAULT	HILTB .017	FN:14	PRODUCER	31-Jul-1999 16:12	2874.0 FT	392.0 FT

Integrated Hole/Cement Volume Summary

Hole Volume = 488.65 F3

Cement Volume = 385.23 F3 (assuming 2.88 IN casing O.D.)

Computed from 2863.0 FT to 570.0 FT using data channel(s) BS

OP System Version: 9C0-413

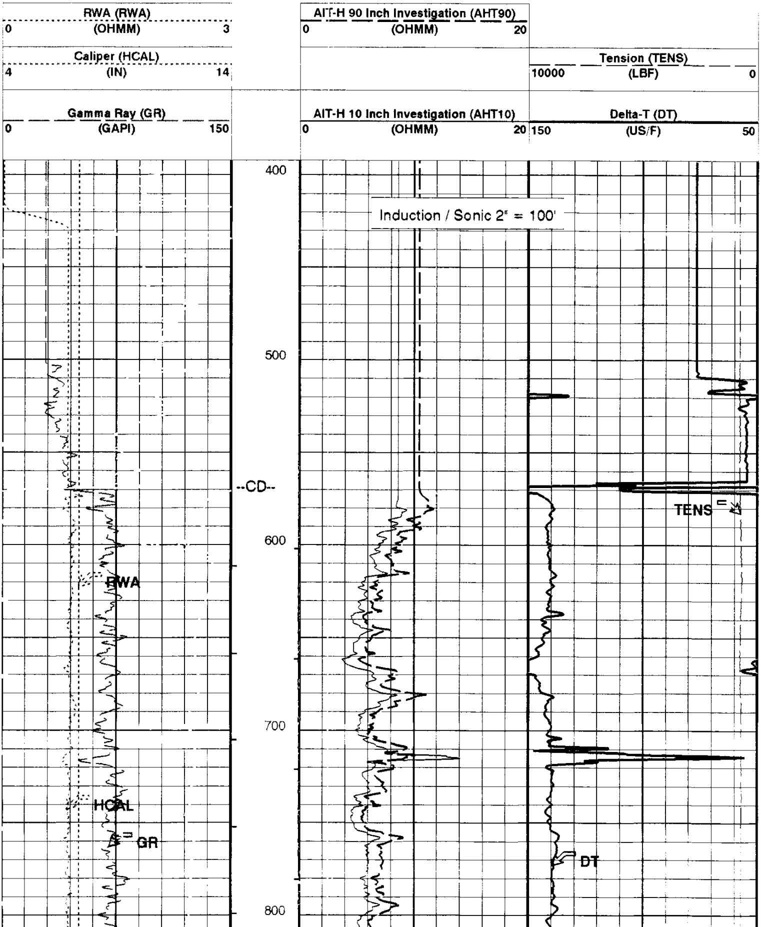
MCM

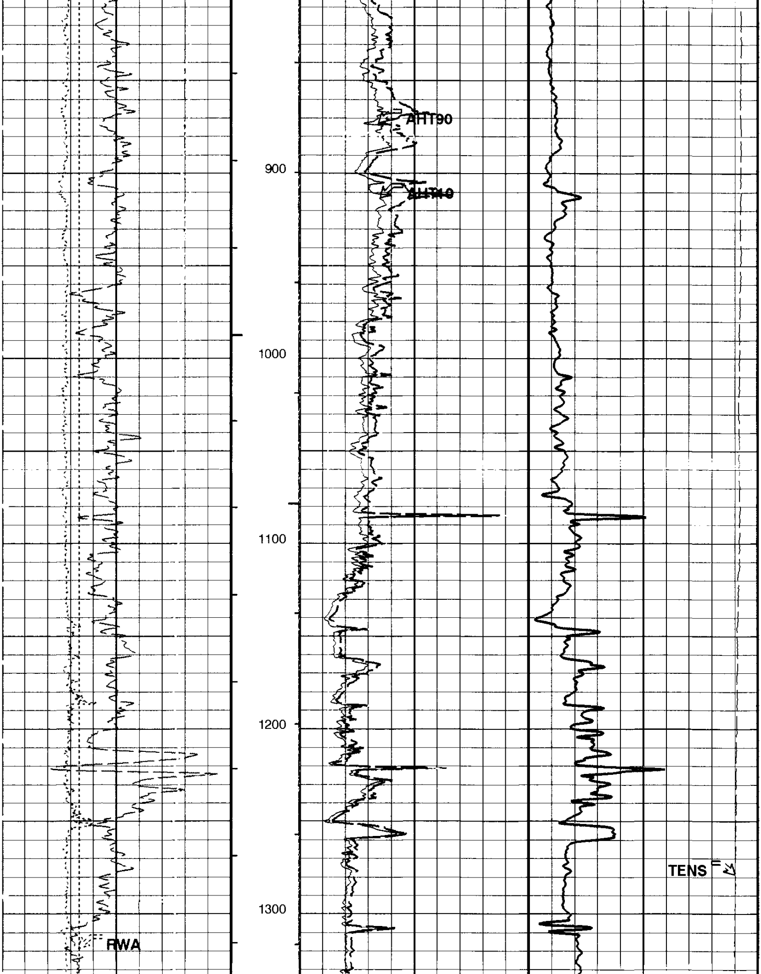
HILTB-DTB	OP9-KP1	SDT-C	9C0-413
SGT-L	9C0-413	TCC-B	9C0-413

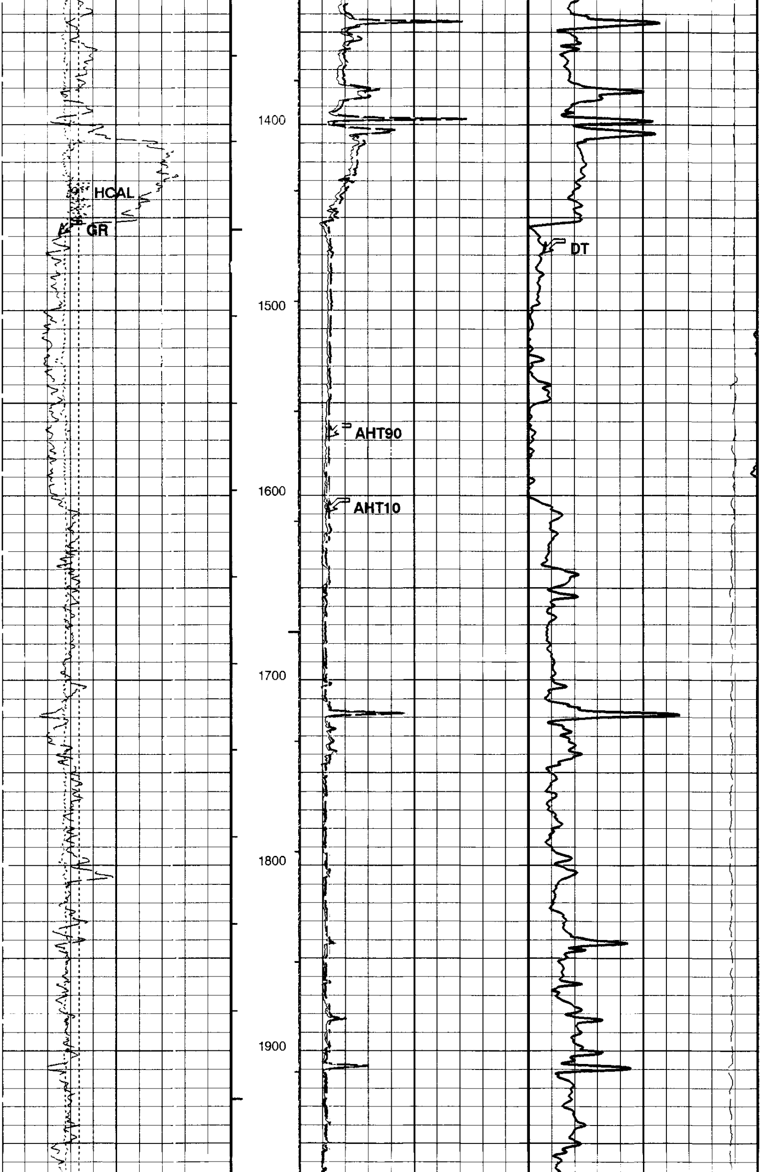
PIP SUMMARY

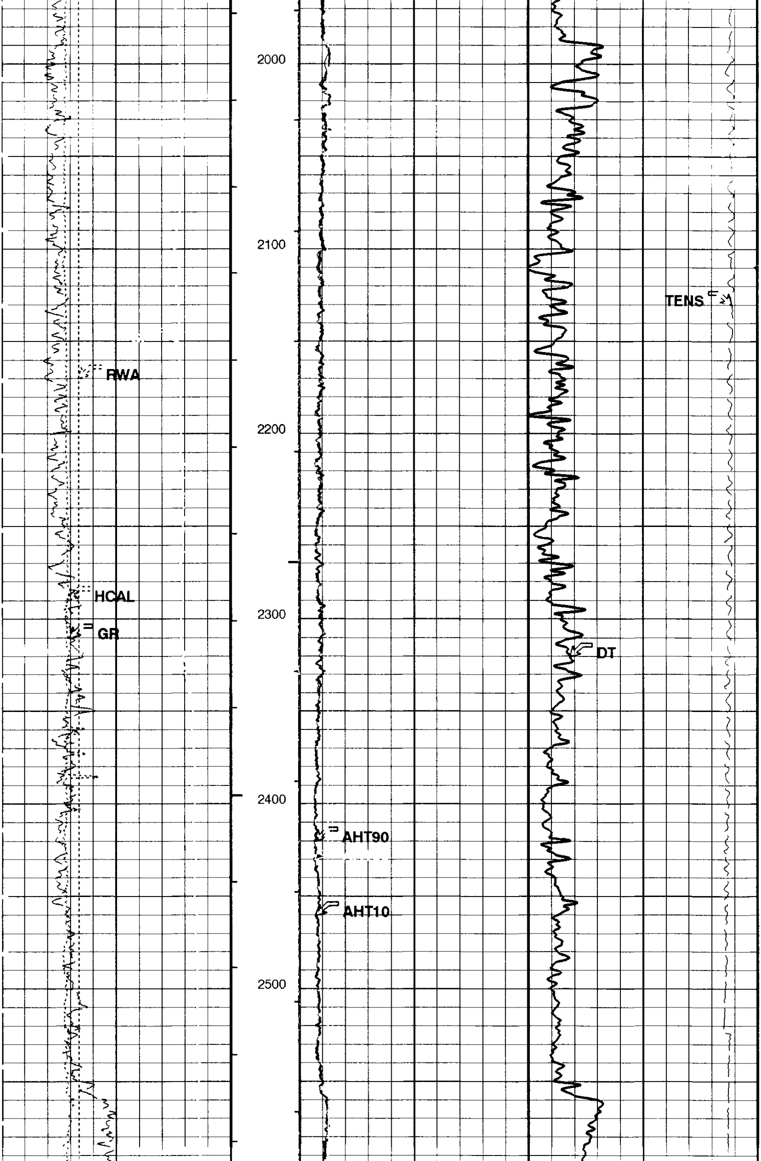
⊢ Integrated Hole Volume Minor Pip Every 10 F3
⟝ Integrated Hole Volume Major Pip Every 100 F3
⊣ Integrated Cement Volume Minor Pip Every 10 F3
⟞ Integrated Cement Volume Major Pip Every 100 F3

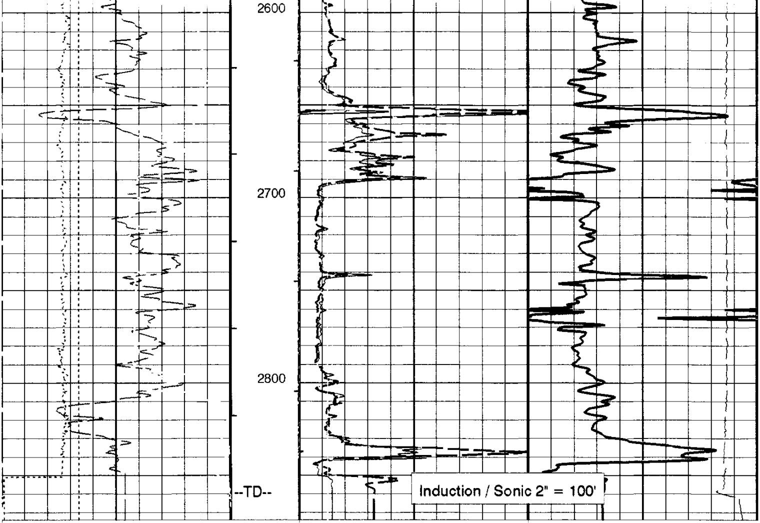
■ Time Mark Every 60 S











Gamma Ray (GR)	AIT-H 10 Inch Investigation (AHT10)	Delta-T (DT)
0 (GAPI) 150	0 (OHMM) 20	150 (US/F) 50
Caliper (HCAL)		Tension (TENS)
4 (IN) 14		10000 (LBF) 0
RWA (RWA)	AIT-H 90 Inch Investigation (AHT90)	
0 (OHMM) 3	0 (OHMM) 20	

PIP SUMMARY

⊢ Integrated Hole Volume Minor Pip Every 10 F3
⊢ Integrated Hole Volume Major Pip Every 100 F3
⊣ Integrated Cement Volume Minor Pip Every 10 F3
⊣ Integrated Cement Volume Major Pip Every 100 F3

▮ Time Mark Every 60 S

AIT-H Answer Product Processing Summary. Data taken with tool # 277 (AHTNO)

...Acquired data from HILT/HAIT

***** Bhole Correction *****

Effective Mud Resistivity computed. Borehole diameter taken as input (see GCSE parameter)

Tool is run in ECCENTERED mode with a tool stand-off of 0.50 IN. Bit Size is 6.25 IN.

***** Input Selections to AIT Answer Product processing *****

Caliper (GCSE): HCAL Mud Resistivity (GRSE): AHMF Temperature (GTSE): LINEAR_ESTIMATE Porosity (FPHI): DPHZ

***** Other parameters used by AIT-H/SAIT Answer Product processing *****

Surface Hole Temperature (SHT)	68.000 DEGF	Bottom Temperature (BHT)	100.000 DEGF
Total Depth (TD)	2863.000 FT		
Form Factor Exponent (FEXP)	2.000	Form Factor Numerator (FNUM)	1.000
Mud Filtrate Sample Resistivity (RMFS)	0.780 OHMM	Mud Filtrate Sample Temperature (MFST)	62.000 DEGF
Resitivity Connate Water (RW)	1.000 OHMM		

***** AIT-H/SAIT Answer Product processing control parameters *****

Playback Mode: OFF

Parameters

DLIS Name	Description	Value	
AHBHM	AIT-H Bhole Correction Mode	0_ComputeMudResistivity	
AHBLM	AIT-H Basic Logs Mode	6_One_Two_and_Four	
AHBPO	AIT-H Basic Logs Processing Option	Standard_Processing	
AHCDE	AIT-H Casing Detection Enable	Yes	
AHCEN	AIT-H Tool Centering Flag (in Borehole)	Eccentered	
AHCSED	AIT-H Casing Shoe Estimated Depth	-50000	FT
AHMRF	AIT-H Mud Resistivity Factor	1	
AHSTA	AIT-H Tool Standoff	0.5	IN
ARTS	AIT Rt Selection (for ALLRES computation)	13_AHT90	
BHT	Bottom Hole Temperature (used in calculations)	100	DEGF
BS	Bit Size	6.250	IN
DFD	Drilling Fluid Density	9.30	LB/G
DHC	Density Hole Correction	BS	
DO	Depth Offset	0.0	FT
DTCM	Delta-T Computation Mode	FULL	
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FPHI	Form Factor Porosity Source	DPHZ	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HSCM	HILT Speed Correction Mode	TSCD_SPEED_CORRECTION	
HSTI	STI Uses HILT Acceleration	YES	
MODE	Firing Mode	SDDB	
MST	Mud Sample Temperature	80.00	DEGF
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	StdRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PP	Playback Processing	OFF	
RMFS	Resistivity of Mud Filtrate Sample	0.7800	OHMM
RTCO	RTCO - Rt Invasion Correction	YES	
RW	Resistivity of Connate Water	1.0000	OHMM
SHT	Surface Hole Temperature	68	DEGF
SPNV	SP Next Value	0	MV
TD	Total Depth	2863	FT
TWS	Temperature of Connate Water Sample	100.00	DEGF

Format: AITSON_S2 Vertical Scale: 2" per 100' Graphics File Created: 31-Jul-1999 16:12

OP System Version: 9C0-413

MCM

HILTB-DTB	OP9-KP1	SDT-C	9C0-413
SGT-L	9C0-413	TCC-B	9C0-413

Speed Corrected - Depth Matched LOG

Input DLIS Files

DEFAULT	HILTC .016	FN:1	PRODUCER	31-Jul-1999 16:09	2874.0 FT	391.5 FT

Output DLIS Files

DEFAULT	HILTB .017	FN:14	PRODUCER	31-Jul-1999 16:12		

Input DLIS Files

DEFAULT	HILTC .016	FN:1	PRODUCER	31-Jul-1999 16:09	2874.0 FT	391.5 FT

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OP System Version: 9C0-413

MCM

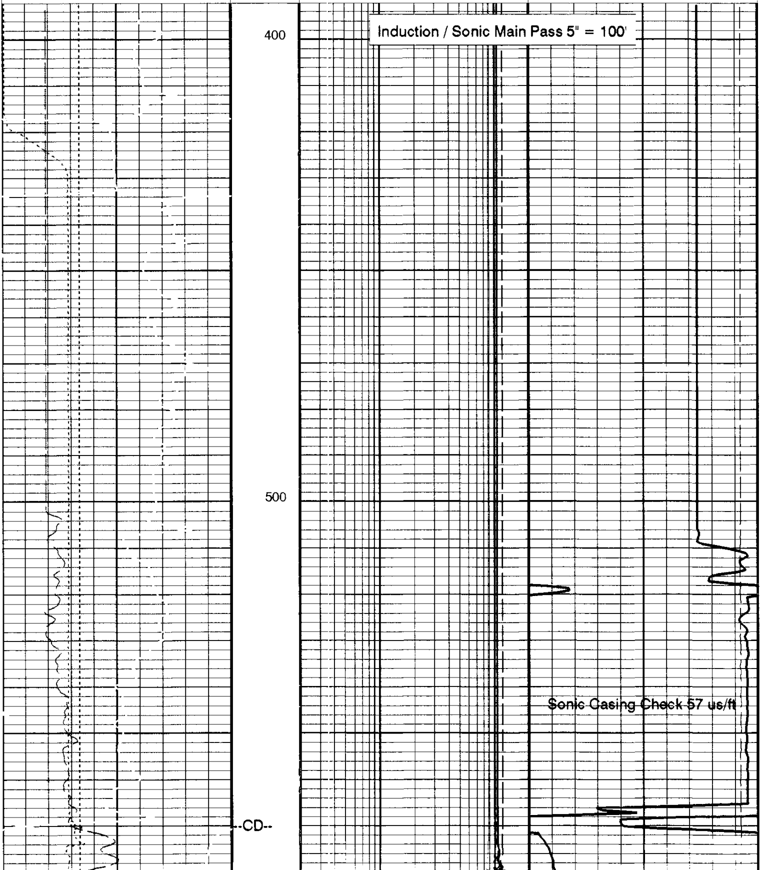
HILTB-DTB	OP9-KP1	SDT-C	9C0-413
SGT-L	9C0-413	TCC-B	9C0-413

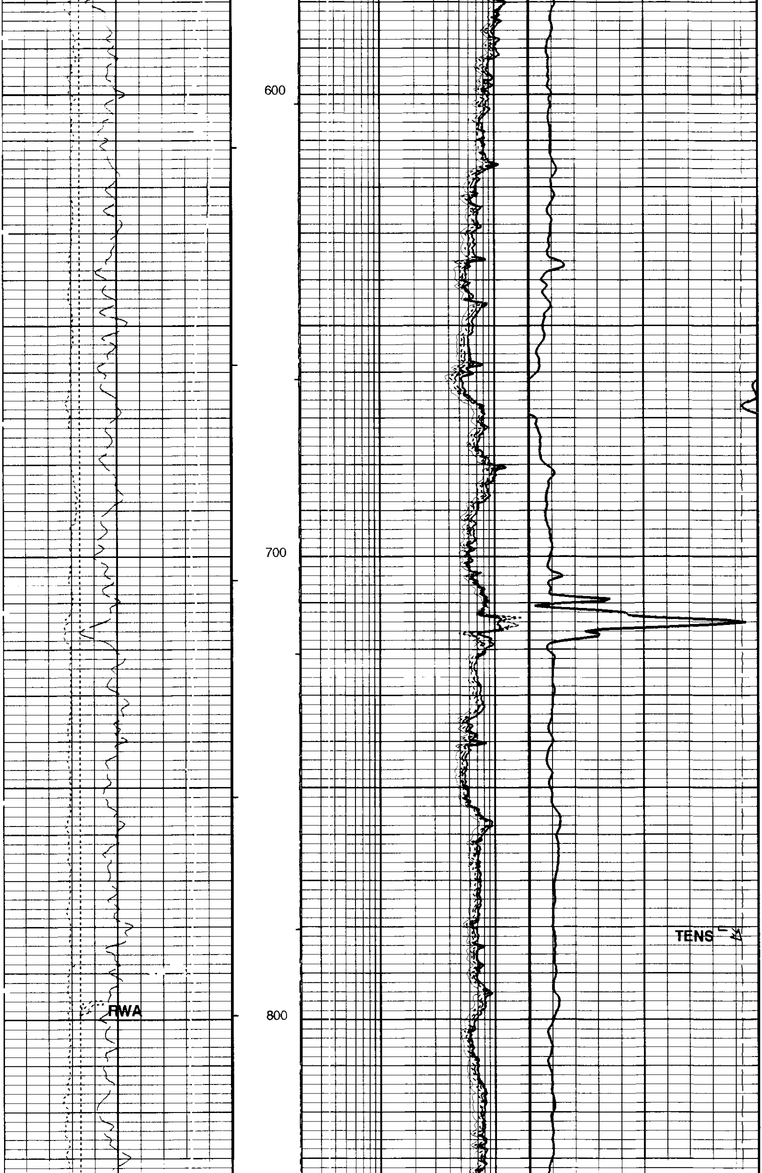
PIP SUMMARY

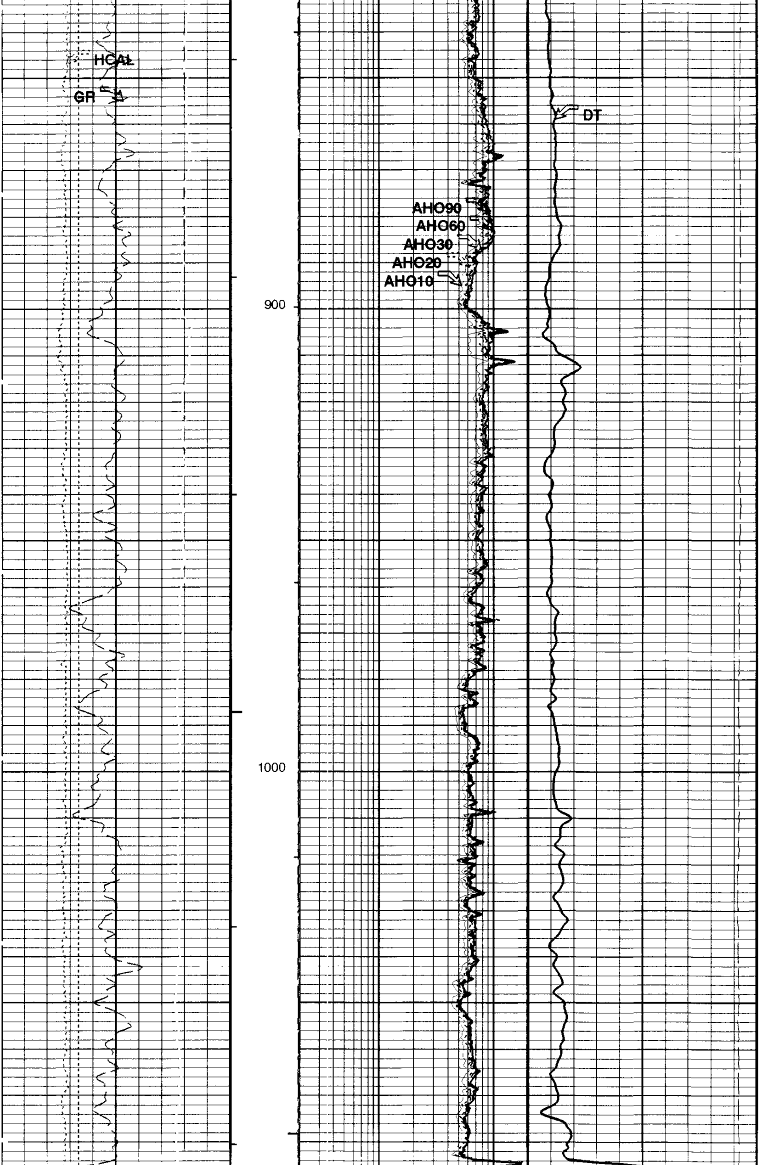
⊢ Integrated Hole Volume Minor Pip Every 10 F3
⊢ Integrated Hole Volume Major Pip Every 100 F3
⊣ Integrated Cement Volume Minor Pip Every 10 F3
⊣ Integrated Cement Volume Major Pip Every 100 F3

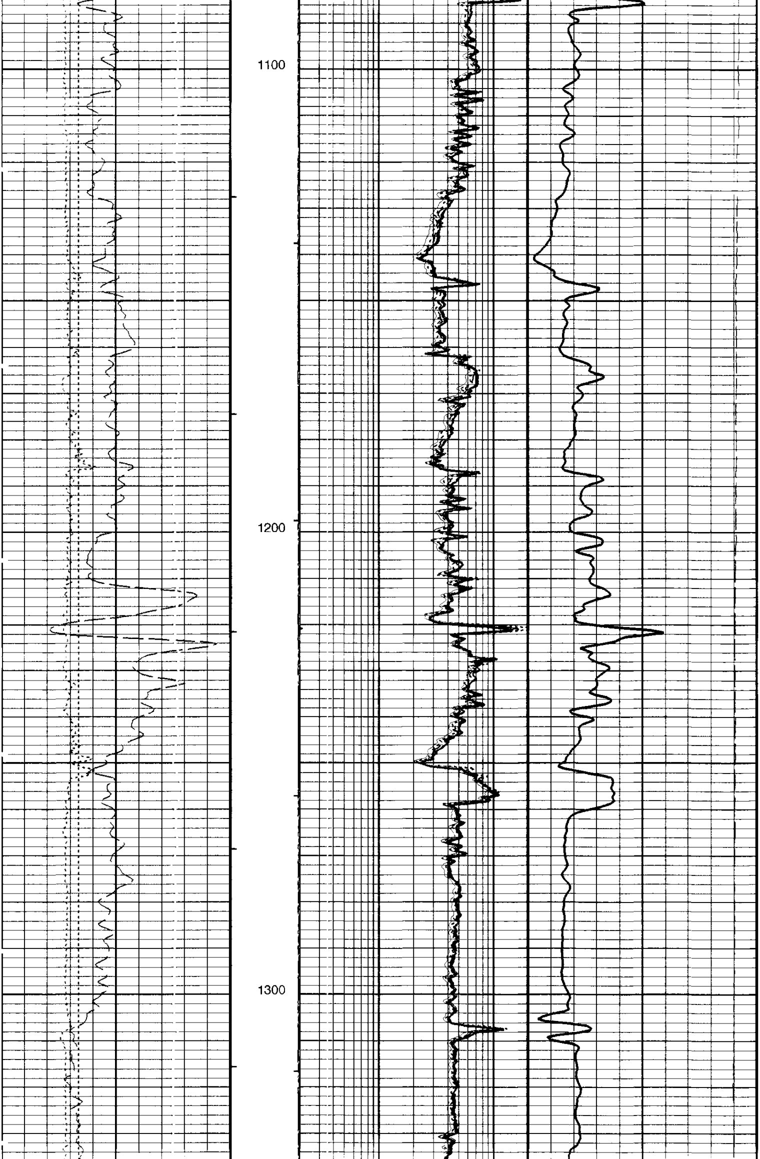
Time Mark Every 60 S

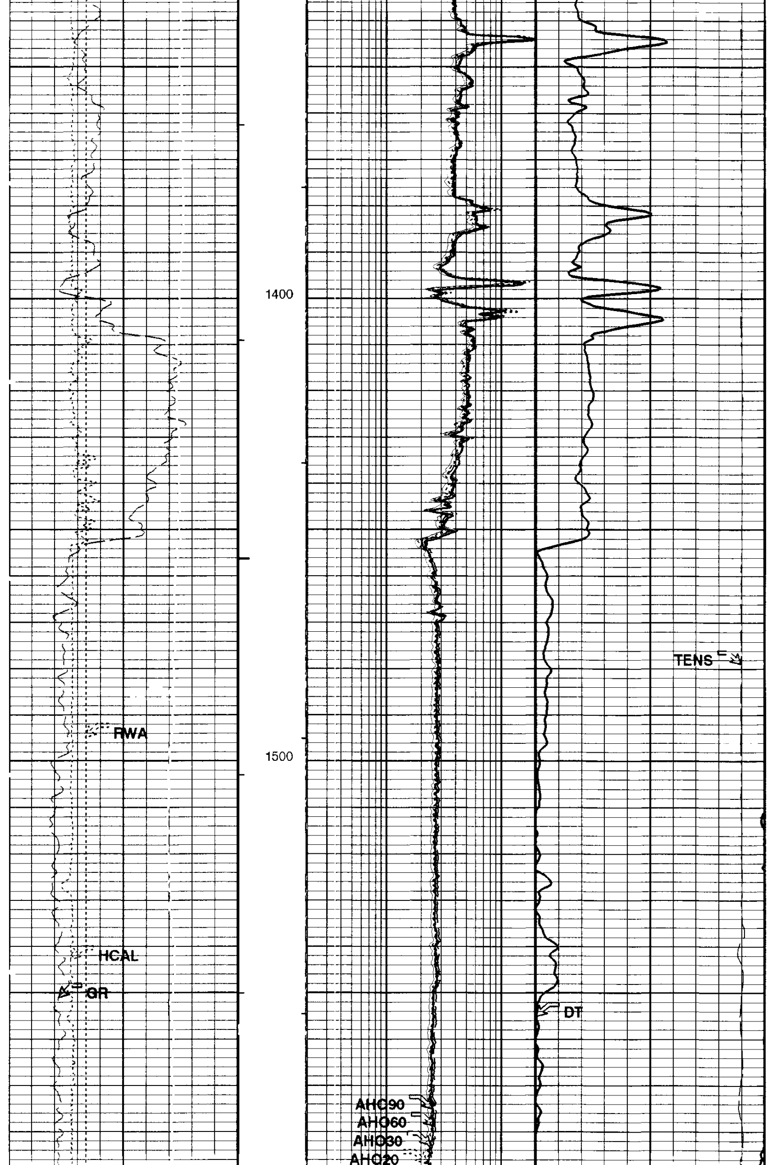
	AIT-H 90 Inch Investigation (AHO90) 0.2 (OHMM) 20	
	AIT-H 60 Inch Investigation (AHO60) 0.2 (OHMM) 20	
RWA (RWA) 0 (OHMM) 3	AIT-H 30 Inch Investigation (AHO30) 0.2 (OHMM) 20	
Caliper (HCAL) 4 (IN) 14	AIT-H 20 Inch Investigation (AHO20) 0.2 (OHMM) 20	Tension (TENS) 10000 (LBF) 0
Gamma Ray (GR) 0 (GAPI) 150	AIT-H 10 Inch Investigation (AHO10) 0.2 (OHMM) 20	Delta-T (DT) 150 (US/F) 50

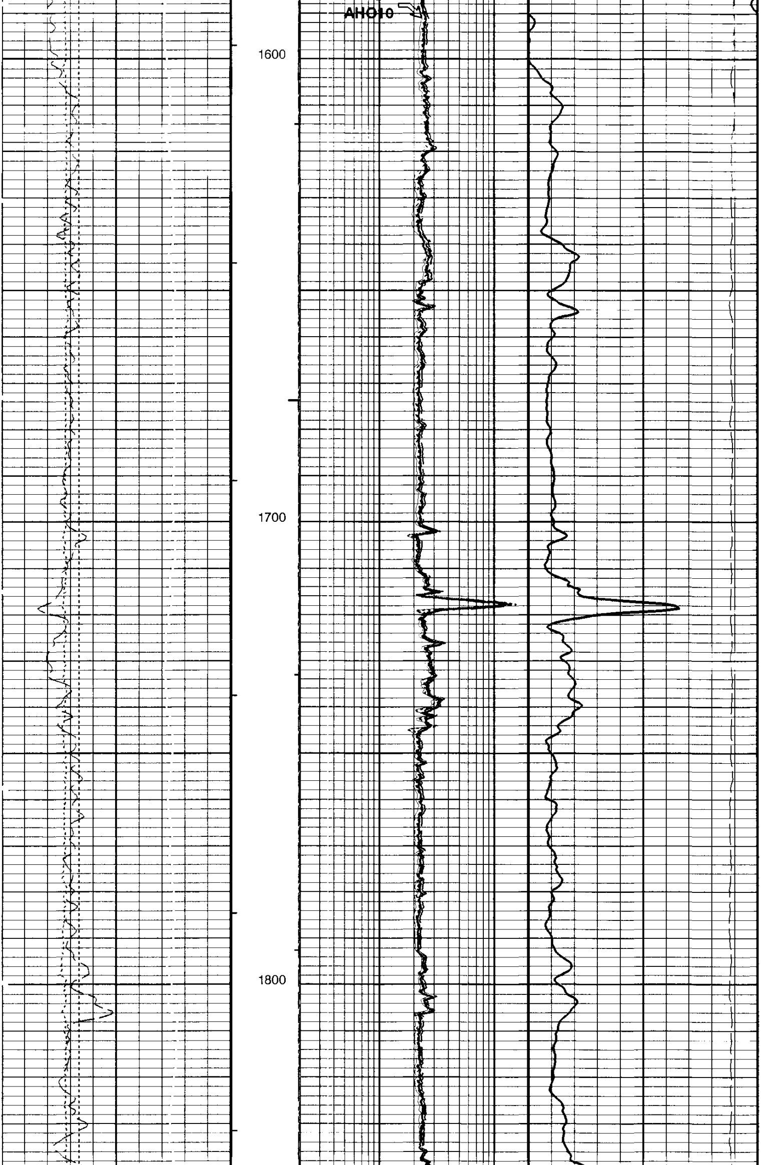


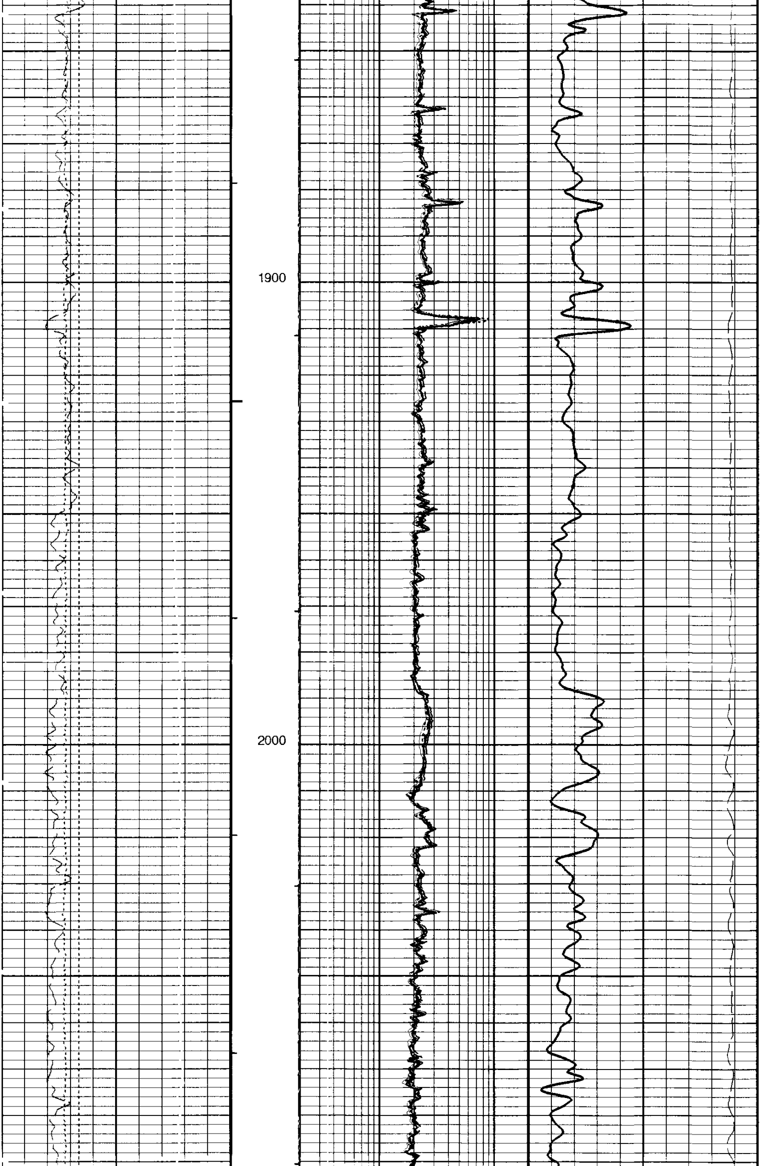


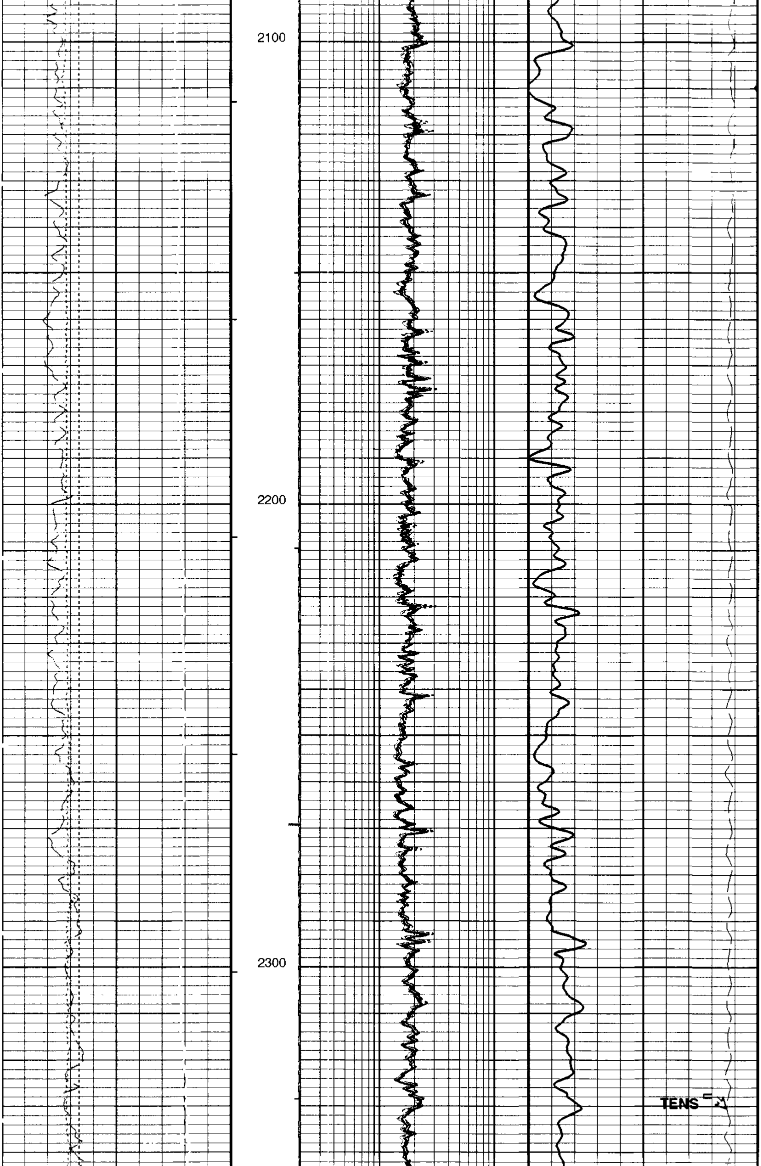


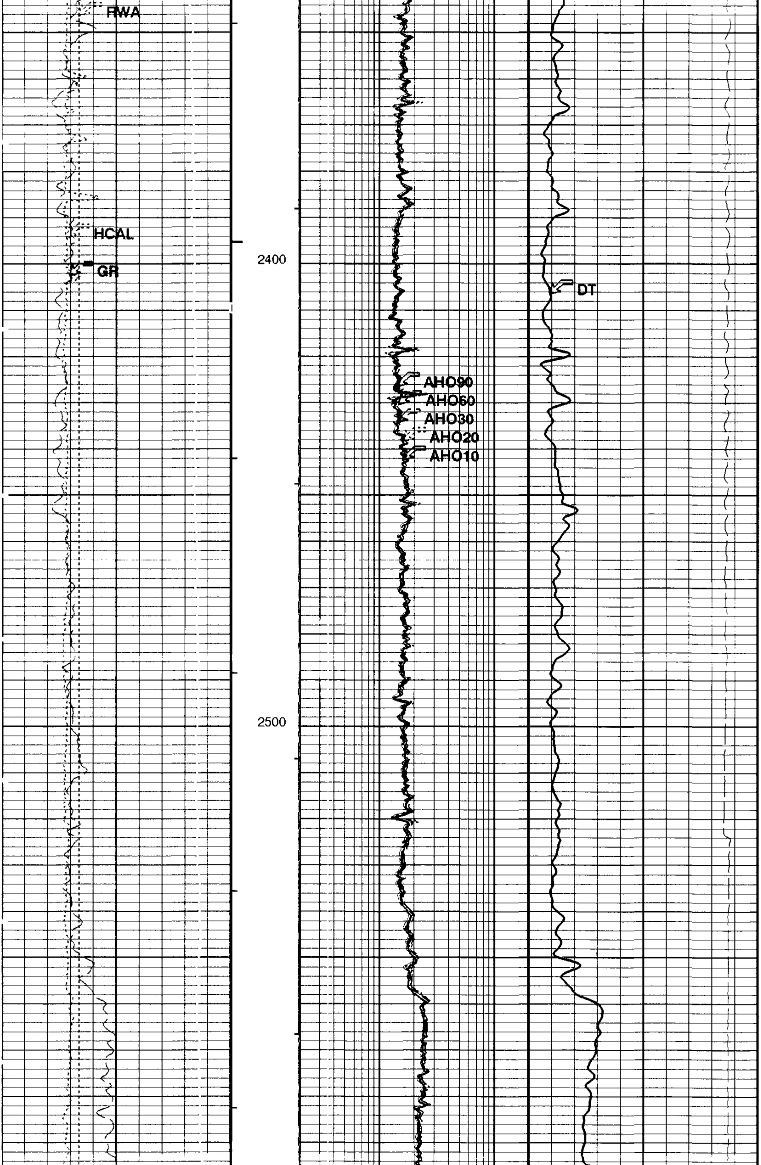


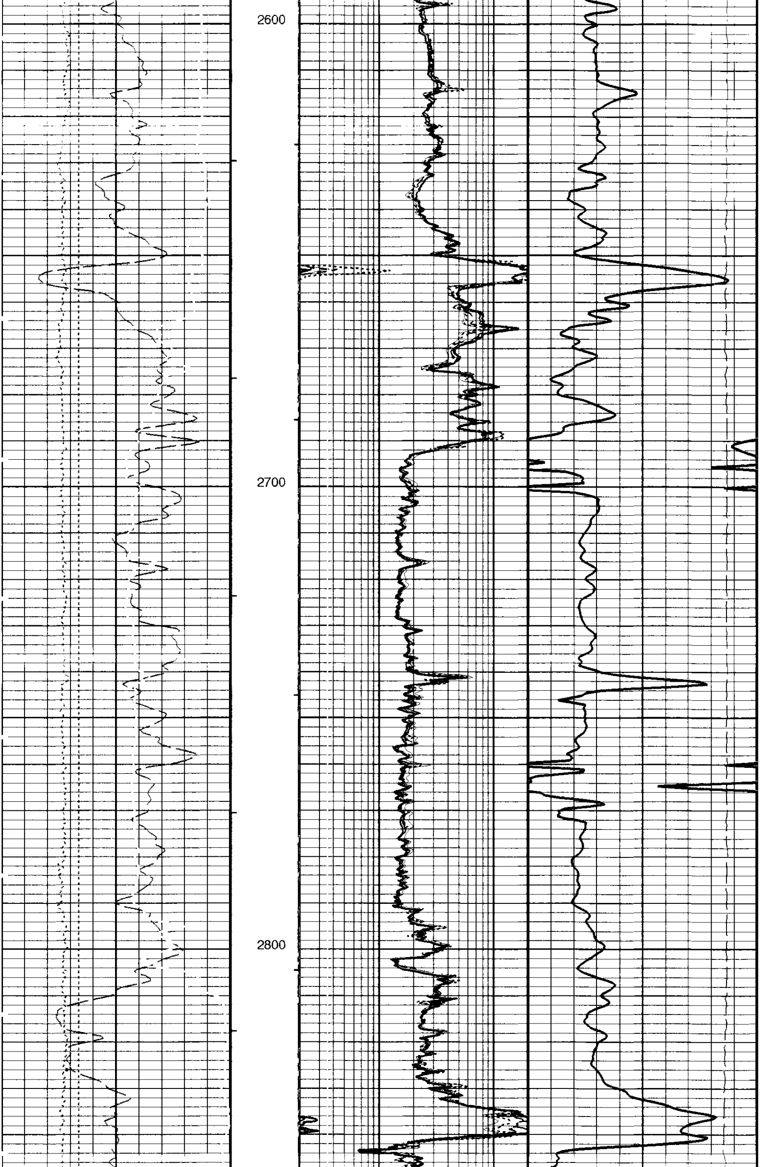


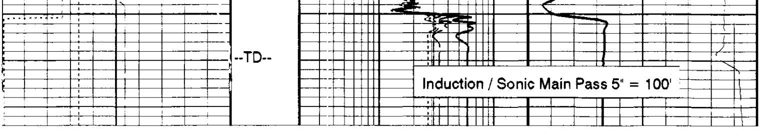












Curve	Left	Unit	Right
Gamma Ray (GR)	0	(GAPI)	150
Caliper (HCAL)	4	(IN)	14
RWA (RWA)	0	(OHMM)	3
AIT-H 10 Inch Investigation (AHO10)	0.2	(OHMM)	20
AIT-H 20 Inch Investigation (AHO20)	0.2	(OHMM)	20
AIT-H 30 Inch Investigation (AHO30)	0.2	(OHMM)	20
AIT-H 60 Inch Investigation (AHO60)	0.2	(OHMM)	20
AIT-H 90 Inch Investigation (AHO90)	0.2	(OHMM)	20
Delta-T (DT)	150	(US/F)	50
Tension (TENS)	10000	(LBF)	0

PIP SUMMARY

⊢ Integrated Hole Volume Minor Pip Every 10 F3
⊢ Integrated Hole Volume Major Pip Every 100 F3
⊣ Integrated Cement Volume Minor Pip Every 10 F3
⊣ Integrated Cement Volume Major Pip Every 100 F3

■ Time Mark Every 60 S

AIT-H Answer Product Processing Summary. Data taken with tool # 277 (AHTNO)
...Acquired data from HILT/HAIT

***** Bhole Correction *****

Effective Mud Resistivity computed. Borehole diameter taken as input (see GCSE parameter)
Tool is run in ECCENTERED mode with a tool stand-off of 0.50 IN. Bit Size is 6.25 IN.

***** Input Selections to AIT Answer Product processing *****

Caliper (GCSE): HCAL Mud Resistivity (GRSE): AHMF Temperature (GTSE): LINEAR_ESTIMATE Porosity (FPHI): DPHZ

***** Other parameters used by AIT-H/SAIT Answer Product processing *****

Surface Hole Temperature (SHT)	68.000 DEGF	Bottom Temperature (BHT)	100.000 DEGF
Total Depth (TD)	2863.000 FT		
Form Factor Exponent (FEXP)	2.000	Form Factor Numerator (FNUM)	1.000
Mud Filtrate Sample Resistivity (RMFS)	0.780 OHMM	Mud Filtrate Sample Temperature (MFST)	62.000 DEGF
Resitivity Connate Water (RW)	1.000 OHMM		

***** AIT-H/SAIT Answer Product processing control parameters *****

Playback Mode: OFF

Parameters

DLIS Name	Description	Value	
AHBHM	AIT-H Bhole Correction Mode	0_ComputeMudResistivity	
AHBLM	AIT-H Basic Logs Mode	6_One_Two_and_Four	
AHBPO	AIT-H Basic Logs Processing Option	Standard_Processing	
AHCDE	AIT-H Casing Detection Enable	Yes	
AHCEN	AIT-H Tool Centering Flag (in Borehole)	Eccentered	
AHCSED	AIT-H Casing Shoe Estimated Depth	-50000	FT
AHMRF	AIT-H Mud Resistivity Factor	1	
AHSTA	AIT-H Tool Standoff	0.5	IN
ARTS	AIT Rt Selection (for ALLRES computation)	13_AHT90	
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DFD	Drilling Fluid Density	9.30	LB/G
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GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HSCM	HILT Speed Correction Mode	TSCD_SPEED_CORRECTION	
HSTI	STI Uses HILT Acceleration	YES	
MODE	Firing Mode	SDDB	

MST	Mud Sample Temperature	80.00	DEGF
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	StdRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PP	Playback Processing	OFF	
RMFS	Resistivity of Mud Filtrate Sample	0.7800	OHMM
RTCO	RTCO - Rt Invasion Correction	YES	
RW	Resistivity of Connate Water	1.0000	OHMM
SHT	Surface Hole Temperature	68	DEGF
SPNV	SP Next Value	0	MV
TD	Total Depth	2863	FT
TWS	Temperature of Connate Water Sample	100.00	DEGF

Format: AITSON Vertical Scale: 5" per 100' Graphics File Created: 31-Jul-1999 16:12

OP System Version: 9C0-413

MCM

HILTB-DTB	OP9-KP1	SDT-C	9C0-413
SGT-L	9C0-413	TCC-B	9C0-413

Speed Corrected - Depth Matched LOG

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Output DLIS Files

DEFAULT	HILTB .017	FN:14	PRODUCER	31-Jul-1999 16:12

COMPANY: **Enerfin Resources Northwest**

WELL: **C.C. 32-28-75 (Hadrasaur)**

FIELD: **Mist Gas**

COUNTY: **Columbia**

STATE: **Oregon**

BOTTOM LOG INTERVAL	2852 ft
SCHLUMBERGER DEPTH	2860 ft
DEPTH DRILLER	2863 ft
KELLY BUSHING	1337.74 ft
DRILL FLOOR	
GROUND LEVEL	1327.74 ft

Schlumberger

Array Induction
BHC Sonic
SP/GR