CC 12-02-65 + RD1

COMPANY: Enerfin Resources Northwest

WELL: C.C. 12-02-65 (Lindbleu)

FIELD: Mist Gas

COUNTY: Columbia **STATE:** Oregon

COUNTY: Columbia
Field: Mist Gas
Location: 570.79' N & 751.27' E from
Well: C.C. 12-02-65 (Lindbleu)
Company: Enerfin Resources Northwest

Schlumberger

Platform Express
Array Induction/SP/GR/ML
Neutron/Density/Sonic

LOCATION	570.79' N & 751.27' E from the West Quarter center	Elev.:	K.B. 918.8 ft G.L. 908.8 ft D.F.
	Permanent Datum: Ground Level	Elev.:	908.8 ft
	Log Measured From: Kelly Bushing	10.0 ft	above Perm. Datum
	Drilling Measured From: Kelly Bushing		

API Serial No.	SECTION	TOWNSHIP	RANGE
	2	6N	5W

Logging Date		13-OCT-1999			
Run Number		1			
Depth Driller		2731 ft			
Schlumberger Depth		2727 ft			
Bottom Log Interval		2719 ft			
Top Log Interval		478 ft			
Casing Driller Size @ Depth		7.000 in	@ 479 ft	@	
Casing Schlumberger		478 ft			
Bit Size		6.250 in			
Type Fluid In Hole		Ligno-Sulfate			
MUD Density	Viscosity	9.4 lbm/gal	39 s		
MUD Fluid Loss	PH	4.8 cm3	9.5		
MUD Source Of Sample		Pit			
RM @ Measured Temperature		1.040 ohm.m	@ 76 degF	@	
RMF @ Measured Temperature		1.110 ohm.m	@ 68 degF	@	
RMC @ Measured Temperature		1.120 ohm.m	@ 66 degF	@	
Source RMF	RMC	Press	Press		
RM @ MRT	RMF @ MRT	0.814 @ 99	0.785 @ 99	@	@
Maximum Recorded Temperatures		99 degF			
Circulation Stopped	Time	13-OCT-1999	11:00		
Logger On Bottom	Time	13-OCT-1999			
Unit Number	Location	3152	Sacramento		
Recorded By		Clayton Campbell			
Witnessed By		Dave Huggins/Rob Lucas			

	Run 1	Run 2

		Run 1	Run 2
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 3

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: Neutron	OS1:
OS2: Density	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
0.5 inch standoffs used on array induction tool	
2 CME-Z centralizers used on BHC sonic sonde	
logs calculated on a sandstone matrix (2.65 g/cc 56 us/ft)	
cement volume calculated assuming 2.875 inch production casing	
Rig: John Taylor Drilling #7	

RUN 1		RUN 2	
SERVICE ORDER #:	6075797	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

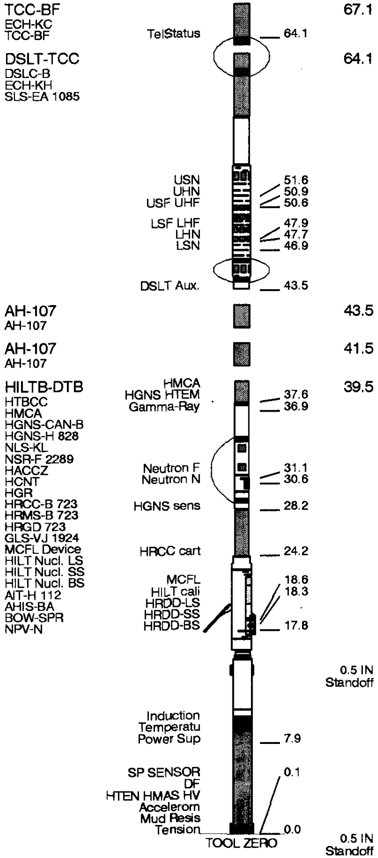
SURFACE EQUIPMENT

GSR-U/Y WITM (CTS)-A
NCT-B
CNB-AB
NCS-VB

DOWNHOLE EQUIPMENT

LEH-QT
LEH-QT 1080

70.0



MAXIMUM STRING DIAMETER 4.88 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Schlumberger

Main Pass 2" = 100'

MAXIS 500 Field Log

Input DLIS Files

DEFAULT HILTB .005 FN:4 PRODUCER 13-Oct-1999 13:57 2730.0 FT 270.0 FT

Integrated Hole/Cement Volume Summary

Hole Volume = 496.19 ft3

Cement Volume = 394.73 ft3 (assuming 2.88 in casing O.D.)

Computed from 2729.5 ft to 480.0 ft

OP System Version: 9C0-413

MCM

HILTB	OP9-KP2	DSLT-BA	OP9-KP2
TCCBF	OP9-KP2		

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

Env.Corr.Thermal Neutron Porosity (TNPH)
1.2 (V/V) 0.6

Env.Corr.Thermal Neutron Porosity (TNPH)
0.6 (V/V) 0

Crossover

Micro Normal Resistivity (HMNO) (OHMM)
0 30

Tension (TENS)
10000 (LBF) 0

RWA (RWA)
0 (OHMM) 3

Micro Inverse Resistivity (HMIN) (OHMM)
0 30

Sonic Porosity (SPHI)
0.6 (V/V) 0

Caliper (HCAL)
4 (IN) 14

Resistivity standoff (RSOZ)
2 (IN) 0

AIT-H 90 Inch Investigation (AHT90)
0 (OHMM) 20

Formation Pe (PEFZ)
-1 (----) 9

Bit Size (BS)
4 (IN) 14

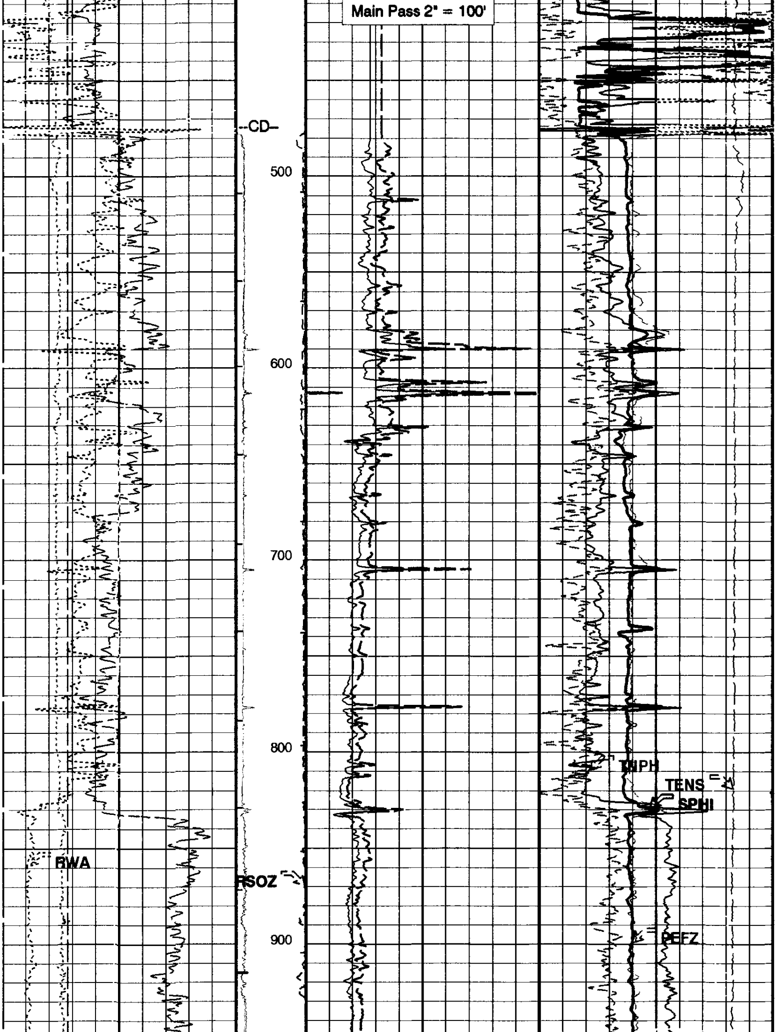
Std Res Density Porosity (DPHZ)
1.2 (V/V) 0.6

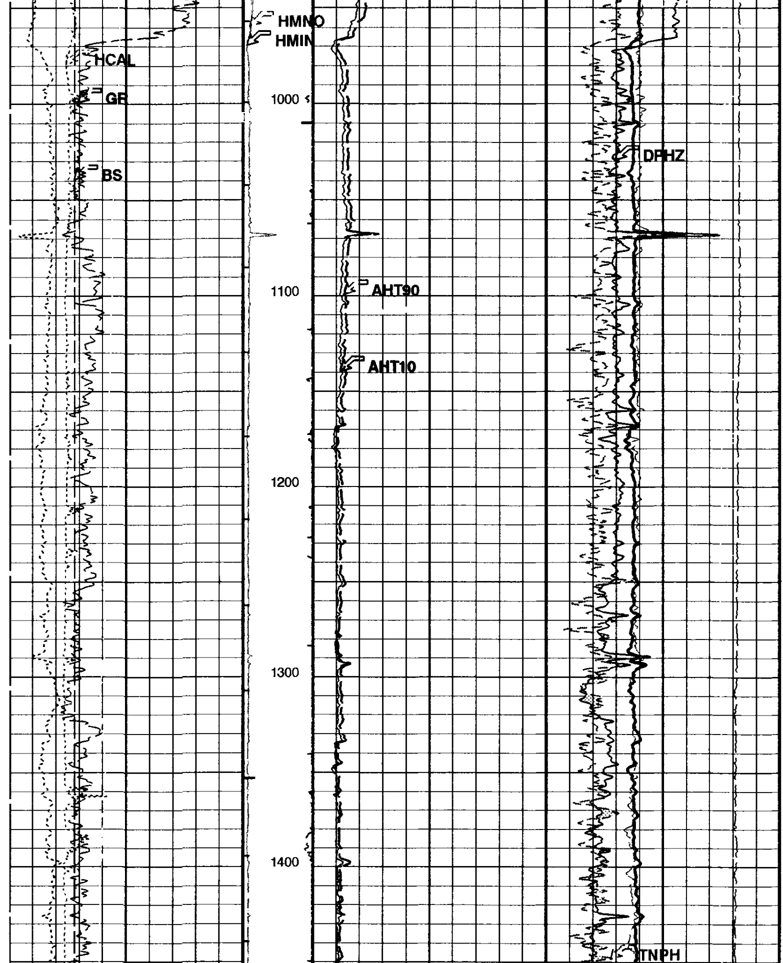
Gamma Ray (GR)
0 (GAPI) 150

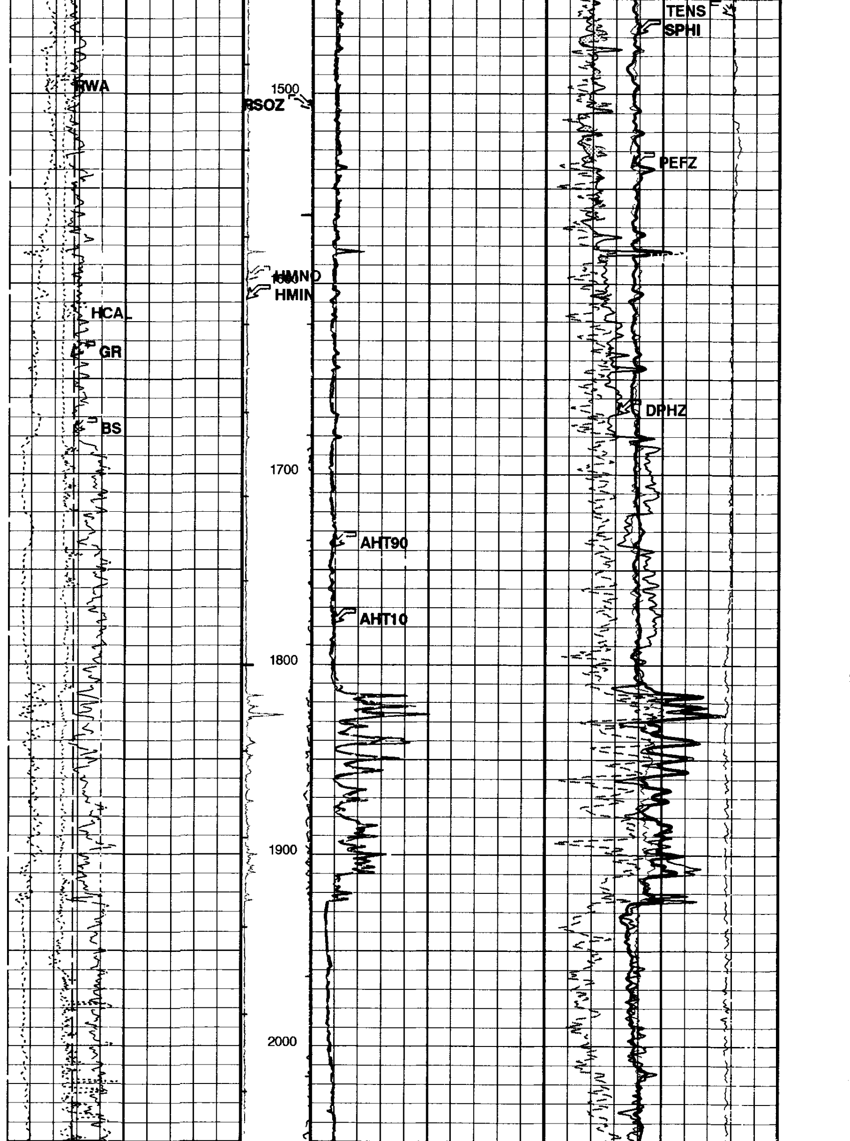
Perm Indicator
400

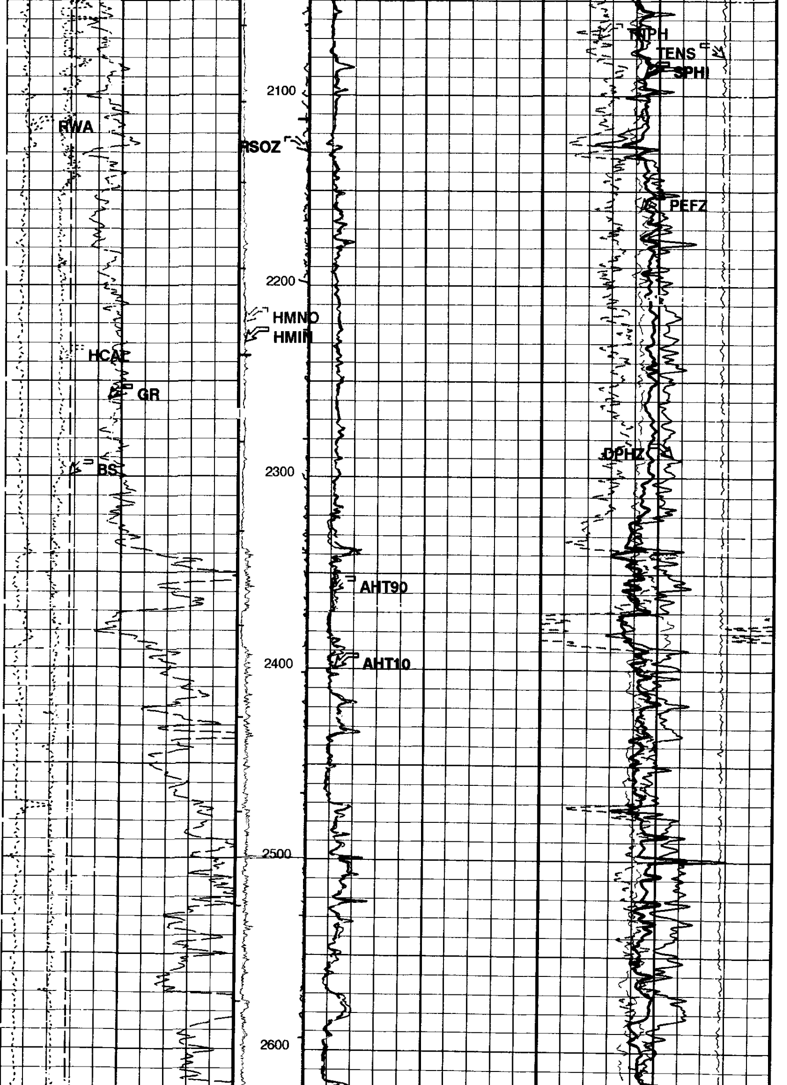
AIT-H 10 Inch Investigation (AHT10)
0 (OHMM) 20

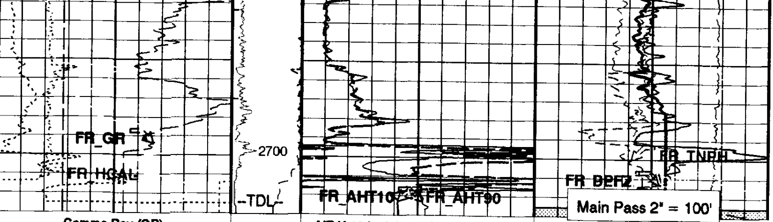
Std Res Density Porosity (DPHZ)
0.6 (V/V) 0











Gamma Ray (GR)
0 (GAPI) 150

Bit Size (BS)
4 (IN) 14

Caliper (HCAL)
4 (IN) 14

RWA (RWA)
0 (OHMM) 3

Perm Indicator

Resistivity standoff (RSOZ)
2 (IN) 0

Micro Inverse Resistivity (HMIN) (OHMM)
0 30

Micro Normal Resistivity (HMNO) (OHMM)
0 30

AIT-H 10 Inch Investigation (AHT10)
0 (OHMM) 20

AIT-H 90 Inch Investigation (AHT90)
0 (OHMM) 20

Std Res Density Porosity (DPHZ)
0.6 (V/V) 0

Std Res Density Porosity (DPHZ)
1.2 (V/V) 0.6

Formation Pe (PEFZ)
-1 (----) 9

Sonic Porosity (SPHI)
0.6 (V/V) 0

Tension (TENS)
10000 (LBF) 0

Crossover

Env.Corr.Thermal Neutron Porosity (TNPH)
0.6 (V/V) 0

Env.Corr.Thermal Neutron Porosity (TNPH)
1.2 (V/V) 0.6

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

Parameters

DLIS Name	Description	Value

AHBHM	AIT-H Borehole Correction Mode	2_COMPUTESTANDOFF	
AHBHV	AIT-H Borehole Correction Code Version Number	870	
AHBLM	AIT-H Basic Logs Mode	6_ONE_TWO_AND_FOUR	
AHBLV	AIT-H Basic Logs Code Version Number	973	
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	
AHFRSV	AIT-H Response Set Version for Four ft Resolution	30.66.23.11	
AHMRF	AIT-H Mud Resistivity Factor	1.000	
AHORSV	AIT-H Response Set Version for One ft Resolution	30.66.23.11	
AHRFV	AIT-H Radial Profiling Code Version Number	700	
AHRPV	AIT-H Radial Parametrization Code Version Number	710	
AHSAP	AIT-H Suspend Answer Product Processing	0_NOSUSPENSION	
AHSTA	AIT-H Tool Standoff	0.500	in
AHTRSV	AIT-H Response Set Version for Two ft Resolution	30.66.23.11	
ARTS	AIT Rt Selection (for ALLRES computation)	13_AHT90	
BHFL	Borehole Fluid Type	WATER	
BHS	Bore Hole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	97.000	degF
BS	Bit Size	6.750	in
BSAL	Borehole Salinity	3900.0	ppm
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
CDTS	C-Delta-T Shale	100.0	us/ft
CSIZ	Current Casing Size	7.000	in
CWEI	Casing Weight	24.000	lbm/ft
DFD	Drilling Fluid Density	9.400	lbm/gal
DHC	Density Hole Correction	BS	
DTF	Delta-T Fluid	189.0	us/ft
DTM	Delta-T Matrix	56.000	us/ft
FD	Fluid Density	1.000	g/cm3
FEXP	Form Factor Exponent	2.000	
FNUM	Form Factor Numerator	1.000	
FPHI	Form Factor Porosity Source	DPHZ	
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0.000	deg
GGRD	Geothermal Gradient	0.010	degF/ft
GRSE	Generalized Mud Resistivity Selection	AHMF	
GTSE	Generalized Temperature Selection	TEMP	
HSCM	HILT Speed Correction Mode	TSCD_SPEED_CORRECTION	
HSCO	Hole Size Correction Option	YES	
HSTI	STI Uses HILT Acceleration	YES	
MATR	Rock Matrix Type	SAND	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.650	g/cm3
MPOF	MCFL Processing Operation Mode	ON	
MST	Mud Sample Temperature	76.000	degF
MWCO	Mud Weight Correction Option	NO	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	STDRES	
NSAR	HRDD Depth Sampling Rate	1.000	in
PTCO	Pressure/Temperature Correction Option	NO	
RMFS	Resistivity of Mud Filtrate Sample	1.110	ohm.m
RTCO	RTCO - Rt Invasion Correction	YES	
RW	Resistivity of Connate Water	1.000	ohm.m
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68.000	degF
SOCN	Standoff Distance	0.125	in
SOCO	Standoff Correction Option	NO	
SPDR	SP Drift	0.000	mV/ft
SPFS	Sonic Porosity Formula	R-H	
SPNV	SP Next Value	-20.000	mV
SPSO	Sonic Porosity Source	DT	
TD	Total Depth	2731.0	ft
TDL	Total Depth - Logger	2731.0	ft
TWS	Temperature of Connate Water Sample	100.0	degF

Format: S2 Vertical Scale: 2" per 100' Graphics File Created: 13-Oct-1999 14:47

OP System Version: 9C0-413

MCM

HILTB	OP9-KP2	DSLT-BA	OP9-KP2
TCCBF	OP9-KP2		

Input DLIS Files

DEFAULT	HILTB .005	FN:4	PRODUCER	13-Oct-1999 13:57	2730.0 FT	270.0 FT

Schlumberger

Main Pass 5" = 100'

MAXIS 500 Field Log

Input DLIS Files

DEFAULT HILTB .005 FN:4 PRODUCER 13-Oct-1999 13:57 2730.0 FT 270.0 FT

Integrated Hole/Cement Volume Summary

Hole Volume = 496.19 ft3
Cement Volume = 394.73 ft3 (assuming 2.88 in casing O.D.)
Computed from 2729.5 ft to 480.0 ft

OP System Version: 9C0-413

MCM

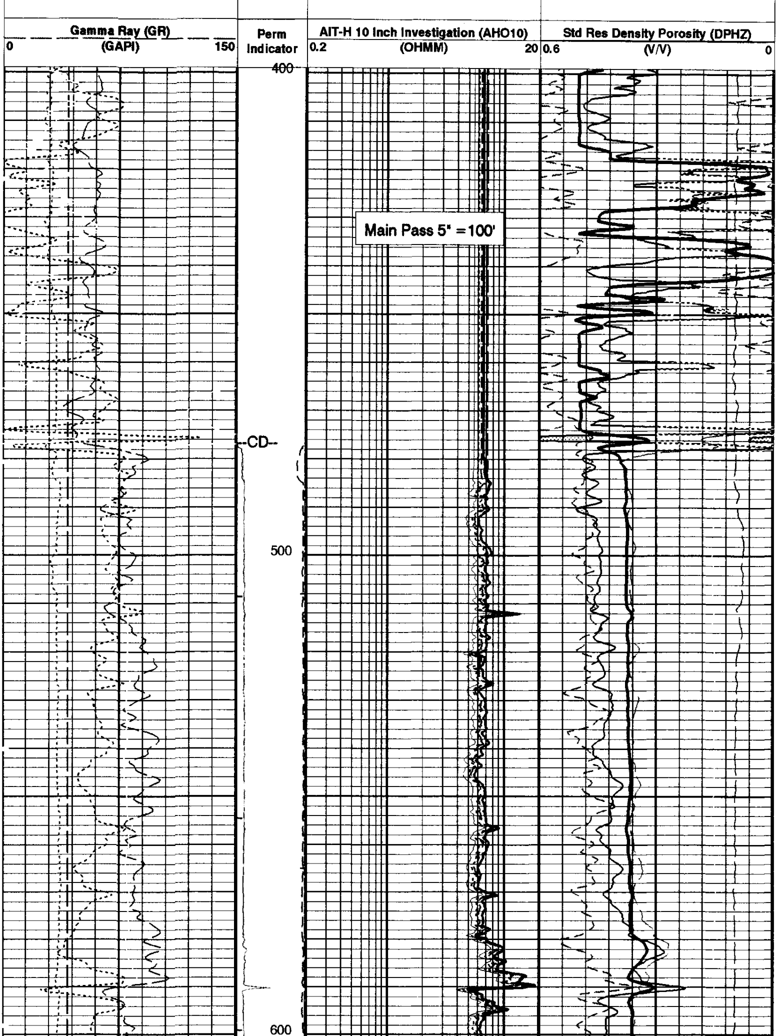
HILTB	OP9-KP2	DSLT-BA	OP9-KP2
TCCBF	OP9-KP2		

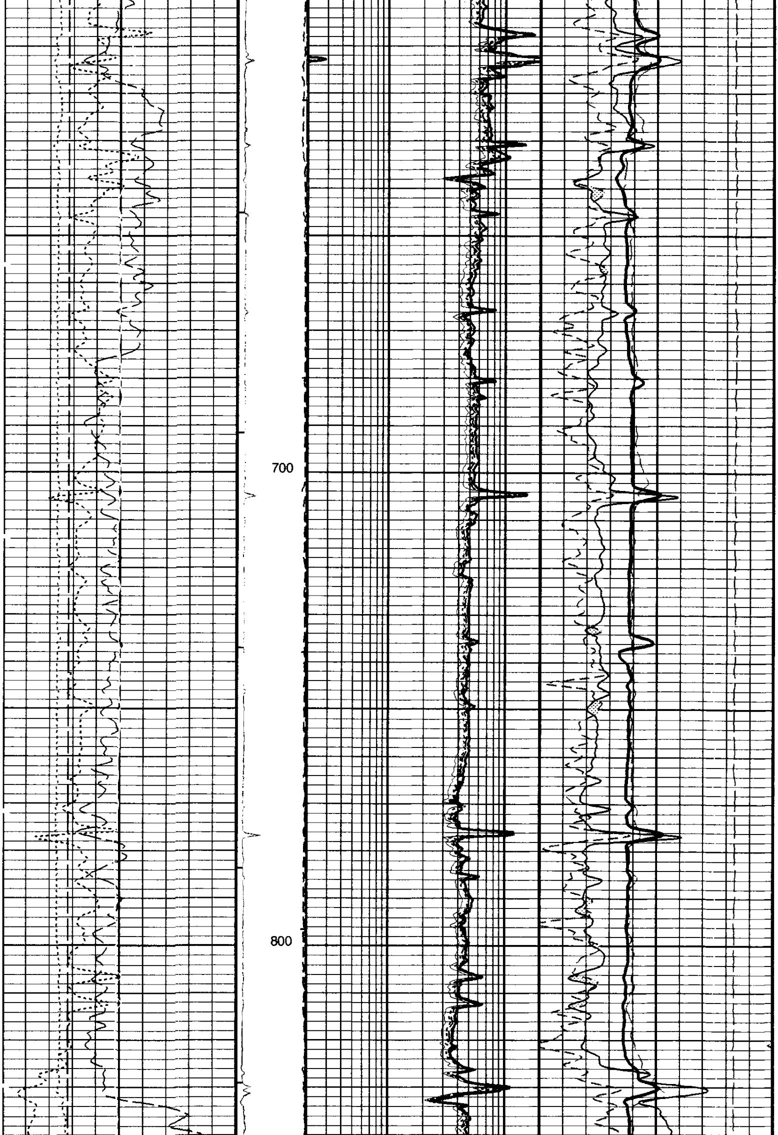
PIP SUMMARY

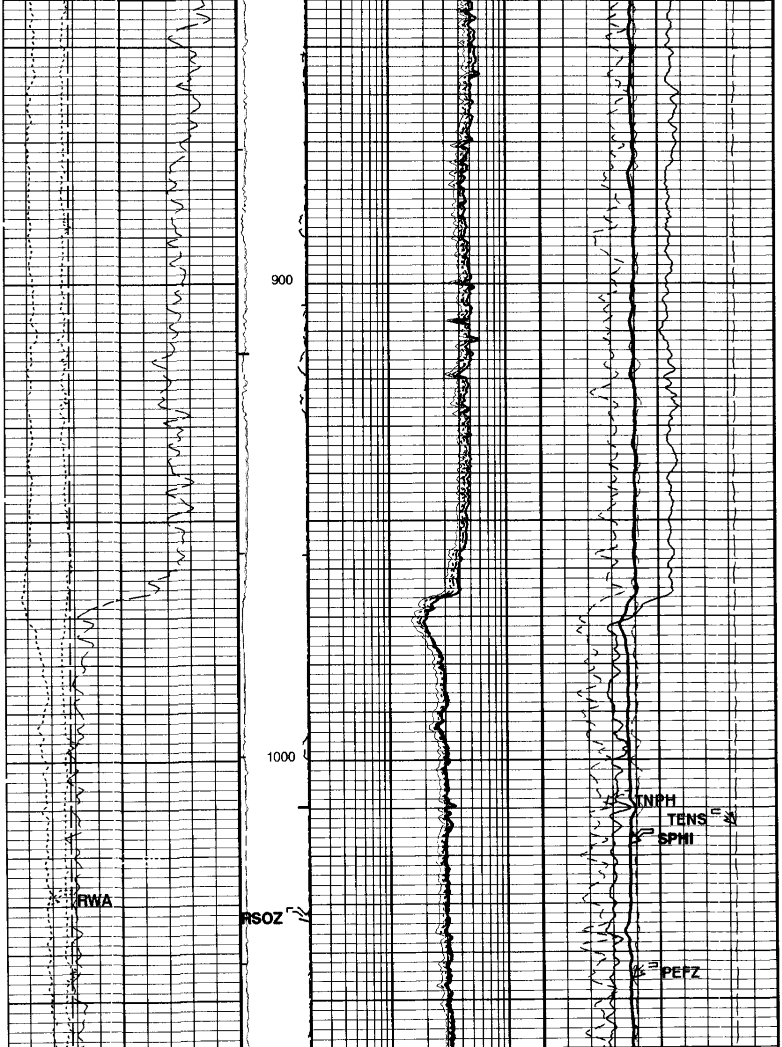
⊢ Integrated Hole Volume Minor Pip Every 10 F3
⊢ Integrated Hole Volume Major Pip Every 100 F3
⊣ Integrated Cement Volume Minor Pip Every 10 F3
⊣ Integrated Cement Volume Major Pip Every 100 F3

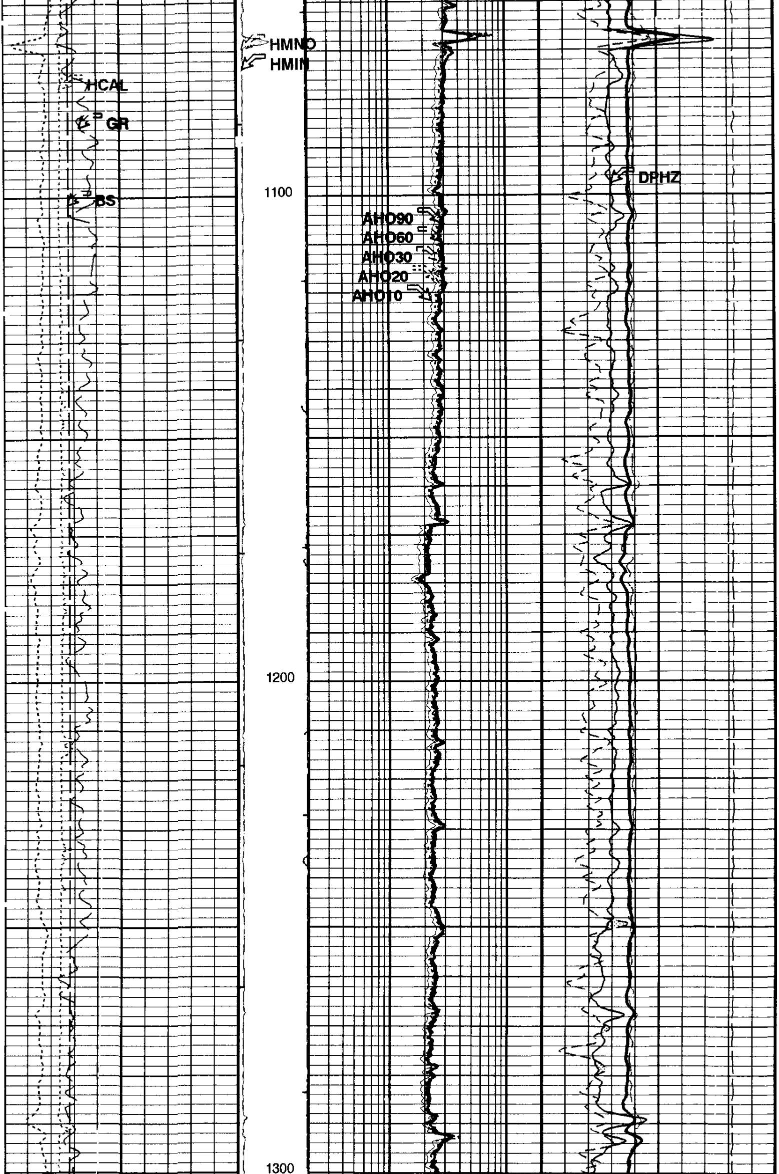
▶ Time Mark Every 60 S

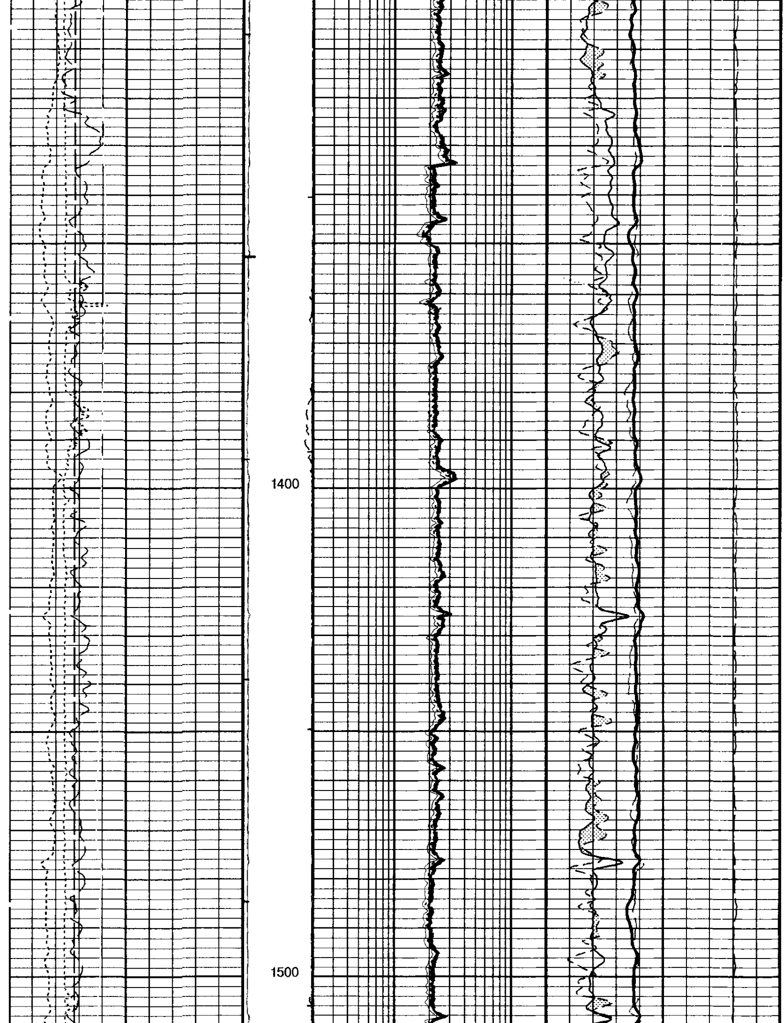
			Env.Corr.Thermal Neutron Porosity (TNPH) 1.2 (V/V) 0.6
			Env.Corr.Thermal Neutron Porosity (TNPH) 0.6 (V/V) 0
			Crossover
	Micro Normal Resistivity (HMNO) (OHMM) 0 30	AIT-H 90 Inch Investigation (AHO90) 0.2 (OHMM) 20	Tension (TENS) 10000 (LBF) 0
RWA (RWA) 0 (OHMM) 3	Micro Inverse Resistivity (HMIN) (OHMM) 0 30	AIT-H 60 Inch Investigation (AHO60) 0.2 (OHMM) 20	Sonic Porosity (SPHI) 0.6 (V/V) 0
Caliper (HCAL) 4 (IN) 14	Resistivity standoff (RSOZ) 2 (IN) 0	AIT-H 30 Inch Investigation (AHO30) 0.2 (OHMM) 20	Formation Pe (PEFZ) -1 (----) 9
Bit Size (BS) 4 (IN) 14		AIT-H 20 Inch Investigation (AHO20) 0.2 (OHMM) 20	Std Res Density Porosity (DPHZ) 1.2 (V/V) 0.6

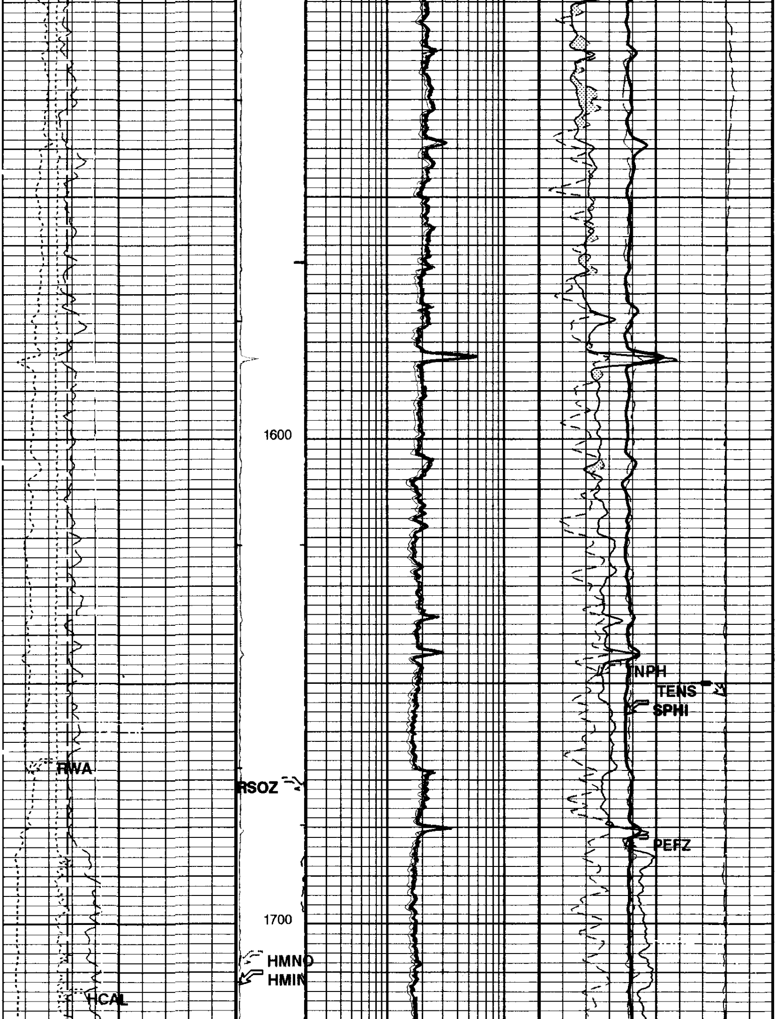


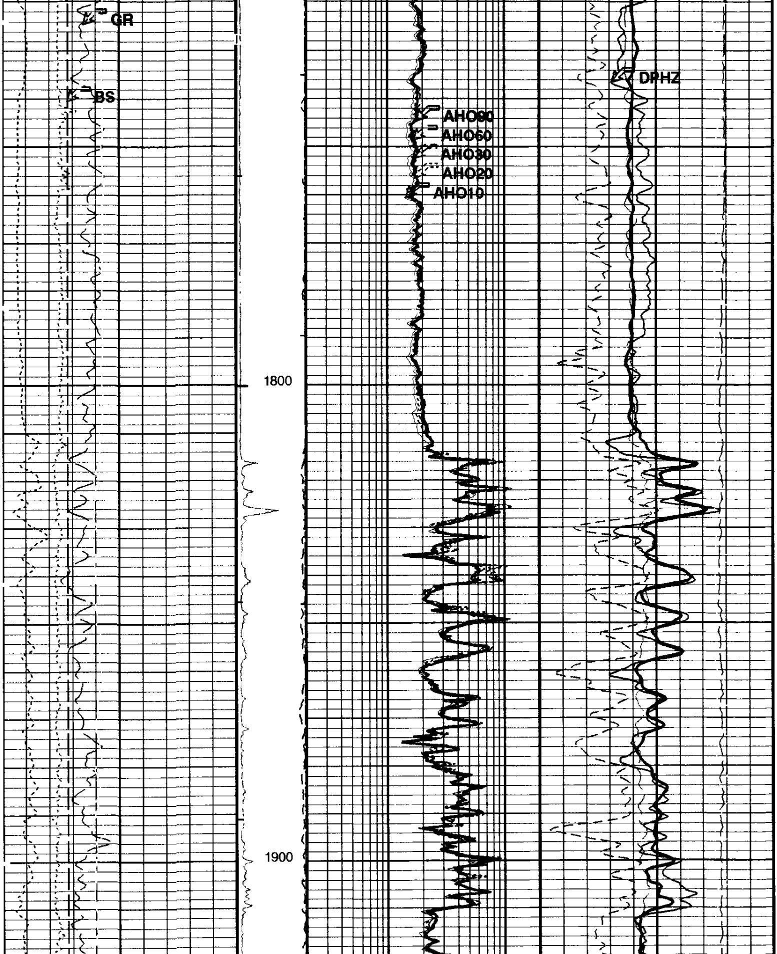


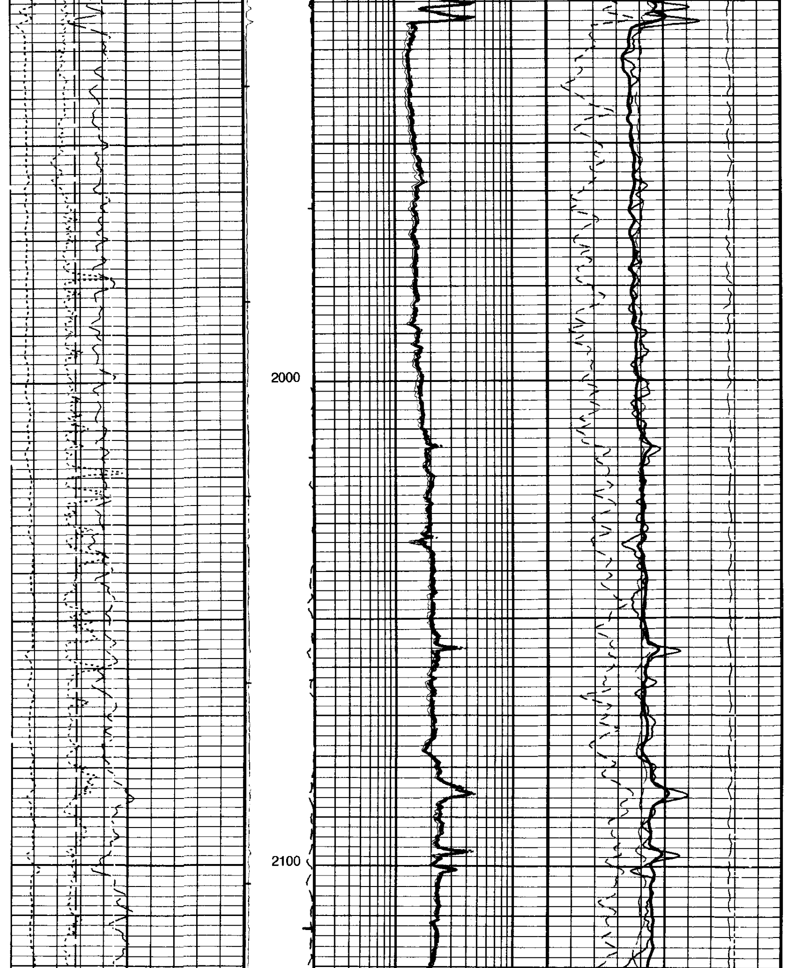


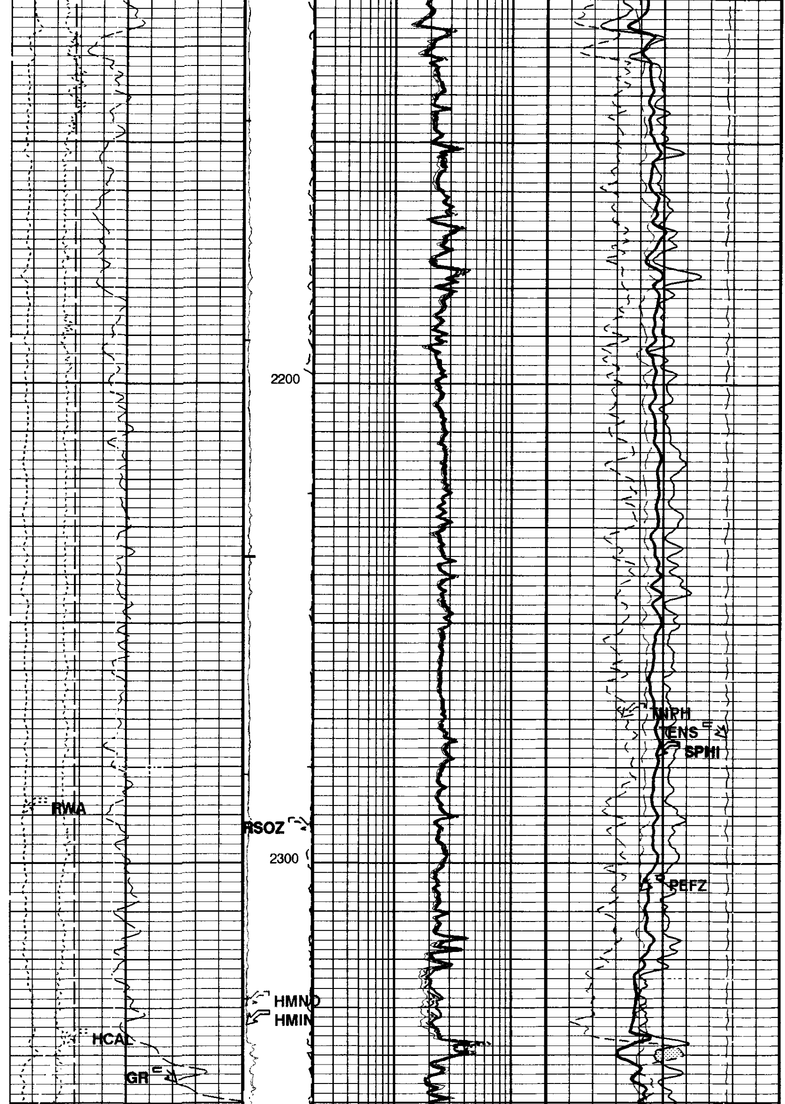


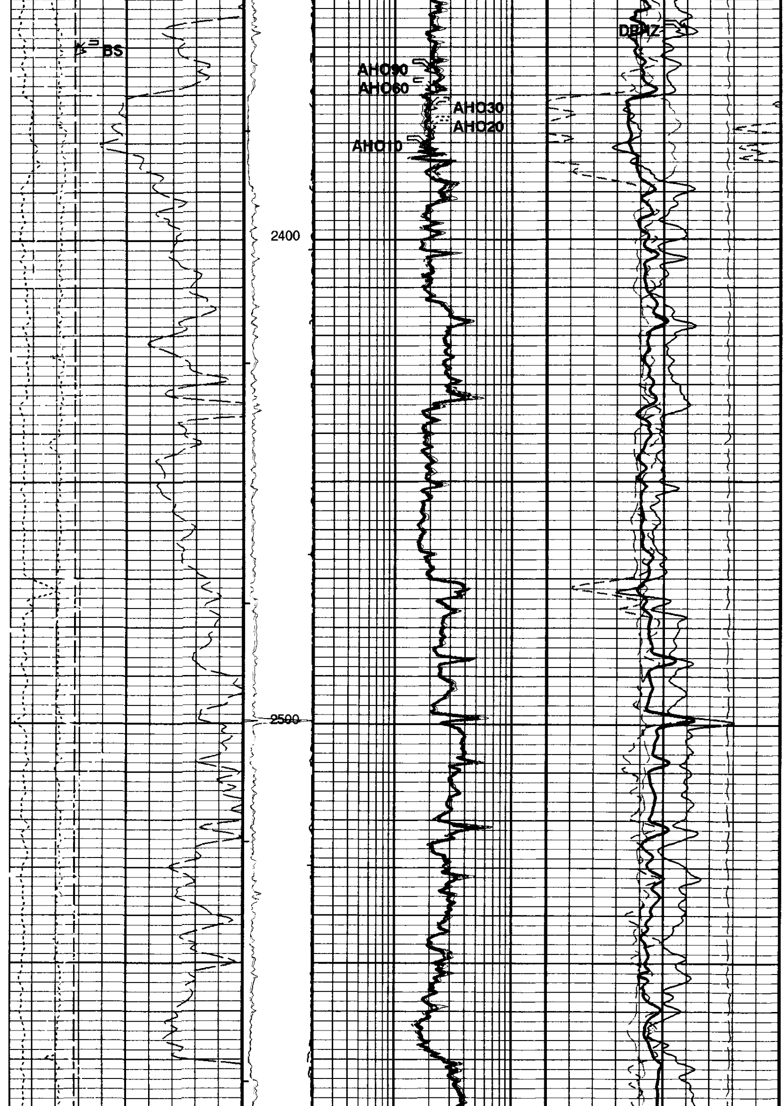


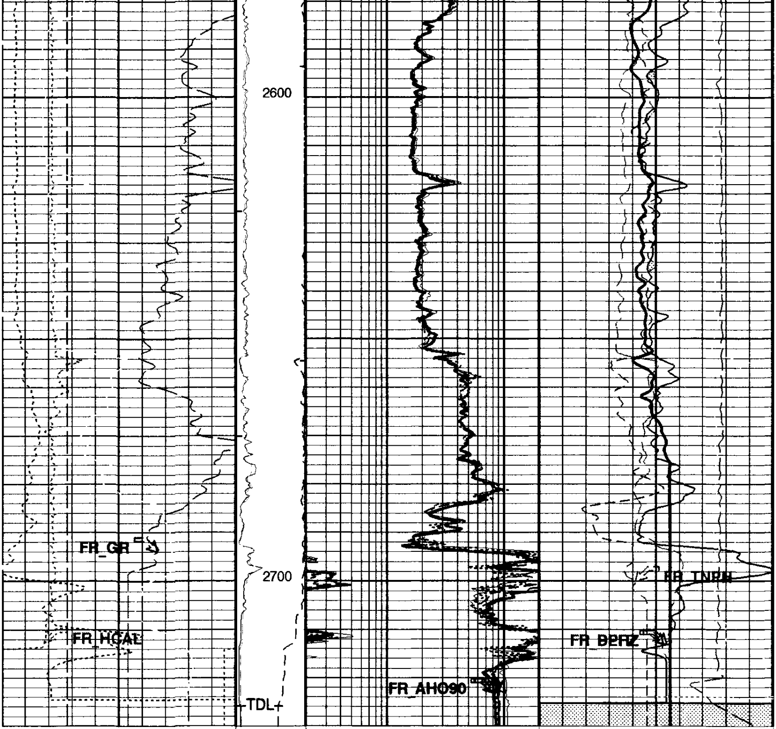












Gamma Ray (GR) 0 (GAPI) 150	Perm Indicator	AIT-H 10 Inch Investigation (AHO10) 0.2 (OHMM) 20	Std Res Density Porosity (DPHZ) 0.6 (V/V) 0
Bit Size (BS) 4 (IN) 14		AIT-H 20 Inch Investigation (AHO20) 0.2 (OHMM) 20	Std Res Density Porosity (DPHZ) 1.2 (V/V) 0.6
Caliper (HCAL) 4 (IN) 14	Resistivity standoff (RSOZ) 2 (IN) 0	AIT-H 30 Inch Investigation (AHO30) 0.2 (OHMM) 20	Formation Pe (PEFZ) -1 (----) 9
RWA (RWA) 0 (OHMM) 3	Micro Inverse Resistivity (HMIN) (OHMM) 0 30	AIT-H 60 Inch Investigation (AHO60) 0.2 (OHMM) 20	Sonic Porosity (SPHI) 0.6 (V/V) 0
	Micro Normal Resistivity (HMNO) (OHMM) 0 30	AIT-H 90 Inch Investigation (AHO90) 0.2 (OHMM) 20	Tension (TENS) 10000 (LBF) 0
			Crossover
			Env.Corr.Thermal Neutron Porosity

(TNPH)

0.6 (V/V) 0

Env.Corr.Thermal Neutron Porosity
(TNPH)

1.2 (V/V) 0.6

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

Parameters

DLIS Name	Description	Value	
AHBHM	AIT-H Borehole Correction Mode	2_COMPUTESTANDOFF	
AHBHV	AIT-H Borehole Correction Code Version Number	870	
AHBLM	AIT-H Basic Logs Mode	6_ONE_TWO_AND_FOUR	
AHBLV	AIT-H Basic Logs Code Version Number	973	
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	
AHFRSV	AIT-H Response Set Version for Four ft Resolution	30.66.23.11	
AHMRF	AIT-H Mud Resistivity Factor	1.000	
AHORSV	AIT-H Response Set Version for One ft Resolution	30.66.23.11	
AHRFV	AIT-H Radial Profiling Code Version Number	700	
AHRPV	AIT-H Radial Parametrization Code Version Number	710	
AHSAP	AIT-H Suspend Answer Product Processing	0_NOSUSPENSION	
AHSTA	AIT-H Tool Standoff	0.500	in
AHTRSV	AIT-H Response Set Version for Two ft Resolution	30.66.23.11	
ARTS	AIT Rt Selection (for ALLRES computation)	13_AHT90	
BHFL	Borehole Fluid Type	WATER	
BHS	Bore Hole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	97.000	degF
BS	Bit Size	6.750	in
BSAL	Borehole Salinity	3900.0	ppm
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
CDTS	C-Delta-T Shale	100.0	us/ft
CSIZ	Current Casing Size	7.000	in
CWEI	Casing Weight	24.000	lbm/ft
DFD	Drilling Fluid Density	9.400	lbm/gal
DHC	Density Hole Correction	BS	
DTF	Delta-T Fluid	189.0	us/ft
DTM	Delta-T Matrix	56.000	us/ft
FD	Fluid Density	1.000	g/cm3
FEXP	Form Factor Exponent	2.000	
FNUM	Form Factor Numerator	1.000	
FPHI	Form Factor Porosity Source	DPHZ	
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0.000	deg
GGRD	Geothermal Gradient	0.010	degF/ft
GRSE	Generalized Mud Resistivity Selection	AHMF	
GTSE	Generalized Temperature Selection	TEMP	
HSCM	HILT Speed Correction Mode	TSCD_SPEED_CORRECTION	
HSCO	Hole Size Correction Option	YES	
HSTI	STI Uses HILT Acceleration	YES	
MATR	Rock Matrix Type	SAND	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.650	g/cm3
MPOF	MCFL Processing Operation Mode	ON	
MST	Mud Sample Temperature	76.000	degF
MWCO	Mud Weight Correction Option	NO	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	STDRES	
NSAR	HRDD Depth Sampling Rate	1.000	in
PTCO	Pressure/Temperature Correction Option	NO	
RMFS	Resistivity of Mud Filtrate Sample	1.110	ohm.m
RTCO	RTCO - Rt Invasion Correction	YES	
RW	Resistivity of Connate Water	1.000	ohm.m
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68.000	degF
SOCN	Standoff Distance	0.125	in
SOCO	Standoff Correction Option	NO	
SPDR	SP Drift	0.000	mV/ft
SPFS	Sonic Porosity Formula	R-H	
SPNV	SP Next Value	-20.000	mV

SPSO	**Sonic Porosity Source**	**DT**	
TD	**Total Depth**	**2731.0**	**ft**
TDL	**Total Depth - Logger**	**2731.0**	**ft**
TWS	**Temperature of Connate Water Sample**	**100.0**	**degF**

Format: S5 **Vertical Scale: 5" per 100'** **Graphics File Created: 13-Oct-1999 14:47**

OP System Version: 9C0-413

MCM

HILTB	**OP9-KP2**	**DSLT-BA**	**OP9-KP2**
TCCBF	**OP9-KP2**		

Input DLIS Files

DEFAULT	**HILTB .005**	**FN:4**	**PRODUCER**	**13-Oct-1999 13:57**	**2730.0 FT**	**270.0 FT**

COMPANY: **Enerfin Resources Northwest**

WELL: **C.C. 12-02-65 (Lindbleu)**

FIELD: **Mist Gas**

COUNTY: **Columbia**

STATE: **Oregon**

BOTTOM LOG INTERVAL	2719 ft
SCHLUMBERGER DEPTH	2727 ft
DEPTH DRILLER	2731 ft
KELLY BUSHING	918.8 ft
DRILL FLOOR	
GROUND LEVEL	908.8 ft

Schlumberger

-END-

Platform Express
Array Induction/SP/GR/ML
Neutron/Density/Sonic