COMPANY: NORTHWEST NATURAL GAS

WELL: COLUMBIA COUNTY # 14-23

FIELD: MIST

COUNTY: COLUMBIA **STATE:** OREGON

COUNTY: COLUMBIA
Field: MIST
Location: 102.97' South and 1099.69' East
Well: COLUMBIA COUNTY # 14-23
Company: NORTHWEST NATURAL GAS

Schlumberger

RST GR CCL
SIGMA MEASURMENT
SCALE : 5"=100 '

LOCATION

102.97' South and 1099.69' East from the NW cornor of section 26		Elev.:	K.B.	663.7 ft
			G.L.	652.7 ft
			D.F.	
Permanent Datum:	GROUND LEVEL	Elev.:	652.7 ft	
Log Measured From:	K.B	11.0 ft	above Perm. Datum	
Drilling Measured From:	K.B			

API Serial No.	SECTION	TOWNSHIP	RANGE
N/A	26	6N	5W

Logging Date	11-JUN-2000		
Run Number	1		
Depth Driller	1562 ft		
Schlumberger Depth	1550 ft		
Bottom Log Interval	1542 ft		
Top Log Interval	1000 ft		
Casing Fluid Type	Gas/ Water		
Salinity			
Density			
Fluid Level			
BIT/CASING/TUBING STRING			
Bit Size	8.500 in		
From	433 ft		
To	2180 ft		
Casing/Tubing Size	5.500 in		
Weight	17 lbm/ft		
Grade	J-55		
From	0 ft		
To	1563 ft		
Maximum Recorded Temperatures	68 degF		
Logger On Bottom / Time	11-JUN-2000	10:00	
Unit Number / Location	3152	Sacramento	
Recorded By	M.Khan		
Witnessed By	Clayton Roth		

	Run 1
PVT DATA	
Oil Density	
Water Salinity	
Gas Gravity	
Bo	
Bw	
1/Bg	
Bubble Point Pressure	
Bubble Point Temperature	
Solution GOR	
Maximum Deviation	
CEMENTING DATA	
Primary/Squeeze	Primary
Casing String No	
Lead Cement Type	
Volume	
Density	
Water Loss	
Additives	
Tail Cement Type	
Volume	
Density	
Water Loss	
Additives	
Expected Cement Top	

Logging Date	
Run Number	
Depth Driller	
Schlumberger Depth	
Bottom Log Interval	
Top Log Interval	
Casing Fluid Type	
Salinity	
Density	
Fluid Level	
BIT/CASING/TUBING STRING	
Bit Size	
From	
To	
Casing/Tubing Size	
Weight	
Grade	
From	
To	
Maximum Recorded Temperatures	
Logger On Bottom / Time	
Unit Number / Location	
Recorded By	
Witnessed By	

Run 2

Run 3

Run 4

DISCLAIMER
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

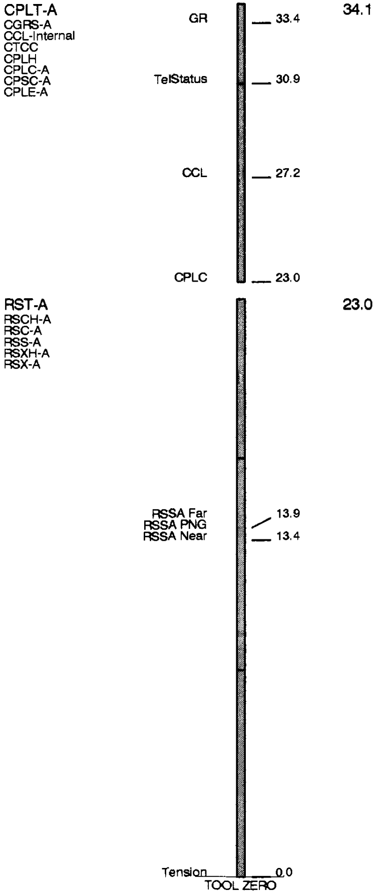
OTHER SERVICES1	OTHER SERVICES2
OS1:	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
MAXIMUM RECORDED TEMP.: 68 DEGF	

RUN 1	RUN 2
SERVICE ORDER #:	SERVICE ORDER #:
PROGRAM VERSION: 9C1-303	PROGRAM VERSION:
FLUID LEVEL:	FLUID LEVEL:

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1	RUN 2
SURFACE EQUIPMENT PUCK WITM (CTS)-A	
DOWNHOLE EQUIPMENT	



MAXIMUM STRING DIAMETER 1.72 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Input DLIS Files

DEFAULT	RSTA .006	FN:5	PRODUCER	11-Jun-2000 10:04	1555.5 FT	946.0 FT

Output DLIS Files

DEFAULT	RSTA .016	FN:15	PRODUCER	11-Jun-2000 15:28	1555.5 FT	926.0 FT

OP System Version: 9C1-303

MCM

RST-A	OP91-KP1a	CPLT-A	9C1-303

PIP SUMMARY

▶ Time Mark Every 60 S

RST Far Effective Capture CR (RSCF_RST)
0 (----) 50

RST Near Effective Capture CR (RSCN_RST)
0 (----) 50

Tension (TENS)
10000 (LBF) 0

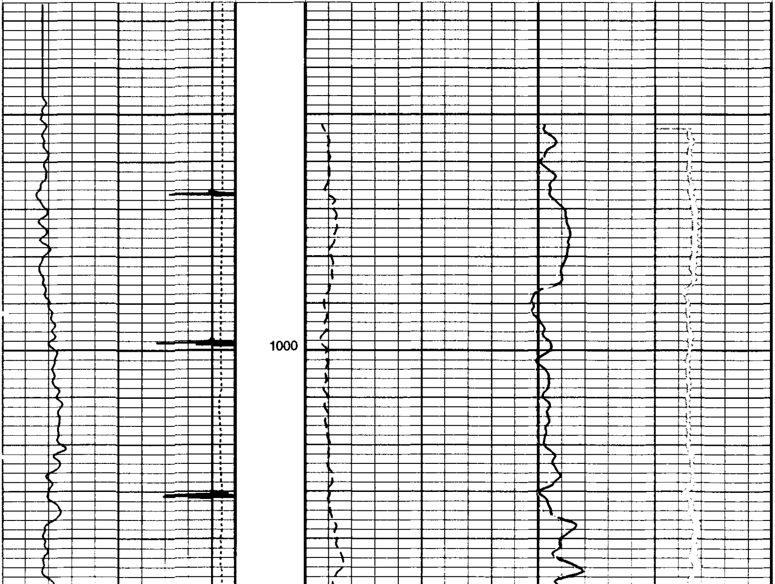
Gamma Ray (GR)
0 (GAPI) 150

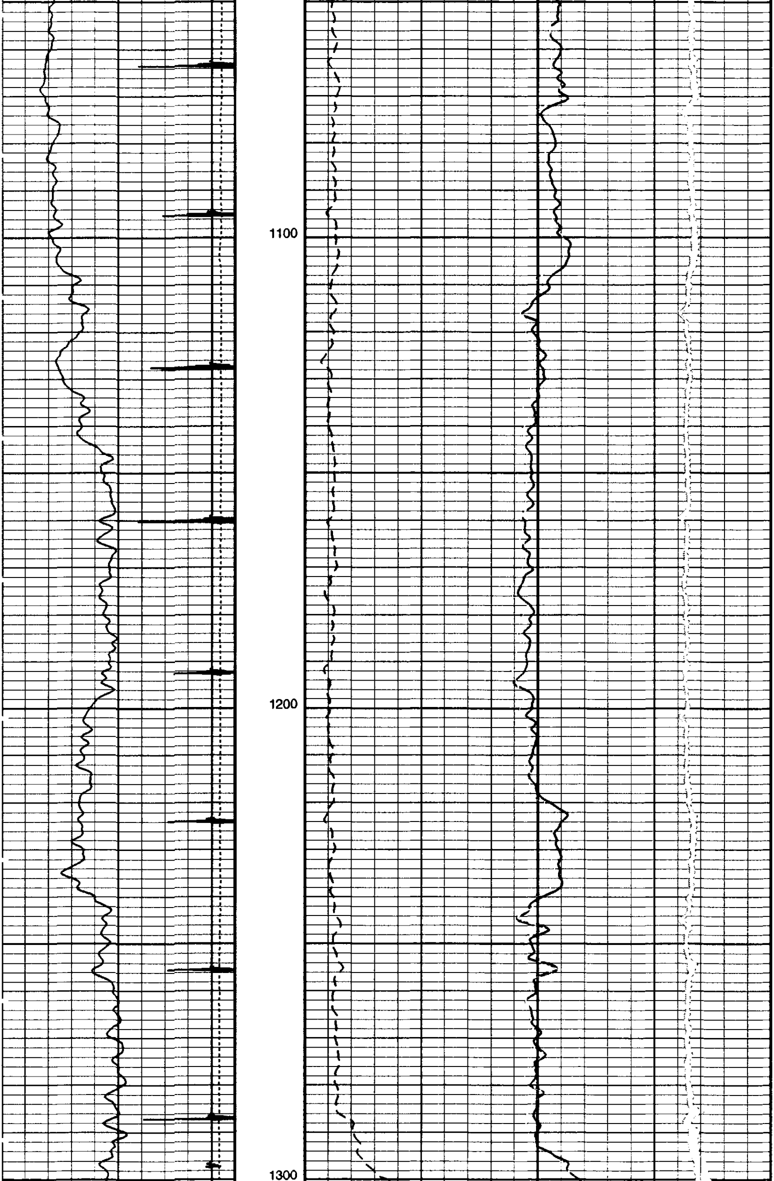
Discriminated CCL (CCLD)
9 (V) -1

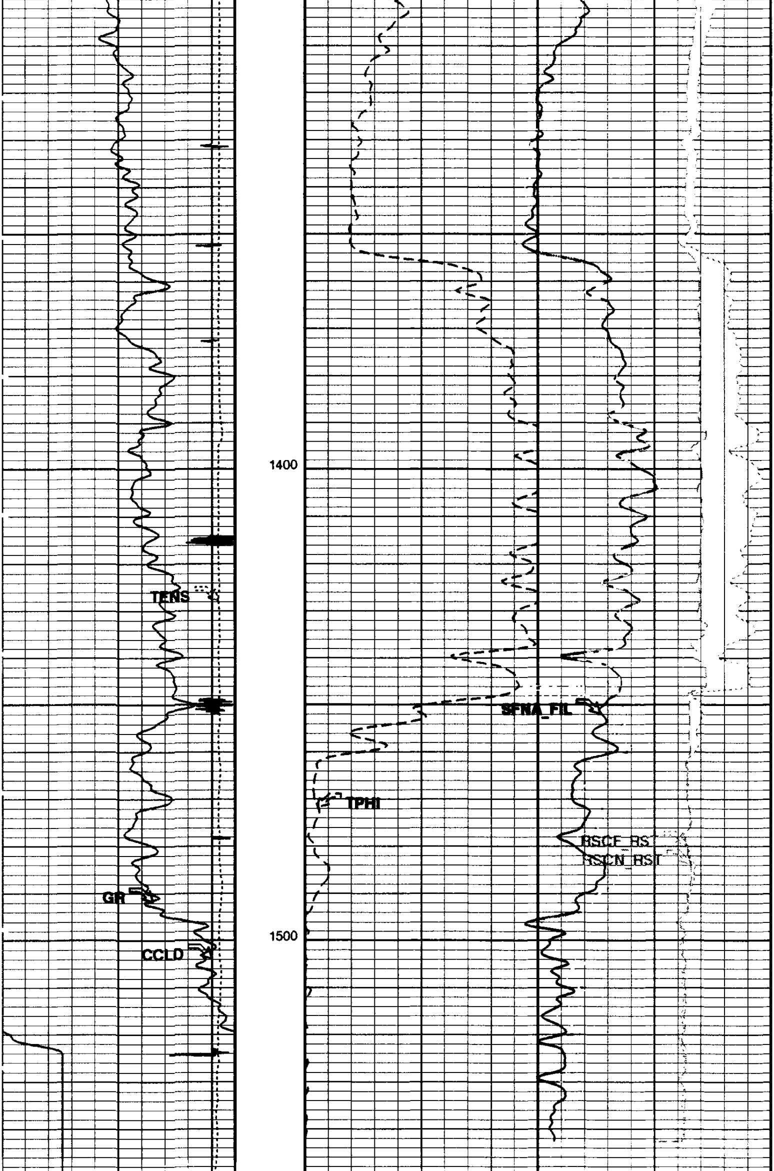
Sigma Formation Near Apparent (SFNA_FIL)
60 (CU) 0

RST Porosity (TPHI)
0.6 (V/V) 0

GAS
From RSCN to
RSCF







Discriminated CCL (CCLD)
9 (V) -1

Gamma Ray (GR)
0 (GAPI) 150

Tension (TENS)
10000 (LBF) 0

RST Porosity (TPHI)
0.6 (V/V) 0

GAS
From RSCN to
RSCF

Sigma Formation Near Apparent (SFNA_FIL)
60 (CU) 0

RST Near Effective
Capture CR
(RSCN_RST)
0 (----) 50

RST Far Effective
Capture CR (RSCF_
RST)
0 (----) 50

PIP SUMMARY

▶ Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
AIRB	RST Air Borehole	YES	
BHS	Borehole Status	CASED	
BS	Bit Size	8.500	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSID	Casing Size I.D.	4.89	IN
CSIZ	Current Casing Size	5.500	IN
CWEI	Casing Weight	17.00	LB/F
DFPC	Depth Filter Processing Constant	ONE	
DO	Depth Offset for Logical Unit 1	0.0	FT
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
NORM_IRAT_RST	RST Normalized Inelastic Ratio	0.48	
NORM_SIGM_RST	RST Normalized Sigma	30	CU
PP	Playback Processing	NORMAL	
RGAI	RST Detector Gain Ratio	1	

Format: RST Vertical Scale: 5" per 100' Graphics File Created: 11-Jun-2000 15:28

OP System Version: 9C1-303

MCM

RST-A OP91-KP1a CPLT-A 9C1-303

Input DLIS Files

DEFAULT RSTA .006 FN:5 PRODUCER 11-Jun-2000 10:04 1555.5 FT 946.0 FT

Output DLIS Files

DEFAULT RSTA .016 FN:15 PRODUCER 11-Jun-2000 15:28

Input DLIS Files

DEFAULT RSTA .006 FN:5 PRODUCER 11-Jun-2000 10:04 1555.5 FT 946.0 FT

Output DLIS Files

DEFAULT RSTA .015 FN:14 PRODUCER 11-Jun-2000 11:21 1555.5 FT 926.0 FT

OP System Version: 9C1-303

MCM

RST-A OP91-KP1a CPLT-A 9C1-303

PIP SUMMARY

▶ Time Mark Every 60 S

RST Far Effective Capture CR (RSCF_
RST)
0 (----) 50

RST Near Effective Capture CR (RSCN_RST)
0 (---) 50

GAS
From RSCN to RSCF

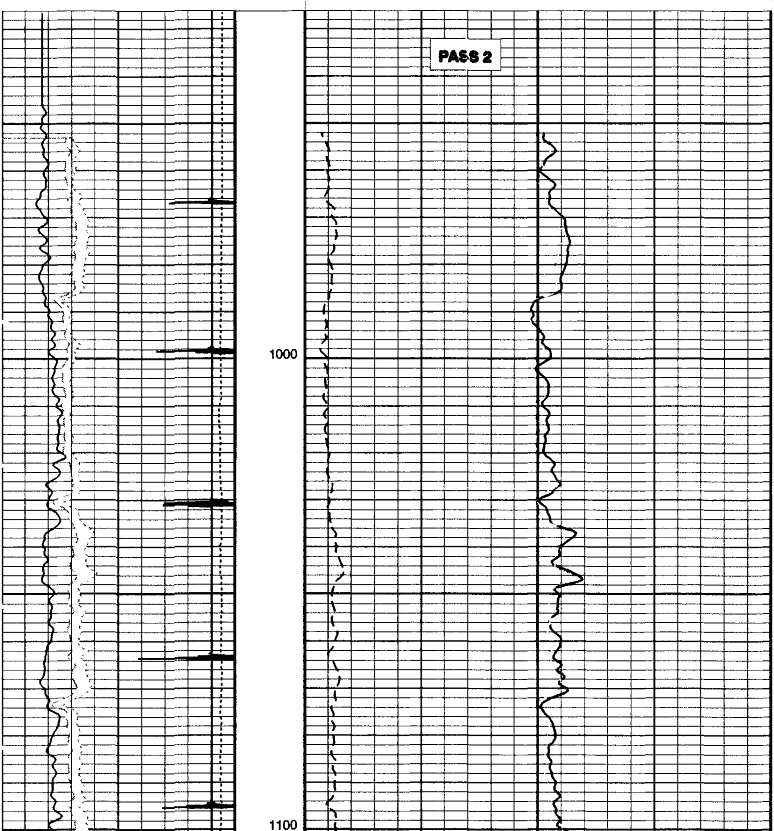
Tension (TENS)
10000 (LBF) 0

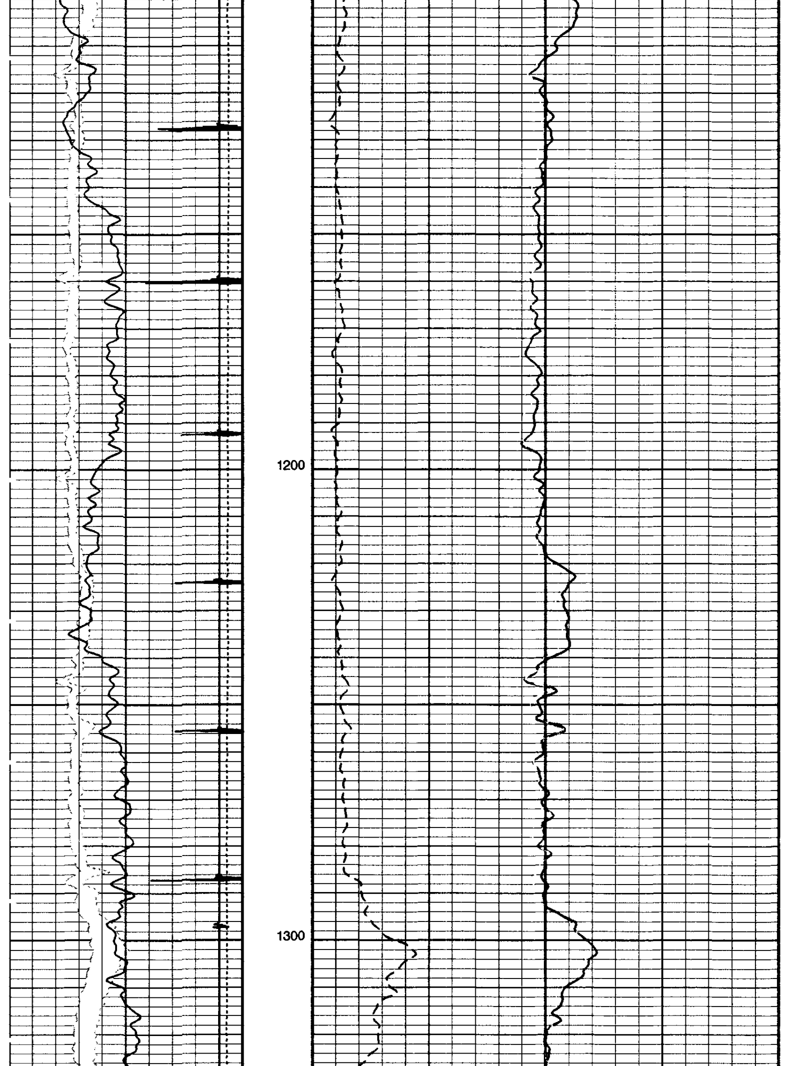
Gamma Ray (GR)
0 (GAPI) 150

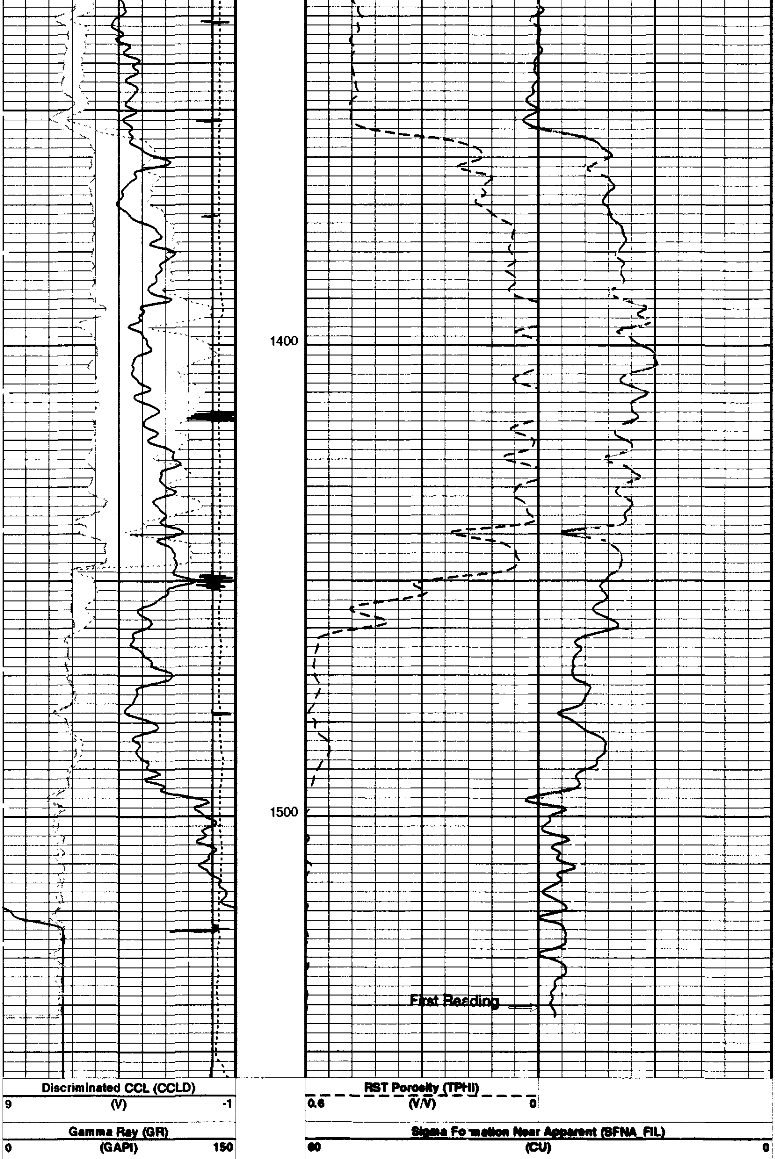
Discriminated CCL (CCLD)
9 (V) -1

Sigma Formation Near Apparent (SFNA_FIL)
60 (CU) 0

RST Porosity (TPHI)
0.6 (V/V) 0







Tension (TENS)
10000 (LBF) 0

GAS
From RSCN to RSCF

RST Near Effective Capture CR (RSCN_RST)
0 (----) 50

RST Far Effective Capture CR (RSCF_RST)
0 (----) 50

PIP SUMMARY

▶ **Time Mark Every 60 S**

Parameters

DLIS Name	Description	Value	
AIRB	RST Air Borehole	YES	
BHS	Borehole Status	CASED	
BS	Bit Size	8.500	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSID	Casing Size I.D.	4.89	IN
CSIZ	Current Casing Size	5.500	IN
CWEI	Casing Weight	17.00	LB/F
DFPC	Depth Filter Processing Constant	ONE	
DO	Depth Offset for Logical Unit 1	0.0	FT
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
NORM_IRAT_RST	RST Normalized Inelastic Ratio	0.48	
NORM_SIGM_RST	RST Normalized Sigma	30	CU
PP	Playback Processing	NORMAL	
RGAI	RST Detector Gain Ratio	1	

Format: RST_SIG_QUALITY **Vertical Scale: 5" per 100'** **Graphics File Created: 11-Jun-2000 11:21**

OP System Version: 9C1-303

MCM

RST-A	OP91-KP1a	CPLT-A	9C1-303

Input DLIS Files

DEFAULT	RSTA .006	FN:5	PRODUCER	11-Jun-2000 10:04	1555.5 FT	946.0 FT

Output DLIS Files

DEFAULT	RSTA .015	FN:14	PRODUCER	11-Jun-2000 11:21		

Schlumberger

REPEAT SECTION

MAXIS [illegible]

Input DLIS Files

DEFAULT	RSTA .005	FN:4	PRODUCER	11-Jun-2000 09:46	1554.5 FT	1140.5 FT

Output DLIS Files

DEFAULT	RSTA .016	FN:15	PRODUCER	11-Jun-2000 11:22	1554.5 FT	1120.5 FT

OP System Version: 9C1-303

MCM

RST-A	OP91-KP1a	CPLT-A	9C1-303

PIP SUMMARY

Time Mark Every 60 S

RST Far Effective Capture CR (RSCF_RST)
0 (----) 50

RST Near Effective Capture CR (RSCN_RST)
0 (----) 50

GAS
From RSCN to RSCF

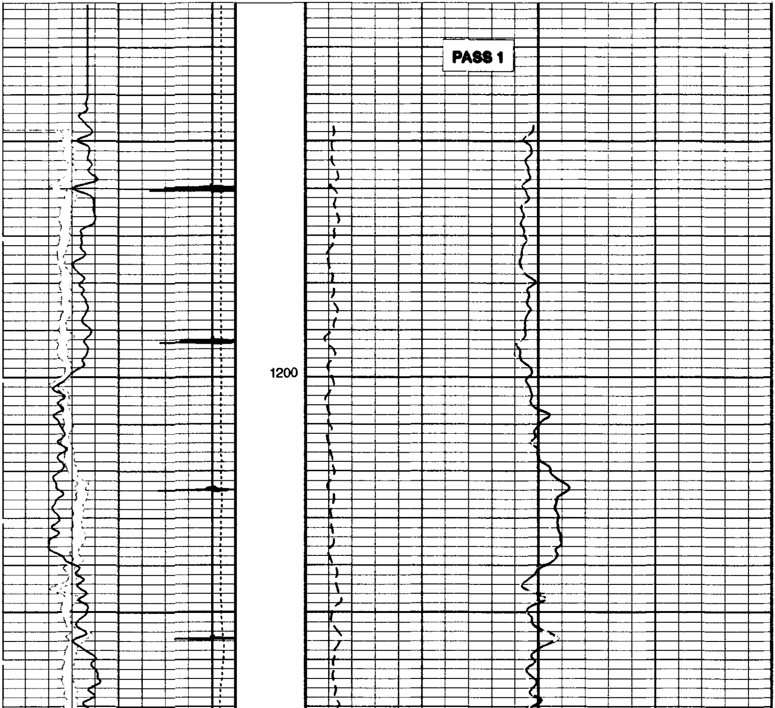
Tension (TENS)
10000 (LBF) 0

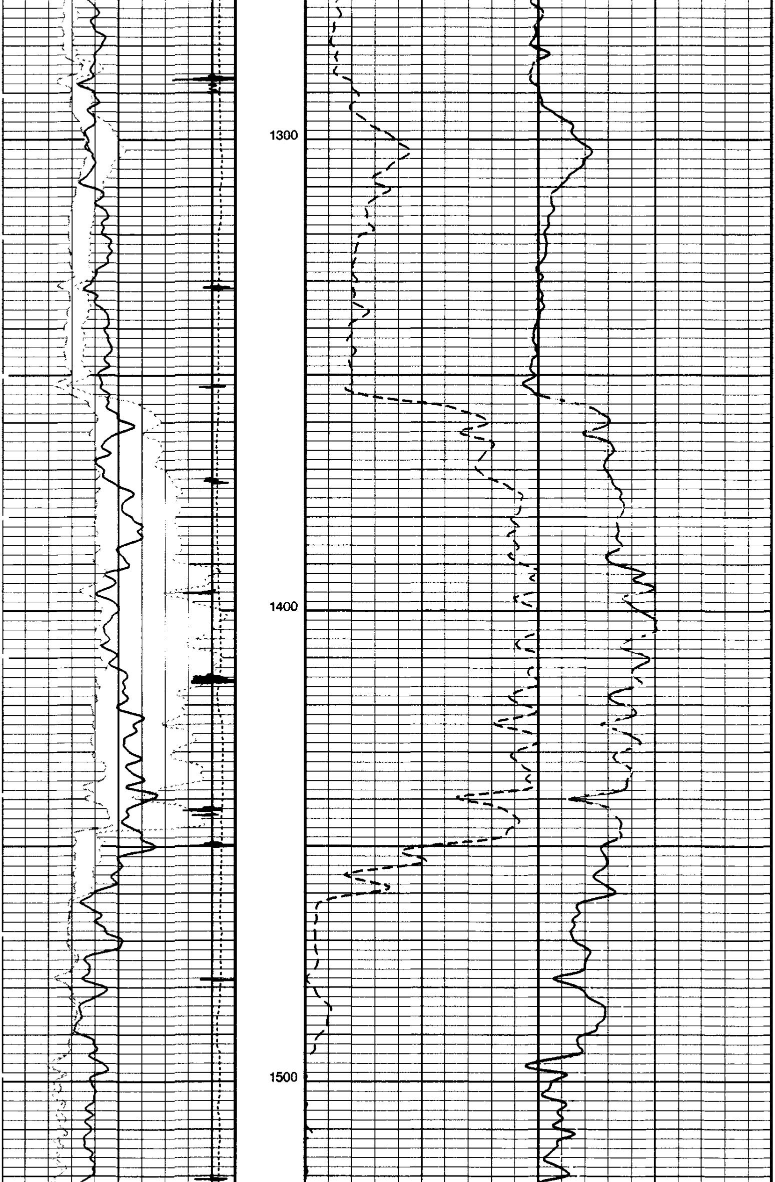
Gamma Ray (GR)
0 (GAPI) 150

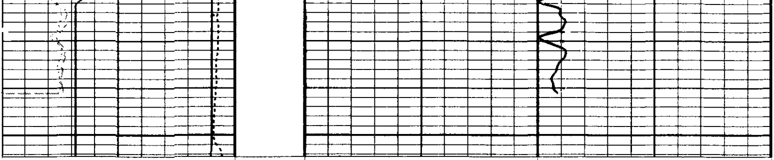
Discriminated CCL (CCLD)
9 (V) -1

Sigma Formation Near Apparent (SFNA_FIL)
60 (CU) 0

RST Porosity (TPHI)
0.6 (V/V) 0







Discriminated CCL (CCLD)
9 (V) -1

Gamma Ray (GR)
0 (GAPI) 150

Tension (TENS)
10000 (LBF) 0

GAS
From RSCN to RSCF

RST Near Effective Capture CR (RSCN_RST)
0 (----) 50

RST Far Effective Capture CR (RSCF_RST)
0 (----) 50

RST Porosity (TPHI)
0.6 (V/V) 0

Sigma Formation Near Apparent (SFNA_FIL)
60 (CU) 0

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
AIRB	RST Air Borehole	YES	
BHS	Borehole Status	CASED	
BS	Bit Size	8.500	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSID	Casing Size I.D.	4.89	IN
CSIZ	Current Casing Size	5.500	IN
CWEI	Casing Weight	17.00	LB/F
DFPC	Depth Filter Processing Constant	ONE	
DO	Depth Offset for Logical Unit 1	0.0	FT
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
NORM_IRAT_RST	RST Normalized Inelastic Ratio	0.48	
NORM_SIGM_RST	RST Normalized Sigma	30	CU
PP	Playback Processing	NORMAL	
RGAI	RST Detector Gain Ratio	1	

Format: RST_SIG_QUALITY **Vertical Scale: 5" per 100'** **Graphics File Created: 11-Jun-2000 11:22**

OP System Version: 9C1-303

MCM

RST-A	OP91-KP1a	CPLT-A	9C1-303

Input DLIS Files

DEFAULT	RSTA .005	FN:4	PRODUCER	11-Jun-2000 09:46	1554.5 FT	1140.5 FT

Output DLIS Files

DEFAULT	RSTA .016	FN:15	PRODUCER	11-Jun-2000 11:22

COMPANY:	NORTHWEST NATURAL GAS
WELL:	COLUMBIA COUNTY # 14-23
FIELD:	MIST
COUNTY:	COLUMBIA
STATE:	OREGON

BOTTOM LOG INTERVAL	1542 ft
SCHLUMBERGER DEPTH	1550 ft
DEPTH DRILLER	1562 ft
KELLY BUSHING	663.7 ft
DRILL FLOOR	
GROUND LEVEL	652.7 ft

Schlumberger

RST GR CCL
SIGMA MEASURMENT
SCALE : 5"=100 '