COMPANY: NORTHWEST NATURAL GAS

WELL: I.W. 24C-23-65

FIELD: CALVIN CREEK GAS STORAGE

COUNTY: COLUMBIA **STATE:** OREGON

COUNTY: COLUMBIA
Field: CALVIN CREEK GAS STORAGE
Location: 985.3' N & 1258.4' E FROM THE
Well: I.W. 24C-23-65
Company: NORTHWEST NATURAL GAS

Schlumberger

FORMATION MICRO IMAGER
Images
SCALE: 25" = 100'

LOCATION		
985.3' N & 1258.4' E FROM THE FROM THE SW CORNER OF 23	Elev.:	K.B. 917.5 ft G.L. 905 ft D.F. 917.3 ft

Permanent Datum: GROUND LEVEL Elev.: 905 ft
Log Measured From: K.B above Perm. Datum
Drilling Measured From: K.B

API Serial No.	SECTION	TOWNSHIP	RANGE
36-009-00350	23	6N	5W

Logging Date		7-MAY-2000		
Run Number		1		
Depth Driller		2591 ft		
Schlumberger Depth		2591 ft		
Bottom Log Interval		2581 ft		
Top Log Interval		1724 ft		
Casing Driller Size @ Depth		8.625 in @ 1727 ft		@
Casing Schlumberger		1725 ft		
Bit Size		7.875 in		
Type Fluid In Hole		DMA		
MUD Density	Viscosity	8.8 lbm/gal	38 s	
MUD Fluid Loss	PH	6.6 cm3	10.5	
MUD Source Of Sample		FLOWLINE		
RM @ Measured Temperature		0.914 ohm.m @ 68 degF		@
RMF @ Measured Temperature		1.250 ohm.m @ 52 degF		@
RMC @ Measured Temperature		1.325 ohm.m @ 52 degF		@
Source RMF	RMC	PRESS	PRESS	
RM @ MRT	RMF @ MRT	0.692 @ 92	0.744 @ 92	@ @
Maximum Recorded Temperatures		92 degF	92 92	
Circulation Stopped	Time	7-MAY-2000	0:30	
Logger On Bottom	Time	7-MAY-2000		
Unit Number	Location	3152	SACRAMENTO	
Recorded By		M.KHAN		
Witnessed By		JACK MEYER		

		Run 1	Run 2	Run 3	Run 4
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					

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: FMI GR	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2

RUN 1		RUN 2	
SERVICE ORDER #:		SERVICE ORDER #:	
PROGRAM VERSION:	9C1-303	PROGRAM VERSION:	
FLUID LEVEL:	0 ft	FLUID LEVEL:	

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

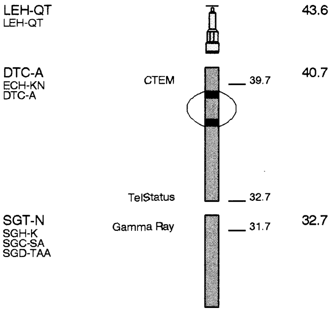
EQUIPMENT DESCRIPTION

RUN 1	RUN 2

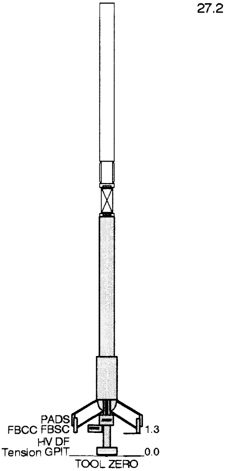
SURFACE EQUIPMENT

GSR-U/Y
WITM (DTS)-A

DOWNHOLE EQUIPMENT



FBST-A
ECH-MRA
FBCC-A 724
AH-185
AH-184
FBSS-A 794
GPIC-C 714
FBSC-A 724



MAXIMUM STRING DIAMETER 5.00 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Input DLIS Files

DEFAULT	FBSTA .017	FN:16	PRODUCER	07-May-2000 08:55	2000.5 FT	1708.1 FT

Output DLIS Files

DEFAULT	FBSTA .019	FN:18	PRODUCER	07-May-2000 09:15	2000.5 FT	1708.5 FT

OP System Version: 9C1-303

MCM

FBST-A	9C1-303	SGT-N	OP91-KP1a
DTC-A	OP91-KP1a		

PIP SUMMARY

Time Mark Every 60 S

FMI Correlation Resistance (LOG) (FBCR)
2 (KOHM) 2000

Pad One Azimuth (P1AZ_FBST)
-40 (DEG) 360

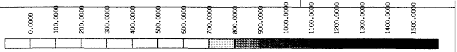
Hole Azimuth (HAZIM)
-40 (DEG) 360

Gamma Ray (GR)
0 (GAPI) 150

Deviation (DEVIM)
0 (DEG) 10

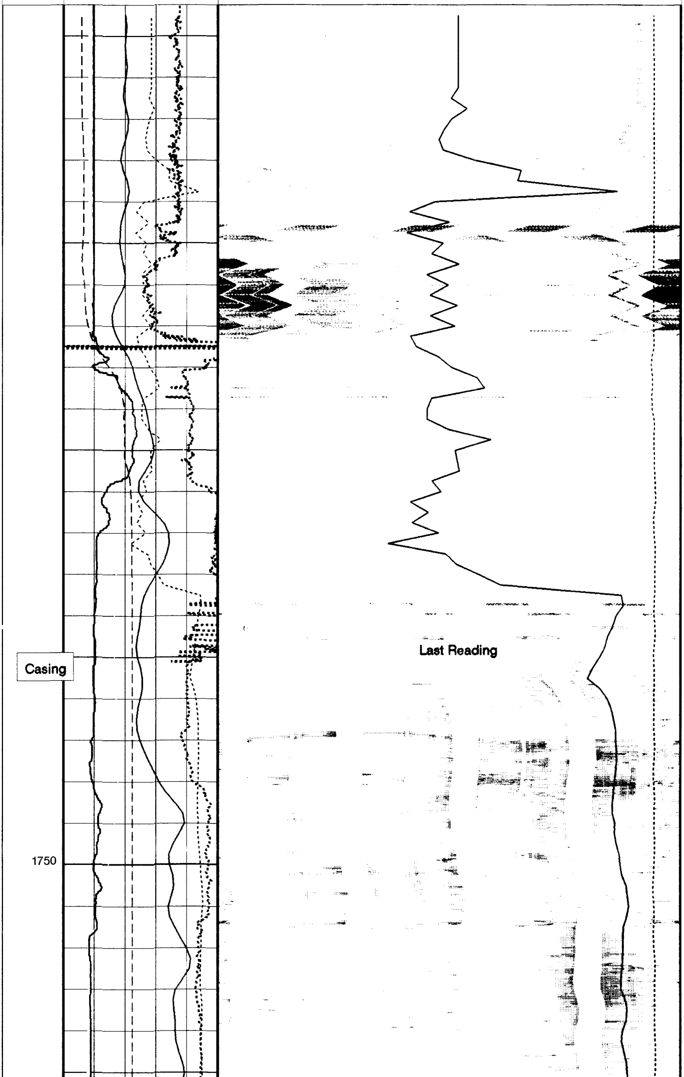
Tension (TENS)
10000 (LBF) 0

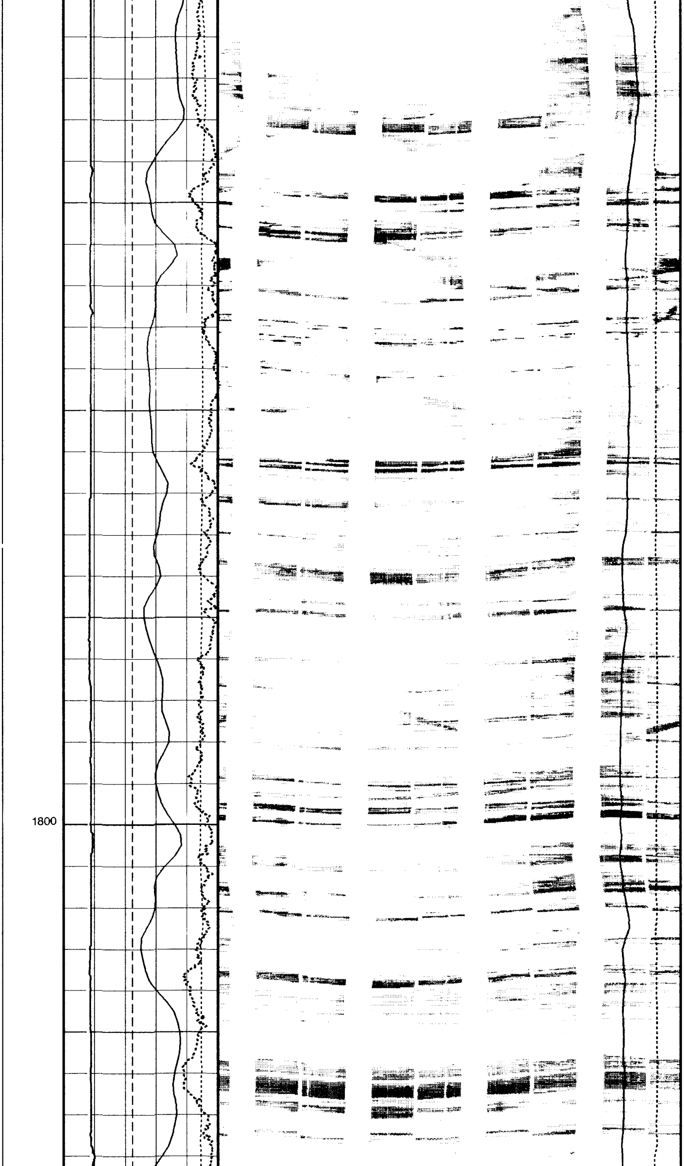
Caliper 2 (C2)
6 (IN) 16

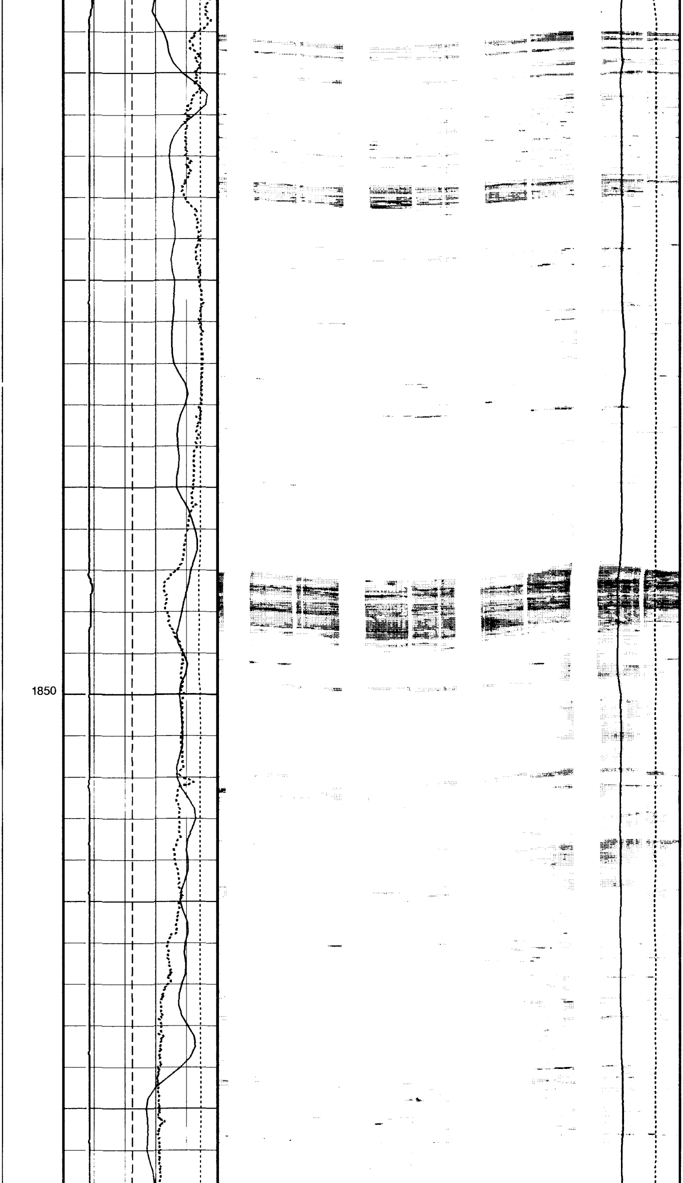


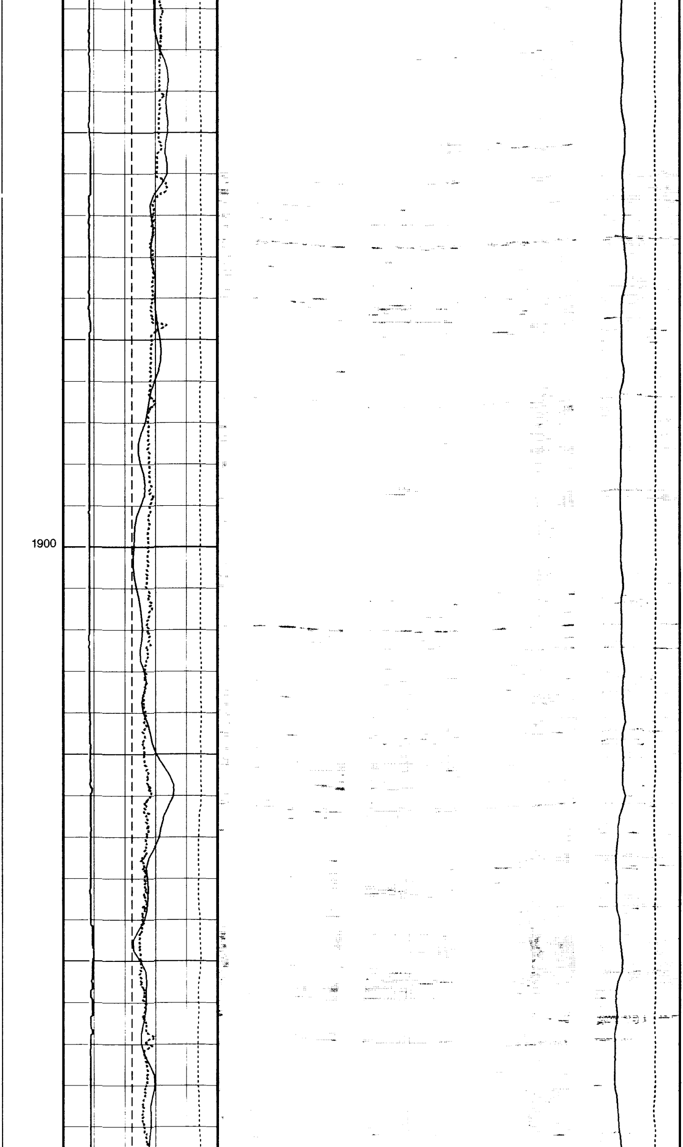
FBST/PADA (FBAA_A)
(----)

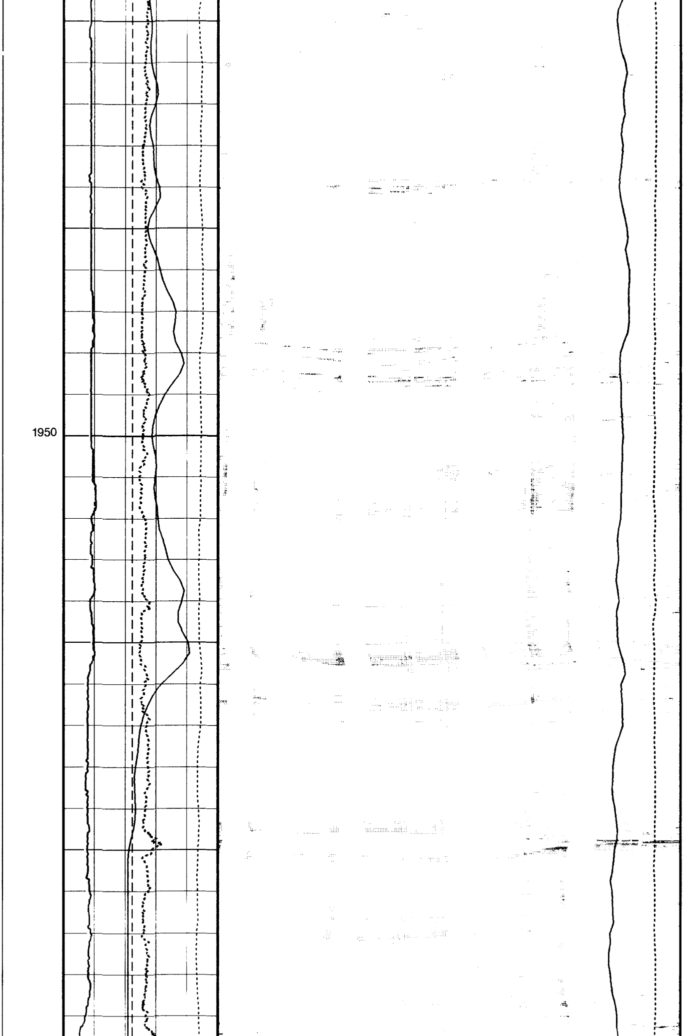
Image Orientation (P1AZ_FBST)
0 (DEG) 360











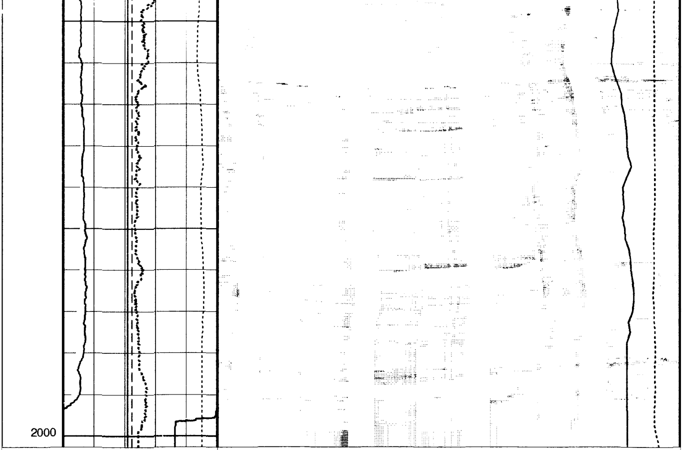
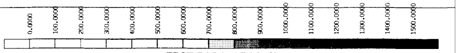


Image Orientation (P1AZ_FBST)
0 (DEG) 360

Caliper 2 (C2)
6 (IN) 16



FBST/PADA (FBAA_A)
(----)

Deviation (DEVIM)
0 (DEG) 10

Tension (TENS)
10000 (LBF) 0

Gamma Ray (GR)
0 (GAPI) 150

Hole Azimuth (HAZIM)
-40 (DEG) 360

Pad One Azimuth (P1AZ_FBST)
-40 (DEG) 360

FMI Correlation Resistance (LOG) (FBCR)
2 (KOHM) 2000

PIP SUMMARY

Time Mark Every 60 S

FMI Image.

Resistive (White) to Conductive (Black)

Format: FMI_WRAP_BY_P1AZ Vertical Scale: 25" per 100' Graphics File Created: 07-May-2000 09:16

OP System Version: 9C1-303

MCM

FBST-A	9C1-303	SGT-N	OP91-KP1a
DTC-A	OP91-KP1a		

Parameters

DLIS Name	Description	Value

AFMO	Accelerometer Filtering Mode	MOVING_AVERAGE	
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
DO	Depth Offset for Logical Unit 1	0.0	FT
EGCO	FMI EMEX and GAIN Correction	NO	
FDBD	FMI Dead Buttons detection	OFF	
FDBP	FMI Dead Buttons Patching	OFF	
FIEQ	FMI Image Equalisation	OFF	
FLM	FMI Logging Mode	8PAD	
ICMO	Inclinometry Computation Mode	AUTOMATIC_SELECTION	
MDEC	Magnetic Field Declination	-9.54999	DEG
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	NORMAL	
SOFF	Stand-Off	0	IN
XGAI_FBST	Gain Value(When manu)	25_dB	
XGMO	Emex & Gain Modes	EmexManu_GainManu	
XVOL	Emex Voltage	0	V

Input DLIS Files

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Output DLIS Files

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WELL:	I.W. 24C-23-65
FIELD:	CALVIN CREEK GAS STORAGE
COUNTY:	COLUMBIA
STATE:	OREGON

BOTTOM LOG INTERVAL	2581 ft
SCHLUMBERGER DEPTH	2591 ft
DEPTH DRILLER	2591 ft
KELLY BUSHING	917.5 ft
DRILL FLOOR	917.3 ft
GROUND LEVEL	905 ft

Schlumberger

FORMATION MICRO IMAGER
LQC
SCALE: 5" = 100'