Amoco Production Company

Re: Request for revised maximum allowable surface injection pressure
E. Elliott SWD #1
Section 26-T30N-R9W
API# 30-045-27799
San Juan County, NM

Attached is information supporting our request to increase the maximum allowable surface injection pressure on the E.E. Elliott SWD #1 well from 1480 psig to 1640 psig. Our recommendation is supported by initial completion fracturing data, a December 1998 injection log survey, and November 1999 refrac data on the Entrada formation.

First, analysis of the completion fracturing data: the surface ISIPs for Entrada, Bluff, and Morrison were 740, 1940, and 2400 psig, respectively. Detailed frac information can be found in Attachment 1. Since injection began in October 1994, the surface injection pressure has gradually increased from 1360 psig to current pressures of 1460-70 psig with the injection of approximately 1.2 million BW. Since our pressures have not approached the ISIPs recorded on the Bluff and Morrison fracs, the only formation capable of accepting injected water to date has been the Entrada formation.

Second, an injection log (spinner and temperature surveys) was run in December 1998 to determine zones of injectivity. Our interpretation of the log indicates current and past water injection is into the Entrada formation. A copy of the log and interpretation can be found in Attachment 2.

Lastly, the Entrada was refraced in November 1999 to bypass near wellbore cement damage which occurred during completion of the Morrison formation. The Entrada refrac ISIP was 1680 psig. Correcting for fluid densities equates to a current surface fracturing pressure of approximately 1713 psig. Treating reports for the Entrada refrac are listed in Attachment 3.

Based upon a discussion with Aztec NMOCD personnel in Aztec, it is our understanding that the maximum allowable surface injection pressure is based on 0.2 psig/ft times the depth of the top formation injection perforation. Using this formulae, it appears the Elliott's allowable pressure may have be calculated in error and should be 1513 psig, rather that 1480 psig. However, based on the information presented, we believe that the Entrada formation is the only formation in the well accepting fluid and hereby request that its allowable maximum injection pressure be raised to 1640 psig (0.2 psi/ft*8202 ft = 1640 psig). The revised allowable pressure is also below the fracturing ISIP pressure noted during the recent refrac work.

Please advise should you have any questions(326-9219).

Buddy Shaw 12/9/99

Buddy Shaw

12-27-99
I asked for seperate test
Buddy said will schedule
+ call us
CP

Attachments

Attachment 1

Completion Information:

Entrada: Date: 11/24/90
Perf interval: 8,202-8,418'
Frac: 70 mgal 40# x-l pad
86 mgal 30# x-l + 243 m# 20/40 sand
max/min/avg prs = 1500/1200/520 psig @ 45 bpm
ISIP = 740 psig

Bluff: Date: 11/300
Perf interval: 7,924-8,048'
Frac: 70 mgal 30# x-l pad
82 mgal 30# x-l + 232 m# 20/40 sand
max/min/avg prs = 2500/2030/1770 psig @ 45 bpm
ISIP = 1940 psig

Morrison: Date: 11/300
Perf interval: 7,564-7,764'
Frac: 40 mgal 30# x-l pad
44 mgal 30# x-l + 121 m# 20/40 sand
max/min/avg prs = 2600/n/a/2050 psig @ 35 bpm
ISIP = 2400 psig

Attachment 2

Summary:

Most, if not all, of current and past water injection into the Elliott SWD #1 is into the lower part of the Entrada formation. At matrix rates, the Morrison and Bluff formations do not appear to be accepting injection water.

Introduction: The logs run were the temperature, continuous spinner, pressure, and density (gradiomanometer), as well as casing collar locator and background gamma-ray for depth control. The logs were assumed to be on depth and perforations were noted o the log center scale. Except for the gradiomanometer, that recorded incorrect water densities of 1.5 to 1.9 g/cc, tool calibrations are presumed to be adequate. Due to fill, the logging total depth (LTD) was around 8,350', which is approximately 80 feet from the bottom perforation.

Temperature data: The lack of character (no slope) on the injection temperature log shows that most of the water injection into the reservoir was below the logging total depth. As expected, the three passes shift sequentially toward cooler temperatures as water injection continued. The shut-in pass is also consistent with major cold water storage and past injection below the LTD. Longer term injection has apparently cooled down the reservoir more that the cooling achieved during logging.

Spinner data: The spinner log is also qualitatively consistent with most, if not all, of the water leaving the wellbore below the LTD. Attempts to interpret the spinner data relying on only the up passes might suggest that some of the water may also be leaving the wellbore near the top of the Morrison and near the top of the Entrada. This interpretation is not consistent with what is seen on the static and dynamic temperature logs.

A copy of the injection log follows.

Attachment 3

Treating reports for the Entrada refrac noted an ISIP of 1680 psig. Correcting for the density of normal injection water (0.434 psi/ft) from 2 % KCl (0.438 psi/ft) water used during the frac equates to a corrected surface ISIP of 1713 psig.

Treating reports and graphs follow.

Amoco Production Company

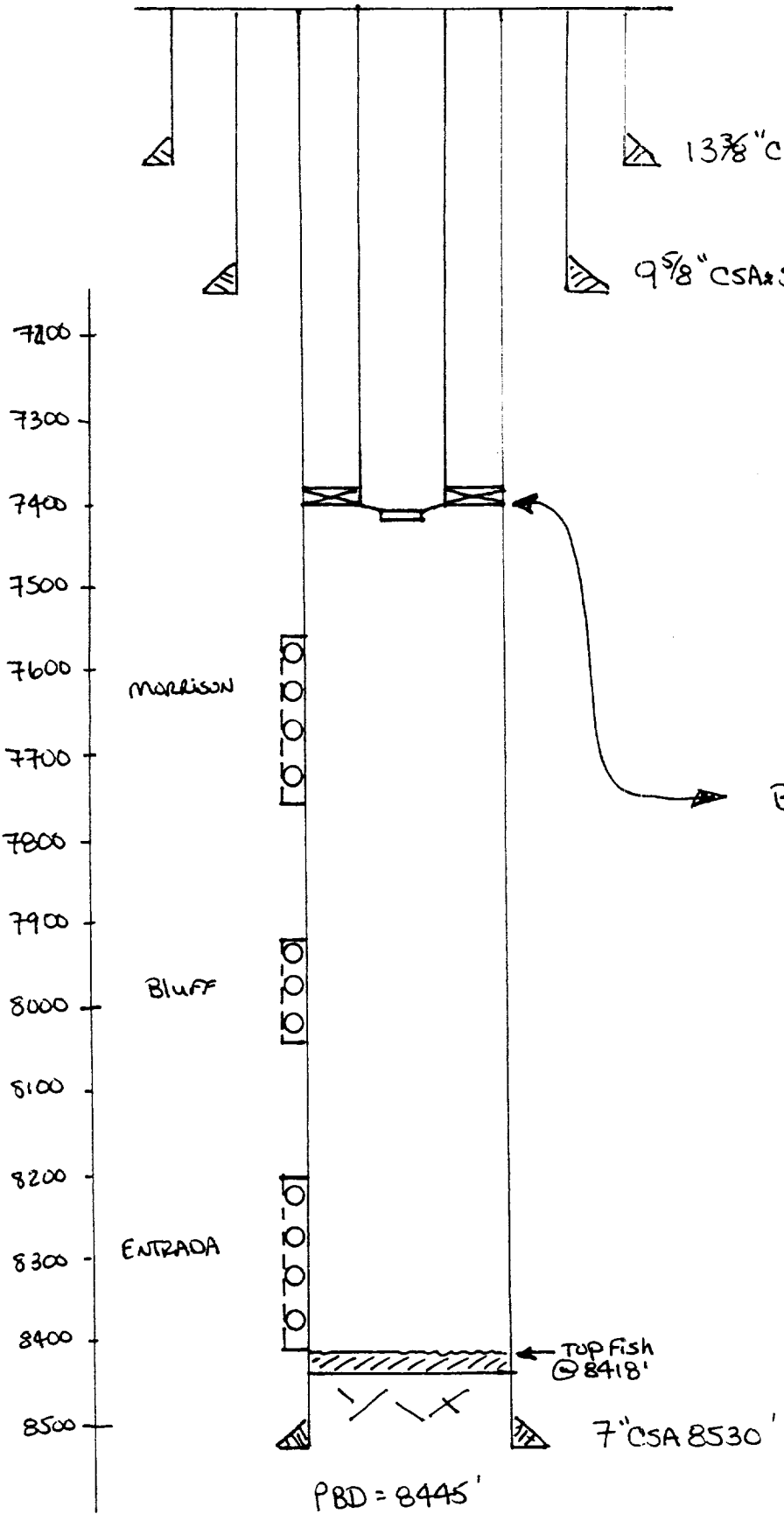
ENGINEERING CHART

SUBJECT Elliott SWD #1

Wellbore Diagram

Date 12/1/99

By GMK



PERFS:

MORRISON : 7564-84'
7593-7603', 18-52', 58-68'
7684-7724', 30-64'

BLUFF : 7924-58', 7968-8048'

ENTRADA : 8202-50', 8280-8310',
8330'-8418'

BAKER Model F-1 PKR SA 7398-7401'

3 1/2" TSA 7407'

2 7/8" TSA 7421'

3 1/2" x 2 3/4" F-Nipple @ 7368'

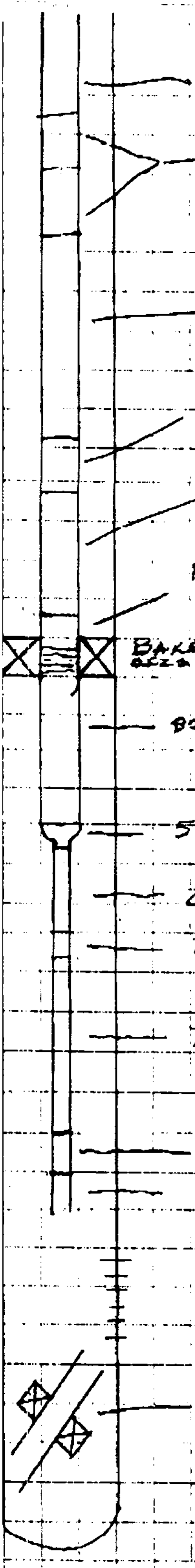
2 7/8" x 2 1/4" F-Nipple @ 7413'

2 7/8" x 2 1/4" R-Nipple @ 7426'

Facsimile Transmission
18-717-G (3-92)

TO	Mike Kutas BP-Amoco Houston
FROM	Greg Kempton BP-Amoco Farmington
Date	12-1-99
Time Sent	2:45
This transmission consists of:	pages
FAX Number	
FAX Operator's Number for Confirmation	
FAX Telephone Number	
Voice Telephone Number	

Notes:



E.E. ELLIOTT SOUTH?

	LENGTH
1 JT 3½ EU 8RD N-80 TBG	
10FT, 3FT & 2FT 3½ PUP JOINT 4.50 ID	15.27
229 JTS 3½ EU 8RD N-80 TBG	
3½ x 2.75 F NIPPLE 316 stainless STEEL TOP 7368.49 OD 4.50 ID 2.75 F	.98
1 JT 3½ EU 8RD N 80 INTERNAL FLANGE coated TOP 7369.47	28.57
BAKER 80-40 EBH-22 ANCHOR SEAL ASSEMBLY TOP @ 7398.04 OD 4.50 5.00 ID 3.00	.75
BAKER MODEL F-1 RETAINER PRODUCTION PKR SIZE 85-40 7" TOP @ 7398.79 FT OD 5.875 ID 4.0625 END @ 7401.12	2.33
85-40 ? MILL OUT EXT END @ 7406.49 OD 5.50 ID 4.0625	5.37
5" LTC BOX x 2⅞ EU 8RD PIN OD 5.5625 ID 2.4375 END @ 7407.11	.62
2⅞ x 6 FT J-55 EU 8RD PUP JT. OD 3.625 END @ 7413.31	6.20
2⅞ x 2.25 F NIPPLE 316 stainless STEEL END @ 7414.34 OD 3.625 ID 2.25 F	1.03
2⅞ x 6 FT J-55 EU 8RD PUP JT OD 3.625 END @ 7420.47	6.13
2⅞ x 2.25 R NIPPLE 4140 STEEL OD 3.625 ID 2.25 R	1.03
2⅞ WIRELINE ENTRY GUIDE OD 3.625 ID 2.4375 END @ 7421.13	.66

INVERTED LOKSET ON BOTTOM
COULD NOT FISH OUT

BPAmoco

FracCAT
Fracturing - Computer Aided Treatment

Treatment Report

Well : **E.E. Elliot SWD #1**
Field : **S26-30N-9W**
Formation : **Entrada**

Well Location :
County : San Juan
State : New Mexico
Country : U.S.A.

Prepared for : **Greg Kempton**
Proposal No. : 8653
Date Prepared : 11-10-1999

Service Point : Farmington
Business Phone : (505) 325-5096
Fax No. : (505) 327-0317

Prepared by : Chris J. Mahaffey
Phone : (505) 330-2989
E-Mail Address : cmahaffey@farmington.dowell.slb.com

Comments :

Schlumberger

Dowell

Client : BPAmoco
Well : E.E. Elliot SWD #1
Formation : Entrada
District : Farmington
Country : U.S.A.
Loadcase : Acq Load Case

Section 1: As Measured Pump Schedule

As Measured Pump Schedule

Stg #	Stage Name	Slurry Volume (bbl)	Slurry Rate (bbl/min)	Pump Time (min)	Fluid Name	Fluid Volume (gal)	Proppant Name	Max Prop Conc (PPA)	Prop Conc (PPA)	Prop Mass (lb)
1	Acid	28.1	4.6	6.1	15% HCl	1176	None	0.0	0.0	0
2	Pre-Pad	152.0	31.6	4.8	YF130	6360	None	0.0	0.0	0
3	Pre-Pad	119.0	44.9	2.7	YF130	4892	40/70 Arizon	0.7	0.5	2391
4	Pre-Pad	178.6	45.2	4.0	YF130	7188	40/70 Arizon	1.1	1.0	6892
5	Pad	1250.0	35.1	35.6	YF130	52434	None	1.3	0.0	1436
6	1.0 PPA	226.4	45.1	5.0	YF130	9070	20/40 Brady	1.5	1.1	9690
7	2.0 PPA	309.9	45.2	6.8	YF130	12040	20/40 Brady	2.4	1.8	21609
8	2.5 PPA	318.0	45.2	7.0	YF125	12028	20/40 Brady	2.7	2.4	29371
9	3.0 PPA	324.5	45.4	7.2	YF125	12017	20/40 Brady	3.2	3.0	35617
10	3.5 PPA	330.9	45.4	7.3	YF125	12016	20/40 Brady	3.8	3.5	41640
11	4.0 PPA	309.3	45.5	6.8	YF125	11014	20/40 Brady	4.3	4.0	43683
12	4.5 PPA	171.9	45.4	3.8	YF125	6010	20/40 Brady	4.7	4.5	26788
13	5.0 PPA	87.6	45.7	1.9	YF125	3007	20/40 Brady	5.2	4.9	14853
14	5.5 PPA	59.7	45.4	1.3	YF125	2007	20/40 Brady	5.9	5.5	11091
15	6.0 PPA	86.0	45.7	1.9	YF125	2921	20/40 Brady	6.1	5.2	15302
16	Flush	295.2	42.6	6.9	YF125	12419	None	2.2	0.0	161

As Measured Totals

Slurry (bbl)	Pump Time (min)	Clean Fluid (gal)	Proppant (lb)	Liquid 1 (gal)	Liquid 2 (gal)
4247.2	109.1	166600	260525	0.0	0.0

Average Treating Pressure: 1500 psi
Maximum Treating Pressure: 2051 psi
Average Injection Rate: 38.9 bbl/min
Maximum Injection Rate: 45.9 bbl/min
Maximum Horsepower 2227.8 hhp
Maximum Prop Concentration 6.1 PPA

Section 2: Message Log

#	Time	Message	Treating Pressure (psi)	Annulus Pressure (psi)	Total Slurry (bbl)	Slurry Rate (bbl/min)	Prop. Conc. (PPA)
1	9:47:27	Pressure Test Lines	4738	0	0.0	0.0	0.0
2	10:39:14	Started Acid	50	0	0.0	0.0	0.0
3	10:45:20	Started Pre-Pad Manually	1378	0	28.1	8.1	0.0
4	10:50:09	Started Pre-Pad Manually	1927	0	180.2	44.9	0.0
5	10:50:13	Started Pumping Prop	1923	0	183.2	45.0	0.0
6	10:52:48	Started Pre-Pad Automatically	1785	0	299.5	44.9	0.5
7	10:52:53	Stage at Perfs: Acid	1785	0	303.3	45.2	0.5
8	10:53:31	Stage at Perfs: Pre-Pad	1744	0	331.8	45.0	1.0
9	10:56:45	Started Pad Automatically	1657	0	477.9	45.2	1.0
10	10:56:53	Stage at Perfs: Pre-Pad	1657	0	484.0	45.4	1.0
11	10:57:36	Stopped Pumping Prop	1634	0	516.4	45.4	0.5
12	10:59:31	Stage at Perfs: Pre-Pad	1685	0	603.1	45.3	0.0

#	Time	Message	Treating Pressure (psi)	Annulus Pressure (psi)	Total Slurry (bbl)	Slurry Rate (bbl/min)	Prop. Conc. (PPA)
13	11:02:30	Shutdown - Fix Leak	1410	0	703.6	0.0	0.0
14	11:08:57	Continue Pad	1401	0	703.7	1.4	0.0
15	11:11:22	Stage at Perfs: Pad	1776	0	781.8	45.3	0.0
16	11:32:15	Started Pumping Prop	1977	0	1723.2	44.9	0.0
17	11:32:22	Started 1.0 PPA Automatically	1968	0	1728.5	45.0	1.2
18	11:37:23	Started 2.0 PPA Automatically	1794	0	1954.6	45.4	1.5
19	11:39:06	Stage at Perfs: 1.0 PPA	1712	0	2032.1	45.0	1.7
20	11:44:06	Stage at Perfs: 2.0 PPA	1639	0	2258.1	45.4	1.9
21	11:44:14	Started 2.5 PPA Automatically	1625	0	2264.2	45.1	2.0
22	11:50:56	Stage at Perfs: 2.5 PPA	1483	0	2567.7	45.4	2.7
23	11:51:16	Started 3.0 PPA Automatically	1479	0	2582.8	45.4	2.7
24	11:57:58	Stage at Perfs: 3.0 PPA	1364	0	2886.8	45.3	3.2
25	11:58:25	Started 3.5 PPA Automatically	1355	0	2907.2	45.4	3.2
26	12:05:07	Stage at Perfs: 3.5 PPA	1295	0	3211.3	45.5	3.7
27	12:05:42	Started 4.0 PPA Automatically	1273	0	3237.8	45.5	3.7
28	12:12:23	Stage at Perfs: 4.0 PPA	1199	0	3541.7	45.5	4.2
29	12:12:30	Started 4.5 PPA Automatically	1199	0	3547.0	45.5	4.2
30	12:16:17	Started 5.0 PPA Automatically	1158	0	3719.2	45.5	4.7
31	12:18:12	Started 5.5 PPA Automatically	1126	0	3806.5	45.5	5.1
32	12:19:10	Stage at Perfs: 4.5 PPA	1108	0	3850.5	45.3	5.7
33	12:19:31	Started 6.0 PPA Automatically	1089	0	3866.4	45.4	5.9
34	12:21:24	Started Flush Manually	1044	0	3952.1	45.3	2.2
35	12:21:27	Stopped Pumping Prop	1030	0	3954.3	45.6	1.5
36	12:22:58	Stage at Perfs: 5.0 PPA	1186	0	4023.3	45.3	0.0
37	12:24:54	Stage at Perfs: 5.5 PPA	1456	0	4110.7	45.2	0.0
38	12:26:13	Stage at Perfs: 6.0 PPA	1639	0	4170.1	45.2	0.0
39	12:28:54	Shutdown - ISIP	1680	0	4247.2	0.0	0.0
40	12:34:38	5 Min. Shut In	1561	0	4247.2	0.0	0.0

COMPANY: **AMOCO PRODUCTION**

WELL: **E.E. ELLIOTT SWD #1**

FIELD: **ENTRADA**

COUNTY: **SAN JUAN** STATE: **NEW MEXICO**

COUNTY: SAN JUAN
Field: ENTRADA
Location: 1270 FNL & 580 FWL
Well: E.E. ELLIOTT SWD #1
Company: AMOCO PRODUCTION

Schlumberger

PRODUCTION LOG
FULLBORE SPINNER
TEMPERATURE

LOCATION: 1270 FNL & 580 FWL

Elev. K.B. 5978 F
G.L. 5956 F
D.F.

Permanent Datum: GROUND LEVEL Elev.: 5956 F
Log Measured From: KELLY BUSHING 22.0 F above Perm. Datum
Drilling Measured From: KELLY BUSHING

API Serial No.	SECTION	TOWNSHIP	RANGE
30-045-27799	26	30 N	9 W

Logging Date	29-DEC-1998
Run Number	1
Depth Driller	8432 F
Schlumberger Depth	8392 F
Bottom Log Interval	8350 F
Top Log Interval	7540 F
Casing Fluid Type	FRESH WATER
Salinity	
Density	8.3 LB/G
Fluid Level	
BIT/CASING/TUBING STRING	
Bit Size	6.750 IN
From	
To	
Casing/Tubing Size	7.000 IN
Weight	23 LB/F
Grade	
From	0 F
To	8528 F
Maximum Recorded Temperatures	
Logger On Bottom Time	29-DEC-1998 15:45
Unit Number Location	130 FARMINGTON
Recorded By	SITTON
Witnessed By	ANDERSON

	Run 1	Run 2	Run 3	Run 4
PVT DATA				
Oil Density				
Water Salinity				
Gas Gravity	1			
Bo				
Bw				
1/Bg				
Bubble Point Pressure	0 PSI			
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 Temperature				
Logger On Bottom Time				
Unit Number Location				
Recorded By				
Witnessed By				

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
Fullbore Spinner & Temperature run to check injection	
profiles of the formations. A Shut-in pass was run	
first, then injection passes made. The injection rate	
was 2030 BWPD. This was maximum allowable under	
current pressure limits. Surface pressures were right	
around 1400 psi. PBTD was not reached due to fill?	
There also appeared to be some restrictions in the hole.	
At 8360 the tool really bounced around, so we did not	
record any deeper than 8350 in fear that tool would be-	
come plugged up. The spinner came out with some very	
hard substance trapped in the cage - almost like chunks	
of coal or shale. Data analysis did not work at the district,	
so Denver will do the processing. Most of the water	
injected appears to be going out the bottom set of perfs.	
Crew: Fulkerson & Griffin.	

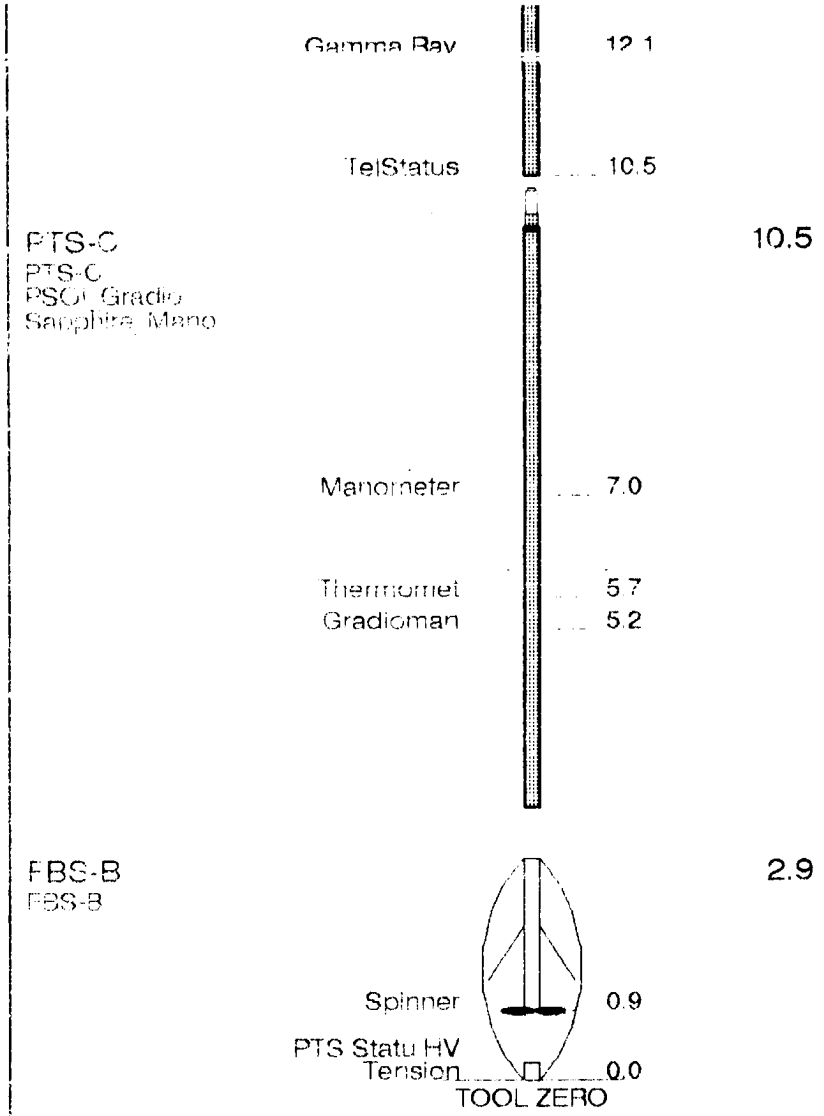
RUN 1			RUN 2		
SERVICE ORDER #:	1276819		SERVICE ORDER #:		
PROGRAM VERSION:	7C0-713		PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

SURFACE EQUIPMENT

ATM-AA
GSR-U/Y

DOWNHOLE EQUIPMENT

CAL-U CAL-U	CCL	21.0	21.7
ATT-B SHR-EB ATC-CB			20.1
	CTEM	15.2	
	Gamma Ray	12.1	



MAXIMUM STRING DIAMETER 1.69 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Schlumberger

SPINNER MERGE

MAXIS 500 Field Log

PLQL Passes Summary

Pass # 1:

Pass # 2:

Pass # 3:

Pass # 4:

Pass # 5:

PLQL Data Manager Files

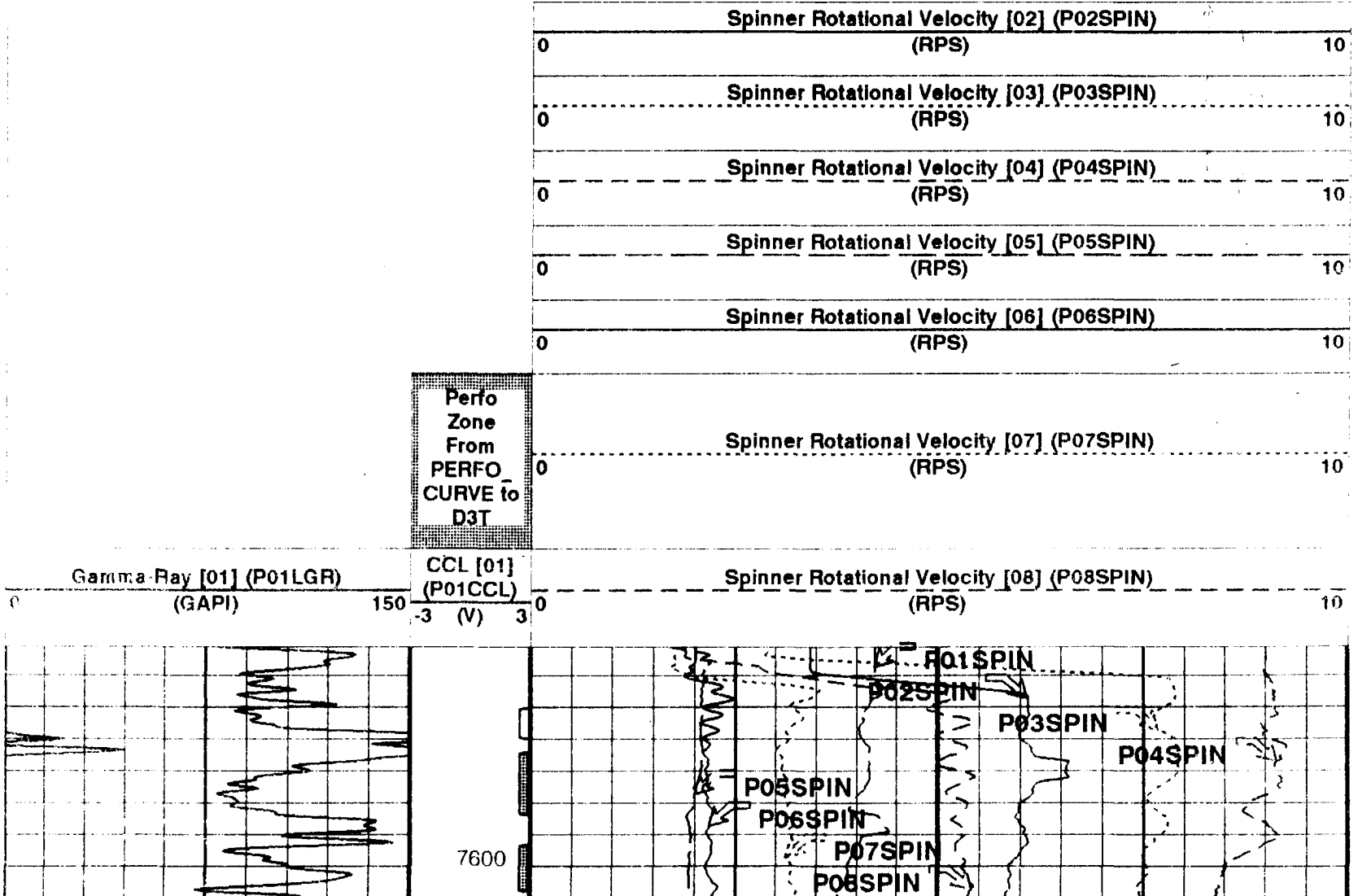
Pass # 1							
	DEFAULT	FBSB .034	FN:27	FIELD	30-DEC-1998 11:51	8359.0 FT	7522.0 FT
Pass # 2							
	DEFAULT	FBSB .035	FN:28	FIELD	30-DEC-1998 11:52	8358.5 FT	7521.5 FT
Pass # 3							
	DEFAULT	FBSB .036	FN:29	FIELD	30-DEC-1998 11:53	8355.0 FT	7516.0 FT
Pass # 4							
	DEFAULT	FBSB .037	FN:30	FIELD	30-DEC-1998 11:54	8353.5 FT	7521.5 FT
Pass # 5							
	DEFAULT	FBSB .038	FN:31	FIELD	30-DEC-1998 11:55	8378.5 FT	7507.5 FT
Pass # 6							
	DEFAULT	FBSB .039	FN:32	FIELD	30-DEC-1998 11:56	8352.5 FT	7518.0 FT
Pass # 7							
	DEFAULT	FBSB .040	FN:33	FIELD	30-DEC-1998 11:57	8353.5 FT	7517.5 FT
Pass # 8							
	DEFAULT	FBSB .041	FN:34	FIELD	30-DEC-1998 11:58	8348.5 FT	7514.5 FT

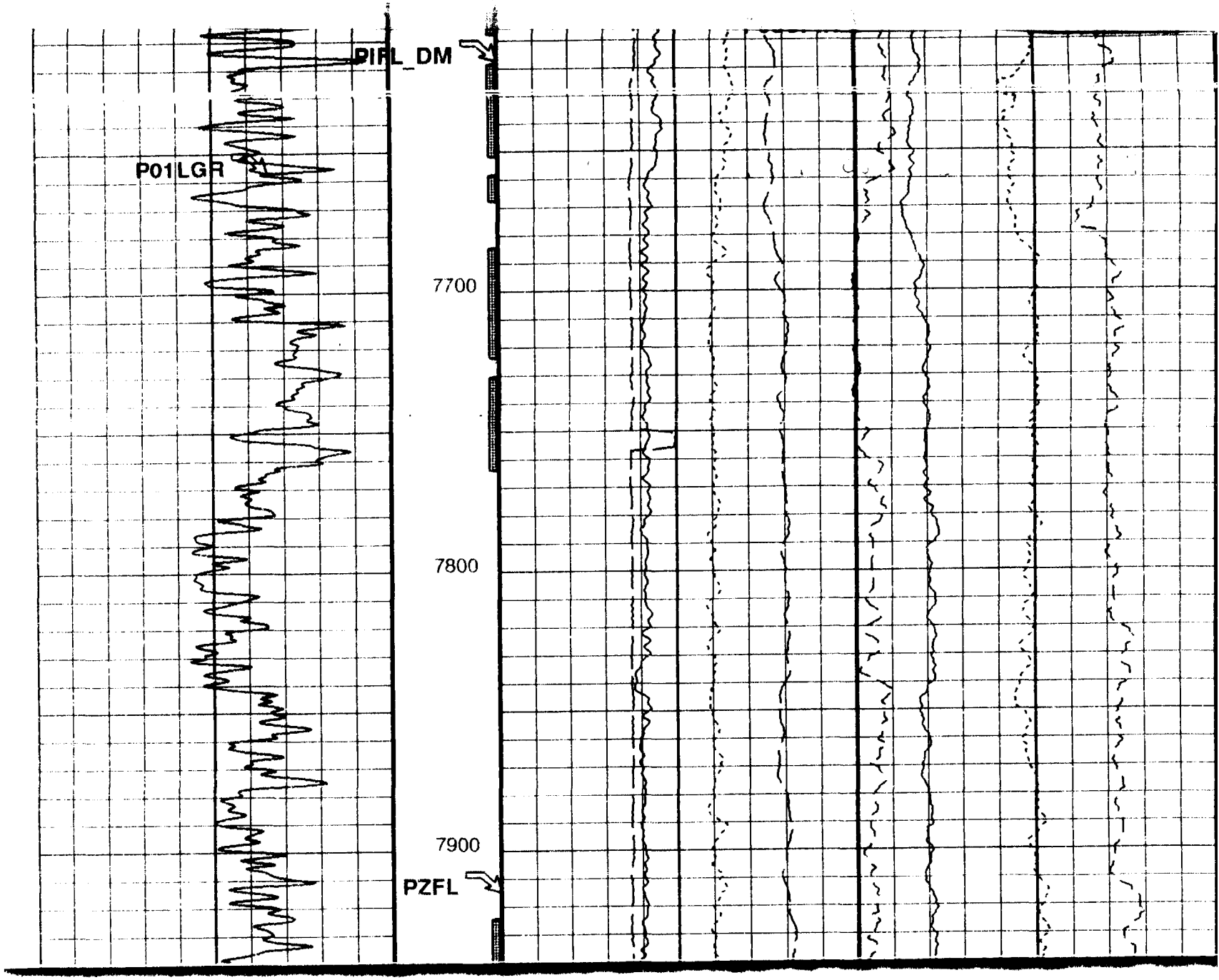
Output DLIS Files

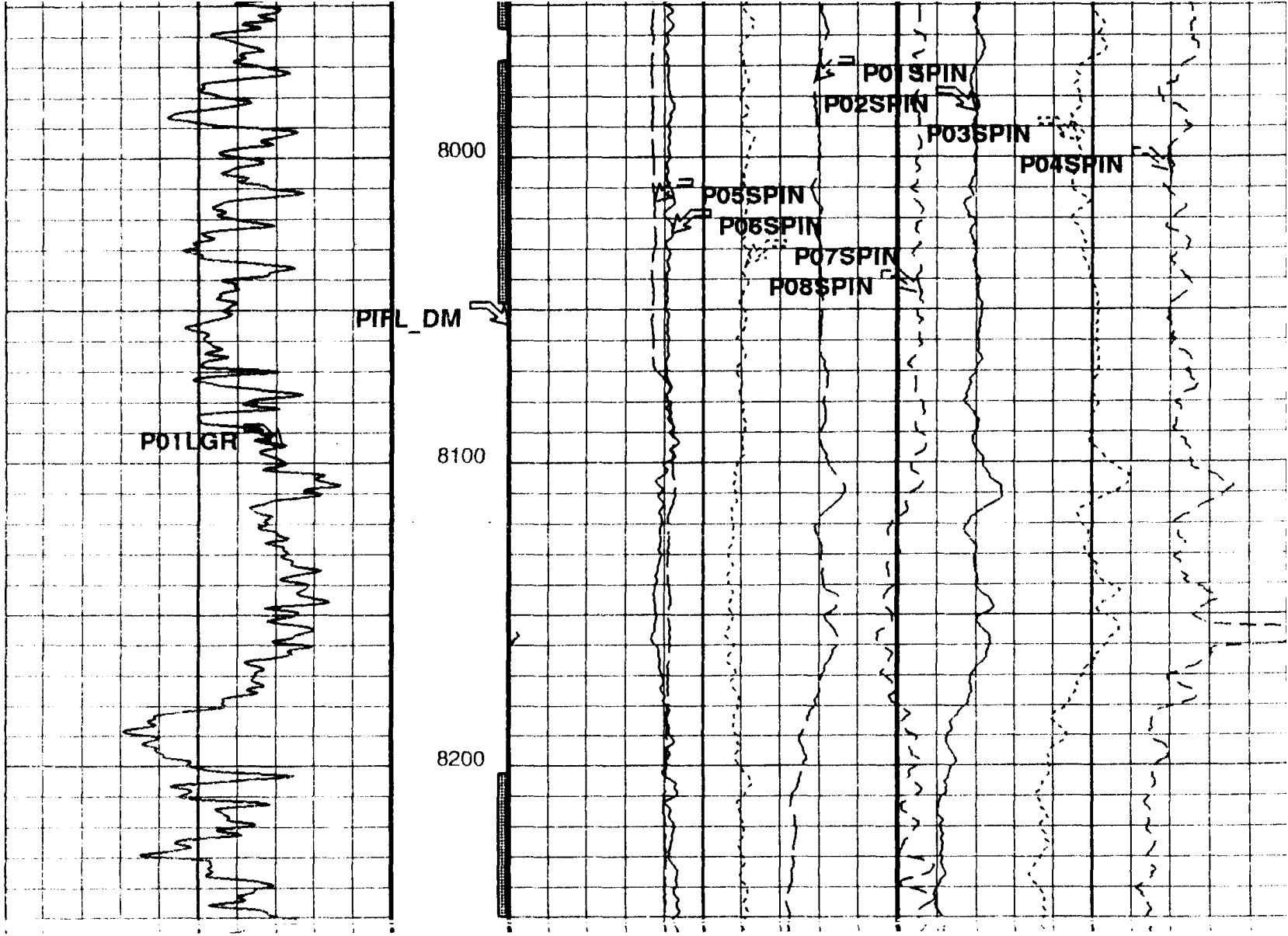
DEFAULT	FBSB .045	FN:37	FIELD	30-DEC-1998 12:12	8348.0 FT	7531.0 FT

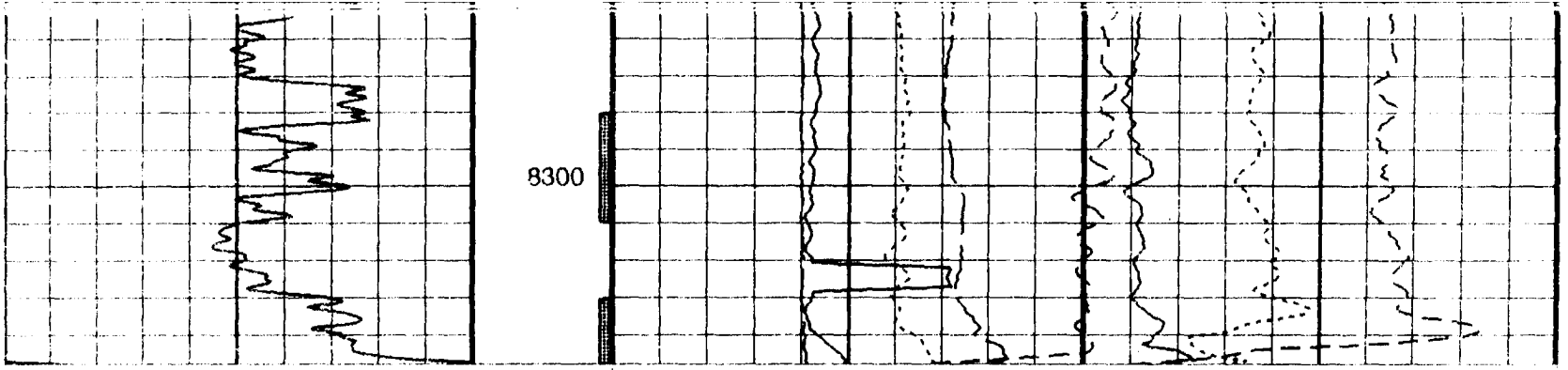
OP System Version: 7C0-713

MBM


Spinner Rotational Velocity [02] (P02SPIN)
0
(RPS)
10
Spinner Rotational Velocity [03] (P03SPIN)
0
(RPS)
10
Spinner Rotational Velocity [04] (P04SPIN)
0
(RPS)
10
Spinner Rotational Velocity [05] (P05SPIN)
0
(RPS)
10
Spinner Rotational Velocity [06] (P06SPIN)
0
(RPS)
10
Perfo Zone From PERFO_CURVE to D3T
Spinner Rotational Velocity [07] (P07SPIN)
0
(RPS)
10
Gamma Ray [01] (P01LGR)
0
(GAPI)
150
CCL [01] (P01CCL)
-3
(V)
3
Spinner Rotational Velocity [08] (P08SPIN)
0
(RPS)
10
P01SPIN
P02SPIN
P03SPIN
P04SPIN
P05SPIN
P06SPIN
P07SPIN
P08SPIN
7600
PIRL_DM


P01LGR
PIRL_DM
7700
7800
7900
PZFL


P01SPIN
P02SPIN
P03SPIN
P04SPIN
P05SPIN
P06SPIN
P07SPIN
P08SPIN
8000
PIRL_DM
P01LGR
8100
8200



Gamma-Ray [01] (P01LGR)
0 (GAPI) 150

CCL [01] (P01CCL)
-3 (V) 3

Perfo Zone From PERFO_ CURVE to D3T

Spinner Rotational Velocity [08] (P08SPIN)
0 (RPS) 10

Spinner Rotational Velocity [07] (P07SPIN)
0 (RPS) 10

Spinner Rotational Velocity [06] (P06SPIN)
0 (RPS) 10

Spinner Rotational Velocity [05] (P05SPIN)
0 (RPS) 10

Spinner Rotational Velocity [04] (P04SPIN)
0 (RPS) 10

Spinner Rotational Velocity [03] (P03SPIN)
0 (RPS) 10

Spinner Rotational Velocity [02] (P02SPIN)
0 (RPS) 10

Spinner Rotational Velocity [01] (P01SPIN)

Parameters

DLIS Name	Description	Value	
CCLS	CCL Selector	CCL	
CSID	Casing Size I.D.	6.5	IN
FCHD	Cased Hole Diameter Selector	PARAMETER	
PGRS	GR Selector	GR	
PGS	Pressure Gauge Selector	PPRE	
RHOS	Fluid Density Selector	PRH	
SPIS	Spinner Selector	SPI1	
TMPS	Temperature Selector	PTEM	

Format: PLQLMultiWithInsertPasses_1 Vertical Scale: 2" per 100' Graphics File Created: 30-DEC-1998 12:12

OP System Version: 7C0-713

MBM

Output DLIS Files

DEFAULT FBSB .045 FN:37 FIELD 30-DEC-1998 12:12

PLQL Passes Summary

Pass # 1:
Pass # 2:
Pass # 3:
Pass # 4:
Pass # 5:
Pass # 6:
Pass # 7:
Pass # 8:

PLQL Data Manager Files

Pass # 1							
	DEFAULT	FBSB .034	FN:27	FIELD	30-DEC-1998 11:51	8359.0 FT	7522.0 FT
Pass # 2							
	DEFAULT	FBSB .035	FN:28	FIELD	30-DEC-1998 11:52	8358.5 FT	7521.5 FT
Pass # 3							
	DEFAULT	FBSB .036	FN:29	FIELD	30-DEC-1998 11:53	8355.0 FT	7516.0 FT
Pass # 4							
	DEFAULT	FBSB .037	FN:30	FIELD	30-DEC-1998 11:54	8353.5 FT	7521.5 FT
Pass # 5							
	DEFAULT	FBSB .038	FN:31	FIELD	30-DEC-1998 11:55	8378.5 FT	7507.5 FT
Pass # 6							
	DEFAULT	FBSB .039	FN:32	FIELD	30-DEC-1998 11:56	8352.5 FT	7518.0 FT
Pass # 7							
	DEFAULT	FBSB .040	FN:33	FIELD	30-DEC-1998 11:57	8353.5 FT	7517.5 FT
Pass # 8							
	DEFAULT	FBSB .041	FN:34	FIELD	30-DEC-1998 11:58	8348.5 FT	7514.5 FT

Output DLIS Files

DEFAULT	FBSB .045	FN:37	FIELD	30-DEC-1998 12:12	8348.0 FT	7531.0 FT

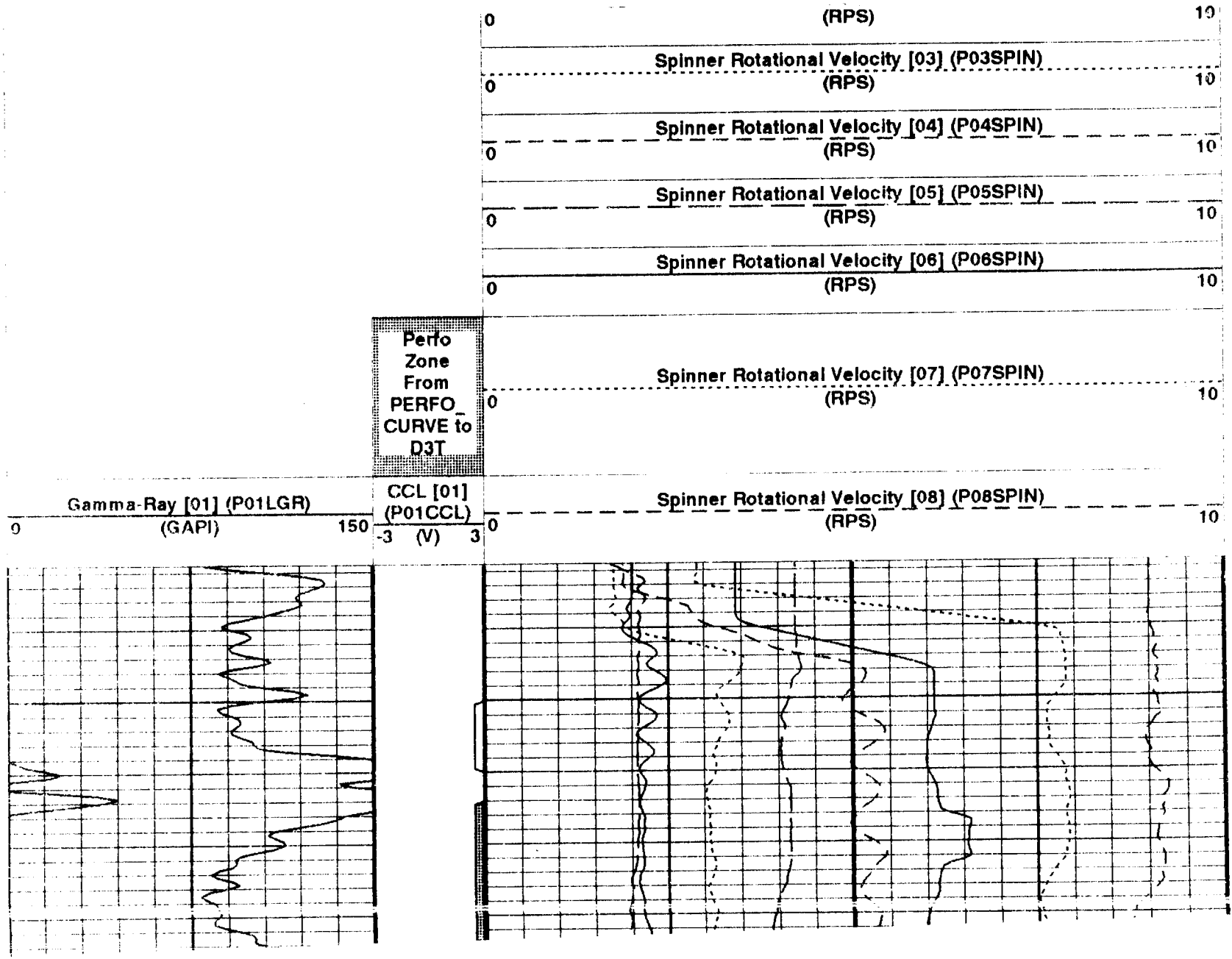
OP System Version: 7C0-713

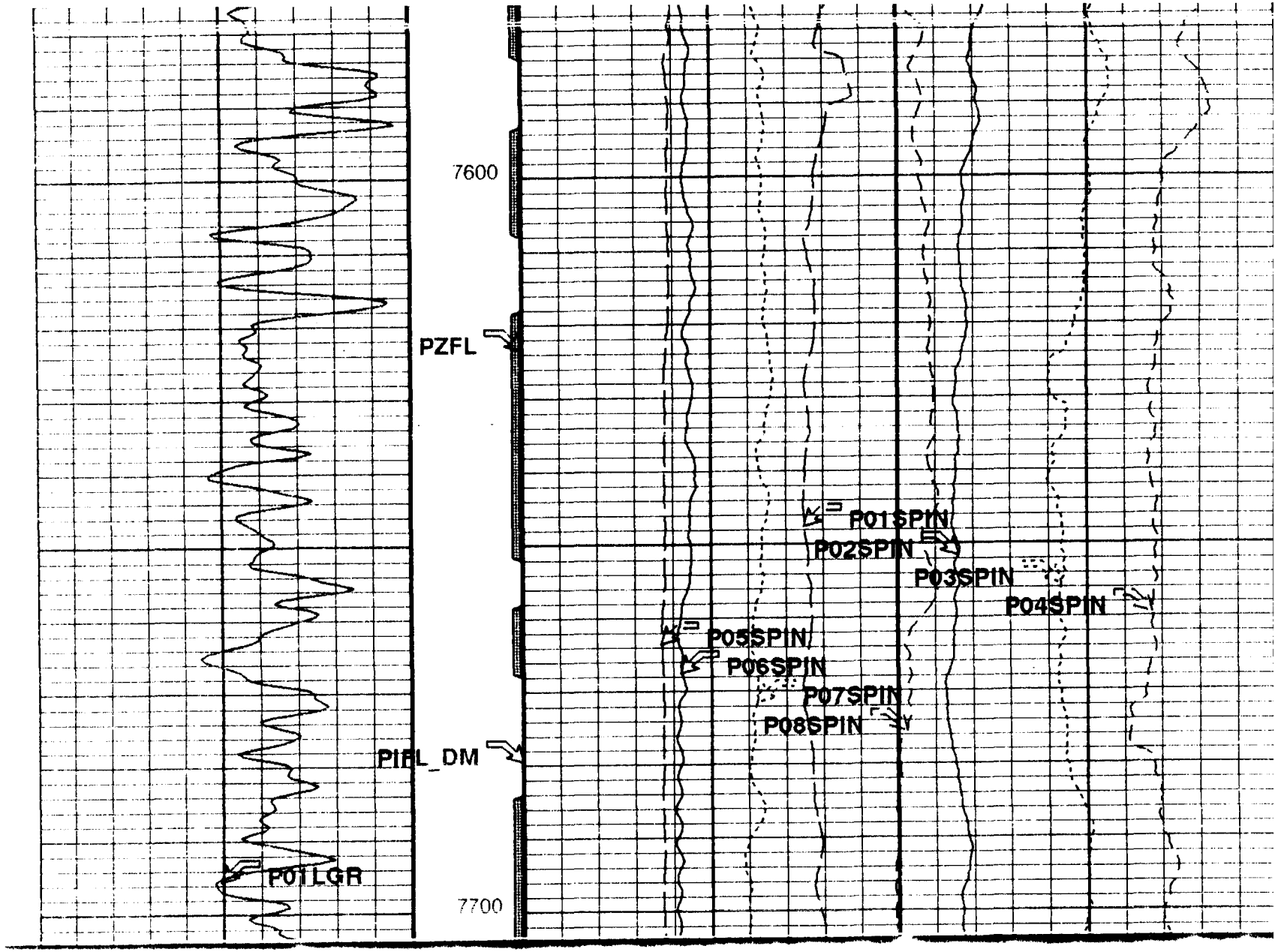
MBM

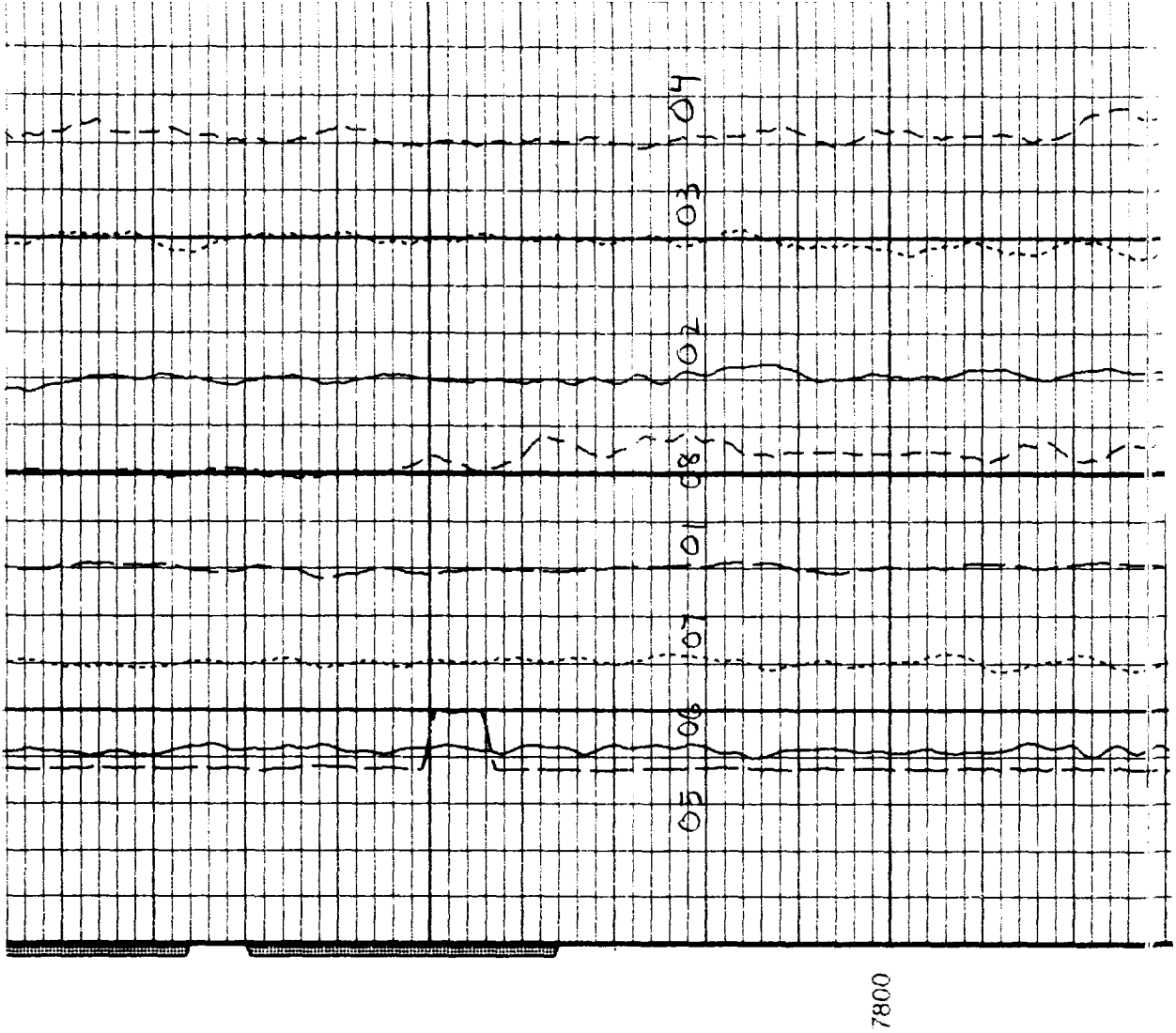
Spinner Rotational Velocity [01] (P01SPIN)

0 (RPS) 10

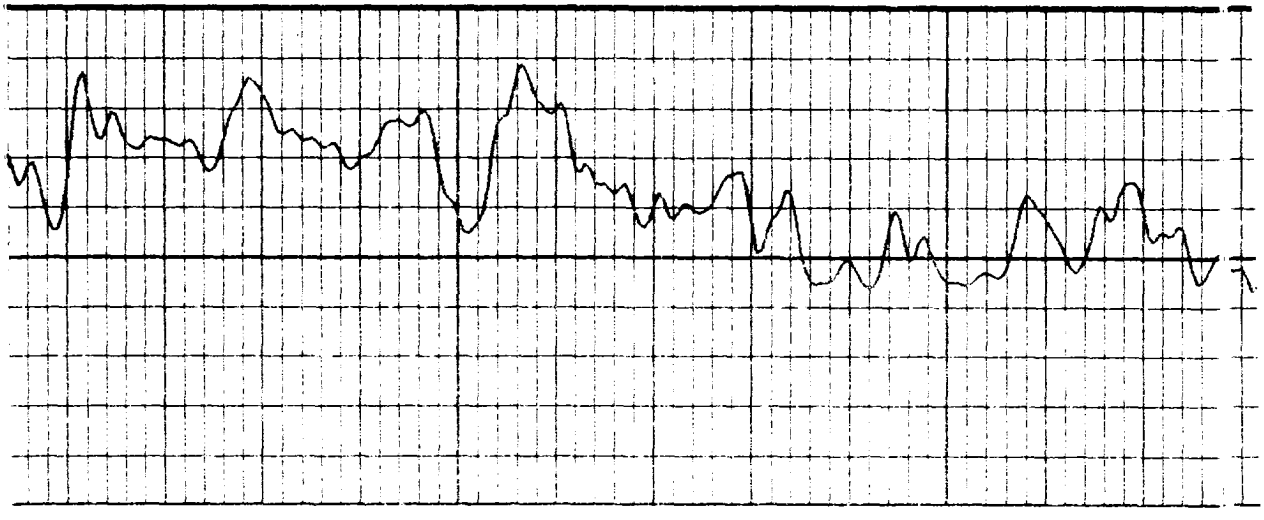
Spinner Rotational Velocity [02] (P02SPIN)

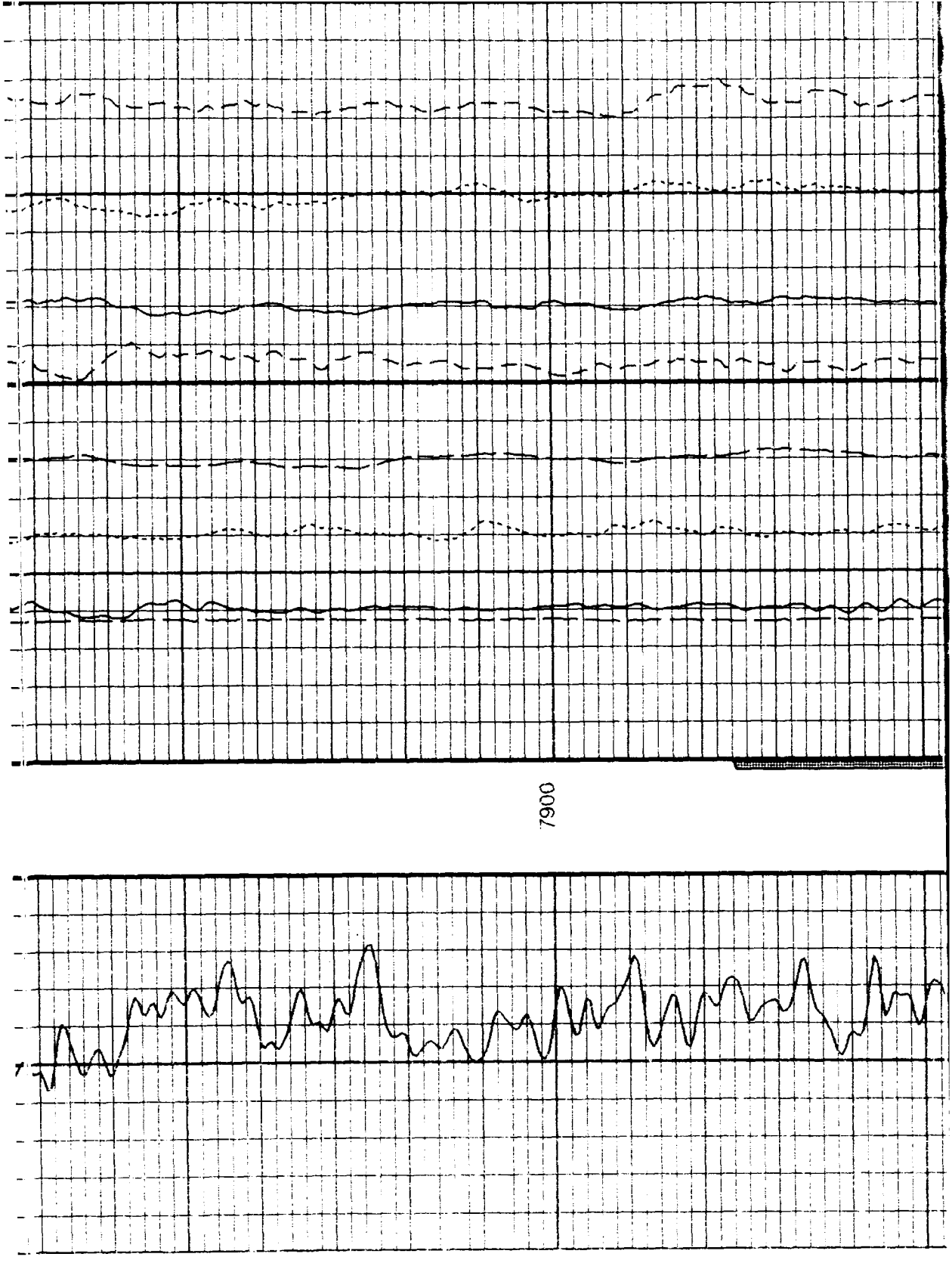

0
(RPS)
10
Spinner Rotational Velocity [03] (P03SPIN)
0
(RPS)
10
Spinner Rotational Velocity [04] (P04SPIN)
0
(RPS)
10
Spinner Rotational Velocity [05] (P05SPIN)
0
(RPS)
10
Spinner Rotational Velocity [06] (P06SPIN)
0
(RPS)
10
Perfo Zone From PERFO_CURVE to D3T
Spinner Rotational Velocity [07] (P07SPIN)
0
(RPS)
10
Gamma-Ray [01] (P01LGR)
0
(GAPI)
150
CCL [01] (P01CCL)
-3
(V)
3
Spinner Rotational Velocity [08] (P08SPIN)
0
(RPS)
10

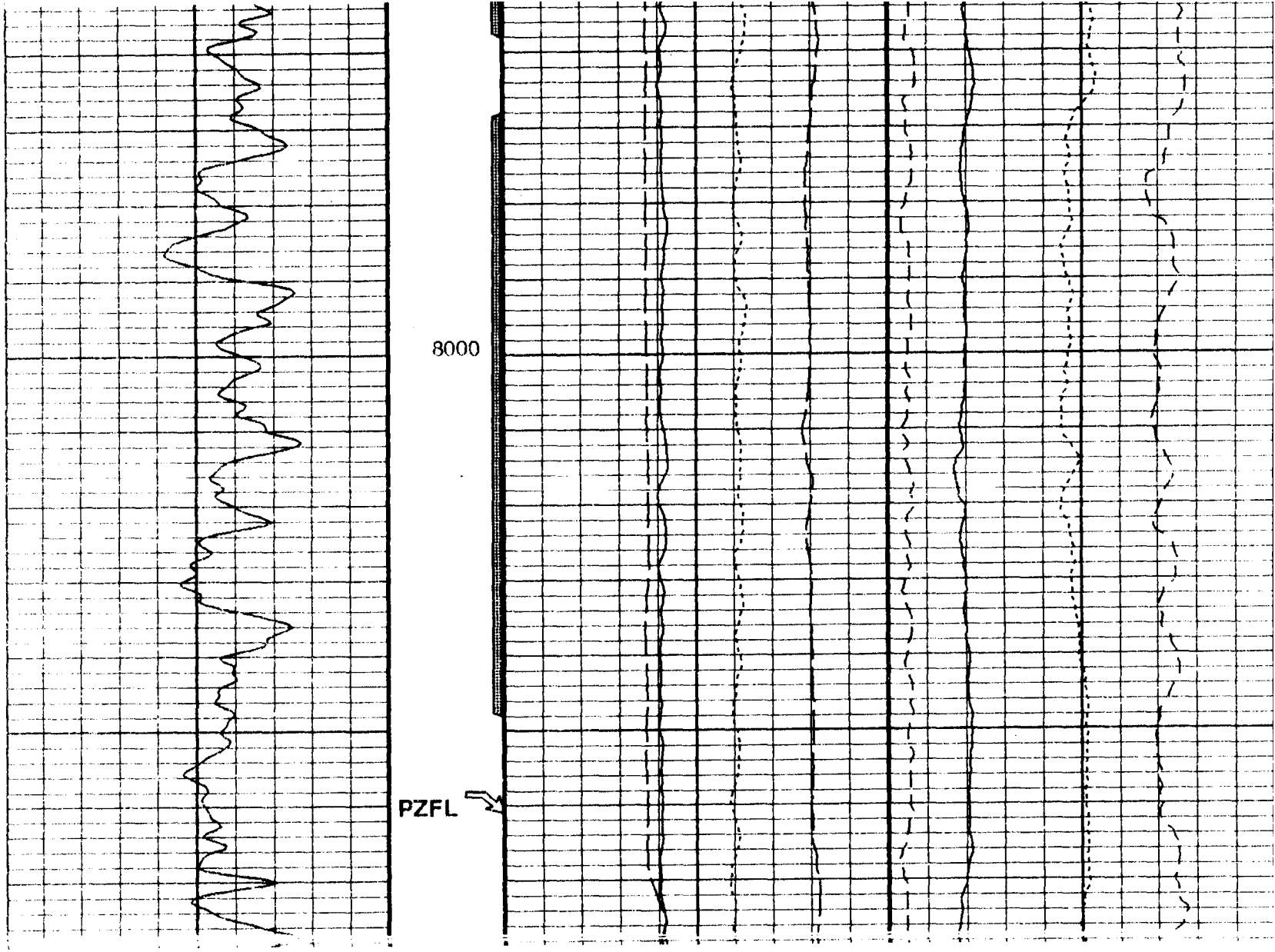

7600
PZFL
P01SPIN
P02SPIN
P03SPIN
P04SPIN
P05SPIN
P06SPIN
P07SPIN
P08SPIN
PIRL_DM
P01LGR
7700

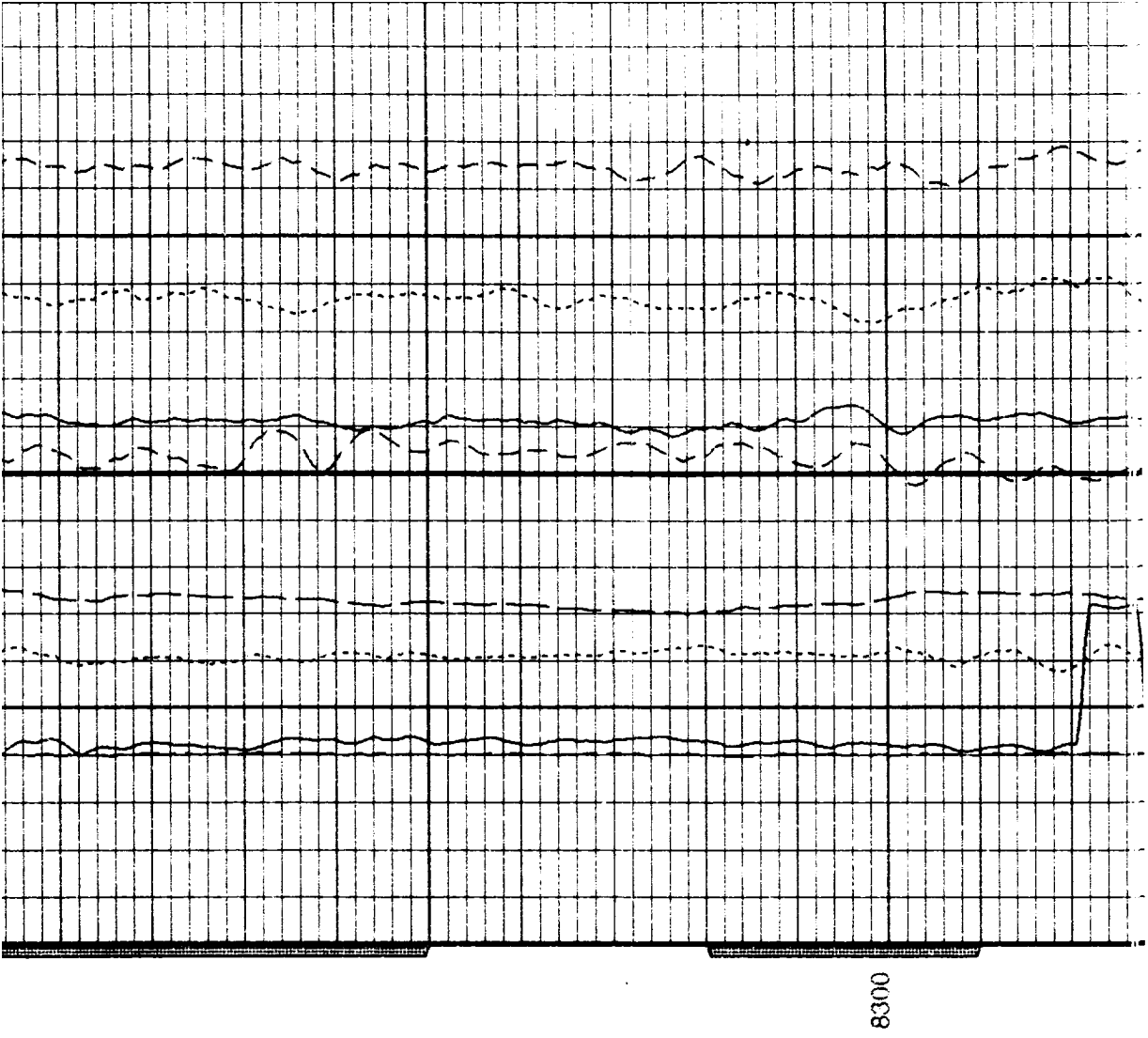


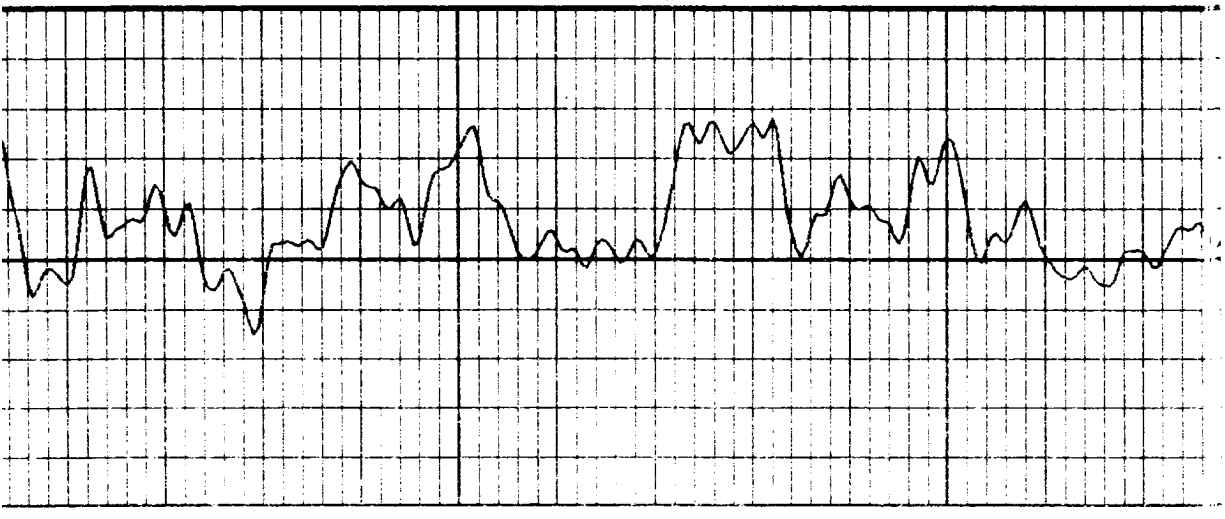
7800

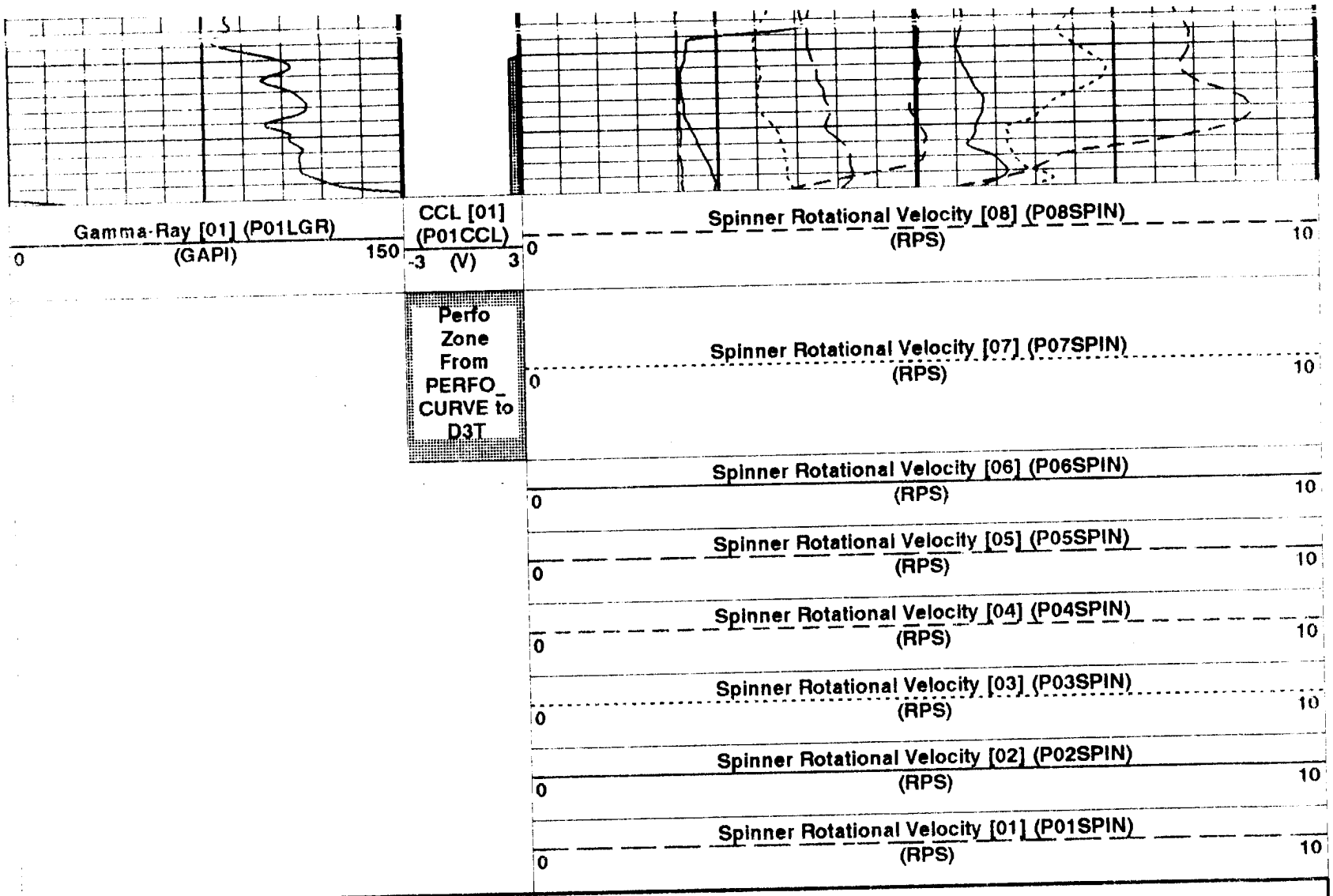



7900


8000
PZFL


8300





Parameters

DLIS Name	Description	Value

CCLS	CCL Selector	CCL	
CSID	Casing Size I.D.	6.5	IN
FCHD	Cased Hole Diameter Selector	PARAMETER	
PGRS	GR Selector	GR	
PGS	Pressure Gauge Selector	PPRE	
RHOS	Fluid Density Selector	PRH	
SPIS	Spinner Selector	SPI1	
TMPS	Temperature Selector	PTEM	

Format: PLQLMultiWithInsertPasses Vertical Scale: 5" per 100' Graphics File Created: 30-DEC-1998 12:12

OP System Version: 7C0-713

MBM

Output DLIS Files

DEFAULT FBSB .045 FN:37 FIELD 30-DEC-1998 12:12

Schlumberger

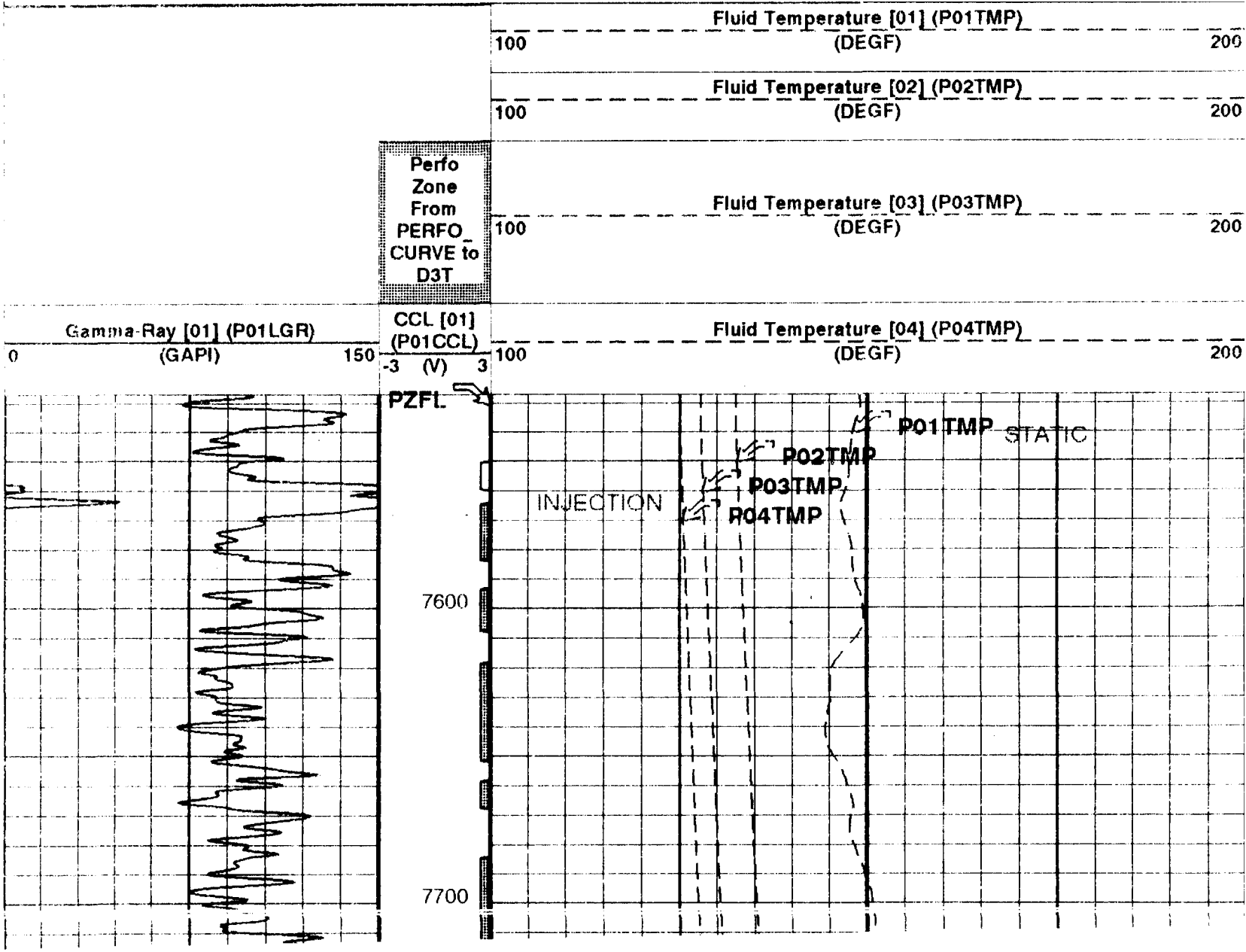
SPINNER MERGE

MAXIS 500 Field Log

Schlumberger

TEMPERATURE MERGE

MAXIS 500 Field Log


Fluid Temperature [01] (P01TMP)
100
(DEGF)
200
Fluid Temperature [02] (P02TMP)
100
(DEGF)
200
Perfo Zone From PERFO_ CURVE to D3T
Fluid Temperature [03] (P03TMP)
100
(DEGF)
200
Gamma-Ray [01] (P01LGR)
0
(GAPI)
150
CCL [01] (P01CCL)
-3
(V)
3
Fluid Temperature [04] (P04TMP)
100
(DEGF)
200
PZFL
P01TMP STATIC
P02TMP
P03TMP
P04TMP
INJECTION
7600
7700

PLQL Passes Summary

Pass # 1:
Pass # 2:
Pass # 3:
Pass # 4:

PLQL Data Manager Files

Pass # 1							
	DEFAULT	FBSB .038	FN:31	FIELD	30-DEC-1998 11:55	8378.5 FT	7507.5 FT
Pass # 2							
	DEFAULT	FBSB .039	FN:32	FIELD	30-DEC-1998 11:56	8352.5 FT	7518.0 FT
Pass # 3							
	DEFAULT	FBSB .040	FN:33	FIELD	30-DEC-1998 11:57	8353.5 FT	7517.5 FT
Pass # 4							
	DEFAULT	FBSB .041	FN:34	FIELD	30-DEC-1998 11:58	8348.5 FT	7514.5 FT

Output DLIS Files

DEFAULT	FBSB .047	FN:39	FIELD	30-DEC-1998 12:19	8348.0 FT	7527.0 FT

OP System Version: 7C0-713

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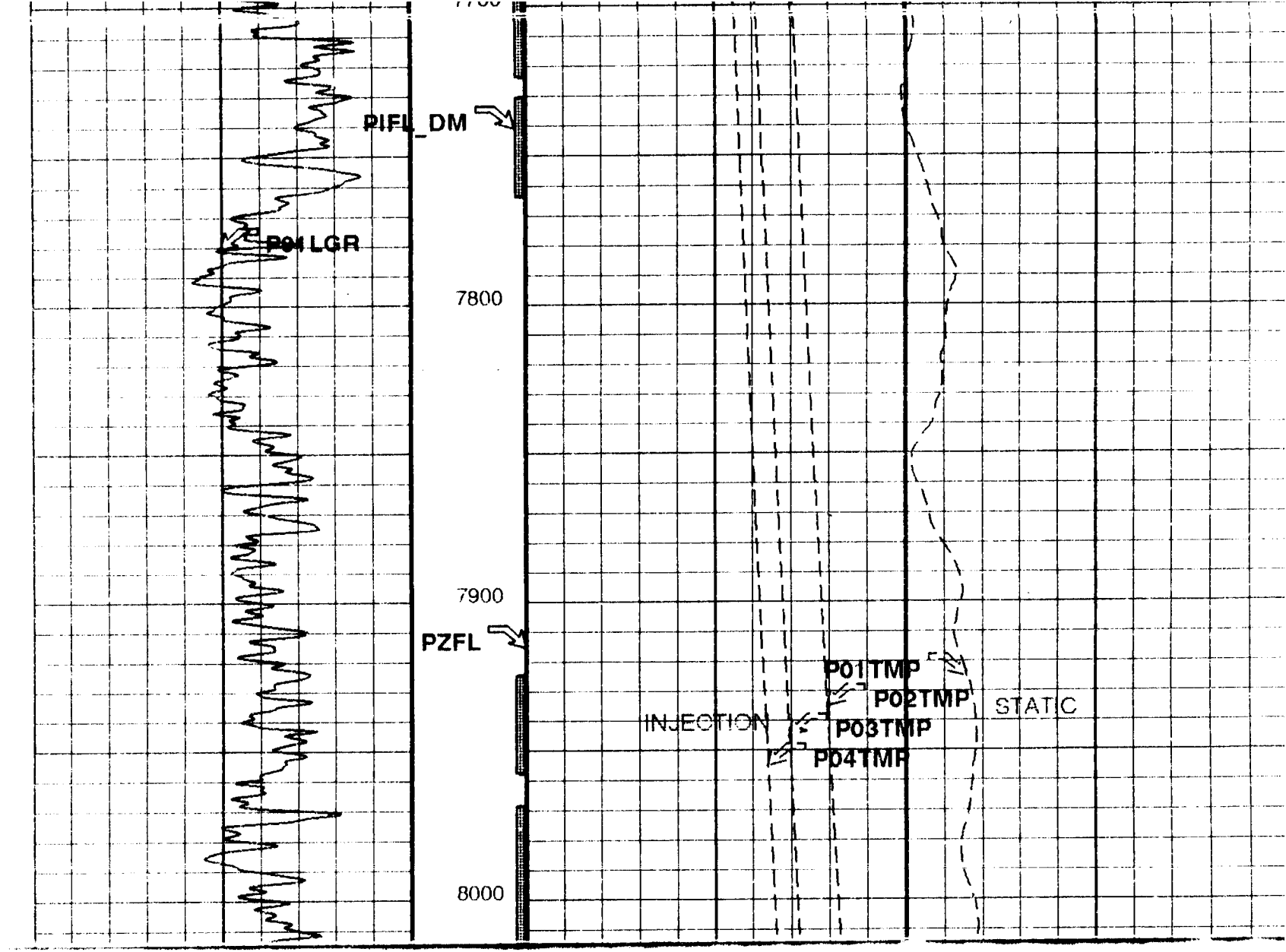
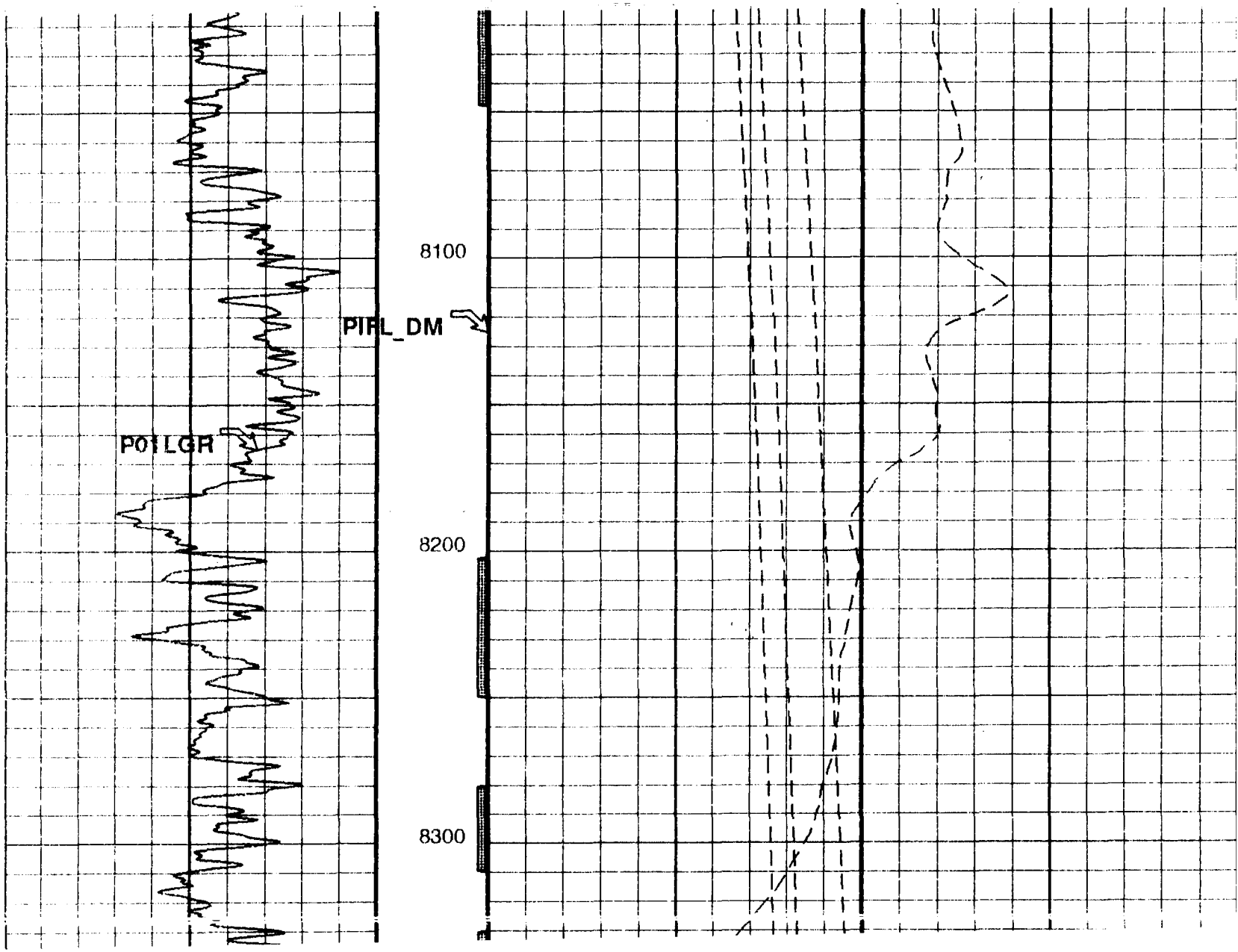

PIFL_DM
P04 LGR
7800
7900
PZFL
P01TMP
P02TMP
P03TMP
P04TMP
INJECTION
STATIC
8000


8100
PIRL_DM
P01LGR
8200
8300

Schlumberger

TEMPERATURE MERGE

MAXIS 500 Field Log

Schlumberger

STATIC PASS

MAXIS 500 Field Log

Input DLIS Files

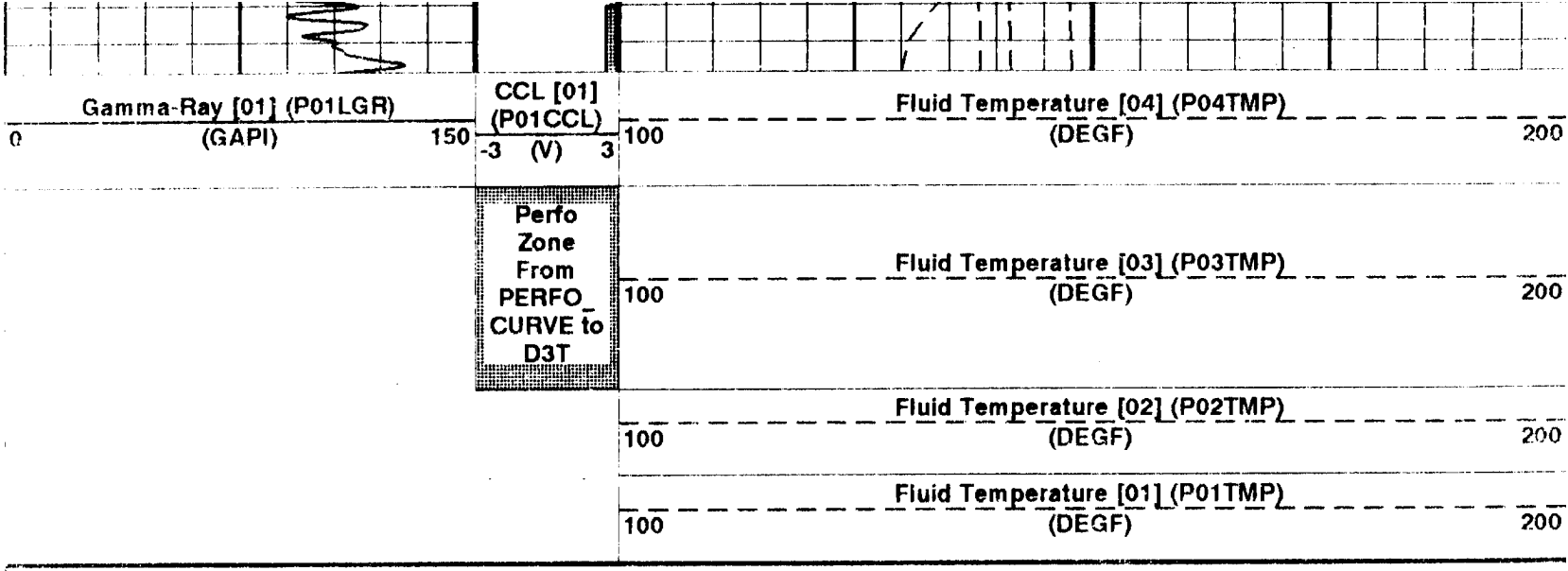
DEFAULT	FBSB .028		FIELD	30-DEC-1998 11:18	8378.5 FT	7507.5 FT

Output DLIS Files

DEFAULT	FBSB .029	FN:24	FIELD	30-DEC-1998 11:21	8378.5 FT	7507.5 FT

OP System Version: 7C0-713

MBM



Parameters

DLIS Name	Description	Value	
CCLS	CCL Selector	CCL	
CSID	Casing Size I.D.	6.5	IN
FCHD	Cased Hole Diameter Selector	PARAMETER	
PGRS	GR Selector	GR	
PGS	Pressure Gauge Selector	PPRE	
RHOS	Fluid Density Selector	PRH	
SPIS	Spinner Selector	SPI1	
TMPS	Temperature Selector	PTEM	

Format: PLQLMultiWithInsertPasses_1 Vertical Scale: 2" per 100' Graphics File Created: 30-DEC-1998 12:19

OP System Version: 7C0-713

MBM

Output DLIS Files

DEFAULT FBSB_047 FN:39 FIELD 30-DEC-1998 12:19

PIP SUMMARY

Time Mark Every 60 S

CCL
From CCL to T1

PERFs
From
PLQL/PER
FO_
INTERVAL
/CV to
D3T

Casing Collar Locator (CCL)
-19 (----) 1

Filtered Auxiliary Spinner 1 (SPI1)
0 (RPS) 10

Gamma Ray (GR)
0 (GAPI) 150

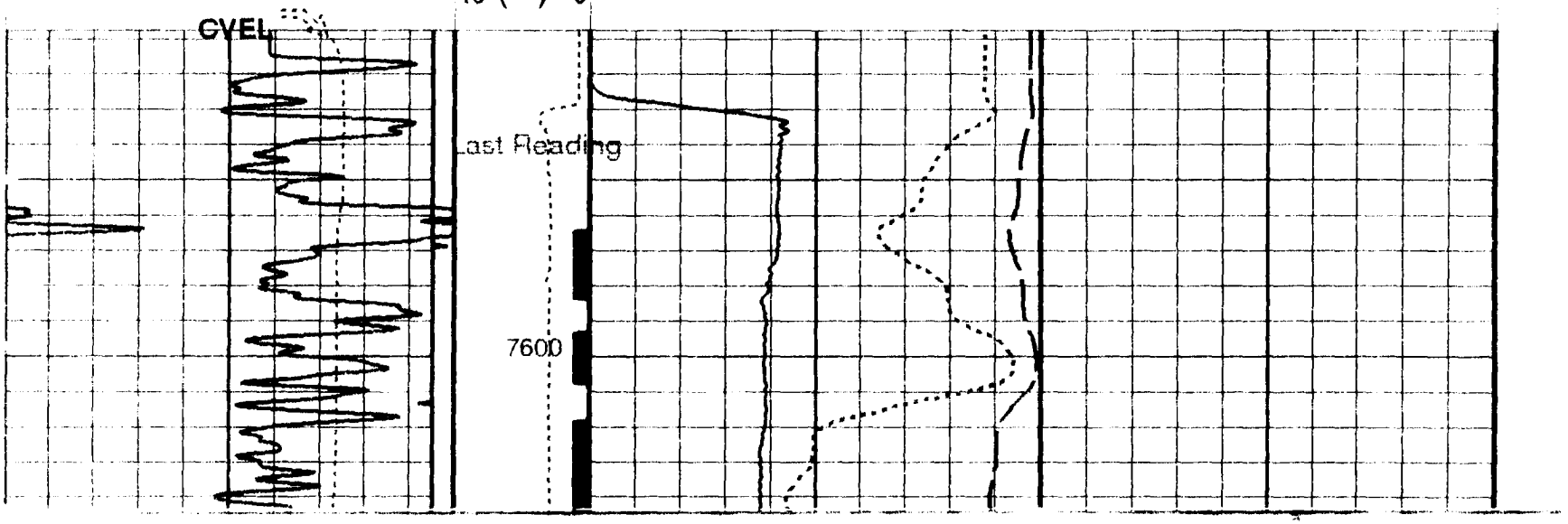
Tension
(TENS)
(LBF)
0 1000

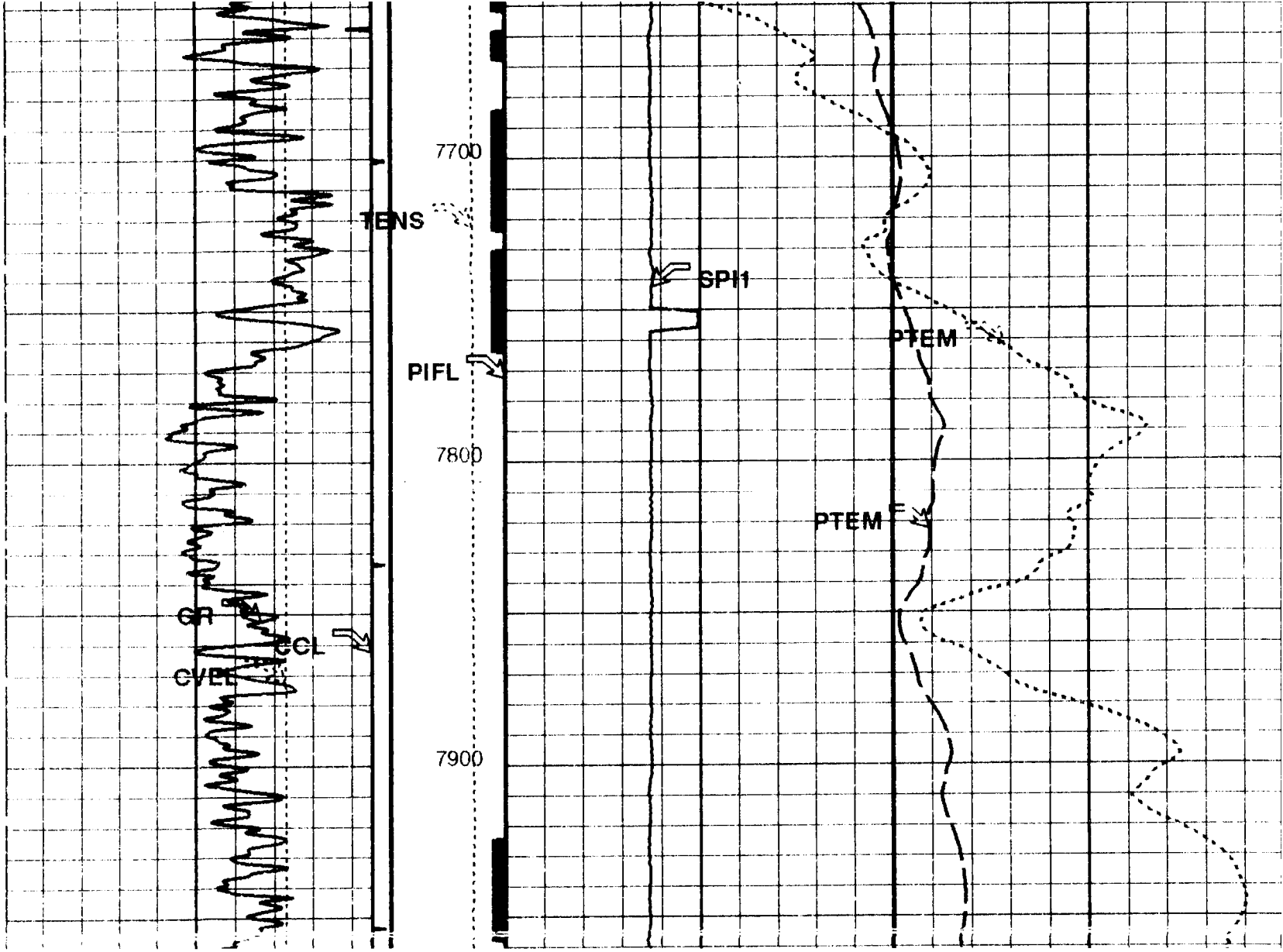
Well Temperature (PTEM)
0 (DEGF) 20

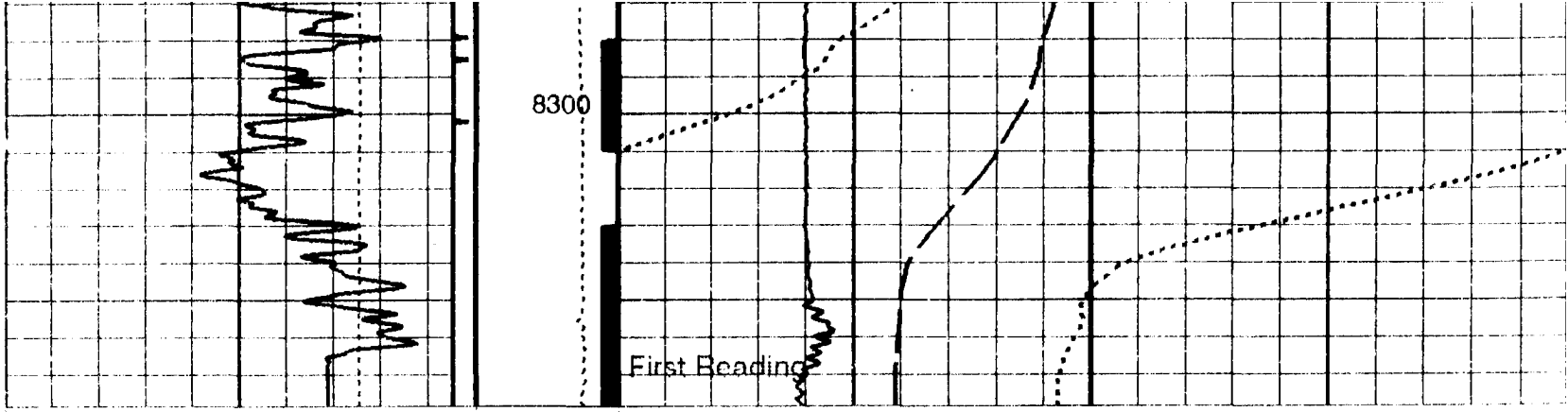
Cable Velocity (CVEL)
-100 (F/MN) 100

Perfo Zone
(PIFL)
16 (----) 0

Well Temperature (PTEM)
100 (DEGF) 200




7700
TENS
SPI1
PTEM
PIFL
7800
PTEM
GR
CCL
CVR
7900



Cable Velocity (CVEL) -100 (F/MN) 100	Perfo Zone (PIFL) 16 (----) 0	Well Temperature (PTEM) 100 (DEGF) 200
Gamma Ray (GR) 0 (GAPI) 150	Tension (TENS) (LBF) 0 1000	Well Temperature (PTEM) 0 (DEGF) 20
Casing Collar Locator (CCL) -19 (----) 1	PERFs From PLQL/PERFO_INTERVAL /CV to D3T	Filtered Auxiliary Spinner 1 (SPI1) 0 (RPS) 10
CCL From CCL to T1		

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value

DLIS Name	Description	Value	
AMOD	Spinner Filter Averaging Mode	LINEAR_AVERAGE	
CCLD	CCL reset delay	12	IN
CCLT	CCL detection level	0.3	V
DO	Depth Offset	0.0	FT
PP	Playback Processing	NORMAL	
SDCF	Spinner Depth Constant Filter	6	
SPI1	Auxiliary Spinner 1 Flowmeter Sonde	FBS-B	

Format: PLT_1 Vertical Scale: 2" per 100' Graphics File Created: 30-DEC-1998 11:21

OP System Version: 7C0-713
MBM

Input DLIS Files

DEFAULT	FBSB .028		FIELD	30-DEC-1998 11:18	8378.5 FT	7507.5 FT

Output DLIS Files

DEFAULT	FBSB .029	FN:24	FIELD	30-DEC-1998 11:21		

Schlumberger

STATIC PASS

MAXIS 500 Field Log

Schlumberger

STATION SUMMARY

Schlumberger PLQL SPL Table Summary

Station	Status	Depth (FT)	Diameter (IN)	Fluid Density (G/C3)	Pressure (PSIA)	Temperature (DEGF)	Spinner (RPS)
0	YES	7538.1	6.50	1.927	4751.7	122.7	1.9
1	YES	7615.0	6.50	1.725	4788.7	123.3	1.4
2	YES	7675.1	6.50	1.815	4819.2	123.6	1.4
3	YES	7725.8	6.50	1.769	4843.6	123.8	1.5
4	YES	7850.1	6.50	1.920	4897.1	125.4	1.5
5	YES	7964.8	6.50	1.823	4948.7	127.0	1.5
6	YES	8130.0	6.50	1.775	5021.7	129.6	1.6
7	YES	8270.1	6.50	1.487	5084.8	131.1	1.3
8	YES	8320.0	6.50	1.829	5109.4	131.3	1.3
9	YES	8349.9	6.50	1.472	5121.5	131.0	1.0
10	YES	8374.8	6.50	1.474	5128.9	130.8	0.5

Schlumberger

STATION SUMMARY

MAXIS 500 Field Log

Schlumberger

PACKER LOG

MAXIS 500 Field Log

Input DLIS Files

DEFAULT	FBSB	.026	FN:23	FIELD	29-DEC-1998 16:10	7592.0 FT	7278.5 FT

Output DLIS Files

DEFAULT	FBSB	.042	FN:35	FIELD	30-DEC-1998 12:00	7595.0 FT	7281.5 FT

OP System Version: 7C0-713

PIP SUMMARY

Time Mark Every 60 S

CCL
From CCL to T1

Casing Collar Locator (CCL)
-19 (----) 1

PERFs From PLQL/PERFO_INTERVAL /CV to D3T

Filtered Auxiliary Spinner 1 (SPI1)
0 (RPS) 10

Gamma Ray (GR)
0 (GAPI) 150

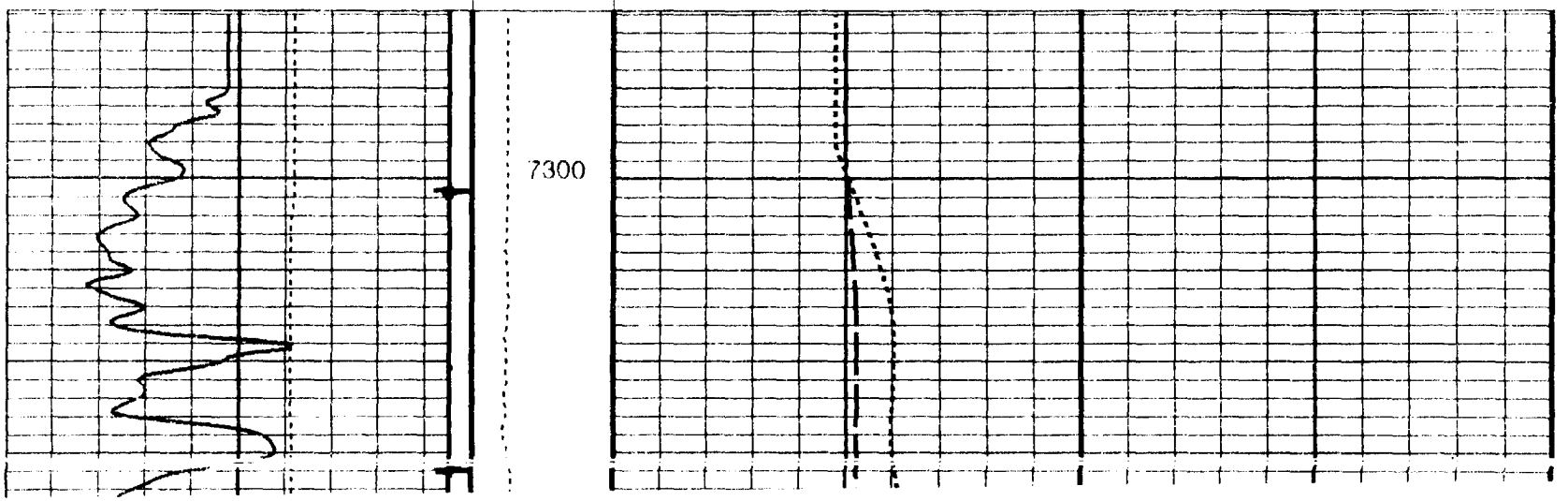
Tension (TENS)
(LBF)
0 1000

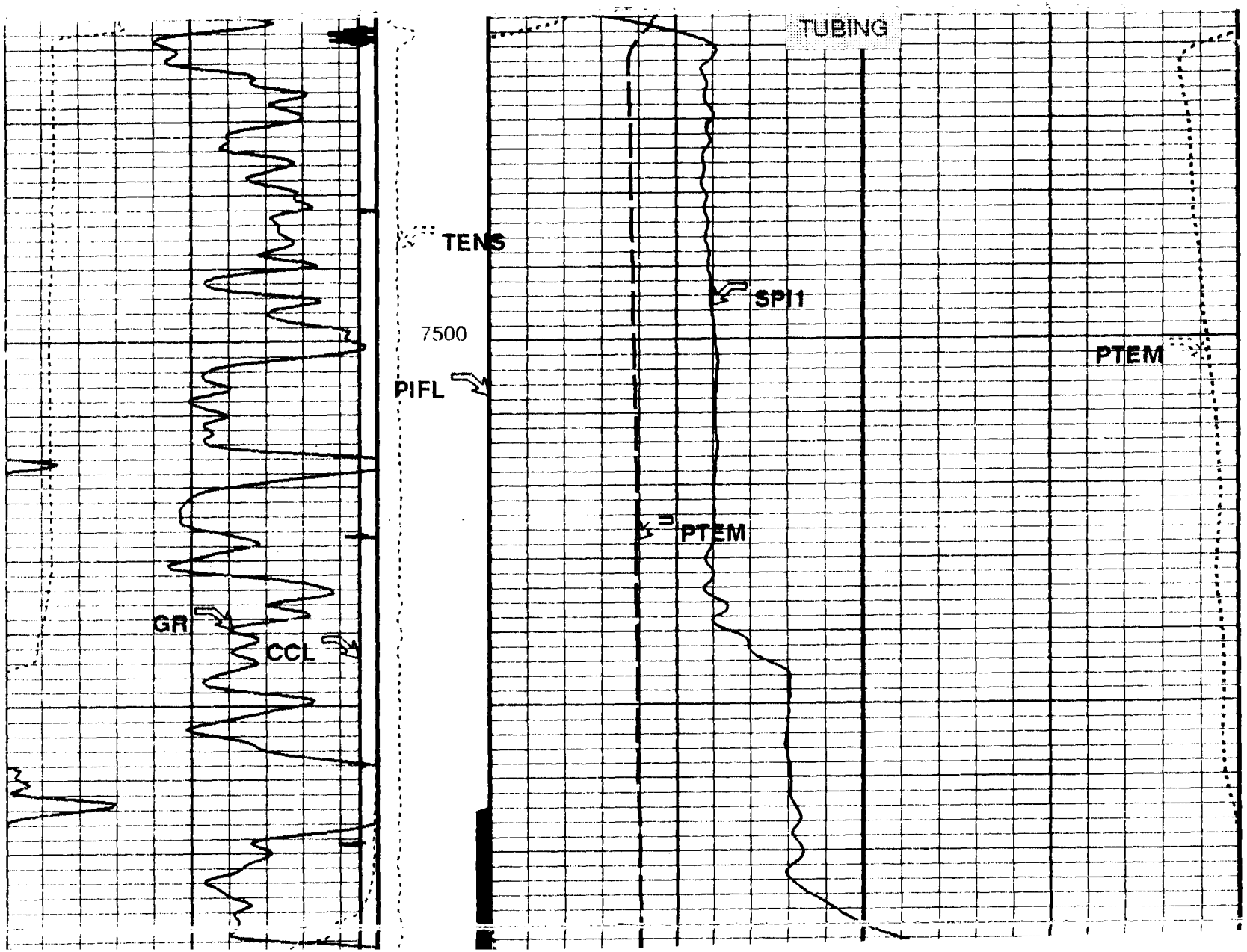
Well Temperature (PTEM)
0 (DEGF) 20

Cable Velocity (CVEL)
-100 (F/MN) 100

Perfo Zone (PIFL)
16 (----) 0

Well Temperature (PTEM)
100 (DEGF) 200




TUBING
TENS
SPI1
7500
PTEM
PIFL
PTEM
GR
CCL

OP System Version: 7C0-713
MBM

Input DLIS Files

DEFAULT	FBSB .026	FN:23	FIELD	29-DEC-1998 16:10	7592.0 FT	7278.5 FT

Output DLIS Files

DEFAULT	FBSB .042	FN:35	FIELD	30-DEC-1998 12:00

Schlumberger

PACKER LOG

MAXIS 500 Field Log

COMPANY: AMOCO PRODUCTION

WELL: E.E. ELLIOTT SWD #1
FIELD: ENTRADA
COUNTY: SAN JUAN
STATE: NEW MEXICO

BOTTOM LOG INTERVAL	8350 F
SCHLUMBERGER DEPTH	8392 F
DEPTH DRILLER	8432 F
KELLY BUSHING	5978 F
DRILL FLOOR	
GROUND LEVEL	5956 F

Schlumberger

PRODUCTION LOG
FULLBORE SPINNER
TEMPERATURE