

Company: Esso Australia Pty Ltd.

Well: A-23 a
Field: Flounder
Rig: Crane / Prod#4

Country: Australia

Crane / Prod#4
Flounder
Gippsland
A-23 a
Esso Australia Pty Ltd.

RST-A
Sigma
Survey

LOCATION			
Gippsland	Elev.:	K.B.	33.2 m
Basin		G.L.	-94 m
Bass Strait		D.F.	33.2 m
Permanent Datum:	M.S.L.	Elev.:	0 m
Log Measured From:	D.F.	33.2 m	above Perm. Datum
Drilling Measured From:	D.F.		

State: Victoria	Max. Well Deviation 49 deg	Longitude 148°06'15.1"E	Latitude 38°18'45.2"S
--------------------	-------------------------------	----------------------------	--------------------------

Logging Date

14-Feb-2007

Run Number

One

Depth Driller

3167 m

Schlumberger Depth

3166 m

Bottom Log Interval

3166 m

Top Log Interval

3120 m

Casing Fluid Type

Production Fluid

Salinity

Density

Fluid Level

BIT/CASING/TUBING STRING

Bit Size

9.875 in

From

To

Casing/Tubing Size

7.658 in

Weight

29.7 lbm/ft

Grade

L-80

From

16.68 m

To

3501 m

Maximum Recorded Temperatures

231 degF

Logger On Bottom

14-Feb-2007

Unit Number

889

Recorded By

S Gilbert, G Wright.

Witnessed By

B White, B Robinson.

Run 1

Oil Density
Water Salinity
Gas Gravity
Bo

PVT DATA

Bw
1/Bg
Bubble Point Pressure
Bubble Point Temperature

Solution GOR

Maximum Deviation

49 deg

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

Unit Number

Recorded By

Witnessed By

DEPTH SUMMARY LISTING

Date Created: 14-FEB-2007 11:27:21

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-EB	Type:	CMTD-B/A	Type:	2-32ZT
Serial Number:	6373	Serial Number:	325357	Serial Number:	24425
Calibration Date:	04-Jan-2007	Calibration Date:	6-FEB-2007	Length:	6600.14 M
Calibrator Serial Number:	9	Calibrator Serial Number:	1174	Conveyance Method: Wireline Rig Type: Offshore_Mobile	
Calibration Cable Type:	2-32ZT	Calibration Gain:	0.90		
Wheel Correction 1:	-2	Calibration Offset:	197.00		
Wheel Correction 2:	-4				

Depth Control Parameters

Log Sequence:	Subsequent Log In the Well
Reference Log Name:	Solar Compersite Log
Reference Log Run Number:	
Reference Log Date:	14-Mar-2005

Depth Control Remarks

1. IDW used as primary depth control
2. Z Chart used as secondary depth control
3.
4.
5.
6.

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
OS1: 2 1/8 Enerjet
OS2: Perforation
OS3: 7 5/8 Mpbtp Plug.
OS4:
OS5:
REMARKS: RUN NUMBER 1
Log Correlated to Solar composited log provided by client .
Objectives : Conduct an RST-A Sigma log from HUD 3170m to 3120m MDKB
making 2 Passes at 900ft/hr with the well shut in .
Maximum Deviation : 49 deg @ 3169m MDKB
Pass # 1 is GR survey From HUD to 3120m MDKB (minitron off)
Pass # 2 and Pass # 3 are RST Sigma Surveys from HUD to 3120m MDKB
SBHP: 3164 psia,SBHT:229 degf.

Crew : J Annear , B Flynn (Days)
P Laurence , L Dooley (Nights)

```

RUN 1
SERVICE ORDER #:      AUSL07336256
PROGRAM VERSION:       14C0-302
FLUID LEVEL:           0 m

```

LOGGED INTERVAL	START	STOP
-----------------	-------	------

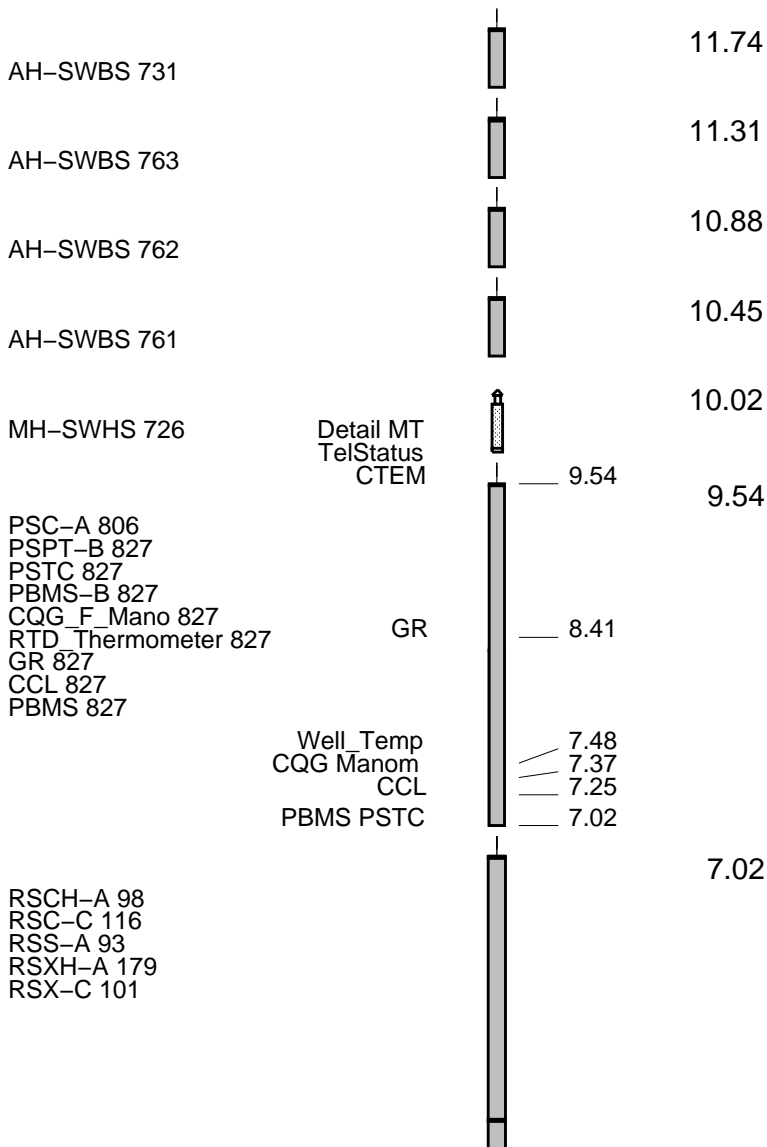
[illegible]

RUN 1

SURFACE EQUIPMENT

WITM-A 806
PSC_16MHZ 827

DOWNHOLE EQUIPMENT

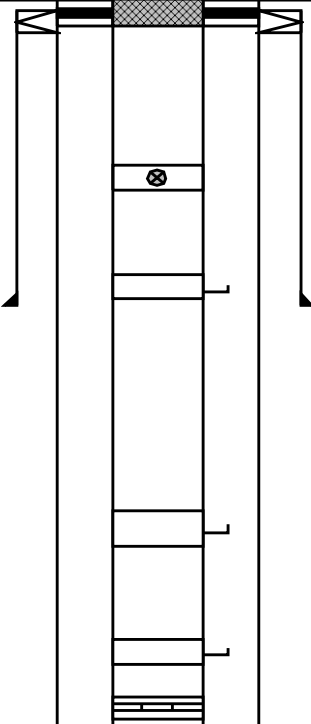


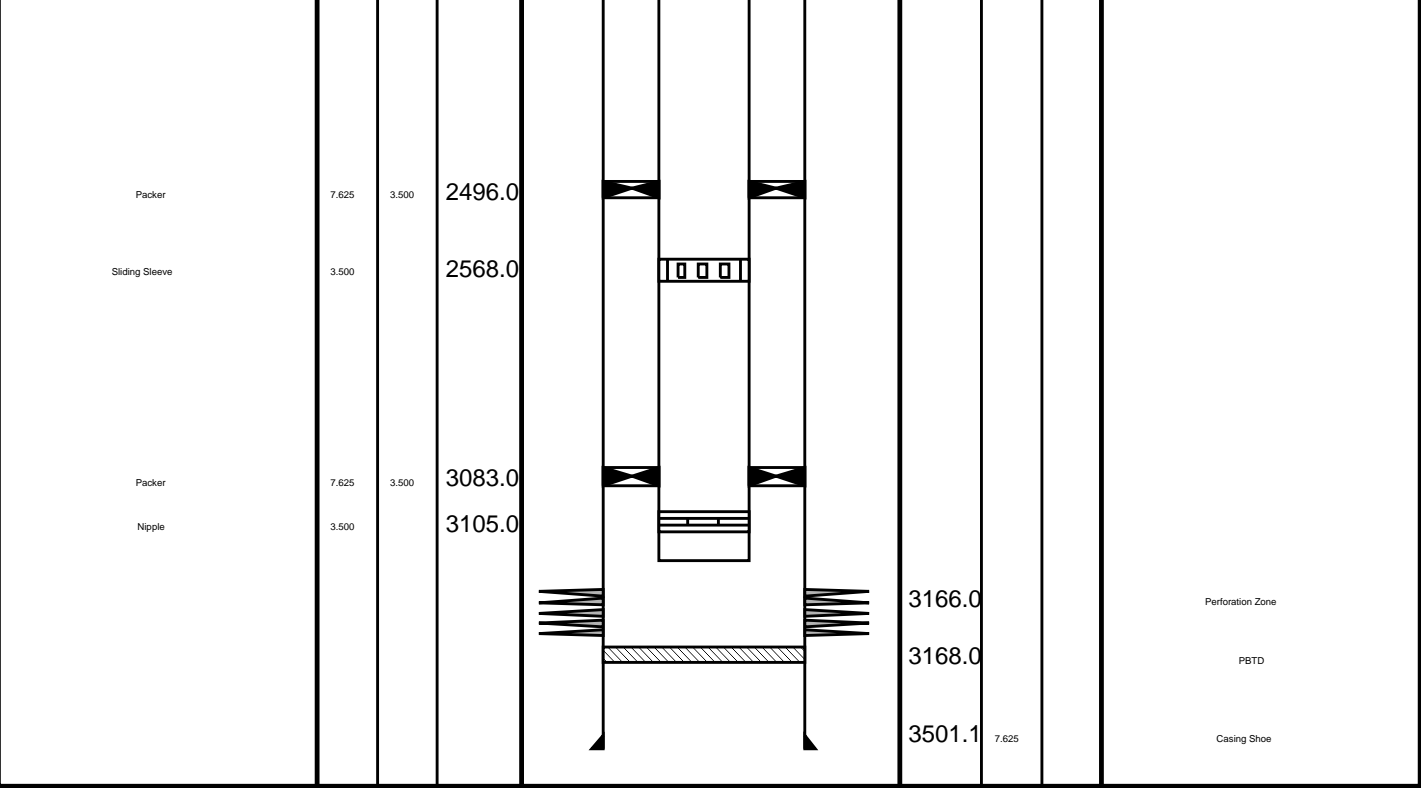
RSC-A Far
RSC-A PNG
RSC-A Nea
RSX-A PNG

4.24
4.09

Tension HV 0.00
TOOL ZERO

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

Production String	(in)		(m)	Well Schematic	(m)	(in)		Casing String
	OD	ID	MD		MD	OD	ID	
<div>Shutin Valve</div> <div>Gas Lift Mandrel</div> <div>Gas Lift Mandrel</div> <div>Gas Lift Mandrel</div> <div>Nipple</div>	7.625 3.500	3.500	19.1		19.8 19.8	7.625 10.750	7.625	<div>Casing String</div> <div>Liner Hanger</div> <div>Casing Shoe</div>
	3.500		445.0					
	3.500		675.0		643.5	10.750		
	3.500		1213.0					
	3.500		1501.0					
	3.500		1517.0					



Schlumberger Job Event Summary

	Time	Elapsed Time	Depth (M)	File
Station Log	14-Feb-2007 5:21	000:29	8.0 - 4.4	RST_PSP_021LTP
Log Pass (down)	14-Feb-2007 5:51	001:28	-1.4 - 3167.5	RST_PSP_022LDP
Log Pass (up)	14-Feb-2007 7:19	000:08	3171.6 - 3088.1	RST_PSP_023LUP
Log Pass (up)	14-Feb-2007 7:36	000:02	3173.1 - 3160.8	RST_PSP_025LUP
Log Pass (up)	14-Feb-2007 7:41	000:11	3171.9 - 3112.5	RST_PSP_026LUP
Log Pass (up)	14-Feb-2007 7:54	000:11	3171.6 - 3109.0	RST_PSP_027LUP



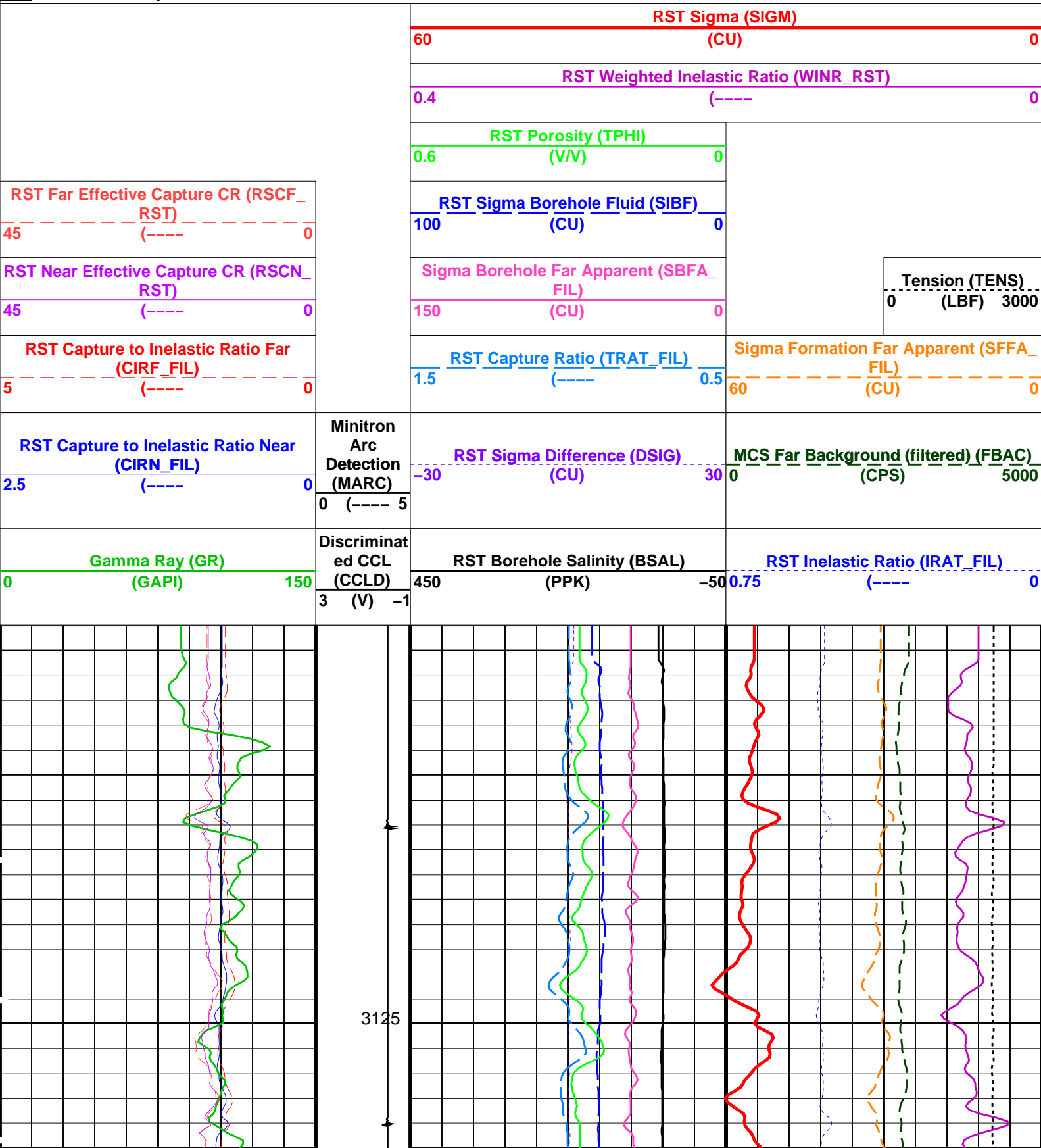
RST-C Sigma Static
Pass # 2 900 ft/hr

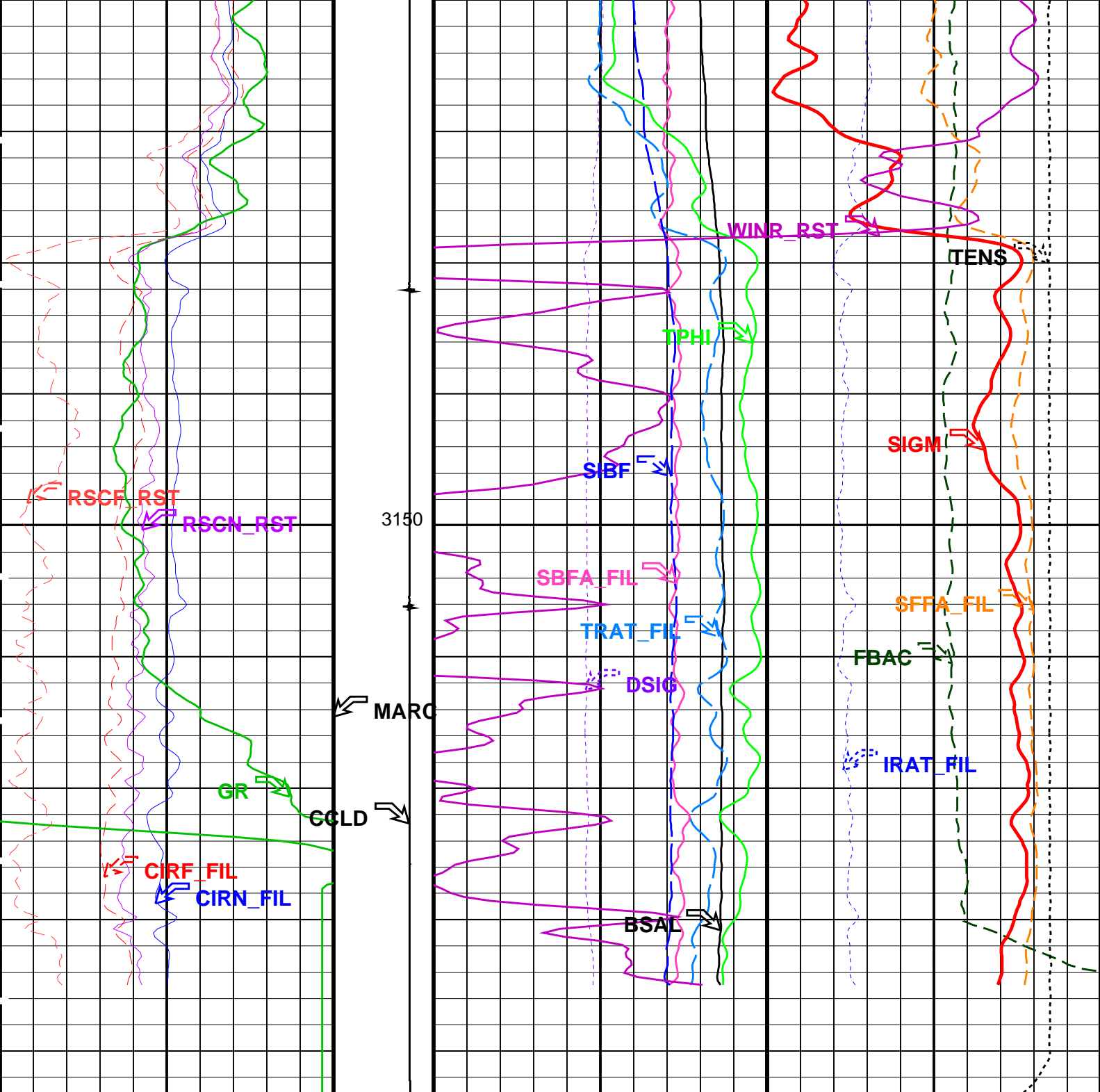
MAXIS Field Log

Output DLIS Files						
DEFAULT	RST_PSP_027LUP	FN:25	PRODUCER	14-Feb-2007 07:54	3171.6 M	3109.0 M

<p align="center">OP System Version: 14C0-302</p> <p align="center">MCM</p>			
RST-C	14C0-302	PSPT-A/B	14C0-302

Time Mark Every 60 S





<div>Gamma Ray (GR)</div> <div>(GAPI)</div> <div>0150</div>	<div>Discriminat</div> <div>ed CCL</div> <div>(CCLD)</div> <div>3 (V) -1</div>	<div>RST Borehole Salinity (BSAL)</div> <div>(PPK)</div> <div>450-50</div>	<div>RST Inelastic Ratio (IRAT_FIL)</div> <div>(----</div> <div>0.750</div>
<div>RST Capture to Inelastic Ratio Near</div> <div>(CIRN_FIL)</div> <div>2.5 (----</div> <div>00</div>	<div>Minitron</div> <div>Arc</div> <div>Detection</div> <div>(MARC)</div> <div>0 (---- 5</div>	<div>RST Sigma Difference (DSIG)</div> <div>(CU)</div> <div>-3030</div>	<div>MCS Far Background (filtered) (FBAC)</div> <div>(CPS)</div> <div>05000</div>
<div>RST Capture to Inelastic Ratio Far</div> <div>(CIRF_FIL)</div> <div>5 (----</div> <div>00</div>		<div>RST Capture Ratio (TRAT_FIL)</div> <div>(----</div> <div>1.50.5</div>	<div>Sigma Formation Far Apparent (SFFA_</div> <div>FIL)</div> <div>(CU)</div> <div>600</div>
<div>RST Near Effective Capture CR (RSCN_</div> <div>RST)</div> <div>45 (----</div> <div>00</div>		<div>Sigma Borehole Far Apparent (SBFA_</div> <div>FIL)</div> <div>(CU)</div> <div>1500</div>	<div>Tension (TENS)</div> <div>(LBF)</div> <div>03000</div>

<div>RST Far Effective Capture CR (RSCF_RST)</div> <div>45(-----)0</div>	<div>RST Sigma Borehole Fluid (SIBF)</div> <div>100(CU)0</div>	
	<div>RST Porosity (TPHI)</div> <div>0.6(V/V)0</div>	
	<div>RST Weighted Inelastic Ratio (WINR_RST)</div> <div>0.4(-----)0</div>	
	<div>RST Sigma (SIGM)</div> <div>60(CU)0</div>	


PIP SUMMARY		
Time Mark Every 60 S		

Parameters		
DLIS Name	Description	Value
RST-C: Reservoir Saturation Pro Tool C		
AIRB	RST Air Borehole	No
BHS	Borehole Status	CASED
BSALOPT	RST Borehole Salinity Option	Unknown
BSFL	RST Borehole Salinity Filter Length	51
DFPC	RST Depth Filter Processing Constant	One
DFPC_TDTL	RST Depth Filter Processing Constant (TDT-like)	Two
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE
NORM_IRAT_RST	RST Normalized Inelastic Ratio	0.48
NORM_SIGM_RST	RST Normalized Sigma	30CU
RGAI	Near/Far Gain Calibration Ratio	1
SMBMO	RST Sigma Mode Background Minitron Off	No
TIER_SIGM	RST Sigma Acquisition Mode	0_RST_Sigma
PSPT-A/B: Production Services Logging Platform		
BHS	Borehole Status	CASED
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE
System and Miscellaneous		
BS	Bit Size	9.875IN
BSAL	Borehole Salinity	-50000.00PPM
CSIZ	Current Casing Size	7.658IN
CWEI	Casing Weight	29.70LB/F

Format: RST_SIG_ANSW	Vertical Scale: 1:200	Graphics File Created: 14-Feb-2007 07:54
----------------------	-----------------------	--

OP System Version: 14C0-302			
MCM			
RST-C	14C0-302	PSPT-A/B	14C0-302

Output DLIS Files			
DEFAULT	RST_PSP_027LUP	FN:25	PRODUCER 14-Feb-2007 07:54



RST-C Sigma Static

Pass # 1 900 ft/hr

MAXIS Field Log

Company: Esso Australia Pty Ltd.	Well: A-23 a
----------------------------------	--------------

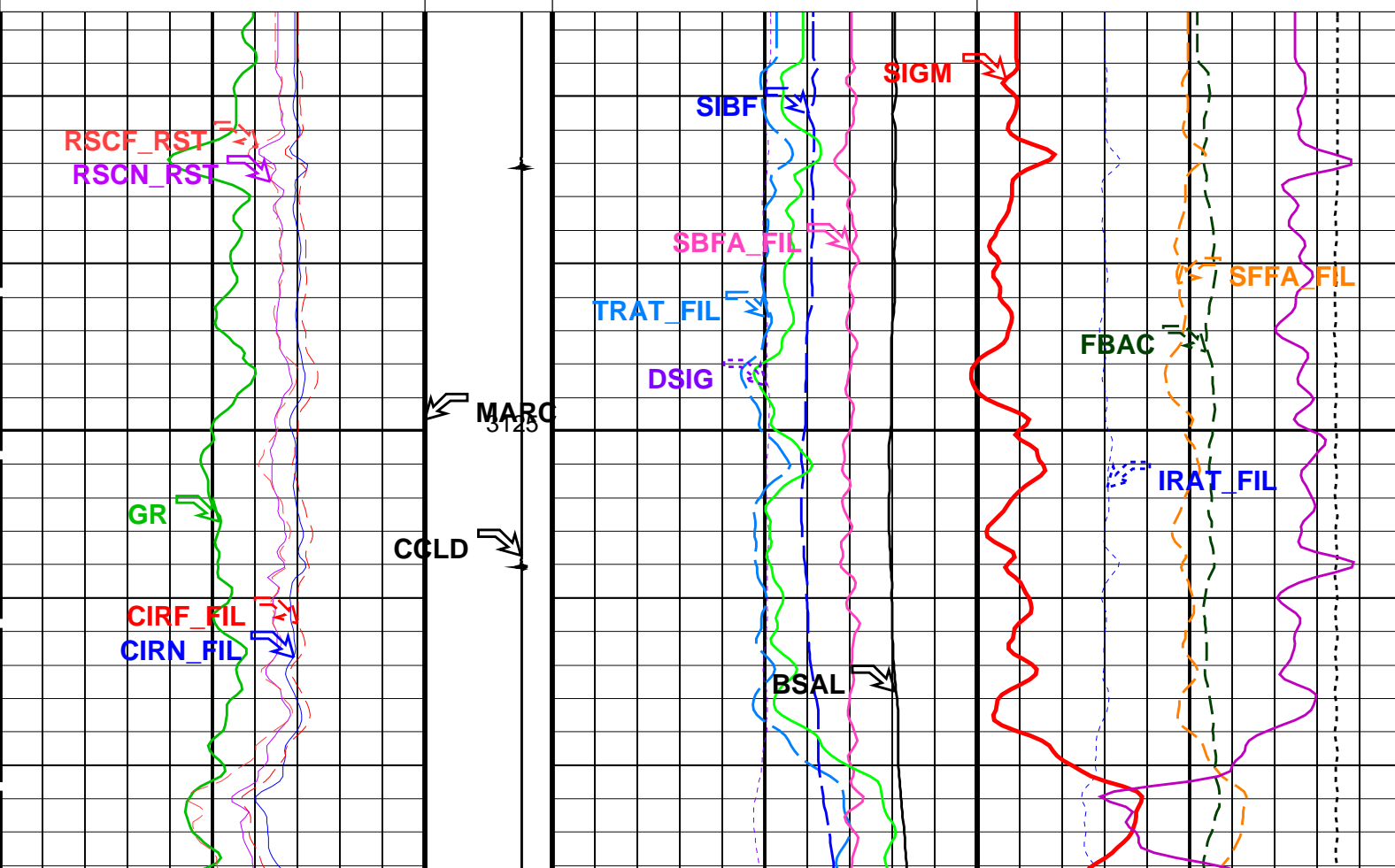
Output DLIS Files					
DEFAULT	RST_PSP_026LUP	FN:24	PRODUCER	14-Feb-2007 07:41	3171.9 M 3112.5 M

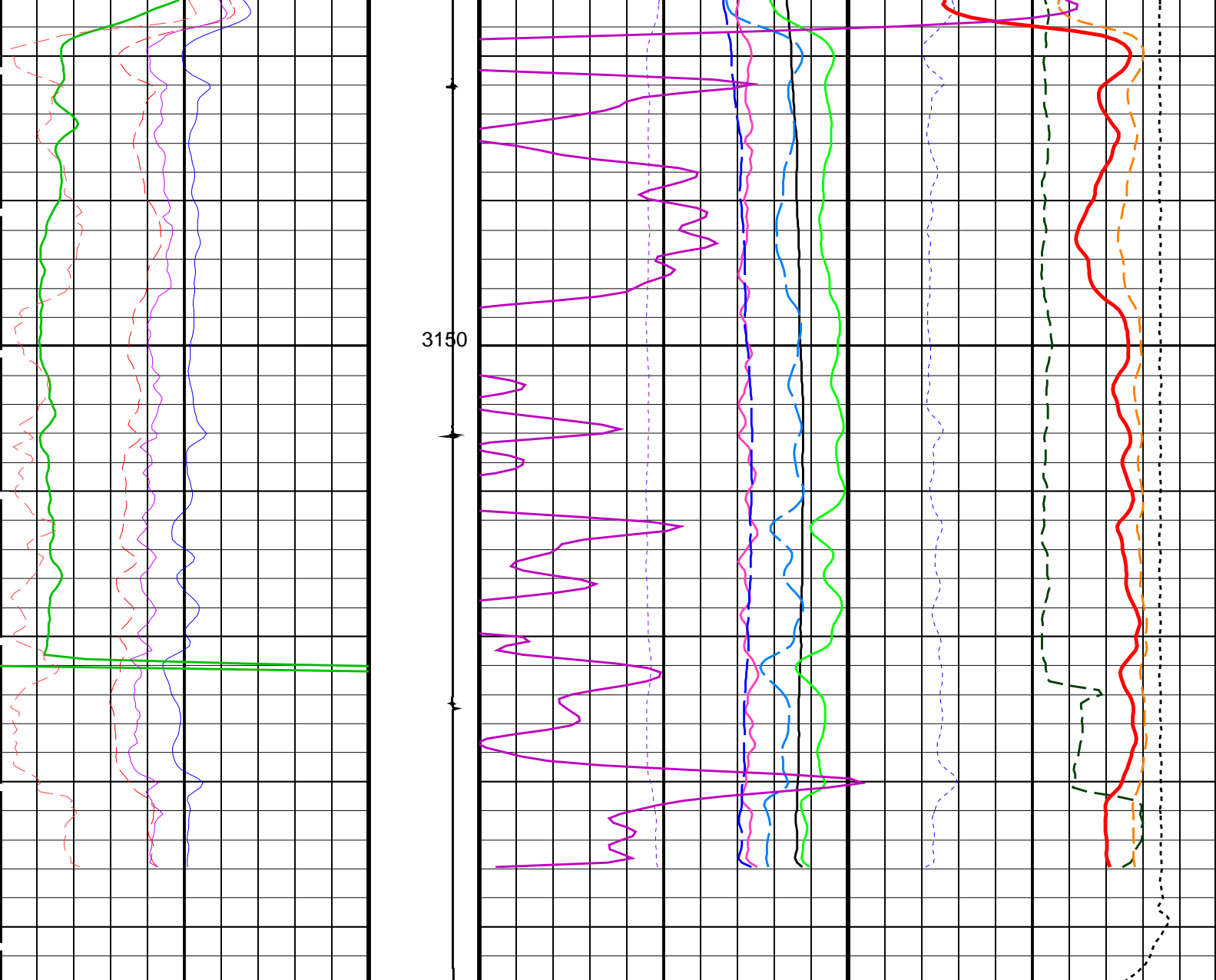
OP System Version: 14C0-302					
-----------------------------	--	--	--	--	--

PIP SUMMARY

Time Mark Every 60 S

		RST Sigma (SIGM)			
		60 (CU)		0	
		RST Weighted Inelastic Ratio (WINR_RST)			
		0.4 (----		0	
		RST Porosity (TPHI)			
		0.6 (V/V)		0	
RST Far Effective Capture CR (RSCF_RST)		RST Sigma Borehole Fluid (SIBF)			
45 (----- 0		100 (CU)		0	
RST Near Effective Capture CR (RSCN_RST)		Sigma Borehole Far Apparent (SBFA_FIL)		Tension (TENS)	
45 (----- 0		150 (CU)		0 3000 (LBF)	
RST Capture to Inelastic Ratio Far (CIRF_FIL)		RST Capture Ratio (TRAT_FIL)		Sigma Formation Far Apparent (SFFA_FIL)	
5 (----- 0		1.5 (----- 0.5		60 (CU)	
RST Capture to Inelastic Ratio Near (CIRN_FIL)		RST Sigma Difference (DSIG)		MCS Far Background (filtered) (FBAC)	
2.5 (----- 0		-30 (CU) 30		0 5000 (CPS)	
		Minitron Arc Detection (MARC)			
		0 (----- 5			
Gamma Ray (GR)		RST Borehole Salinity (BSAL)		RST Inelastic Ratio (IRAT_FIL)	
0 (GAPI) 150		450 (PPK) -50		0.75 (----- 0	
		Discriminat ed CCL (CCLD)			
		3 (V) -1			





Gamma Ray (GR) (GAPI)		Discriminat ed CCL (CCLD) (V)	RST Borehole Salinity (BSAL) (PPK)		RST Inelastic Ratio (IRAT_FIL) (----	
0	150		450	-50	0.75	0
RST Capture to Inelastic Ratio Near (CIRN_FIL) (----		Minitron Arc Detection (MARC) (-----	RST Sigma Difference (DSIG) (CU)		MCS Far Background (filtered) (FBAC) (CPS)	
2.5	0		-30	30	0	5000
RST Capture to Inelastic Ratio Far (CIRF_FIL) (-----			RST Capture Ratio (TRAT_FIL) (----		Sigma Formation Far Apparent (SFFA_ FIL) (CU)	
5	0		1.5	0.5	60	0
RST Near Effective Capture CR (RSCN_ RST) (-----			Sigma Borehole Far Apparent (SBFA_ FIL) (CU)		Tension (TENS) (LBF)	
45	0		150			
RST Far Effective Capture CR (RSCF_ RST) (-----			RST Sigma Borehole Fluid (SIBF) (CU)			
45	0	100				
		RST Porosity (TPHI) (V/V)				
		0.6				
		RST Weighted Inelastic Ratio (WINR_RST) (-----				
		0.4				

	RST Sigma (SIGM)	
60	(CU)	0

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
RST-C: Reservoir Saturation Pro Tool C			
AIRB	RST Air Borehole	No	CU
BHS	Borehole Status	CASED	
BSALOPT	RST Borehole Salinity Option	Unknown	
BSFL	RST Borehole Salinity Filter Length	51	
DFPC	RST Depth Filter Processing Constant	One	
DFPC_TDTL	RST Depth Filter Processing Constant (TDT-like)	Two	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
NORM_IRAT_RST	RST Normalized Inelastic Ratio	0.48	
NORM_SIGM_RST	RST Normalized Sigma	30	
RGAI	Near/Far Gain Calibration Ratio	1	
SMBMO	RST Sigma Mode Background Minitron Off	No	
TIER_SIGM	RST Sigma Acquisition Mode	0_RST_Sigma	
PSPT-A/B: Production Services Logging Platform			
BHS	Borehole Status	CASED	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
System and Miscellaneous			
BS	Bit Size	9.875	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	7.658	IN
CWEI	Casing Weight	29.70	LB/F

Format: RST_SIG_ANSW Vertical Scale: 1:200 Graphics File Created: 14-Feb-2007 07:41

OP System Version: 14C0-302

MCM

RST-C 14C0-302 PSPT-A/B 14C0-302

Output DLIS Files

DEFAULT RST_PSP_026LUP FN:24 PRODUCER 14-Feb-2007 07:41

Schlumberger

Correlation Pass

MAXIS Field Log

Input DLIS Files

DEFAULT RST_PSP_023LUP FN:21 PRODUCER 14-Feb-2007 07:19 3171.6 M 3088.1 M

Output DLIS Files

DEFAULT RST_PSP_024PUP FN:22 PRODUCER 14-Feb-2007 07:30 3172.4 M 3083.8 M

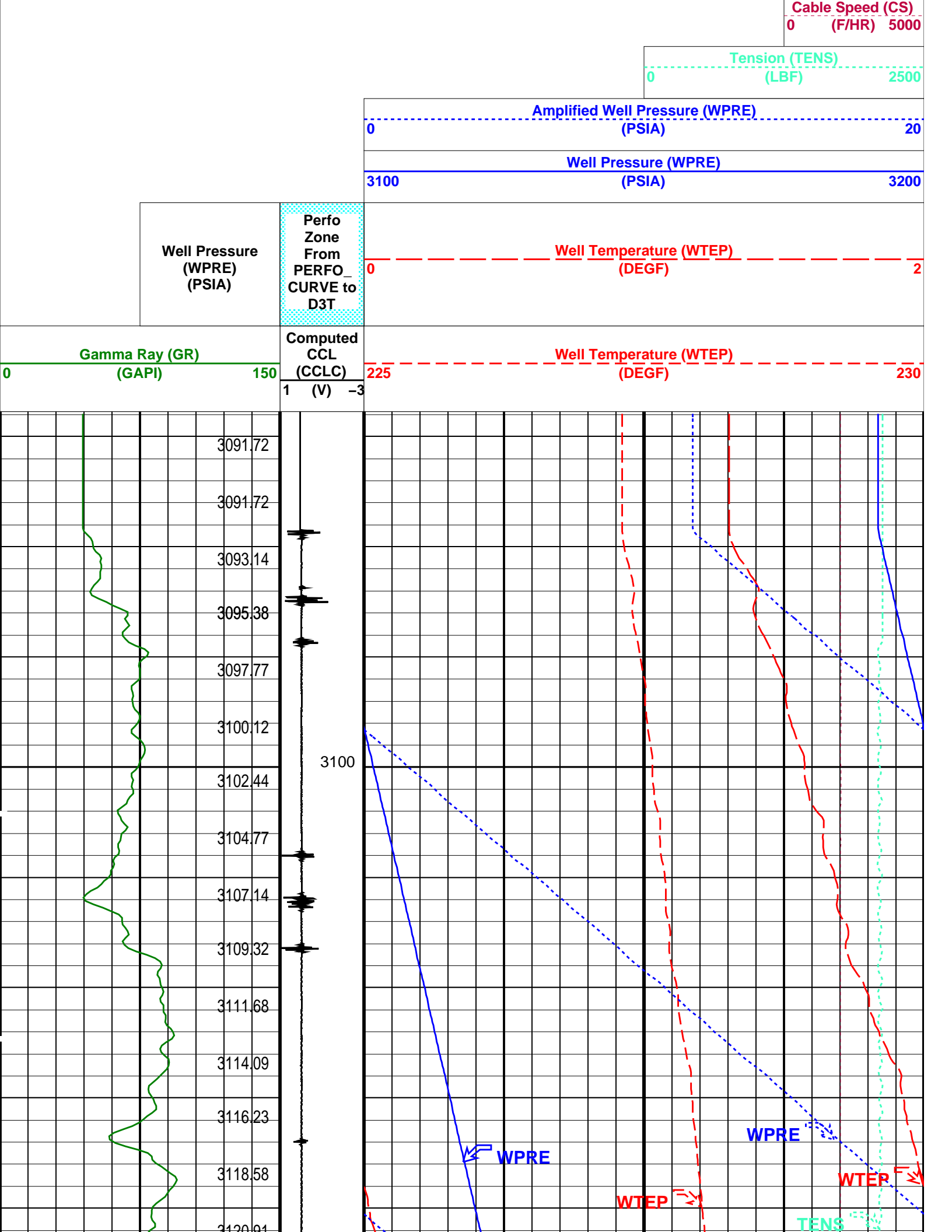
OP System Version: 14C0-302

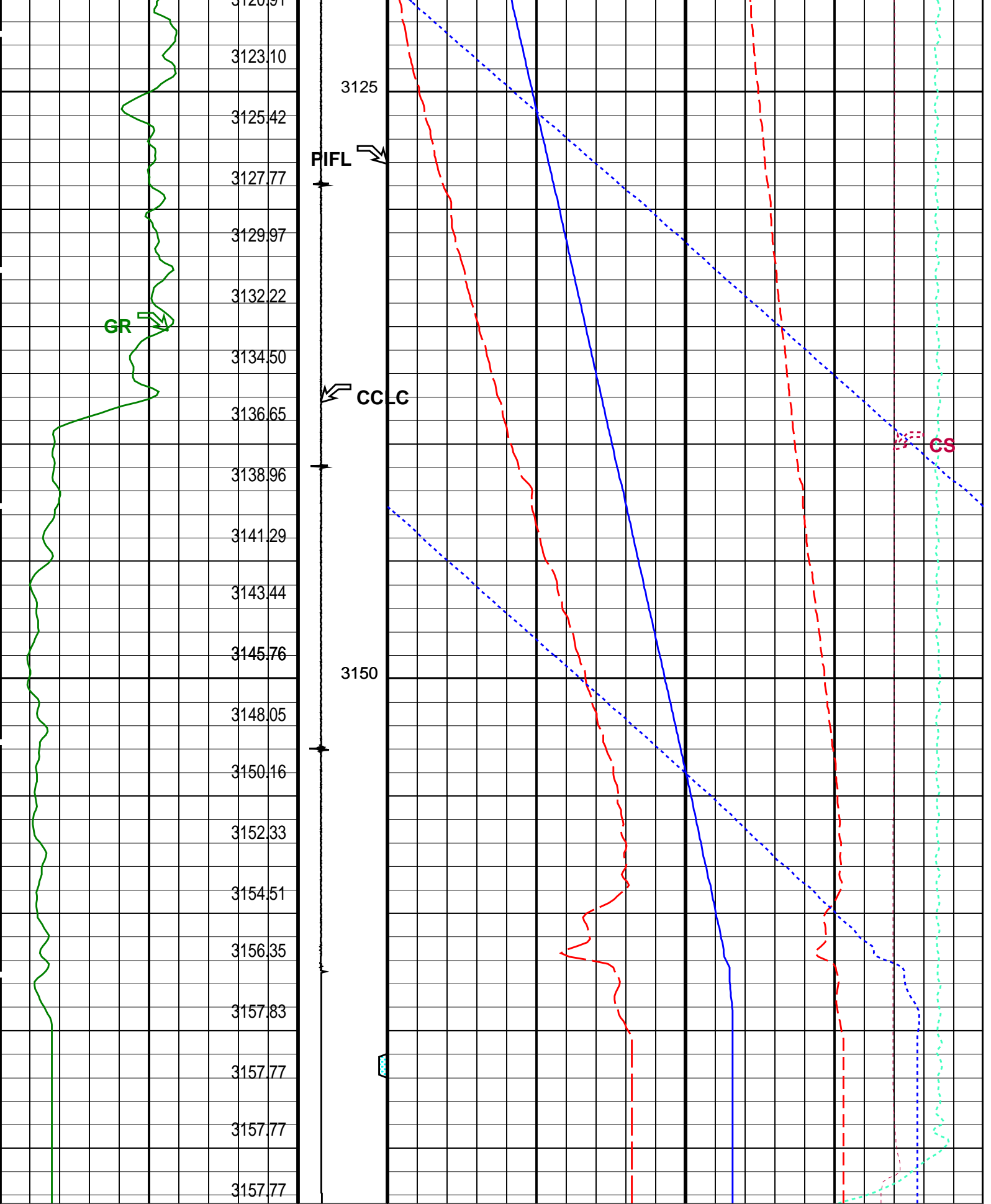
MCM

RST-C 14C0-302 PSPT-A/B 14C0-302

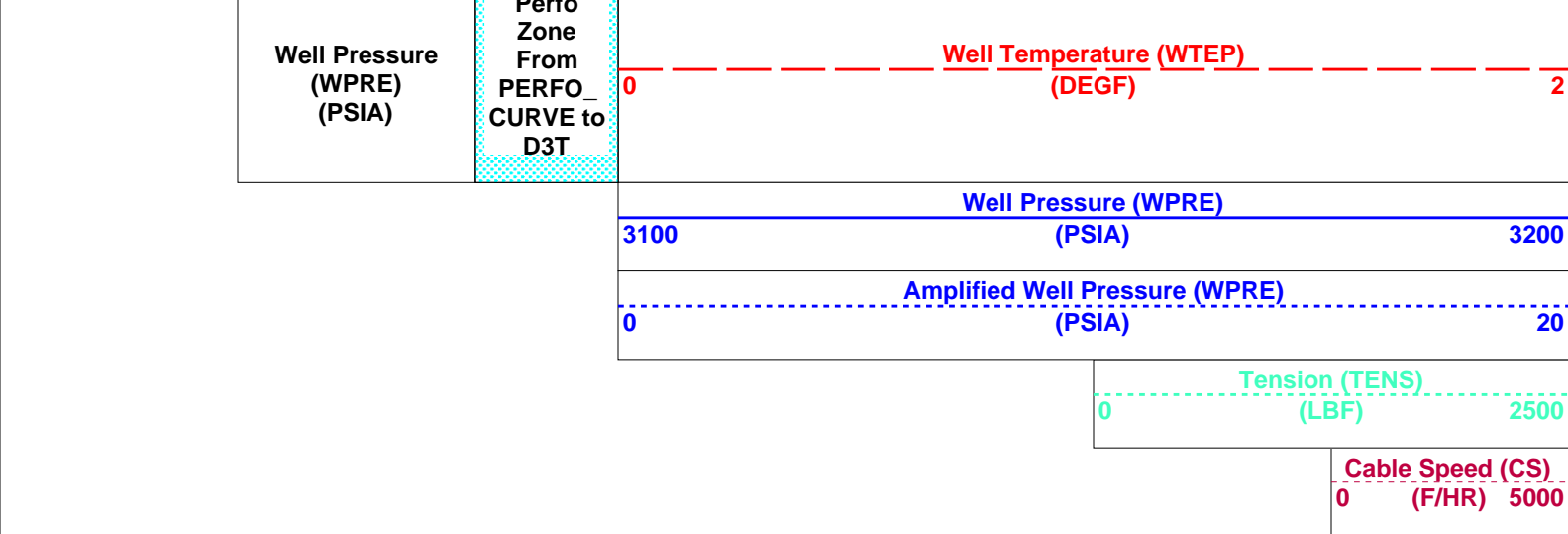
PIP SUMMARY

Time Mark Every 60 S





Gamma Ray (GR) (GAPI)		Computed CCL (CCLC) (V)	Well Temperature (WTEP) (DEGF)
0	150	1 -3	225 230
		Perforation	



PIP SUMMARY

Time Mark Every 60 S

Format: PSP_1_1 Vertical Scale: 1:200 Graphics File Created: 14-Feb-2007 07:30

OP System Version: 14C0-302

MCM

RST-C	14C0-302	PSPT-A/B	14C0-302
-------	----------	----------	----------

Parameters			
DLIS Name	Description	Value	
DO	System and Miscellaneous	0.8	M
PP	Depth Offset for Playback Playback Processing	NORMAL	

Input DLIS Files					
DEFAULT	RST_PSP_023LUP	FN:21	PRODUCER	14-Feb-2007 07:19	3171.6 M 3088.1 M

Output DLIS Files				
DEFAULT	RST_PSP_024PUP	FN:22	PRODUCER	14-Feb-2007 07:30

Company: **Esso Australia Pty Ltd.**

Schlumberger

Well: **A-23 a**

Field: **Flounder**

Rig: **Crane / Prod#4**

Country: **Australia**

RST-A

Sigma

Survey