

Company: Esso Australia Pty Ltd.

Well: FLOUNDER A23A

Field: FLOUNDER

Rig: Crane / Prod#4 Country: Australia

RST-C  
Sigma Log  
18-Feb-2010

Crane / Prod#4	
FLOUNDER	
Gippsland	
FLOUNDER A23A	
Esso Australia Pty Ltd.	
LOCATION	
Gippsland	Elev.: K.B. 33.20 m
Basin	G.L. -94.00 m
Bass Strait	D.F. 33.20 m
Permanent Datum:	M.S.L.
Log Measured From:	DF
Drilling Measured From:	DF
State: Victoria	Max. Well Deviation 48.8 deg
	Longitude 148°06'15.1"E
	Latitude 38°18'45.2"S

Logging Date	18-Feb-2010		
Run Number	2		
Depth Driller	3508 m		
Schlumberger Depth	3163 m		
Bottom Log Interval	3159 m		
Top Log Interval	3098 m		
Casing Fluid Type	Production Fluid		
Salinity			
Density	1.05 g/cm3		
Fluid Level	1200 m		
BIT/CASING/TUBING STRING			
Bit Size	9.875 in		
From	644 m		
To	3508 m		
Casing/Tubing Size	7.625 in		
Weight	29.7 lbm/ft		
Grade	L -80		
From	16.68 m		
To	3501 m		
Maximum Recorded Temperatures	228 degF		
Logger On Bottom	18-Feb-2010	18:30	
Unit Number	889	AUSL	
Recorded By	C.Rowand / W.Mackenzie		
Witnessed By	G.Rimmer		

	Oil Density	Run 1	Run 2	R
	Water Salinity			
	Gas Gravity			
	Bo			
	Bw			
	1/Bg			
	Bubble Point Pressure			
	Bubble Point Temperature			
	Solution GOR			
	Maximum Deviation	48.8 deg		
	CEMENTING DATA			
	Primary/Squeeze			
	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			

Date Created: 18-FEB-2010 20:44:51

## Logging Cable

Type:	2-32ZT
Serial Number:	208558
Length:	6020 M
<hr/>	
Conveyance Method:	Wireline
Rig Type:	Offshore Fixed

Log Sequence:	Subsequent Trip To the Well
Reference Log Name:	Solar Composite
Reference Log Run Number:	
Reference Log Date:	14-Feb-2007
Subsequent Trip Down Log Correction:	-2.00 M

1. Log correlated to Esso provided Solar Composite log.
2. Rigged up on main deck using the platform crane.
3. Tool Zero is referenced from the Tubing Hanger at 19.05m
- 4.
- 5.
6. Tension:  $a=4.72E-5$ ,  $b=0.7936$ ,  $c=-82.9$

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 SERVICES2  
OS1:  
OS2:  
OS3:  
OS4:  
OS5:











REMARKS: RUN NUMBER 2

Pass # 2 and Pass # 3 are RST Sigma Surveys from HUD to 3100m MDKB

MATR= Sandstone as per previous RST Sigma log.  
CSIZ = 7–5/8", CWEI = 29.7 lb/ft, BS = 9–7/8", BSAL=–50000ppm  
From 3108m to 3098m (in the tubing) the CWEI = 38.9 lb/ft.

RUN 1			RUN 2		
SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:			SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:		
AUSL07336256 17C0–154 1200 m					
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1			RUN 2		
SURFACE EQUIPMENT					
WITM-A PSC_16MHZ					
DOWNHOLE EQUIPMENT					
MH-SWBH MH-SWBH 759		13.08			
AH-SWBS AH-SWBS 785		12.77			
AH-SWBS AH-SWBS 786		12.12			
AH-SWBS AH-SWBS 787		11.48			
AH-SWBS AH-SWBS 788		10.83			
AH-SWBS AH-SWBS 789		10.18			
PSPT PSC-A PSPT-B PSTC-A 1864 PBMS-B 3918 CQG_F_Mano RTD_Thermometer GR CCL PBMS 1864	<div>Detail MT TelStatus CTEM</div>  <div>GR</div>  <div>Well_Temp CQG Manom CCL PBMS PSTC</div> 	<div>9.54</div> <div>8.41</div> <div>7.48 7.37 7.25 7.02</div>	9.54		
RST-C RSCH-A 111 RSC-C 132 RSS-A 108 RSXH-A 145 RSX-C 132		7.02			

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

Client: Esso Australia Pty Ltd.

Well: FLA A23a

Field: Flounder

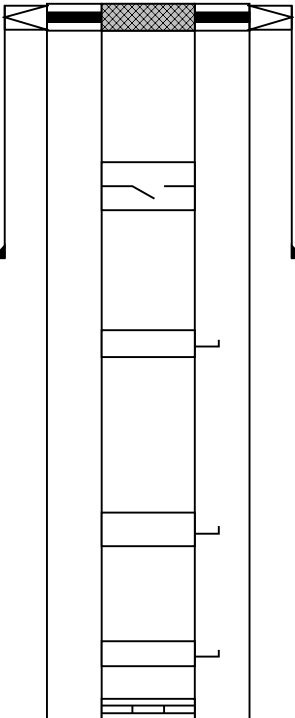
State: Victoria

Country: Australia

Rig Name: Crane / Prod4

Reference Datum: Mean Sea Level

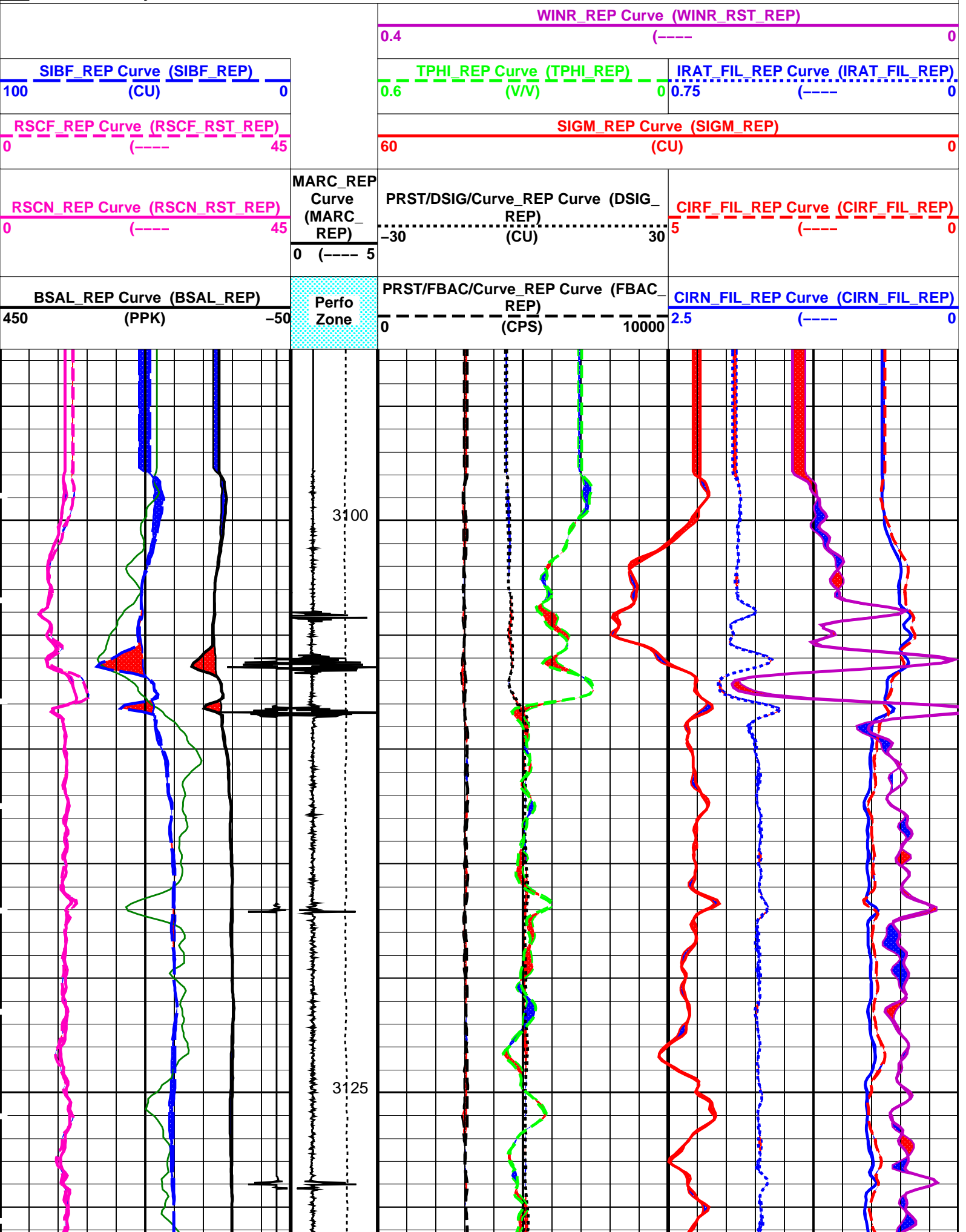
Elevation: 0.0 m

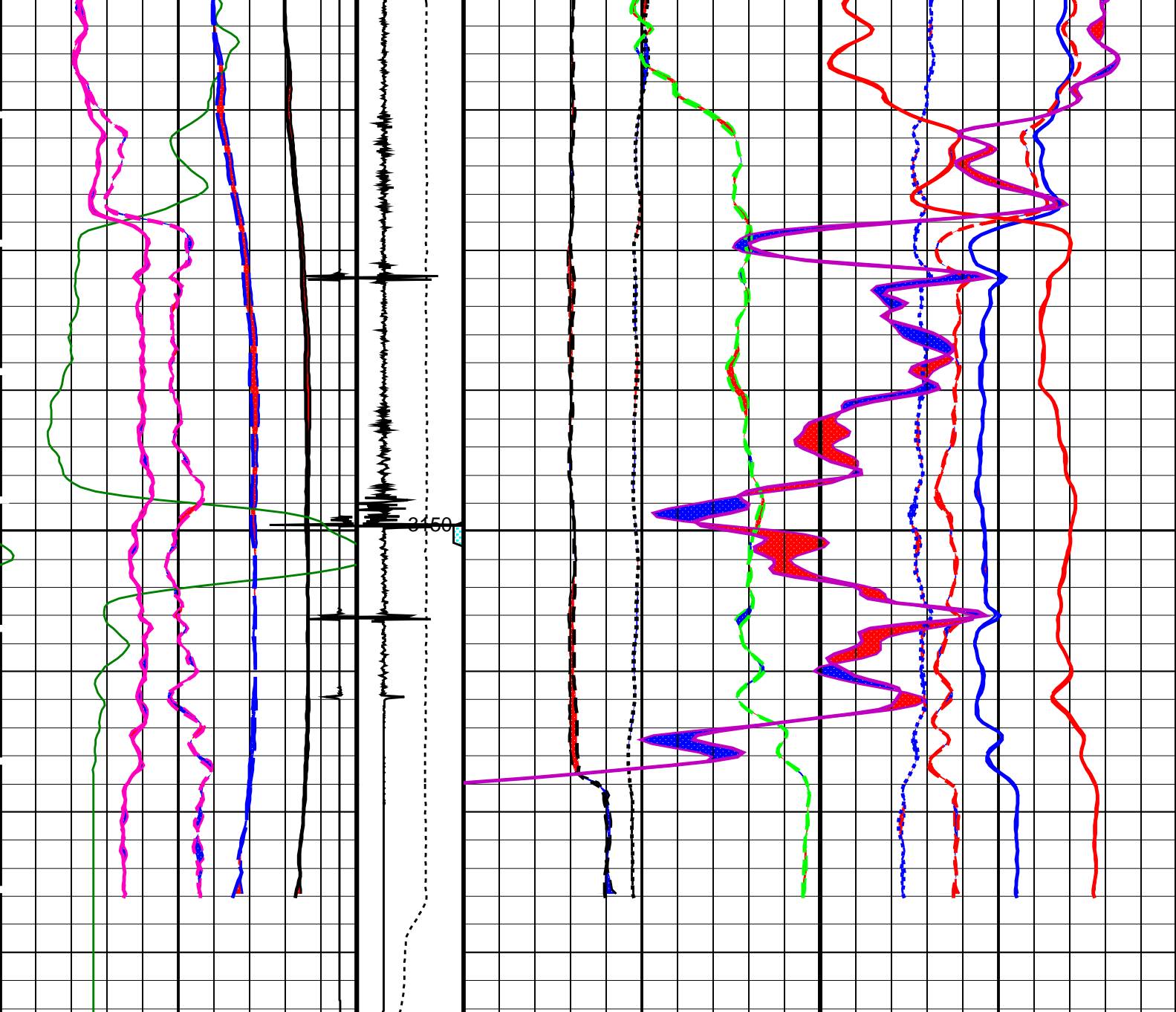
Production String	(in)		(m)	Well Schematic	(m)		(in)	Casing String
	OD	ID	MD		MD	OD	ID	
Tubing Hanger	7.625	3.500	18.0		19.7	10.750		Casing String
SSSV	3.500	2.750	447.0		643.5	10.750		Casing Shoe
Side Pocket Mandrel	3.500		675.0					
Side Pocket Mandrel	3.500		1213.0					
Side Pocket Mandrel	3.500		1501.0					
Nipple	3.500		1517.0					



# PIP SUMMARY

Time Mark Every 60 S





<b>BSAL_REP Curve (BSAL_REP)</b> 450 (PPK) -50	<b>Perfo Zone</b>	<b>PRST/FBAC/Curve_REP Curve (FBAC_REP)</b> 0 (CPS) 10000	<b>CIRN_FIL_REP Curve (CIRN_FIL_REP)</b> 2.5 (----) 0
<b>RSCN_REP Curve (RSCN_RST_REP)</b> 0 (----) 45	<b>MARC_REP Curve (MARC_REP)</b> 0 (----) 5	<b>PRST/DSIG/Curve_REP Curve (DSIG_REP)</b> -30 (CU) 30	<b>CIRF_FIL_REP Curve (CIRF_FIL_REP)</b> 5 (----) 0
<b>RSCF_REP Curve (RSCF_RST_REP)</b> 0 (----) 45		<b>SIGM_REP Curve (SIGM_REP)</b> 60 (CU) 0	
<b>SIBF_REP Curve (SIBF_REP)</b> 100 (CU) 0		<b>TPHI_REP Curve (TPHI_REP)</b> 0.6 (V/V) 0	<b>IRAT_FIL_REP Curve (IRAT_FIL_REP)</b> 0.75 (----) 0
		<b>WINR_REP Curve (WINR_RST_REP)</b> 0.4 (----) 0	

PIP SUMMARY

RST-C	SRPC-3870_Q3_2009_OP17_V3	PSPT	SRPC-3870_Q3_2009_OP17_V3
Input DLIS Files			
DEFAULT	RST_PSP_030PUP	FN:38	PRODUCER 18-Feb-2010 19:53 3167.2 M 3092.3 M
DEFAULT	RST_PSP_032PUP	FN:40	PRODUCER 18-Feb-2010 19:54 3167.3 M 3092.5 M
Output DLIS Files			
DEFAULT	RST_PSP_034PUP	FN:44	PRODUCER 18-Feb-2010 19:58
CUST	RST_PSP_034PUC	FN:45	CUSTOMER 18-Feb-2010 19:58



RST Sigma Pass #2  
Shut In

MAXIS Field Log

Company: Esso Australia Pty Ltd. Well: FLA A23a

Input DLIS Files			
DEFAULT	RST_PSP_032LUP	FN:31	PRODUCER 18-Feb-2010 19:17 3167.6 M 3088.5 M
Output DLIS Files			
DEFAULT	RST_PSP_032PUP	FN:40	PRODUCER 18-Feb-2010 19:54 3167.3 M 3092.5 M
CUST	RST_PSP_032PUC	FN:41	CUSTOMER 18-Feb-2010 19:54 3167.3 M 3092.5 M

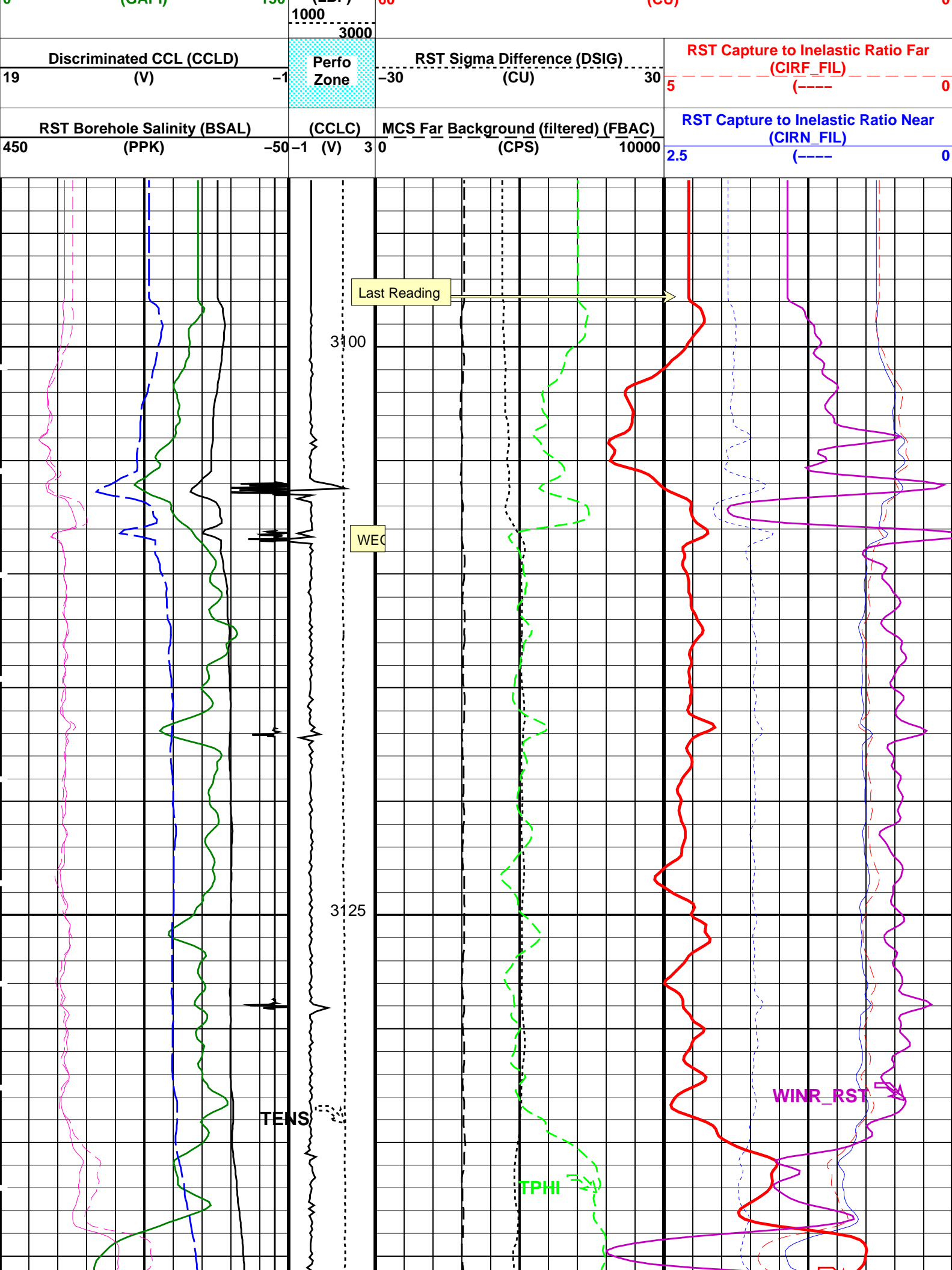
OP System Version: 17C0-154			
RST-C	SRPC-3870_Q3_2009_OP17_V3	PSPT	SRPC-3870_Q3_2009_OP17_V3

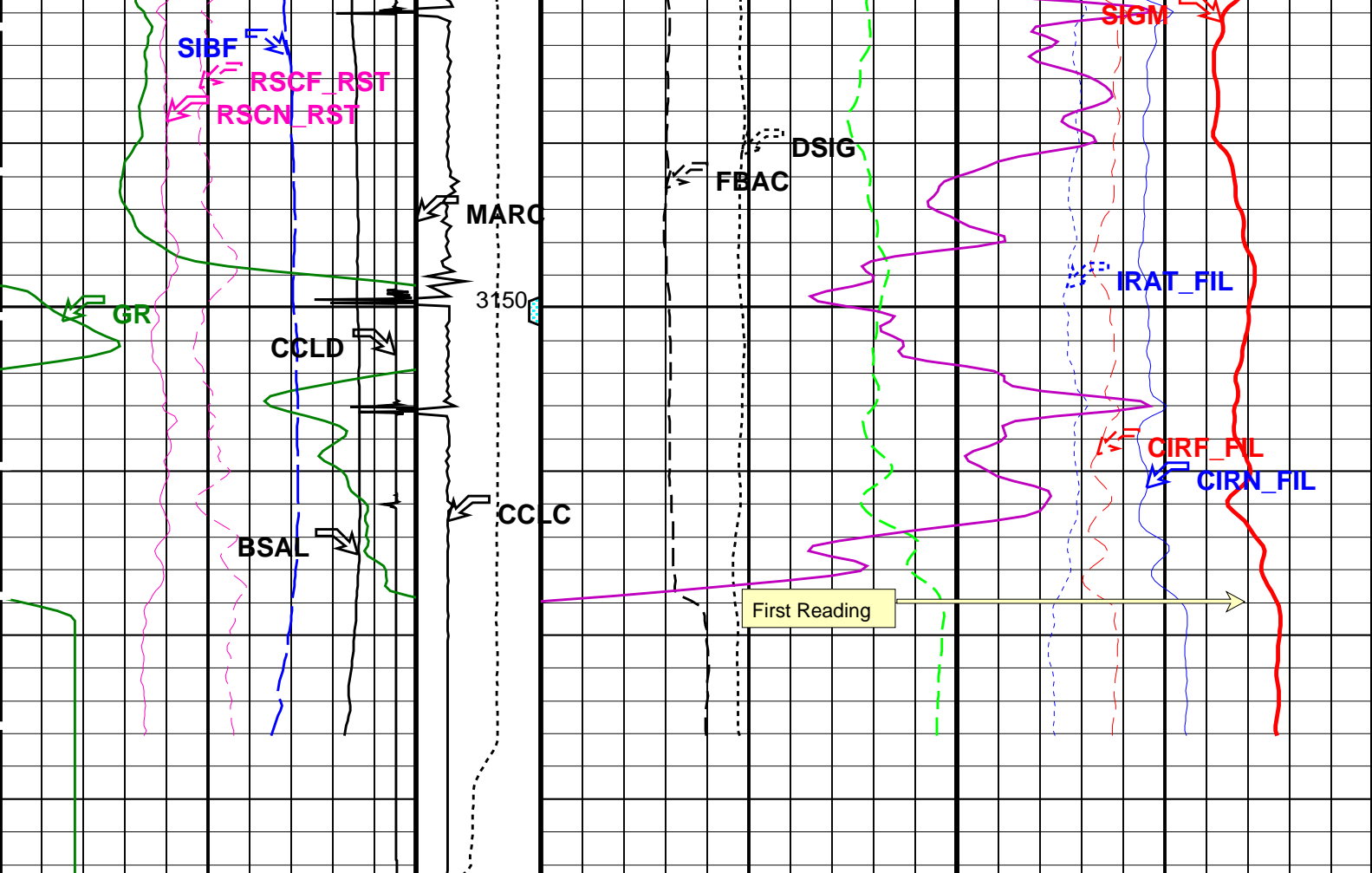
Changed Parameter Summary			
DLIS Name	New Value	Previous Value	Depth & Time
CWEI	29.70 LB/F 38.90 LB/F	38.90 LB/F 29.70 LB/F	3167.3 19:54:33 3107.9 19:54:46

PIP SUMMARY			
Time Mark Every 60 S			

RST Far Effective Capture CR (RSCF_RST)			
0 (---- 45			
RST Near Effective Capture CR (RSCN_RST)	RST Weighted Inelastic Ratio (WINR_RST)		
0 (---- 45	0.4 (---- 0		
RST Sigma Borehole Fluid (SIBF_CU)	Minitron Arc Detection (MARC)	RST Porosity (TPHI_V/V)	RST Inelastic Ratio (IRAT_FIL)
100 (CU) 0	0 (---- 5	0.6 (---- 0	0.75 (---- 0
Gamma Ray (GR_GAPI)	Tension (TENS_LBF)	RST Sigma (SIGM)	
0 (GAPI) 150	60 (LBF)	(CU) 0	







RST Borehole Salinity (BSAL) (PPK)		(CCLC)	MCS Far Background (filtered) (FBAC) (CPS)		RST Capture to Inelastic Ratio Near (CIRN_FIL)	
450		-50	0		2.5	
Discriminated CCL (CCLD) (V)		(V)	RST Sigma Difference (DSIG) (CU)		RST Capture to Inelastic Ratio Far (CIRF_FIL)	
19		-1	-30		5	
Gamma Ray (GR) (GAPI)		Tension (TENS) (LBF)	RST Sigma (SIGM) (CU)		RST Inelastic Ratio (IRAT_FIL)	
0		1000	60		0.75	
RST Sigma Borehole Fluid (SIBF) (CU)		Minitron Arc Detection (MARC)	RST Porosity (TPHI) (V/V)		RST Weighted Inelastic Ratio (WINR_RST)	
100		0	0.6		0.4	
RST Near Effective Capture CR (RSCN_RST)						
0						
RST Far Effective Capture CR (RSCF_RST)						
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
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	CU
RGAI	Near/Far Gain Calibration Ratio	1	
TIER_SIGM	RST Sigma Acquisition Mode	0_RST_Sigma	
PSPT: 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	7.625	IN
CWEI	Casing Weight	29.70	LB/F
DO	Depth Offset for Playback	-0.3	M
PP	Playback Processing	NORMAL	

Format: RST\_SIG\_ANSW    Vertical Scale: 1:200    Graphics File Created: 18-Feb-2010 19:54

## OP System Version: 17C0-154

RST-C	SRPC-3870_Q3_2009_OP17_V3	PSPT	SRPC-3870_Q3_2009_OP17_V3
Input DLIS Files			
DEFAULT	RST_PSP_032LUP	FN:31    PRODUCER	18-Feb-2010 19:17    3167.6 M    3088.5 M
Output DLIS Files			
DEFAULT	RST_PSP_032PUP	FN:40    PRODUCER	18-Feb-2010 19:54
CUST	RST_PSP_032PUC	FN:41    CUSTOMER	18-Feb-2010 19:54

**Schlumberger**

## RST Sigma Pass #1 Shut In

MAXIS Field Log

Company: Esso Australia Pty Ltd.    Well: FLA A23a

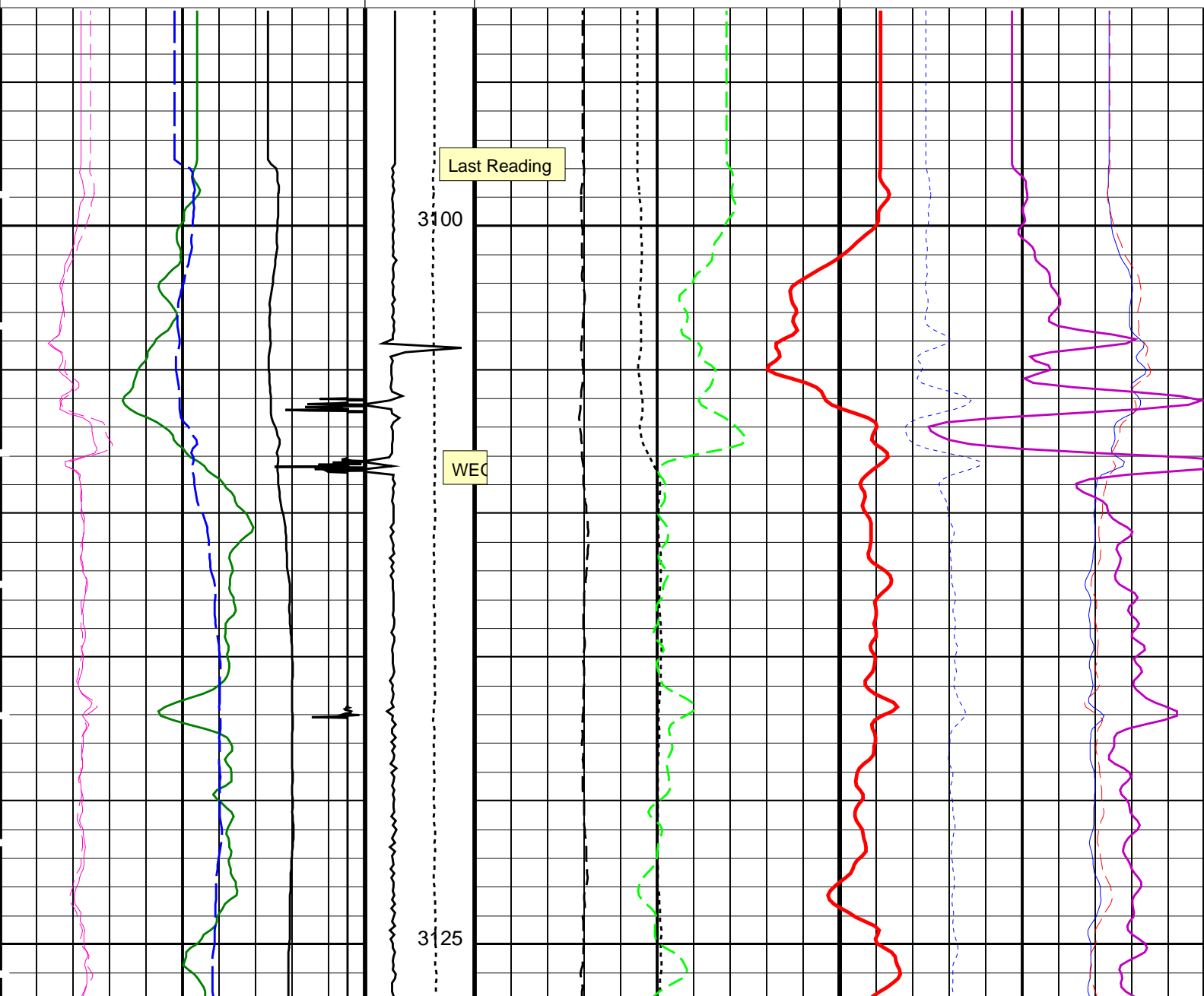
Input DLIS Files			
DEFAULT	RST_PSP_030LUP	FN:29    PRODUCER	18-Feb-2010 18:53    3167.5 M    3085.0 M
Output DLIS Files			
DEFAULT	RST_PSP_030PUP	FN:38    PRODUCER	18-Feb-2010 19:53    3167.2 M    3092.3 M
CUST	RST_PSP_030PUC	FN:39    CUSTOMER	18-Feb-2010 19:53    3167.2 M    3092.3 M

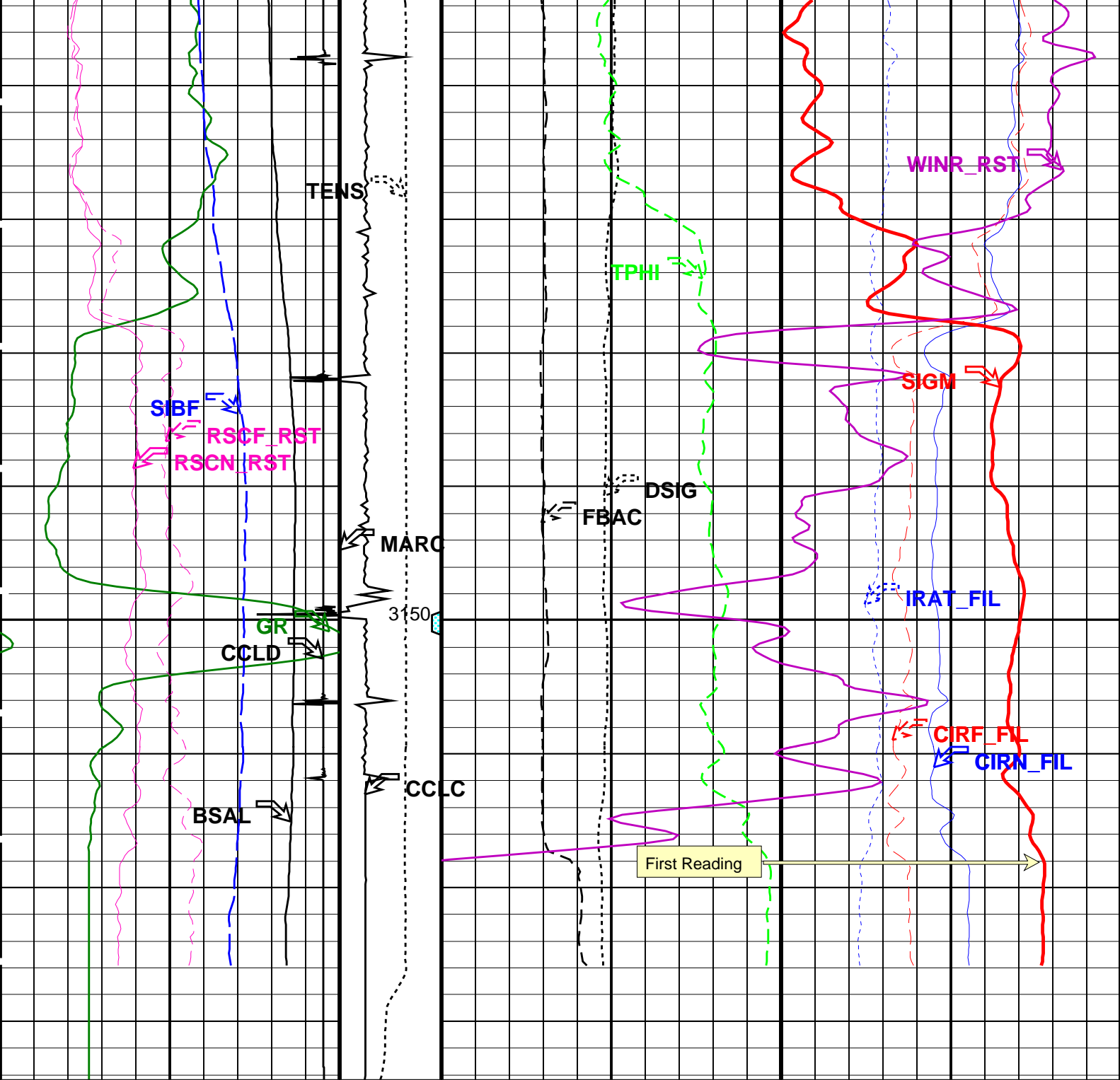
## OP System Version: 17C0-154

RST-C	SRPC-3870_Q3_2009_OP17_V3	PSPT	SRPC-3870_Q3_2009_OP17_V3
Changed Parameter Summary			
DLIS Name	New Value	Previous Value	Depth & Time
CWEI	29.70 LB/F	38.90 LB/F	3167.2 19:53:31
	38.90 LB/F	29.70 LB/F	3107.9 19:53:48

PIP SUMMARY

RST Far Effective Capture CR (RSCF_RST) 0 (-----) 45			
RST Near Effective Capture CR (RSCN_RST) 0 (-----) 45		RST Weighted Inelastic Ratio (WINR_RST) 0.4 (-----) 0	
RST Sigma Borehole Fluid (SIBF) 100 (CU) 0	Minitron Arc Detection (MARC) 0 (-----) 5	RST Porosity (TPHI) (V/V) 0.6 (-----) 0	RST Inelastic Ratio (IRAT_FIL) 0.75 (-----) 0
Gamma Ray (GR) (GAPI) 0 150		RST Sigma (SIGM) (CU) 60 (-----) 0	
Discriminated CCL (CCLD) (V) 19 -1	Perfo Zone	RST Sigma Difference (DSIG) (CU) -30 (-----) 30	RST Capture to Inelastic Ratio Far (CIRF_FIL) 5 (-----) 0
RST Borehole Salinity (BSAL) (PPK) 450 -50		MCS Far Background (filtered) (FBAC) (CPS) 0 10000	RST Capture to Inelastic Ratio Near (CIRN_FIL) 2.5 (-----) 0





RST Borehole Salinity (BSAL) (PPK)	(CCLC)	MCS Far Background (filtered) (FBAC)	RST Capture to Inelastic Ratio Near (CIRN_FIL)
450	-50 -1 (V)	3 0 (CPS)	2.5 (----) 0
Discriminated CCL (CCLD) (V)	19 -1	RST Sigma Difference (DSIG) (CU)	RST Capture to Inelastic Ratio Far (CIRF_FIL) (----) 0
	Perfo Zone		5 (----) 0
Gamma Ray (GR) (GAPI)	Tension (TENS) (LBF)	RST Sigma (SIGM) (CU)	
0 150	1000 3000	60 0	
RST Sigma Borehole Fluid (SIBF) (CU)	Minitron Arc Detection (MARC)	RST Porosity (TPHI) (V/V)	RST Inelastic Ratio (IRAT_FIL) (----) 0
100 0	0 (----) 5	0.6 0	0.75 (----) 0
RST Near Effective Capture CR (RSCN)		RST Weighted Inelastic Ratio (WINR_RST)	

Input DLIS Files						
DEFAULT	RST_PSP_027LUP	FN:26	PRODUCER	18-Feb-2010 18:34	3167.9 M	3091.0 M
Output DLIS Files						

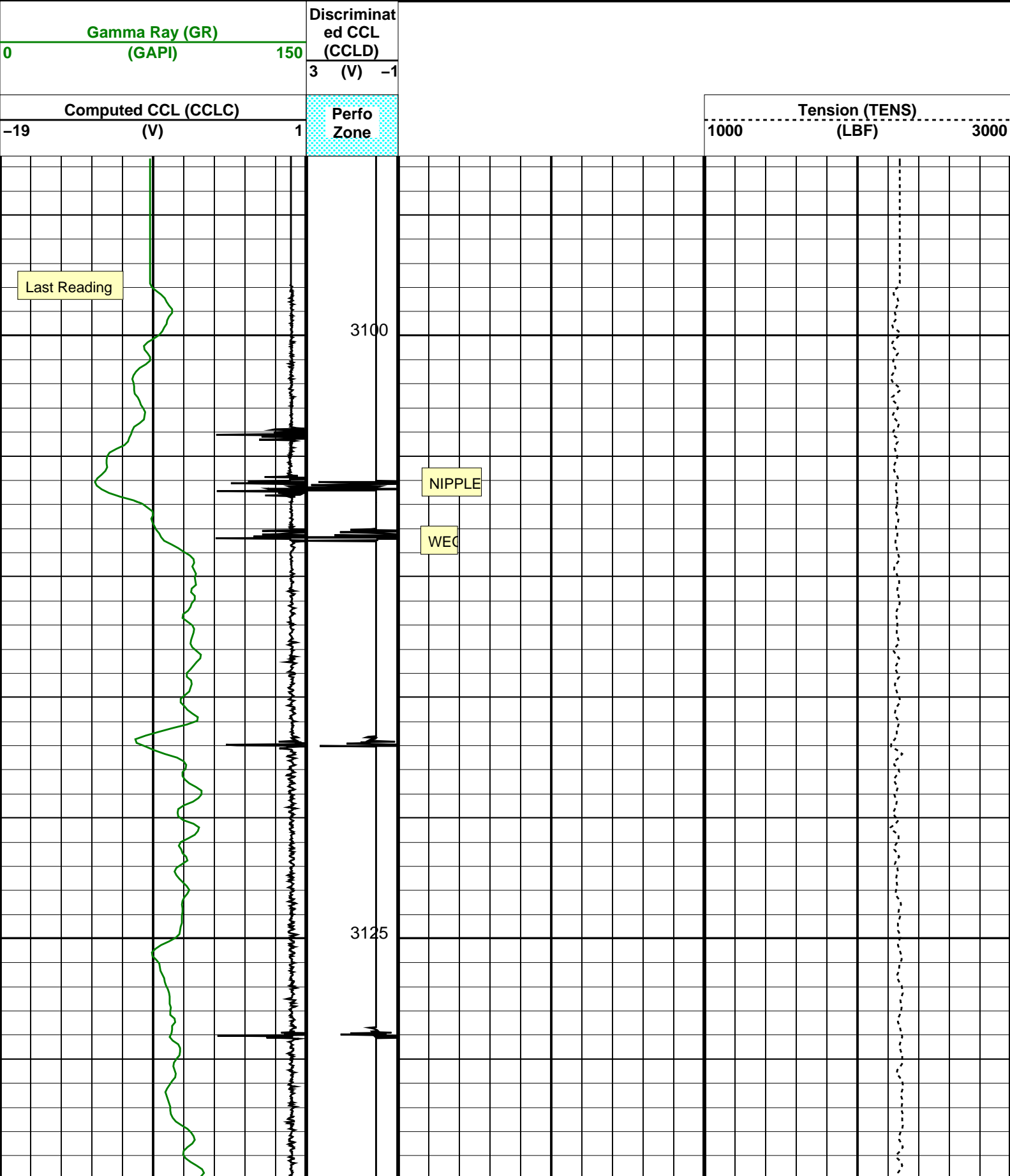
OP System Version: 17C0-154

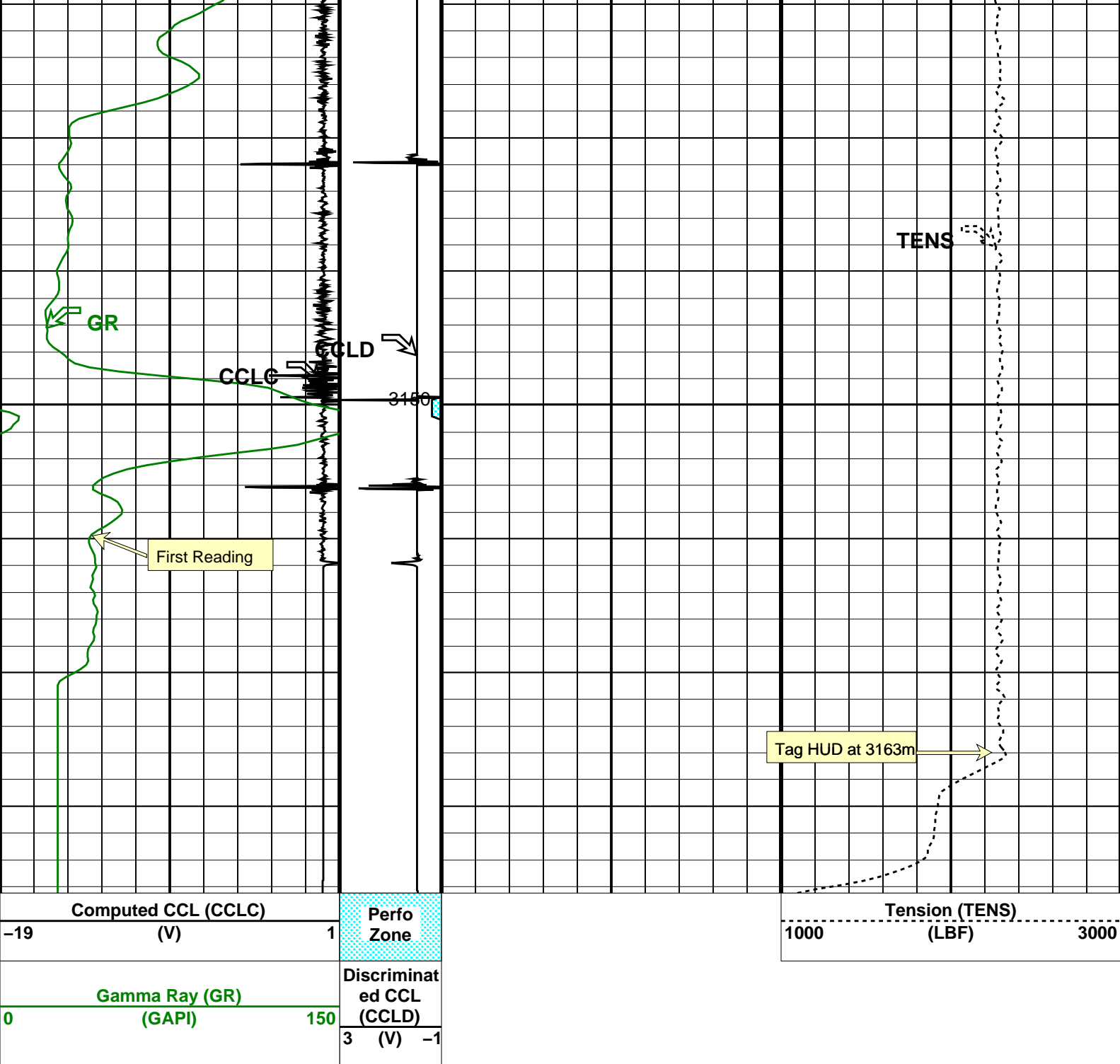
RST-C

SRPC-3870\_Q3\_2009\_OP17\_V3

PSPT

SRPC-3870\_Q3\_2009\_OP17\_V3







DEFAULT	RST_PSP_027PUP	FN:34	PRODUCER	18-Feb-2010 19:49
CUST	RST_PSP_027PUC	FN:35	CUSTOMER	18-Feb-2010 19:49

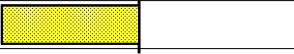

**Schlumberger**

## Before Survey Calibration

MAXIS Field Log

Calibration and Check Summary							
Measurement	Nominal	Master	Before	After	Change	Limit	Units
Production Services Logging Platform Wellsite Calibration – Detector Calibration							
Before: 16-Feb-2010 10:55							
Gamma-Ray Jig-Bkg	125.0	N/A	133.5	N/A	N/A	N/A	GAPI

Production Services Logging Platform / Equipment Identification			
Primary Equipment:			
Production Logging Platform (CQG-F)	PSPT – B		
PSP Basic Measurement Sonde (CQG_F)	PBMS – B	3918	
PSP Basic measurement module	PBMS –		
PSP CCL	CCL –		
PSP GR	GR –		
PSP RTD Well Temperature	RTD_ –		
PSP Crystal Quartz Gauge Type F	CQG_ –		
PSP Telemetry and bus master cartridge	PSTC – A	1864	
Auxiliary Equipment:			

Production Services Logging Platform Wellsite Calibration							
Detector Calibration							
Phase	Gamma-Ray Background	GAPI	Value	Phase	Gamma-Ray Jig-Bkg	GAPI	Value
Before			3.676	Before			133.5
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		110.0 (Minimum)	125.0 (Nominal)	140.0 (Maximum)
Before: 16-Feb-2010 10:55							

Company: **Esso Australia Pty Ltd.**

**Schlumberger**

Well: **FLOUNDER A23A**

Field: **FLOUNDER**

Rig: **Crane / Prod#4**

Country: **Australia**

RST-C  
Sigma Log  
18-Feb-2010