

Company: Esso Australia Pty Ltd.

Well: A-4b
Field: Bream A
Rig : Prod4

Country: Australia

2-1/8" PowerJet MWPT Perforation Record
4 1/2" MPBT Posiset Plug Setting Record
12-Nov-2009

Prod4
Bream A
Gippsland
A-4b
Esso Australia Pty Ltd.

LOCATION			
Gippsland	Elev.:	K.B.	32.82 m
Basin		G.L.	-59.00 m
Bass Strait		D.F.	32.82 m
Permanent Datum:	M.S.L	Elev.:	0.00 m
Log Measured From:	D.F	32.82 m	above Perm. Datum
Drilling Measured From:	D.F		

State: Victoria	Max. Well Deviation 62.9 deg	Longitude 147 46'15"E	Latitude 038 30'4"S
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Logging Date	12-Nov-2009		
Run Number	2 - 6		
Depth Driller	2845 m		
Schlumberger Depth	2755.6 m		
Bottom Log Interval	2750 m		
Top Log Interval	2748 m		
Casing Fluid Type	Production Fluids		
Salinity			
Density			
Fluid Level	1875 m		
BIT/CASING/TUBING STRING			
Bit Size	9.375 in		
From	1447 m		
To	2845 m		
Casing/Tubing Size	7.000 in		
Weight	26 lbn/ft		
Grade	N-80		
From	152 m		
To	2832 m		
Maximum Recorded Temperatures	202 degF		
Logger On Bottom	12-Nov-2009	Time	0:11
Unit Number	889	AUSL	
Recorded By	O Darby		
Witnessed By	G Rimmer		

PVT DATA			
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	62.9 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		Time	
Unit Number		Location	
Recorded By			
Witnessed By			

Depth System Equipment

Date Created: 12-NOV-2009 2:22:55

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-EB	Type:	PSDS/OSDS	Type:	2-32ZT
Serial Number:	6373	Serial Number:	325357	Serial Number:	207505
Calibration Date:	13-Oct-2009	Calibration Date:	21-Oct-2009	Length:	6421 M
Calibrator Serial Number:	30	Calibrator Serial Number:	854	Conveyance Method:	Wireline
Calibration Cable Type:	2-32ZT	Number of Calibration Points:	9	Rig Type:	Rigless
Wheel Correction 1:	0	Calibration RMS:	454		
Wheel Correction 2:	-2	Calibration Peak Error:	281		

Log Sequence:	Subsequent Trip To the Well
Reference Log Name:	
Reference Log Run Number:	Solar Composite Log
Reference Log Date:	
Subsequent Trip Down Log Correction:	

1. IDW used as primary depth control
2. Z Chart used as secondary depth control.

DISCLAIMER

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OTHER SERVICES1	OTHER SERVICES2
OS1: RST	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1

REMARKS: RUN NUMBER 2

Log correlated to ExxonMobil petrophysical analysis composite provided by client

Maximum well deviation = 62.9Deg @ 1330m MDPKB. Average 42.8Deg

Objective:

– Add perforations over the interval 2748.0m to 2750.0m MDKB using 2-1/8" 6SPF

45Deg phased PowerJet perforating gun with MWPT.

AH-Flex Joint 41
 AH-Flex Joint 41

3.99

SAH-G 1047
 SAH-G 1047

3.53

MPD-MB 336
 MPD-MB 336

3.20

AH-ESIC 15042003
 AH-ESIC 15042003

2.66

AH-Firing Head 1

2.23

MWP_GUN
 GUN-2 1/8" Phased Powerjet 1

2.00

TOOL BOTTOM

MAXIMUM STRING DIAMETER 2.13 IN
 MEASUREMENTS RELATIVE TO TOOL ZERO
 ALL LENGTHS IN METERS

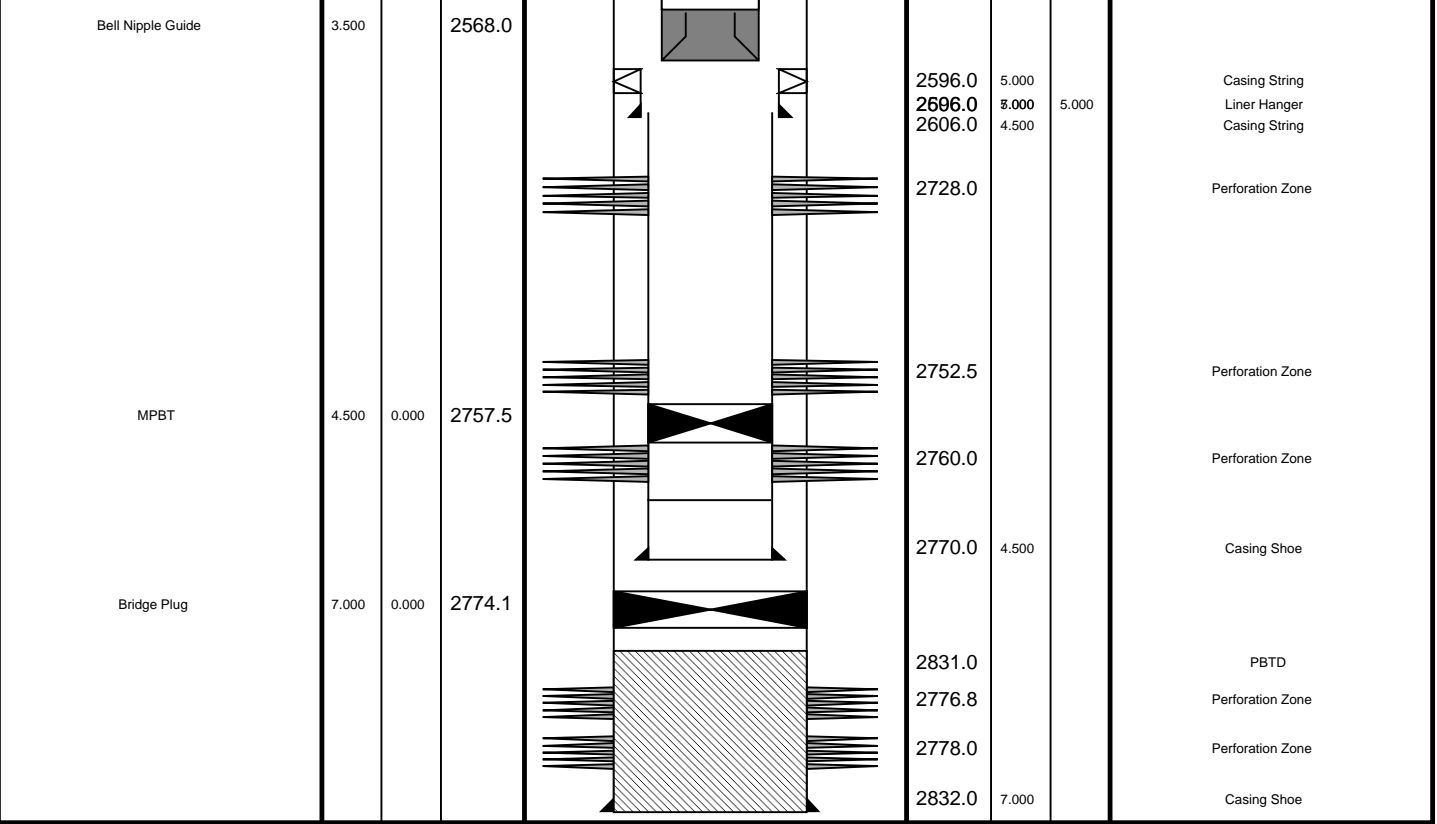
MPEX-DA 4 1/2" MPBT Plug
 MPEX-DA

3.20

TOOL BOTTOM

MAXIMUM STRING DIAMETER 2.13 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	
Tubing	3.500		12.0		16.0	10.375		Casing String Liner Hanger Casing Shoe Casing String
Tubing Hanger		3.500	12.0		12.3	10.375	7.625	
					140.0	7.625		
					152.0	7.000		
SSSV	3.500		455.0					
Gas Lift Mandrel	3.500		572.0					
Gas Lift Mandrel	3.500		1174.0					
Gas Lift Mandrel	3.500		1455.0					
Gas Lift Mandrel	3.500		1725.0		1396.0	10.375		Casing Shoe
Gas Lift Mandrel	3.500		2181.0					
Packer	7.000	3.500	2561.0					
Nipple	3.500		2197.0					

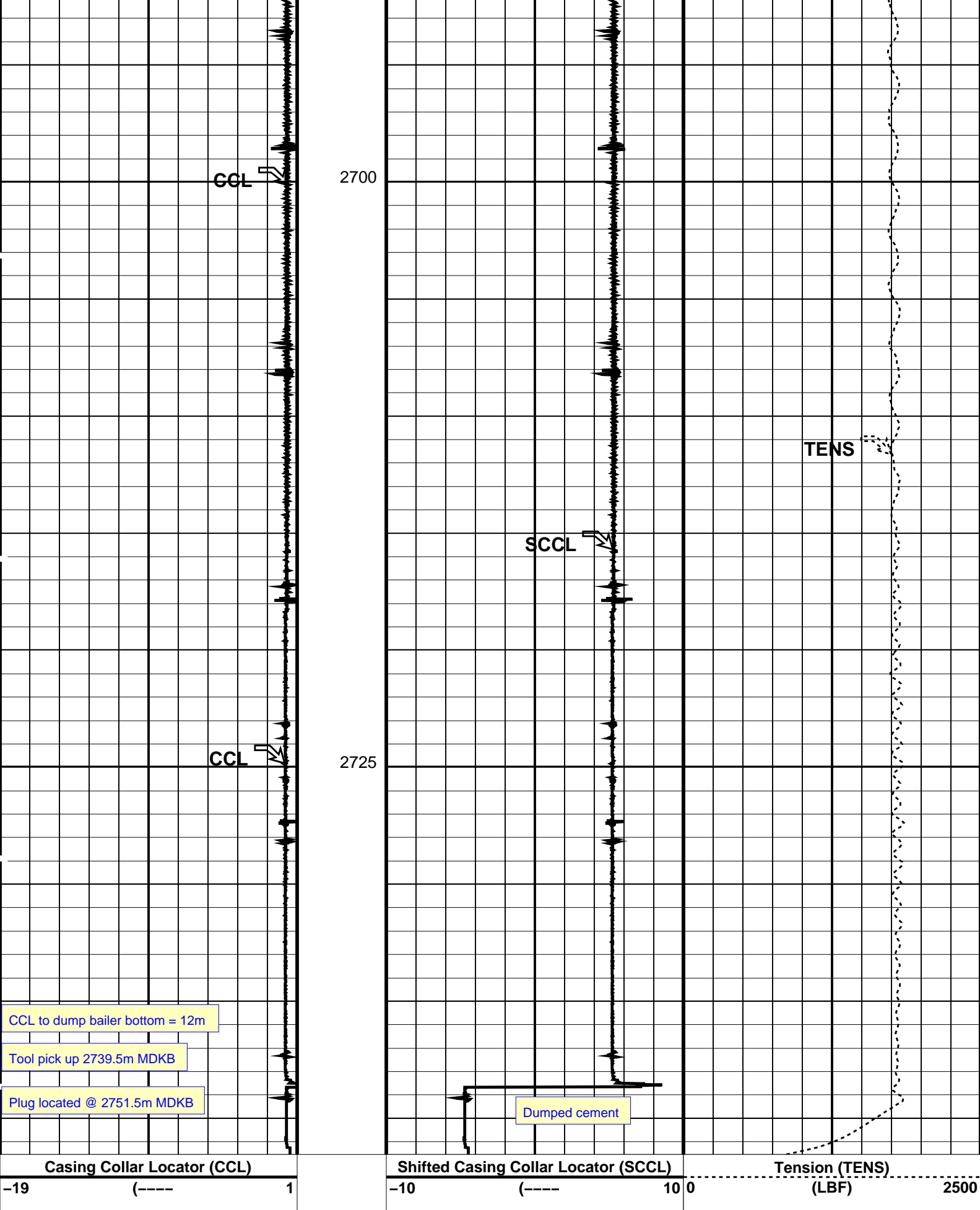


Job Events Summary

MAXIS Field Log

Schlumberger Job Event Summary

	Time	Elapsed Time	Depth (M)	File
Simulated Log	13-Nov-2009 0:52	000:02		PERFO_036LUP
OP checked MWPT				
Log Pass (up)	13-Nov-2009 2:42	000:05	2748.4 - 2690.0	PERFO_042LUP
MWPT - Correlation pass				
Log Pass (up)	13-Nov-2009 2:51	000:15	2748.2 - 2692.8	PERFO_043LUP
MWPT - Shooting pass				
Station Log	13-Nov-2009 2:53	000:07	2744.4	PERFO_045LTP
MWPT - Station log				
Simulated Log	13-Nov-2009 17:09	000:11		PERFO_050LUP
OP check Dummy plug toolstring				
Log Pass (up)	13-Nov-2009 17:57	001:07	2752.8 - 2674.3	PERFO_052LUP
Dummy plug - Correlation pass				
Log Pass (up)	13-Nov-2009 19:05	000:00	2672.5 - 2666.8	PERFO_053LUP
Dummy plug - Short joint correlation				

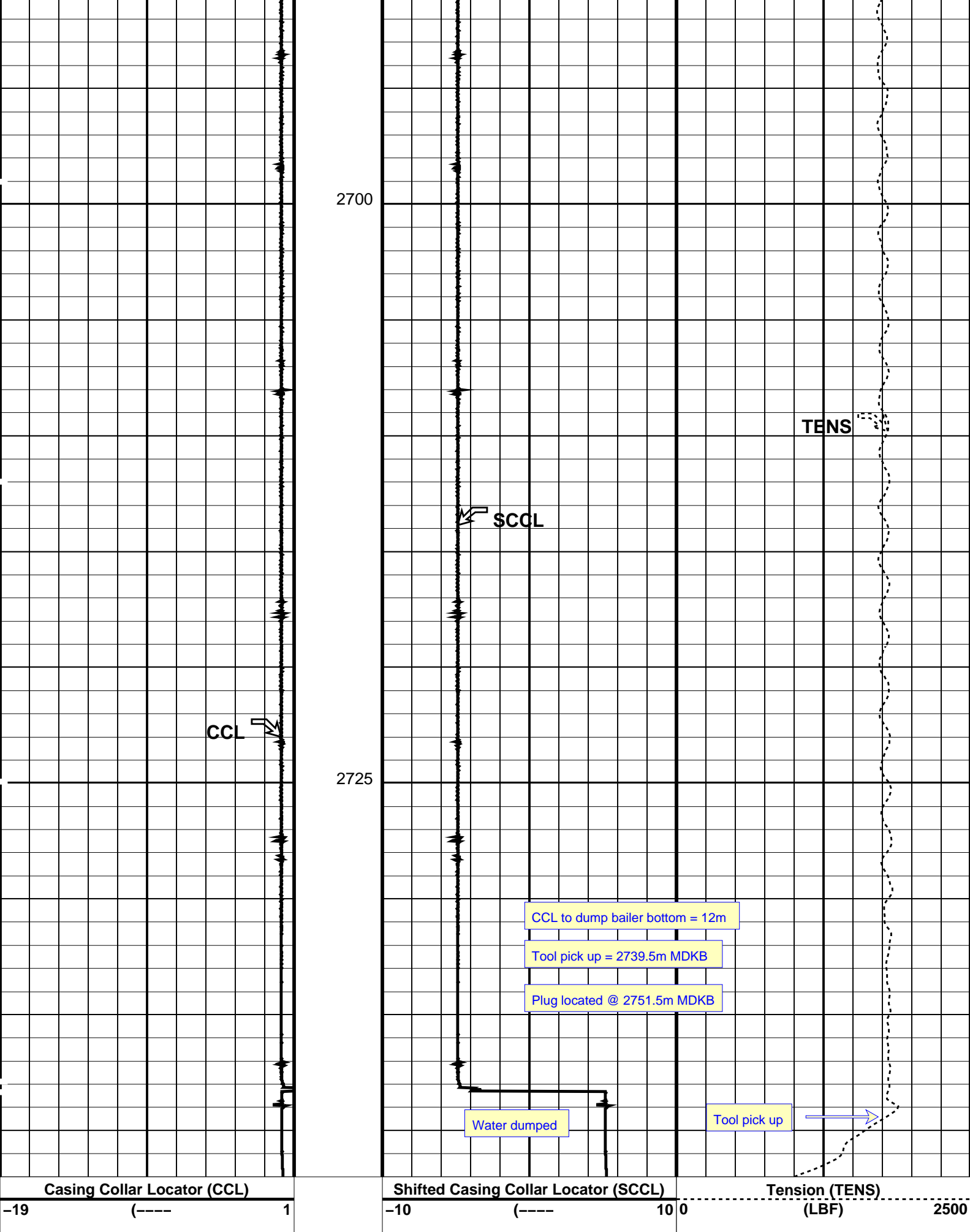


CCL to dump bailer bottom = 12m

Tool pick up 2739.5m MDKB

Plug located @ 2751.5m MDKB

[illegible]



Parameters

DLIS Name	Description	Value
CCLD	CCL-L: Casing Collar Locator	12 IN
CCLT	CCL reset delay	0.3 V
	CCL Detection Level	
DO	System and Miscellaneous	
PP	Depth Offset for Playback	-0.5 M
	Playback Processing	NORMAL

Format: PERFO Vertical Scale: 1:200 Graphics File Created: 14-Nov-2009 00:19

OP System Version: 17C0-154

SHM_GUN 17C0-154 CCL-L 17C0-154

Input DLIS Files

DEFAULT PERFO_081LUP FN:79 PRODUCER 13-Nov-2009 23:33 2742.4 M 2688.3 M

Output DLIS Files

DEFAULT PERFO_084PUP FN:82 PRODUCER 14-Nov-2009 00:19

Schlumberger

4 1/2" MPBT Posiset Plug
Setting Record

MAXIS Field Log

Output DLIS Files

DEFAULT CCL_073LUP FN:71 PRODUCER 13-Nov-2009 21:23

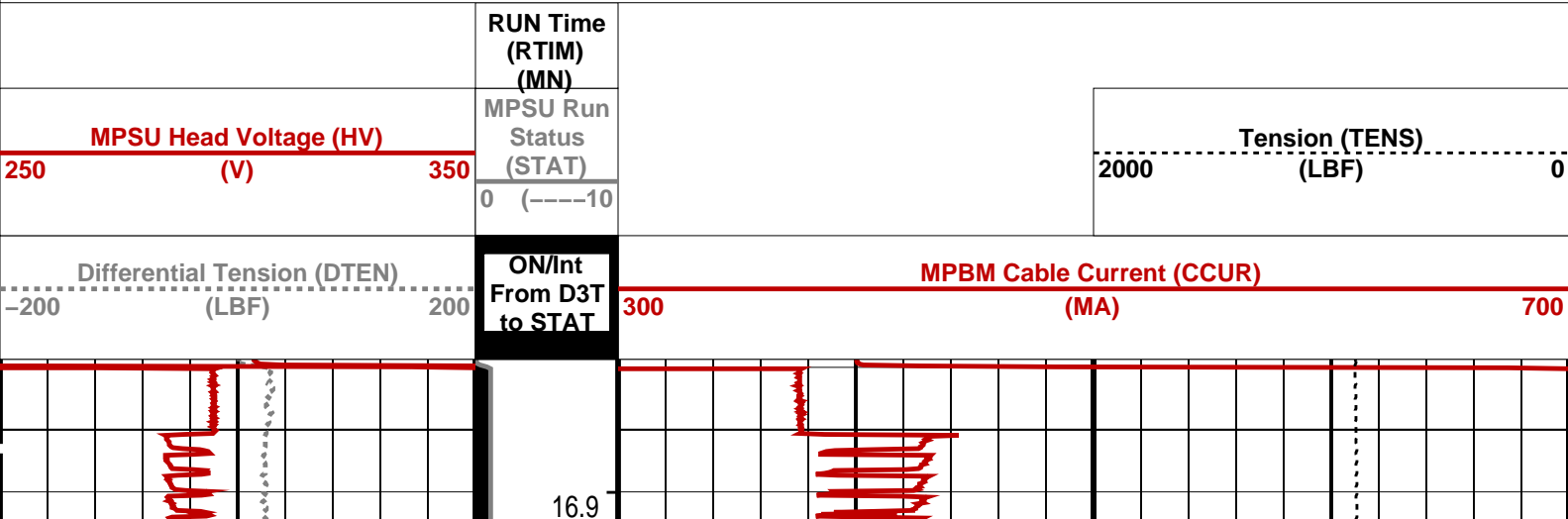
OP System Version: 17C0-154

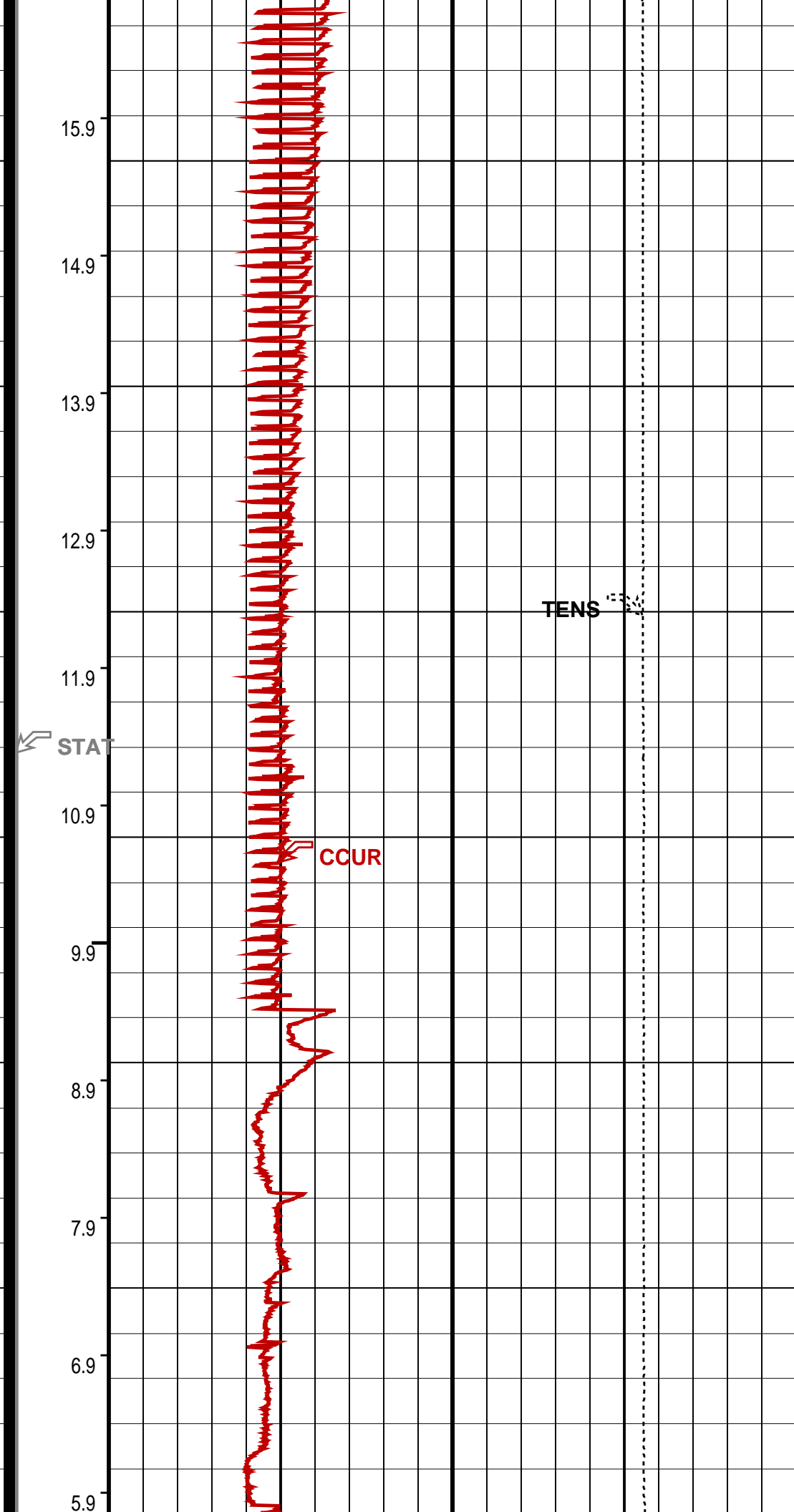
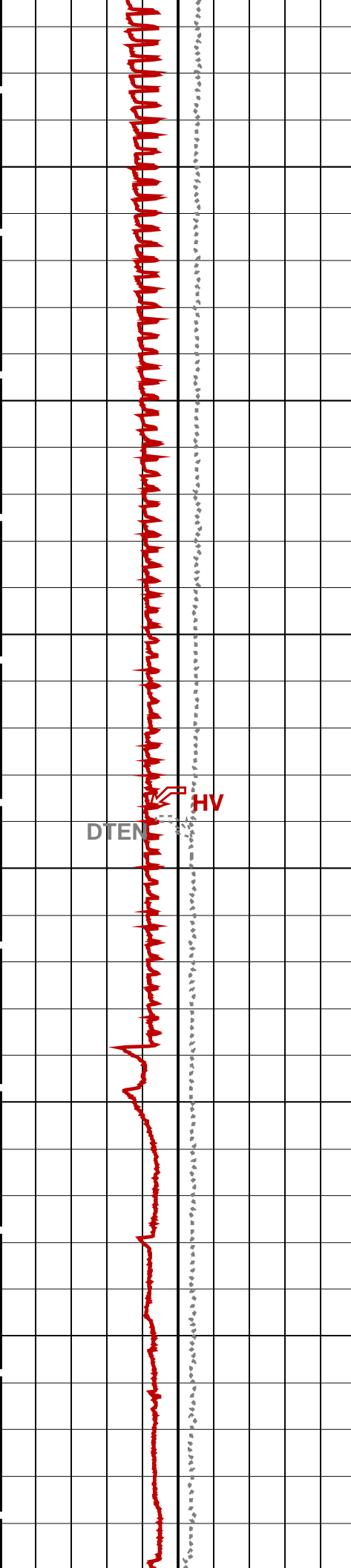
MPEX-CA 17C0-154 MPSU-CA 17C0-154
CCL-L 17C0-154

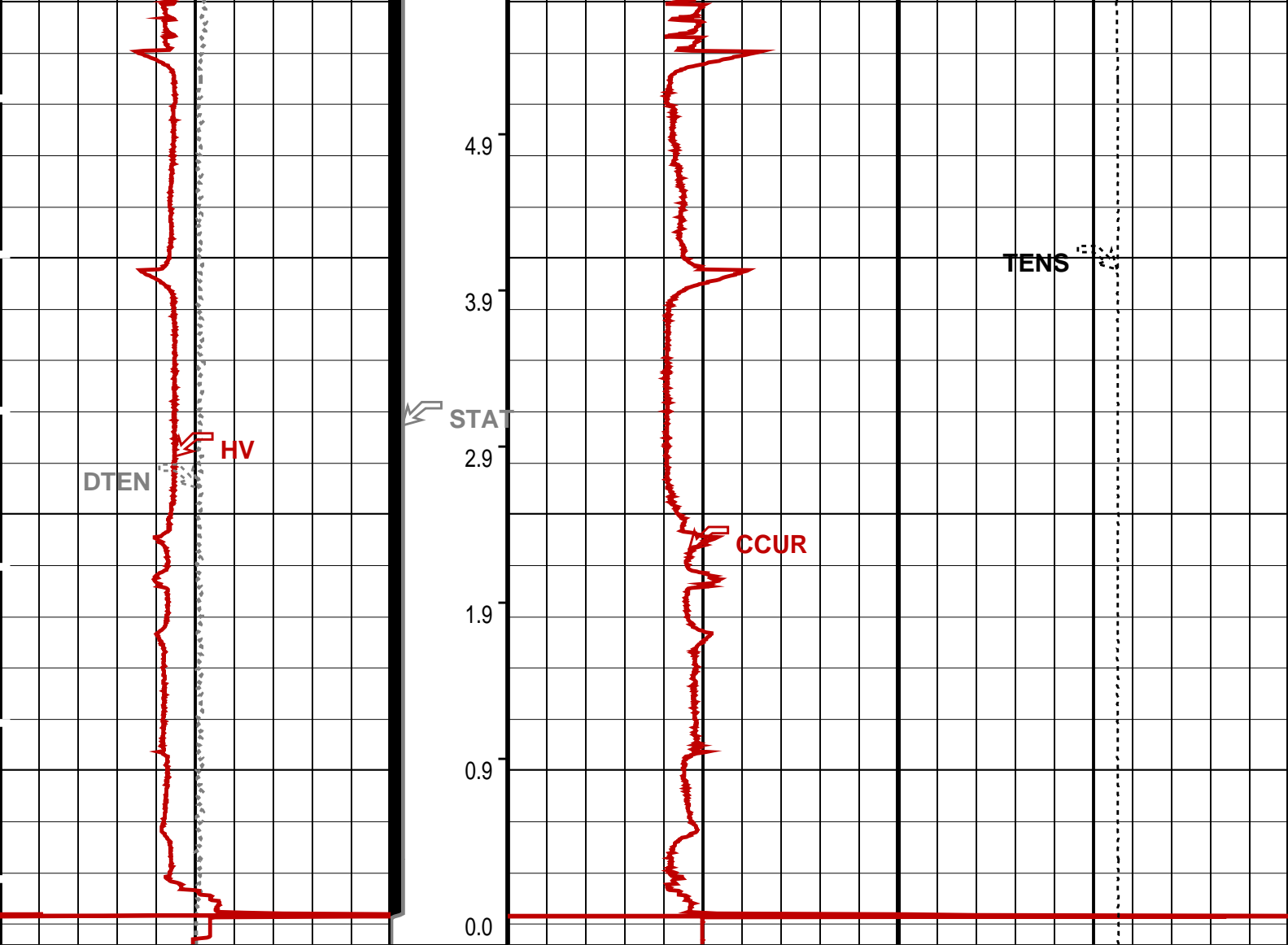
PIP SUMMARY

- MPSU Run Time Every 1 MN
- MPSU Run Time Every 10 MN

Time Mark Every 60 S







Differential Tension (DTEN) (LBF)	ON/Int From D3T to STAT	MPBM Cable Current (CCUR) (MA)	Tension (TENS) (LBF)
-200 200		300 700	2000 0
MPSU Head Voltage (HV) (V)	MPSU Run Status (STAT)		
250 350	0 (----10)		
	RUN Time (RTIM) (MN)		

PIP SUMMARY

⊥ MPSU Run Time Every 1 MN

→ MPSU Run Time Every 10 MN

Time Mark Every 60 S

Parameters			
DLIS Name	Description		Value
IPUMP	MPSU-CA: MECHANICAL PLUGBACK SETTING UNIT Intensifier Pump		TRUE
Format: MPBT		Vertical Scale: 1:600	Graphics File Created: 13-Nov-2009 21:23
OP System Version: 17C0-154			
MPEX-CA	17C0-154	MPSU-CA	17C0-154
CCL-L	17C0-154		

Output DLIS Files



4 1/2" MPBT Posiset Plug
Correlation pass

MAXIS Field Log

Input DLIS Files

DEFAULT

Flip_CCL_094LUP

PRODUCER

14-Nov-2009 02:39

2744.6 M

2669.6 M

Output DLIS Files

DEFAULT

PERFO_096PUP

FN:93

PRODUCER

14-Nov-2009 02:40

2744.7 M

2669.6 M

OP System Version: 17C0-154

MWP_GUN

17C0-154

MWPT-CA

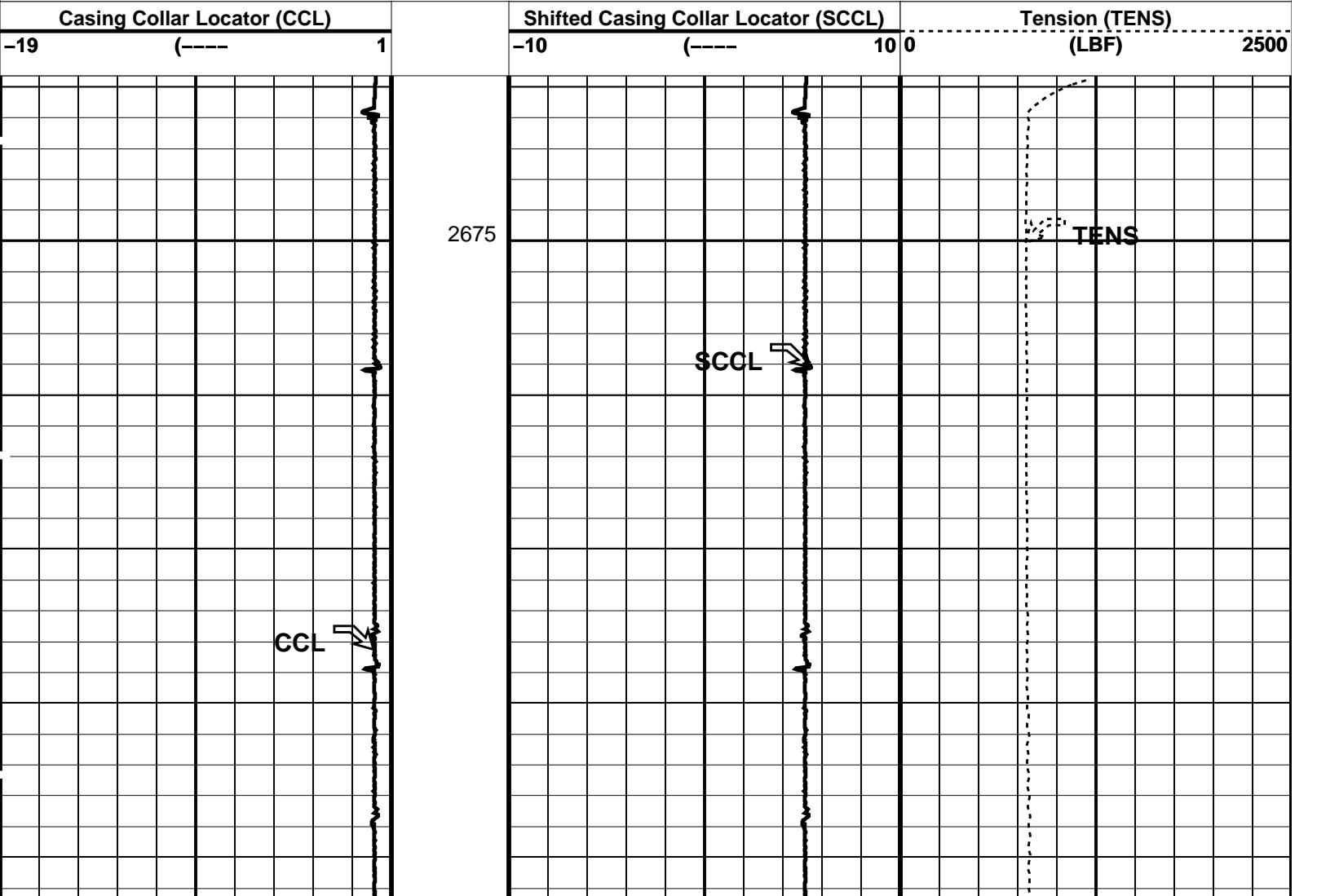
17C0-154

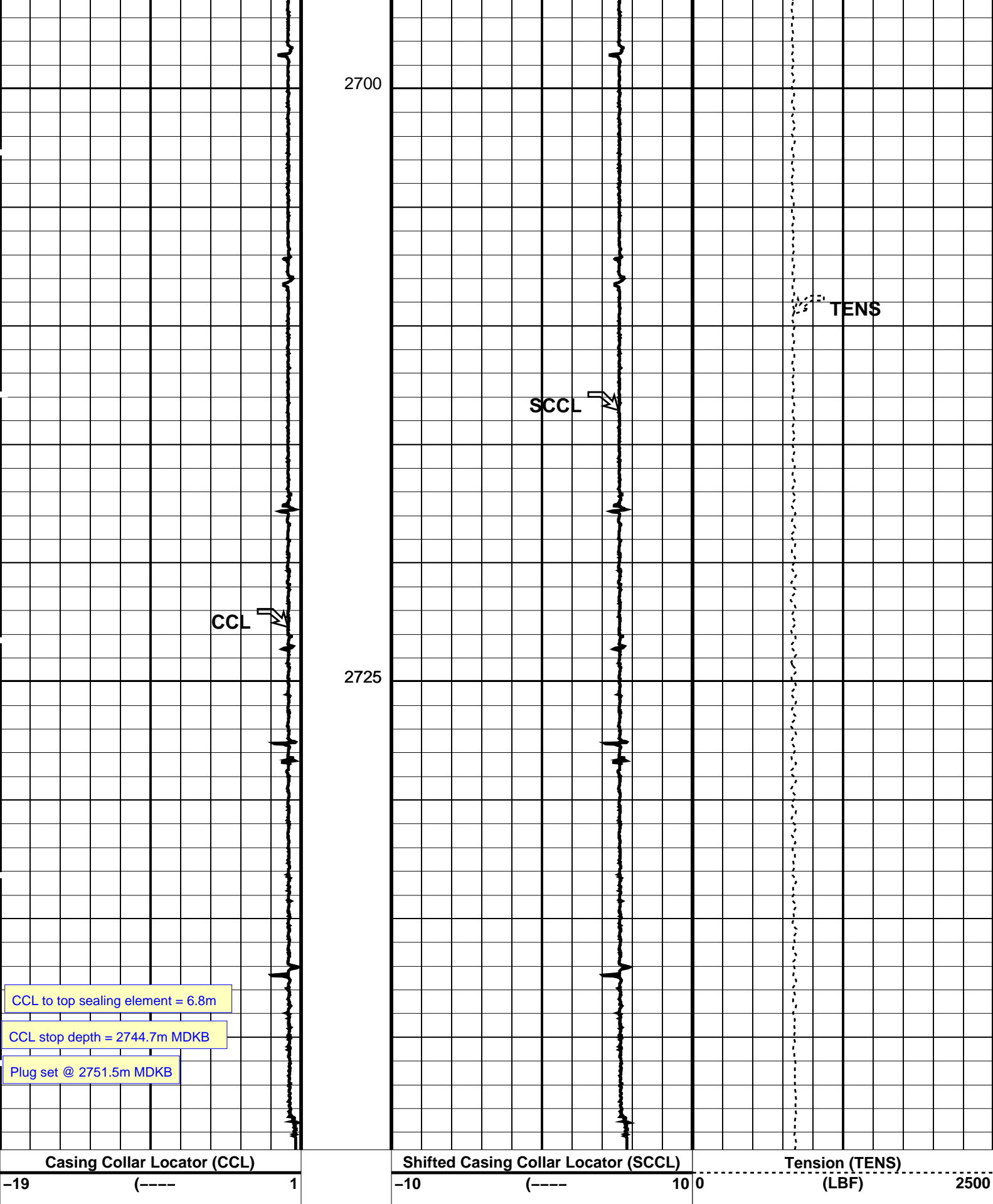
MWGT-AA

17C0-154

PIP SUMMARY

Time Mark Every 60 S



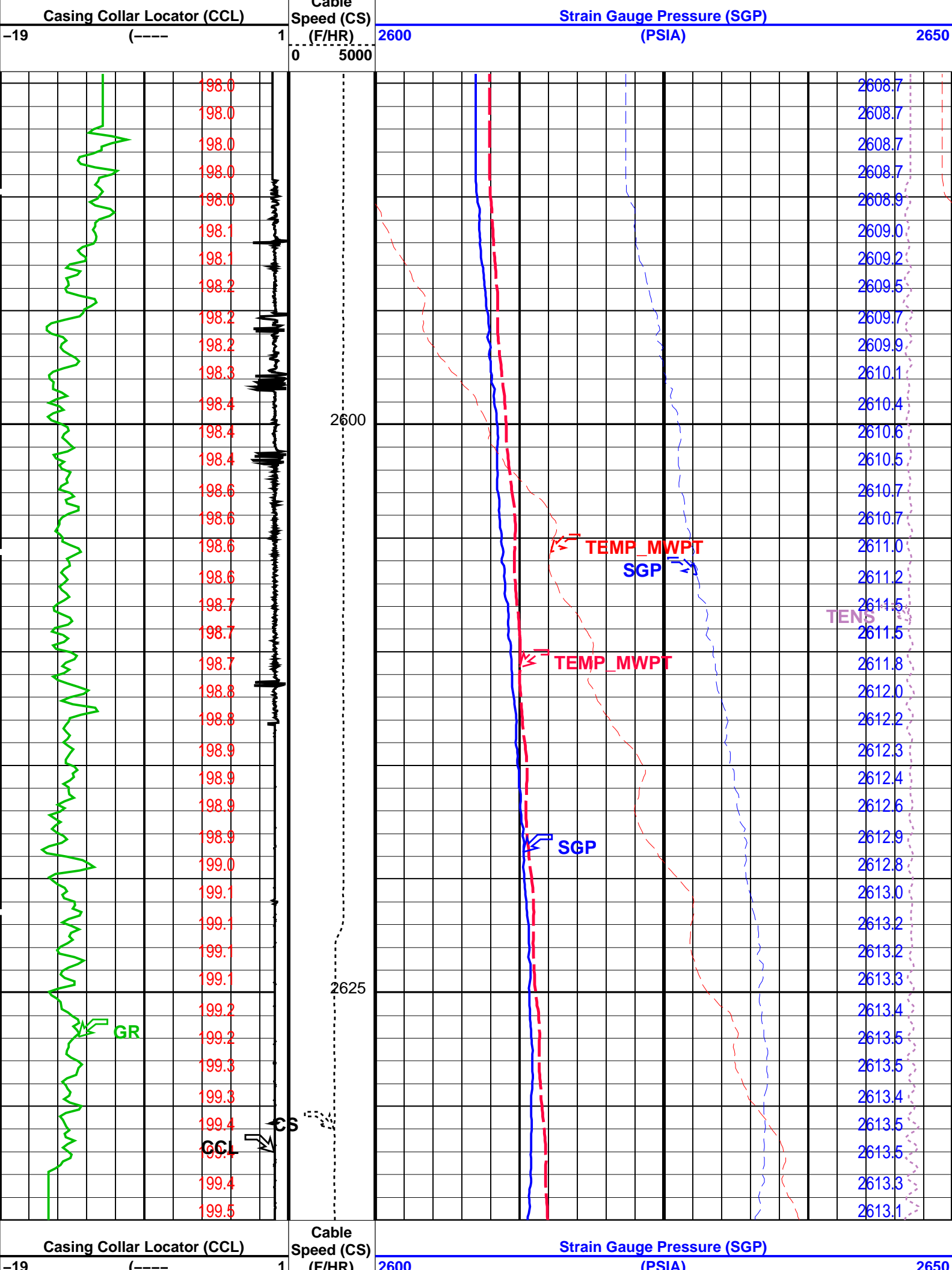


PIP SUMMARY

Time Mark Every 60 S

Parameters		
DLIS Name	Description	Value

		Pressure (SGP) (PSIA)	
		Tension (TENS) (LBF)	
		0	2000
Temperature (TEMP_MWPT) (DEGF)		Temperature (TEMP_MWPT) (DEGF)	
0		2	
CCL From CCL to T1		Strain Gauge Pressure (SGP) (PSIA)	
0		20	
Gamma Ray (GR) (GAPI)		Temperature (TEMP_MWPT) (DEGF)	
0	150	195	210



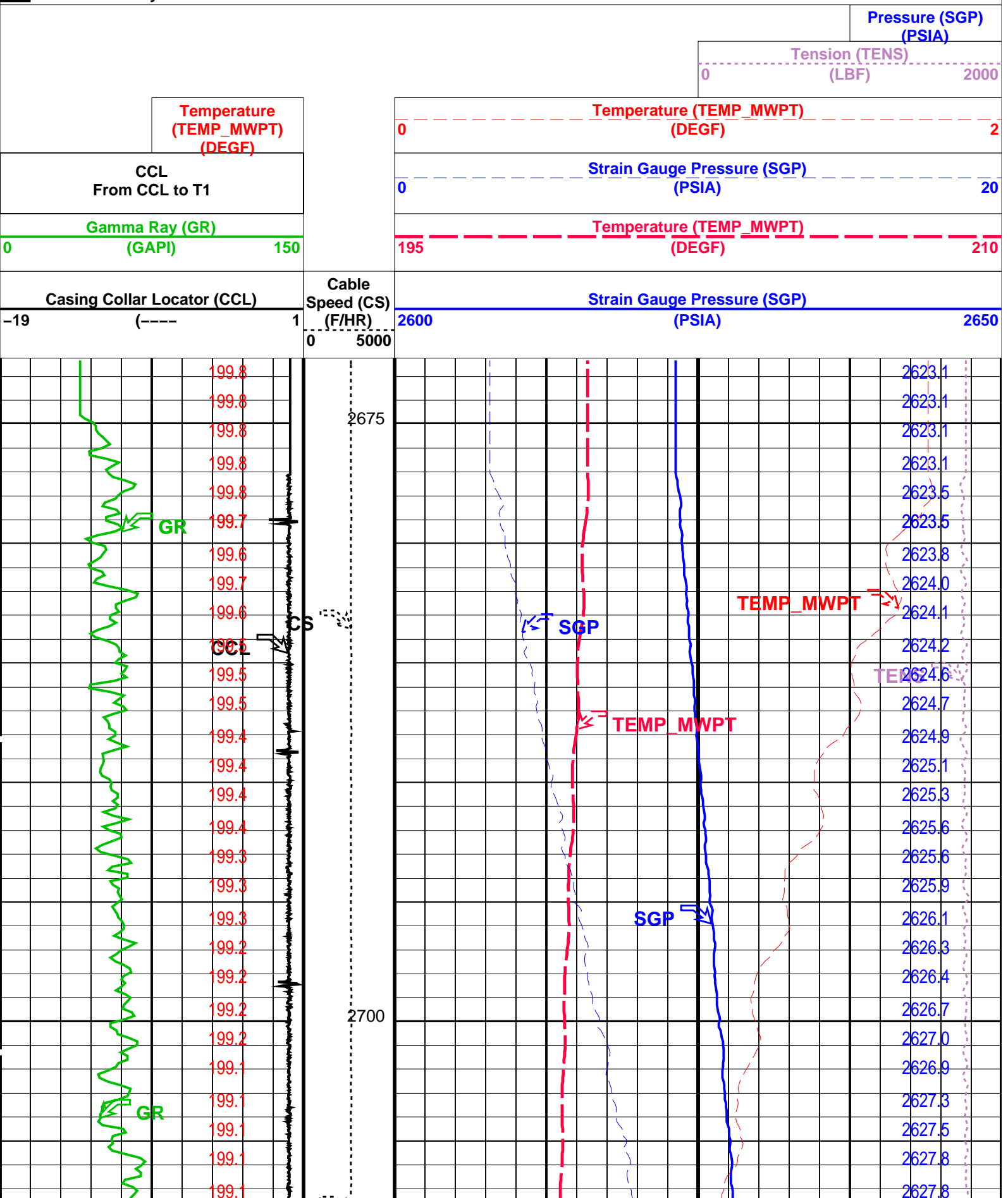
MWP_GUN 17C0-154
MWGT-AA 17C0-154

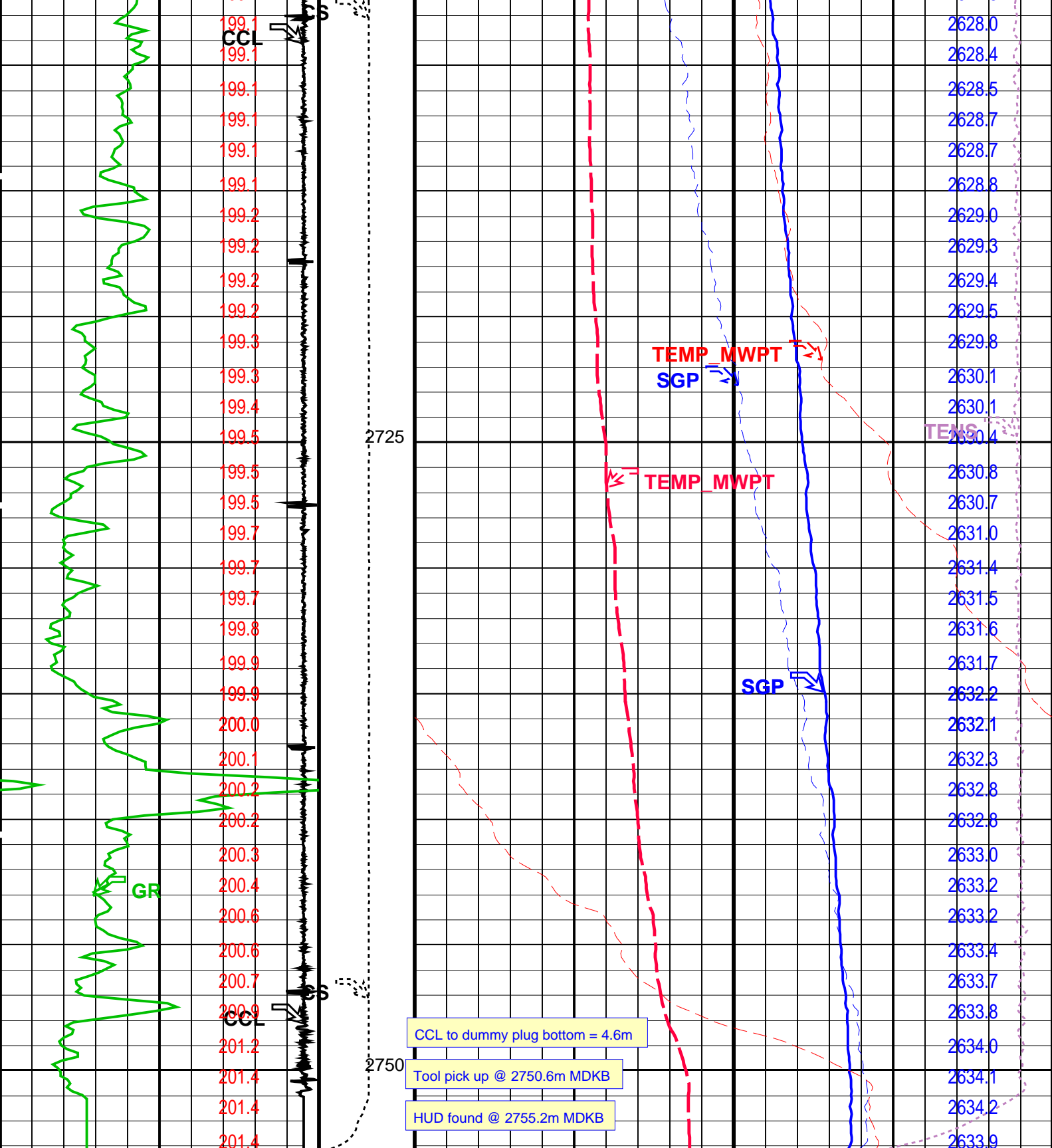
MWPT-CA

17C0-154

PIP SUMMARY

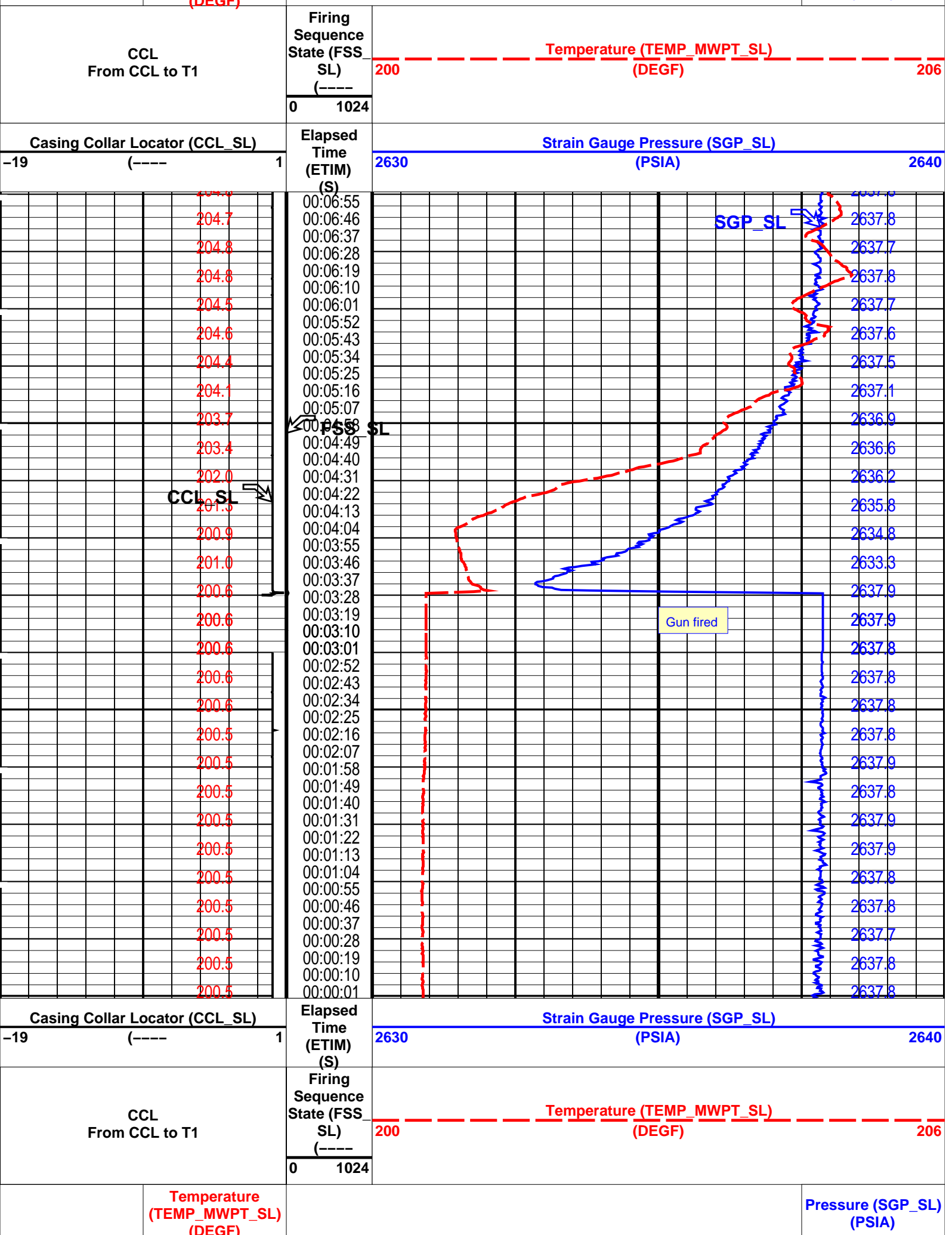
Time Mark Every 60 S





Casing Collar Locator (CCL)		Cable Speed (CS) (F/HR) 0-----5000	Strain Gauge Pressure (SGP)	
-19	(----) 1		2600	(PSIA) 2650
Gamma Ray (GR)			Temperature (TEMP_MWPT)	
0	(GAPI) 150		195	(DEGF) 210
CCL From CCL to T1			Strain Gauge Pressure (SGP)	
			0	(PSIA) 20
	Temperature (TEMP_MWPT)		Temperature (TEMP_MWPT)	
			0	(DEGF) 2

(DEGF)				Tension (TENS) (LBF)		0	2000						
						Pressure (SGP) (PSIA)							
PIP SUMMARY													
Time Mark Every 60 S													
Parameters													
DLIS Name		Description			Value								
MWPT-CA: MEASUREMENT WHILE PERFORATING TOOL													
DEVI_FL_CORR		Deviation Angle for Flow Line Correction			0	DEG							
FLD		Flow Line Density			1	G/C3							
MWPT_NULL_SOURCE		MWPT NULL Temperature Source			TEMS								
MWPT_NULL_TEMP		MWPT NULL Temperature			0.0	DEGC							
System and Miscellaneous													
DO		Depth Offset for Playback			0.3	M							
PP		Playback Processing			NORMAL								
Format: MWP		Vertical Scale: 1:200			Graphics File Created: 13-Nov-2009 19:13								
OP System Version: 17C0-154													
MWP_GUN		17C0-154		MWPT-CA		17C0-154							
MWGT-AA		17C0-154											
Input DLIS Files													
DEFAULT	PERFO_052LUP	FN:50	PRODUCER					13-Nov-2009 17:57	2752.8 M	2674.3 M			
Output DLIS Files													
DEFAULT	PERFO_058PUP	FN:56	PRODUCER	13-Nov-2009 19:13									
<div> <div>Schlumberger</div> <div>2-1/8" PowerJet Gun – MWPT Station Log</div> </div> <div>MAXIS Field Log</div>													
Company: Esso Australia Pty Ltd.						Well: A-4b							
Input DLIS Files													
DEFAULT	PERFO_045LTP	FN:43	PRODUCER	13-Nov-2009 02:53	2744.4 M								
Output DLIS Files													
DEFAULT	PERFO_093PTP	FN:91	PRODUCER	14-Nov-2009 02:36	2744.4 M								
OP System Version: 17C0-154													
MWP_GUN		17C0-154		MWPT-CA		17C0-154							
MWGT-AA		17C0-154											
PIP SUMMARY													
Time Mark Every 60 S													
		Temperature (TEMP_MWPT_SL) (DEGF)				Pressure (SGP_SL) (PSIA)							



Parameters

DLIS Name	Description	Value
MWPT-CA: MEASUREMENT WHILE PERFORATING TOOL		
DEVI_FL_CORR	Deviation Angle for Flow Line Correction	0 DEG
FLD	Flow Line Density	1 G/C3
MWPT_NULL_SOURCE	MWPT NULL Temperature Source	TEMS
MWPT_NULL_TEMP	MWPT NULL Temperature	0.0 DEGC
System and Miscellaneous		
PP	Playback Processing	NORMAL

Format: MWP_SL Vertical Scale: 1" per 60S Graphics File Created: 14-Nov-2009 02:36

OP System Version: 17C0-154

MWP_GUN	17C0-154	MWPT-CA	17C0-154
MWGT-AA	17C0-154		

Input DLIS Files

DEFAULT	PERFO_045LTP	FN:43	PRODUCER	13-Nov-2009 02:53	2744.4 M
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Output DLIS Files

DEFAULT	PERFO_093PTP	FN:91	PRODUCER	14-Nov-2009 02:36
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Schlumberger

**2-1/8" PowerJet Gun – MWPT
Shooting Pass**

MAXIS Field Log

Company: Esso Australia Pty Ltd.

Well: A-4b

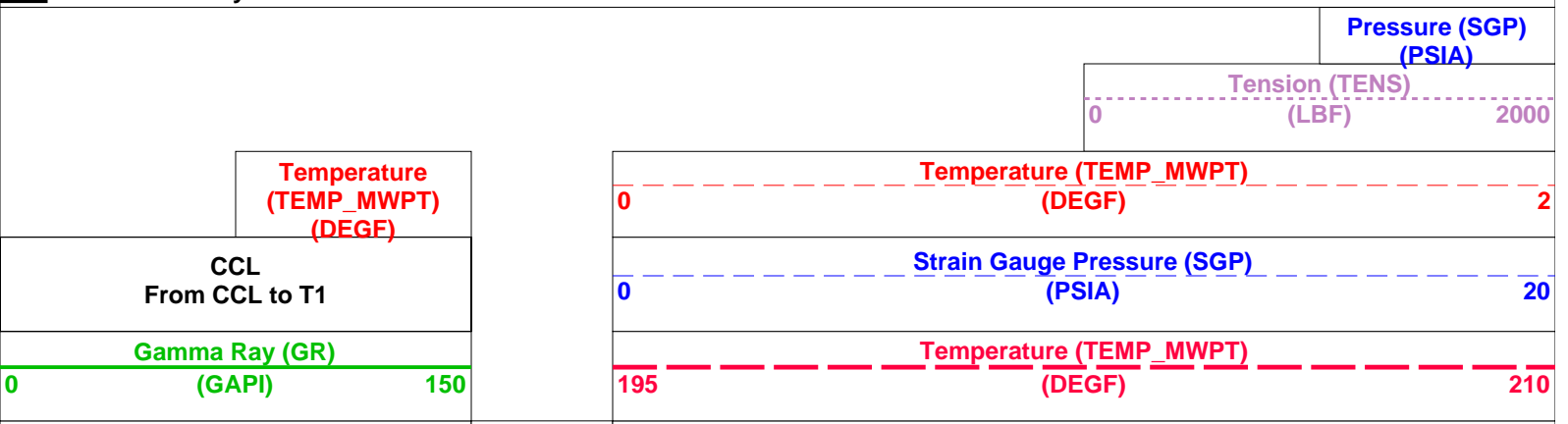
Output DLIS Files

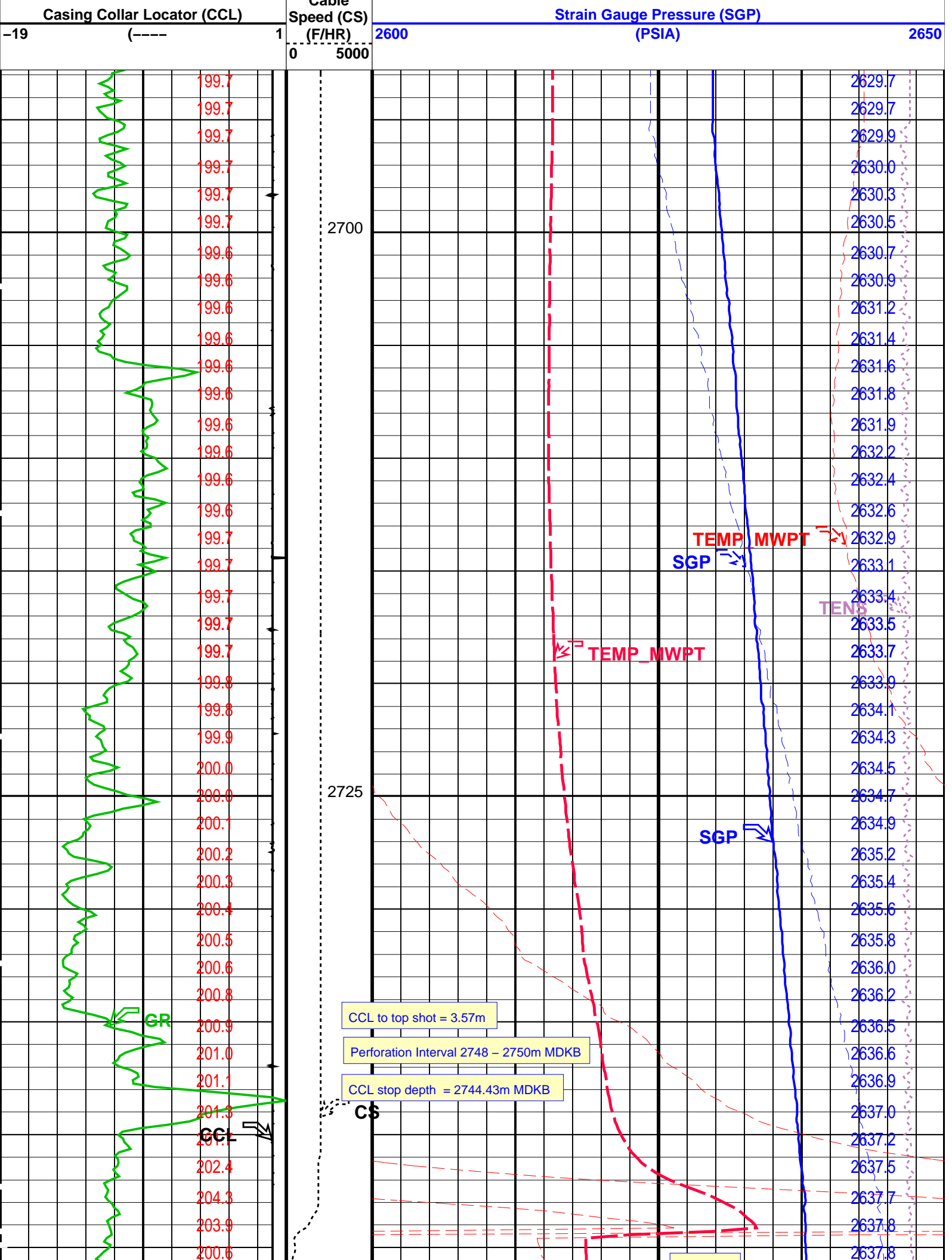
DEFAULT	PERFO_043LUP	FN:41	PRODUCER	13-Nov-2009 02:51	2748.2 M	2692.8 M
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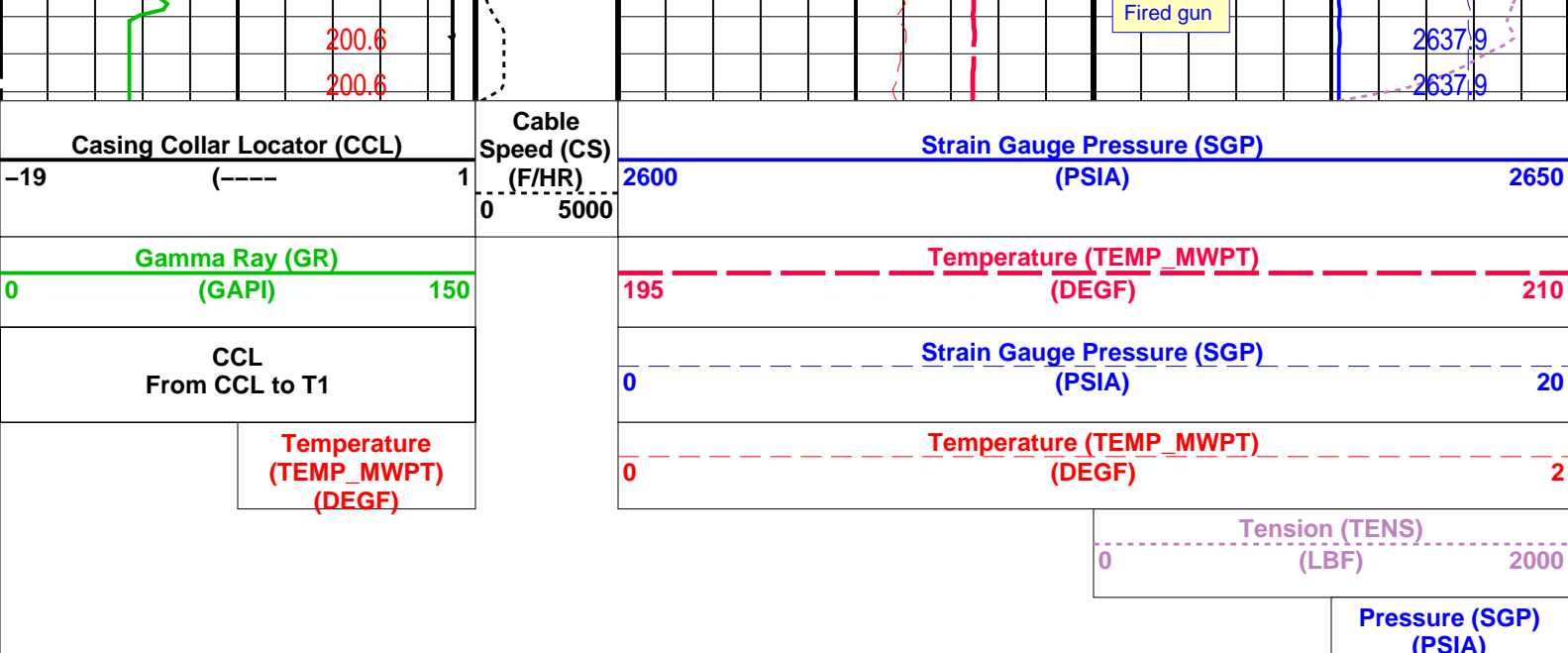
OP System Version: 17C0-154

MWP_GUN	17C0-154	MWPT-CA	17C0-154
MWGT-AA	17C0-154		

PIP SUMMARY







PIP SUMMARY


☐ Time Mark Every 60 S

Parameters			
DLIS Name	Description	Value	
MWPT-CA: MEASUREMENT WHILE PERFORATING TOOL			
DEVI_FL_CORR	Deviation Angle for Flow Line Correction	0	DEG
FLD	Flow Line Density	1	G/C3
MWPT_NULL_SOURCE	MWPT NULL Temperature Source	TEMS	
MWPT_NULL_TEMP	MWPT NULL Temperature	0.0	DEGC

Format: MWP Vertical Scale: 1:200 Graphics File Created: 13-Nov-2009 02:51

OP System Version: 17C0-154			
MWP_GUN	17C0-154	MWPT-CA	17C0-154
MWGT-AA	17C0-154		

Output DLIS Files			
DEFAULT	PERFO_043LUP	FN:41 PRODUCER	13-Nov-2009 02:51



2-1/8" PowerJet Gun – MWPT Correlation Pass

MAXIS Field Log

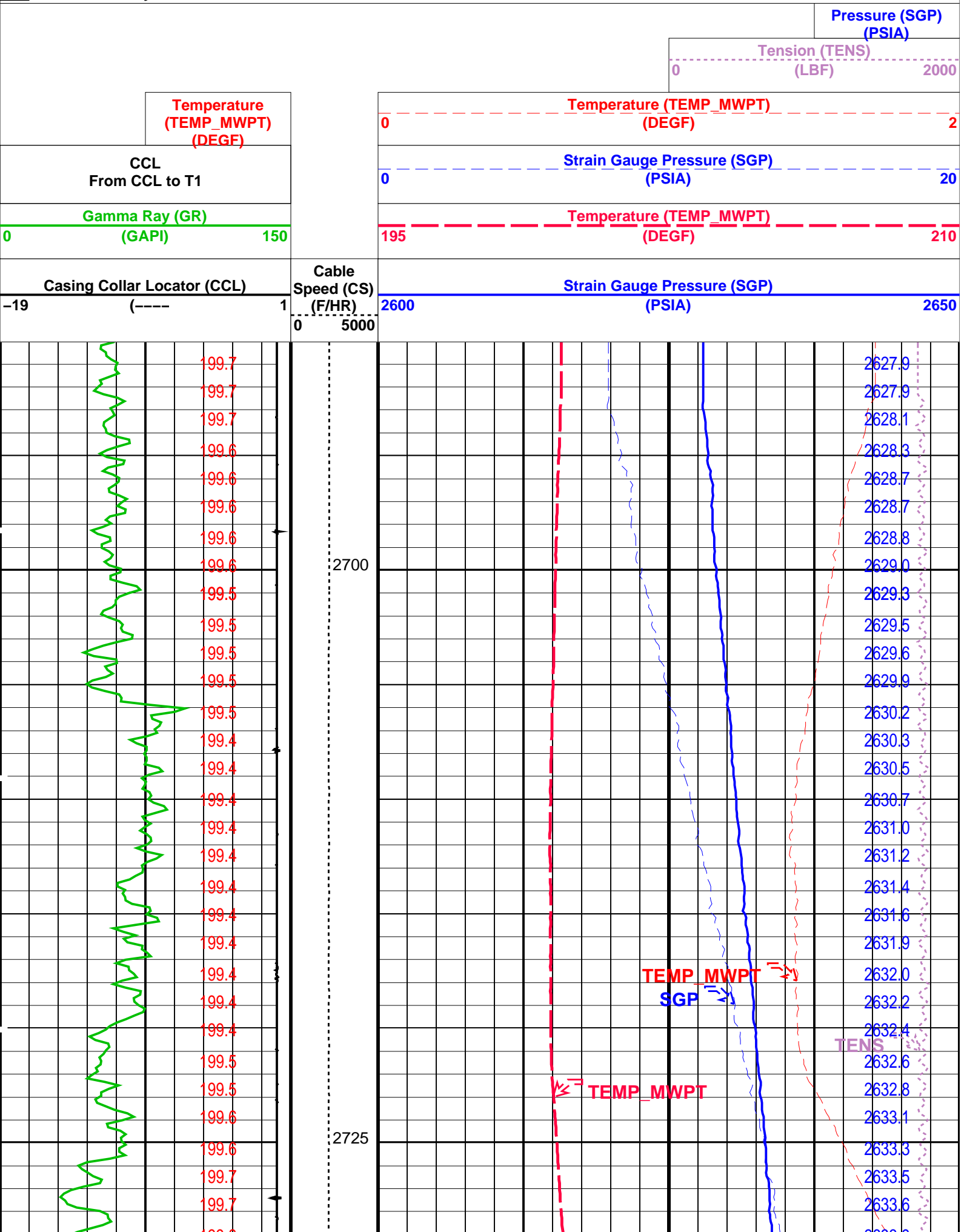
Company: Esso Australia Pty Ltd. Well: A-4b

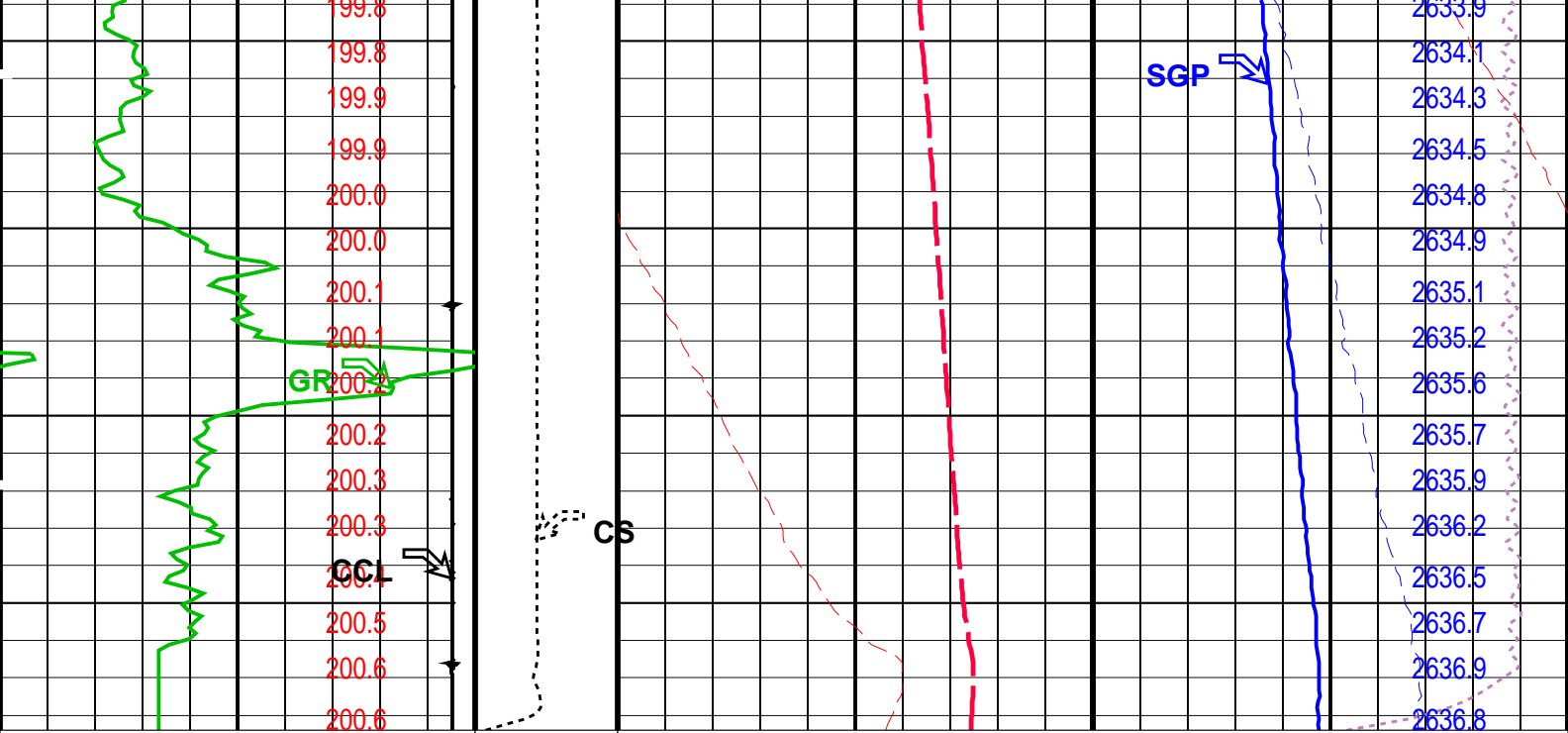
Output DLIS Files			
DEFAULT	PERFO_042LUP	FN:40 PRODUCER	13-Nov-2009 02:42 2748.4 M 2690.0 M

OP System Version: 17C0-154			
MWP_GUN	17C0-154	MWPT-CA	17C0-154
MWGT-AA	17C0-154		

PIP SUMMARY

Time Mark Every 60 S





Casing Collar Locator (CCL)		Cable Speed (CS)	Strain Gauge Pressure (SGP)	
-19 (----) 1		(F/HR)	(PSIA)	
		0 5000	2600 2650	
Gamma Ray (GR)			Temperature (TEMP_MWPT)	
0 (GAPI) 150			(DEGF)	
			195 210	
CCL			Strain Gauge Pressure (SGP)	
From CCL to T1			(PSIA)	
			0 20	
Temperature (TEMP_MWPT)			Temperature (TEMP_MWPT)	
(DEGF)			(DEGF)	
			0 2	
			Tension (TENS)	
			(LBF)	
			0 2000	
			Pressure (SGP)	
			(PSIA)	

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
MWPT-CA: MEASUREMENT WHILE PERFORATING TOOL			
DEVI_FL_CORR	Deviation Angle for Flow Line Correction	0	DEG
FLD	Flow Line Density	1	G/C3
MWPT_NULL_SOURCE	MWPT NULL Temperature Source	TEMS	
MWPT_NULL_TEMP	MWPT NULL Temperature	0.0	DEGC

Format: MWP Vertical Scale: 1:200

Graphics File Created: 13-Nov-2009 02:42

OP System Version: 17C0-154

MWP_GUN	17C0-154	MWPT-CA	17C0-154
MWGT-AA	17C0-154		

Output DLIS Files

DEFAULT	PERFO_042LUP	FN:40	PRODUCER	13-Nov-2009 02:42
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Company: Esso Australia Pty Ltd.

Schlumberger

Well: **A-4b**
Field: **Bream A**
Rig : **Prod4**
Country: **Australia**

2-1/8" PowerJet MWPT Perforation Record
4 1/2" MPBT Posiset Plug Setting Record
12-Nov-2009