

Company: Esso Australia Pty Ltd.

Well: W-19

Field: West Tuna

Rig: Crane / Prod 4

Country: Australia

2" Phased Powerjet Omega HSD  
Perforation Record

Rig: Crane / Prod 4  
Field: West Tuna  
Location: Gippsland  
Well: W-19  
Company: Esso Australia Pty Ltd.

LOCATION			
Gippsland	Elev.:	K.B.	38.90 m
Basin		G.L.	60.00 m
Bass Strait		D.F.	38.90 m
Permanent Datum:	M.S.L		
Log Measured From:	K.B	38.90 m	above Perm. Datum
Drilling Measured From:	K.B		

State: Victoria	Max. Well Deviation 68.5 deg	Longitude 148° 25' 05.29"E	Latitude 38° 10' 16.00"S
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Logging Date

2-Sep-2009

Run Number

1-2

Depth Driller

2748 m

Schlumberger Depth

2734 m

Bottom Log Interval

2725 m

Top Log Interval

2715 m

Casing Fluid Type

Production Fluids

Salinity

Density

Fluid Level

0 m

BIT/CASING/TUBING STRING

Bit Size

8.500 in

From

758 m

To

2823 m

Casing/Tubing Size

3.500 in

Weight

29.7 lbm/ft

Grade

L-80

From

16.89 m

To

2682.56 m

Maximum Recorded Temperatures

173 degF

Logger On Bottom

2-Sep-2009

11:00

Unit Number

889

Prod 4 / AUSL

Recorded By

B.Donahoe

Witnessed By

B.Robinson

Run 1

Run 2

PVT DATA

Oil Density

Water Salinity

Gas Gravity

Bo

Bw

1/Bg

Bubble Point Pressure

Bubble Point Temperature

Solution GOR

Maximum Deviation

68.5 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 SUMMARY LISTING

Date Created: 3-SEP-2009 13:58:06

### Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-EB	Type:	PSDS/OSDS	Type:	2-32ZT
Serial Number:	6373	Serial Number:	325357	Serial Number:	208196
Calibration Date:	2-Dec-2008	Calibration Date:	20-7-2009	Length:	6461 M
Calibrator Serial Number:	30	Calibrator Serial Number:	1174	Conveyance Method: Wireline Rig Type: Rigless	
Calibration Cable Type:	2-32ZT	Number of Calibration Points:	10		
Wheel Correction 1:	-1	Calibration RMS:	281		
Wheel Correction 2:	-2	Calibration Peak Error:	454		

### Depth Control Parameters

Log Sequence:	Subsequent Log In the Well
Reference Log Name:	West Tuna W-19 Petrophysical Analysis
Reference Log Run Number:	1
Reference Log Date:	Not provided

### Depth Control Remarks

1. IDW-EB 6373 used as primary depth control.
2. Z-Chart as back-up.
3.
4.
5.
6.

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OTHER SERVICES1
OS1: None

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Log correlated to ExxonMobil Petrophysical AnalysisLog supplied with logging program.	
Objectives: Perforate the well over the intervals 2720m to 2725m MDKB and 2715m to 2720m MDKB	
using 10m ( 2 x 5m guns) of 2.0" 6 SPF, 45 deg phased Powerjet Omega HSD guns.	
Maximum Deviation = 68.5deg @ 1690m MDKB	

Gun 1

Gun 2

Fired @ 2720m to 2725m MDKB	Fired @ 2715m to 2720m MDKB
CCL to Top Shot = 3.56 m	CCL to Top Shot = 3.56m
CCL Stop Depth @ 2716.44m MDKB	CCL Stop Depth @ 2711.44 m MDKB
HUD Tagged @ 2734m MDKB	













Schlumberger crews: Nathan Simmons,Rick Murray

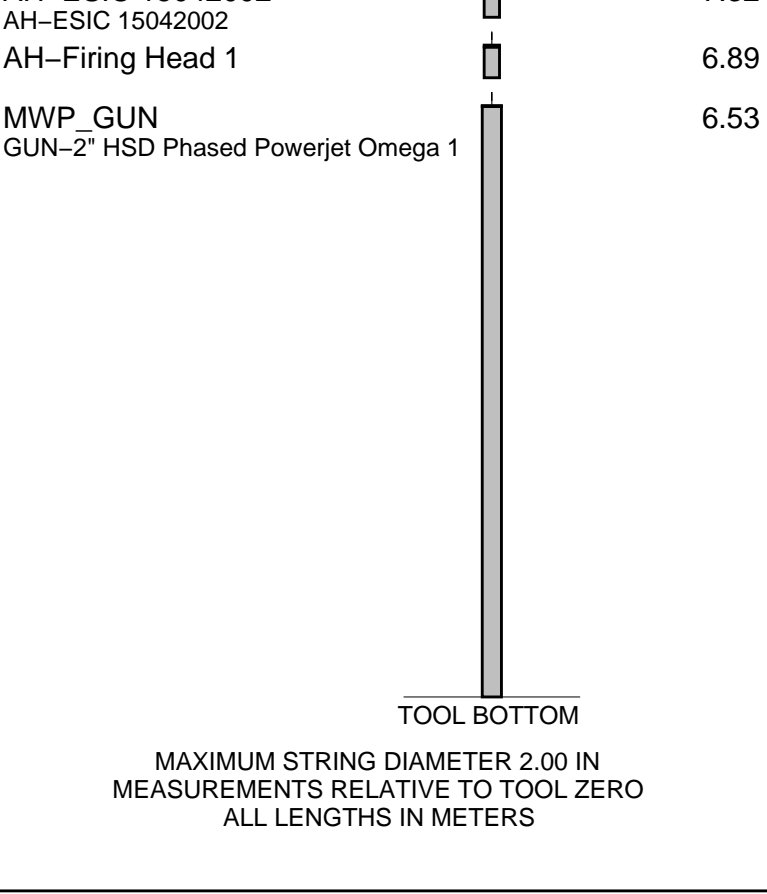
RUN 1			RUN 2		
SERVICE ORDER #:	AUSL07336279		SERVICE ORDER #:		
PROGRAM VERSION:	17C0-154		PROGRAM VERSION:		
FLUID LEVEL:	0 m		FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

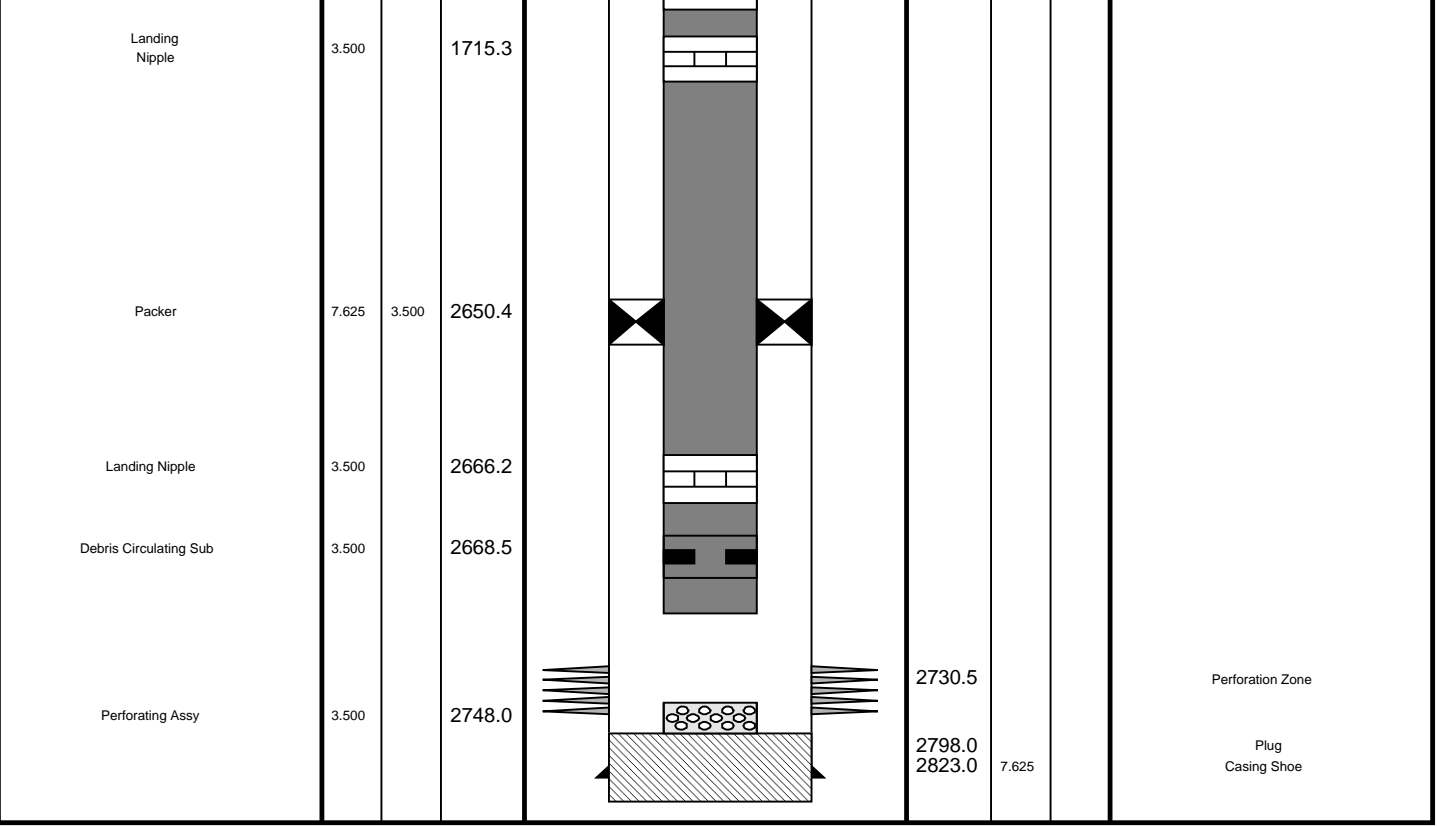
RUN 1

RUN 2

SURFACE EQUIPMENT					
MWPM-AA					
DOWNHOLE EQUIPMENT					
AH-SWBS-B 789					15.67
AH-SWBS-B 789					
AH-SWBS-B 788					14.98
AH-SWBS-B 788					
AH-SWBS-B 787					14.30
AH-SWBS-B 787					
AH-SWBS-B 786					13.61
AH-SWBS-B 786					
AH-SWBS-B 785					12.93
AH-SWBS-B 785					
MH-SWHS-A 759					12.24
AH-124 7002					11.91
MWGT-AA 59					11.81
MWPG-AA 59	MWPG GR	2.41			
MWGH-AA 59					
MWPT-CA 74					10.83
MWPH-AA 74					
MWPS-AA 74					
	CCL SMWP Pres SMWP Temp Tension	TOOL ZERO			
AH-122 8					8.01
AH-WPSA-BA					7.88
AH-WPSA-BA 4001					
AH-ESIC 15042002					7.32



Production String	(in)		(m)	Well Schematic	(m)	(in)		Casing String
	OD	ID	MD		MD	OD	ID	
Tubing	3.500		16.9		17.6	10.750		Casing String
					17.6	7.625		Casing String
SSSV	3.500		442.7					
Side Pocket Mandrel	3.500		674.2					
					758.0	10.750		Casing Shoe
Side pocket Mandrel	3.500		1699.4					



Job Event Summary

MAXIS Field Log

Schlumberger Job Event Summary						
		Time	Elapsed Time	Depth (M)		File
Log Pass (up)	2-Sep-2009 15:24	000:06	2733.9 - 2670.5	PERFO_013LUP		
Log Pass (up)	2-Sep-2009 15:34	000:13	2732.2 - 2644.4	PERFO_014LUP		
Log Pass (up)	3-Sep-2009 10:01	000:08	2733.0 - 2645.7	PERFO_025LUP		
Log Pass (up)	3-Sep-2009 10:18	000:13	2733.3 - 2645.2	PERFO_026LUP		

Company: Esso Australia Pty Ltd.

Well: W-19

## Output DLIS Files

DEFAULT PERFO\_026LUP FN:25 PRODUCER 03-Sep-2009 10:18 2733.3 M 2645.2 M

## OP System Version: 17C0-154

MWP\_GUN 17C0-154 MWPT-CA 17C0-154  
MWGT-AA 17C0-154

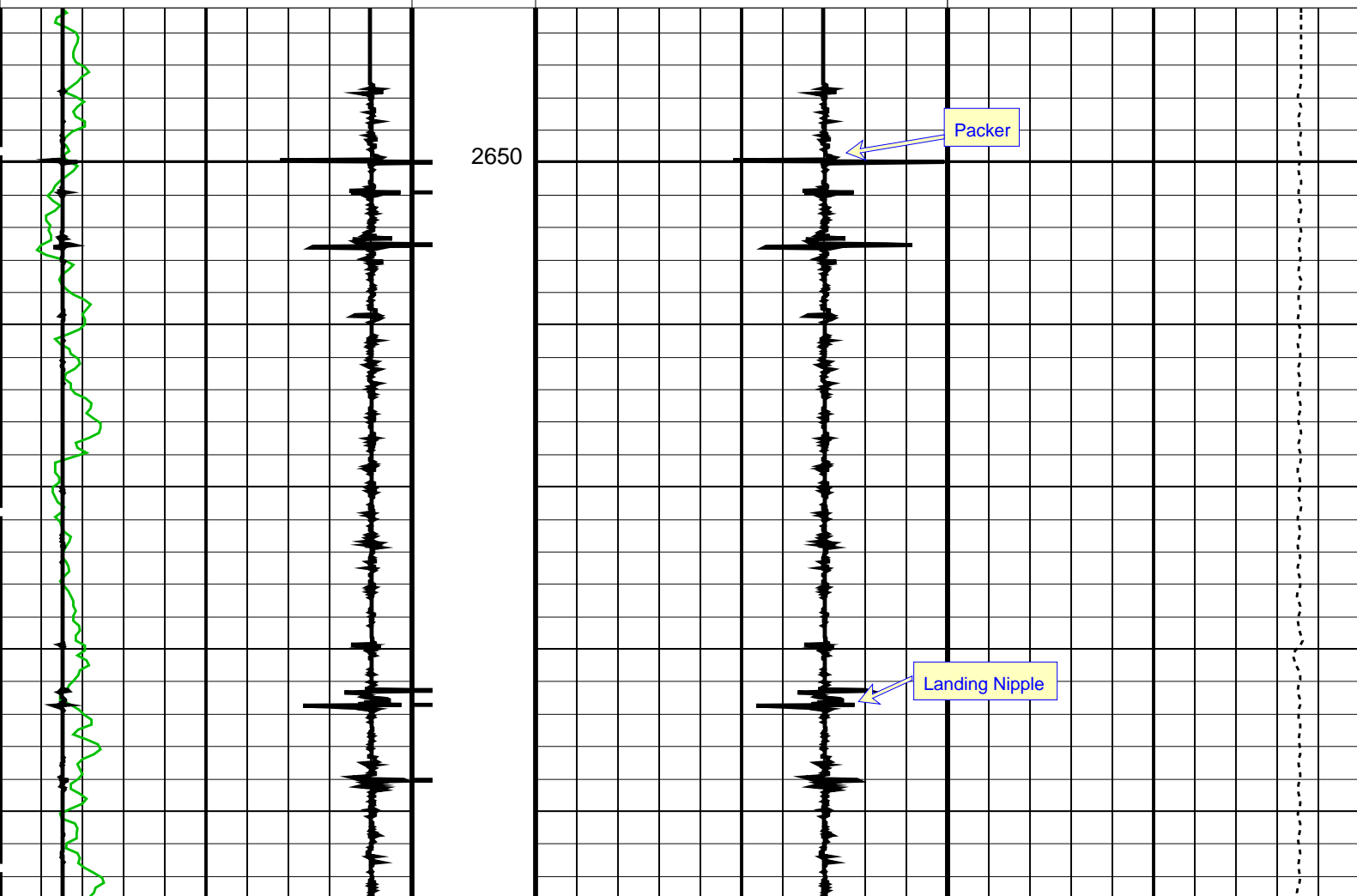
### PIP SUMMARY

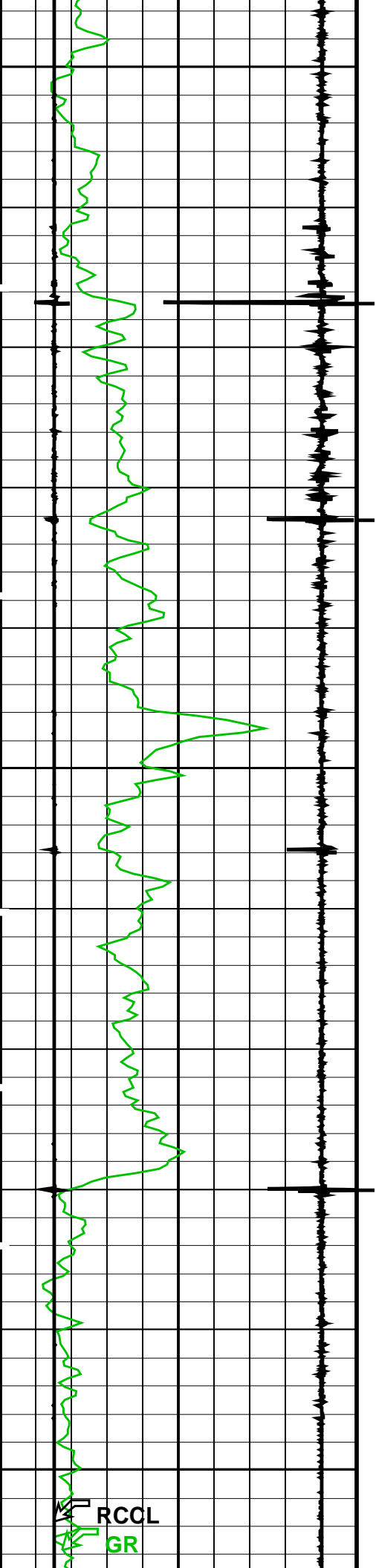
← Casing Collars

Time Mark Every 60 S

Raw Casing Collar Locator (RCCL)		
-3	(----	17
Casing Collar Locator (CCL)		
-19	(----	1
Gamma Ray (GR) (GAPI)		
0		150

Shifted Casing Collar Locator (SCCL)		Tension (TENS)	
-10	(----	10	10000
			(LBF)
			0

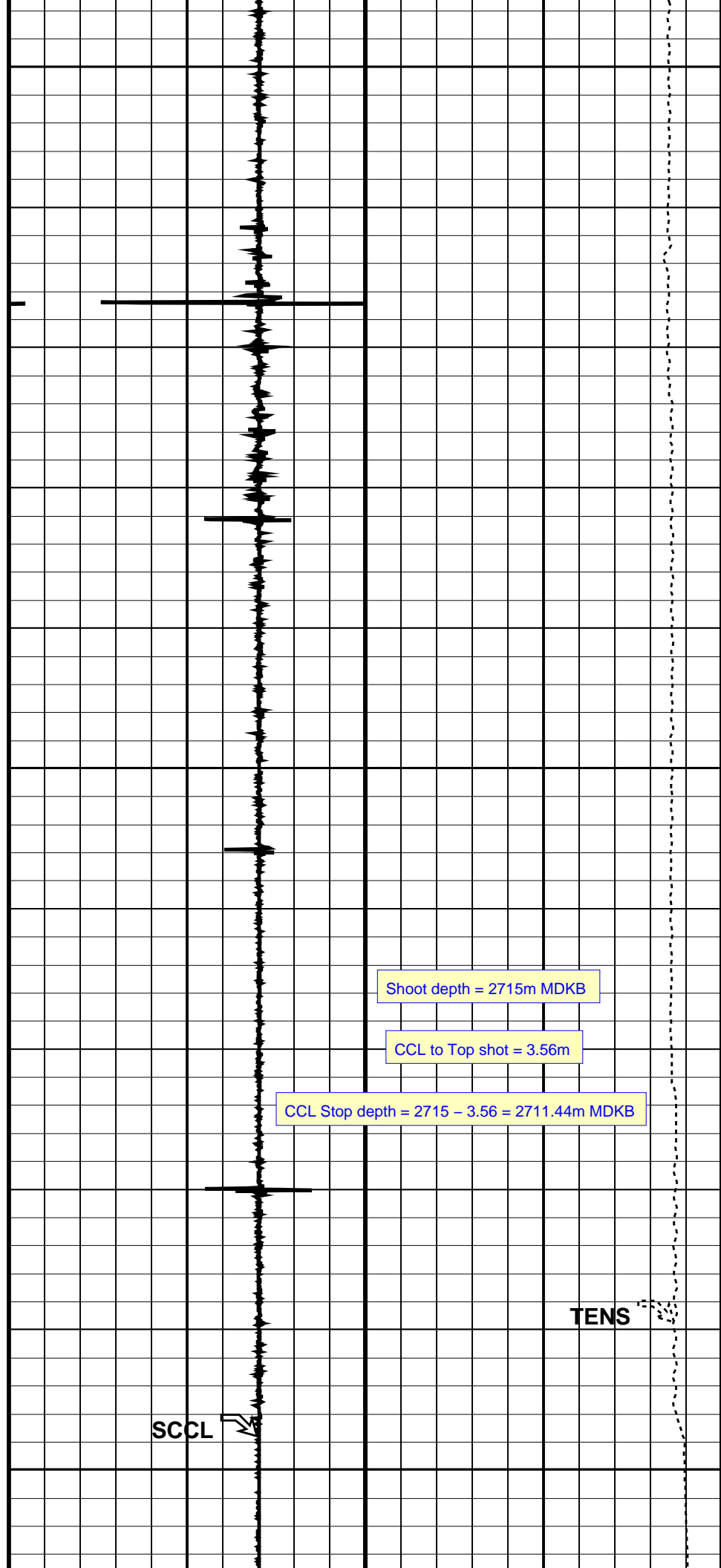


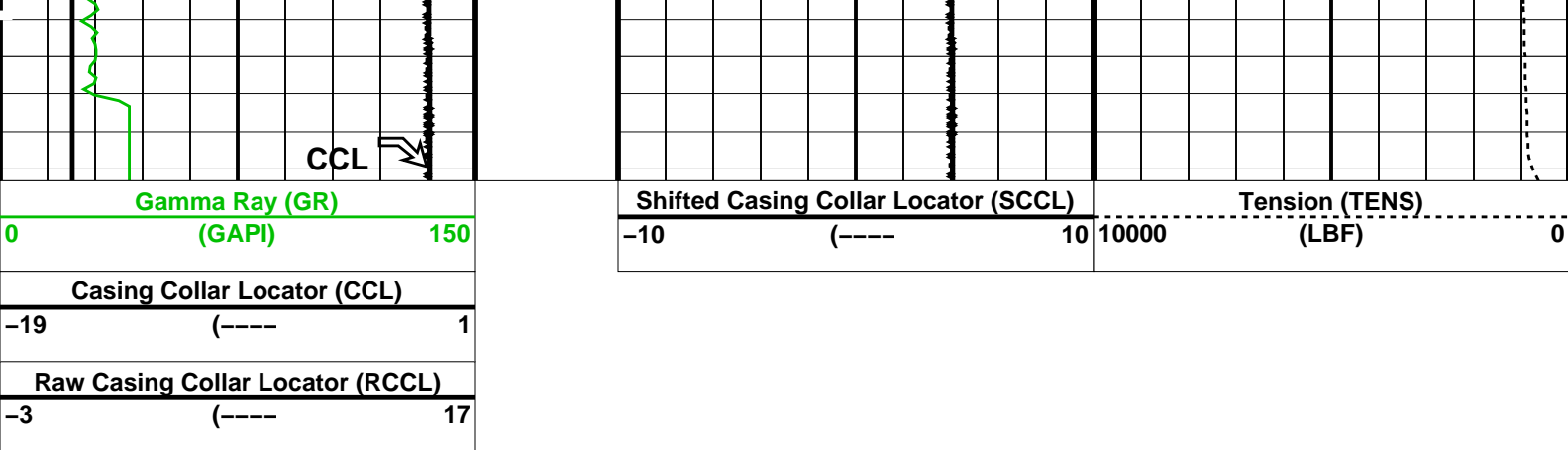


2675

2700

2725





**PIP SUMMARY**

Time Mark Every 60 S

Casing Collars

Parameters			
DLIS Name	Description	Value	
MWPT-CA: MEASUREMENT WHILE PERFORATING TOOL			
CCLD	CCL reset delay	12	IN
CCLT	CCL detection level	0.3	V
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: PERFO Vertical Scale: 1:200 Graphics File Created: 03-Sep-2009 10:18

**OP System Version: 17C0-154**

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

**Output DLIS Files**

DEFAULT	PERFO_026LUP	FN:25	PRODUCER	03-Sep-2009 10:18
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Gun 2 Correlation

MAXIS Field Log

Company: Esso Australia Pty Ltd. Well: W-19

**Output DLIS Files**

DEFAULT	PERFO_025LUP	FN:24	PRODUCER	03-Sep-2009 10:01	2733.0 M	2645.7 M
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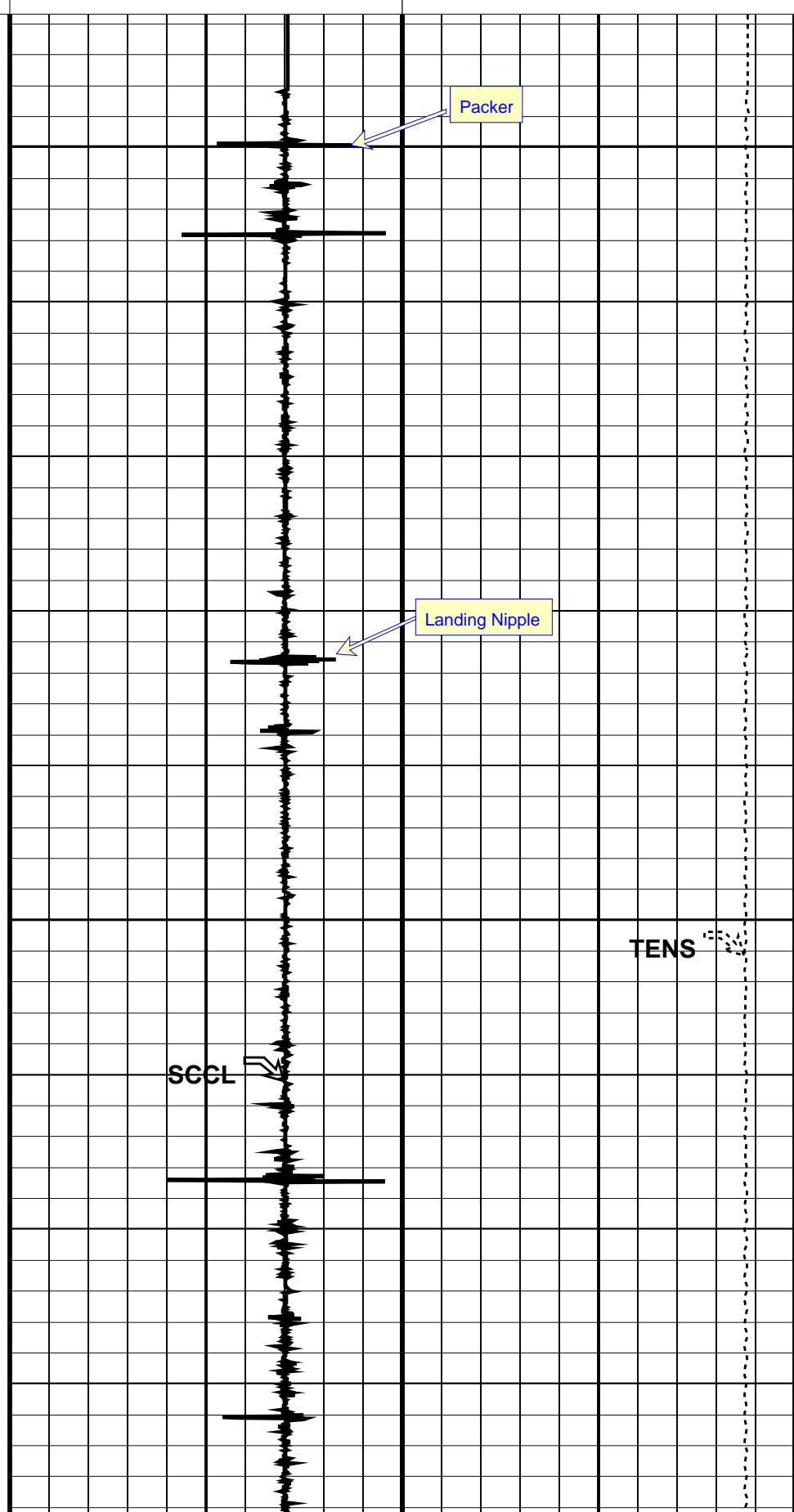
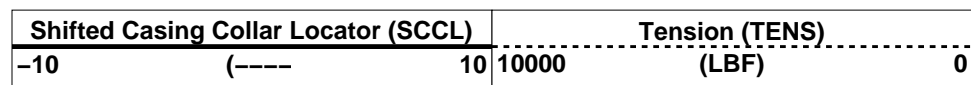
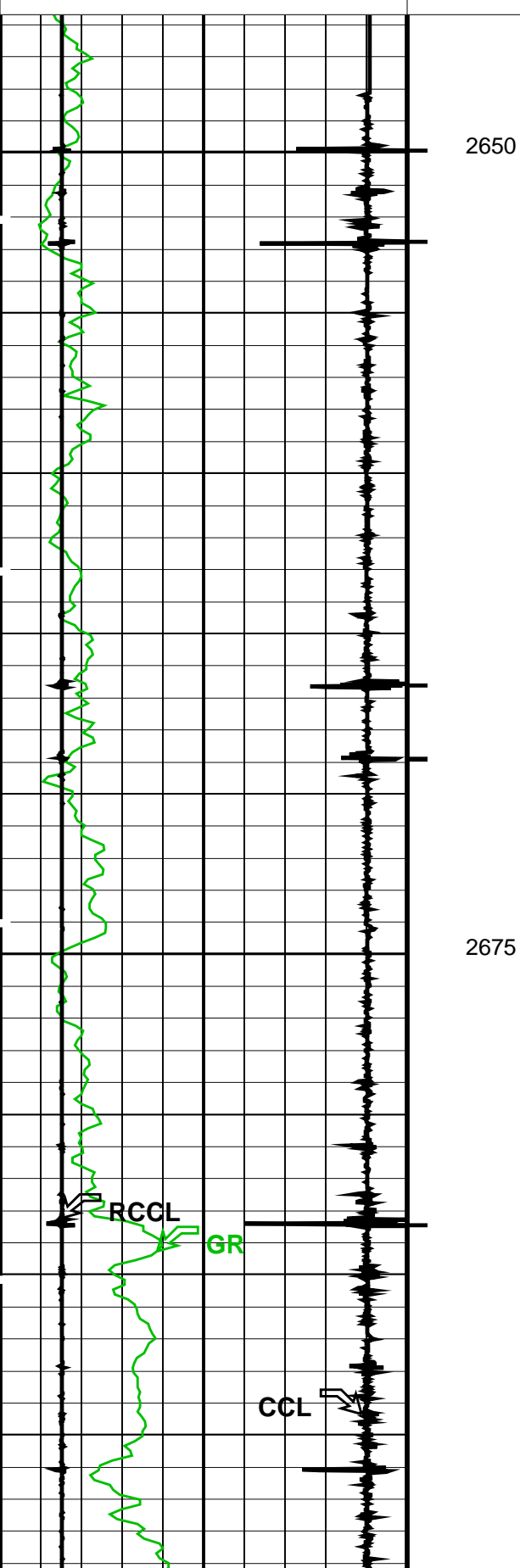
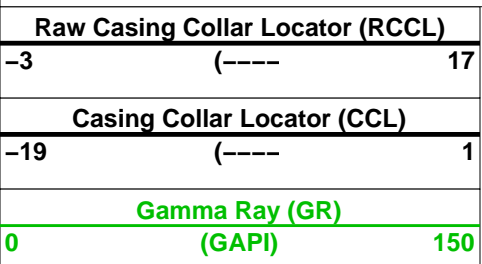
**OP System Version: 17C0-154**

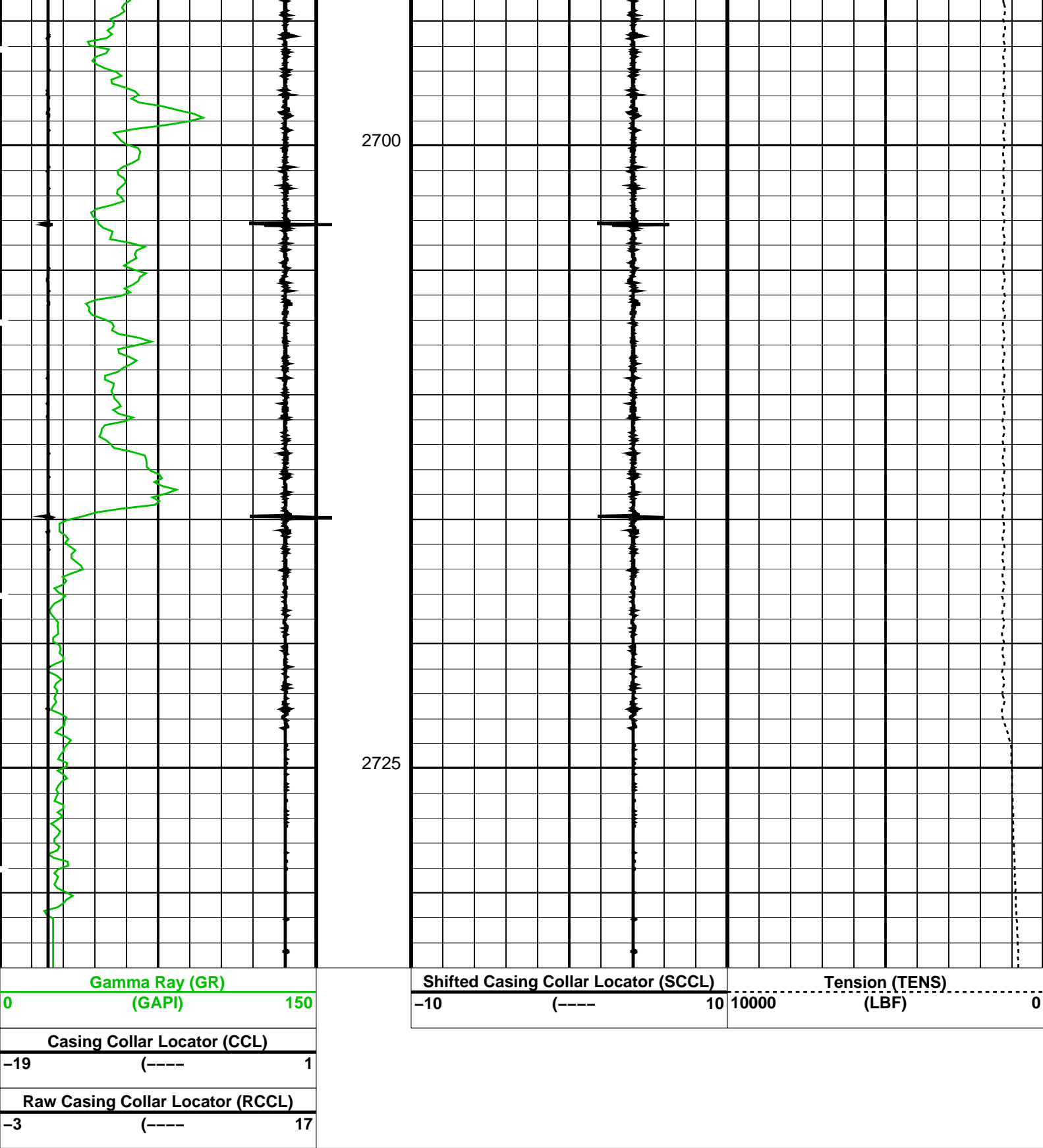
MWP_GUN	17C0-154	MWPT-CA	17C0-154
MWGT-AA	17C0-154		

**PIP SUMMARY**

Time Mark Every 60 S

Casing Collars





Time Mark Every 60 S

← Casing Collars

Parameters		
DLIS Name	Description	Value
MWPT-CA: MEASUREMENT WHILE PERFORATING TOOL		
CCLD	CCL reset delay	12 IN
CCLT	CCL detection level	0.3 V
DEVI_FL_CORR	Deviation Angle for Flow Line Correction	0 DEG
FLD	Flow Line Density	1 G/C2

FLD  
MWPT\_NULL\_SOURCE  
MWPT\_NULL\_TEMP

Flow Line Density  
MWPT NULL Temperature Source  
MWPT NULL Temperature

TEMS  
0.0  
DEGC

Format: PERFO    Vertical Scale: 1:200    Graphics File Created: 03-Sep-2009 10:01

OP System Version: 17C0-154

MWP\_GUN    17C0-154    MWPT-CA    17C0-154  
MWGT-AA    17C0-154

Output DLIS Files

DEFAULT    PERFO\_025LUP    FN:24    PRODUCER    03-Sep-2009 10:01

Schlumberger

Gun 1 Shooting Pass  
2720m – 2725m MDKB

MAXIS Field Log

Company: Esso Australia Pty Ltd.    Well: W-19

Output DLIS Files

DEFAULT    PERFO\_014LUP    FN:13    PRODUCER    02-Sep-2009 15:34    2732.2 M    2644.4 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

└─ Casing Collars

Raw Casing Collar Locator (RCCL)

-3    (----)    17

Casing Collar Locator (CCL)

-19    (----)    1

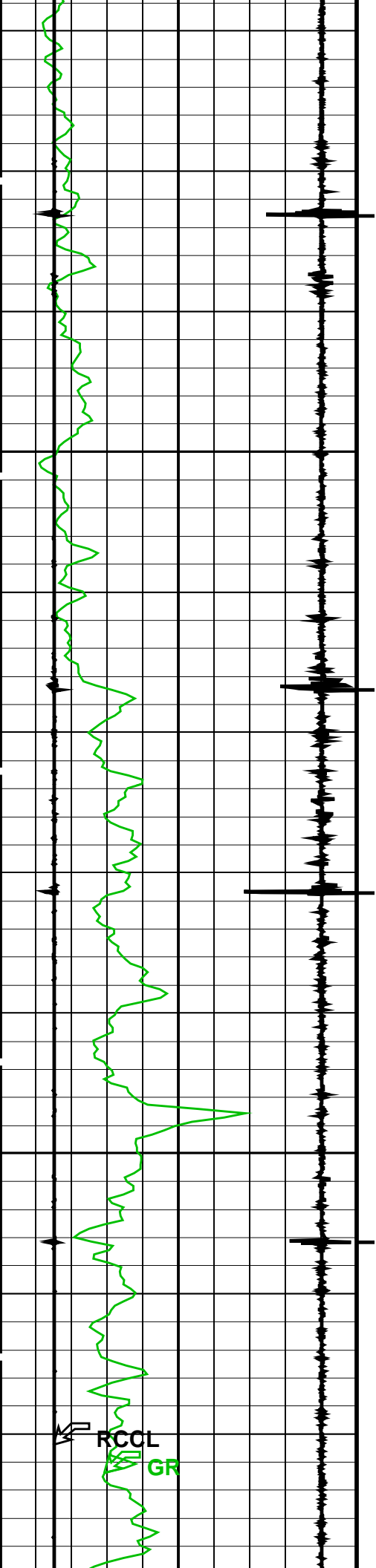
Gamma Ray (GR)  
(GAPI)    0    150

Shifted Casing Collar Locator (SCCL)

-10    (----)    10

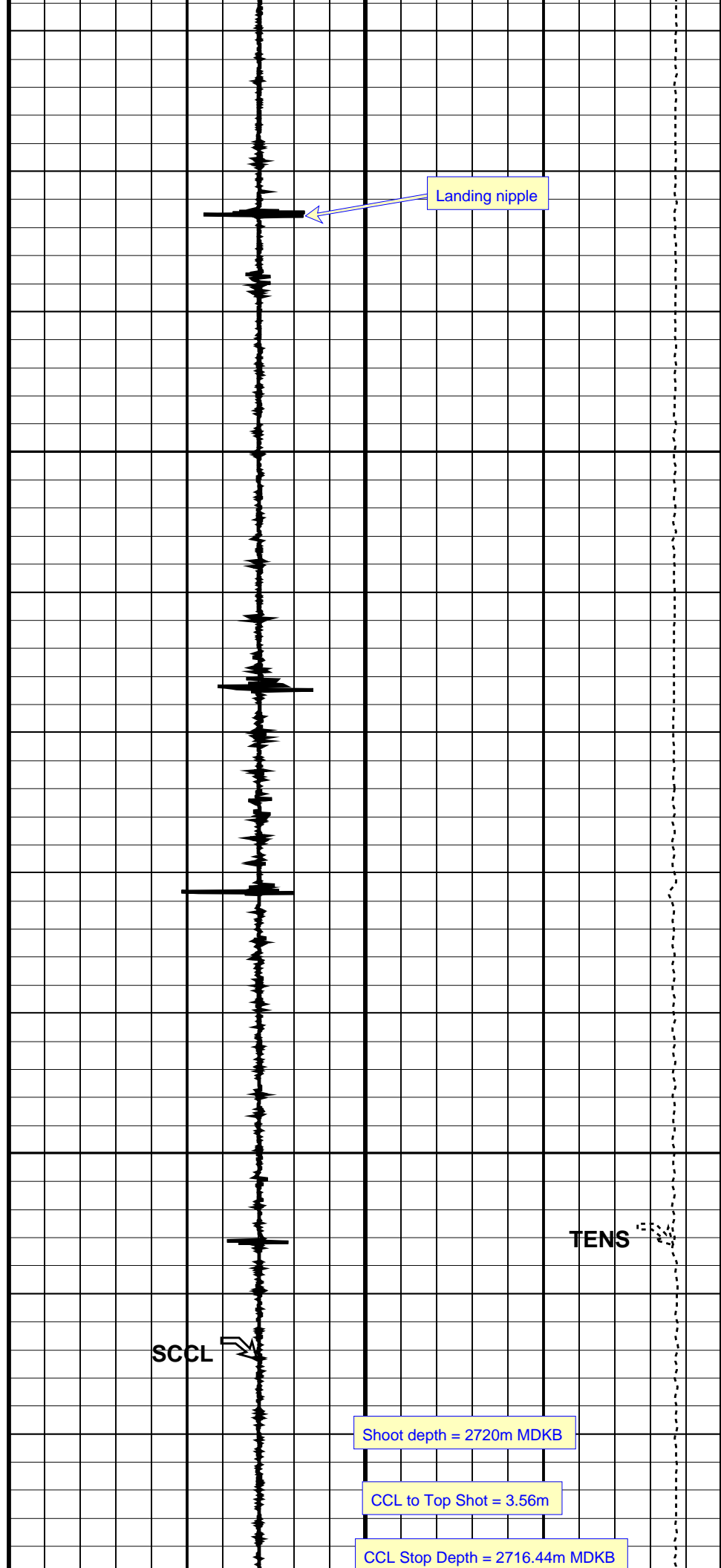
Tension (TENS)  
(LBF)    10000    0

2650



2675

2700



Landing nipple

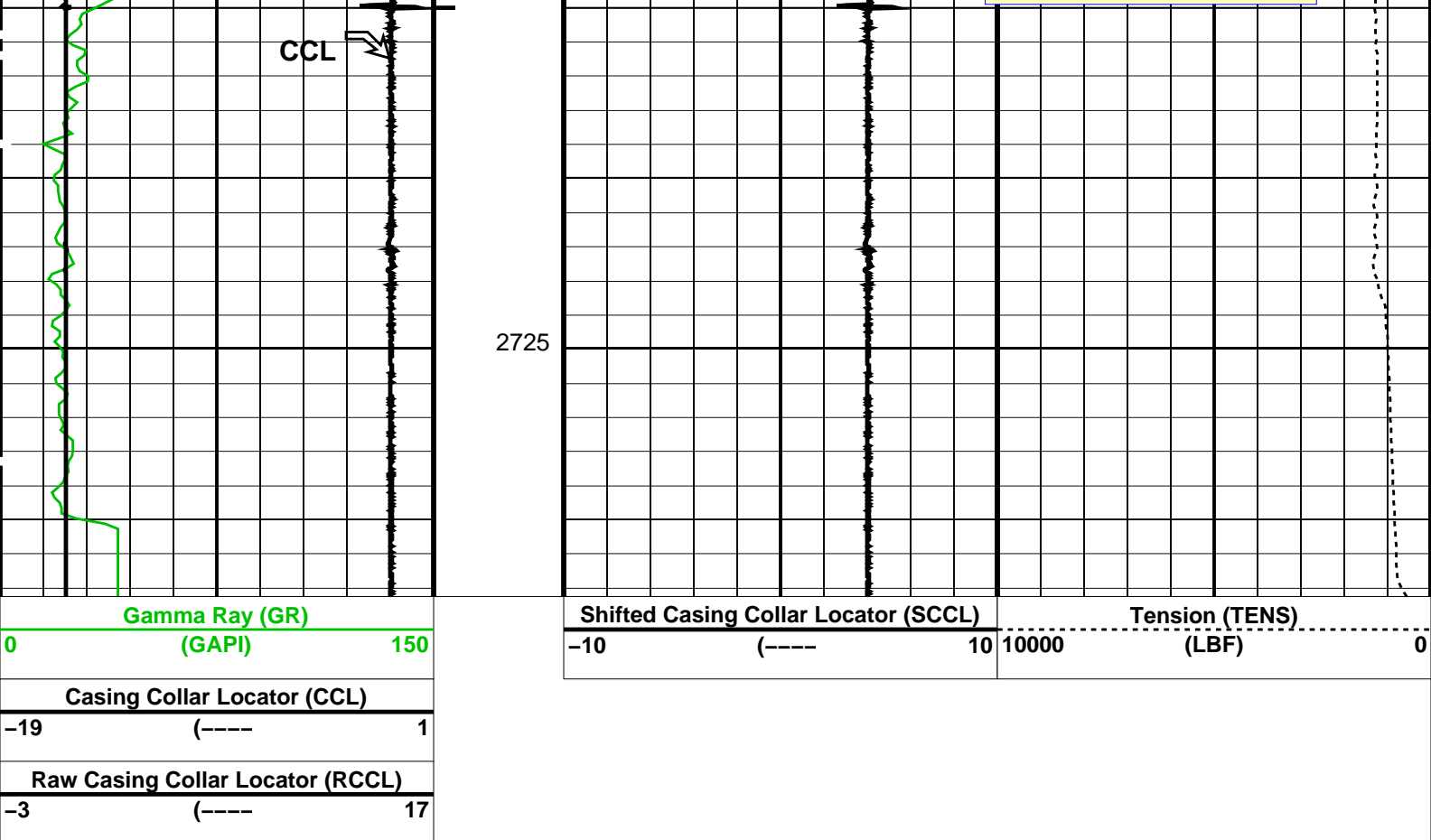
TENS

SCCL

Shoot depth = 2720m MDKB

CCL to Top Shot = 3.56m

CCL Stop Depth = 2716.44m MDKB



PIP SUMMARY

Time Mark Every 60 S


Casing Collars

Parameters		
DLIS Name	Description	Value
MWPT-CA: MEASUREMENT WHILE PERFORATING TOOL		
CCLD	CCL reset delay	12 IN
CCLT	CCL detection level	0.3 V
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: PERFO Vertical Scale: 1:200 Graphics File Created: 02-Sep-2009 15:34

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

Output DLIS Files			
DEFAULT	PERFO_014LUP	FN:13	PRODUCER 02-Sep-2009 15:34



Gun 1 Correlation

MAXIS Field Log

Output DLIS Files

DEFAULTPERFO\_013LUPFN:12PRODUCER02-Sep-2009 15:242733.9 M2670.5 M

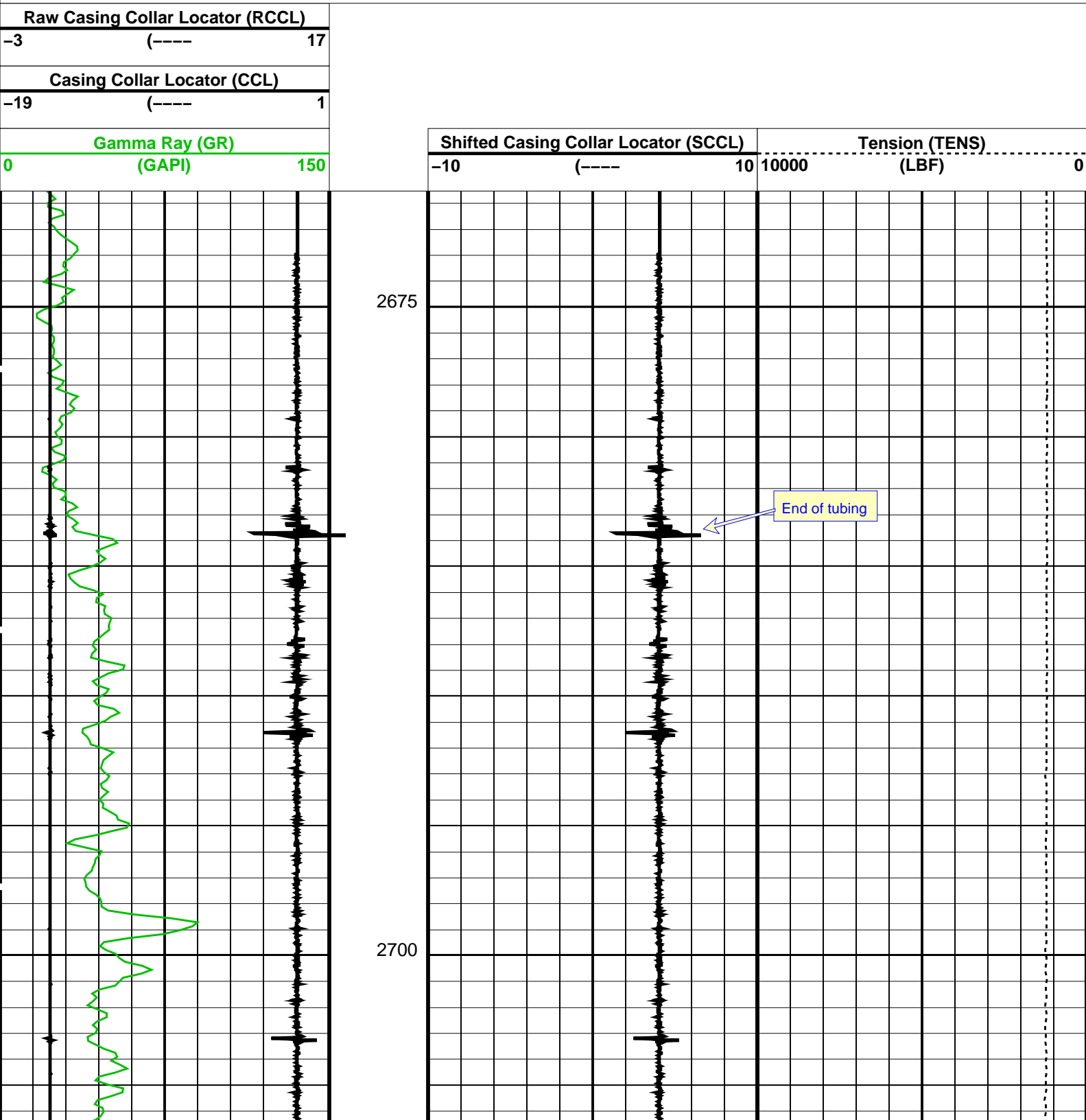
OP System Version: 17C0-154

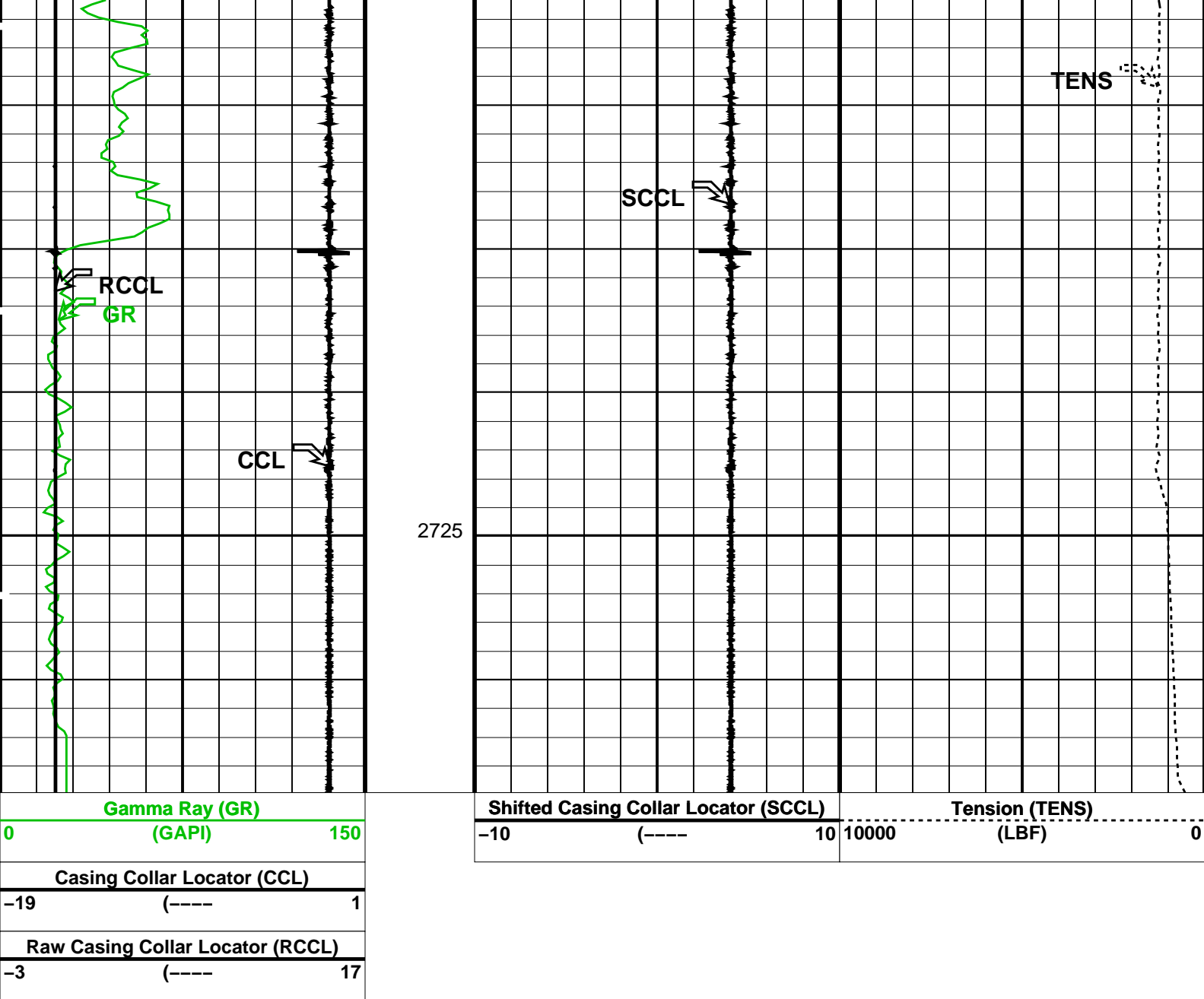
MWP\_GUN17C0-154MWPT-CA17C0-154MWGT-AA17C0-154

PIP SUMMARY

Time Mark Every 60 S

Casing Collars





PIP SUMMARY

Time Mark Every 60 S

Casing Collars

Parameters		
DLIS Name	Description	Value
MWPT-CA: MEASUREMENT WHILE PERFORATING TOOL		
CCLD	CCL reset delay	12 IN
CCLT	CCL detection level	0.3 V
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: PERFO Vertical Scale: 1:200 Graphics File Created: 02-Sep-2009 15:24

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

Output DLIS Files			
DEFAULT	PERFO_013LUP	FN:12 PRODUCER	02-Sep-2009 15:24

Company:

Esso Australia Pty Ltd.

Schlumberger

Well:

W-19

Field:

West Tuna

Rig:

Crane / Prod 4

Country:

Australia

2" Phased Powerjet Omega HSD  
Perforation Record