

Company: Esso Australia Pty. Ltd.

Well: A7  
Field: Tuna  
Rig: Rig 22 / Prod 2  
Country: Australia

2-7/8" PURE HSD Perforation  
2782m to 2785m MDKB  
MAXIS Operating System

Rig: Rig 22 / Prod 2  
Field: Tuna  
Location: Gippsland  
Well: A7  
Company: Esso Australia Pty. Ltd.

LOCATION	
Gippsland	Elev.: K.B. 32.1 m
Basin	G.L. -59 m
Bass Strait	D.F. 32.1 m
Permanent Datum:	Mean Sea Level
Log Measured From:	Kelly Bushing
Drilling Measured From:	Kelly Bushing
State: Victoria	Max. Well Deviation 57 deg
	Longitude 148°25' 05.29"E
	Latitude 38°10' 16.00"S

Logging Date	10-Apr-2006	11-Apr-2006
Run Number	1	3
Depth Driller	2825 m	2825 m
Schlumberger Depth	2809 m	2809 m
Bottom Log Interval	2800 m	2785 m
Top Log Interval	2713 m	2782 m
Casing Fluid Type	Sea Water	Sea Water
Salinity	120000 ppm	120000 ppm
Density	1 g/cm3	1 g/cm3
Fluid Level	0 m	0 m
BIT/CASING/TUBING STRING		
Bit Size	8.500 in	8.500 in
From	1897 m	1897 m
To	2968.1 m	2968.1 m
Casing/Tubing Size	4.500 in	4.500 in
Weight	12.6 lbm/ft	12.6 lbm/ft
Grade	L-80	L-80
From	1750 m	1750 m
To	2825 m	2825 m
Maximum Recorded Temperatures	102 degC	102 degC
Logger On Bottom	10-Apr-2006	11-Apr-2006
Unit Number	3827	3827
Recorded By	S. Pottsuan, O. Tahmiscic	S. Pottsuan, O. Tahmiscic
Witnessed By	Don Broomfield, Jimmy Dean	Don Broomfield, Jimmy Dean

PVT DATA		
Oil Density	Run 1	Run 2
Water Salinity	120000 ppm	120000 ppm
Gas Gravity		
Bo		
Bw		
1/Bg		
Bubble Point Pressure		
Bubble Point Temperature		
Solution GOR		
Maximum Deviation	57 deg	57 deg
CEMENTING DATA		
Primary/Squeeze	Primary	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		

Run 4

## Date Created: 17-APR-2006 1:57:45

## Depth Measuring Device

## Tension Device

## Logging Cable

Type:	2-32ZT
Serial Number:	4202
Length:	6274.92 M
Conveyance Method:	Wireline
Rig Type:	Offshore Fixed

Log Sequence:	Subsequent Trip To the Well
Reference Log Name:	TUNA A7 Petrophysical Analysis
Reference Log Run Number:	
Reference Log Date:	
Subsequent Trip Down Log Correction:	

1. All Schlumberger Depth Control Policies followed.
2. Gamma Ray response used for correlation.
3. Correlated to reference log provided by Esso.
4. IDW used as Primary Depth Control.
5. Z-Chart used as Secondary Depth Control.
- 6.

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.

OS1: RST-C Sigma Log  
OS2: 2-7/8" PURE HSD  
OS3:  
OS4:  
OS5:

OS1: Drift Run  
OS2: RST-C Sigma Log  
OS3:  
OS4:  
OS5:



















REMARKS: RUN NUMBER 2

Log objectives: Perforate well from 2782 to 2785m MDKB  
with 2-7/8" PURE HSD Gun

Correlated to "TUNA A7 Petrophysical Analysis".

Gun used: 2-7/8" PURE HSD [2906 PJ Omega HMX Charges,  
4.6 spf, 60 deg]

	API RP 19B Data: Penetration = 36.0 in; Ent. Hole = 0.34 in.				
	CCL to Top Shot = 3.46m				
Tool string as per enclosed sketch.	CCL Stop Depth = 2778.55m MDKB				
Well sketch copied from Workover Program (10-Feb-2006)	Actual Top Shot = 2782.01m MDKB				
	Actual Bottom Shot = 2784.81m MDKB				
Hang up depth = 2809m MDKB.	PURE design allowed only 2.8m from Top to Bottom Shot.				
	42 HMX charges, 6 PURE punchers used in total				
Day crew: B. Glover and S. McGee	Day crew: B. Glover and S. McGee				
Night crew: D. Stuckey and S. Kiss	Night crew: D. Stuckey and S. Kiss				
Performed by Schlumberger.	Performed by Schlumberger.				
RUN 1			RUN 2		
SERVICE ORDER #:	AUSL06185777		SERVICE ORDER #:	AUSL06185777	
PROGRAM VERSION:	14C0-302		PROGRAM VERSION:	14C0-302	
FLUID LEVEL:	0 m		FLUID LEVEL:	0 m	
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION					
RUN 1			RUN 2		
SURFACE EQUIPMENT			SURFACE EQUIPMENT		
WITM (SHM) 415			WITM (SHM) 415		
DOWNHOLE EQUIPMENT			DOWNHOLE EQUIPMENT		
MH-22 MH-22		12.97	MH-22 MH-22		12.97
AH-38		12.49	AH-38		12.49
EQF-43 EQF-43 281		12.40	EQF-43 EQF-43 281		12.40
PGGT-CC PGGC PGGH-A 136		10.57	PGGT-CC PGGC PGGH-A 136		10.57
Gamma Ray Casing Co Tension		0.48	Gamma Ray Casing Co Tension		0.48
		TOOL ZERO			TOOL ZERO
AH-122		8.62	AH-122		8.62
AH-WPSA AH-WPSA 4001		8.48	AH-WPSA AH-WPSA 4001		8.48
AH-ESIC-H AH-ESIC-H 6		7.91	AH-ESIC AH-ESIC 16031932		7.91
AH-FiringHead		7.48	AH-FiringHead		7.48
SHM_GUN GUN-20ft_Dummy_Gun		7.33	SHM_GUN GUN-20ft_PURE_HSD_Gun		7.33

TOOL BOTTOM

0.99

TOOL BOTTOM

0.99

MAXIMUM STRING DIAMETER 2.88 IN  
MEASUREMENTS RELATIVE TO TOOL ZERO  
ALL LENGTHS IN METERS

17/4/2006

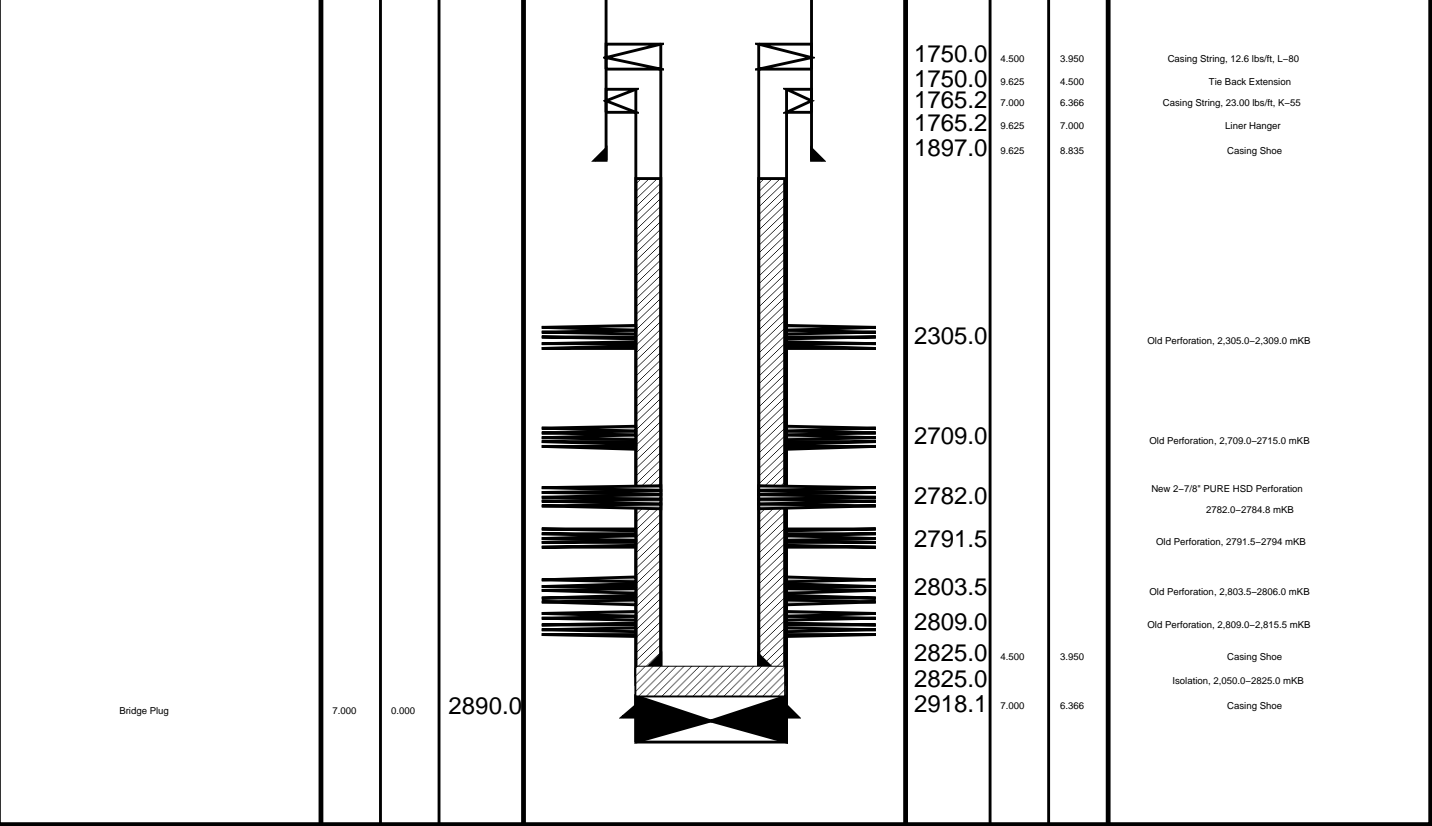
Well: A7

Rig Name: Rig 22

State: Victoria

Elevation: 32.9 m

Production String		(in) OD	(m) ID	MD	Well Schematic			(m) MD	(in) OD	(m) ID	Casing String
								14.4	9.625	8.835	Casing String, 40.00 lbs/ft, K-55
								14.8	13.375	12.615	Casing String, 54.50 lbs/ft, K-55
								735.5	13.375	12.615	Casing Shoe



Job Event Summary

MAXIS Field Log

Schlumberger Job Event Summary

Time	Elapsed Time	Depth (M)	File
Rig Up Started 10–Apr–2006 18:20 Rig up and pressure test.			
Descent 1: GUN/PGGCC			
Begin Descent 10–Apr–2006 20:20 Run in hole with Dummy Gun.			
Log Pass (up) 10–Apr–2006 21:30 000:06 2810.6 – 2711.7 PERFO_010LUP Dummy run correlation log.			
Descent 2: GUN/PGGCC			

Begin Descent 11-Apr-2006 13:00  
Run in hole with 2-7/8" PURE HSD Gun.  
Log Pass (up) 11-Apr-2006 13:46 000:05 2801.4 - 2750.1 PERFO\_028LUP  
2-7/8" PURE HSD Gun correlation log.  
Log Pass (up) 11-Apr-2006 13:54 000:13 2817.0 - 2745.2 PERFO\_029LUP  
2-7/8" PURE HSD Gun shoot log.  
Rig Down Completed 11-Apr-2006 14:30  
Rig down tools and pressure gear.

**Schlumberger**

## 2-7/8" PURE HSD Perforation Operational Summary Listing

MAXIS Field Log

### PERFO2 Operational Summary Listing

Device	Status	Req Depth ( M)	Obs Depth ( M)	Time Used
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GUN1	Used	2782.0	2782.0	Tue Apr 11 14:02:52 2006
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**Schlumberger**

## Shoot Log 2782m to 2785m MDKB

MAXIS Field Log

Company: Esso Australia Pty. Ltd.

Well: TNA\_A7

### Output DLIS Files

DEFAULT	PERFO_029LUP	FN:33	PRODUCER	11-Apr-2006 13:54	2817.0 M	2745.2 M
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### OP System Version: 14C0-302 MCM

SHM_GUN	14C0-302	PGGT-CC	14C0-302
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#### Casing Collar Locator (CCL)

-19	(----	1
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Gamma Ray (GR)  
(GAPI)

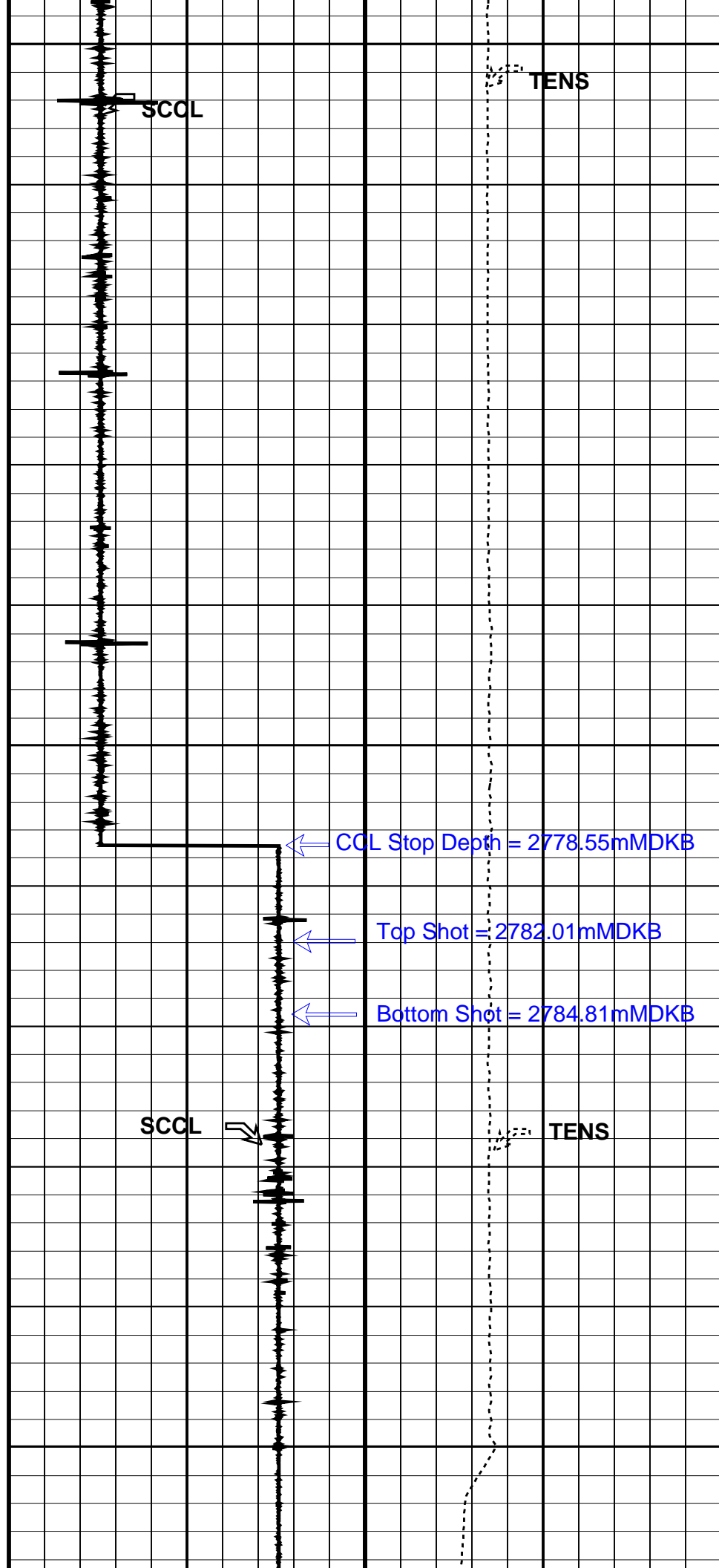
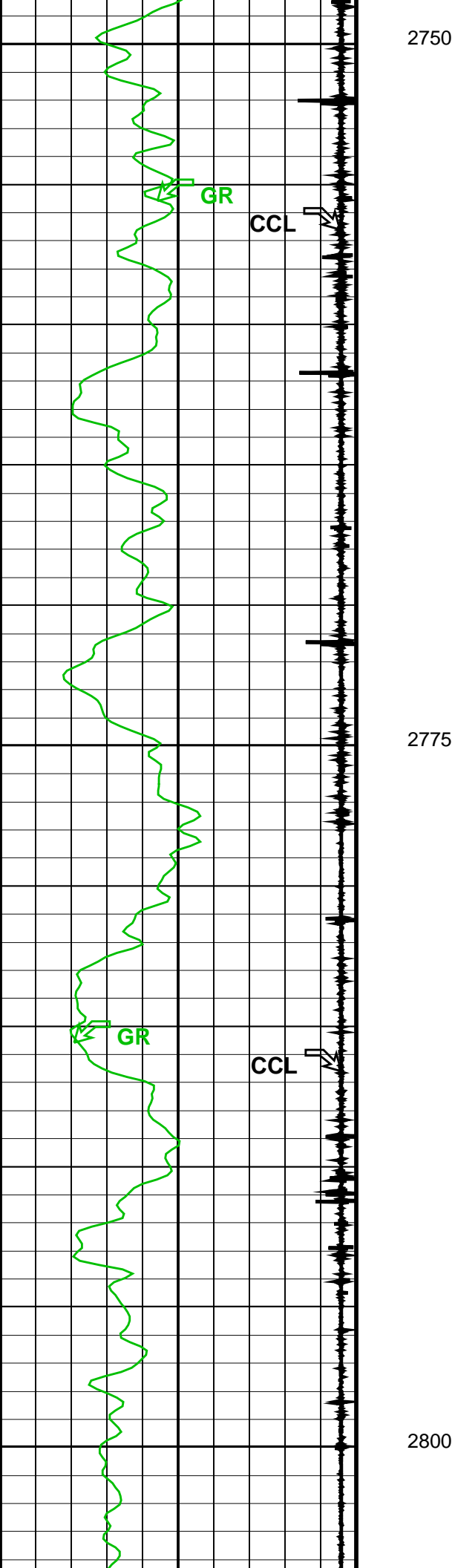
0	200
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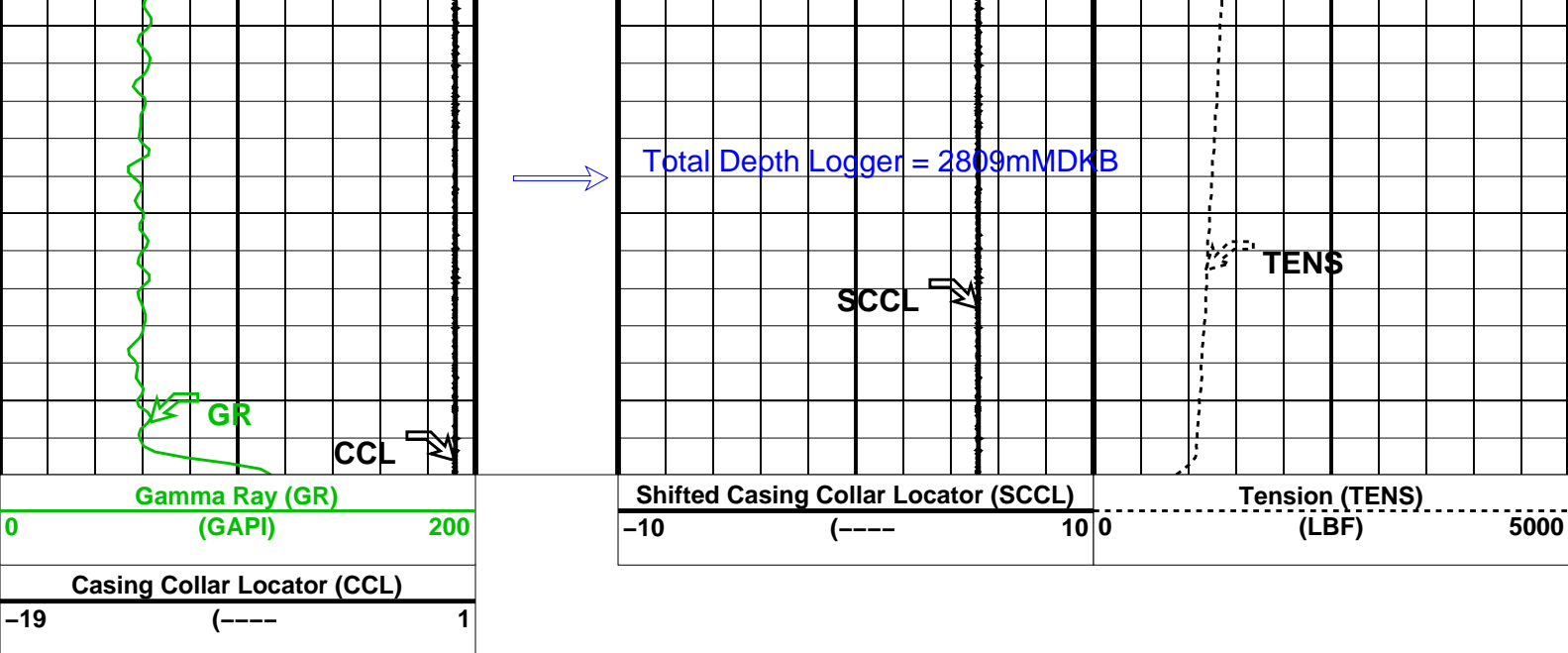
#### Shifted Casing Collar Locator (SCCL)

-10	(----	10
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#### Tension (TENS)

0	(LBF)	5000
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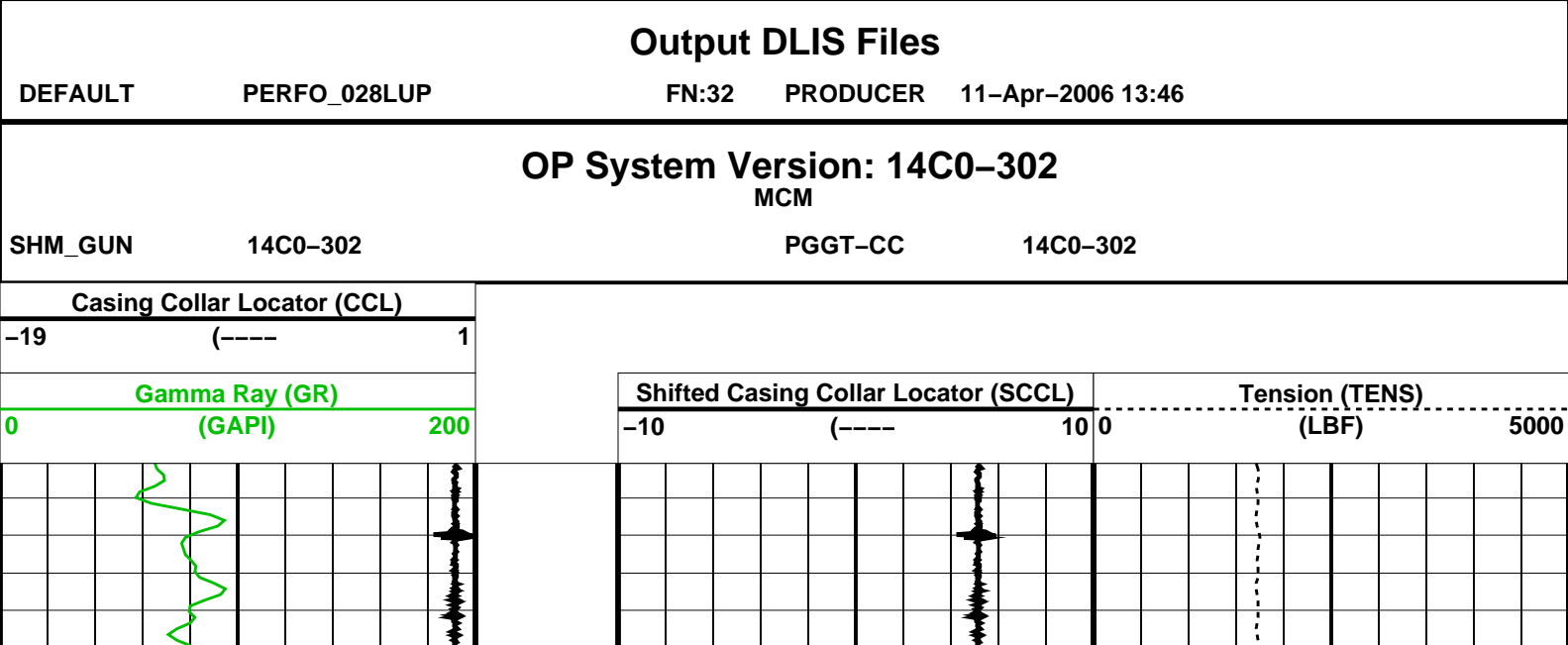
Format: CORRELATION		Vertical Scale: 1:200		Graphics File Created: 11-Apr-2006 13:54	
OP System Version: 14C0-302					
MCM					
SHM_GUN	14C0-302	PGGT-CC	14C0-302		
Output DLIS Files					
DEFAULT	PERFO_029LUP	FN:33	PRODUCER	11-Apr-2006 13:54	



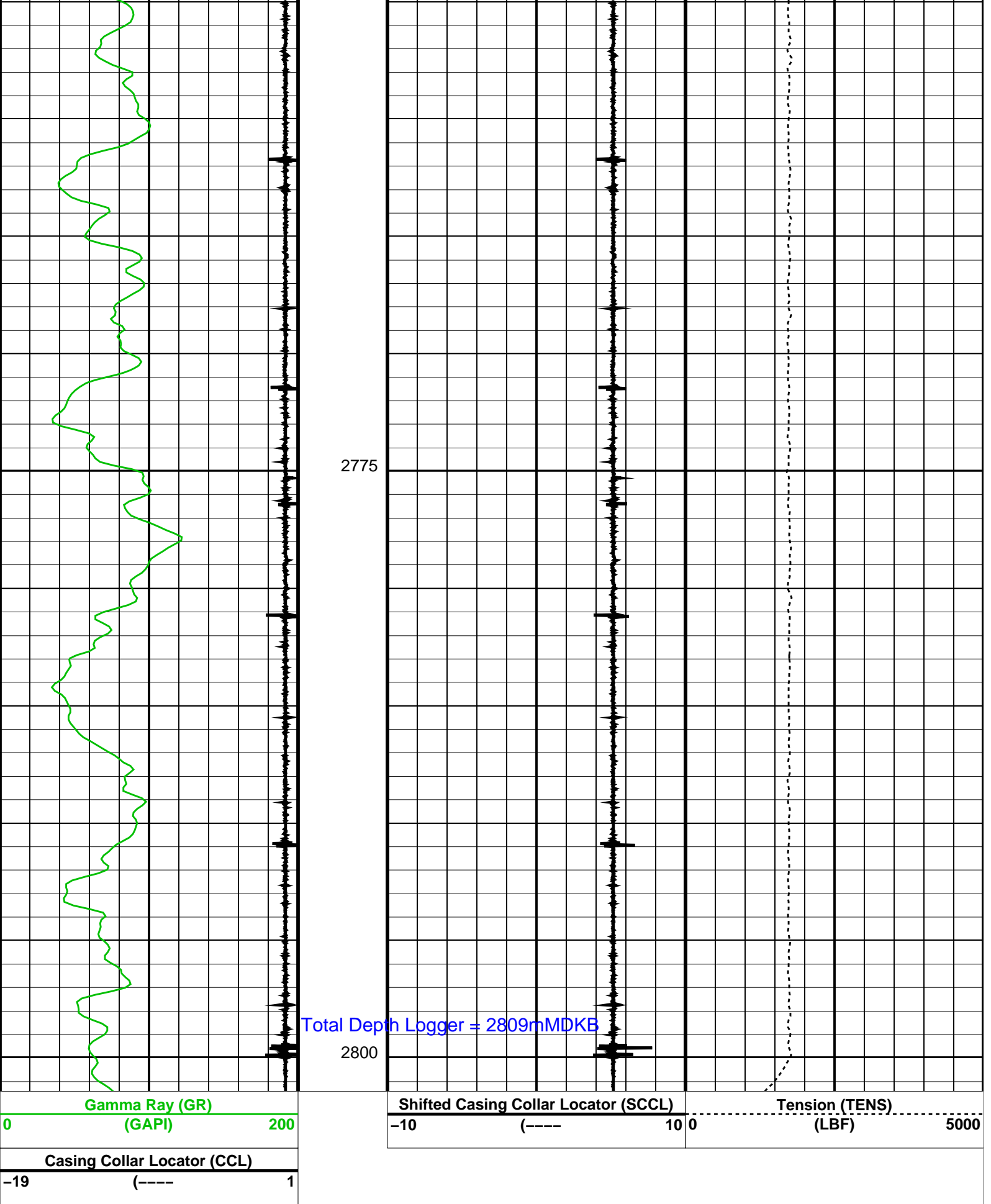
Correlation Log

MAXIS Field Log

Company: Esso Australia Pty. Ltd. Well: TNA\_A7







Format: CORRELATION Vertical Scale: 1:200 Graphics File Created: 11-Apr-2006 13:46

OP System Version: 14C0-302  
MCM

SHM GUN 14C0-302 PGGT-CC 14C0-302

## Output DLIS Files

DEFAULT

PERFO\_028LUP

FN:32

PRODUCER

11-Apr-2006 13:46

**Schlumberger**

Dummy Correlation Log  
HUD = 2809mMDKB

MAXIS Field Log

Company: Esso Australia Pty. Ltd.

Well: TNA\_A7

## Output DLIS Files

DEFAULT

PERFO\_010LUP

FN:9

PRODUCER

10-Apr-2006 21:30

OP System Version: 14C0-302  
MCM

SHM\_GUN-

14C0-302

PGGT-CC

14C0-302

Casing Collar Locator (CCL)

-19 (----) 1

Gamma Ray (GR)

(GAPI)

0 150

Shifted Casing Collar Locator (SCCL)

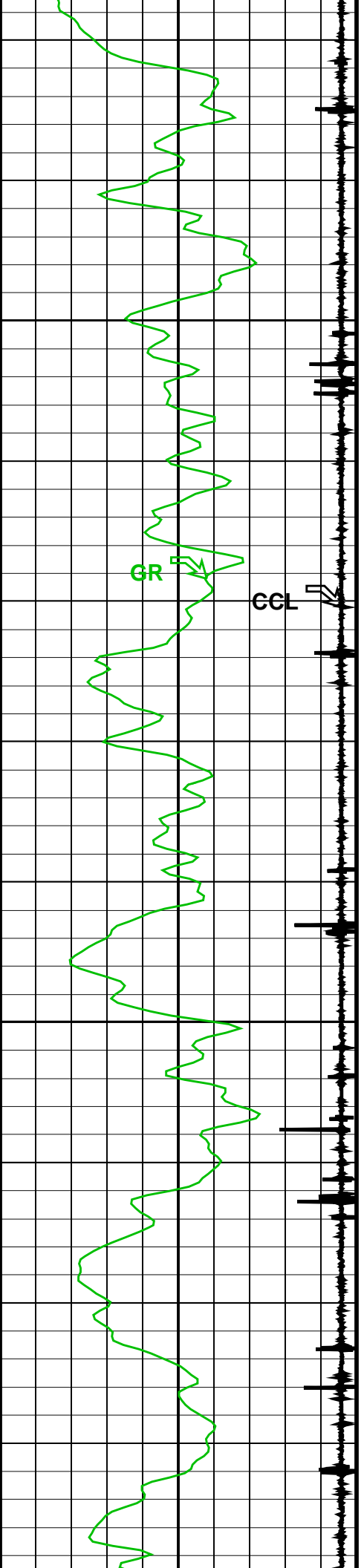
-10 (----) 10 0

Tension (TENS)

(LBF)

5000

2725

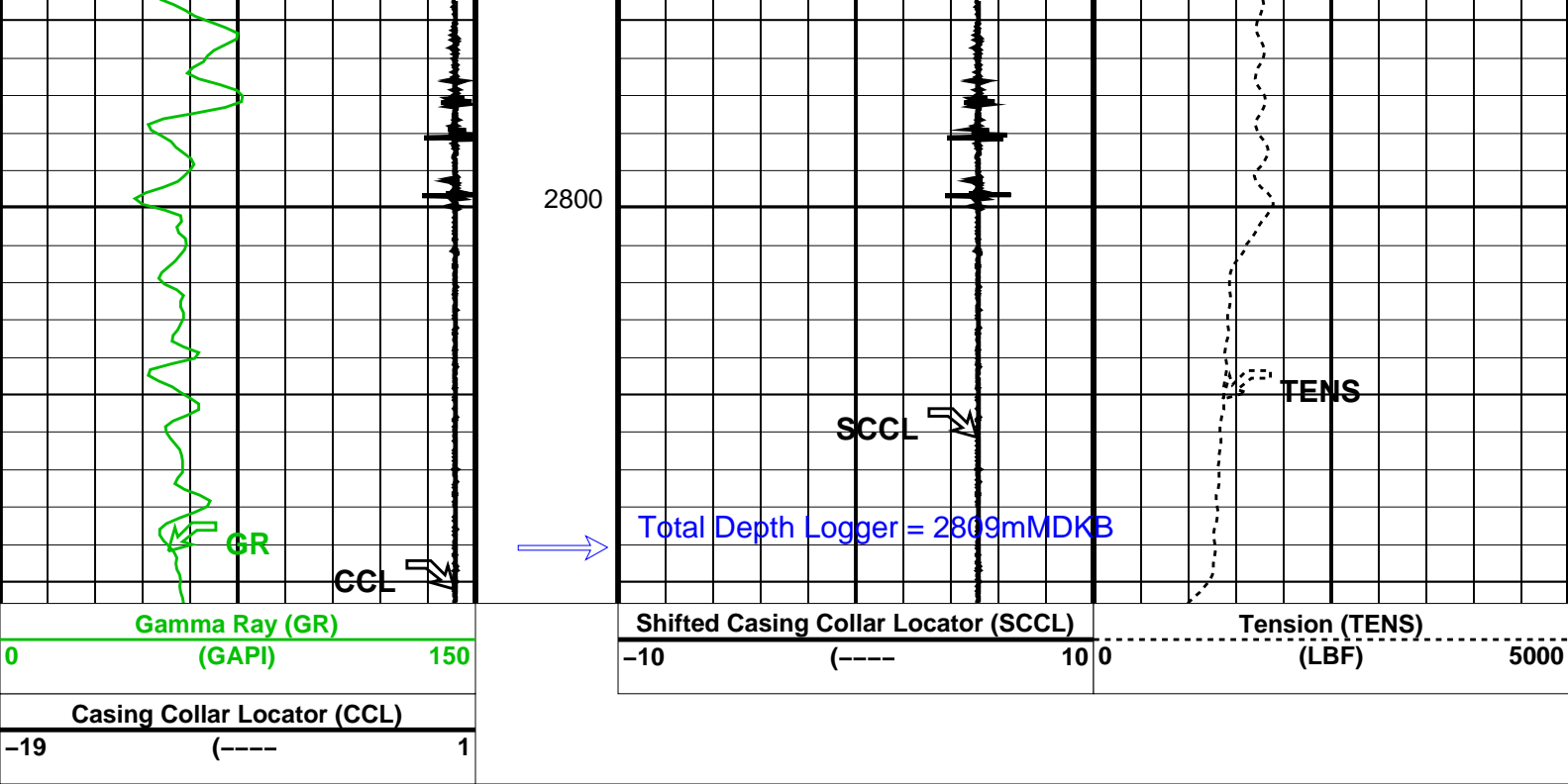


2750

SCCL

TENS

2775



Format: CORRELATION		Vertical Scale: 1:200		Graphics File Created: 10-Apr-2006 21:30	
OP System Version: 14C0-302					
MCM					
SHM_GUN-	14C0-302	PGGT-CC		14C0-302	
Output DLIS Files					
DEFAULT	PERFO_010LUP	FN:9	PRODUCER	10-Apr-2006 21:30	

Schlumberger

PULSE Memory Gauge  
Pressure Data

MAXIS Field Log

## MEMORY GAUGE PARAM

### Burst Trigger Settings

Trigger Mode: Window

Pressure Level: 300 psi

Window Length: 35 msec

Burst Length: 9.1 sec (28800 samp/sec)

### Calibrations

Gauge S/N: Pulse-044

Calibration: 13-Dec-2005  
Gain: 68.2006  
Offset: 8150758.8061

## MEASUREMENTS AND PERFORATION

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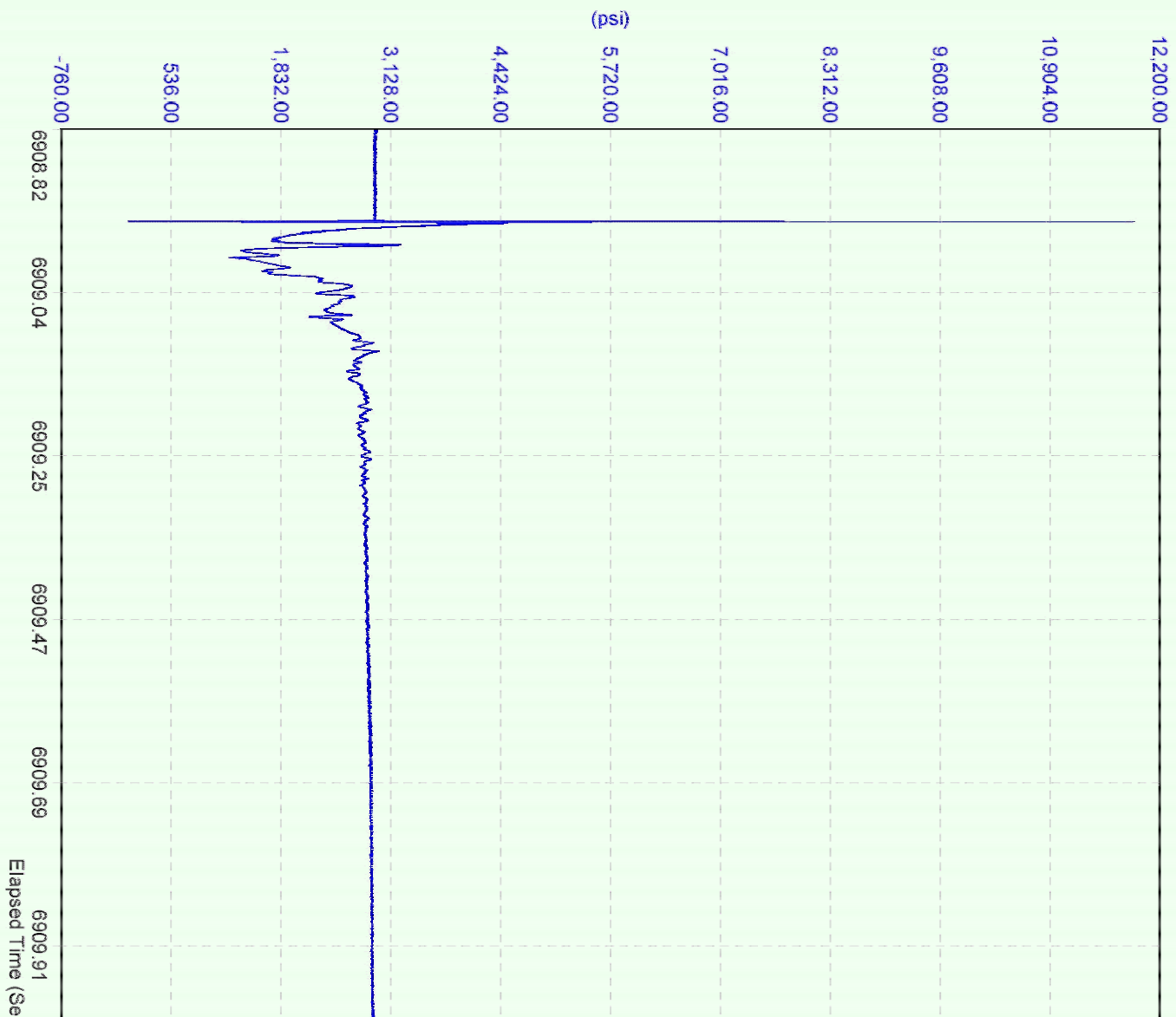
CCL to Top Shot: 3.46 m  
CCL to Pressure Gauge Sensor: 8.75 m

CCL Stop Depth: 2778.55 mMDKB  
Top of Perforation: 2782.01 mMDKB  
Bottom of Perforation: 2784.81 mMDKB  
Pressure Gauge Depth : 2787.30 mMDKB

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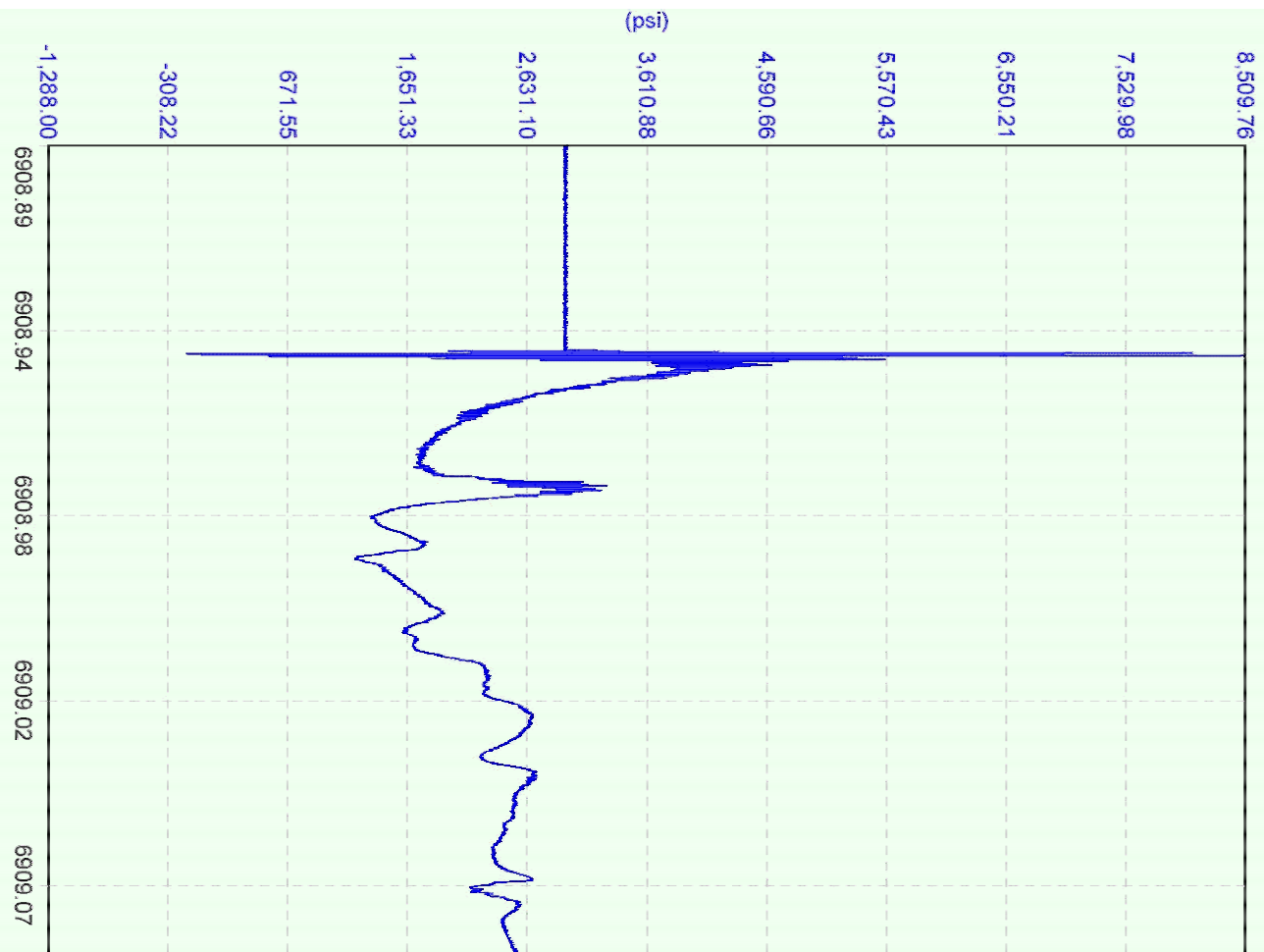
### CanadaTech PULSE Memory Gauge – Fast Pressure Data

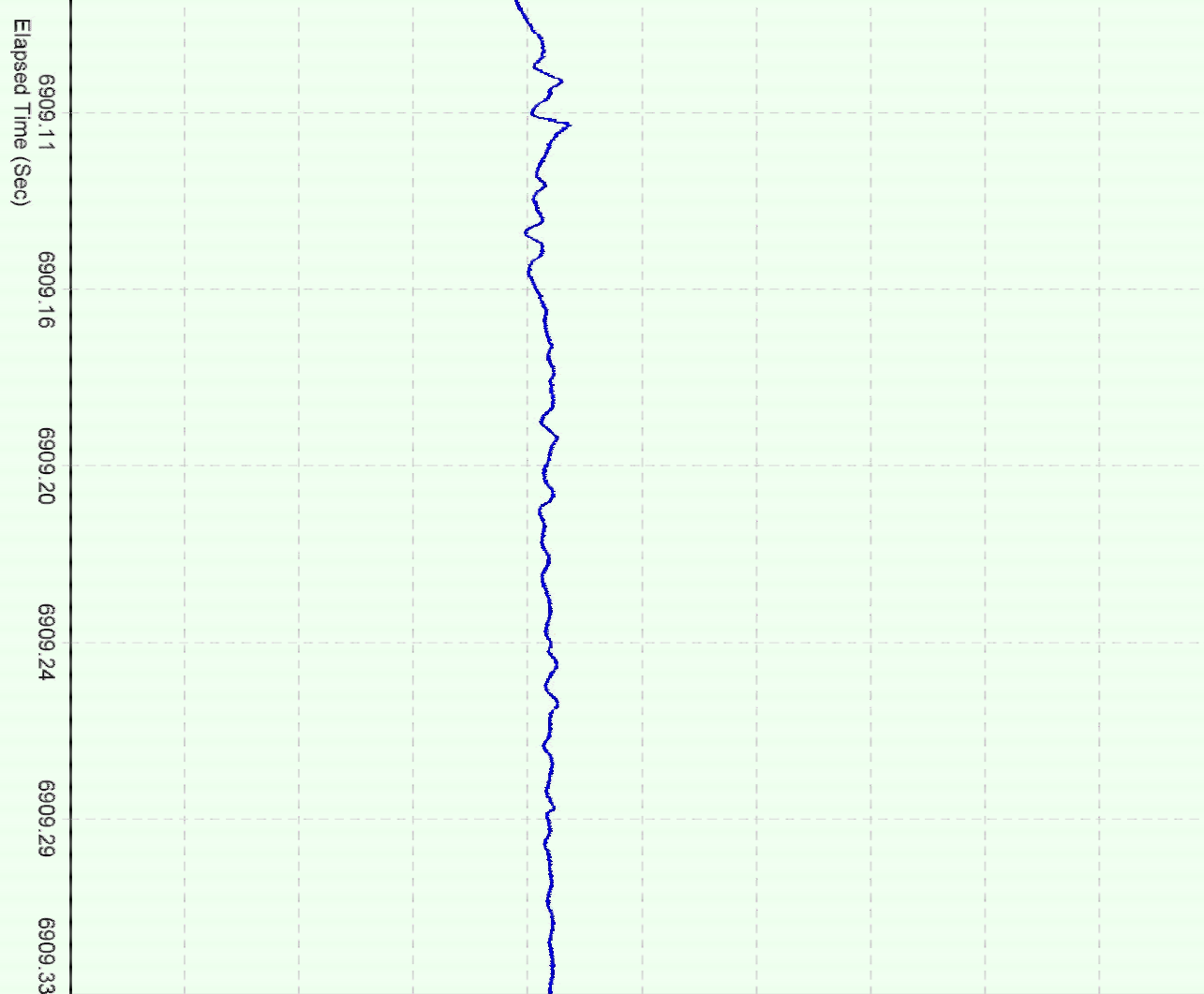
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CanadaTech PULSE Memory Gauge – Fast Pressure Data (zoomed in)





Company: **Esso Australia Pty. Ltd.**

**Schlumberger**

Well: **A7**

Field: **Tuna**

Rig: **Rig 22 / Prod 2**

Country: **Australia**

2-7/8" PURE HSD Perforation

2782m to 2785m MDKB

MAXIS Operating System