

THE NAT. RES. & ENV.  
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# SEISMIC COMPUTATIONS

Schlumberger



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Schlumberger

24 JUN 1986

PETROLEUM DIVISION

ESSO AUSTRALIA LTD  
GEOGRAM PROCESSING REPORT

LEATHERJACKET - 1

FIELD : WILDCAT  
STATE : VICTORIA  
COUNTRY : AUSTRALIA  
LOCATION : GIPPSLAND BASIN  
COORDINATES : 038° 05' 16.85" S  
148° 46' 41.82" E  
DATE OF SURVEY : 1-MARCH-1986  
REFERENCE NO. : 560306

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Fig. 1 : Wavelet polarity convention

Fig. 2 : Gun geometry sketch

Well Seismic Service Computation Request

Well Seismic Service Field Report

Geophysical Airgun Report

Drift Computation Report

Sonic Adjustment Parameter Report

Velocity Report

Time Converted Velocity Report

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## 1.0 INTRODUCTION

A velocity check shot survey was conducted in the Leatherjacket - 1 well on 1 March 1986. Six levels from 620 metres to 951 metres below DF were shot using a airgun source. All levels have been used in the calibration of the sonic log.

The shot times and calibrated sonic times have been corrected to the seismic reference datum at mean sea level.

## 2.0 DATA ACQUISITION

Table 1 Field Equipment and Survey Parameters

---

Elevation SRD	0.0 metres AMSL
Elevation KB	21.0 metres AMSL
Elevation DF	20.7 metres AMSL
Elevation GL	-106.0 metres AMSL
No. of Levels	6
Well Deviation	Nil
Total Depth	951 metres below DF
Energy Source	Airgun, 120 cu inches
Source Offset	40.0 metres
Source Depth	9.1 metres below MSL
Source Azimuth	50°
Reference Sensor	Accelerometer
Sensor Offset	40.0 metres
Sensor Depth	9.1 metres below MSL
Sensor Azimuth	50°
Downhole Geophone	Geospace HS-1 High Temp. (350° F) Coil Resist. 225Ω ±10 % Natural Freq. 8-12 hertz Sensitivity 0.45 V/in/sec Maximum tilt angle 60°

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Recording was made on the Schlumberger Cyber Service Unit (CSU) using LIS format.

### 2.1 Survey Details

The survey was shot using a airgun source and accelerometer as the surface sensor. A moonpool hydrophone was recorded for calculating the source offset. No major problems were noted during the survey.

### 3.0 CHECK SHOT DATA

A total of 6 check levels were shot during the survey. The level at 620 metres below DF was shot going into and coming out of the well. The transit times from both sets of data are identical.

The data quality is good and a plot of the stacked check shot data is displayed at plot 3 of the 'Raw and Stacked Checkshot Data'.

Table 2 Checkshot levels

Level Depth (metres below DF )	Stacked Shots	Rejected Shots	Quality	Comments
620	5	0	Good	Shot going down
	5	0	Good	
745	5	0	Good	
811	4	1	Good	
857	4	4	Good	
951	6	4	Good	

## 4.0 SONIC CALIBRATION

A 'drift' curve is obtained using the sonic log and the vertical check level times. The term 'drift' is defined as the seismic time (from check shots) minus the sonic time (from integration of edited sonic). Commonly the word 'drift' is used to identify the above difference, or to identify the gradient of drift verses increasing depth, or to identify a difference of drift between two levels.

The gradient of drift, that is the slope of the drift curve, can be negative or positive.

For a negative drift  $\frac{\Delta drift}{\Delta depth} < 0$ , the sonic time is greater than the seismic time over a certain section of the log.

For a positive drift  $\frac{\Delta drift}{\Delta depth} > 0$ , the sonic time is less than the seismic time over a certain section of the log.

The drift curve, between two levels, is then an indication of the error on the integrated sonic or an indication of the amount of correction required on the sonic to have the TTI of the corrected sonic match the check shot times.

Two methods of correction to the sonic log are used.

1. **Uniform or block shift** This method applies a uniform correction to all the sonic values over the interval. This uniform correction is applied in the case of positive drift and is the average correction represented by the drift curve gradient expressed in  $\mu\text{sec}/\text{m}$ .
2.  **$\Delta T$  Minimum** In the case of negative drift a second method is used, called  $\Delta t$  minimum. This applies a differential correction to the sonic log, where it is assumed that the greatest amount of transit time error is caused by the lower velocity sections of the log. Over a given interval the method will correct only  $\Delta t$  values which are higher than a threshold, the  $\Delta t_{min}$ . Values of  $\Delta t$  which are lower than the threshold are not corrected. The correction is a reduction of the excess of  $\Delta t$  over  $\Delta t_{min}$ ,  $\Delta t - \Delta t_{min}$ .

$\Delta t - \Delta t_{min}$  is reduced through multiplication by a reduction coefficient which remains constant over the interval. This reduction coefficient, named  $G$ , can be defined as:

$$G = 1 + \frac{drift}{\int (\Delta t - \Delta t_{min}) dZ}$$

Where drift is the drift over the interval to be corrected and the value  $\int (\Delta t - \Delta t_{min}) dZ$  is the time difference between the integrals of the two curves  $\Delta t$  and  $\Delta t_{min}$ , only over the intervals where  $\Delta t > \Delta t_{min}$ .

Hence the corrected sonic:  $\Delta t = G(\Delta t - \Delta t_{min}) + \Delta t_{min}$ .

## 5.0 SONIC CALIBRATION PROCESSING

### 5.1 Open Hole Logs

Both the sonic and density logs used have been edited prior to input into the Well Seismic Calibration processing chain.

The top and bottom checkshots at 620 and 951 metres respectively are outside of the logged interval. Both the sonic and density have been extrapolated at constant values to these levels. The overall log quality is good and only minor zones of cycle skipping have been edited from the sonic log.

Density log interval : 626 to 925 metres below DF  
Sonic log interval : 640 to 945 metres below DF

### 5.2 Source Offset

The moonpool hydrophone was used to determine the airgun offset. An average transit time of 27 milliseconds was measured between the airgun and the moonpool hydrophone. Using this time and a water velocity of 1480 metres/sec an offset of 39.9 metres was calculated. The moonpool hydrophone was positioned 14.5 feet from the wellhead at right angles to the airgun. An offset distance of 40 metres has been used.

### 5.3 Correction to Datum

Seismic reference datum (SRD) is at mean sea level. The airgun source was positioned 9.1 metres below MSL. Using a water velocity of 1480 metres/sec a correction of -6.15 milliseconds has been applied vertically between gun and datum.

### 5.4 Imposed Shots and Velocity Modelling

An imposed shot at the sea floor has been used in addition to the checkshot data to calibrate the sonic log. The transit time has been calculated assuming a water velocity of 1480 metres/sec. The checkshot at the top of the sonic is of good quality and has been used in the sonic calibration.



The velocity model used is displayed below. Depths stated are referenced to metres below derrick floor and metres below SRD respectively.

SRD		20.7 / 0 metres
	1480 metres/sec	
Sea floor		126.7 / 106 metres
	2032 metres/sec	
Top of sonic		620 / 599.3 metres

### 5.5 Sonic Calibration Results

The top of the sonic log (620 metres below DF) is chosen as the origin for the calibration drift curve. The drift curve indicates a number of corrections to be made to the sonic log. A list of shifts used on the sonic data is given below.

Table 3 Sonic Drift

Depth Interval (metres below DF )	Block Shift $\mu\text{sec}/\text{m}$	$\Delta t_{min}$ $\mu\text{sec}/\text{m}$	Equiv Block Shift $\mu\text{sec}/\text{m}$
126.7-620.0	0.0	-	0.0
620.0-951.0	13.9	-	13.9

The adjusted sonic curve is considered to be the best result using the available data.

## 6.0 GEOGRAM PROCESSING

GEOGRAM plots were generated using 20, 25, 30 and 35 hertz ricker wavelets. The presentations include both normal and reverse polarity on a time scale of 3.75 in/sec.

GEOGRAM processing produces synthetic seismic traces based on reflection coefficients generated from sonic and density measurements in the well-bore. The steps in the processing chain are the following:

- Depth to time conversion
- Reflection coefficients
- Attenuation coefficients
- Convolution
- Output.

### 6.1 Depth to Time Conversion

Open hole logs are recorded from the bottom to top with a depth index. This data is converted to a two-way time index and flipped to read from the top to bottom in order to match the seismic section.

### 6.2 Primary Reflection Coefficients

Sonic and density data are averaged over chosen time intervals (normally 2 or 4 milliseconds). Reflection coefficients are then computed using:

$$R = \frac{\rho_2 \cdot \nu_2 - \rho_1 \cdot \nu_1}{\rho_2 \cdot \nu_2 + \rho_1 \cdot \nu_1}$$

where

- $\rho_1$  = density of the layer above the reflection interface
- $\rho_2$  = density of the layer below the reflection interface
- $\nu_1$  = compressional wave velocity of the layer above the reflection interface
- $\nu_2$  = compressional wave velocity of the layer below the reflection interface

This computation is done for each time interval to generate a set of primary reflection coefficients without transmission losses.

### 6.3 Primaries with Transmission Loss

Transmission loss on two-way attenuation coefficients are computed using:

$$A_n = (1 - R_1^2).(1 - R_2^2).(1 - R_3^2)...(1 - R_n^2)$$

A set of primary reflection coefficients with transmission loss is generated using:

$$Primary_n = R_n.A_{n-1}$$

### 6.4 Primaries plus Multiples

Multiples are computed from these input reflection coefficients using the transform technique from the top of the well to obtain the impulse response of the earth. The transform outputs primaries plus multiples.

### 6.5 Multiples Only

By subtracting previously calculated primaries from the above result we obtain multiples only.

### 6.6 Wavelet

A theoretical wavelet is chosen to use for convolution with the reflection coefficients previously generated. Choices available include:

- Klauder wavelet
- Ricker zero phase wavelet
- Ricker minimum phase wavelet
- Butterworth wavelet
- User defined wavelet.

Time variant butterworth filtering can be applied after convolution. Polarity conventions are shown in Figure 1. These GEOGRAMS were generated using zero and minimum phase ricker wavelets.

### 6.7 Convolution

Standard procedure of convolution of wavelet with reflection coefficients. The output is the synthetic seismogram.

## 7.0 SUMMARY OF GEOPHYSICAL LISTINGS

Six geophysical data listings are appended to this report. Following is a brief description of the format of each listing.

### 7.1 Geophysical Airgun Report

1. Level number : the level number starting from the top level (includes any imposed shots).
2. Vertical depth from DF :  $dkb$ , the depth in metres from derrick floor .
3. Vertical depth from SRD :  $dsrc$ , the depth in metres from seismic reference datum.
4. Vertical depth from GL :  $dgl$ , the depth in metres from ground level.
5. Observed travel time HYD to GEO :  $tim0$ , the transit time picked from the stacked data by subtracting the surface sensor first break time from the downhole sensor first break time.
6. Vertical travel time SRC to GEO :  $timv$ , is corrected for source to hydrophone distance and for source offset.
7. Vertical travel time SRD to GEO :  $shtm$ , is  $timv$  corrected for the vertical distance between source and datum.
8. Average velocity SRD to GEO : the average seismic velocity from datum to the corresponding checkshot level,  $\frac{dsrc}{shtm}$ .
9. Delta depth between shots :  $\Delta depth$ , the vertical distance between each level.
10. Delta time between shots :  $\Delta time$ , the difference in vertical travel time ( $shtm$ ) between each level.
11. Interval velocity between shots : the average seismic velocity between each level,  $\frac{\Delta depth}{\Delta time}$ .

### 7.2 Drift Computation Report

1. Level number : the level number starting from the top level (includes any imposed shots).
2. Vertical depth from DF : the depth in metres from derrick floor .
3. Vertical depth from SRD : the depth in metres from seismic reference datum.
4. Vertical depth from GL : the depth in metres from ground level.
5. Vertical travel time SRD to GEO : the calculated vertical travel time from datum to downhole geophone (see column 7, Geophysical Airgun Report).
6. Integrated raw sonic time : the raw sonic log is integrated from top to bottom and listed at each level. An initial value at the top of the sonic log is set equal to the checkshot time at that level. This may be an imposed shot if a shot was not taken at the top of the sonic.
7. Computed drift at level : the checkshot time minus the integrated raw sonic time.
8. Computed blk-shft correction : the drift gradient between any two checkshot levels ( $\frac{\Delta drift}{\Delta depth}$ ).

### 7.3 Sonic Adjustment Parameter Report

1. Knee number : the knee number starting from the highest knee. (The first knees listed will generally be at SRD and the top of sonic. The drift imposed at these knees will normally be zero.)
2. Vertical depth from DF : the depth in metres from derrick floor .
3. Vertical depth from SRD : the depth in metres from seismic reference datum.
4. Vertical depth from GL : the depth in metres from ground level.
5. Drift at knee : the value of drift imposed at each knee.
6. Blockshift used : the change in drift divided by the change in depth between any two levels.
7. Delta-T minimum used : see section 4 of report for an explanation of  $\Delta t_{min}$ .
8. Reduction factor : see section 4 of report.
9. Equivalent blockshift : the gradient of the imposed drift curve.

### 7.4 Velocity Report

1. Level number : the level number starting from the top level (includes any imposed shots).
2. Vertical depth from DF : the depth in metres from derrick floor .
3. Vertical depth from SRD : the depth in metres from seismic reference datum
4. Vertical depth from GL : the depth in metres from ground level
5. Vertical travel time SRD to GEOPH : the vertical travel time from SRD to downhole geophone (see column 7, Geophysical Airgun Report)
6. Integrated adjusted sonic time : the adjusted sonic log is integrated from top to bottom. An initial value at the top of the sonic is set equal the checkshot time at that level. (The adjusted sonic log is the drift corrected sonic log.)
7. Drift=shot time-raw son : the check shot time minus the raw integrated sonic time.
8. Residual=shot time-adj son : the check shot time minus the adjusted integrated sonic time. This is the difference between calculated drift and the imposed drift.
9. Adjusted interval velocity : the interval velocity calculated from the integrated adjusted sonic time at each level.

## 7.5 Time Converted Velocity Report

The data in this listing has been resampled in time.

1. Two way travel time from SRD : This is the index for the data in this listing. The first value is at SRD (0 milliseconds) and the sampling rate is 2 milliseconds.
2. Measured depth from DF : the depth from DF at each corresponding value of two way time.
3. Vertical depth from SRD : the vertical depth from SRD at each corresponding value of two way time.
4. Average velocity SRD to GEO : the vertical depth from SRD divided by half the two way time.
5. RMS velocity : the root mean square velocity from datum to the corresponding value of two way time.

$$v_{rms} = \sqrt{\sum_1^n v_i^2 t_i / \sum_1^n t_i}$$

where  $v_i$  is the velocity between each 2 milliseconds interval.

6. First normal moveout : the correction time in milliseconds to be applied to the two way travel time for a specified moveout distance (default = 3000 feet).
7. Second normal moveout : the correction time in milliseconds to be applied to the two way travel time for a specified moveout distance (default = 4500 feet).
8. Third normal moveout : the correction time in milliseconds to be applied to the two way travel time for a specified moveout distance (default = 6000 feet).
9. Interval velocity : the velocity between each sampled depth. Typically, the sampling rate is 2 milliseconds two way time, (1 millisecond one way time) therefore the interval velocity will be equal to the depth increment divided by 0.001. It is equivalent to column 9 from the the Velocity Report.

## 7.6 Synthetic Seismogram Table

1. Two way travel time from SRD : This is the index for the data in this listing. The first value is at the top of the sonic. The default sampling rate is 2 milliseconds.
2. Vertical depth from SRD : the vertical depth from SRD at each corresponding value of two way time.
3. Interval velocity : the velocity between each sampled depth. Typically, the sampling rate is 2 milliseconds two way time, (1 millisecond one way time) therefore the interval velocity will be equal to the depth increment divided by 0.001. It is equivalent to column 9 from the the Velocity Report.
4. Interval density : the average density between two successive values of two way time.
5. Reflect. coeff. : the difference in acoustic impedance divided by the sum of the acoustic impedance between any two levels. The acoustic impedance is the product of the interval density and the interval velocity.
6. Two way atten. coeff. : is computed from the series

$$A_n = (1 - R_1^2)(1 - R_2^2)(1 - R_3^2)\dots(1 - R_n^2)$$

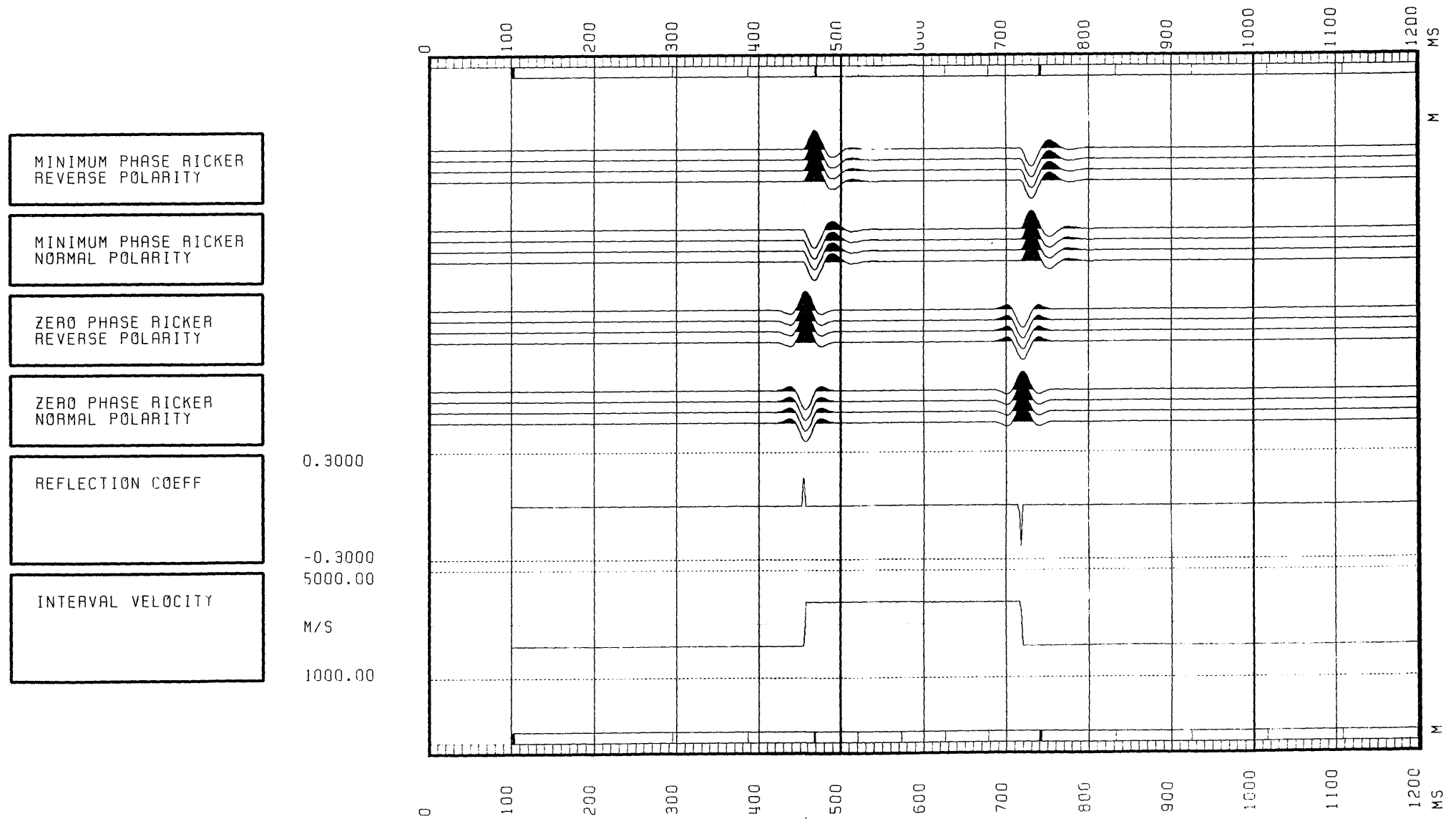
7. Synthetic seismo. primary : the product of the reflection coefficient at each depth and the two way attenuation coefficient up to that depth.

$$Primary_n = R_n \cdot A_{n-1}$$

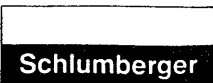
8. Primary + multiple : a transform technique is used to calculate multiples from the input reflection coefficients.
9. Multiples only : (Primary + multiple) - (Synthetic seismo. primary)

# SCHLUMBERGER (SEG-1976) WAVELET POLARITY CONVENTION

Figure 1







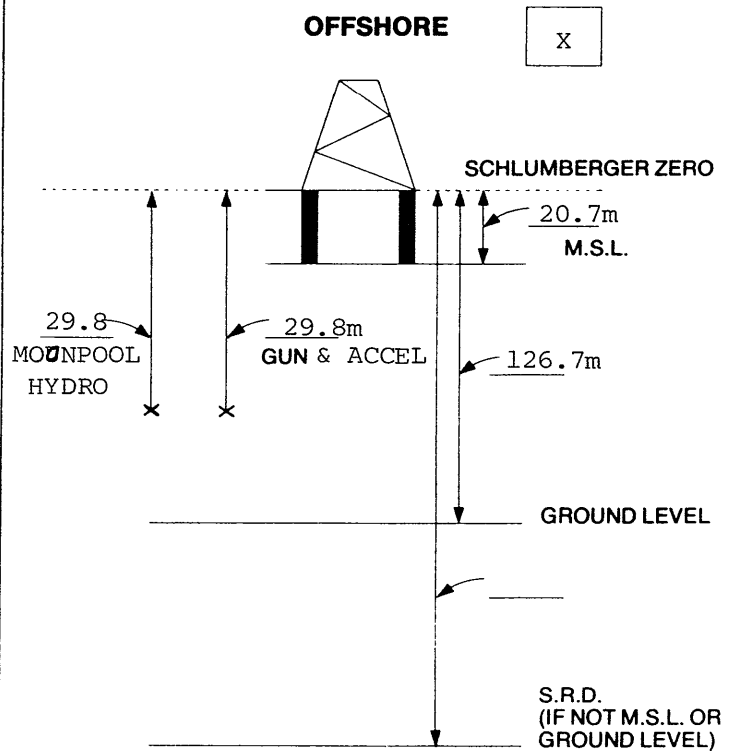
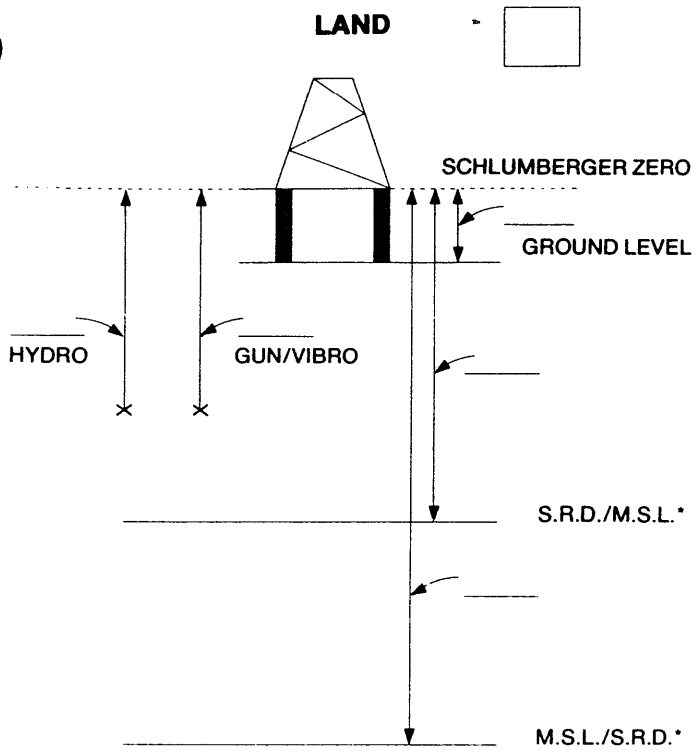
# GUN GEOMETRY SKETCH

Figure 2.

CLIENT: ESSO AUSTRALIA LTD

WELL: LEATHERJACKET-1

DATE: 1/3/86

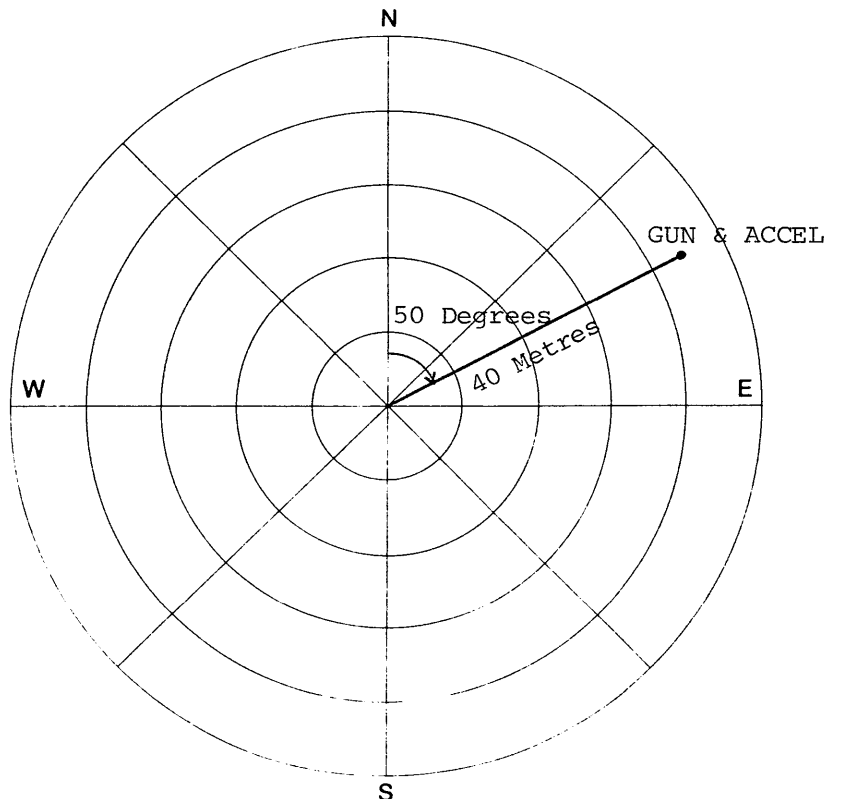


INDICATE ALL DISTANCES RELATIVE TO SCHLUMBERGER ZERO

INDICATE ALL DISTANCES RELATIVE TO SCHLUMBERGER ZERO

\* DELETE AS APPLICABLE

SHOT POS'N	GUN OFFSET	ACCEL OFFSET	GUN DEPTH	ACCEL DEPTH
1	40m	40m	9.1m	9.1m
2				
3				
4				
5				
6				
7				



INDICATE GUN/VIBRO AND HYDROPHONE OFFSET AND AZIMUTH RELATIVE TO NORTH

**WELL SEISMIC SERVICE COMPUTATION REQUEST**

COMPANY: ESSO CONTACT: \_\_\_\_\_

WELL: LEATHER JACKET-1

FIELD/COUNTRY: WILDCAT/AUSTRALIA

LOCATION/DIVISION: VEA/ANZ

DATE WST JOB: \_\_\_\_\_

DATE SENT: \_\_\_\_\_

BY: RAMIAH

**NUMBER OF COPIES OF RESULTS (CLIENT)**

PRODUCT	REPORTS	PLOT TRANSP.	PLOT PRINT	TAPE
WSE	6	1	6	#1
WSC	6	1	6	#2
GEO	6	1	6	
VSP				

**DATA SUPPLIED FOR INTERVALS TO BE PROCESSED**

	FROM	TO
A. LOGS : DENSITY	951	620
SONIC	951	620
B. SHOTS	951	620

UNITS: FEET  METRES

CLIENT TAPE: FORMAT: TAPE #1 SEG Y  TAPE #2 LIS

DENSITY: 1600 BPI  1600 BPI

**SONIC CALIBRATION BY WST (WSC)**

URGENT? YES  NO

IS A WELL SEISMIC EDIT (WSE) REQUESTED? YES  NO

(WSE IS RECOMMENDED WHERE FIELD STACK QUALITY IS AFFECTED BY BAD HOLE CONDITIONS)

REQUESTED TIME ORIGIN (SRD) 0.0 METRES ABOVE/BELOW MEAN SEA LEVEL (MSL)

STATIC CORRECTION TO BE APPLIED : -

LAYER	VELOCITY	FROM	TO
1			
2			
3			

\_\_\_\_\_ MILLISECONDS FROM GROUND LEVEL OR

TRUE VERTICAL DEPTH (TVD) CORRECTION? YES  NO  (TVD IS RECOMMENDED IF DEVIATION EXCEEDS 5°)

DEVIATION DATA SUPPLIED? YES  NO

11 INCH WSC DISPLAY DEPTH SCALES TO BE USED (UP TO TWO) 1/5000  1/1000  OTHER

22 INCH WIDE TIME/DEPTH DISPLAY SPECIAL TIME FUNCTION? (T-DEPTH/VELOCITY) YES  NO  VELOCITY

22 INCH WIDE GEOLOGICAL INTERVAL VELOCITY DISPLAY? YES  NO  GEOLOGICAL MARKERS SUPPLIED

SPECIAL SCALES TO BE USED? SPECIFY \_\_\_\_\_

**GEOGRAM**

URGENT? YES  NO

FREQUENCY TEST TO BE SUPPLIED BEFORE FINALIZATION (8 BAND WIDTHS) YES  NO

FINAL GEOGRAM PARAMETERS : -

(ONE GEOGRAM INCLUDES DISPLAYS IN BOTH POLARITIES FOR EACH OF, PRIMARIES, PRIMARIES + MULTIPLES, PRIMARIES WITH TRANSMISSION LOSS, MULTIPLES ONLY FOR THE CHOSEN WAVELET AND T.V.F.)

WAVELET	FREQ.	T.	T. LOW	T. HIGH	F. LOW	F. HIGH
KLAUDER <input type="checkbox"/>						
MIN PHASE <input type="checkbox"/>	20, 25					
ZERO PHASE <input type="checkbox"/>	30, 35					
OTHER: <input type="checkbox"/> RICKER						

SCALE IS 10 CM/SEC + ONE OTHER - SPECIFY 3.75in/sec

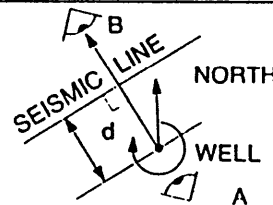
DIP OPTION YES  NO

SEISMIC LINE NUMBER \_\_\_\_\_

(ENCLOSE WELL LOCATION MAP VERSUS SEISMIC LINE)

DISTANCE BETWEEN TRACES \_\_\_\_\_

SECTION PERSPECTIVE: SEEN FROM A  FROM B



d \_\_\_\_\_

α \_\_\_\_\_

α (CLOCKWISE)

SPECIAL REQUESTS: \_\_\_\_\_

**VERTICAL SEISMIC PROFILE**

URGENT? YES  NO

UP TO 3 VELOCITY FILTER TESTS WILL BE SENT PROVISIONALLY

SPECIFY NUMBER OF TRACES IN WINDOW REQUIRED 3  5  7  9  11

TIME VARIANT FILTER (TVF) TO BE APPLIED ON FINAL DISPLAY : -

SCALE IS 10 CM/SEC + ONE OTHER. SPECIFY \_\_\_\_\_

SPECIAL REQUESTS? \_\_\_\_\_

TIME 1	TIME 2	FLOW	F. HIGH

ENCLOSE SEISMIC SECTION. INDICATE RELATION TO WELL ON A DIAGRAM





ANALYST: N. SANDERS

22-APR-86 14:43:45

PROGRAM: GSHOT .007.507

```
*****  
*                                     *  
*                                     *  
*                                     *  
*                                     *  
*          SCHLUMBERGER              *  
*                                     *  
*                                     *  
*****
```

GEOPHYSICAL AIRGUN REPORT

COMPANY : ESSO AUSTRALIA LTD  
WELL : LEATHERJACKET - 1  
FIELD : WILDCAT  
STATE : VICTORIA  
COUNTRY : AUSTRALIA  
REFERENCE: 560306

ANALYST: T. SANDERS

22-APR-86 14:43:45

PROGRAM: GSHOT 007.007

```
*****  
*  
*  
*  
*****  
*  
* SCHLUMBERGER *  
*  
*****
```

GEOPHYSICAL AIRGUN REPORT

COMPANY : ESSO AUSTRALIA LTD  
WELL : LEATHERJACKET - 1  
FIELD : WILDCAT  
STATE : VICTORIA  
COUNTRY : AUSTRALIA  
REFERENCE: 560306

## LONG DEFINITIONS

## GLOBAL

KB - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL  
 SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL  
 EKE - ELEVATION OF KELLY BUSHING  
 GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD  
 VELHYD - VELOCITY OF THE MEDIUM BETWEEN THE SOURCE AND THE HYDROPHONE  
 VELSUR - VELOCITY OF THE MEDIUM BETWEEN THE SOURCE AND THE SRD

## MATRIX

GUNELZ - SOURCE ELEVATION ABOVE SRD (ONE FOR THE WHOLE JOB; OR ONE PER SHOT)  
 GUNEWZ - SOURCE DISTANCE FROM THE BOREHOLE AXIS IN EW DIRECTION (CF. GUNELZ)  
 GUNNSZ - SOURCE DISTANCE FROM THE BOREHOLE AXIS IN NS DIRECTION (CF. GUNELZ)  
 HYDELZ - HYDROPHONE ELEVATION ABOVE SRD (CF. GUNELZ)  
 HYDEWZ - HYDROPHONE DISTANCE FROM THE BOREH. AXIS IN EW DIRECTION (CF. GUNELZ)  
 HYDNNSZ - HYDROPHONE DISTANCE FROM THE BOREH. AXIS IN NS DIRECTION (CF. GUNELZ)  
 TRTHYD - TRAVEL TIME FROM THE HYDROPHONE TO THE SOURCE  
 TRTSRD - TRAVEL TIME FROM THE SOURCE TO THE SRD  
 DEWVEL - DEVIATED WELL DATA PER SHOT : MEAS. DEPTH, VERT. DEPTH, EW, NS

## SAMPLED

SHOT.GSH - SHOT NUMBER  
 DKB.GSH - MEASURED DEPTH FROM KELLY-BUSHING  
 DSRD.GSH - DEPTH FROM SRD  
 DGL.GSH - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)  
 TIMO.GSH - MEASURED TRAVEL TIME FROM HYDROPHONE TO GEOPHONE  
 TIMV.GSH - VERTICAL TRAVEL TIME FROM THE SOURCE TO THE GEOPHONE  
 SHTM.GSH - SHOT TIME (WST)  
 AVGV.GSH - AVERAGE SEISMIC VELOCITY  
 DELZ.GSH - DEPTH INTERVAL BETWEEN SUCCESSIVE SHOTS  
 DELT.GSH - TRAVEL TIME INTERVAL BETWEEN SUCCESSIVE SHOTS  
 INTV.GSH - INTERNAL VELOCITY, AVERAGE

## (GLOBAL PARAMETERS)

## (VALUE)

ELEV. OF KB AB. MSL (WST)	KB	:	20.7000	M
ELEV. OF SRD AB. MSL (WST)	SRD	:	0	M
ELEVATION OF KELLY BUSHI	EKE	:	20.7000	M
ELEV. OF GL AB. SRD (WST)	GL	:	-106.000	M
VEL SOURCE-HYDRO (WST)	VELHYD	:	1480.00	M/S
VEL SOURCE-SRD (WST)	VELSUR	:	1480.00	M/S

## (MATRIX PARAMETERS)

	SOURCE ELV M	SOURCE EW M	SOURCE NS M	HYDRO ELEV M	HYDRO EW M	HYDRO NS M
1	-9.10	30.64	25.71	-9.10	30.64	25.71

	TRT HYD-SC MS	TRT SC-SPD MS
1	0	6.15

	VD @ KB M	VD @ KB M	VD @ SRD M	E-W COORD M	N-S COORD M
1	126.70	126.70	106.00	0	0
2	620.00	620.00	590.30	0	0
3	745.00	745.00	724.30	0	0
4	811.00	811.00	790.30	0	0
5	857.00	857.00	836.30	0	0
6	951.00	951.00	930.30	0	0



LEVEL NUMBER	MEASUR DEPTH FROM KM M	VERTIC DEPTH FROM SRD M	VERTIC DEPTH FROM GL M	OPSERV TRAVEL TIME HYD/GEO MS	VERTIC TRAVEL TIME SRC/GEO MS	VERTIC TRAVEL TIME SRD/GEO MS	AVERAGE VELOC SRD/GEO M/S	DELTA DEPTH BETWEEN SHOTS M	DELTA TIME BETWEEN SHOTS MS	INTERV VELOC BETWEEN SHOTS M/S
1	126.70	106.00	0	70.83	65.47	71.62	1480			
2	620.00	599.30	493.30	309.00	308.29	314.44	1906	493.30	242.82	2032
3	745.00	724.30	618.30	363.00	362.43	368.58	1965	125.00	54.14	2309
4	811.00	790.30	684.30	390.00	389.49	395.64	1998	66.00	27.06	2439
5	857.00	836.30	730.30	408.00	407.52	413.67	2022	46.00	18.03	2551
6	951.00	930.30	824.30	433.00	432.59	438.74	2120	94.00	25.07	3750



ANALYST: M. SANDERS

22-APR-86 14:49:14

PROGRAM: GDRIFT 007.ED9

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*          SCHLUMBERGER              *
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DRIFT COMPUTATION REPORT

COMPANY : ESSO AUSTRALIA LTD  
WELL : LEATHERJACKET - 1  
FIELD : WILDCAT  
STATE : VICTORIA  
COUNTRY : AUSTRALIA  
REFERENCE: 560306

ANALYST: M. SANDERS

22-APR-86 14:49:14

PROGRAM: GDRIFT 007.E09

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*          SCHLUMBERGER              *
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DRIFT COMPUTATION REPORT

COMPANY : ESSO AUSTRALIA LTD  
WELL : LEATHERJACKET - 1  
FIELD : WILDCAT  
STATE : VICTORIA  
COUNTRY : AUSTRALIA  
REFERENCE: 560306

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## LONG DEFINITIONS

## GLOBAL

KB - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL  
 SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL  
 EKB - ELEVATION OF KELLY BUSHING  
 GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD  
 XSTART - TOP OF ZONE PROCESSED BY WST  
 XSTOP - BOTTOM OF ZONE PROCESSED BY WST  
 GAD001 - RAW SONIC CHANNEL NAME USED FOR WST SONIC ADJUSTMENT  
 UNFDEN - UNIFORM DENSITY VALUE

## ZONE

LOFDEN - LAYER OPTION FLAG FOR DENSITY : -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER  
 LAYDEN - USER SUPPLIED DENSITY DATA

## SAMPLED

SHOT - SHOT NUMBER  
 DKE - MEASURED DEPTH FROM KELLY-BUSHING  
 DSRD - DEPTH FROM SRD  
 DGL - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)  
 SHTM - SHOT TIME (WST)  
 PAWS - RAW SONIC (WST)  
 SHDR - DRIFT AT SHOT OR KNEE  
 BLSSH - BLOCK SHIFT BETWEEN SHOTS OR KNEE

## (GLOBAL PARAMETERS)

## (VALUE)

ELEV OF KB AB. MSL (WST)	KB	:	20.7000	M
ELEV OF SRD AB. MSL (WST)	SRD	:	0	M
ELEVATION OF KELLY BUSHI	EKB	:	20.7000	M
ELEV OF GL AB. SRD (WST)	GL	:	-104.000	M
TOP OF ZONE PROCD (WST)	XSTART	:	0	M
BOT OF ZONE PROCD (WST)	XSTOP	:	0	M
RAW SONIC CH NAME (WST)	GAD001	:	DT.WST.003.IPA.FLP.*	
UNIFORM DENSITY VALUE	UNFDEN	:	2.30000	G/C3

## (ZONED PARAMETERS)

## (VALUE)

## (LIMITS)

LAYER OPTION FLAG DENS	LOFDEN	:	1.000000	30479.7	-	0
USER SUPPLIED DENSITY DA	LAYDEN	:	-999.2500	G/C3	30479.7	0

COMPANY : ESSO AUSTRALIA LTD

WELL : LEATHERJACKET - 1

PAGE 2

LEVEL NUMBER	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	VERTICAL DEPTH FROM GL M	VERTICAL TRAVEL TIME SRD/GEQ MS	INTEGRATED RAW SONIC TIME MS	COMPUTED DRIFT AT LEVEL MS	COMPUTED BLK-SHFT CORRECTION US/M
1	126.70	106.00	0	71.62	71.62	0	0
2	620.00	599.30	493.30	314.44	314.44	0	0
3	745.00	724.30	618.30	368.56	366.73	1.85	14.81
4	811.00	790.30	684.30	395.64	393.66	1.93	1.93
5	857.00	836.30	730.30	413.67	410.40	3.27	28.16
6	951.00	930.30	824.30	438.74	433.94	4.80	16.22

ANALYST: M. SANDERS

22-APR-86 15:00:33

PROGRAM: GADJUST 008.F07

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*          SCHLUMBERGER              *
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SONIC ADJUSTMENT PARAMETER REPORT

COMPANY : ESSO AUSTRALIA LTD  
WELL : LEATHERJACKET - 1  
FIELD : WILDCAT  
STATE : VICTORIA  
COUNTRY : AUSTRALIA  
REFERENCE: 560306

LONG DEFINITIONS

GLOBAL

SRCDRF - ORIGIN OF ADJUSTMENT DATA  
 CONADJ - CONSTANT ADJUSTMENT TO AUTOMATIC DELTA-T MINIMUM = 7.5 US/F  
 UNERTH - UNIFORM EARTH VELOCITY (GTRFRM)

ZONE

ZDRIFT - USER DRIFT AT BOTTOM OF THE ZONE  
 ADJOPZ - TYPE OF ADJUSTMENT IN THE DRIFT ZONE : 0=DELTA-T MIN, 1=BLOCKSHIFT  
 ADJUSZ - DELTA-T MINIMUM USED FOR ADJUSTMENT IN THE DRIFT ZONE  
 LOFVEL - LAYER OPTION FLAG FOR VELOCITY: -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER  
 LAYVEL - USER SUPPLIED VELOCITY DATA

SAMPLED

SHOT - SHOT NUMBER  
 VDKB - VERTICAL DEPTH RELATIVE TO KB  
 DSRD - DEPTH FROM SRD  
 DGL - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)  
 KNEE - KNEE  
 BLSH - BLOCK SHIFT BETWEEN SHOTS OR KNEE  
 DTMI - VALUE OF DELTA-T MINIMUM USED  
 COEF - DELTA-T MIN COEFFICIENT USED IN THE DRIFT ZONE  
 DRGR - GRADIENT OF DRIFT CURVE

(GLOBAL PARAMETERS)

(VALUE)

ORIG OF ADJ DATA (WST)	SRCDRF	:	2.00000	
CONS SONIC ADJUST (WST)	CONADJ	:	24.6063	US/M
UNIFORM EARTH VELOCITY	UNERTH	:	2133.50	M/S

(ZONED PARAMETERS)

(VALUE)

(LIMITS)

USER DRIFT ZONE (WST)	ZDRIFT	:	4.600000	MS	951.000	-	620.000
					620.000	-	126.700
ADJUSTMENT MODE (WST)	ADJOPZ	:	-999.2500		30479.7	-	0
USER DELTA-T MIN (WST)	ADJUSZ	:	-999.2500	US/M	30479.7	-	0
LAYER OPTION FLAG VELOC	LOFVEL	:	1.000000		30479.7	-	0
USER VELOC (WST)	LAYVEL	:	2032.000	M/S	620.000	-	126.700
			1400.000		126.700	-	25.7000



COMPANY : ESSO AUSTRALIA LTD

WELL : LEATHERJACKET - 1

PAGE 2

KNEE NUMBER	VERTICAL DEPTH FROM KH M	VERTICAL DEPTH FROM SRD M	VERTICAL DEPTH FROM GL M	DRIFT AT KNEE MS	BLOCKSHIFT USED US/M	DELTA-T MINIMUM USED US/M	REDUCTION FACTOR G	EQUIVALENT BLOCKSHIFT US/M
1	126.70	106.00	0	0				0
2	620.00	599.30	493.30	0				0
3	951.00	930.30	824.30	4.50	13.90			13.90

ANALYST: W. SANDERS

22-APR-86 15:01:05

PROGRAM: GADJST 008.E07

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*   SCHLUMBERGER                     *  
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VELOCITY REPORT

COMPANY : ESSO AUSTRALIA LTD  
WELL : LEATHERJACKET - 1  
FIELD : WILDCAT  
STATE : VICTORIA  
COUNTRY : AUSTRALIA  
REFERENCE: 560306

LONG DEFINITIONS

GLOBAL

- KB - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
- SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
- EKB - ELEVATION OF KELLY BUSHING
- GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
- UNERTH - UNIFORM EARTH VELOCITY (GTRFRM)

ZONE

- LOFVEL - LAYER OPTION FLAG FOR VELOCITY: -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
- LAYVEL - USER SUPPLIED VELOCITY DATA

SAMPLED

- SHOT - SHOT NUMBER
- DKS - MEASURED DEPTH FROM KELLY-BUSHING
- DSRD - DEPTH FROM SRD
- DGL - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
- SHTM - SHOT TIME (WST)
- ADJS - ADJUSTED SONIC TRAVEL TIME
- SHDR - DRIFT AT SHOT OR KNEE
- REST - RESIDUAL TRAVEL TIME AT KNEE
- INTV - INTERNAL VELOCITY, AVERAGE

(GLOBAL PARAMETERS)

(VALUE)

ELEV OF KB AB. MSL (WST)	KB	:	20.7000	M
ELEV OF SRD AB. MSL (WST)	SRD	:	0	M
ELEVATION OF KELLY BUSHI	EKB	:	20.7000	M
ELEV OF GL AB. SRD (WST)	GL	:	-106.000	M
UNIFORM EARTH VELOCITY	UNERTH	:	2133.50	M/S

(ZONED PARAMETERS)

(VALUE)

(LIMITS)

LAYER OPTION FLAG VELOC	LOFVEL	:	1.000000		30479.7	-	0
USER VELOC (WST)	LAYVEL	:	2032.000	M/S	620.000	-	126.700
			1480.000		126.700		20.7000

COMPANY : ESSO AUSTRALIA LTD

WELL : LEATHERJACKET - 1

PAGE 4

LEVEL NUMBER	MEASURED DEPTH FROM KS M	VERTICAL DEPTH FROM SRD M	VERTICAL DEPTH FROM GL M	VERTICAL TRAVEL TIME SRD/GEOPH MS	INTEGRATED ADJUSTED SONIC TIME MS	DRIFT		RESIDUAL		ADJUSTED INTERVAL VELOCITY M/S
						= SHOT TIME - RAW SON MS	= SHOT TIME - ADJ SON MS	= SHOT TIME - ADJ SON MS	= SHOT TIME - ADJ SON MS	
1	126.70	106.00	0	71.62	71.62	0	0	0	1480	
2	620.00	594.30	497.30	314.44	314.44	0	0	0	2032	
3	745.00	724.30	618.30	368.58	368.46	1.35	.12	.12	2314	
4	811.00	790.30	684.30	395.64	396.30	1.98	-.66	-.66	2371	
5	857.00	836.30	730.30	413.67	413.68	3.27	0	0	2648	
6	951.00	930.30	824.30	438.74	438.54	4.80	.20	.20	3781	

TIME/DEPTH

ANALYST: M. SANDERS

24-APR-86 08:48:57

PROGRAM: GTRFRM 007.FCB

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*          SCHLUMBERGER              *  
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TIME CONVERTED VELOCITY REPORT

COMPANY : ESSO AUSTRALIA LTD  
WELL : LEATHERJACKET - 1  
FIELD : WILDCAT  
STATE : VICTORIA  
COUNTRY : AUSTRALIA  
REFERENCE: 560306

ANALYST: H. SANDERS

24-APR-86 08:48:57

PROGRAM: GTRFRM 007.F08

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*          SCHLUMBERGER              *  
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TIME CONVERTED VELOCITY REPORT

COMPANY : ESSO AUSTRALIA LTD  
WELL : LEATHERJACKET - 1  
FIELD : WILDCAT  
STATE : VICTORIA  
COUNTRY : AUSTRALIA  
REFERENCE: 560306

LONG DEFINITIONS

GLOBAL

KB - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL  
 SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL  
 GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD  
 UNERTH - UNIFORM EARTH VELOCITY (GTRFRM)  
 UNFDEN - UNIFORM DENSITY VALUE

MATRIX

MVODIS - MOVE-OUT DISTANCE FROM BOREHOLE

ZONE

LUFVEL - LAYER OPTION FLAG FOR VELOCITY: -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER  
 LAYVEL - USER SUPPLIED VELOCITY DATA  
 LOFDEN - LAYER OPTION FLAG FOR DENSITY : -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER  
 LAYDEN - USER SUPPLIED DENSITY DATA

SAMPLED

TWOT - TWO WAY TRAVEL TIME (RELATIVE TO THE SEISMIC REFERENCE)  
 DKP - MEASURED DEPTH FROM KELLY-BUSHING  
 DSRD - DEPTH FROM SRD  
 AVGV - AVERAGE SEISMIC VELOCITY  
 RMSV - ROOT MEAN SQUARE VELOCITY (SEISMIC)  
 MVOT - NORMAL MOVE-OUT  
 MVOT - NORMAL MOVE-OUT  
 MVOT - NORMAL MOVE-OUT  
 INTV - INTERNAL VELOCITY, AVERAGE

(GLOBAL PARAMETERS)

(VALUE)

ELEV OF KB AB. MSL (WST)	KB	:	20.7000	M
ELEV OF SRD AB. MSL (WST)	SRD	:	0	M
ELEV OF GL AB. SRD (WST)	GL	:	-106.000	M
UNIFORM EARTH VELOCITY	UNERTH	:	2133.00	M/S
UNIFORM DENSITY VALUE	UNFDEN	:	2.30000	G/C3

(MATRIX PARAMETERS)

MVOUT DIST

1	1000.0
2	1500.0
3	2000.0



COMPANY : ESSO AUSTRALIA LTD

WELL : LEATHERJACKET - 1

PAGE 2

(ZONED PARAMETERS)

(VALUE)

(LIMITS)

LAYER OPTION FLAG VELOC	LOFVEL	:	1.000000		30479.7	-	0
USER VELOC (WST)	LAYVEL	:	2032.000	M/S	620.000	-	126.700
			1480.000		126.700	-	20.7000
LAYER OPTION FLAG DENS	LOFDEN	:	-1.000000		30479.7	-	0
USER SUPPLIED DENSITY DA	LAYDEN	:	-999.2500	G/C3	30479.7	-	0

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KR M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
0	20.70	0						
2.00	22.18	1.48	1480	1480	673.68	1011.52	1349.35	1480
4.00	23.66	2.96	1480	1480	671.69	1009.52	1347.36	1480
6.00	25.14	4.44	1480	1480	669.70	1007.53	1345.36	1480
8.00	26.62	5.92	1480	1480	667.72	1005.55	1343.38	1480
10.00	28.10	7.40	1480	1480	665.75	1003.56	1341.39	1480
12.00	29.58	8.88	1480	1480	663.78	1001.58	1339.40	1480
14.00	31.06	10.36	1480	1480	661.82	999.61	1337.42	1480
16.00	32.54	11.84	1480	1480	659.87	997.64	1335.45	1480
18.00	34.02	13.32	1480	1480	657.92	995.67	1333.47	1480
20.00	35.50	14.80	1480	1480	655.97	993.71	1331.50	1480
22.00	36.98	16.28	1480	1480	654.03	991.75	1329.53	1480
24.00	38.46	17.76	1480	1480	652.10	989.80	1327.56	1480
26.00	39.94	19.24	1480	1480	650.18	987.85	1325.60	1480
28.00	41.42	20.72	1480	1480	648.26	985.90	1323.64	1480
30.00	42.90	22.20	1480	1480	646.34	983.96	1321.68	1480
32.00	44.38	23.68	1480	1480	644.43	982.02	1319.73	1480
34.00	45.86	25.16	1480	1480	642.53	980.08	1317.78	1480
36.00	47.34	26.64	1480	1480	640.63	978.15	1315.83	1480
38.00	48.82	28.12	1480	1480	638.74	976.23	1313.89	1480
40.00	50.30	29.60	1480	1480	636.86	974.30	1311.94	1480
42.00	51.78	31.08	1480	1480	634.98	972.38	1310.00	1480
44.00	53.26	32.56	1480	1480	633.11	970.47	1308.07	1480
46.00	54.74	34.04	1480	1480	631.24	968.56	1306.13	1480

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KR M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
<u>48.00</u>	56.22	<u>35.52</u>	1480	1480	629.38	966.65	1304.20	1480
50.00	57.70	37.00	1480	1480	627.52	964.75	1302.26	1480
52.00	59.18	38.48	1480	1480	625.67	962.85	1300.35	1480
<u>54.00</u>	60.66	<u>39.96</u>	1480	1480	623.83	960.95	1298.43	1480
56.00	62.14	41.44	1480	1480	621.99	959.06	1296.51	1480
58.00	63.62	42.92	1480	1480	620.16	957.17	1294.60	1480
60.00	65.10	44.40	1480	1480	618.33	955.29	1292.68	1480
<u>62.00</u>	66.58	<u>45.88</u>	1480	1480	616.51	953.41	1290.77	1480
64.00	68.06	47.36	1480	1480	614.70	951.53	1288.87	1480
66.00	69.54	48.84	1480	1480	612.89	949.66	1286.96	1480
<u>68.00</u>	71.02	<u>50.32</u>	1480	1480	611.09	947.79	1285.06	1480
<u>70.00</u>	72.50	<u>51.80</u>	1480	1480	609.29	945.93	1283.16	1480
72.00	73.98	53.28	1480	1480	607.50	944.07	1281.27	1480
<u>74.00</u>	75.46	<u>54.76</u>	1480	1480	605.72	942.21	1279.38	1480
76.00	76.94	56.24	1480	1480	603.94	940.36	1277.49	1480
78.00	78.42	57.72	1480	1480	602.16	938.51	1275.60	1480
80.00	79.90	59.20	1480	1480	600.40	936.67	1273.72	1480
<u>82.00</u>	81.38	<u>60.68</u>	1480	1480	598.63	934.83	1271.84	1480
84.00	82.86	62.16	1480	1480	596.83	932.99	1269.96	1480
86.00	84.34	63.64	1480	1480	595.13	931.16	1268.08	1480
<u>88.00</u>	85.82	<u>65.12</u>	1480	1480	593.33	929.33	1266.21	1480
90.00	87.30	66.60	1480	1480	591.64	927.50	1264.34	1480
92.00	88.78	68.08	1480	1480	589.91	925.68	1262.48	1480
<u>94.00</u>	90.26	<u>69.56</u>	1480	1480	588.13	923.86	1260.62	1480

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KR M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
96.00	91.74	71.04	1480	1480	586.46	922.05	1258.76	1480
98.00	93.22	72.52	1480	1480	584.75	920.24	1256.90	1480
100.00	94.70	74.00	1480	1480	583.04	918.43	1255.05	1480
<u>102.00</u>	96.18	<u>75.48</u>	1480	1480	581.33	916.63	1253.20	1480
104.00	97.66	76.96	1480	1480	579.63	914.84	1251.35	1480
106.00	99.14	78.44	1480	1480	577.94	913.04	1249.50	1480
<u>108.00</u>	100.62	<u>79.92</u>	1480	1480	576.25	911.25	1247.66	1480
110.00	102.10	81.40	1480	1480	574.57	909.47	1245.82	1480
112.00	103.58	82.88	1480	1480	572.90	907.68	1243.98	1480
114.00	105.06	84.36	1480	1480	571.23	905.90	1242.15	1480
<u>116.00</u>	106.54	<u>85.84</u>	1480	1480	569.56	904.13	1240.32	1480
118.00	108.02	87.32	1480	1480	567.90	902.36	1238.49	1480
120.00	109.50	88.80	1480	1480	566.25	900.59	1236.67	1480
<u>122.00</u>	110.98	<u>90.28</u>	1480	1480	564.60	898.83	1234.85	1480
124.00	112.46	91.76	1480	1480	562.96	897.07	1233.03	1480
126.00	113.94	93.24	1480	1480	561.32	895.32	1231.21	1480
<u>128.00</u>	115.42	<u>94.72</u>	1480	1480	559.69	893.56	1229.40	1480
130.00	116.90	96.20	1480	1480	558.07	891.82	1227.59	1480
132.00	118.38	97.68	1480	1480	556.45	890.07	1225.78	1480
134.00	119.86	99.16	1480	1480	554.83	888.33	1223.98	1480
<u>136.00</u>	121.34	<u>100.64</u>	1480	1480	553.23	886.60	1222.18	1480
138.00	122.82	102.12	1480	1480	551.62	884.87	1220.38	1480
140.00	124.30	103.60	1480	1480	550.03	883.14	1218.58	1480
<u>142.00</u>	125.78	<u>105.08</u>	1480	1480	548.44	881.41	1216.79	1480

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GFO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
								1719
144.00	127.50	106.80	1483	1484	545.25	877.27	1211.75	2032
146.00	129.53	108.83	1491	1492	539.76	869.61	1202.01	2032
148.00	131.56	110.86	1498	1501	534.45	862.21	1192.61	2032
150.00	133.59	112.89	1505	1509	529.31	855.08	1183.55	2032
152.00	135.63	114.93	1512	1517	524.34	848.17	1174.81	2032
154.00	137.66	116.96	1519	1525	519.51	841.49	1166.35	2032
156.00	139.69	118.99	1525	1533	514.83	835.02	1158.17	2032
158.00	141.72	121.02	1532	1540	510.28	828.74	1150.25	2032
160.00	143.75	123.05	1538	1547	505.86	822.64	1142.57	2032
162.00	145.78	125.08	1544	1554	501.56	816.73	1135.12	2032
164.00	147.81	127.11	1550	1561	497.38	810.97	1127.89	2032
166.00	149.85	129.15	1556	1567	493.30	805.37	1120.87	2032
168.00	151.88	131.18	1562	1574	489.32	799.93	1114.03	2032
170.00	153.91	133.21	1567	1580	485.44	794.62	1107.39	2032
172.00	155.94	135.24	1573	1586	481.65	789.44	1100.91	2032
174.00	157.97	137.27	1578	1592	477.96	784.39	1094.61	2032
176.00	160.00	139.30	1583	1597	474.34	779.46	1088.46	2032
178.00	162.04	141.34	1588	1603	470.81	774.65	1082.46	2032
180.00	164.07	143.37	1593	1608	467.35	769.94	1076.60	2032
182.00	166.10	145.40	1598	1613	463.96	765.34	1070.83	2032
184.00	168.13	147.43	1602	1619	460.65	760.84	1065.29	2032
186.00	170.16	149.46	1607	1624	457.40	756.43	1059.82	2032
188.00	172.19	151.49	1612	1628	454.22	752.12	1054.47	2032
190.00	174.22	153.52	1616	1633	451.10	747.89	1049.24	

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KR M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
192.00	176.26	155.56	1620	1638	448.03	743.74	1044.11	2032
194.00	173.29	157.59	1625	1642	445.03	739.68	1039.09	2032
196.00	180.32	159.62	1629	1647	442.03	735.69	1034.17	2032
198.00	182.35	161.65	1633	1651	439.18	731.73	1029.35	2032
200.00	184.38	163.68	1637	1655	436.33	727.94	1024.61	2032
202.00	186.41	165.71	1641	1660	433.53	724.16	1019.97	2032
204.00	188.45	167.75	1645	1664	430.78	720.45	1015.40	2032
206.00	190.48	169.78	1648	1668	428.08	716.81	1010.93	2032
208.00	192.51	171.81	1652	1671	425.42	713.22	1006.52	2032
210.00	194.54	173.84	1656	1675	422.80	709.70	1002.20	2032
212.00	196.57	175.87	1659	1679	420.22	706.23	997.95	2032
214.00	198.60	177.90	1663	1683	417.68	702.82	993.76	2032
216.00	200.63	179.93	1666	1686	415.18	699.45	989.65	2032
218.00	202.67	181.97	1669	1690	412.72	696.14	985.60	2032
220.00	204.70	184.00	1673	1693	410.29	692.88	981.61	2032
222.00	206.73	186.03	1676	1696	407.90	689.67	977.69	2032
224.00	208.76	188.06	1679	1700	405.54	686.50	973.82	2032
226.00	210.79	190.09	1682	1703	403.22	683.38	970.01	2032
228.00	212.82	192.12	1685	1706	400.93	680.30	966.26	2032
230.00	214.86	194.16	1688	1709	398.67	677.26	962.56	2032
232.00	216.89	196.19	1691	1712	396.44	674.27	958.91	2032
234.00	218.92	198.22	1694	1715	394.24	671.31	955.31	2032
236.00	220.95	200.25	1697	1718	392.06	668.39	951.76	2032
238.00	222.98	202.28	1700	1721	389.92	665.51	948.25	2032

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
<u>240.00</u>	225.01	<u>204.31</u>	1703	1724	387.80	662.66	944.79	2032
242.00	227.04	<u>206.34</u>	1705	1727	385.71	659.85	941.38	2032
244.00	229.08	<u>208.38</u>	1708	1729	383.64	657.08	938.01	2032
<u>246.00</u>	231.11	<u>210.41</u>	1711	1732	381.60	654.33	934.68	2032
248.00	233.14	<u>212.44</u>	1713	1735	379.59	651.62	931.39	2032
<u>250.00</u>	235.17	<u>214.47</u>	1716	1737	377.60	648.95	928.14	2032
252.00	237.20	<u>216.50</u>	1718	1740	375.63	646.30	924.93	2032
254.00	239.23	<u>218.53</u>	1721	1742	373.68	643.68	921.76	2032
<u>256.00</u>	241.27	<u>220.57</u>	1723	1745	371.76	641.09	918.62	2032
258.00	243.30	<u>222.60</u>	1726	1747	369.86	638.53	915.52	2032
<u>260.00</u>	245.33	<u>224.63</u>	1728	1749	367.98	635.99	912.45	2032
262.00	247.36	<u>226.66</u>	1730	1752	366.12	633.49	909.41	2032
264.00	249.39	<u>228.69</u>	1733	1754	364.28	631.01	906.41	2032
<u>266.00</u>	251.42	<u>230.72</u>	1735	1756	362.46	628.55	903.44	2032
268.00	253.45	<u>232.75</u>	1737	1758	360.66	626.12	900.50	2032
<u>270.00</u>	255.49	<u>234.79</u>	1739	1761	358.88	623.72	897.59	2032
272.00	257.52	<u>236.82</u>	1741	1763	357.12	621.34	894.71	2032
274.00	259.55	<u>238.85</u>	1743	1765	355.38	618.98	891.86	2032
<u>276.00</u>	261.58	<u>240.88</u>	1746	1767	353.65	616.65	889.04	2032
278.00	263.61	<u>242.91</u>	1748	1769	351.94	614.34	886.25	2032
<u>280.00</u>	265.64	<u>244.94</u>	1750	1771	350.25	612.05	883.48	2032
282.00	267.68	<u>246.97</u>	1752	1773	348.58	609.78	880.74	2032
284.00	269.71	<u>249.01</u>	1754	1775	346.92	607.53	878.02	2032
<u>286.00</u>	271.74	<u>251.04</u>	1756	1777	345.28	605.30	875.33	2032

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KR M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SPD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
288.00	273.77	257.07	1757	1779	343.65	603.10	872.66	2032
290.00	275.80	255.10	1759	1781	342.05	600.91	870.02	2032
292.00	277.83	257.13	1761	1782	340.45	598.74	867.40	2032
294.00	279.86	259.16	1763	1784	338.88	596.59	864.80	2032
296.00	281.90	261.20	1765	1786	337.31	594.46	862.23	2032
298.00	283.93	263.23	1767	1788	335.76	592.35	859.68	2032
300.00	285.96	265.26	1768	1790	334.23	590.26	857.15	2032
302.00	287.99	267.29	1770	1791	332.71	588.18	854.64	2032
304.00	290.02	269.32	1772	1793	331.20	586.12	852.15	2032
306.00	292.05	271.35	1774	1795	329.71	584.08	849.68	2032
308.00	294.08	273.38	1775	1796	328.23	582.05	847.23	2032
310.00	296.12	275.42	1777	1798	326.76	580.04	844.80	2032
312.00	298.15	277.45	1779	1799	325.31	578.05	842.39	2032
314.00	300.18	279.48	1780	1801	323.87	576.07	840.00	2032
316.00	302.21	281.51	1782	1803	322.44	574.11	837.62	2032
318.00	304.24	283.54	1783	1804	321.02	572.16	835.27	2032
320.00	306.27	285.57	1785	1806	319.62	570.23	832.93	2032
322.00	308.31	287.61	1786	1807	318.23	568.31	830.61	2032
324.00	310.34	289.64	1788	1809	316.85	566.41	828.31	2032
326.00	312.37	291.67	1789	1810	315.48	564.52	826.02	2032
328.00	314.40	293.70	1791	1811	314.12	562.64	823.75	2032
330.00	316.43	295.73	1792	1813	312.78	560.78	821.50	2032
332.00	318.46	297.76	1794	1814	311.44	558.93	819.26	2032
334.00	320.49	299.79	1795	1815	310.12	557.10	817.04	2032



TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
336.00	322.53	301.83	1797	1817	308.81	555.22	814.83	2032
338.00	324.56	303.86	1798	1818	307.50	553.47	812.64	2032
340.00	326.59	305.89	1799	1820	306.21	551.67	810.45	2032
342.00	328.62	307.92	1801	1821	304.93	549.89	808.30	2032
344.00	330.65	309.95	1802	1822	303.66	548.12	806.15	2032
346.00	332.68	311.98	1803	1824	302.40	546.36	804.02	2032
348.00	334.72	314.02	1805	1825	301.15	544.61	801.90	2032
350.00	336.75	316.05	1806	1826	299.91	542.88	799.79	2032
352.00	338.78	318.08	1807	1827	298.68	541.15	797.70	2032
354.00	340.81	320.11	1809	1829	297.45	539.44	795.62	2032
356.00	342.84	322.14	1810	1830	296.24	537.74	793.55	2032
358.00	344.87	324.17	1811	1831	295.04	536.05	791.50	2032
360.00	346.90	326.20	1812	1832	293.84	534.37	789.46	2032
362.00	348.94	328.24	1813	1833	292.66	532.71	787.43	2032
364.00	350.97	330.27	1815	1834	291.48	531.05	785.41	2032
366.00	353.00	332.30	1816	1836	290.32	529.40	783.41	2032
368.00	355.03	334.33	1817	1837	289.16	527.77	781.42	2032
370.00	357.06	336.36	1818	1838	288.01	526.14	779.44	2032
372.00	359.09	338.39	1819	1839	286.87	524.53	777.47	2032
374.00	361.13	340.43	1820	1840	285.74	522.92	775.51	2032
376.00	363.16	342.46	1822	1841	284.61	521.33	773.57	2032
378.00	365.19	344.49	1823	1842	283.50	519.74	771.63	2032
380.00	367.22	346.52	1824	1843	282.39	518.17	769.71	2032
382.00	369.25	348.55	1825	1844	281.29	516.58	767.80	2032

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KR M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
<u>384.00</u>	371.28	<u>350.58</u>	1826	1845	280.20	515.04	765.89	2032
386.00	373.31	352.61	1827	1846	279.11	513.50	764.00	2032
<u>388.00</u>	375.35	<u>354.65</u>	1828	1847	278.04	511.96	762.12	2032
390.00	377.38	356.68	1829	1848	276.97	510.43	760.25	2032
392.00	379.41	358.71	1830	1849	275.91	508.91	758.39	2032
<u>394.00</u>	381.44	<u>360.74</u>	1831	1850	274.85	507.40	756.54	2032
396.00	383.47	362.77	1832	1851	273.81	505.90	754.70	2032
<u>398.00</u>	385.50	<u>364.80</u>	1833	1852	272.77	504.40	752.87	2032
400.00	387.54	366.84	1834	1853	271.74	502.92	751.05	2032
402.00	389.57	368.87	1835	1854	270.71	501.44	749.24	2032
<u>404.00</u>	391.60	<u>370.90</u>	1836	1855	269.69	499.93	747.44	2032
406.00	393.63	372.93	1837	1856	268.68	498.52	745.64	2032
<u>408.00</u>	395.66	<u>374.96</u>	1838	1857	267.68	497.07	743.86	2032
410.00	397.69	376.99	1839	1858	266.66	495.62	742.09	2032
<u>412.00</u>	399.72	<u>379.02</u>	1840	1858	265.69	494.19	740.32	2032
414.00	401.76	381.06	1841	1859	264.71	492.76	738.57	2032
416.00	403.79	383.09	1842	1860	263.74	491.34	736.82	2032
<u>418.00</u>	405.82	<u>385.12</u>	1843	1861	262.77	489.93	735.08	2032
420.00	407.85	387.15	1844	1862	261.80	488.53	733.35	2032
<u>422.00</u>	409.88	<u>389.18</u>	1844	1863	260.85	487.13	731.63	2032
424.00	411.91	391.21	1845	1864	259.90	485.74	729.92	2032
426.00	413.95	393.25	1846	1864	258.95	484.36	728.21	2032
<u>428.00</u>	415.98	<u>395.28</u>	1847	1865	258.01	482.99	726.52	2032
430.00	418.01	397.31	1848	1866	257.08	481.63	724.83	2032

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SPD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
432.00	420.04	399.34	1849	1867	256.16	480.27	723.15	2032
434.00	422.07	401.37	1850	1868	255.24	478.92	721.48	2032
436.00	424.10	403.40	1850	1868	254.32	477.57	719.81	2032
438.00	426.13	405.43	1851	1869	253.42	476.23	718.16	2032
440.00	428.17	407.47	1852	1870	252.52	474.91	716.51	2032
442.00	430.20	409.50	1853	1871	251.62	473.58	714.87	2032
444.00	432.23	411.53	1854	1871	250.73	472.27	713.24	2032
446.00	434.26	413.56	1855	1872	249.85	470.96	711.61	2032
448.00	436.29	415.59	1855	1873	248.97	469.66	709.99	2032
450.00	438.32	417.62	1856	1874	248.10	468.36	708.38	2032
452.00	440.36	419.66	1857	1874	247.23	467.07	706.78	2032
454.00	442.39	421.69	1858	1875	246.37	465.79	705.18	2032
456.00	444.42	423.72	1858	1876	245.51	464.51	703.59	2032
458.00	446.45	425.75	1859	1877	244.66	463.24	702.01	2032
460.00	448.48	427.78	1860	1877	243.81	461.98	700.44	2032
462.00	450.51	429.81	1861	1878	242.97	460.72	698.87	2032
464.00	452.54	431.84	1861	1879	242.14	459.47	697.31	2032
466.00	454.58	433.88	1862	1879	241.31	458.23	695.76	2032
468.00	456.61	435.91	1863	1880	240.49	456.99	694.21	2032
470.00	458.64	437.94	1864	1881	239.67	455.76	692.67	2032
472.00	460.67	439.97	1864	1881	238.85	454.53	691.14	2032
474.00	462.70	442.00	1865	1882	238.04	453.32	689.61	2032
476.00	464.73	444.03	1866	1883	237.24	452.10	688.09	2032
478.00	466.77	446.07	1866	1883	236.44	450.89	686.58	2032

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
480.00	468.80	448.10	1867	1884	235.64	449.69	685.07	2032
<u>482.00</u>	470.83	<u>450.13</u>	1868	1885	234.85	448.50	683.57	2032
484.00	472.86	452.16	1862	1885	234.07	447.31	682.07	2032
486.00	474.89	454.19	1869	1886	233.29	446.12	680.53	2032
<u>488.00</u>	476.92	<u>456.22</u>	1870	1886	232.51	444.94	679.10	2032
490.00	478.95	458.25	1870	1887	231.74	443.77	677.63	2032
<u>492.00</u>	480.99	<u>460.29</u>	1871	1883	230.98	442.60	676.16	2032
494.00	483.02	462.32	1872	1883	230.22	441.44	674.69	2032
496.00	485.05	<u>464.35</u>	1872	1889	229.46	440.29	673.24	2032
498.00	487.08	466.38	1873	1889	228.71	439.14	671.78	2032
500.00	489.11	468.41	1874	1890	227.96	437.99	670.34	2032
<u>502.00</u>	491.14	<u>470.44</u>	1874	1891	227.21	436.85	668.90	2032
504.00	493.18	472.48	1875	1891	226.48	435.72	667.47	2032
<u>506.00</u>	495.21	<u>474.51</u>	1876	1892	225.74	434.59	666.04	2032
508.00	497.24	476.54	1876	1892	225.01	433.46	664.61	2032
510.00	499.27	478.57	1877	1893	224.28	432.35	663.20	2032
<u>512.00</u>	501.30	<u>480.60</u>	1877	1894	223.56	431.23	661.79	2032
514.00	503.33	482.63	1878	1894	222.84	430.12	660.38	2032
516.00	505.36	<u>484.66</u>	1879	1895	222.13	429.02	658.98	2032
518.00	507.40	486.70	1879	1895	221.42	427.92	657.59	2032
520.00	509.43	488.73	1880	1896	220.72	426.83	656.20	2032
<u>522.00</u>	511.46	<u>490.76</u>	1880	1896	220.02	425.74	654.82	2032
524.00	513.49	492.79	1881	1897	219.32	424.66	653.44	2032
<u>526.00</u>	515.52	<u>494.82</u>	1881	1897	218.63	423.58	652.07	2032

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
528.00	517.55	496.85	1882	1898	217.94	422.51	650.70	2032
530.00	519.59	498.88	1883	1898	217.25	421.44	649.34	2032
<u>532.00</u>	521.62	<u>500.92</u>	1883	1899	216.57	420.38	647.98	2032
534.00	523.65	502.95	1884	1899	215.89	419.32	646.63	2032
536.00	525.68	504.98	1884	1900	215.22	418.27	645.28	2032
538.00	527.71	507.01	1885	1900	214.55	417.22	643.94	2032
<u>540.00</u>	529.74	<u>509.04</u>	1885	1901	213.88	416.17	642.61	2032
542.00	531.77	511.07	1886	1901	213.22	415.13	641.28	2032
544.00	533.81	513.11	1886	1902	212.56	414.10	639.95	2032
<u>546.00</u>	535.84	<u>515.14</u>	1887	1902	211.91	413.07	638.63	2032
548.00	537.87	517.17	1887	1903	211.26	412.04	637.32	2032
550.00	539.90	519.20	1888	1903	210.61	411.02	636.00	2032
<u>552.00</u>	541.93	<u>521.23</u>	1889	1904	209.97	410.00	634.70	2032
554.00	543.96	523.26	1889	1904	209.33	408.99	633.40	2032
<u>556.00</u>	545.99	<u>525.29</u>	1890	1905	208.69	407.98	632.10	2032
558.00	548.03	527.33	1890	1905	208.06	406.98	630.81	2032
<u>560.00</u>	550.06	<u>529.36</u>	1891	1906	207.43	405.98	629.52	2032
562.00	552.09	531.39	1891	1906	206.80	404.99	628.24	2032
564.00	554.12	533.42	1892	1907	206.18	404.00	626.97	2032
<u>566.00</u>	556.15	<u>535.45</u>	1892	1907	205.56	403.01	625.69	2032
568.00	558.18	537.48	1893	1908	204.94	402.03	624.43	2032
570.00	560.22	539.52	1893	1908	204.33	401.05	623.16	2032
<u>572.00</u>	562.25	<u>541.55</u>	1894	1908	203.72	400.08	621.91	2032
574.00	564.28	543.58	1894	1909	203.11	399.11	620.65	2032

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KR M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
576.00	566.31	545.61	1894	1909	202.51	398.14	619.40	2032
578.00	567.34	547.64	1895	1910	201.91	397.18	618.16	2032
580.00	570.37	549.67	1895	1910	201.32	396.23	616.92	2032
582.00	572.40	551.70	1896	1911	200.72	395.28	615.68	2032
584.00	574.44	553.74	1896	1911	200.13	394.33	614.45	2032
586.00	576.47	555.77	1897	1911	199.55	393.38	613.23	2032
588.00	578.50	557.80	1897	1912	198.96	392.44	612.00	2032
590.00	580.53	559.83	1898	1912	198.38	391.51	610.79	2032
592.00	582.56	561.86	1898	1913	197.80	390.57	609.57	2032
594.00	584.59	563.89	1899	1913	197.23	389.65	608.36	2032
596.00	586.63	565.93	1899	1914	196.66	388.72	607.16	2032
598.00	588.66	567.96	1900	1914	196.09	387.80	605.96	2032
600.00	590.69	569.99	1900	1914	195.53	386.88	604.76	2032
602.00	592.72	572.02	1900	1915	194.96	385.97	603.57	2032
604.00	594.75	574.05	1901	1915	194.40	385.06	602.38	2032
606.00	596.78	576.08	1901	1916	193.85	384.16	601.20	2032
608.00	598.81	578.11	1902	1916	193.29	383.25	600.02	2032
610.00	600.85	580.15	1902	1916	192.74	382.36	598.84	2032
612.00	602.88	582.18	1903	1917	192.20	381.46	597.67	2032
614.00	604.91	584.21	1903	1917	191.65	380.57	596.50	2032
616.00	606.94	586.24	1903	1918	191.11	379.69	595.34	2032
618.00	608.97	588.27	1904	1918	190.57	378.80	594.18	2032
620.00	611.00	590.30	1904	1918	190.03	377.92	593.02	2032
622.00	613.04	592.34	1905	1919	189.50	377.05	591.87	2032

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KR M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SPD/GFO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
<u>624.00</u>	615.07	<u>594.37</u>	1905	1919	188.97	376.18	590.72	2032
626.00	617.10	596.40	1905	1919	188.44	375.31	589.58	2032
628.00	619.13	598.43	1906	1920	187.92	374.44	588.44	2032
<u>630.00</u>	621.28	<u>600.53</u>	1907	1921	187.32	373.45	587.12	2148
632.00	623.50	602.80	1908	1922	186.69	372.39	585.68	2221
<u>634.00</u>	625.72	<u>605.02</u>	1909	1923	186.06	371.32	584.25	2221
636.00	627.84	607.14	1909	1923	185.50	370.38	582.99	2118
<u>638.00</u>	630.03	<u>609.33</u>	1910	1924	184.89	369.37	581.62	2193
640.00	632.26	611.56	1911	1925	184.27	368.31	580.20	2226
642.00	634.49	613.79	1912	1926	183.65	367.27	578.78	2229
<u>644.00</u>	637.18	<u>616.48</u>	1915	1929	182.73	365.66	576.53	2691
646.00	639.36	618.66	1915	1930	182.14	364.67	575.20	2187
<u>648.00</u>	641.51	<u>620.81</u>	1916	1931	181.59	363.73	573.94	2146
650.00	643.92	623.22	1918	1932	180.87	362.50	572.25	2411
<u>652.00</u>	646.32	<u>625.62</u>	1919	1934	180.17	361.30	570.59	2395
654.00	649.12	628.42	1922	1937	179.20	359.59	568.20	2801
<u>656.00</u>	651.51	<u>630.81</u>	1923	1939	178.52	358.41	566.55	2389
658.00	653.91	633.21	1925	1940	177.83	357.23	564.94	2405
<u>660.00</u>	656.36	<u>635.65</u>	1926	1942	177.13	356.00	563.25	2444
662.00	658.76	638.06	1928	1943	176.45	354.84	561.64	2400
664.00	661.09	640.39	1929	1945	175.82	353.75	560.14	2334
<u>666.00</u>	663.52	<u>642.82</u>	1930	1946	175.14	352.56	558.50	2432
668.00	665.80	645.10	1931	1947	174.55	351.54	557.10	2283
<u>670.00</u>	668.02	<u>647.32</u>	1932	1948	174.00	350.60	555.32	2217

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
<u>672.00</u>	670.30	<u>649.60</u>	1933	1949	173.41	349.59	554.44	2282
674.00	672.57	651.87	1934	1950	172.84	348.60	553.08	2272
<u>676.00</u>	674.74	<u>654.04</u>	1935	1951	172.33	347.73	551.89	2161
678.00	676.96	656.26	1936	1952	171.79	346.79	550.62	2223
680.00	679.17	658.47	1937	1953	171.25	345.83	549.37	2211
<u>682.00</u>	681.35	<u>660.66</u>	1937	1954	170.74	344.99	548.15	2189
684.00	683.62	662.92	1938	1954	170.19	344.04	546.85	2256
<u>686.00</u>	686.05	<u>665.35</u>	1940	1956	169.55	342.91	545.28	2433
688.00	688.33	667.63	1941	1957	168.99	341.96	543.96	2276
<u>690.00</u>	690.67	<u>669.97</u>	1942	1953	168.41	340.93	542.54	2350
692.00	692.97	672.27	1943	1959	167.85	339.96	541.20	2298
<u>694.00</u>	695.40	<u>674.70</u>	1944	1961	167.23	338.86	539.67	2429
696.00	697.64	676.94	1945	1962	166.71	337.96	538.43	2235
<u>698.00</u>	700.05	<u>679.35</u>	1947	1963	166.10	336.90	536.95	2411
700.00	702.49	681.79	1948	1965	165.49	335.81	535.42	2443
<u>702.00</u>	704.79	<u>684.09</u>	1949	1966	164.95	334.86	534.11	2301
704.00	707.25	686.55	1950	1967	164.33	333.77	532.58	2460
<u>706.00</u>	709.62	<u>688.92</u>	1952	1969	163.76	332.77	531.18	2373
708.00	711.77	691.07	1952	1969	163.30	331.98	530.10	2144
<u>710.00</u>	714.01	<u>693.31</u>	1953	1970	162.81	331.11	528.90	2244
712.00	716.16	695.46	1954	1970	162.36	330.33	527.33	2142
<u>714.00</u>	718.31	<u>697.61</u>	1954	1971	161.91	329.55	526.76	2153
716.00	720.52	699.82	1955	1972	161.43	328.72	525.61	2212
<u>718.00</u>	723.04	<u>702.34</u>	1956	1973	160.81	327.60	524.05	2524



TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
<u>720.00</u>	725.29	<u>704.59</u>	1957	1974	160.32	326.74	522.84	2247
722.00	727.55	706.85	1958	1975	159.83	325.83	521.65	2261
<u>724.00</u>	729.74	<u>709.04</u>	1959	1976	159.38	325.09	520.56	2184
726.00	732.09	711.39	1960	1977	158.85	324.15	519.24	2357
728.00	734.37	713.67	1961	1978	158.36	323.29	518.04	2279
<u>730.00</u>	736.93	<u>716.23</u>	1962	1980	157.74	322.18	516.46	2555
732.00	739.30	718.60	1963	1981	157.22	321.24	515.14	2371
<u>734.00</u>	741.76	<u>721.06</u>	1965	1982	156.65	320.23	513.72	2460
736.00	743.89	723.19	1965	1983	156.24	319.51	512.72	2131
<u>738.00</u>	746.37	<u>725.67</u>	1967	1984	155.68	318.49	511.23	2478
740.00	748.82	728.12	1968	1986	155.13	317.51	509.89	2451
<u>742.00</u>	751.13	<u>730.43</u>	1969	1987	154.62	316.61	508.62	2363
744.00	753.61	732.91	1970	1988	154.09	315.65	507.27	2426
<u>746.00</u>	756.12	<u>735.42</u>	1972	1990	153.53	314.63	505.82	2512
748.00	758.30	737.60	1972	1990	153.11	313.89	504.79	2182
<u>750.00</u>	760.63	<u>739.93</u>	1973	1991	152.63	313.04	503.59	2326
752.00	762.94	742.24	1974	1992	152.17	312.21	502.42	2314
<u>754.00</u>	765.23	<u>744.53</u>	1975	1993	151.71	311.40	501.28	2286
756.00	767.56	746.86	1976	1994	151.25	310.56	500.09	2329
<u>758.00</u>	769.93	<u>749.23</u>	1977	1995	150.76	309.68	498.86	2372
760.00	772.31	751.61	1978	1996	150.27	308.81	497.62	2385
762.00	774.69	753.99	1979	1997	149.79	307.94	496.39	2379
<u>764.00</u>	777.04	<u>756.34</u>	1980	1998	149.33	307.10	495.20	2350
766.00	779.26	758.56	1981	1999	148.92	306.37	494.18	2213

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
<u>768.00</u>	781.60	<u>760.90</u>	1982	2000	148.46	305.55	493.01	2342
770.00	783.93	763.23	1982	2001	148.01	304.73	491.85	2336
<u>772.00</u>	786.21	<u>765.51</u>	1983	2001	147.59	303.97	490.78	2273
774.00	788.51	767.81	1984	2002	147.15	303.19	489.67	2303
<u>776.00</u>	790.83	<u>770.13</u>	1985	2003	146.72	302.40	488.55	2316
778.00	793.17	772.47	1986	2004	146.27	301.59	487.40	2347
<u>780.00</u>	795.52	<u>774.82</u>	1987	2005	145.83	300.78	486.26	2348
782.00	797.93	777.23	1988	2006	145.36	299.93	485.04	2414
<u>784.00</u>	800.41	<u>779.71</u>	1989	2007	144.87	299.03	483.76	2475
786.00	802.85	782.15	1990	2009	144.39	298.17	482.51	2444
<u>788.00</u>	805.30	<u>784.60</u>	1991	2010	143.92	297.30	481.27	2449
790.00	807.75	787.05	1993	2011	143.45	296.44	480.04	2443
<u>792.00</u>	810.23	<u>789.53</u>	1994	2013	142.97	295.56	478.77	2480
794.00	812.88	792.18	1995	2014	142.42	294.55	477.31	2647
<u>796.00</u>	815.31	<u>794.61</u>	1996	2016	141.97	293.72	476.12	2429
798.00	817.83	797.13	1998	2017	141.48	292.82	474.82	2524
<u>800.00</u>	820.57	<u>799.87</u>	2000	2019	140.90	291.75	473.26	2742
802.00	823.02	802.32	2001	2020	140.45	290.92	472.07	2447
<u>804.00</u>	825.52	<u>804.82</u>	2002	2022	139.98	290.05	470.81	2503
806.00	828.34	807.64	2004	2024	139.38	288.94	469.18	2816
<u>808.00</u>	831.19	<u>810.49</u>	2006	2026	138.78	287.80	467.52	2851
810.00	834.22	813.52	2009	2030	138.09	286.52	465.62	3030
<u>812.00</u>	837.04	<u>816.34</u>	2011	2032	137.51	285.42	464.02	2824
814.00	839.87	819.17	2013	2034	136.92	284.33	462.42	2831

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
								3063
816.00	842.94	822.24	2015	2037	136.24	233.05	460.52	2480
<u>818.00</u>	845.42	<u>824.72</u>	2016	2039	135.81	232.25	459.36	2387
820.00	847.81	827.11	2017	2039	135.41	231.51	458.30	2447
<u>822.00</u>	850.25	<u>829.55</u>	2018	2041	134.99	230.74	457.18	2416
824.00	852.67	831.97	2019	2042	134.59	279.99	456.10	2511
<u>826.00</u>	855.13	<u>834.48</u>	2021	2043	134.16	279.18	454.93	2971
828.00	858.15	837.45	2023	2046	133.54	278.02	453.21	4055
830.00	862.21	841.51	2028	2053	132.40	275.82	449.89	3276
<u>832.00</u>	865.43	<u>844.73</u>	2031	2057	131.66	274.43	447.92	3563
834.00	869.05	848.35	2034	2062	130.80	272.73	445.35	3417
<u>836.00</u>	872.47	<u>851.77</u>	2038	2066	130.03	271.29	443.12	3720
838.00	876.19	855.49	2042	2071	129.11	269.54	440.48	3513
<u>840.00</u>	879.70	<u>859.00</u>	2045	2076	128.31	268.00	438.17	3806
842.00	883.51	862.81	2049	2082	127.38	266.20	435.46	3976
844.00	887.43	<u>866.73</u>	2054	2088	126.38	264.27	432.53	2765
<u>846.00</u>	890.25	<u>869.55</u>	2056	2090	125.91	263.38	431.21	2792
848.00	893.04	872.34	2057	2092	125.43	262.47	429.83	4019
<u>850.00</u>	897.06	<u>876.36</u>	2062	2099	124.44	260.55	426.96	4044
852.00	901.10	880.40	2067	2105	123.45	258.62	424.04	4164
<u>854.00</u>	905.27	<u>884.57</u>	2072	2113	122.41	256.61	420.93	4034
856.00	909.35	888.65	2076	2119	121.43	254.71	418.09	3950
<u>858.00</u>	913.30	<u>892.60</u>	2081	2125	120.53	252.96	415.43	3694
860.00	916.99	896.29	2084	2130	119.76	251.46	413.15	4024
<u>862.00</u>	921.02	<u>900.32</u>	2089	2137	118.85	249.69	410.45	

COMPANY : ESSO AUSTRALIA LTD

WELL : LEATHERJACKET - 1

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TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GE0 M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
864.00	925.04	904.34	2093	2143	117.96	247.94	407.80	4021
866.00	929.01	908.31	2098	2149	117.10	246.27	405.24	3973
868.00	932.98	912.28	2102	2155	116.25	244.61	402.72	3973
870.00	936.96	916.26	2106	2161	115.42	242.98	400.23	3973
872.00	940.93	920.23	2111	2167	114.59	241.37	397.77	3973
874.00	944.90	924.20	2115	2173	113.78	239.78	395.34	3973
876.00	948.88	928.18	2119	2178	112.98	238.21	392.94	

SYNTHETIC

ANALYST: M. SANDERS

22-APR-66 17:59:31

PROGRAM: GTRFRM 007.503

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*          SCHLUMBERGER          *  
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SYNTHETIC SEISMOGRAM TABLE

COMPANY : ESSO AUSTRALIA LTD  
WELL : LEATHERJACKET - 1  
FIELD : WILDCAT  
STATE : VICTORIA  
COUNTRY : AUSTRALIA  
REFERENCE: 560306

ANALYST: M. SANDERS

22-APR-86 17:59:31

PROGRAM: GTRFRM 007.EOS

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*   SCHLUMBERGER                     *
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SYNTHETIC SEISMOGRAM TABLE

COMPANY : ESSO AUSTRALIA LTD  
 WELL : LEATHERJACKET - 1  
 FIELD : WILDCAT  
 STATE : VICTORIA  
 COUNTRY : AUSTRALIA  
 REFERENCE: 560306

THE HEADINGS AND FLAGS SHOWN IN THE DATA LIST ARE DEFINED AS FOLLOWS:

IGEOFL- FLAG INDICATING MODE OF PROCESSING  
IGEOFL = 0 WST DATA AVAILABLE AND PROCESSED  
IGEOFL = 1 WST DATA NOT AVAILABLE

LOG INPUT DATA :  
GRFUC1- CHANNEL NAME FOR INPUT DENSITY LOG DATA  
GTRUC1- CHANNEL NAME FOR INPUT SONIC LOG DATA  
GCURVE- CORRELATION LOG NAMES

#### USER DEFINED MODELING

LOFVEL- LAYER OPTION FLAG FOR VELOCITY  
LOFDEN- LAYER OPTION FLAG FOR DENSITY  
LAYVEL- LAYERED VELOCITY VALUES FOR USER SUPPLIED ZONE LIMIT  
WITH RESPECT TO SONIC LOG DATA  
LAYDEN- LAYERED DENSITY VALUES FOR USER SUPPLIED ZONE LIMITS  
WITH RESPECT TO SONIC LOG DATA  
UNERTH- UNIFORM EARTH VELOCITY  
UNFDEN- UNIFORM EARTH DENSITY  
SRATE- SAMPLING RATE IN MS  
INIDEP- START DEPTH FOR COMPUTING SYNTHETIC SEISMOGRAM  
WITH RESPECT TO SONIC LOG DATA  
IGESTP- STOP DEPTH FOR COMPUTING SYNTHETIC SEISMOGRAM  
WITH RESPECT TO SONIC LOG DATA  
INITAU- TWO WAY TRAVEL TIME FROM TOP SONIC TO SRD  
EKE- ELEVATION OF KELLY BUSHING WITH RESPECT TO  
MEAN SEA LEVEL  
SRDGeo- SEISMIC REFERENCE DEPTH WITH RESPECT TO  
MEAN SEA LEVEL  
ICDP- FLAG FOR COMPUTING RESIDUAL MULTIPLES  
CDPTIM- TWO WAY TIME INTERVAL FOR COMPUTATION OF  
RESIDUAL MULTIPLES  
SCRTIM- SURFACE REFLECTOR TWO WAY TIME ABOVE INITAU  
SCREFL- SURFACE REFLECTION COEFFICIENT  
RCMAX- REFLECTION COEFFICIENTS THAT ARE EQUAL TO OR  
GREATER THAN THIS VALUE SHALL BE FLAGGED

\*NOTE\* IN CASE OF MODELING A SYNTHETIC SEISMOGRAM WITHOUT  
SONIC LOG DATA THE DEPTH REFERENCES SHALL BE USER  
DEFINED

#### OUTPUT DATA

RMSVWE- ROOT MEAN SQUARE VELOCITY FOUND FOR THE WELL  
SRDTIM- TWO WAY TRANSIT TIME BETWEEN INIDEP AND SRDGeo

#### CHANNEL NAMES



TWOT- TWO WAY TRAVEL TIME  
 DSRD- DEPTH OF COMPUTED DATA WITH RESPECT TO SRD  
 INTV- INTERVAL VELOCITY ON A TIME SCALE  
 RHOT- INTERVAL DENSITY ON A TIME SCALE  
 REFL- REFLECTION COEFFICIENT AT GIVEN TWO WAY TRAVEL TIMES  
 ATTE- ATTENUATION COEFFICIENT AT GIVEN TWO WAY TRAVEL TIMES  
 PRIM- SYNTHETIC SEISMOGRAM - PRIMARIES  
 MULT- SYNTHETIC SEISMOGRAM - PRIMARIES + MULTIPLES  
 MUON- MULTIPLES ONLY

CHANNEL NAMES

CHAN 1 - TWOT.GMU.002.\*  
 CHAN 2 - DSRD.GRF.006.\*  
 CHAN 3 - INTV.GRF.007.\*  
 CHAN 4 - RHOT.GRF.001.\*  
 CHAN 5 - REFL.GRF.001.\*  
 CHAN 6 - ATTE.GRF.001.\*  
 CHAN 7 - PRIM.GRF.001.\*  
 CHAN 8 - MULT.GMU.001.\*  
 CHAN 9 - MUON.GMU.001.\*

(GLOBAL PARAMETERS)

(VALUE)

MODE OF PROC (GEOGRAM)	IGEOFL	:	0	
INITIALIZE CDP LOGIC	ICDP	:	0	
CDP TIME	CDPTIM	:	2.200000	S
TIME SAMPLING (WST)	SRATE	:	2.000000	MS
TOP DEPTH OF PROCESSING	INIDEP	:	599.300	M
BOTTOM DEPTH OF PROCESSING	IGESTP	:	930.000	M
INITIAL TWO WAY TRAVEL T	INITAU	:	0.628830	S
SRD FOR GEOGRAM	SRDGRD	:	-70479.7	M
ELEVATION OF KELLY DUSHI	EKP	:	0	M
SRD TIME	SRDTIM	:	0	MS
SURFACE COEFFICIENT OF R	SCRTIM	:	0	MS
SURFACE COEFFICIENT OF R	SCREFL	:	-1.000000	
REFLECTION COEFF MAXIMUM	RCMAX	:	0.300000	
RMS VELOCITY IN WELL	RMSVWE	:	2720.52	M/S
UNIFORM PATH VELOCITY	UNVPTH	:	2125.00	M/S
UNIFORM DENSITY VALUE	UNFDEN	:	2.30000	G/CC

(MATRIX PARAMETERS)

- 1 GP\*
- 2 CALI.CHR.LOG.DCS.\*

(ZONED PARAMETERS)

(VALUE)

(LIMITS)

LAYER OPTION FLAG DENS	LOFDEN	:	-1.000000		30479.7	-	0
LAYER OPTION FLAG VELOC	LOFVEL	:	1.000000		30479.7	-	0
USER SUPPLIED DENSITY DA	LAYDEN	:	-999.2500	G/C3	30479.7	-	0
USER VELOC (WST)	LAYVEL	:	2032.000	M/S	620.000	-	126.700
			1480.000		126.700		20.7000

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
630.9	601.52	2222	2.200	0	1.00000	-.00017	-.00017	0
632.9	603.74	2221	2.200	-.002	1.00000	-.00163	-.00163	0
634.9	605.96	2214	2.200	-.014	.99981	-.01366	-.01366	0
636.9	608.11	2154	2.200	.002	.99981	.00234	.00233	-.00001
638.9	610.27	2164	2.200	-.002	.99980	-.00230	-.00234	-.00004
640.9	612.43	2154	2.200	.052	.99708	.05218	.05200	-.00018
642.9	614.82	2392	2.200	.030	.99620	.02950	.02958	.00008
644.9	617.36	2537	2.200	-.065	.99205	-.06434	-.06428	.00006
646.9	619.59	2229	2.200	.007	.99200	.00676	.00836	.00160
648.9	621.85	2260	2.200	.019	.99163	.01916	.01936	.00020
650.9	624.20	2348	2.201	.044	.98974	.04337	.04177	-.00160
652.9	626.71	2511	2.246	.055	.98674	.05442	.05254	-.00188
654.9	629.46	2751	2.289	-.096	.97772	-.09437	-.09682	-.00245
656.9	631.82	2360	2.202	.026	.97704	.02572	.03323	.00751
658.9	634.25	2437	2.249	.009	.97695	.00920	.01264	.00344
660.9	636.72	2462	2.267	-.035	.97572	-.03467	-.04410	-.00943
662.9	639.04	2321	2.241	.006	.97569	.00540	.00142	-.00399
664.9	641.40	2367	2.225	-.003	.97564	-.00749	-.01253	-.00504
666.9	643.76	2759	2.195	-.015	.97541	-.01496	-.00424	.01072
668.9	646.05	2289	2.194	-.015	.97516	-.01563	-.00801	.00761
670.9	648.20	2356	2.175	.025	.97454	.02453	.00710	-.01743
672.9	650.50	2719	2.200	-.032	.97313	-.03638	-.03204	.00434
674.9	652.80	2192	2.157	.012	.97305	.01140	.01294	.00154
676.9	654.97	2174	2.234	.011	.97297	.01086	.01079	-.00007
678.9		2237	2.221					

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (ON TOP) #	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/CC	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
678.9	657.21			-.015	.97270	-.01475	-.00526	.00949
680.9	659.41	2207	2.184	-.014	.97251	-.01370	-.02516	-.01146
682.9	661.59	2174	2.155	.032	.97149	.03153	.03754	.00601
684.9	663.37	2279	2.195	.050	.96904	.04881	.05556	.00676
686.9	665.30	2435	2.271	-.025	.96841	-.02467	-.02876	-.00408
688.9	668.65	2351	2.235	-.008	.96834	-.00822	-.00786	.00036
690.9	671.01	2360	2.189	-.026	.96769	-.02507	-.02143	.00364
692.9	673.26	2249	2.181	.040	.96611	.03909	.03961	.00052
694.9	675.69	2415	2.203	-.019	.96575	-.01863	-.02396	-.00533
696.9	677.98	2302	2.223	.033	.96470	.03186	.02819	-.00366
698.9	680.41	2436	2.244	-.018	.96438	-.01764	-.02150	-.00385
700.9	682.30	2386	2.208	-.028	.96438	-.01764	-.02150	-.00385
702.9	685.09	2280	2.184	-.028	.96360	-.02739	-.01554	.01186
704.9	687.54	2466	2.229	.049	.96125	.04761	.05027	.00267
706.9	689.79	2243	2.081	-.082	.95486	-.07834	-.09020	-.01186
708.9	692.00	2210	2.029	-.020	.95447	-.01927	-.03323	-.01396
710.9	694.19	2192	2.032	-.003	.95446	-.00292	.00529	.00821
712.9	696.39	2194	2.049	.004	.95444	.00426	.01030	.00604
714.9	698.49	2106	2.017	-.028	.95368	-.02701	-.02991	-.00290
716.9	700.90	2409	2.149	.099	.94443	.09394	.09096	-.00297
718.9	703.29	2393	2.048	-.027	.94372	-.02582	-.02485	.00097
720.9	705.58	2289	2.047	-.023	.94324	-.02130	.00042	.02172
722.9	707.77	2189	2.001	-.033	.94219	-.03150	-.04732	-.01582
724.9	709.09	2316	1.977	.022	.94174	.02062	.02557	.00495
726.9	712.36	2268	2.067	.012	.94161	.01108	.01023	-.00085
				.030	.94078	.02783	.01776	-.01007

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
728.9	714.69	2330	2.134	.071	.93610	.06636	.08916	.02280
730.9	717.24	2558	2.239	-.018	.93579	-.01706	-.01853	-.00147
732.9	719.74	2501	2.208	-.110	.92445	-.10304	-.10385	-.00081
734.9	721.97	2228	1.987	.035	.92328	.03279	.03615	.00336
736.9	724.24	2265	2.099	.117	.91068	.10786	.09313	-.01472
738.9	726.70	2468	2.435	-.014	.91051	-.01256	-.03167	-.01911
740.9	729.08	2380	2.456	-.051	.90810	-.04680	-.02700	.01980
742.9	731.50	2413	2.186	.003	.90810	.00280	-.00103	-.00384
744.9	733.92	2427	2.187	.034	.90702	.03128	.04635	.01557
746.9	736.42	2492	2.282	-.163	.88306	-.14741	-.14758	-.00017
748.9	738.54	2124	1.929	.130	.86809	.11497	.07383	-.04113
750.9	740.99	2440	2.181	-.084	.86190	-.07332	-.07946	-.00613
752.9	743.21	2229	2.015	.020	.86155	.01730	.03161	.01431
754.9	745.49	2232	2.050	.033	.86063	.02820	.06412	.03591
756.9	747.36	2367	2.109	-.006	.86060	-.00506	-.03525	-.03019
758.9	750.23	2374	2.079	.023	.86013	.02011	.01848	-.00163
760.9	752.62	2382	2.166	.003	.86012	.00222	.02685	.02463
762.9	755.03	2411	2.156	-.117	.84828	-.10092	-.09939	.00153
764.9	757.19	2114	1.947	.088	.84167	.07490	.06881	-.00608
766.9	759.52	2376	2.067	.008	.84162	.00670	-.00852	-.01523
768.9	761.79	2365	2.109	-.014	.84145	-.01191	.01242	.02433
770.9	764.20	2315	2.091	-.003	.84139	-.00699	-.01303	-.00614
772.9	766.47	2277	2.092	.020	.84038	.02083	-.00076	-.02159
774.9	768.70	2307	2.169	.002	.84067	.00127	.05460	.05333
		2339	2.157					

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/CM <sup>3</sup>	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
776.9	771.12	2347	2.121	-.004	.84086	-.00351	-.02530	-.02180
778.9	773.47	2352	2.143	.008	.84081	.00640	-.02770	-.03410
780.9	775.82	2453	2.164	.024	.84031	.02050	.05660	.03610
782.9	778.28	2456	2.139	-.005	.84029	-.00430	-.04281	-.03851
784.9	780.73	2451	2.145	0	.84029	.00030	.01508	.01478
786.9	783.18	2449	2.121	-.006	.84026	-.00496	.01136	.01632
788.9	785.63	2460	2.222	.026	.83971	.02150	-.00199	-.02349
790.9	788.09	2578	2.286	.037	.83853	.03142	.05083	.01942
792.9	790.67	2585	2.109	-.039	.83727	-.03262	-.03129	.00133
794.9	793.26	2366	1.990	-.073	.83279	-.06118	-.07869	-.01751
796.9	795.62	2686	2.270	.128	.81906	.10694	.11187	.00493
798.9	798.31	2613	2.248	-.019	.81878	-.01530	-.00760	.00770
800.9	800.92	2432	2.229	-.040	.81746	-.03277	-.03195	.00083
802.9	803.35	2628	2.120	.014	.81731	.01119	.00590	-.00529
804.9	805.98	2829	2.328	.083	.81162	.06818	.06601	-.00217
806.9	808.81	2929	2.335	.019	.81134	.01523	.08797	.07274
808.9	811.74	3067	2.356	.023	.81072	.02233	-.02247	-.04480
810.9	814.81	2638	2.274	-.093	.80376	-.07514	-.09488	-.01974
812.9	817.44	3019	2.319	.077	.79899	.06191	.07586	.01395
814.9	820.46	2824	2.271	-.044	.79746	-.03495	-.01898	.01597
816.9	823.29	2429	2.153	-.101	.78925	-.08094	-.09572	-.01478
818.9	825.72	2429	2.152	0	.78925	-.00034	-.00277	-.00244
820.9	828.14	2440	2.239	.022	.78886	.01740	-.00556	-.02297
822.9	830.58	2410	2.271	.001	.78886	.00059	-.00870	-.00930
824.9	832.99			.035	.78788	.02783	.04245	.01462

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
826.9	835.55	2559	2.295	.199	.75677	.15656	.13343	-.02313
828.9	839.17	3621	2.426	.016	.75657	.01238	.04855	.03617
830.9	842.88	3709	2.447	-.050	.75465	-.03806	-.01025	.02781
832.9	846.31	3431	2.392	.014	.75450	.01070	.04732	.03663
834.9	849.81	3498	2.414	-.053	.75240	-.03983	-.08071	-.04088
836.9	853.03	3221	2.359	.141	.73738	.10630	.10037	-.00593
838.9	857.07	4036	2.501	-.082	.73246	-.06025	-.06568	-.00543
840.9	860.60	3531	2.427	.056	.73017	.04095	.08648	.04553
842.9	864.47	3866	2.479	-.063	.72680	-.04959	-.07389	-.02430
844.9	867.96	3498	2.392	-.163	.70757	-.11822	-.13356	-.01534
846.9	870.69	2722	2.213	.137	.69437	.09664	.10372	.00707
848.9	874.05	3361	2.360	.109	.68611	.07575	.07169	-.00406
850.9	878.01	3963	2.491	.018	.68588	.01256	-.01612	-.02867
852.9	882.10	4089	2.505	.010	.68581	.00705	.04975	.04269
854.9	886.29	4186	2.497	-.052	.68393	-.03586	-.04277	-.00691
856.9	890.28	4000	2.354	-.015	.68379	-.00998	.02191	.03189
858.9	894.11	3825	2.391	-.020	.68351	-.01381	-.00127	.01254
860.9	897.74	3634	2.417	.093	.67696	.06688	-.02565	-.09253
862.9	902.00	4256	2.511	-.041	.67583	-.02775	.04255	.07031
864.9	905.97	3969	2.481	-.003	.67578	-.00574	-.02633	-.02053
866.9	909.94	3973	2.484	-.021	.67549	-.01402	.03652	.05054
868.9	913.91	3973	2.487	.003	.67548	.00183	-.01525	-.01703
870.9	917.80	3973	2.490	.029	.67491	.01966	-.01520	-.03486
872.9	921.76	3973	2.493	.010	.67430	.00944	.03776	.02928

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/CC	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
874.9	925.57			.002	.67480	.00156	-.01474	-.01631
876.9	929.50	3977	2.566	0	.67480	-.00007	.00835	.00842
878.9	933.72	3977	2.566	0	0	0	.03235	.03235
890.9							-.04670	-.04670
892.9							-.00230	-.00230
884.9							.01455	.01455
886.9							.01118	.01118
898.9							.01117	.01117
890.9							-.02023	-.02023
892.9							-.01276	-.01276
894.9							.00145	.00145
896.9							-.02245	-.02245
898.9							.02718	.02718
900.9							-.00695	-.00695
902.9							.04692	.04692
904.9							-.05535	-.05535
906.9							.01464	.01464
908.9							.05035	.05035
910.9							-.01929	-.01929
912.9							-.03506	-.03506
914.9							-.00136	-.00136
916.9							.02865	.02865
918.9							.04313	.04313
920.9							-.06459	-.06459
922.9							-.01487	-.01487



TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
924.9							.05061	.05061
926.9							-.03632	-.03632
928.9							-.01843	-.01843
930.9							.09723	.09723
932.9							-.05195	-.05195
934.9							-.06372	-.06372
936.9							-.00133	-.00133
938.9							-.00045	-.00045
940.9							.04643	.04643
942.9							-.00287	-.00287
944.9							.02826	.02826
946.9							.01073	.01073
948.9							-.06830	-.06830
950.9							.04663	.04663
952.9							-.03384	-.03384
954.9							.04365	.04365
956.9							-.02676	-.02676
958.9							.00712	.00712
960.9							-.01113	-.01113
962.9							-.00927	-.00927
964.9							.00252	.00252
966.9							-.00990	-.00990
968.9							.01708	.01708
970.9							.06011	.06011

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/CC	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
972.9							-.07906	-.07906
974.9							.01094	.01094
976.9							-.02156	-.02156
978.9							.02790	.02790
980.9							.00606	.00606
982.9							-.02951	-.02951
984.9							.00706	.00706
986.9							-.00731	-.00731
988.9							-.01025	-.01025
990.9							.04851	.04851
992.9							-.02639	-.02639
994.9							.01956	.01956
996.9							.00180	.00180
998.9							-.04052	-.04052
1000.9							.03033	.03033
1002.9							-.01940	-.01940

PE604148

This is an enclosure indicator page.  
The enclosure PE604148 is enclosed within the  
container PE905266 at this location in this  
document.

The enclosure PE604148 has the following characteristics:

ITEM\_BARCODE = PE604148  
CONTAINER\_BARCODE = PE905266  
NAME = Seismic Calibration Log  
BASIN = GIPPSLAND  
PERMIT = VIC/P19  
TYPE = WELL  
SUBTYPE = VELOCITY\_CHART  
DESCRIPTION = Leatherjacket-1 Seismic Calibration Log  
(Adjusted Continuous Velocity Log).  
From the Geogram Processing Report.  
Includes: Drift Curve, Adjusted  
Conutinous Velocity Log and Time/Depth  
Log-Velocities.  
REMARKS =  
DATE\_CREATED = 13/03/1986  
DATE\_RECEIVED = 24/06/1986  
W\_NO = W928  
WELL\_NAME = Leatherjacket-1  
CONTRACTOR = Schlumberger  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE604149

This is an enclosure indicator page.  
The enclosure PE604149 is enclosed within the  
container PE905266 at this location in this  
document.

The enclosure PE604149 has the following characteristics:

ITEM\_BARCODE = PE604149  
CONTAINER\_BARCODE = PE905266  
NAME = Seismic Calibration Log  
BASIN = GIPPSLAND  
PERMIT = VIC/P19  
TYPE = WELL  
SUBTYPE = VELOCITY\_CHART  
DESCRIPTION = Leatherjacket-1 Seismic Calibration  
Log (Adjusted Continuous Velocity Log).  
From the Geogram Processing Report.  
REMARKS =  
DATE\_CREATED = 13/03/1986  
DATE\_RECEIVED = 24/06/1986  
W\_NO = W928  
WELL\_NAME = Leatherjacket-1  
CONTRACTOR = Schlumberger  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE604150

This is an enclosure indicator page.  
The enclosure PE604150 is enclosed within the  
container PE905266 at this location in this  
document.

The enclosure PE604150 has the following characteristics:

ITEM\_BARCODE = PE604150  
CONTAINER\_BARCODE = PE905266  
NAME = Geogram (Synthetic Seismogram)  
BASIN = GIPPSLAND  
PERMIT = VIC/P19  
TYPE = WELL  
SUBTYPE = SYNTH\_SEISMOGRAM  
DESCRIPTION = Leatherjacket-1 Geogram (Synthetic  
Seismogram). From the Geogram  
Processing Report.  
REMARKS =  
DATE\_CREATED = 13/03/1986  
DATE\_RECEIVED = 24/06/1986  
W\_NO = W928  
WELL\_NAME = Leatherjacket-1  
CONTRACTOR = Schlumberger  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE905267

This is an enclosure indicator page.  
The enclosure PE905267 is enclosed within the  
container PE905266 at this location in this  
document.

The enclosure PE905267 has the following characteristics:

ITEM\_BARCODE = PE905267  
CONTAINER\_BARCODE = PE905266  
NAME = Raw and Stacked Checkshot Data  
BASIN = GIPPSLAND  
PERMIT = VIC/P19  
TYPE = WELL  
SUBTYPE = VELOCITY\_CHART  
DESCRIPTION = Leatherjacket-1 Raw and Stacked  
Checkshot Data. From the Geogram  
Processing Report. Includes: Raw Data  
Downhole Sensor, Raw Data Surface  
Sensor and Stacked Data.  
REMARKS =  
DATE\_CREATED = 13/03/1986  
DATE\_RECEIVED = 24/06/1986  
W\_NO = W928  
WELL\_NAME = Leatherjacket-1  
CONTRACTOR = Schlumberger  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)