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PE906719



G F F Resources Ltd

WELL COMPLETION REPORT

LANGLEY-1

PPL 1

OTWAY BASIN, VICTORIA

compiled by

Kevin Lanigan

January, 1996

VOLUME 4

WELL SEISMIC PROCESSING REPORT

Level 6, 6 Riverside Quay, Southbank, Victoria 3006 Telephone: (03) 9684-4888 Facsimile: (03) 9684-4897

MELBOURNE LOG INTERPRETATION CENTRE

**PO BOX 7435
479 ST. KILDA ROAD
MELBOURNE VICTORIA 3004**

SONIC CALIBRATION AND GEOGRAM PLOTS

Well Seismic Survey - Plot 1

Drift Corrected Sonic

Seismic Calibration Log

25 hz zero phase Geogram, 10 cm/sec

35 hz zero phase Geogram , 10 cm/sec

45 hz zero phase Geogram, 10 cm/sec

31 JAN 1996

PETROLEUM DIVISION

Schlumberger

Schlumberger Oilfield Australia Pty. Ltd.

Level 3, 312 St Kilda Road, MELBOURNE VIC 3004
P.O. Box 7435, 479 St Kilda Road, MELBOURNE VIC 3004
Phone: (03) 696 6266 Fax: (03) 690 0309 Telex: AA 151320

GFE RESOURCES LTD
WELL SEISMIC PROCESSING REPORT
Sonic Calibration and Geogram

LANGLEY-1

FIELD : EXPLORATION

COUNTRY : AUSTRALIA

COORDINATES : 038 35'51.089" S
: 142 56'10.625" E

LOCATION : VICTORIA

DATE OF SURVEY : 03-JUNE-1994

REFERENCE NO. : SYJ-561022

INTERVAL : 2008 - 350 M

CONTENTS

1. Introduction	1
2. Data Acquisition	1
3. Sonic Calibration Processing	2
3.1 Sonic Calibration	2
3.2 Open Hole Logs	3
3.3 Correction to Datum and Velocity Modelling	3
3.4 Sonic Calibration Results	3
4. Synthetic Seismogram Processing	4
4.1 Depth to Time Conversion	4
4.2 Primary Reflection Coefficients	4
4.3 Primaries with Transmission Loss	5
4.4 Primaries plus Multiples	5
4.5 Multiples Only	5
4.7 Polarity Convention	5
4.8 Convolution	6
A Summary of Geophysical Listings	7
A1 Geophysical Airgun Report	7
A2 Drift Computation Report	8
A3 Sonic Adjustment Parameter Report	8
A4 Velocity Report	9
A5 Time Converted Velocity Report	9
List of Tables	
1 Survey Parameters	1
2 Sonic Drift	3
List of Figures	
1 Wavelet Polarity Convention	

1. Introduction

One Vertical Seismic Profile - Checkshot survey was recorded with the Well Seismic Tool (WST) at the *Langley1* well. The survey was run on June 3, 1994. The data was edited and stacked, the transit times were re-picked and used as the input for sonic calibration processing.

2. Data Acquisition

The data was acquired in one logging run using the one component Well Seismic Tool (WST). A single bolt air gun was used as the source. The gun was positioned 2 meters below ground level. Recording was made on the Schlumberger Cyber Service Unit using LIS format.

Table 1. Survey Parameters

Elevation of KB	67.9M
Elevation of DF	69.3 M
Elevation of GL	-64.0 M
Total Depth	2008 M
Energy Source	1 X 200 cu in. airguns
Source Offset	22 M
Source Depth	2 M below GL
Reference Sensor	Fire Pulse
Hydrophone Offset	- M
Hydrophone Depth	- M
Source & Hyd. Azimuth	125.5 Degr.

3. Sonic Calibration Processing

3.1 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 versus 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.

$$\frac{\Delta \text{drift}}{\Delta \text{depth}} < 0$$

For a negative drift the sonic time is greater than the seismic time over a certain section of the log.

For a positive drift $\frac{\Delta \text{drift}}{\Delta \text{depth}} > 0$, 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 $\mu\text{sec/ft}$.

2. ΔT Minimum. In the case of negative drift a second method is used, called ΔT 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 Δt values which are higher than a threshold, the Δt_{min} . Values of Δt which are lower than the threshold are not corrected. The correction is a reduction of the excess of Δt over Δt_{min} , $\Delta t - \Delta t_{\text{min}}$.

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

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

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

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

3.2 Open Hole Logs

The sonic log has been recorded from 2008.0 to 350.0 metres measured depth below DF. This sonic log has been edited to alleviate cycle skipping and spiky data. The density log has also been edited to take into account bad hole condition. The gamma ray and caliper logs are included as correlation curves.

True vertical depth correction was performed for all the logs and checkshot depth/time since the well is slightly deviated.

3.3 Correction to Datum and Velocity Modelling

The sonic calibration processing has been referenced to the seismic reference datum (SRD) which is 64 M below Ground Level. Static corrections are applied to correct for source offset and source depth. This involves using a surface velocity between the source and SRD of 1820 m/sec.

3.4 Sonic Calibration Results

The top of the sonic log (350.0 metres below DF) is chosen as the origin for the calibration drift curve.

The drift curve is the correction imposed upon the sonic log. The adjusted sonic curve is considered to be the best result using the available data. A list of shifts used on the sonic data is given below.

Table 2: Sonic Drift

Depth Interval (metres below KB)	Block Shift $\mu\text{sec}/\text{mt}$	Δt_{min} $\mu\text{sec}/\text{mt}$	Equiv Block shift $\mu\text{sec}/\text{mt}$
0 - 350	0.00	-	0.00
350 - 517.5	-	457.41	-26.27
517.5 - 559.5	97.62	-	97.62
559.5 - 1424.0	-	325.89	-8.10
1424.0 - 1768.0	13.81	-	13.81
1768.0 - 2008.0	-	221.97	-12.29

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1424.0 - 1768.0	13.81	-	13.81
1768.0 -2008.0	-	221.97	-12.29

4.3 Primaries with Transmission Loss

Transmission loss on two-way attenuation coefficients is 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:

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

4.4 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.

4.5 Multiples Only

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

4.6 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.

4.7 Polarity Convention

An increase in acoustic impedance gives a positive reflection coefficient, is written to tape as a negative number and is displayed as a white trough under normal polarity. Polarity conventions are displayed in figure 1.

4.8 Convolution

The standard procedure of convolving the wavelet with reflection coefficients; the output is the synthetic seismogram.

A Summary of Geophysical Listings

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

A1 Geophysical Airgun Report

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

A2 Drift Computation Report

1. Level number: the level number starting from the top level (includes any imposed shots).
2. Vertical depth from KB: the depth in metres from kelly bushing
3. Vertical depth from SRD: the depth in metres from seismic reference datum.
4. Vertical travel time SRD to GEO: the calculated vertical travel time from datum to downhole geophone (see column 7, Geophysical Airgun Report).
5. 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.
6. Computed drift at level: the checkshot time minus the integrated raw sonic time.
7. Computed blk-shft correction: the drift gradient between any two checkshot levels
$$\left(\frac{\Delta \text{drift}}{\Delta \text{depth}} \right).$$

A3 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 KB: the depth in metres from kelly bushing
3. Vertical depth from SRD: the depth in metres from seismic reference datum.
4. Drift at knee: the value of drift imposed at each knee.
5. Blockshift used: the change in drift divided by the change in depth between any two levels.
6. Delta-T minimum used: see section 4 of report for an explanation of Δt_{\min} .
7. reduction factor: see section 4 of report.
8. Equivalent blockshift: the gradient of the imposed drift curve.

A4 Velocity Report

1. Level number: the level number starting from the top level (includes any imposed shots).
2. Vertical depth from KB: the depth in metres from kelly bushing.
3. Vertical depth from SRD: the depth in metres from seismic reference datum.
4. Vertical travel time SRD to GEOPH: the vertical travel time from SRD to downhole geophone (see column 7, Geophysical Airgun Report)
5. 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.)
6. Drift=shot time-raw sonic: the check shot time minus the raw integrated sonic time.
7. Residual=shot time-adj sonic: the check shot time minus the adjusted integrated sonic time. This is the difference between calculated drift and the imposed drift.
8. Adjusted interval velocity: the interval velocity calculated from the integrated adjusted sonic time at each level.

A5 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 millisecs) and the sampling rate is 2 millisecs.
2. Measured depth from KB: the depth from KB 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 millisecs 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 = 1000 M).

$$\Delta t = \sqrt{t^2 + \left(\frac{X}{v_{rms}}\right)^2} - t$$

where:

Δt = normal moveout (secs)
X = moveout distance (metres)
t = two way time (secs)
 v_{rms} = rms velocity (metres / sec)

7. Second normal moveout: the correction time in milliseconds to be applied to the two way travel time for a specified moveout distance (default = 1500 M).

8. Third normal moveout: the correction time in milliseconds to be applied to the two way travel time for a specified moveout distance (default = 2000 M)

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 0.002. It is equivalent to column 9 from the Velocity Report.

SCHLUMBERGER (SEG-1976) WAVELET POLARITY CONVENTION

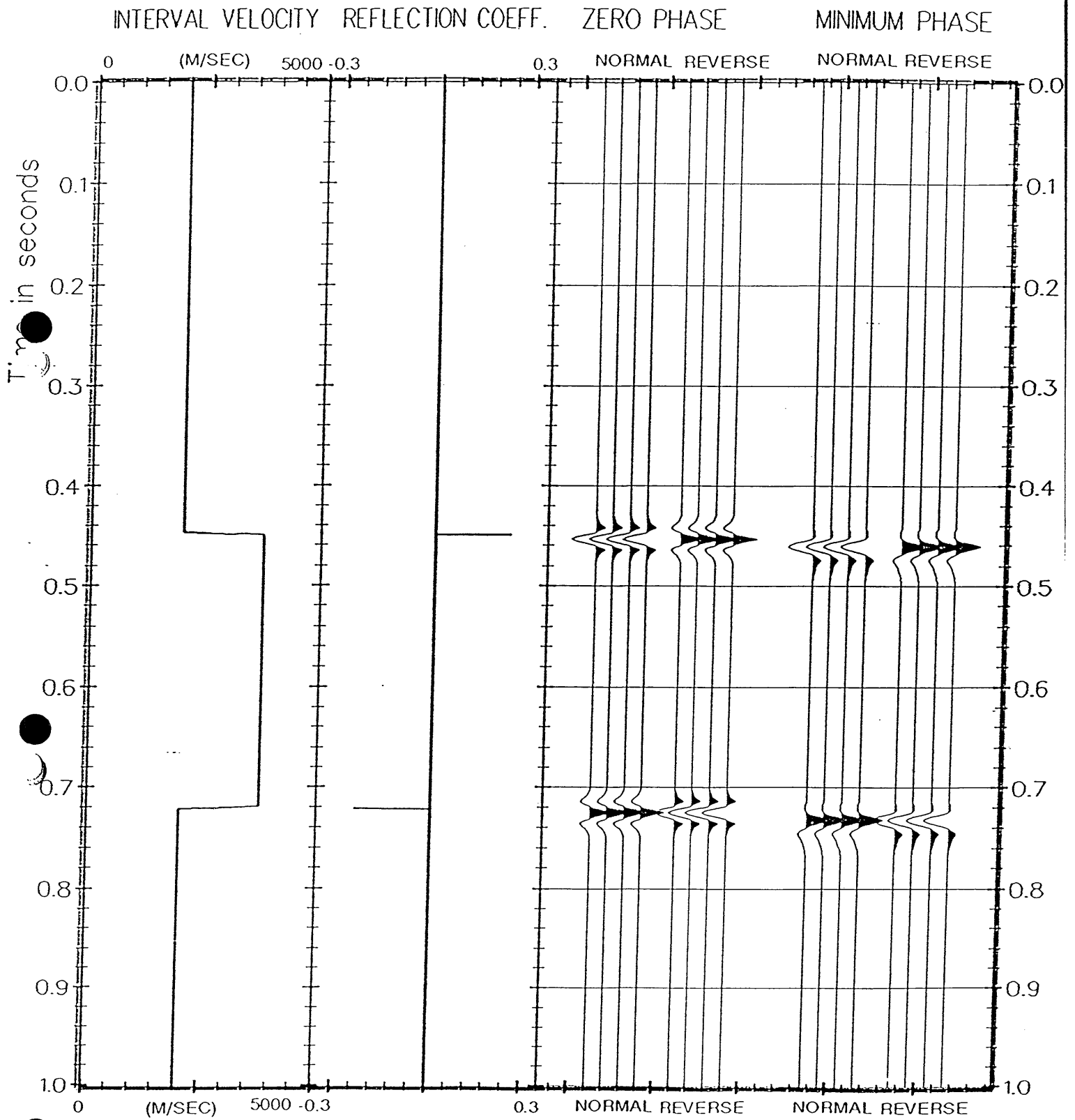


Figure 1 Wavelet Polarity Convention

ANALYST: WIBISONO

16-JUN-94 17:10:00

PROGRAM: GTRFRM 001.E13

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* SCHLUMBERGER *
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TIME CONVERTED VELOCITY REPORT

COMPANY : GFE RESOURCES LTD.
WELL : LANGLEY #1
FIELD : EXPLORATION
STATE : VICTORIA
COUNTRY : AUSTRALIA
REFERENCE: SYJ.561022
LOGGED : 03-JUN-1994

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 Users Reference (Generally Ground Level) Above SRD
 UNERTH - UNIFORM EARTH VELOCITY (GTRFRM)
 UNFDEN - UNIFORM DENSITY VALUE

MATRIX
 MVODIS - MOVE-OUT DISTANCE FROM BOREHOLE

ZONE
 LOFVEL - 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)
 DKB - 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)

ELEV OF KB AB. MSL (WST)	KB	:	69.7000	M
ELEV OF SRD AB. MSL(WST)	SRD	:	0	M
ELEV OF GL AB. SRD(WST)	GL	:	0	M
UNIFORM EARTH VELOCITY	UNERTH	:	1820.00	M/S
UNIFORM DENSITY VALUE	UNFDEN	:	2.30000	G/C3

(MATRIX PARAMETERS)

MVOUT DIST	
M	
1	1000.0
2	1500.0
3	2000.0

COMPANY : GFE RESOURCES LTD.

WELL :

: LANGLEY #1

PAGE

2

(ZONED PARAMETERS)

LAYER OPTION FLAG VELOC	LOFVEL			
USER VELOC (WST)	LAYVEL	1820.000	M/S	0
LAYER OPTION FLAG DENS	LOFDEN	-1.000000	G/C3	0
USER SUPPLIED DENSITY DA	LAYDEN			0

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
2.00	71.5	1.8	1820	1820	547.45	822.18	1096.90	1820
4.00	73.3	3.6	1820	1820	545.47	820.19	1094.91	1820
6.00	75.2	5.5	1820	1820	543.48	818.20	1092.92	1820
8.00	77.0	7.3	1820	1820	541.51	816.21	1090.93	1820
10.00	78.8	9.1	1820	1820	539.54	814.24	1088.95	1820
12.00	80.6	10.9	1820	1820	537.58	812.26	1086.97	1820
14.00	82.4	12.7	1820	1820	535.63	810.29	1084.99	1820
16.00	84.3	14.6	1820	1820	533.68	808.33	1083.02	1820
18.00	86.1	16.4	1820	1820	531.75	806.37	1081.05	1820
20.00	87.9	18.2	1820	1820	529.81	804.42	1079.08	1820
22.00	89.7	20.0	1820	1820	527.89	802.47	1077.12	1820
24.00	91.5	21.8	1820	1820	525.97	800.53	1075.16	1820
26.00	93.4	23.7	1820	1820	524.07	798.59	1073.21	1820
28.00	95.2	25.5	1820	1820	522.16	796.65	1071.26	1820
30.00	97.0	27.3	1820	1820	520.27	794.72	1069.31	1820
32.00	98.8	29.1	1820	1820	518.38	792.80	1067.37	1820
34.00	100.6	30.9	1820	1820	516.50	790.88	1065.43	1820
36.00	102.5	32.8	1820	1820	514.63	788.96	1063.49	1820
38.00	104.3	34.6	1820	1820	512.76	787.05	1061.56	1820
40.00	106.1	36.4	1820	1820	510.90	785.15	1059.63	1820
42.00	107.9	38.2	1820	1820	509.05	783.25	1057.70	1820
44.00	109.7	40.0	1820	1820	507.21	781.35	1055.78	1820
46.00	111.6	41.9	1820	1820	505.37	779.46	1053.86	1820
48.00	113.4	43.7	1820	1820	503.54	777.57	1051.95	1820

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 NORMAL VELOCITY M/S
50.00	115.2	45.5	1820	1820	501.72	775.69	1050.04	1820
52.00	117.0	47.3	1820	1820	499.91	773.81	1048.13	1820
54.00	118.8	49.1	1820	1820	498.10	771.94	1046.23	1820
56.00	120.7	51.0	1820	1820	496.30	770.08	1044.33	1820
58.00	122.5	52.8	1820	1820	494.50	768.21	1042.43	1820
60.00	124.3	54.6	1820	1820	492.72	766.36	1040.54	1820
62.00	126.1	56.4	1820	1820	490.94	764.50	1038.65	1820
64.00	127.9	58.2	1820	1820	489.17	762.66	1036.76	1820
66.00	129.8	60.1	1820	1820	487.40	760.81	1034.88	1820
68.00	131.6	61.9	1820	1820	485.64	758.98	1033.00	1820
70.00	133.4	63.7	1820	1820	483.89	757.14	1031.13	1820
72.00	135.2	65.5	1820	1820	482.15	755.31	1029.26	1820
74.00	137.0	67.3	1820	1820	480.41	753.49	1027.39	1820
76.00	138.9	69.2	1820	1820	478.68	751.67	1025.53	1820
78.00	140.7	71.0	1820	1820	476.96	749.86	1023.67	1820
80.00	142.5	72.8	1820	1820	475.24	748.05	1021.81	1820
82.00	144.3	74.6	1820	1820	473.54	746.25	1019.96	1820
84.00	146.1	76.4	1820	1820	471.83	744.45	1018.11	1820
86.00	148.0	78.3	1820	1820	470.14	742.65	1016.26	1820
88.00	149.8	80.1	1820	1820	468.45	740.86	1014.42	1820
90.00	151.6	81.9	1820	1820	466.77	739.08	1012.58	1820
92.00	153.4	83.7	1820	1820	465.10	737.29	1010.75	1820
94.00	155.2	85.5	1820	1820	463.43	735.52	1008.91	1820
96.00	157.1	87.4	1820	1820	461.77	733.75	1007.09	1820

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
98.00	158.9	89.2	1820	1820	460.12	731.98	1005.26	1820
100.00	160.7	91.0	1820	1820	458.48	730.22	1003.44	1820
102.00	162.5	92.8	1820	1820	456.84	728.46	1001.62	1820
104.00	164.3	94.6	1820	1820	455.21	726.71	999.81	1820
106.00	166.2	96.5	1820	1820	453.58	724.96	998.00	1820
108.00	168.0	98.3	1820	1820	451.96	723.22	996.20	1820
110.00	169.8	100.1	1820	1820	450.35	721.48	994.39	1820
112.00	171.6	101.9	1820	1820	448.75	719.75	992.59	1820
114.00	173.4	103.7	1820	1820	447.15	718.02	990.80	1820
116.00	175.3	105.6	1820	1820	445.56	716.30	989.01	1820
118.00	177.1	107.4	1820	1820	443.98	714.58	987.22	1820
120.00	178.9	109.2	1820	1820	442.40	712.87	985.43	1820
122.00	180.7	111.0	1820	1820	440.83	711.16	983.65	1820
124.00	182.5	112.8	1820	1820	439.27	709.45	981.88	1820
126.00	184.4	114.7	1820	1820	437.71	707.75	980.10	1820
128.00	186.2	116.5	1820	1820	436.16	706.06	978.33	1820
130.00	188.0	118.3	1820	1820	434.62	704.37	976.56	1820
132.00	189.8	120.1	1820	1820	433.08	702.68	974.80	1820
134.00	191.6	121.9	1820	1820	431.55	701.00	973.04	1820
136.00	193.5	123.8	1820	1820	430.03	699.32	971.28	1820
138.00	195.3	125.6	1820	1820	428.52	697.65	969.53	1820
140.00	197.1	127.4	1820	1820	427.01	695.98	967.78	1820
142.00	198.9	129.2	1820	1820	425.50	694.32	966.04	1820
144.00	200.7	131.0	1820	1820	424.01	692.66	964.30	1820

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
146.00	202.6	132.9	1820	1820	422.52	691.01	962.56	1820
148.00	204.4	134.7	1820	1820	421.03	689.36	960.82	1820
150.00	206.2	136.5	1820	1820	419.56	687.71	959.09	1820
152.00	208.0	138.3	1820	1820	418.09	686.08	957.36	1820
154.00	209.8	140.1	1820	1820	416.62	684.44	955.64	1820
156.00	211.7	142.0	1820	1820	415.17	682.81	953.92	1820
158.00	213.5	143.8	1820	1820	413.72	681.18	952.20	1820
160.00	215.3	145.6	1820	1820	412.27	679.56	950.49	1820
162.00	217.1	147.4	1820	1820	410.84	677.95	948.78	1820
164.00	218.9	149.2	1820	1820	409.40	676.33	947.07	1820
166.00	220.8	151.1	1820	1820	407.98	674.73	945.37	1820
168.00	222.6	152.9	1820	1820	406.56	673.12	943.67	1820
170.00	224.4	154.7	1820	1820	405.15	671.53	941.97	1820
172.00	226.2	156.5	1820	1820	403.74	669.93	940.28	1820
174.00	228.0	158.3	1820	1820	402.34	668.34	938.59	1820
176.00	229.9	160.2	1820	1820	400.95	666.76	936.91	1820
178.00	231.7	162.0	1820	1820	399.56	665.18	935.22	1820
180.00	233.5	163.8	1820	1820	398.18	663.60	933.55	1820
182.00	235.3	165.6	1820	1820	396.81	662.03	931.87	1820
184.00	237.1	167.4	1820	1820	395.44	660.47	930.20	1820
186.00	239.0	169.3	1820	1820	394.08	658.90	928.53	1820
188.00	240.8	171.1	1820	1820	392.72	657.35	926.87	1820
190.00	242.6	172.9	1820	1820	391.37	655.79	925.21	1820
192.00	244.4	174.7	1820	1820	390.03	654.24	923.55	1820

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 NORMAL VELOCITY M/S
194.00	246.2	176.5	1820	1820	388.69	652.70	921.89	1820
196.00	248.1	178.4	1820	1820	387.36	651.16	920.24	1820
198.00	249.9	180.2	1820	1820	386.04	649.63	918.60	1820
200.00	251.7	182.0	1820	1820	384.72	648.10	916.95	1820
202.00	253.5	183.8	1820	1820	383.41	646.57	915.31	1820
204.00	255.3	185.6	1820	1820	382.10	645.05	913.68	1820
206.00	257.2	187.5	1820	1820	380.80	643.53	912.04	1820
208.00	259.0	189.3	1820	1820	379.50	642.02	910.41	1820
210.00	260.8	191.1	1820	1820	378.21	640.51	908.79	1820
212.00	262.6	192.9	1820	1820	376.93	639.01	907.16	1820
214.00	264.4	194.7	1820	1820	375.65	637.51	905.54	1820
216.00	266.3	196.6	1820	1820	374.38	636.01	903.93	1820
218.00	268.1	198.4	1820	1820	373.12	634.52	902.32	1820
220.00	269.9	200.2	1820	1820	371.86	633.03	900.71	1820
222.00	271.7	202.0	1820	1820	370.60	631.55	899.10	1820
224.00	273.5	203.8	1820	1820	369.36	630.07	897.50	1820
226.00	275.4	205.7	1820	1820	368.11	628.60	895.90	1820
228.00	277.2	207.5	1820	1820	366.88	627.13	894.30	1820
230.00	279.0	209.3	1820	1820	365.65	625.67	892.71	1820
232.00	280.8	211.1	1820	1820	364.42	624.21	891.12	1820
234.00	282.6	212.9	1820	1820	363.20	622.75	889.54	1820
236.00	284.5	214.8	1820	1820	361.99	621.30	887.96	1820
238.00	286.3	216.6	1820	1820	360.78	619.85	886.38	1820
240.00	288.1	218.4	1820	1820	359.58	618.41	884.80	1820

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
242.00	289.9	220.2	1820	1820	358.38	616.97	883.23	1820
244.00	291.7	222.0	1820	1820	357.19	615.54	881.66	1820
246.00	293.6	223.9	1820	1820	356.01	614.11	880.10	1820
248.00	295.4	225.7	1820	1820	354.83	612.68	878.54	1820
250.00	297.2	227.5	1820	1820	353.65	611.26	876.98	1820
252.00	299.0	229.3	1820	1820	352.48	609.84	875.43	1820
254.00	300.8	231.1	1820	1820	351.32	608.43	873.87	1820
256.00	302.7	233.0	1820	1820	350.16	607.02	872.33	1820
258.00	304.5	234.8	1820	1820	349.01	605.61	870.78	1820
260.00	306.3	236.6	1820	1820	347.86	604.21	869.24	1820
262.00	308.1	238.4	1820	1820	346.72	602.82	867.70	1820
264.00	309.9	240.2	1820	1820	345.58	601.43	866.17	1820
266.00	311.8	242.1	1820	1820	344.45	600.04	864.64	1820
268.00	313.6	243.9	1820	1820	343.33	598.65	863.11	1820
270.00	315.4	245.7	1820	1820	342.21	597.27	861.58	1820
272.00	317.2	247.5	1820	1820	341.09	595.90	860.06	1820
274.00	319.0	249.3	1820	1820	339.98	594.53	858.55	1820
276.00	320.9	251.2	1820	1820	338.88	593.16	857.03	1820
278.00	322.7	253.0	1820	1820	337.78	591.80	855.52	1820
280.00	324.5	254.8	1820	1820	336.68	590.44	854.01	1820
282.00	326.3	256.6	1820	1820	335.59	589.09	852.51	1820
284.00	328.1	258.4	1820	1820	334.51	587.73	851.01	1820
286.00	330.0	260.3	1820	1820	333.43	586.39	849.51	1820
288.00	331.8	262.1	1820	1820	332.35	585.05	848.01	1820

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 NORMAL VELOCITY M/S
290.00	333.6	263.9	1820	1820	331.29	583.71	846.52	1820
292.00	335.4	265.7	1820	1820	330.22	582.37	845.03	1820
294.00	337.2	267.5	1820	1820	329.16	581.04	843.55	1820
296.00	339.1	269.4	1820	1820	328.11	579.72	842.07	1820
298.00	340.9	271.2	1820	1820	327.06	578.40	840.59	1820
300.00	342.7	273.0	1820	1820	326.02	577.08	839.12	1820
302.00	344.5	274.8	1820	1820	324.98	575.76	837.64	1820
304.00	346.3	276.6	1820	1820	323.94	574.45	836.18	1820
306.00	348.2	278.5	1820	1820	322.91	573.15	834.71	1821
308.00	350.0	280.3	1820	1820	321.89	571.84	833.24	1970
310.00	352.0	282.3	1821	1821	320.60	570.12	831.20	1963
312.00	353.9	284.2	1822	1822	319.34	568.43	829.20	1975
314.00	355.9	286.2	1823	1823	318.07	566.71	827.16	1963
316.00	357.9	288.2	1824	1824	316.82	565.03	825.18	1971
318.00	359.8	290.1	1825	1825	315.57	563.35	823.18	1966
320.00	361.8	292.1	1826	1826	314.34	561.69	821.21	1939
322.00	363.7	294.0	1826	1827	313.17	560.11	819.35	1924
324.00	365.7	296.0	1827	1827	312.02	558.59	817.56	1957
326.00	367.6	297.9	1828	1828	310.83	556.98	815.66	1940
328.00	369.5	299.8	1828	1829	309.68	555.43	813.83	1928
330.00	371.5	301.8	1829	1829	308.55	553.91	812.05	1928
332.00	373.4	303.7	1830	1830	307.43	552.41	810.28	1918
334.00	375.3	305.6	1830	1830	306.33	550.94	808.56	1908
336.00	377.2	307.5	1831	1831	305.26	549.50	806.87	

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
338.00	379.1	309.4	1831	1831	304.20	548.09	805.23	1899
340.00	381.0	311.3	1831	1832	303.17	546.71	803.62	1890
342.00	382.9	313.2	1832	1832	302.12	545.30	801.97	1906
344.00	384.9	315.2	1832	1833	301.01	543.79	800.18	1946
346.00	386.8	317.1	1833	1833	299.92	542.30	798.42	1940
348.00	388.7	319.0	1833	1834	298.88	540.89	796.76	1912
350.00	390.6	320.9	1834	1834	297.87	539.54	795.19	1890
352.00	392.6	322.9	1834	1835	296.79	538.06	793.43	1946
354.00	394.5	324.8	1835	1836	295.69	536.55	791.63	1962
356.00	396.4	326.7	1836	1836	294.69	535.19	790.03	1903
358.00	398.4	328.7	1836	1837	293.56	533.62	788.14	1992
360.00	400.5	330.8	1838	1839	292.25	531.75	785.82	2118
362.00	402.6	332.9	1839	1840	291.06	530.07	783.78	2044
364.00	404.6	334.9	1840	1841	289.92	528.46	781.83	2019
366.00	406.7	337.0	1842	1843	288.59	526.55	779.46	2147
368.00	408.9	339.2	1843	1844	287.33	524.75	777.23	2109
370.00	411.4	341.7	1847	1849	285.39	521.82	773.44	2531
372.00	414.4	344.7	1853	1856	282.64	517.54	767.77	2969
374.00	417.1	347.4	1858	1862	280.37	514.03	763.17	2756
376.00	420.0	350.3	1863	1869	277.94	510.26	758.20	2856
378.00	422.2	352.5	1865	1871	276.56	508.22	755.63	2261
380.00	424.4	354.7	1867	1873	275.35	506.48	753.46	2147
382.00	426.6	356.9	1868	1875	274.09	504.63	751.16	2194
384.00	428.9	359.2	1871	1877	272.71	502.58	748.56	2288

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 NORMAL VELOCITY M/S
386.00	430.9	361.2	1871	1878	271.71	501.17	746.86	2010
388.00	433.0	363.3	1873	1879	270.52	499.42	744.67	2171
390.00	435.3	365.6	1875	1882	269.18	497.44	742.16	2278
392.00	437.4	367.7	1876	1883	268.16	495.97	740.37	2053
394.00	439.3	369.6	1876	1883	267.23	494.66	738.79	1981
396.00	441.4	371.7	1877	1884	266.22	493.21	737.01	2056
398.00	443.6	373.9	1879	1886	265.07	491.51	734.89	2171
400.00	445.6	375.9	1880	1887	264.06	490.06	733.10	2064
402.00	447.7	378.0	1881	1887	263.08	488.64	731.36	2051
404.00	449.7	380.0	1881	1888	262.11	487.24	729.65	2045
406.00	451.8	382.1	1882	1889	261.08	485.74	727.79	2098
408.00	453.8	384.1	1883	1890	260.16	484.42	726.19	2011
410.00	455.8	386.1	1884	1890	259.27	483.14	724.64	1994
412.00	457.9	388.2	1884	1891	258.33	481.78	722.96	2041
414.00	459.9	390.2	1885	1892	257.46	480.53	721.45	1985
416.00	462.0	392.3	1886	1893	256.46	479.06	719.62	2104
418.00	464.1	394.4	1887	1894	255.47	477.61	717.82	2098
420.00	466.2	396.5	1888	1895	254.50	476.18	716.05	2090
422.00	468.2	398.5	1889	1895	253.59	474.85	714.41	2044
424.00	470.2	400.5	1889	1896	252.71	473.57	712.84	2020
426.00	472.2	402.5	1890	1896	251.89	472.39	711.41	1969
428.00	474.1	404.4	1890	1897	251.12	471.30	710.10	1920
430.00	476.0	406.3	1890	1897	250.37	470.22	708.82	1912
432.00	477.9	408.2	1890	1897	249.62	469.15	707.54	1912

WELL : LANGLEY #1

COMPANY : GFE RESOURCES LTD.

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
434.00	479.9	410.2	1890	1897	248.84	468.04	706.19	1943
436.00	481.9	412.2	1891	1897	248.03	466.85	704.74	1984
438.00	483.9	414.2	1891	1898	247.20	465.64	703.26	1999
440.00	485.9	416.2	1892	1898	246.35	464.39	701.71	2029
442.00	487.8	418.1	1892	1899	245.57	463.26	700.34	1960
444.00	489.8	420.1	1892	1899	244.80	462.14	698.98	1958
446.00	491.8	422.1	1893	1899	243.99	460.95	697.51	2005
448.00	493.9	424.2	1894	1900	243.11	459.64	695.87	2074
450.00	496.1	426.4	1895	1902	242.06	458.02	693.80	2246
452.00	498.3	428.6	1896	1903	241.09	456.55	691.93	2177
454.00	500.4	430.7	1897	1904	240.20	455.20	690.24	2108
456.00	502.5	432.8	1898	1905	239.29	453.83	688.51	2129
458.00	504.6	434.9	1899	1906	238.42	452.53	686.87	2092
460.00	506.8	437.1	1901	1907	237.46	451.05	684.99	2197
462.00	509.1	439.4	1902	1909	236.44	449.48	682.97	2255
464.00	511.3	441.6	1903	1910	235.50	448.04	681.14	2187
466.00	513.4	443.7	1904	1911	234.64	446.72	679.47	2120
468.00	515.7	446.0	1906	1913	233.60	445.10	677.38	2299
470.00	518.1	448.4	1908	1916	232.43	443.26	674.96	2426
472.00	520.2	450.5	1909	1916	231.65	442.09	673.50	2047
474.00	522.2	452.5	1909	1917	230.86	440.88	671.98	2073
476.00	524.3	454.6	1910	1918	230.07	439.69	670.47	2072
478.00	526.7	457.0	1912	1920	229.02	438.03	668.32	2348
480.00	528.8	459.1	1913	1920	228.21	436.80	666.75	2105

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
482.00	531.1	461.4	1914	1922	227.23	435.26	664.76	2293
484.00	533.4	463.7	1916	1924	226.22	433.66	662.68	2332
486.00	535.7	466.0	1918	1926	225.22	432.09	660.63	2330
488.00	538.2	468.5	1920	1928	224.08	430.27	658.22	2475
490.00	540.4	470.7	1921	1929	223.24	428.95	656.53	2185
492.00	542.2	472.5	1921	1929	222.69	428.15	655.58	1831
494.00	544.4	474.7	1922	1930	221.88	426.90	653.98	2151
496.00	546.4	476.7	1922	1930	221.19	425.85	652.66	2019
498.00	548.4	478.7	1922	1931	220.51	424.80	651.35	2020
500.00	550.5	480.8	1923	1932	219.75	423.63	649.86	2108
502.00	552.5	482.8	1924	1932	219.08	422.61	648.58	2005
504.00	554.4	484.7	1924	1932	218.49	421.73	647.49	1912
506.00	556.6	486.9	1924	1933	217.70	420.49	645.90	2164
508.00	559.0	489.3	1926	1935	216.73	418.93	643.84	2378
510.00	561.5	491.8	1929	1937	215.63	417.13	641.45	2526
512.00	564.0	494.3	1931	1940	214.53	415.34	639.06	2532
514.00	566.5	496.8	1933	1942	213.52	413.72	636.90	2444
516.00	569.0	499.3	1935	1945	212.45	411.96	634.56	2530
518.00	571.4	501.7	1937	1947	211.48	410.39	632.46	2429
520.00	574.0	504.3	1940	1950	210.36	408.55	630.00	2594
522.00	576.6	506.9	1942	1952	209.32	406.84	627.71	2531
524.00	579.2	509.5	1945	1955	208.21	405.02	625.26	2607
526.00	581.7	512.0	1947	1958	207.14	403.26	622.89	2582
528.00	584.4	514.7	1950	1961	206.09	401.41	620.39	2646

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 NORMAL VELOCITY M/S
530.00	586.9	517.2	1952	1964	205.00	399.71	618.12	2559
532.00	589.5	519.8	1954	1966	204.03	398.12	615.99	2503
534.00	592.0	522.3	1956	1968	203.05	396.51	613.82	2526
536.00	594.5	524.8	1958	1971	202.04	394.83	611.56	2574
538.00	597.1	527.4	1961	1974	201.02	393.14	609.28	2594
540.00	599.7	530.0	1963	1976	200.06	391.56	607.15	2534
542.00	602.0	532.3	1964	1977	199.31	390.34	605.55	2280
544.00	604.2	534.5	1965	1978	198.62	389.23	604.10	2202
546.00	606.5	536.8	1966	1980	197.82	387.93	602.37	2358
548.00	608.8	539.1	1968	1981	197.05	386.66	600.69	2331
550.00	611.3	541.6	1969	1983	196.19	385.23	598.77	2463
552.00	613.7	544.0	1971	1985	195.39	383.92	597.01	2386
554.00	616.2	546.5	1973	1987	194.49	382.42	594.99	2523
556.00	618.8	549.1	1975	1989	193.58	380.89	592.93	2553
558.00	621.5	551.8	1978	1992	192.51	379.10	590.48	2747
560.00	624.1	554.4	1980	1995	191.61	377.58	588.41	2569
562.00	626.6	556.9	1982	1997	190.73	376.11	586.43	2539
564.00	629.1	559.4	1984	1999	189.89	374.71	584.53	2498
566.00	631.7	562.0	1986	2001	189.03	373.26	582.56	2545
568.00	634.1	564.4	1987	2003	188.23	371.92	580.77	2463
570.00	636.6	566.9	1989	2005	187.46	370.63	579.03	2436
572.00	639.0	569.3	1991	2006	186.67	369.31	577.24	2470
574.00	641.5	571.8	1992	2008	185.90	368.03	575.52	2440
576.00	643.9	574.2	1994	2010	185.15	366.77	573.81	2438

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
578.00	646.5	576.8	1996	2012	184.28	365.30	571.81	2600
580.00	649.2	579.5	1998	2015	183.37	363.74	569.66	2685
582.00	652.0	582.3	2001	2018	182.35	361.98	567.23	2838
584.00	654.9	585.2	2004	2022	181.29	360.16	564.71	2893
586.00	657.5	587.8	2006	2024	180.49	358.81	562.85	2558
588.00	660.1	590.4	2008	2026	179.66	357.39	560.91	2615
590.00	663.1	593.4	2012	2030	178.54	355.44	558.18	3023
592.00	665.6	595.9	2013	2032	177.82	354.21	556.52	2475
594.00	668.3	598.6	2015	2035	176.97	352.75	554.51	2678
596.00	670.9	601.2	2017	2037	176.18	351.40	552.65	2604
598.00	673.5	603.8	2019	2039	175.40	350.06	550.81	2596
600.00	676.3	606.6	2022	2042	174.48	348.47	548.61	2808
602.00	679.0	609.3	2024	2044	173.67	347.07	546.67	2668
604.00	681.6	611.9	2026	2047	172.87	345.69	544.76	2667
606.00	684.2	614.5	2028	2049	172.13	344.42	543.02	2573
608.00	686.8	617.1	2030	2051	171.41	343.18	541.31	2562
610.00	689.3	619.6	2031	2052	170.70	341.97	539.64	2540
612.00	691.8	622.1	2033	2054	170.00	340.76	537.98	2545
614.00	694.5	624.8	2035	2056	169.24	339.43	536.15	2655
616.00	697.3	627.6	2038	2059	168.39	337.96	534.09	2794
618.00	700.3	630.6	2041	2063	167.43	336.26	531.71	2985
620.00	703.0	633.3	2043	2065	166.67	334.93	529.86	2693
622.00	705.6	635.9	2045	2067	165.96	333.70	528.15	2614
624.00	708.3	638.6	2047	2070	165.19	332.36	526.28	2721

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 NORMAL VELOCITY M/S
626.00	710.9	641.2	2049	2072	164.49	331.14	524.59	2618
628.00	713.7	644.0	2051	2074	163.69	329.74	522.62	2796
630.00	716.8	647.1	2054	2078	162.72	328.02	520.19	3075
632.00	719.6	649.9	2057	2081	161.95	326.66	518.29	2774
634.00	722.7	653.0	2060	2085	160.95	324.87	515.74	3161
636.00	725.3	655.6	2062	2087	160.29	323.72	514.15	2598
638.00	727.9	658.2	2063	2089	159.67	322.63	512.64	2555
640.00	730.9	661.2	2066	2092	158.81	321.09	510.46	2982
642.00	733.5	663.8	2068	2094	158.16	319.96	508.89	2611
644.00	736.1	666.4	2069	2096	157.53	318.86	507.35	2590
646.00	738.9	669.2	2072	2098	156.79	317.54	505.48	2819
648.00	741.7	672.0	2074	2101	156.04	316.22	503.62	2822
650.00	744.5	674.8	2076	2103	155.32	314.92	501.80	2809
652.00	747.3	677.6	2078	2106	154.62	313.69	500.06	2761
654.00	750.2	680.5	2081	2109	153.86	312.33	498.14	2890
656.00	753.1	683.4	2084	2112	153.07	310.91	496.11	2972
658.00	756.3	686.6	2087	2115	152.20	309.34	493.86	3114
660.00	759.4	689.7	2090	2119	151.33	307.77	491.62	3124
662.00	762.4	692.7	2093	2122	150.54	306.35	489.60	3001
664.00	765.2	695.5	2095	2125	149.84	305.09	487.80	2861
666.00	768.2	698.5	2098	2128	149.10	303.76	485.91	2939
668.00	771.0	701.3	2100	2131	148.41	302.53	484.16	2851
670.00	774.1	704.4	2103	2134	147.64	301.13	482.16	3025
672.00	777.0	707.3	2105	2137	146.92	299.83	480.29	2950

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 NORMAL VELOCITY M/S
674.00	779.8	710.1	2107	2139	146.28	298.67	478.65	2800
676.00	782.5	712.8	2109	2141	145.68	297.60	477.14	2713
678.00	785.1	715.4	2110	2142	145.15	296.65	475.80	2593
680.00	787.7	718.0	2112	2144	144.63	295.73	474.50	2555
682.00	790.1	720.4	2112	2144	144.19	294.94	473.41	2391
684.00	792.7	723.0	2114	2146	143.65	293.97	472.04	2628
686.00	795.5	725.8	2116	2148	143.03	292.86	470.45	2808
688.00	798.3	728.6	2118	2150	142.42	291.74	468.86	2813
690.00	801.0	731.3	2120	2152	141.86	290.75	467.45	2687
692.00	803.7	734.0	2121	2154	141.29	289.71	465.97	2743
694.00	806.5	736.8	2123	2156	140.71	288.66	464.47	2770
696.00	809.3	739.6	2125	2158	140.14	287.62	462.99	2755
698.00	812.0	742.3	2127	2160	139.56	286.57	461.49	2788
700.00	814.7	745.0	2129	2162	139.03	285.61	460.11	2690
702.00	817.5	747.8	2130	2164	138.47	284.60	458.67	2752
704.00	820.2	750.5	2132	2165	137.94	283.64	457.31	2694
706.00	822.8	753.1	2133	2167	137.44	282.74	456.02	2640
708.00	825.5	755.8	2135	2168	136.95	281.83	454.73	2640
710.00	828.1	758.4	2136	2170	136.46	280.95	453.46	2631
712.00	830.7	761.0	2138	2171	135.99	280.10	452.26	2584
714.00	833.4	763.7	2139	2173	135.45	279.12	450.86	2757
716.00	836.2	766.5	2141	2175	134.91	278.13	449.43	2790
718.00	839.1	769.4	2143	2177	134.34	277.09	447.93	2856
720.00	841.8	772.1	2145	2179	133.82	276.14	446.56	2753

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 NORMAL VELOCITY M/S
722.00	845.0	775.3	2148	2182	133.12	274.83	444.65	3195
724.00	848.0	778.3	2150	2185	132.51	273.69	443.00	3006
726.00	851.1	781.4	2153	2188	131.88	272.52	441.29	3062
728.00	854.0	784.3	2155	2190	131.30	271.45	439.75	2942
730.00	857.1	787.4	2157	2193	130.67	270.28	438.03	3092
732.00	860.2	790.5	2160	2196	130.06	269.15	436.38	3042
734.00	863.3	793.6	2162	2199	129.44	268.00	434.70	3088
736.00	866.5	796.8	2165	2202	128.78	266.76	432.88	3203
738.00	869.7	800.0	2168	2206	128.11	265.51	431.05	3225
740.00	872.9	803.2	2171	2209	127.47	264.30	429.27	3195
742.00	876.1	806.4	2174	2213	126.81	263.06	427.45	3249
744.00	879.3	809.6	2176	2216	126.18	261.88	425.71	3190
746.00	882.5	812.8	2179	2219	125.56	260.72	424.00	3174
748.00	885.6	815.9	2181	2222	124.98	259.64	422.42	3079
750.00	888.7	819.0	2184	2224	124.41	258.56	420.83	3096
752.00	891.8	822.1	2186	2227	123.84	257.49	419.25	3099
754.00	894.9	825.2	2189	2230	123.24	256.37	417.61	3167
756.00	898.0	828.3	2191	2233	122.70	255.36	416.12	3041
758.00	900.9	831.2	2193	2235	122.20	254.41	414.73	2956
760.00	903.7	834.0	2195	2237	121.75	253.58	413.52	2798
762.00	906.6	836.9	2197	2239	121.29	252.72	412.27	2841
764.00	909.5	839.8	2199	2241	120.80	251.79	410.89	2972
766.00	912.3	842.6	2200	2242	120.36	250.97	409.70	2798
768.00	915.3	845.6	2202	2244	119.88	250.07	408.38	2931

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 NORMAL VELOCITY M/S
770.00	918.0	848.3	2203	2246	119.48	249.33	407.29	2702
772.00	920.6	850.9	2205	2247	119.09	248.60	406.24	2673
774.00	923.4	853.7	2206	2248	118.70	247.86	405.15	2716
776.00	926.0	856.3	2207	2250	118.31	247.14	404.10	2677
778.00	928.6	858.9	2208	2250	117.97	246.50	403.18	2540
780.00	931.3	861.6	2209	2252	117.58	245.78	402.13	2697
782.00	933.9	864.2	2210	2253	117.21	245.09	401.12	2654
784.00	936.6	866.9	2212	2254	116.83	244.37	400.06	2706
786.00	939.4	869.7	2213	2255	116.44	243.64	398.99	2733
788.00	942.0	872.3	2214	2256	116.07	242.94	397.98	2674
790.00	944.9	875.2	2216	2258	115.65	242.16	396.82	2843
792.00	947.7	878.0	2217	2260	115.26	241.40	395.71	2791
794.00	950.5	880.8	2219	2261	114.85	240.64	394.58	2820
796.00	953.2	883.5	2220	2263	114.47	239.92	393.53	2746
798.00	955.9	886.2	2221	2264	114.11	239.24	392.53	2683
800.00	958.6	888.9	2222	2265	113.76	238.58	391.56	2669
802.00	961.2	891.5	2223	2266	113.42	237.94	390.62	2628
804.00	963.9	894.2	2224	2267	113.06	237.26	389.63	2694
806.00	966.6	896.9	2226	2268	112.70	236.58	388.63	2711
808.00	969.4	899.7	2227	2269	112.33	235.89	387.61	2745
810.00	972.2	902.5	2228	2271	111.94	235.14	386.49	2860
812.00	975.0	905.3	2230	2272	111.57	234.45	385.47	2754
814.00	977.8	908.1	2231	2274	111.20	233.74	384.42	2792
816.00	980.5	910.8	2232	2275	110.85	233.08	383.45	2714

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
818.00	983.3	913.6	2234	2276	110.49	232.39	382.43	2766
820.00	986.0	916.3	2235	2278	110.15	231.74	381.47	2703
822.00	988.7	919.0	2236	2279	109.80	231.07	380.48	2753
824.00	991.5	921.8	2237	2280	109.44	230.39	379.47	2778
826.00	994.5	924.8	2239	2282	109.03	229.61	378.30	2979
828.00	997.4	927.7	2241	2284	108.66	228.88	377.22	2877
830.00	1000.2	930.5	2242	2285	108.28	228.16	376.14	2884
832.00	1003.0	933.3	2243	2287	107.94	227.51	375.17	2751
834.00	1005.8	936.1	2245	2288	107.59	226.85	374.19	2779
836.00	1008.5	938.8	2246	2289	107.25	226.20	373.22	2766
838.00	1011.4	941.7	2247	2291	106.89	225.51	372.19	2850
840.00	1014.2	944.5	2249	2292	106.53	224.82	371.16	2859
842.00	1017.0	947.3	2250	2293	106.21	224.20	370.24	2725
844.00	1019.7	950.0	2251	2295	105.88	223.57	369.30	2758
846.00	1022.7	953.0	2253	2296	105.51	222.85	368.22	2933
848.00	1025.6	955.9	2254	2298	105.14	222.14	367.15	2937
850.00	1028.5	958.8	2256	2299	104.79	221.46	366.14	2867
852.00	1031.3	961.6	2257	2301	104.44	220.79	365.13	2875
854.00	1034.2	964.5	2259	2303	104.09	220.10	364.10	2904
856.00	1037.2	967.5	2261	2304	103.71	219.38	363.01	2989
858.00	1040.2	970.5	2262	2306	103.34	218.65	361.92	2993
860.00	1043.2	973.5	2264	2308	102.97	217.94	360.84	2989
862.00	1046.2	976.5	2266	2310	102.62	217.25	359.80	2943
864.00	1049.1	979.4	2267	2311	102.27	216.57	358.78	2933

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
866.00	1052.0	982.3	2269	2313	101.93	215.92	357.80	2887
868.00	1055.0	985.3	2270	2315	101.57	215.22	356.74	2991
870.00	1057.8	988.1	2271	2316	101.26	214.62	355.84	2799
872.00	1060.6	990.9	2273	2317	100.94	214.01	354.92	2829
874.00	1063.5	993.8	2274	2319	100.61	213.37	353.95	2894
876.00	1066.2	996.5	2275	2320	100.32	212.80	353.10	2749
878.00	1069.1	999.4	2277	2321	100.00	212.18	352.17	2855
880.00	1071.9	1002.2	2278	2322	99.70	211.60	351.28	2802
882.00	1074.8	1005.1	2279	2324	99.37	210.96	350.31	2924
884.00	1077.8	1008.1	2281	2325	99.04	210.31	349.34	2936
886.00	1080.6	1010.9	2282	2327	98.74	209.71	348.43	2857
888.00	1083.7	1014.0	2284	2329	98.39	209.03	347.39	3045
890.00	1086.7	1017.0	2285	2331	98.04	208.35	346.36	3040
892.00	1089.6	1019.9	2287	2332	97.73	207.75	345.45	2881
894.00	1092.6	1022.9	2288	2334	97.39	207.09	344.44	3020
896.00	1095.5	1025.8	2290	2335	97.08	206.48	343.52	2911
898.00	1098.5	1028.8	2291	2337	96.76	205.85	342.56	2968
900.00	1101.4	1031.7	2293	2338	96.45	205.24	341.64	2925
902.00	1104.3	1034.6	2294	2340	96.14	204.63	340.70	2945
904.00	1107.2	1037.5	2295	2341	95.84	204.04	339.81	2896
906.00	1110.1	1040.4	2297	2342	95.54	203.46	338.93	2883
908.00	1113.1	1043.4	2298	2344	95.23	202.85	338.00	2967
910.00	1115.9	1046.2	2299	2345	94.96	202.31	337.18	2804
912.00	1118.7	1049.0	2300	2346	94.69	201.79	336.39	2769

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/CEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL NORMAL VELOCITY M/S
914.00	1121.6	1051.9	2302	2347	94.40	201.22	335.52	2889
916.00	1124.4	1054.7	2303	2349	94.13	200.69	334.71	2820
918.00	1127.2	1057.5	2304	2350	93.85	200.13	333.86	2873
920.00	1130.1	1060.4	2305	2351	93.58	199.60	333.05	2815
922.00	1132.9	1063.2	2306	2352	93.31	199.08	332.27	2791
924.00	1135.7	1066.0	2307	2353	93.04	198.54	331.44	2863
926.00	1138.5	1068.8	2308	2354	92.77	198.02	330.64	2814
928.00	1141.4	1071.7	2310	2356	92.49	197.46	329.79	2908
930.00	1144.4	1074.7	2311	2357	92.20	196.89	328.92	2954
932.00	1147.3	1077.6	2312	2358	91.92	196.33	328.06	2930
934.00	1150.2	1080.5	2314	2360	91.65	195.81	327.26	2846
936.00	1153.0	1083.3	2315	2361	91.38	195.28	326.45	2877
938.00	1155.8	1086.1	2316	2362	91.14	194.79	325.71	2772
940.00	1158.7	1089.0	2317	2363	90.86	194.25	324.88	2911
942.00	1161.6	1091.9	2318	2364	90.59	193.72	324.06	2904
944.00	1164.6	1094.9	2320	2366	90.32	193.18	323.23	2926
946.00	1167.6	1097.9	2321	2367	90.03	192.60	322.33	3038
948.00	1170.6	1100.9	2323	2369	89.74	192.02	321.45	3035
950.00	1173.6	1103.9	2324	2370	89.45	191.45	320.57	3017
952.00	1176.9	1107.2	2326	2373	89.13	190.81	319.57	3218
954.00	1179.9	1110.2	2327	2374	88.85	190.26	318.72	3007
956.00	1182.8	1113.1	2329	2375	88.60	189.75	317.94	2889
958.00	1185.7	1116.0	2330	2376	88.34	189.24	317.15	2902
960.00	1188.6	1118.9	2331	2378	88.08	188.72	316.35	2937

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 NORMAL VELOCITY M/S
962.00	1191.6	1121.9	2332	2379	87.81	188.19	315.54	2971
964.00	1194.4	1124.7	2333	2380	87.58	187.72	314.81	2819
966.00	1197.3	1127.6	2335	2381	87.33	187.23	314.05	2879
968.00	1200.1	1130.4	2336	2382	87.09	186.76	313.33	2837
970.00	1203.0	1133.3	2337	2384	86.84	186.26	312.57	2895
972.00	1205.9	1136.2	2338	2385	86.60	185.78	311.82	2886
974.00	1208.8	1139.1	2339	2386	86.35	185.28	311.05	2923
976.00	1211.7	1142.0	2340	2387	86.10	184.79	310.29	2921
978.00	1214.7	1145.0	2341	2388	85.85	184.29	309.52	2946
980.00	1217.7	1148.0	2343	2390	85.60	183.78	308.72	2986
982.00	1220.7	1151.0	2344	2391	85.35	183.27	307.93	2988
984.00	1223.6	1153.9	2345	2392	85.10	182.78	307.17	2948
986.00	1226.6	1156.9	2347	2394	84.84	182.27	306.38	3008
988.00	1229.8	1160.1	2348	2396	84.56	181.71	305.50	3153
990.00	1232.9	1163.2	2350	2397	84.30	181.16	304.66	3109
992.00	1236.0	1166.3	2351	2399	84.03	180.62	303.82	3118
994.00	1239.0	1169.3	2353	2400	83.78	180.12	303.03	3019
996.00	1242.1	1172.4	2354	2402	83.51	179.58	302.20	3118
998.00	1245.2	1175.5	2356	2403	83.26	179.08	301.41	3039
1000.00	1248.1	1178.4	2357	2405	83.03	178.61	300.68	2942
1002.00	1251.0	1181.3	2358	2406	82.80	178.16	299.98	2911
1004.00	1253.9	1184.2	2359	2407	82.58	177.72	299.30	2849
1006.00	1256.7	1187.0	2360	2408	82.37	177.29	298.63	2853
1008.00	1259.7	1190.0	2361	2409	82.13	176.81	297.88	3016

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
1010.00	1262.7	1193.0	2362	2410	81.89	176.33	297.13	2997
1012.00	1265.7	1196.0	2364	2412	81.65	175.85	296.39	3014
1014.00	1268.8	1199.1	2365	2413	81.41	175.37	295.63	3035
1016.00	1271.8	1202.1	2366	2414	81.18	174.90	294.89	3016
1018.00	1275.1	1205.4	2368	2416	80.91	174.34	294.02	3260
1020.00	1278.1	1208.4	2369	2418	80.67	173.88	293.29	3008
1022.00	1281.8	1212.1	2372	2421	80.33	173.16	292.17	3699
1024.00	1284.8	1215.1	2373	2422	80.10	172.71	291.46	2991
1026.00	1287.8	1218.1	2374	2423	79.88	172.26	290.74	2998
1028.00	1290.7	1221.0	2376	2425	79.65	171.81	290.04	2991
1030.00	1293.7	1224.0	2377	2426	79.43	171.36	289.34	3001
1032.00	1297.0	1227.3	2378	2428	79.17	170.83	288.51	3238
1034.00	1299.9	1230.2	2380	2429	78.96	170.40	287.84	2943
1036.00	1302.9	1233.2	2381	2430	78.74	169.95	287.13	3020
1038.00	1305.9	1236.2	2382	2431	78.52	169.52	286.45	2994
1040.00	1309.0	1239.3	2383	2433	78.30	169.07	285.74	3037
1042.00	1311.9	1242.2	2384	2434	78.09	168.65	285.08	2944
1044.00	1314.9	1245.2	2385	2435	77.88	168.22	284.41	2985
1046.00	1318.0	1248.3	2387	2436	77.66	167.76	283.69	3076
1048.00	1321.0	1251.3	2388	2437	77.44	167.33	283.01	3009
1050.00	1324.0	1254.3	2389	2439	77.24	166.91	282.35	2970
1052.00	1327.0	1257.3	2390	2440	77.03	166.48	281.67	3020
1054.00	1329.9	1260.2	2391	2441	76.82	166.07	281.03	2963
1056.00	1332.7	1263.0	2392	2442	76.64	165.71	280.46	2792

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
1058.00	1336.3	1266.6	2394	2444	76.35	165.11	279.51	3560
1060.00	1339.4	1269.7	2396	2446	76.13	164.66	278.80	3105
1062.00	1342.5	1272.8	2397	2447	75.92	164.23	278.11	3070
1064.00	1345.5	1275.8	2398	2448	75.71	163.81	277.46	3014
1066.00	1348.5	1278.8	2399	2449	75.51	163.39	276.80	3019
1068.00	1351.6	1281.9	2401	2451	75.29	162.95	276.11	3111
1070.00	1354.7	1285.0	2402	2452	75.08	162.51	275.41	3114
1072.00	1357.8	1288.1	2403	2453	74.88	162.10	274.75	3044
1074.00	1360.9	1291.2	2404	2455	74.67	161.67	274.08	3083
1076.00	1364.0	1294.3	2406	2456	74.46	161.24	273.40	3104
1078.00	1367.1	1297.4	2407	2457	74.25	160.81	272.72	3122
1080.00	1370.2	1300.5	2408	2459	74.04	160.39	272.04	3111
1082.00	1373.3	1303.6	2410	2460	73.84	159.98	271.39	3058
1084.00	1376.8	1307.1	2412	2463	73.57	159.42	270.51	3544
1086.00	1379.9	1310.2	2413	2464	73.36	159.00	269.84	3120
1088.00	1383.0	1313.3	2414	2465	73.16	158.58	269.17	3124
1090.00	1386.2	1316.5	2416	2467	72.95	158.15	268.49	3152
1092.00	1389.2	1319.5	2417	2468	72.75	157.76	267.86	3054
1094.00	1392.3	1322.6	2418	2469	72.56	157.36	267.23	3070
1096.00	1395.5	1325.8	2419	2471	72.35	156.92	266.53	3217
1098.00	1398.6	1328.9	2421	2472	72.15	156.52	265.90	3073
1100.00	1401.7	1332.0	2422	2473	71.96	156.13	265.27	3082
1102.00	1404.7	1335.0	2423	2474	71.77	155.74	264.66	3031
1104.00	1407.8	1338.1	2424	2475	71.59	155.36	264.05	3051

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
1106.00	1410.8	1341.1	2425	2477	71.40	154.98	263.45	3023
1108.00	1413.9	1344.2	2426	2478	71.21	154.58	262.81	3146
1110.00	1417.0	1347.3	2428	2479	71.02	154.20	262.20	3063
1112.00	1420.1	1350.4	2429	2480	70.83	153.80	261.56	3130
1114.00	1423.2	1353.5	2430	2482	70.64	153.41	260.95	3079
1116.00	1426.3	1356.6	2431	2483	70.46	153.04	260.36	3043
1118.00	1429.3	1359.6	2432	2484	70.28	152.67	259.77	3041
1120.00	1432.4	1362.7	2433	2485	70.10	152.30	259.18	3070
1122.00	1435.4	1365.7	2434	2486	69.92	151.93	258.59	3040
1124.00	1438.6	1368.9	2436	2488	69.72	151.53	257.95	3187
1126.00	1441.9	1372.2	2437	2489	69.51	151.10	257.25	3329
1128.00	1445.0	1375.3	2439	2491	69.33	150.72	256.64	3121
1130.00	1448.1	1378.4	2440	2492	69.15	150.34	256.05	3098
1132.00	1451.2	1381.5	2441	2493	68.97	149.97	255.45	3105
1134.00	1454.4	1384.7	2442	2494	68.78	149.59	254.84	3142
1136.00	1457.4	1387.7	2443	2495	68.61	149.24	254.28	3034
1138.00	1460.4	1390.7	2444	2496	68.44	148.89	253.73	3029
1140.00	1463.5	1393.8	2445	2497	68.28	148.54	253.17	3026
1142.00	1466.4	1396.7	2446	2498	68.12	148.22	252.65	2955
1144.00	1469.5	1399.8	2447	2499	67.95	147.86	252.09	3061
1146.00	1472.6	1402.9	2448	2500	67.78	147.51	251.52	3073
1148.00	1475.6	1405.9	2449	2501	67.62	147.18	250.99	2991
1150.00	1478.4	1408.7	2450	2502	67.47	146.87	250.50	2889
1152.00	1481.4	1411.7	2451	2503	67.31	146.55	249.98	2963

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
1154.00	1484.7	1415.0	2452	2505	67.12	146.16	249.35	3257
1156.00	1487.9	1418.2	2454	2506	66.93	145.76	248.72	3284
1158.00	1491.2	1421.5	2455	2508	66.75	145.38	248.10	3243
1160.00	1494.4	1424.7	2456	2509	66.57	145.01	247.50	3201
1162.00	1497.6	1427.9	2458	2510	66.39	144.64	246.91	3201
1164.00	1500.8	1431.1	2459	2512	66.21	144.26	246.30	3245
1166.00	1504.2	1434.5	2461	2513	66.01	143.86	245.65	3345
1168.00	1507.4	1437.7	2462	2515	65.84	143.50	245.08	3176
1170.00	1510.6	1440.9	2463	2516	65.67	143.14	244.49	3196
1172.00	1513.7	1444.0	2464	2517	65.50	142.80	243.95	3101
1174.00	1516.7	1447.0	2465	2518	65.35	142.48	243.43	3047
1176.00	1519.9	1450.2	2466	2519	65.18	142.12	242.86	3195
1178.00	1523.2	1453.5	2468	2521	65.00	141.75	242.25	3292
1180.00	1526.5	1456.8	2469	2522	64.82	141.37	241.64	3305
1182.00	1529.7	1460.0	2470	2524	64.64	141.01	241.05	3251
1184.00	1533.0	1463.3	2472	2525	64.47	140.64	240.46	3265
1186.00	1536.3	1466.6	2473	2527	64.29	140.28	239.88	3273
1188.00	1539.5	1469.8	2474	2528	64.12	139.92	239.30	3253
1190.00	1542.8	1473.1	2476	2530	63.94	139.56	238.71	3285
1192.00	1546.2	1476.5	2477	2531	63.76	139.18	238.10	3350
1194.00	1549.2	1479.5	2478	2532	63.62	138.87	237.60	3053
1196.00	1552.2	1482.5	2479	2533	63.48	138.59	237.14	2945
1198.00	1555.1	1485.4	2480	2534	63.35	138.31	236.70	2898
1200.00	1558.1	1488.4	2481	2534	63.20	138.01	236.21	3027

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
1202.00	1561.2	1491.5	2482	2535	63.05	137.70	235.72	3076
1204.00	1564.2	1494.5	2483	2536	62.91	137.41	235.25	2996
1206.00	1567.1	1497.4	2483	2537	62.78	137.12	234.78	2981
1208.00	1570.2	1500.5	2484	2538	62.64	136.83	234.31	3004
1210.00	1573.2	1503.5	2485	2539	62.49	136.54	233.84	3032
1212.00	1576.2	1506.5	2486	2540	62.36	136.25	233.38	2990
1214.00	1579.1	1509.4	2487	2540	62.22	135.97	232.92	2969
1216.00	1582.2	1512.5	2488	2541	62.08	135.68	232.45	3051
1218.00	1585.3	1515.6	2489	2542	61.94	135.38	231.96	3097
1220.00	1588.4	1518.7	2490	2543	61.79	135.08	231.48	3077
1222.00	1591.3	1521.6	2490	2544	61.67	134.81	231.04	2930
1224.00	1594.3	1524.6	2491	2545	61.53	134.54	230.60	2973
1226.00	1597.3	1527.6	2492	2546	61.40	134.25	230.14	3015
1228.00	1600.3	1530.6	2493	2546	61.27	133.98	229.70	2976
1230.00	1603.2	1533.5	2494	2547	61.14	133.71	229.26	2959
1232.00	1606.2	1536.5	2494	2548	61.01	133.44	228.82	2983
1234.00	1609.2	1539.5	2495	2549	60.88	133.17	228.38	2989
1236.00	1612.1	1542.4	2496	2549	60.75	132.91	227.96	2941
1238.00	1615.1	1545.4	2497	2550	60.62	132.64	227.53	2971
1240.00	1618.1	1548.4	2497	2551	60.49	132.36	227.08	3011
1242.00	1621.2	1551.5	2498	2552	60.36	132.08	226.63	3055
1244.00	1624.2	1554.5	2499	2553	60.23	131.81	226.18	3019
1246.00	1627.2	1557.5	2500	2553	60.10	131.55	225.76	2977
1248.00	1630.2	1560.5	2501	2554	59.98	131.28	225.33	2983

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
1250.00	1633.1	1563.4	2501	2555	59.85	131.02	224.91	2972
1252.00	1636.2	1566.5	2502	2556	59.72	130.75	224.46	3035
1254.00	1639.2	1569.5	2503	2556	59.59	130.48	224.03	3021
1256.00	1642.2	1572.5	2504	2557	59.47	130.22	223.60	2994
1258.00	1645.1	1575.4	2505	2558	59.35	129.97	223.20	2943
1260.00	1648.1	1578.4	2505	2559	59.23	129.71	222.78	2976
1262.00	1651.1	1581.4	2506	2559	59.10	129.46	222.37	2971
1264.00	1654.1	1584.4	2507	2560	58.98	129.20	221.94	3006
1266.00	1657.0	1587.3	2508	2561	58.86	128.95	221.53	2973
1268.00	1660.0	1590.3	2508	2561	58.74	128.69	221.12	2991
1270.00	1663.1	1593.4	2509	2562	58.61	128.43	220.69	3024
1272.00	1666.1	1596.4	2510	2563	58.49	128.17	220.27	3025
1274.00	1669.1	1599.4	2511	2564	58.37	127.92	219.86	2986
1276.00	1672.2	1602.5	2512	2565	58.24	127.65	219.42	3089
1278.00	1675.2	1605.5	2512	2565	58.12	127.40	219.01	3020
1280.00	1678.2	1608.5	2513	2566	58.00	127.14	218.59	3027
1282.00	1681.3	1611.6	2514	2567	57.87	126.88	218.16	3100
1284.00	1684.3	1614.6	2515	2568	57.75	126.62	217.74	3037
1286.00	1687.4	1617.7	2516	2569	57.63	126.37	217.33	3010
1288.00	1690.4	1620.7	2517	2570	57.51	126.11	216.91	3086
1290.00	1693.5	1623.8	2517	2570	57.39	125.86	216.49	3047
1292.00	1696.5	1626.8	2518	2571	57.27	125.61	216.09	3022
1294.00	1699.4	1629.7	2519	2572	57.16	125.37	215.70	2937
1296.00	1702.5	1632.8	2520	2573	57.04	125.12	215.29	3069

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 NORMAL VELOCITY M/S
1298.00	1705.5	1635.8	2520	2573	56.92	124.88	214.90	2972
1300.00	1708.4	1638.7	2521	2574	56.81	124.65	214.52	2937
1302.00	1711.5	1641.8	2522	2575	56.69	124.40	214.11	3074
1304.00	1714.6	1644.9	2523	2576	56.57	124.14	213.68	3133
1306.00	1718.1	1648.4	2524	2577	56.42	123.81	213.14	3506
1308.00	1721.7	1652.0	2526	2579	56.26	123.48	212.60	3531
1310.00	1725.3	1655.6	2528	2581	56.09	123.13	212.03	3622
1312.00	1729.0	1659.3	2529	2583	55.93	122.77	211.44	3678
1314.00	1732.3	1662.6	2531	2584	55.79	122.48	210.96	3340
1316.00	1735.5	1665.8	2532	2585	55.66	122.21	210.52	3220
1318.00	1738.6	1668.9	2532	2586	55.55	121.97	210.12	3083
1320.00	1741.7	1672.0	2533	2587	55.43	121.73	209.73	3050
1322.00	1744.7	1675.0	2534	2588	55.32	121.50	209.35	3008
1324.00	1747.6	1677.9	2535	2588	55.22	121.28	208.99	2944
1326.00	1750.8	1681.1	2536	2589	55.10	121.02	208.57	3174
1328.00	1754.1	1684.4	2537	2591	54.97	120.74	208.11	3328
1330.00	1757.5	1687.8	2538	2592	54.83	120.45	207.62	3423
1332.00	1761.0	1691.3	2539	2594	54.68	120.15	207.12	3462
1334.00	1764.4	1694.7	2541	2595	54.55	119.86	206.65	3404
1336.00	1767.8	1698.1	2542	2596	54.41	119.57	206.18	3371
1338.00	1771.8	1702.1	2544	2599	54.23	119.18	205.52	4000
1340.00	1775.8	1706.1	2546	2602	54.04	118.77	204.85	4025
1342.00	1779.9	1710.2	2549	2605	53.84	118.36	204.16	4109
1344.00	1783.9	1714.2	2551	2607	53.66	117.97	203.52	3990

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
1346.00	1787.6	1717.9	2553	2609	53.50	117.63	202.96	3751
1348.00	1791.7	1722.0	2555	2612	53.31	117.23	202.29	4075
1350.00	1795.8	1726.1	2557	2615	53.13	116.84	201.64	4036
1352.00	1799.5	1729.8	2559	2617	52.97	116.50	201.08	3775
1354.00	1803.4	1733.7	2561	2619	52.81	116.15	200.50	3836
1356.00	1807.1	1737.4	2562	2621	52.66	115.83	199.97	3691
1358.00	1810.8	1741.1	2564	2623	52.51	115.51	199.44	3727
1360.00	1814.5	1744.8	2566	2625	52.35	115.18	198.90	3738
1362.00	1818.2	1748.5	2568	2627	52.20	114.86	198.37	3722
1364.00	1822.0	1752.3	2569	2629	52.05	114.54	197.83	3757
1366.00	1825.8	1756.1	2571	2631	51.89	114.20	197.27	3836
1368.00	1830.0	1760.3	2573	2634	51.71	113.82	196.63	4116
1370.00	1834.2	1764.5	2576	2637	51.52	113.41	195.95	4227
1372.00	1838.4	1768.7	2578	2640	51.34	113.02	195.30	4191
1374.00	1842.6	1772.9	2581	2643	51.16	112.63	194.65	4177
1376.00	1846.4	1776.7	2582	2645	51.00	112.30	194.10	3874
1378.00	1850.5	1780.8	2585	2648	50.83	111.93	193.48	4108
1380.00	1854.7	1785.0	2587	2650	50.65	111.55	192.85	4140
1382.00	1858.5	1788.8	2589	2652	50.50	111.23	192.31	3874
1384.00	1862.3	1792.6	2590	2654	50.36	110.92	191.81	3747
1386.00	1866.2	1796.5	2592	2657	50.21	110.60	191.28	3862
1388.00	1870.0	1800.3	2594	2659	50.06	110.28	190.74	3894
1390.00	1874.0	1804.3	2596	2661	49.90	109.95	190.19	3944
1392.00	1877.8	1808.1	2598	2663	49.76	109.64	189.66	3856

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
1394.00	1881.8	1812.1	2600	2665	49.61	109.32	189.13	3906
1396.00	1885.9	1816.2	2602	2668	49.44	108.97	188.55	4099
1398.00	1889.9	1820.2	2604	2670	49.29	108.63	187.98	4040
1400.00	1893.8	1824.1	2606	2673	49.14	108.31	187.45	3923
1402.00	1897.8	1828.1	2608	2675	48.99	107.99	186.92	3947
1404.00	1901.8	1832.1	2610	2677	48.83	107.65	186.36	4074
1406.00	1905.6	1835.9	2611	2679	48.70	107.37	185.89	3736
1408.00	1909.5	1839.8	2613	2681	48.56	107.06	185.37	3923
1410.00	1913.4	1843.7	2615	2684	48.41	106.75	184.85	3930
1412.00	1917.4	1847.7	2617	2686	48.26	106.43	184.32	4010
1414.00	1921.5	1851.8	2619	2688	48.11	106.11	183.78	4050
1416.00	1925.4	1855.7	2621	2691	47.97	105.80	183.26	3964
1418.00	1929.5	1859.8	2623	2693	47.82	105.48	182.72	4053
1420.00	1933.6	1863.9	2625	2695	47.67	105.15	182.18	4092
1422.00	1937.6	1867.9	2627	2698	47.52	104.85	181.66	3993
1424.00	1941.6	1871.9	2629	2700	47.38	104.53	181.14	4039
1426.00	1945.7	1876.0	2631	2702	47.23	104.22	180.62	4033
1428.00	1949.6	1879.9	2633	2705	47.09	103.93	180.12	3960
1430.00	1953.5	1883.8	2635	2707	46.96	103.64	179.64	3881
1432.00	1957.4	1887.7	2636	2709	46.83	103.35	179.16	3922
1434.00	1961.4	1891.7	2638	2711	46.69	103.06	178.67	3950
1436.00	1965.3	1895.6	2640	2713	46.56	102.77	178.19	3967
1438.00	1969.3	1899.6	2642	2715	46.42	102.48	177.70	3977
1440.00	1973.3	1903.6	2644	2717	46.28	102.18	177.20	4029

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
1442.00	1977.4	1907.7	2646	2720	46.14	101.88	176.69	4056
1444.00	1981.3	1911.6	2648	2722	46.01	101.60	176.22	3935
1446.00	1985.3	1915.6	2650	2724	45.88	101.31	175.74	3981
1448.00	1989.4	1919.7	2651	2726	45.74	101.02	175.25	4059
1450.00	1993.4	1923.7	2653	2728	45.60	100.73	174.76	4052
1452.00	1997.4	1927.7	2655	2731	45.47	100.45	174.29	3980
1454.00	2001.4	1931.7	2657	2733	45.35	100.17	173.83	3943
1456.00	2005.1	1935.4	2658	2734	45.24	99.93	173.42	3703
1458.00	2006.9	1937.2	2657	2733	45.21	99.88	173.34	1820

PE604710

This is an enclosure indicator page.
The enclosure PE604710 is enclosed within the
container PE906719 at this location in this
document.

The enclosure PE604710 has the following characteristics:

ITEM_BARCODE = PE604710
CONTAINER_BARCODE = PE906719
 NAME = Vertical Seismic Profile
 BASIN = OTWAY
 PERMIT = PPL1
 TYPE = WELL
 SUBTYPE = VELOCITY_CHART
DESCRIPTION = Vertical Seismic Profile, Plot 1,
 Langley-1
REMARKS =
DATE_CREATED = 15/06/94
DATE_RECEIVED = 31/01/96
 W_NO = W1099
 WELL_NAME = LANGLEY-1
CONTRACTOR = SCHLUMBERGER
CLIENT_OP_CO = GFE RESOURCES LTD

(Inserted by DNRE - Vic Govt Mines Dept)

PE604711

This is an enclosure indicator page.
The enclosure PE604711 is enclosed within the
container PE906719 at this location in this
document.

The enclosure PE604711 has the following characteristics:

- ITEM_BARCODE = PE604711
- CONTAINER_BARCODE = PE906719
- NAME = Geogram, 25 Hz
- BASIN = OTWAY
- PERMIT = PPL1
- TYPE = WELL
- SUBTYPE = SYNTH_SEISMOGRAPH
- DESCRIPTION = Geogram, Synthetic Seismogram, 25 Hz
- REMARKS =
- DATE_CREATED = 15/06/94
- DATE_RECEIVED = 31/01/96
- W_NO = W1099
- WELL_NAME = LANGLEY-1
- CONTRACTOR = SCHLUMBERGER
- CLIENT_OP_CO = GFE RESOURCES LTD

(Inserted by DNRE - Vic Govt Mines Dept)

PE604712

This is an enclosure indicator page.
The enclosure PE604712 is enclosed within the
container PE906719 at this location in this
document.

The enclosure PE604712 has the following characteristics:

ITEM_BARCODE = PE604712
CONTAINER_BARCODE = PE906719
 NAME = Geogram, 35 Hz
 BASIN = OTWAY
 PERMIT = PPL1
 TYPE = WELL
 SUBTYPE = SYNTH_SEISMOGRAPH
 DESCRIPTION = Geogram, Synthetic Seismogram, 35 Hz
 REMARKS =
 DATE_CREATED = 15/06/94
 DATE_RECEIVED = 31/01/96
 W_NO = W1099
 WELL_NAME = LANGLEY-1
 CONTRACTOR = SCHLUMBERGER
 CLIENT_OP_CO = GFE RESOURCES LTD

(Inserted by DNRE - Vic Govt Mines Dept)

PE604713

This is an enclosure indicator page.
The enclosure PE604713 is enclosed within the
container PE906719 at this location in this
document.

The enclosure PE604713 has the following characteristics:

- ITEM_BARCODE = PE604713
- CONTAINER_BARCODE = PE906719
 - NAME = Geogram, 45 Hz
 - BASIN = OTWAY
 - PERMIT = PPL1
 - TYPE = WELL
 - SUBTYPE = SYNTH_SEISMOGRAPH
- DESCRIPTION = Geogram, Synthetic Seismogram, 45 Hz
- REMARKS =
- DATE_CREATED = 15/06/94
- DATE_RECEIVED = 31/01/96
 - W_NO = W1099
 - WELL_NAME = LANGLEY-1
 - CONTRACTOR = SCHLUMBERGER
 - CLIENT_OP_CO = GFE RESOURCES LTD

(Inserted by DNRE - Vic Govt Mines Dept)

PE604714

This is an enclosure indicator page.
The enclosure PE604714 is enclosed within the
container PE906719 at this location in this
document.

The enclosure PE604714 has the following characteristics:

- ITEM_BARCODE = PE604714
- CONTAINER_BARCODE = PE906719
- NAME = Drift Corrected Sonic
- BASIN = OTWAY
- PERMIT = PPL1
- TYPE = WELL
- SUBTYPE = WELL_LOG
- DESCRIPTION = Drift Corrected Sonic, Langley-1
- REMARKS =
- DATE_CREATED = 15/06/94
- DATE_RECEIVED = 31/01/96
- W_NO = W1099
- WELL_NAME = LANGLEY-1
- CONTRACTOR = SCHLUMBERGER
- CLIENT_OP_CO = GFE RESOURCES LTD

(Inserted by DNRE - Vic Govt Mines Dept)

PE604715

This is an enclosure indicator page.
The enclosure PE604715 is enclosed within the
container PE906719 at this location in this
document.

The enclosure PE604715 has the following characteristics:

- ITEM_BARCODE = PE604715
- CONTAINER_BARCODE = PE906719
 - NAME = Seismic Calibration Log
 - BASIN = OTWAY
 - PERMIT = PPL1
 - TYPE = WELL
 - SUBTYPE = VELOCITY_CHART
- DESCRIPTION = Seismic Calibration Log, Langley-1
- REMARKS =
- DATE_CREATED = 15/06/94
- DATE_RECEIVED = 31/01/96
 - W_NO = W1099
 - WELL_NAME = LANGLEY-1
 - CONTRACTOR = SCHLUMBERGER
 - CLIENT_OP_CO = GFE RESOURCES LTD

(Inserted by DNRE - Vic Govt Mines Dept)

SHOTS

ANALYST: IBISONO

16-JUN-94 16:08

PROGRAM: GSHOT 007.E08

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* SCHLUMBERGER *
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GEOPHYSICAL AIRGUN REPORT

COMPANY : GFE RESOURCES LTD.
WELL : LANGLEY #1
FIELD : EXPLORATION
STATE : VICTORIA
COUNTRY : AUSTRALIA
REFERENCE: SYJ.561022
LOGGED : 03-JUN-1994

LONG DEFINITIONS

GLOBAL
 - Elevation of the KELLY-BUSHING Above MSL or MWL
 KB - Elevation of the Seismic Reference Datum Above MSL or MWL
 SRD - Elevation of Kelly Bushing
 EKB - ELEVATION OF THE MEDIUM BETWEEN THE SOURCE AND THE HYDROPHONE
 VELHYD - VELOCITY OF THE MEDIUM BETWEEN THE SOURCE AND THE SRD
 VELSUR - VELOCITY OF THE MEDIUM BETWEEN THE SOURCE AND THE SRD

MATRIX
 - SOURCE ELEVATION ABOVE SRD (ONE FOR THE WHOLE JOB; OR ONE PER SHOT)
 GUNELZ - SOURCE DISTANCE FROM THE BOREHOLE AXIS IN EW DIRECTION (CF: GUNELZ)
 GUNEWZ - SOURCE DISTANCE FROM THE BOREHOLE AXIS IN NS 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)
 HYDNSZ - 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 number
 SHOT.GSH - Measured Depth from Kelly-Bushing
 DKB.GSH - Depth from SRD
 DSRD.GSH - Tie In Memorized Output
 TIMO.GSH - Vertical Travel Time from the source to the Geophone
 TIMV.GSH - Shot time (WST)
 SHTM.GSH - Average Seismic Velocity
 AVGV.GSH - Depth Interval between Successive Shots
 DELZ.GSH - Travel Time Interval between Successive Shots
 DELT.GSH - Internal Velocity, Average
 INTV.GSH - Internal Velocity, Average

(GLOBAL PARAMETERS)
 (VALUE)
 ELEV OF KB AB. MSL (WST) KB : 69.7000 M
 ELEV OF SRD AB. MSL(WST) SRD : 69.7000 M
 Elevation of Kelly Bushi EKB : 1524.00 M/S
 VEL SOURCE-HYDRO(WST) VELHYD : 1820.00 M/S
 VEL SOURCE-SRD (WST) VELSUR : 1820.00 M/S

(MATRIX PARAMETERS)

	SOURCE ELV M	SOURCE EW M	SOURCE NS M	HYDRO ELEV M	HYDRO EW M	HYDRO NS M
1	62.0	15.6	-15.6	62.0	15.6	-15.6



WELL : LANGLEY #1



COMPANY : GFE RESOURCES LTD.

TRT HYD-SC	TRT SC-SRD
MS	MS
1	0
	-34.07

	MD @ KB	VD @ KB	VD @ SRD	E-W COORD	N-S COORD
	M	M	M	M	M
1	350.0	350.0	280.3	0	0
2	510.0	510.0	440.3	0	0
3	560.0	560.0	490.3	0	0
4	778.0	778.0	708.3	0	0
5	842.0	842.0	772.3	0	0
6	917.0	917.0	847.3	0	0
7	1060.0	1060.0	990.3	0	0
8	1200.0	1200.0	1130.3	0	0
9	1348.0	1348.0	1278.3	0	0
10	1427.0	1427.0	1357.3	0	0
11	1545.0	1545.0	1475.3	0	0
12	1715.5	1715.5	1645.8	0	0
13	1730.5	1730.5	1660.8	0	0
14	1751.0	1751.0	1681.3	0	0
15	1771.0	1771.0	1701.3	0	0
16	1802.5	1802.5	1732.8	0	0
17	1826.0	1826.0	1756.3	0	0
18	1870.0	1870.0	1800.3	0	0
19	1910.0	1910.0	1840.3	0	0
20	2005.0	2005.0	1935.3	0	0

LEVEL NUMBER	MEASUR DEPTH FROM KB M	VERTIC DEPTH FROM SRD M	OBSERV 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	350.0	280.3	188.50	188.11	154.05	1820	160.0	77.03	2077
2	510.0	440.3	265.40	265.15	231.08	1905	50.0	23.33	2144
3	560.0	490.3	288.70	288.47	254.41	1927	218.0	84.98	2565
4	778.0	708.3	373.60	373.45	339.38	2087	64.0	23.91	2676
5	842.0	772.3	397.50	397.36	363.30	2126	75.0	22.22	3376
6	917.0	847.3	419.70	419.58	385.51	2198	143.0	49.52	2888
7	1060.0	990.3	469.20	469.10	435.03	2276	140.0	51.41	2723
8	1200.0	1130.3	520.60	520.51	486.45	2324	148.0	47.61	3108
9	1348.0	1278.3	568.20	568.12	534.06	2394	79.0	24.21	3264
10	1427.0	1357.3	592.40	592.33	558.26	2431	118.0	37.51	3146
11	1545.0	1475.3	629.90	629.84	595.77	2476	170.5	55.71	3061
12	1715.5	1645.8	685.60	685.54	651.48	2526	15.0	4.50	3333
13	1730.5	1660.8	690.10	690.04	655.98	2532	20.5	8.60	2384
14	1751.0	1681.3	698.70	698.64	664.58	2530	20.0	6.80	2941
15	1771.0	1701.3	705.50	705.45	671.38	2534	31.5	7.50	4199
16	1802.5	1732.8	713.00	712.95	678.88	2552	23.5	4.50	5221
17	1826.0	1756.3	717.50	717.45	683.38	2570	44.0	11.70	3760
18	1870.0	1800.3	729.20	729.15	695.08	2590	40.0	9.40	4255
19	1910.0	1840.3	738.60	738.55	704.48	2612	95.0	24.30	3909
20	2005.0	1935.3	762.90	762.85	728.79	2656			

DRIIFT

DRIIFT

ANALYST: WIBISONO

16-JUN-94 16:09

PROGRAM: GDRIPT 007.E09

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DRIFT COMPUTATION REPORT

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COMPANY : GFE RESOURCES LTD.  
WELL    : LANGLEY #1  
FIELD   : EXPLORATION  
STATE   : VICTORIA  
COUNTRY : AUSTRALIA  
REFERENCE: SYJ.561022  
LOGGED  : 03-JUN-1994
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LONG DEFINITIONS

GLOBAL
 - Elevation of the KELLY-BUSHING Above MSL or MWL
 - Elevation of the Seismic Reference Datum Above MSL or MWL
 SRD - Elevation of Kelly Bushing
 EKB - TOP OF ZONE PROCESSED BY WST
 XSTART - BOTTOM OF ZONE PROCESSED BY WST
 XSTOP - UNIFORM DENSITY VALUE
 UNFDEN - UNIFORM DENSITY VALUE
 GAD001 - RAW SONIC CHANNEL NAME USED FOR WST SONIC ADJUSTMENT

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

SAMPLED
 SHOT - Shot number
 DKB - Measured Depth from Kelly-Bushing
 DSRD - Depth from SRD
 SHTM - Shot time (WST)
 RAMS - Raw Sonic (WST)
 SHDR - Drift at Shot or Knee
 BLSH - Block Shift between Shots or Knee

(GLOBAL PARAMETERS) (VALUE)
 ELEV OF KB AB. MSL (WST) KB : 69.7000 M
 ELEV OF SRD AB. MSL (WST) SRD : 69.7000 M
 Elevation of Kelly Bushi EKB : 0 M
 TOP OF ZONE PROC (WST) XSTART : 0 M
 BOT OF ZONE PROC (WST) XSTOP : 0 M
 UNIFORM DENSITY VALUE UNFDEN : 2.30000 G/C3
 RAW SONIC CH NAME (WST) GAD001 : DT.EDI.ATT.002.FLP.*

(ZONED PARAMETERS) (VALUE) (LIMITS)
 LAYER OPTION FLAG DENS LOFDEN : 1.000000 0 G/C3 30479.7 = 0
 USER SUPPLIED DENSITY DA LAYDEN : 0 G/C3 0 = 0

LEVEL NUMBER	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	VERTICAL TRAVEL TIME SRD/GEO MS	INTEGRATED RAW SONIC TIME MS	COMPUTED DRIFT AT LEVEL MS	COMPUTED BLK-SHIFT CORRECTION US/M
1	350.0	280.3	154.05	154.05	0	-29.49
2	510.0	440.3	231.08	235.80	-4.72	86.98
3	560.0	490.3	254.41	254.78	-.37	-1.42
4	778.0	708.3	339.38	340.06	-.68	-9.95
5	842.0	772.3	363.30	364.61	-1.32	-33.77
6	917.0	847.3	385.51	389.36	-3.85	-20.95
7	1060.0	990.3	435.03	441.88	-6.84	17.35
8	1200.0	1130.3	486.45	490.86	-4.41	-11.38
9	1348.0	1278.3	534.06	540.16	-6.10	-15.24
10	1427.0	1357.3	558.26	565.57	-7.30	14.99
11	1545.0	1475.3	595.77	601.30	-5.53	8.22
12	1715.5	1645.8	651.48	655.61	-4.13	37.86
13	1730.5	1660.8	655.98	659.54	-3.56	108.98
14	1751.0	1681.3	664.58	665.91	-1.33	62.58
15	1771.0	1701.3	671.38	671.46	-.08	-30.56
16	1802.5	1732.8	678.88	679.92	-1.04	-99.68
17	1826.0	1756.3	683.38	686.77	-3.38	2.94
18	1870.0	1800.3	695.08	698.34	-3.25	-35.24
19	1910.0	1840.3	704.48	709.15	-4.66	-9.38
20	1999.2	1929.5	727.30	732.80	-5.50	
21	2005.0	1935.3	728.79			

ANALYST: WILBISONO

16-JUN-94 17:08

PROGRAM: GADJST 008.E08

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SCHLUMBERGER

SONIC ADJUSTMENT PARAMETER REPORT

COMPANY : GFE RESOURCES LTD.

WELL : LANGLEY #1

FIELD : EXPLORATION

STATE : VICTORIA

COUNTRY : AUSTRALIA

REFERENCE: SYJ.561022

LOGGED : 03-JUN-1994

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
 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)	(LIMITS)
ORIG OF ADJ DATA (WST)	: 2.00000	MS
CONS SONIC ADJUST (WST)	: 24.6063	US/M
UNIFORM EARTH VELOCITY	: 1820.00	M/S
(ZONED PARAMETERS)	(VALUE)	(LIMITS)
USER DRIFT ZONE (WST)	: -5.500000	MS
ZDRIFT	: -2.550000	2008.00 - 1768.00
	: -7.300000	1768.00 - 1424.00
	: -3.000000	1424.00 - 559.500
	: -4.400000	559.500 - 517.500
	: 0	517.500 - 350.000
ADJUSMNT MODE (WST)	: -999.2500	350.000 - 0
USER DELTA-T MIN (WST)	: -999.2500	30479.7 - 0
LAYER OPTION FLAG VELOC	: 0	30479.7 - 0
USER VELOC (WST)	: 1820.000	30479.7 - 0
LAYVEL		350.000 - 0

COMPANY GFE RESOURCES LTD.

WEIGHT : LANGLEY #1

PAGE 2

KNEE NUMBER	VERTICAL DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	DRIFT AT KNEE MS	BLOCKSHIFT USED US/M	DELTA-T MINIMUM USED US/M	REDUCTION FACTOR G	EQUIVALENT BLOCKSHIFT US/M
2	350.0	280.3	0	0	457.41	.57	-26.27
3	517.5	447.8	-4.40	97.62			97.62
4	559.5	489.8	-.30		325.89	.77	-8.10
5	1424.0	1354.3	-7.30	13.81			13.81
6	1768.0	1698.3	-2.55		221.97	.65	-12.29
7	2008.0	1938.3	-5.50				

ANALYST: BIBISONO

16-JUN-94 17:08

PROGRAM: GADJST 008.E08

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* SCHLUMBERGER *
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VELOCITY REPORT

COMPANY : GFE RESOURCES LTD.
WELL : LANGLEY #1
FIELD : EXPLORATION
STATE : VICTORIA
COUNTRY : AUSTRALIA
REFERENCE: SYJ.561022
LOGGED : 03-JUN-1994

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
 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
 DKB - Measured Depth from Kelly-Bushing
 DSRD - Depth from SRD
 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 : 69.7000 M
 ELEV OF SRD AB. MSL (WST) SRD : 0 M
 Elevation of Kelly Bushing EKB : 69.7000 M
 UNIFORM EARTH VELOCITY UNERTH : 1820.00 M/S

(ZONED PARAMETERS) (VALUE) (LIMITS)
 LAYER OPTION FLAG VELOC LOFVEL : 0 M/S 30479.7 - 0
 USER VELOC (WST) LAYVEL : 1820.000 M/S 350.000 - 0

LEVEL NUMBER	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	VERTICAL TRAVEL TIME SRD/GEOPH MS	INTEGRATED ADJUSTED SONIC TIME MS	DRIFT = SHOT TIME - RAW SON MS	RESIDUAL = SHOT TIME - ADJ SON MS	ADJUSTED INTERVAL VELOCITY M/S
1	350.0	280.3	154.05	154.05	0	0	1820
2	510.0	440.3	231.08	231.44	-4.72	-.36	2067
3	560.0	490.3	254.41	254.46	-.37	-.05	2172
4	778.0	708.3	339.38	336.39	-.68	3.00	2661
5	842.0	772.3	363.30	360.09	-1.32	3.20	2700
6	917.0	847.3	385.51	384.67	-3.85	.84	3051
7	1060.0	990.3	435.03	435.83	-6.84	-.80	2795
8	1200.0	1130.3	486.45	484.00	-4.41	2.45	2906
9	1348.0	1278.3	534.06	532.88	-6.10	1.18	3028
10	1427.0	1357.3	558.26	558.29	-7.30	-.03	3109
11	1545.0	1475.3	595.77	595.66	-5.53	.11	3158
12	1715.5	1645.8	651.48	652.32	-4.13	-.84	3009
13	1730.5	1660.8	655.98	656.45	-3.56	-.47	3626
14	1751.0	1681.3	664.58	663.11	-1.33	1.47	3081
15	1771.0	1701.3	671.38	668.84	-.08	2.54	3485
16	1802.5	1732.8	678.88	676.80	-1.04	2.08	3960
17	1826.0	1756.3	683.38	683.08	-3.38	.31	3744
18	1870.0	1800.3	695.08	694.02	-3.25	1.06	4019
19	1910.0	1840.3	704.48	704.17	-4.66	.32	3944
20	1999.2	1929.5	727.30	726.48	-5.50	.82	3997
21	2005.0	1935.3	728.79	728.01		.78	3815

TIME/DEPTH

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