Appendix A

Blasting seismograph records for structure at High Mesa

High Mesa
Exterior Master

File Name: 01258056.DTB
Number: 056
Date: 3 15 2005
Time: 15:47
Serial Number: 1258
Seismic Trigger: 0.0250 in s 0.6350 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.2

Amplitudes and Frequencies

Acoustic: 110 dB @ 1.6 Hz
(0.06Mb 0.0009psi 0.0060kPa)

***Radial:* 0.03in/s 0.762mm/s @ 32.0Hz**

Vertical: 0.02in/s 0.508mm/s @ 25.6Hz

Transverse: 0.025in/s 0.635mm/s @ 32.0Hz

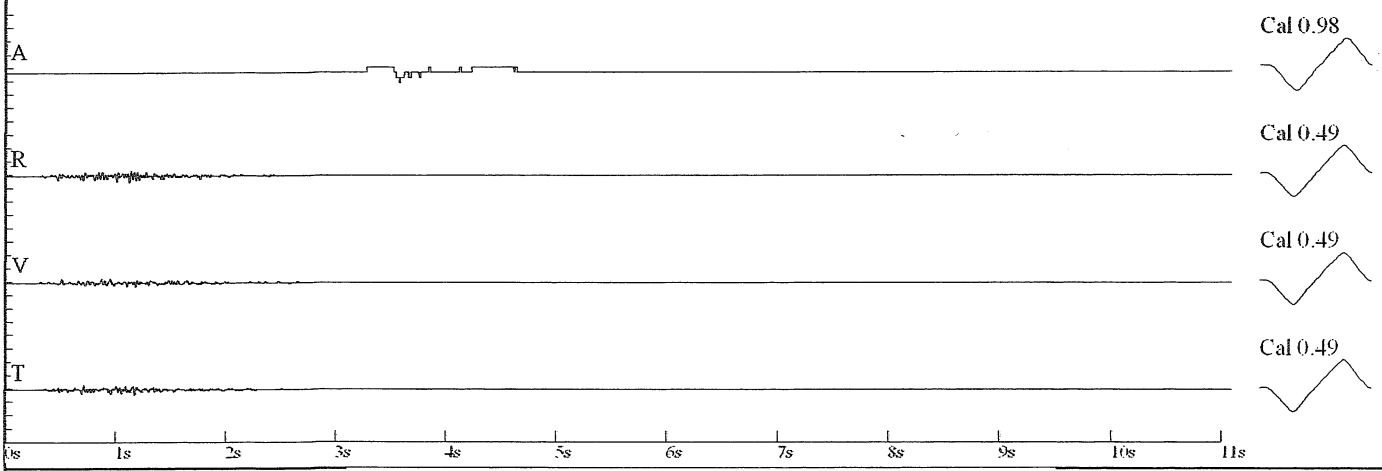
Graph Information

Duration: 0.000s To: 11.000s

Acoustic Scale:
120dB 0.20Mb (0.050Mb/div)

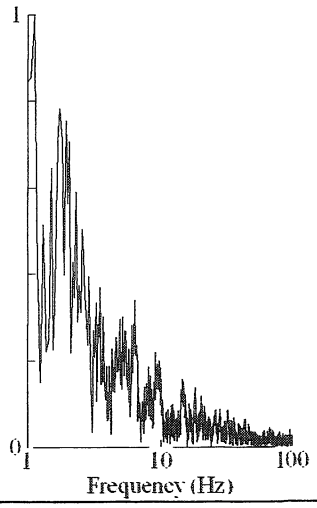
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s

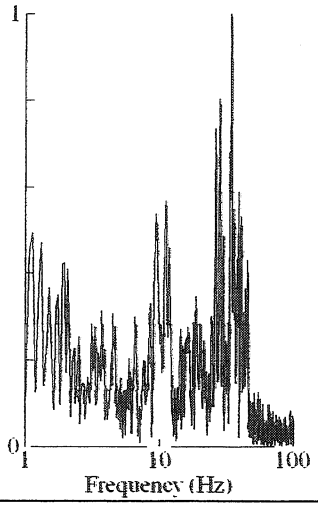


Fourier Analysis (Power Spectrum - Box Window)

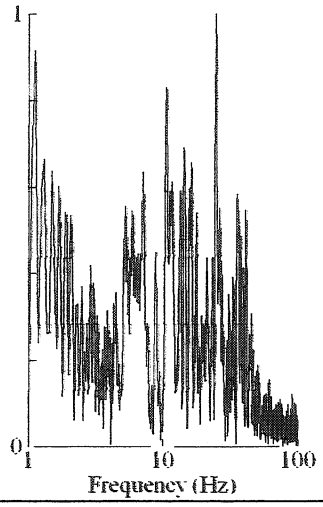
Acoustic
1.13 Hz



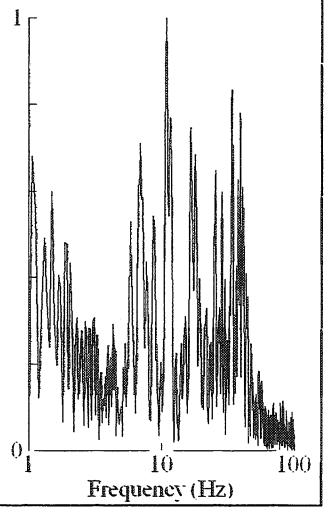
Radial
34.50 Hz



Vertical
25.06 Hz



Transverse
10.88 Hz



High Mesa
Upper corner
V = NE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

File Name: 02276294.DTB
Number: 294
Date: 3 15 2005
Time: 15:48
Serial Number: 2276
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.2

Amplitudes and Frequencies

Acoustic: 112 dB @ 0.0 Hz
(0.08Mb 0.0012psi 0.0080kPa)

Radial: 0.02in/s 0.508mm/s @ 0.0Hz

***Vertical:* 0.05in/s 1.27mm/s @ 19.6Hz**

Transverse: 0.03in/s 0.762mm/s @ 23.2Hz

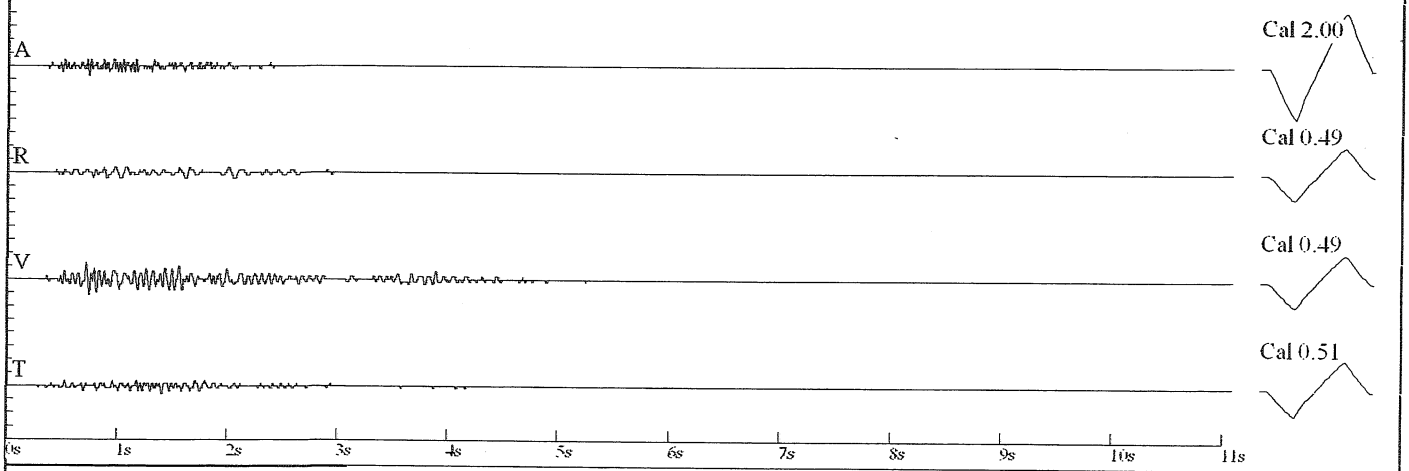
Graph Information

Duration: 0.000s To: 11.000s

Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)

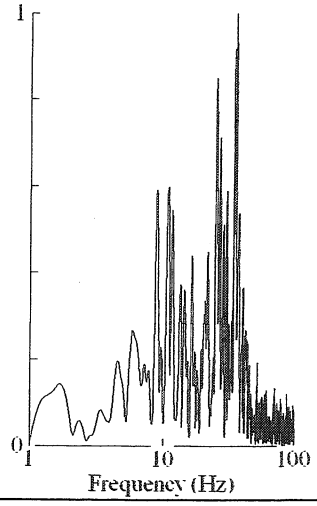
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s

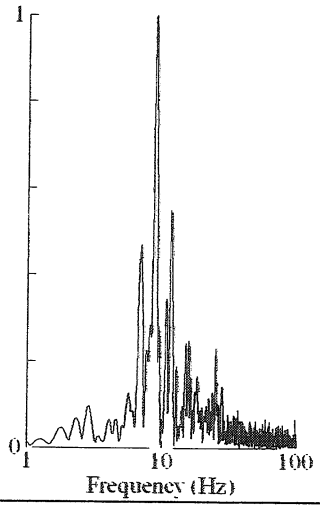


Fourier Analysis (Power Spectrum - Box Window)

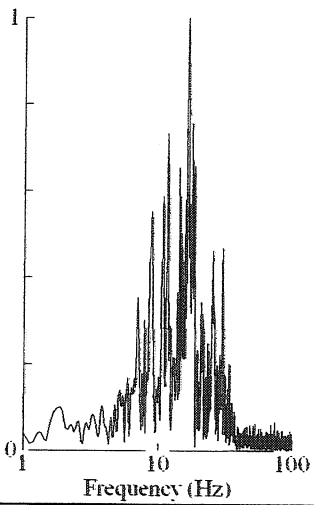
Acoustic
34.75 Hz



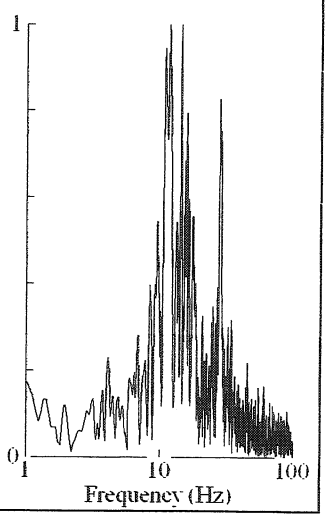
Radial
8.88 Hz



Vertical
16.56 Hz



Transverse
11.75 Hz



High Mesa
Lower corner
V = SE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

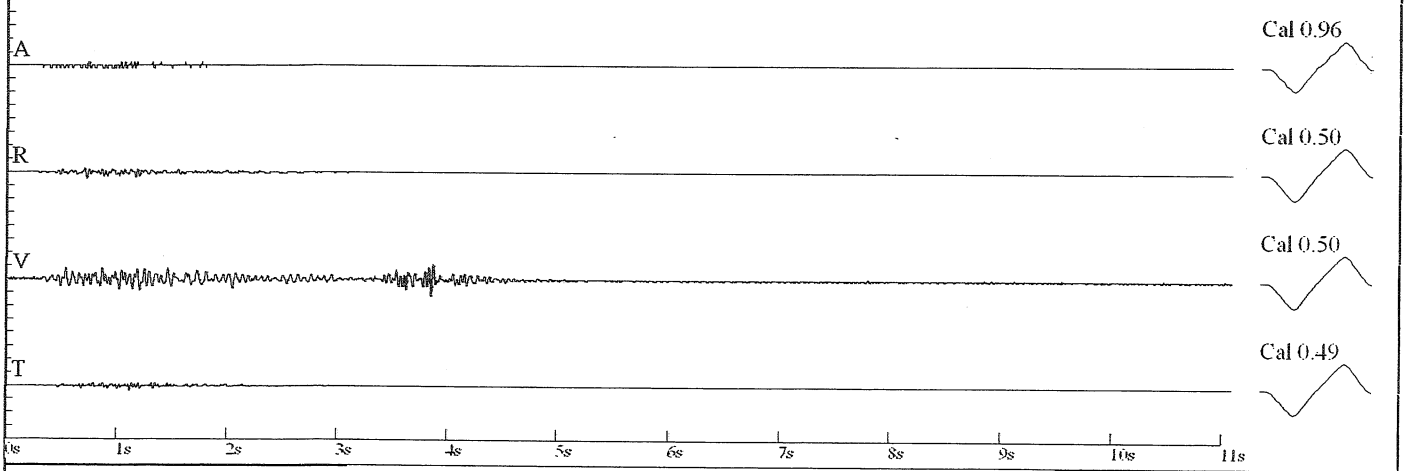
File Name: 00930013.DTB
Number: 013
Date: 3 15 2005
Time: 15:48
Serial Number: 930
Seismic Trigger: 0.0450 in s 1.1430 mm s
Acoustic Trigger: 126 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

Acoustic: 106 dB @ 0.0 Hz
(0.04Mb 0.0006psi 0.0040kPa)
Radial: 0.02in/s 0.508mm/s @ 28.4Hz
***Vertical:* 0.065in/s 1.651mm/s @ 28.4Hz**
Transverse: 0.02in/s 0.508mm/s @ 28.4Hz

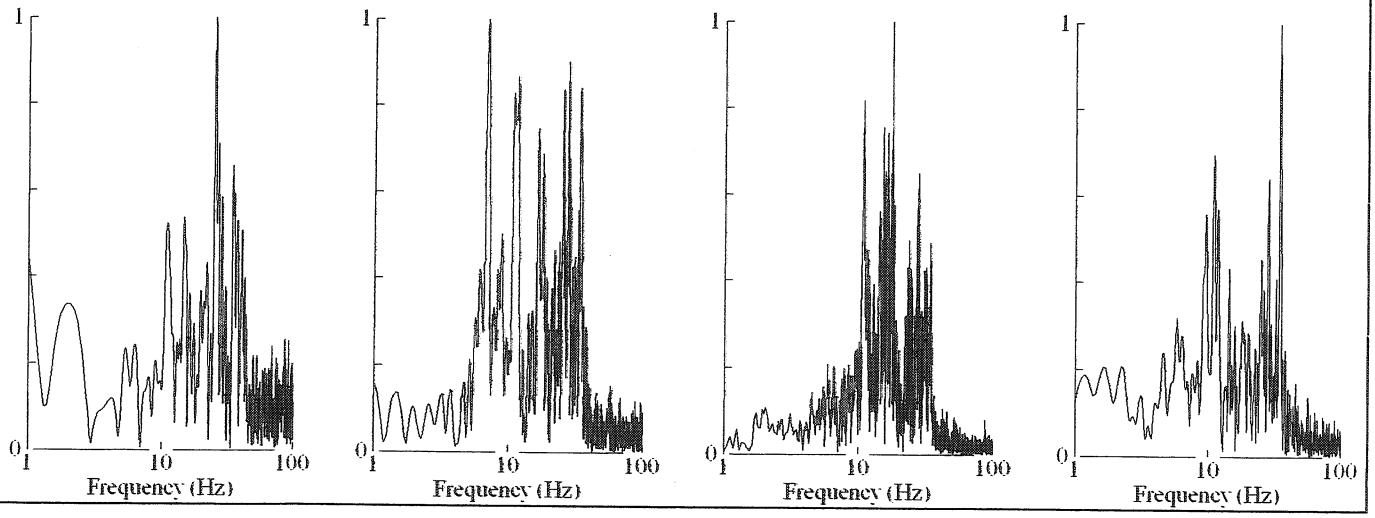
Graph Information

Duration: 0.000s To: 11.000s
Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)

Acoustic	Radial	Vertical	Transverse
25.00 Hz	6.88 Hz	17.94 Hz	34.38 Hz



High Mesa
Exterior Master

File Name: 01258057.DTB
Number: 057
Date: 3 16 2005
Time: 13:51
Serial Number: 1258
Seismic Trigger: 0.0250 in s 0.6350 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 6.7

Amplitudes and Frequencies

Acoustic: 100 dB @ 0.0 Hz
(0.02Mb 0.0003psi 0.0020kPa)

***Radial:* 0.035in/s 0.889mm/s @ 36.5Hz**

Vertical: 0.015in/s 0.381mm/s @ 36.5Hz

Transverse: 0.025in/s 0.635mm/s @ 32.0Hz

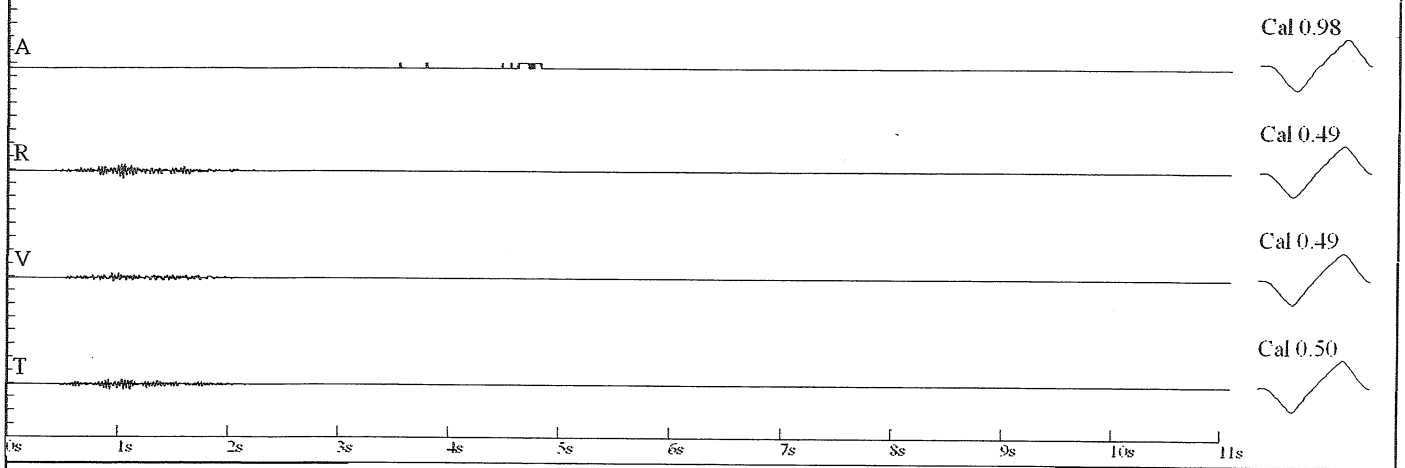
Graph Information

Duration: 0.000s To: 11.000s

Acoustic Scale:
120dB 0.20Mb (0.050Mb/div)

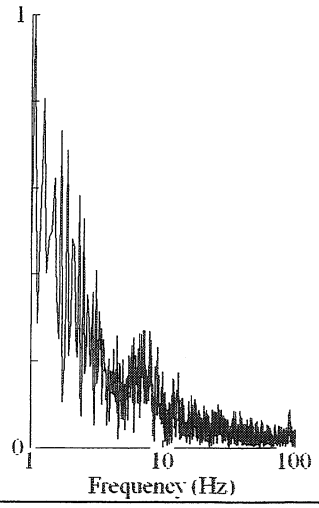
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s

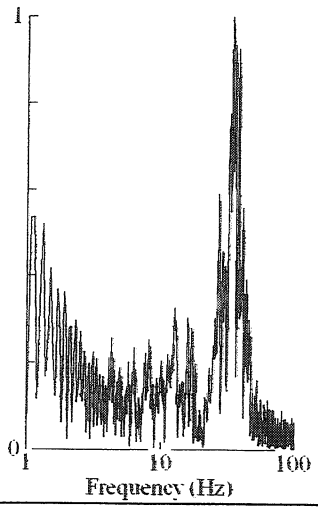


Fourier Analysis (Power Spectrum - Box Window)

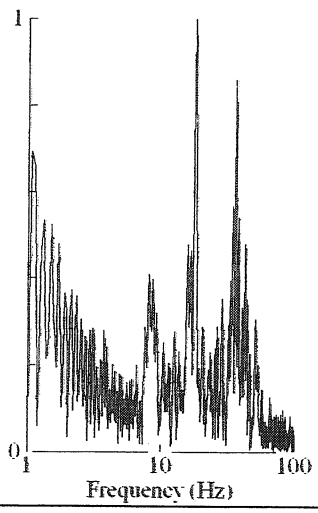
Acoustic
1.06 Hz



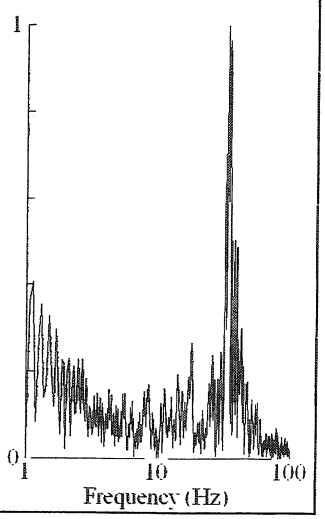
Radial
34.13 Hz



Vertical
17.94 Hz



Transverse
33.69 Hz



High Mesa
Lower corner
V = SE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

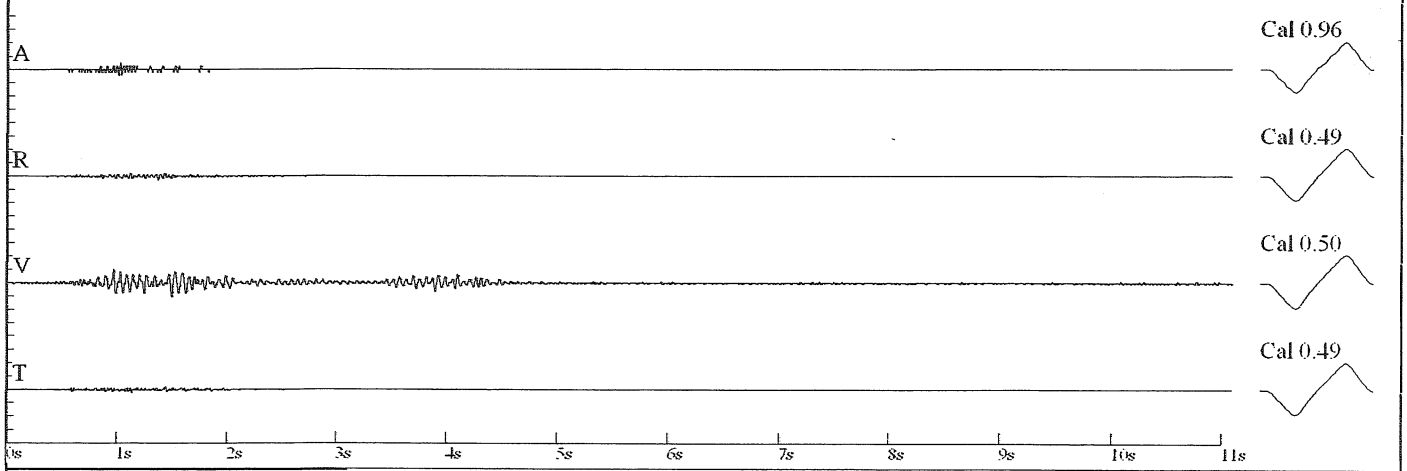
File Name: 00930014.DTB
Number: 014
Date: 3 16 2005
Time: 13:52
Serial Number: 930
Seismic Trigger: 0.0450 in s 1.1430 mm s
Acoustic Trigger: 126 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.0

Amplitudes and Frequencies

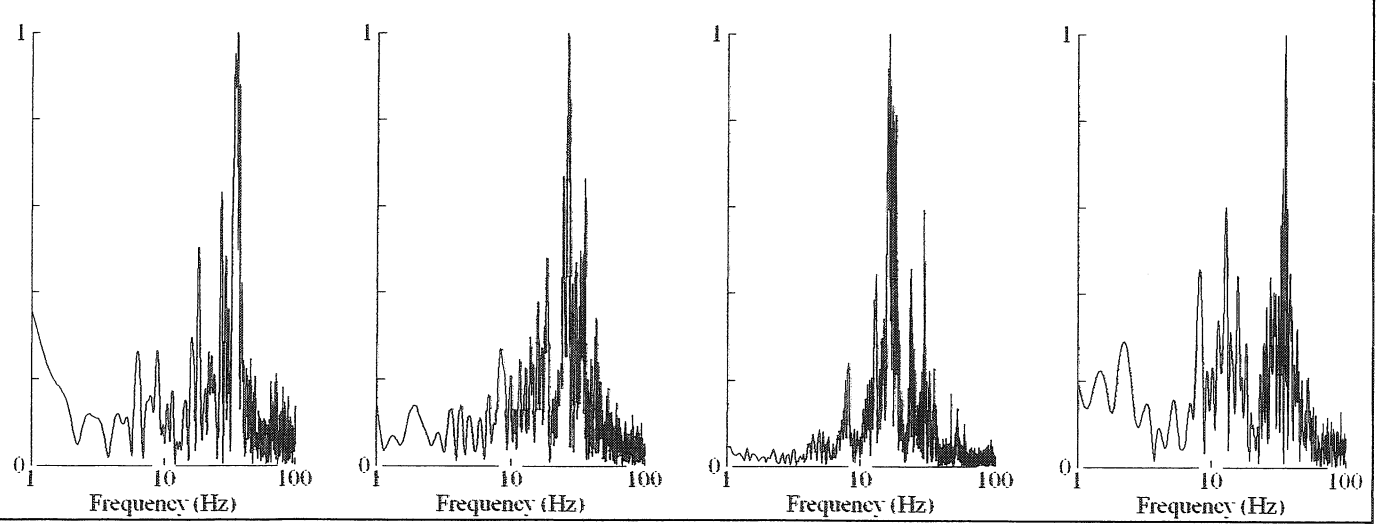
Acoustic: 112 dB @ 0.0 Hz
(0.08Mb 0.0012psi 0.0080kPa)
Radial: 0.015in/s 0.381mm/s @ 28.4Hz
***Vertical:* 0.055in/s 1.397mm/s @ 21.3Hz**
Transverse: 0.015in/s 0.381mm/s @ 36.5Hz

Graph Information

Duration: 0.000s To: 11.000s
Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)



High Mesa
Upper corner
V = NE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

File Name: 02276295.DTB
Number: 295
Date: 3 16 2005
Time: 13:52
Serial Number: 2276
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

Acoustic: 116 dB @ 42.6 Hz
(0.12Mb 0.0017psi 0.0120kPa)

Radial: 0.01in/s 0.254mm/s @ 0.0Hz

***Vertical:* 0.05in/s 1.27mm/s @ 25.6Hz**

Transverse: 0.02in/s 0.508mm/s @ 0.0Hz

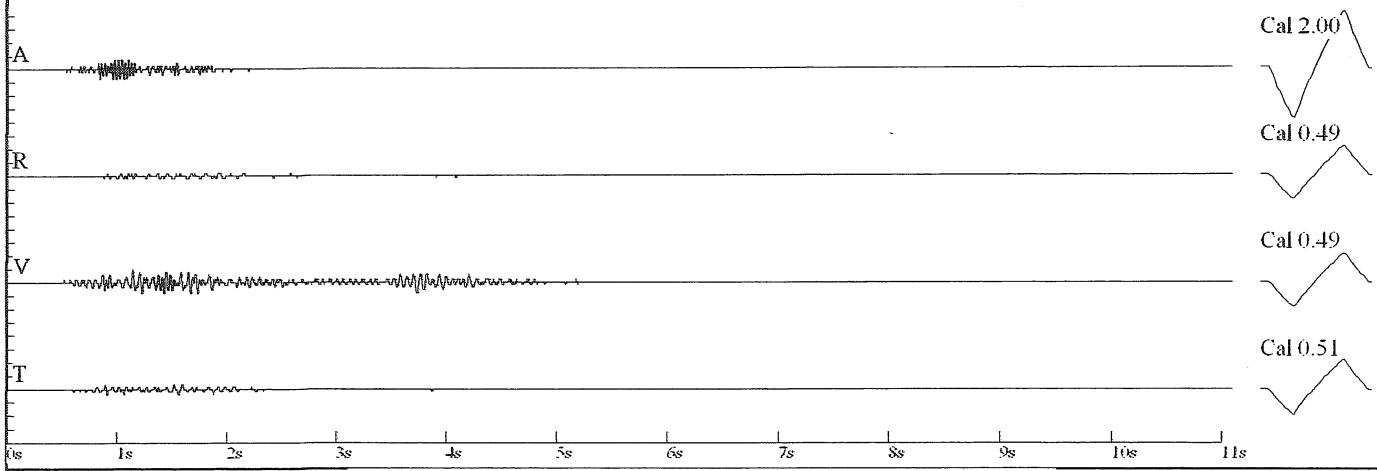
Graph Information

Duration: 0.000s To: 11.000s

Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)

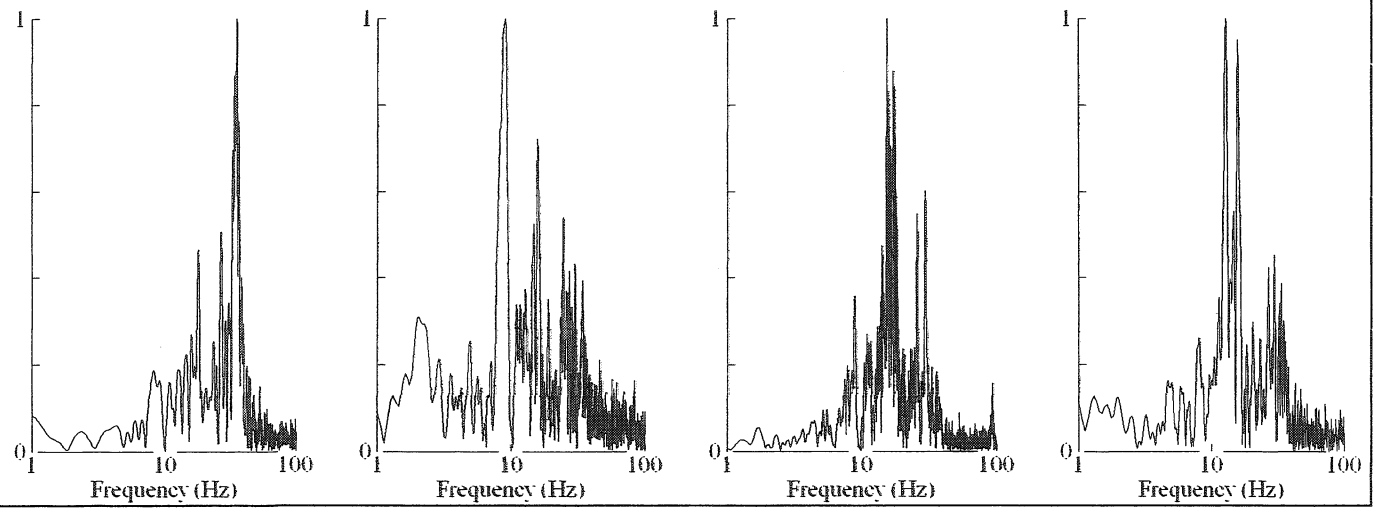
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)

Acoustic	Radial	Vertical	Transverse
34.81 Hz	9.00 Hz	15.75 Hz	12.81 Hz



High Mesa
Exterior Master

File Name: 01258058.DTB
Number: 058
Date: 3 16 2005
Time: 15:15
Serial Number: 1258
Seismic Trigger: 0.0250 in s 0.6350 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

Acoustic: 106 dB @ 0.0 Hz
(0.04Mb 0.0006psi 0.0040kPa)

Radial: 0.045in/s 1.143mm/s @ 21.3Hz

***Vertical:* 0.05in/s 1.27mm/s @ 6.0Hz**

Transverse: 0.045in/s 1.143mm/s @ 9.8Hz

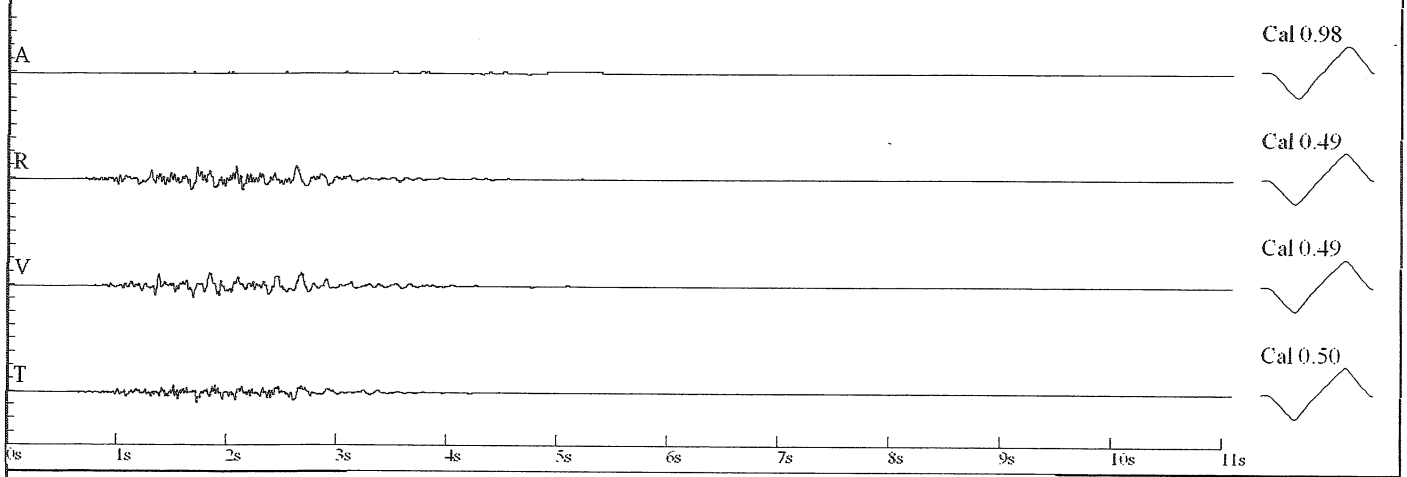
Graph Information

Duration: 0.000s To: 11.000s

Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)

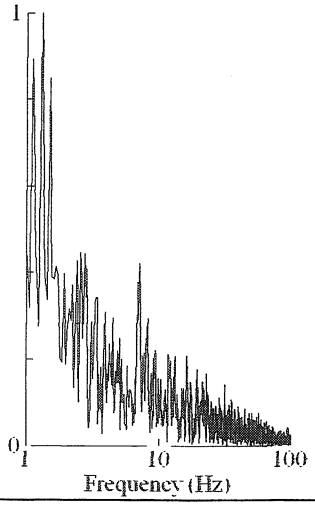
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s

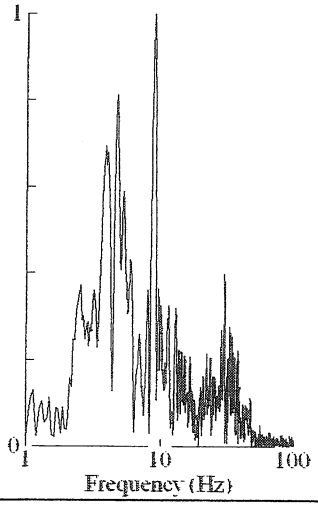


Fourier Analysis (Power Spectrum - Box Window)

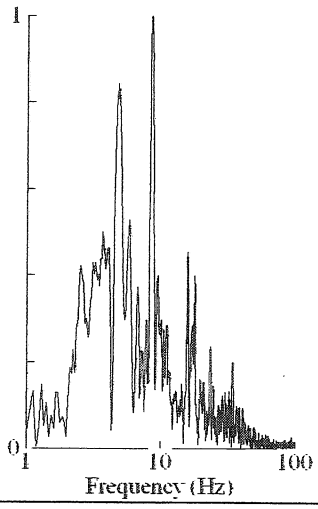
Acoustic
1.31 Hz



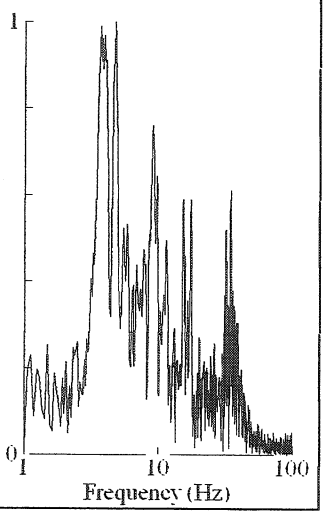
Radial
8.94 Hz



Vertical
8.56 Hz



Transverse
4.69 Hz



High Mesa
Lower corner
V = SE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

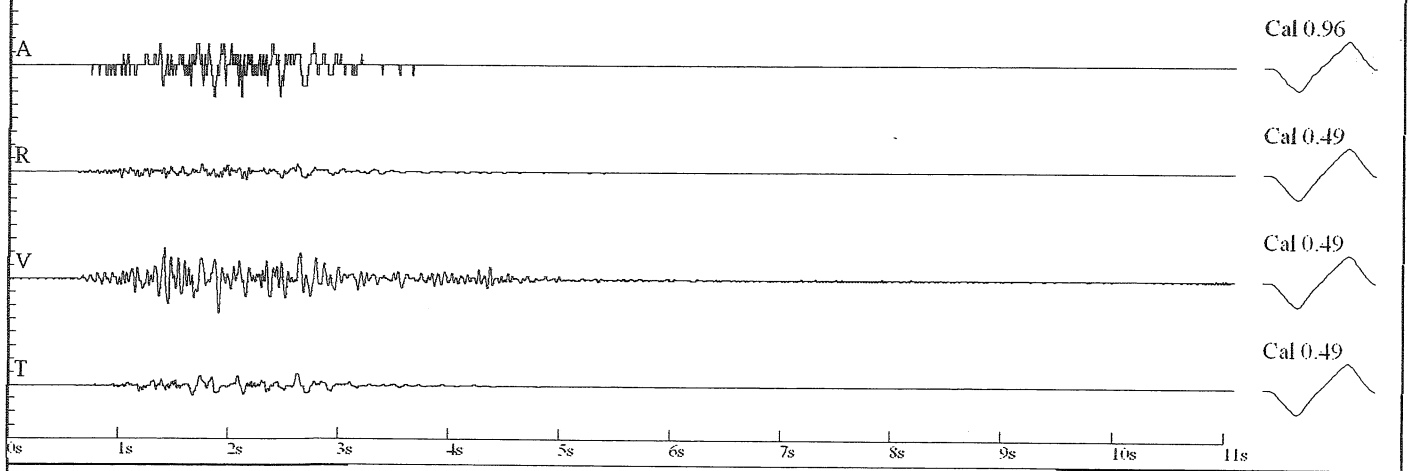
File Name: 00930015.DTB
Number: 015
Date: 3 16 2005
Time: 15:16
Serial Number: 930
Seismic Trigger: 0.0450 in s 1.1430 mm s
Acoustic Trigger: 126 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.0

Amplitudes and Frequencies

Acoustic: 116 dB @ 12.8 Hz
(0.12Mb 0.0017psi 0.0120kPa)
Radial: 0.03in/s 0.762mm/s @ 15.0Hz
***Vertical:* 0.13in/s 3.302mm/s @ 12.1Hz**
Transverse: 0.045in/s 1.143mm/s @ 8.2Hz

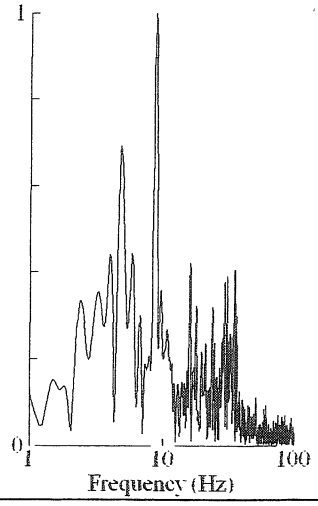
Graph Information

Duration: 0.000s To: 11.000s
Acoustic Scale:
120dB 0.20Mb (0.050Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s

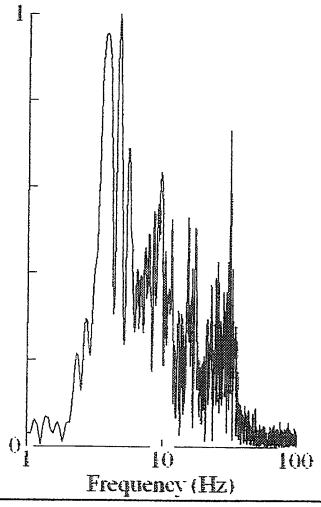


Fourier Analysis (Power Spectrum - Box Window)

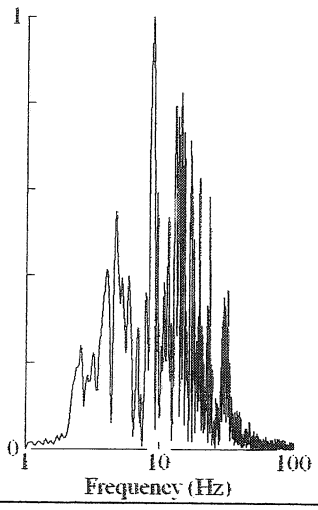
Acoustic
8.63 Hz



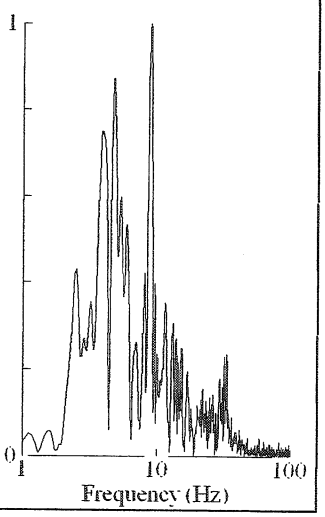
Radial
4.69 Hz



Vertical
8.88 Hz



Transverse
8.88 Hz



High Mesa
Upper corner
V = NE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

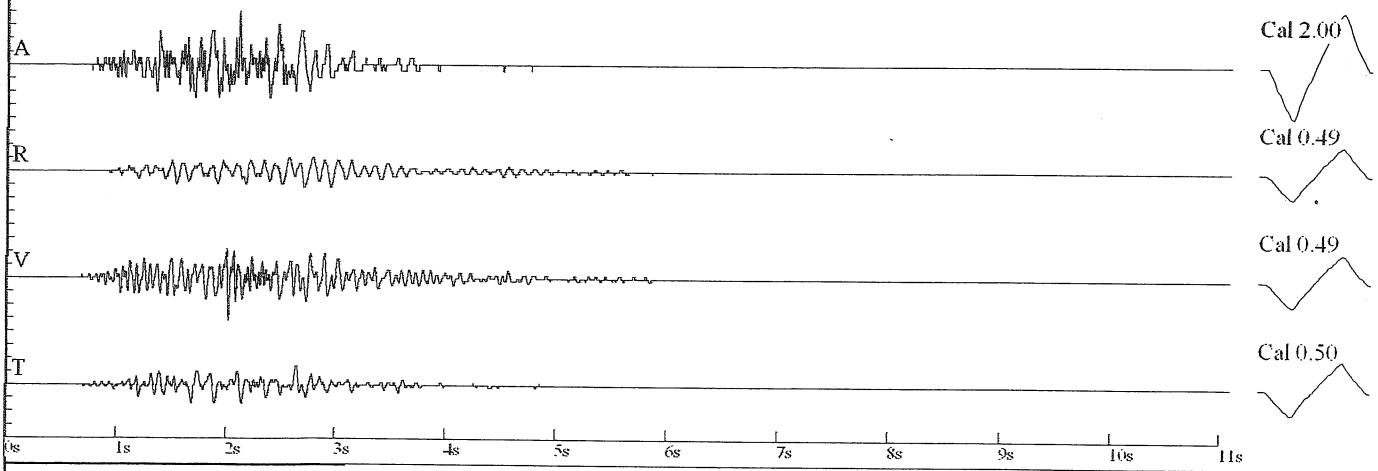
File Name: 02276296.DTB
Number: 296
Date: 3 16 2005
Time: 15:15
Serial Number: 2276
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

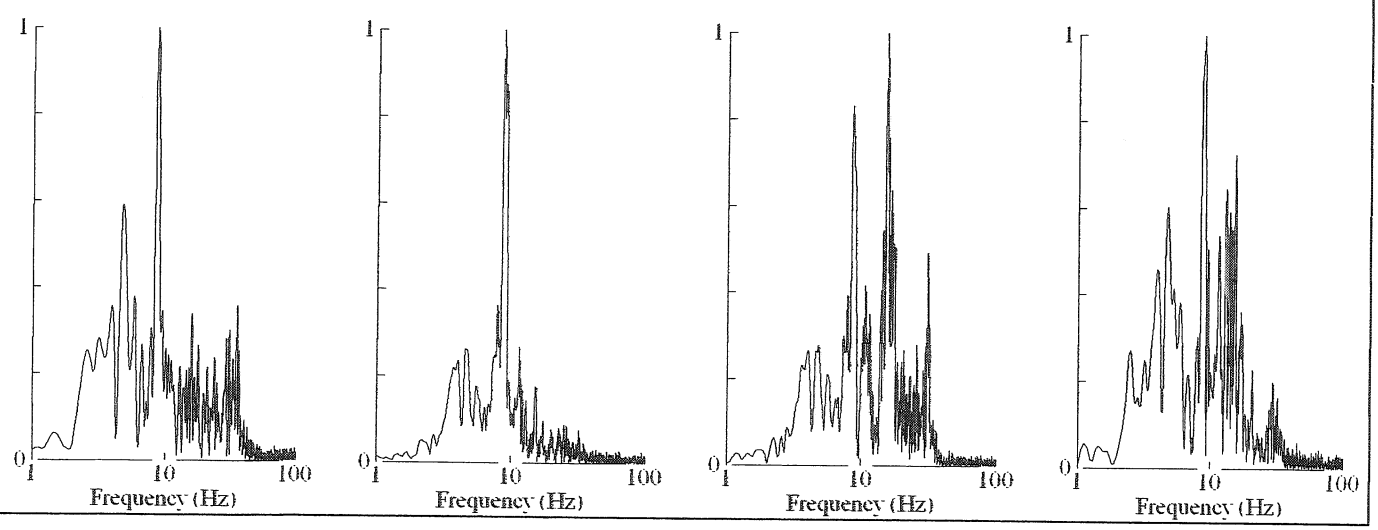
Acoustic: 124 dB @ 25.6 Hz
(0.32Mb 0.0046psi 0.0320kPa)
Radial: 0.06in/s 1.524mm/s @ 8.8Hz
***Vertical:* 0.16in/s 4.064mm/s @ 21.3Hz**
Transverse: 0.07in/s 1.778mm/s @ 10.6Hz

Graph Information

Duration: 0.000s To: 11.000s
Acoustic Scale:
124dB 0.32Mb (0.079Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)



High Mesa
Exterior Master

File Name: 01258059.DTB
Number: 059
Date: 3 17 2005
Time: 15:00
Serial Number: 1258
Seismic Trigger: 0.0250 in s 0.6350 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

Acoustic: 100 dB @ 0.0 Hz
(0.02Mb 0.0003psi 0.0020kPa)

***Radial:* 0.035in/s 0.889mm/s @ 32.0Hz**

Vertical: 0.03in/s 0.762mm/s @ 6.7Hz

Transverse: 0.025in/s 0.635mm/s @ 9.4Hz

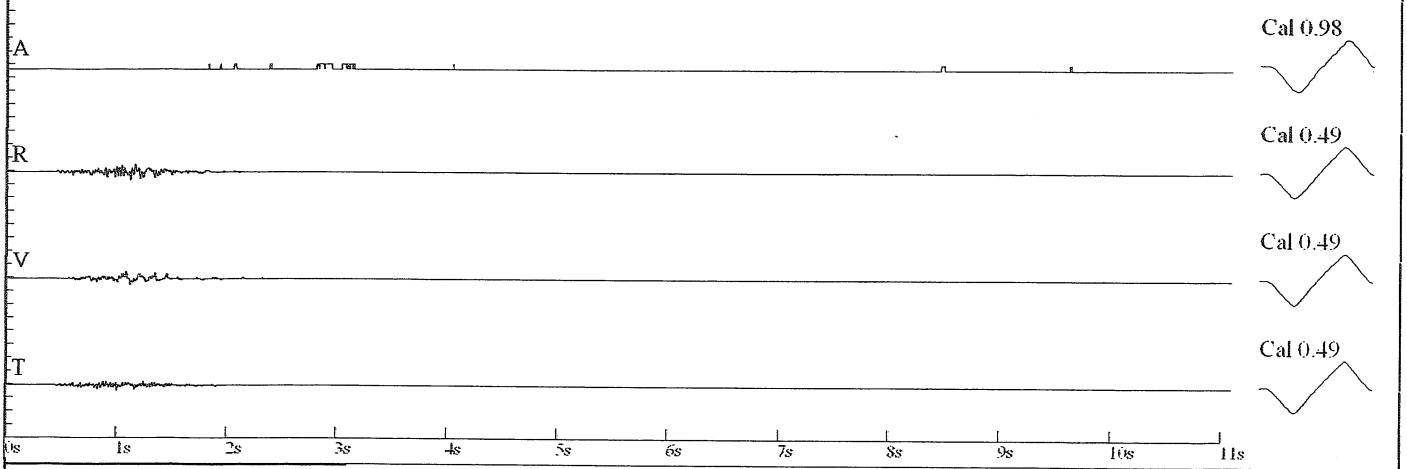
Graph Information

Duration: 0.000s To: 11.000s

Acoustic Scale:
120dB 0.20Mb (0.050Mb/div)

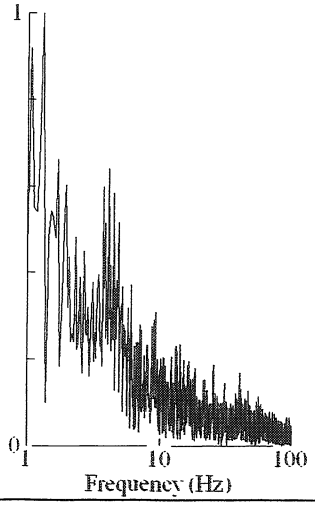
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s

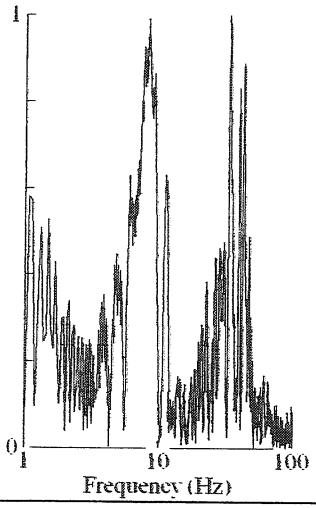


Fourier Analysis (Power Spectrum - Box Window)

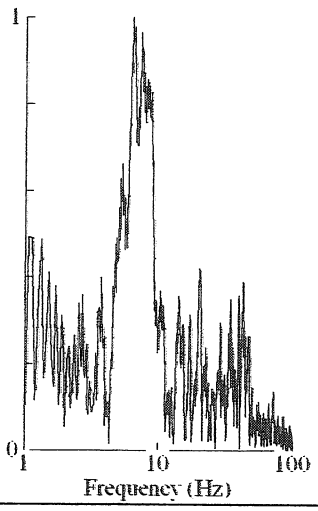
Acoustic
1.31 Hz



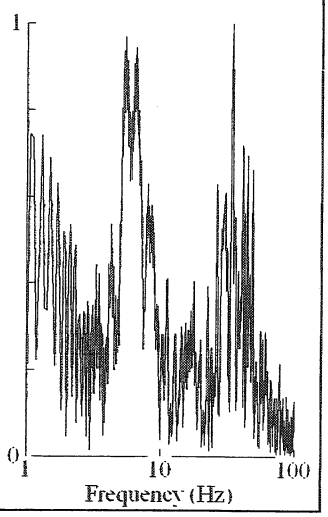
Radial
33.31 Hz



Vertical
6.31 Hz



Transverse
33.94 Hz



High Mesa
Lower corner
V = SE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

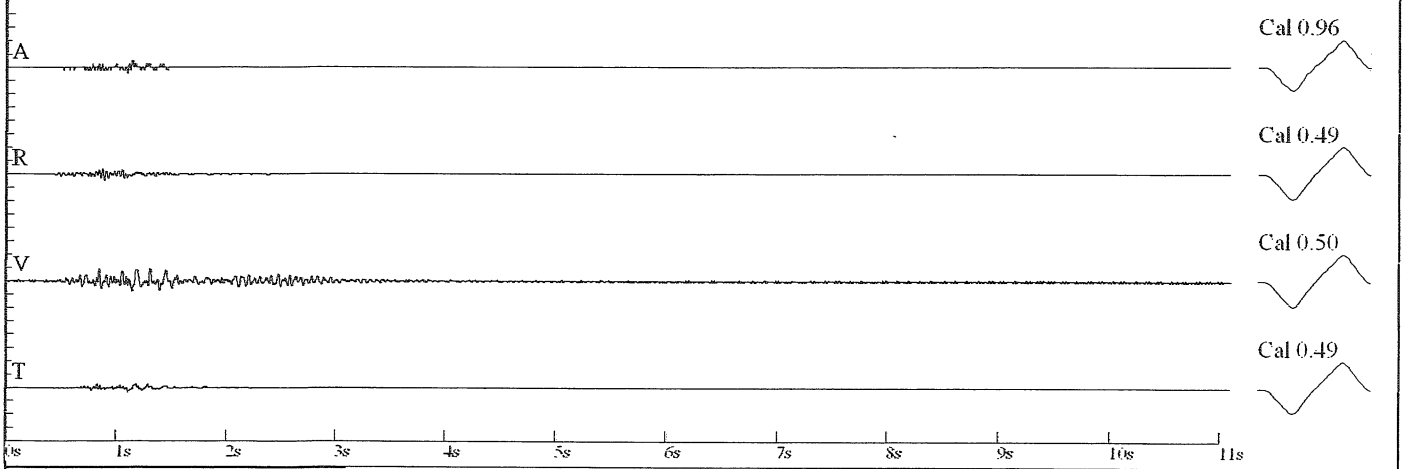
File Name: 00930016.DTB
Number: 016
Date: 3 17 2005
Time: 15:01
Serial Number: 930
Seismic Trigger: 0.0450 in s 1.1430 mm s
Acoustic Trigger: 126 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.0

Amplitudes and Frequencies

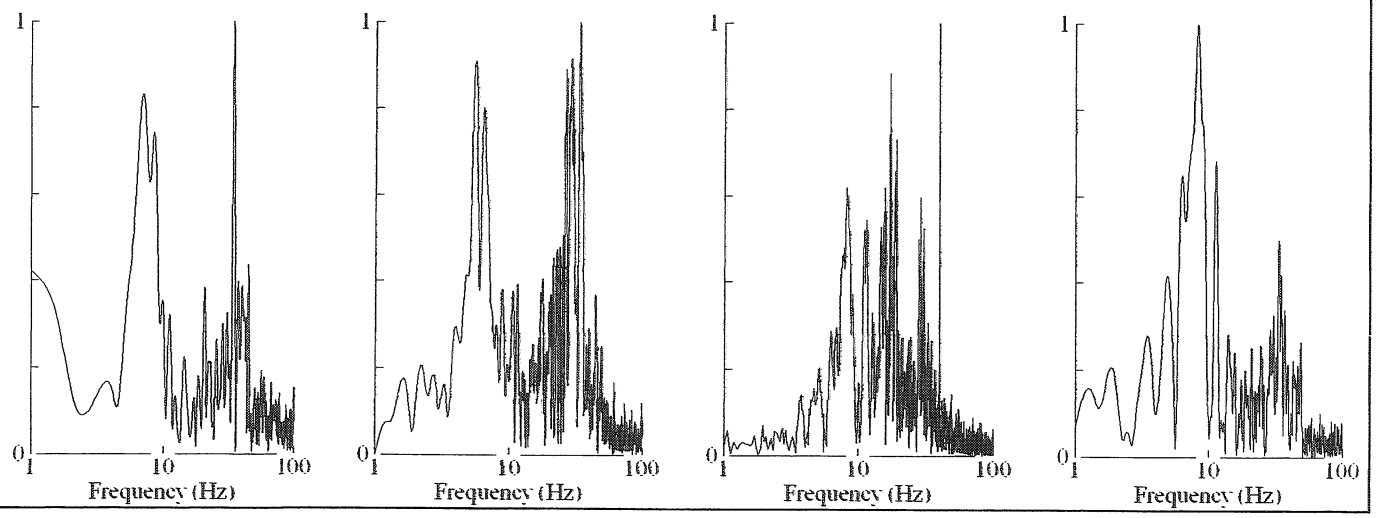
Acoustic: 112 dB @ 0.0 Hz
(0.08Mb 0.0012psi 0.0080kPa)
Radial: 0.015in/s 0.381mm/s @ 42.6Hz
***Vertical:* 0.045in/s 1.143mm/s @ 21.3Hz**
Transverse: 0.02in/s 0.508mm/s @ 10.2Hz

Graph Information

Duration: 0.000s To: 11.000s
Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)



High Mesa
Upper corner
V = NE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

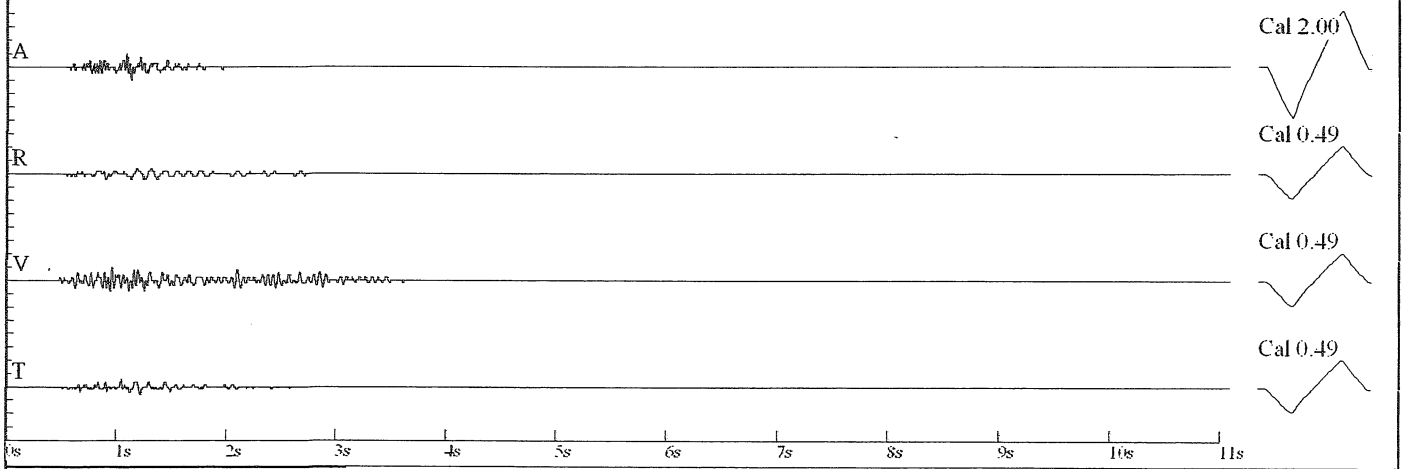
File Name: 02276297.DTB
Number: 297
Date: 3 17 2005
Time: 15:01
Serial Number: 2276
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

Acoustic: 118 dB @ 36.5 Hz
(0.16Mb 0.0023psi 0.0160kPa)
Radial: 0.02in/s 0.508mm/s @ 0.0Hz
***Vertical:* 0.04in/s 1.016mm/s @ 32.0Hz**
Transverse: 0.03in/s 0.762mm/s @ 32.0Hz

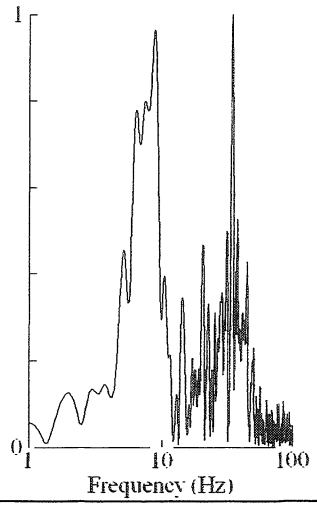
Graph Information

Duration: 0.000s To: 11.000s
Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s

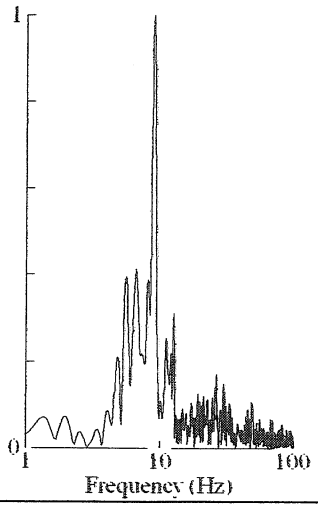


Fourier Analysis (Power Spectrum - Box Window)

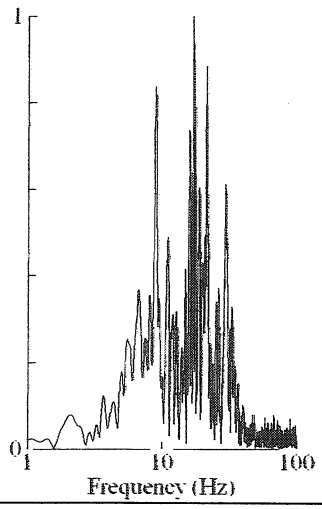
Acoustic
33.50 Hz



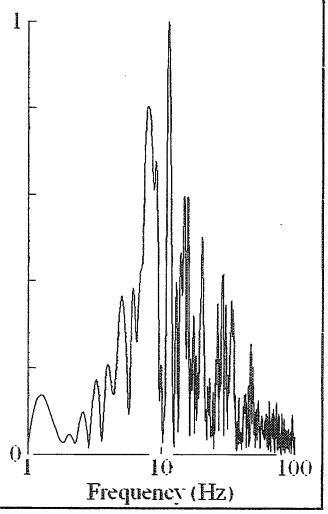
Radial
8.94 Hz



Vertical
17.06 Hz



Transverse
11.38 Hz



High Mesa
Exterior Master

File Name: 01258060.DTB
Number: 060
Date: 3 18 2005
Time: 10:59
Serial Number: 1258
Seismic Trigger: 0.0250 in s 0.6350 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 6.6

Amplitudes and Frequencies

Acoustic: 100 dB @ 0.0 Hz
(0.02Mb 0.0003psi 0.0020kPa)

***Radial:* 0.025in/s 0.635mm/s @ 36.5Hz**

***Vertical:* 0.025in/s 0.635mm/s @ 12.1Hz**

Transverse: 0.015in/s 0.381mm/s @ 36.5Hz

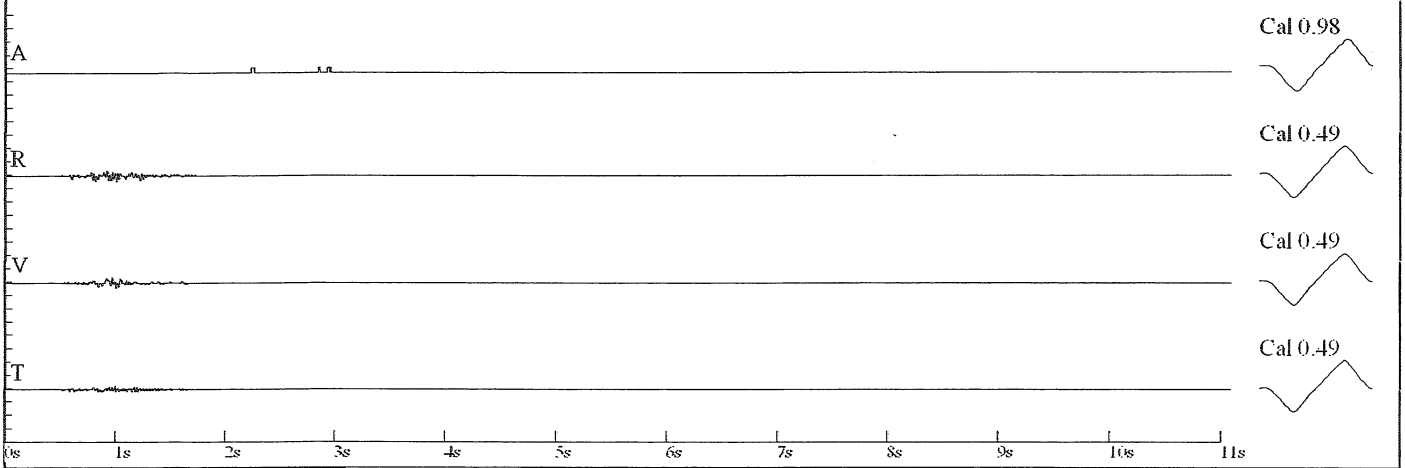
Graph Information

Duration: 0.000s To: 11.000s

Acoustic Scale:
120dB 0.20Mb (0.050Mb/div)

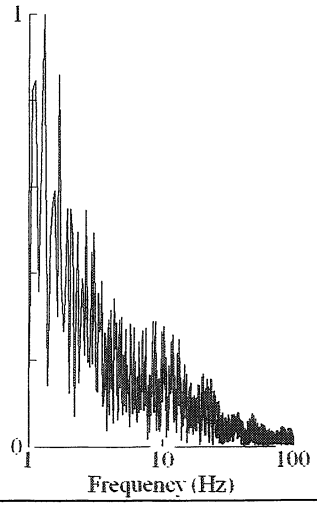
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s

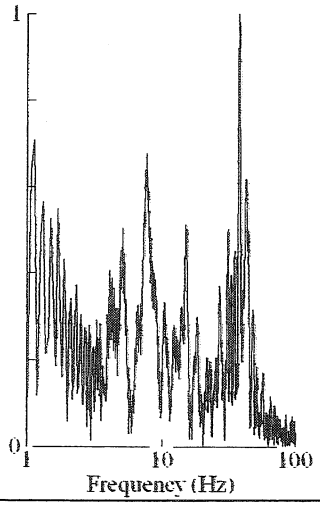


Fourier Analysis (Power Spectrum - Box Window)

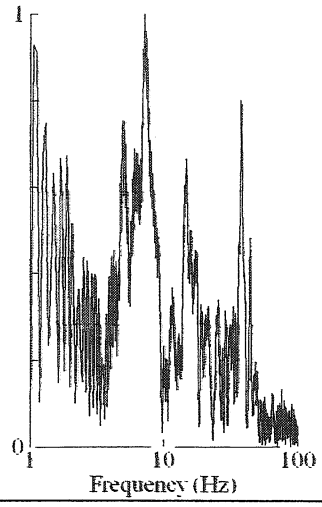
Acoustic
1.31 Hz



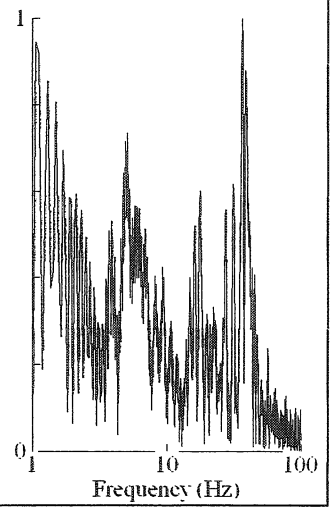
Radial
38.13 Hz



Vertical
7.31 Hz



Transverse
36.44 Hz



High Mesa
Lower corner
V = SE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

File Name: 00930020.DTB
Number: 020
Date: 3 18 2005
Time: 11:00
Serial Number: 930
Seismic Trigger: 0.0450 in s 1.1430 mm s
Acoustic Trigger: 126 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.0

Amplitudes and Frequencies

Acoustic: 106 dB @ 0.0 Hz
(0.04Mb 0.0006psi 0.0040kPa)

Radial: 0.01in/s 0.254mm/s @ 0.0Hz

***Vertical:* 0.055in/s 1.397mm/s @ 17.0Hz**

Transverse: 0.01in/s 0.254mm/s @ 0.0Hz

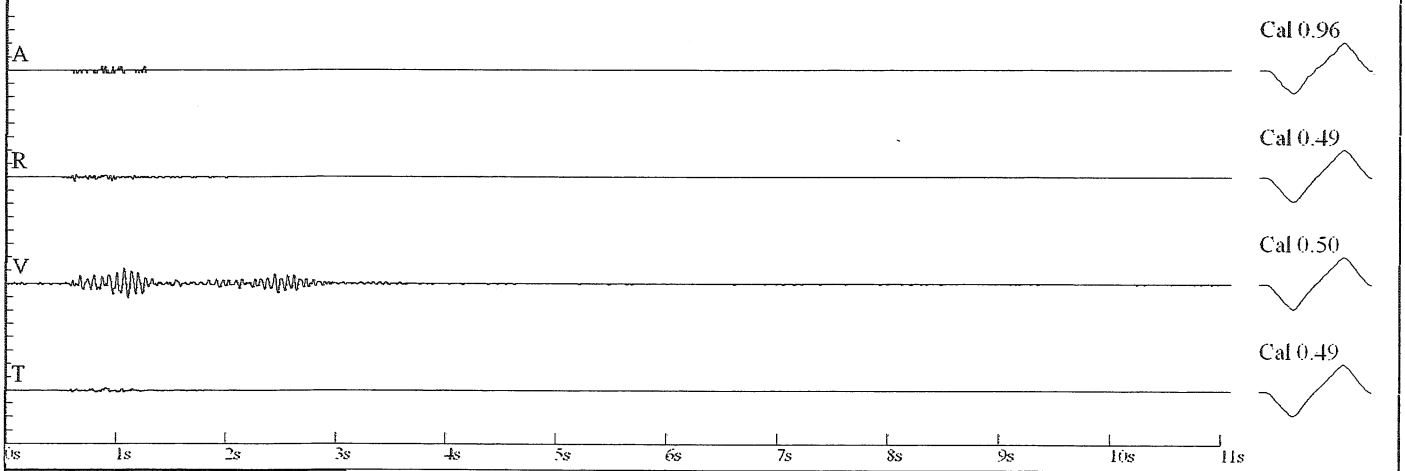
Graph Information

Duration: 0.000s To: 11.000s

Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)

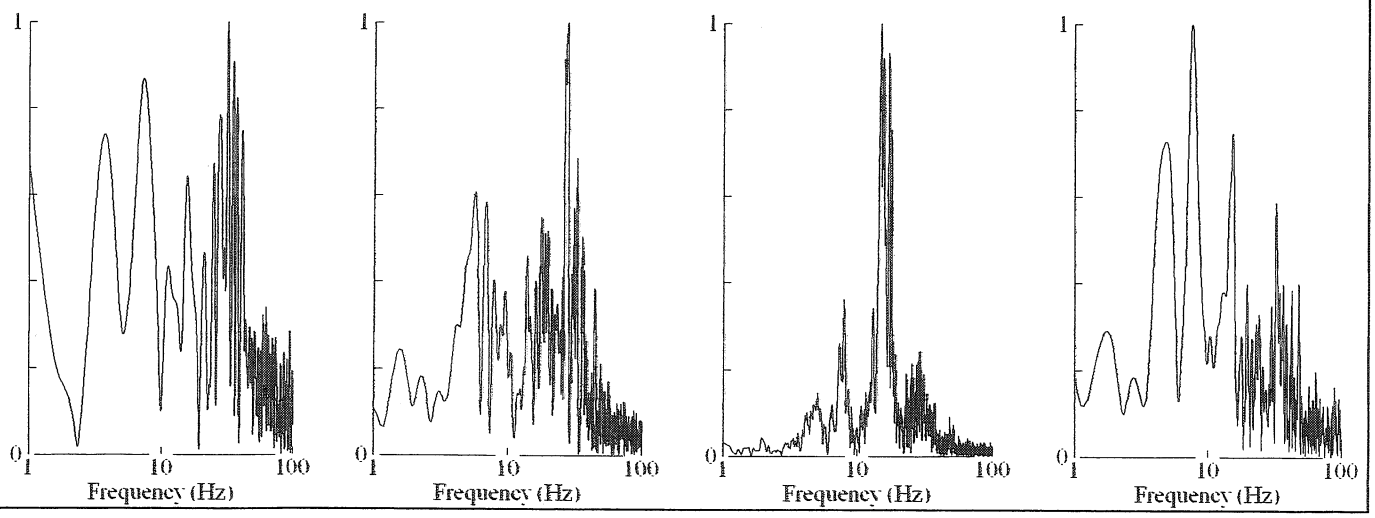
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)

Acoustic	Radial	Vertical	Transverse
31.44 Hz	27.81 Hz	14.81 Hz	7.63 Hz



High Mesa
Upper corner
V = NE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

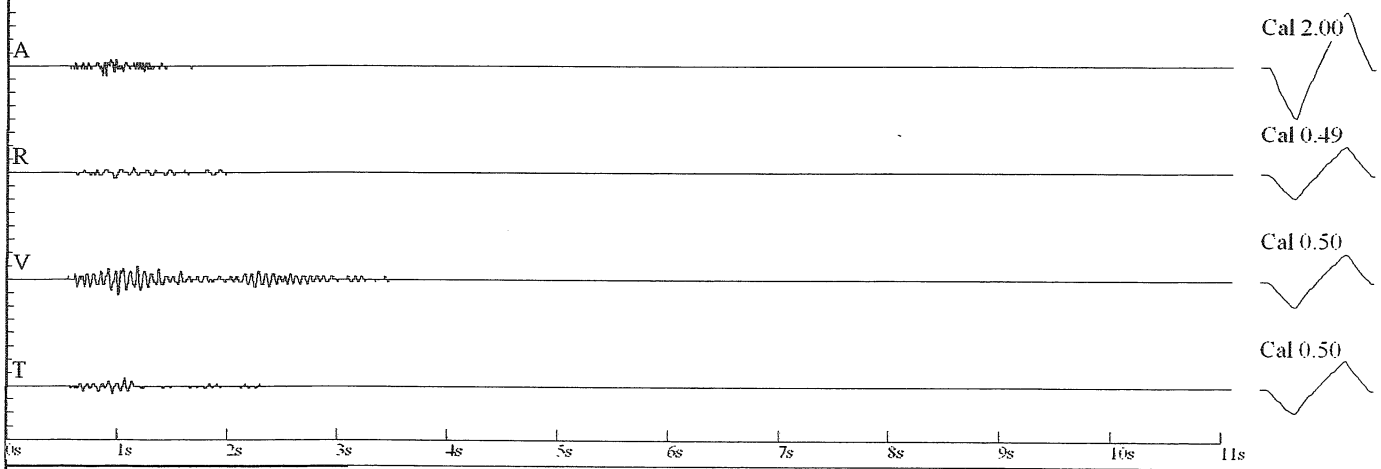
File Name: 02276301.DTB
Number: 301
Date: 3 18 2005
Time: 11:00
Serial Number: 2276
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 6.8

Amplitudes and Frequencies

Acoustic: 112 dB @ 0.0 Hz
(0.08Mb 0.0012psi 0.0080kPa)
Radial: 0.02in/s 0.508mm/s @ 0.0Hz
***Vertical:* 0.05in/s 1.27mm/s @ 23.2Hz**
Transverse: 0.03in/s 0.762mm/s @ 25.6Hz

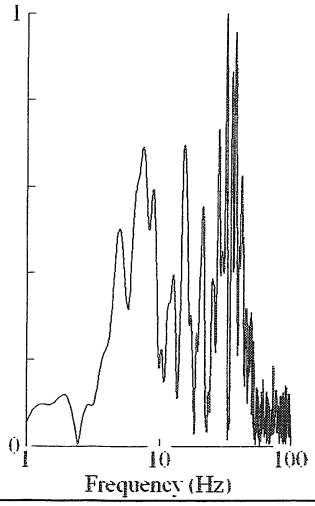
Graph Information

Duration: 0.000s To: 11.000s
Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s

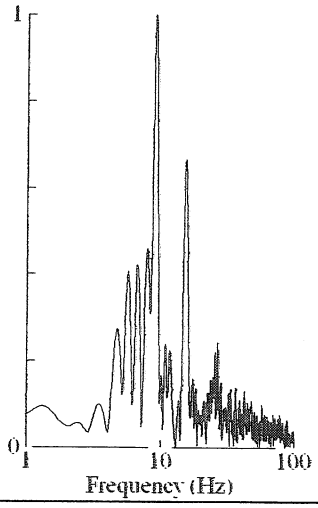


Fourier Analysis (Power Spectrum - Box Window)

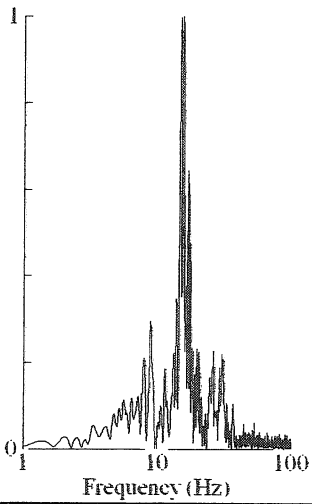
Acoustic
31.38 Hz



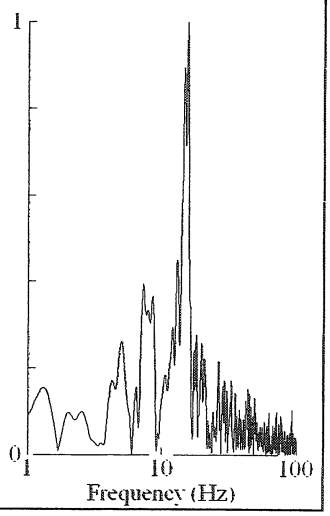
Radial
9.00 Hz



Vertical
15.50 Hz



Transverse
15.56 Hz



High Mesa
Exterior Master

File Name: 01258061.DTB
Number: 061
Date: 3 18 2005
Time: 13:06
Serial Number: 1258
Seismic Trigger: 0.0250 in s 0.6350 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.0

Amplitudes and Frequencies

Acoustic: 110 dB @ 1.4 Hz
(0.06Mb 0.0009psi 0.0060kPa)

Radial: 0.035in/s 0.889mm/s @ 4.4Hz

***Vertical:* 0.045in/s 1.143mm/s @ 4.4Hz**

Transverse: 0.025in/s 0.635mm/s @ 6.9Hz

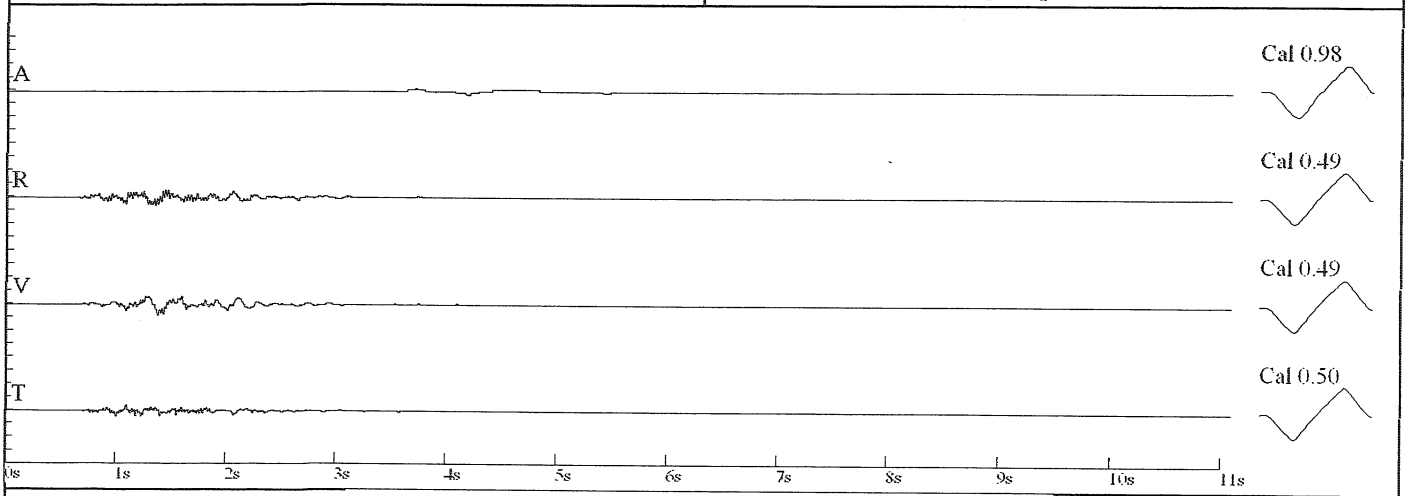
Graph Information

Duration: 0.000s To: 11.000s

Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)

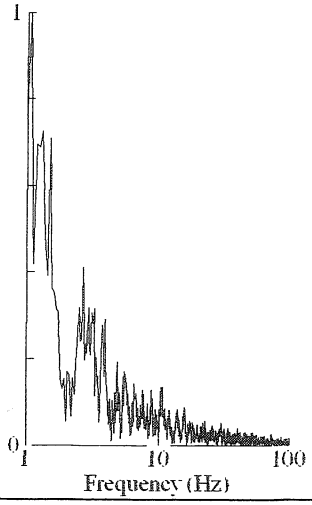
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s

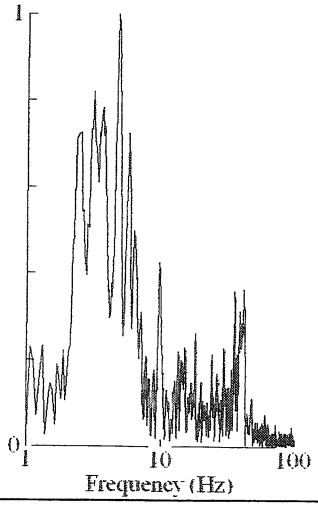


Fourier Analysis (Power Spectrum - Box Window)

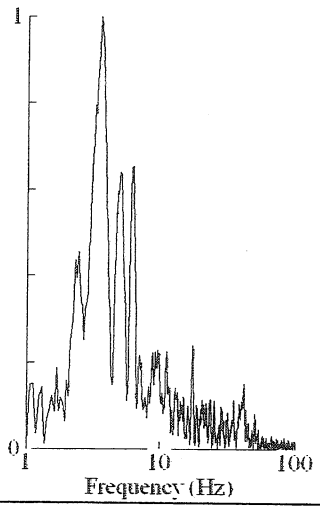
Acoustic
1.06 Hz



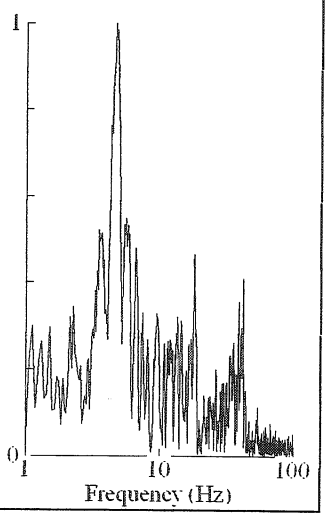
Radial
4.75 Hz



Vertical
3.56 Hz



Transverse
4.63 Hz



High Mesa
Lower corner
V = SE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

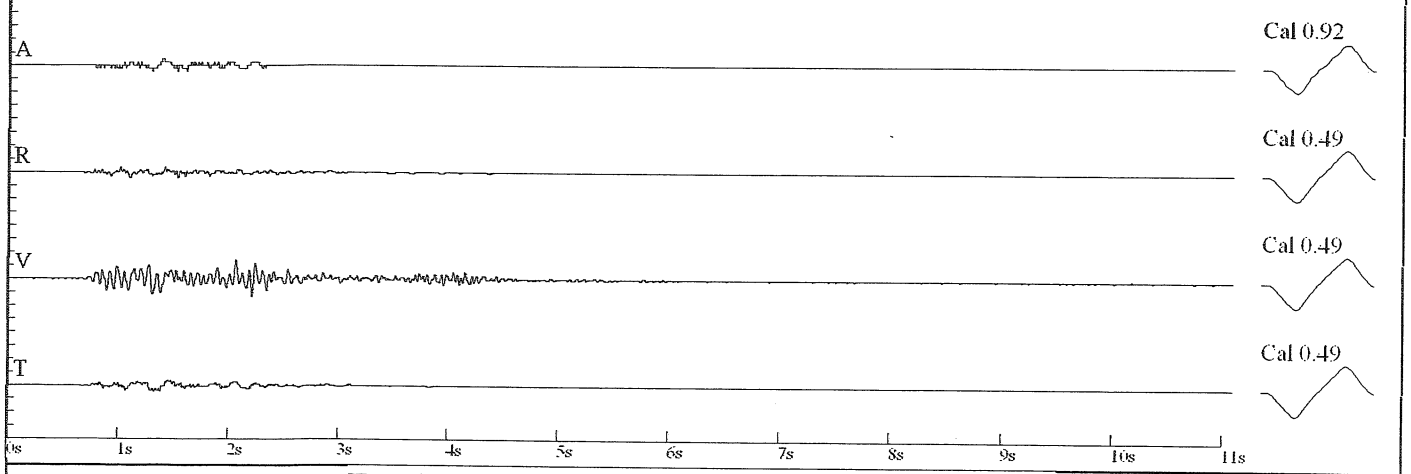
File Name: 00930021.DTB
Number: 021
Date: 3 18 2005
Time: 13:07
Serial Number: 930
Seismic Trigger: 0.0450 in s 1.1430 mm s
Acoustic Trigger: 126 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.0

Amplitudes and Frequencies

Acoustic: 112 dB @ 0.0 Hz
(0.08Mb 0.0012psi 0.0080kPa)
Radial: 0.02in/s 0.508mm/s @ 21.3Hz
***Vertical:* 0.07in/s 1.778mm/s @ 14.2Hz**
Transverse: 0.025in/s 0.635mm/s @ 3.7Hz

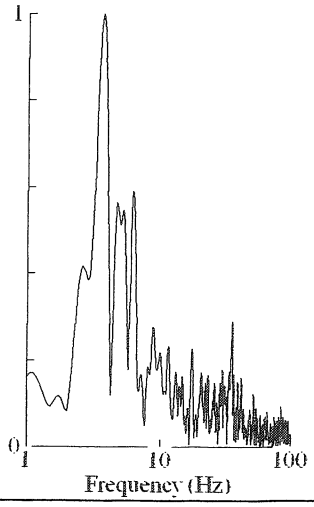
Graph Information

Duration: 0.000s To: 11.000s
Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s

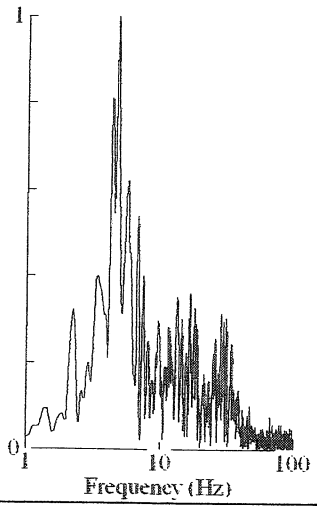


Fourier Analysis (Power Spectrum - Box Window)

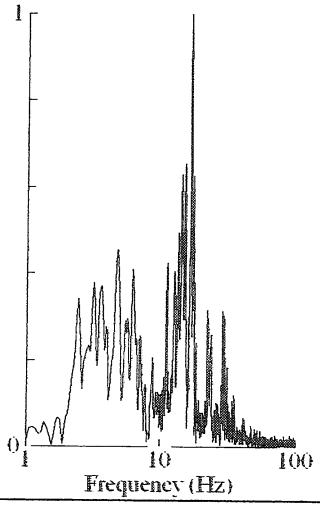
Acoustic
3.63 Hz



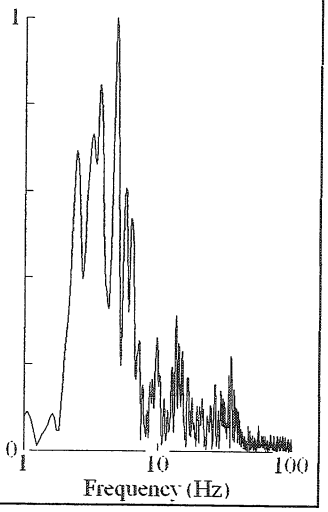
Radial
4.75 Hz



Vertical
16.81 Hz



Transverse
4.81 Hz



High Mesa
Upper corner
V = NE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

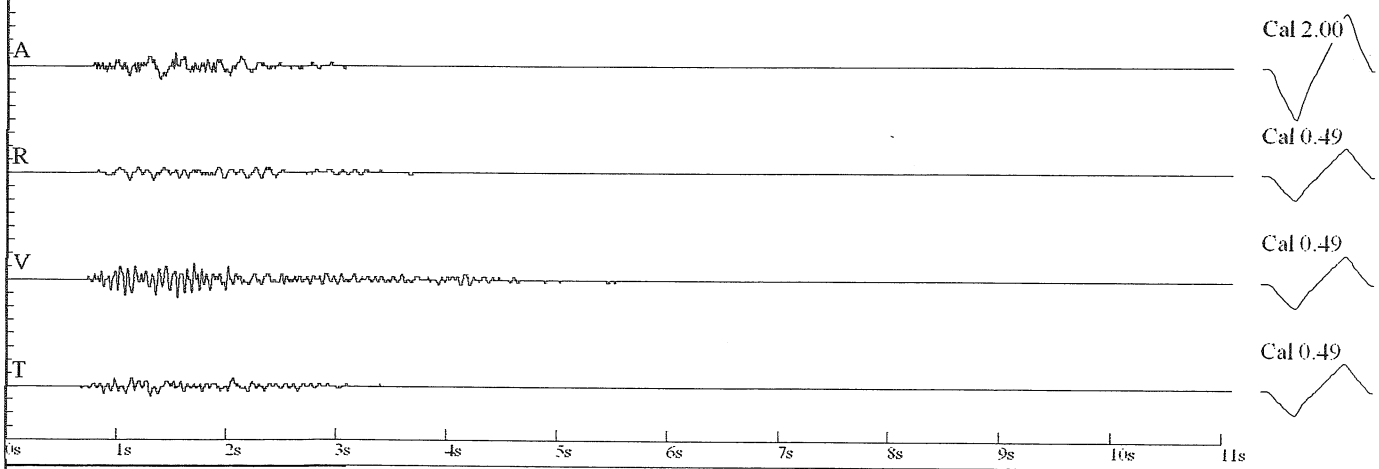
File Name: 02276302.DTB
Number: 302
Date: 3 18 2005
Time: 13:06
Serial Number: 2276
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

Acoustic: 118 dB @ 25.6 Hz
(0.16Mb 0.0023psi 0.0160kPa)
Radial: 0.03in/s 0.762mm/s @ 12.8Hz
***Vertical:* 0.07in/s 1.778mm/s @ 21.3Hz**
Transverse: 0.04in/s 1.016mm/s @ 9.4Hz

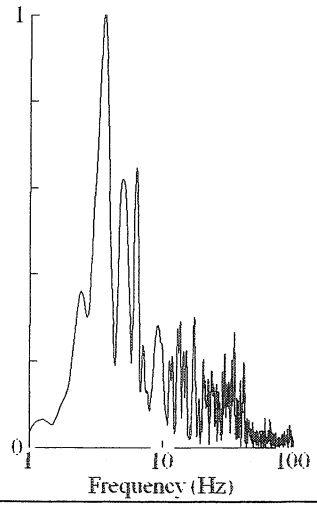
Graph Information

Duration: 0.000s To: 11.000s
Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s

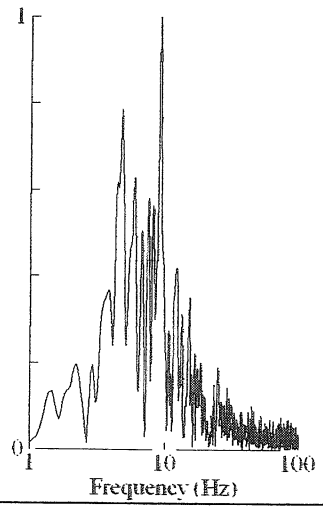


Fourier Analysis (Power Spectrum - Box Window)

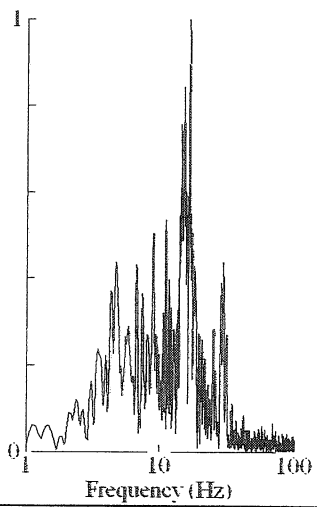
Acoustic
3.56 Hz



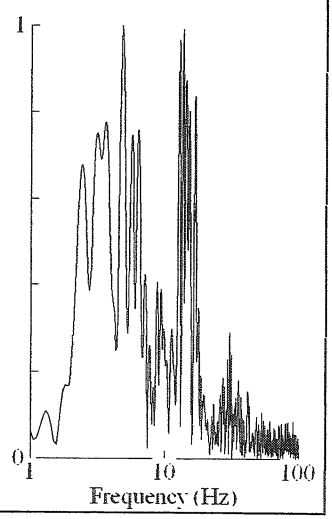
Radial
9.13 Hz



Vertical
16.69 Hz



Transverse
4.75 Hz



High Mesa
Exterior Master

File Name: 01258063.DTB
Number: 063
Date: 3 21 2005
Time: 11:04
Serial Number: 1258
Seismic Trigger: 0.0250 in s 0.6350 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

Acoustic: 106 dB @ 0.0 Hz
(0.04Mb 0.0006psi 0.0040kPa)

***Radial:* 0.06in/s 1.524mm/s @ 32.0Hz**

Vertical: 0.035in/s 0.889mm/s @ 28.4Hz

Transverse: 0.055in/s 1.397mm/s @ 23.2Hz

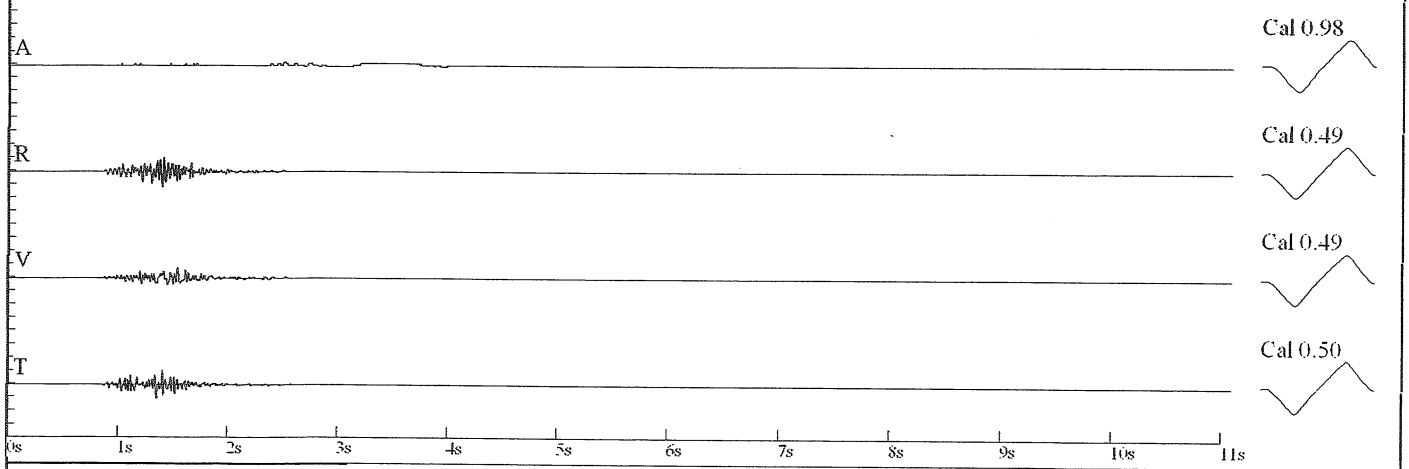
Graph Information

Duration: 0.000s To: 11.000s

Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)

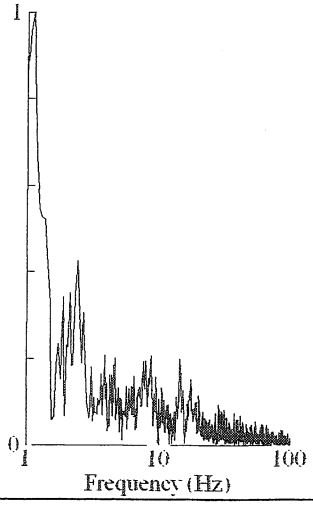
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s

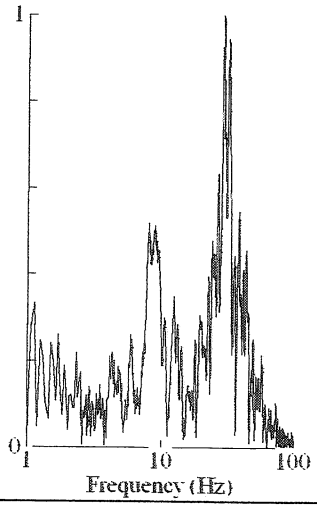


Fourier Analysis (Power Spectrum - Box Window)

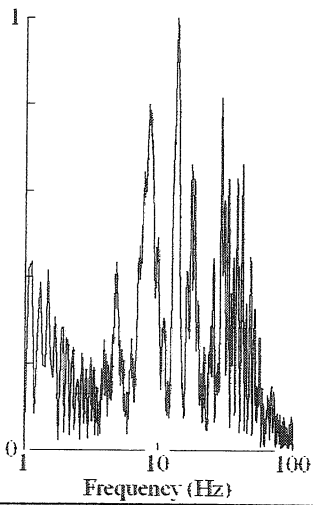
Acoustic
1.13 Hz



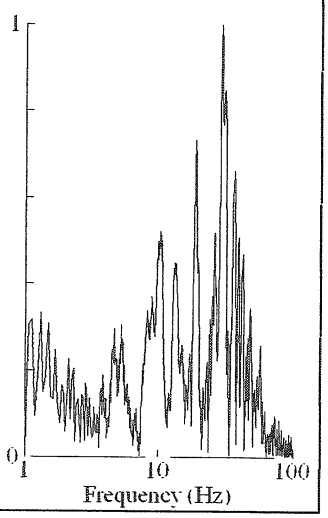
Radial
28.94 Hz



Vertical
13.69 Hz



Transverse
29.19 Hz



High Mesa
Upper corner
V = NE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

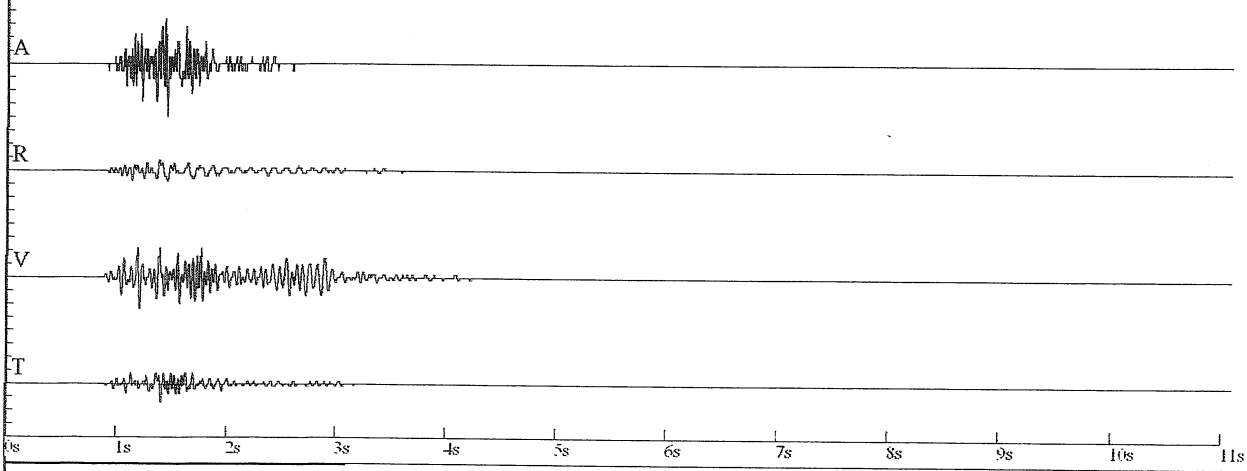
File Name: 02276304.DTB
Number: 304
Date: 3 21 2005
Time: 11:05
Serial Number: 2276
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

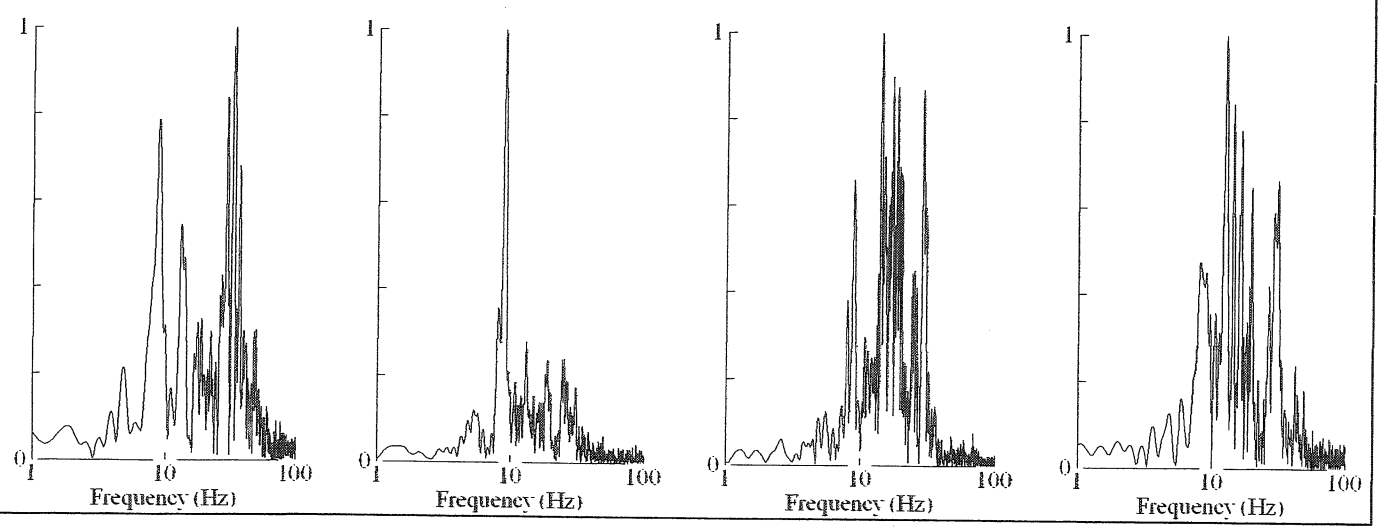
Acoustic: 123 dB @ 25.6 Hz
(0.28Mb 0.0041psi 0.0280kPa)
Radial: 0.04in/s 1.016mm/s @ 10.6Hz
***Vertical:* 0.12in/s 3.048mm/s @ 21.3Hz**
Transverse: 0.07in/s 1.778mm/s @ 25.6Hz

Graph Information

Duration: 0.000s To: 11.000s
Acoustic Scale:
123dB 0.28Mb (0.071Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)



High Mesa
Exterior Master

File Name: 01258064.DTB
Number: 064
Date: 3 22 2005
Time: 12:35
Serial Number: 1258
Seismic Trigger: 0.0250 in s 0.6350 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.0

Amplitudes and Frequencies

Acoustic: 106 dB @ 0.0 Hz
(0.04Mb 0.0006psi 0.0040kPa)

***Radial:* 0.05in/s 1.27mm/s @ 7.3Hz**

Vertical: 0.04in/s 1.016mm/s @ 5.4Hz

***Transverse:* 0.05in/s 1.27mm/s @ 10.6Hz**

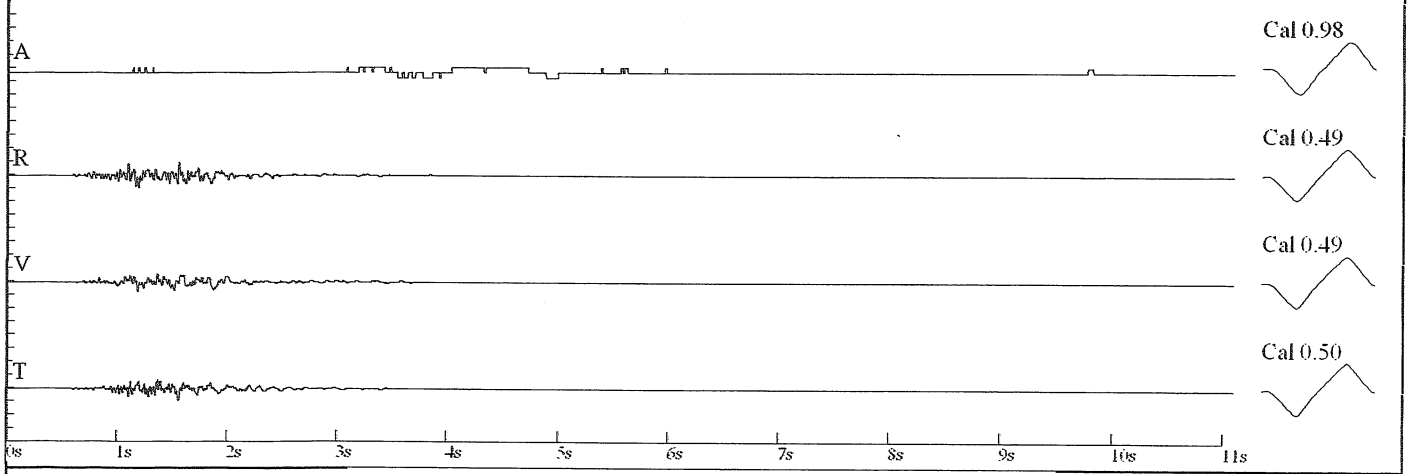
Graph Information

Duration: 0.000s To: 11.000s

Acoustic Scale:
120dB 0.20Mb (0.050Mb/div)

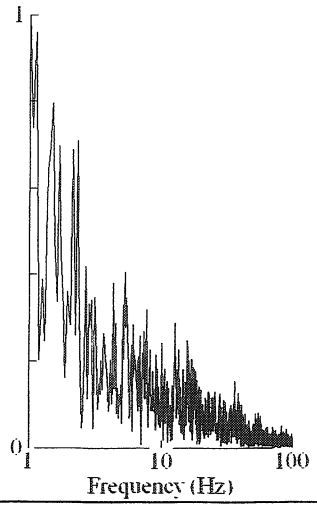
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s

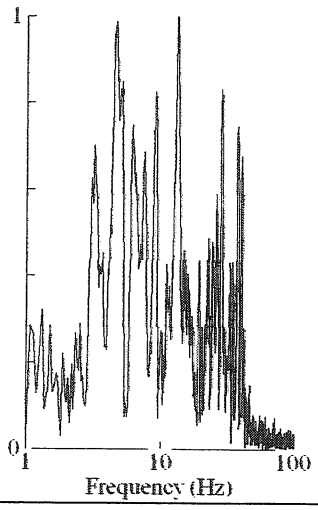


Fourier Analysis (Power Spectrum - Box Window)

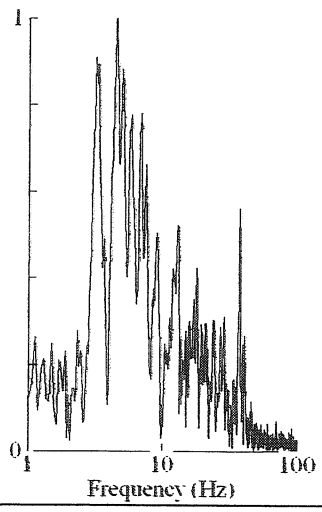
Acoustic
1.00 Hz



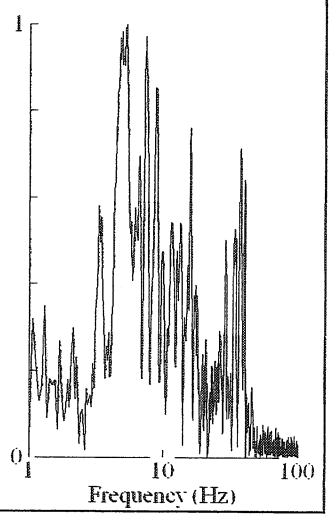
Radial
13.13 Hz



Vertical
4.50 Hz



Transverse
5.31 Hz



High Mesa
Upper corner
V = NE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

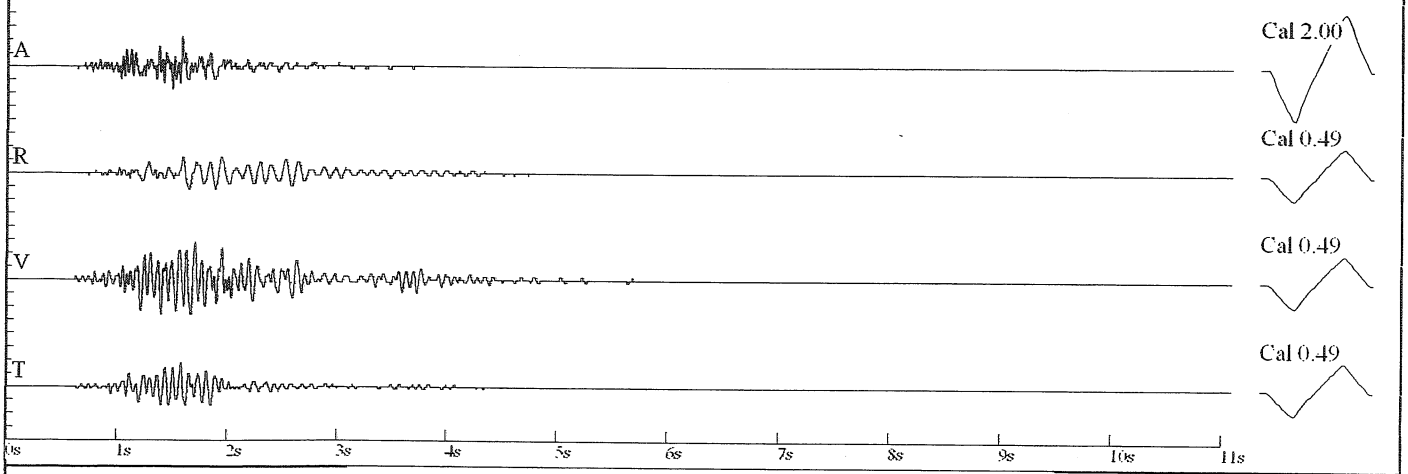
File Name: 02276305.DTB
Number: 305
Date: 3 22 2005
Time: 12:36
Serial Number: 2276
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

Acoustic: 125 dB @ 11.1 Hz
(0.36Mb 0.0052psi 0.0360kPa)
Radial: 0.06in/s 1.524mm/s @ 11.6Hz
***Vertical:* 0.14in/s 3.556mm/s @ 14.2Hz**
Transverse: 0.09in/s 2.286mm/s @ 15.0Hz

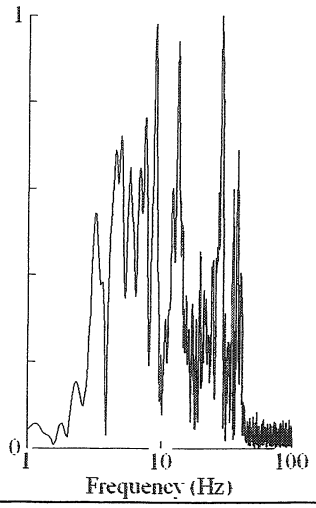
Graph Information

Duration: 0.000s To: 11.000s
Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s

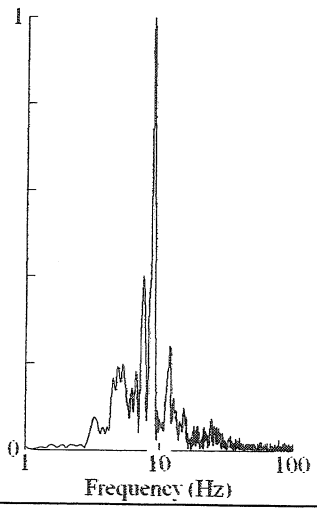


Fourier Analysis (Power Spectrum - Box Window)

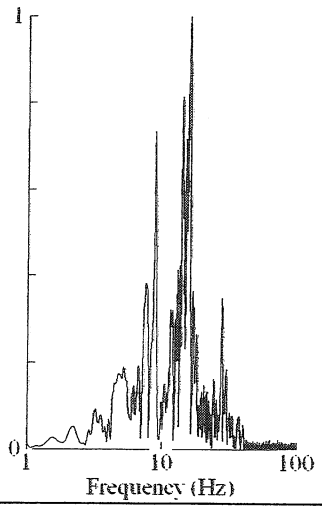
Acoustic
28.19 Hz



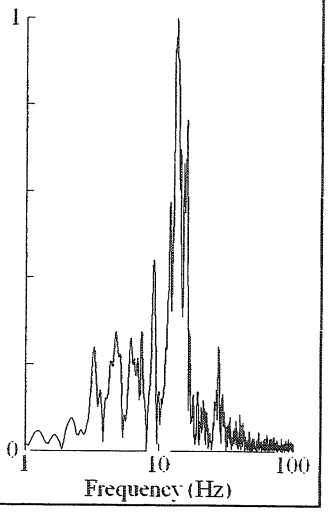
Radial
8.88 Hz



Vertical
16.06 Hz



Transverse
13.38 Hz



High Mesa
Exterior Master

File Name: 01258082.DTB
Number: 082
Date: 3 25 2005
Time: 11:00
Serial Number: 1258
Seismic Trigger: 0.0250 in s 0.6350 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

Acoustic: 100 dB @ 0.0 Hz
(0.02Mb 0.0003psi 0.0020kPa)

***Radial:* 0.03in/s 0.762mm/s @ 32.0Hz**

Vertical: 0.025in/s 0.635mm/s @ 11.1Hz

***Transverse:* 0.03in/s 0.762mm/s @ 28.4Hz**

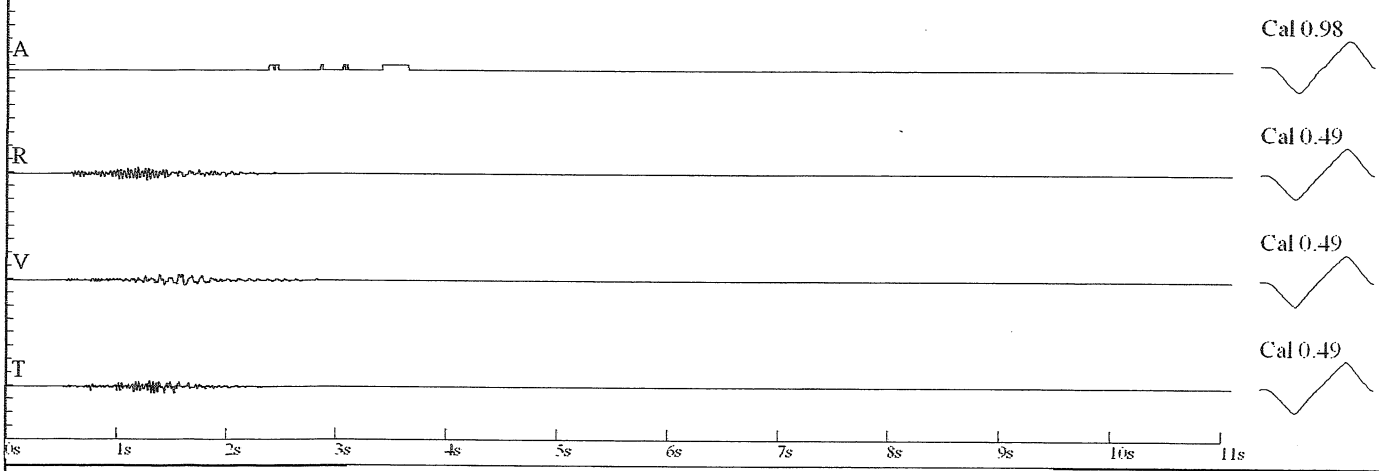
Graph Information

Duration: 0.000s To: 11.000s

Acoustic Scale:
120dB 0.20Mb (0.050Mb/div)

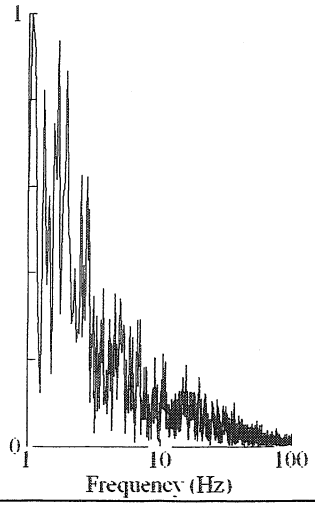
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s

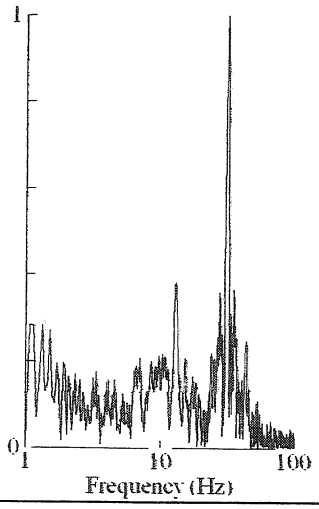


Fourier Analysis (Power Spectrum - Box Window)

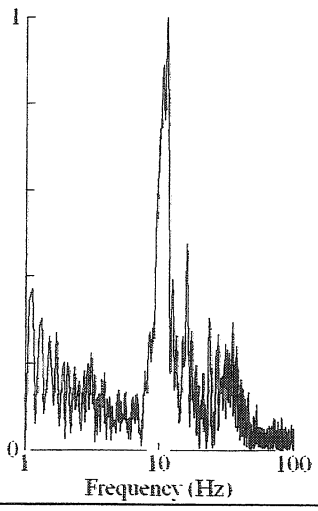
Acoustic
1.06 Hz



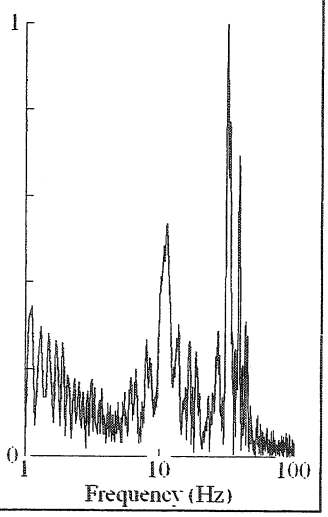
Radial
31.75 Hz



Vertical
11.44 Hz



Transverse
31.69 Hz



High Mesa
Upper corner
V = NE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

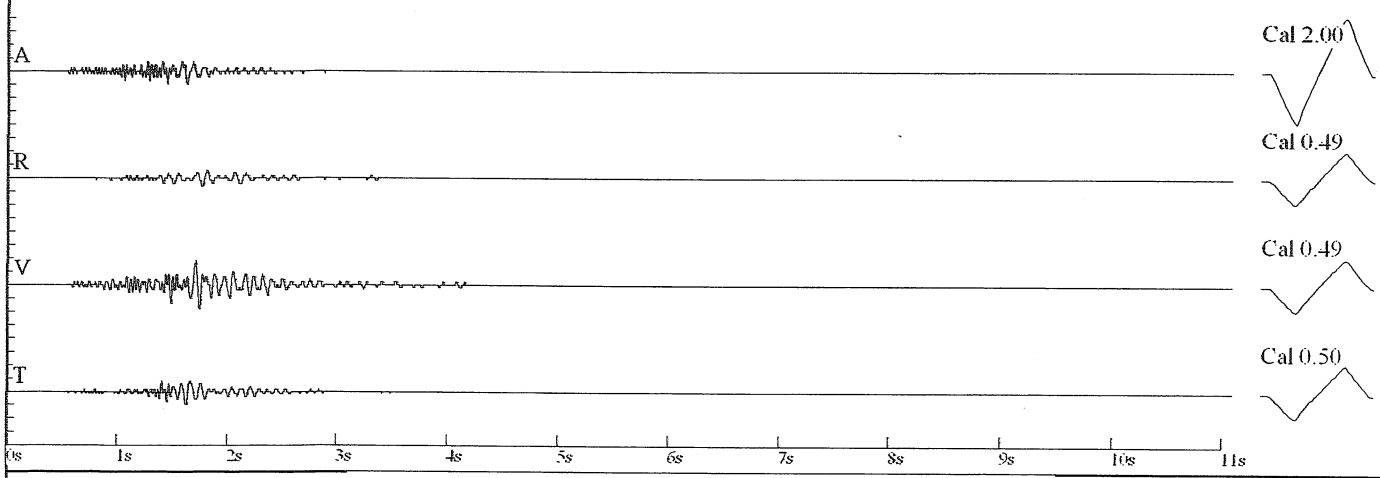
File Name: 02276323.DTB
Number: 323
Date: 3 25 2005
Time: 11:01
Serial Number: 2276
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

Acoustic: 118 dB @ 28.4 Hz
(0.16Mb 0.0023psi 0.0160kPa)
Radial: 0.03in/s 0.762mm/s @ 17.0Hz
***Vertical:* 0.09in/s 2.286mm/s @ 15.0Hz**
Transverse: 0.05in/s 1.27mm/s @ 16.0Hz

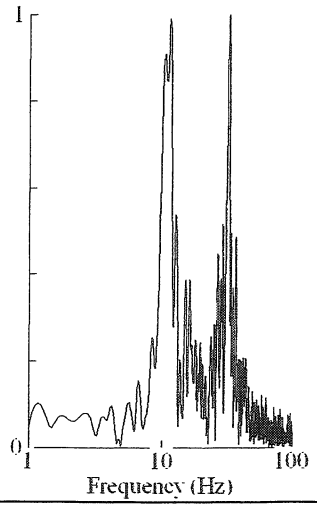
Graph Information

Duration: 0.000s To: 11.000s
Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s

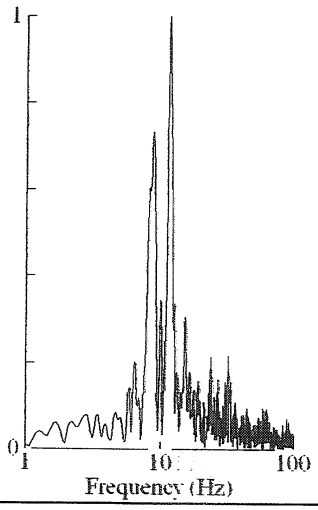


Fourier Analysis (Power Spectrum - Box Window)

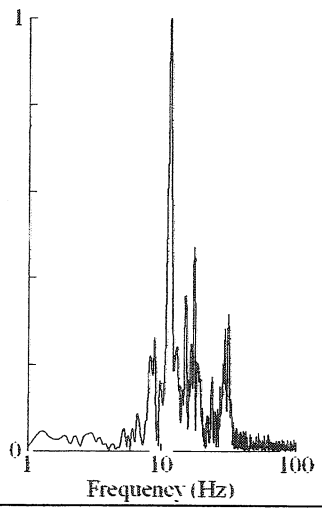
Acoustic
31.75 Hz



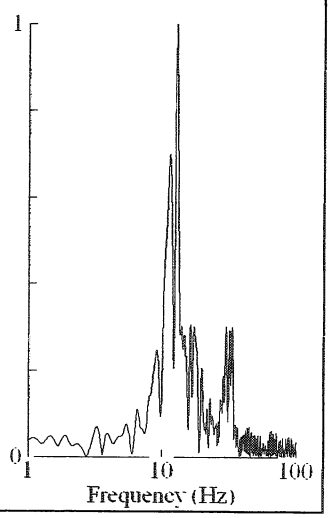
Radial
11.50 Hz



Vertical
11.56 Hz



Transverse
12.88 Hz



High Mesa
Exterior Master

File Name: 01258001.DTB
Number: 001
Date: 4 8 2005
Time: 11:18
Serial Number: 1258
Seismic Trigger: 0.0250 in s 0.6350 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

Acoustic: 106 dB @ 0.0 Hz
(0.04Mb 0.0006psi 0.0040kPa)

***Radial:* 0.075in/s 1.905mm/s @ 32.0Hz**

Vertical: 0.055in/s 1.397mm/s @ 25.6Hz

Transverse: 0.07in/s 1.778mm/s @ 42.6Hz

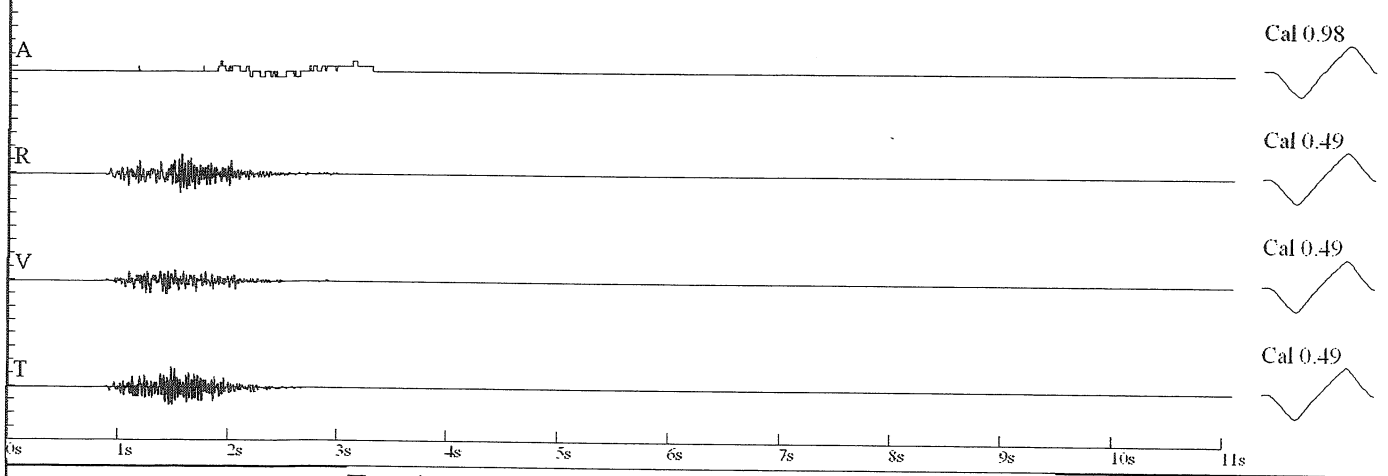
Graph Information

Duration: 0.000s To: 11.000s

Acoustic Scale:
120dB 0.20Mb (0.050Mb/div)

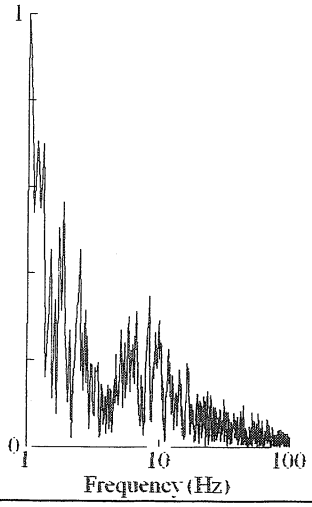
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s

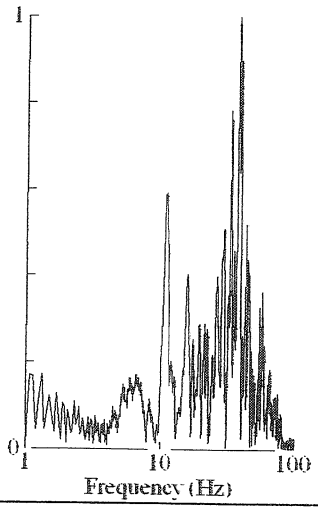


Fourier Analysis (Power Spectrum - Box Window)

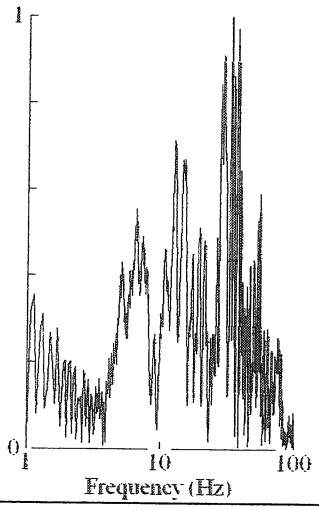
Acoustic
1.00 Hz



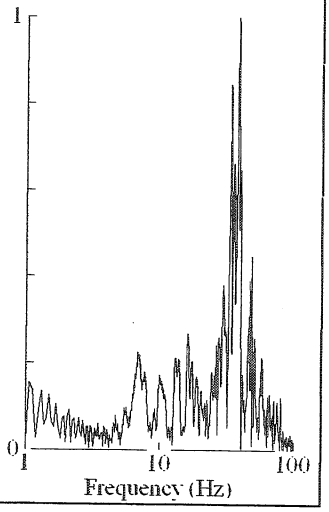
Radial
37.88 Hz



Vertical
33.50 Hz



Transverse
37.63 Hz



High Mesa
Lower corner
V = SE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

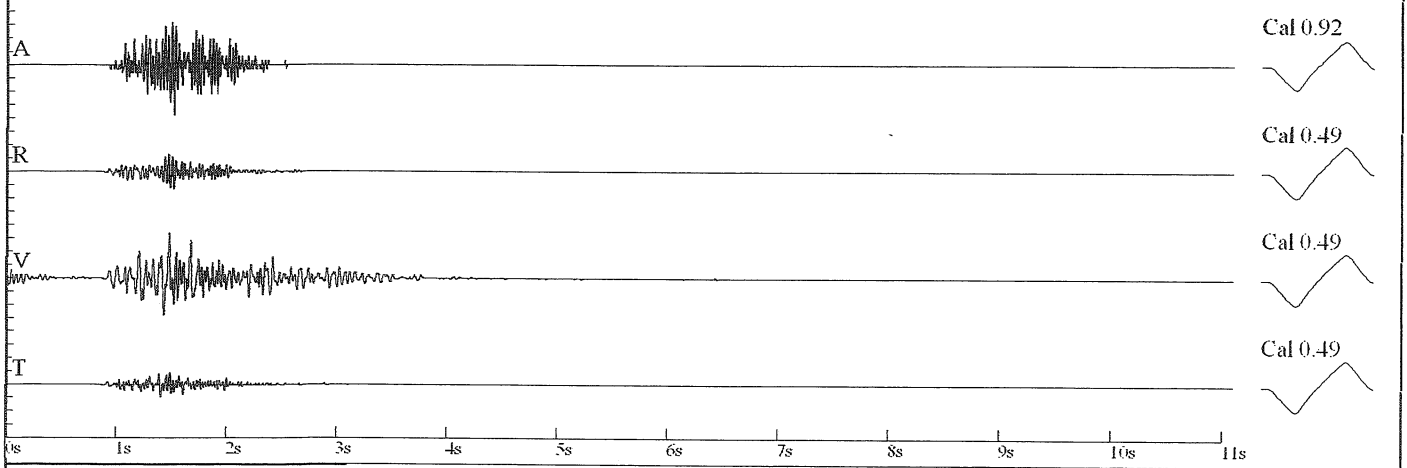
File Name: 00930004.DTB
Number: 004
Date: 4 8 2005
Time: 11:18
Serial Number: 930
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 124 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 6.9

Amplitudes and Frequencies

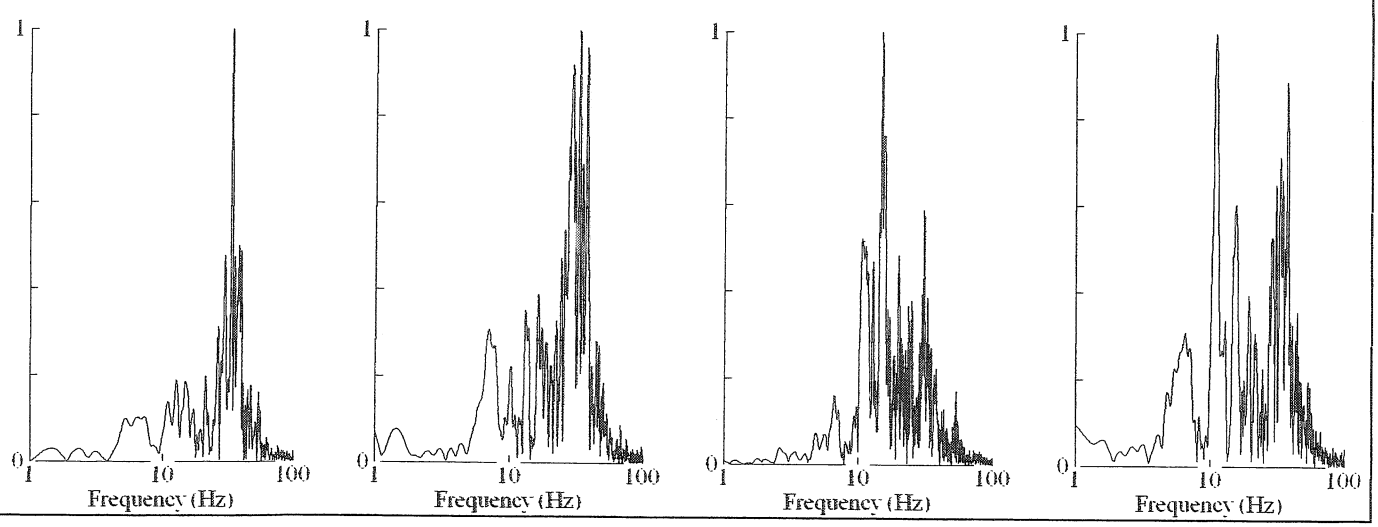
Acoustic: 122 dB @ 32.0 Hz
(0.24Mb 0.0035psi 0.0240kPa)
Radial: 0.065in/s 1.651mm/s @ 32.0Hz
***Vertical:* 0.17in/s 4.318mm/s @ 21.3Hz**
Transverse: 0.05in/s 1.27mm/s @ 21.3Hz

Graph Information

Duration: 0.000s To: 11.000s
Acoustic Scale:
122dB 0.25Mb (0.063Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)



High Mesa
Upper corner
V = NE midwall; A = vertical
A channel: 1 Mb = 0.5 ips
Transvers component feel from corner
as a result of high winds

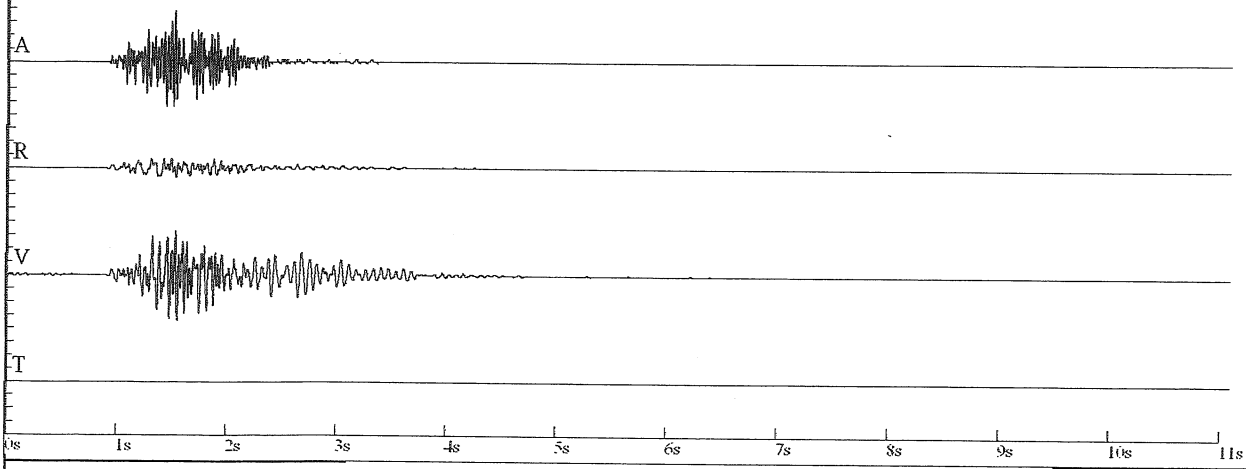
File Name: 02276003.DTB
Number: 003
Date: 4 8 2005
Time: 11:18
Serial Number: 2276
Seismic Trigger: 0.0400 in s 1.0160 mm s
Acoustic Trigger: 117 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.0

Amplitudes and Frequencies

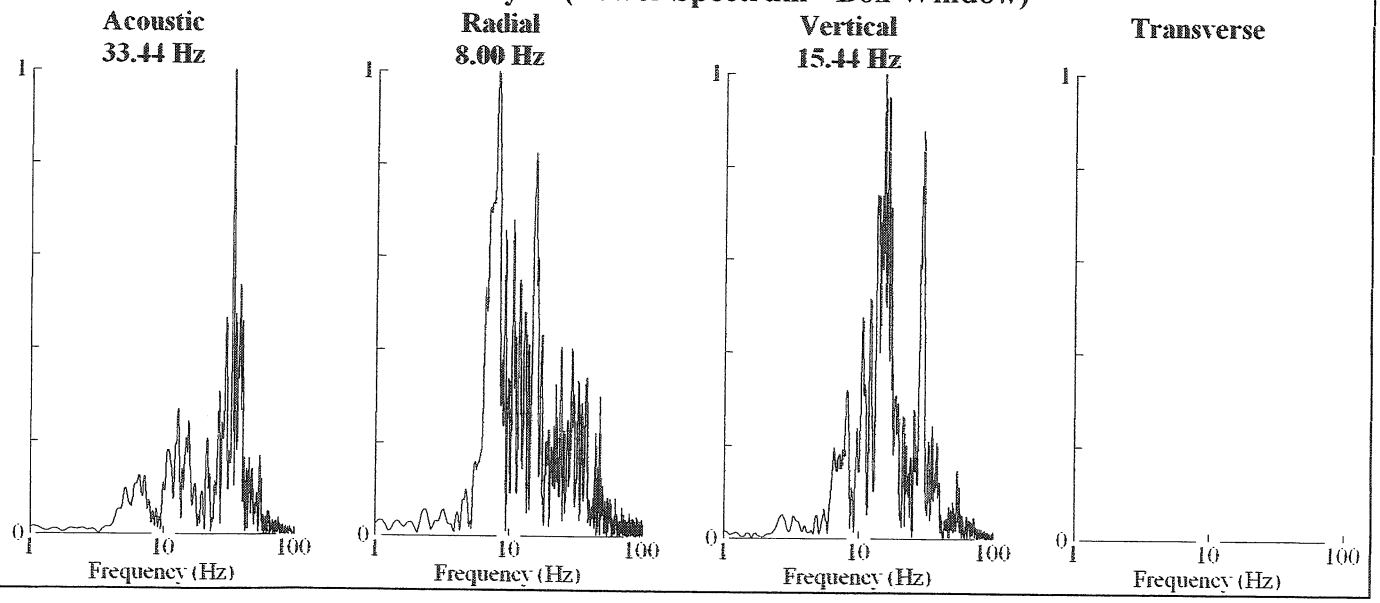
Acoustic: 128 dB @ 32.0 Hz
(0.48Mb 0.0070psi 0.0480kPa)
Radial: 0.035in/s 0.889mm/s @ 8.2Hz
***Vertical:* 0.17in/s 4.318mm/s @ 23.2Hz**
Transverse: 0.00in/s 0.00mm/s @ 0.0Hz

Graph Information

Duration: 0.000s To: 11.000s
Acoustic Scale:
128dB 0.50Mb (0.126Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)



High Mesa
Exterior Master

File Name: 01258022.DTB
Number: 022
Date: 4 12 2005
Time: 14:21
Serial Number: 1258
Seismic Trigger: 0.0250 in s 0.6350 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

Acoustic: 106 dB @ 0.0 Hz
(0.04Mb 0.0006psi 0.0040kPa)

***Radial:* 0.025in/s 0.635mm/s @ 12.8Hz**

***Vertical:* 0.025in/s 0.635mm/s @ 8.5Hz**

Transverse: 0.02in/s 0.508mm/s @ 32.0Hz

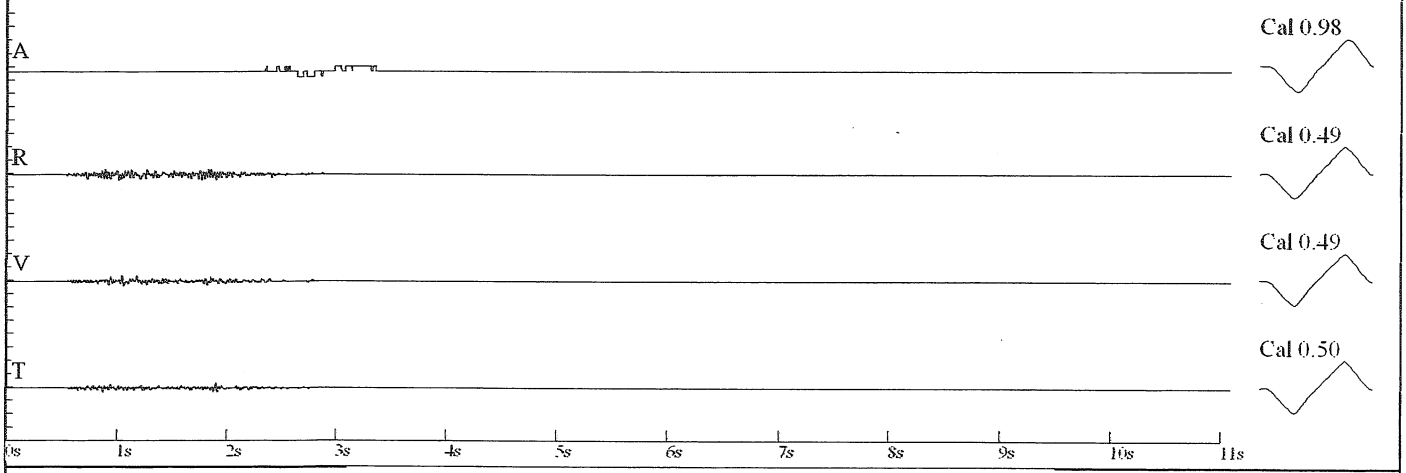
Graph Information

Duration: 0.000s To: 11.000s

Acoustic Scale:
120dB 0.20Mb (0.050Mb/div)

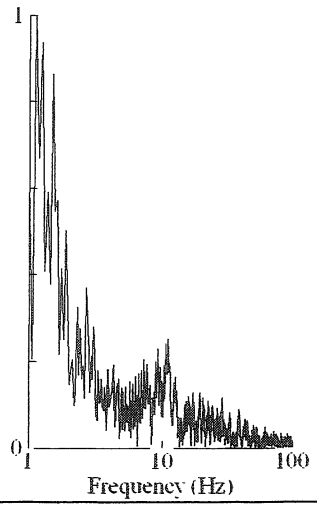
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s

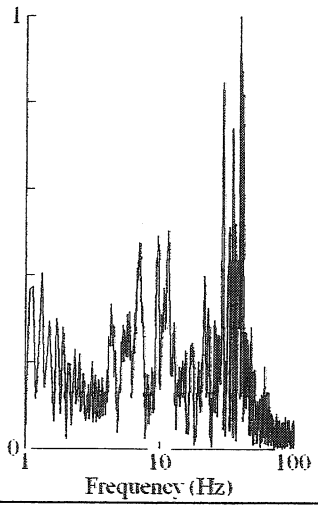


Fourier Analysis (Power Spectrum - Box Window)

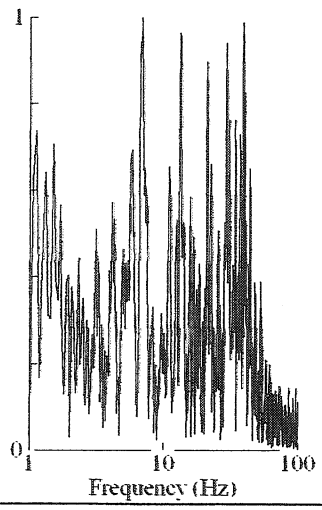
Acoustic
1.13 Hz



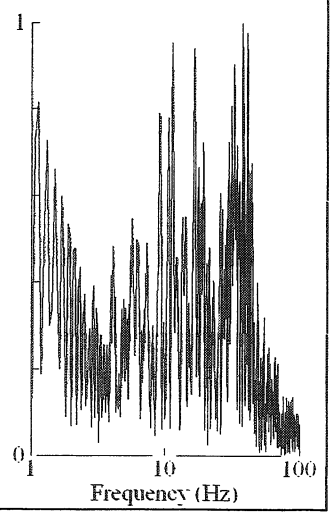
Radial
39.13 Hz



Vertical
6.88 Hz



Transverse
37.25 Hz



High Mesa
Lower corner
V = SE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

File Name: 00930024.DTB
Number: 024
Date: 4 12 2005
Time: 14:21
Serial Number: 930
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 124 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.0

Amplitudes and Frequencies

Acoustic: 110 dB @ 36.5 Hz
(0.06Mb 0.0009psi 0.0060kPa)

Radial: 0.02in/s 0.508mm/s @ 36.5Hz

***Vertical:* 0.045in/s 1.143mm/s @ 23.2Hz**

Transverse: 0.025in/s 0.635mm/s @ 28.4Hz

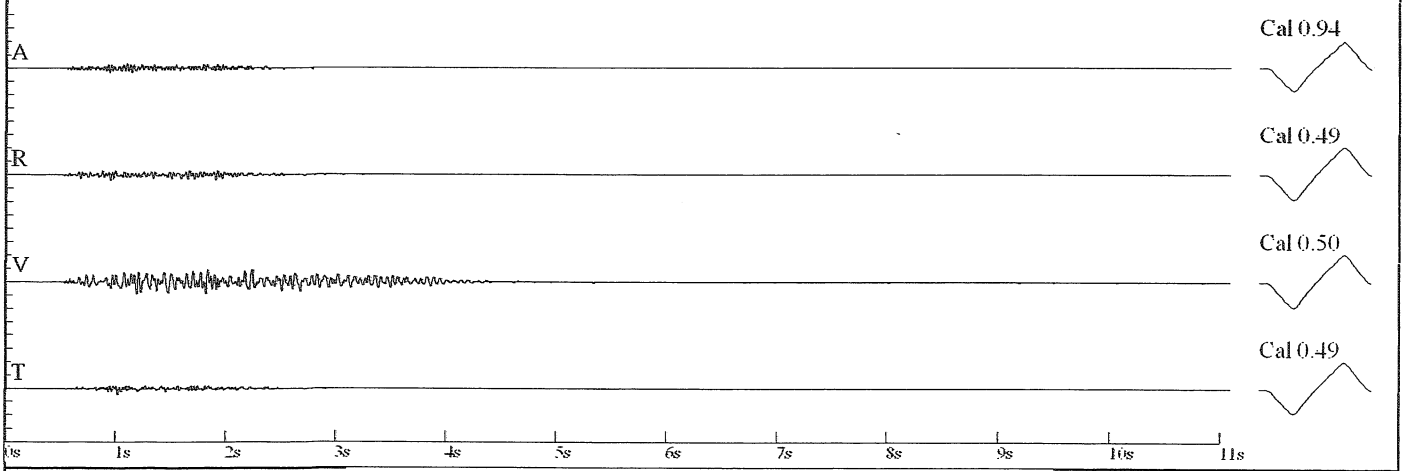
Graph Information

Duration: 0.000s To: 11.000s

Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)

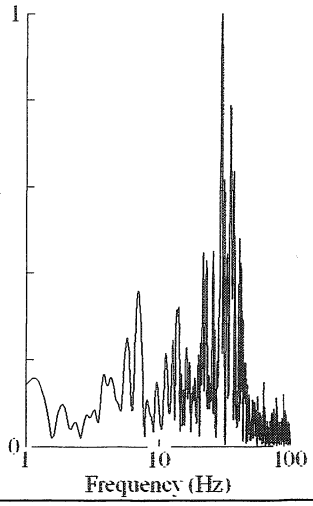
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s

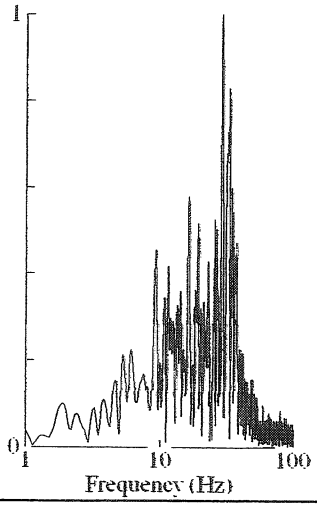


Fourier Analysis (Power Spectrum - Box Window)

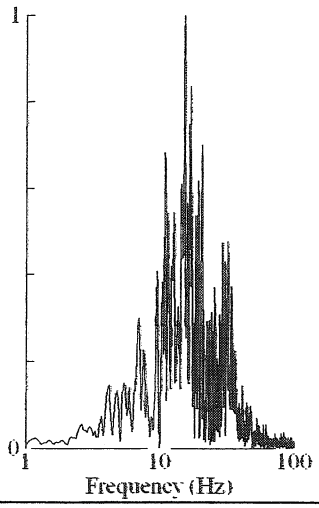
Acoustic
29.38 Hz



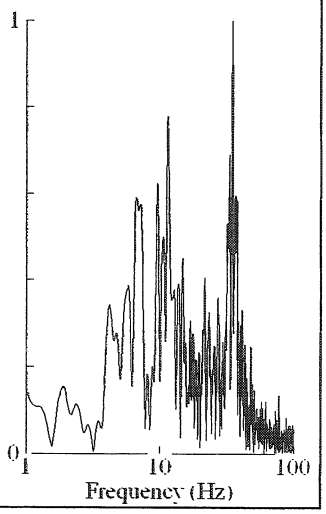
Radial
29.06 Hz



Vertical
15.38 Hz



Transverse
34.44 Hz



High Mesa
Upper corner
V = NE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

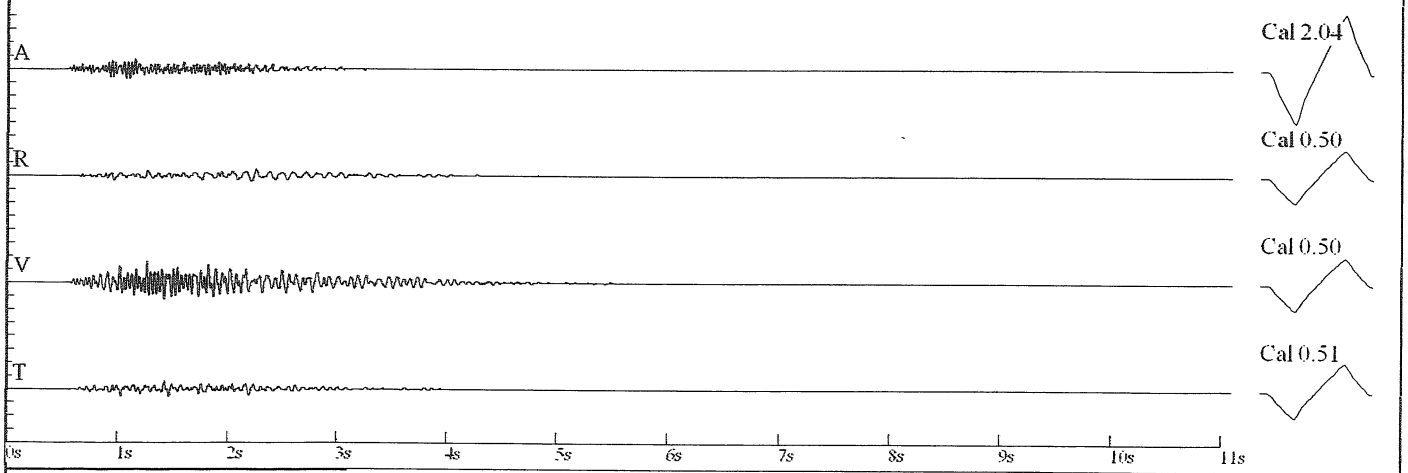
File Name: 02276023.DTB
Number: 023
Date: 4 12 2005
Time: 14:21
Serial Number: 2276
Seismic Trigger: 0.0400 in s 1.0160 mm s
Acoustic Trigger: 117 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

Acoustic: 116 dB @ 32.0 Hz
(0.12Mb 0.0017psi 0.0120kPa)
Radial: 0.025in/s 0.635mm/s @ 14.2Hz
***Vertical:* 0.08in/s 2.032mm/s @ 23.2Hz**
Transverse: 0.03in/s 0.762mm/s @ 21.3Hz

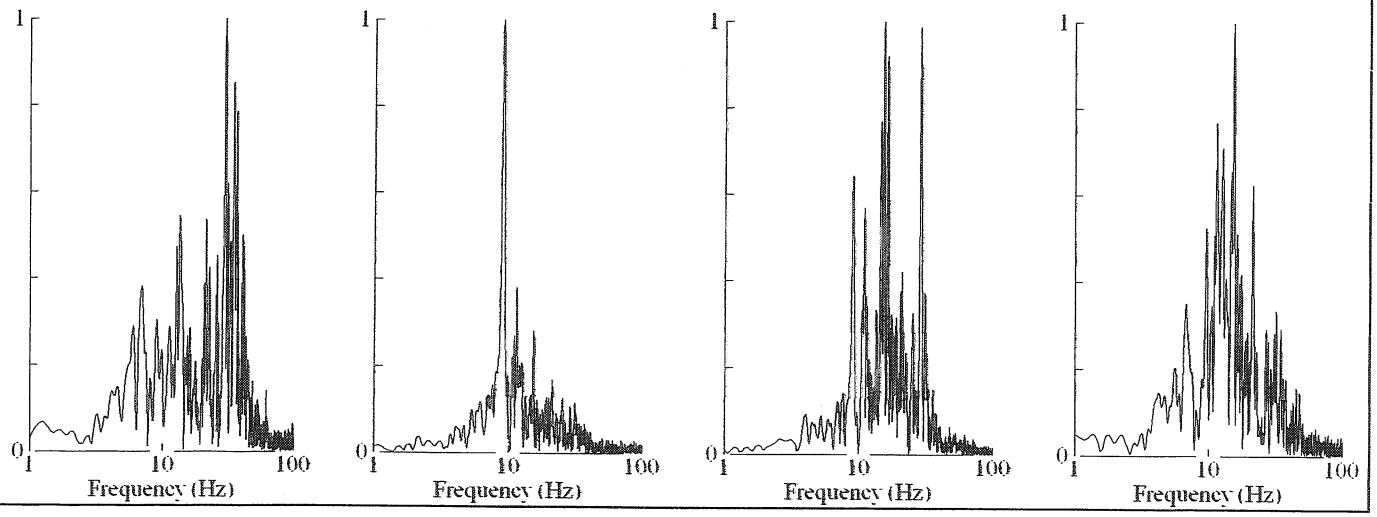
Graph Information

Duration: 0.000s To: 11.000s
Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)

Acoustic	Radial	Vertical	Transverse
29.44 Hz	9.06 Hz	15.38 Hz	15.38 Hz



High Mesa
Exterior Master

File Name: 01258023.DTB
Number: 023
Date: 4 13 2005
Time: 15:39
Serial Number: 1258
Seismic Trigger: 0.0250 in s 0.6350 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.0

Amplitudes and Frequencies

Acoustic: 106 dB @ 0.0 Hz
(0.04Mb 0.0006psi 0.0040kPa)

***Radial:* 0.03in/s 0.762mm/s @ 36.5Hz**

***Vertical:* 0.03in/s 0.762mm/s @ 6.5Hz**

Transverse: 0.025in/s 0.635mm/s @ 7.3Hz

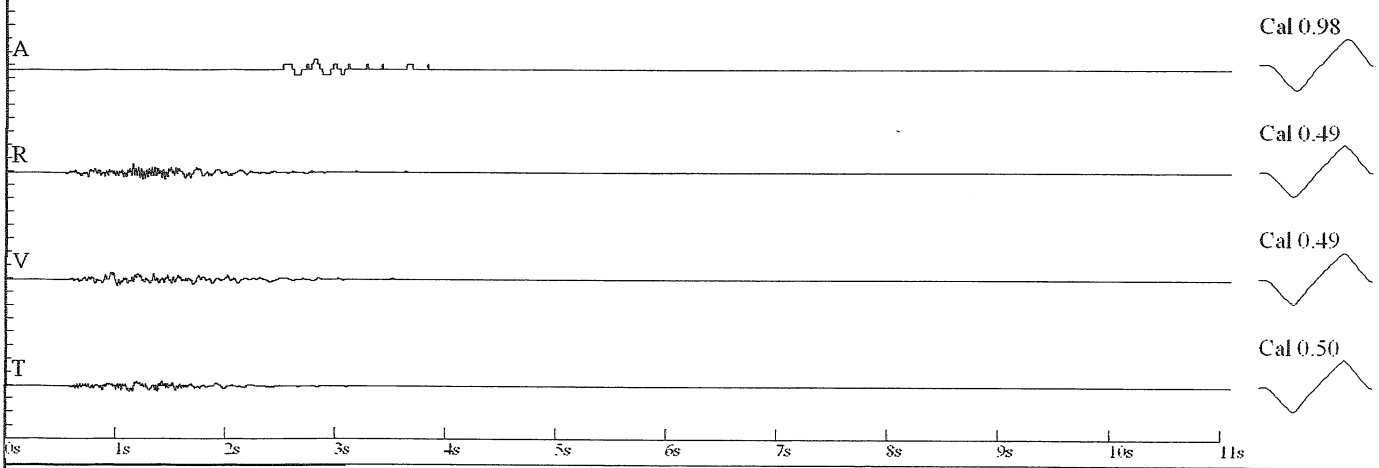
Graph Information

Duration: 0.000s To: 11.000s

Acoustic Scale:
120dB 0.20Mb (0.050Mb/div)

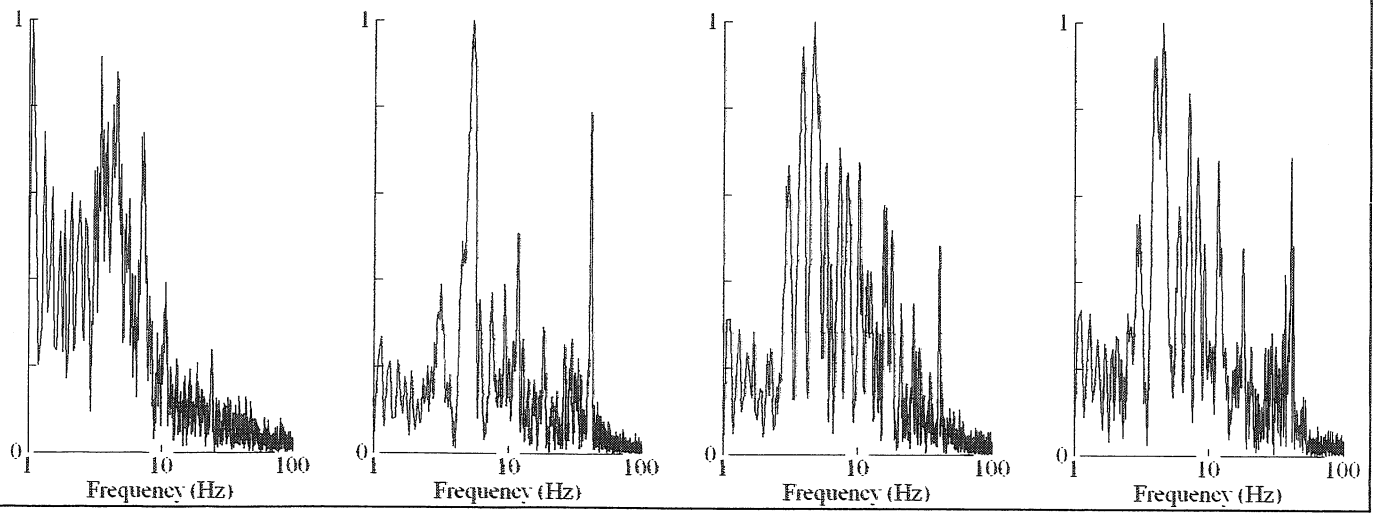
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)

Acoustic	Radial	Vertical	Transverse
1.06 Hz	5.38 Hz	4.75 Hz	4.56 Hz



High Mesa
Lower corner
V = SE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

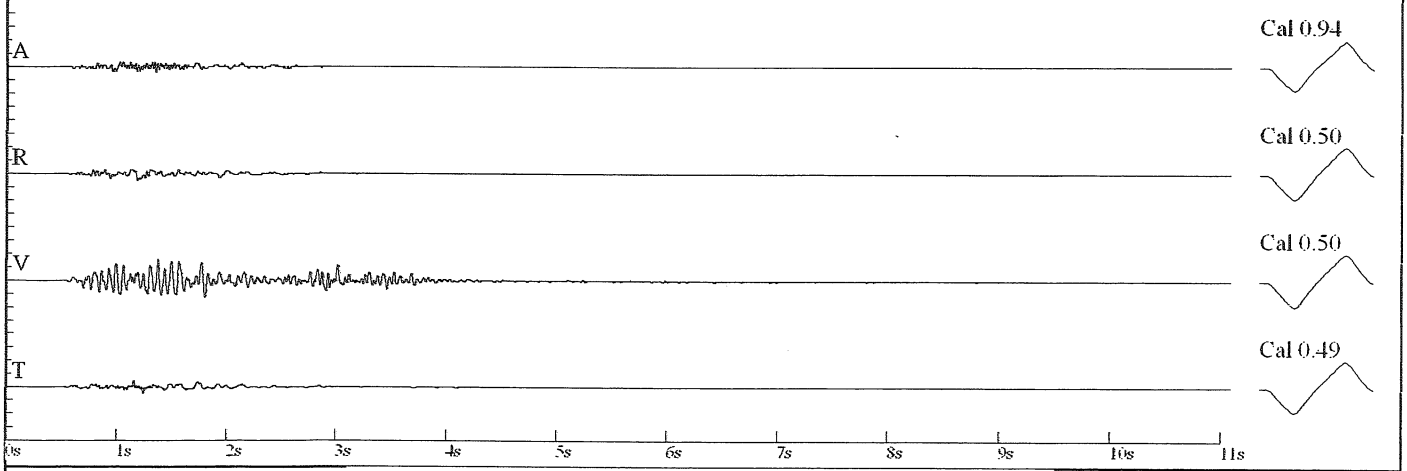
File Name: 00930025.DTB
Number: 025
Date: 4 13 2005
Time: 15:40
Serial Number: 930
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 124 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.0

Amplitudes and Frequencies

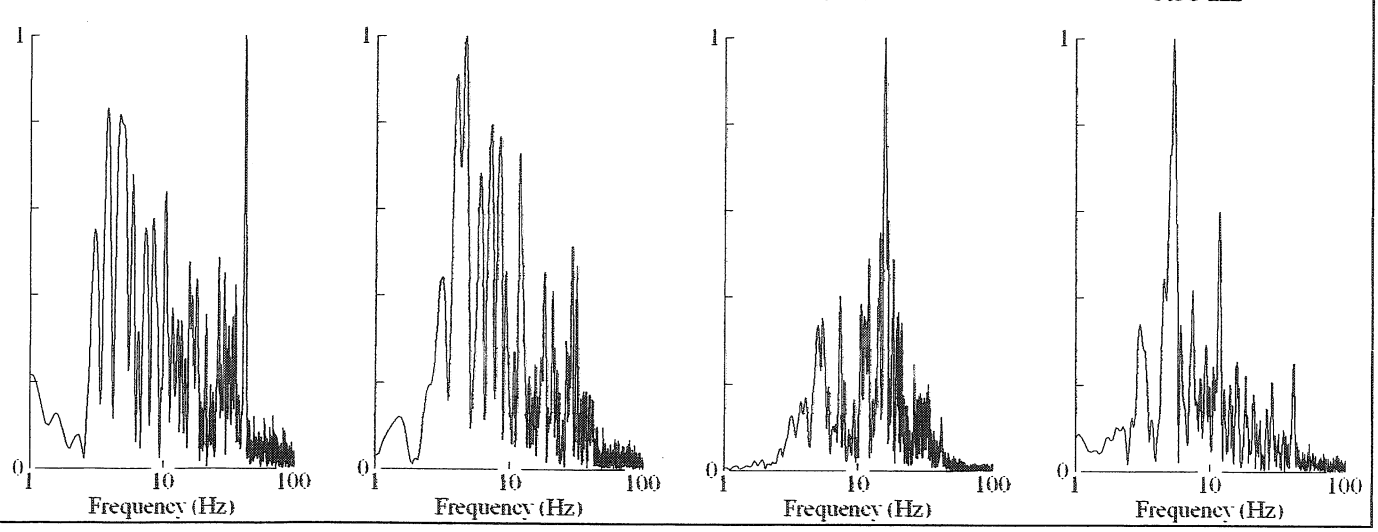
Acoustic: 112 dB @ 42.6 Hz
(0.08Mb 0.0012psi 0.0080kPa)
Radial: 0.025in/s 0.635mm/s @ 5.9Hz
***Vertical:* 0.08in/s 2.032mm/s @ 19.6Hz**
Transverse: 0.025in/s 0.635mm/s @ 25.6Hz

Graph Information

Duration: 0.000s To: 11.000s
Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)



High Mesa
Upper corner
V = NE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

File Name: 02276024.DTB
Number: 024
Date: 4 13 2005
Time: 15:39
Serial Number: 2276
Seismic Trigger: 0.0400 in s 1.0160 mm s
Acoustic Trigger: 117 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

Acoustic: 118 dB @ 28.4 Hz
(0.16Mb 0.0023psi 0.0160kPa)

Radial: 0.065in/s 1.651mm/s @ 8.8Hz

***Vertical:* 0.08in/s 2.032mm/s @ 9.4Hz**

Transverse: 0.045in/s 1.143mm/s @ 17.0Hz

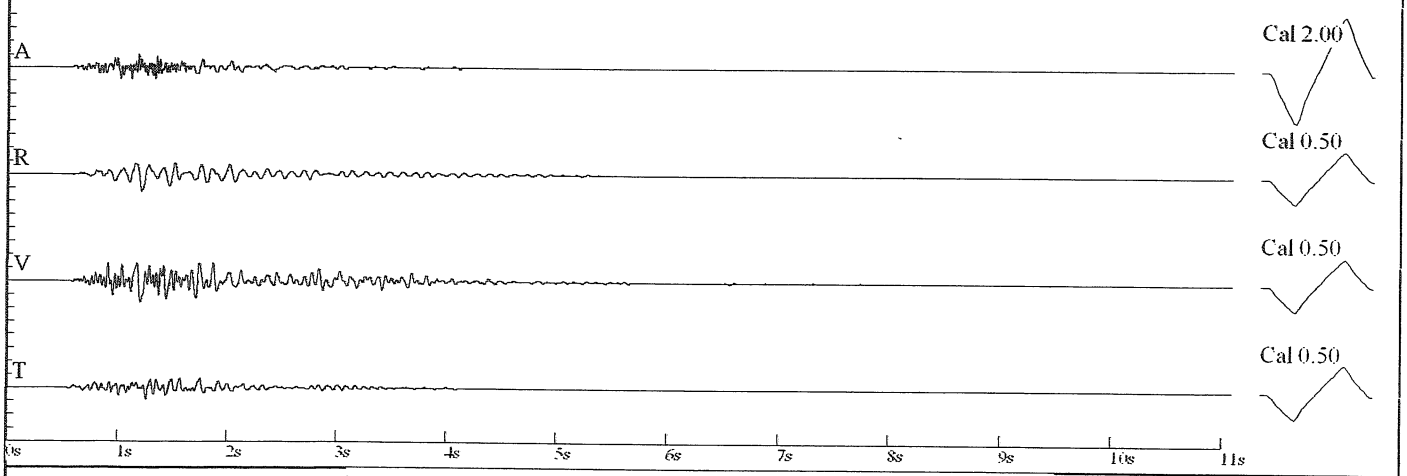
Graph Information

Duration: 0.000s To: 11.000s

Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)

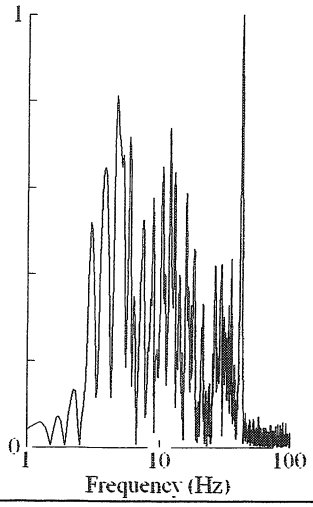
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s

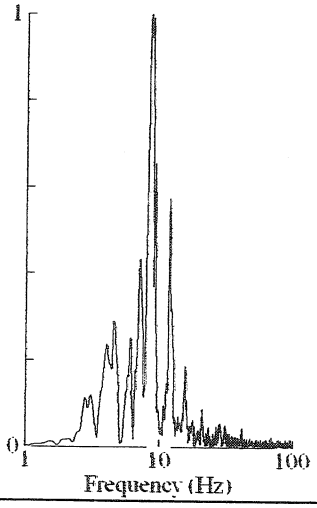


Fourier Analysis (Power Spectrum - Box Window)

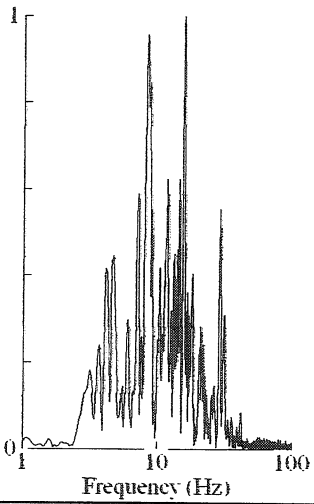
Acoustic
41.31 Hz



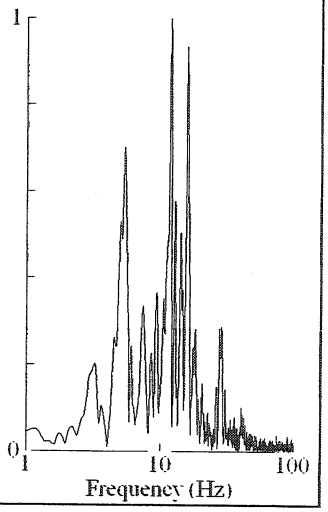
Radial
8.50 Hz



Vertical
15.69 Hz



Transverse
11.88 Hz



High Mesa
Exterior Master

File Name: 01258024.DTB
Number: 024
Date: 4 14 2005
Time: 15:56
Serial Number: 1258
Seismic Trigger: 0.0250 in s 0.6350 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.0

Amplitudes and Frequencies

Acoustic: 112 dB @ 2.1 Hz
(0.08Mb 0.0012psi 0.0080kPa)

Radial: 0.03in/s 0.762mm/s @ 25.6Hz

***Vertical:* 0.04in/s 1.016mm/s @ 10.6Hz**

Transverse: 0.035in/s 0.889mm/s @ 11.6Hz

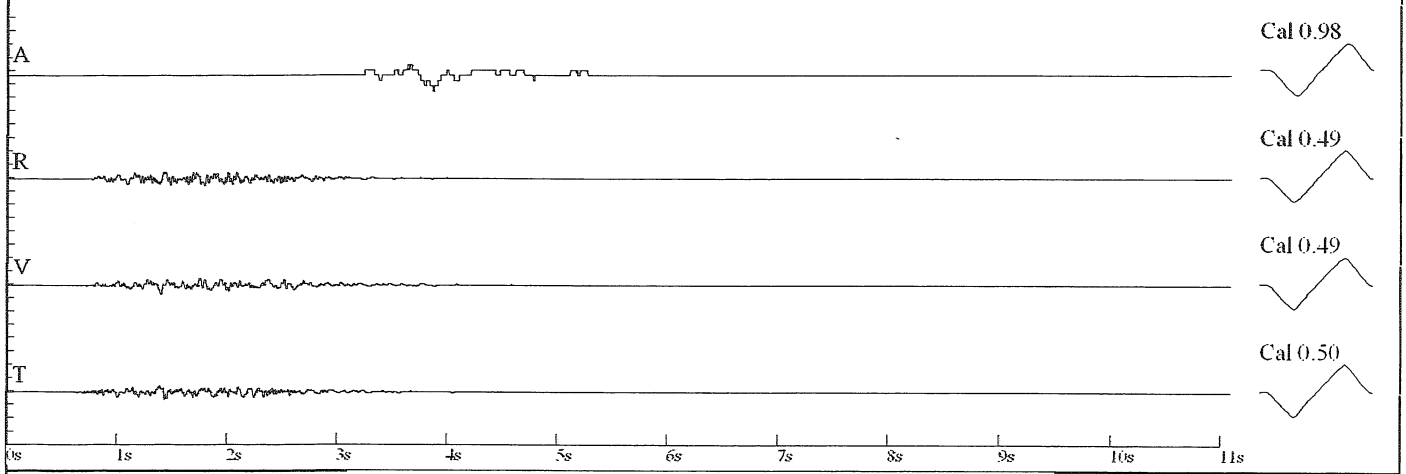
Graph Information

Duration: 0.000s To: 11.000s

Acoustic Scale:
120dB 0.20Mb (0.050Mb/div)

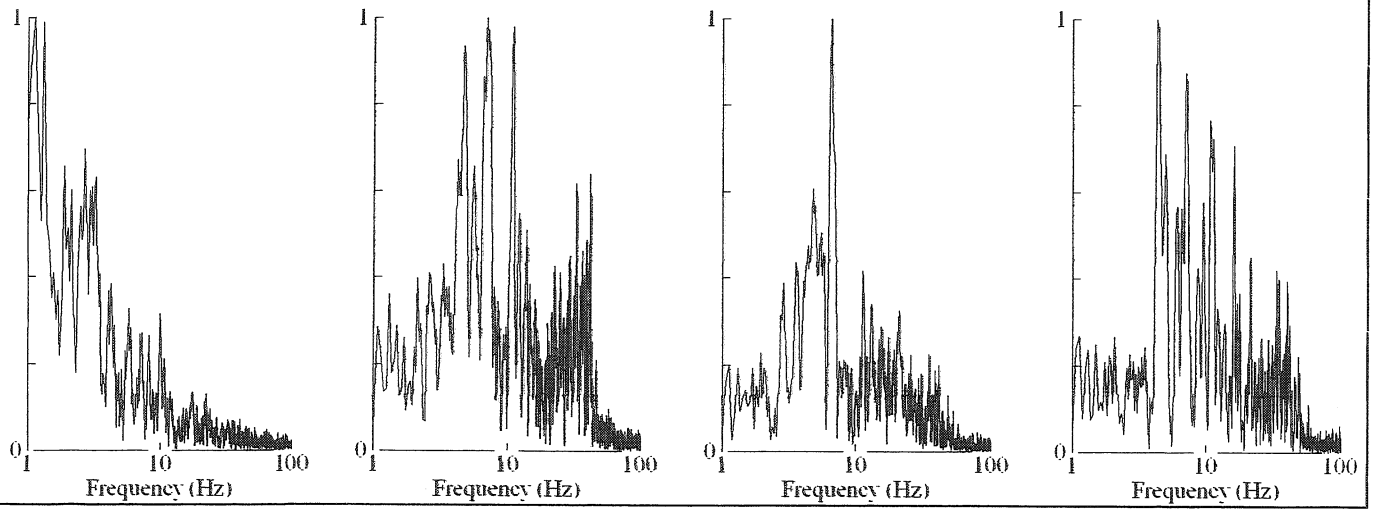
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)

Acoustic	Radial	Vertical	Transverse
1.13 Hz	7.06 Hz	6.56 Hz	4.31 Hz



High Mesa
Lower corner
V = SE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

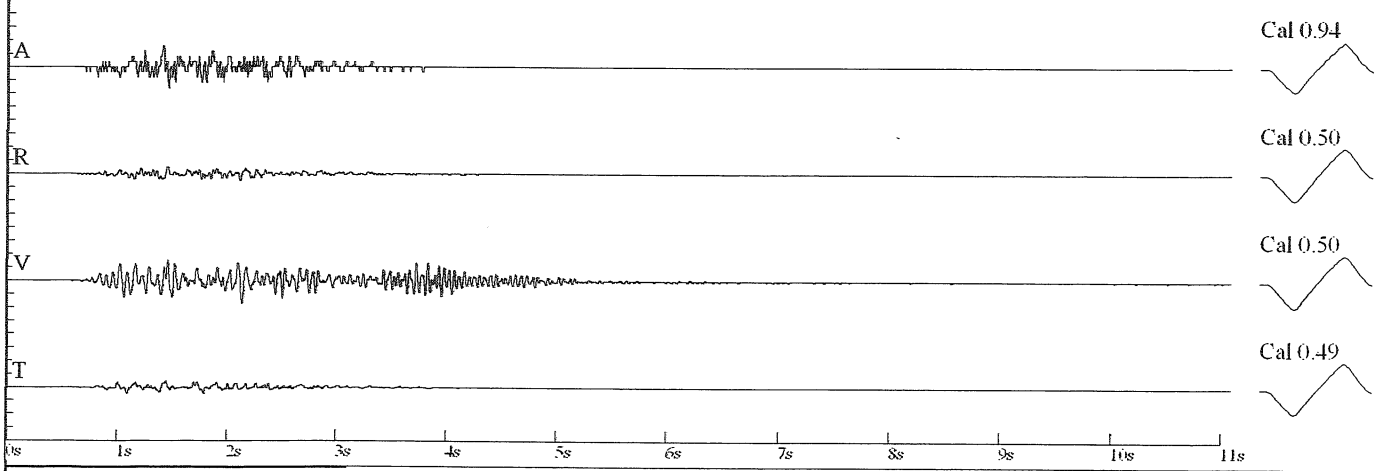
File Name: 00930026.DTB
Number: 026
Date: 4 14 2005
Time: 15:56
Serial Number: 930
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 124 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.0

Amplitudes and Frequencies

Acoustic: 112 dB @ 14.2 Hz
(0.08Mb 0.0012psi 0.0080kPa)
Radial: 0.025in/s 0.635mm/s @ 16.0Hz
***Vertical:* 0.085in/s 2.159mm/s @ 15.0Hz**
Transverse: 0.025in/s 0.635mm/s @ 10.2Hz

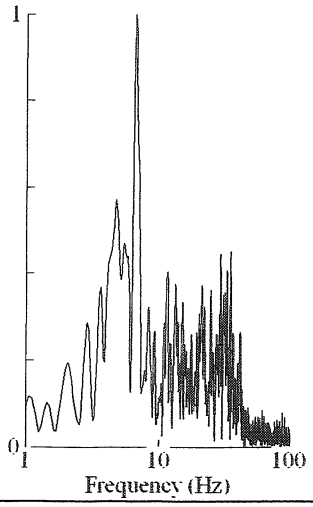
Graph Information

Duration: 0.000s To: 11.000s
Acoustic Scale:
120dB 0.20Mb (0.050Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s

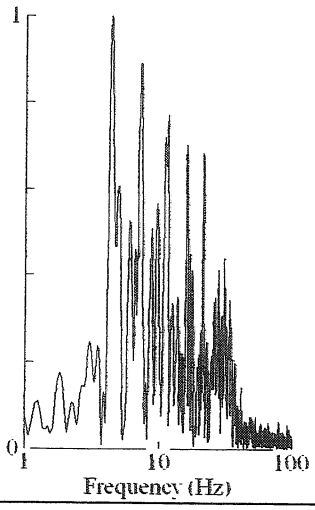


Fourier Analysis (Power Spectrum - Box Window)

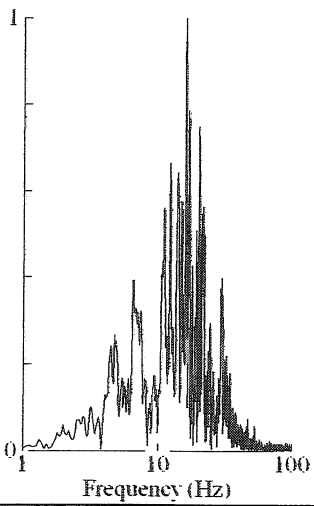
Acoustic
6.56 Hz



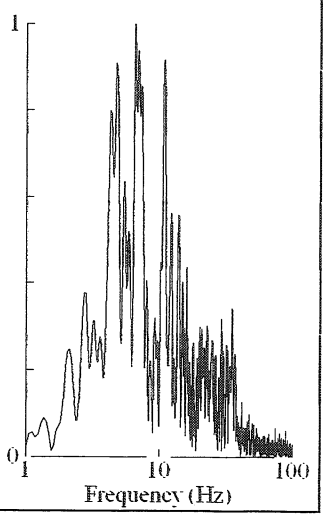
Radial
4.38 Hz



Vertical
16.06 Hz



Transverse
6.56 Hz



High Mesa
Upper corner
V = NE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

File Name: 02276025.DTB
Number: 025
Date: 4 14 2005
Time: 15:56
Serial Number: 2276
Seismic Trigger: 0.0400 in s 1.0160 mm s
Acoustic Trigger: 117 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.0

Amplitudes and Frequencies

Acoustic: 119 dB @ 12.1 Hz
(0.18Mb 0.0026psi 0.0180kPa)

Radial: 0.05in/s 1.27mm/s @ 8.8Hz

***Vertical:* 0.16in/s 4.064mm/s @ 15.0Hz**

Transverse: 0.055in/s 1.397mm/s @ 13.4Hz

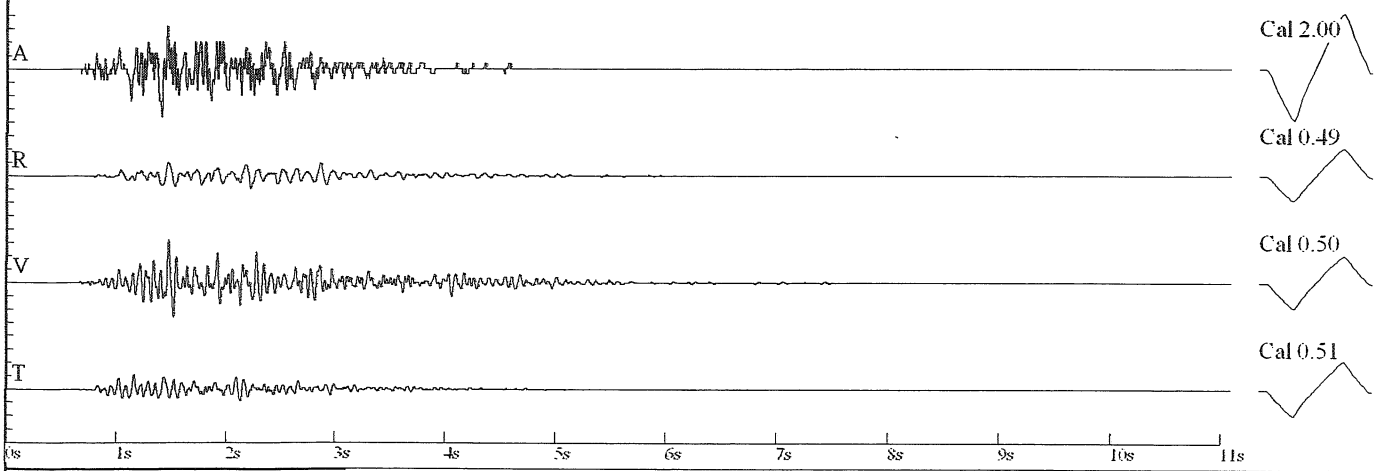
Graph Information

Duration: 0.000s To: 11.000s

Acoustic Scale:
120dB 0.20Mb (0.050Mb/div)

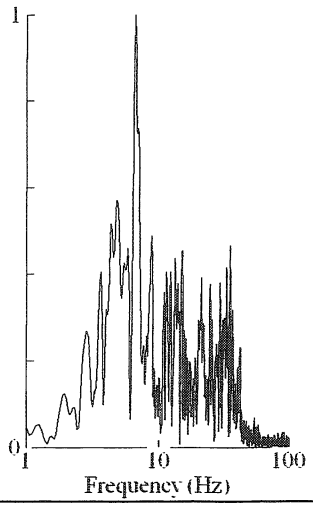
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s

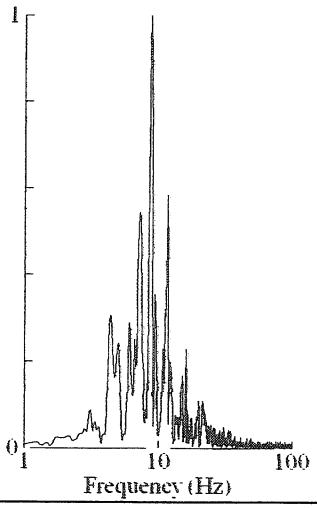


Fourier Analysis (Power Spectrum - Box Window)

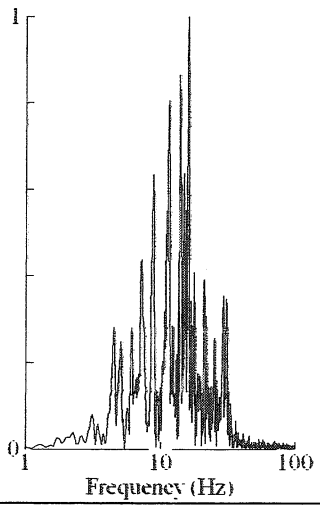
Acoustic
6.50 Hz



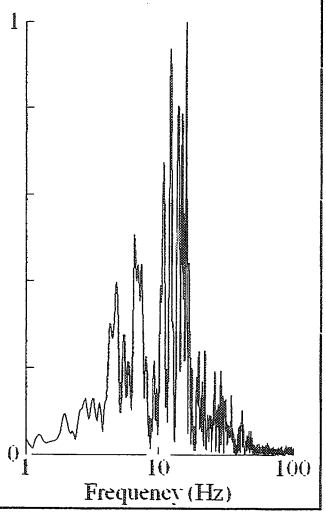
Radial
8.81 Hz



Vertical
16.06 Hz



Transverse
16.06 Hz



Appendix B

Blasting seismograph records for structure at Bighorn

Bighorn
Exterior Master

File Name: 03047015.DTB
Number: 015
Date: 3 15 2005
Time: 09:59
Serial Number: 3047
Seismic Trigger: 0.0250 in s 0.6350 mm s
Acoustic Trigger: 124 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.0

Amplitudes and Frequencies

Acoustic: 100 dB @ 0.0 Hz
(0.02Mb 0.0003psi 0.0020kPa)

Radial: 0.025in/s 0.635mm/s @ 23.2Hz

Vertical: 0.025in/s 0.635mm/s @ 32.0Hz

***Transverse:* 0.035in/s 0.889mm/s @ 32.0Hz**

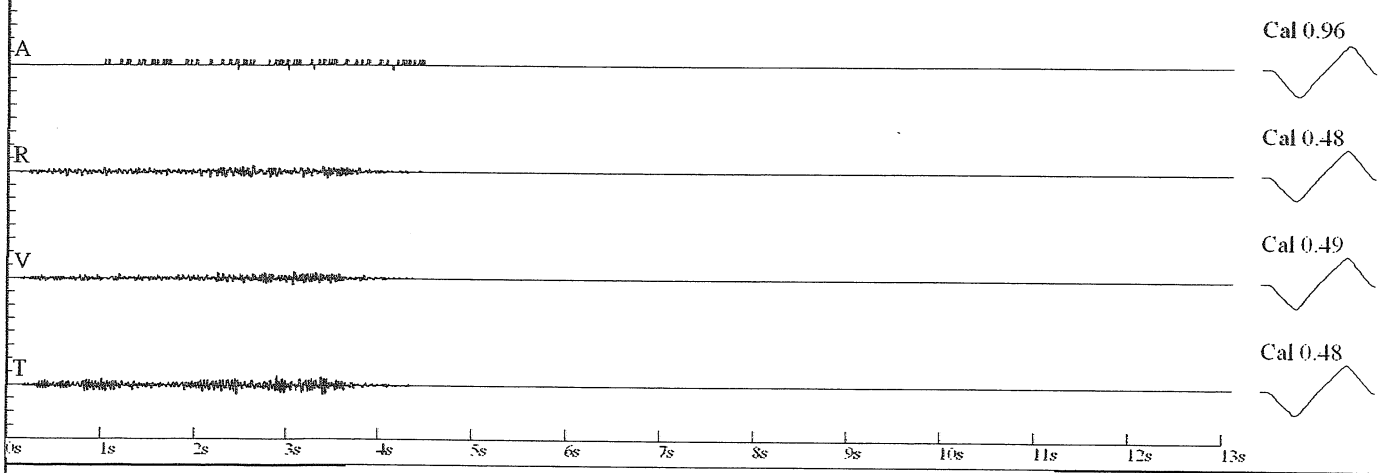
Graph Information

Duration: 0.000s To: 13.000s

Acoustic Scale:
120dB 0.20Mb (0.050Mb/div)

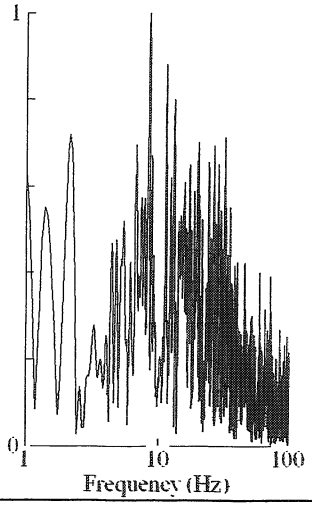
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s

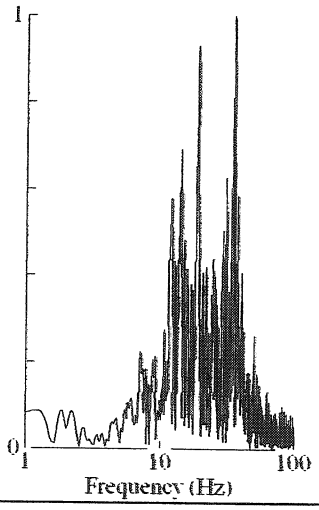


Fourier Analysis (Power Spectrum - Box Window)

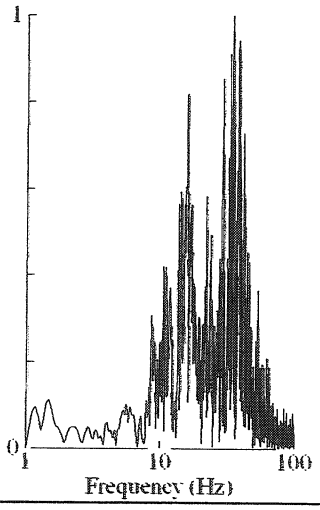
Acoustic
8.31 Hz



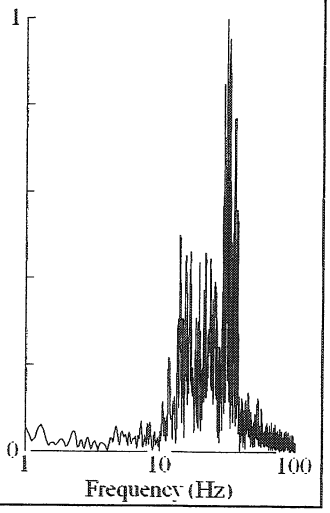
Radial
35.31 Hz



Vertical
34.25 Hz



Transverse
30.94 Hz



Bighorn
Lower corner
V = SE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

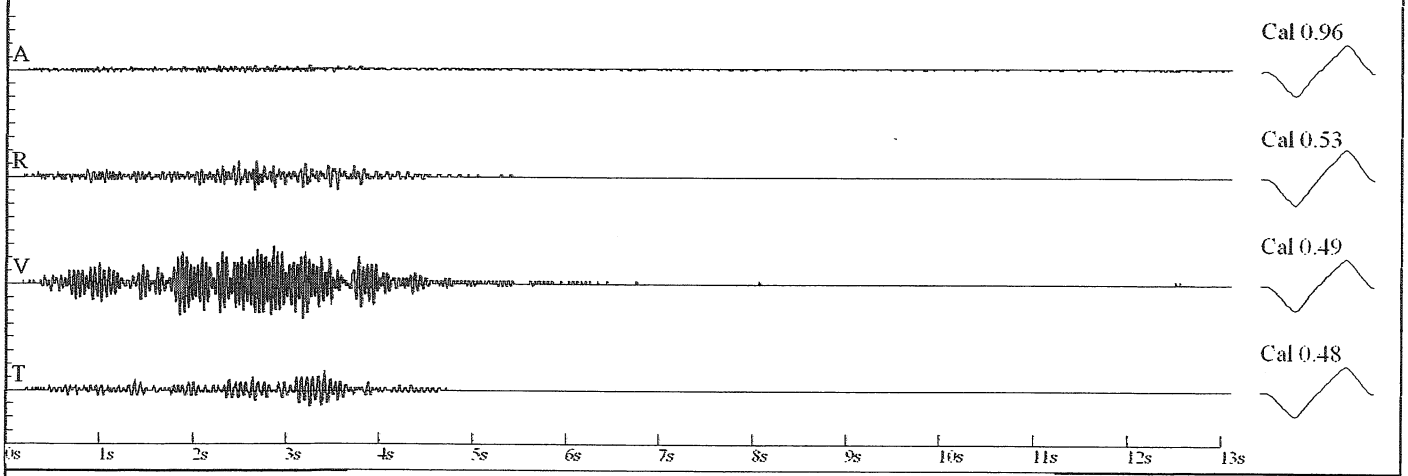
File Name: 01010027.DTB
Number: 027
Date: 3 15 2005
Time: 09:59
Serial Number: 1010
Seismic Trigger: 0.0600 in s 1.52-40 mm s
Acoustic Trigger: 136 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.2

Amplitudes and Frequencies

Acoustic: 110 dB @ 25.6 Hz
(0.06Mb 0.0009psi 0.0060kPa)
Radial: 0.06in/s 1.524mm/s @ 23.2Hz
***Vertical:* 0.14in/s 3.556mm/s @ 23.2Hz**
Transverse: 0.07in/s 1.778mm/s @ 19.6Hz

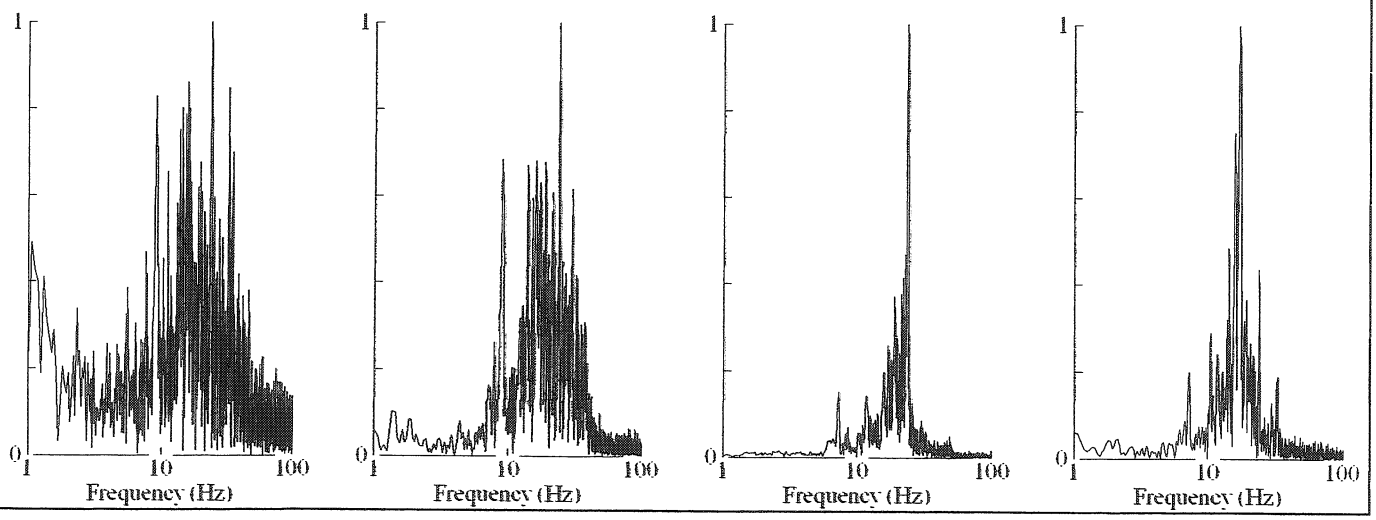
Graph Information

Duration: 0.000s To: 13.000s
Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)

Acoustic	Radial	Vertical	Transverse
23.63 Hz	23.88 Hz	23.69 Hz	17.06 Hz



Bighorn
Upper corner
V = SW midwall; A = vertical
A channel: 1 Mb = 0.5 ips
R,V,T * 0.60 factor

File Name: 02279251.DTB
Number: 251
Date: 3 15 2005
Time: 09:58
Serial Number: 2279
Seismic Trigger: 0.0600 in s 1.5240 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.2

Amplitudes and Frequencies

Acoustic: 110 dB @ 25.6 Hz
(0.06Mb 0.0009psi 0.0060kPa)

Radial: 0.15in/s 3.81mm/s @ 11.1Hz

***Vertical:* 0.38in/s 9.652mm/s @ 18.2Hz**

Transverse: 0.11in/s 2.794mm/s @ 15.0Hz

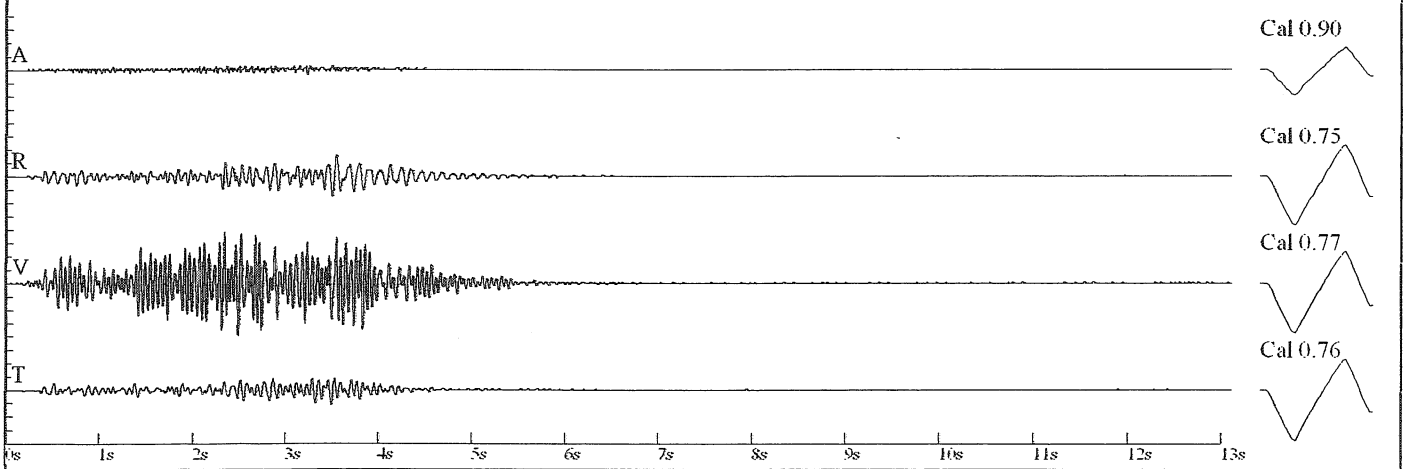
Graph Information

Duration: 0.000s To: 13.000s

Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)

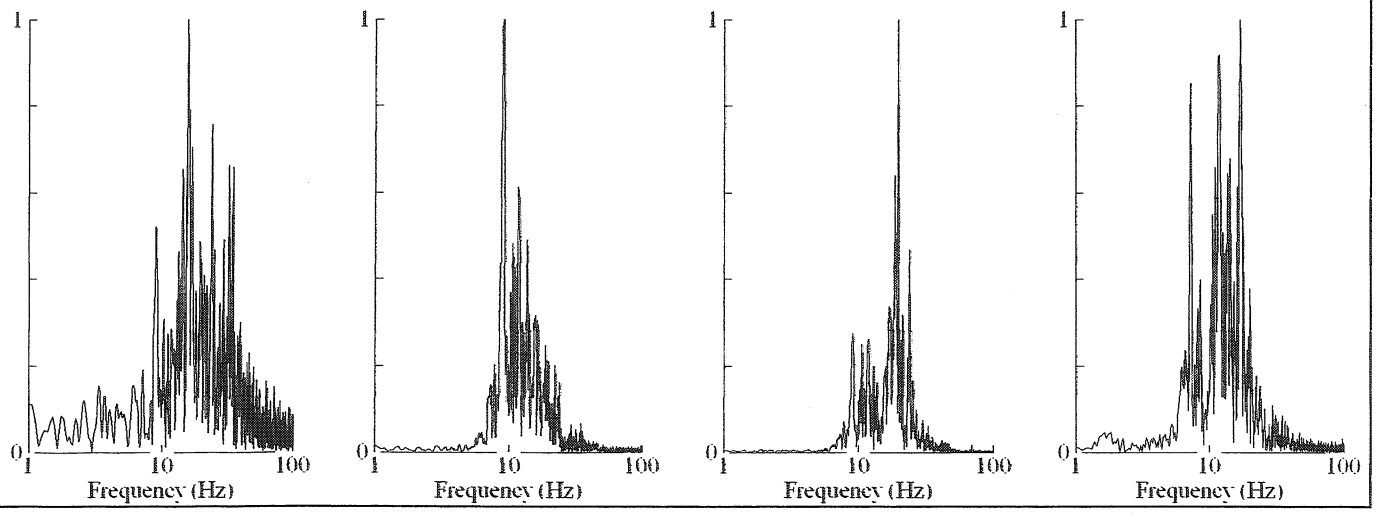
Seismic Scale:
0.38in/s (0.095in/s/div) 9.65mm/s (2.413mm/s/div)

Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)

Acoustic	Radial	Vertical	Transverse
15.63 Hz	9.13 Hz	19.81 Hz	16.88 Hz



Bighorn
Exterior Master

File Name: 03047003.DTB
Number: 003
Date: 3 21 2005
Time: 12:11
Serial Number: 3047
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 133 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.0

Amplitudes and Frequencies

Acoustic: 100 dB @ 0.0 Hz
(0.02Mb 0.0003psi 0.0020kPa)

***Radial:* 0.045in/s 1.143mm/s @ 21.3Hz**

Vertical: 0.025in/s 0.635mm/s @ 36.5Hz

Transverse: 0.04in/s 1.016mm/s @ 28.4Hz

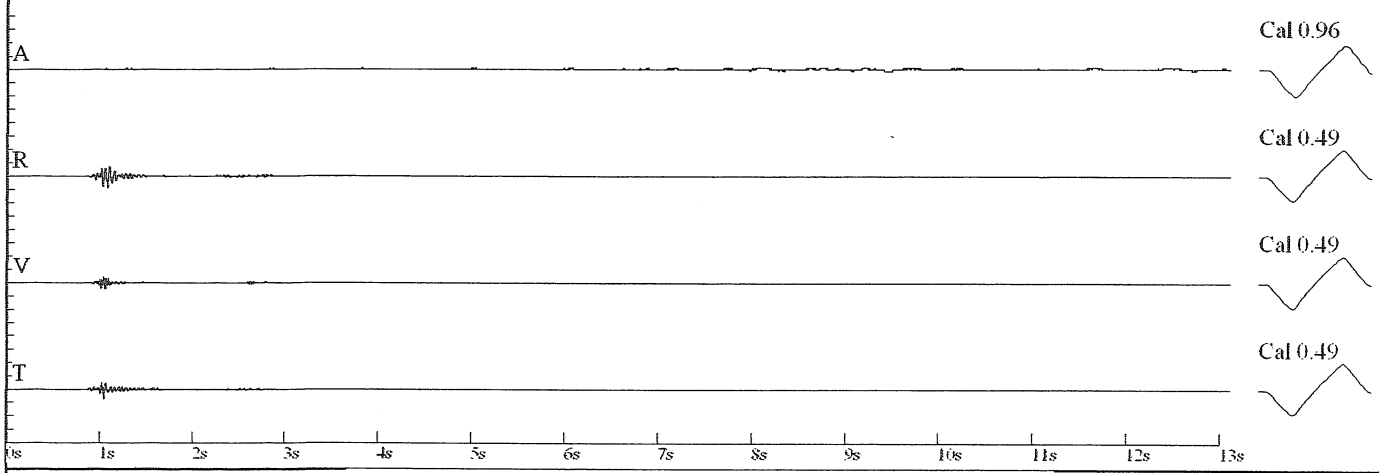
Graph Information

Duration: 0.000s To: 13.000s

Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)

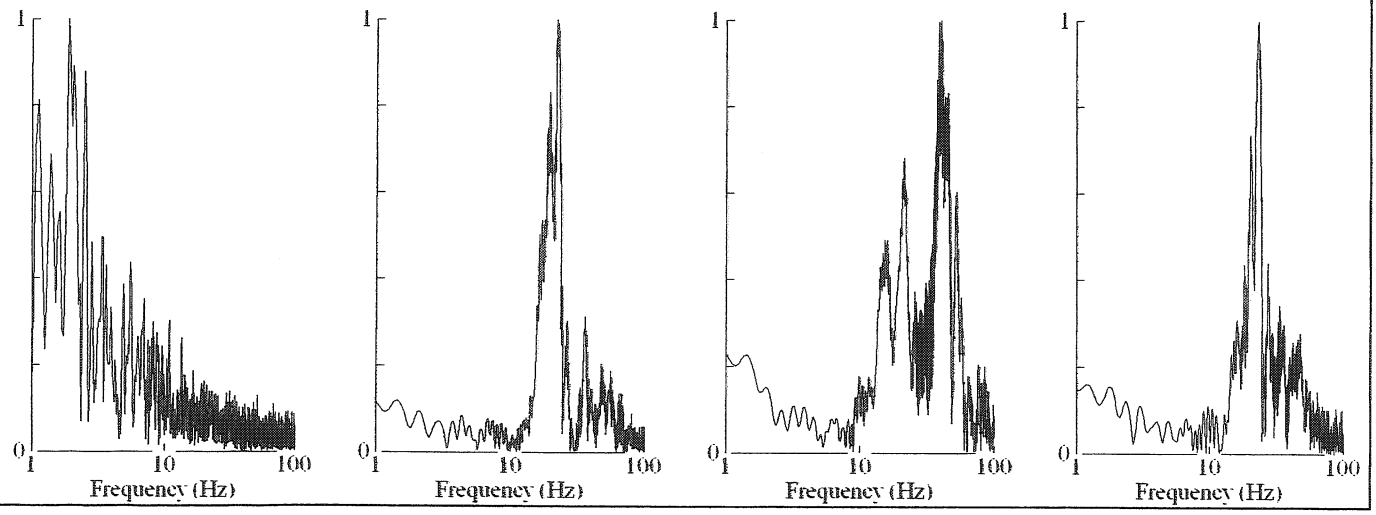
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)

Acoustic	Radial	Vertical	Transverse
1.88 Hz	22.06 Hz	40.63 Hz	23.13 Hz



Bighorn
Lower corner
V = SE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

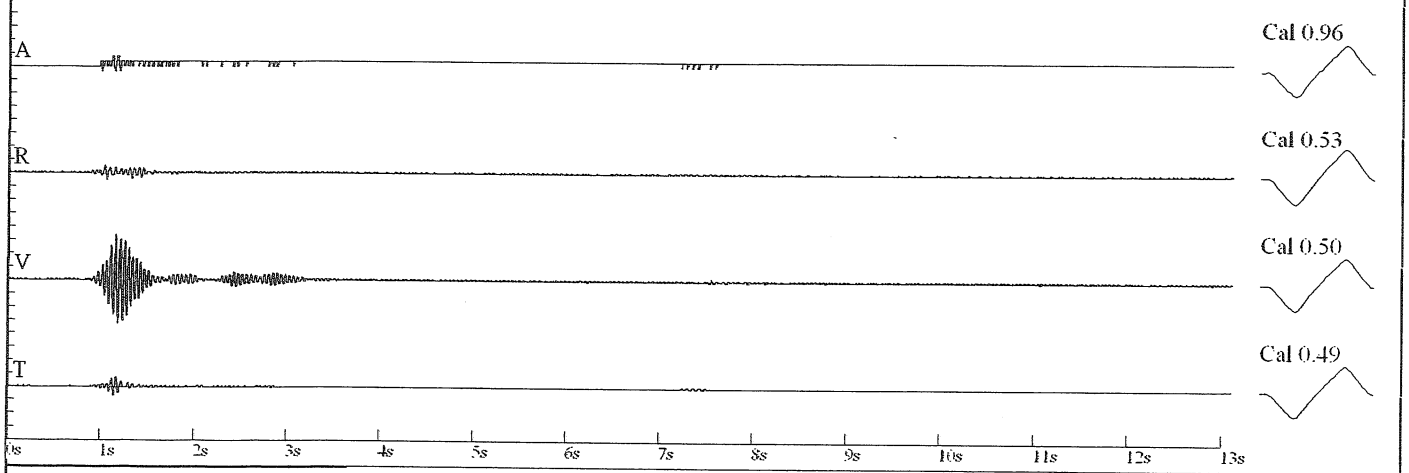
File Name: 01010002.DTB
Number: 002
Date: 3 21 2005
Time: 12:07
Serial Number: 1010
Seismic Trigger: 0.0400 in s 1.0160 mm s
Acoustic Trigger: 119 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

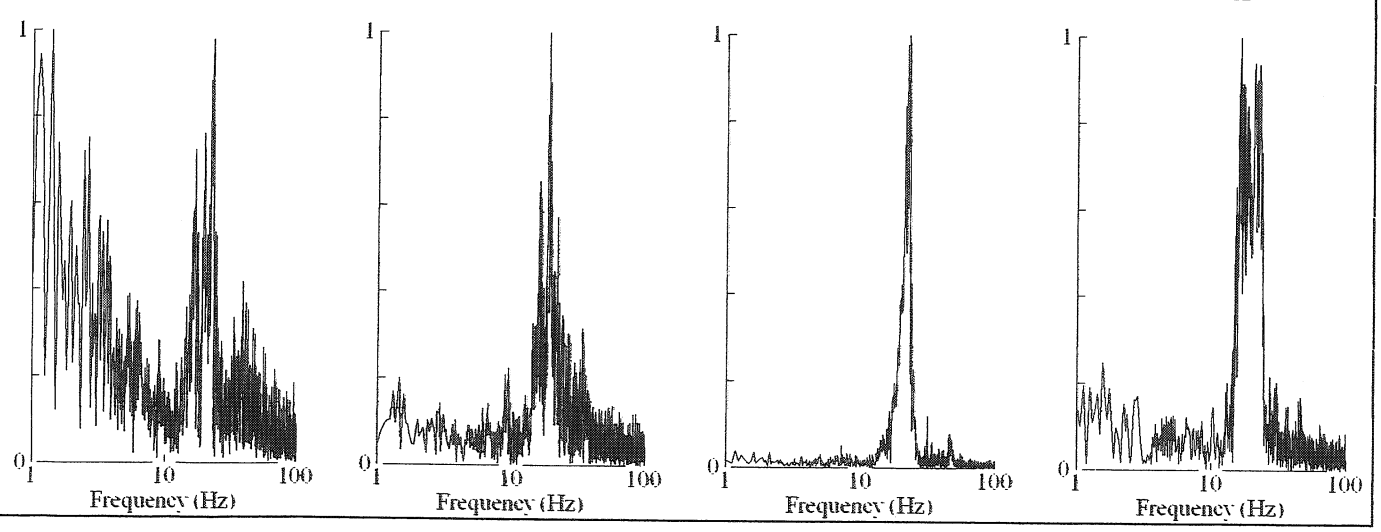
Acoustic: 106 dB @ 0.0 Hz
(0.04Mb 0.0006psi 0.0040kPa)
Radial: 0.03in/s 0.762mm/s @ 21.3Hz
***Vertical:* 0.17in/s 4.318mm/s @ 21.3Hz**
Transverse: 0.035in/s 0.889mm/s @ 21.3Hz

Graph Information

Duration: 0.000s To: 13.000s
Acoustic Scale:
120dB 0.20Mb (0.050Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)



Bighorn
Upper corner
V = SW midwall; A = vertical
A channel: 1 Mb = 0.5 ips
R,V,T * 0.60 factor

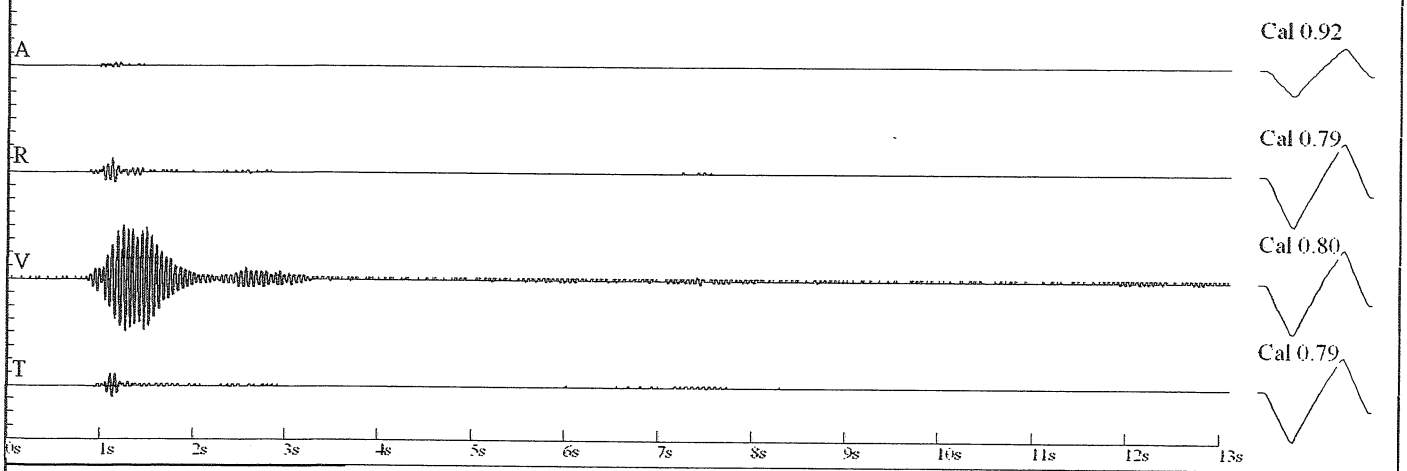
File Name: 02279001.DTB
Number: 001
Date: 3 21 2005
Time: 12:08
Serial Number: 2279
Seismic Trigger: 0.0600 in s 1.5240 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.2

Amplitudes and Frequencies

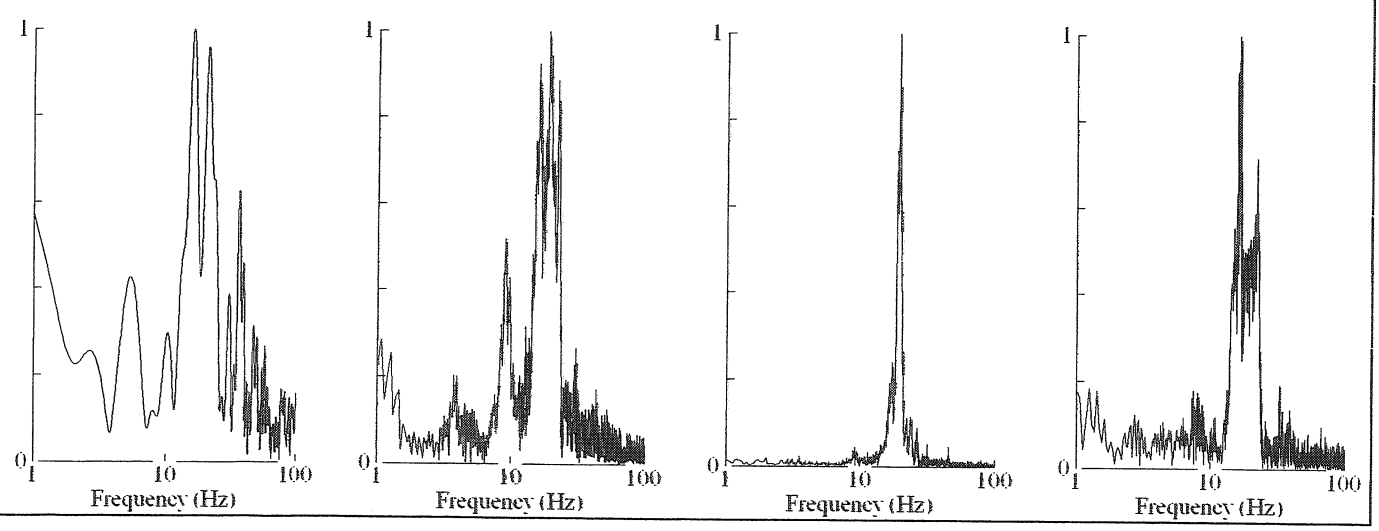
Acoustic: 106 dB @ 0.0 Hz
(0.04Mb 0.0006psi 0.0040kPa)
Radial: 0.07in/s 1.778mm/s @ 21.3Hz
***Vertical:* 0.27in/s 6.858mm/s @ 19.6Hz**
Transverse: 0.06in/s 1.524mm/s @ 21.3Hz

Graph Information

Duration: 0.000s To: 13.000s
Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)
Seismic Scale:
0.27in/s (0.068in/s/div) 6.86mm/s (1.715mm/s/div)
Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)



Bighorn
Exterior Master

File Name: 03047004.DTB
Number: 004
Date: 3 22 2005
Time: 12:38
Serial Number: 3047
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 133 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 6.9

Amplitudes and Frequencies

Acoustic: 100 dB @ 0.0 Hz
(0.02Mb 0.0003psi 0.0020kPa)

***Radial:* 0.04in/s 1.016mm/s @ 23.2Hz**

Vertical: 0.035in/s 0.889mm/s @ 15.0Hz

***Transverse:* 0.04in/s 1.016mm/s @ 8.8Hz**

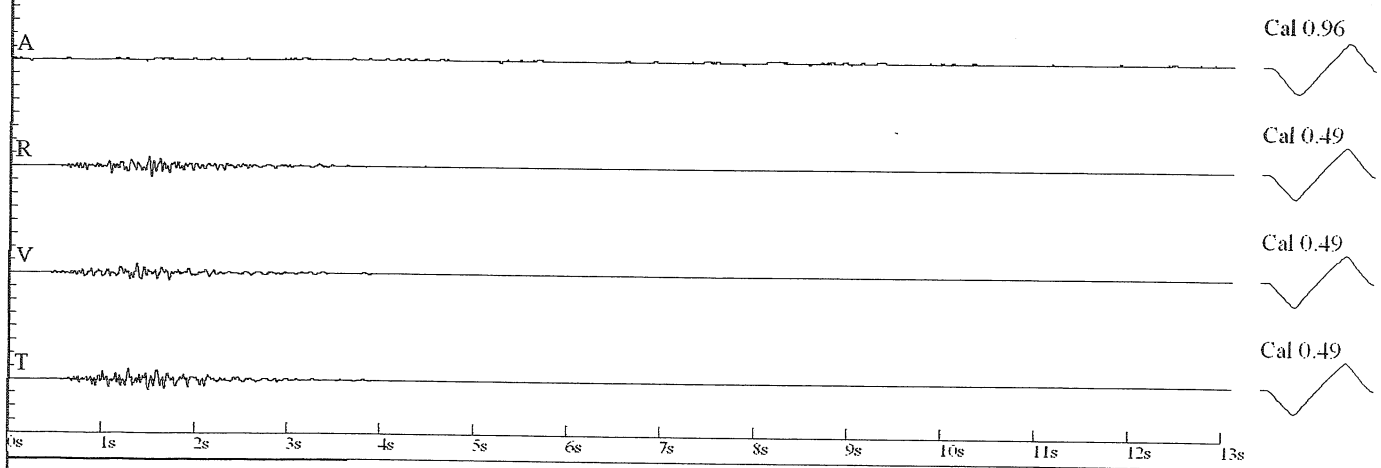
Graph Information

Duration: 0.000s To: 13.000s

Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)

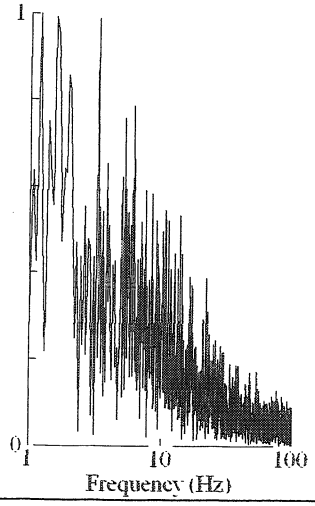
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s

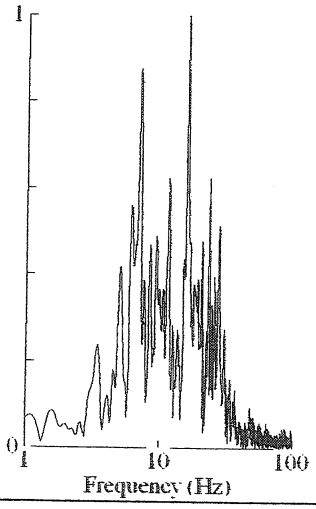


Fourier Analysis (Power Spectrum - Box Window)

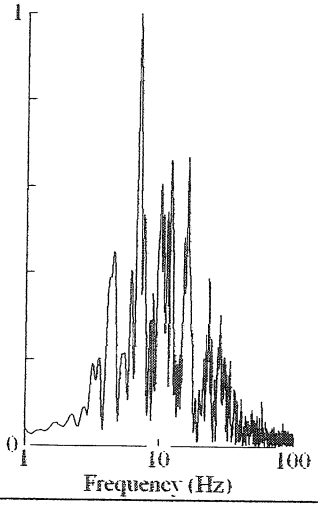
Acoustic
1.19 Hz



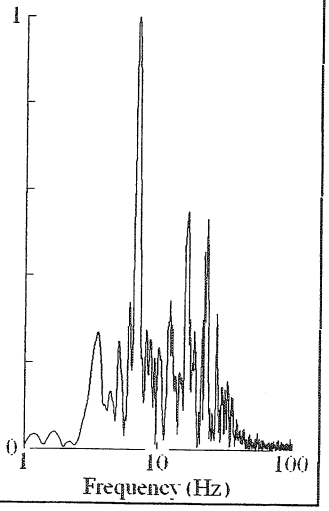
Radial
16.00 Hz



Vertical
7.00 Hz



Transverse
7.06 Hz



Bighorn
Lower corner
V = SE midwall; A = vertical
A channel: 1 Mb = 0.25 ips

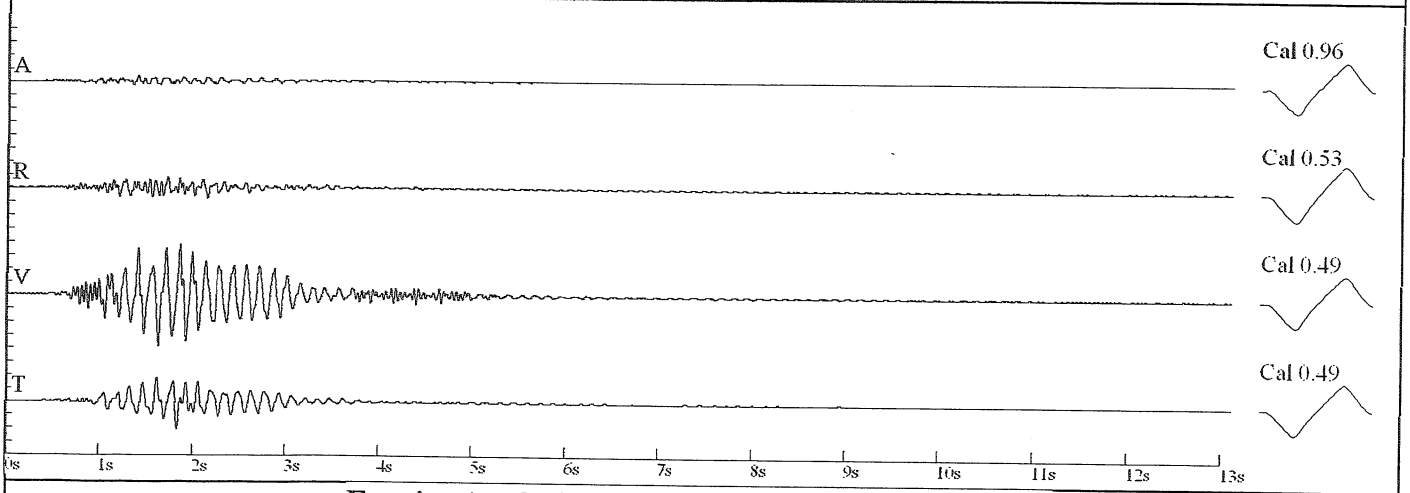
File Name: 01010003.DTB
Number: 003
Date: 3 22 2005
Time: 12:34
Serial Number: 1010
Seismic Trigger: 0.0400 in s 1.0160 mm s
Acoustic Trigger: 119 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.2

Amplitudes and Frequencies

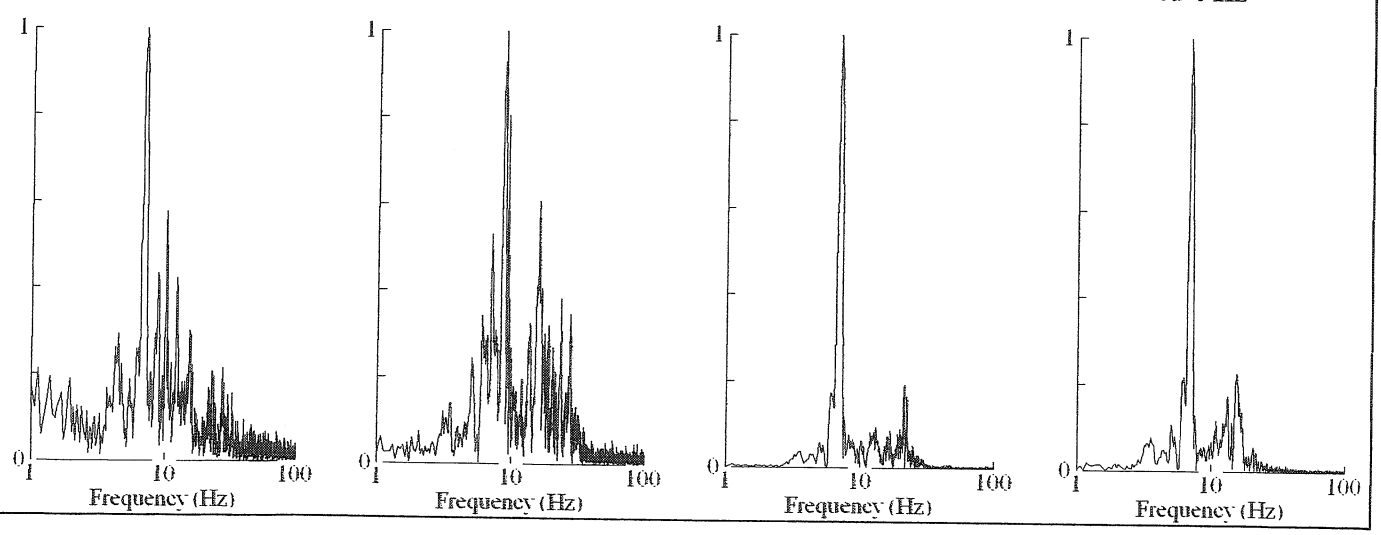
Acoustic: 112 dB @ 14.2 Hz
(0.08Mb 0.0012psi 0.0080kPa)
Radial: 0.045in/s 1.143mm/s @ 10.6Hz
***Vertical:* 0.205in/s 5.207mm/s @ 8.8Hz**
Transverse: 0.11in/s 2.794mm/s @ 11.1Hz

Graph Information

Duration: 0.000s To: 13.000s
Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)
Seismic Scale:
0.21in/s (0.053in/s/div) 5.33mm/s (1.334mm/s/div)
Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)



Bighorn
Upper corner
V = SW midwall; A = vertical
A channel: 1 Mb = 0.5 ips
R,V,T * 0.60 factor

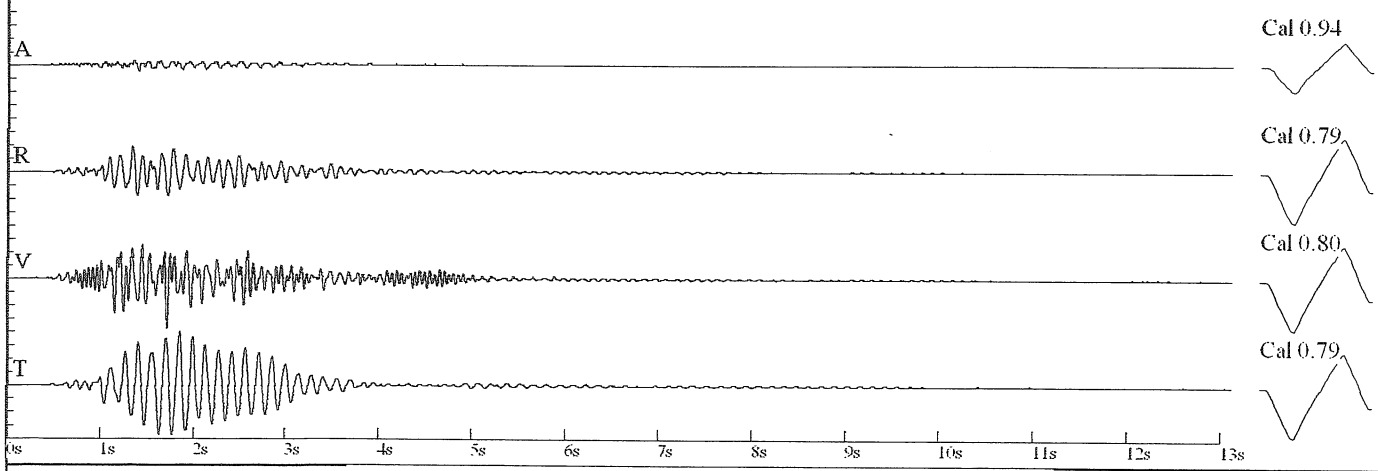
File Name: 02279002.DTB
Number: 002
Date: 3 22 2005
Time: 12:35
Serial Number: 2279
Seismic Trigger: 0.0600 in s 1.5240 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.2

Amplitudes and Frequencies

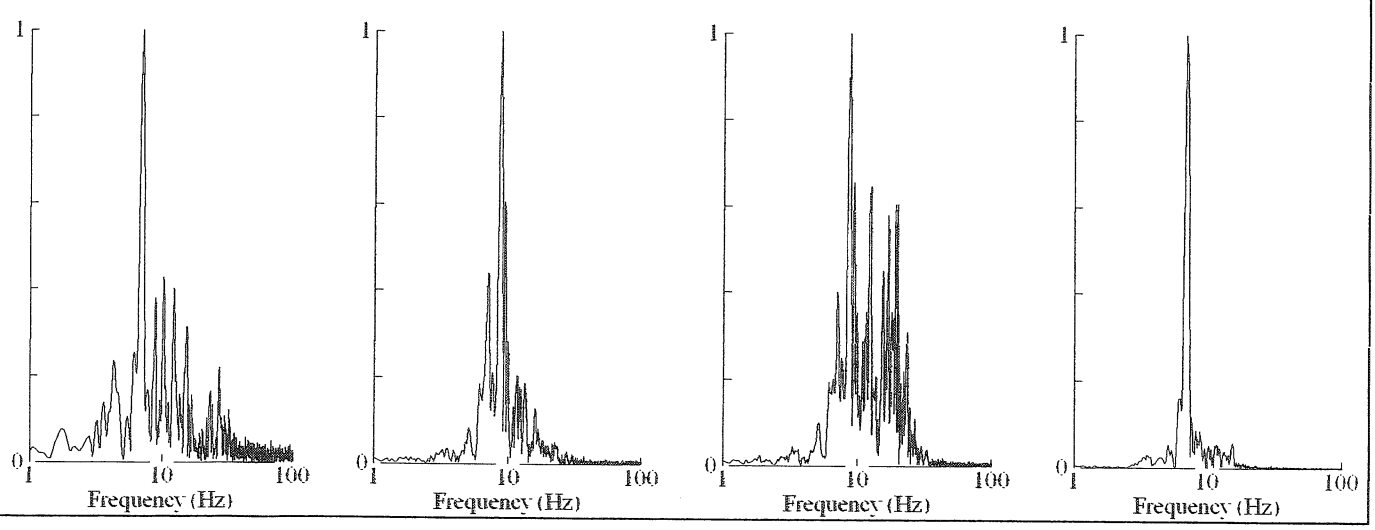
Acoustic: 112 dB @ 17.0 Hz
(0.08Mb 0.0012psi 0.0080kPa)
Radial: 0.19in/s 4.826mm/s @ 9.1Hz
Vertical: 0.38in/s 9.652mm/s @ 15.0Hz
***Transverse:* 0.40in/s 10.16mm/s @ 7.3Hz**

Graph Information

Duration: 0.000s To: 13.000s
Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)
Seismic Scale:
0.40in/s (0.100in/s/div) 10.16mm/s (2.540mm/s/div)
Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)



Bighorn
Exterior Master

File Name: 03047010.DTB
Number: 010
Date: 3 23 2005
Time: 14:51
Serial Number: 3047
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 133 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 6.9

Amplitudes and Frequencies

Acoustic: 110 dB @ 64.0 Hz
(0.06Mb 0.0009psi 0.0060kPa)

Radial: 0.33in/s 8.382mm/s @ 23.2Hz

Vertical: 0.205in/s 5.207mm/s @ 32.0Hz

***Transverse:* 0.45in/s 11.43mm/s @ 21.3Hz**

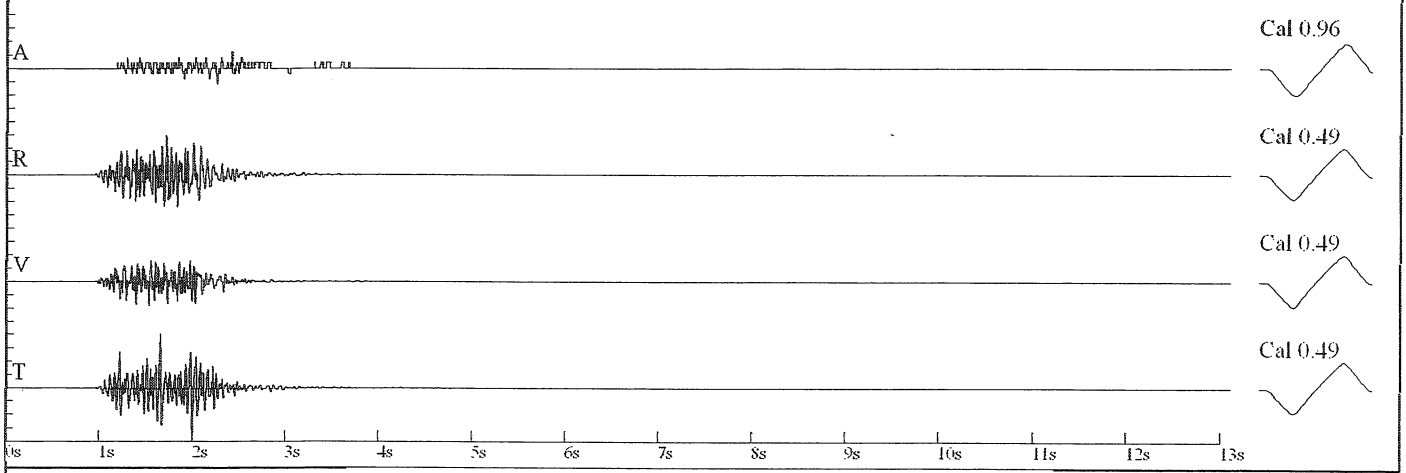
Graph Information

Duration: 0.000s To: 13.000s

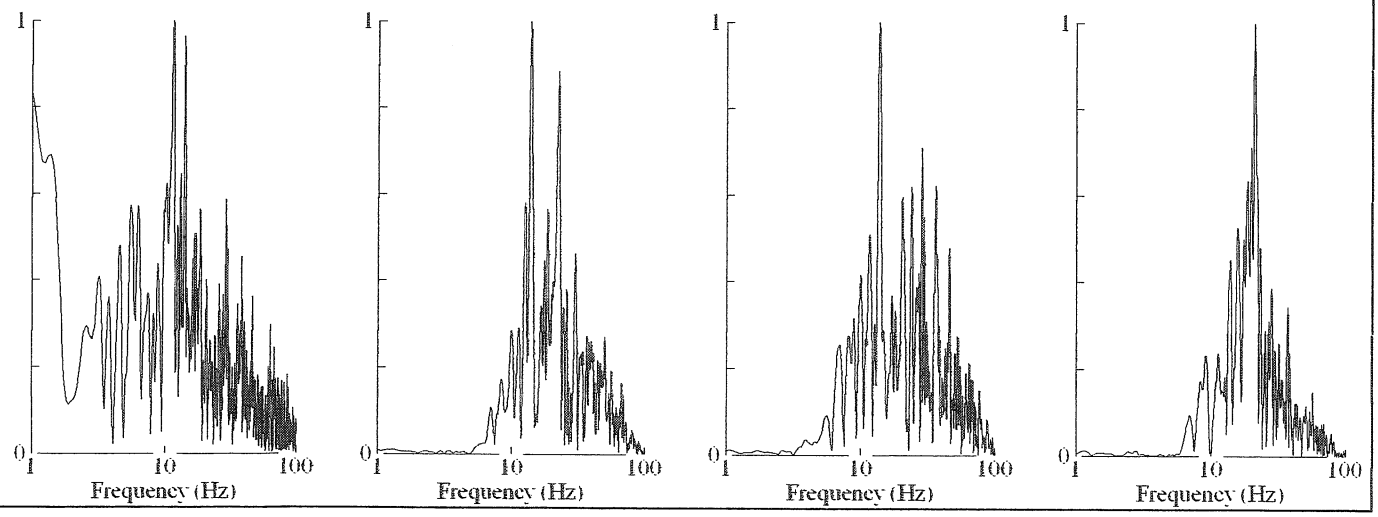
Acoustic Scale:
120dB 0.20Mb (0.050Mb/div)

Seismic Scale:
0.45in/s (0.113in/s/div) 11.43mm/s (2.858mm/s/div)

Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)



Bighorn
Lower corner
V = SE midwall; A = vertical
A channel: 1 Mb = 0.25 ips

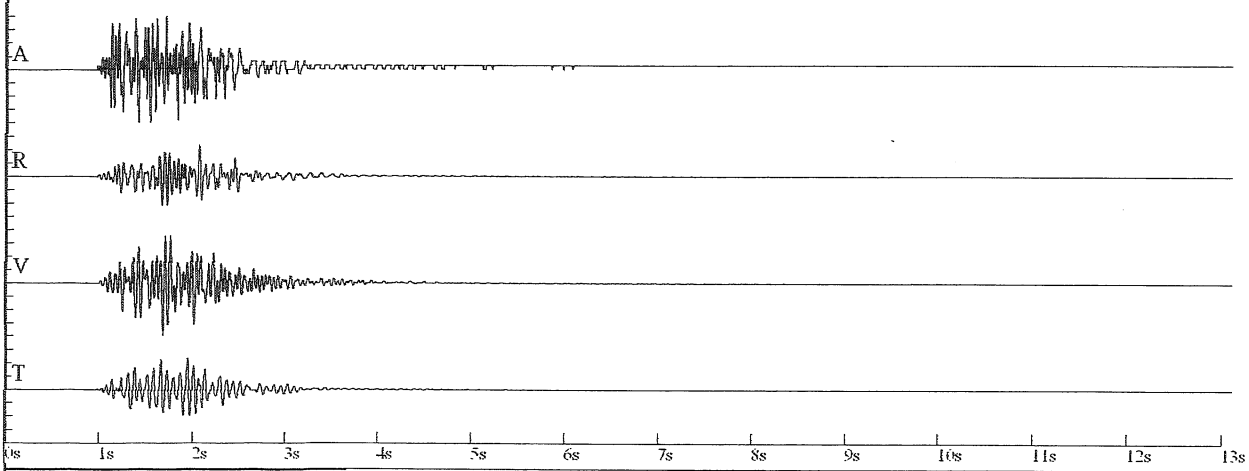
File Name: 01010009.DTB
Number: 009
Date: 3 23 2005
Time: 14:47
Serial Number: 1010
Seismic Trigger: 0.0400 in s 1.0160 mm s
Acoustic Trigger: 119 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.2

Amplitudes and Frequencies

Acoustic: 122 dB @ 28.4 Hz
(0.26Mb 0.0038psi 0.0260kPa)
Radial: 0.315in/s 8.001mm/s @ 17.0Hz
***Vertical:* 0.535in/s 13.589mm/s @ 19.6Hz**
Transverse: 0.315in/s 8.001mm/s @ 15.0Hz

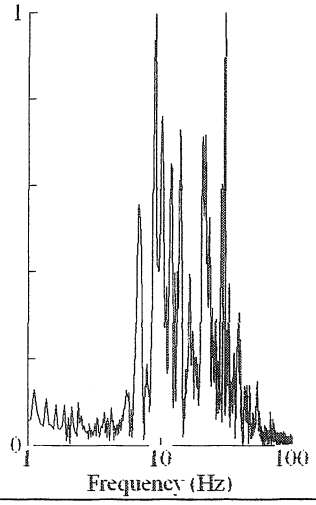
Graph Information

Duration: 0.000s To: 13.000s
Acoustic Scale:
122dB 0.25Mb (0.063Mb/div)
Seismic Scale:
0.54in/s (0.135in/s/div) 13.72mm/s (3.429mm/s/div)
Time Line Intervals at: 1.00 s

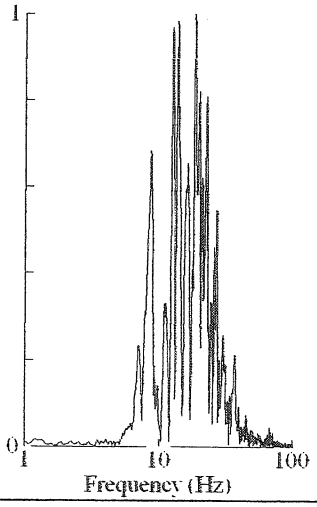


Fourier Analysis (Power Spectrum - Box Window)

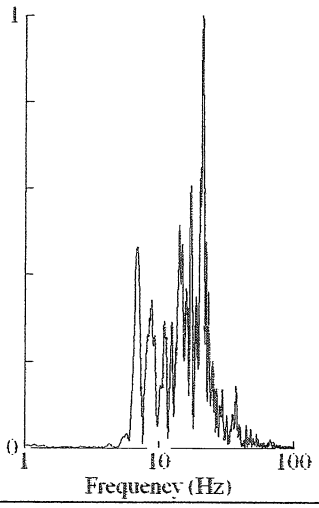
Acoustic
29.81 Hz



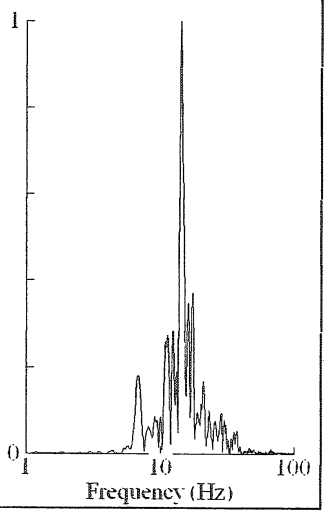
Radial
18.63 Hz



Vertical
21.19 Hz



Transverse
14.13 Hz



Bighorn
Upper corner
V = SW midwall; A = vertical
A channel: 1 Mb = 0.5 ips
R,V,T * 0.60 factor

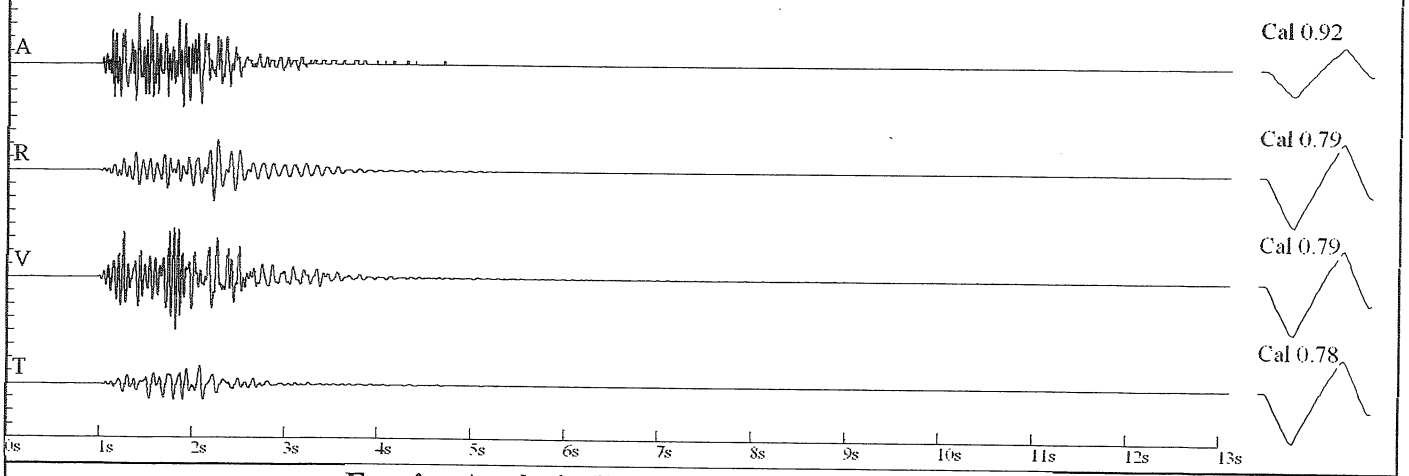
File Name: 02279008.DTB
Number: 008
Date: 3 23 2005
Time: 14:48
Serial Number: 2279
Seismic Trigger: 0.0600 in s 1.5240 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.2

Amplitudes and Frequencies

Acoustic: 124 dB @ 18.2 Hz
(0.30Mb 0.0044psi 0.0300kPa)
Radial: 0.90in/s 22.86mm/s @ 11.1Hz
***Vertical:* 1.52in/s 38.608mm/s @ 21.3Hz**
Transverse: 0.52in/s 13.208mm/s @ 10.2Hz

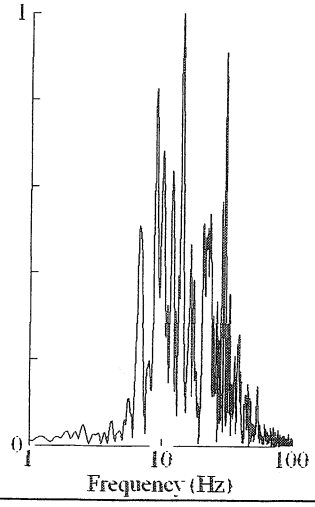
Graph Information

Duration: 0.000s To: 13.000s
Acoustic Scale:
124dB 0.32Mb (0.079Mb/div)
Seismic Scale:
1.52in/s (0.380in/s/div) 38.61mm/s (9.652mm/s/div)
Time Line Intervals at: 1.00 s

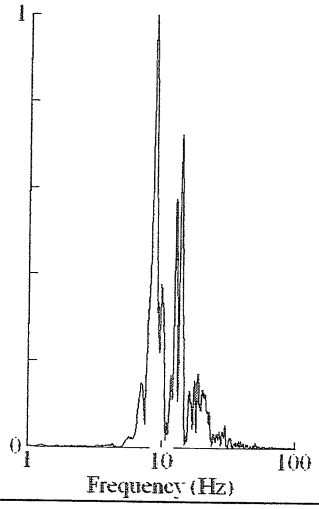


Fourier Analysis (Power Spectrum - Box Window)

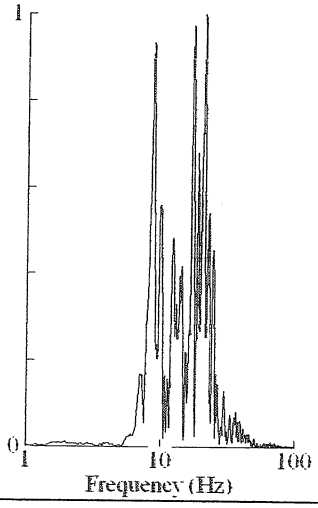
Acoustic
13.88 Hz



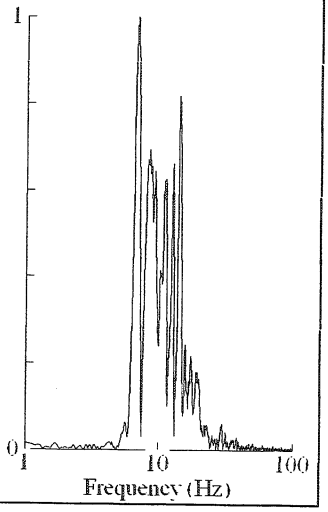
Radial
8.75 Hz



Vertical
20.81 Hz



Transverse
6.81 Hz



Bighorn
Exterior Master

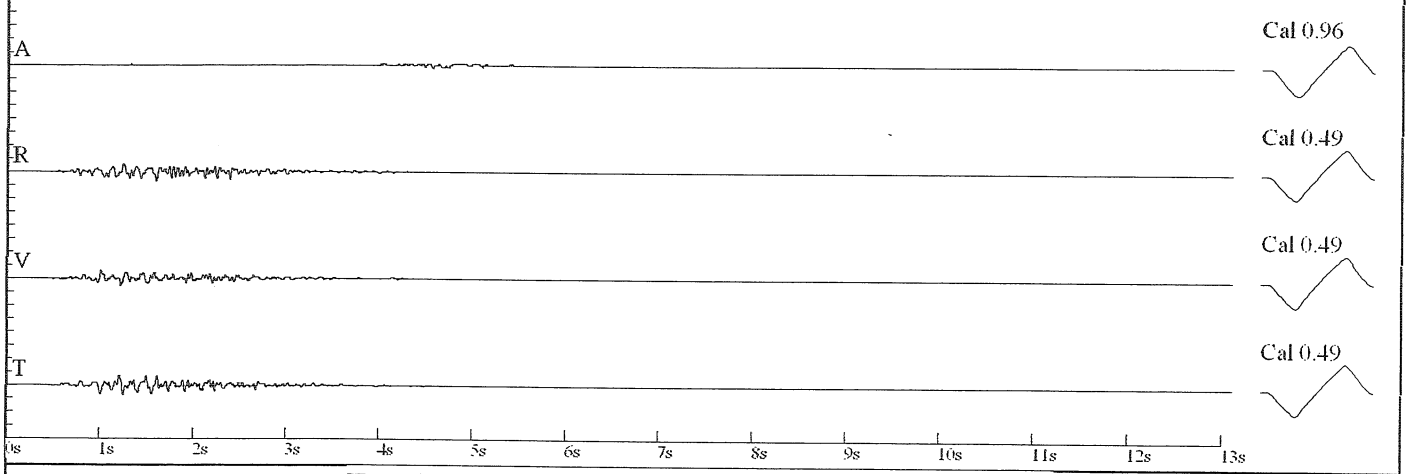
File Name: 03047068.DTB
Number: 068
Date: 4 14 2005
Time: 14:58
Serial Number: 3047
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 133 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 6.9

Amplitudes and Frequencies

Acoustic: 106 dB @ 0.0 Hz
(0.04Mb 0.0006psi 0.0040kPa)
Radial: 0.035in/s 0.889mm/s @ 10.2Hz
Vertical: 0.03in/s 0.762mm/s @ 10.6Hz
***Transverse:* 0.04in/s 1.016mm/s @ 7.1Hz**

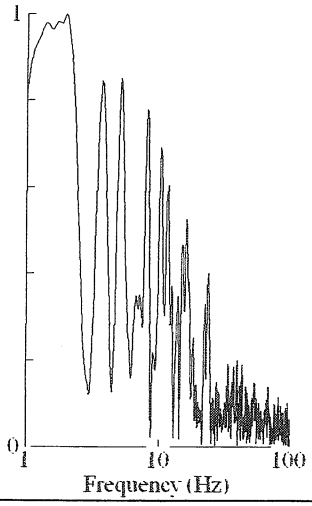
Graph Information

Duration: 0.000s To: 13.000s
Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s

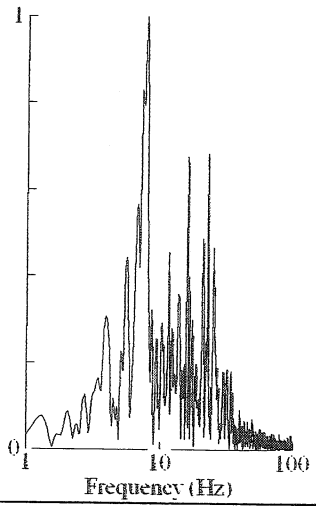


Fourier Analysis (Power Spectrum - Box Window)

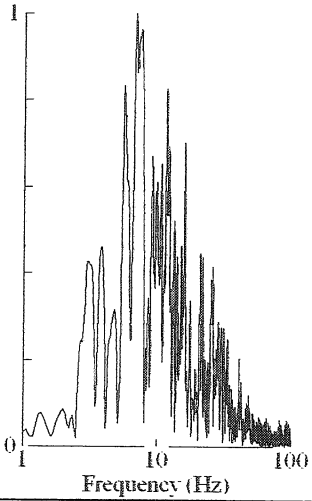
Acoustic
1.94 Hz



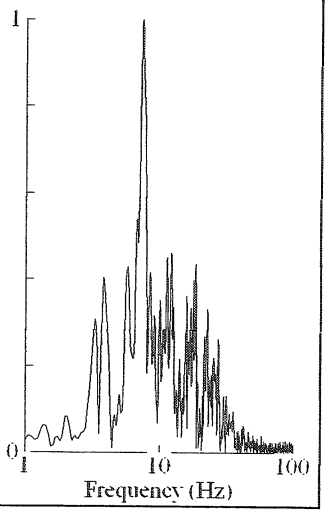
Radial
7.75 Hz



Vertical
6.81 Hz



Transverse
7.38 Hz



Bighorn
Lower corner
V = SE midwall; A = vertical
A channel: 1 Mb = 0.25 ips

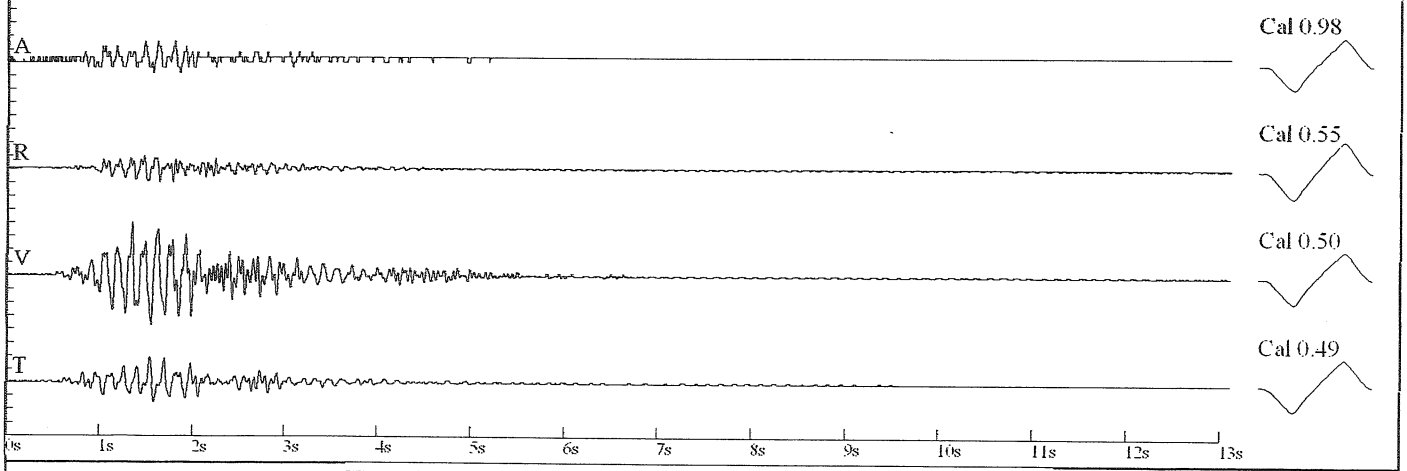
File Name: 01010062.DTB
Number: 062
Date: 4 14 2005
Time: 15:54
Serial Number: 1010
Seismic Trigger: 0.0400 in s 1.0160 mm s
Acoustic Trigger: 119 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

Acoustic: 112 dB @ 9.4 Hz
(0.08Mb 0.0012psi 0.0080kPa)
Radial: 0.05in/s 1.27mm/s @ 7.7Hz
***Vertical:* 0.20in/s 5.08mm/s @ 7.3Hz**
Transverse: 0.095in/s 2.413mm/s @ 9.8Hz

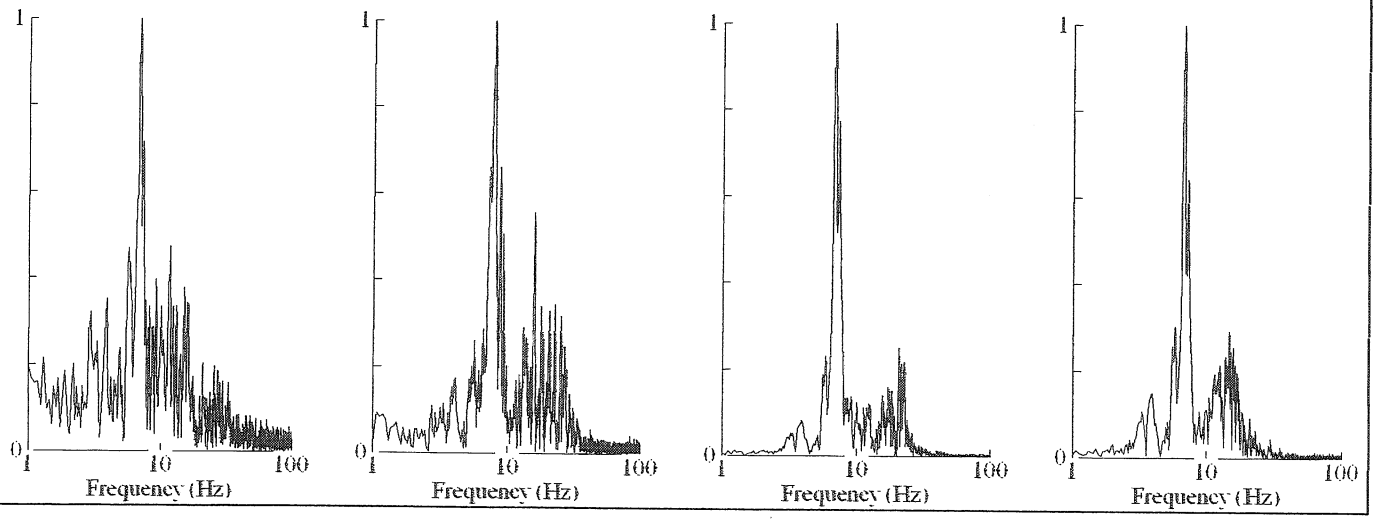
Graph Information

Duration: 0.000s To: 13.000s
Acoustic Scale:
120dB 0.20Mb (0.050Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)

Acoustic 6.81 Hz | **Radial 7.88 Hz** | **Vertical 6.81 Hz** | **Transverse 6.81 Hz**



Bighorn
Upper corner
V = SW midwall; A = vertical
A channel: 1 Mb = 0.5 ips
R,V,T * 0.60 factor

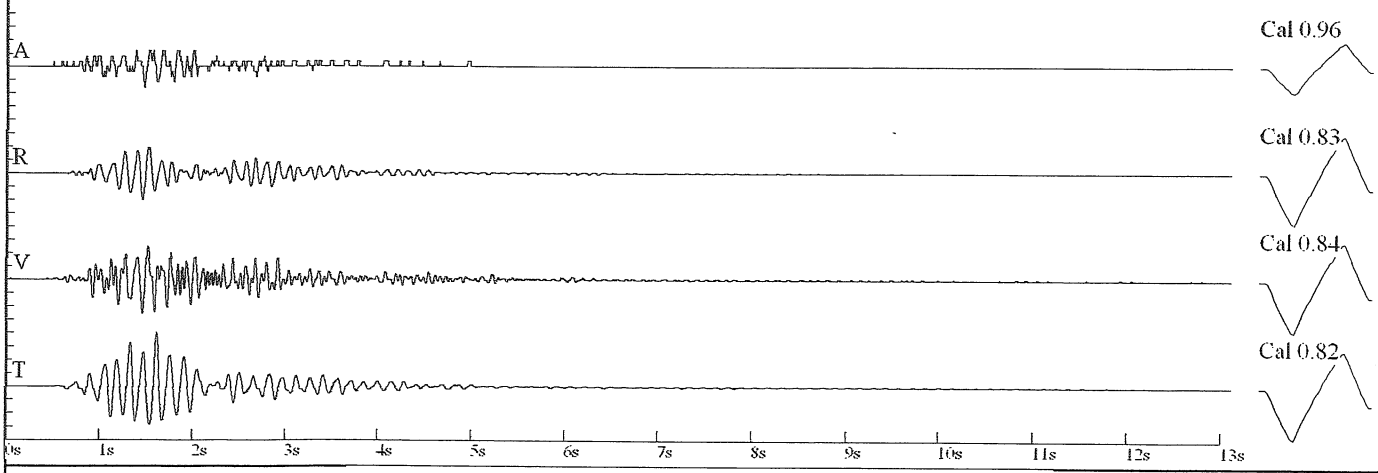
File Name: 02279064.DTB
Number: 064
Date: 4 14 2005
Time: 15:54
Serial Number: 2279
Seismic Trigger: 0.0600 in s 1.5240 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

Acoustic: 112 dB @ 14.2 Hz
(0.08Mb 0.0012psi 0.0080kPa)
Radial: 0.26in/s 6.604mm/s @ 8.8Hz
Vertical: 0.32in/s 8.128mm/s @ 9.1Hz
***Transverse:* 0.50in/s 12.70mm/s @ 7.7Hz**

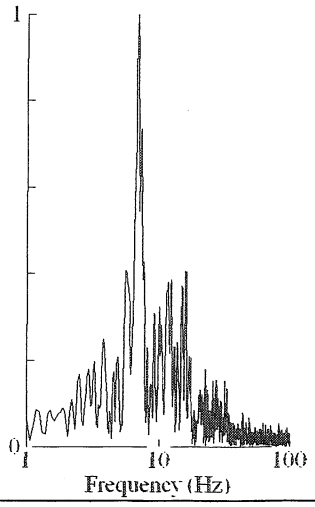
Graph Information

Duration: 0.000s To: 13.000s
Acoustic Scale:
120dB 0.20Mb (0.050Mb/div)
Seismic Scale:
0.50in/s (0.125in/s/div) 12.70mm/s (3.175mm/s/div)
Time Line Intervals at: 1.00 s

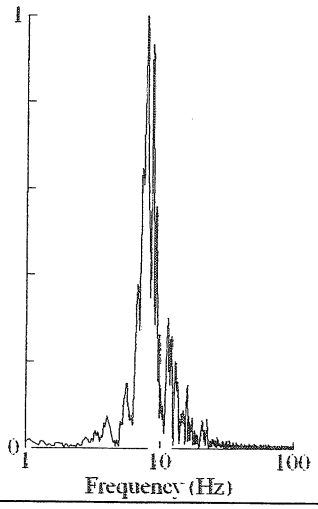


Fourier Analysis (Power Spectrum - Box Window)

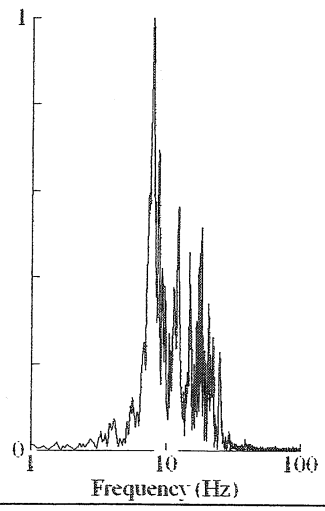
Acoustic
6.81 Hz



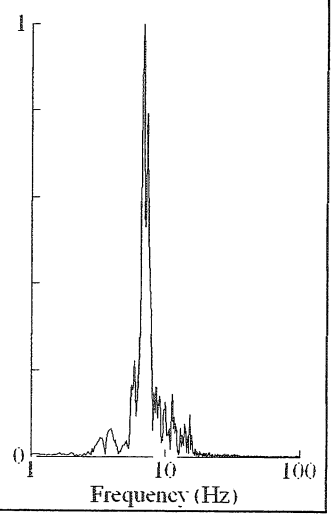
Radial
7.81 Hz



Vertical
7.88 Hz



Transverse
6.81 Hz



Appendix C

Seismograph records during construction excavation activities and wind for structures at Bighorn and High Mesa

Bighorn Equipment and wind
Exterior Master

File Name: 03047135.DTB
Number: 135
Date: 3 18 2005
Time: 12:54
Serial Number: 3047
Seismic Trigger: 0.0250 in s 0.6350 mm s
Acoustic Trigger: 124 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 6.9

Amplitudes and Frequencies

Acoustic: 116 dB @ 42.6 Hz
(0.12Mb 0.0017psi 0.0120kPa)

***Radial:* 0.055in/s 1.397mm/s @ 64.0Hz**

Vertical: 0.025in/s 0.635mm/s @ 64.0Hz

Transverse: 0.02in/s 0.508mm/s @ 85.3Hz

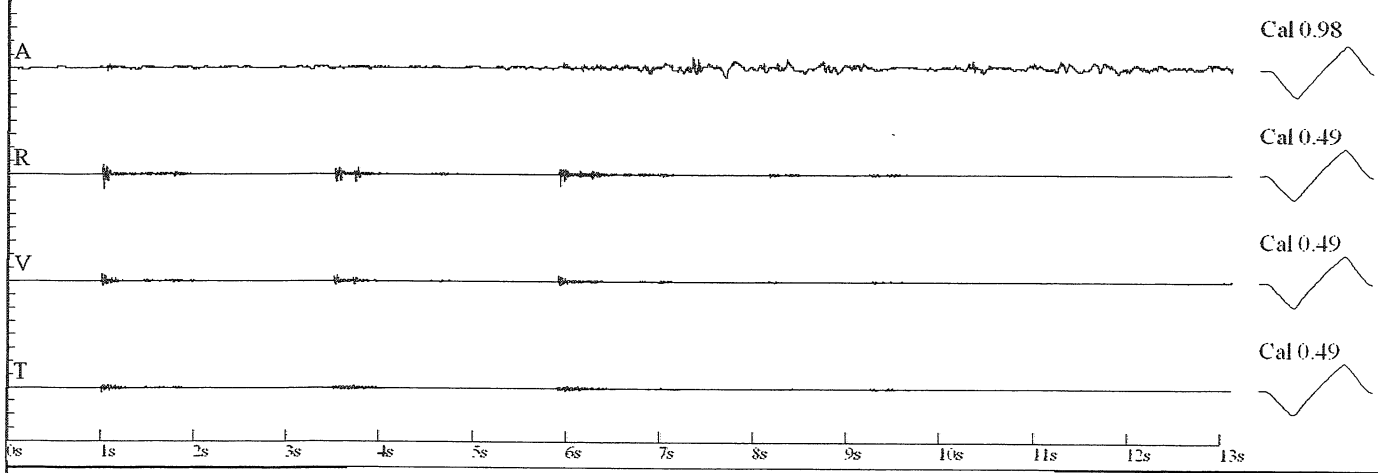
Graph Information

Duration: 0.000s To: 13.000s

Acoustic Scale:
129dB 0.56Mb (0.141Mb/div)

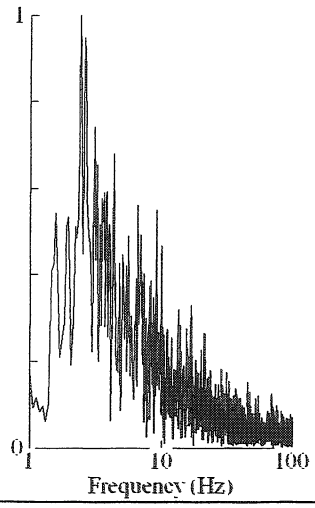
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s

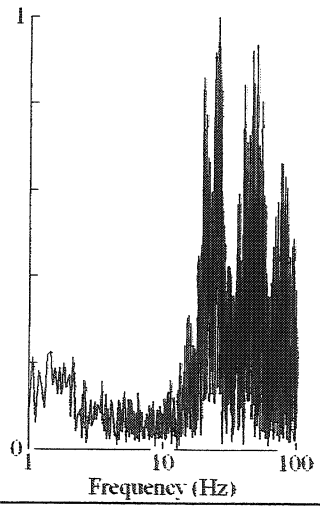


Fourier Analysis (Power Spectrum - Box Window)

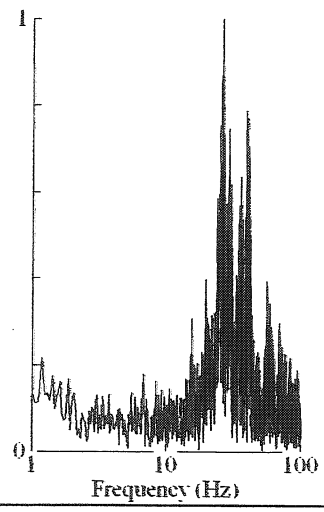
Acoustic
2.38 Hz



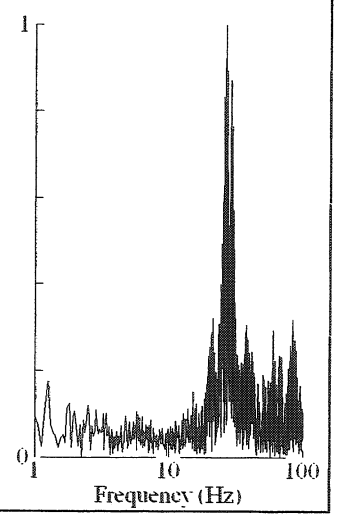
Radial
25.69 Hz



Vertical
26.56 Hz



Transverse
26.56 Hz



Bighorn Equipment
Lower corner
V = SE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

File Name: 01010145.DTB
Number: 145
Date: 3 18 2005
Time: 12:53
Serial Number: 1010
Seismic Trigger: 0.0600 in s 1.5240 mm s
Acoustic Trigger: 136 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

Acoustic: 106 dB @ 0.0 Hz
(0.04Mb 0.0006psi 0.0040kPa)

Radial: 0.02in/s 0.508mm/s @ 0.0Hz

***Vertical:* 0.03in/s 0.762mm/s @ 51.2Hz**

Transverse: 0.01in/s 0.254mm/s @ 0.0Hz

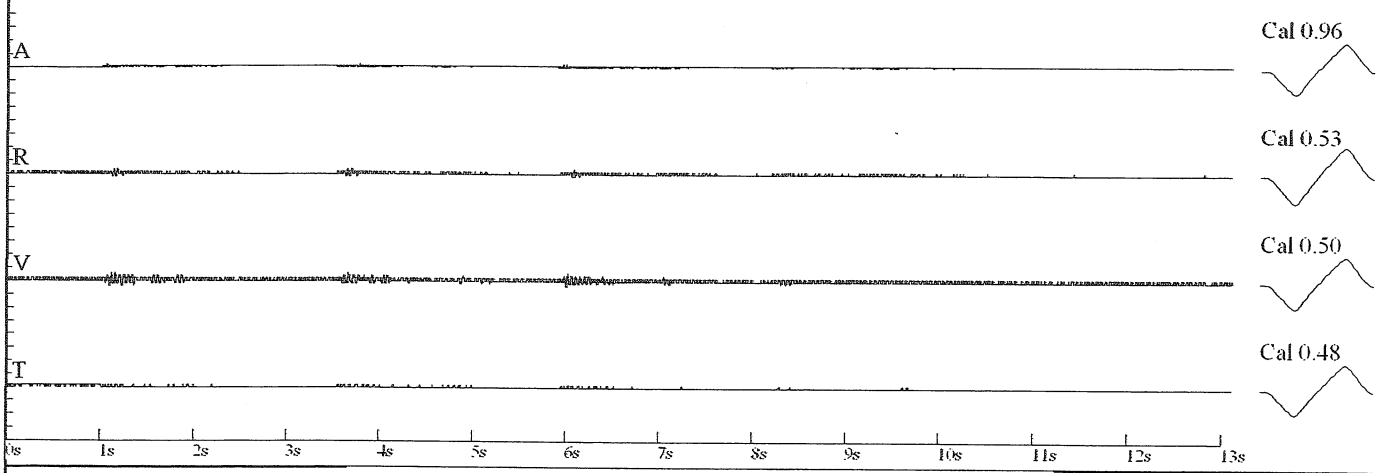
Graph Information

Duration: 0.000s To: 13.000s

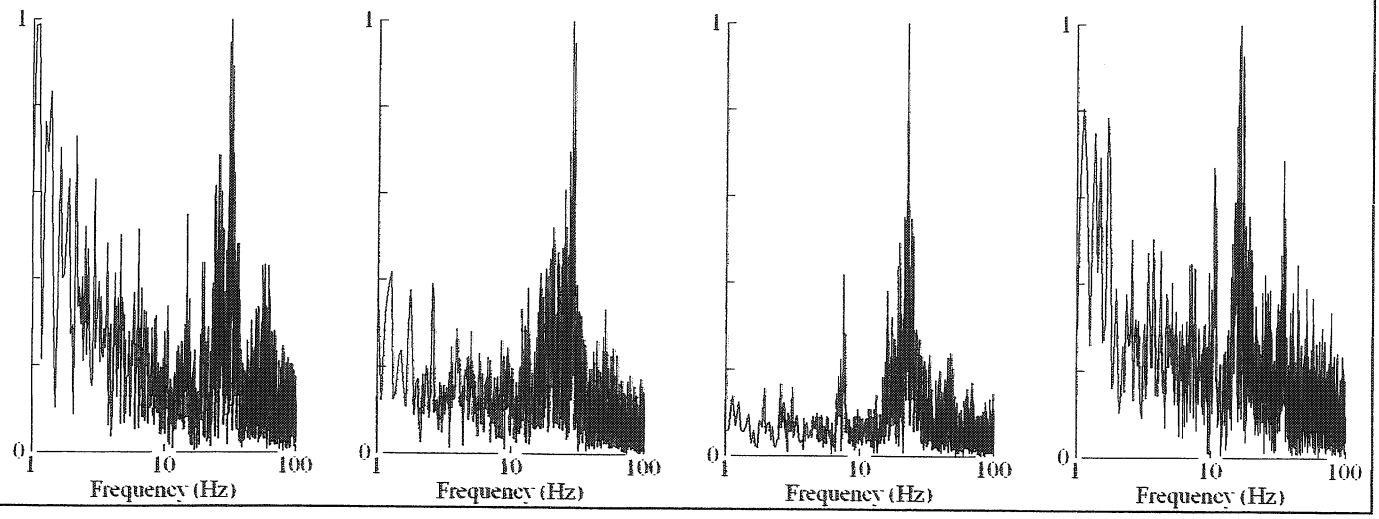
Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)

Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)



Bighorn
Upper corner
V = SW midwall; A = vertical
A channel: 1 Mb = 0.5 ips
R,V,T * 0.60 factor

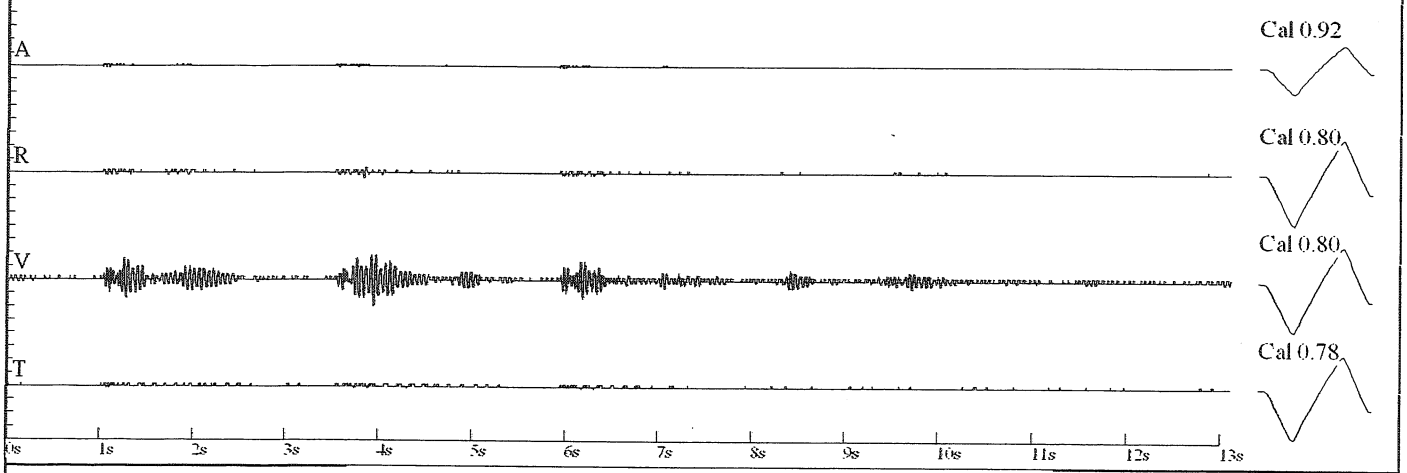
File Name: 02279029.DTB
Number: 029
Date: 3 18 2005
Time: 12:53
Serial Number: 2279
Seismic Trigger: 0.0600 in s 1.5240 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.2

Amplitudes and Frequencies

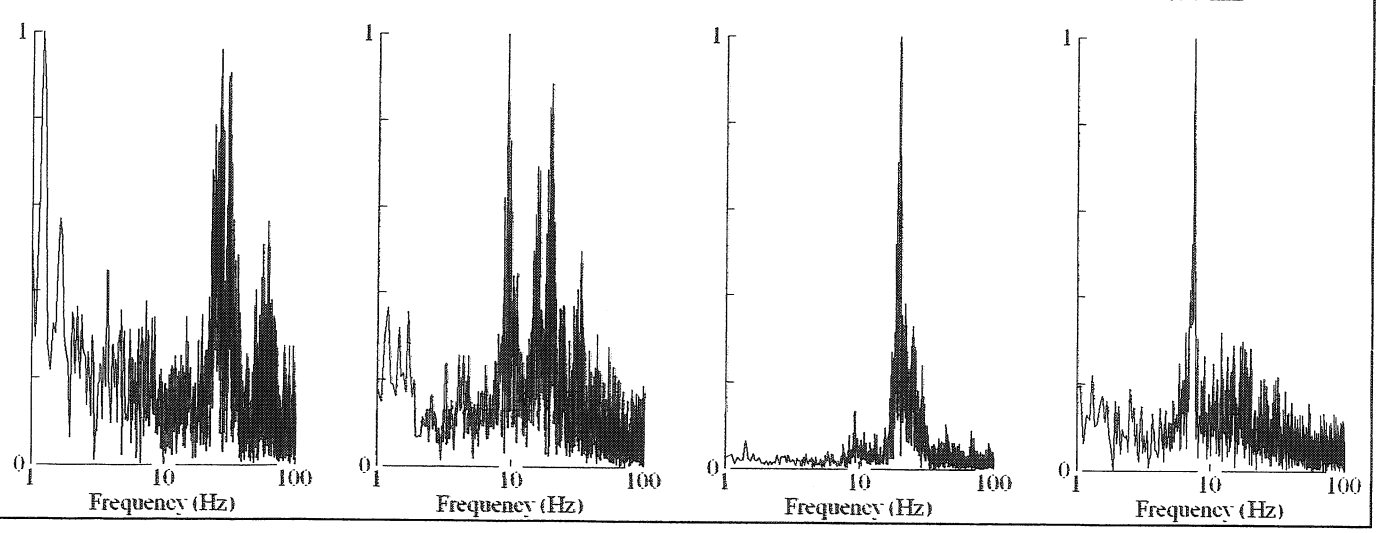
Acoustic: 100 dB @ 0.0 Hz
(0.02Mb 0.0003psi 0.0020kPa)
Radial: 0.02in/s 0.508mm/s @ 0.0Hz
***Vertical:* 0.10in/s 2.54mm/s @ 23.2Hz**
Transverse: 0.01in/s 0.254mm/s @ 0.0Hz

Graph Information

Duration: 0.000s To: 13.000s
Acoustic Scale:
129dB 0.56Mb (0.141Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)



Bighorn
Exterior Master
Wind - 40.3 mps gusts

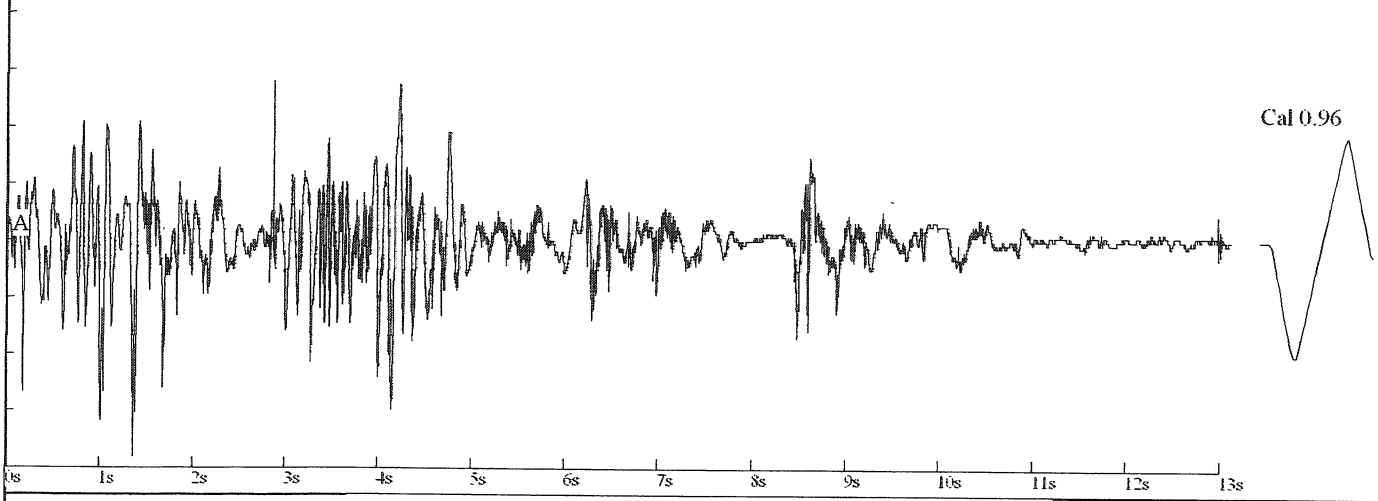
File Name: 03047005.DTB
Number: 005
Date: 3 22 2005
Time: 23:54
Serial Number: 3047
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 133 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 6.9

Amplitudes and Frequencies

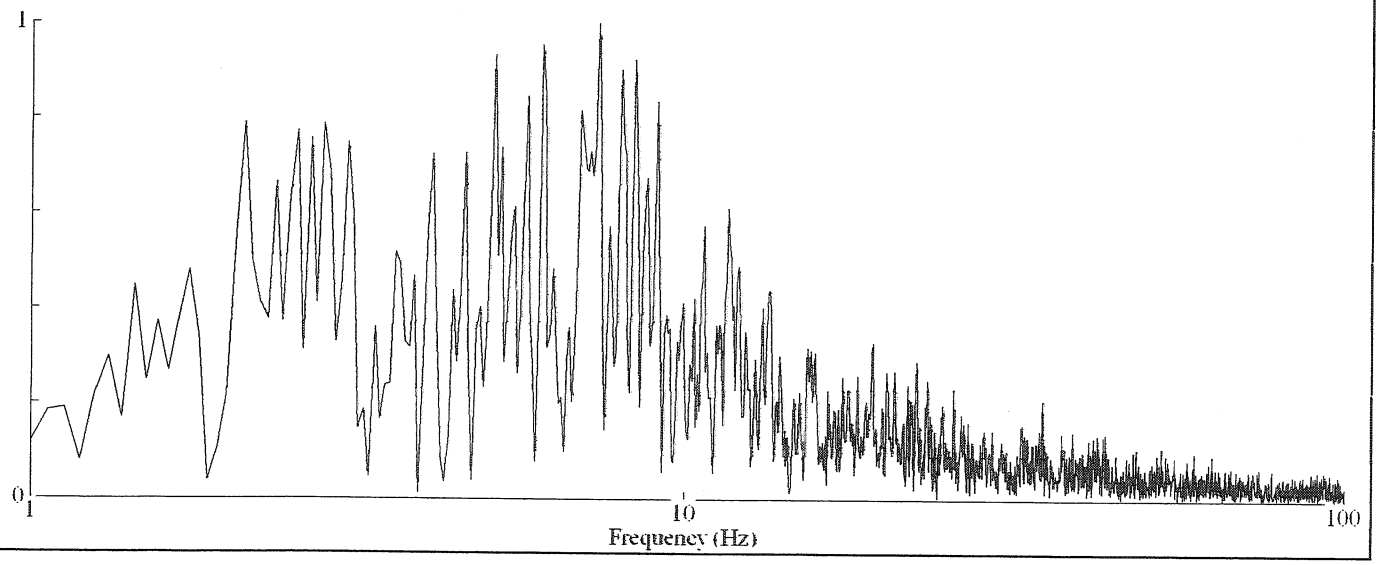
Acoustic: 136 dB @ 6.7 Hz
(1.20Mb 0.0174psi 0.1200kPa)

Graph Information

Duration: 0.000s To: 13.000s
Acoustic Scale:
136dB 1.26Mb (0.315Mb/div)
Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)
Acoustic
7.38 Hz



Bighorn
Lower corner
V = SE midwall; A = vertical
A channel: 1 Mb = 0.5 ips
Wind

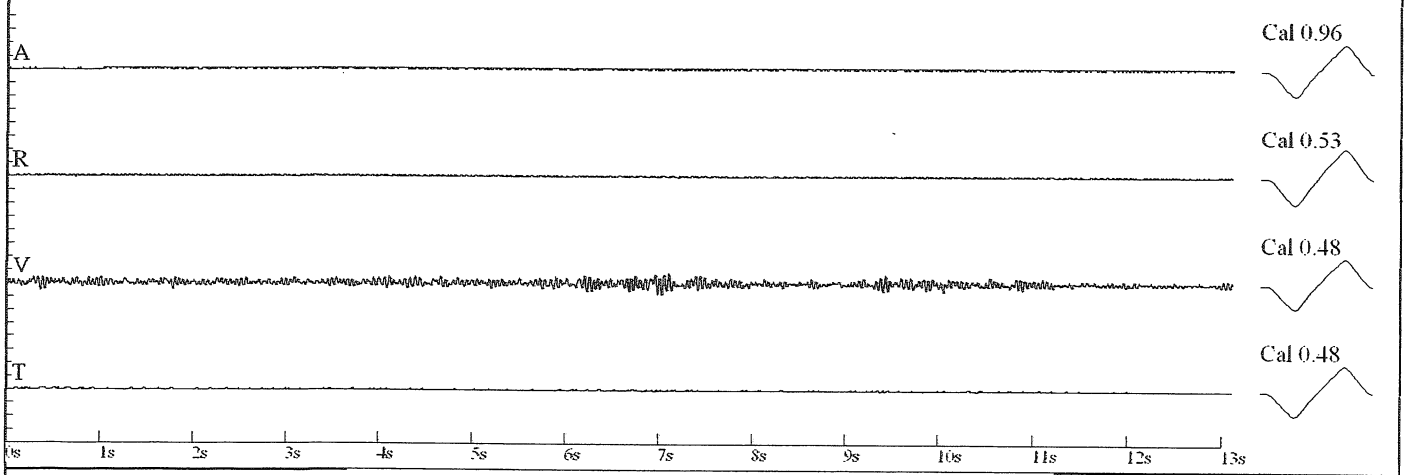
File Name: 01010004.DTB
Number: 004
Date: 3 22 2005
Time: 23:50
Serial Number: 1010
Seismic Trigger: 0.0400 in s 1.0160 mm s
Acoustic Trigger: 119 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

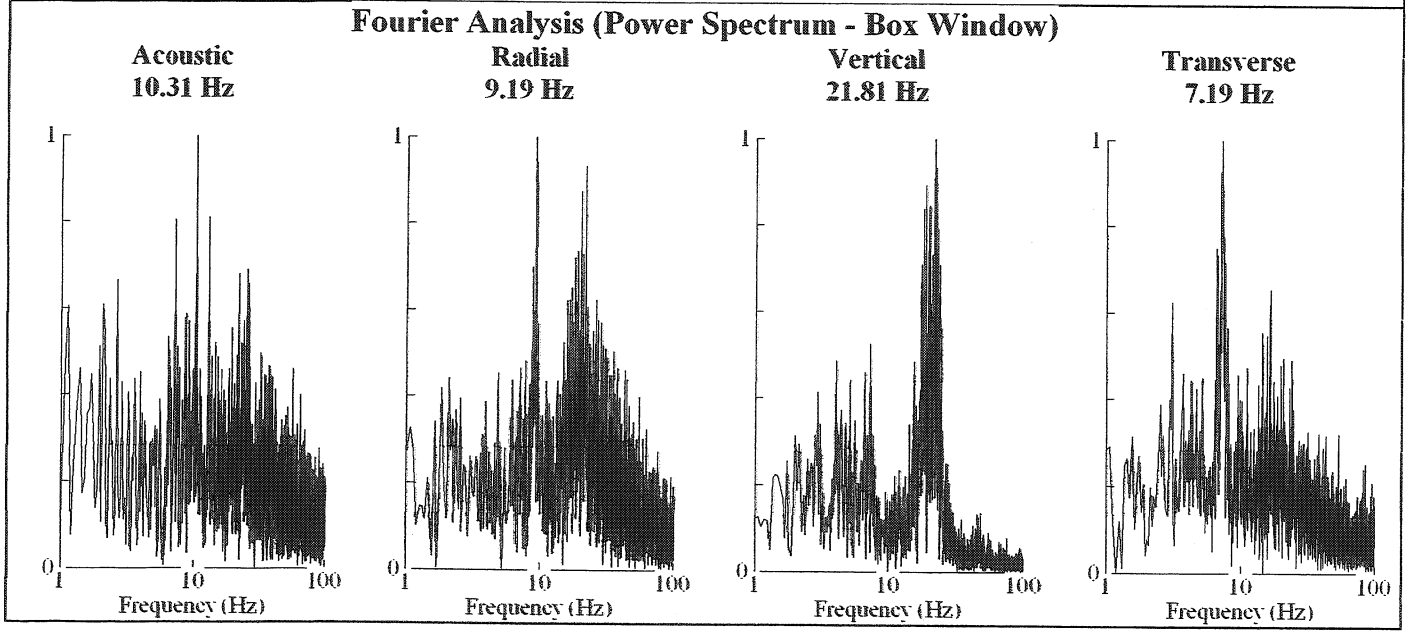
Acoustic: 100 dB @ 0.0 Hz
(0.02Mb 0.0003psi 0.0020kPa)
Radial: 0.005in/s 0.127mm/s @ 0.0Hz
***Vertical:* 0.04in/s 1.016mm/s @ 21.3Hz**
Transverse: 0.005in/s 0.127mm/s @ 0.0Hz

Graph Information

Duration: 0.000s To: 13.000s
Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)



Bighorn
Upper corner
V = SW midwall; A = vertical
A channel: 1 Mb = 0.5 ips
R,V,T * 0.60 factor
Wind

File Name: 02279003.DTB
Number: 003
Date: 3 22 2005
Time: 23:51
Serial Number: 2279
Seismic Trigger: 0.0600 in s 1.5240 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.2

Amplitudes and Frequencies

Acoustic: 100 dB @ 0.0 Hz
(0.02Mb 0.0003psi 0.0020kPa)

Radial: 0.02in/s 0.508mm/s @ 0.0Hz

***Vertical:* 0.09in/s 2.286mm/s @ 17.0Hz**

Transverse: 0.02in/s 0.508mm/s @ 0.0Hz

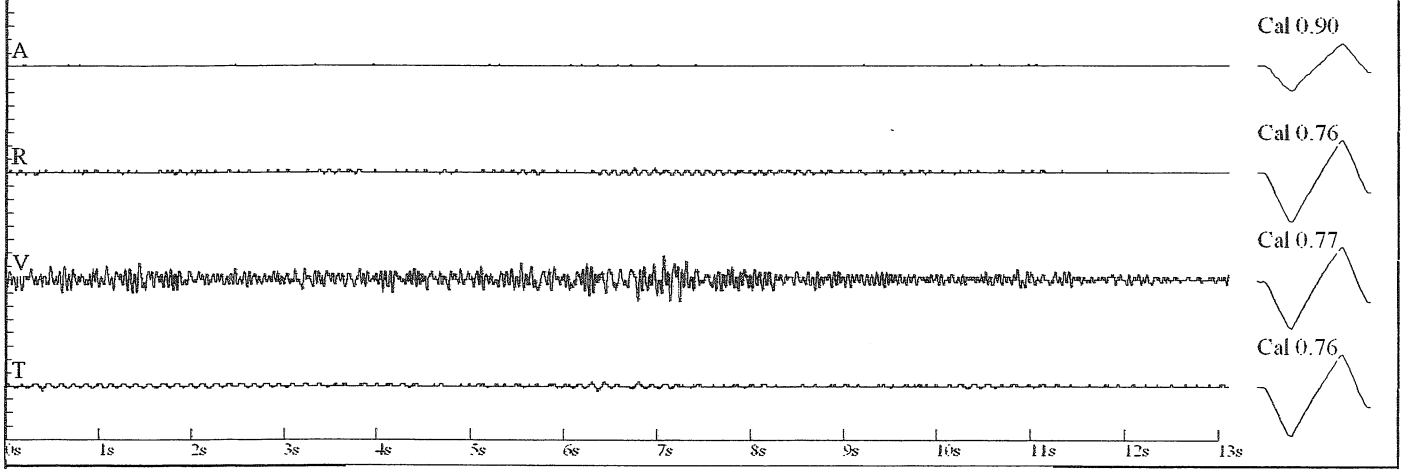
Graph Information

Duration: 0.000s To: 13.000s

Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)

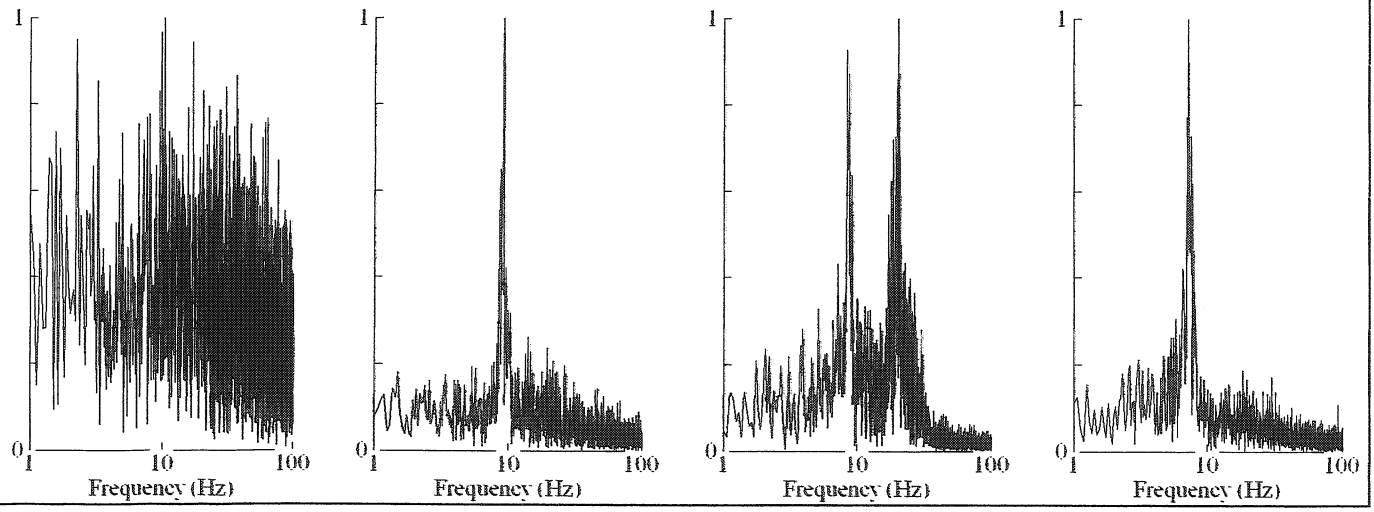
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)

Acoustic	Radial	Vertical	Transverse
10.50 Hz	9.25 Hz	20.44 Hz	7.19 Hz



Bighorn
Exterior Master
Wind - 40.3 mps gusts

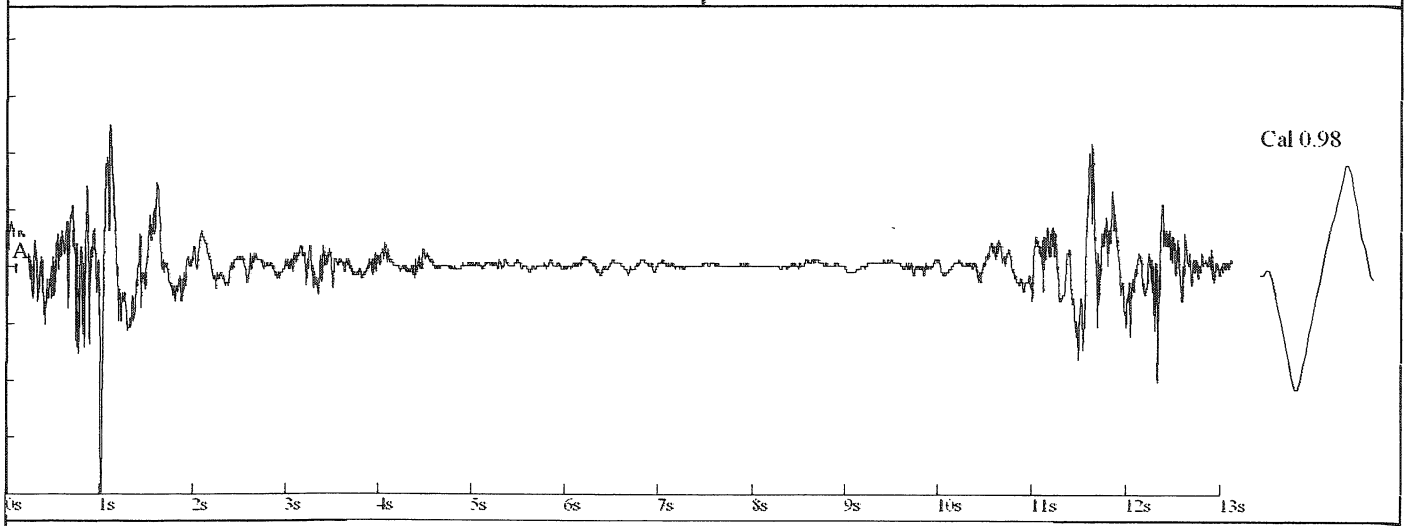
File Name: 03047007.DTB
Number: 007
Date: 3 23 2005
Time: 02:16
Serial Number: 3047
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 133 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.0

Amplitudes and Frequencies

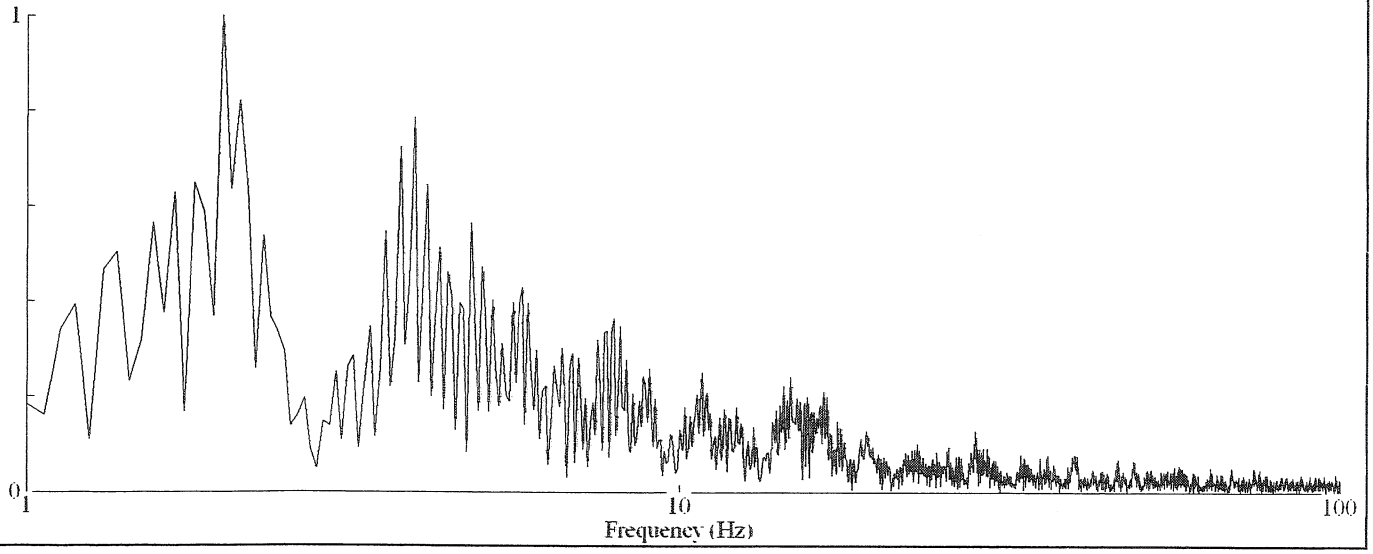
Acoustic: 137 dB @ 9.1 Hz
(1.46Mb 0.0212psi 0.1460kPa)

Graph Information

Duration: 0.000s To: 13.000s
Acoustic Scale:
137dB 1.42Mb (0.354Mb/div)
Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)
Acoustic
2.00 Hz



Bighorn
Lower corner
V = SE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

File Name: 01010006.DTB
Number: 006
Date: 3 23 2005
Time: 02:13
Serial Number: 1010
Seismic Trigger: 0.0400 in s 1.0160 mm s
Acoustic Trigger: 119 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.2

Amplitudes and Frequencies

Acoustic: 100 dB @ 0.0 Hz
(0.02Mb 0.0003psi 0.0020kPa)

Radial: 0.01in/s 0.254mm/s @ 0.0Hz

***Vertical:* 0.06in/s 1.524mm/s @ 15.0Hz**

Transverse: 0.01in/s 0.254mm/s @ 0.0Hz

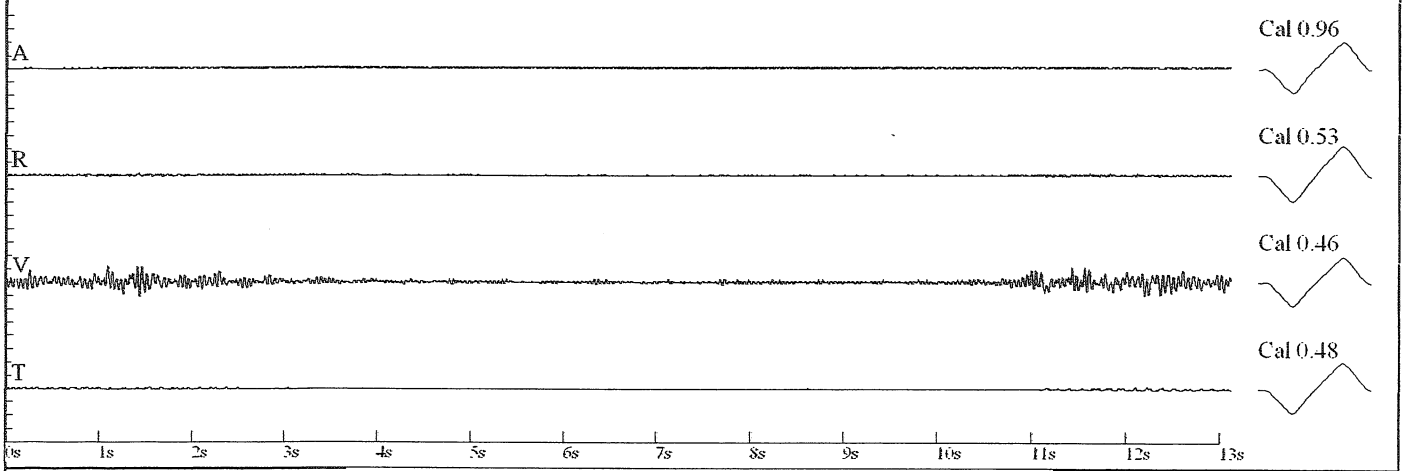
Graph Information

Duration: 0.000s To: 13.000s

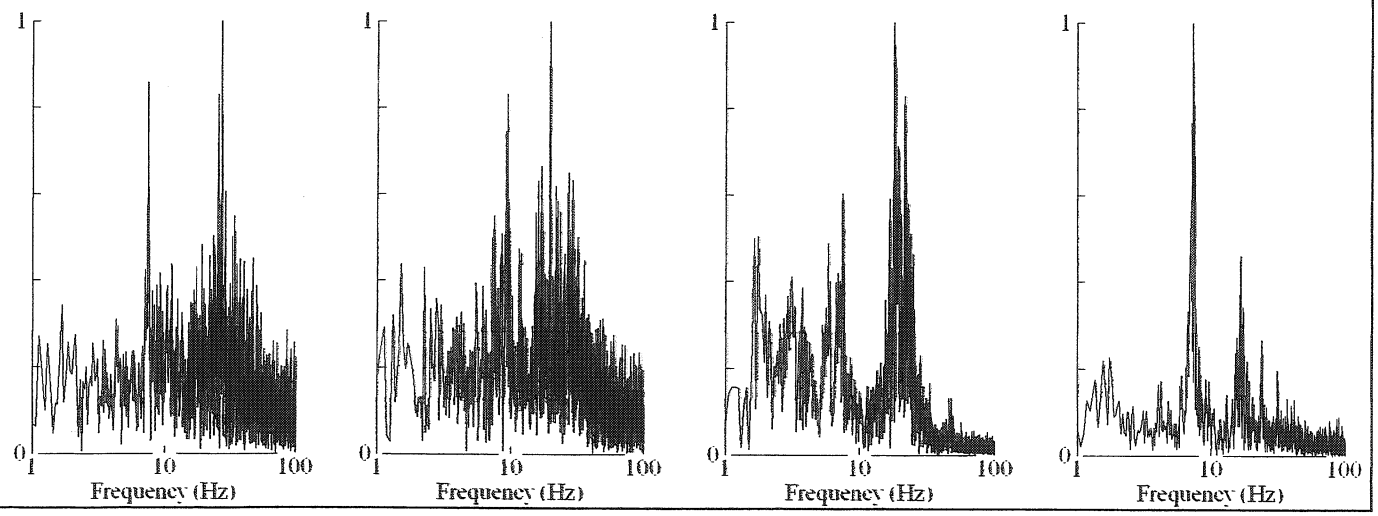
Acoustic Scale:
129dB 0.56Mb (0.141Mb/div)

Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)



Bighorn
Upper corner
V = SW midwall; A = vertical
A channel: 1 Mb = 0.5 ips
R,V,T * 0.60 factor
Wind

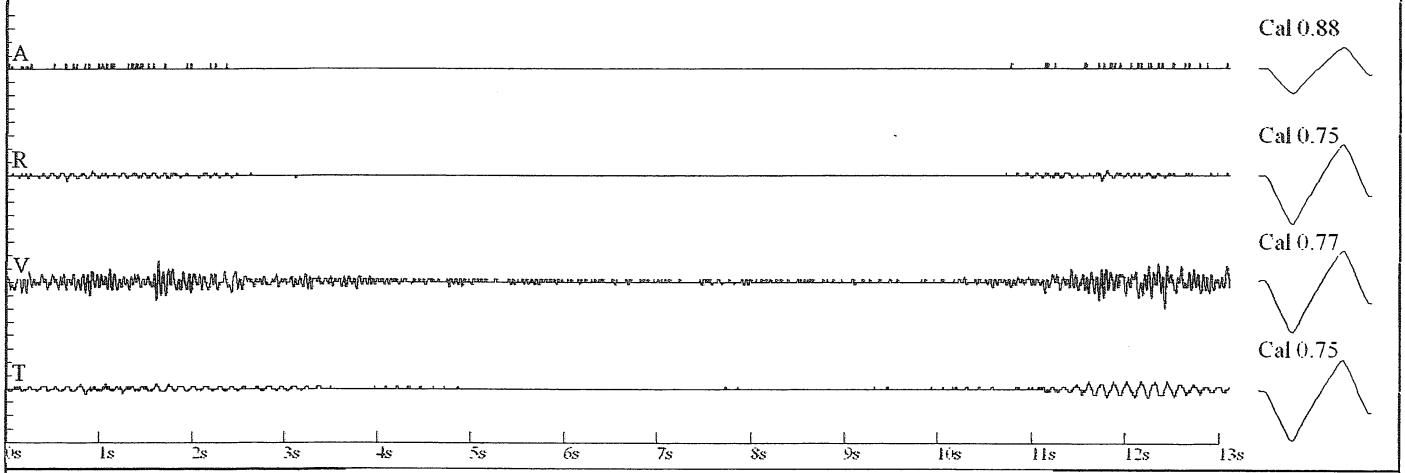
File Name: 02279005.DTB
Number: 005
Date: 3 23 2005
Time: 02:14
Serial Number: 2279
Seismic Trigger: 0.0600 in s 1.5240 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.2

Amplitudes and Frequencies

Acoustic: 100 dB @ 0.0 Hz
(0.02Mb 0.0003psi 0.0020kPa)
Radial: 0.02in/s 0.508mm/s @ 0.0Hz
***Vertical:* 0.10in/s 2.54mm/s @ 17.0Hz**
Transverse: 0.03in/s 0.762mm/s @ 11.6Hz

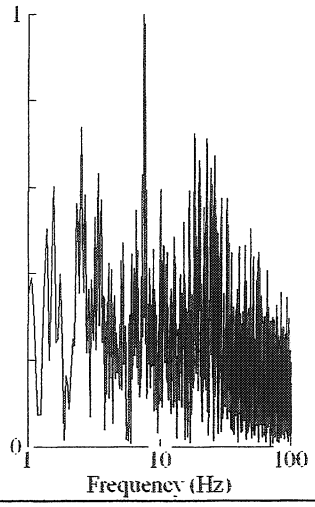
Graph Information

Duration: 0.000s To: 13.000s
Acoustic Scale:
120dB 0.20Mb (0.050Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s

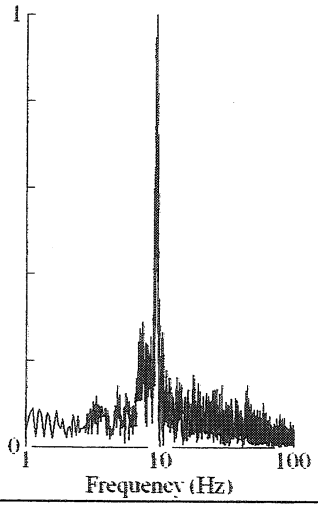


Fourier Analysis (Power Spectrum - Box Window)

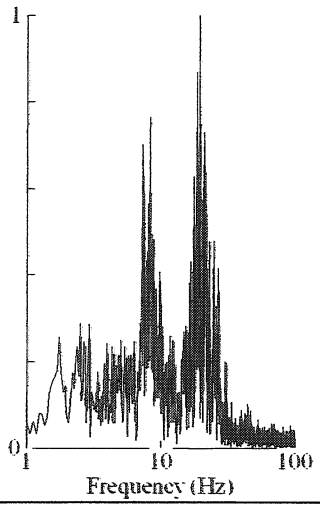
Acoustic
7.38 Hz



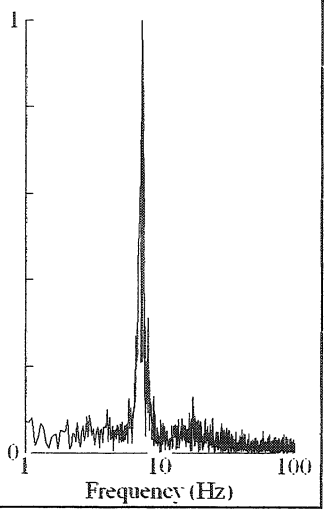
Radial
9.38 Hz



Vertical
19.69 Hz



Transverse
7.38 Hz



Bighorn Equipment
Exterior Master

File Name: 03047008.DTB
Number: 008
Date: 3 23 2005
Time: 06:42
Serial Number: 3047
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 133 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.0

Amplitudes and Frequencies

Acoustic: 110 dB @ 5.3 Hz
(0.06Mb 0.0009psi 0.0060kPa)

***Radial:* 0.03in/s 0.762mm/s @ 28.4Hz**

Vertical: 0.01in/s 0.254mm/s @ 0.0Hz

Transverse: 0.015in/s 0.381mm/s @ 32.0Hz

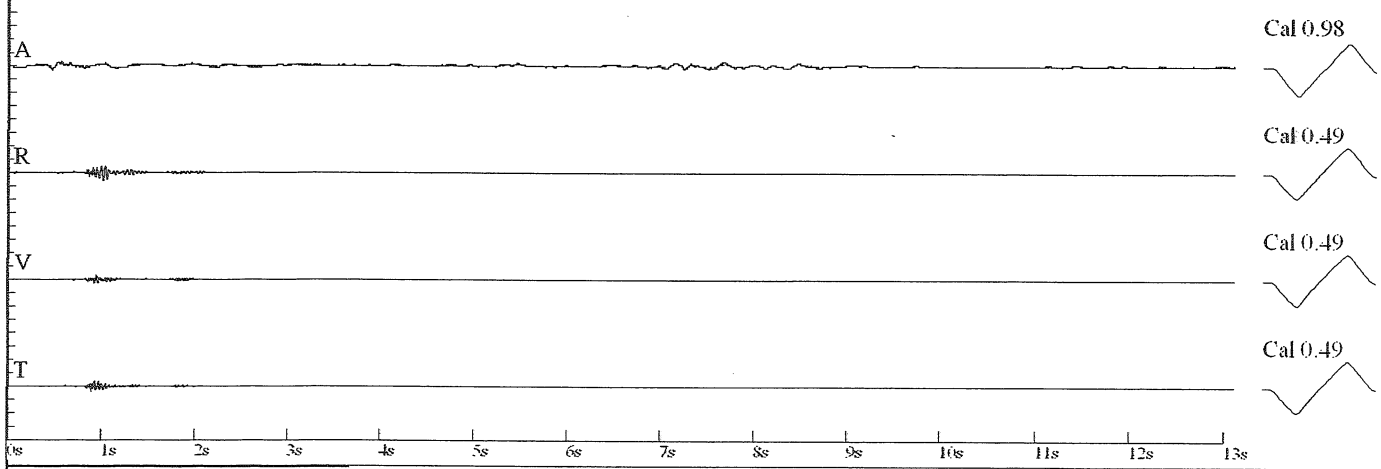
Graph Information

Duration: 0.000s To: 13.000s

Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)

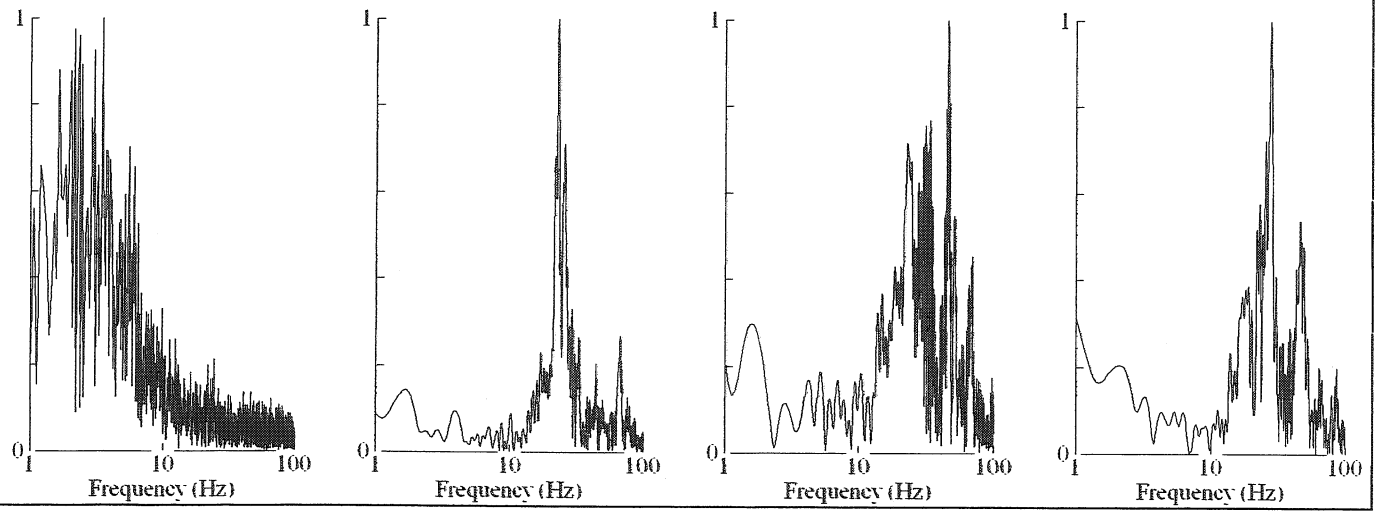
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)

Acoustic	Radial	Vertical	Transverse
3.44 Hz	22.88 Hz	46.00 Hz	28.00 Hz



Bighorn Equipment
Lower corner
V = SE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

File Name: 01010007.DTB
Number: 007
Date: 3 23 2005
Time: 06:39
Serial Number: 1010
Seismic Trigger: 0.0400 in s 1.0160 mm s
Acoustic Trigger: 119 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.2

Amplitudes and Frequencies

Acoustic: 106 dB @ 0.0 Hz
(0.04Mb 0.0006psi 0.0040kPa)

Radial: 0.02in/s 0.508mm/s @ 28.4Hz

***Vertical:* 0.085in/s 2.159mm/s @ 25.6Hz**

Transverse: 0.02in/s 0.508mm/s @ 25.6Hz

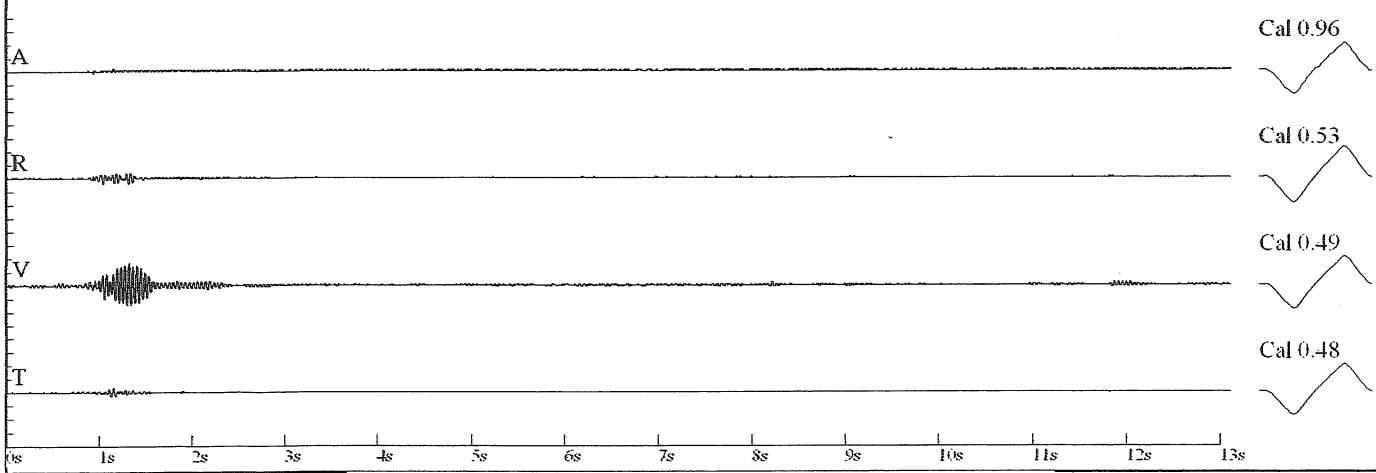
Graph Information

Duration: 0.000s To: 13.000s

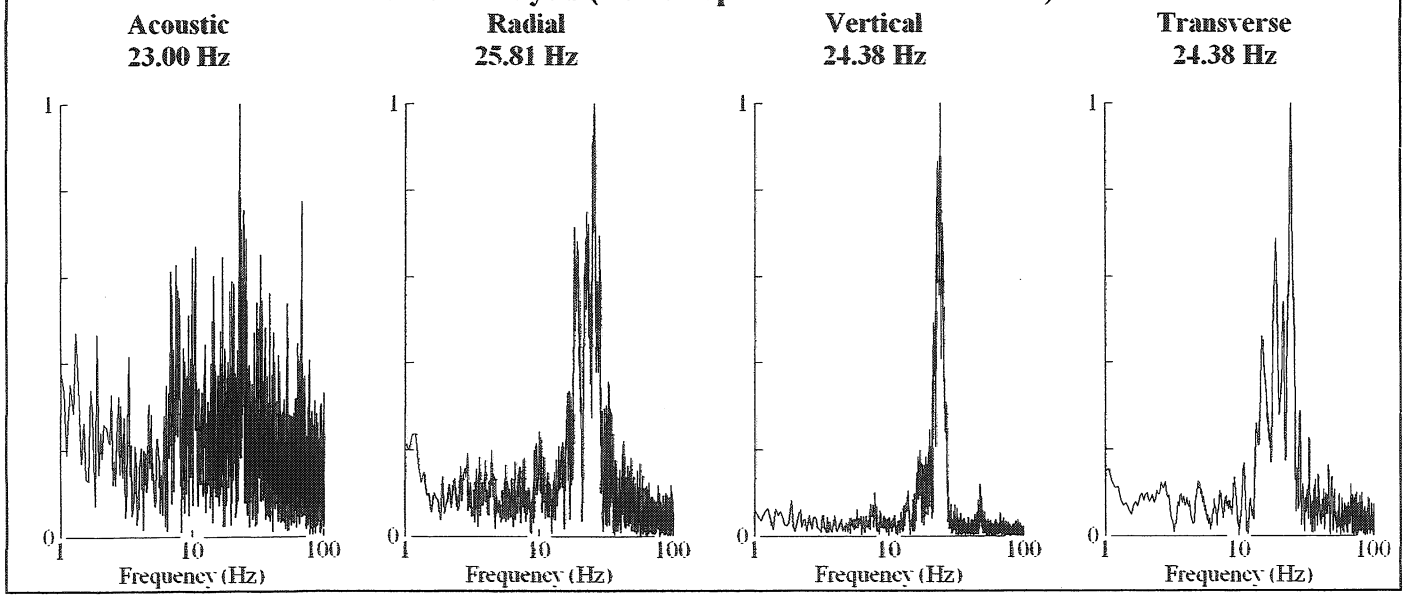
Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)

Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)



Bighorn Equipment
Upper corner
V = SW midwall; A = vertical
A channel: 1 Mb = 0.5 ips
R,V,T * 0.60 factor

File Name: 02279006.DTB
Number: 006
Date: 3 23 2005
Time: 06:40
Serial Number: 2279
Seismic Trigger: 0.0600 in s 1.5240 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.2

Amplitudes and Frequencies

Acoustic: 100 dB @ 0.0 Hz
(0.02Mb 0.0003psi 0.0020kPa)

Radial: 0.03in/s 0.762mm/s @ 23.2Hz

***Vertical:* 0.19in/s 4.826mm/s @ 23.2Hz**

Transverse: 0.03in/s 0.762mm/s @ 25.6Hz

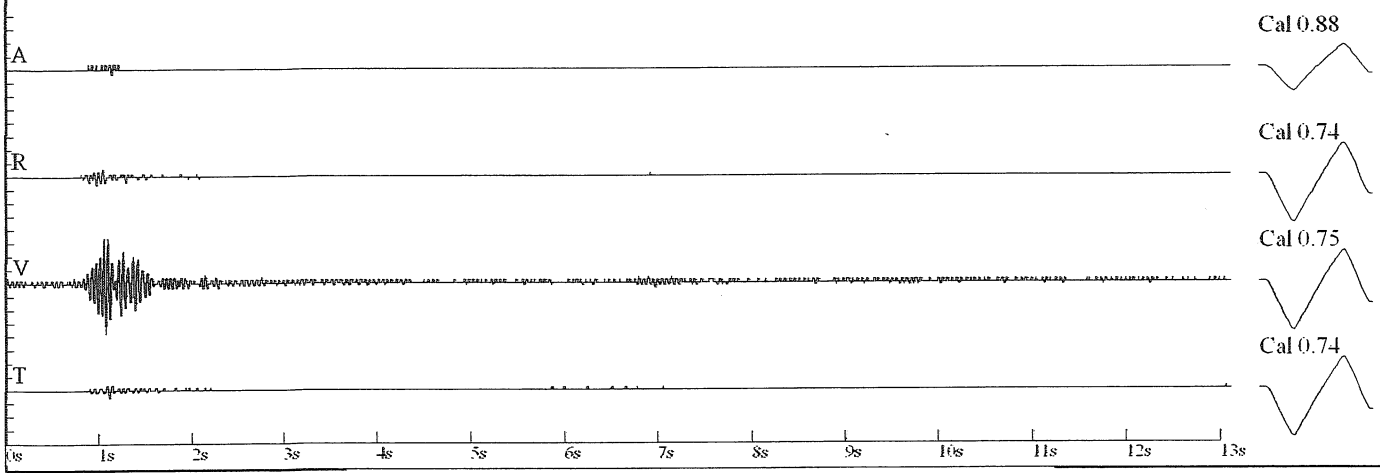
Graph Information

Duration: 0.000s To: 13.000s

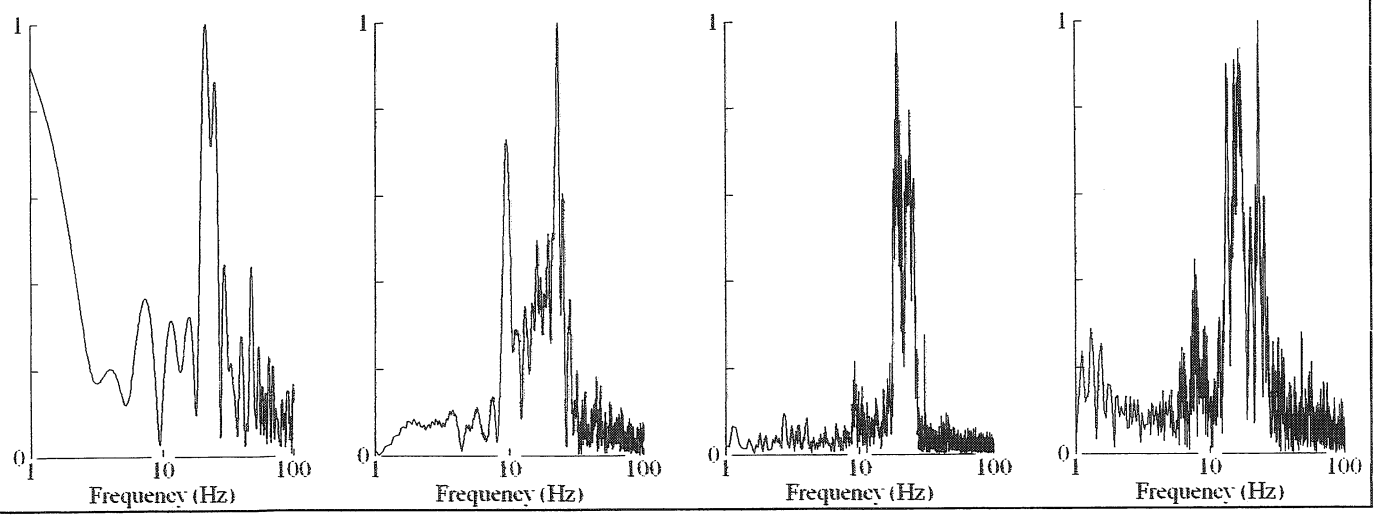
Acoustic Scale:
120dB 0.20Mb (0.050Mb/div)

Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)



Bighorn Equipment
Exterior Master

File Name: 03047009.DTB
Number: 009
Date: 3 23 2005
Time: 11:53
Serial Number: 3047
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 133 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.0

Amplitudes and Frequencies

Acoustic: 100 dB @ 0.0 Hz
(0.02Mb 0.0003psi 0.0020kPa)

***Radial:* 0.04in/s 1.016mm/s @ 85.3Hz**

Vertical: 0.025in/s 0.635mm/s @ 85.3Hz

Transverse: 0.035in/s 0.889mm/s @ 64.0Hz

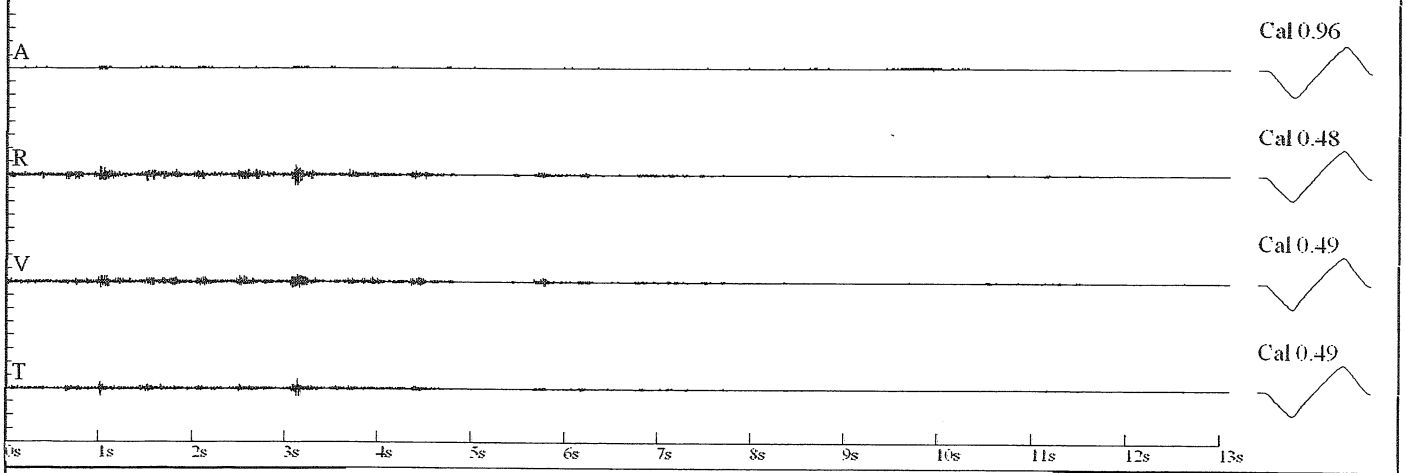
Graph Information

Duration: 0.000s To: 13.000s

Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)

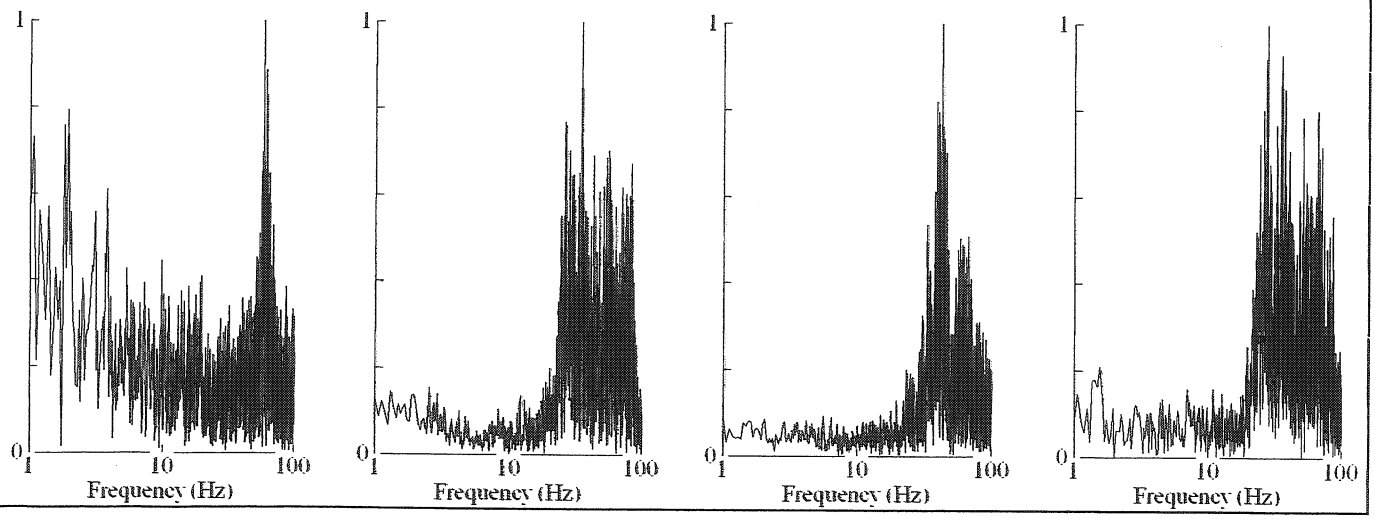
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)

Acoustic	Radial	Vertical	Transverse
58.38 Hz	35.00 Hz	43.50 Hz	27.88 Hz



Bighorn
Lower corner
V = SE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

File Name: 01010008.DTB
Number: 008
Date: 3 23 2005
Time: 11:49
Serial Number: 1010
Seismic Trigger: 0.0400 in s 1.0160 mm s
Acoustic Trigger: 119 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.2

Amplitudes and Frequencies

Acoustic: 100 dB @ 0.0 Hz
(0.02Mb 0.0003psi 0.0020kPa)

***Radial:* 0.015in/s 0.381mm/s @ 32.0Hz**

***Vertical:* 0.015in/s 0.381mm/s @ 36.5Hz**

Transverse: 0.005in/s 0.127mm/s @ 0.0Hz

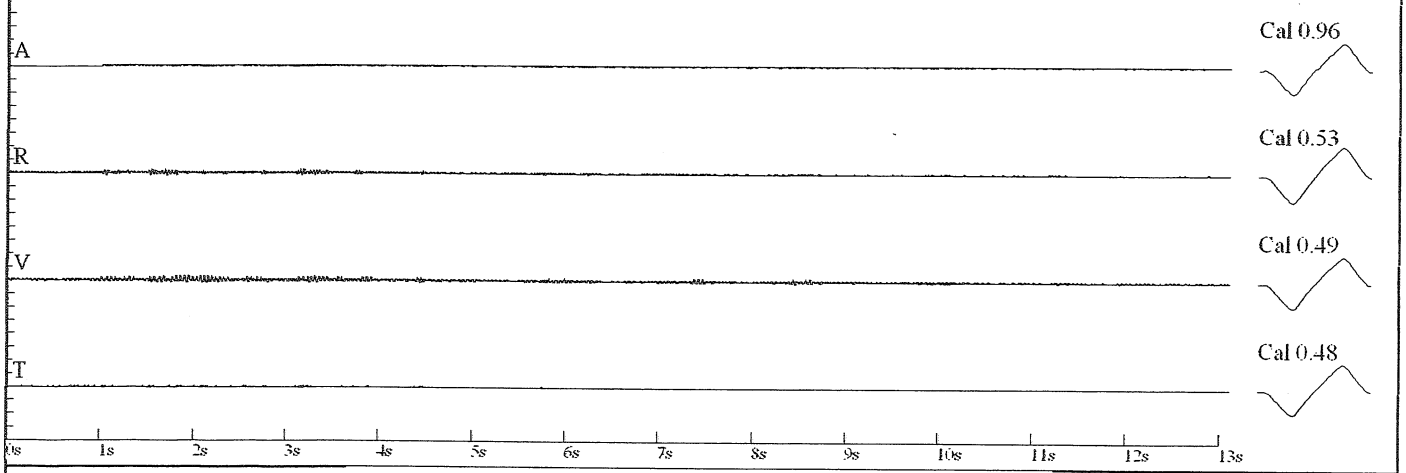
Graph Information

Duration: 0.000s To: 13.000s

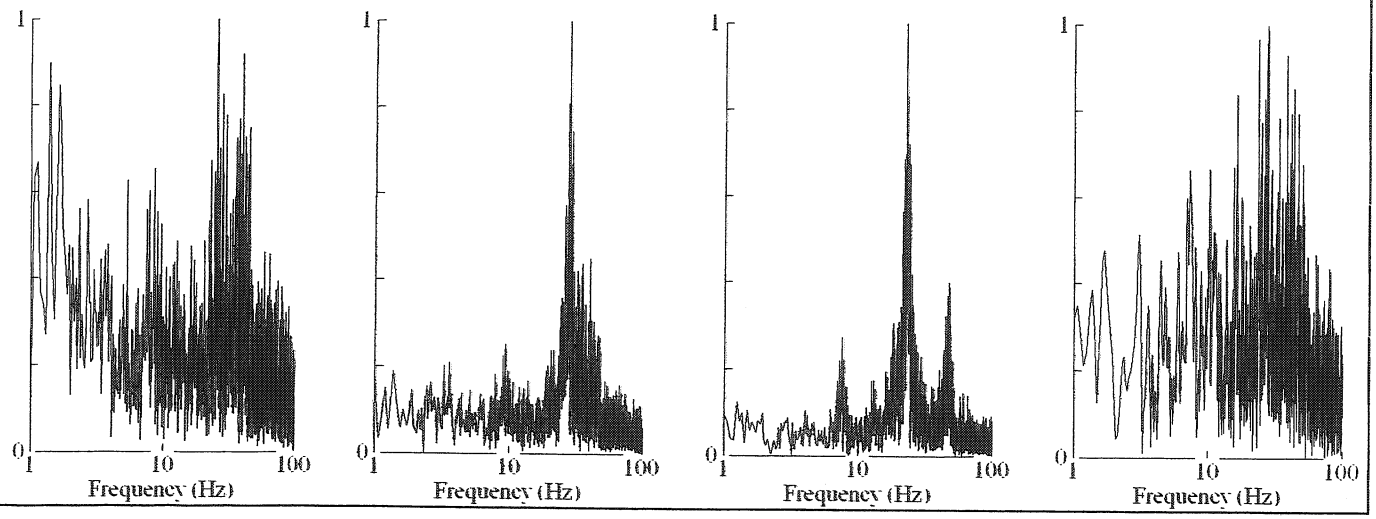
Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)

Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)



Bighorn
Upper corner
V = SW midwall; A = vertical
A channel: 1 Mb = 0.5 ips
R,V,T * 0.60 factor

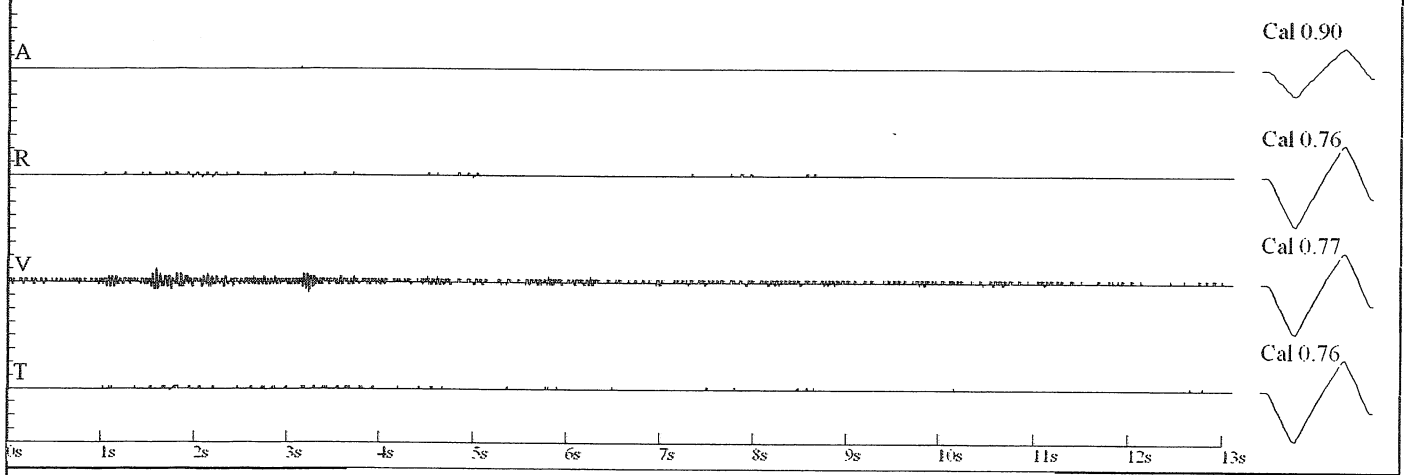
File Name: 02279007.DTB
Number: 007
Date: 3 23 2005
Time: 11:50
Serial Number: 2279
Seismic Trigger: 0.0600 in s 1.5240 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.2

Amplitudes and Frequencies

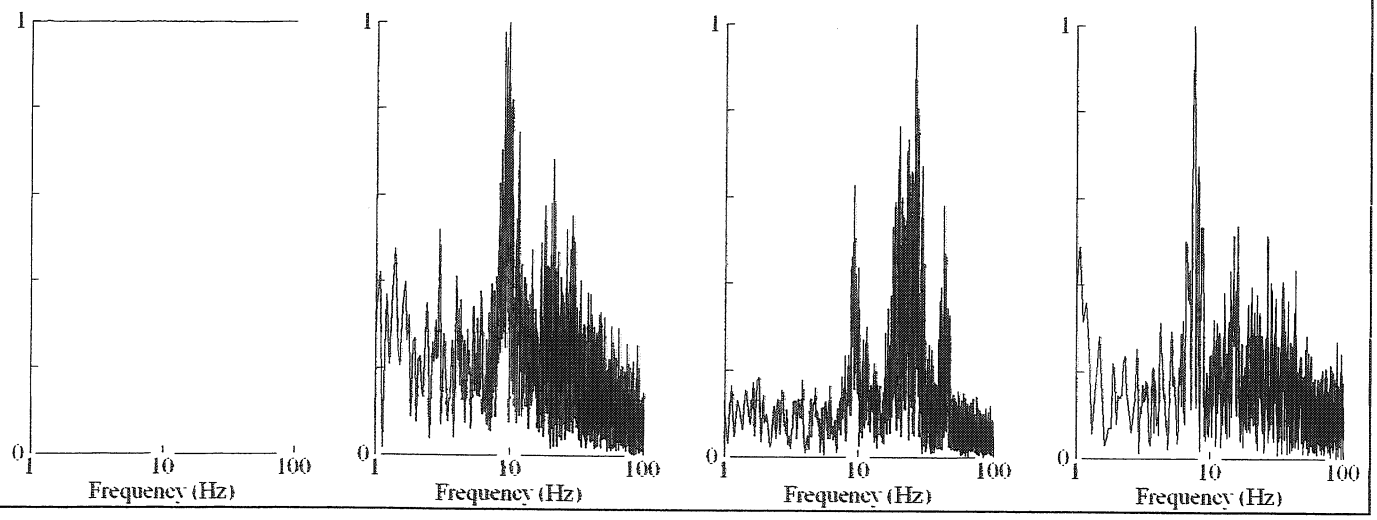
Acoustic: 100 dB @ 0.0 Hz
(0.02Mb 0.0003psi 0.0020kPa)
Radial: 0.01in/s 0.254mm/s @ 0.0Hz
***Vertical:* 0.05in/s 1.27mm/s @ 32.0Hz**
Transverse: 0.01in/s 0.254mm/s @ 0.0Hz

Graph Information

Duration: 0.000s To: 13.000s
Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)



Bighorn Equipment
Exterior Master
(no noise)

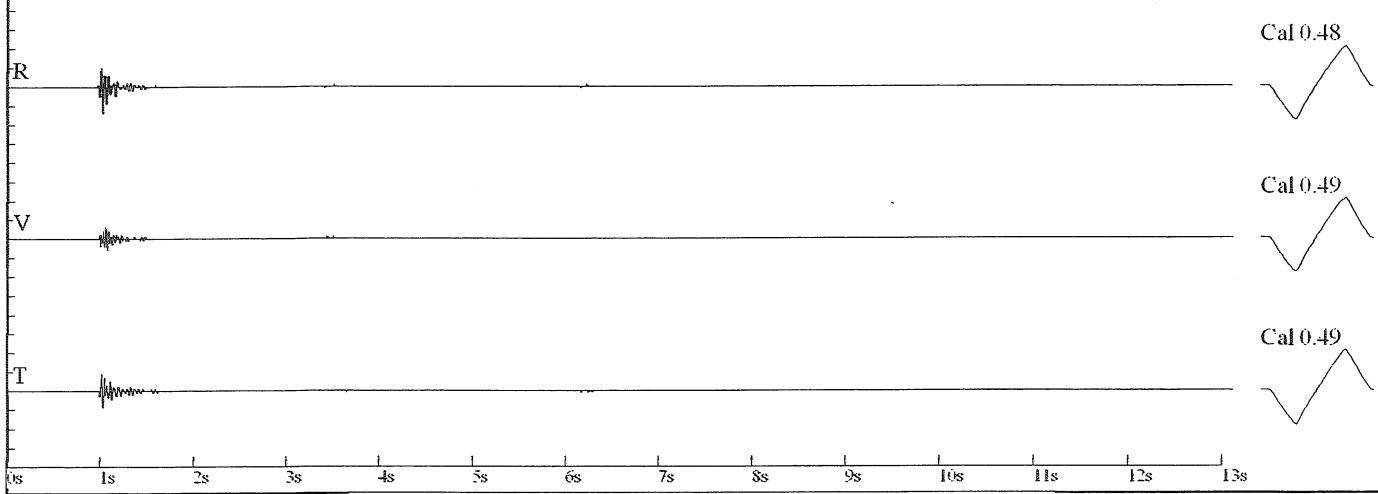
File Name: 03047065.DTB
Number: 065
Date: 4 12 2005
Time: 12:15
Serial Number: 3047
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 133 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 6.9

Amplitudes and Frequencies

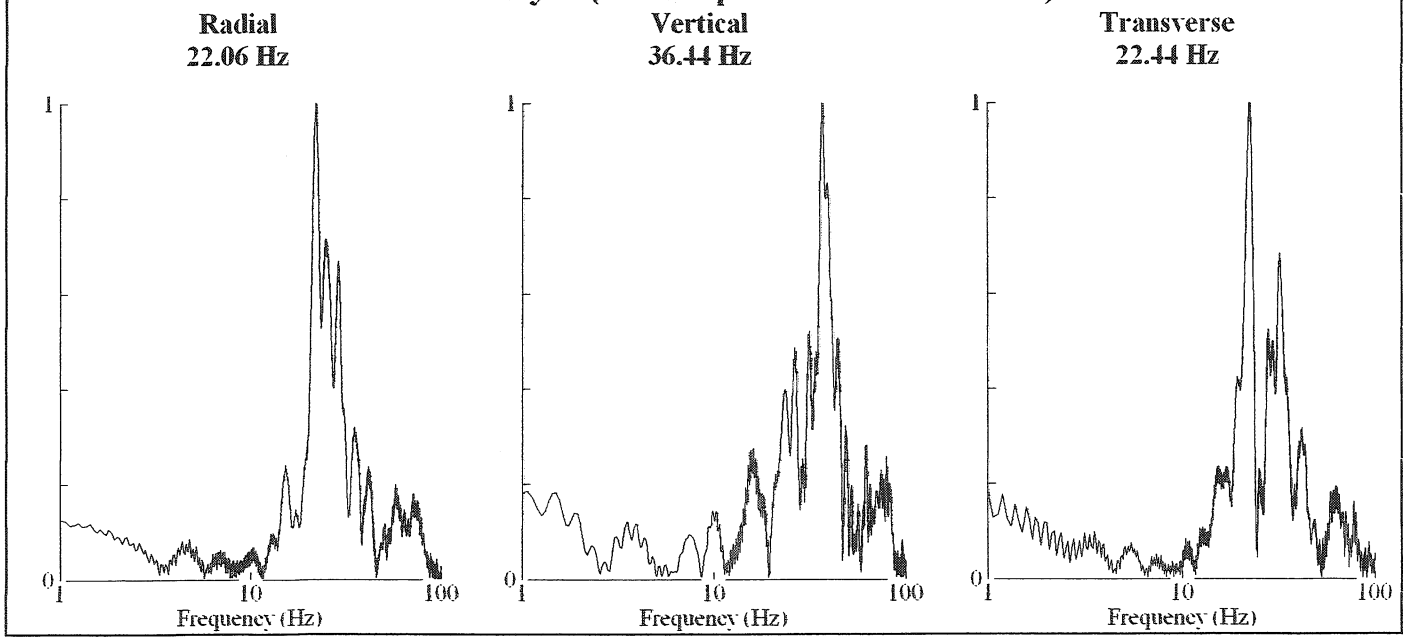
***Radial:* 0.07in/s 1.778mm/s @ 28.4Hz**
Vertical: 0.03in/s 0.762mm/s @ 42.6Hz
Transverse: 0.045in/s 1.143mm/s @ 32.0Hz

Graph Information

Duration: 0.000s To: 13.000s
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)



Bighorn Equipment
Lower corner
V = SE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

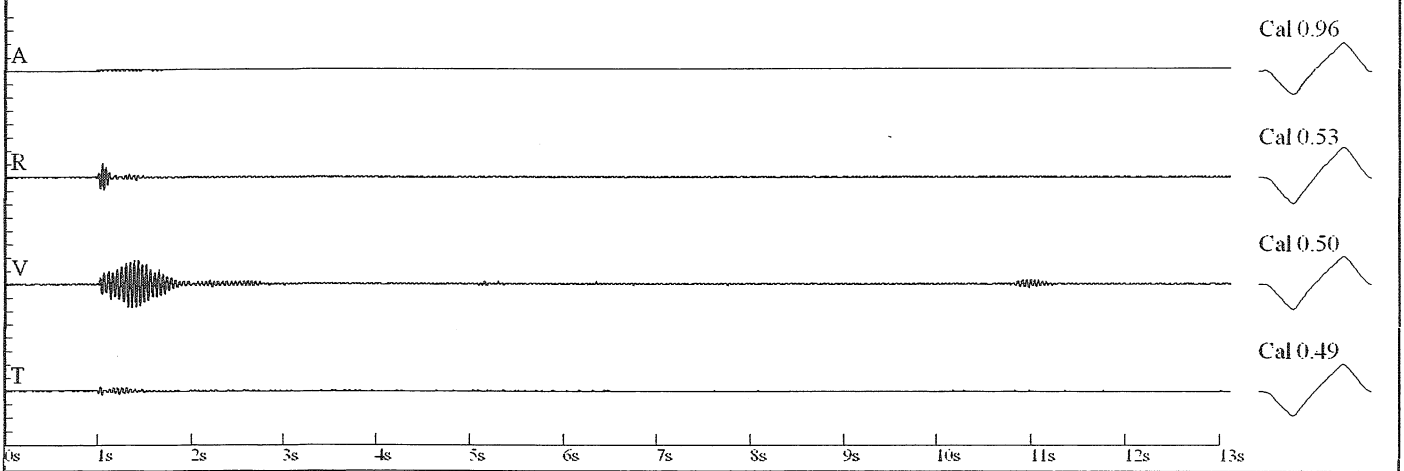
File Name: 01010059.DTB
Number: 059
Date: 4 12 2005
Time: 13:10
Serial Number: 1010
Seismic Trigger: 0.0400 in s 1.0160 mm s
Acoustic Trigger: 119 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

Acoustic: 100 dB @ 0.0 Hz
(0.02Mb 0.0003psi 0.0020kPa)
Radial: 0.055in/s 1.397mm/s @ 25.6Hz
***Vertical:* 0.09in/s 2.286mm/s @ 21.3Hz**
Transverse: 0.02in/s 0.508mm/s @ 28.4Hz

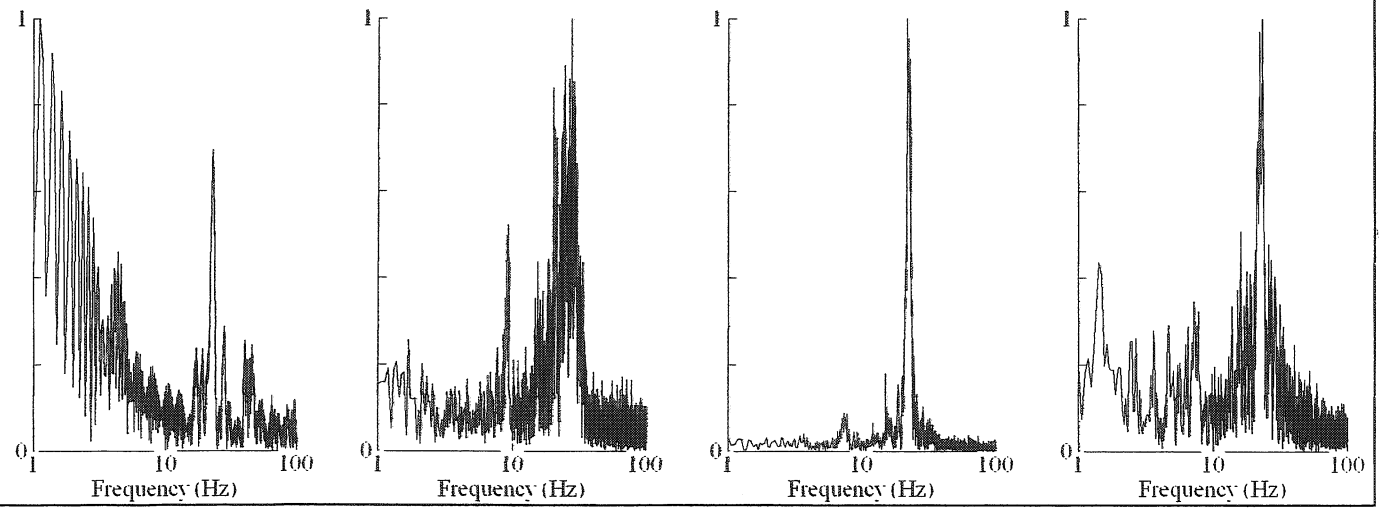
Graph Information

Duration: 0.000s To: 13.000s
Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)
Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)

Acoustic	Radial	Vertical	Transverse
1.13 Hz	27.63 Hz	22.25 Hz	23.19 Hz



Bighorn Equipment
Upper corner
V = SW midwall; A = vertical
A channel: 1 Mb = 0.5 ips
R,V,T * 0.60 factor

File Name: 02279061.DTB
Number: 061
Date: 4 12 2005
Time: 13:11
Serial Number: 2279
Seismic Trigger: 0.0600 in s 1.5240 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

Acoustic: 100 dB @ 0.0 Hz
(0.02Mb 0.0003psi 0.0020kPa)

Radial: 0.04in/s 1.016mm/s @ 25.6Hz

***Vertical:* 0.16in/s 4.064mm/s @ 23.2Hz**

Transverse: 0.02in/s 0.508mm/s @ 0.0Hz

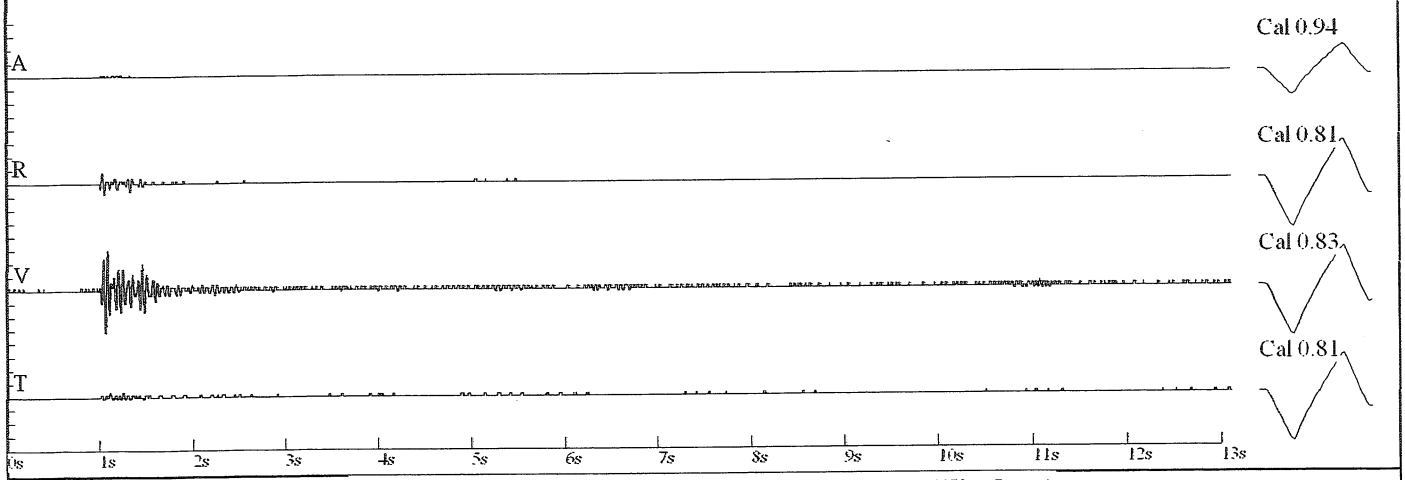
Graph Information

Duration: 0.000s To: 13.000s

Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)

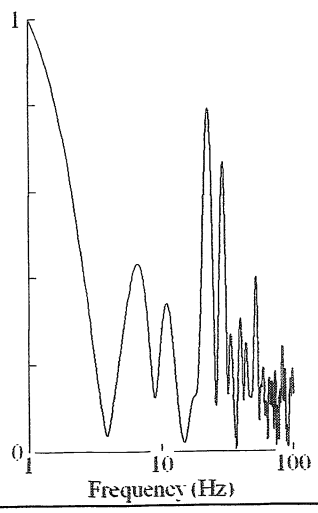
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s

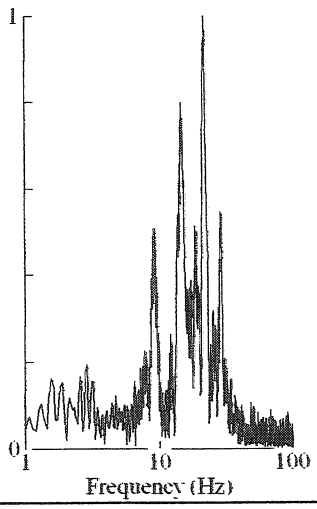


Fourier Analysis (Power Spectrum - Box Window)

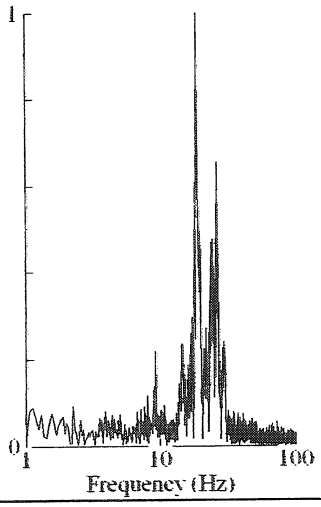
Acoustic
1.00 Hz



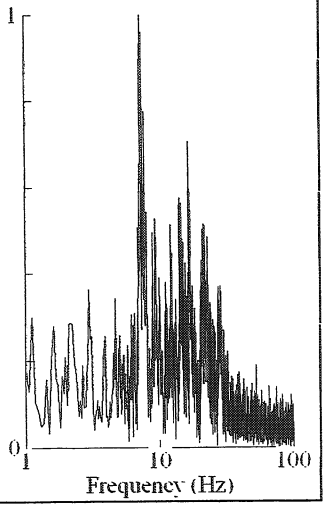
Radial
21.88 Hz



Vertical
19.00 Hz



Transverse
7.25 Hz



Bighorn Equipment
Exterior Master

File Name: 03047066.DTB
Number: 066
Date: 4 13 2005
Time: 10:46
Serial Number: 3047
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 133 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 6.9

Amplitudes and Frequencies

Acoustic: 100 dB @ 0.0 Hz
(0.02Mb 0.0003psi 0.0020kPa)

***Radial:* 0.045in/s 1.143mm/s @ 32.0Hz**

Vertical: 0.025in/s 0.635mm/s @ 51.2Hz

Transverse: 0.035in/s 0.889mm/s @ 32.0Hz

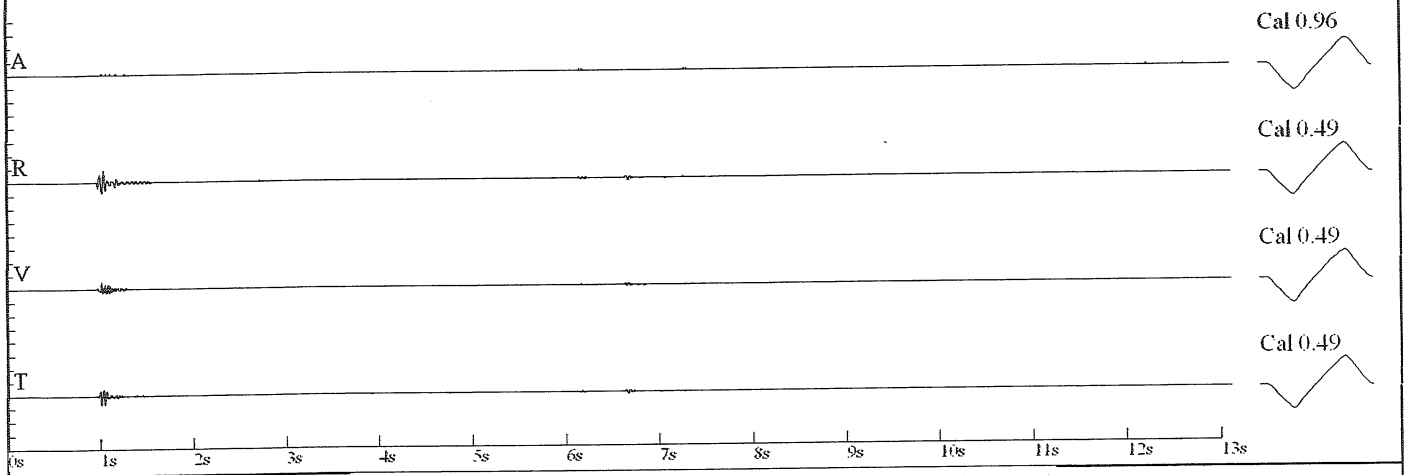
Graph Information

Duration: 0.000s To: 13.000s

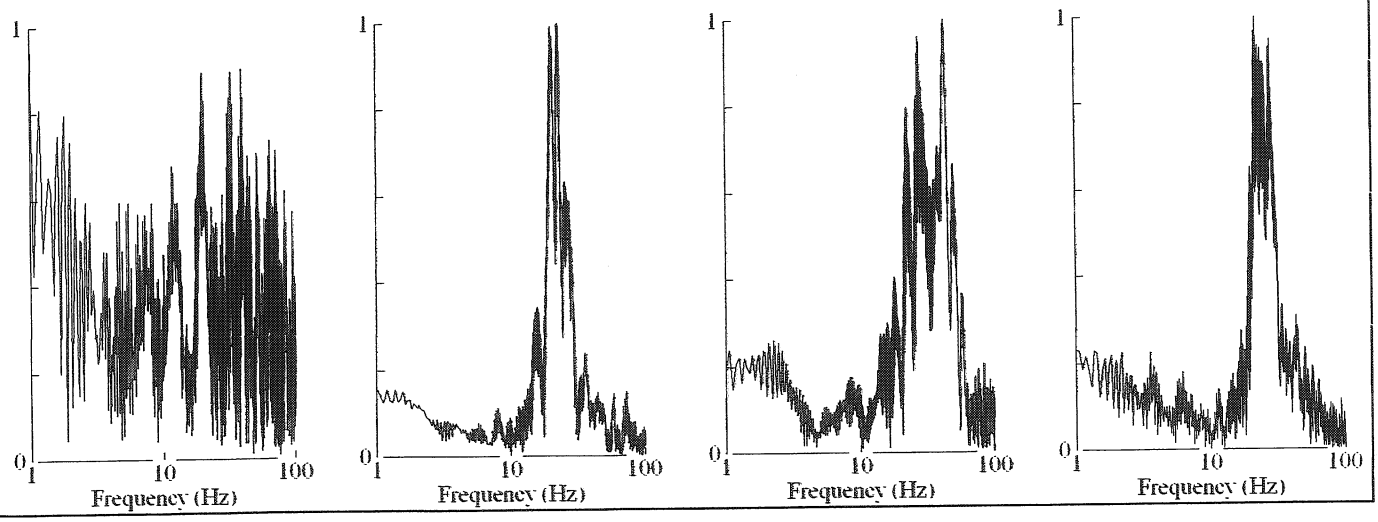
Acoustic Scale:
129dB 0.56Mb (0.141Mb/div)

Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)



Bighorn Equipment
Lower corner
V = SE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

File Name: 01010060.DTB
Number: 060
Date: 4 13 2005
Time: 11:41
Serial Number: 1010
Seismic Trigger: 0.0400 in s 1.0160 mm s
Acoustic Trigger: 119 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

Acoustic: 100 dB @ 0.0 Hz
(0.02Mb 0.0003psi 0.0020kPa)

Radial: 0.035in/s 0.889mm/s @ 23.2Hz

***Vertical:* 0.095in/s 2.413mm/s @ 21.3Hz**

Transverse: 0.02in/s 0.508mm/s @ 21.3Hz

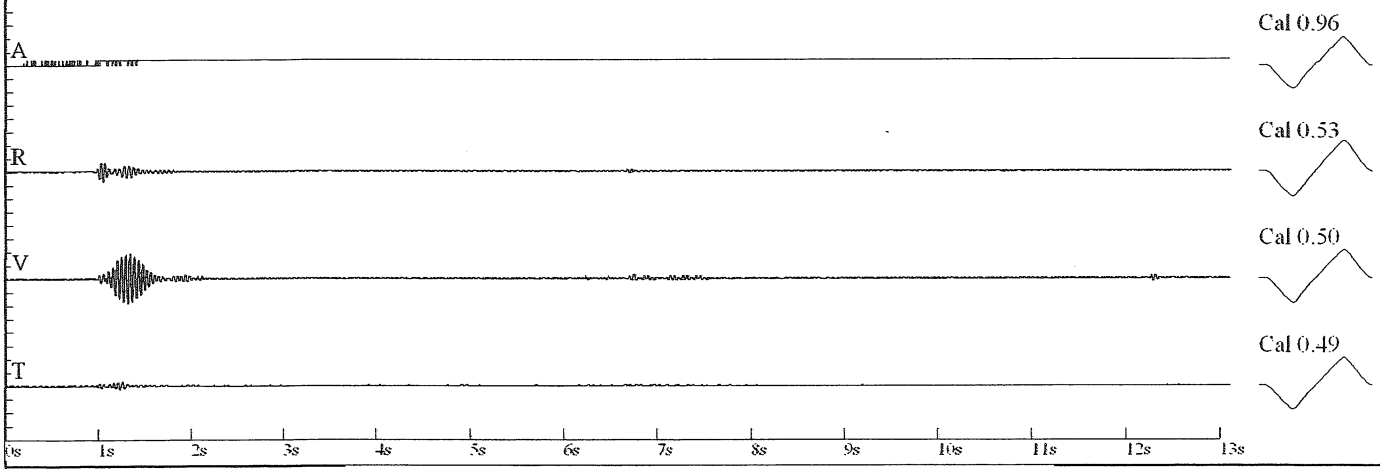
Graph Information

Duration: 0.000s To: 13.000s

Acoustic Scale:
120dB 0.20Mb (0.050Mb/div)

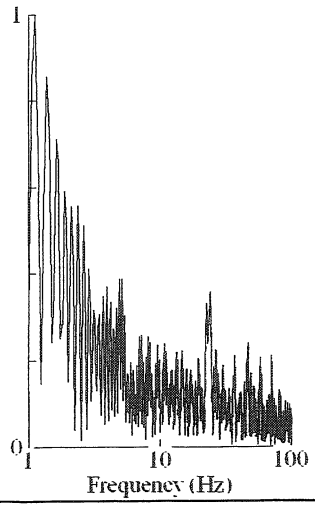
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s

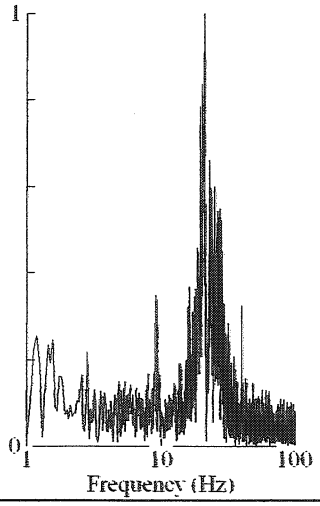


Fourier Analysis (Power Spectrum - Box Window)

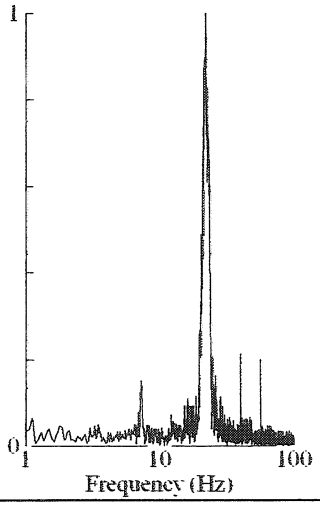
Acoustic
1.13 Hz



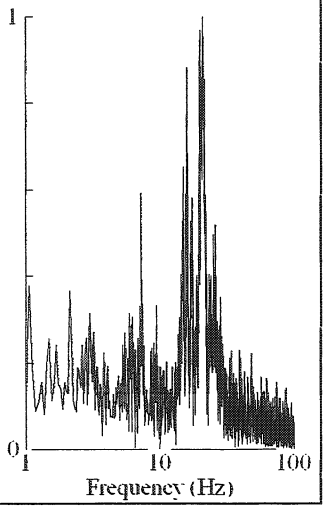
Radial
21.06 Hz



Vertical
22.06 Hz



Transverse
21.06 Hz



Bighorn Equipment
Upper corner
V = SW midwall; A = vertical
A channel: 1 Mb = 0.5 ips
R,V,T * 0.60 factor

File Name: 02279062.DTB
Number: 062
Date: 4 13 2005
Time: 11:42
Serial Number: 2279
Seismic Trigger: 0.0600 in s 1.5240 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 12.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

Acoustic: 100 dB @ 0.0 Hz
(0.02Mb 0.0003psi 0.0020kPa)

Radial: 0.05in/s 1.27mm/s @ 25.6Hz

***Vertical:* 0.14in/s 3.556mm/s @ 23.2Hz**

Transverse: 0.02in/s 0.508mm/s @ 0.0Hz

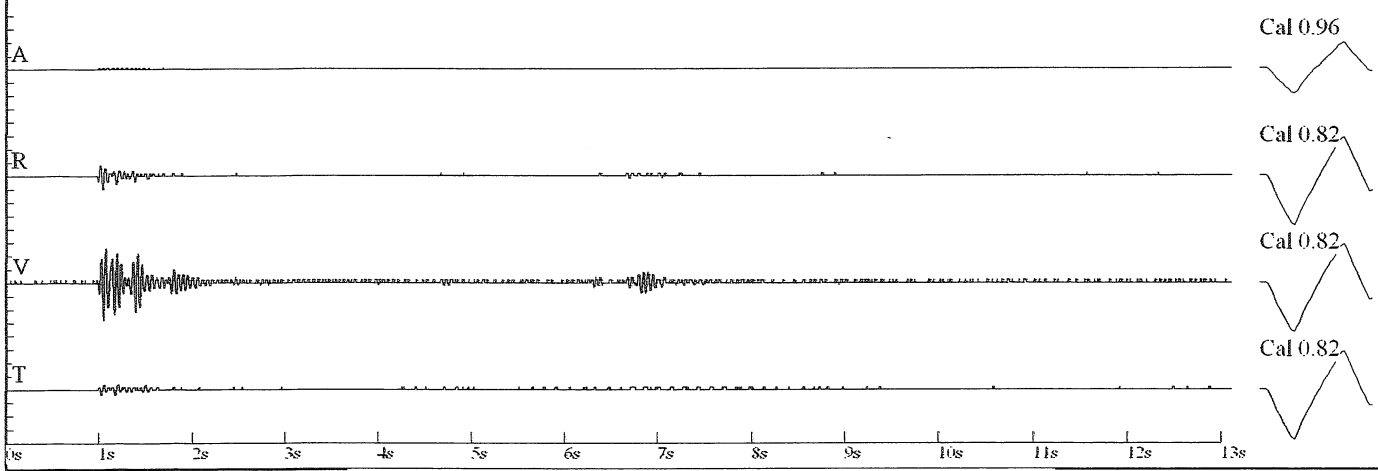
Graph Information

Duration: 0.000s To: 13.000s

Acoustic Scale:
129dB 0.56Mb (0.141Mb/div)

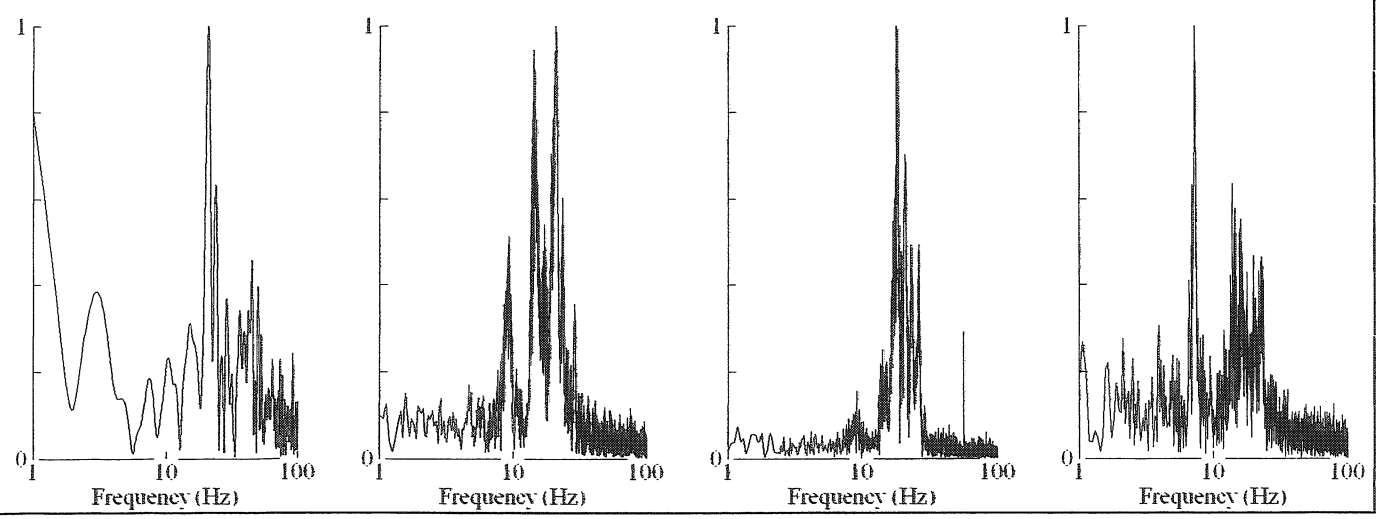
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)

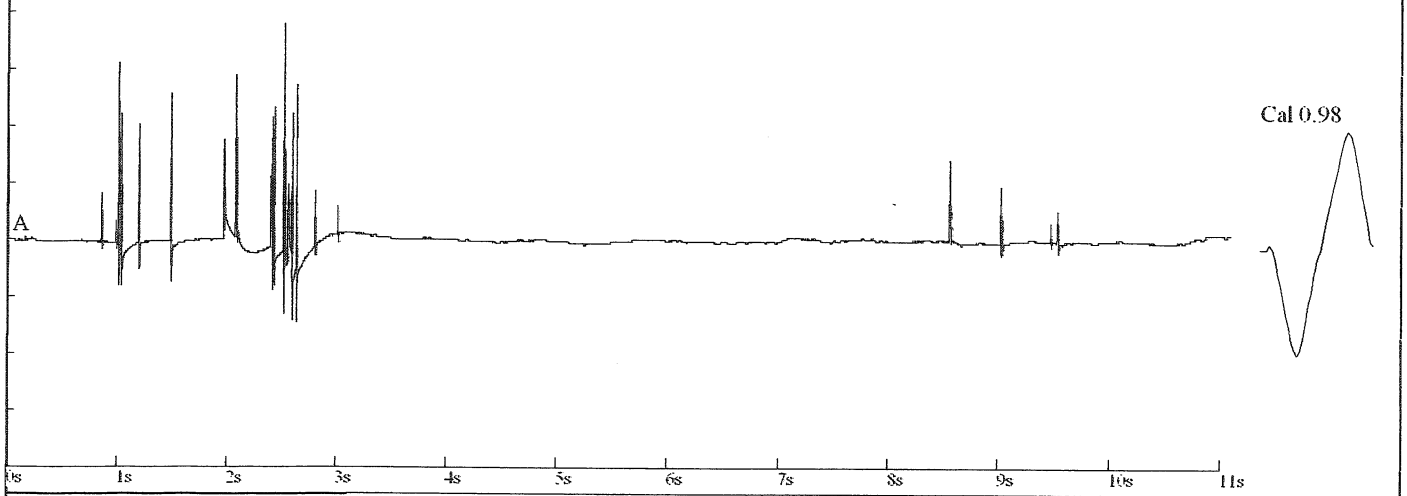
Acoustic	Radial	Vertical	Transverse
20.81 Hz	20.88 Hz	18.19 Hz	7.31 Hz



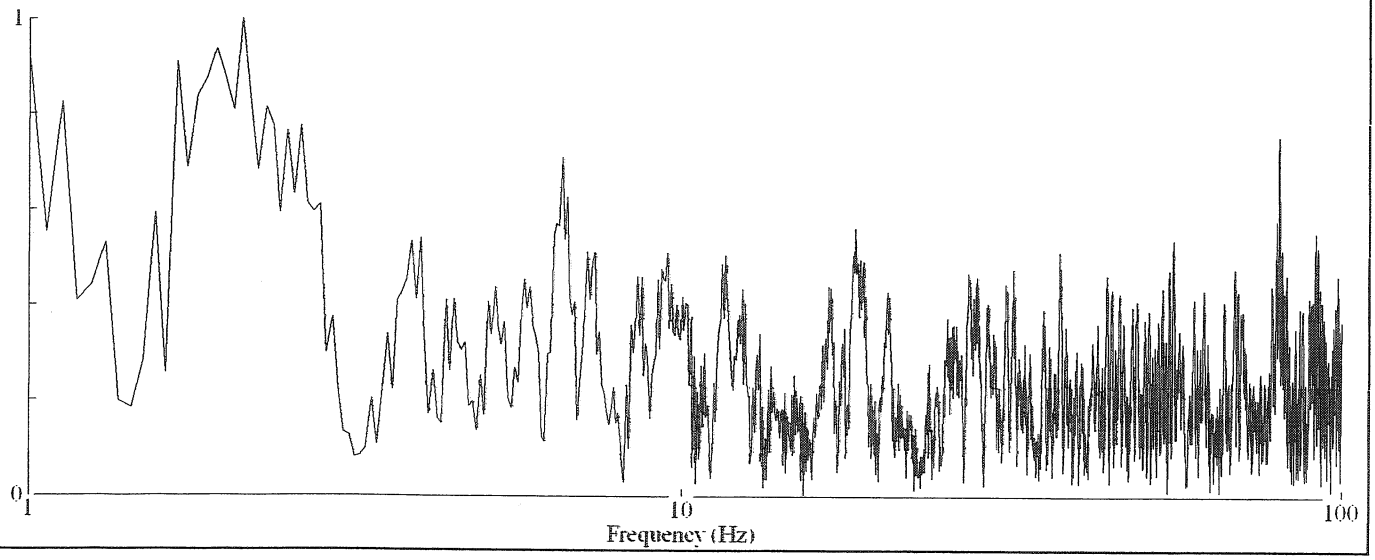
High Mesa Thunder storm and wind
Exterior Master

File Name: 01258069.DTB
Number: 069
Date: 3 22 2005
Time: 23:52
Serial Number: 1258
Seismic Trigger: 0.0250 in s 0.6350 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.2

Amplitudes and Frequencies	Graph Information
Acoustic: 141 dB @ 85.3 Hz (2.12Mb 0.0307psi 0.2120kPa)	*Duration:* 0.000s To: 11.000s *Acoustic Scale:* 141dB 2.24Mb (0.561Mb/div) *Time Line Intervals at:* 1.00 s



Fourier Analysis (Power Spectrum - Box Window)
Acoustic
2.13 Hz



High Mesa Thunder storm and wind
Upper corner
V = NE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

File Name: 02276310.DTB
Number: 310
Date: 3 22 2005
Time: 23:53
Serial Number: 2276
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.2

Amplitudes and Frequencies

Acoustic: <100 dB

Radial: 0.01in/s 0.254mm/s @ 0.0Hz

***Vertical:* 0.03in/s 0.762mm/s @ 13.4Hz**

Transverse: 0.01in/s 0.254mm/s @ 0.0Hz

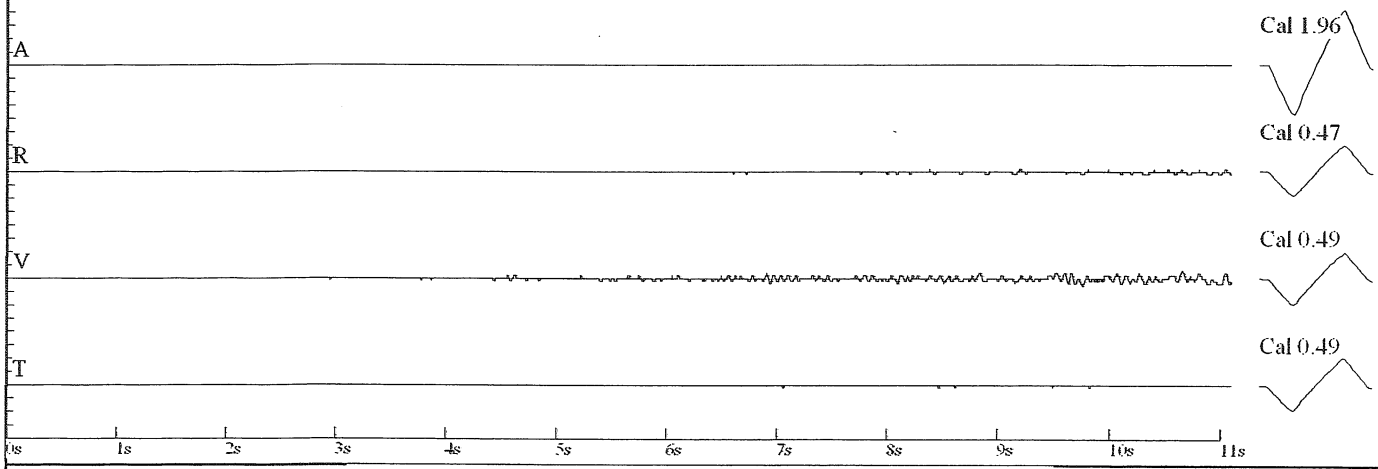
Graph Information

Duration: 0.000s To: 11.000s

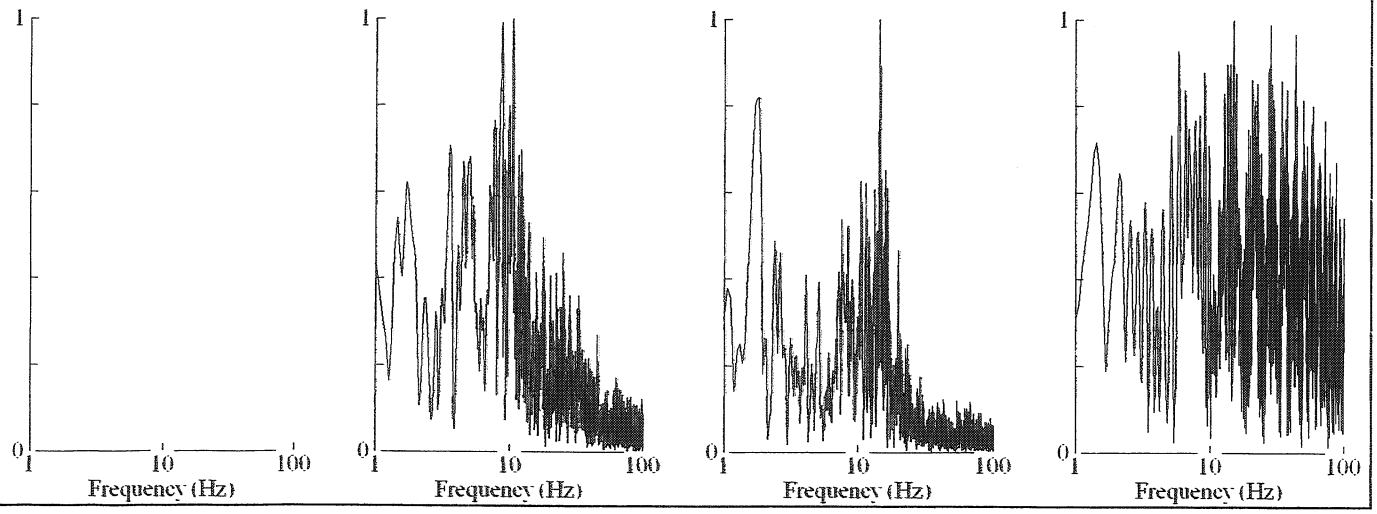
Acoustic Scale:
120dB 0.20Mb (0.050Mb/div)

Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)



High Mesa Thunder storm and wind
Exterior Master

File Name: 01258065.DTB
Number: 065
Date: 3 22 2005
Time: 23:50
Serial Number: 1258
Seismic Trigger: 0.0250 in s 0.6350 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

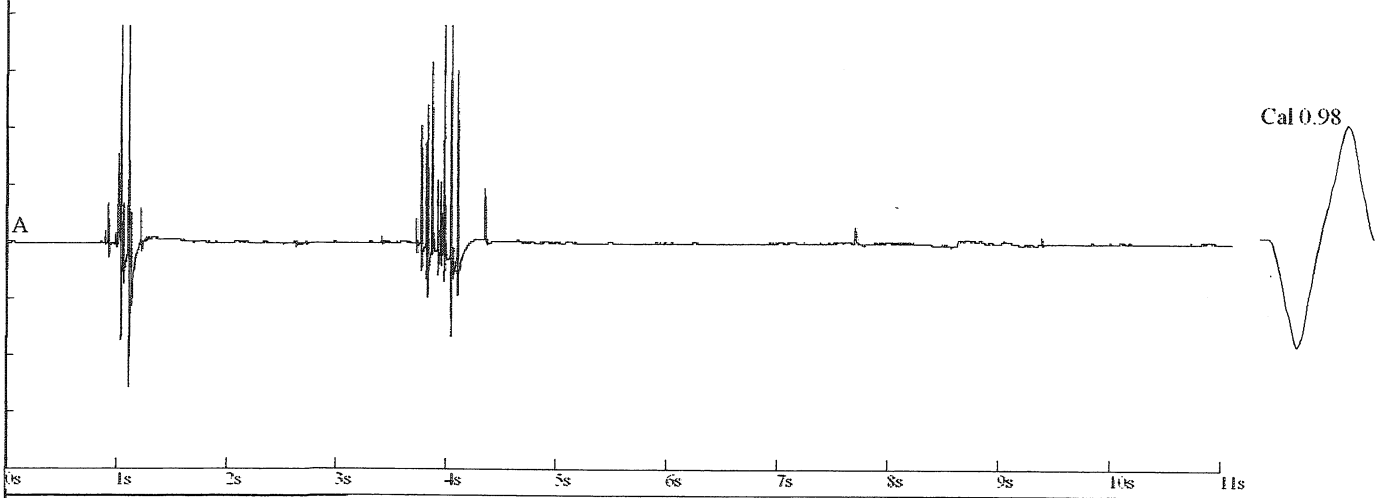
Acoustic: 141 dB @ 85.3 Hz
(2.12Mb 0.0307psi 0.2120kPa)

Graph Information

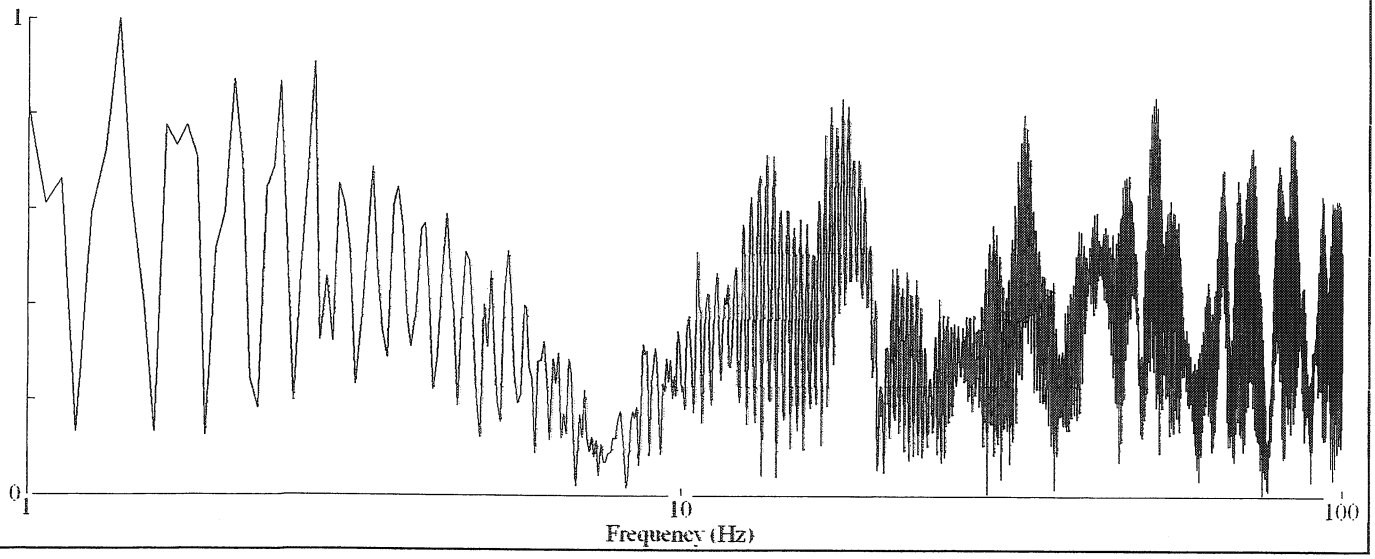
Duration: 0.000s To: 11.000s

Acoustic Scale:
141dB 2.24Mb (0.561Mb/div)

Time Line Intervals at: 1.00 s



Fourier Analysis (Power Spectrum - Box Window)
Acoustic
1.38 Hz



High Mesa Thunder storm and wind
Upper corner
V = NE midwall; A = vertical
A channel: 1 Mb = 0.5 ips

File Name: 02276306.DTB
Number: 306
Date: 3 22 2005
Time: 23:51
Serial Number: 2276
Seismic Trigger: 0.0300 in s 0.7620 mm s
Acoustic Trigger: 125 dB
Sample Rate: 512
Record Duration: 10.0 Seconds
Pre-Trigger: 1.00 Seconds
Sensor Gain: 2x
Battery: 7.1

Amplitudes and Frequencies

Acoustic: 106 dB @ 0.0 Hz
(0.04Mb 0.0006psi 0.0040kPa)

Radial: 0.01in/s 0.254mm/s @ 0.0Hz

***Vertical:* 0.04in/s 1.016mm/s @ 128.0Hz**

Transverse: 0.01in/s 0.254mm/s @ 0.0Hz

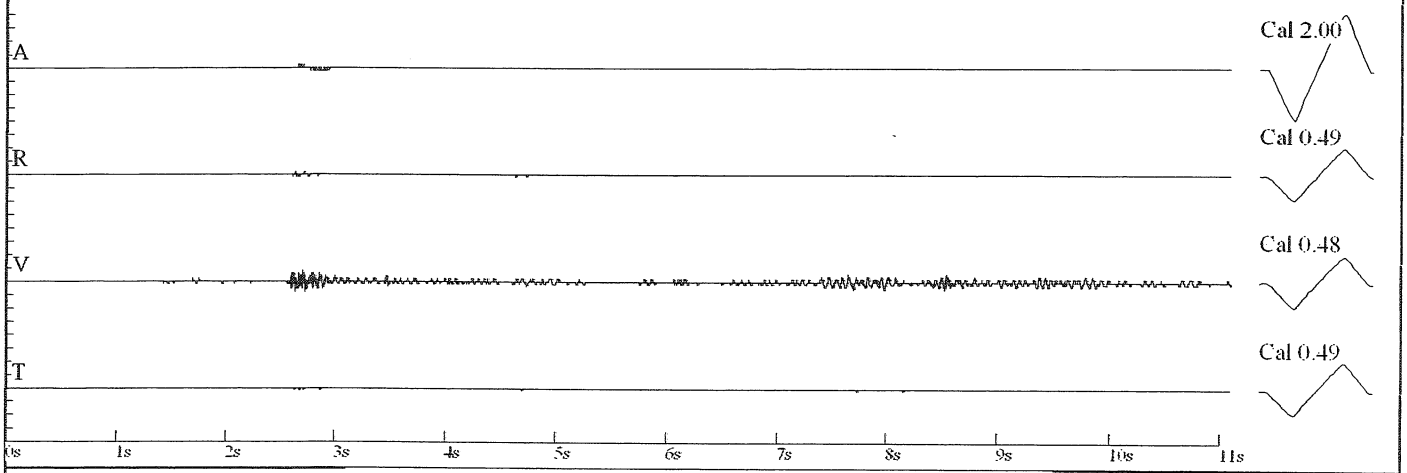
Graph Information

Duration: 0.000s To: 11.000s

Acoustic Scale:
130dB 0.63Mb (0.158Mb/div)

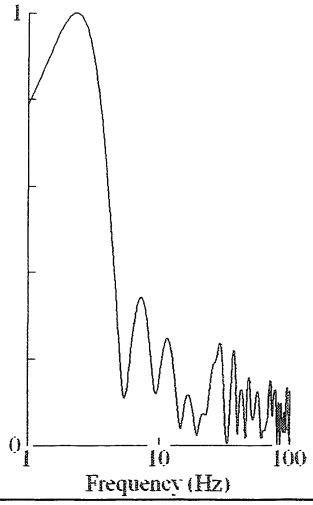
Seismic Scale:
0.20in/s (0.050in/s/div) 5.08mm/s (1.270mm/s/div)

Time Line Intervals at: 1.00 s

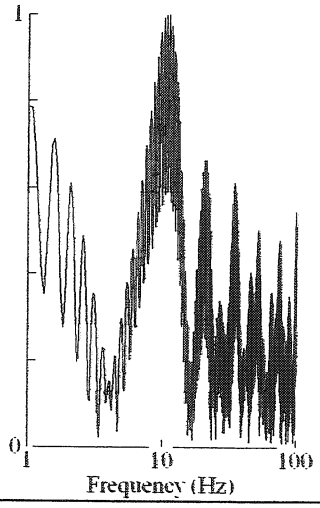


Fourier Analysis (Power Spectrum - Box Window)

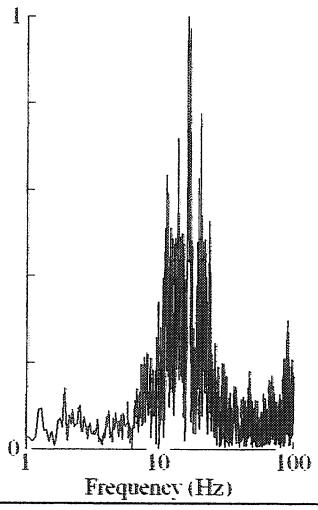
Acoustic
2.31 Hz



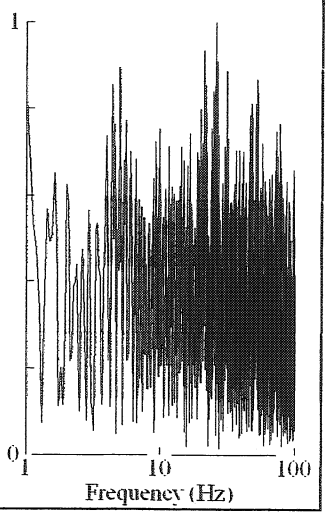
Radial
11.25 Hz



Vertical
16.44 Hz



Transverse
25.88 Hz



Appendix D

Summary of seismograph data

Table D-1 Summary of seismograph records for Bighorn residence

Shot date and time	Unit	Structure location	Location of transducer	Transverse (northeast)	Peak Frequency	FFT Frequency	Vertical	Peak Frequency	FFT Frequency	Radial (southwest)	Peak Frequency	FFT Frequency	Airblast	
				(in/s)	(Hz)	(Hz)	(in/s)	(Hz)	(Hz)	(in/s)	(Hz)	(Hz)	(dB)	(psi)
3/15/05a	3047	master	ground	0.035	32.0	30.9	0.025	32.0	34.3	0.025	23.2	35.3	100	0.00003
10:00	1010	S corner	S1	0.070	19.6	17.1	0.030	25.6	23.6	0.060	23.2	23.9		
	1010	SE wall	SE mid-wall	0.140	23.2	23.7								
	2279	S corner	S2	0.072	15.0	16.9	0.030	25.6	15.6	0.099	11.1	9.1		
	2279	SW wall	SW mid-wall							0.250	18.2	19.8		
3/15/05b	3047	master	ground	nt										
	1010	S corner	S1											
	1010	SE wall	SE mid-wall											
	2279	S corner	S2											
	2279	SW wall	SW mid-wall											
3/16/05a	3047	master	ground	lost data										
1:58	1010	S corner	S1	0.050	18.2	15.9	0.040	32.0	9.9	0.070	16.0	25.6		
	1010	SE wall	SE mid-wall	0.100	23.2	22.9								
	2279	S corner	S2	0.080	11.1	7.5	0.030	32.0	15.9	0.136	10.2	8.6		
	2279	SW wall	SW mid-wall							0.319	17.0	18.1		
3/16/05b	3047	master	ground	lost data										
3:17	1010	S corner	S1	0.070	12.1	15.9	0.050	9.8	9.8	0.070	15.0	8.4		
	1010	SE wall	SE mid-wall	0.180	7.3	7.1								
	2279	S corner	S2	0.253	9.1	8.4	0.050	9.8	9.8	0.253	9.8	8.6		
	2279	SW wall	SW mid-wall							0.361	9.8	8.5		
3/17/2005	3047	master	ground	nt										
	1010	S corner	S1											
	1010	SE wall	SE mid-wall											
	2279	S corner	S2											
	2279	SW wall	SW mid-wall											
3/18/05a	3047	master	ground	nt										
	1010	S corner	S1											
	1010	SE wall	SE mid-wall											
	2279	S corner	S2											
	2279	SW wall	SW mid-wall											
3/18/05b	3047	master	ground	nt										
	1010	S corner	S1											
	1010	SE wall	SE mid-wall											
	2279	S corner	S2											
	2279	SW wall	SW mid-wall											
03/21/05	3047	master	ground	0.04	28.4	23.1	0.025	36.5	40.6	0.045	21.3	22.1	100	0.0003
11:07	1010	S corner	S1	0.035	21.3	16.4	0.020		1.4	0.030	21.3	18.9		
	1010	SE wall	SE mid-wall	0.170	21.3	22.8								
	2279	S corner	S2	0.036	21.3	16.4	0.020		16.000	0.042	21.3	18.8		
	2279	SW wall	SW mid-wall							0.162	19.6	19.6		
03/22/05	3047	master	ground	0.040	8.8	7.1	0.035	15.0	7.0	0.040	23.2	16.0	100	0.0003
12:35	1010	S corner	S1	0.110	11.1	6.9	0.040	14.2	7.1	0.045	10.6	8.8		
	1010	SE wall	SE mid-wall	0.205	8.8	6.4								
	2279	S corner	S2	0.250	7.3	6.9	0.040	17.0	7.0	0.119	9.1	8.8		
	2279	SW wall	SW mid-wall							0.238	15.0	8.8		
03/23/05	3047	master	ground	nt	nt									
12:09	1010	S corner	S1											
	1010	SE wall	SE mid-wall											
	2279	S corner	S2											
	2279	SW wall	SW mid-wall											

Table D-1 Summary of seismograph records for Bighorn residence

Shot date and time	Unit	Structure location	Location of transducer	Transverse (northeast)	Peak Frequency	FFT Frequency	Vertical	Peak Frequency	FFT Frequency	Radial (southwest)	Peak Frequency	FFT Frequency	Airblast	
				(in/s)	(Hz)	(Hz)	(in/s)	(Hz)	(Hz)	(in/s)	(Hz)	(Hz)	(dB)	(psi)
03/23/05	3047	master	ground	0.450	21.3	21.1	0.205	32.0	13.8	0.330	23.2	14.0	110	0.0009
2:47	1010	S corner	S1	0.315	15.0	14.1	0.130	28.4	29.8	0.315	17.0	18.6		
	1010	SE wall	SE mid-wall	0.535	19.6	21.2								
	2279	S corner	S2	0.325	10.2	6.8	0.150	18.2	13.9	0.563	11.1	8.8		
	2279	SW wall	SW mid-wall							0.950	10.2	20.8		
03/24/05	3047	master	ground	nt										
1:17	1010	S corner	S1											
	1010	SE wall	SE mid-wall											
	2279	S corner	S2											
	2279	SW wall	SW mid-wall											
03/25/05	3047	master	ground	nt										
10:58	1010	S corner	S1											
	1010	SE wall	SE mid-wall											
	2279	S corner	S2											
	2279	SW wall	SW mid-wall											
3/29/05	3047	master	ground	nt										
2:01	1010	S corner	S1											
	1010	SE wall	SE mid-wall											
	2279	S corner	S2											
	2279	SW wall	SW mid-wall											
3/30/05	3047	master	ground	nt										
3:41	1010	S corner	S1											
	1010	SE wall	SE mid-wall											
	2279	S corner	S2											
	2279	SW wall	SW mid-wall											
3/31/05	3047	master	ground	nt										
10:30	1010	S corner	S1											
	1010	SE wall	SE mid-wall											
	2279	S corner	S2											
	2279	SW wall	SW mid-wall											
3/31/05	3047	master	ground	nt										
2:25	1010	S corner	S1											
	1010	SE wall	SE mid-wall											
	2279	S corner	S2											
	2279	SW wall	SW mid-wall											
4/1/05	3047	master	ground	nt										
11:42	1010	S corner	S1											
	1010	SE wall	SE mid-wall											
	2279	S corner	S2											
	2279	SW wall	SW mid-wall											
4/5/05	3047	master	ground	nt										
10:08	1010	S corner	S1											
	1010	SE wall	SE mid-wall											
	2279	S corner	S2											
	2279	SW wall	SW mid-wall											
4/6/05	3047	master	ground	nt										
12:39	1010	S corner	S1											
	1010	SE wall	SE mid-wall											
	2279	S corner	S2											
	2279	SW wall	SW mid-wall											

Table D-1 Summary of seismograph records for Bighorn residence

Shot date and time	Unit	Structure location	Location of transducer	Transverse (northeast)	Peak Frequency	FFT Frequency	Vertical	Peak Frequency	FFT Frequency	Radial (southwest)	Peak Frequency	FFT Frequency	Airblast	
				(in/s)	(Hz)	(Hz)	(in/s)	(Hz)	(Hz)	(in/s)	(Hz)	(Hz)	(dB)	(psi)
4/7/05	3047	master	ground	nt										
12:33	1010	S corner	S1											
	1010	SE wall	SE mid-wall											
	2279	S corner	S2											
	2279	SW wall	SW mid-wall											
4/8/05	3047	master	ground	nt										
11:15	1010	S corner	S1											
	1010	SE wall	SE mid-wall											
	2279	S corner	S2											
	2279	SW wall	SW mid-wall											
4/12/05	3047	master	ground	nt										
2:21	1010	S corner	S1											
	1010	SE wall	SE mid-wall											
	2279	S corner	S2											
	2279	SW wall	SW mid-wall											
4/13/05	3047	master	ground	nt										
3:40	1010	S corner	S1											
	1010	SE wall	SE mid-wall											
	2279	S corner	S2											
	2279	SW wall	SW mid-wall											
4/14/05	3047	master	ground	0.040	7.1	7.4	0.030	10.6	6.8	0.035	10.2	7.8	106	0.0006
4:00	1010	S corner	S1	0.095	9.8	6.8	0.040	9.4	6.8	0.050	7.7	7.9		
	1010	SE wall	SE mid-wall	0.200	7.3	6.8								
	2279	S corner	S2	0.313	7.7	6.8	0.040	14.2	8.8	0.157	8.8	7.8		
	2279	SW wall	SW mid-wall							0.190	9.1	7.9		

nt - no trigger; ground motion below seismograph trigger level

Table D-2 Summary of seismograph records for High Mesa residence

Shot date and time	Unit	Structure location	Location of transducer	Transverse (southeast)	Peak Frequency	FFT Frequency	Vertical	Peak Frequency	FFT Frequency	Radial (northeast)	Peak Frequency	FFT Frequency	Airblast	
				(in/s)	(Hz)	(Hz)	(in/s)	(Hz)	(Hz)	(in/s)	(Hz)	(Hz)	(dB)	(psi)
3/15/05b	1258	master	ground	0.025	32.0	10.9	0.020	25.6	25.1	0.030	32.0	34.5	110	0.0009
3:48	903	E corner	S1	0.020	28.5	34.4	0.020		25.0	0.020	28.4	6.9		
	903	SE wall	MW	0.065	28.4	17.9								
	2276	E corner	S2	0.030	23.2	11.8	0.020		34.8	0.020		8.9		
	2276	NE wall	MW							0.050	19.6	16.6		
3/16/05a	1258	master	ground	0.025	32.0	33.7	0.015	36.5	17.9	0.035	36.5	34.1	100	0.0003
1:58	903	E corner	S1	0.015	36.5	35.1	0.040		34.8	0.015	28.4	35.1		
	903	SE wall	MW	0.055	21.3	16.4								
	2276	E corner	S2	0.020		12.8	0.030	42.6	34.8	0.010		9.0		
	2276	NE wall	MW							0.050	25.6	15.8		
3/16/05b	1258	master	ground	0.045	9.8	4.7	0.050	6.0	8.6	0.045	21.3	8.9		
3:17	903	E corner	S1	0.045	8.2	8.9	0.060	12.8	8.6	0.045	8.2	4.7		
	903	SE wall	MW	0.130	12.1	8.9								
	2276	E corner	S2	0.070	10.6	8.9	0.080	25.6	8.6	0.060	8.8	8.6		
	2276	NE wall	MW							0.160	21.3	15.5		
3/17/2005	1258	master	ground	0.025	9.4	33.9	0.030	6.7	6.1	0.035	32.0	33.9	100	0.0003
3:05	903	E corner	S1	0.020	10.2	8.3	0.040		33.8	0.015	42.6	33.5		
	903	SE wall	MW	0.045	21.3	40.1								
	2276	E corner	S2	0.030	32.0	11.4	0.040		33.5	0.020		8.9		
	2276	NE wall	MW							0.040	32.0	17.1		
3/18/05a	1258	master	ground	0.015	36.5	35.4	0.025	12.1	7.3	0.025	36.5	38.1	100	0.0003
11:00	903	E corner	S1	0.010		7.6	0.020		31.4	0.010		27.8		
	903	SE wall	MW	0.055	17.0	14.8								
	2276	E corner	S2	0.030	25.6	15.6	0.020		31.4	0.020		9.0		
	2276	NE wall	MW							0.050	23.2	15.5		
3/18/05b	1258	master	ground	0.025	6.9	4.6	0.045	4.4	3.6	0.035	4.4	4.8	110	0.0009
3:07	903	E corner	S1	0.025	3.7	4.8	0.040		3.6	0.020	21.3	4.8		
	903	SE wall	MW	0.070	14.2	16.8								
	2276	E corner	S2	0.030	25.4	15.6	0.020		31.9	0.020		15.6		
	2276	NE wall	MW							0.050	23.2	15.5		
03/21/05	1258	master	ground	0.055	23.2	29.2	0.035	28.4	13.7	0.060	32.0	28.9	106	0.0006
11:07	903	E corner	S1											
	903	SE wall	MW											
	2276	E corner	S2	0.070	25.6	12.6	0.070	25.6	32.7	0.040	10.6	8.9		
	2276	NE wall	MW							0.120	21.3	14.1		
03/22/05	1258	master	ground	0.050	10.6	5.3	0.040	5.4	4.5	0.050	7.3	13.1	106	0.0006
12:35	903	E corner	S1											
	903	SE wall	MW											
	2276	E corner	S2	0.090	15.0	13.4	0.090	11.1	28.2	0.060	11.1	8.9		
	2276	NE wall	MW							0.140	14.2	16.1		
03/23/05	1258	master	ground	nt										
	903	E corner	S1											
	903	SE wall	MW											
	2276	E corner	S2											
	2276	NE wall	MW											
03/23/05	1258	master	ground	nt										
	903	E corner	S1											
	903	SE wall	MW											
	2276	E corner	S2											
	2276	NE wall	MW											

Table D-2 Summary of seismograph records for High Mesa residence

Shot date and time	Unit	Structure location	Location of transducer	Transverse (southeast)	Peak Frequency	FFT Frequency	Vertical	Peak Frequency	FFT Frequency	Radial (northeast)	Peak Frequency	FFT Frequency	Airblast	
				(in/s)	(Hz)	(Hz)	(in/s)	(Hz)	(Hz)	(in/s)	(Hz)	(Hz)	(dB)	(psi)
4/8/05	1258	master	ground	0.070	42.6	37.6	0.055	25.6	33.5	0.075	32.0	37.9	106	0.0006
11:15	903	E corner	S1	0.050	21.3	11.0	0.120	32.0	33.4	0.065	32.0	33.1		
	903	SE wall	MW	0.170	21.3	15.0								
	2276	E corner	S2	fell off wall			0.120	32.0	33.4	0.035	8.2	8.0		
	2276	NE wall	MW							0.170	23.2	15.4		
4/12/05	1258	master	ground	0.020	32.0	3.3	0.025	8.5	6.9	0.025	12.8	39.1	106	0.0006
2:21	903	E corner	S1	0.025	28.4	34.4	0.030	36.5	29.4	0.020	36.5	29.1		
	903	SE wall	MW	0.045	23.2	16.4								
	2276	E corner	S2	0.030	21.3	15.4	0.030	32.0	29.4	0.025	14.2	9.1		
	2276	NE wall	MW							0.1	23.2	15.4		
4/13/05	1258	master	ground	0.025	7.3	4.5	0.030	6.5	4.8	0.030	36.5	5.4	106	0.0006
11:00	903	E corner	S1	0.025	25.6	5.4	0.040	42.6	41.1	0.025	5.9	4.6		
	903	SE wall	MW	0.080	19.6	15.8								
	2276	E corner	S2	0.045	17.0	11.8	0.040	28.4	41.3	0.065	8.8	8.5		
	2276	NE wall	MW							0.080	9.4	15.7		
4/14/05	1258	master	ground	0.035	11.6	4.3	0.040	10.6	6.6	0.030	25.6	7.1	112	0.0012
3:07	903	E corner	S1	0.025	10.1	6.6	0.000	14.2	6.6	0.025	16.0	4.4		
	903	SE wall	MW	0.085	15.0	16.1								
	2276	E corner	S2	0.055	13.4	16.1	0.045	12.1	6.5	0.050	8.8	8.8		
	2276	NE wall	MW							0.160	15.0	16.1		

nt - no trigger; ground motion below seismograph trigger level