



**ASSOCIAZIONE INTERCOMUNALE AREA BAZZANESE**  
Comuni di Bazzano, Castello di Serravalle, Crespellano, Monte  
San Pietro, Monteveglio, Savigno, Zola Predosa  
Provincia di Bologna



**PIANO STRUTTURALE DEI COMUNI  
DELL'AREA BAZZANESE**

**MICROZONAZIONE SISMICA DEL COMUNE DI MONTE SAN PIETRO  
Allegati**

Adozione: Del. C.C. n. ... del .....

Approvazione: Del. C.C. n. ... del .....

**ASSOCIAZIONE INTERCOMUNALE AREA BAZZANESE**  
**Presidente del comitato di Pianificazione Associata: ALFREDO PARINI**

	Sindaci	Assessori
<i>Bazzano</i>	Elio RIGILLO	Moreno PEDRETTI
<i>Castello di Serravalle</i>	Milena ZANNA	Cesare GIOVANARDI
<i>Crespellano</i>	Alfredo PARINI	Alfredo PARINI
<i>Monte San Pietro</i>	Stefano RIZZOLI	Pierluigi COSTA
<i>Monteveglio</i>	Daniele RUSCIGNO	Daniele RUSCIGNO
<i>Savigno</i>	Augusto CASINI ROPA	Augusto CASINI ROPA
<i>Zola Predosa</i>	Stefano FIORINI	Stefano FIORINI

***Responsabile dello studio***

dr. geol. Samuel Sangiorgi

***Ufficio di Piano***

Marco LENZI (Coordinamento)

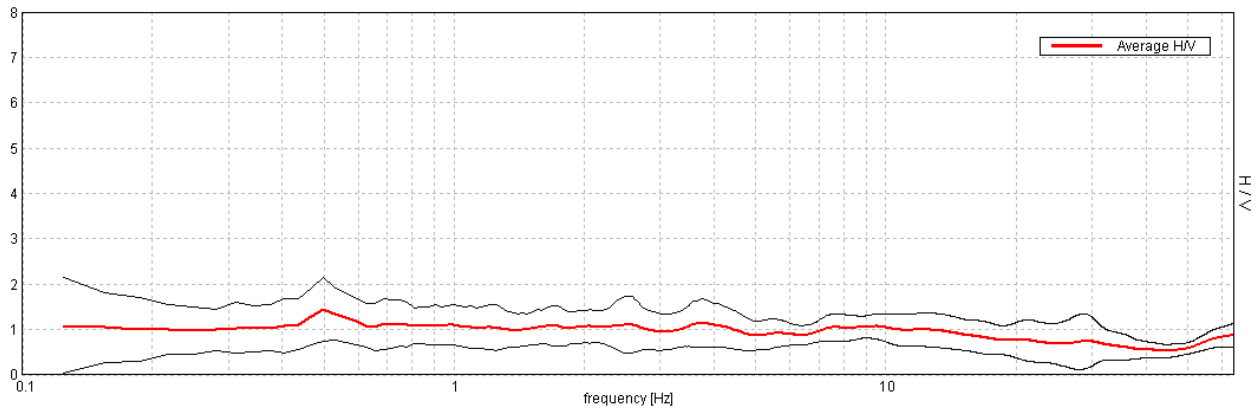
**OTTOBRE 2013**

## MONTE SAN PIETRO, 037042P1HVSR1

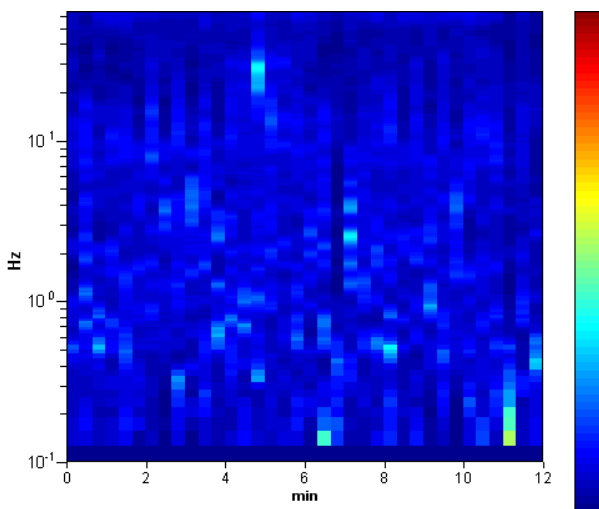
Instrument: TRZ-0108/01-10  
 Start recording: 08/05/13 10:18:54      End recording: 08/05/13 10:30:55  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analysis performed on the entire trace.  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

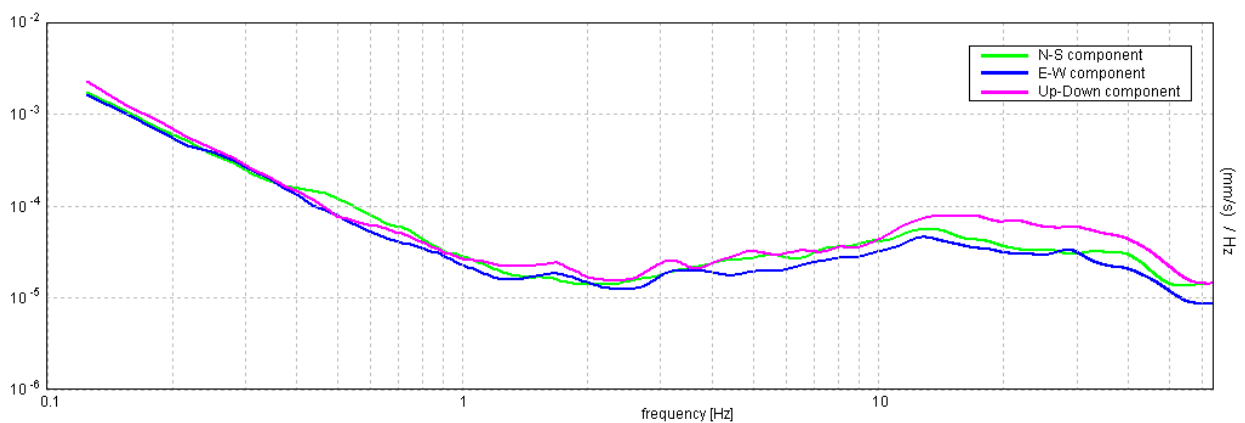
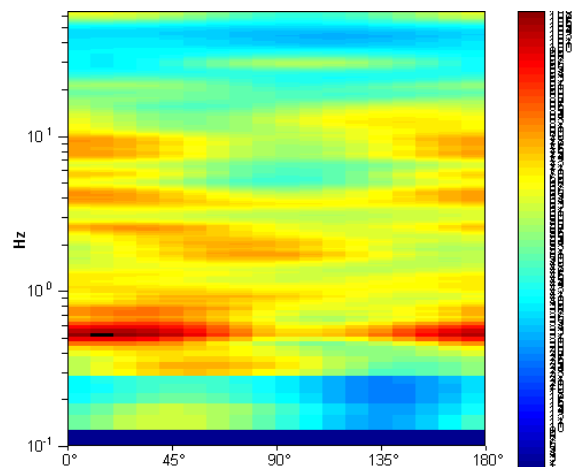
Max. H/V at  $0.5 \pm 0.0$  Hz (in the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

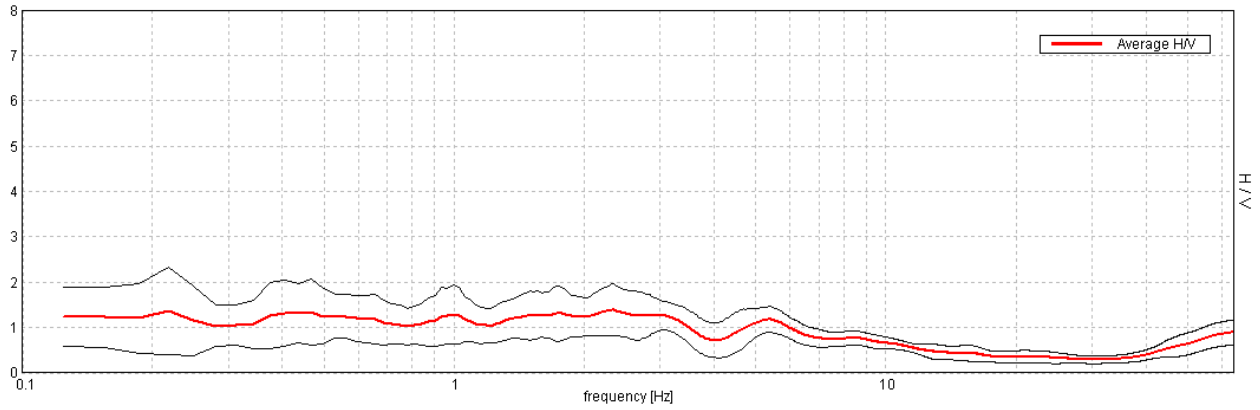


**MONTE SAN PIETRO, 037042P2HVSR2**

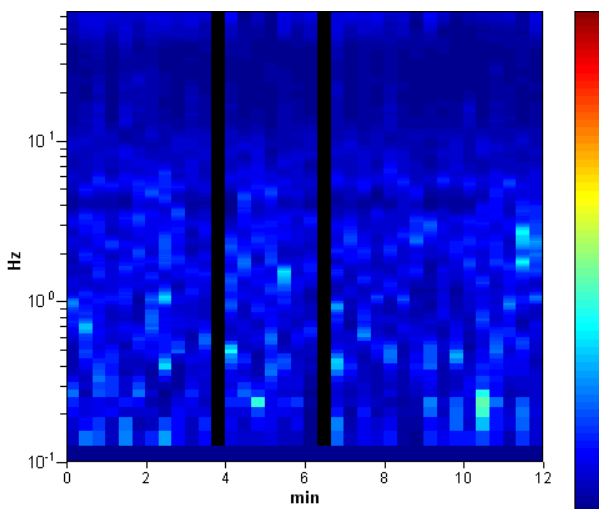
Instrument: TRZ-0108/01-10  
 Start recording: 08/05/13 10:35:12      End recording: 08/05/13 10:47:13  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 94% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

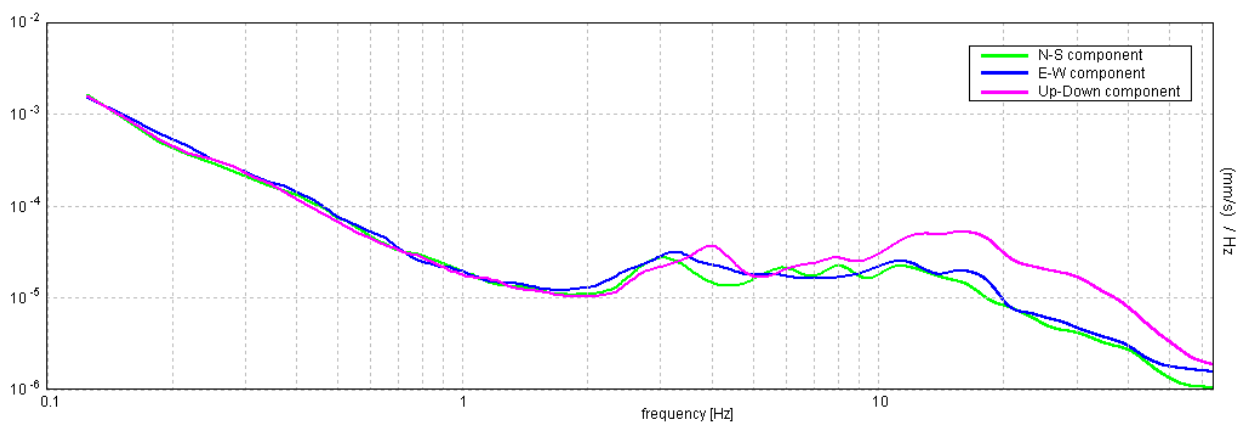
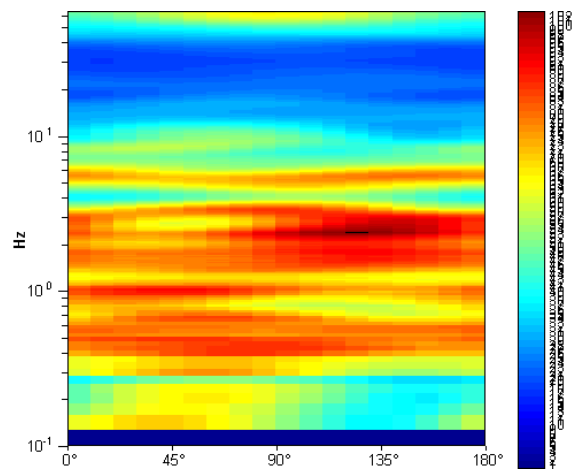
Max. H/V at  $2.34 \pm 0.58$  Hz (in the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

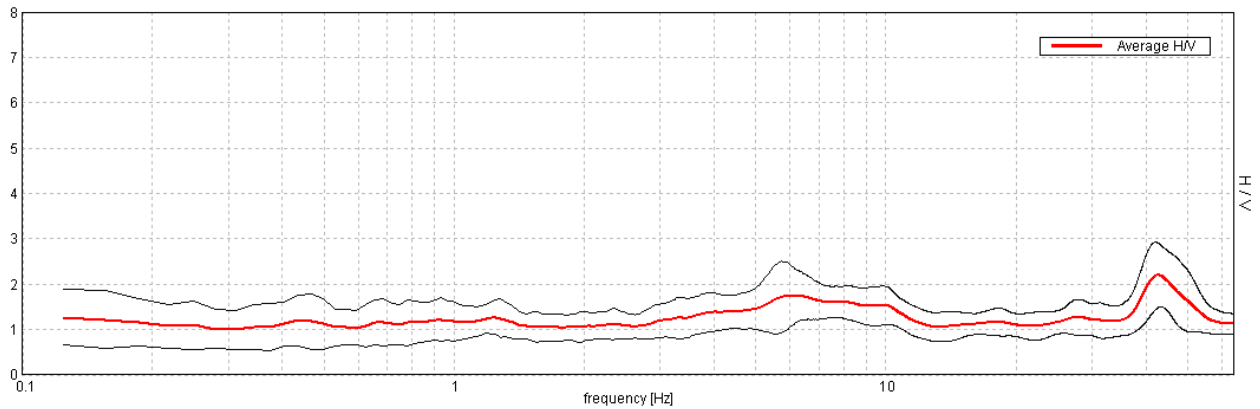


## MONTE SAN PIETRO, 037042P3HVSR3

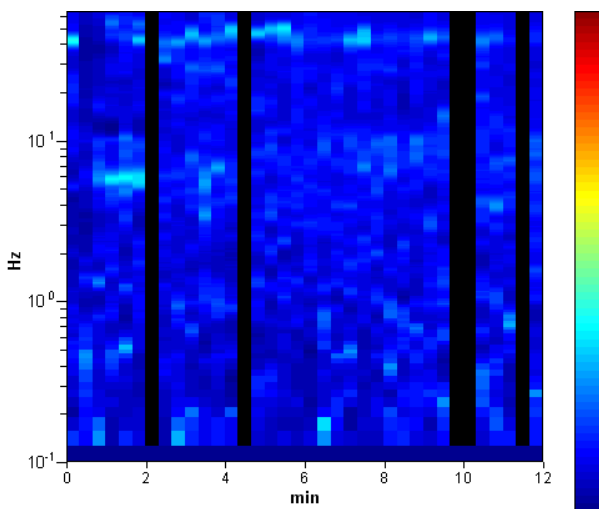
Instrument: TRZ-0108/01-10  
 Start recording: 08/05/13 10:54:25      End recording: 08/05/13 11:06:26  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 86% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

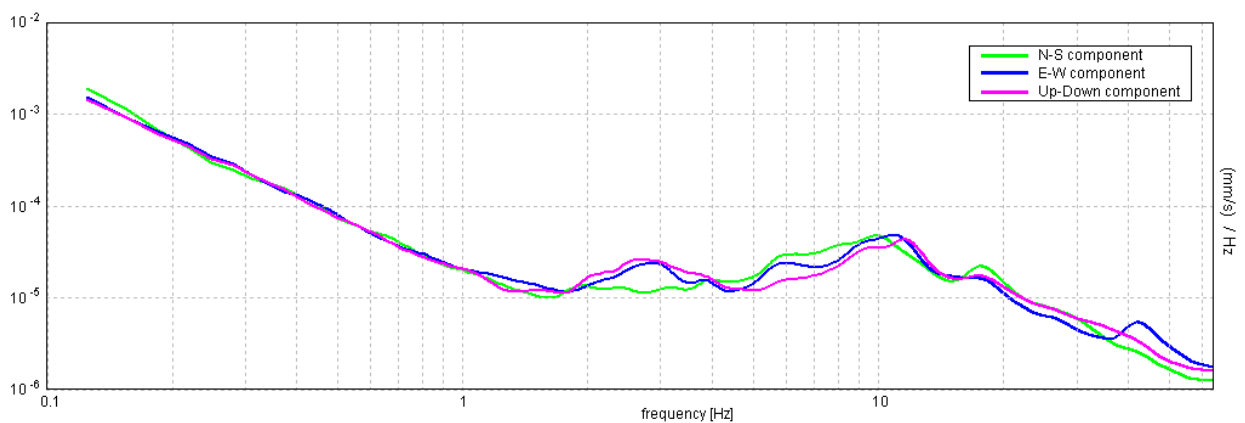
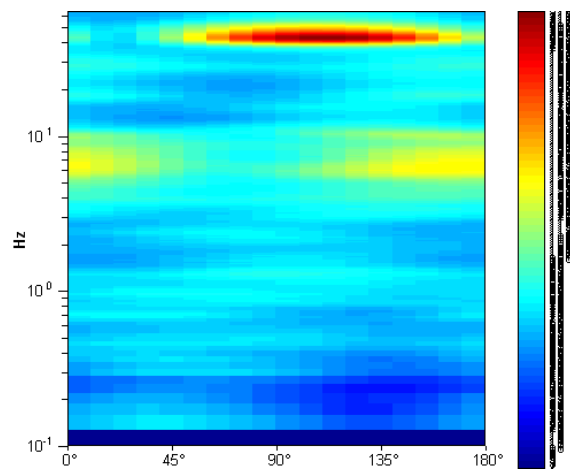
Max. H/V at 5.94 ± 0.67 Hz. (In the range 0.0 - 20.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

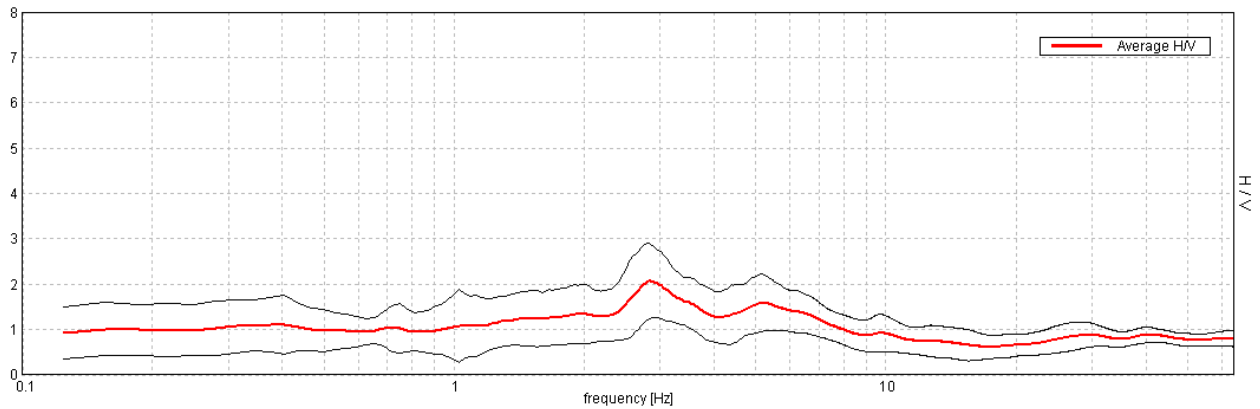


## MONTE SAN PIETRO, 037042P4HVSR4

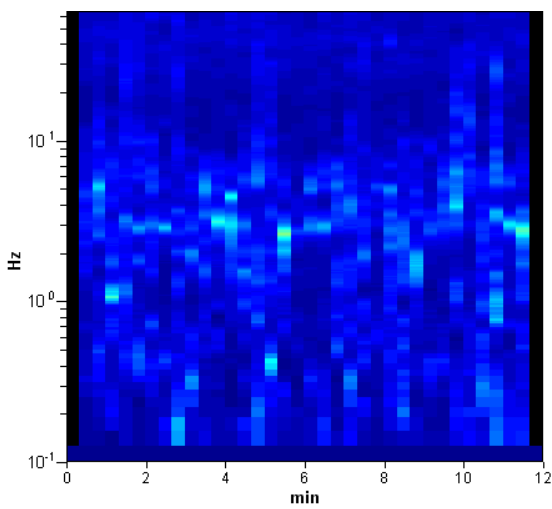
Instrument: TRZ-0108/01-10  
 Start recording: 08/05/13 11:14:59      End recording: 08/05/13 11:27:00  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 94% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

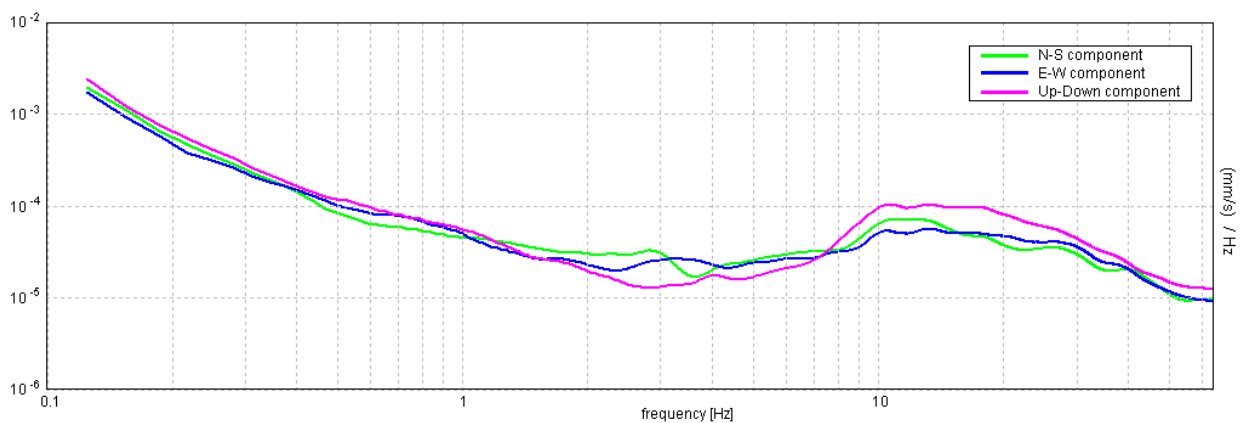
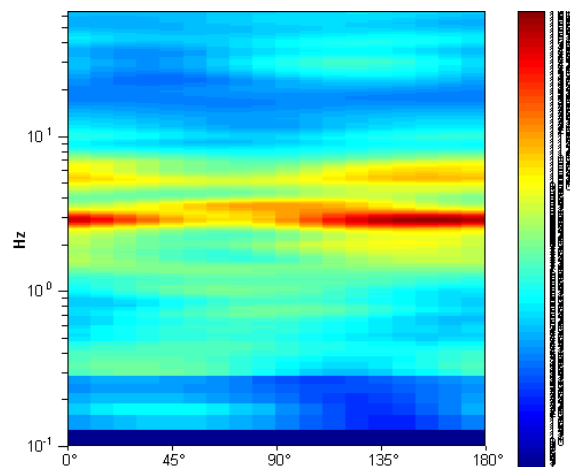
Max. H/V at  $2.84 \pm 0.24$  Hz (in the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

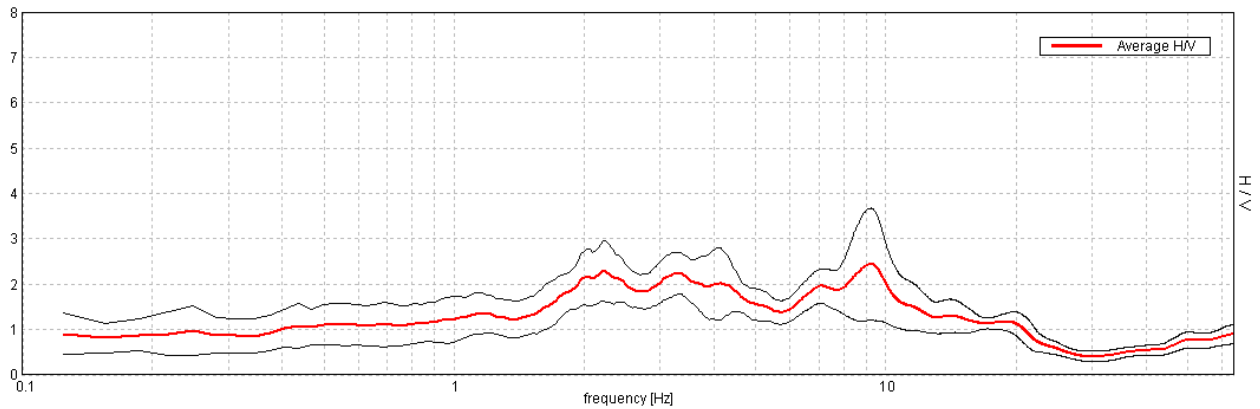


## MONTE SAN PIETRO, 037042P5HVSR5

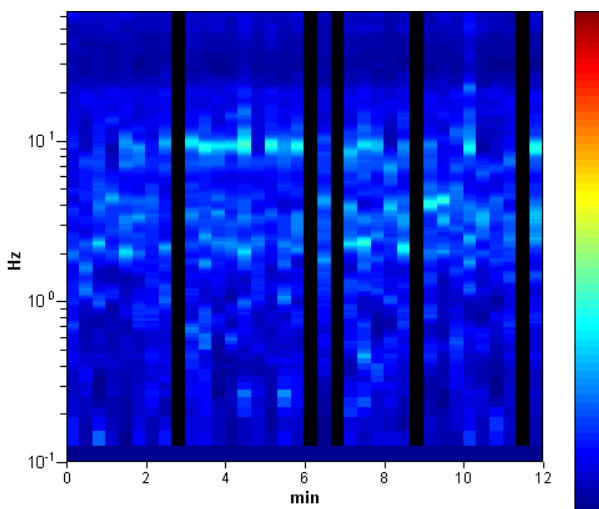
Instrument: TRZ-0108/01-10  
 Start recording: 08/05/13 12:00:00      End recording: 08/05/13 12:12:01  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 86% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

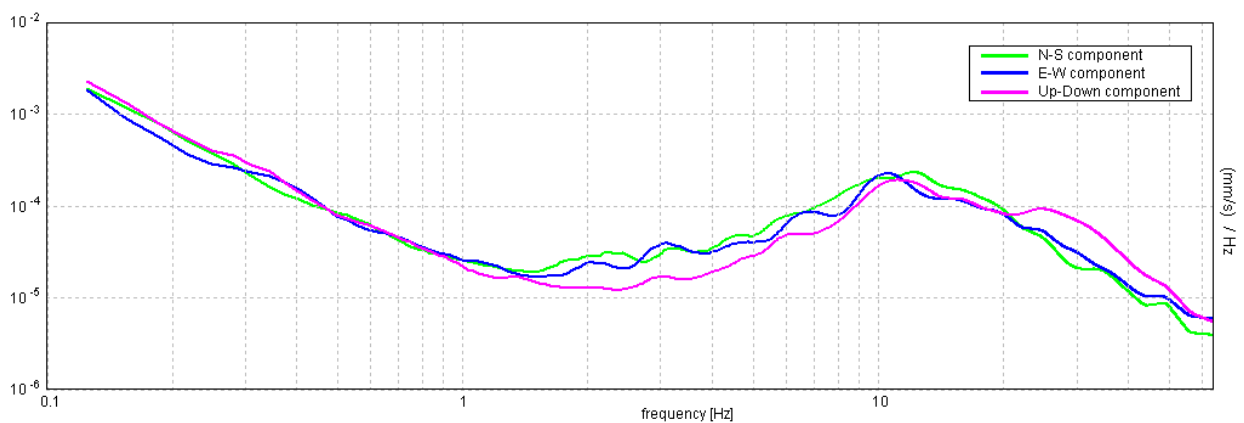
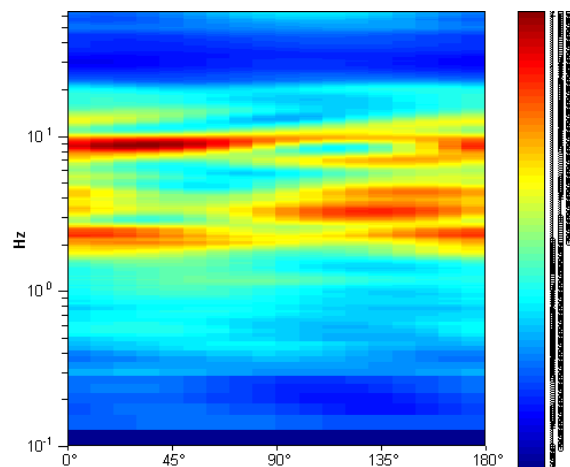
Max. H/V at  $9.28 \pm 1.46$  Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

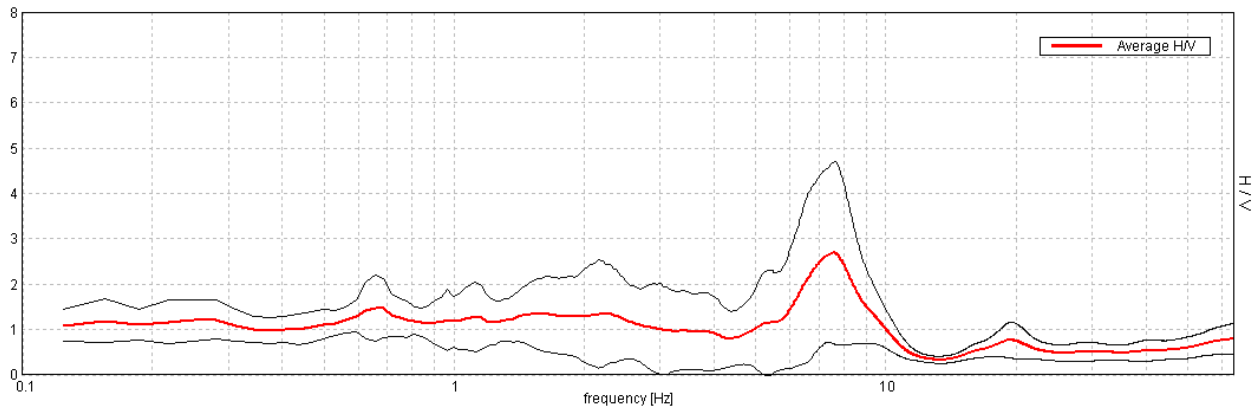


## MONTE SAN PIETRO, 037042P6HVSR6

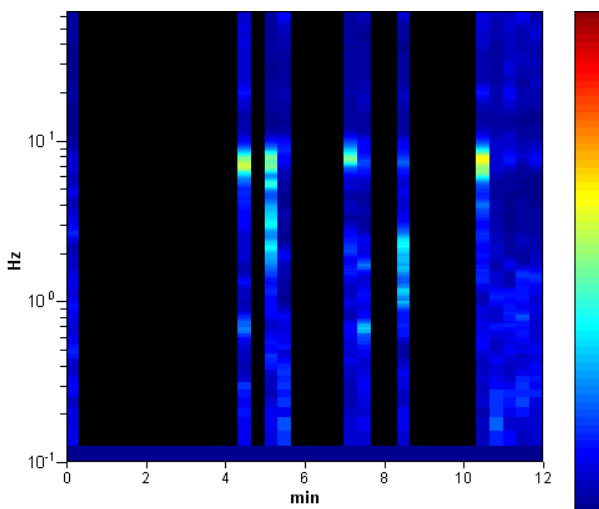
Instrument: TRZ-0108/01-10  
 Start recording: 08/05/13 12:23:13      End recording: 08/05/13 12:35:14  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 33% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

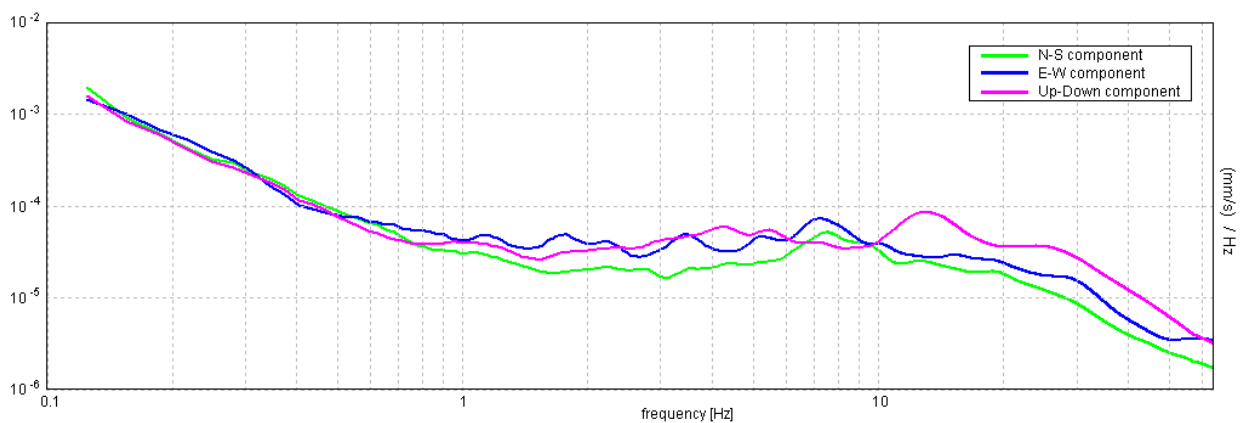
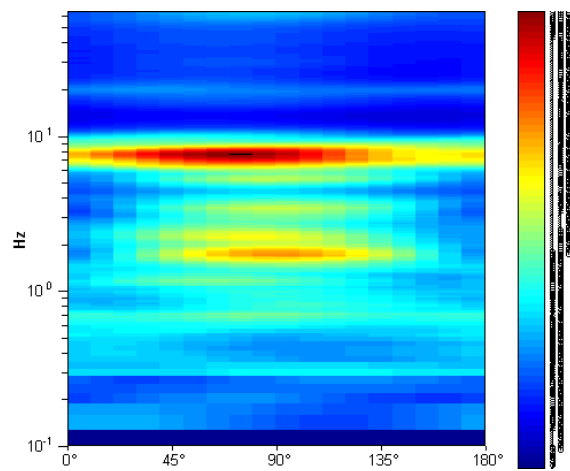
Max. H/V at 7.53 ± 1.37 Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

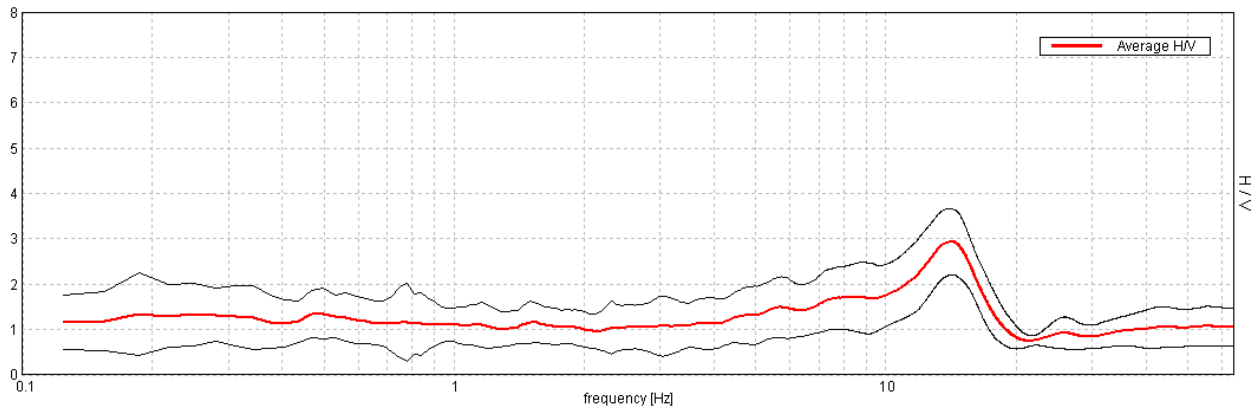


## MONTE SAN PIETRO, 037042P7HVSR7

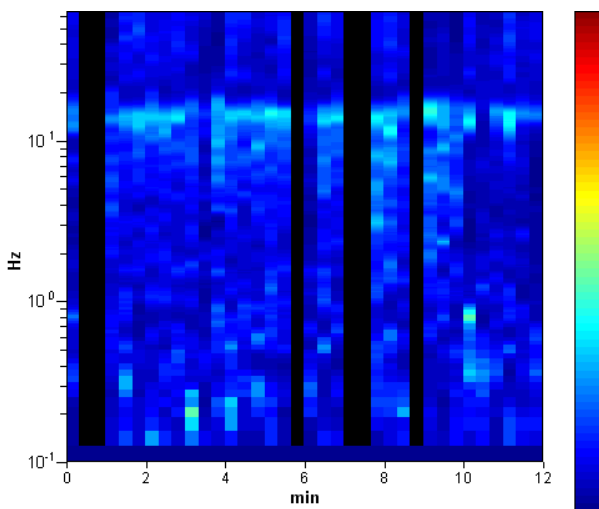
Instrument: TRZ-0108/01-10  
 Start recording: 08/05/13 12:40:08      End recording: 08/05/13 12:52:09  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 83% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

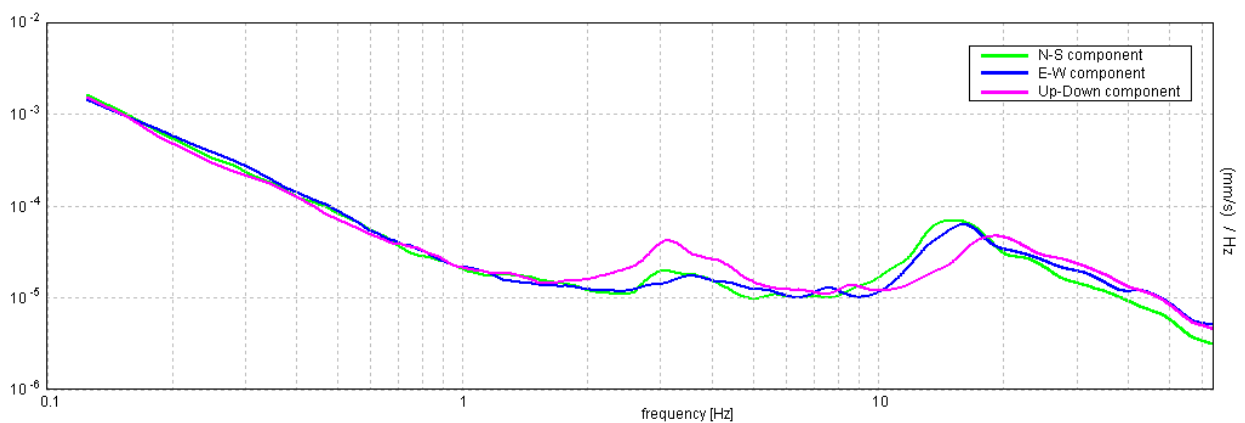
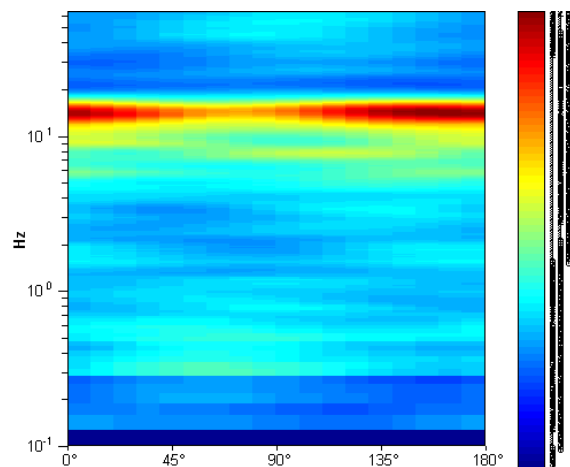
Max. H/V at  $14.06 \pm 0.15$  Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V



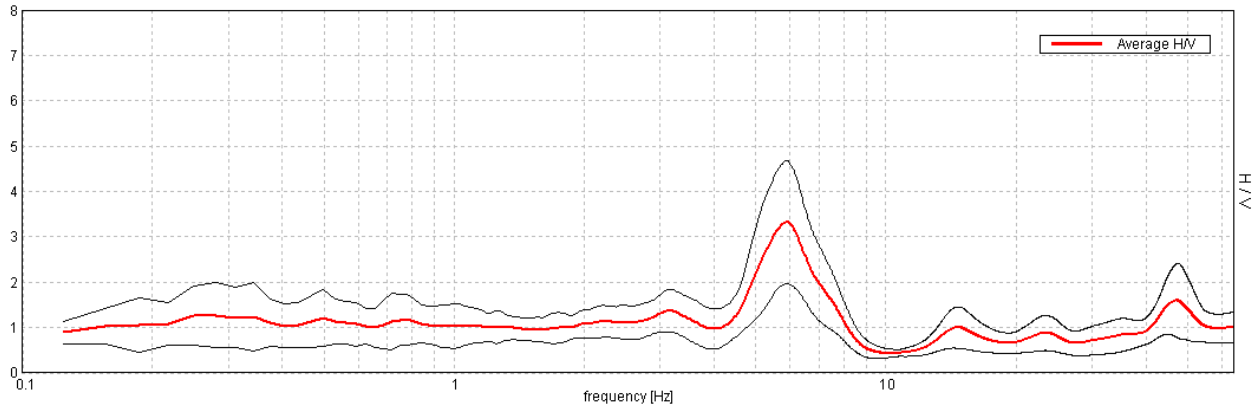


**MONTE SAN PIETRO, 037042P8HVSR8**

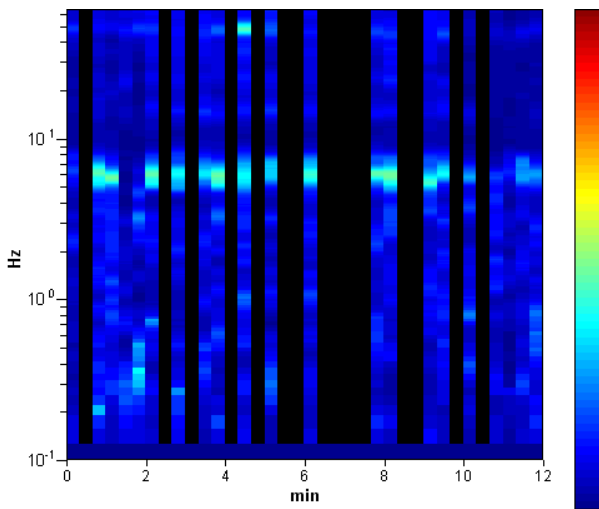
Instrument: TRZ-0108/01-10  
 Start recording: 08/05/13 13:13:57      End recording: 08/05/13 13:25:58  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 58% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

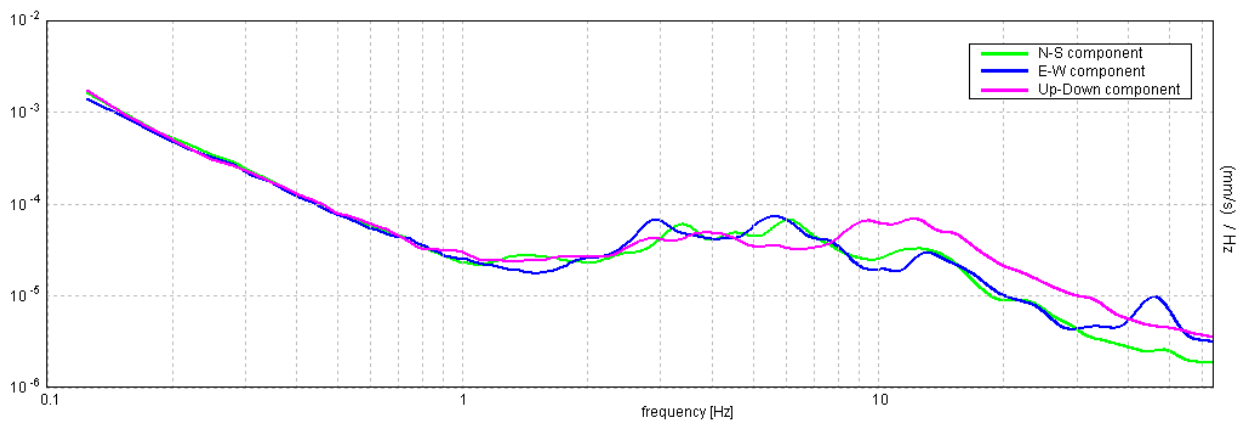
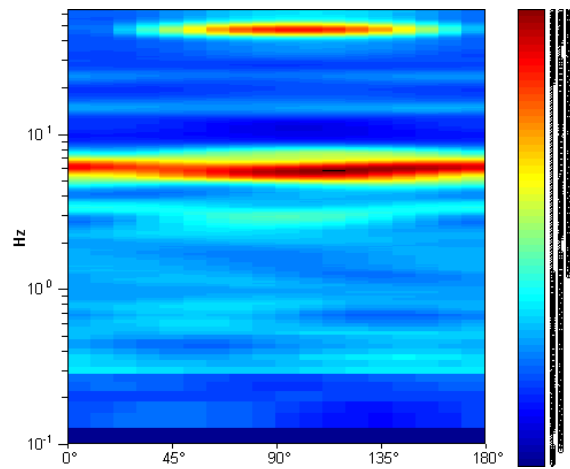
Max. H/V at 5.94 ± 0.04 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

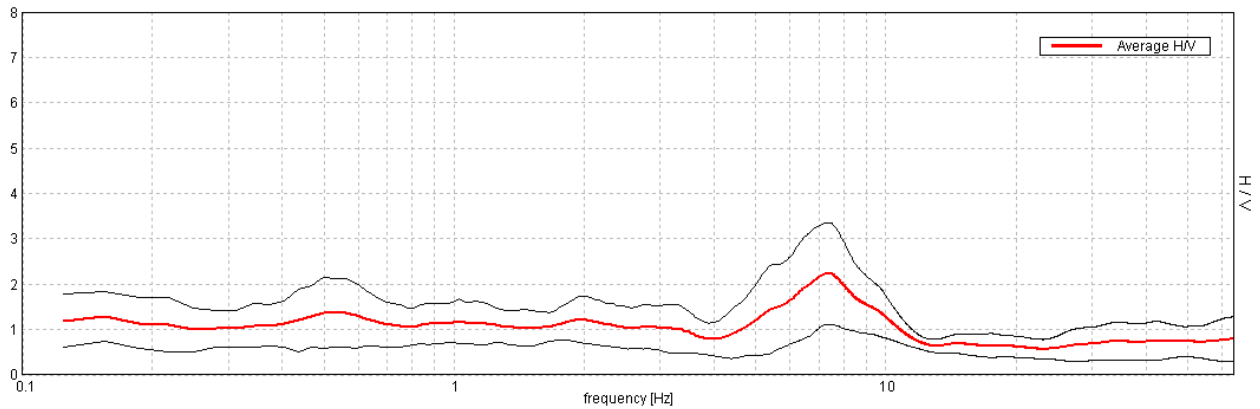


## MONTE SAN PIETRO, 037042P9HVSR9

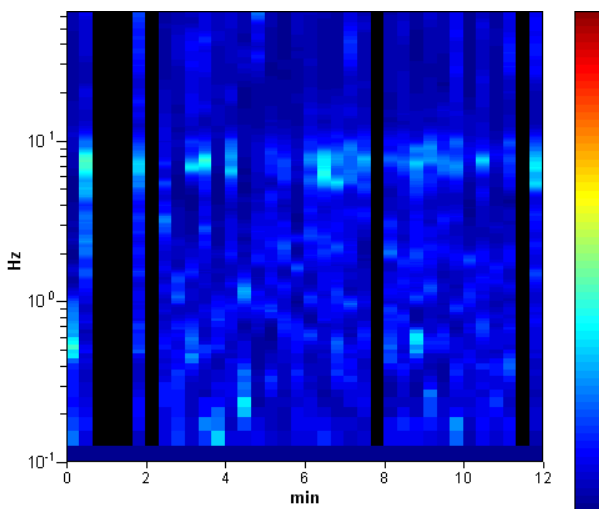
Instrument: TRZ-0108/01-10  
 Start recording: 08/05/13 13:29:47 End recording: 08/05/13 13:41:48  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00". Analyzed 83% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

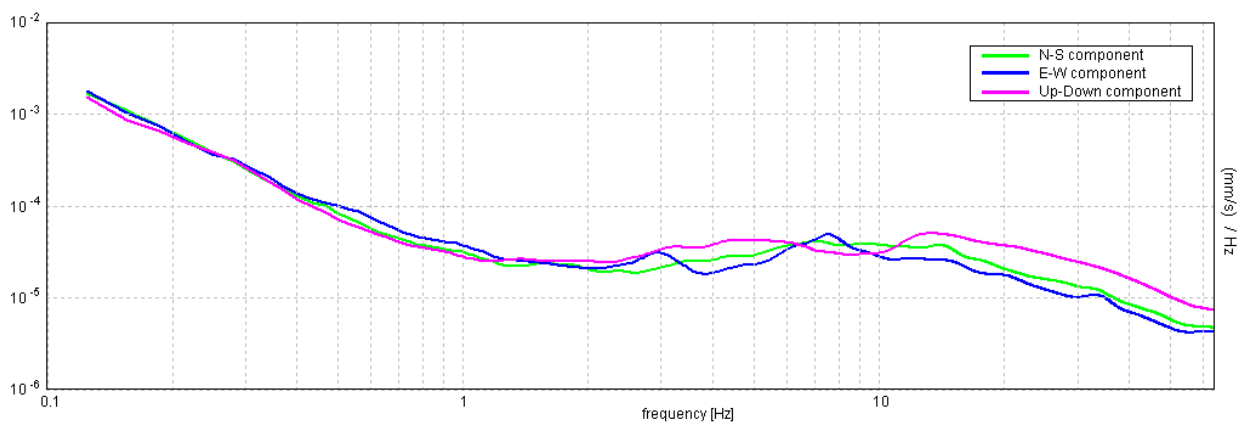
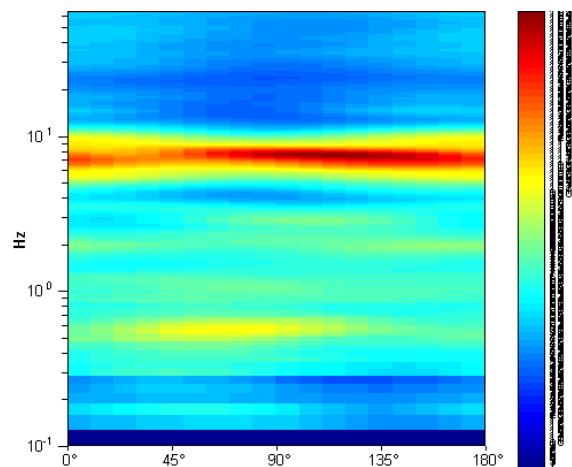
Max. H/V at 7.28 ± 0.67 Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V



## MONTE SAN PIETRO, 037042P10HVSR10

Instrument: TRZ-0108/01-10

Start recording: 09/05/13 09:04:43 End recording: 09/05/13 09:16:44

Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN

Trace length: 0h12'00". Analyzed 69% trace (manual window selection)

Sampling rate: 128 Hz

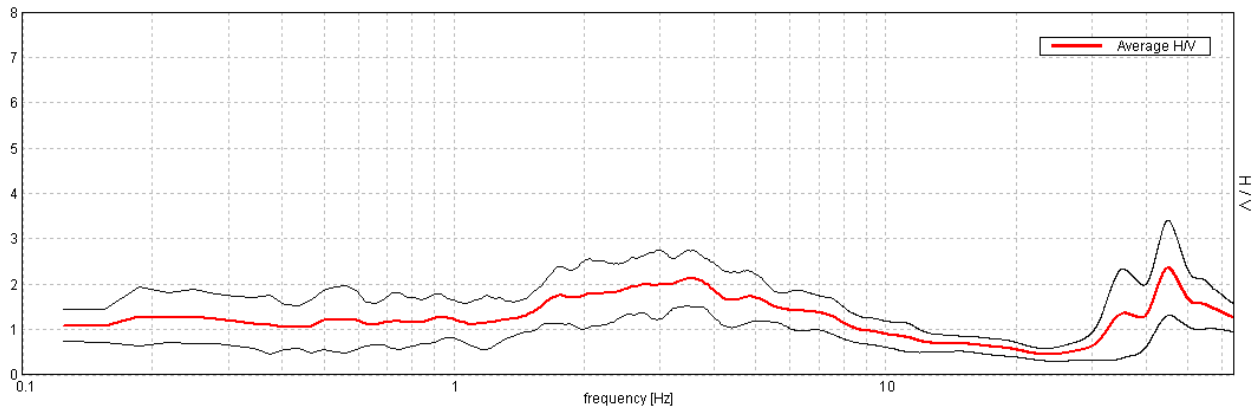
Window size: 20 s

Smoothing type: Triangular window

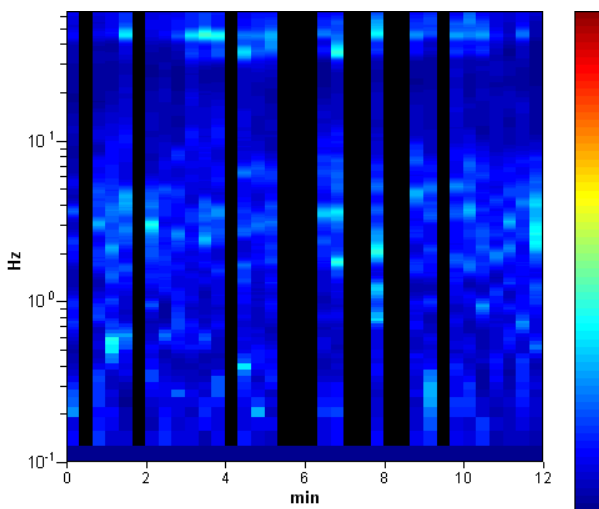
Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

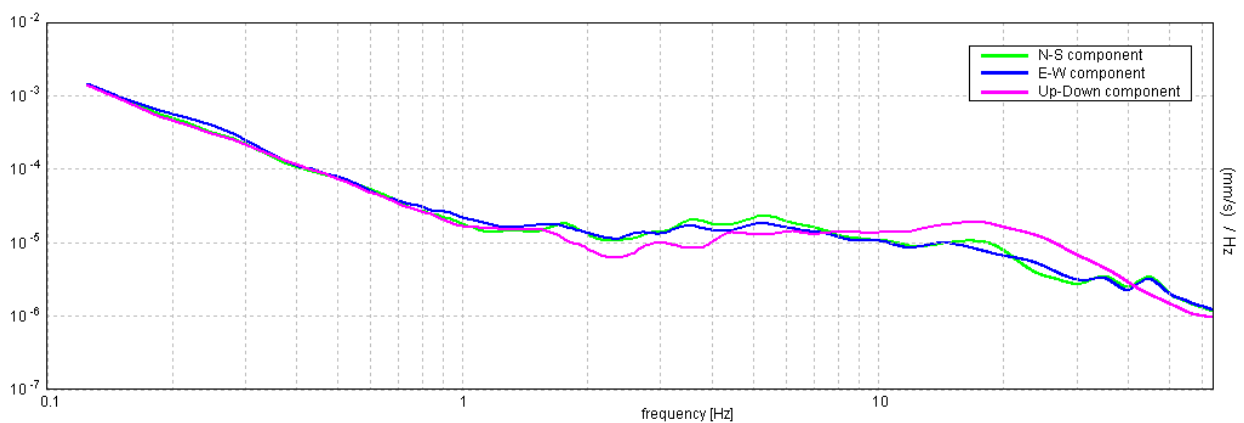
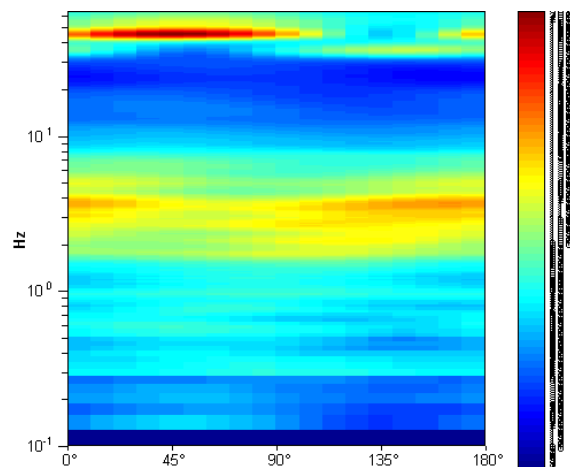
Max. H/V at  $3.5 \pm 0.43$  Hz. (In the range 0.0 - 30.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

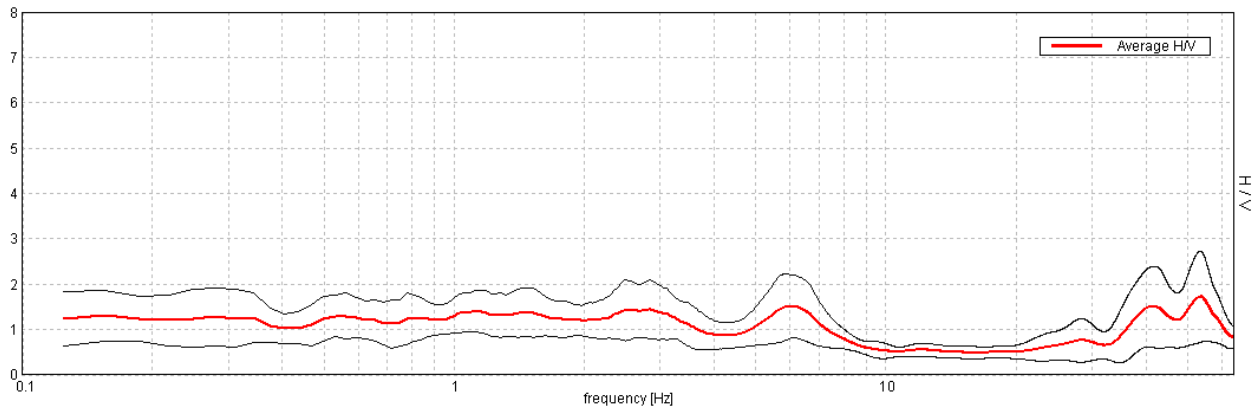


## MONTE SAN PIETRO, 037042P12HVSR12

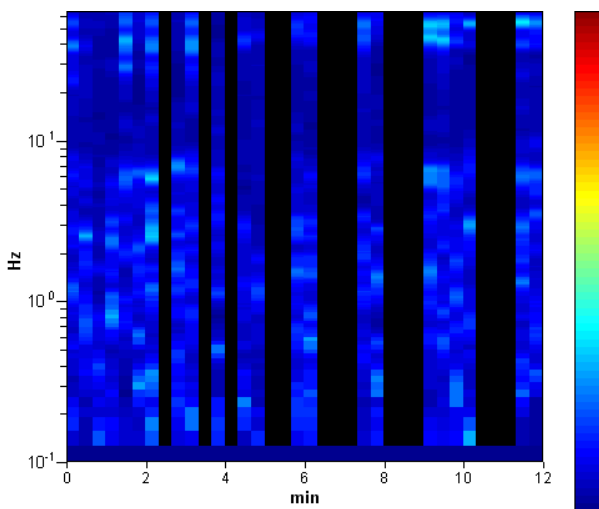
Instrument: TRZ-0108/01-10  
 Start recording: 09/05/13 09:41:09      End recording: 09/05/13 09:53:10  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 61% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

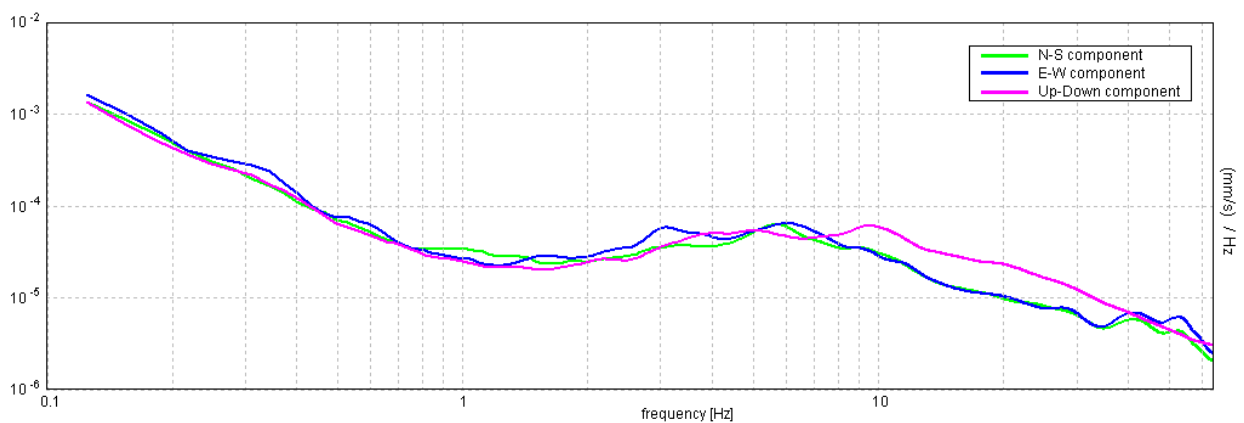
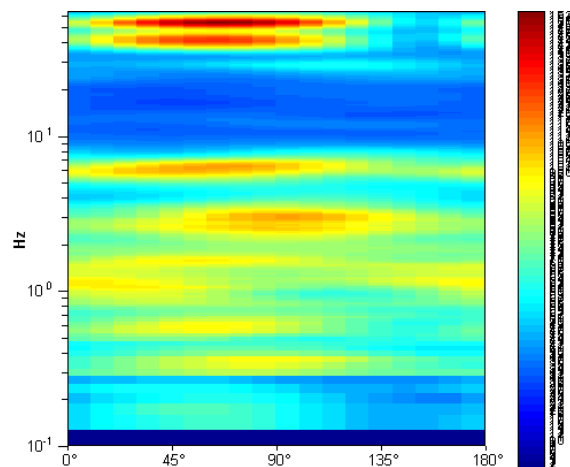
Max. H/V at 5.97 ± 1.6 Hz. (In the range 0.0 - 30.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

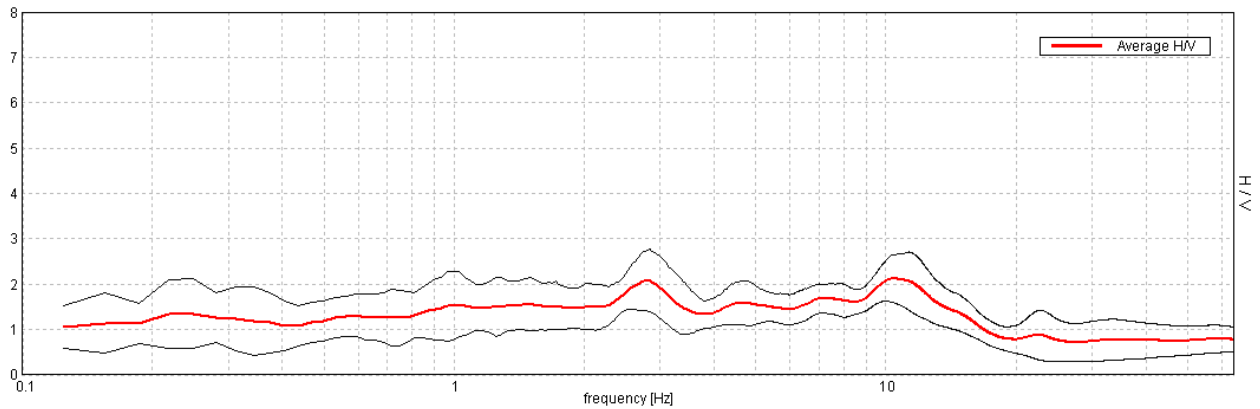


## MONTE SAN PIETRO, 037042P13HVSR13

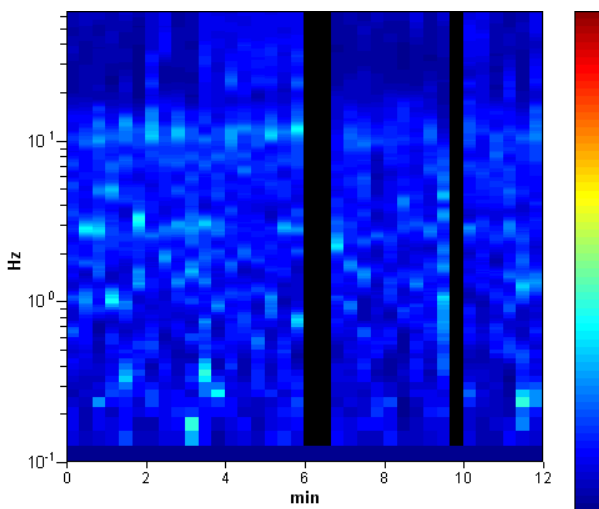
Instrument: TRZ-0108/01-10  
 Start recording: 09/05/13 10:01:07      End recording: 09/05/13 10:13:08  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 92% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

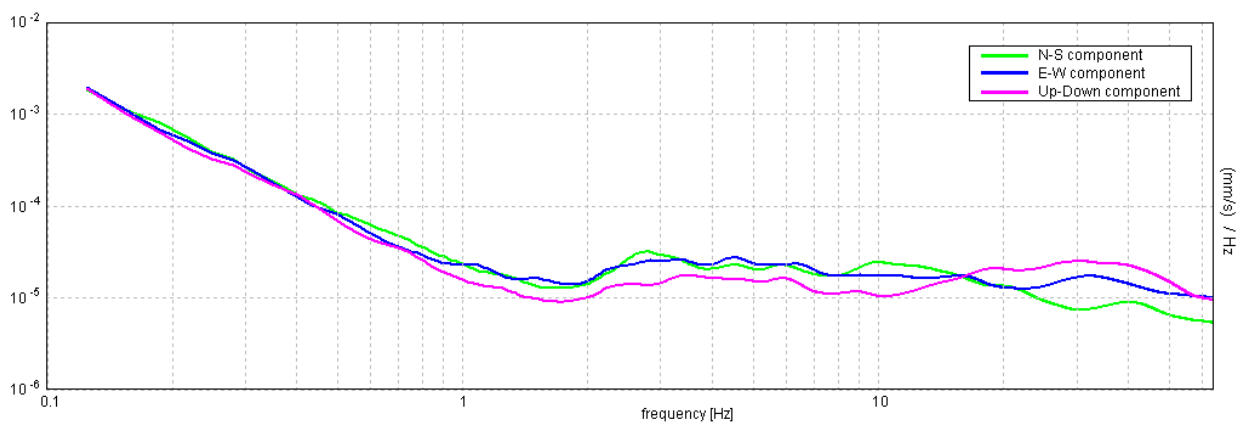
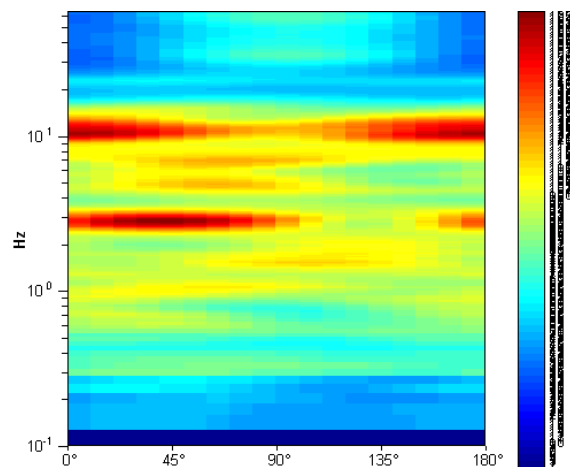
Max. H/V at  $10.38 \pm 1.94$  Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

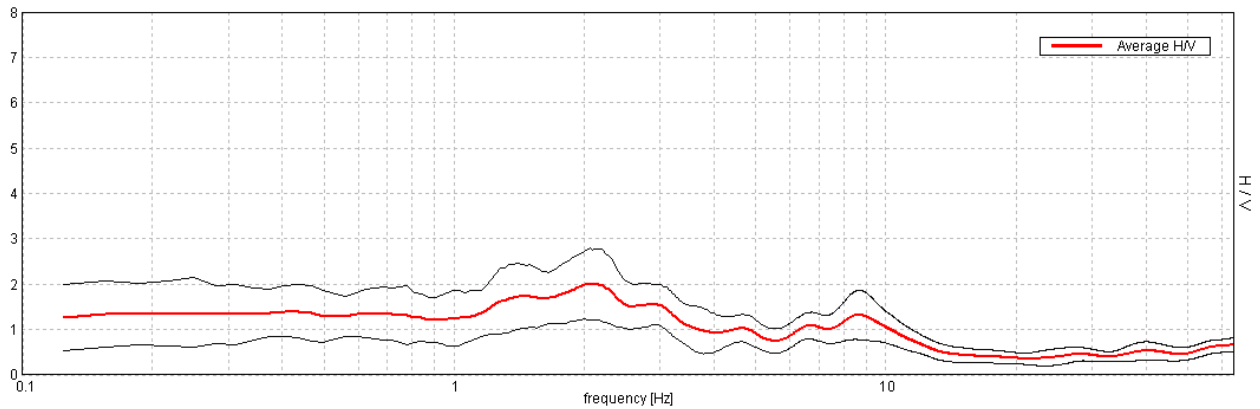


## MONTE SAN PIETRO, 037042P14HVSR14

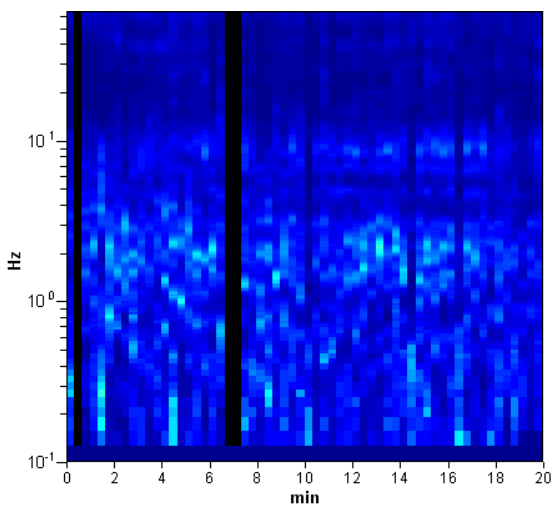
Instrument: TRZ-0108/01-10  
 Start recording: 09/05/13 10:18:26      End recording: 09/05/13 10:38:27  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h20'00".      Analyzed 95% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

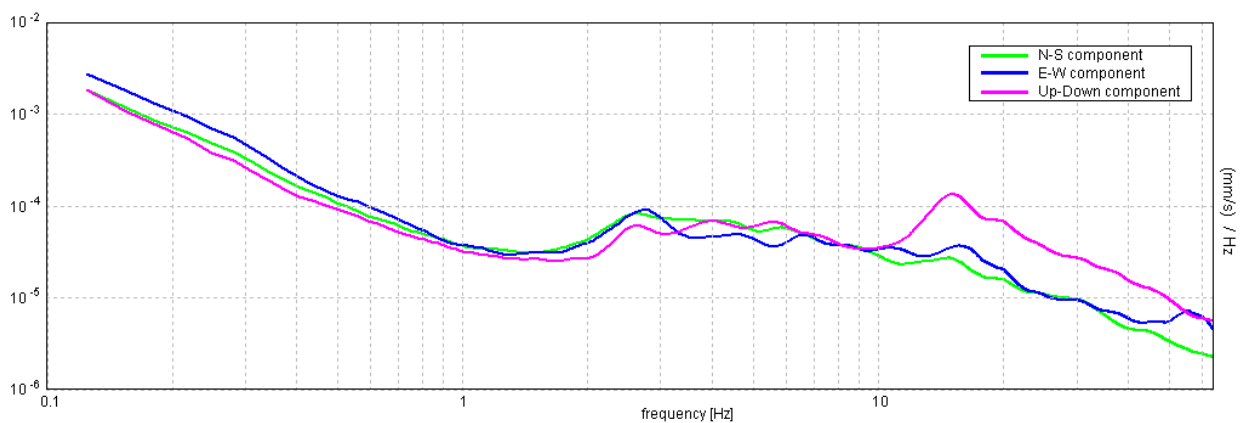
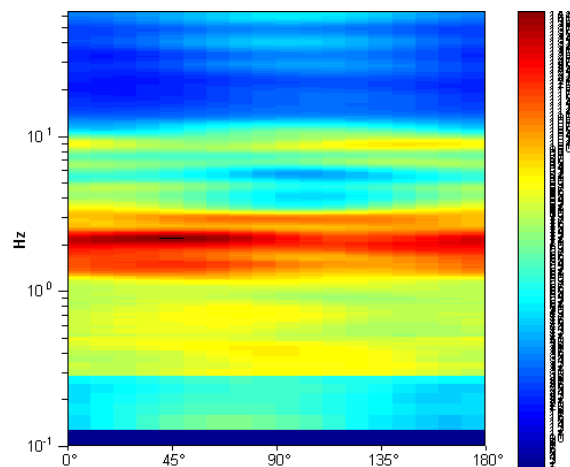
Max. H/V at 2.13 ± 0.14 Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

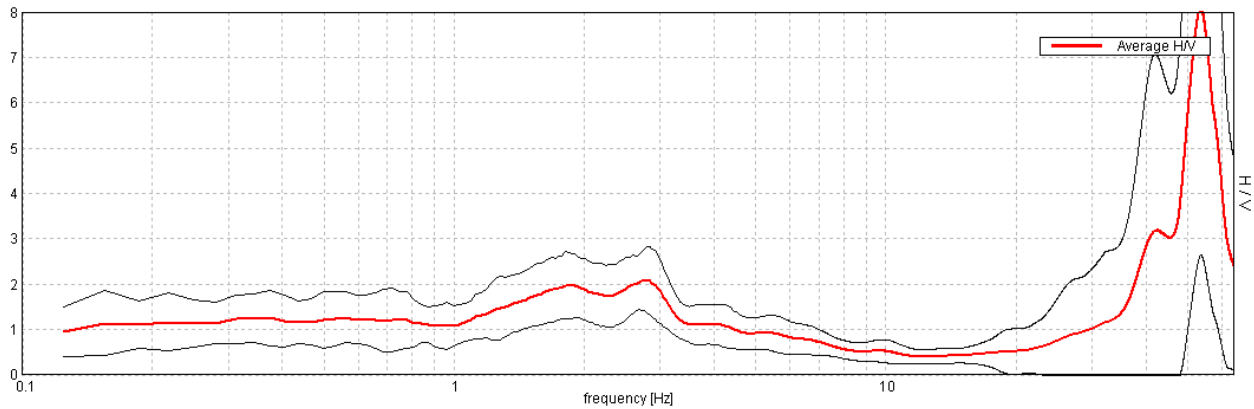


## MONTE SAN PIETRO, 037042P15HVSR15

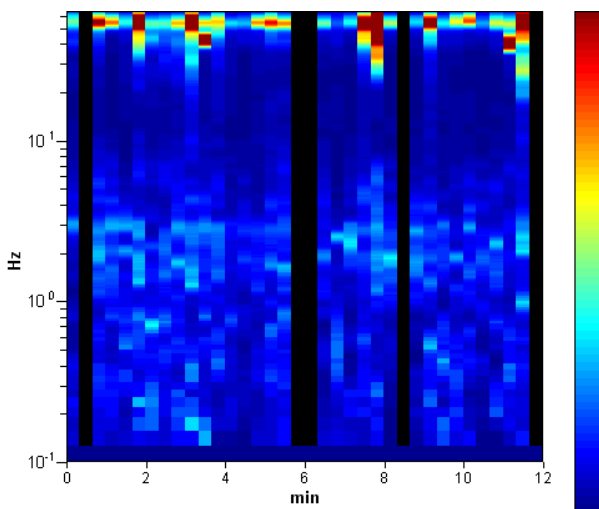
Instrument: TRZ-0108/01-10  
 Start recording: 09/05/13 10:41:39 End recording: 09/05/13 10:53:40  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00". Analyzed 86% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

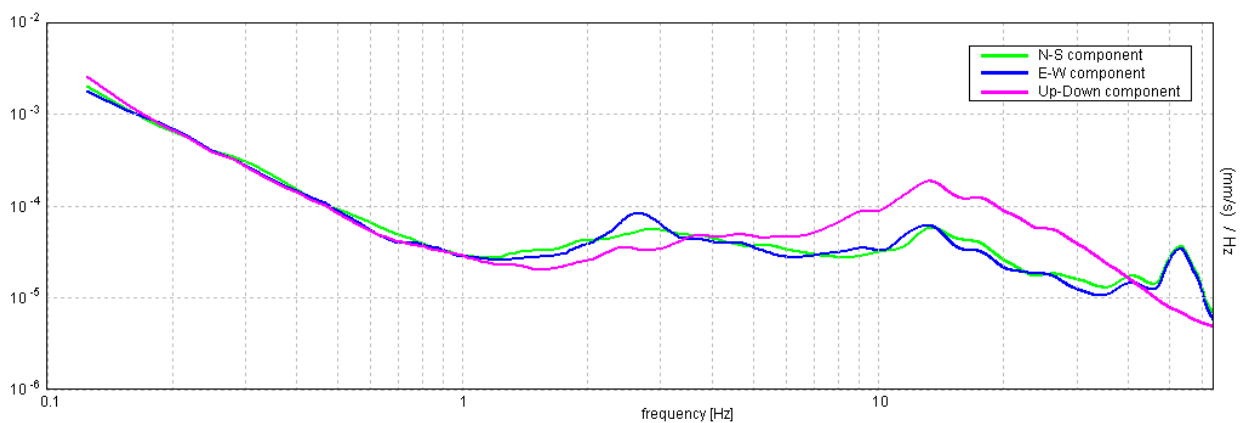
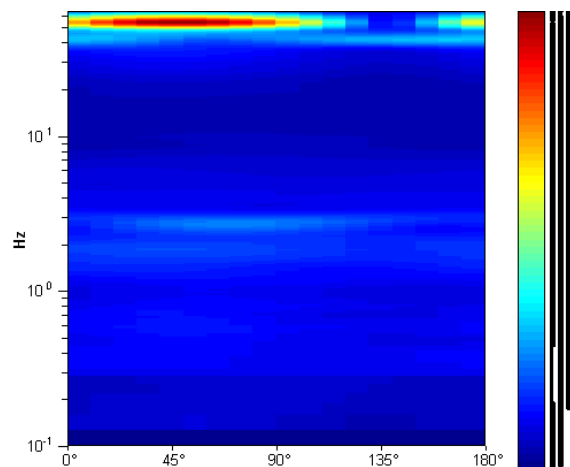
Max. H/V at  $2.78 \pm 0.03$  Hz. (In the range 0.0 - 30.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

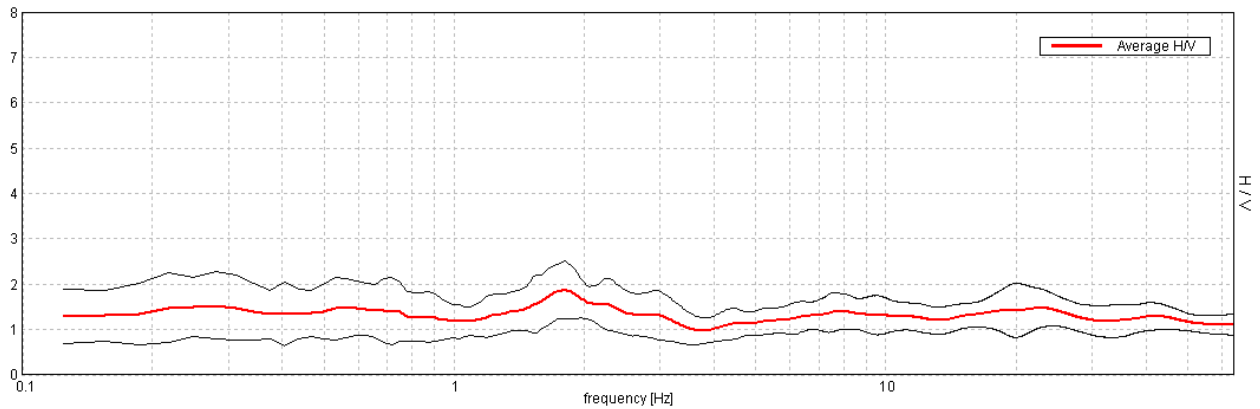


## MONTE SAN PIETRO, 037042P16HVSR16

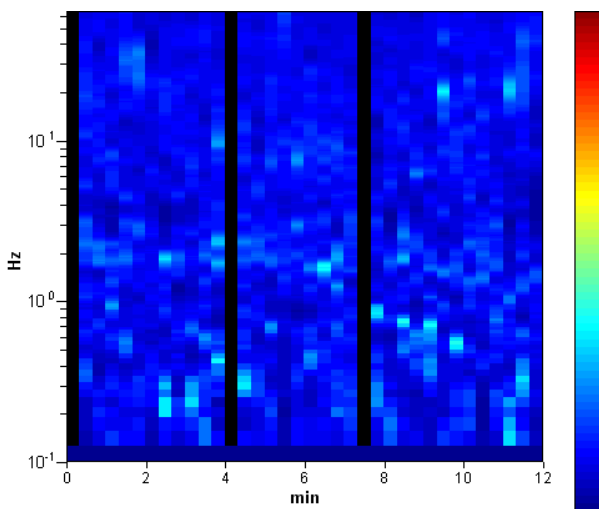
Instrument: TRZ-0108/01-10  
 Start recording: 09/05/13 11:12:32      End recording: 09/05/13 11:24:33  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 92% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

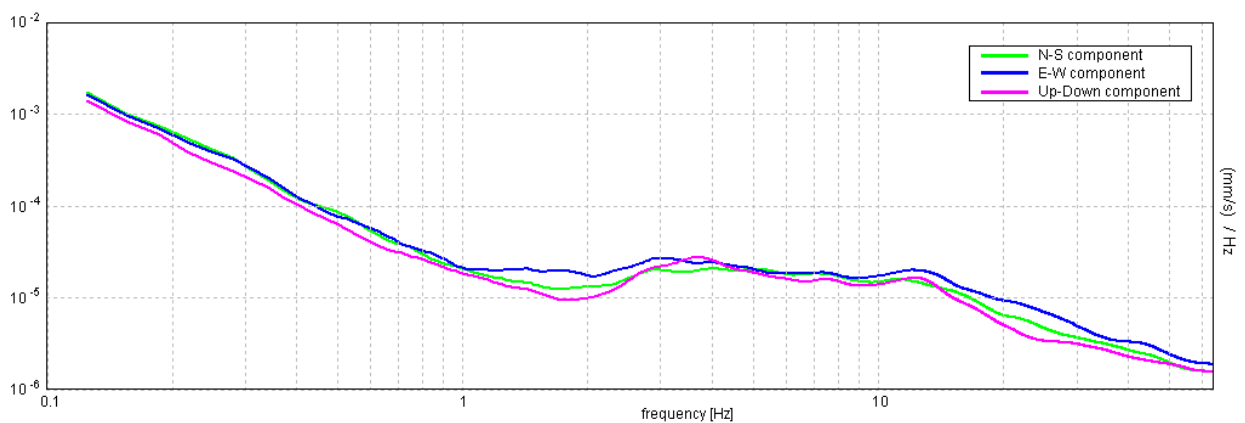
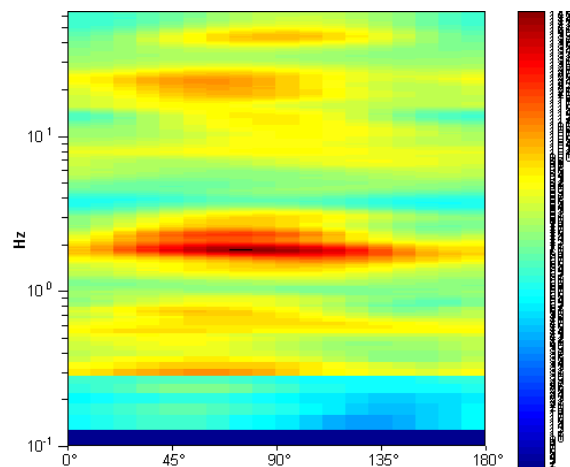
Max. H/V at  $1.81 \pm 0.04$  Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V



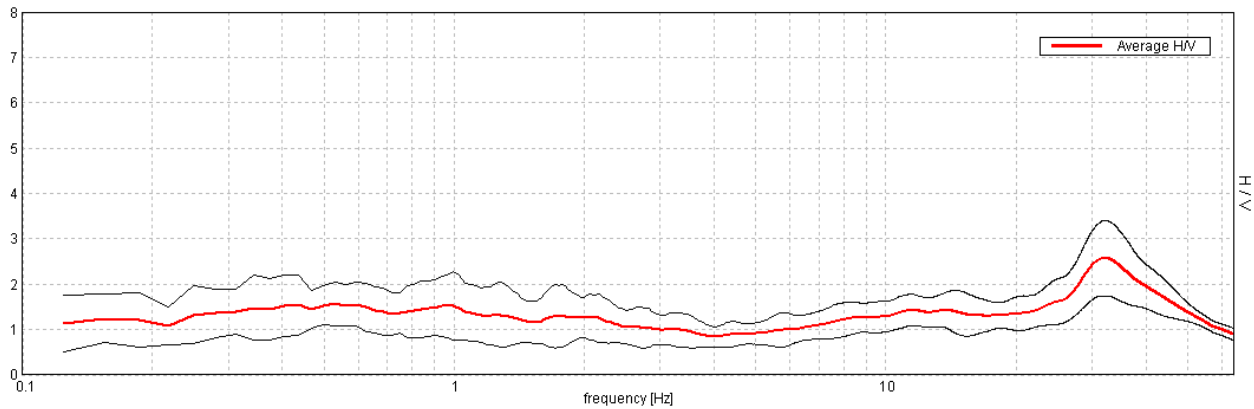


**MONTE SAN PIETRO, 037042P17HVSR17**

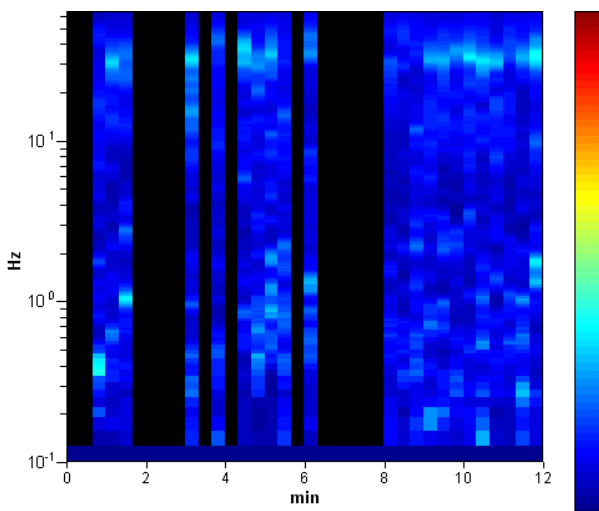
Instrument: TRZ-0108/01-10  
 Start recording: 09/05/13 11:39:12      End recording: 09/05/13 11:51:13  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 61% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

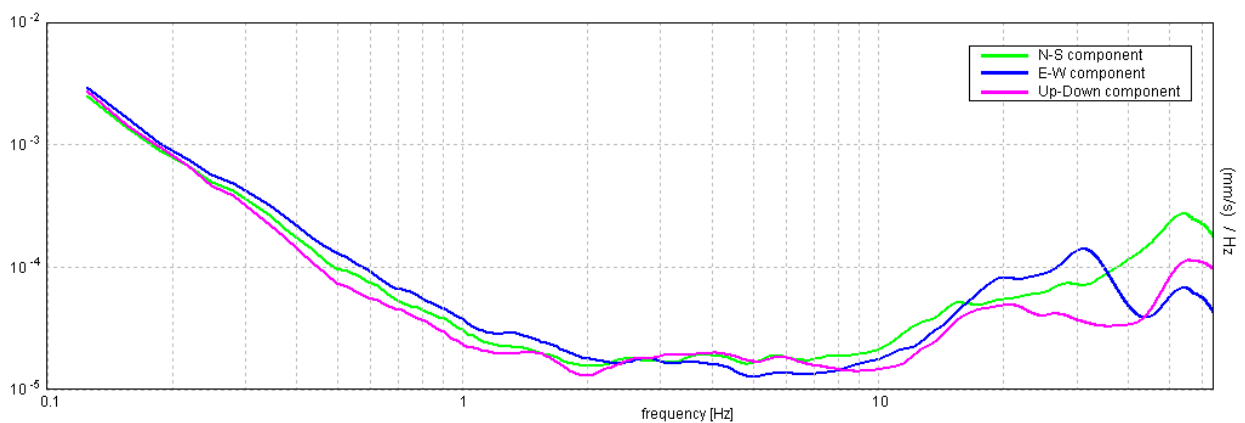
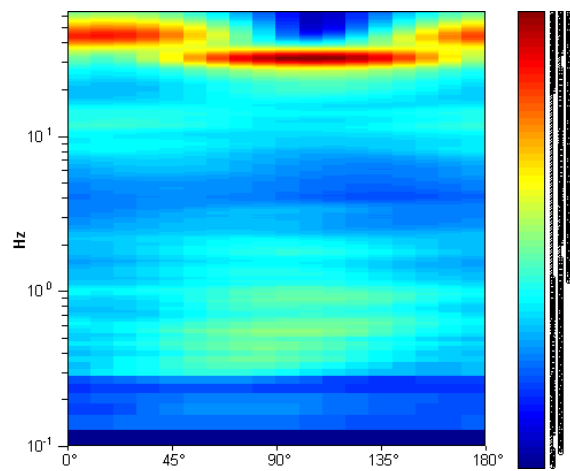
Max. H/V at  $0.53 \pm 0.06$  Hz. (In the range 0.0 - 15.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

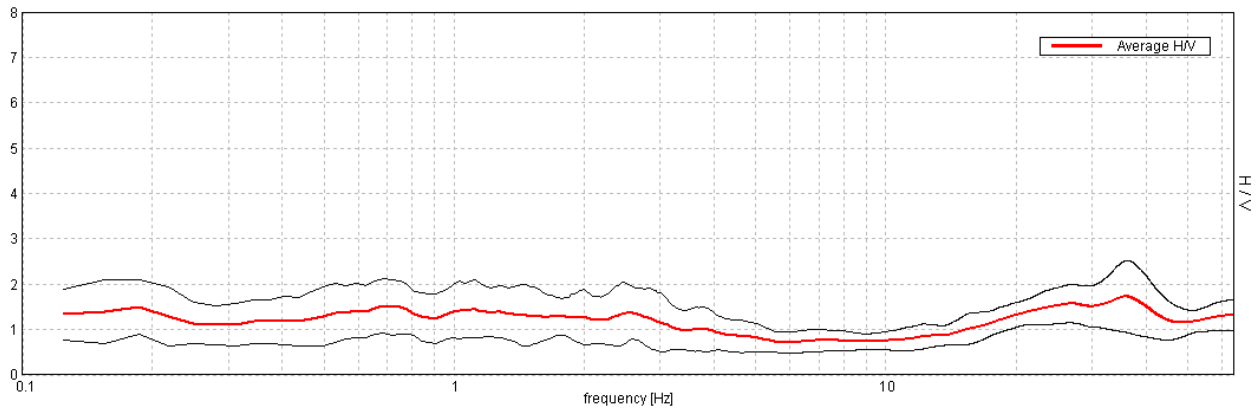


### MONTE SAN PIETRO, 037042P18HVSR18

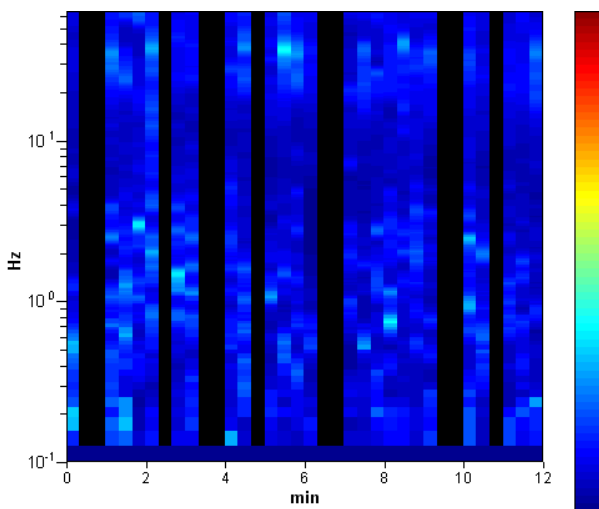
Instrument: TRZ-0108/01-10  
Start recording: 09/05/13 11:56:55      End recording: 09/05/13 12:08:56  
Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
Trace length: 0h12'00".      Analyzed 69% trace (manual window selection)  
Sampling rate: 128 Hz  
Window size: 20 s  
Smoothing type: Triangular window  
Smoothing: 12%

#### HORIZONTAL TO VERTICAL SPECTRAL RATIO

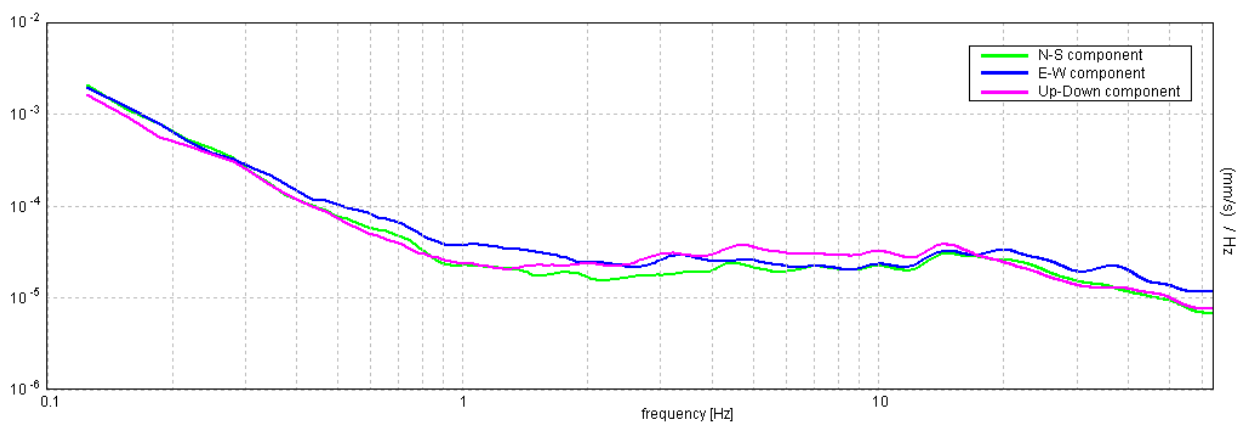
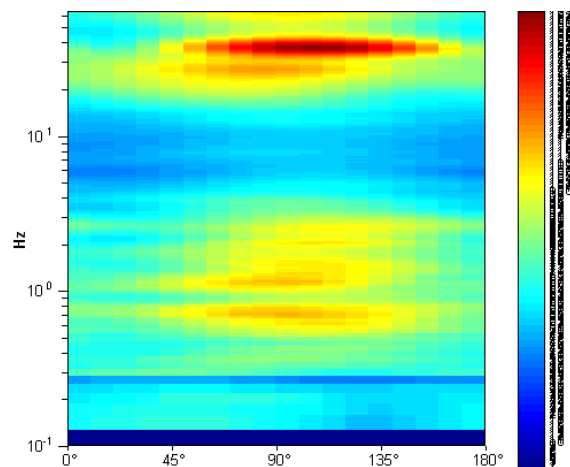
Max. H/V at  $0.69 \pm 0.18$  Hz. (In the range 0.0 - 15.0 Hz).



#### H/V TIME HISTORY



#### DIRECTIONAL H/V

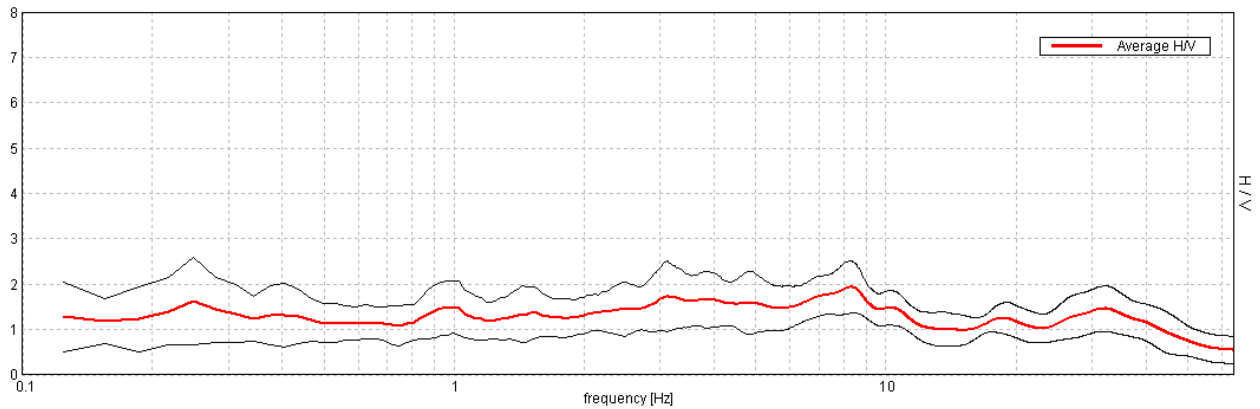


## MONTE SAN PIETRO, 037042P19HVSR19

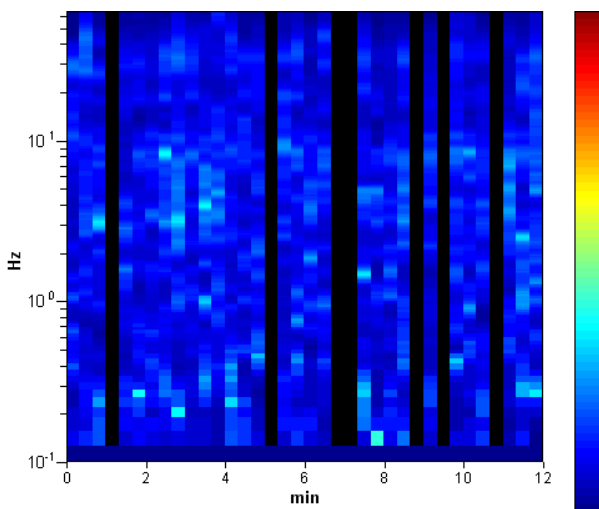
Instrument: TRZ-0108/01-10  
Start recording: 09/05/13 12:16:54      End recording: 09/05/13 12:28:55  
Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
Trace length: 0h12'00".      Analyzed 81% trace (manual window selection)  
Sampling rate: 128 Hz  
Window size: 20 s  
Smoothing type: Triangular window  
Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

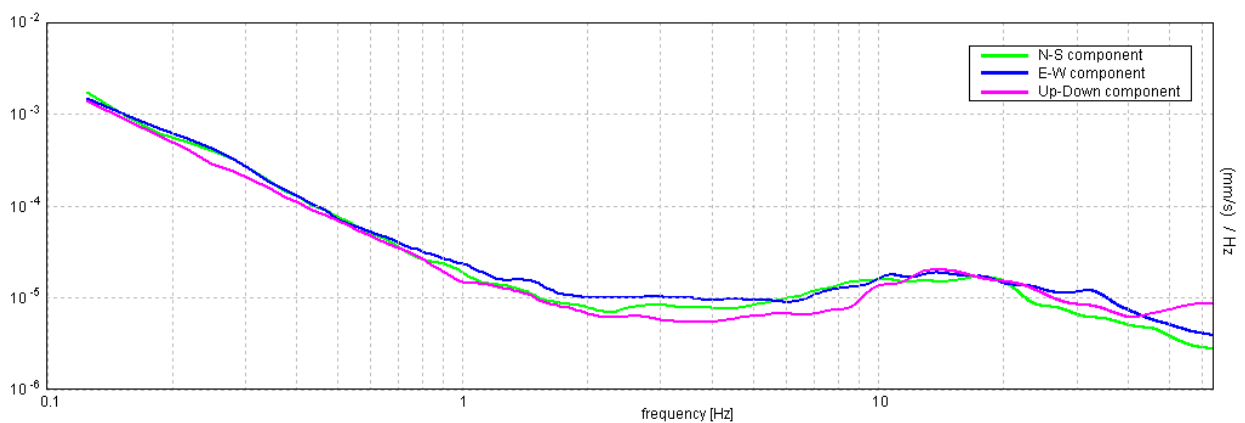
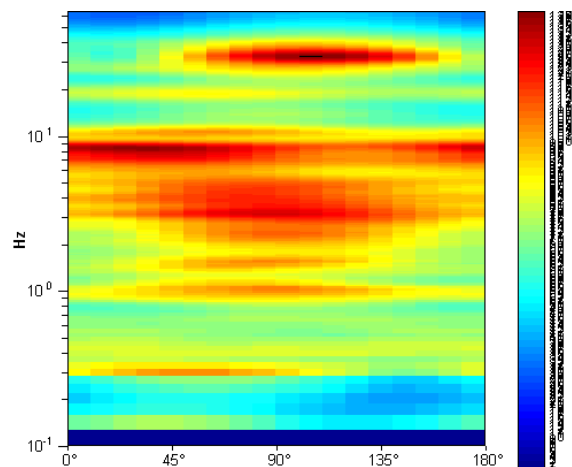
Max. H/V at  $8.31 \pm 2.45$  Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

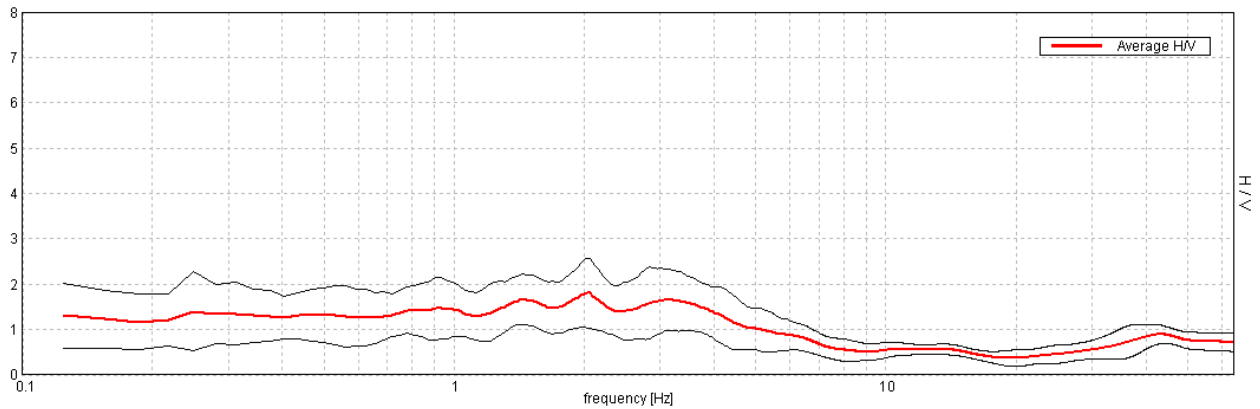


## MONTE SAN PIETRO, 037042P21HVSR21

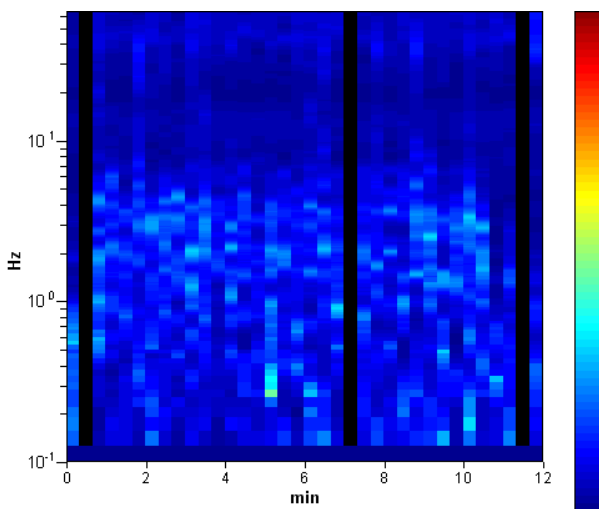
Instrument: TRZ-0108/01-10  
 Start recording: 09/05/13 14:09:38      End recording: 09/05/13 14:21:39  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 92% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

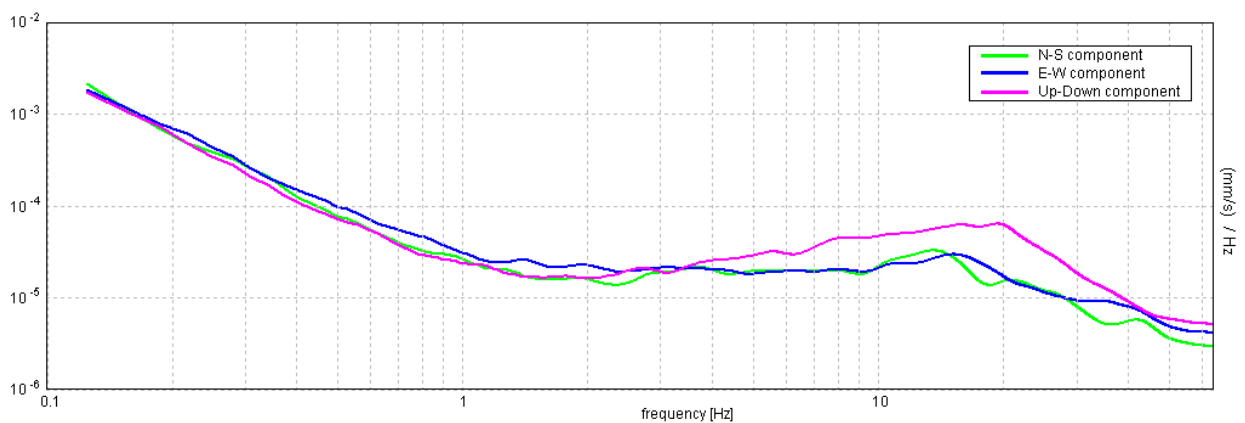
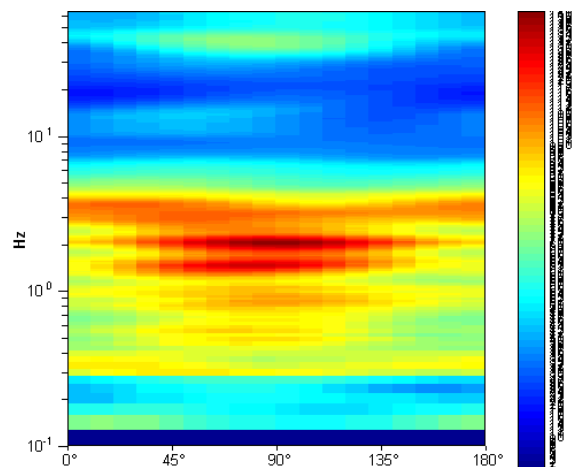
Max. H/V at 2.03 ± 0.26 Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

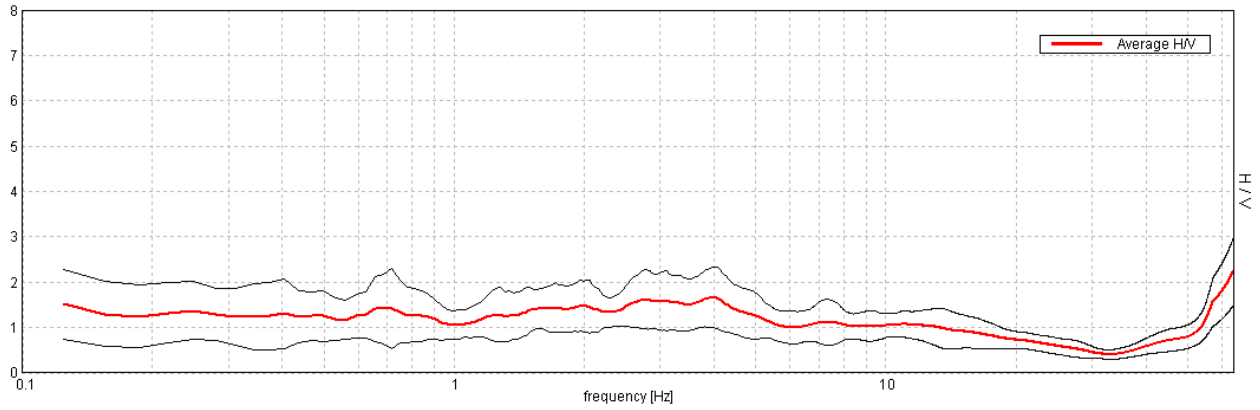


**MONTE SAN PIETRO, 037042P22HVSR22**

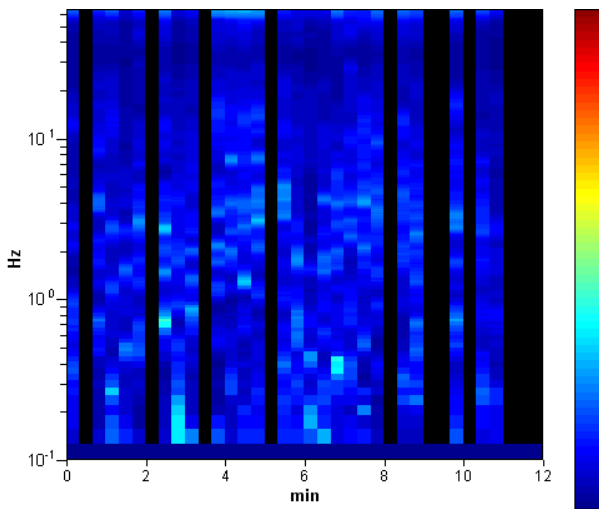
Instrument: TRZ-0108/01-10  
 Start recording: 09/05/13 14:25:30      End recording: 09/05/13 14:37:31  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 69% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

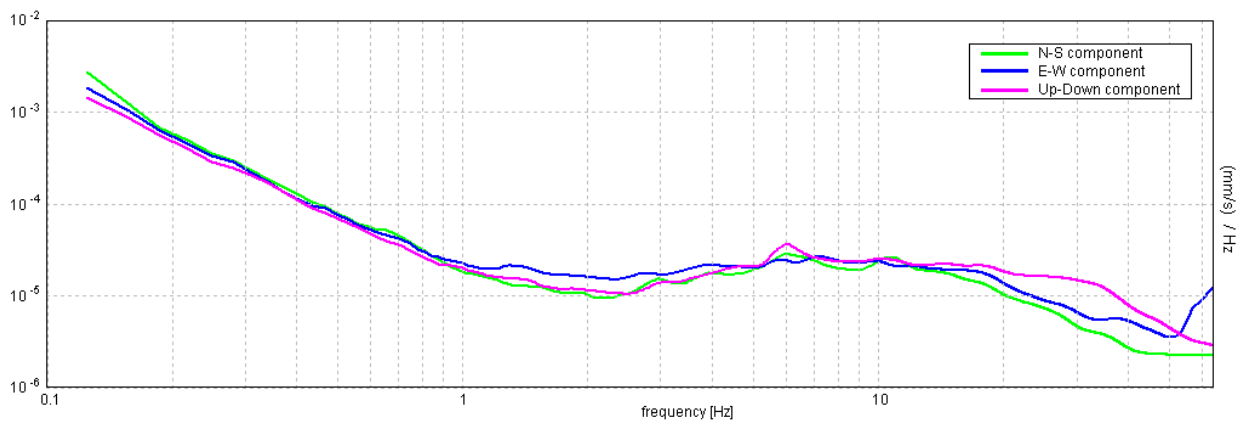
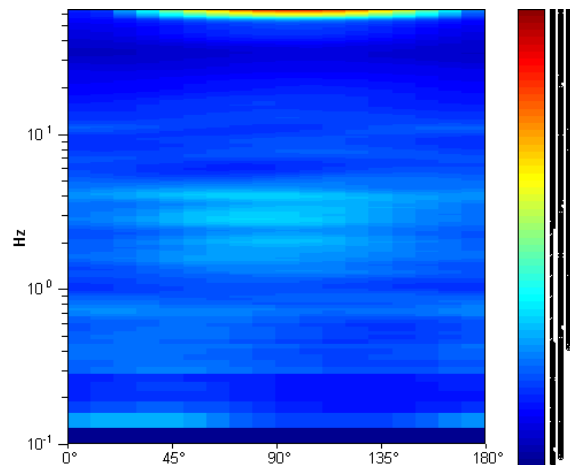
Max. H/V at  $3.97 \pm 1.13$  Hz. (In the range 0.0 - 30.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

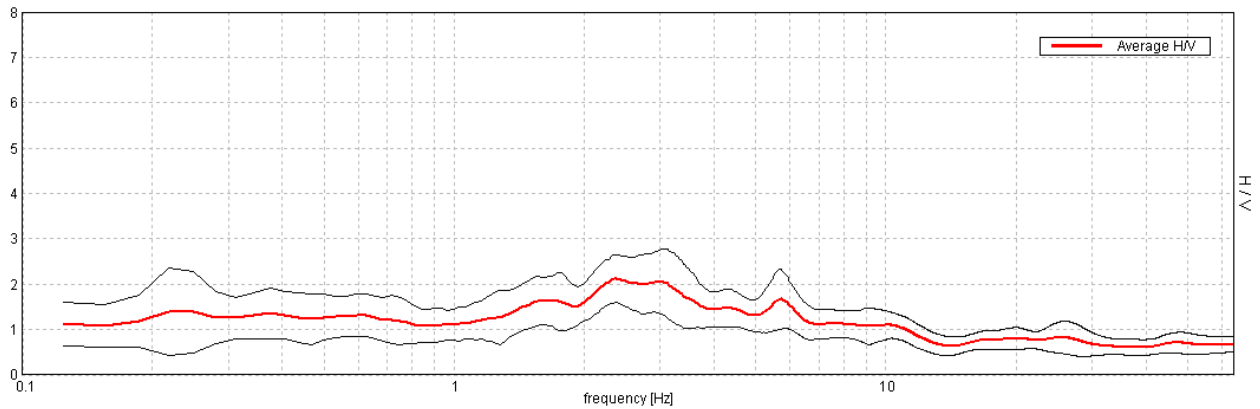


## MONTE SAN PIETRO, 037042P23HVSR23

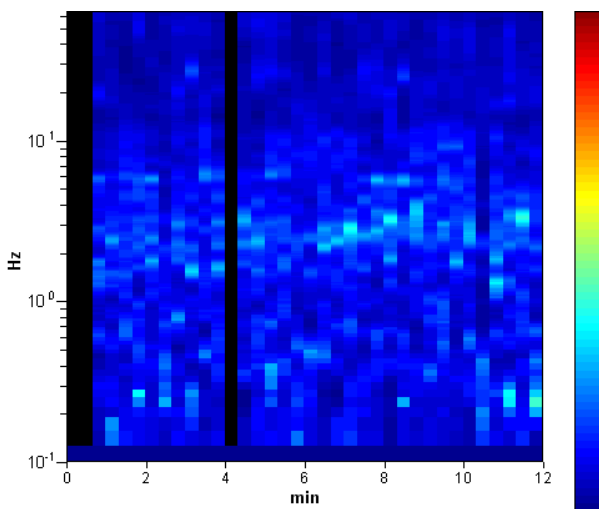
Instrument: TRZ-0108/01-10  
 Start recording: 09/05/13 14:42:46      End recording: 09/05/13 14:54:47  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 92% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

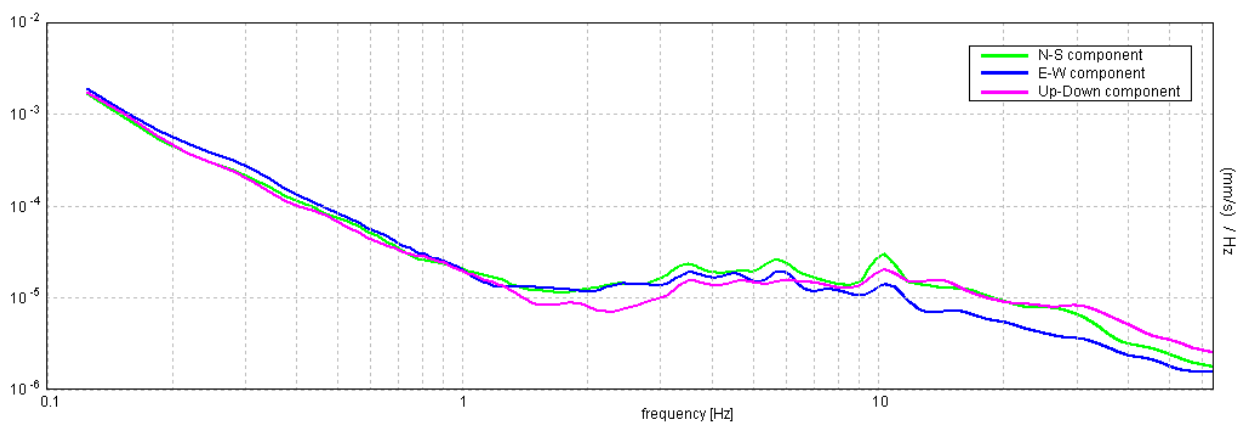
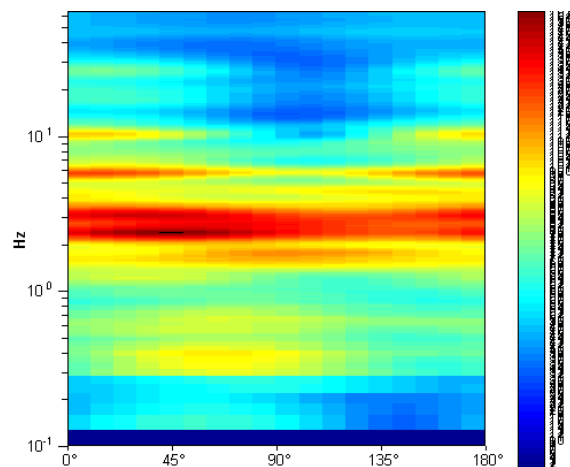
Max. H/V at 2.38 ± 0.32 Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

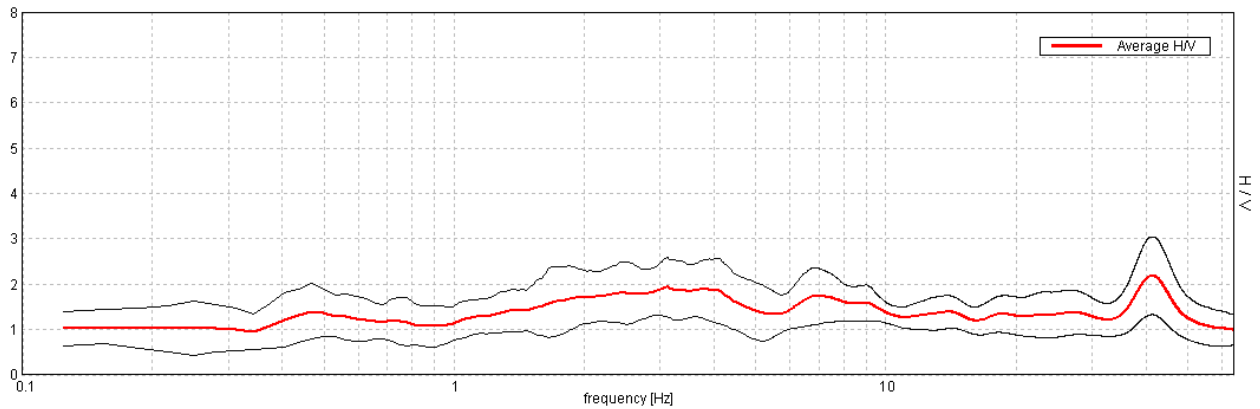


## MONTE SAN PIETRO, 037042P24HVSR24

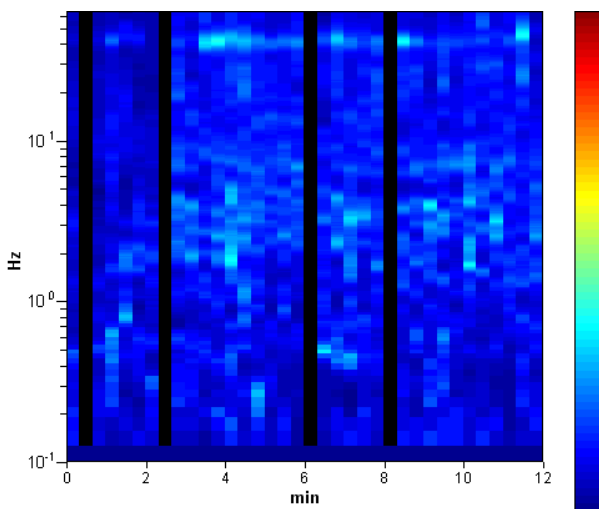
Instrument: TRZ-0108/01-10  
 Start recording: 09/05/13 15:00:11      End recording: 09/05/13 15:12:12  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 89% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

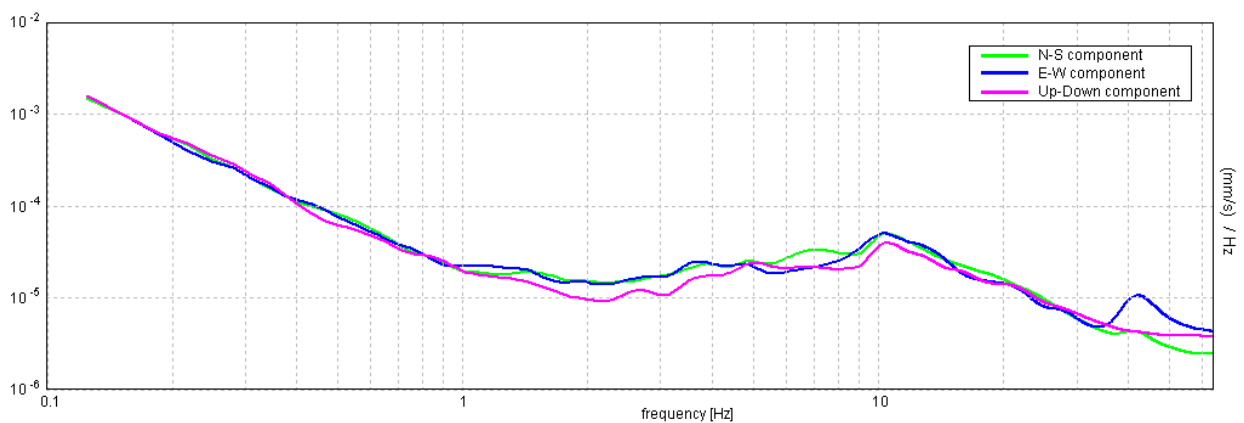
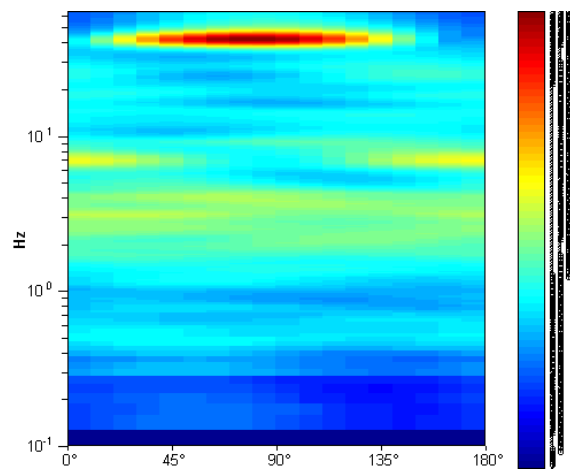
Max. H/V at 3.13 ± 0.49 Hz. (In the range 0.0 - 30.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

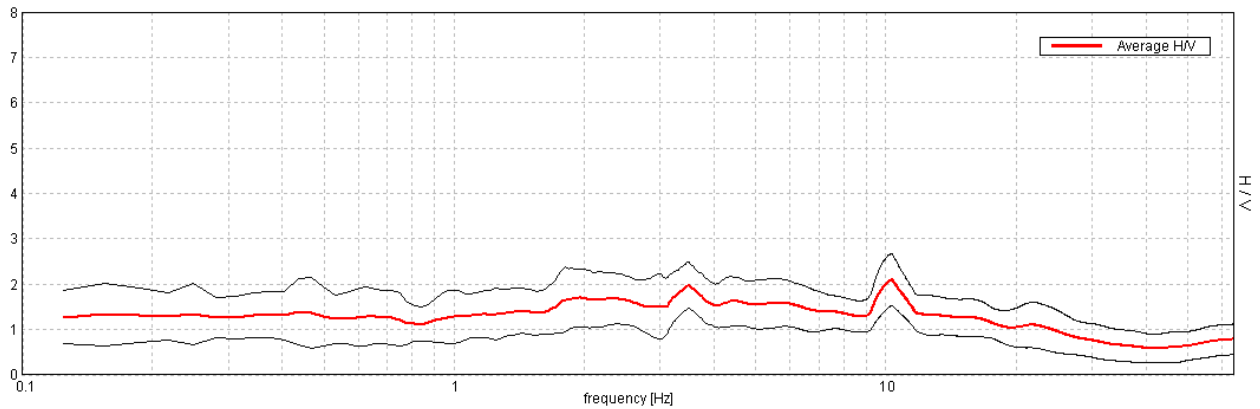


## MONTE SAN PIETRO, 037042P25HVSR25

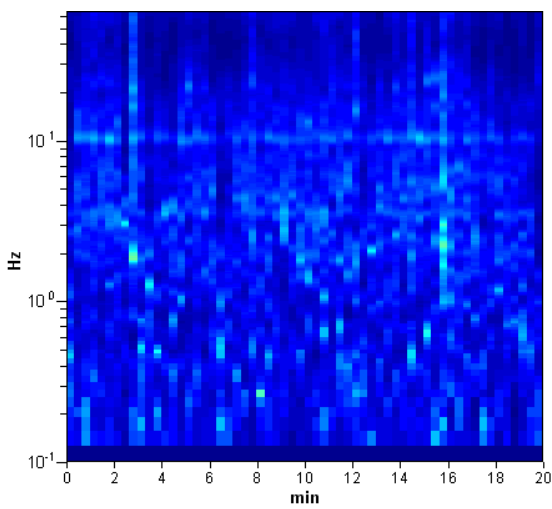
Instrument: TRZ-0108/01-10  
 Start recording: 09/05/13 15:15:59      End recording: 09/05/13 15:36:00  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h20'00".      Analysis performed on the entire trace.  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

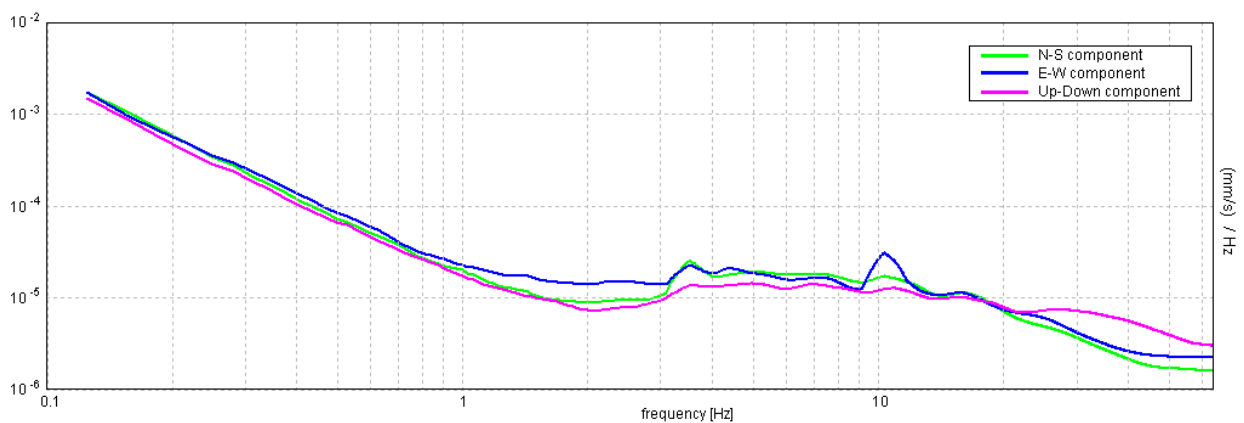
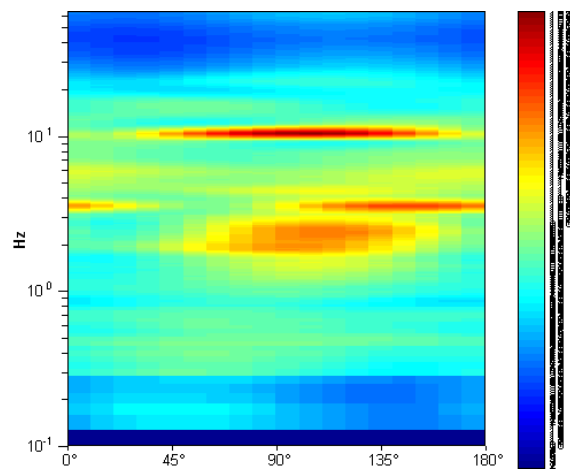
Max. H/V at  $10.28 \pm 0.54$  Hz (in the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V



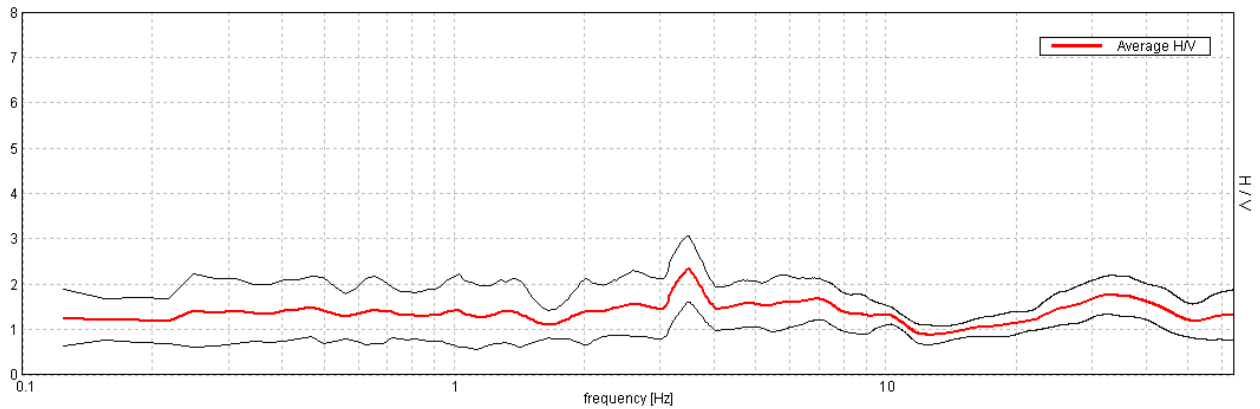


## MONTE SAN PIETRO, 037042P26HVSR26

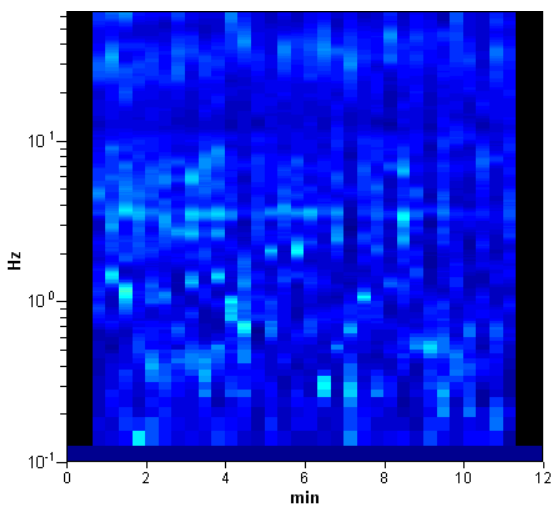
Instrument: TRZ-0108/01-10  
 Start recording: 09/05/13 15:42:36      End recording: 09/05/13 15:54:37  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 89% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

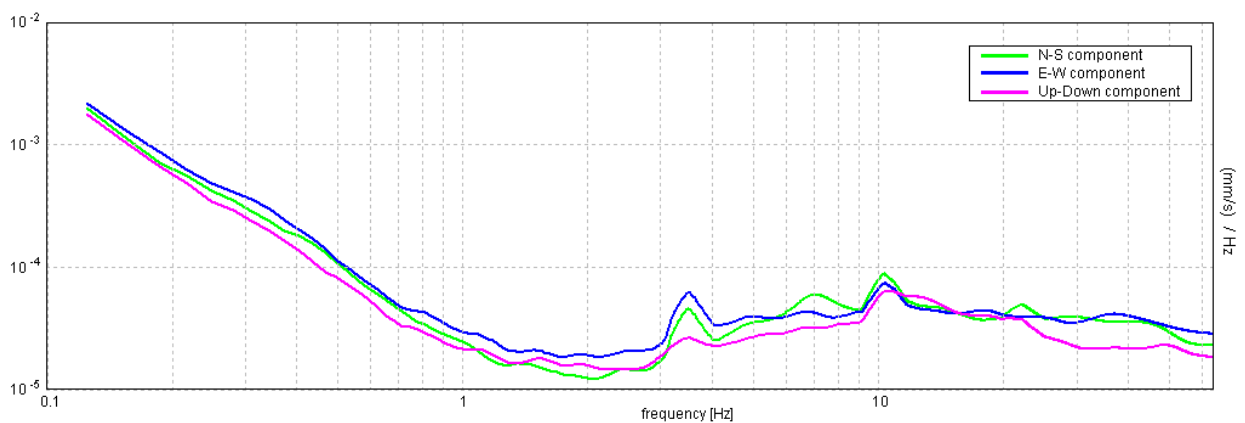
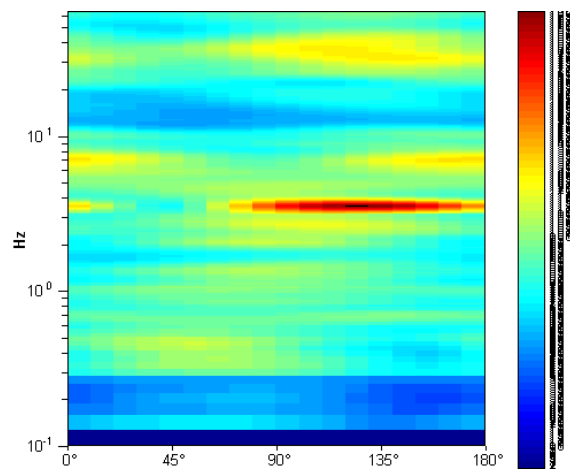
Max. H/V at  $3.5 \pm 1.83$  Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

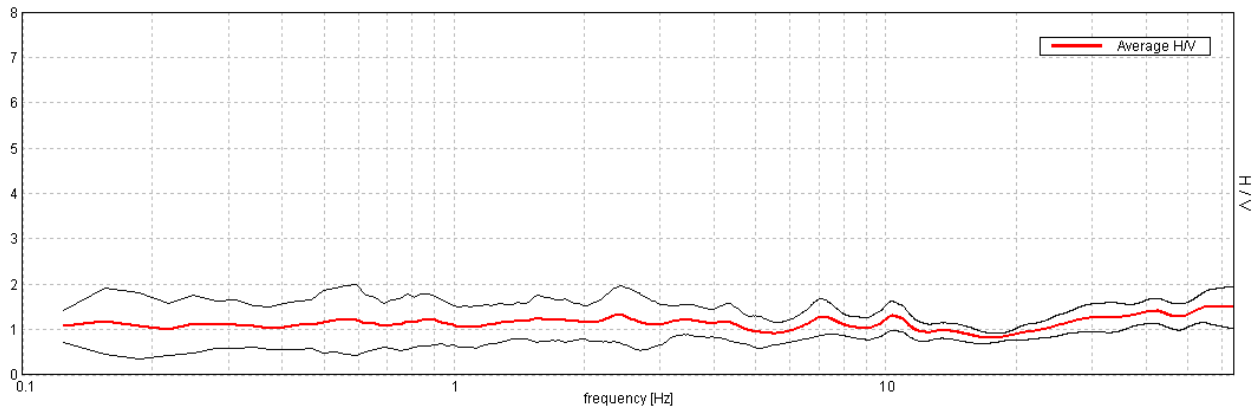


## MONTE SAN PIETRO, 037042P27HVSR27

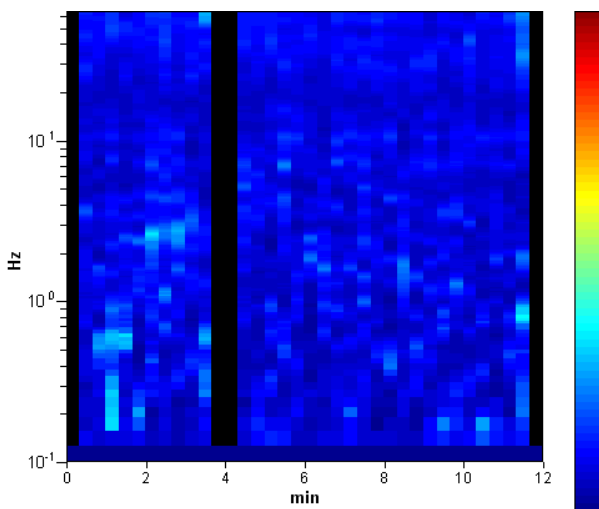
Instrument: TRZ-0108/01-10  
 Start recording: 09/05/13 16:00:47      End recording: 09/05/13 16:12:48  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 89% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

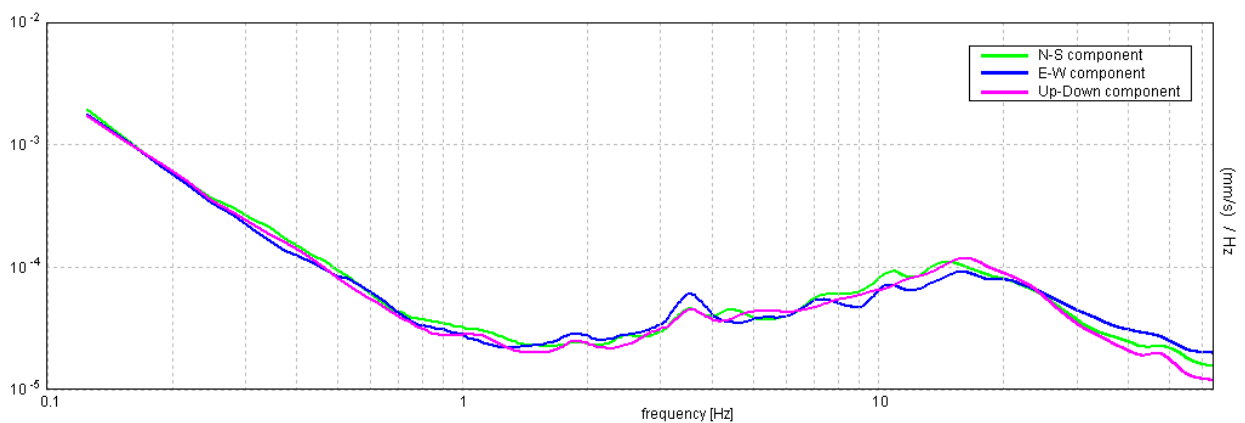
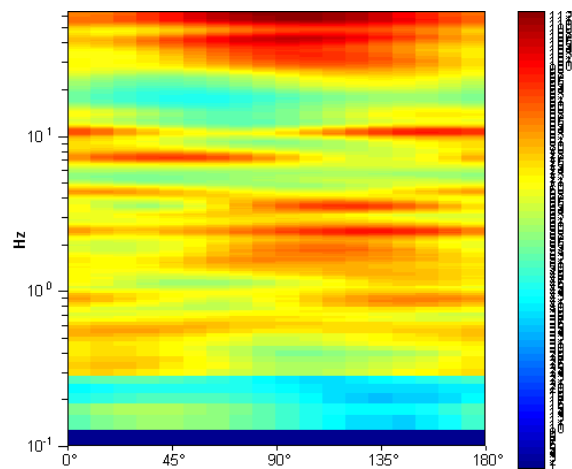
Max. H/V at 2.41 ± 0.38 Hz. (In the range 0.0 - 20.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

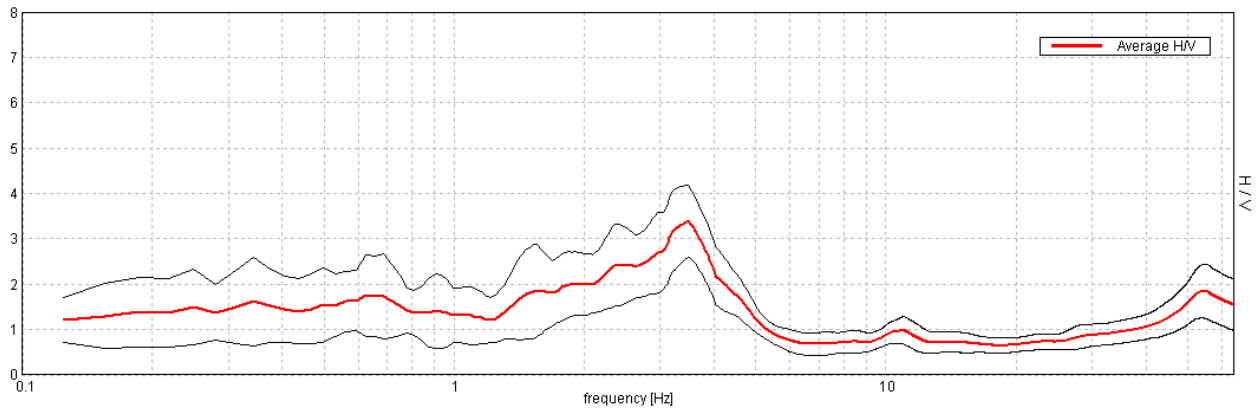


## MONTE SAN PIETRO, 037042P28HVSR28

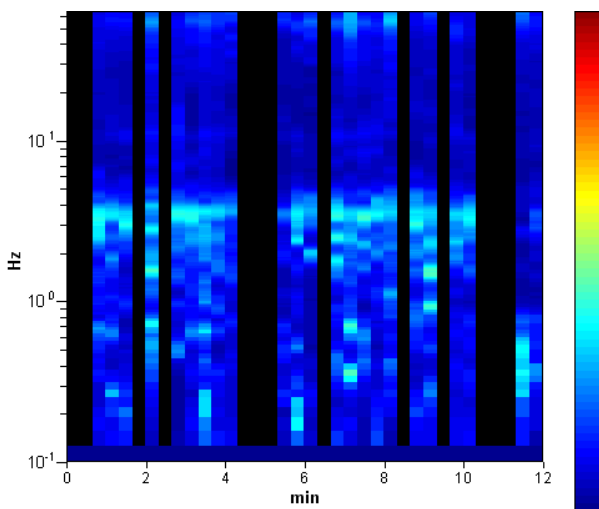
Instrument: TRZ-0108/01-10  
 Start recording: 09/05/13 16:18:34      End recording: 09/05/13 16:30:35  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 64% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

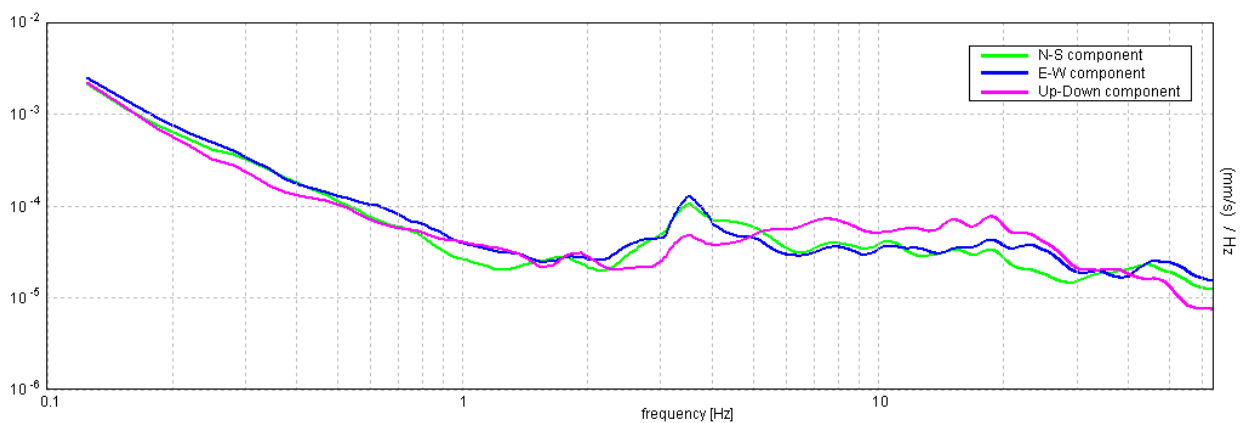
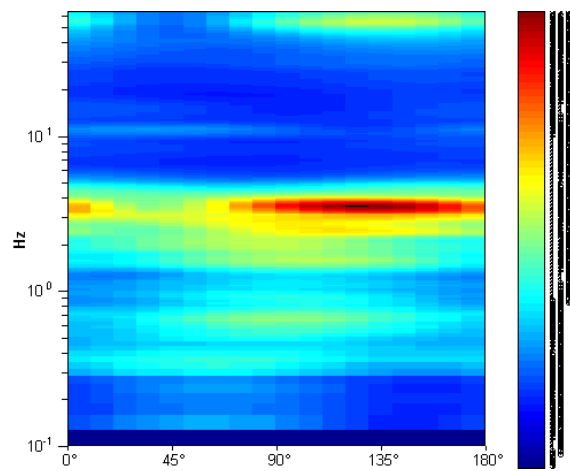
Max. H/V at 3.47 ± 0.04 Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

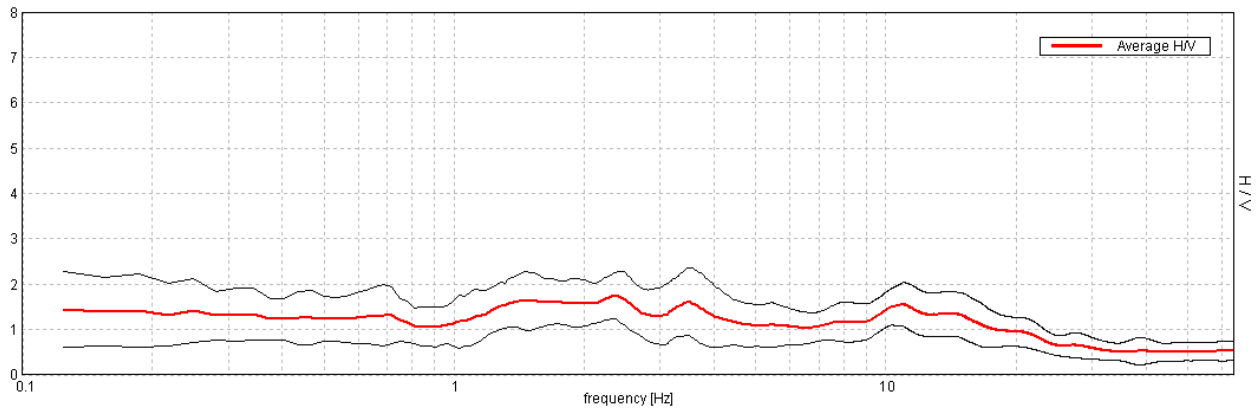


## MONTE SAN PIETRO, 037042P29HVSR29

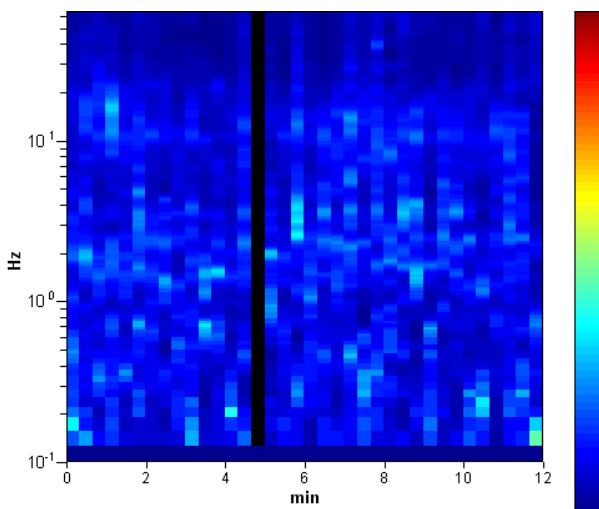
Instrument: TRZ-0108/01-10  
Start recording: 09/05/13 16:34:01      End recording: 09/05/13 16:46:02  
Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
Trace length: 0h12'00".      Analyzed 97% trace (manual window selection)  
Sampling rate: 128 Hz  
Window size: 20 s  
Smoothing type: Triangular window  
Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

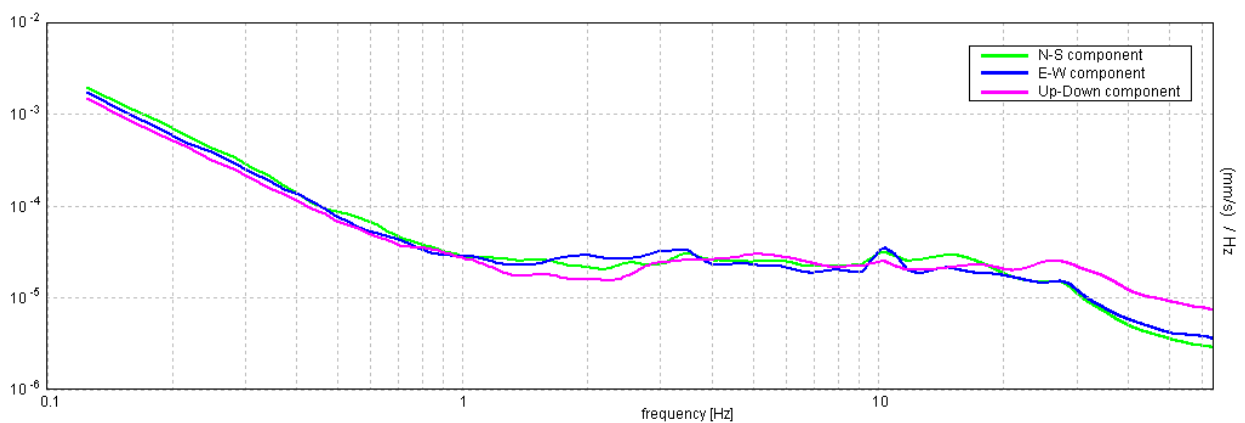
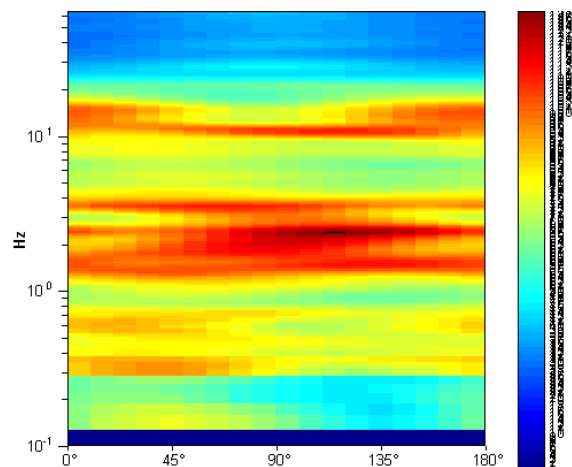
Max. H/V at 2.34 ± 0.28 Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

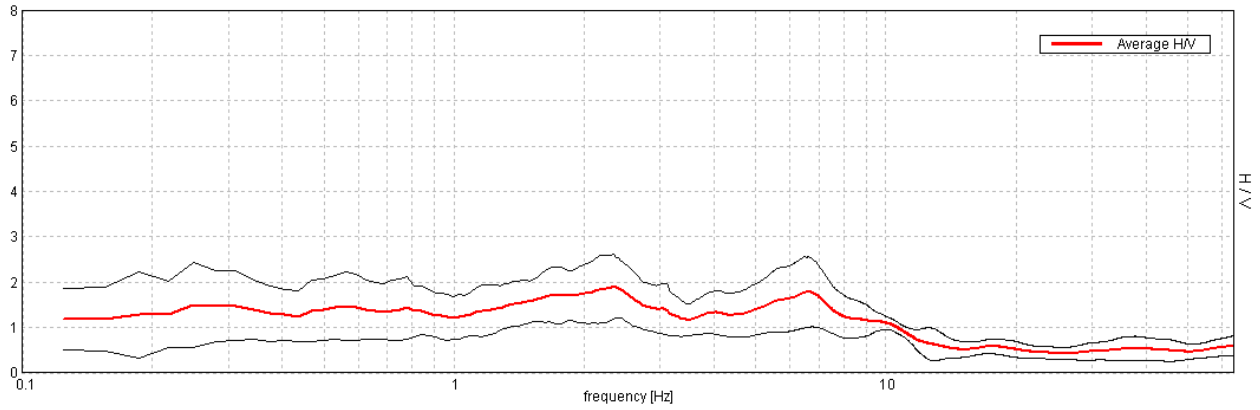


**MONTE SAN PIETRO, 037042P30HVSR30**

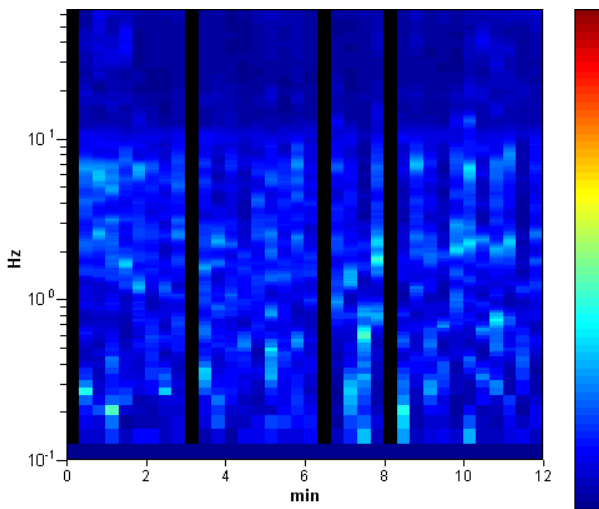
Instrument: TRZ-0108/01-10  
 Start recording: 09/05/13 16:54:55      End recording: 09/05/13 17:06:56  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 89% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

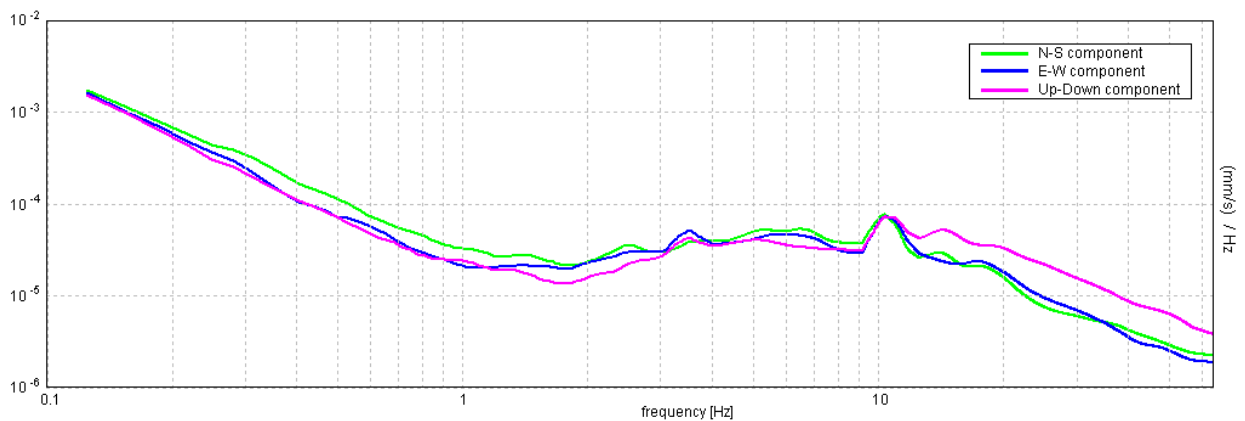
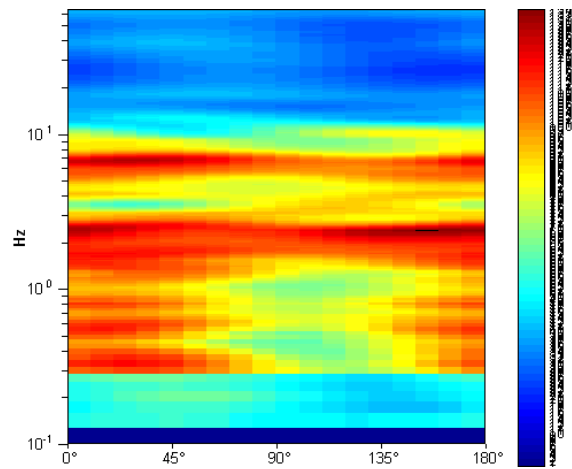
Max. H/V at 2.34 ± 0.87 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

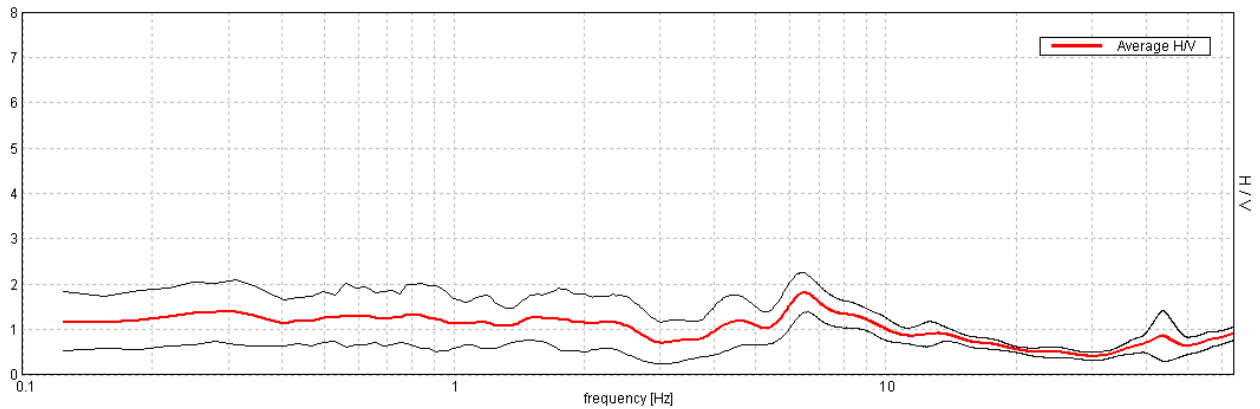


## MONTE SAN PIETRO, 037042P33HVSR33

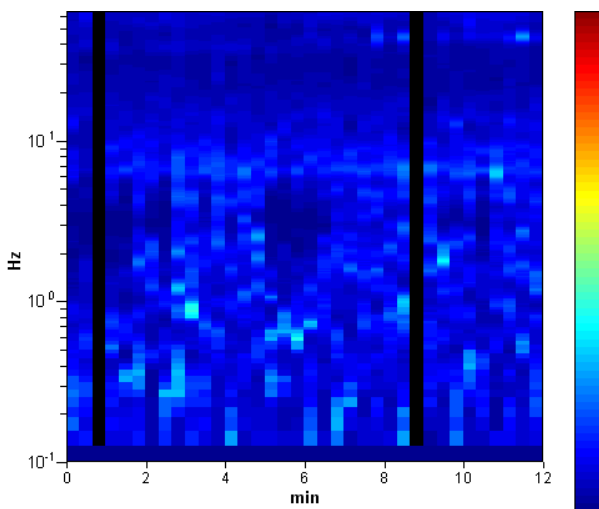
Instrument: TRZ-0108/01-10  
 Start recording: 10/05/13 08:16:28      End recording: 10/05/13 08:28:29  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 94% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

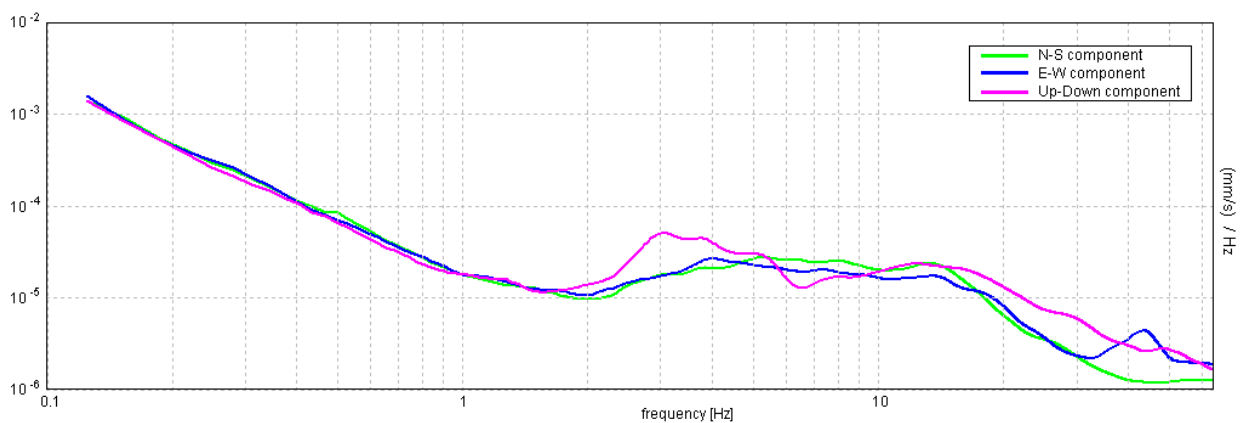
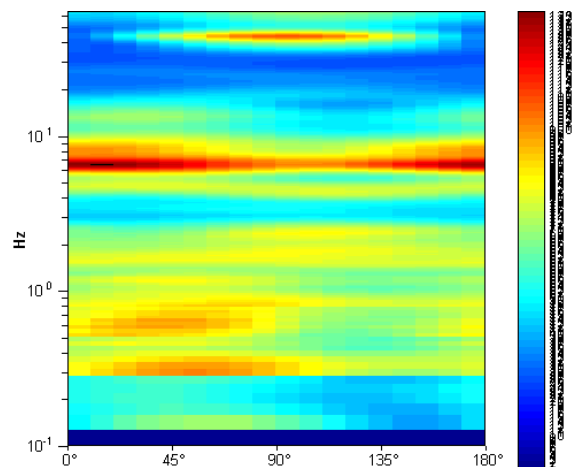
Max. H/V at 6.47 ± 1.46 Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

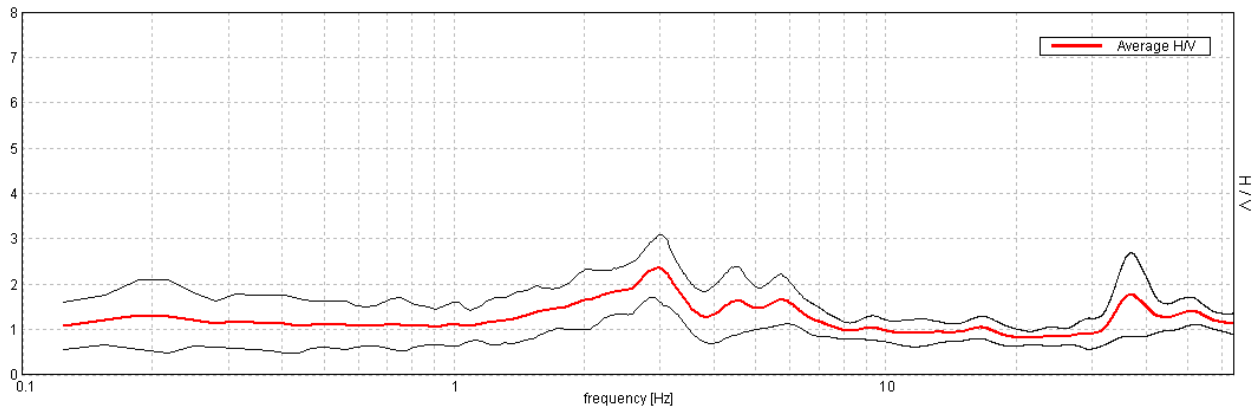


**MONTE SAN PIETRO, 037042P34HVSR34**

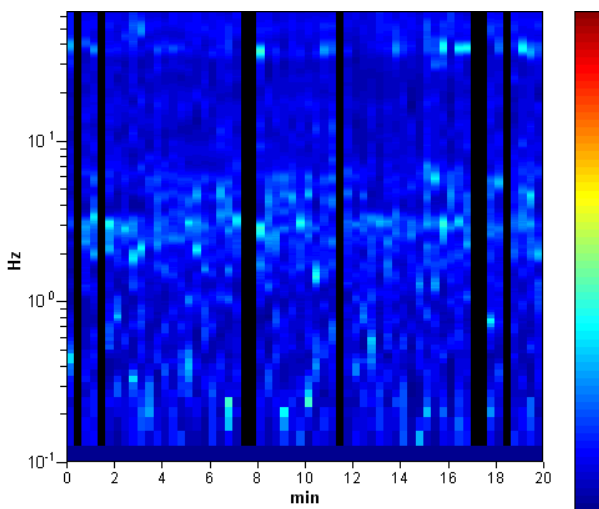
Instrument: TRZ-0108/01-10  
 Start recording: 10/05/13 08:33:53      End recording: 10/05/13 08:53:53  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h20'00".      Analyzed 87% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

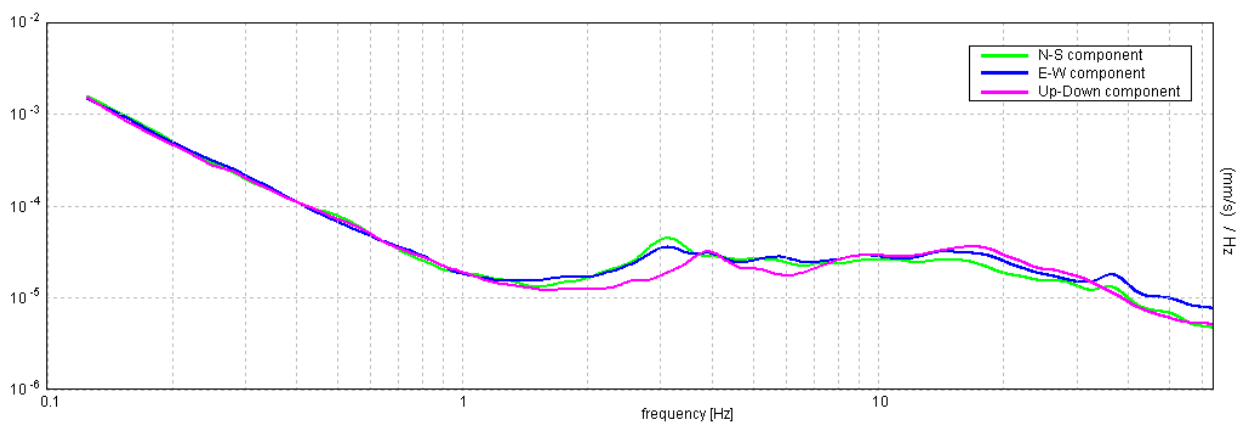
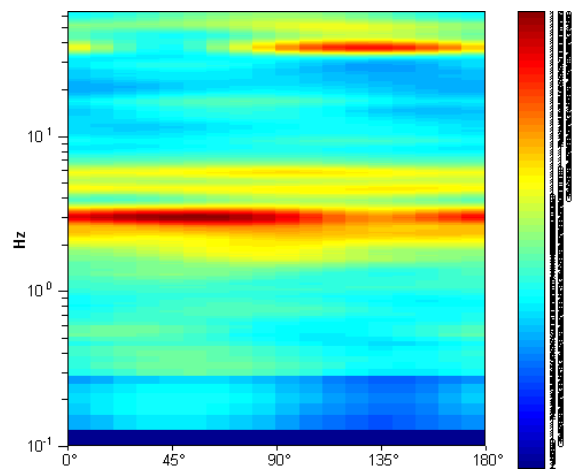
Max. H/V at  $2.97 \pm 1.41$  Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

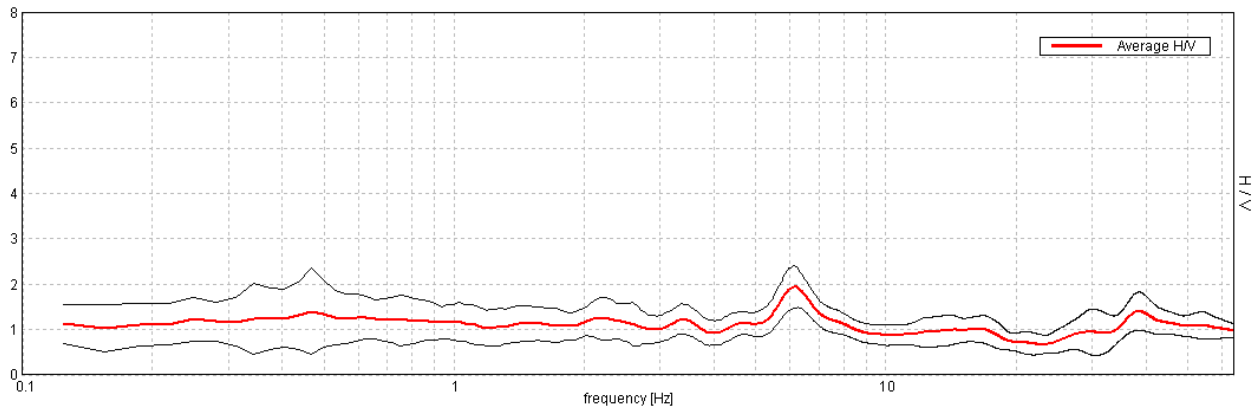


**MONTE SAN PIETRO, 037042P36HVSR36**

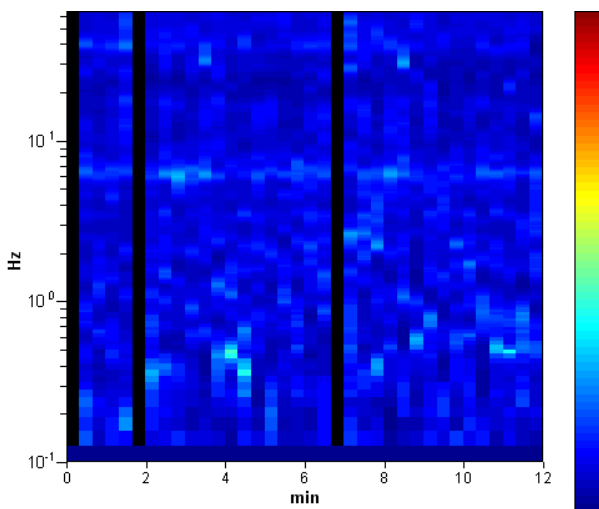
Instrument: TRZ-0108/01-10  
 Start recording: 10/05/13 09:15:28      End recording: 10/05/13 09:27:29  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 92% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

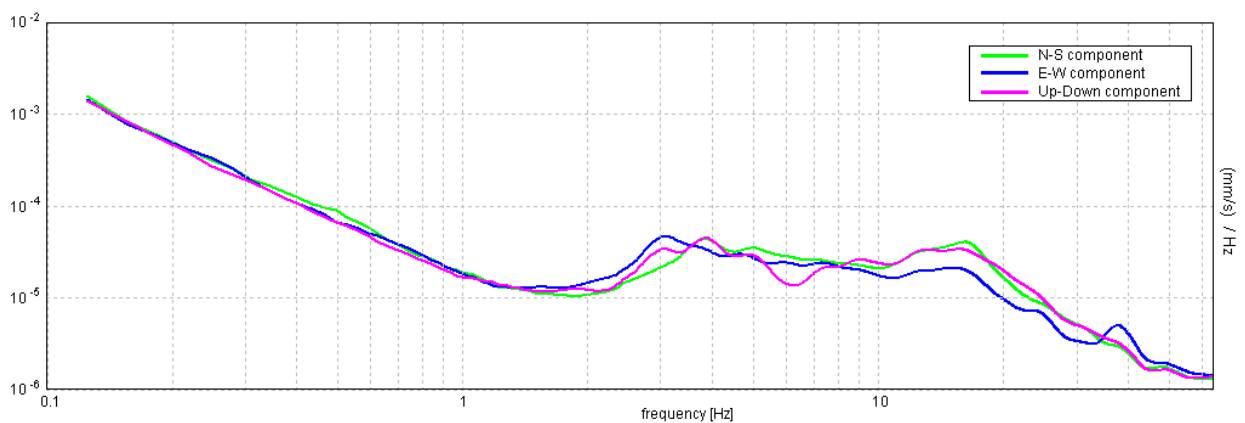
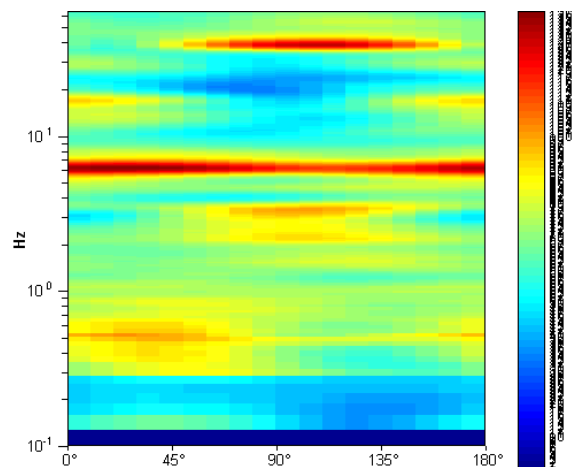
Max. H/V at 6.16 ± 2.08 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**



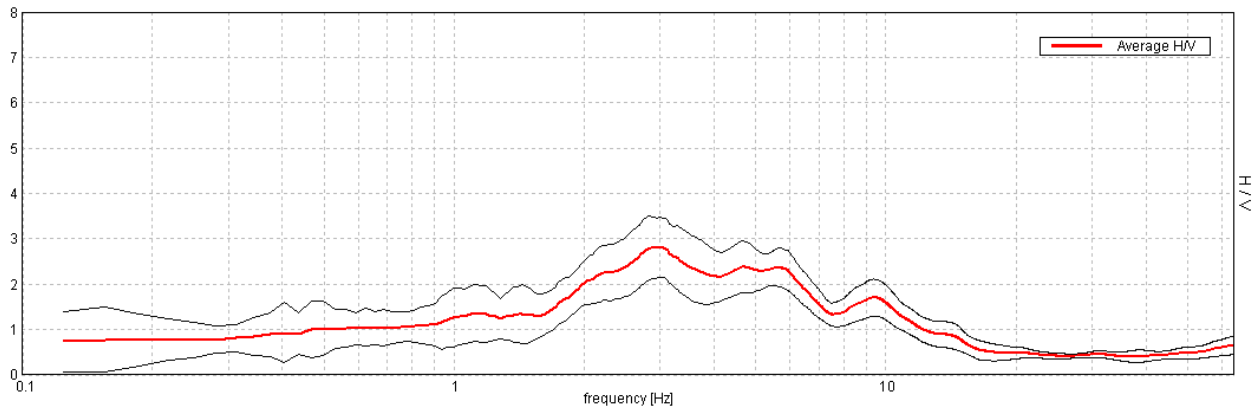


**MONTE SAN PIETRO, 037042P37HVSR37**

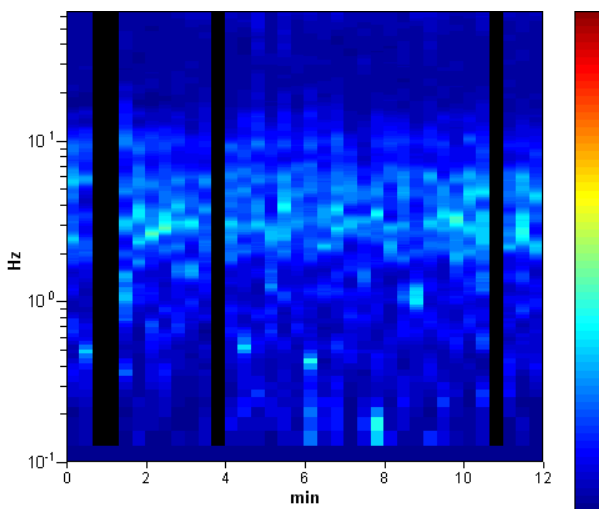
Instrument: TRZ-0108/01-10  
 Start recording: 10/05/13 09:39:07      End recording: 10/05/13 09:51:07  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 89% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

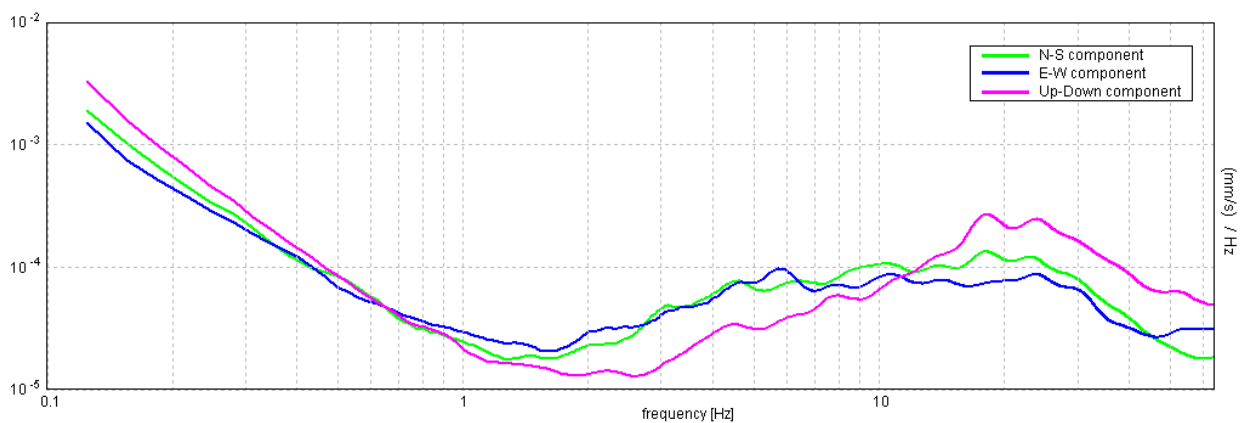
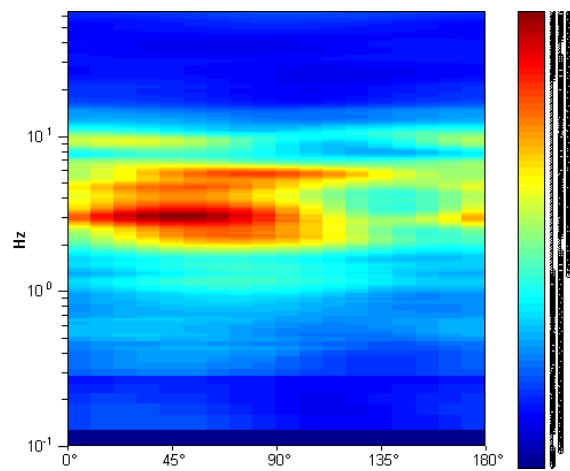
Max. H/V at  $3.0 \pm 0.33$  Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

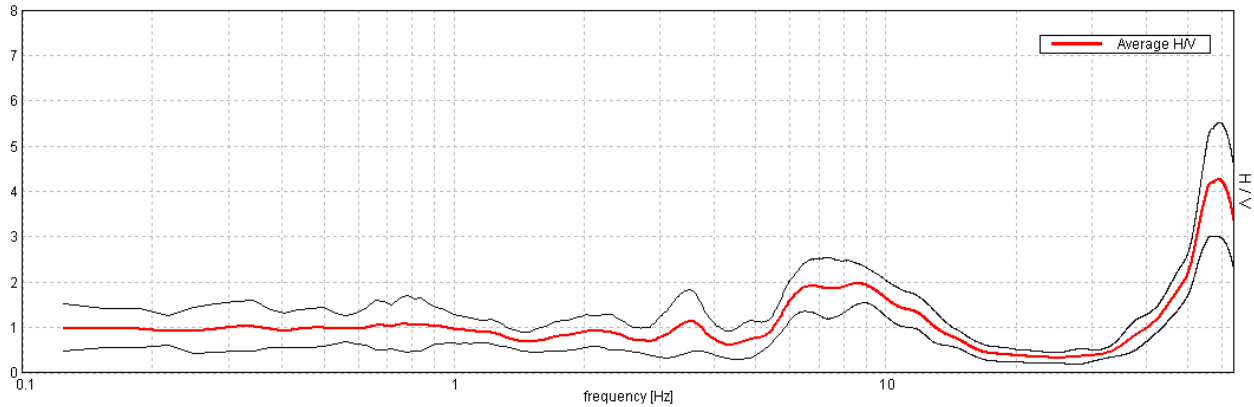


**MONTE SAN PIETRO, 037042P38HVSR38**

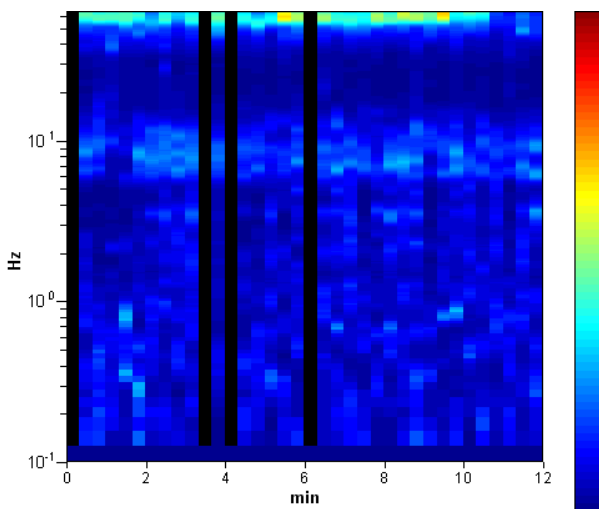
Instrument: TRZ-0108/01-10  
 Start recording: 10/05/13 09:55:45      End recording: 10/05/13 10:07:46  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 89% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

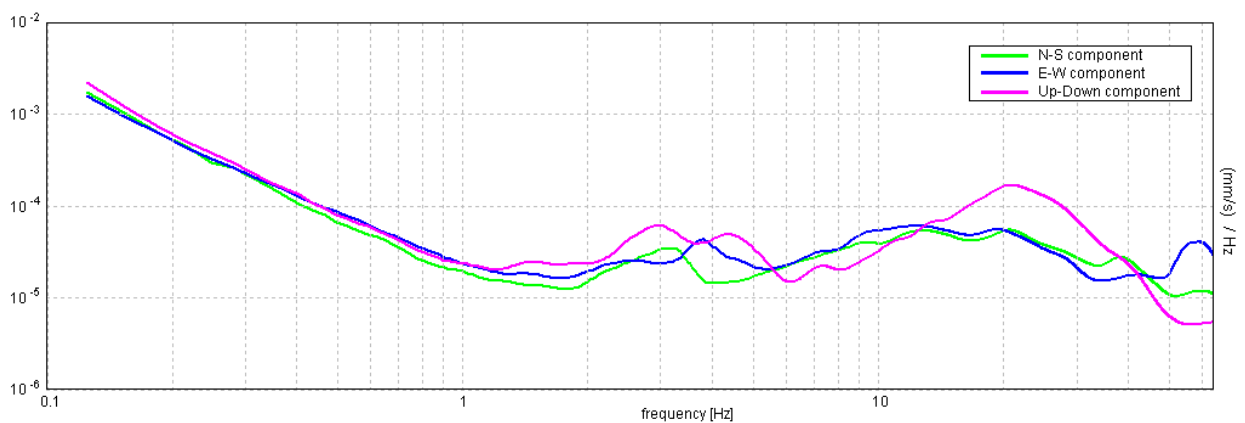
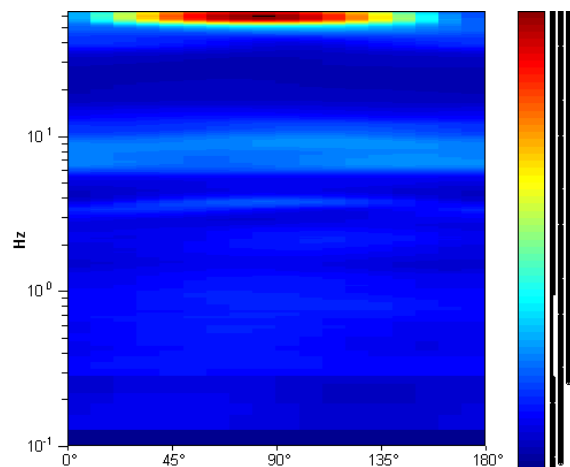
Max. H/V at 8.56 ± 0.14 Hz. (In the range 0.0 - 30.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

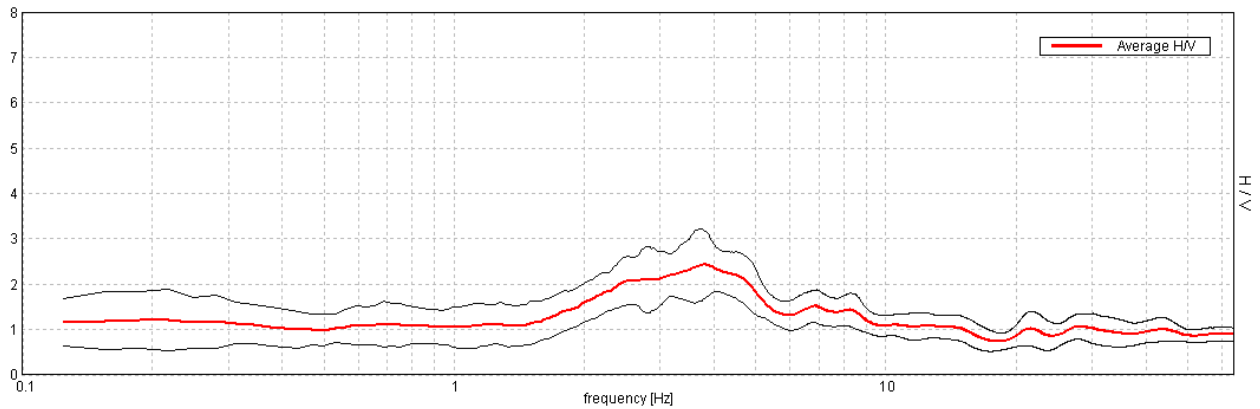


## MONTE SAN PIETRO, 037042P39HVSR39

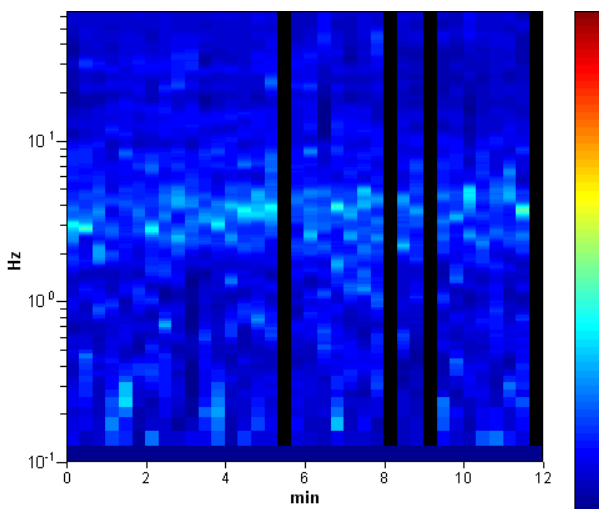
Instrument: TRZ-0108/01-10  
 Start recording: 10/05/13 10:14:26      End recording: 10/05/13 10:26:27  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 89% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

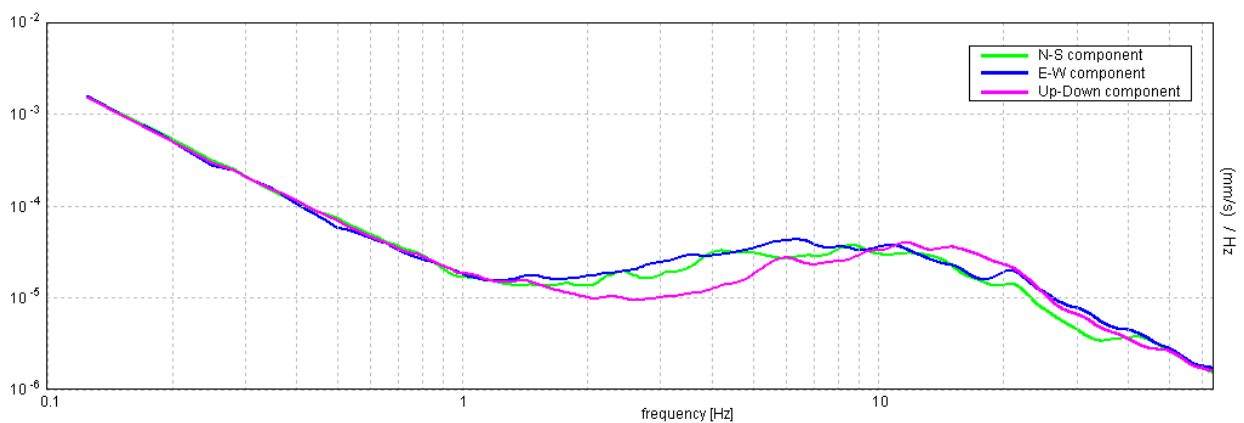
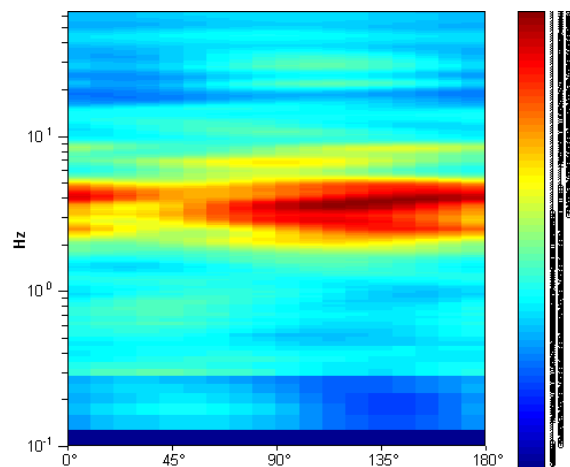
Max. H/V at  $3.75 \pm 0.24$  Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

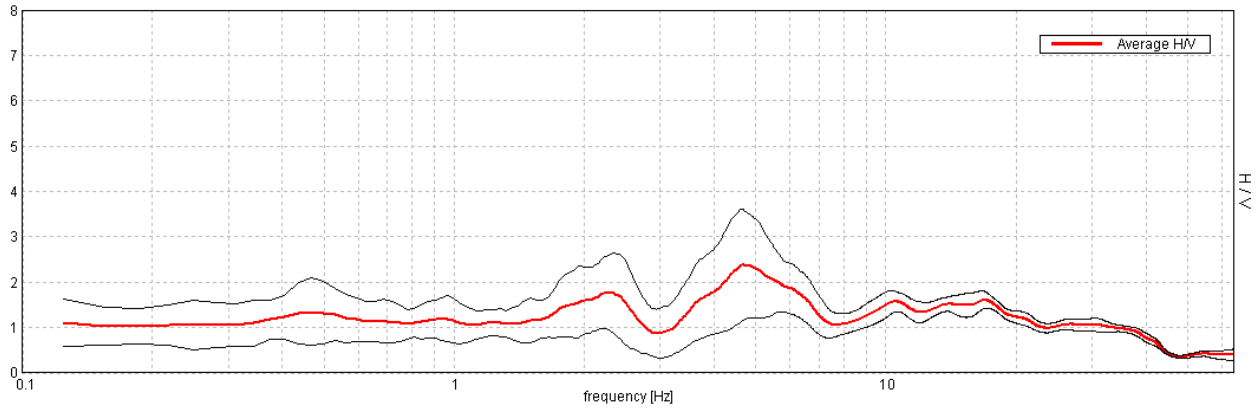


**MONTE SAN PIETRO, 037042P40HVSR40**

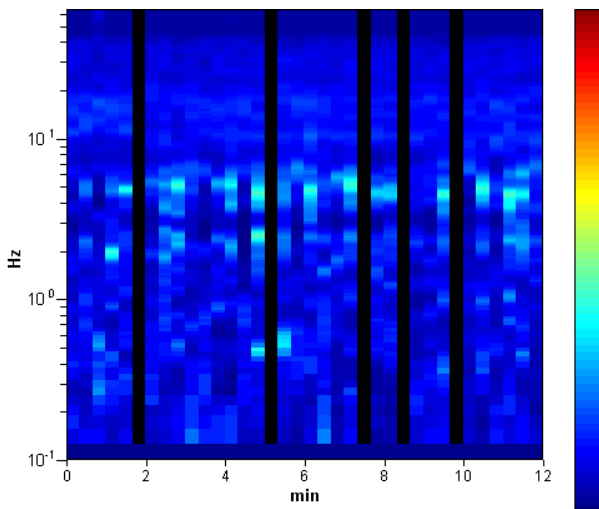
Instrument: TRZ-0108/01-10  
 Start recording: 10/05/13 10:29:44      End recording: 10/05/13 10:41:45  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 86% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

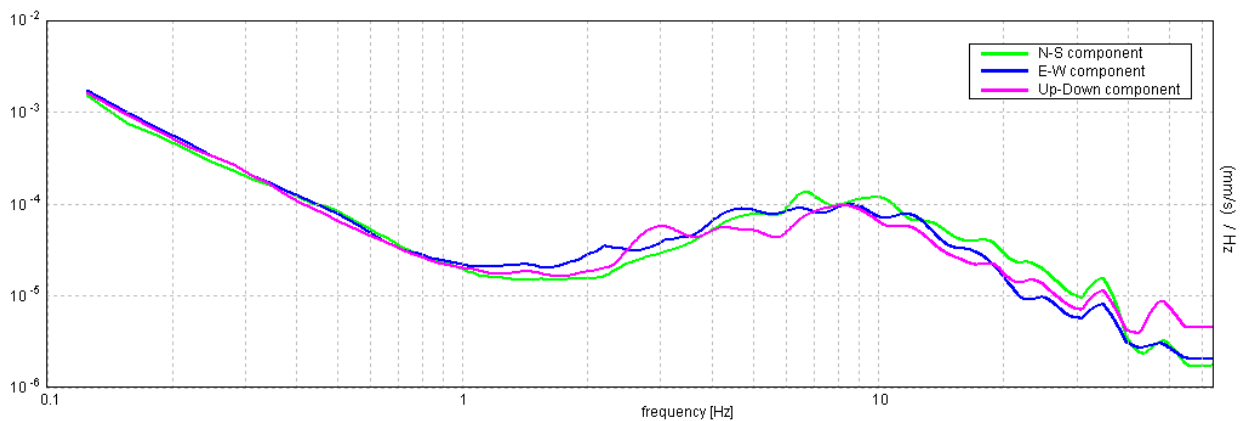
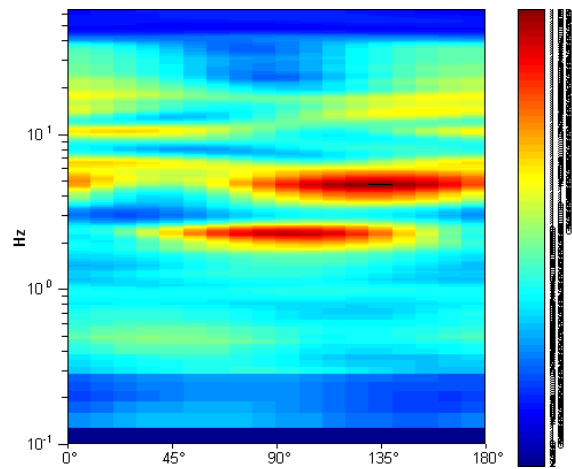
Max. H/V at 4.69 ± 1.03 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

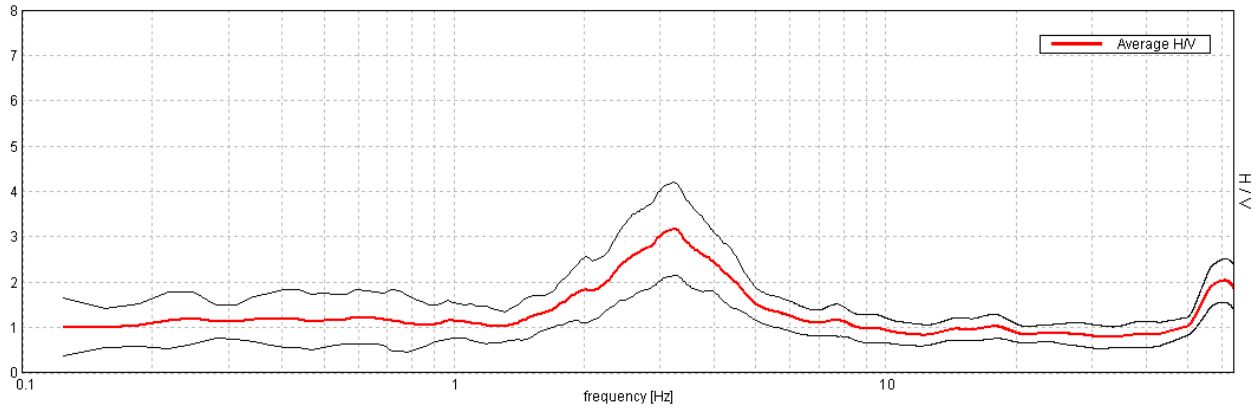


**MONTE SAN PIETRO, 037042P41HVSR41**

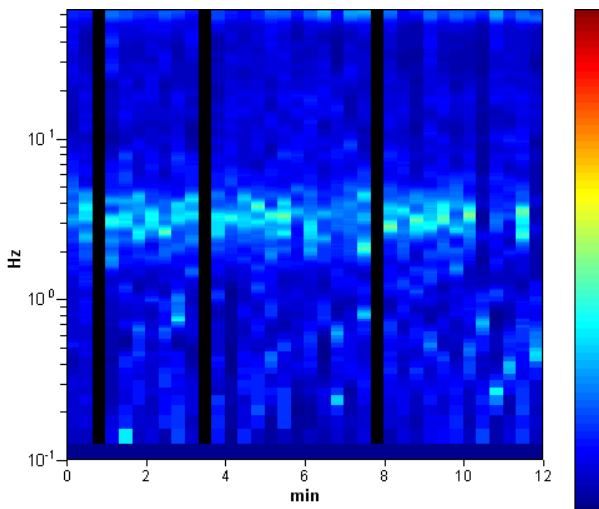
Instrument: TRZ-0108/01-10  
 Start recording: 10/05/13 10:48:15      End recording: 10/05/13 11:00:16  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 92% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

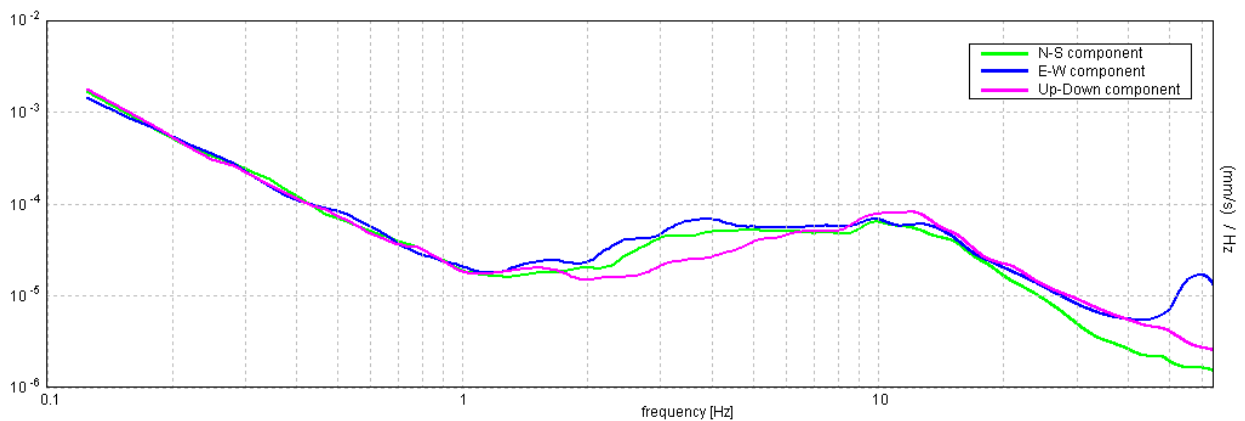
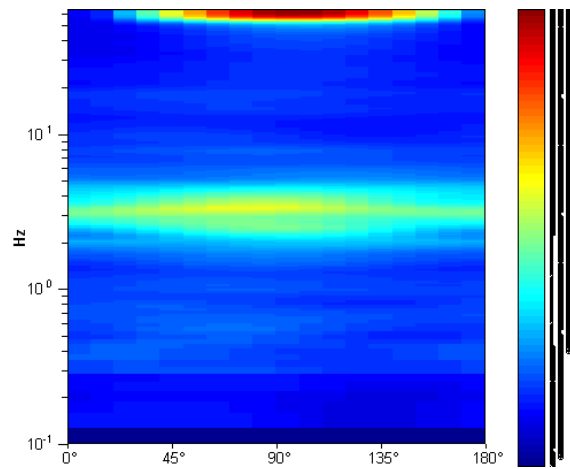
Max. H/V at 3.22 ± 0.02 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

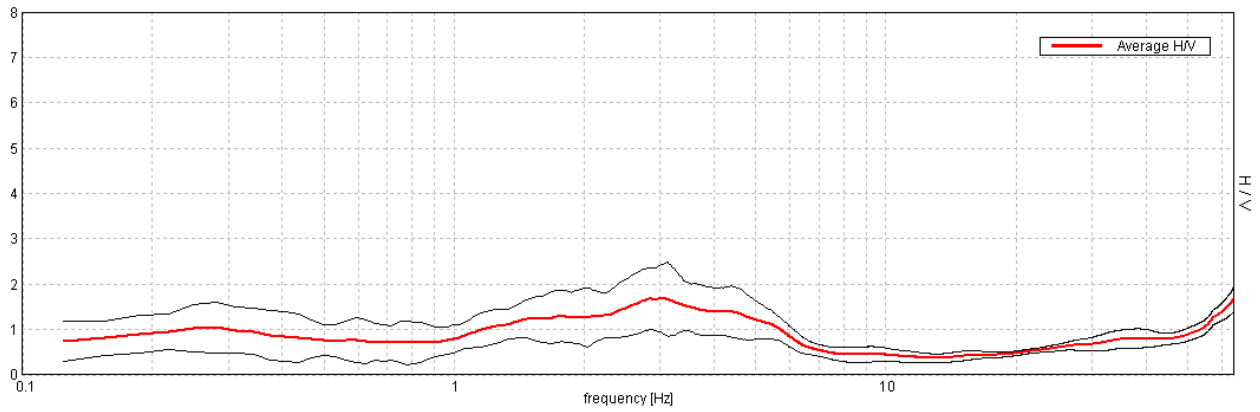


**MONTE SAN PIETRO, 037042P43HVSR43**

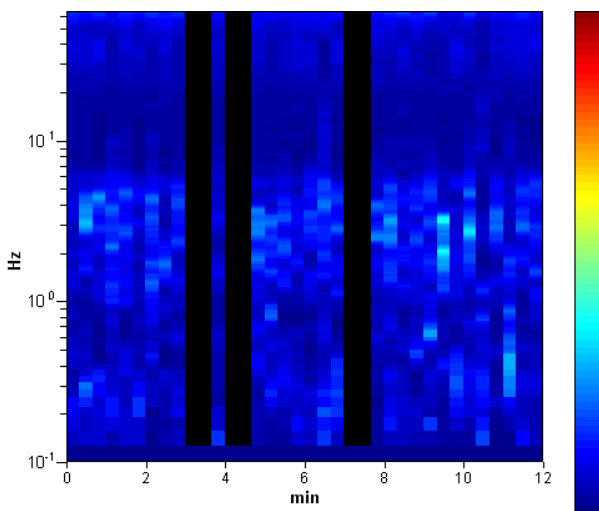
Instrument: TRZ-0108/01-10  
 Start recording: 10/05/13 12:59:19      End recording: 10/05/13 13:11:20  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 83% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

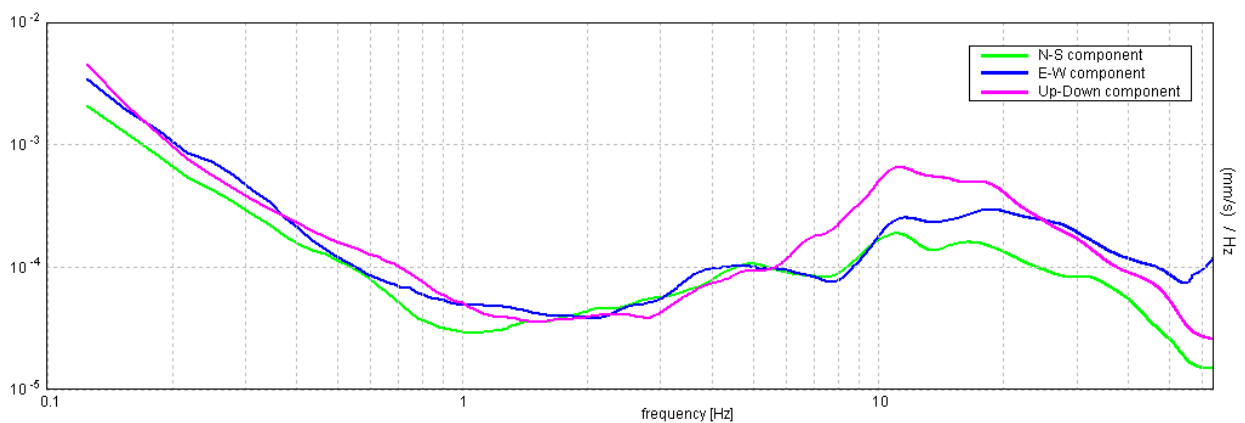
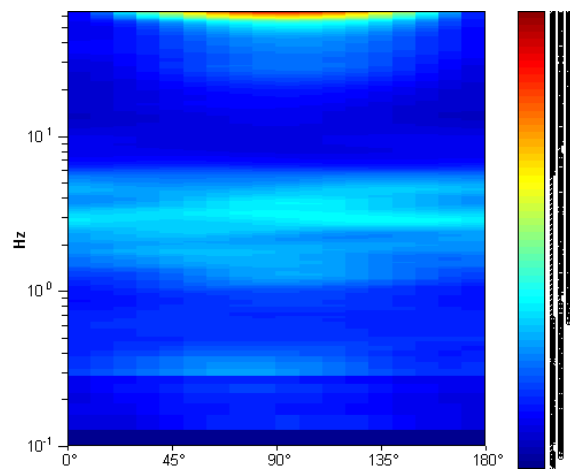
Max. H/V at 2.84 ± 0.35 Hz. (In the range 0.0 - 40.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

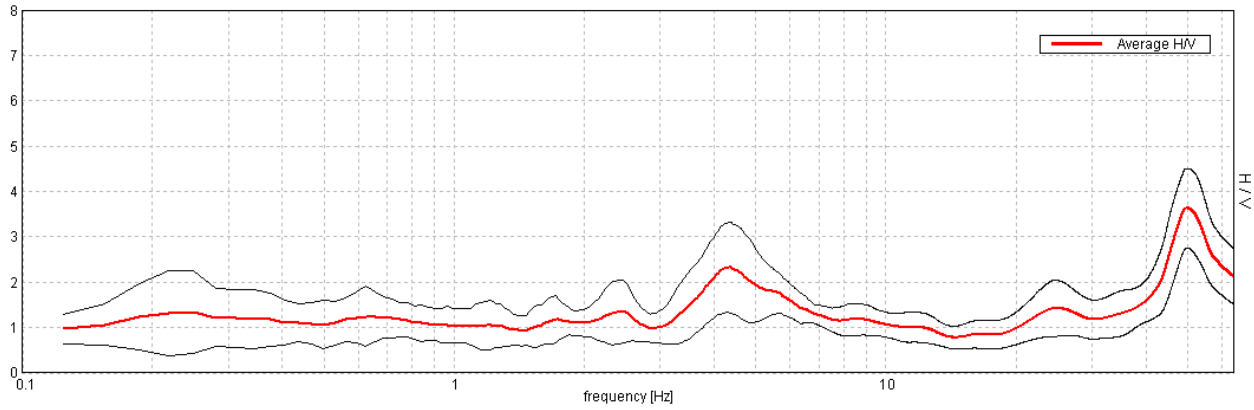


**MONTE SAN PIETRO, 037042P44HVSR44**

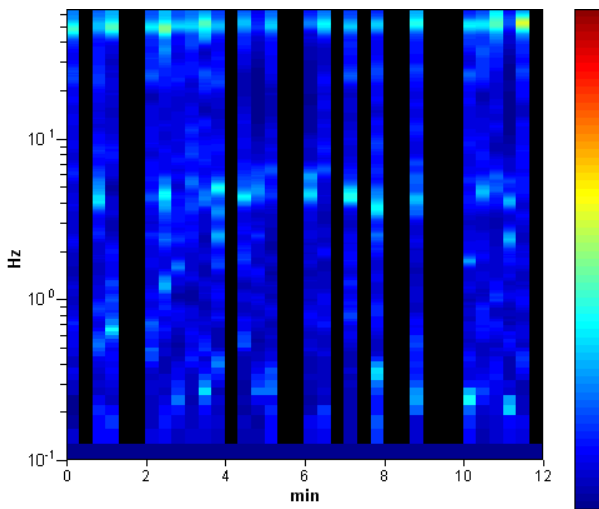
Instrument: TRZ-0108/01-10  
 Start recording: 10/05/13 13:16:25      End recording: 10/05/13 13:28:26  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 61% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

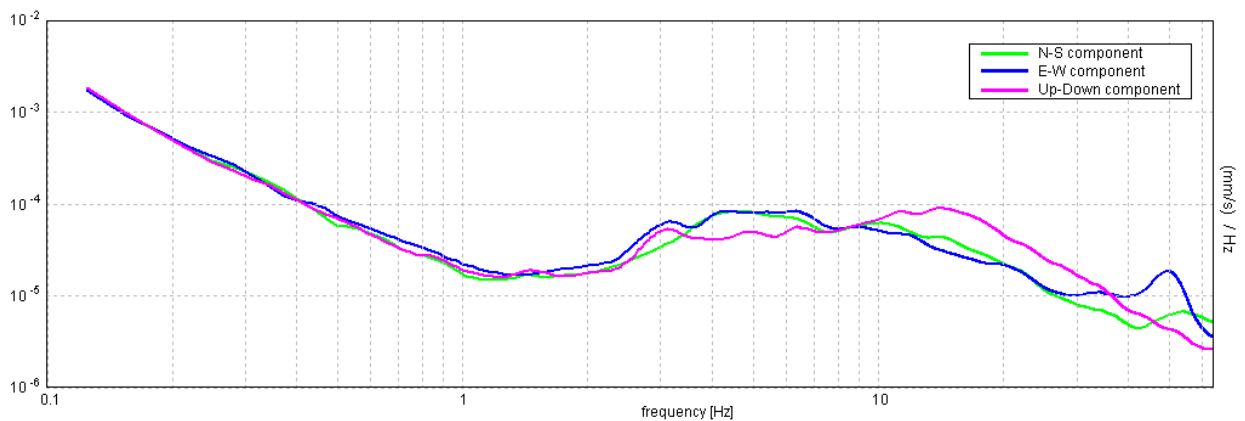
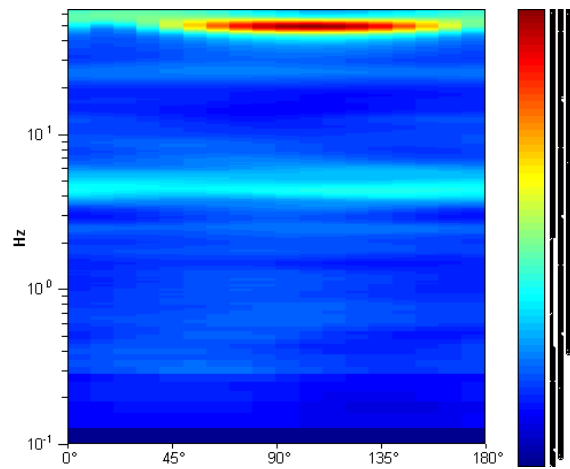
Max. H/V at 4.34 ± 1.92 Hz. (In the range 0.0 - 30.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

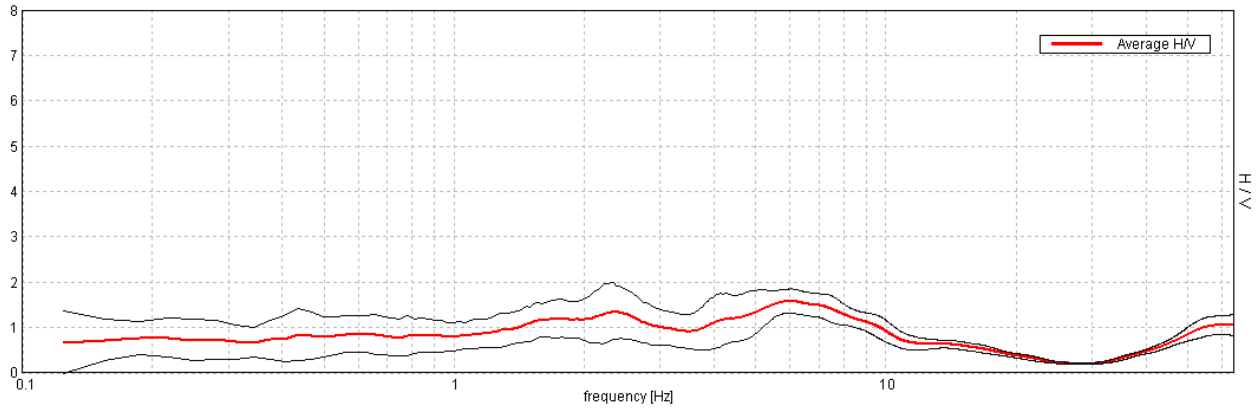


**MONTE SAN PIETRO, 037042P45HVSR45**

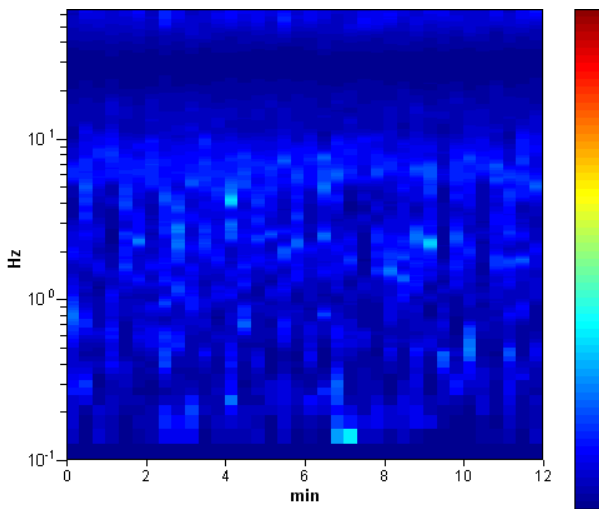
Instrument: TRZ-0108/01-10  
 Start recording: 10/05/13 13:57:10      End recording: 10/05/13 14:09:11  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analysis performed on the entire trace.  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

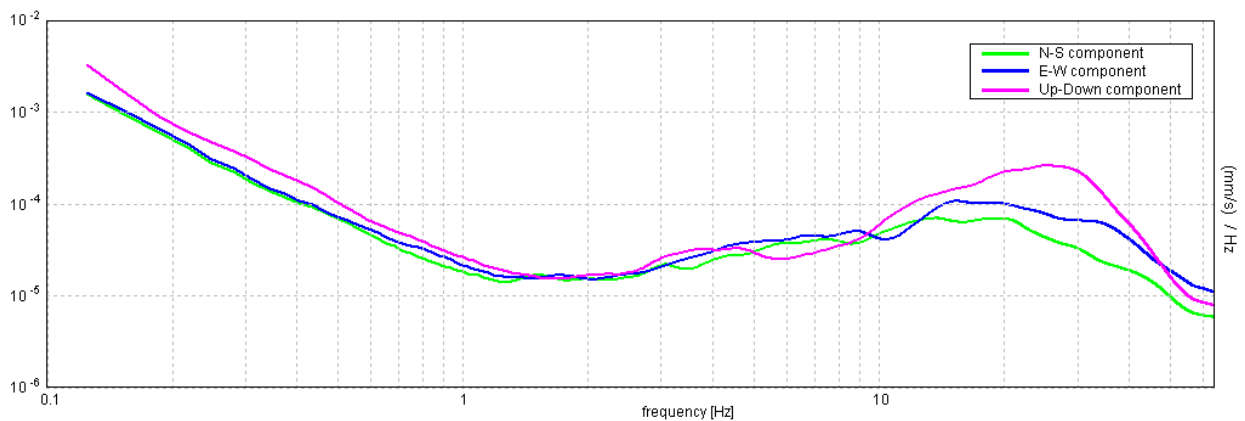
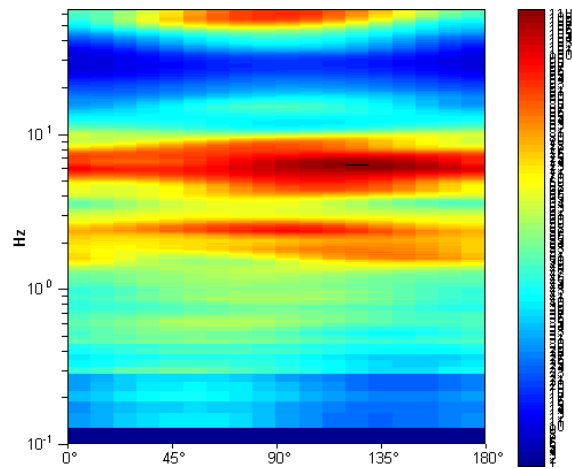
Max. H/V at 5.97 ± 0.42 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**



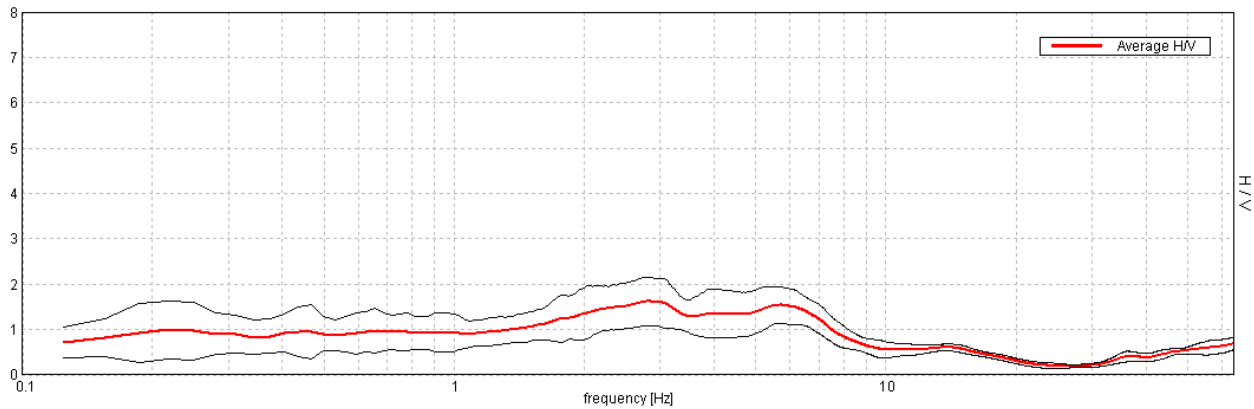


**MONTE SAN PIETRO, 037042P46HVSR46**

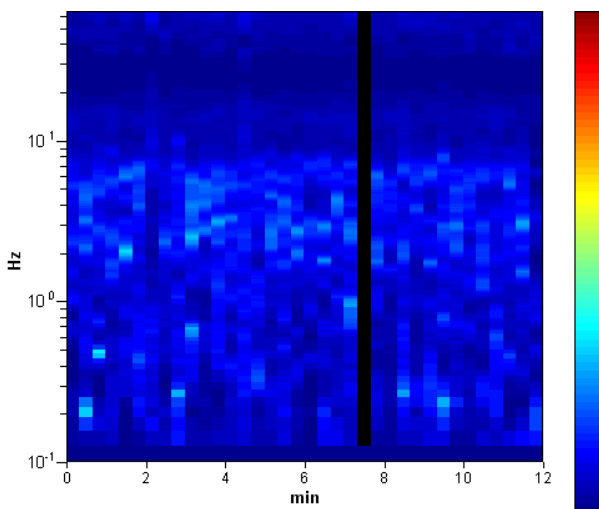
Instrument: TRZ-0108/01-10  
 Start recording: 10/05/13 14:12:34      End recording: 10/05/13 14:24:35  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 97% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

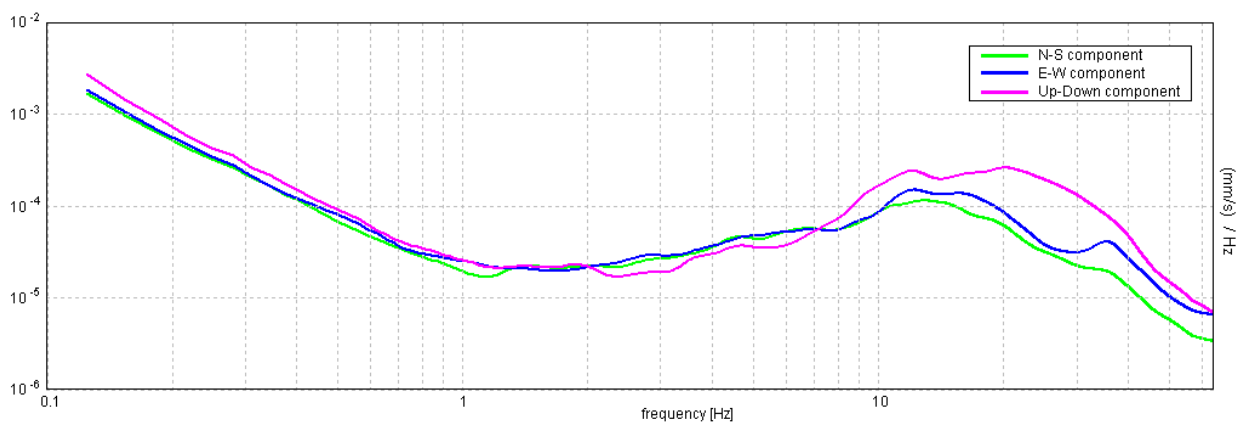
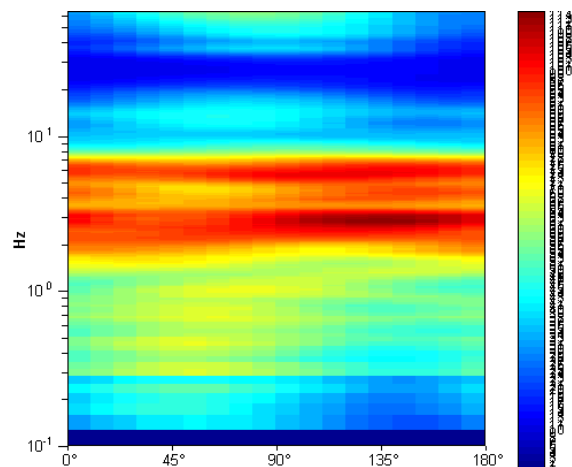
Max. H/V at  $2.81 \pm 0.49$  Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

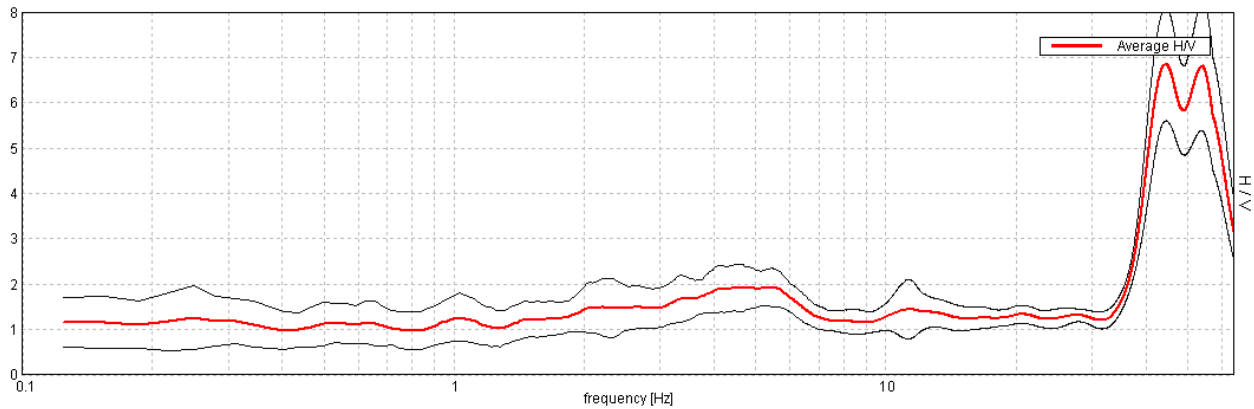


**MONTE SAN PIETRO, 037042P47HVSR47**

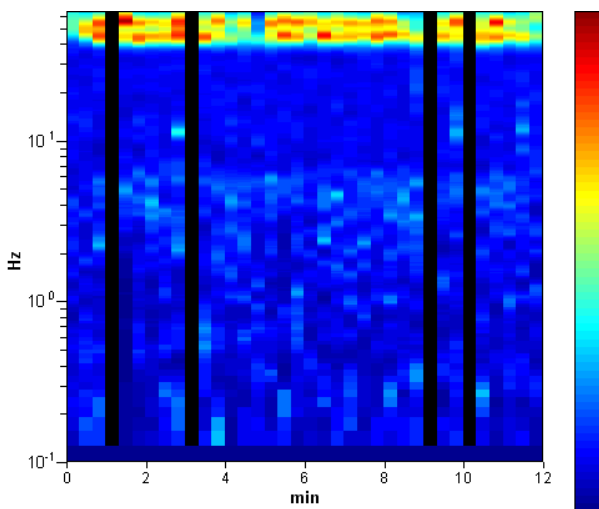
Instrument: TRZ-0108/01-10  
 Start recording: 10/05/13 14:33:08      End recording: 10/05/13 14:45:09  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 89% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

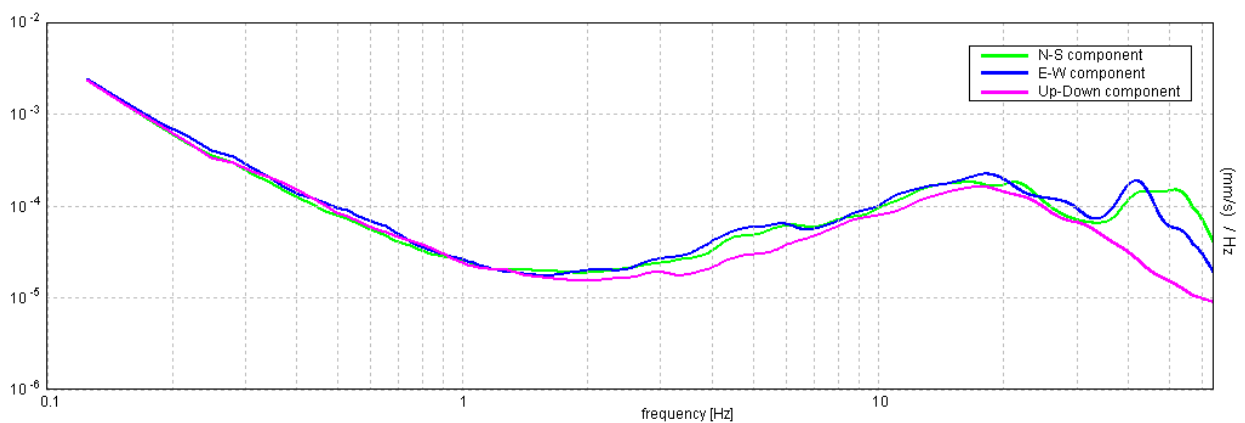
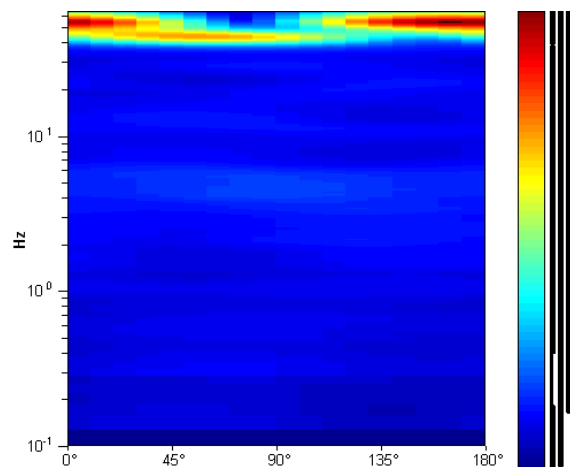
Max. H/V at 5.38 ± 0.36 Hz. (In the range 0.0 - 30.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

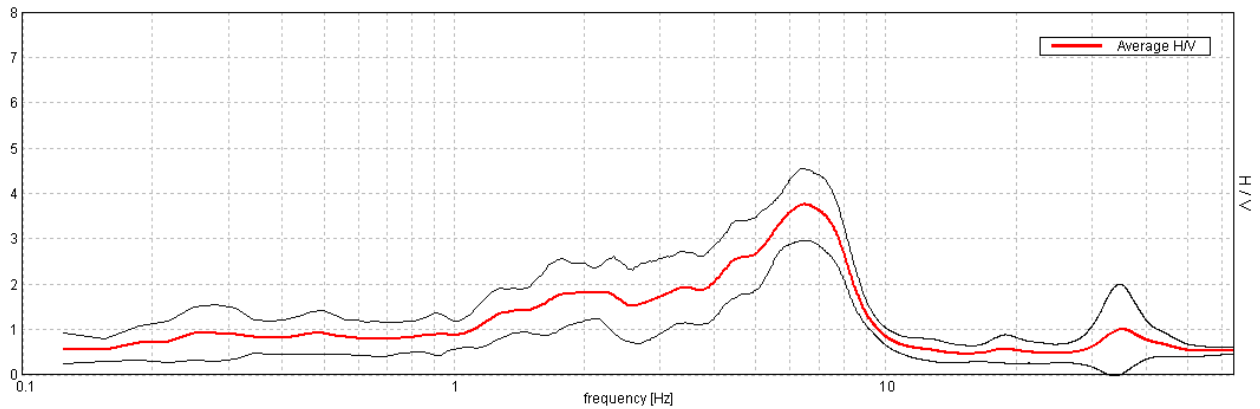


## MONTE SAN PIETRO, 037042P48HVSR48

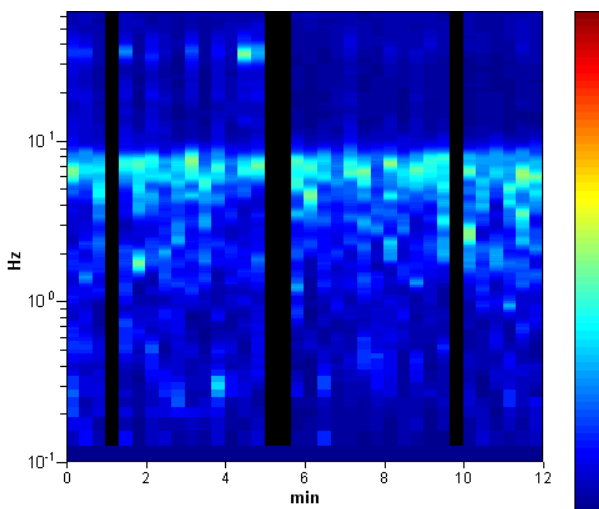
Instrument: TRZ-0108/01-10  
Start recording: 10/05/13 14:50:32      End recording: 10/05/13 15:02:33  
Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
Trace length: 0h12'00".      Analyzed 89% trace (manual window selection)  
Sampling rate: 128 Hz  
Window size: 20 s  
Smoothing type: Triangular window  
Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

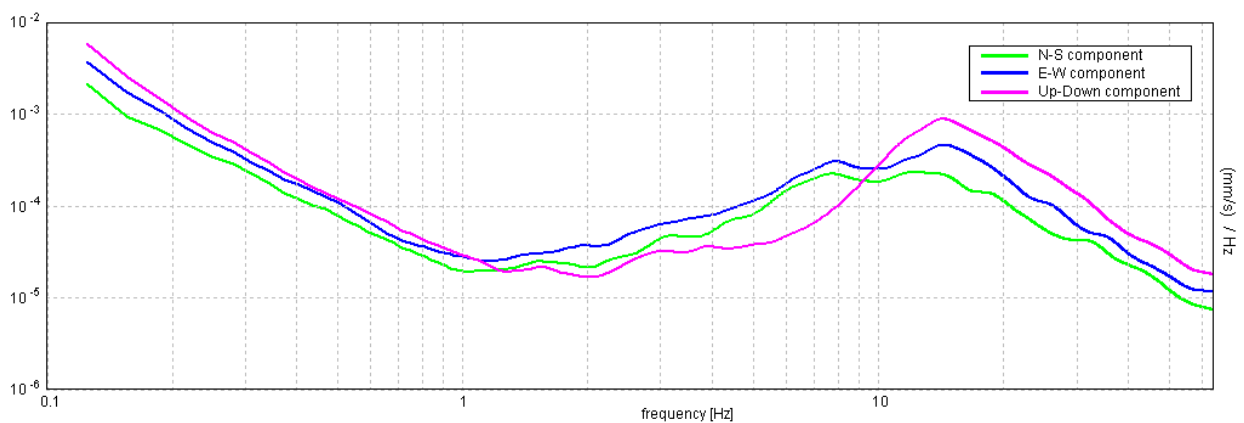
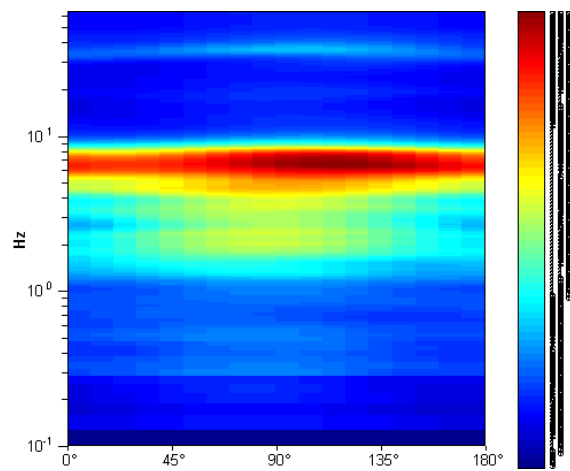
Max. H/V at  $6.5 \pm 0.08$  Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

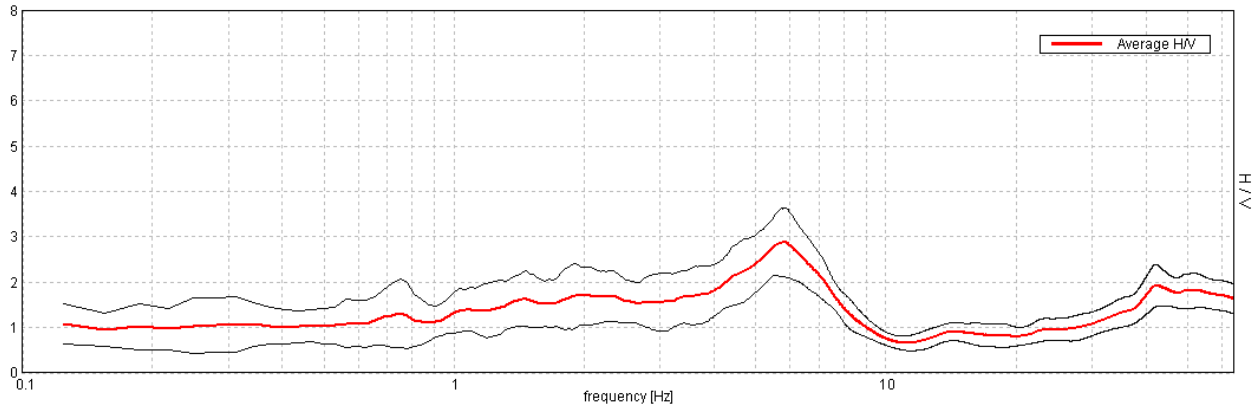


**MONTE SAN PIETRO, 037042P49HVSR49**

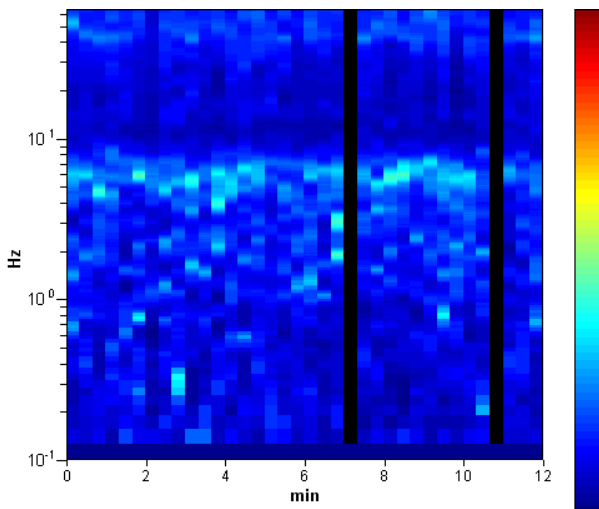
Instrument: TRZ-0108/01-10  
 Start recording: 10/05/13 15:05:54      End recording: 10/05/13 15:17:55  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 94% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

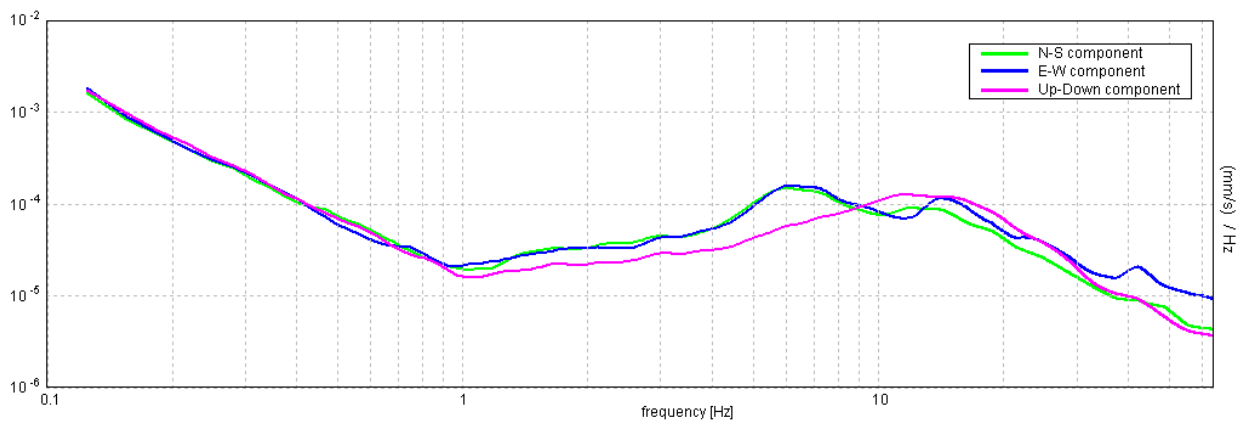
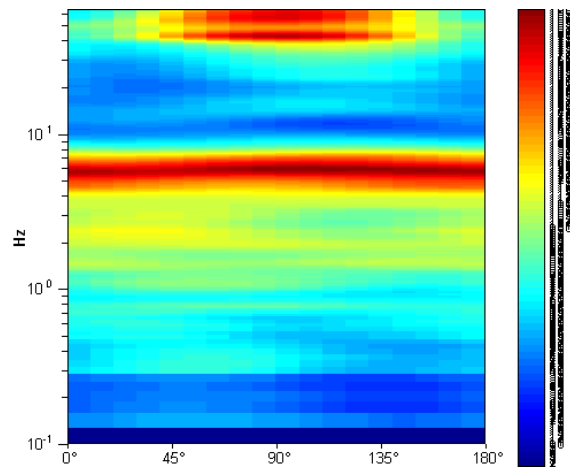
Max. H/V at 5.81 ± 0.03 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

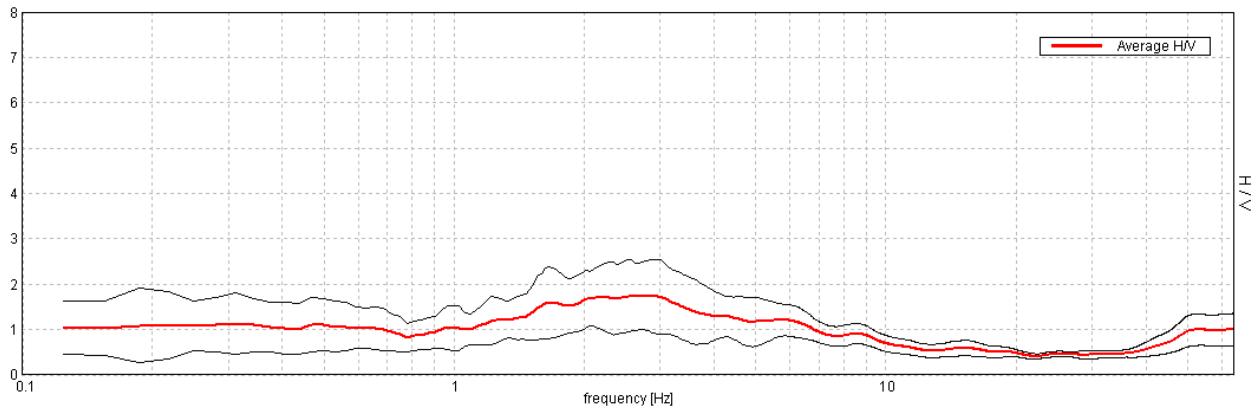


**MONTE SAN PIETRO, 037042P50HVSR50**

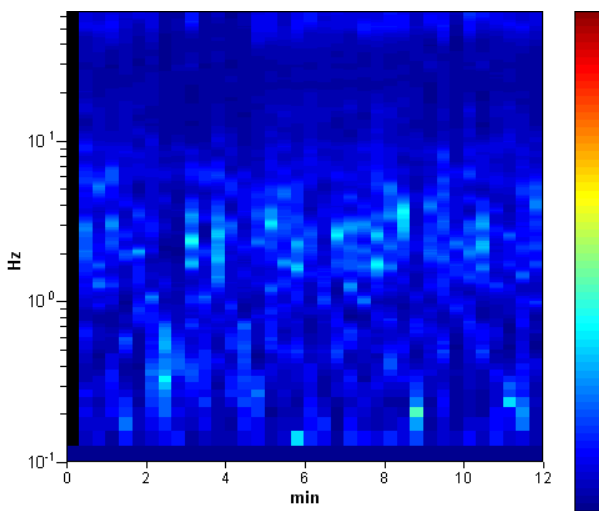
Instrument: TRZ-0108/01-10  
 Start recording: 13/05/13 08:23:30      End recording: 13/05/13 08:35:31  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 97% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

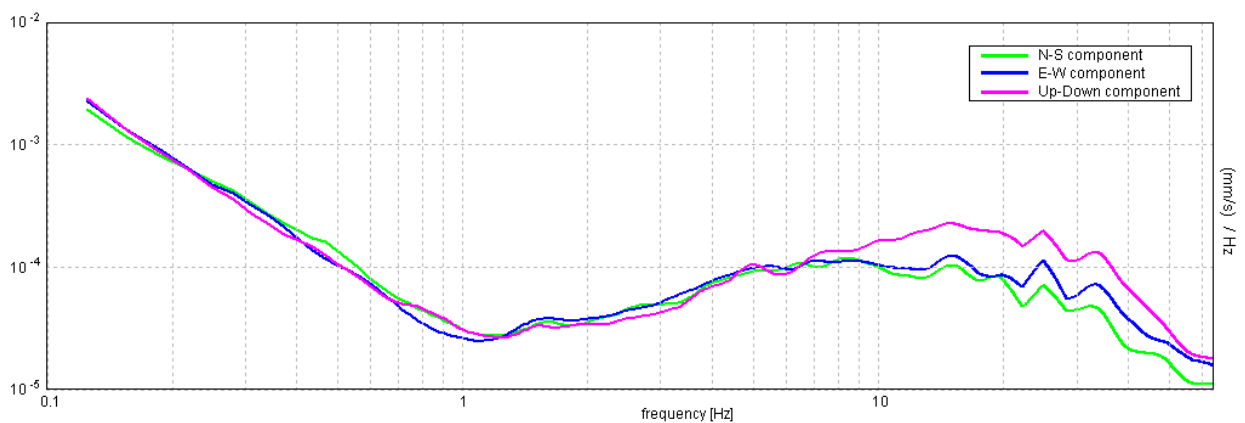
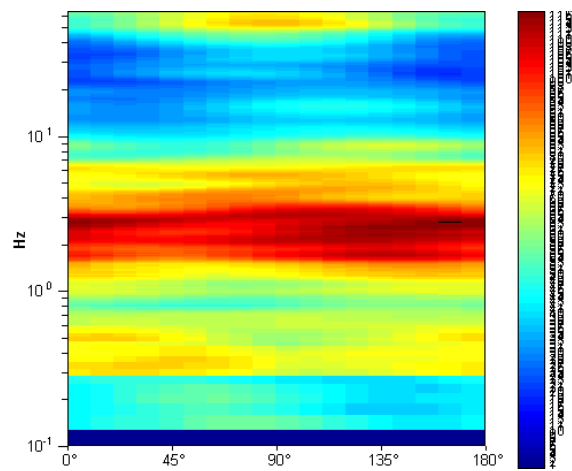
Max. H/V at 2.78 ± 0.21 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

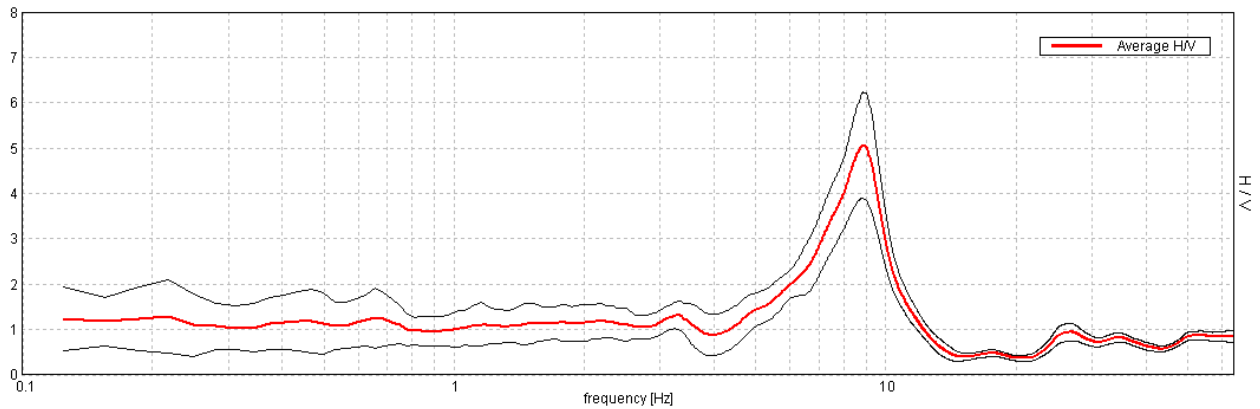


**MONTE SAN PIETRO, 037042P51HVSR51**

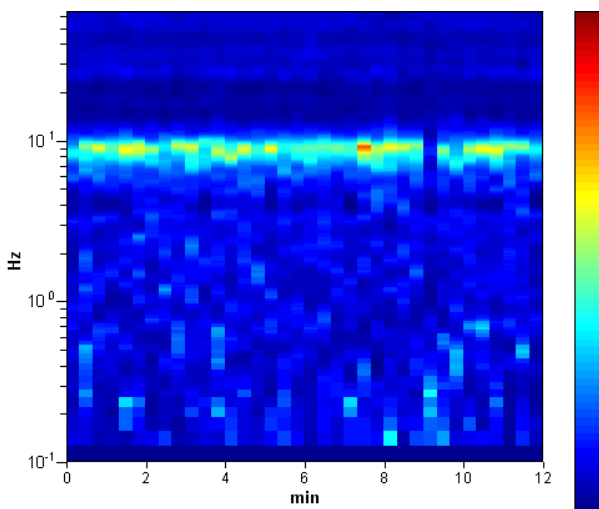
Instrument: TRZ-0108/01-10  
 Start recording: 13/05/13 08:40:53      End recording: 13/05/13 08:52:54  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analysis performed on the entire trace.  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

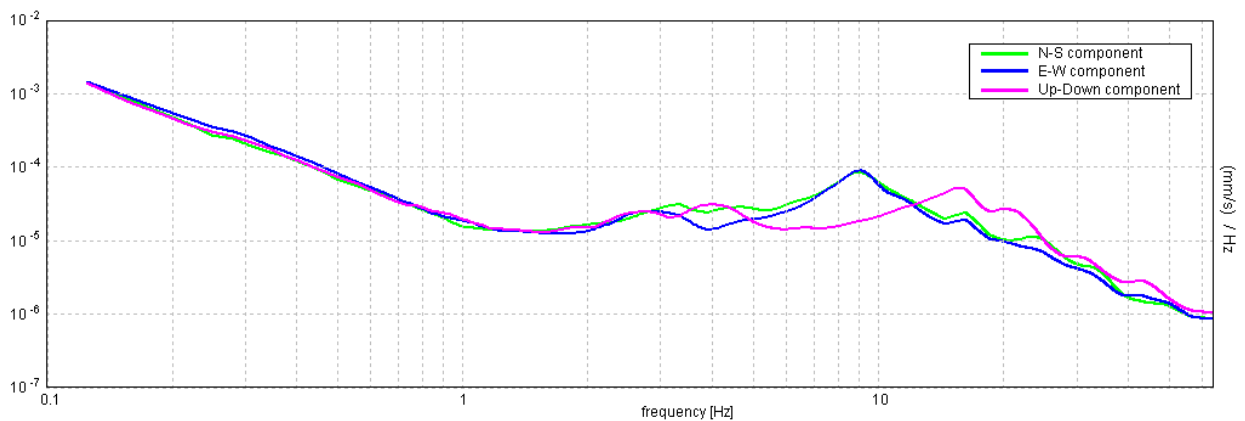
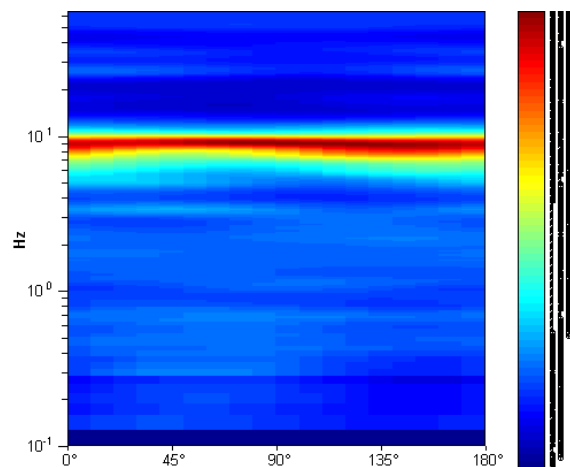
Max. H/V at 8.84 ± 0.04 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

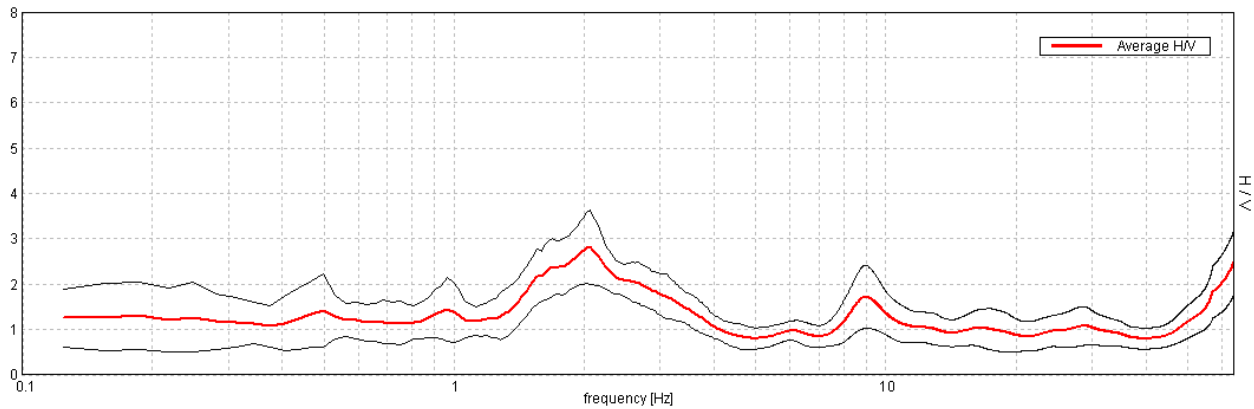


**MONTE SAN PIETRO, 037042P53HVSR53**

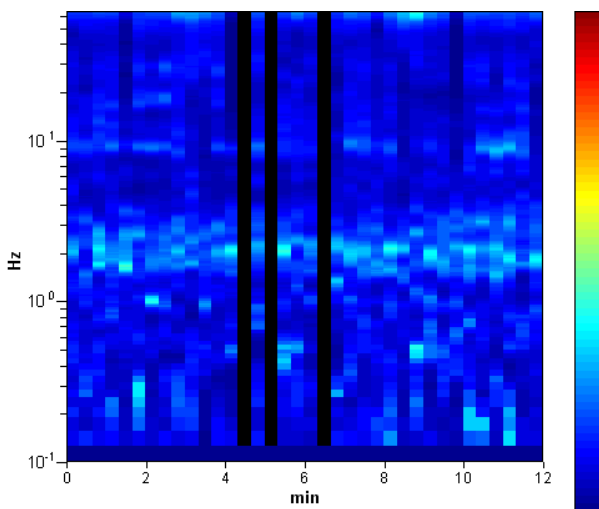
Instrument: TRZ-0108/01-10  
 Start recording: 28/05/13 10:19:27      End recording: 28/05/13 10:31:28  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 92% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

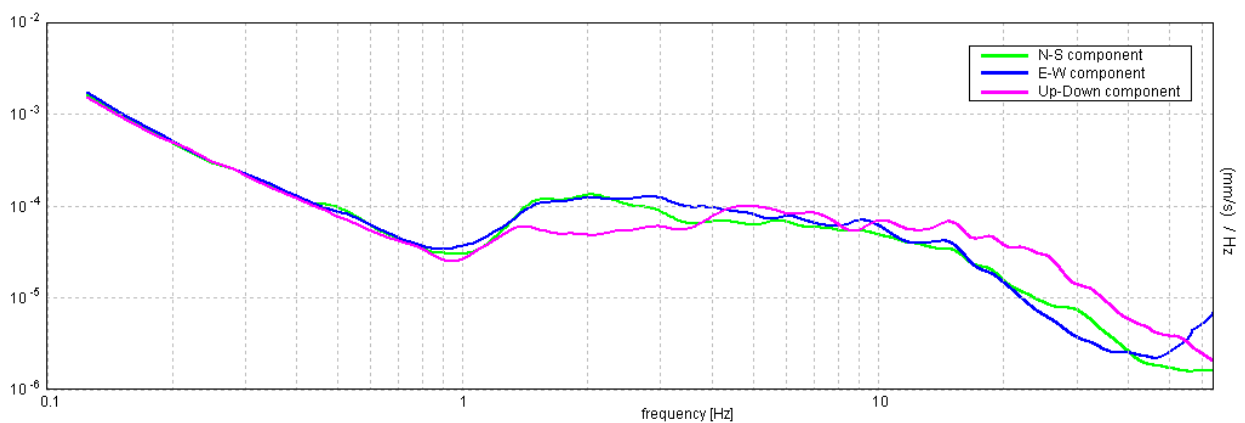
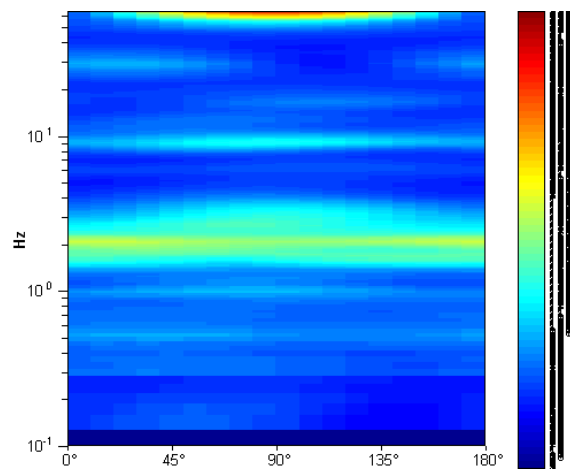
Max. H/V at 2.06 ± 0.03 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

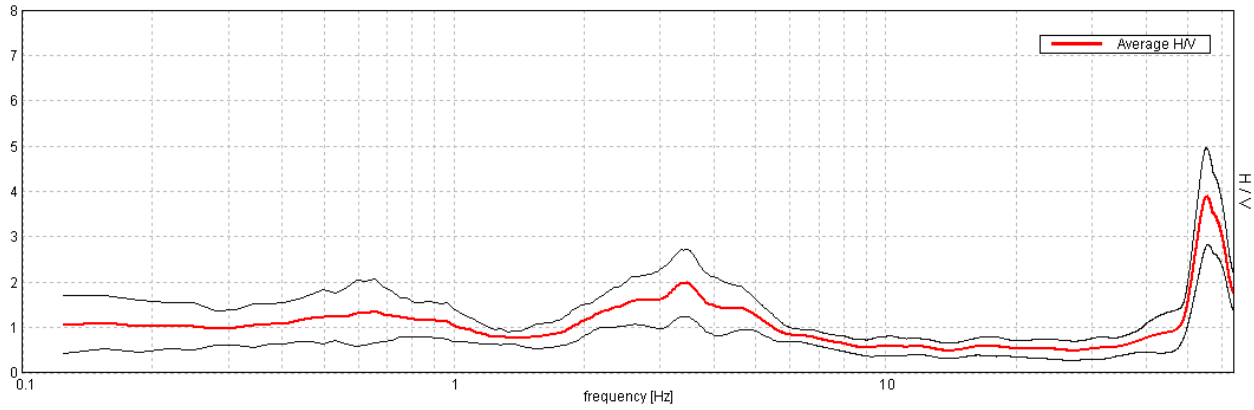


**MONTE SAN PIETRO, 037042P54HVSR54**

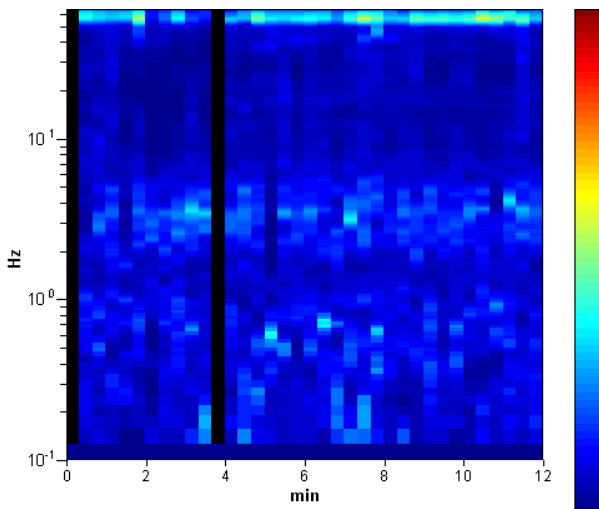
Instrument: TRZ-0108/01-10  
 Start recording: 28/05/13 10:48:28      End recording: 28/05/13 11:00:29  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 94% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

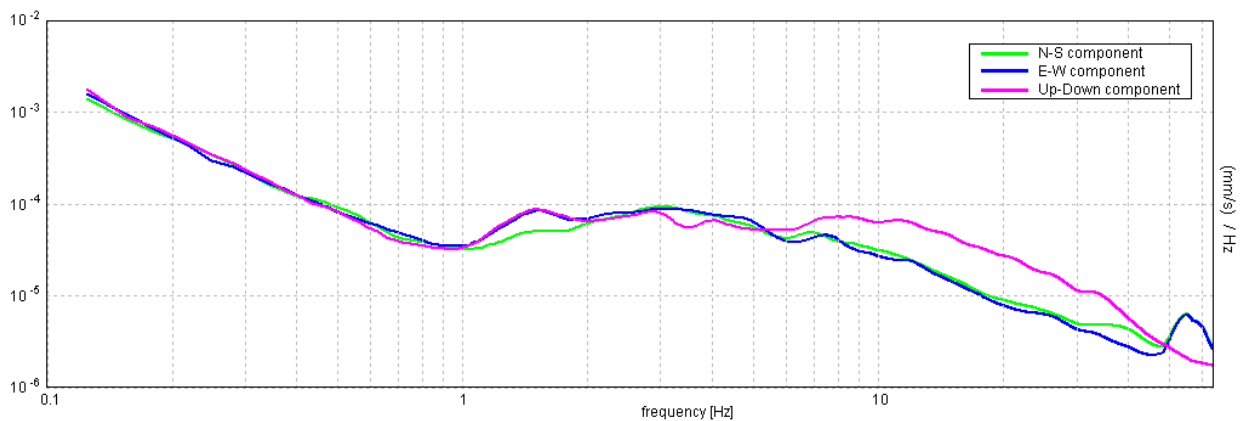
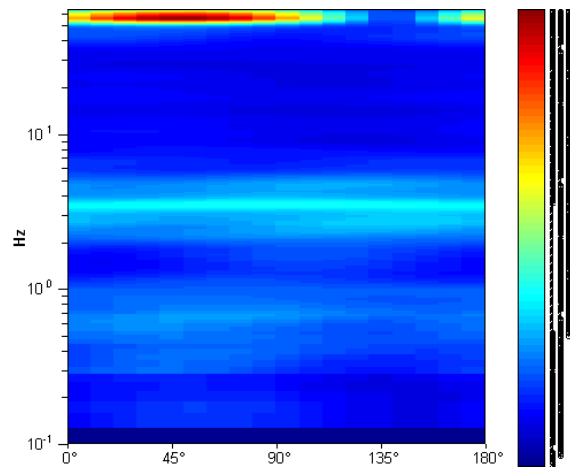
Max. H/V at  $3.38 \pm 0.34$  Hz. (In the range 0.0 - 40.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**



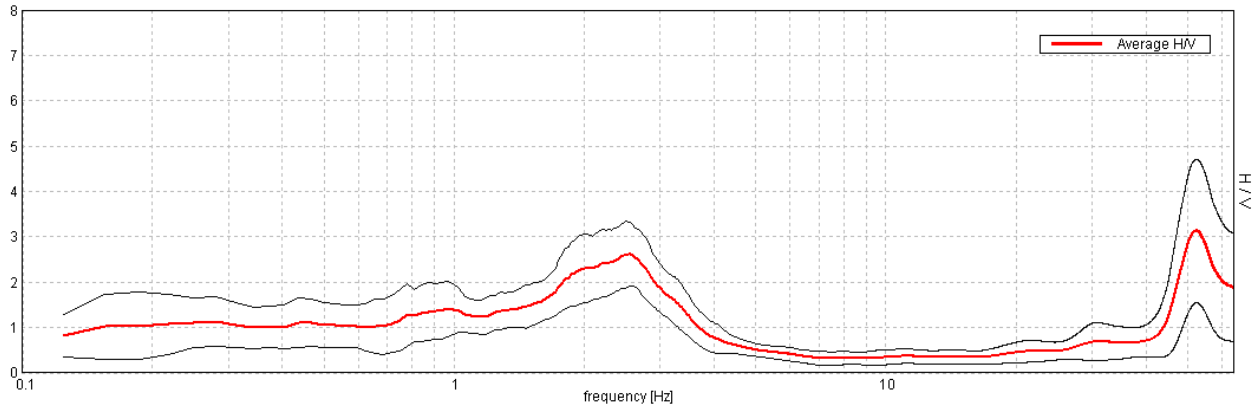


**MONTE SAN PIETRO, 037042P55HVSR55**

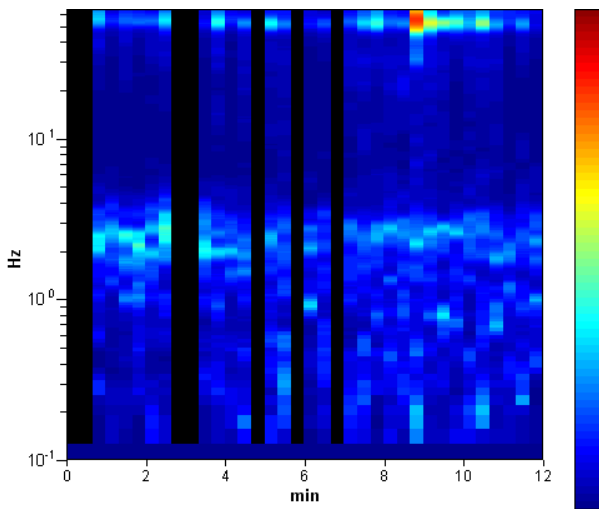
Instrument: TRZ-0108/01-10  
 Start recording: 28/05/13 11:10:44      End recording: 28/05/13 11:22:45  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 81% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

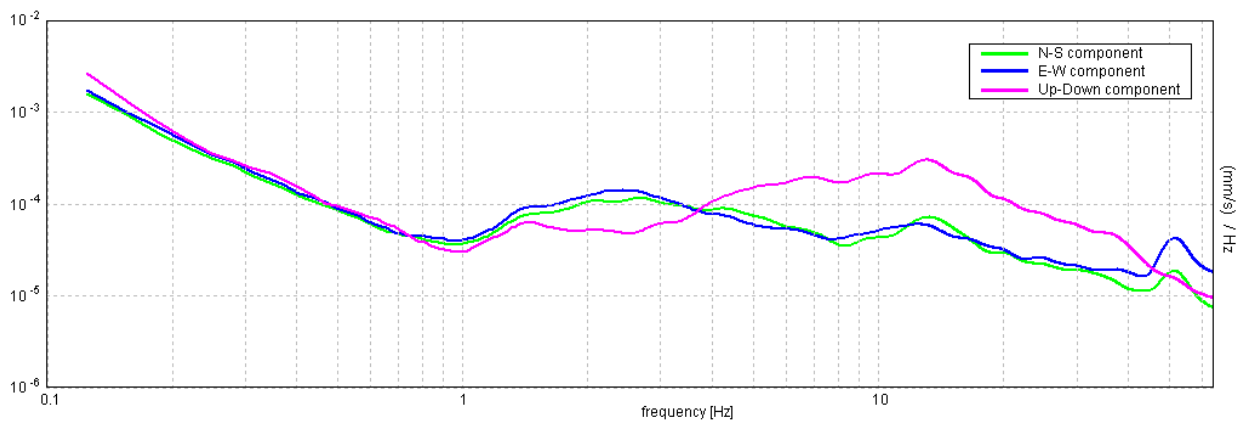
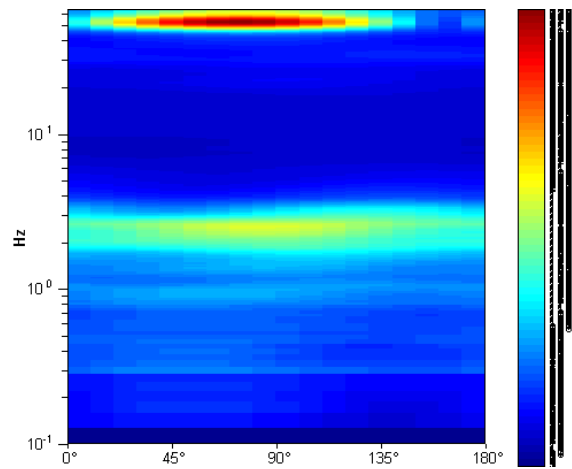
Max. H/V at  $2.56 \pm 0.06$  Hz. (In the range 0.0 - 40.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

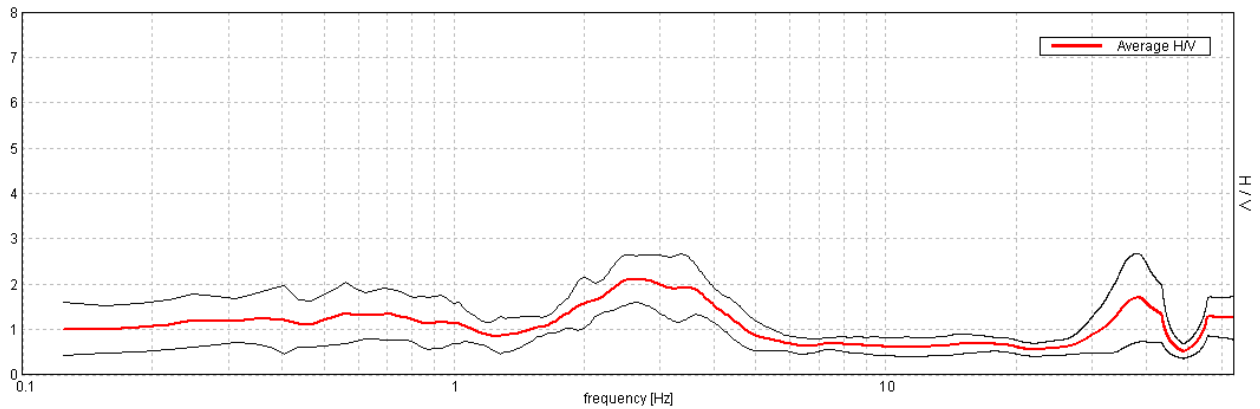


## MONTE SAN PIETRO, 037042P56HVSR56

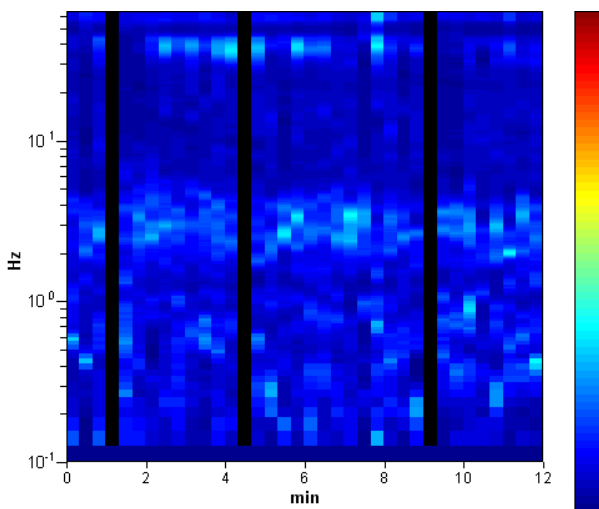
Instrument: TRZ-0108/01-10  
Start recording: 28/05/13 11:29:35      End recording: 28/05/13 11:41:36  
Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
Trace length: 0h12'00".      Analyzed 92% trace (manual window selection)  
Sampling rate: 128 Hz  
Window size: 20 s  
Smoothing type: Triangular window  
Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

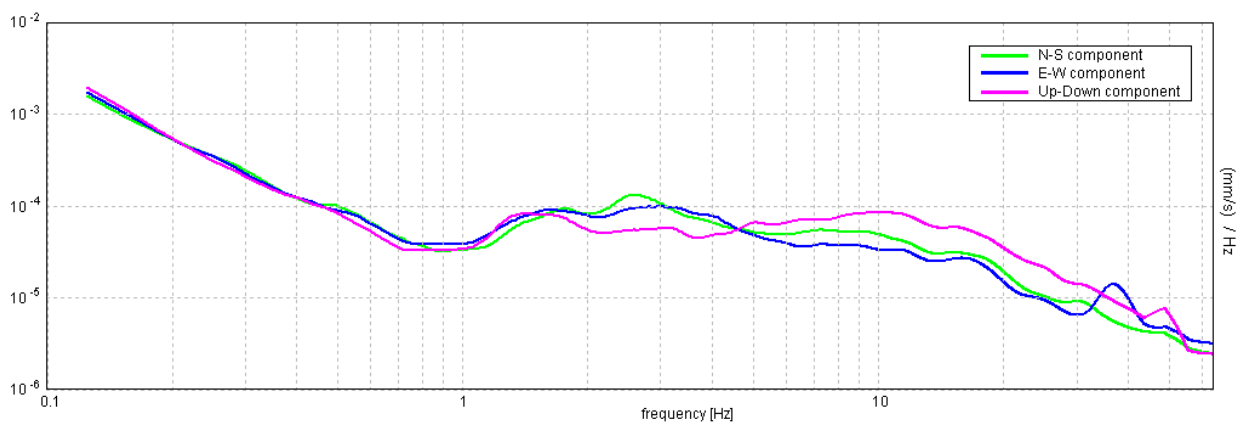
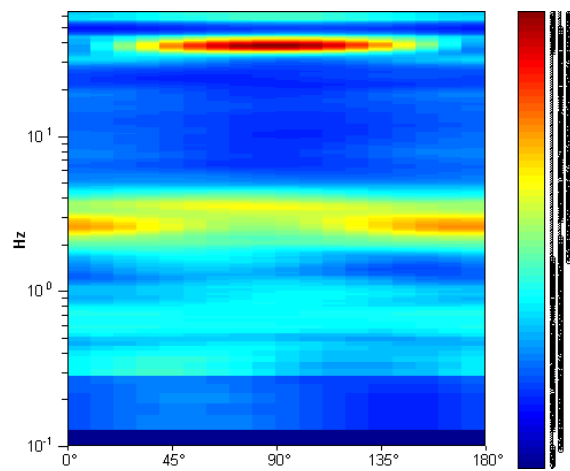
Max. H/V at 2.59 ± 0.23 Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

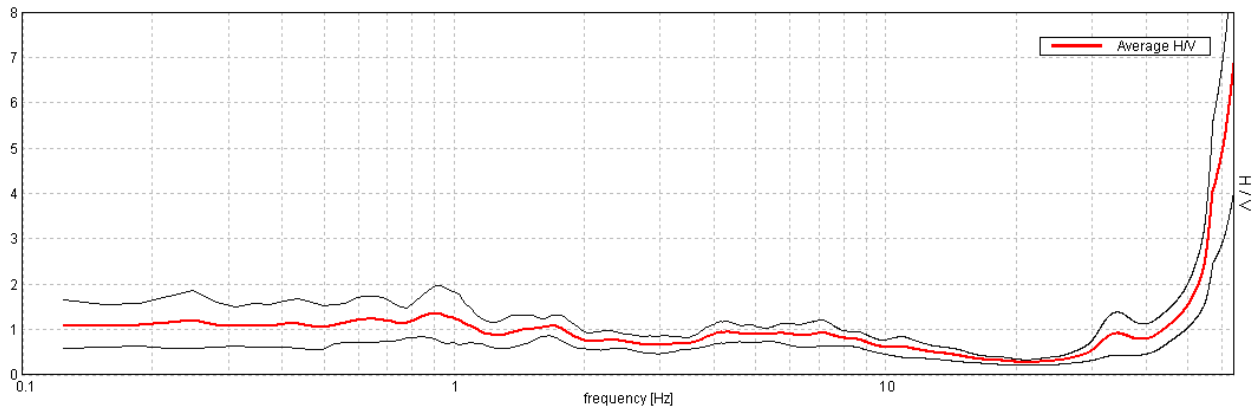


**MONTE SAN PIETRO, 037042P57HVSR57**

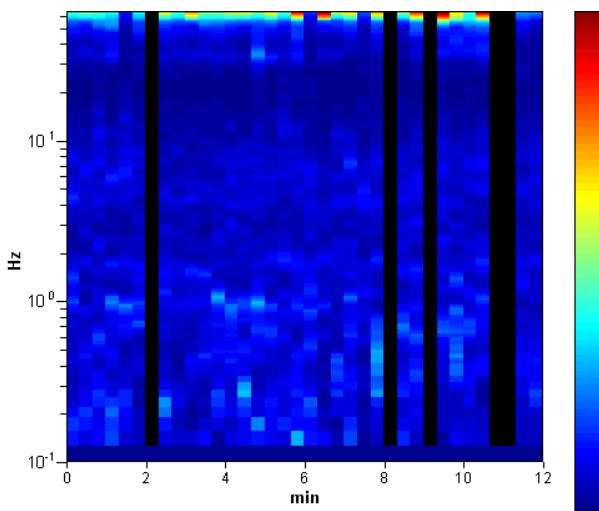
Instrument: TRZ-0108/01-10  
 Start recording: 28/05/13 11:49:17      End recording: 28/05/13 12:01:18  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 86% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

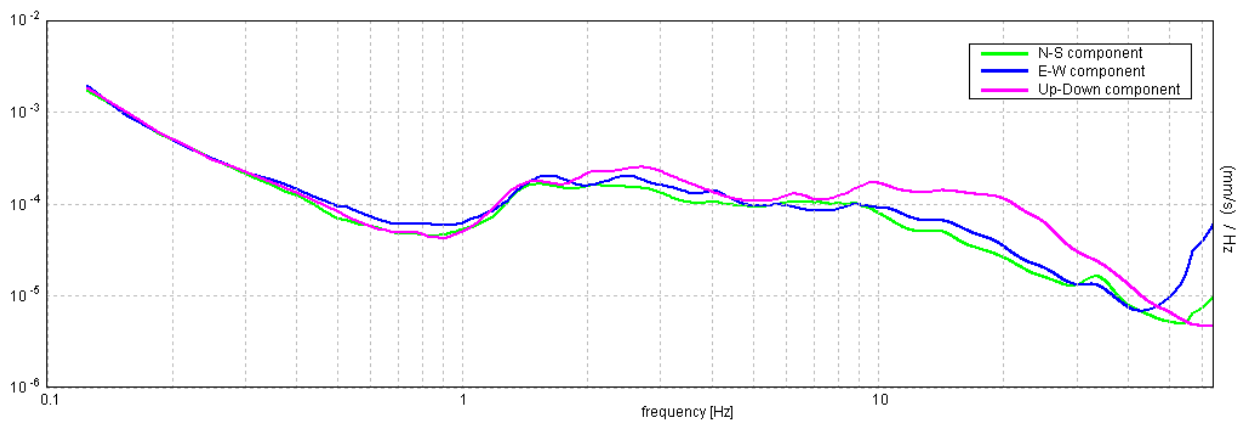
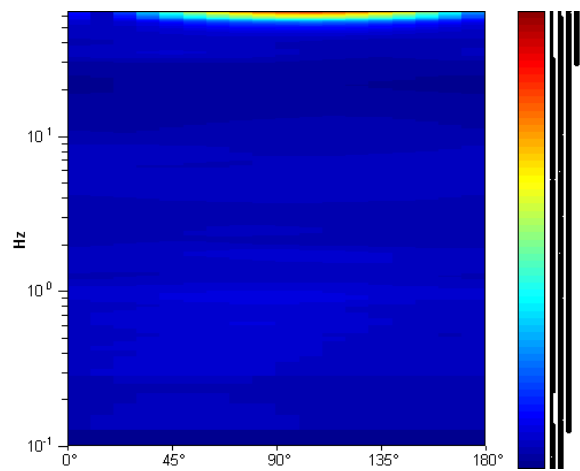
Max. H/V at  $0.91 \pm 0.09$  Hz. (In the range 0.0 - 20.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

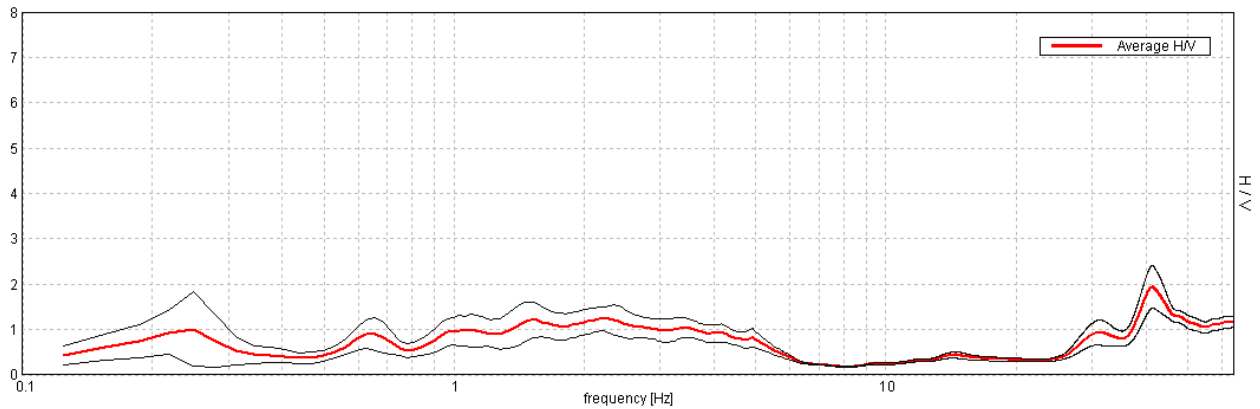


**MONTE SAN PIETRO, 037042P58HVSR58**

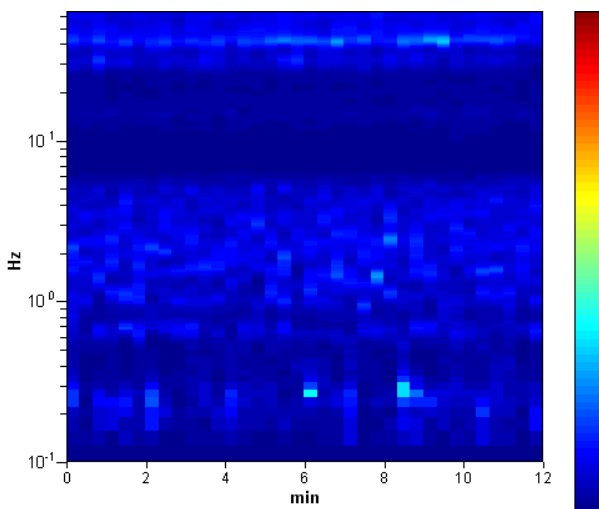
Instrument: TRZ-0108/01-10  
 Start recording: 28/05/13 12:06:26      End recording: 28/05/13 12:18:27  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analysis performed on the entire trace.  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

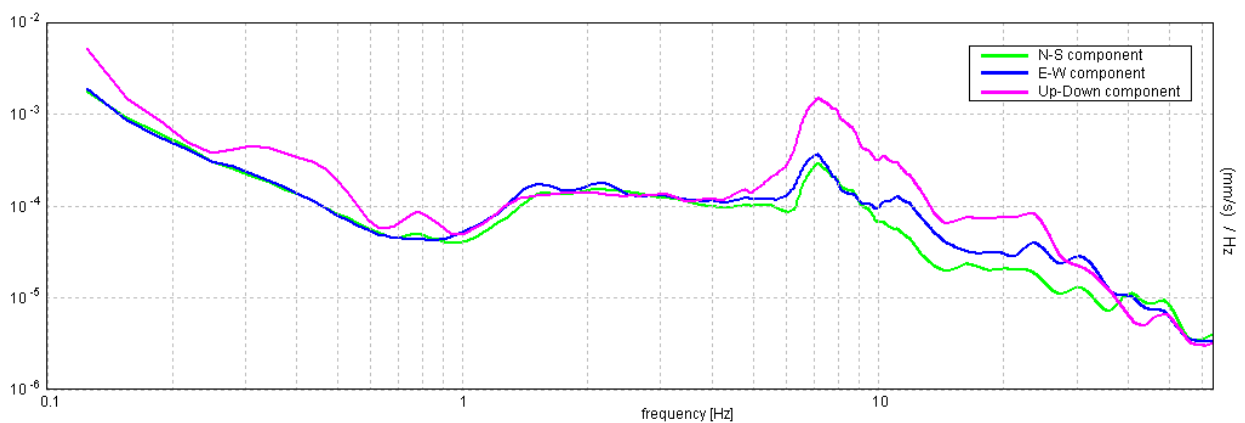
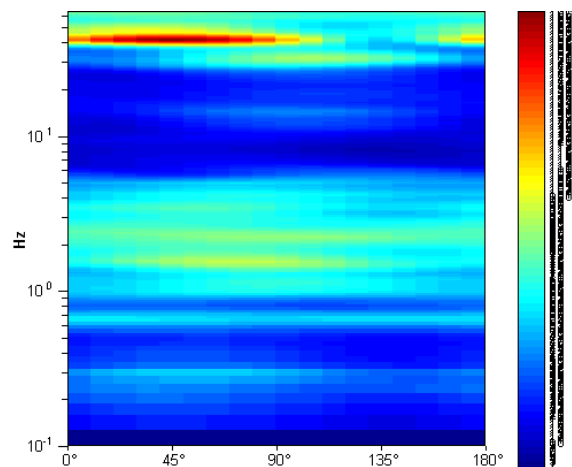
Max. H/V at 2.22 ± 0.04 Hz. (In the range 0.0 - 20.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

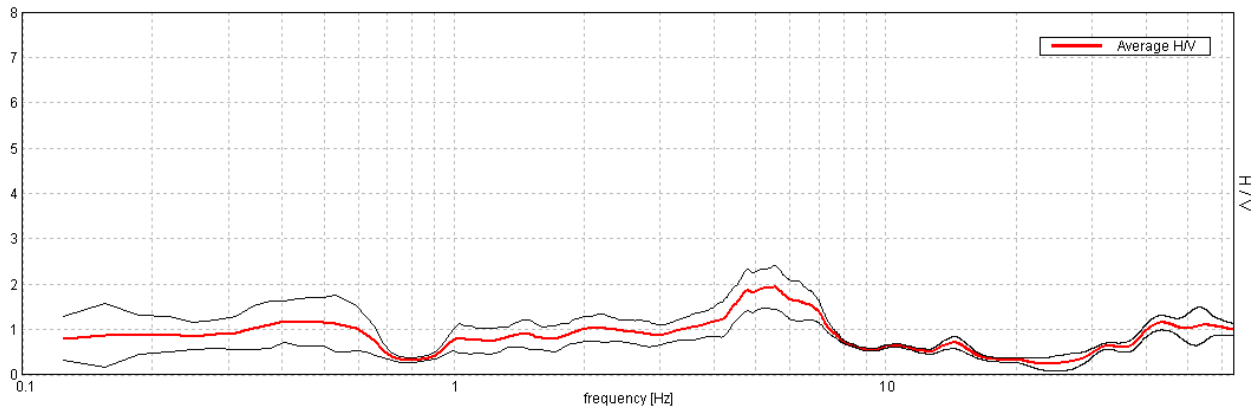


**MONTE SAN PIETRO, 037042P59HVSR59**

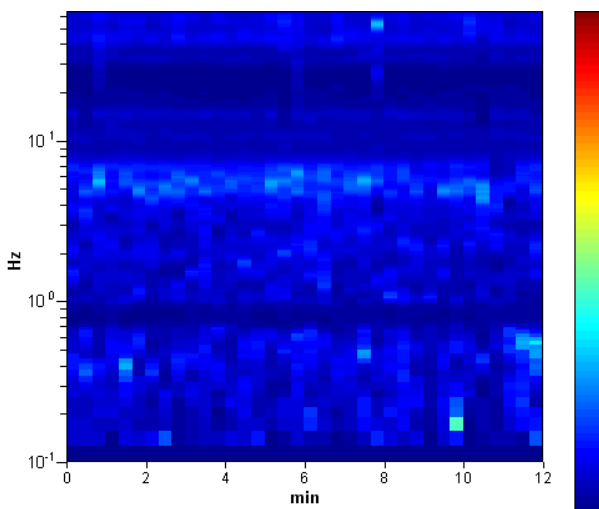
Instrument: TRZ-0108/01-10  
 Start recording: 28/05/13 12:23:28      End recording: 28/05/13 12:35:29  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analysis performed on the entire trace.  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

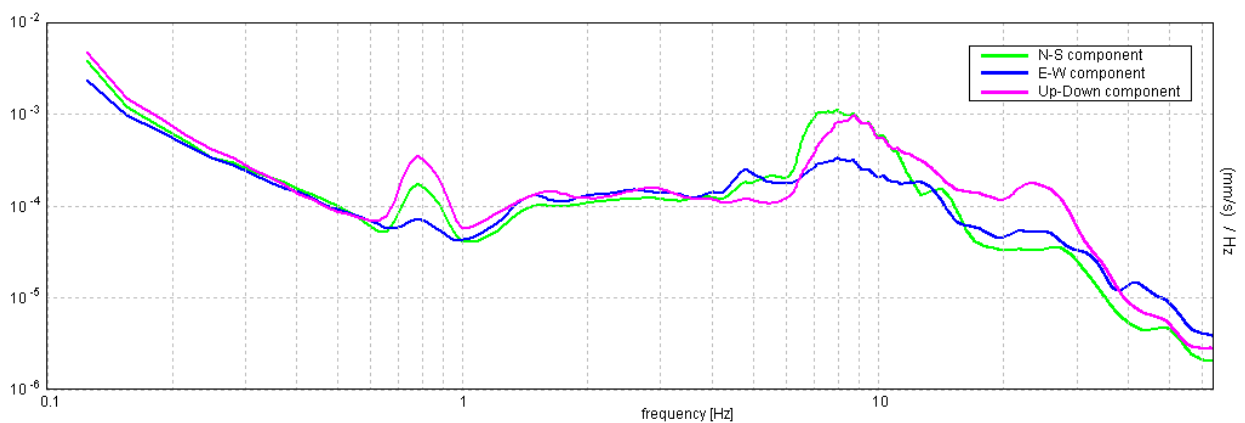
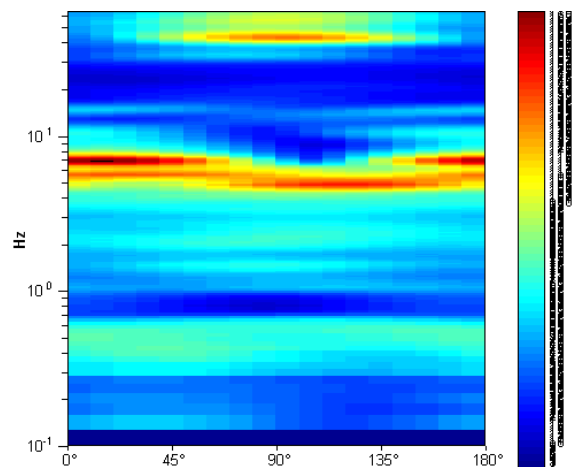
Max. H/V at 5.53 ± 0.31 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

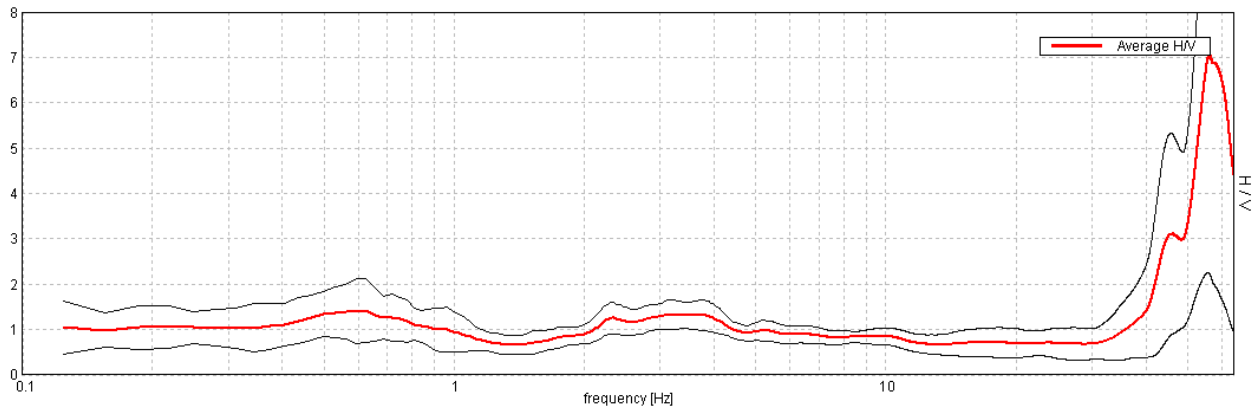


**MONTE SAN PIETRO, 037042P60HVSR60**

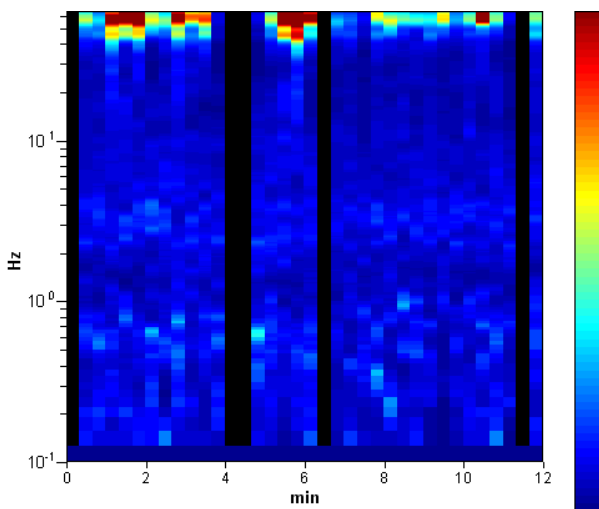
Instrument: TRZ-0108/01-10  
 Start recording: 28/05/13 12:39:26      End recording: 28/05/13 12:51:27  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 86% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

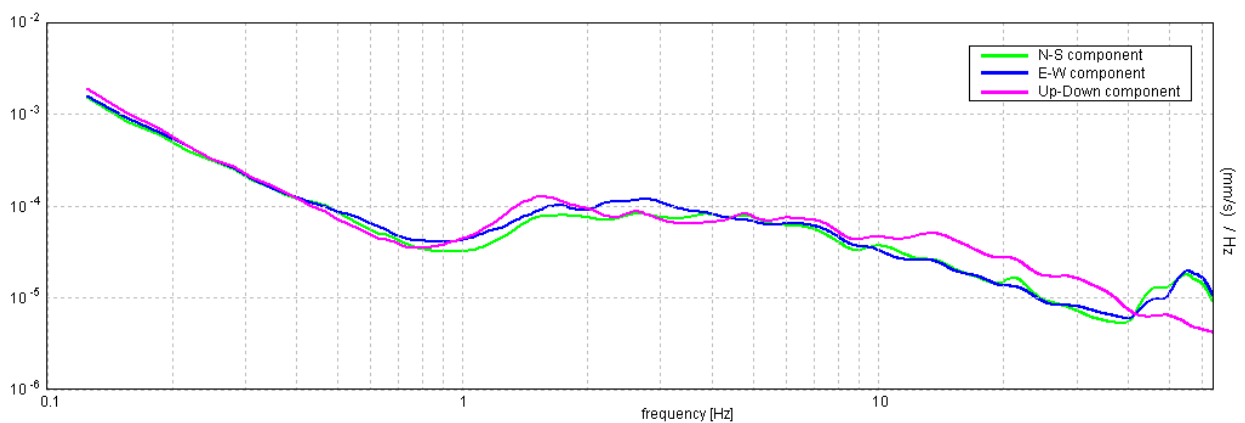
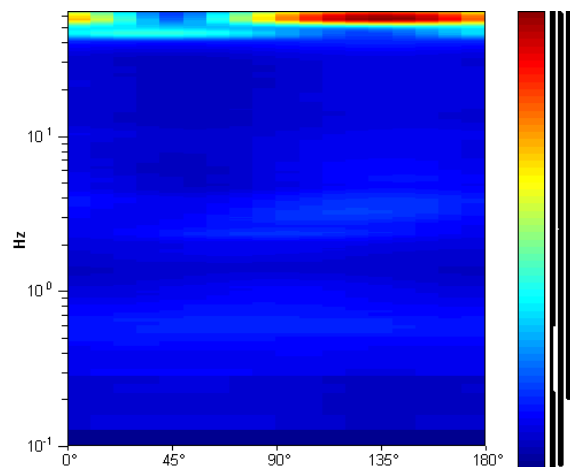
Max. H/V at  $0.63 \pm 0.01$  Hz. (In the range 0.0 - 30.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

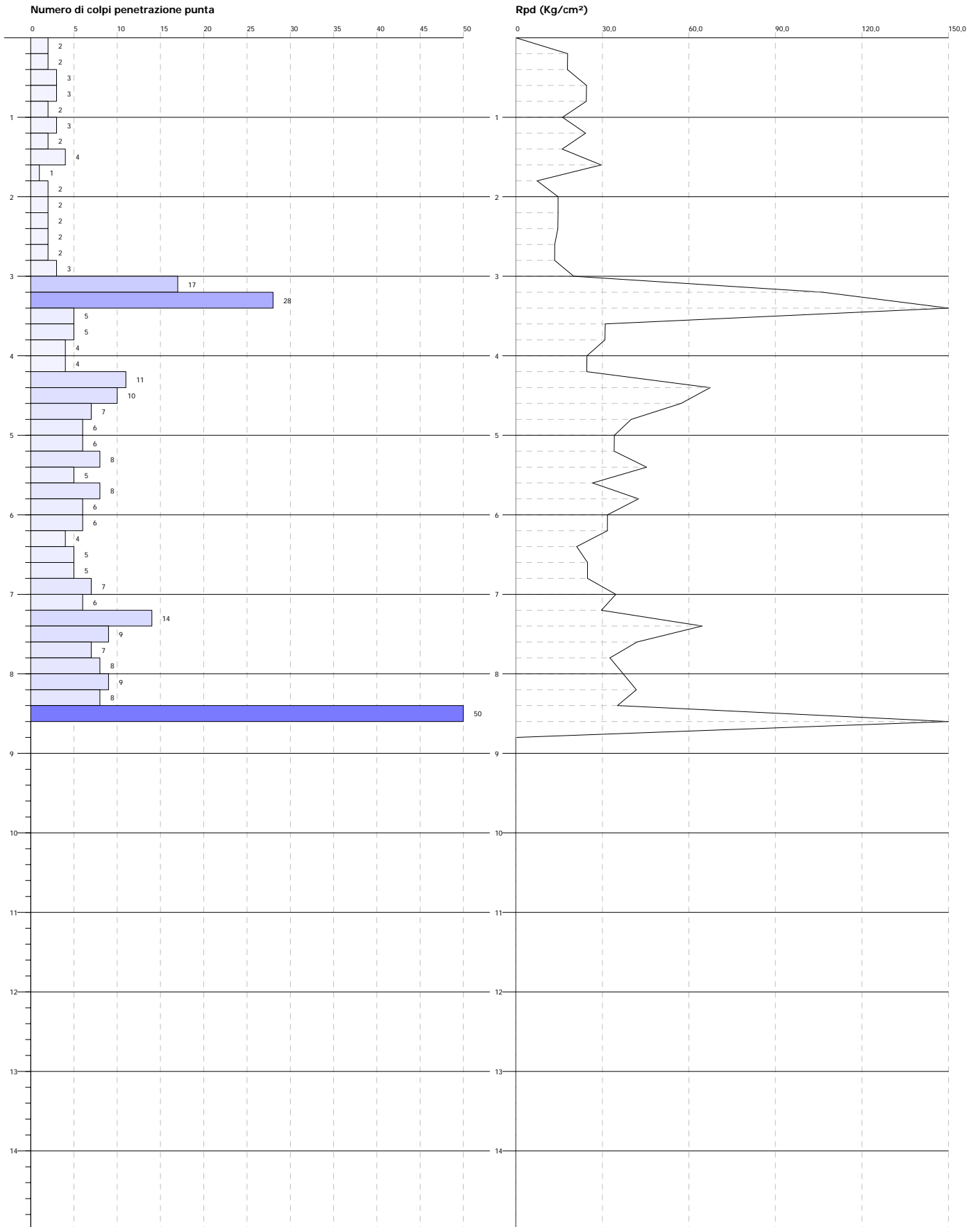


**PROVA PENETROMETRICA DINAMICA O37042P10DP61**  
**Strumento utilizzato... DPSH TG 63-200 PAGANI**  
**DIAGRAMMA NUMERO COLPI PUNTA-Rpd**

Committente :  
 Cantiere : DPSH VALSAMOGGIA  
 Località : Monte San Pietro

Data :09/05/2013  
 falda: foro occluso a m 8,40 - elevata umidità da m 2,40

Scala 1:66



PROVA PENETROMETRICA DINAMICA 037042P61DP62

Strumento utilizzato... DPHS TG 63-200 PAGANI

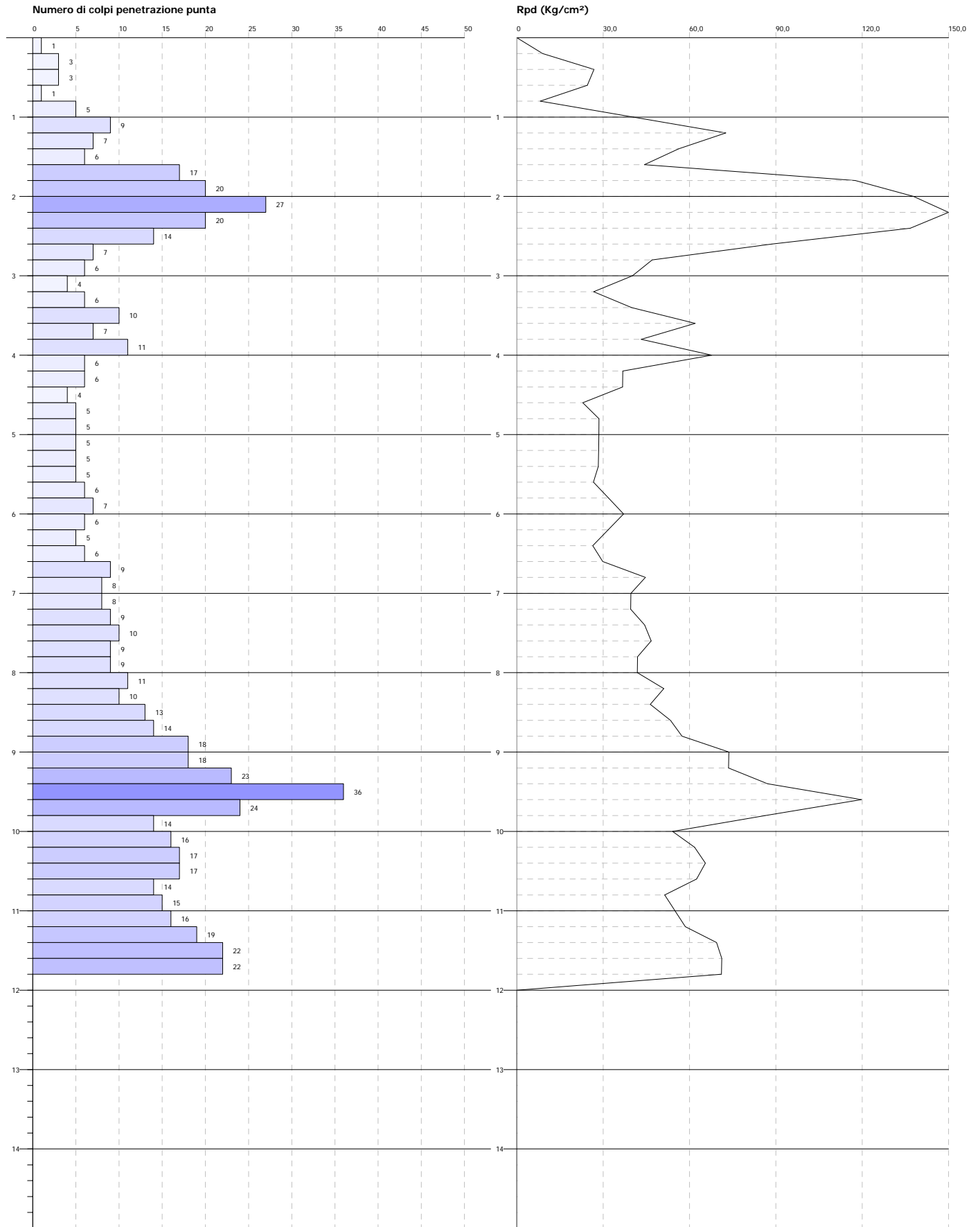
DIAGRAMMA NUMERO COLPI PUNTA-Rpd

Committente :  
 Cantiere : DPHS VALSAMOGGIA  
 Località : Monte San Pietro

Data :09/05/2013

falda: foro occluso a m 2,70 - acqua a m 2,70

Scala 1:66



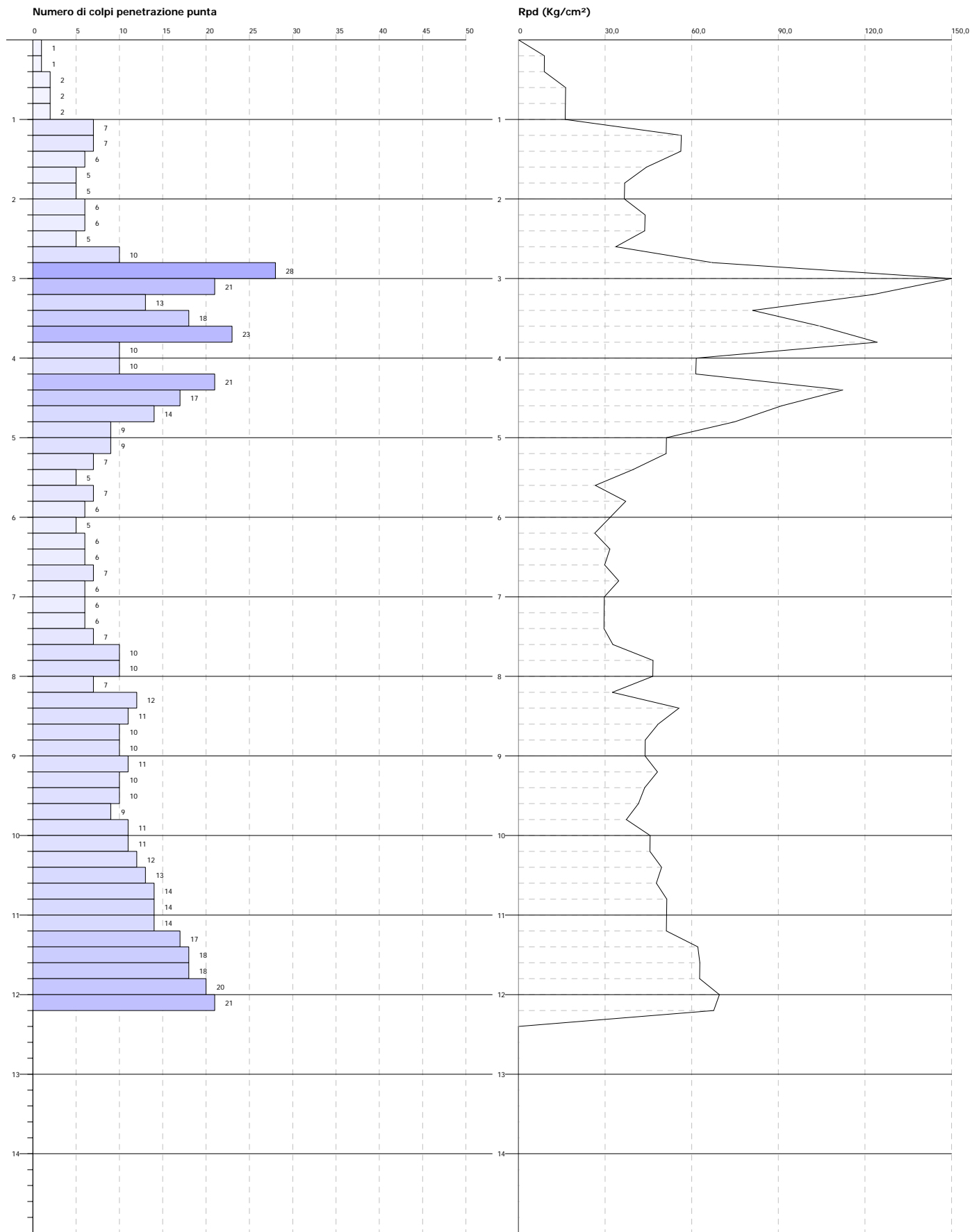


Committente : STUDIO SANGIORGI  
Cantiere : DPSH VALSAMOGGIA  
Località : Monte San Pietro

Data :09/05/2013

falda: foro occluso a m 4,10 - no acqua, più in profondità aste bagnate

Scala 1:66



PROVA PENETROMETRICA DINAMICA 037042P62DP64

Strumento utilizzato... DPSH TG 63-200 PAGANI

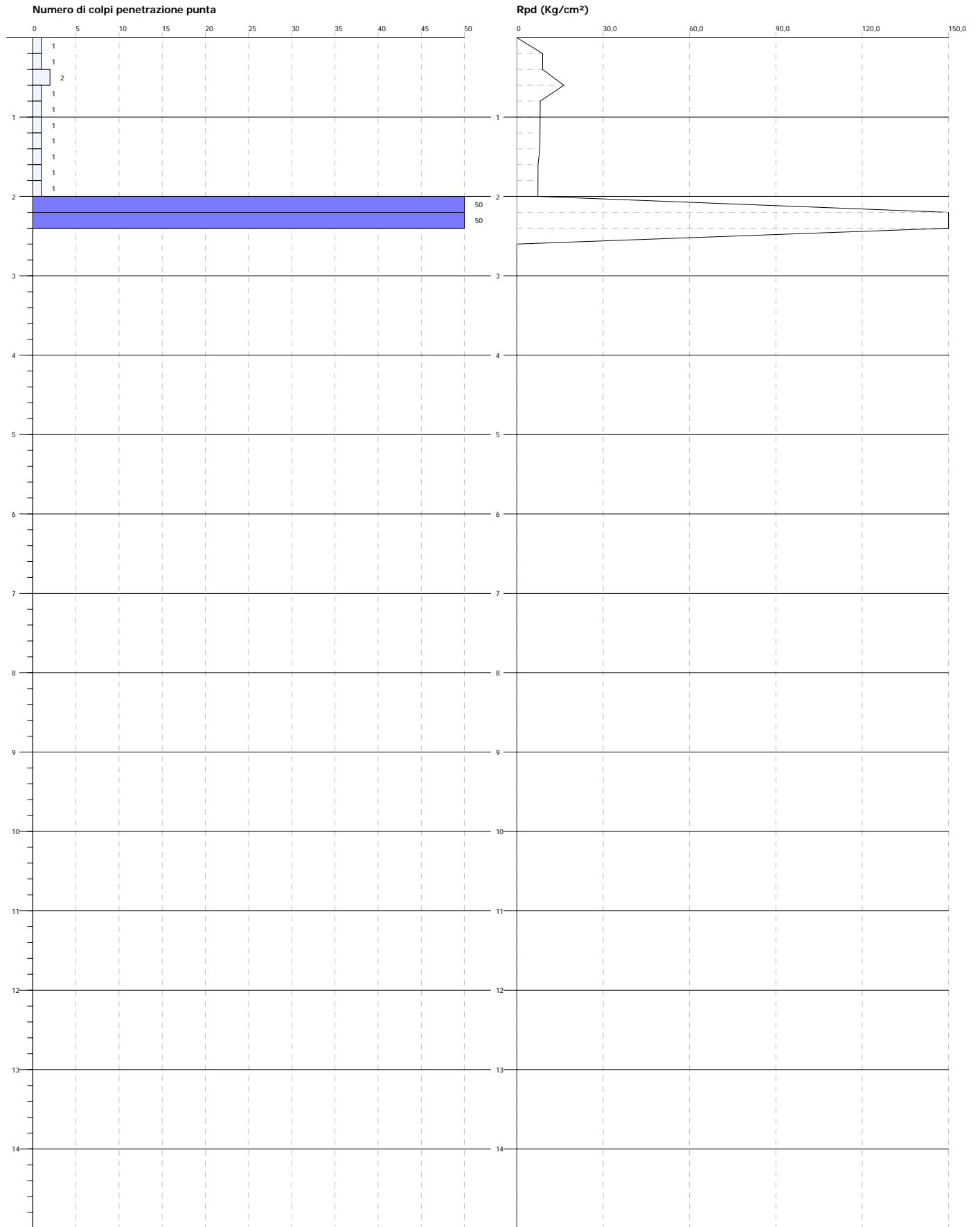
DIAGRAMMA NUMERO COLPI PUNTA-Rpd

Committente : STUDIO SANGIORGI  
Cantiere : DPSH VALSAMOGGIA  
Località : Monte San Pietro

Data :09/05/2013

assenza di falda

Scala 1:66

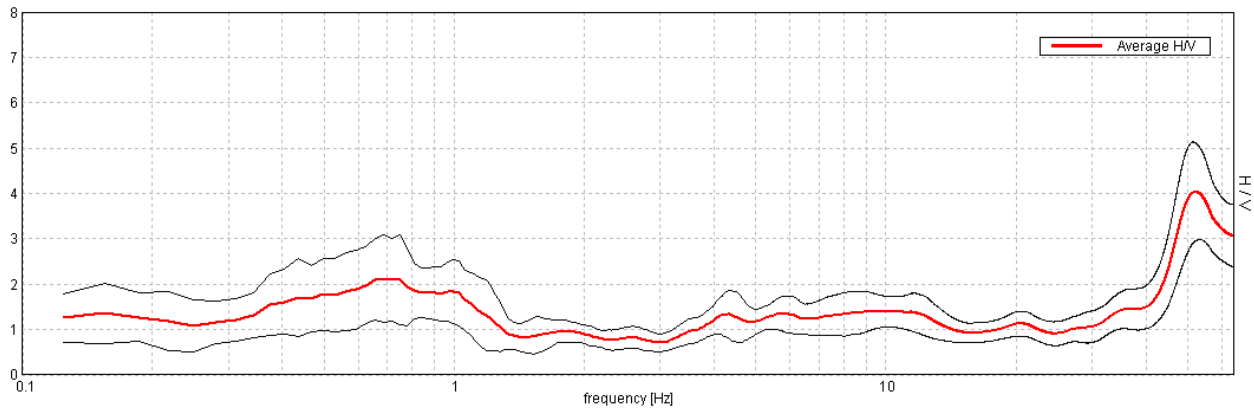


### MONTE SAN PIETRO, 037042P63HVSR65

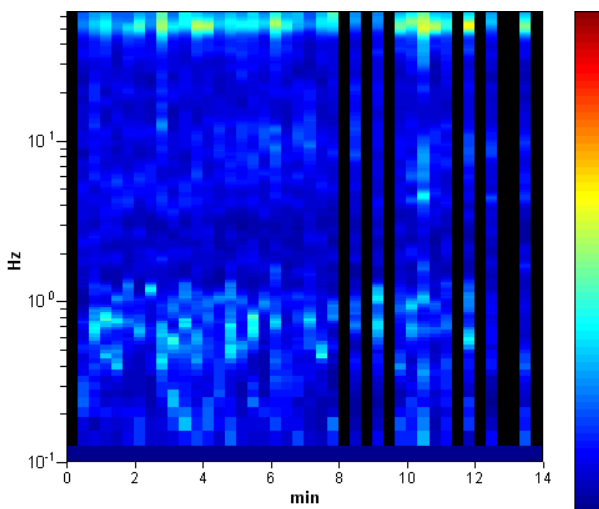
Instrument: TRZ-0108/01-10  
Start recording: 12/04/13 15:46:28      End recording: 12/04/13 16:00:29  
Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
Trace length: 0h14'00".      Analyzed 79% trace (manual window selection)  
Sampling rate: 128 Hz  
Window size: 20 s  
Smoothing type: Triangular window  
Smoothing: 12%

#### HORIZONTAL TO VERTICAL SPECTRAL RATIO

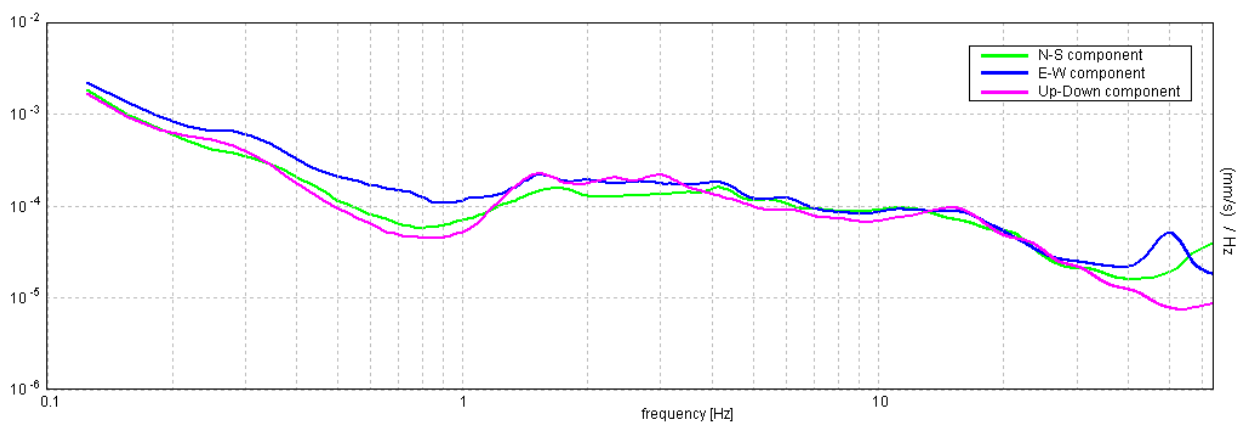
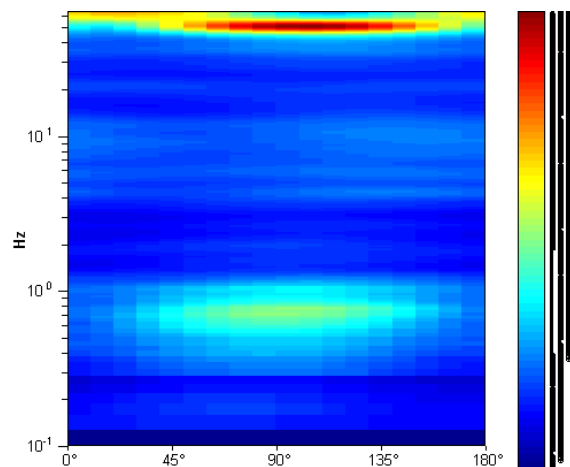
Max. H/V at  $0.69 \pm 0.03$  Hz. (In the range 0.0 - 30.0 Hz).



#### H/V TIME HISTORY



#### DIRECTIONAL H/V



037043P64CPT66

STUDIO GEOLOGICO ASSOCIATO

**GEOSURROGATE**

Via C. Treves, 13/A - Tel. 051/42.35.10  
40134 BOLOGNA

Località:

Calderino

Committente:

Sig. FERRONI NATALINO

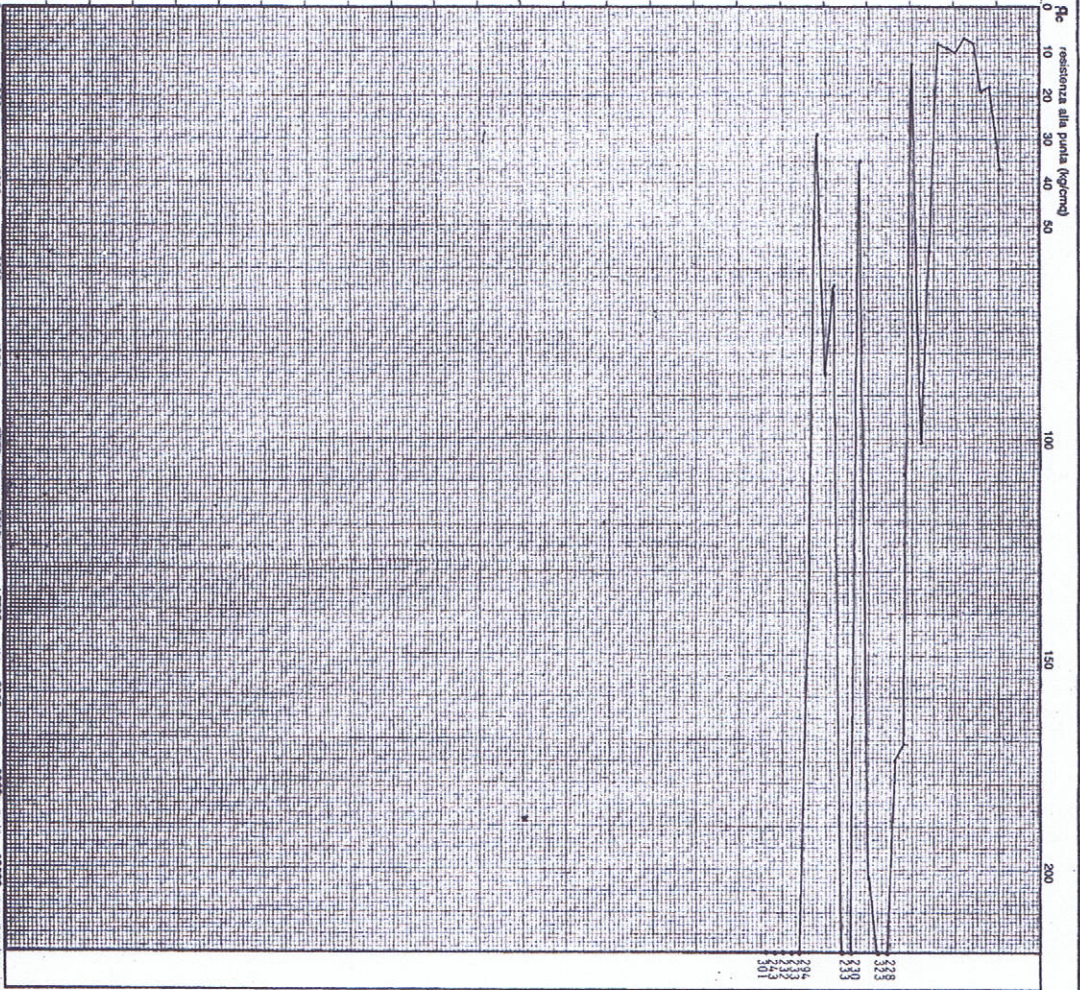
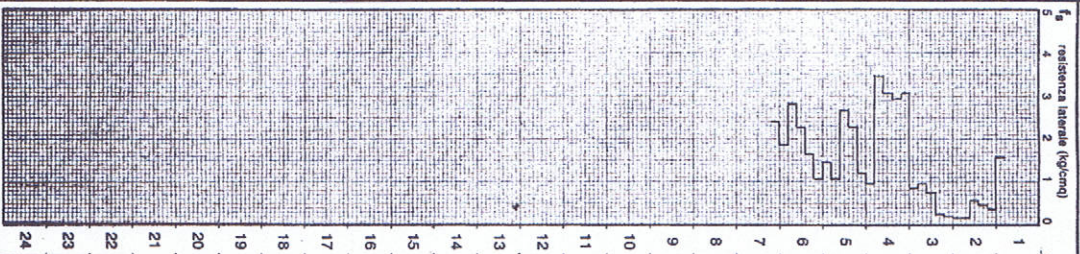
**CPT (CONE PENETROMETER TEST)**

N.:

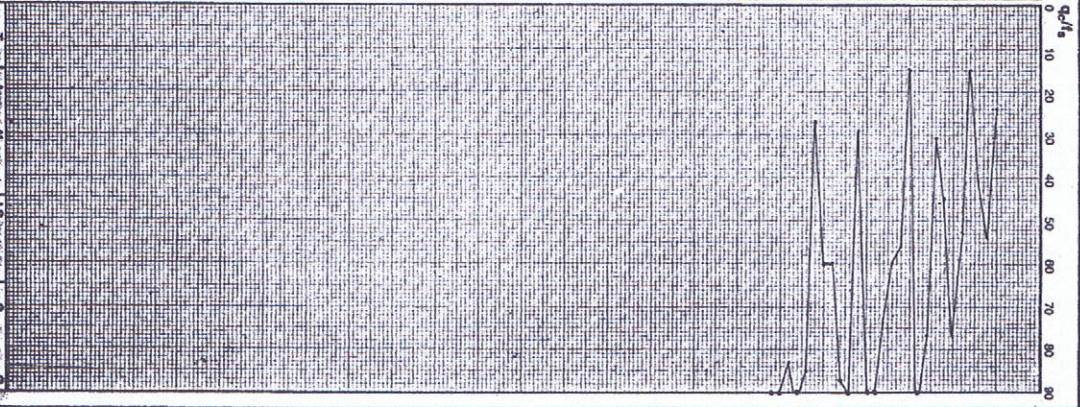
1

Data: 27 Luglio 1990

*g. g. Cozzi*



Quota di falda



D37042 P655567

**GEO-PROBE**

40134 BOLOGNA  
Via Treves 13/f - Tel. 42.35.10

SONDAGGIO N. 3

Data: 27 Luglio 1990

2200 P005b.

Committente: Sig. FERRONI NATALINO

Località: Calderino

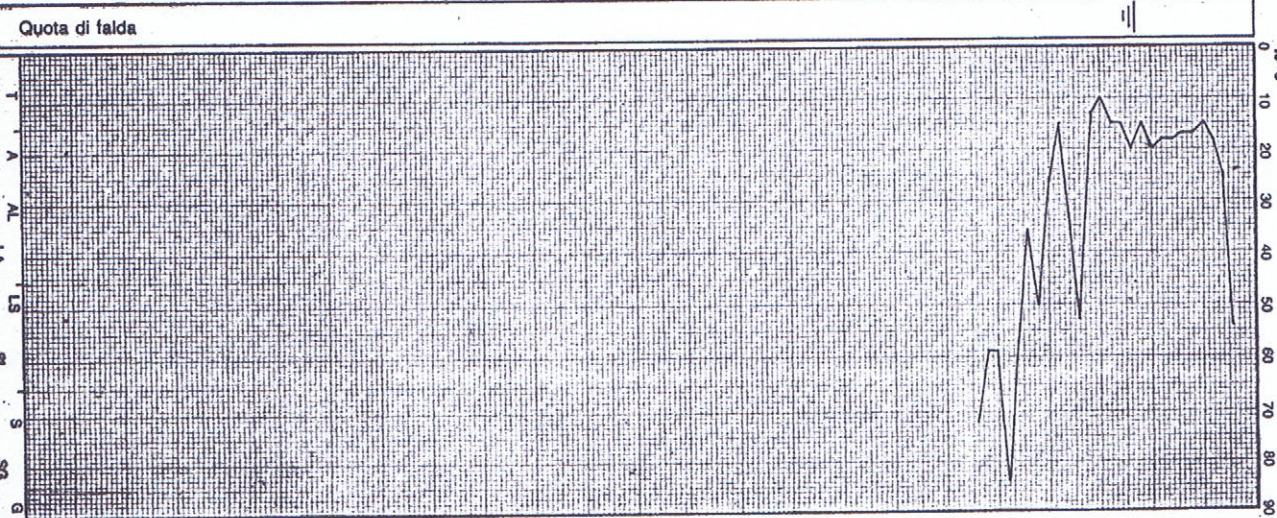
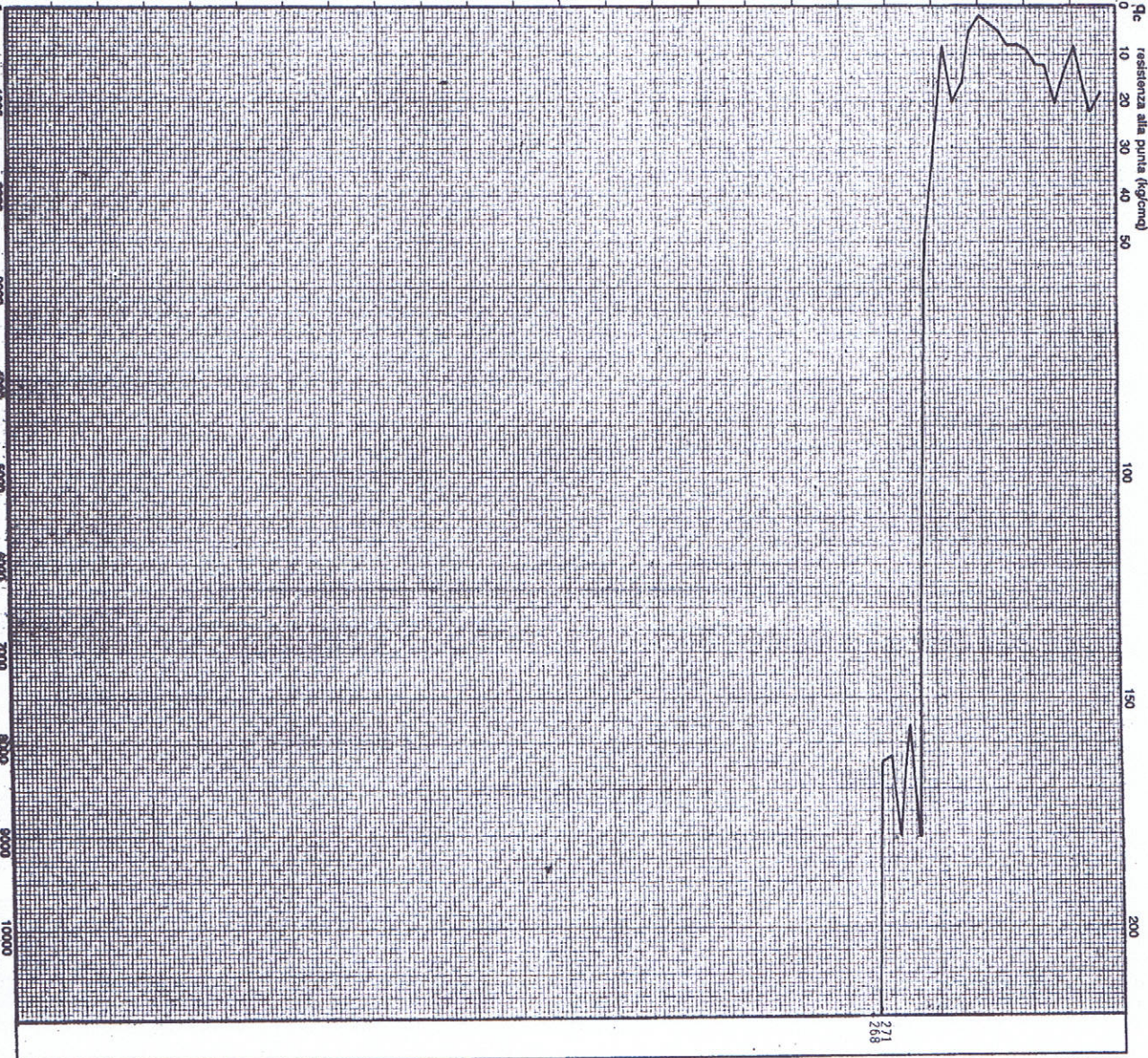
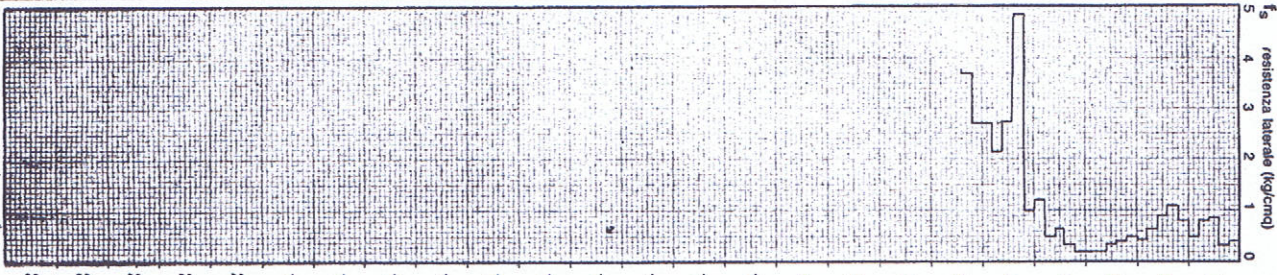
profondità (mt) scala	idrologia	colonna stratigrafica	Descrizione ed osservazione dei terreni	S.P.T.		carotaggio %	Pocket Penetrometer	Tor Vane
				profondità	NC			
							kg/cmq	
10.5		C.I.	Limo-argilloso di colore grigiastro, localmente sabbioso; - Presenza di inclusi lapidei di origine calcarea; - Terreno di consistenza da dura a molto dura; - Umidità da medio-scarso a scarso.					
			C.I. = Campione indisturbato (0.80-1.20 m.)					

*210060030*

Località: Cimitero di Monte S. Pietro (Bo)

Committente: Comune di Monte S. Pietro

Data: 06/07/89



da 0.00 a - 0.40 m.	Terreno pedogenizzato;
da - 0.40 a - 1.20 m.	Argilla inorganica compatta, ( $q_c = 15+18$ kg/cmq.; $q_c/f_s = 14+19$ );
da - 1.20 a - 2.00 m.	Argilla inorganica molto compatta: ( $q_c = 24+31$ kg/cmq.; $q_c/f_s = 13+18$ );
da - 2.00 a - 2.80 m.	Argille sabbiose e limose di consistenza medio alta: ( $q_c = 28+35$ kg/cmq.; $q_c/f_s = 20+23$ );
da - 2.80 a - 3.60 m.	Sabbie a variabile contenuto in limo e/o viceversa di addensamento medio-scarso: ( $q_c = 19+24$ kg/cmq.; $q_c/f_s = 43+52$ ), localmente argillose;
da - 3.60 a - 4.20 m.	Limi-sabbiosi e/o sabbie argillose e limi di buona consistenza: ( $q_c = 28+34$ kg/cmq.; $q_c/f_s = 35+42$ );
da - 4.20 a - 5.80 m.	Argille sabbiose e limose di consistenza medio scarsa: ( $q_c = 13+18$ kg/cmq.; $q_c/f_s = 24+28$ ), alternate a limi-sabbiosi e/o sabbie argillose e limi di consistenza medio-scarso: ( $q_c = 15+18$ kg/cmq.; $q_c/f_s = 33+39$ );
da - 5.80 a - 6.80 m.	Limi sabbiosi e/o sabbie limose di medio addensamento: ( $q_c = 24+30$ kg/cmq.; $q_c/f_s = 35+48$ );
da - 6.80 a - 7.80 m.	Limi sabbiosi a variabile contenuto in argilla di media consistenza: ( $q_c = 18+19$ kg/cmq.; $q_c/f_s = 30+39$ ), inglobanti una sottile lente argillosa di bassa consistenza: ( $q_c = 7$ kg/cmq.; $q_c/f_s = 10$ );
da - 7.80 a - 9.80 m.	Limi sabbiosi e/o sabbie argillose e limi di buona consistenza: ( $q_c = 25+38$ kg/cmq.; $q_c/f_s = 33+40$ ), passanti localmente a sabbie ben addensate: ( $q_c = 40+49$ kg/cmq.; $q_c/f_s = 55+77$ );

1220070.

037042 P68 CPT 70

- 11 -

220 H C 21

- CPT 5 -

da 0.00 a - 0.40 m.	Terreno pedogenizzato;
da - 0.40 a - 2.80 m.	Argille inorganiche molto compatte: ( $q_c = 21+30$ kg/cmq.; $q_c/f_s = 14+19$ );
da - 2.80 a - 3.40 m.	Argille inorganiche compatte: ( $q_c = 14+17$ kg/cmq.; $q_c/f_s = 17+21$ );
da - 3.40 a - 4.10 m.	Argille di consistenza medio-scarso: ( $q_c = 9+13$ kg/cmq.; $q_c/f_s = 13+19$ );
da - 4.10 a - 4.80 m.	Limi-sabbiosi e/o sabbie-argillose e limi di buona consistenza: ( $q_c = 24+29$ kg/cmq.; $q_c/f_s = 26+36$ );
da - 4.80 a - 5.60 m.	Argille a variabile contenuto in limo di ottima consistenza: ( $q_c = 30+35$ kg/cmq.; $q_c/f_s = 24+27$ ), localmente sabbiose;
da - 5.60 a - 6.00 m.	Argille inorganiche molto compatte: ( $q_c = 20$ kg/cmq.; $q_c/f_s = 16+20$ );
da - 6.00 a - 8.20 m.	Sabbie ben addensate: ( $q_c = 60+115$ kg/cmq.; $q_c/f_s = 50+72$ ) localmente limose: ( $q_c = 48+53$ kg/cmq.; $q_c/f_s = 32+36$ );
da - 8.20 a - 9.00 m.	Limi-sabbiosi e/o sabbie argillose e limi di ottima consistenza: ( $q_c = 60+88$ kg/cmq.; $q_c/f_s = 34+43$ );
da - 9.00 a -10.00 m.	Argille sabbiose e limi di buona consistenza: ( $q_c = 27+34$ kg/cmq.; $q_c/f_s = 24+32$ );
da -10.00 a -11.00 m.	Limi-sabbiosi e/o sabbie argillose e limi di buona consistenza: ( $q_c = 33+40$ kg/cmq.; $q_c/f_s = 33+38$ ).



037042 P69 OPTU71

NOTE p. 58,5

0 2 4 6 8 10 12 0 9.5 ΔU 2/9.5

PREFORO

Alte di preforo ammessa è pulita  
M Q L R M

Qc un'ora → lui abbassa  
la prova di dim. con  
conformazione

base white o Bush?

P. DISS

16.10  
42 Sec

220070 U S 24

PROVA DI DISSIPAZIONE N°	A	DURATA

Qc 0.3 R=1.2	130	0,2	1,1	0,094 0,106
Qc 0.1 con un'ora 9,0 MPa	230	0,1	1,2	0,030 0,059
	330	0,1	1,1	0,040 0,053
Qc 0.14	430	0,5	1,7	0,173 0,104
base con ammorbato ~ 4,5	530	2,4	5,2	0,080 0,117
Fract. Qc 2, R=5	630	2,6	5,6	0,236 0,378
diaccia con R, R	730	1,6	3,4	0,147 0,068
Picco Qc rotore	2,3	4,1	0,008 0,047	
880 ammorbato sequela	930	1,2	3,1	0,346 0,683
picco Qc	1030	2,5	4,1	0,639 → 0,060!
10.10 Picchi Qc 20 R=2, R=7, R=3	1130	1,2	2,7	0,016 0,305
	1230	2,0	4,5	0,387 0,516
Picco R (suro?)	1330	1,3	3,0	0,558 0,492
OK - calo R	1430	0,8	2,0	0,665 0,779
diacina con ~ 7,0 MPa	1452	2,1	3,4	0,331 0,12
OK	1528	0,5	1,6	0,552 → 0,250
OK	1630	4,1	5,2	0,091 0,101
OK	1730	3,5	4,4	0,000 0,14
OK	1930	2,3	5,3	0,42 0,57
OK - calo R	2030	1,9	4,7	0,493 0,74
OK	2130	3,6	5,8	0,11 → 0,16
OK	2230	2,2	3,8	0,05 0,7
OK	2330	3,0	5,1	0,102

FINE SONO 4000  
x TILTING COMMAN  
↓  
fome prova x incalce  
centine passolana

INCLINAZIONE ~ 70%

037043P64CPT66

STUDIO GEOLOGICO ASSOCIATO

**GEORPROSES**

40134 BOLOGNA

Via C. Treves, 13/f - Tel. 051/42.35.10

**CPT (CONE PENETROMETER TEST)**

N. 1

1

2900 Coala

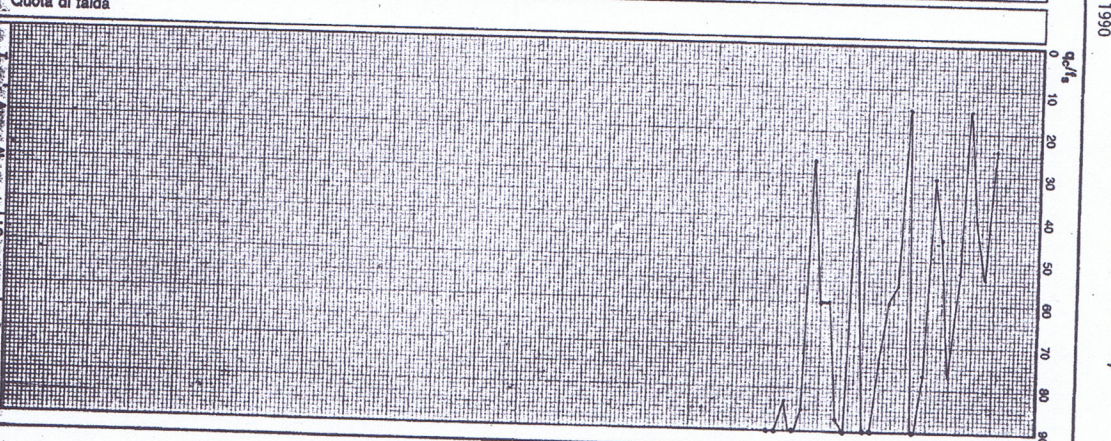
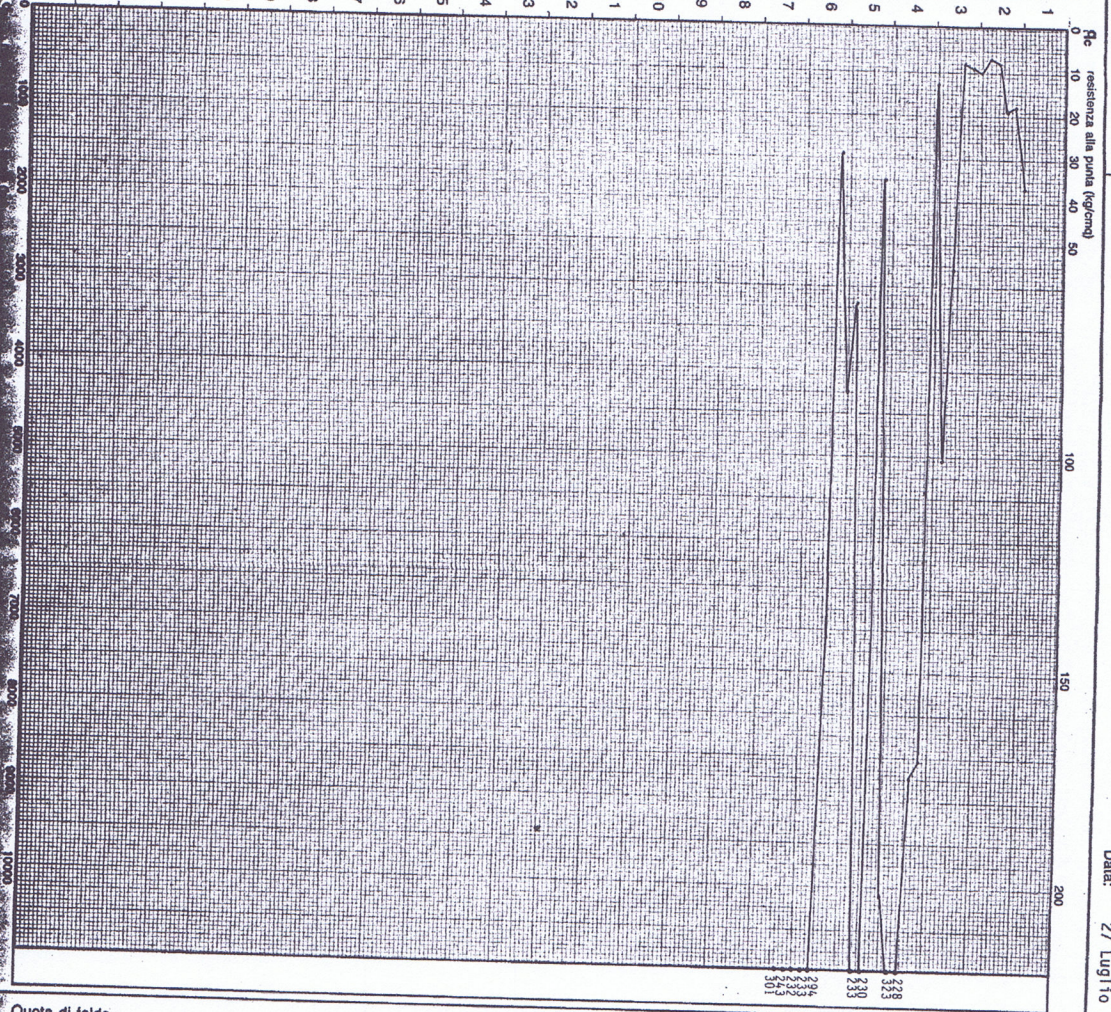
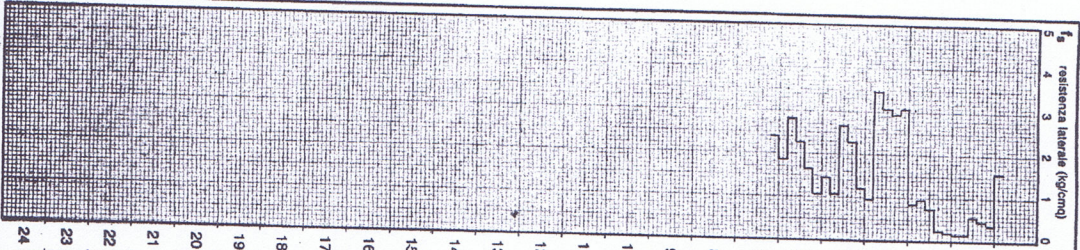
Località:

Calder'ino

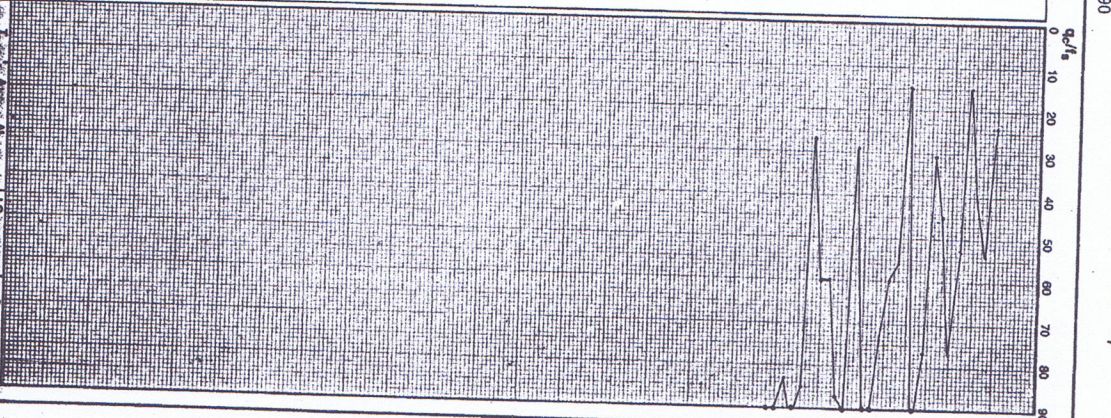
Committente:

Sig. FERRONI NATALINO

Data: 27 Luglio 1990



Quota di falda



037042 P655567

**GEO-PROJE**

40134 BOLOGNA  
Via Treves 13/f - Tel. 42.35.10

SONDAGGIO N. <sup>3</sup>

Data: 27 Luglio 1990

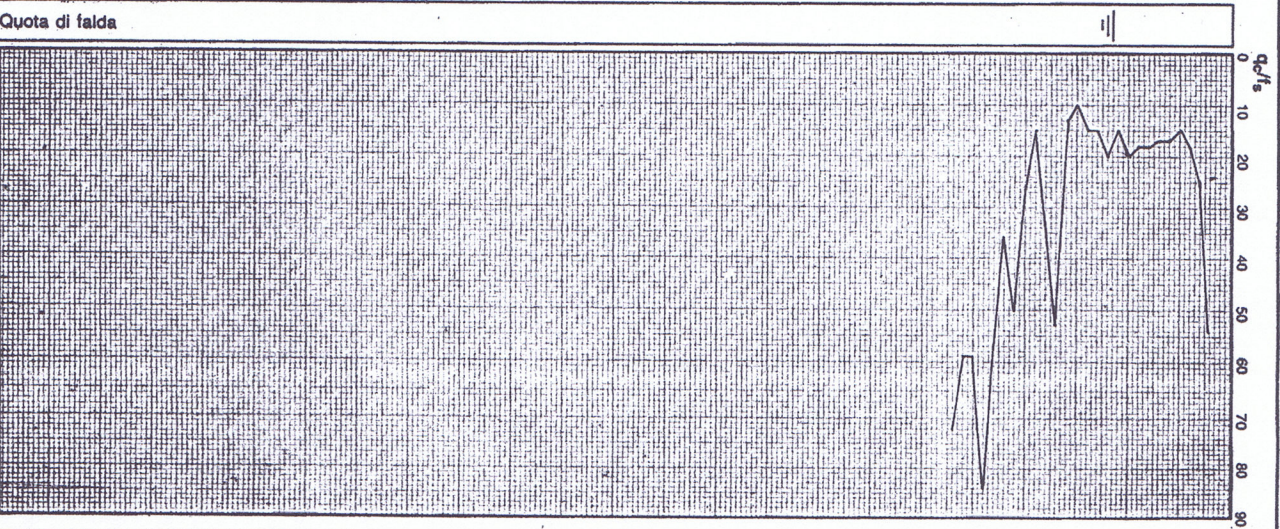
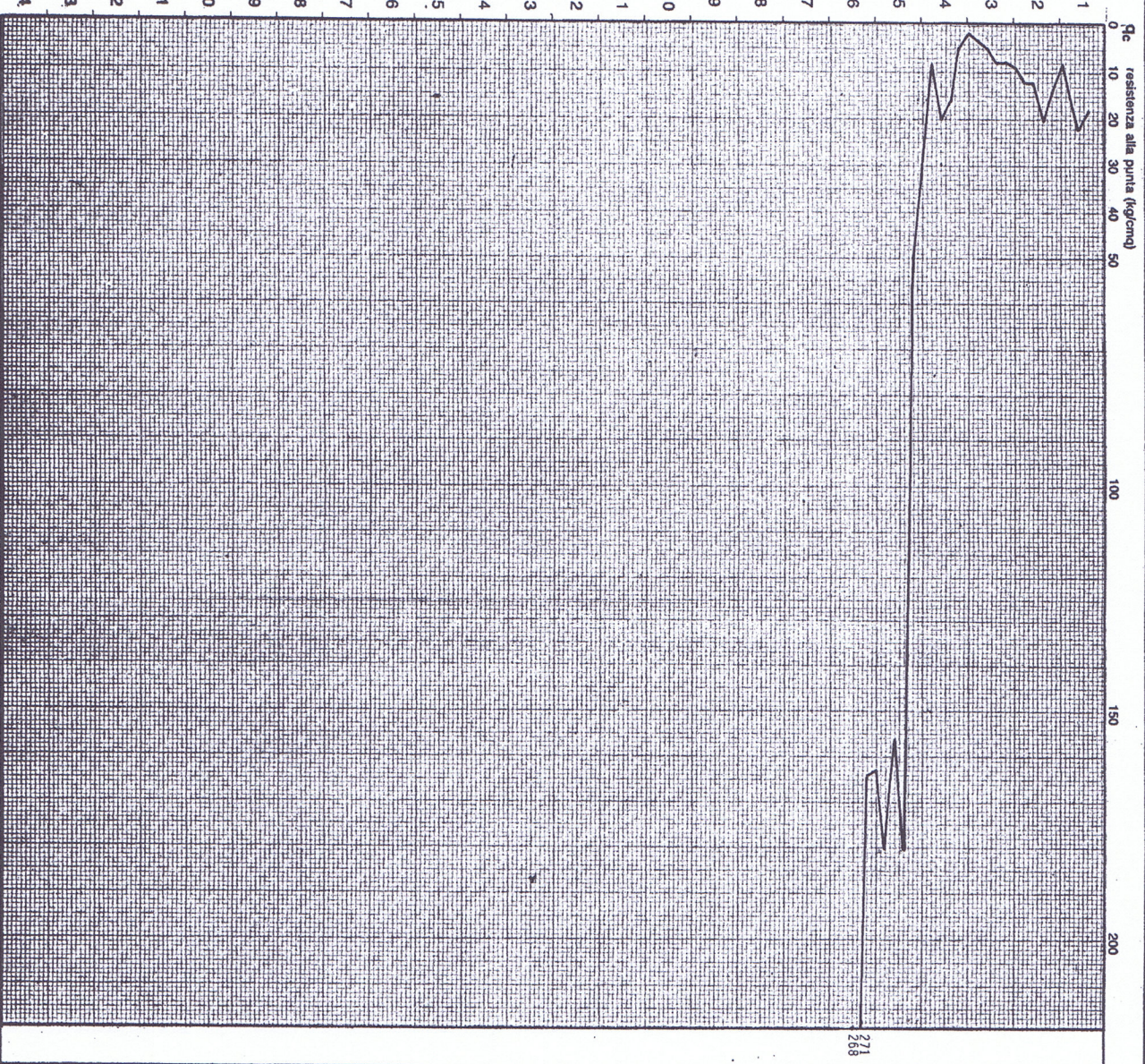
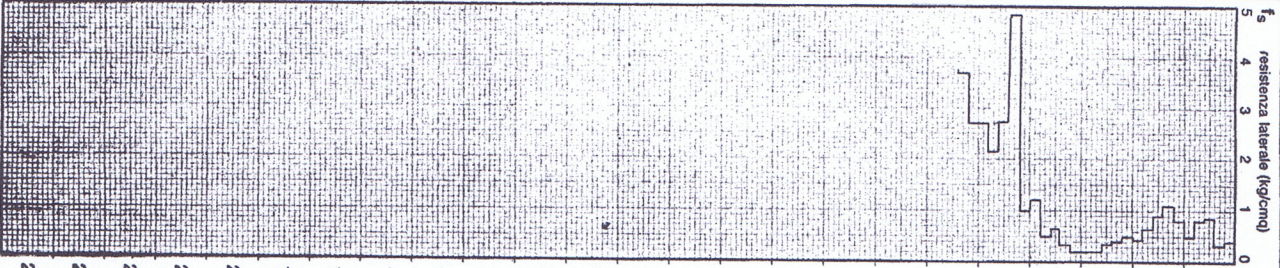
2200 P005b.

Committente: Sig. FERRONI NATALINO

Località: Calderino

profondità (mt) scala	idrologia	colonna stratigrafica	Descrizione ed osservazione dei terreni	S.P.T.		carotaggio %	Pocket Penetrometer	Tor Vane
				profondità	Nc			
							kg/cmq	
10.5		C.I.	Limo-argilloso di colore grigiastro, localmente sabbioso; - Presenza di inclusi lapidei di origine calcarea; - Terreno di consistenza da dura a molto dura; - Umidità da medio-scarsa a scarsa.					
			C.I. = Campione indisturbato (0.80-1.20 m.)					

*Handwritten signature*



Quota di falda (m)

220HC28

da 0.00 a - 0.40 m.	Terreno pedogenizzato;
da - 0.40 a - 1.20 m.	Argilla inorganica compatta, ( $q_c = 15+18$ kg/cmq.; $q_c/f_s = 14+19$ );
da - 1.20 a - 2.00 m.	Argilla inorganica molto compatta: ( $q_c = 24+31$ kg/cmq.; $q_c/f_s = 13+18$ );
da - 2.00 a - 2.80 m.	Argille sabbiose e limose di consistenza medio alta: ( $q_c = 28+35$ kg/cmq.; $q_c/f_s = 20+23$ );
da - 2.80 a - 3.60 m.	Sabbie a variabile contenuto in limo e/o viceversa di addensamento medio-scarso: ( $q_c = 19+24$ kg/cmq.; $q_c/f_s = 43+52$ ), localmente argillose;
da - 3.60 a - 4.20 m.	Limi-sabbiosi e/o sabbie argillose e limi di buona consistenza: ( $q_c = 28+34$ kg/cmq.; $q_c/f_s = 35+42$ );
da - 4.20 a - 5.80 m.	Argille sabbiose e limose di consistenza medio scarsa: ( $q_c = 13+18$ kg/cmq.; $q_c/f_s = 24+28$ ), alternate a limi-sabbiosi e/o sabbie argillose e limi di consistenza medio-scarso: ( $q_c = 15+18$ kg/cmq.; $q_c/f_s = 33+39$ );
da - 5.80 a - 6.80 m.	Limi sabbiosi e/o sabbie limose di medio addensamento: ( $q_c = 24+30$ kg/cmq.; $q_c/f_s = 35+48$ );
da - 6.80 a - 7.80 m.	Limi sabbiosi a variabile contenuto in argilla di media consistenza: ( $q_c = 18+19$ kg/cmq.; $q_c/f_s = 30+39$ ), inglobanti una sottile lente argillosa di bassa consistenza: ( $q_c = 7$ kg/cmq.; $q_c/f_s = 10$ );
da - 7.80 a - 9.80 m.	Limi sabbiosi e/o sabbie argillose e limi di buona consistenza: ( $q_c = 25+38$ kg/cmq.; $q_c/f_s = 33+40$ ), passanti localmente a sabbie ben addensate: ( $q_c = 40+49$ kg/cmq.; $q_c/f_s = 55+77$ );

1220070.

037042P68CPT70

- 11 -

2204C21

- CPT 5 -

- da 0.00 a - 0.40 m. Terreno pedogenizzato;
- da - 0.40 a - 2.80 m. Argille inorganiche molto compatte:  
( $q_c = 21+30$  kg/cmq.;  $q_c/f_s = 14+19$ );
- da - 2.80 a - 3.40 m. Argille inorganiche compatte:  
( $q_c = 14+17$  kg/cmq.;  $q_c/f_s = 17+21$ );
- da - 3.40 a - 4.10 m. Argille di consistenza medio-scarso:  
( $q_c = 9+13$  kg/cmq.;  $q_c/f_s = 13+19$ );
- da - 4.10 a - 4.80 m. Limi-sabbiosi e/o sabbie-argillose e limi di buona consistenza:  
( $q_c = 24+29$  kg/cmq.;  $q_c/f_s = 26+36$ );
- da - 4.80 a - 5.60 m. Argille a variabile contenuto in limo di ottima consistenza:  
( $q_c = 30+35$  kg/cmq.;  $q_c/f_s = 24+27$ ), localmente sabbiose;
- da - 5.60 a - 6.00 m. Argille inorganiche molto compatte:  
( $q_c = 20$  kg/cmq.;  $q_c/f_s = 16+20$ );
- da - 6.00 a - 8.20 m. Sabbie ben addensate:  
( $q_c = 60+115$  kg/cmq.;  $q_c/f_s = 50+72$ ) localmente limose:  
( $q_c = 48+53$  kg/cmq.;  $q_c/f_s = 32+36$ );
- da - 8.20 a - 9.00 m. Limi-sabbiosi e/o sabbie argillose e limi di ottima consistenza:  
( $q_c = 60+88$  kg/cmq.;  $q_c/f_s = 34+43$ );
- da - 9.00 a -10.00 m. Argille sabbiose e limi di buona consistenza:  
( $q_c = 27+34$  kg/cmq.;  $q_c/f_s = 24+32$ );
- da -10.00 a -11.00 m. Limi-sabbiosi e/o sabbie argillose e limi di buona consistenza:  
( $q_c = 33+40$  kg/cmq.;  $q_c/f_s = 33+38$ ).



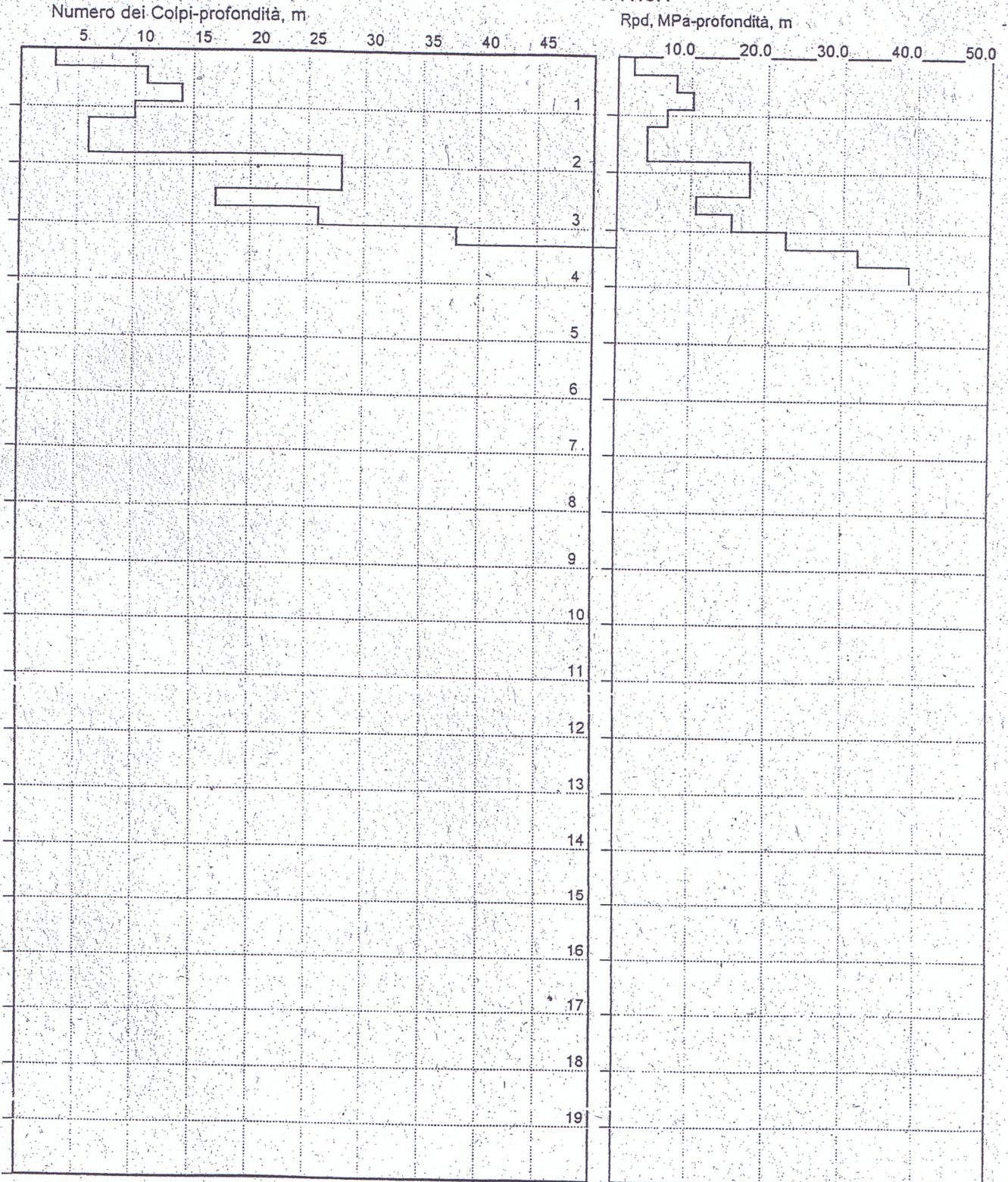
037042P70DP72

dott. Geol. ALBERTO PELAGATTI-VALSERENA 62-40040 PIAN DEL VOGLIO (BO)  
TEL. 0534/99175-FAX 0534/99264

COMMITTENTE: Provincia di Bologna  
CANTIERE: Parco del Lavino  
LOCALITA': Calderino

DITTA ESECUTRICE: dr. Pelagatti  
DIREZIONE CANTIERE:  
DATA:25/09/01

PROVA PENETROMETRICA DINAMICA No.1



PENETROMETRO DINAMICO TIPO: PAGANI TG 63 - 100 kN

Massa battente, Kg: 63.50 lo acquifero  
Altezza caduta, m: 0.75  
Area punta, cm<sup>2</sup>: 20.00  
Diametro punta, mm: 51.00  
NOTA: nessun livello acquifero

Peso sistema di battuta, Kg: 0.00  
Peso per metro aste, Kg: 5.40  
Intervallo di misura, cm: 30.00  
Uso rivestimento/fanghi iniezione: SI  
Angolo apertura punta, gradi: 60.00

FIRMA:



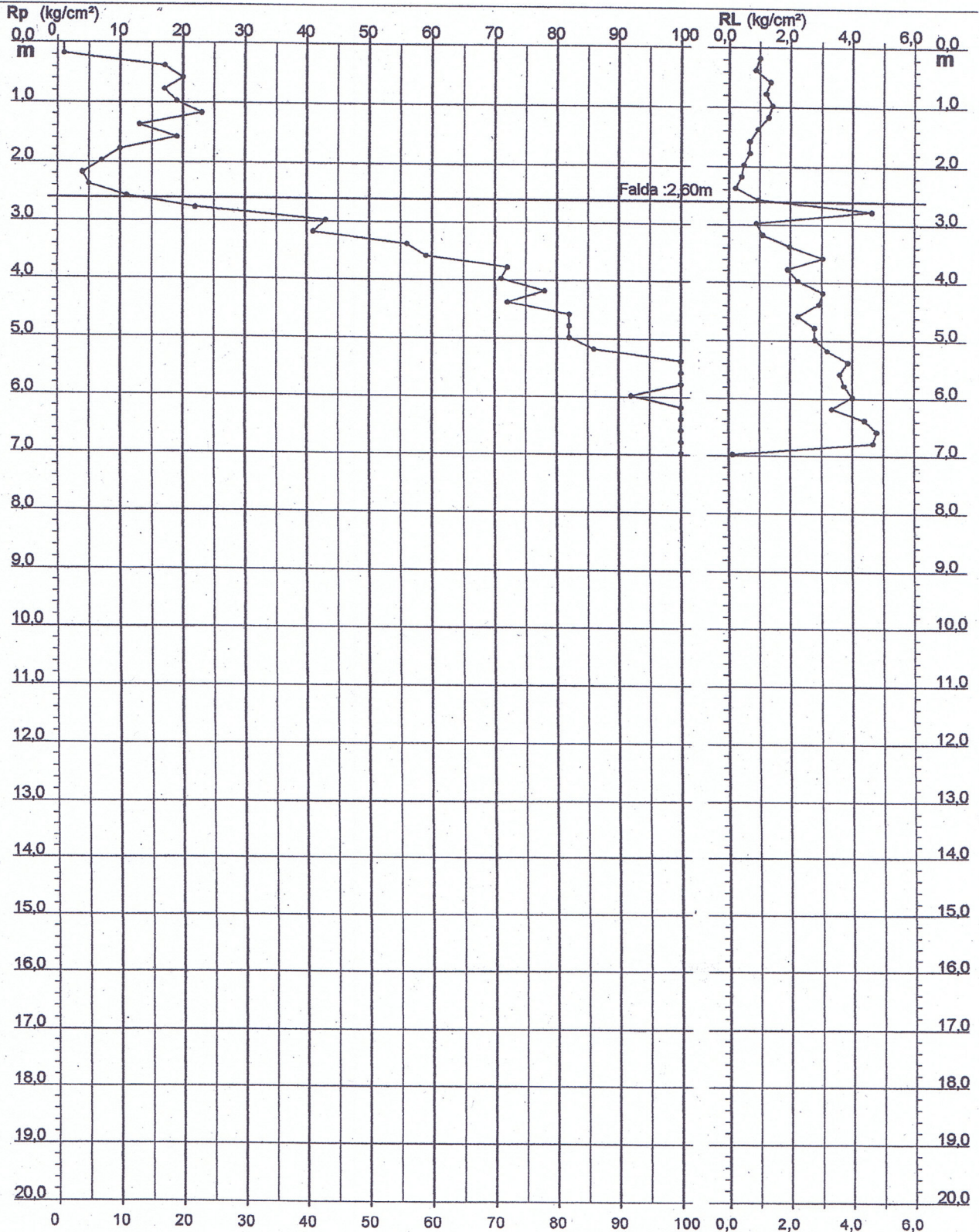
# PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 1

3.010496-016

- committente: Coop Reno  
- lavoro: Ristrutturazione capannone industriale  
- località: Via Caduti della Libertà-Calderino di M.te S.Pietro  
- resp. cantiere:  
- assist. cantiere:

- data prova : 10/01/2006  
- quota inizio : Piano Campagna  
- prof. falda : 2,60 m da quota inizio  
- scala vert. : 1 : 100  
- data emiss. : 13/02/2006

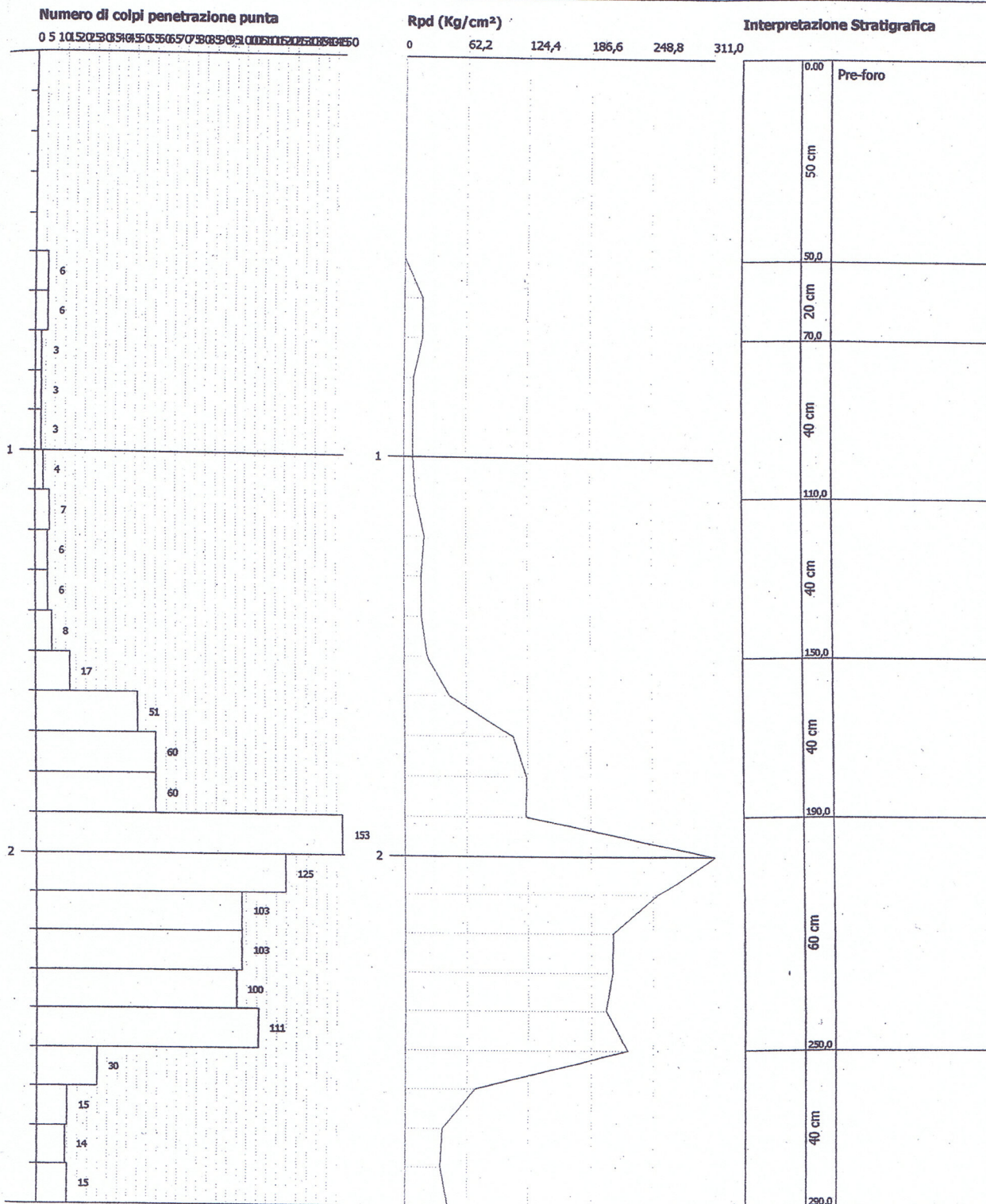


037042P710L74

**PROVA PENETROMETRICA DINAMICA Nr.1**  
**Strumento utilizzato... DL-30 (60°)**  
**DIAGRAMMA NUMERO COLPI PUNTA-Rpd**

Committente : P.i.Magli  
Cantiere : Via Caduti della Libertà  
Località : Calderino di M.te San Pietro (Bo)

Data :10/01/2006



**GEO-PROBE s.r.l.**

**DPSH 1**

40033 Casalecchio di Reno (BO)  
Via Cimarosa, 119 - Tel. 051/61.33.072  
P.I. 04135500371

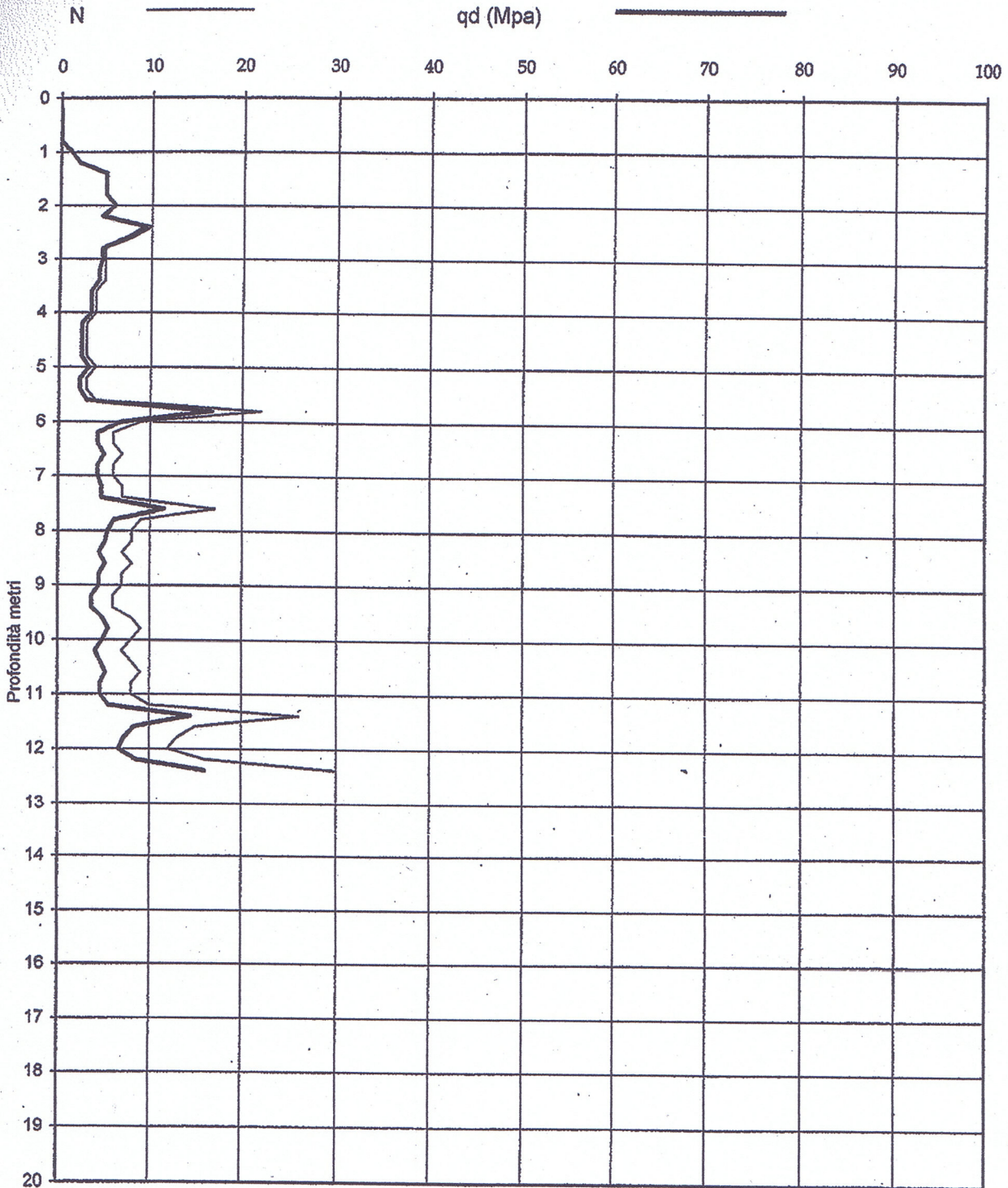
Data prova: 08/03/2006  
Quota ---  
Codice lavoro: 2006.055

Committente: Dr. Barbieri

Rapporto di prova N. 06.0246 /RSP

Località: Monte San Pietro (BO) via Osti - Calderino

Attrezzatura: Penetrometro dinamico Emilia-DPSH



GEO-PROBE S.r.l. Indagini Geognostiche

Profondità acqua da p.c. : assente

Note: ---

Procedure di prova	Rapporto di prova N°	Rev.	Data emissione	Sperimentatore	Il Direttore di Laboratorio
--- 3	06.0246 /RSP	0	09/03/2006	Dr. Tabarroni	Dr. Luca Conti

037042P73DP76

**GEO-PROBE s.r.l.**

**DPSH 2**

40033 Casalecchio di Reno (BO)

Via Cimarosa, 119 - Tel. 051/61.33.072

P.I. 04135500371

Data prova: 08/03/2006

Quota: ---

Codice lavoro: 2006.055

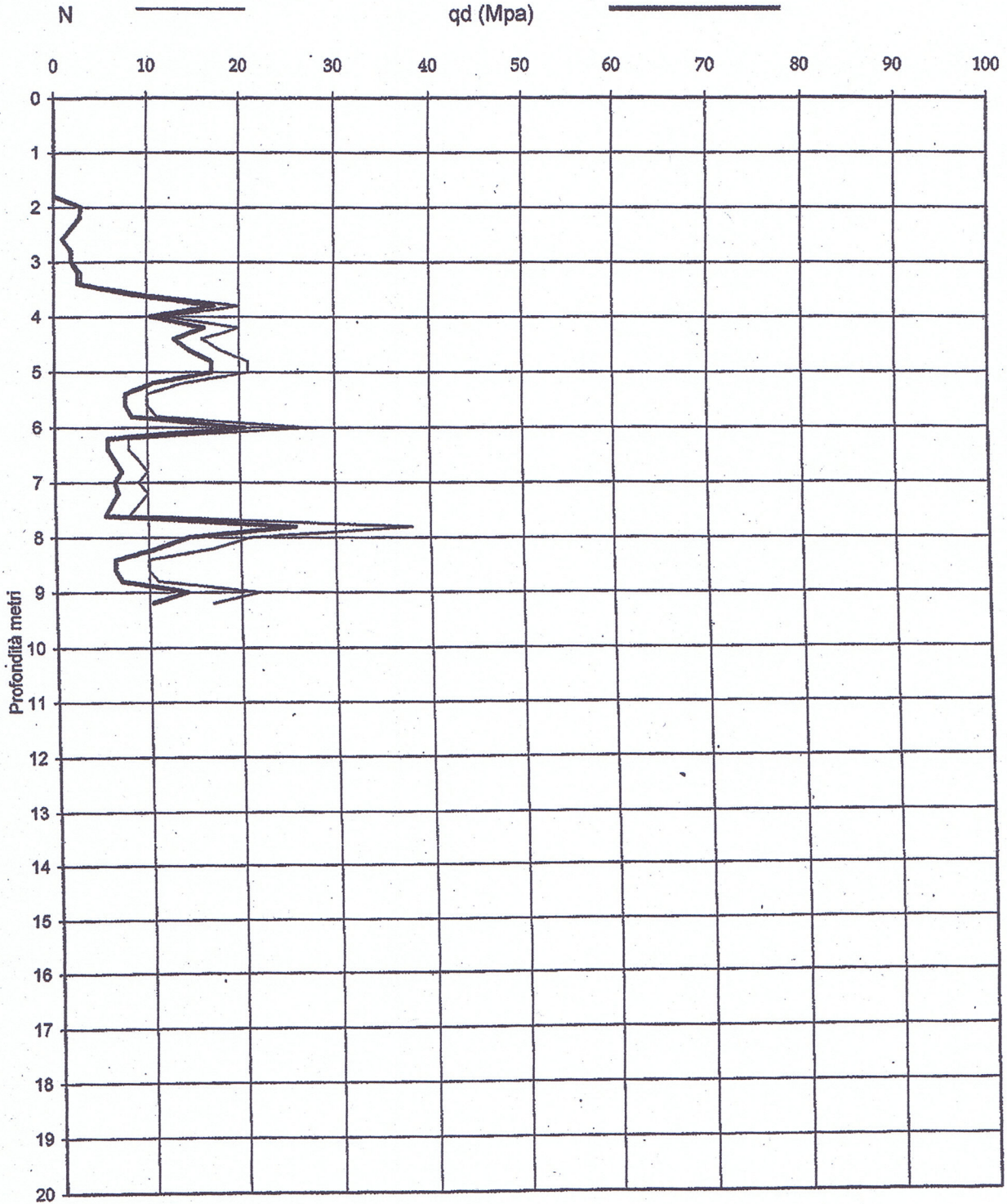
Committente: Dr. Barbieri

Rapporto di prova N. 06.0247 /RSP

Località: Monte San Pietro (BO)

via Osti - Calderino

Attrezzatura: Penetrometro dinamico Emilia-DPSH



GEO-PROBE S.r.l. Indagini Geognostiche

Profondità acqua da p.c. : 2.80 m

Note: ---

Procedure di prova	Rapporto di prova N°	Rev.	Data emissione	Sperimentatore	Il Direttore di Laboratorio
---	06.0247 /RSP	0	09/03/2006	Dr. Tabarroni	Dr. Luca Conti

**GEO-PROBE s.r.l.**

40033 Casalecchio di Reno (BO)  
Via Cimarosa, 119 - Tel. 051/61.33.072  
P.I. 04135500371

**DPSH 4**

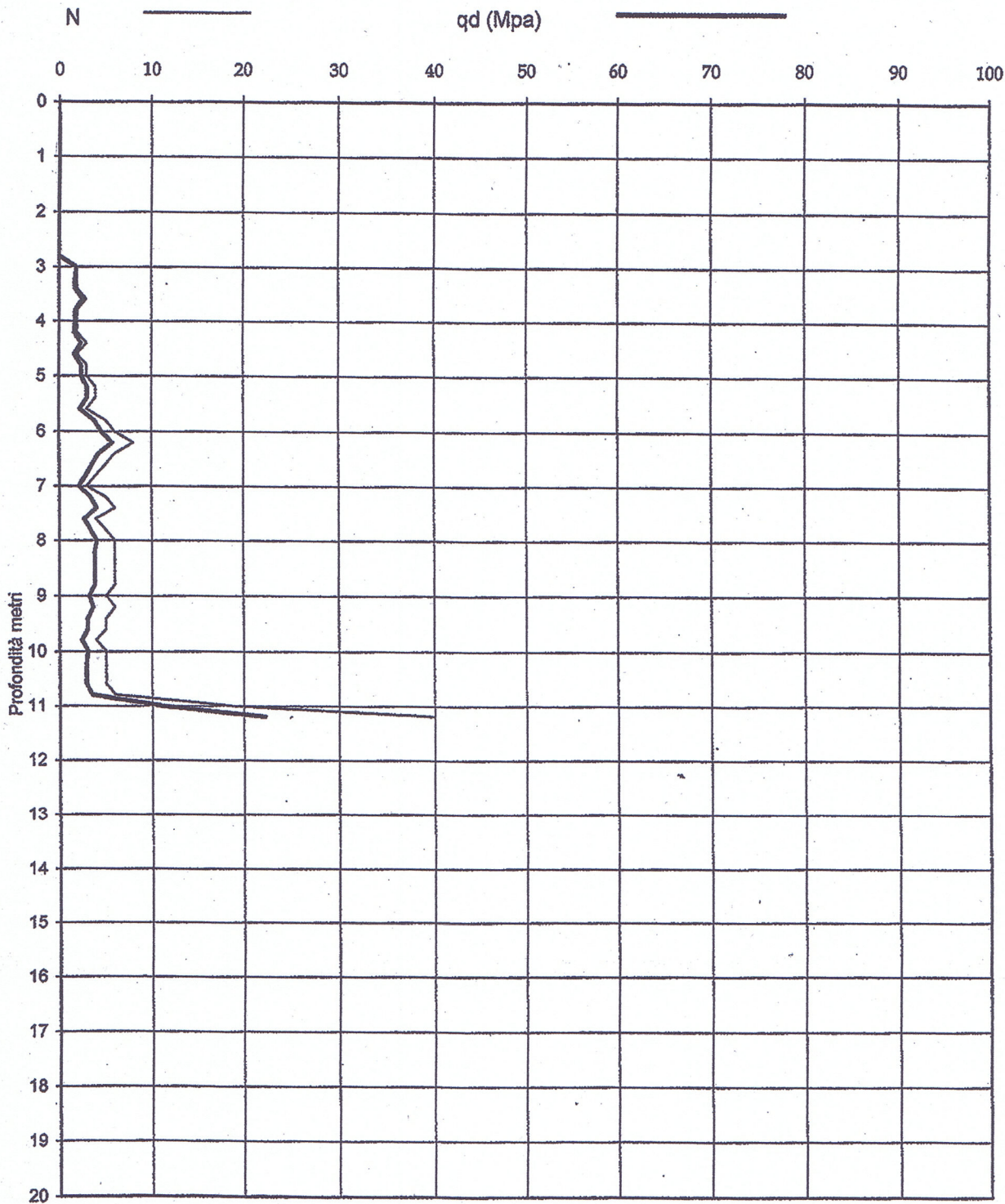
Data prova: 08/03/2006  
Quota —  
Codice lavoro: 2006.055

Committente: Dr. Barbieri

Rapporto di prova N. 06.0249 /RSP

Località: Monte San Pietro (BO) via Osti - Calderino

Attrezzatura: Penetrometro dinamico Emilia-DPSH



GEO-PROBE S.r.l. Indagini Geognostiche

Profondità acqua da p.c. : assente

Note: —

Procedure di prova	Rapporto di prova N°	Rev.	Data emissione	Sperimentatore	Il Direttore di Laboratorio
— 3	06.0249 /RSP	0	09/03/2006	Dr. Tabarroni	Dr. Luca Conti

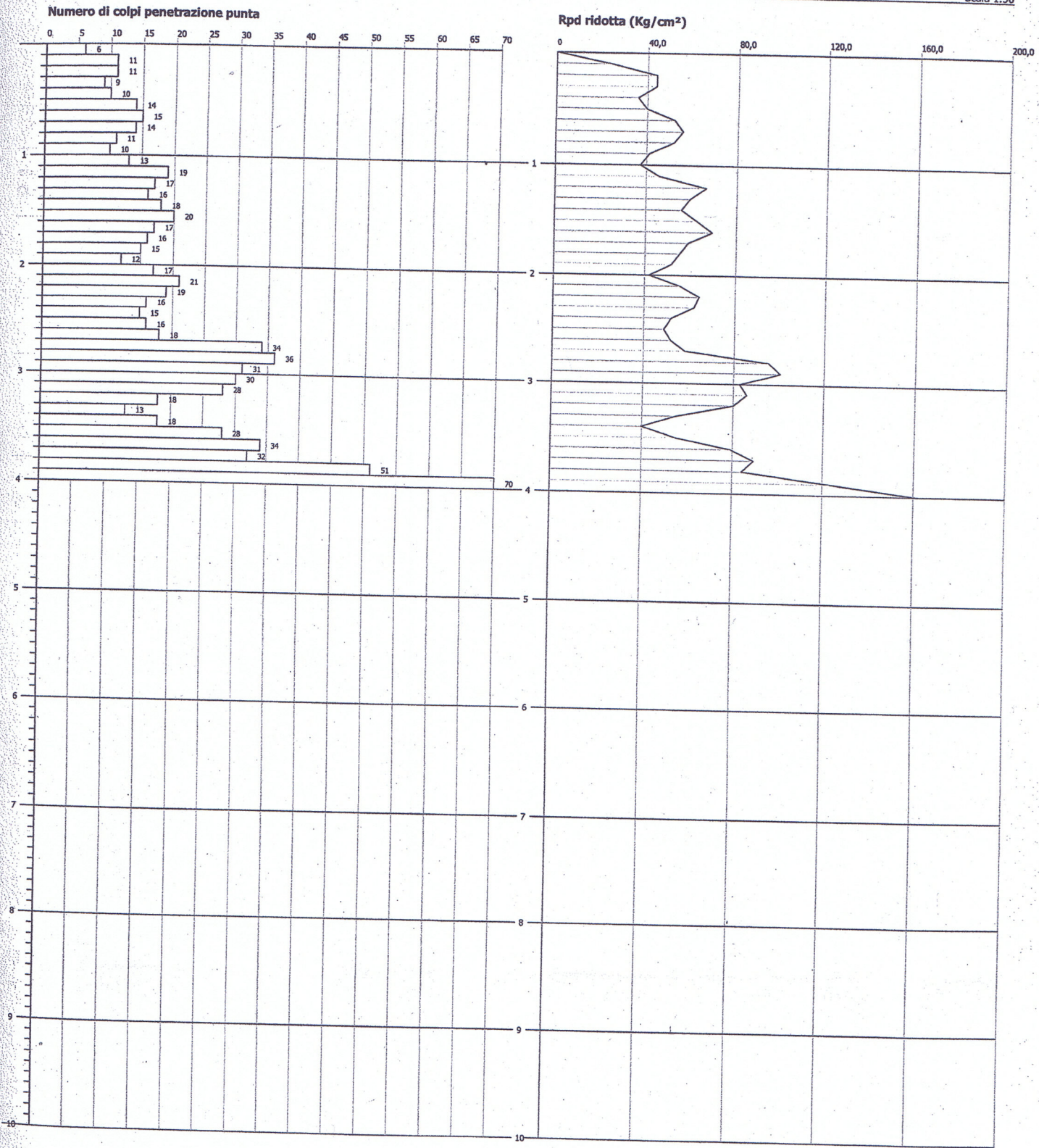
037042P750L78

**PROVA PENETROMETRICA DINAMICA P1**  
**Strumento utilizzato DPM 30-20 GEO-TOOL**

Committente: Dott. Geol. Beniamino Costantini  
Cantiere: Via Amola  
Località: Calderino

Data: 12/07/2011

Scala 1:50



037042 P75 HVSR79

### CALDERINO, CALDERINO\_22

Instrument: TEN-0002/01-06

Start recording: 12/07/11 09:54:57      End recording: 12/07/11 10:06:58

Channel labels: NORTH SOUTH; EAST WEST; UP DOWN

GPS data not available

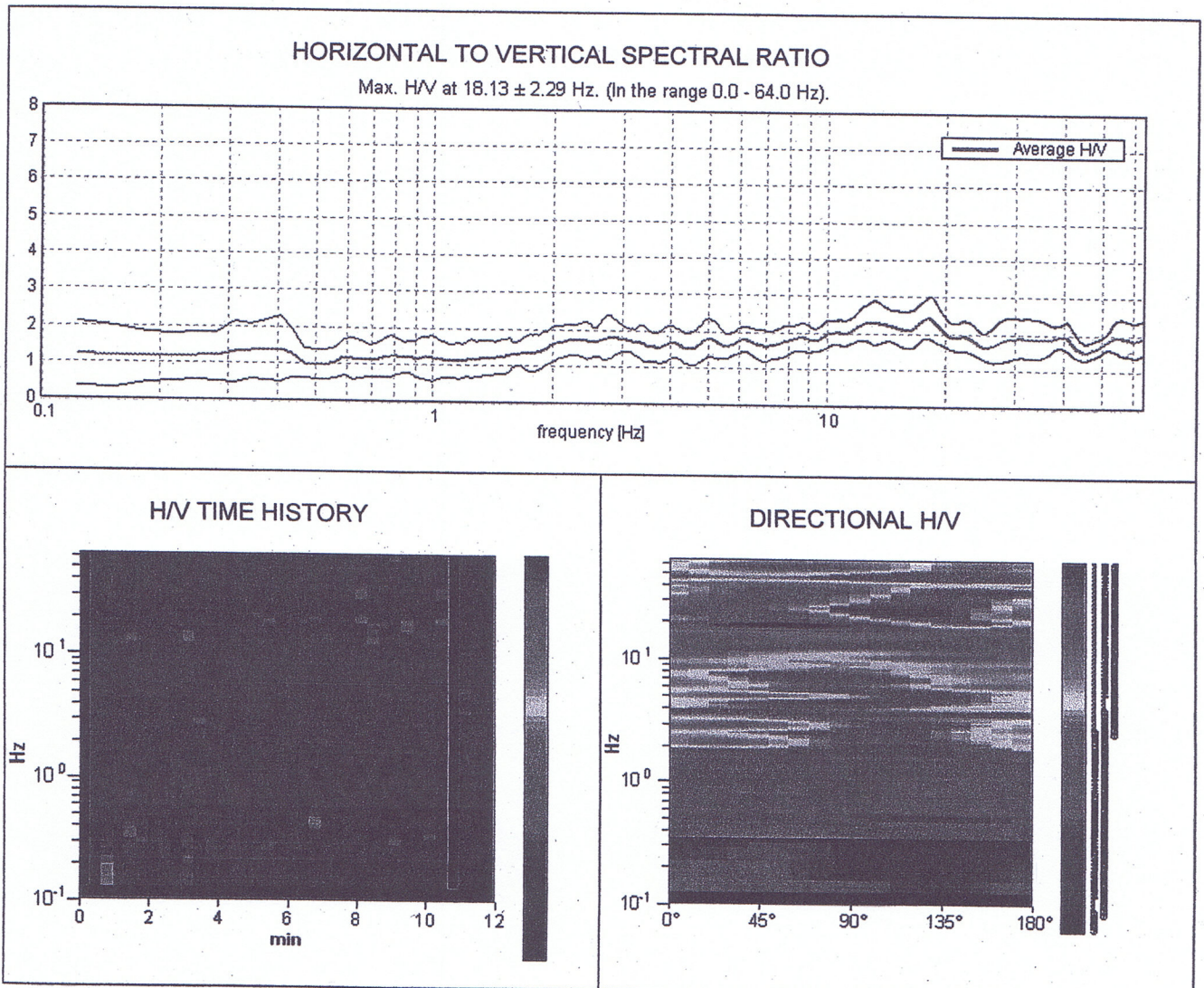
Trace length: 0h12'00".      Analyzed 94% trace (automatic window selection)

Sampling rate: 128 Hz

Window size: 20 s

Smoothing type: Triangular window

Smoothing: 10%



037042P76DP80

**GEO-PROBE s.r.l.**

**D P S H**

40033 Casalecchio di Reno (BO)  
Via Cimarosa, 119 - Tel. 051/61.33.072

Data: 29/08/2005

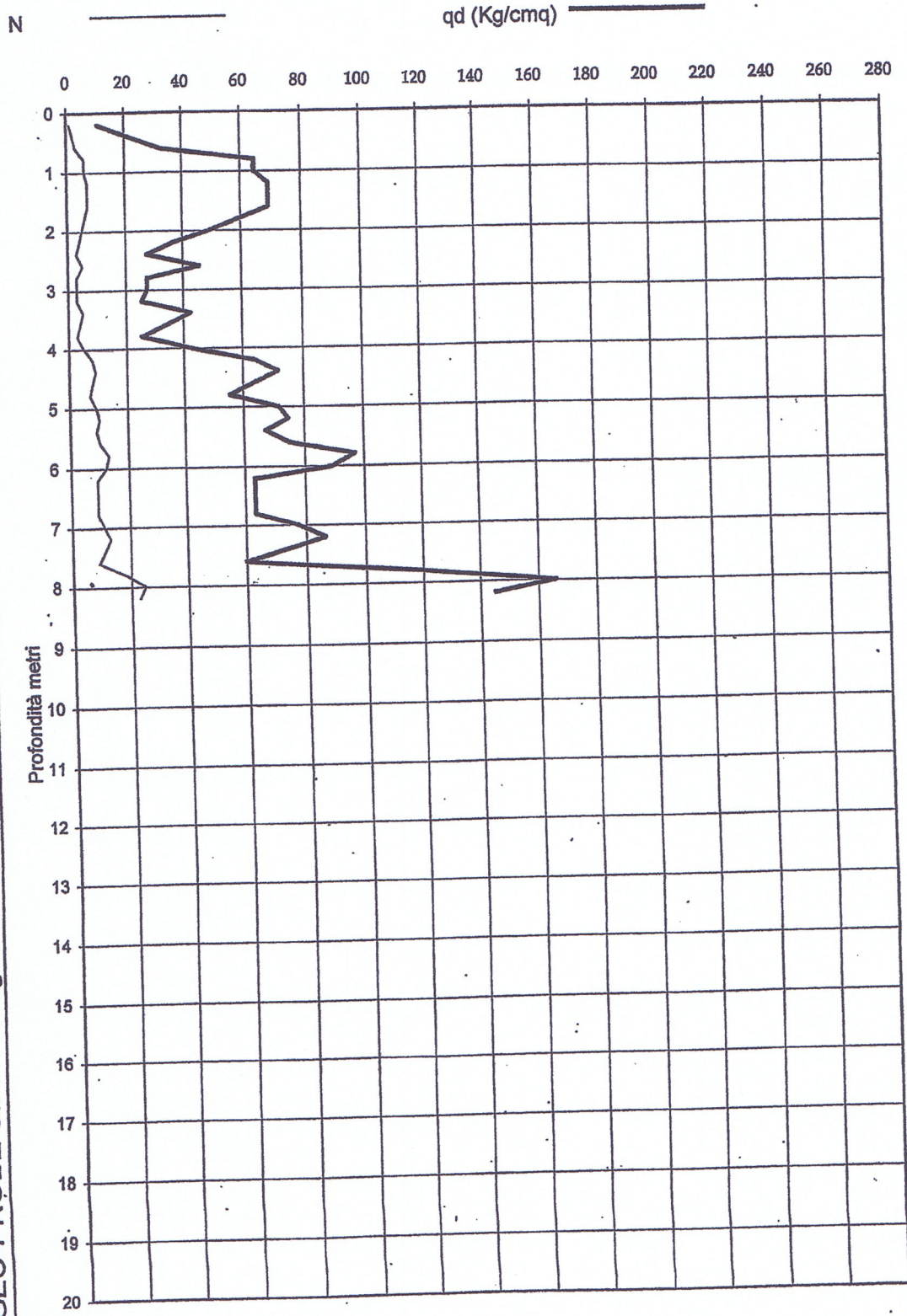
N. 1

Committente: Dr. Gianni Barbieri

N. Certificato: D0520901

Località: Monte San Pietro (BO)

via Togliatti - Calderino



Profondità acqua da p.c. : assente

GEO-PROBE S.r.l. Indagini Geognostiche

Note: —



037042 P77DP81

GEO-PROBE s.r.l.

D P S H

40033 Casalecchio di Reno (BO)  
Via Cimarosa, 119 - Tel. 051/61.33.072

Data: 29/08/2005

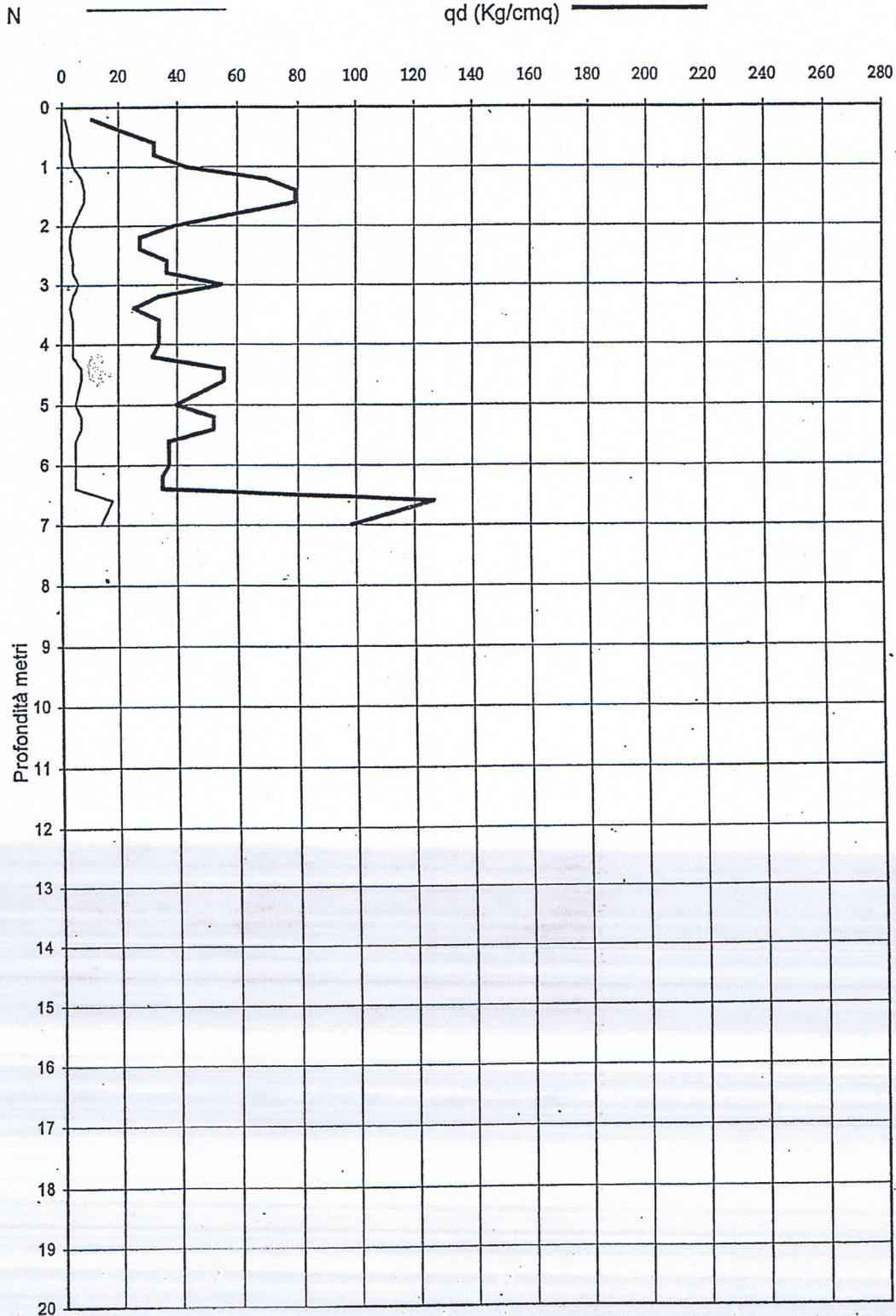
N. 2

Committente: Dr. Gianni Barbieri

N. Certificato: D0520902

Località: Monte San Pietro (BO)

via Togliatti - Calderino



Profondità acqua da p.c. : assente

GEO-PROBE S.r.l. Indagini Geognostiche

Note: ---

037042 P78DP82

**GEO-PROBE s.r.l.**

**D P S H**

40033 Casalecchio di Reno (BO)  
Via Cimarosa, 119 - Tel. 051/61.33.072

Data: 29/08/2005

N. 3

Committente: Dr. Gianni Barbieri

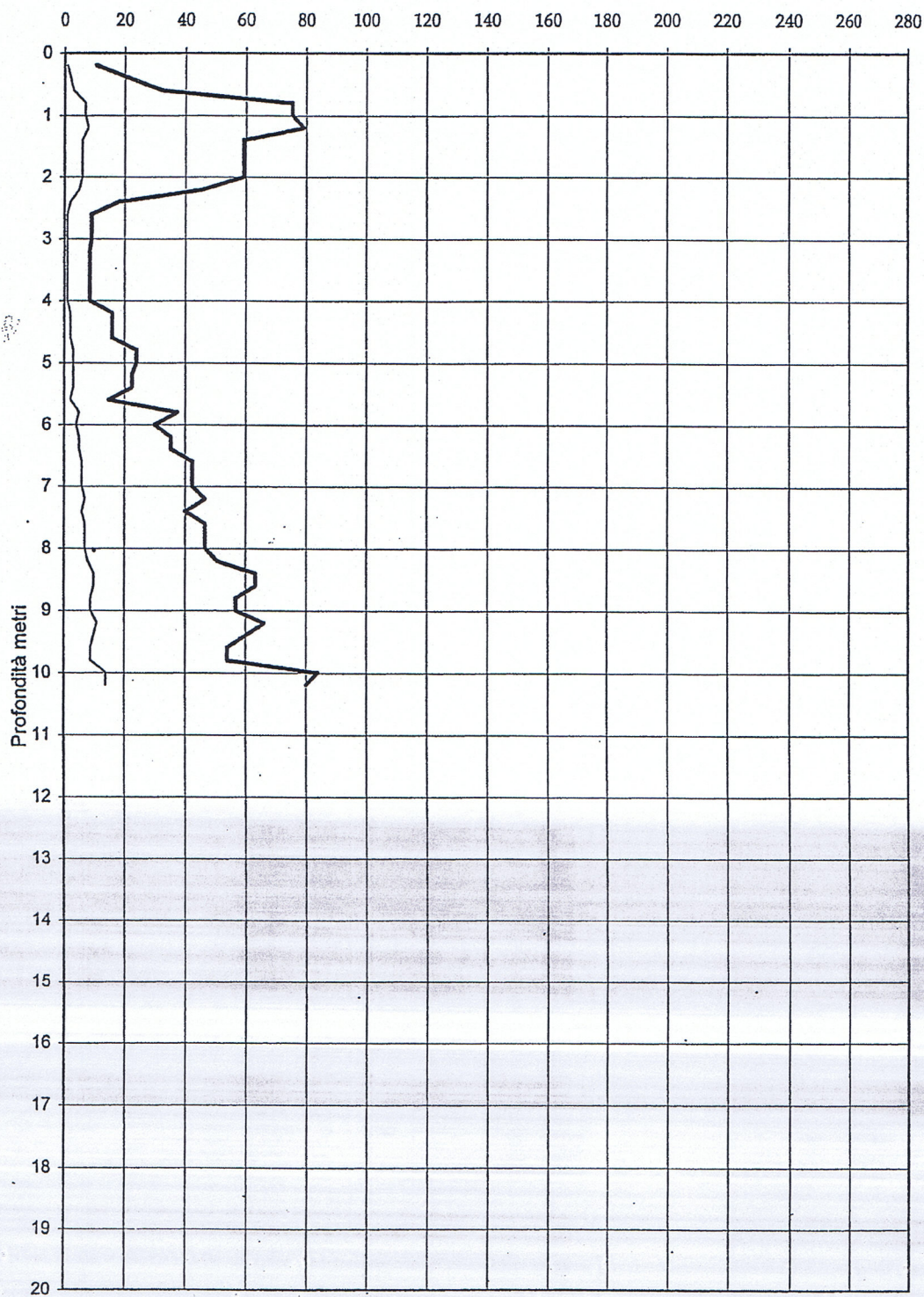
N. Certificato: D0520903

Località: Monte San Pietro (BO)

via Togliatti - Calderino

N

qd (Kg/cmq)



GEO-PROBE S.r.l. Indagini Geognostiche

Profondità acqua da p.c. : foro chiuso a -3,50 m

Note: ---

037042 P79 DP83

**GEO-PROBE S.r.l.**

**D P S H**

40033 Casalecchio di Reno (BO)  
Via Cimarosa, 119 - Tel. 051/61.33.072

Data: 29/08/2005

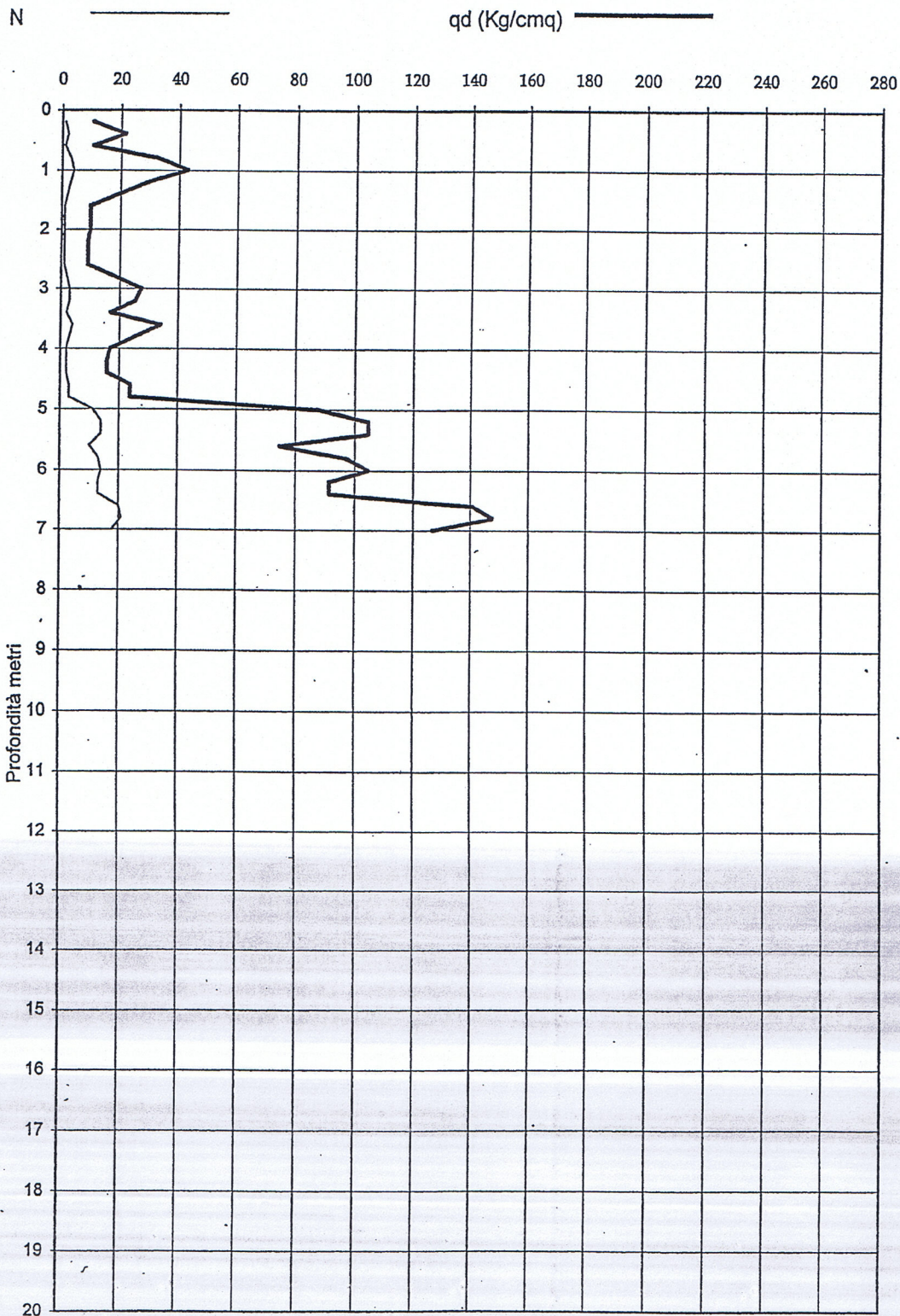
N. 4

Committente: Dr. Gianni Barbieri

N. Certificato: D0520904

Località: Monte San Pietro (BO)

via Togliatti - Calderino



GEO-PROBE S.r.l. Indagini Geognostiche

Note: —

5

GEO-PROBE  
40133 BOLOGNA

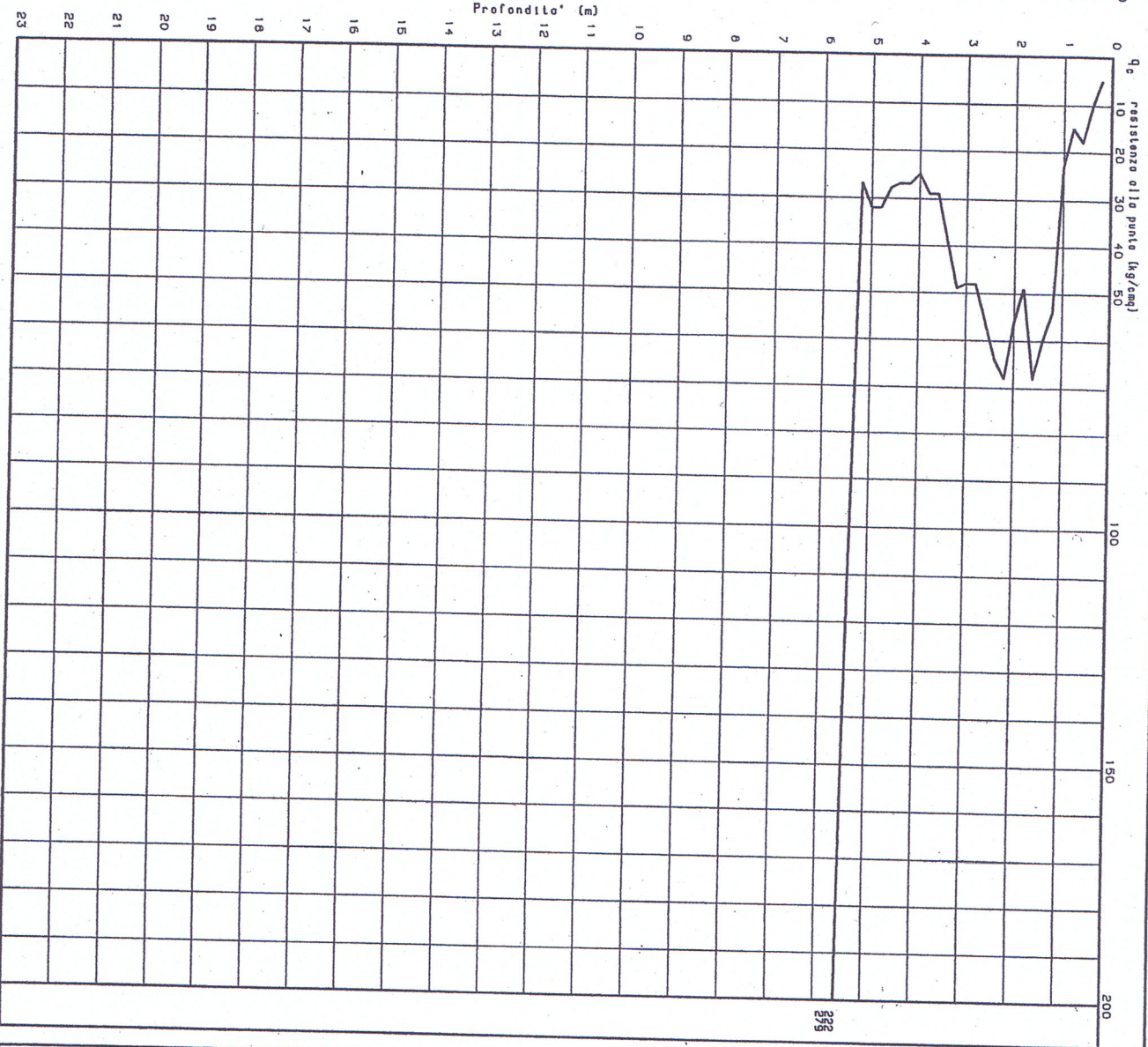
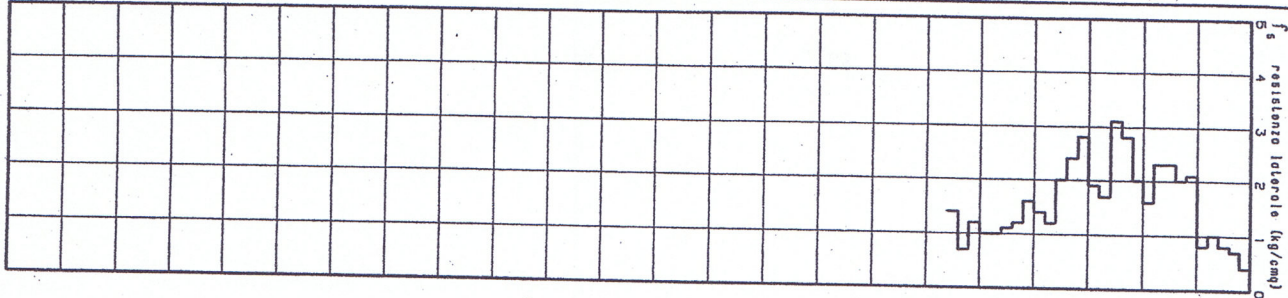
CPT  
REGONE PENETRATION TESTS  
N. 1

N. CERVIGNANI 99040001

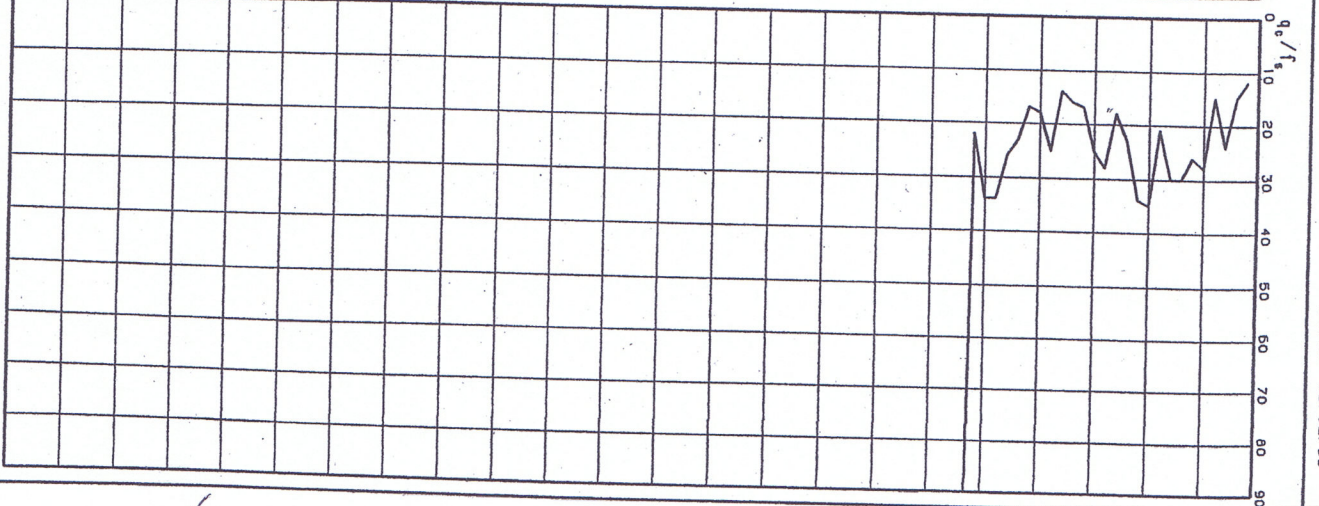
Via R. Orsico, 7 - Tel. 051/51.45.350

Località: Monte San Pietro (BO) Calderino - Case Bonozzi

Data: 12/02/99

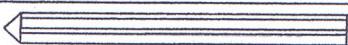


Livello acqua da p.c.: assente



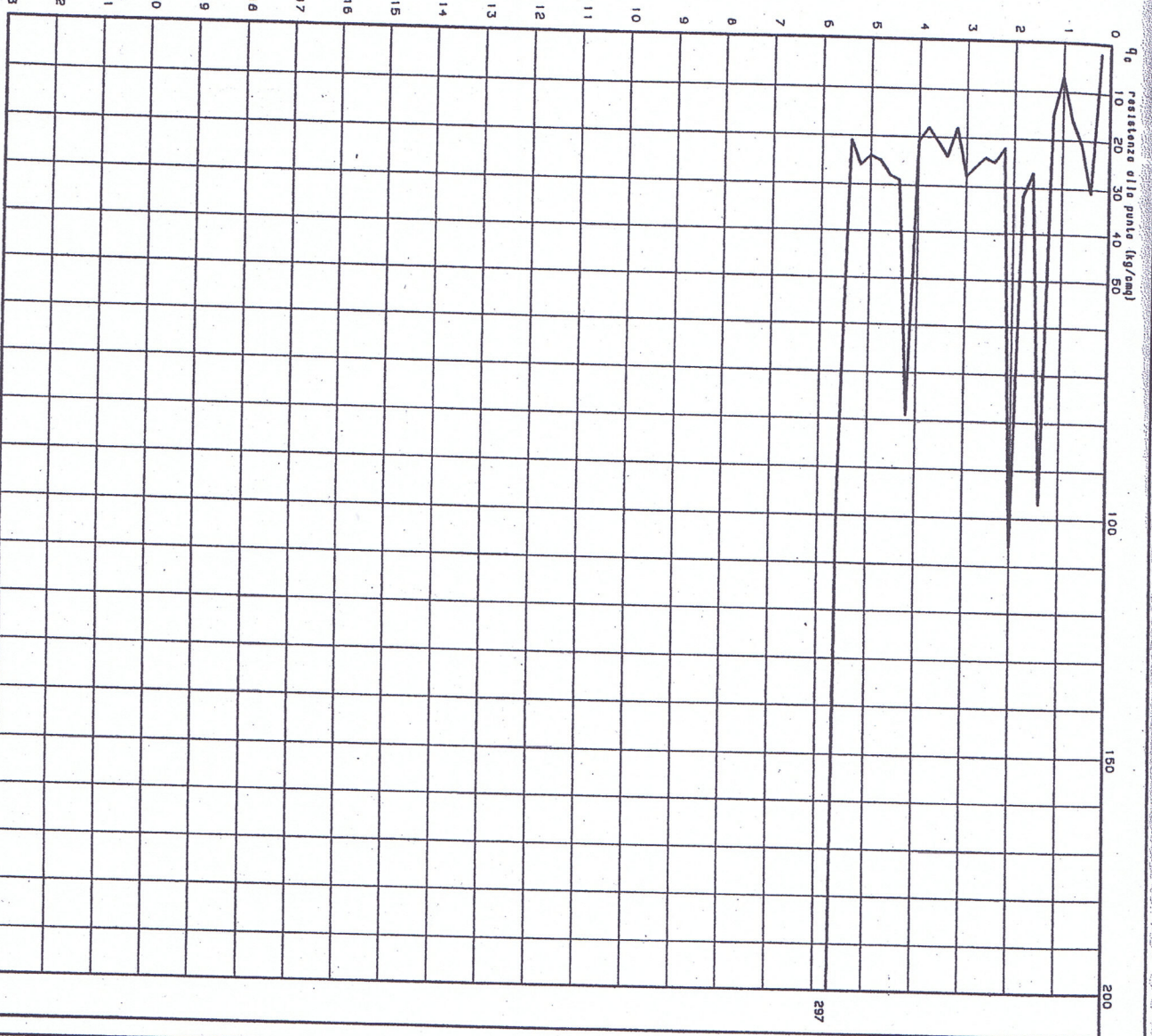
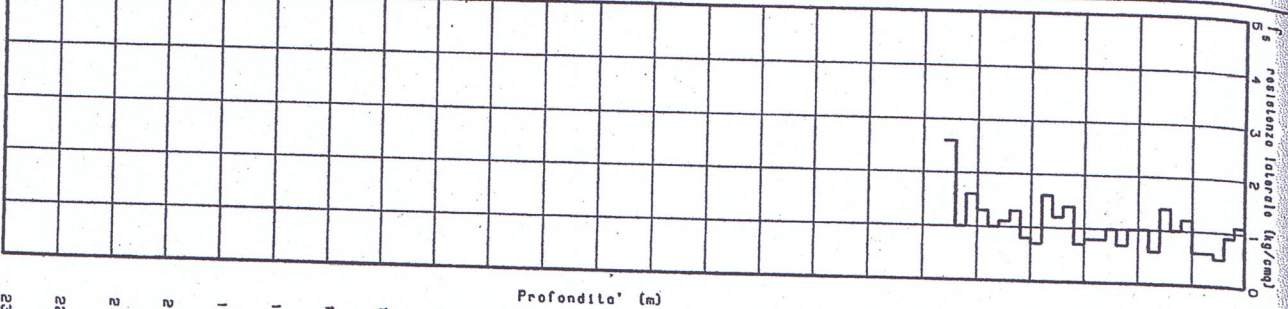
Profondità* (m)	Colonna stratigr.	Descrizione stratigrafica	Folde	Campioni			Pocket penetrometer (kg/cm²)	Tonvane (kg/cm²)	S.P.T.		Piezometro (m)	Schema
				Profondità* (m)	n.	Tipo			Profondità* (m)	N.		
0.40		Terrano di riporto di natura limoso argilloso con abbondanti frammenti lapidei eterogenei.										
1.00		Argilla limosa di colore beige brunoastro; - terreno a consistenza da plastico duro e duro ed umidità scorsa. Argilla limosa di colore nocciolo; - terreno a consistenza duro ed umidità scorsa.										
4.20		Limo argilloso e sabbioso di colore nocciolo brunoastro; - terreno a consistenza plastico ed umidità medio scorsa.		3.60 - 4.00	1	1					3.00	
5.20		Ghiaia in matrice limosa sabbiosa; - terreno ad addensamento medio scorso.										
7.00											5.00	

Quota di folde: assente

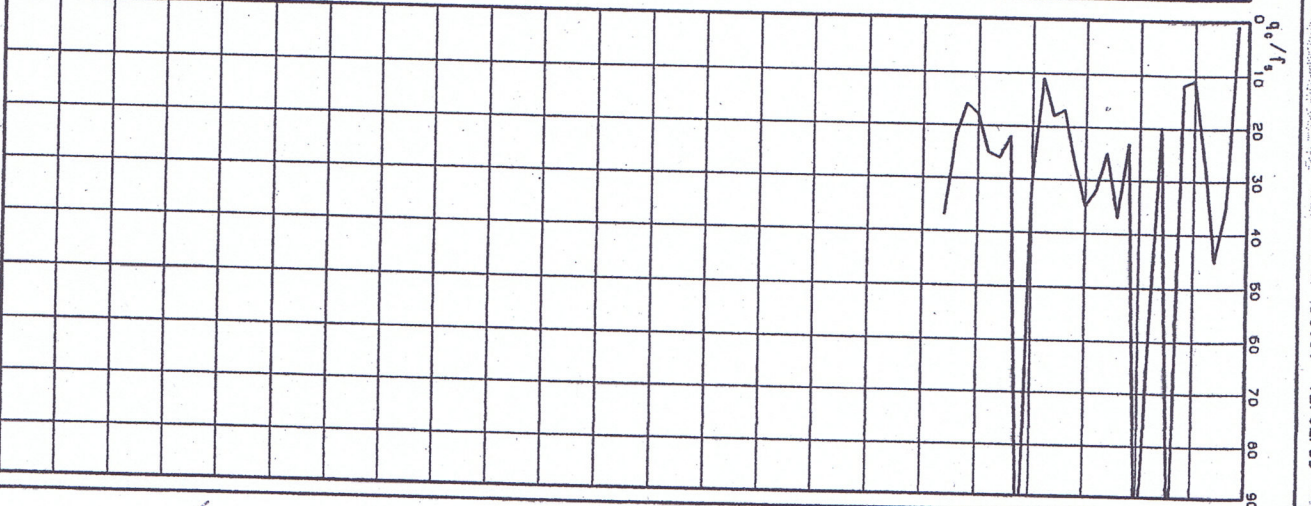


GEO-PROBE  
 Via Fr. Grillo, 7 - Tel. 051/46145-460  
 Caselle Marittime - Monte San Pietro (BO) - Calderino - Case Bonozzi  
 CPT CONE PENETRATION TEST  
 Data: 12/02/99

Note: Test in opera piazzale della lunghezza di 5.00 m



Livello acqua da p.c.: -2.00 m



# GEO-PROBE

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

# DPSH 037042 P88 DP87

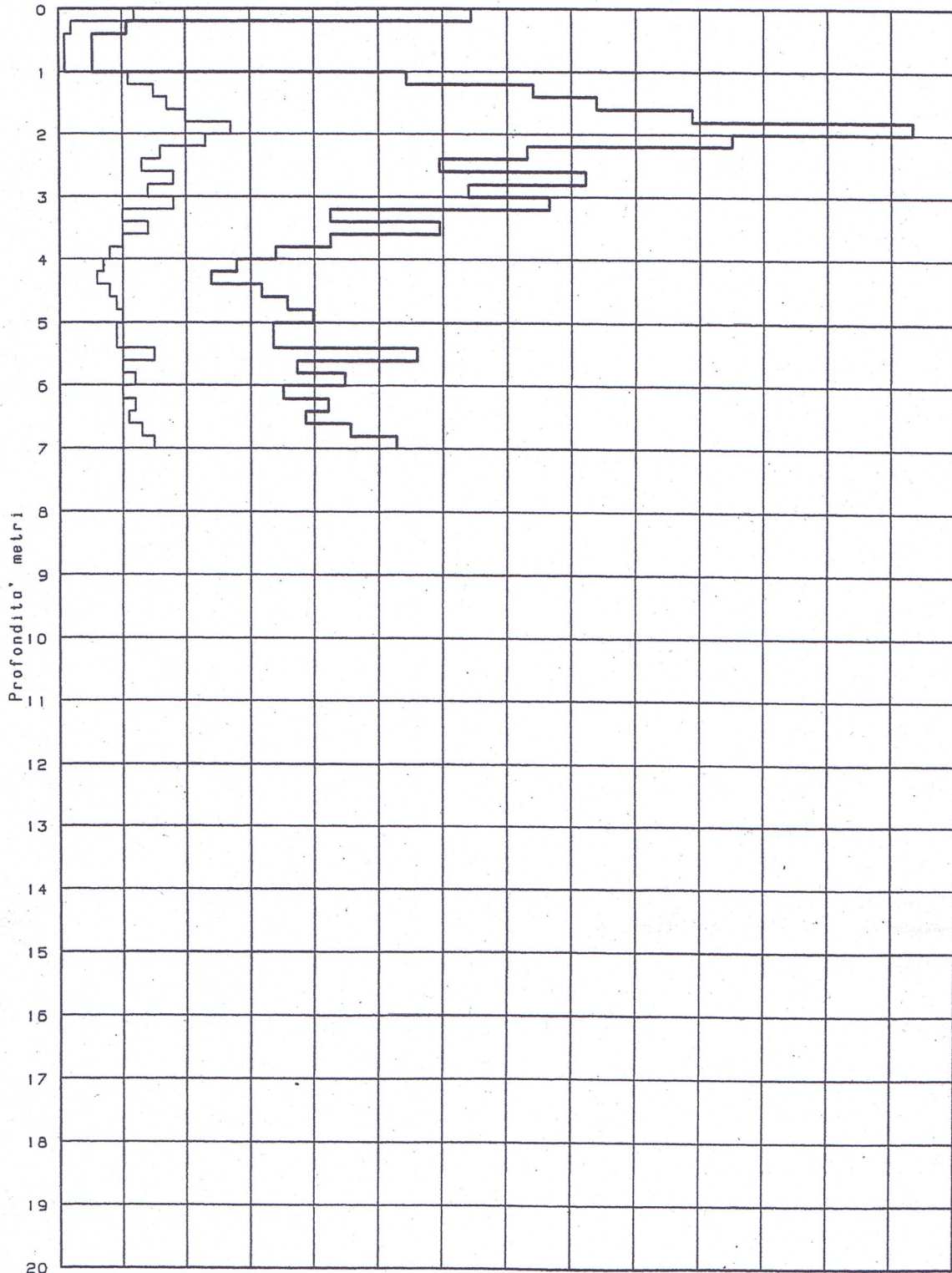
Data: 12/02/99

N. 3

Committente: Costruzioni Lanzarini-Futura Costruzioni N. Certificato: D9904003

Localita': Monte San Pietro (BO) Calderino - Case Bonazzi

Qd 20 40 60 80 100 140 180 220 260 (kg/cmq)  
N 10 20 30 40 50 60 70 80 90 100 120 140



Quota di falda: -1.60 m

GEO-PROBE s.n.c. Indagini Geognostiche

# GEO-PROBE

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

# DPSH 037042P83DP88

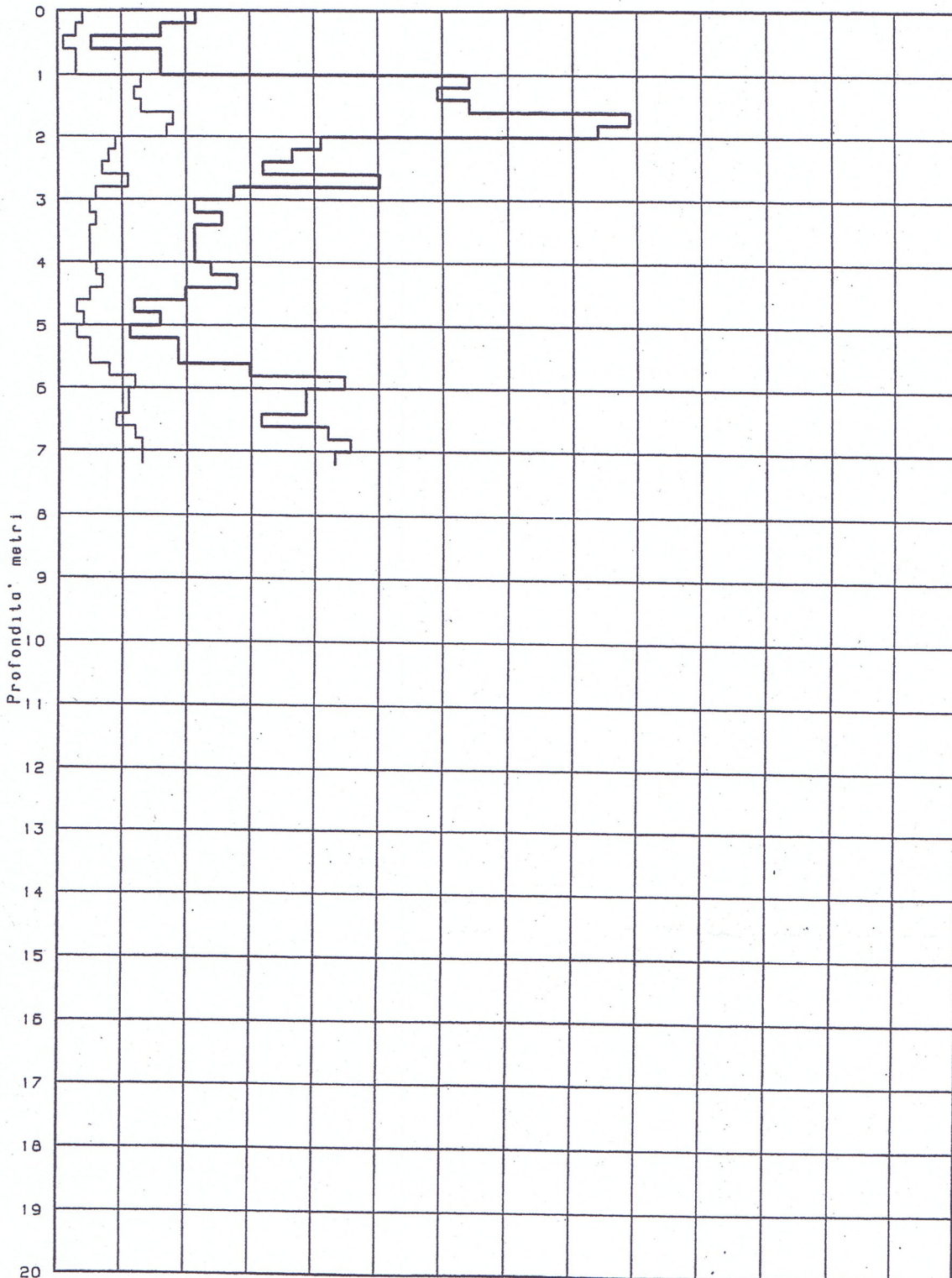
Data: 12/02/99

N. 5

Committente: Costruzioni Lanzarini-Futura Costruzioni N. Certificato: D9904005

Localita': Monte San Pietro (BO) Calderino - Case Bonazzi

Qd \_\_\_\_\_ 20 40 60 80 100 140 180 220 260 (kg/cmq)  
N \_\_\_\_\_ 10 20 30 40 50 60 70 80 90 100 120 140

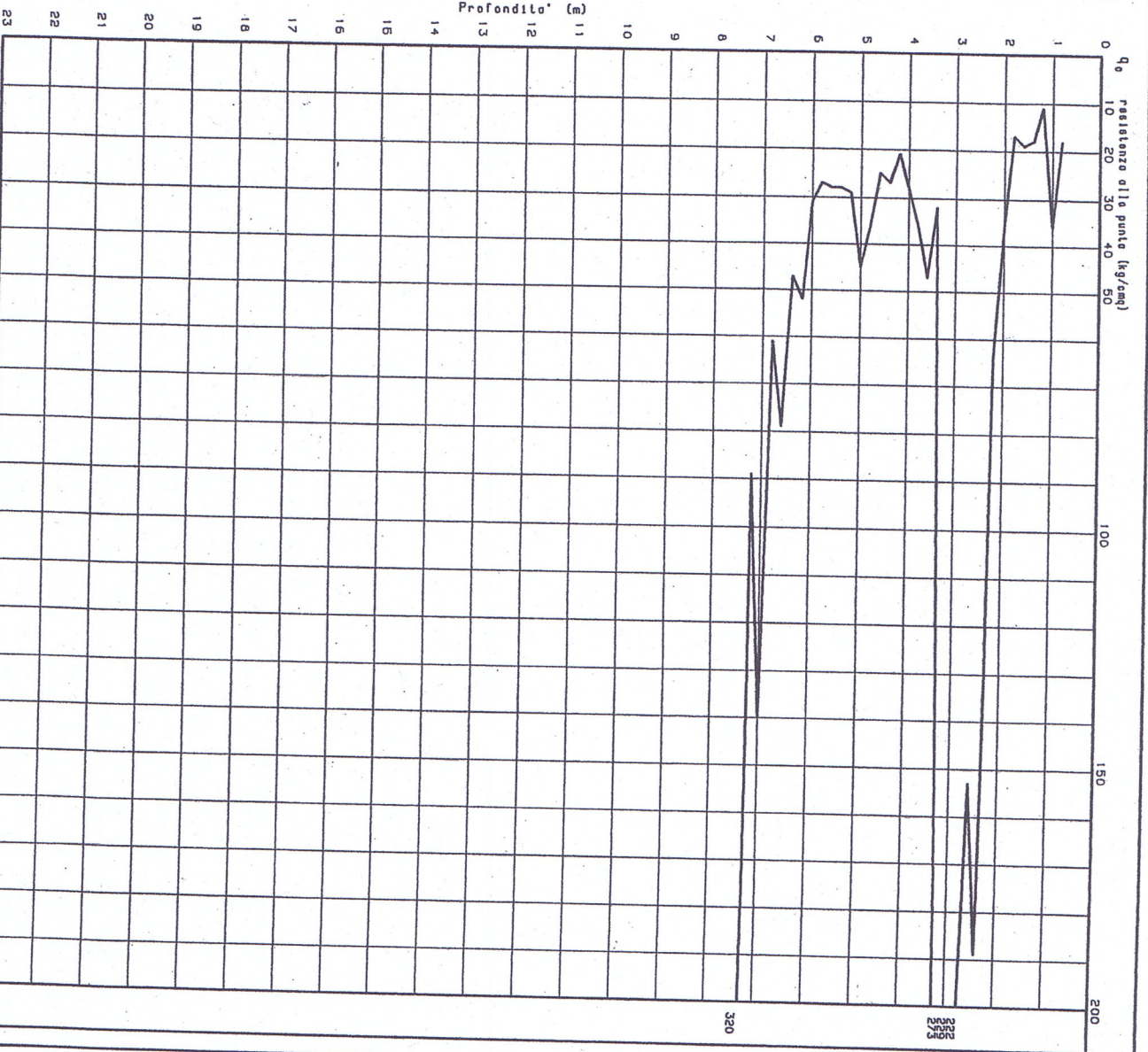
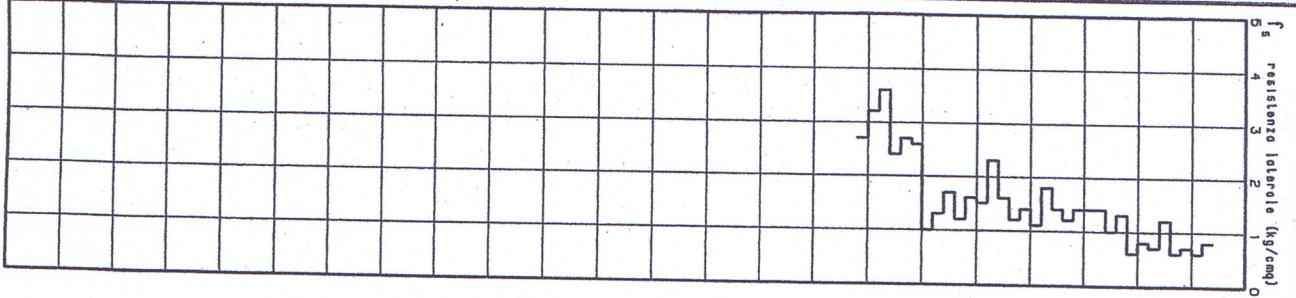


Quota di fondo: -1.05 m

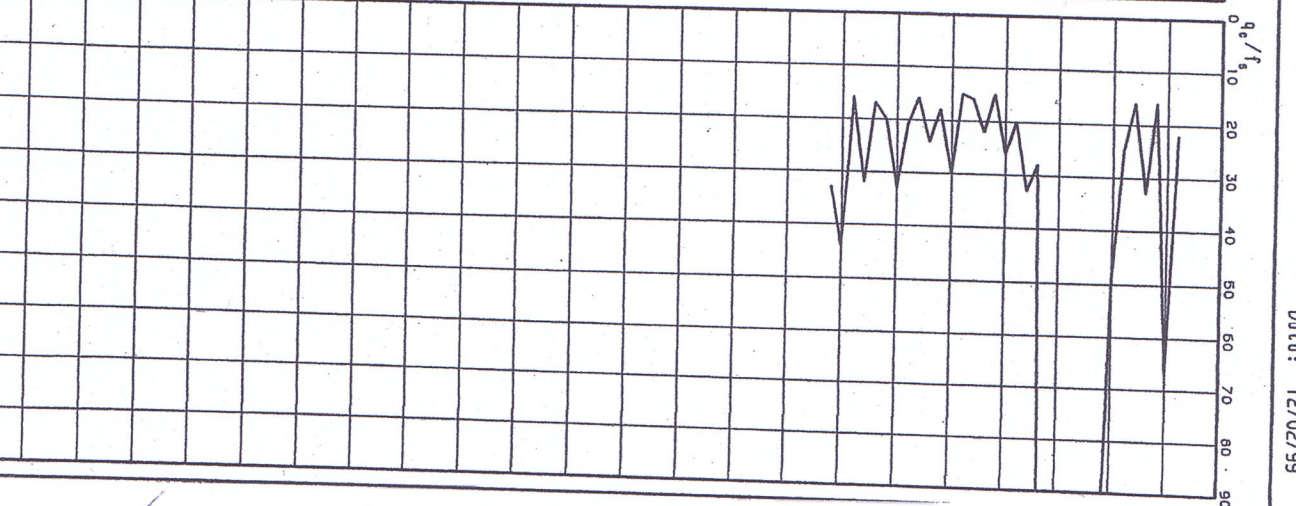
GEO-PROBE s.n.c. Indagini Geognostiche



GEO-PROBE  
 40133 BOLOGNA  
 Via R. Grieco, 7 - Tel. 051/61.45.360  
 Località: Monte San Pietro (BO) Calderino - Case Bonozzi  
 Committente: Costruzioni Lonzorini - Futuro Costruzioni  
 CPT CONE PENETRATION TESTS  
 N.5  
 N. Caratteristiche: 99040005  
 Data: 12/02/99



Livello acqua da p.c.: -2.80 m



GEO-PROBE S. r. l.

40033 CASALECCHIO DI RENO

Via Cimara, 119 - Tel. 051/61.33.072

CPT (CONE PENETRATION TEST)

N. 4

N. Certificato: 05257004

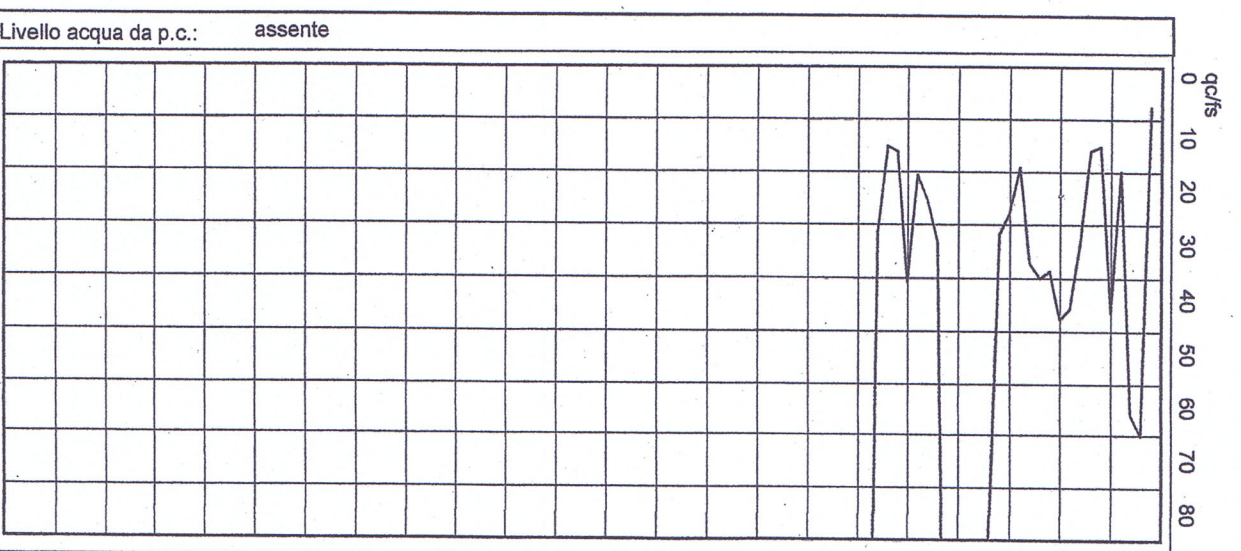
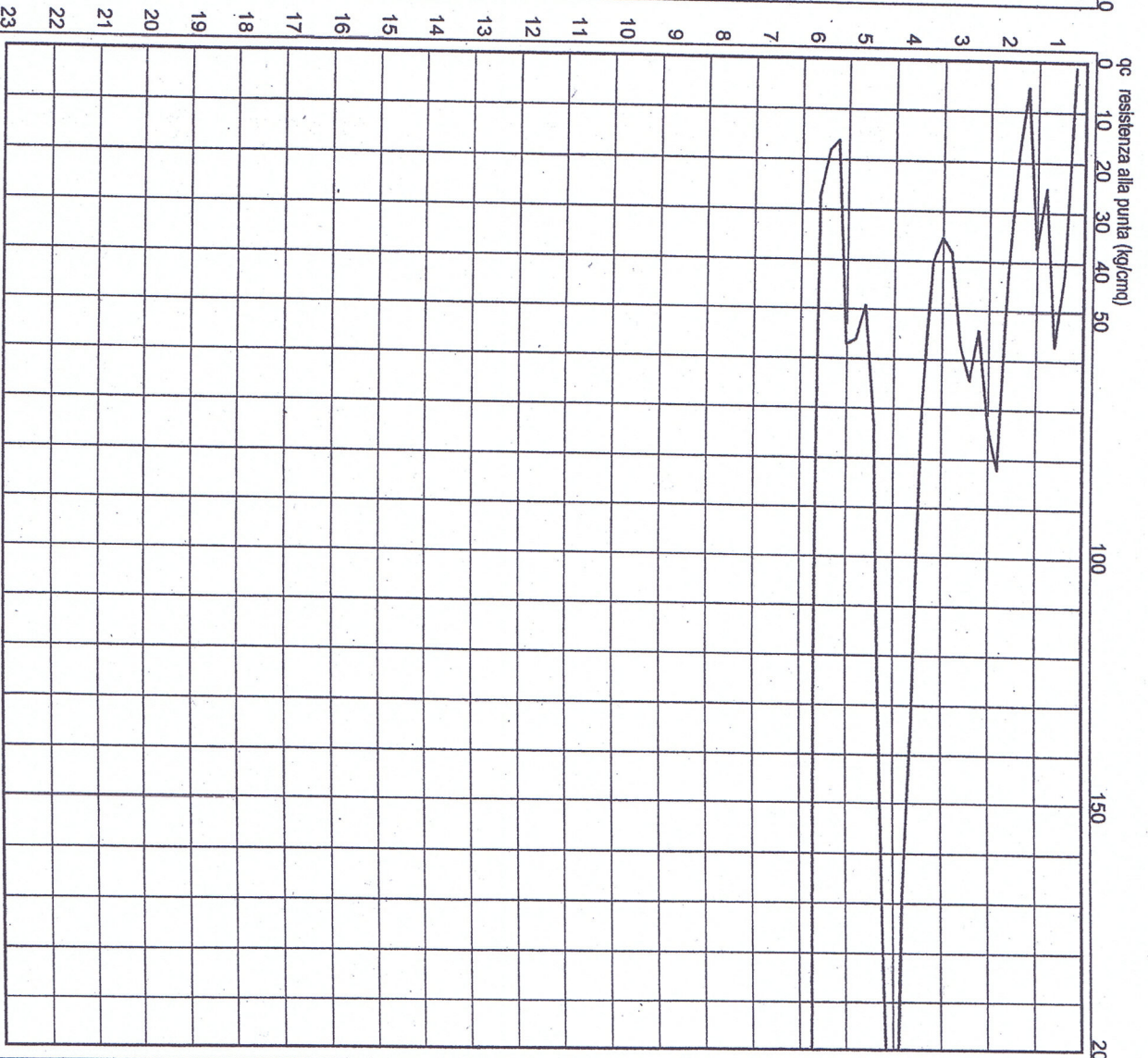
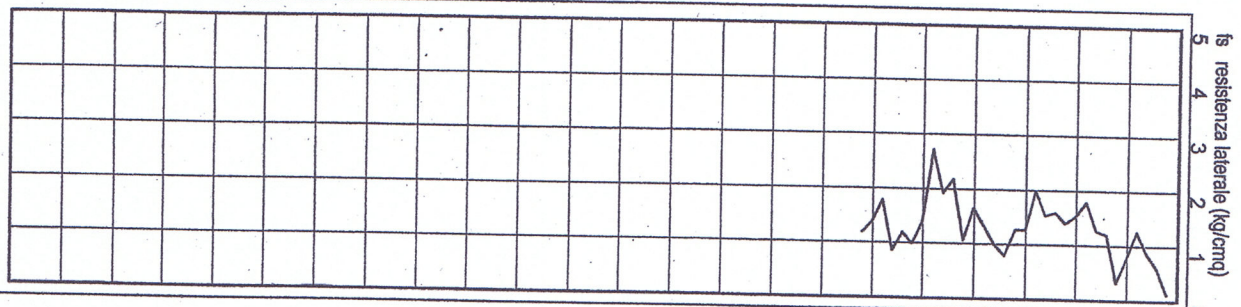
Quota: ---

Committente: Agena s.r.l.

Località: Monte San Pietro (BO)

via De Gasperi - Monte San Giovanni

Data: 24/10/05



Note: ---

**GEO-PROBE S.r.l.**

40033 CASALECCHIO DI RENO

Via Cimara, 119 - Tel. 051/61.33.072

**CPT (CONE PENETRATION TEST)**

N. 6

N. Certificato: 05257006

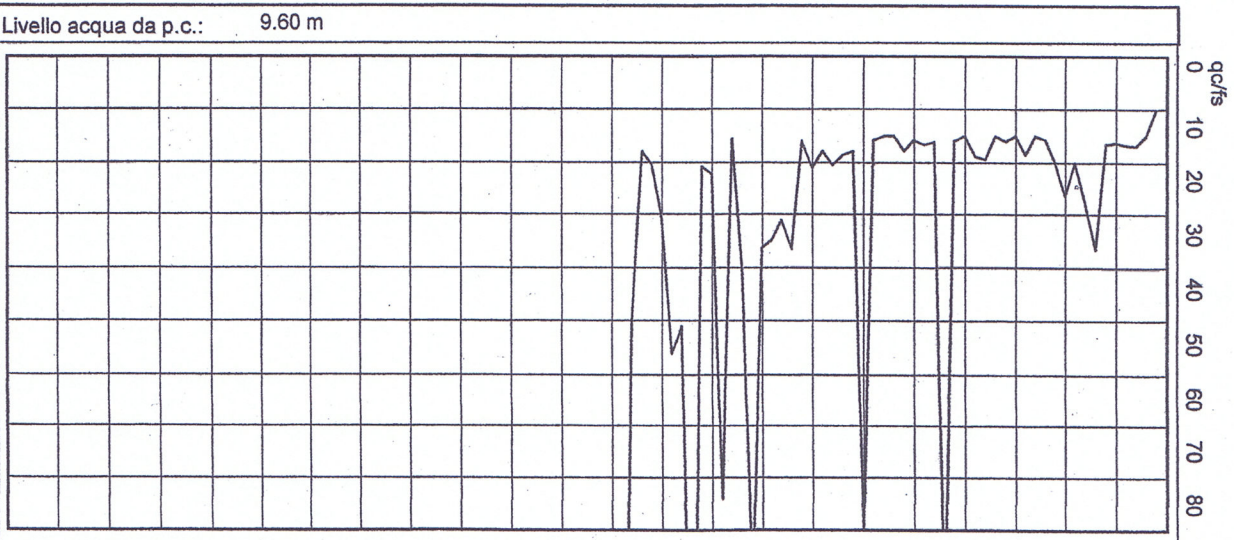
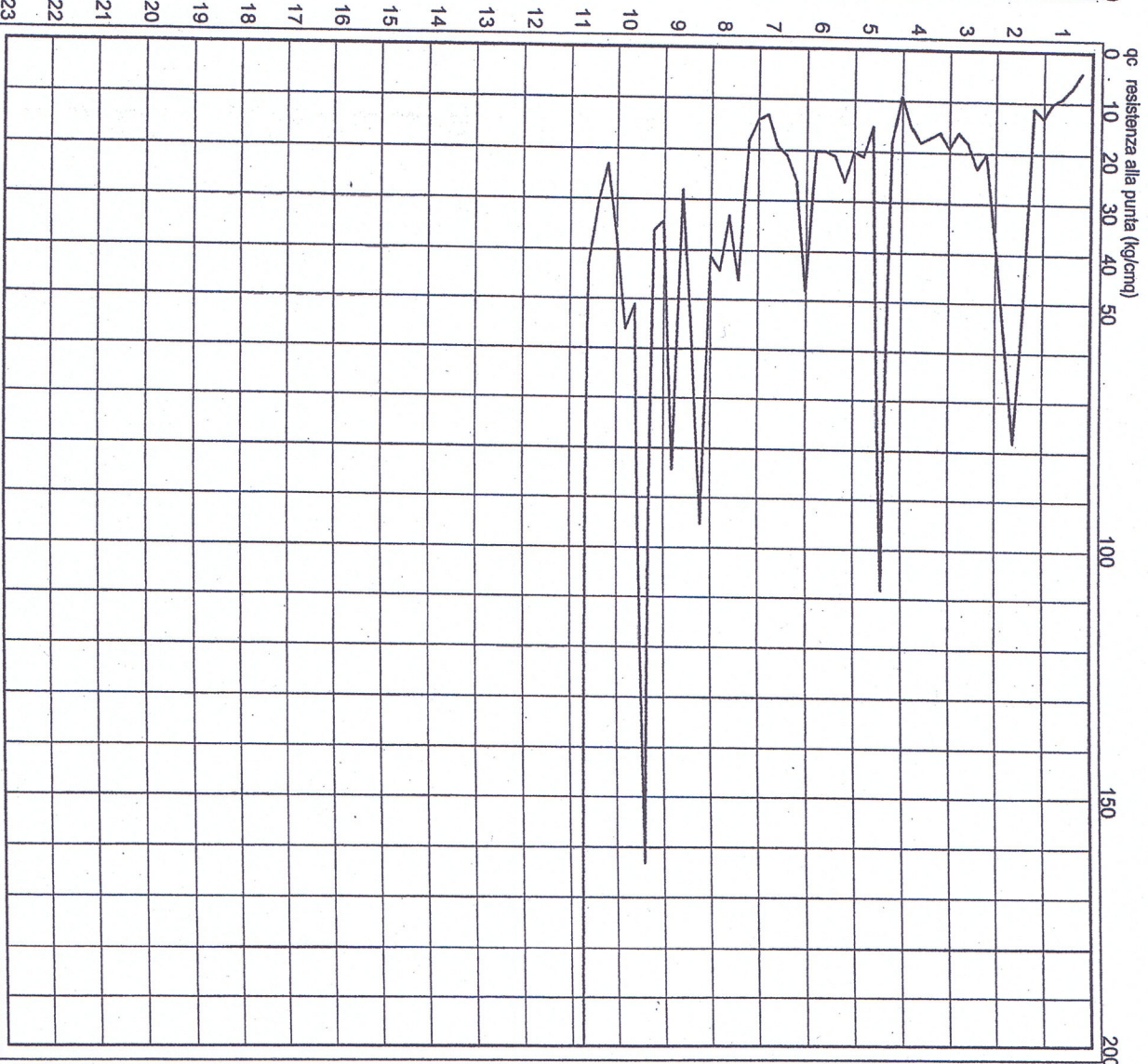
Commitente: Agena s.r.l.

Località: Monte San Pietro (BO)

via De Gasperi - Monte San Giovanni

Quota: ---

Data: 24/10/05



Note: ---

GEO-PROBE

40133 BOLOGNA

Via R. Griseo, 7 - Tel. 051/61.45.360

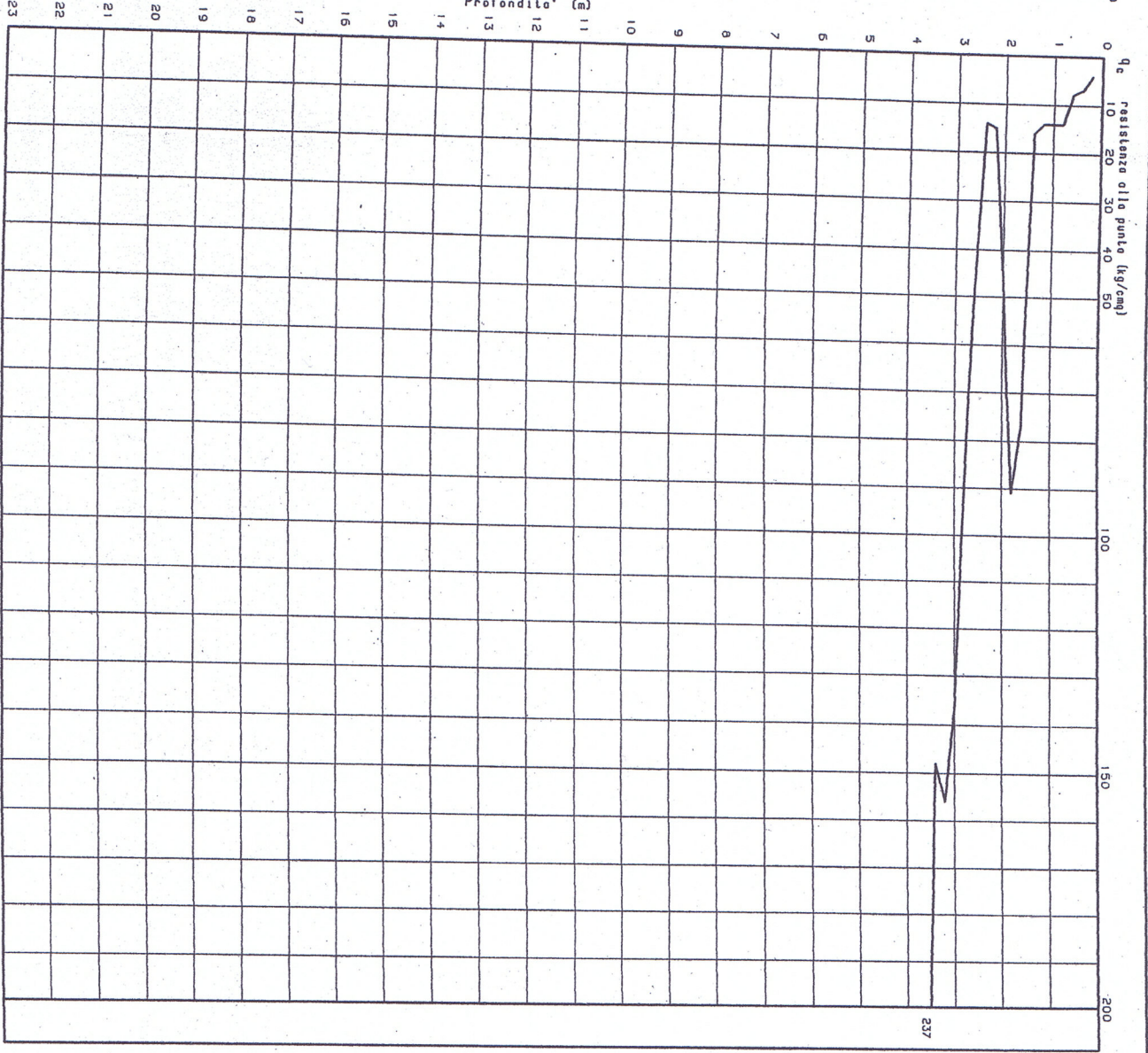
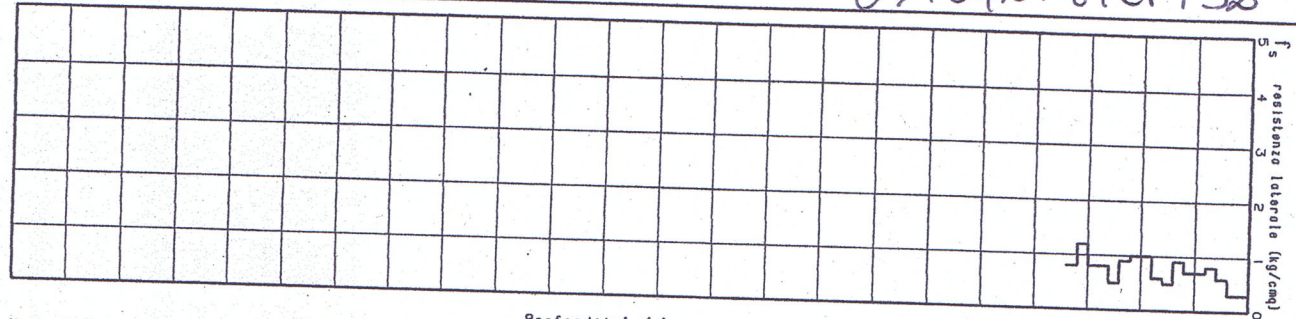
CPT (CONE PENETRATION TEST) N.7

Committente: Rizzardi Renzo ed Altri

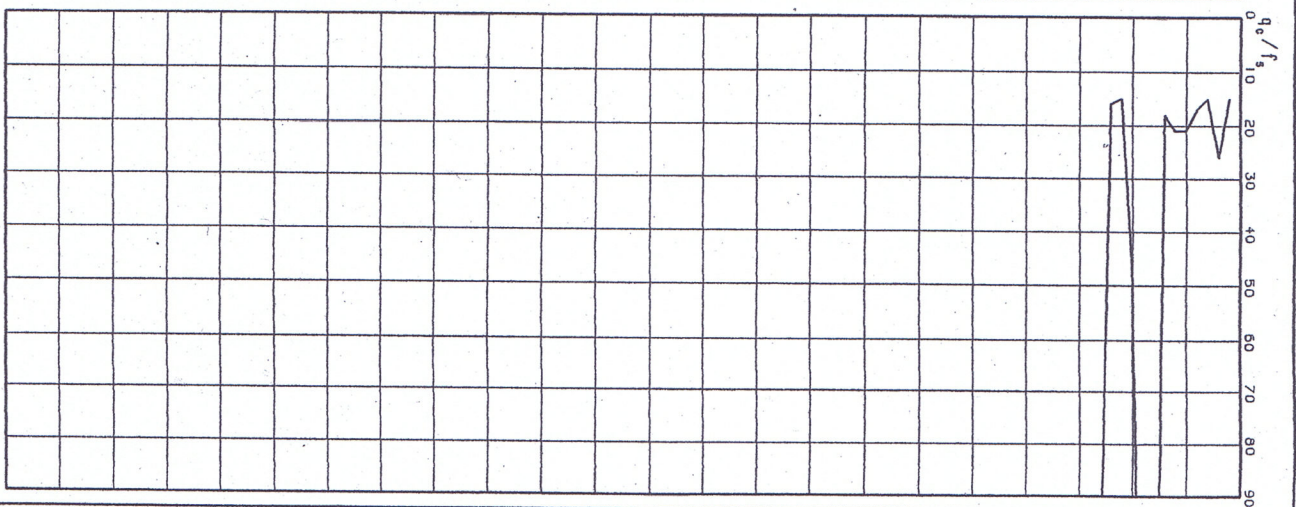
Localita': Monte San Pietro (BO) Monte San Giovanni - C. de' Ghedelli Gioacco

N. Certificato: 99309007

Data: 26/10/99



Livello acqua da p.c.: -2.60 m



Committente: Sig.ri Rizzardi e Camassi

Località: Monte San Pietro (BO)

037042 P88CPT93

Cantiere: Ca' de' Ghedotti - Monte San Giovanni

Data: 10/01/1997

Prova N°: 2

Profondità falda: assente

Certificato N°: 97001002

L1 kgf	L2 kgf	qc kg/cm <sup>2</sup>	fs kg/cm <sup>2</sup>	qc/fs -	FR %	
50	0	5	0.47	11		m 0
100	170	10	0.73	14	9.33	
140	250	14	0.80	18	7.33	
130	250	13	0.87	15	5.71	
950	1080	95	1.87	51	6.67	
					1.96	
800	1080	80	1.47	55		m 1
410	630	41	1.13	36	1.83	
340	510	34	1.07	32	2.76	
530	690	53	1.00	53	3.14	
1950	2100	195	3.33	59	1.89	
					1.71	
2530	3030	253	3.33	76		m 2
2040	2540	204	2.47	83	1.32	
780	1150	78	1.60	49	1.21	
3540	3780	354	0.00	0	2.05	
4000	0	400	0.00	0	0.94	
					0.00	m 3

Committente: Sig.ri Rossi Lucia e Barbieri Primo

Località: Monte San Pietro

Cantiere: Monte San Giovanni

037042P89CPT94

Data esecuzione: 31/05/91

Prova N°: 001

Profondità falda: -1.90 m.

Certificato N°: 91076001

L1 kg	L2 kg	cc kg/cm <sup>2</sup>	fs kg/cm <sup>2</sup>	cc/fs	FR %	
70	0	7				m 0
250	390	25	0.93	8	13.33	
350	470	35	0.80	51	3.20	
300	390	30	0.60	58	1.71	
360	670	36	2.07	15	6.89	
			1.47	25	4.07	
270	490	27				m 1
200	450	20	1.67	16	6.17	
460	600	46	0.93	21	4.57	
160	340	16	1.20	38	2.61	
230	400	23	1.13	14	7.08	
			0.93	25	4.06	
190	330	19				m 2
170	360	17	1.27	15	5.67	
180	350	18	1.13	15	6.67	
240	420	24	1.20	15	6.67	
420	610	42	1.27	19	5.28	
			0.73	57	1.75	
140	250	14				m 3
270	410	27	0.93	15	6.67	
1220	1400	122	1.20	23	4.44	
760	940	76	1.20	102	0.93	
1180	1640	118	3.07	23	4.04	
			1.60	45	2.20	
1020	1410	102				m 4
2140	2370	214	1.53	67	1.50	
1570	1890	157	2.07	104	0.97	
1580	1940	158	1.73	91	1.10	
1100	1410	110	2.07	81	1.25	
			1.67	66	1.52	
1430	1680	143				m 5
1260	1550	126	1.93	74	1.33	
3590	0	359	0.00	0	0.00	
			0.00	0	0.00	

GEO-PROBE s.n.c. PROVA PENETROMETRICA STATICA (C.P.T.)

Committente: Dr. Dal Pian

Località: Monte S. Pietro (BO)

Cantiere: Monte S. Giovanni

037042P90CPT95

Data: 20/10/98

Prova N°: 1

Profondità falda: assente

Certificato N°: 98266001

L1 kgf	L2 kgf	qc kg/cm <sup>2</sup>	fs kg/cm <sup>2</sup>	qc/fs	FR %	
30	0	3	0.33	9		m 0
20	70	2	0.47	4	11.11	
20	90	2	0.40	5	23.33	
20	80	2	0.40	5	20.00	
40	100	4	0.40	10	20.00	
50	110	5	0.60	8	10.00	m 1
30	120	3	0.73	4	12.00	
110	220	11	1.40	8	24.44	
270	480	27	0.87	31	12.73	
220	350	22	1.20	18	3.21	
480	660	48	2.27	21	5.45	m 2
1090	1430	109	1.33	82	4.72	
710	910	71	1.87	38	1.22	
730	1010	73	2.67	27	2.63	
960	1360	96	2.40	40	3.65	
1510	1870	151	1.40	108	2.50	m 3
970	1180	97	2.07	47	0.93	
730	1040	73	2.07	35	2.13	
620	930	62	1.07	58	2.83	
550	710	55	2.13	26	1.72	
1550	1870	155	2.13	73	3.88	m 4
1610	1930	161	3.07	53	1.38	
1220	1680	122	1.40	87	1.90	
410	620	41	1.20	34	1.15	
1170	1350	117	2.07	57	2.93	
3190	3500	319	1.67	191	1.77	m 5
3860	4110	386	0.00	0	0.52	
					0.00	

Note: 0

GEO-PROBE s.n.c. PROVA PENETROMETRICA STATICA (C.P.T.)

Committente: Dr. Dal Pian

Località: Monte S. Pietro (BO)

Cantiere: Monte S. Giovanni

037042 P91CPT96

Data: 20/10/98

Prova N°: 3

Profondità falda:

Certificato N°: 98266003

L1 kgf	L2 kgf	qc kg/cm <sup>2</sup>	fs kg/cm <sup>2</sup>	qc/fs -	FR %	
50	0	5	0.40	13	8.00	m 0
80	140	8	0.67	12	8.33	
70	170	7	0.53	13	7.62	
140	220	14	0.80	18	5.71	
190	310	19	0.93	20	4.91	
180	320	18	0.93	19	5.19	m 1
200	340	20	0.73	27	3.67	
210	320	21	0.67	32	3.17	
170	270	17	0.93	18	5.49	
150	290	15	0.53	28	3.56	
160	240	16	1.20	13	7.50	m 2
300	480	30	1.67	18	5.56	
370	620	37	1.00	37	2.70	
160	310	16	0.93	17	5.83	
270	410	27	1.27	21	4.69	
670	860	67	0.67	101	1.00	m 3
300	400	30	0.87	35	2.89	
330	460	33	1.67	20	5.05	
210	460	21	1.07	20	5.08	
210	370	21	1.00	21	4.76	
180	330	18	1.13	16	6.30	m 4
320	490	32	0.73	44	2.29	
170	280	17	1.07	16	6.27	
380	540	38	0.73	52	1.93	
210	320	21	1.20	18	5.71	
190	370	19	1.00	19	5.26	m 5
120	270	12	0.80	15	6.67	
170	290	17	0.87	20	5.10	
300	430	30	0.93	32	3.11	
170	310	17	0.93	18	5.49	
220	360	22	0.93	24	4.24	m 6
420	560	42	1.00	42	2.38	
300	450	30	2.87	10	9.56	
800	1230	80	1.13	71	1.42	
190	360	19	0.67	29	3.51	
110	210	11	0.67	17	6.06	m 7
180	280	18	0.87	21	4.81	
190	320	19	0.80	24	4.21	
680	800	68	0.87	78	1.27	
500	630	50	2.80	18	5.60	
1420	1840	142	0.87	164	0.61	m 8
1560	1690	156	0.87	180	0.56	
1020	1150	102	1.00	102	0.98	
420	570	42	1.47	29	3.49	
2100	2320	210	1.80	117	0.86	
1110	1380	111	0.67	167	0.60	m 9
890	990	89	1.40	64	1.57	
790	500	29	1.20	24	4.14	
630	810	63	1.60	39	2.54	
1110	1350	111	0.67	167	0.60	m 10



GEO-PROBE s.n.c. PROVA PENETROMETRICA STATICA (C.I.P.T.)

Segue Certificato N°: 98266003

L1 kgf	L2 kgf	qc kg/cm <sup>2</sup>	ts kg/cm <sup>2</sup>	qc/fs	FR %	
1280	1380	128	1.60	80	1.25	m 10
1880	2120	188	3.07	61	1.63	
1130	1590	113	1.20	94	1.06	
1040	1220	104	1.73	60	1.67	
980	1240	98	1.67	59	1.70	
3940	4190	394	3.13	126	0.80	m 11
4680	5150	468	0.00	0	0.00	

Note: Posto in opera piezometro della lunghezza di 10.25 m

# GEO-PROBE

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

# DPSH

# 037042 P92DP97

Data: 21/10/99

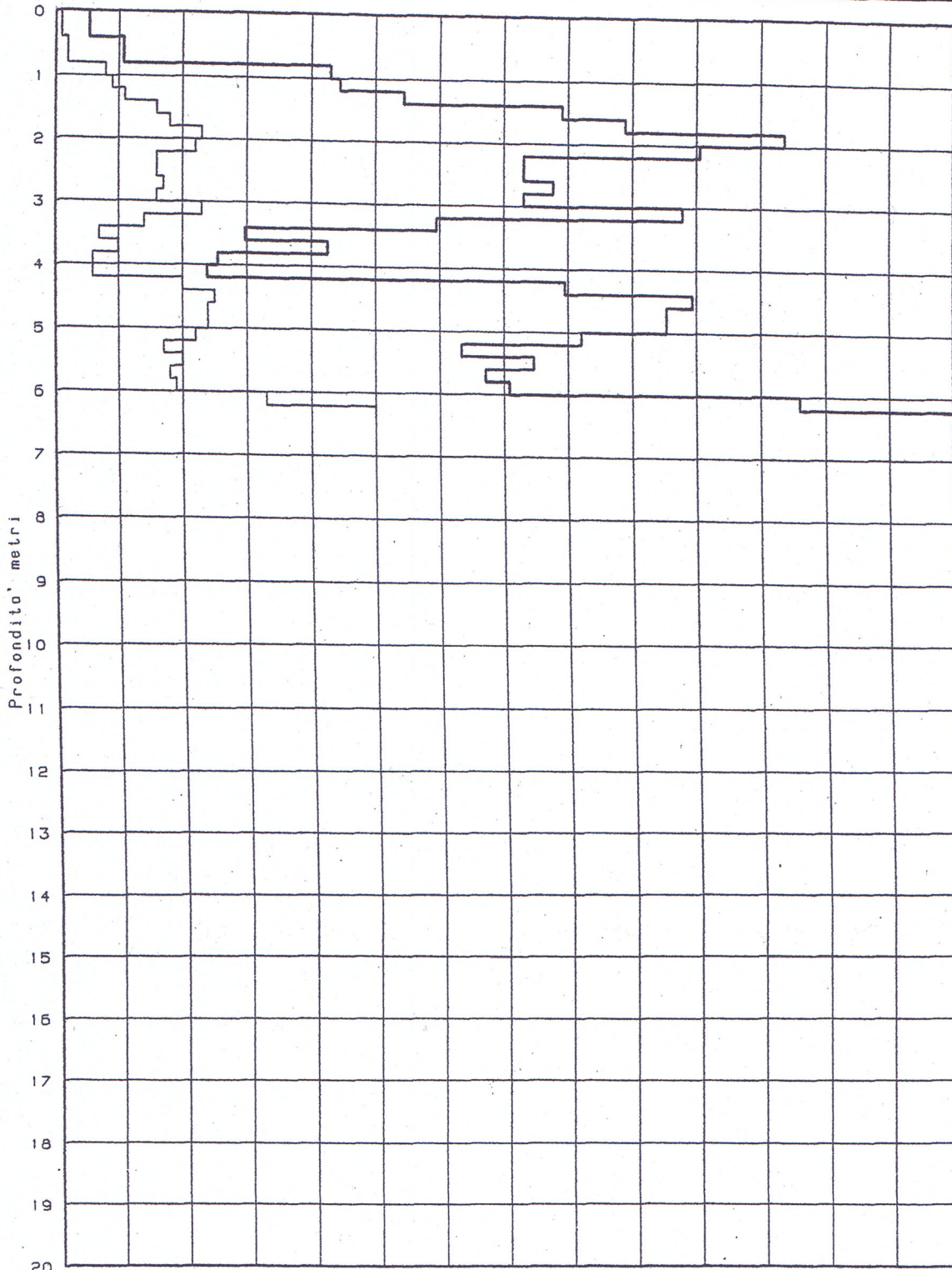
N. 1

Committente: Rizzardi Renzo ed Altri

N. Certificato: D9930901

Localita': Monte San Pietro (BO) Monte San Giovanni - Ca' de' Ghedotti - Gnocco

Od \_\_\_\_\_ 20 40 60 80 100 140 180 220 260 \_\_\_\_\_ (kg/cmq)  
N \_\_\_\_\_ 10 20 30 40 50 60 70 80 90 100 120 140



Profondita' acqua da p.c.: -2.80 m

GEO-PROBE s.n.c. Indagini Geognostiche

8

# GEO-PROBE

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

# DPSH 037042P93DP98

Data: 29/10/99

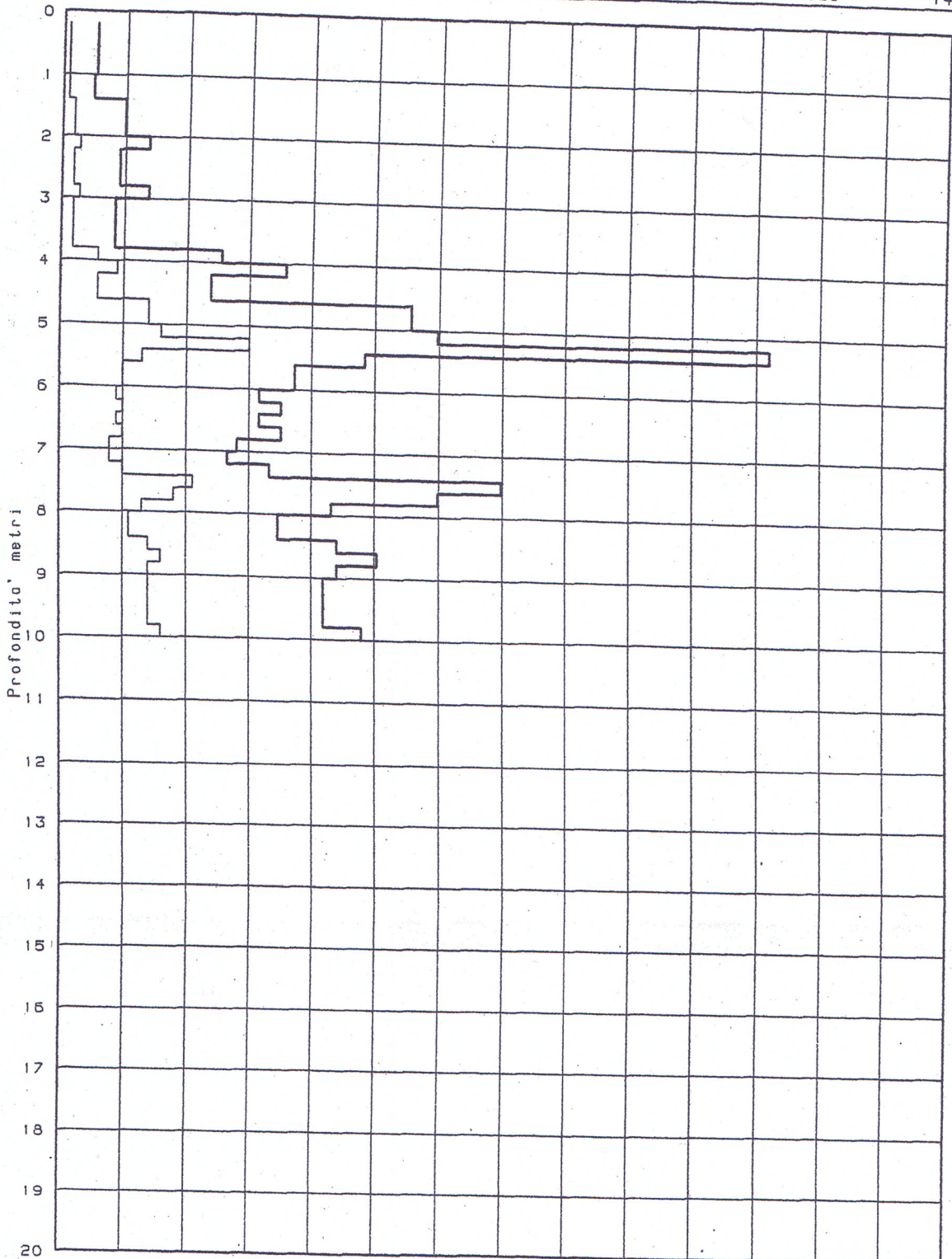
N. 4

Committente: Rizzardi Renzo ed Altri

N. Certificato: D9930904

Localita': Monte San Pietro (BO) Monte San Giovanni - Ca' de' Ghedotti - Gnocco

Od 20 40 60 80 100 140 180 220 260 (kg/cmq)  
N 10 20 30 40 50 60 70 80 90 100 120 140



Profondita' acqua da p.c.: -3.00 m

GEO-PROBE s.n.c. Indagini Geognostiche

# GEO-PROBE

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

# DPSH 037042 P94 DP99

Data: 26/10/99

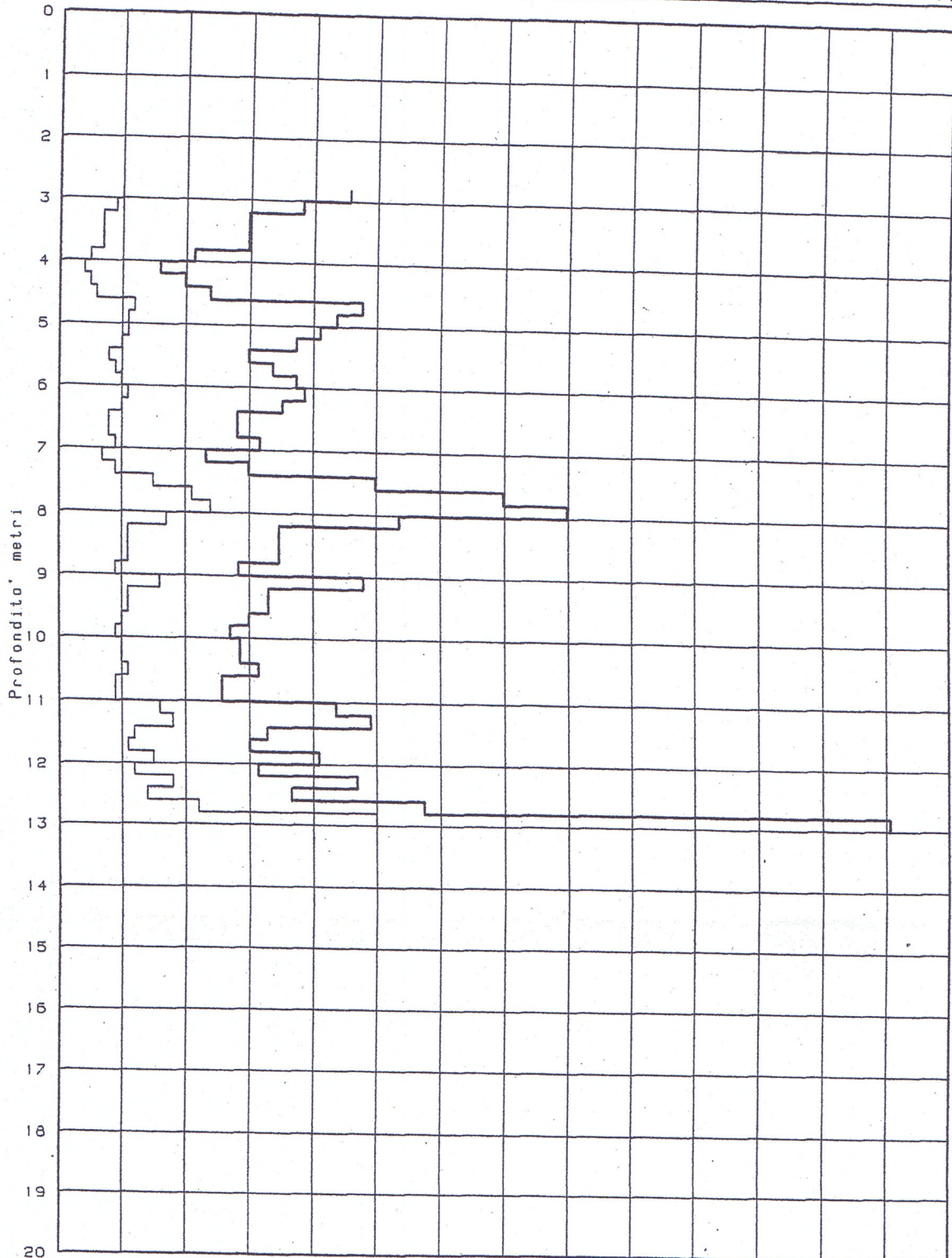
N. 5

Committente: Rizzardi Renzo ed Altri

N. Certificato: D9930905

Localita': Monte San Pietro (BO) Monte San Giovanni - Ca' de' Ghedotti - Gnocco

Qd 20 40 60 80 100 140 180 220 260 (kg/cmq)  
N 10 20 30 40 50 60 70 80 90 100 120 140



Profondita' acqua da p.c.: -3.20 m

GEO-PROBE s.n.c. Indagini Geognostiche

GEO-PROBE

DPSH

037042P95DP100

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

Data: 26/10/99

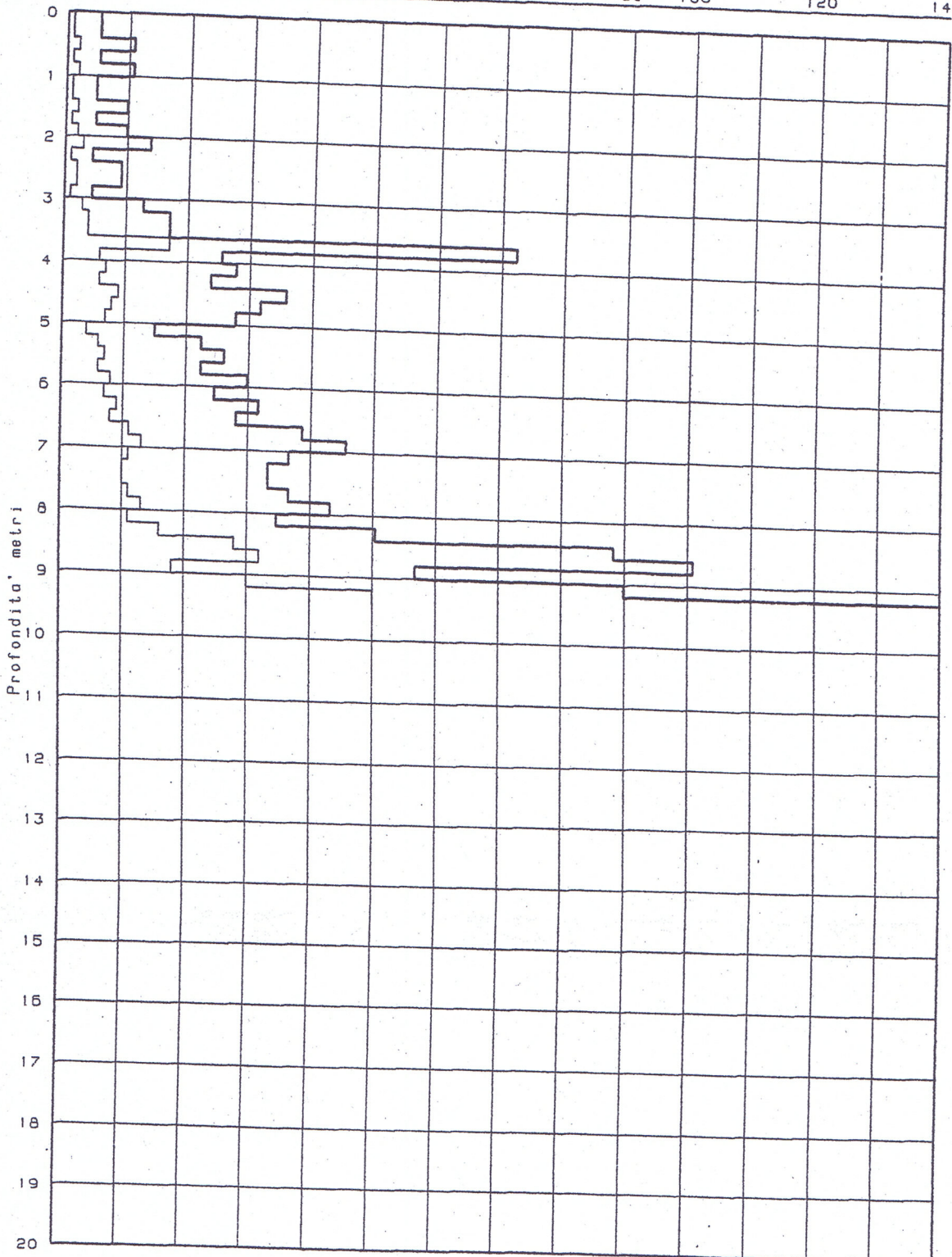
N. 6

Committente: Rizzardi Renzo ed Altri

N. Certificato: D9930906

Localita': Monte San Pietro (BO) Monte San Giovanni - Ca' de' Ghedotti - Gnocco

Od 20 40 60 80 100 140 180 220 260 (kg/cmq)  
N 10 20 30 40 50 60 70 80 90 100 120 140



Profondita' acqua da p.c.: -2.40 m

GEO-PROBE s.n.c. Indagini Geognostiche

GEO-PROBE

DPSH

037042P96DP101

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

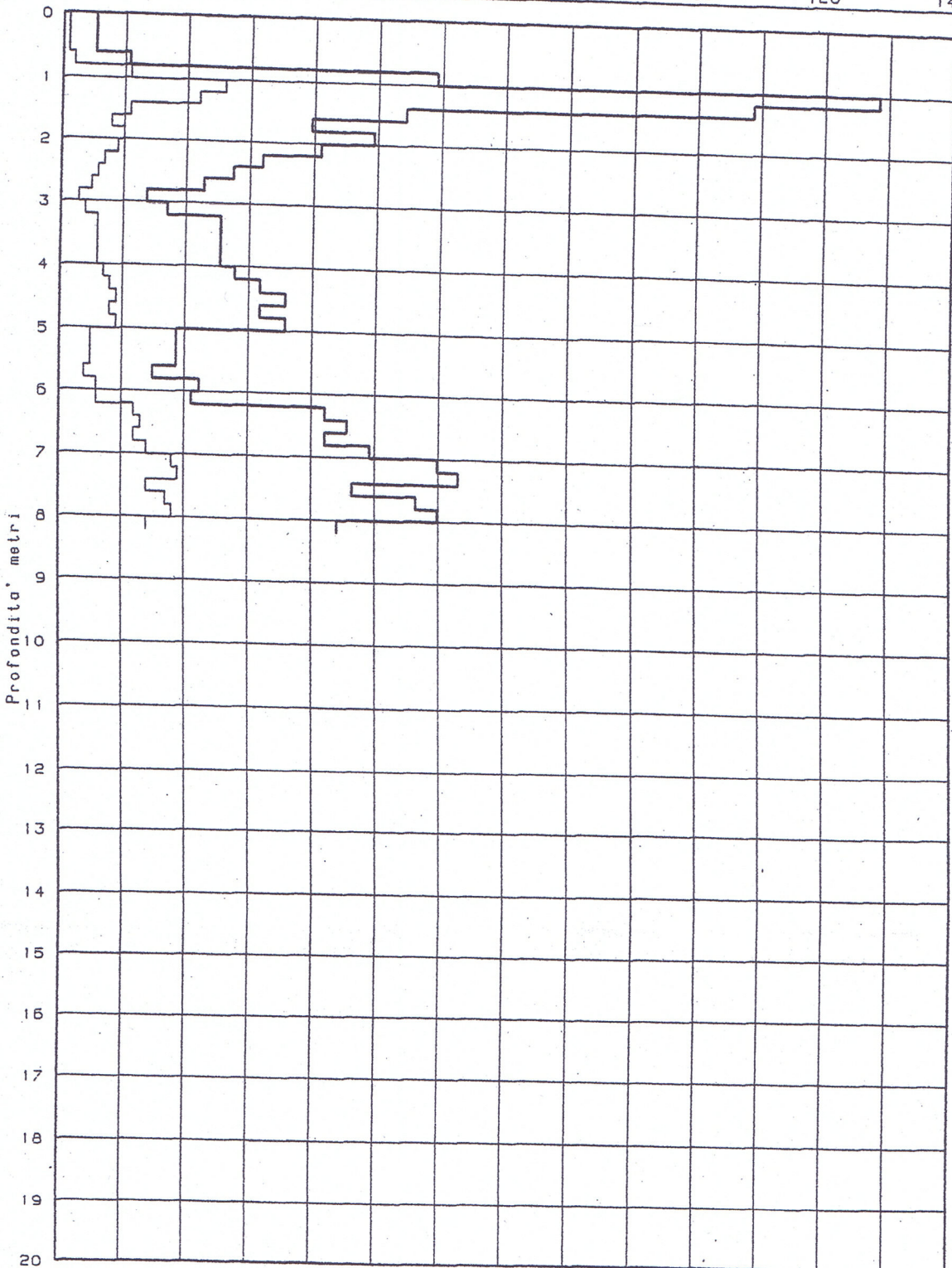
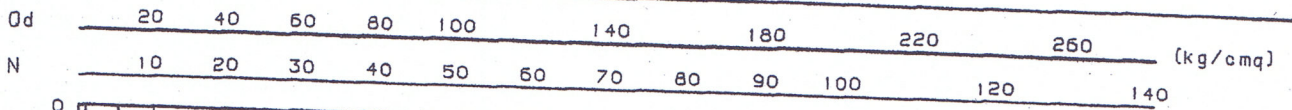
Data: 21/10/99

N. 7

Committente: Rizzardi Renzo ed Altri

N. Certificato: D9930907

Localita': Monte San Pietro (BO) Monte San Giovanni - Ca' de' Ghedotti - Gnocco



Profondita' acqua da p.c.: -2.60 m

GEO-PROBE s.n.c. Indagini Geognostiche

# GEO-PROBE

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

# DPSH

Data: 26/10/99

037042 P97 DP102

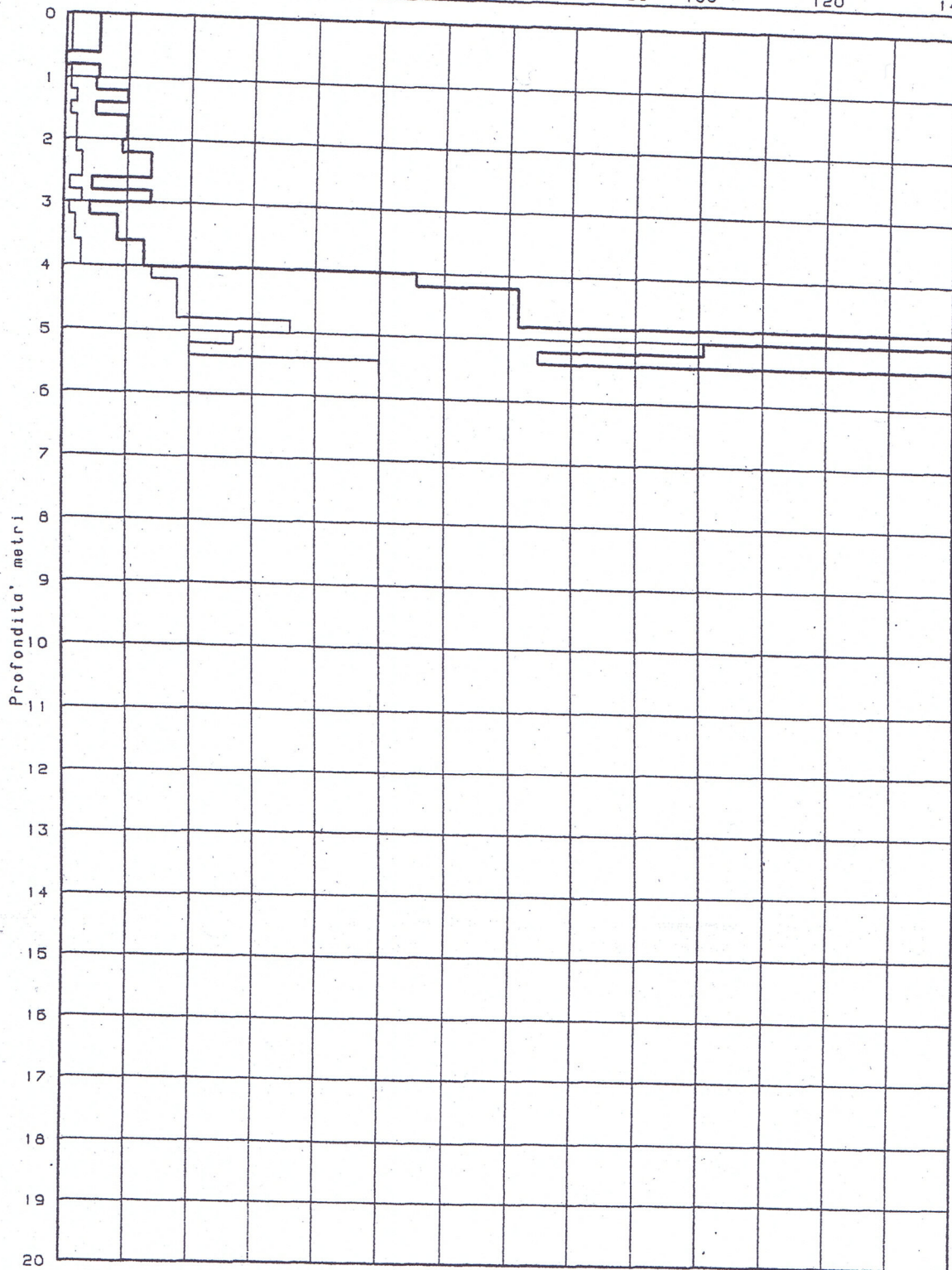
N. 8

Committente: Rizzardi Renzo ed Altri

N. Certificato: D9930908

Localita': Monte San Pietro (BO) Monte San Giovanni - Ca' de' Ghedotti - Gnocco

Qd 20 40 60 80 100 140 180 220 260 (kg/cmq)  
N 10 20 30 40 50 60 70 80 90 100 120 140



GEO-PROBE s.n.c. Indagini Geognostiche

Profondita' acqua da p.c.: -3.10 m

# GEO-PROBE

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

# DPSH

Data: 25/10/99

037042 P98 DP103

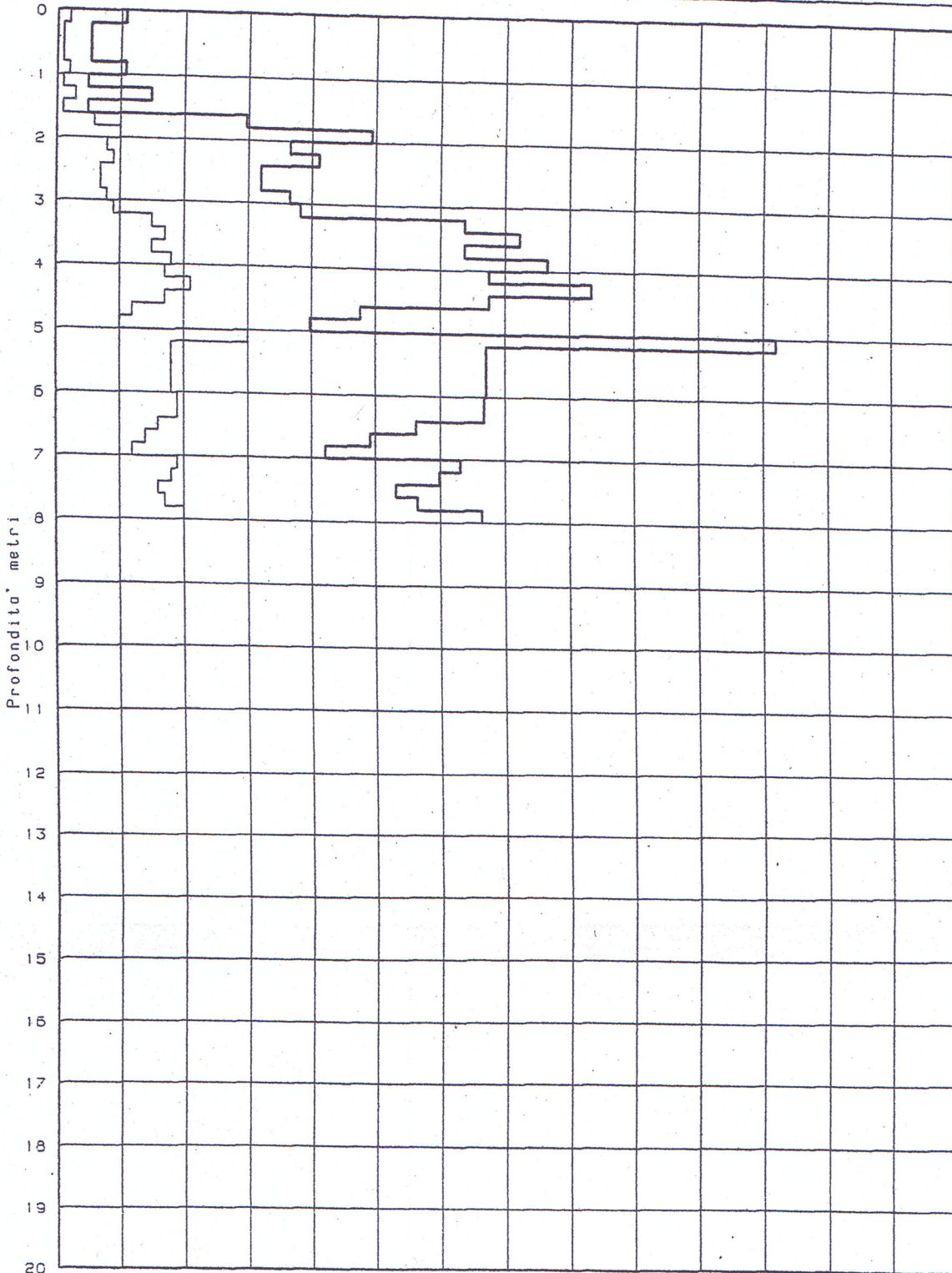
N. 9

Committente: Rizzardi Renzo ed Altri

N. Certificato: D9930909

Localita': Monte San Pietro (BO) Monte San Giovanni - Ca' de' Ghedotti - Gnocco

Qd	20	40	60	80	100	140	180	220	260	(kg/cmq)		
N	10	20	30	40	50	60	70	80	90	100	120	140



Profondita' occhio da p.c.: -2.60 m

GEO-PROBE s.n.o. Indagini Geognostiche



# GEO-PROBE

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

# D P S H

037042 P99 H VSR 104

Data: 26/10/99

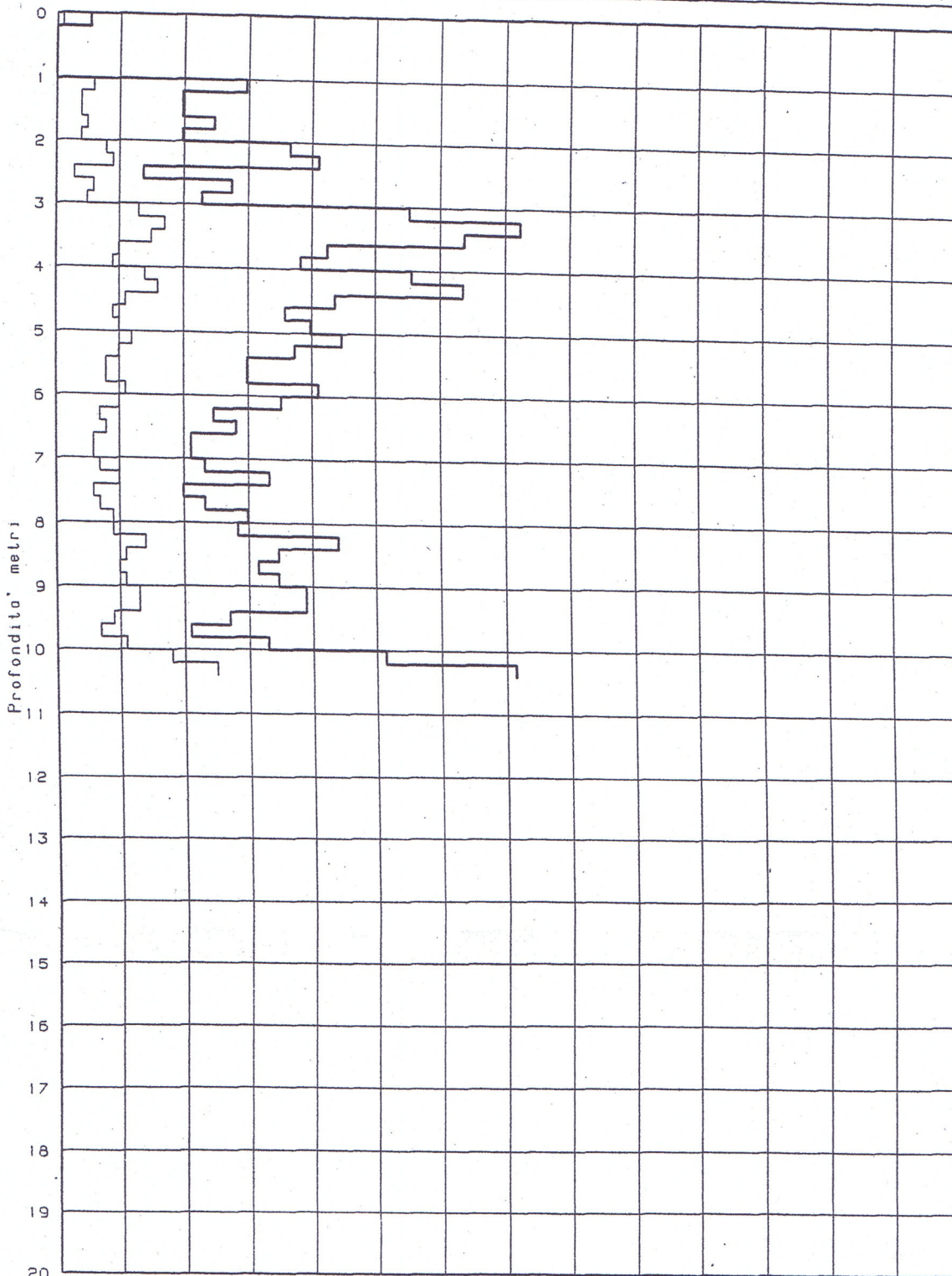
N. 10

Committente: Rizzardi Renzo ed Altri

N. Certificato: D9930910

Localita': Monte San Pietro (BO) Monte San Giovanni - Ca' de' ghedotti - Gnocco

Od 20 40 60 80 100 140 180 220 260 (kg/cm<sup>2</sup>)  
N 10 20 30 40 50 60 70 80 90 100 120 140



Profondita' occhio da p.c.: -2.50 m

GEO-PROBE s.n.c. Indagini Geognostiche

A

# GEO-PROBE

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

# D P S H 037042 P100 DP105

Data: 29/10/99

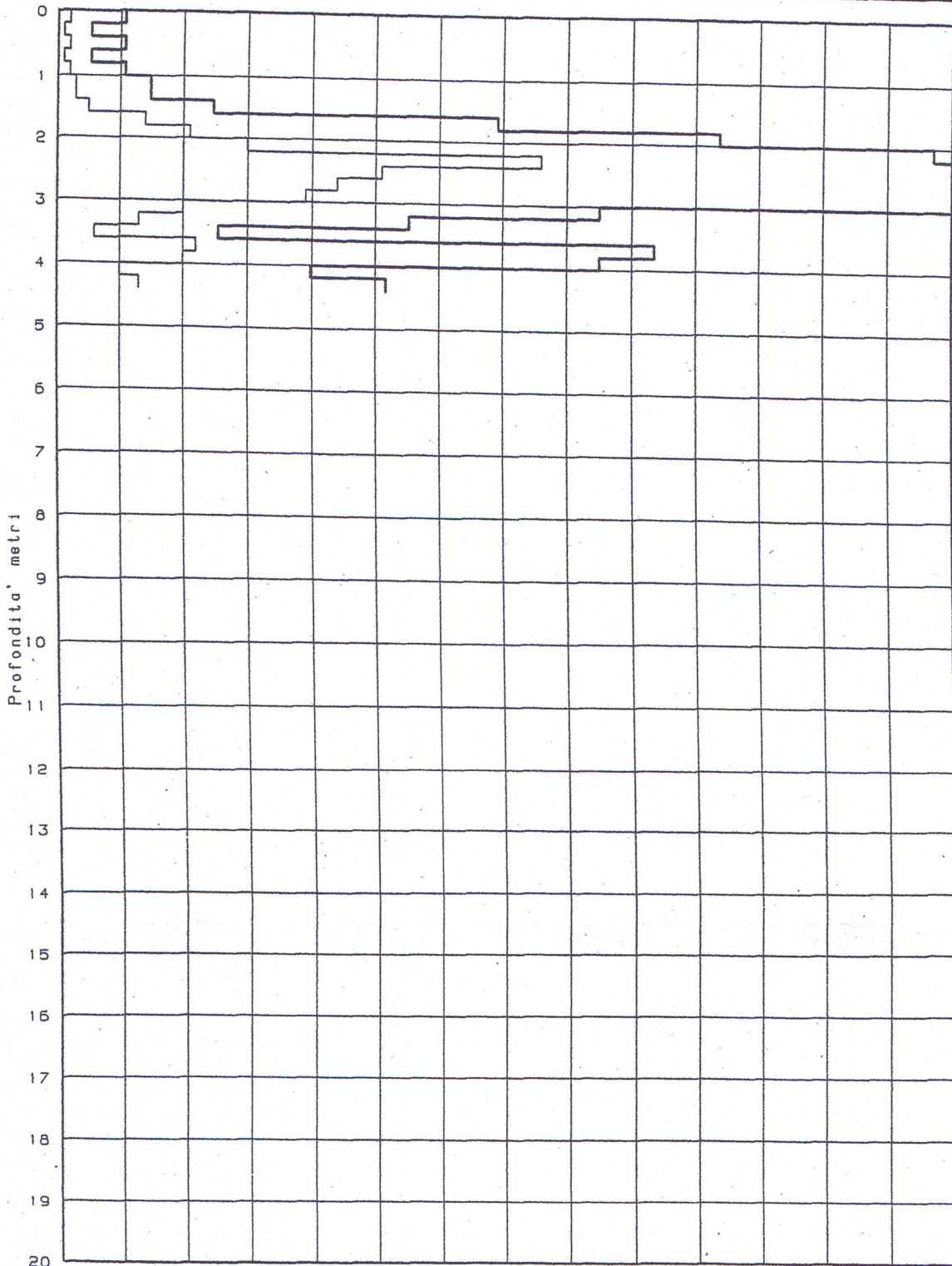
N. 11

Committente: Rizzardi Renzo ed Altri

N. Certificato: D9930911

Localita': Monte San Pietro (BO) Monte San Giovanni - Ca' de' Ghedotti - Gnocco

Od 20 40 60 80 100 140 180 220 260 (kg/cmq)  
N 10 20 30 40 50 60 70 80 90 100 120 140



Profondita' acqua da p.c.: -2.50 m

GEO-PROBE s.n.c. Indagini Geognostiche

8

GEO-PROBE

DPSH 037042 P101 DP106

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

Data: 29/10/99

N. 12

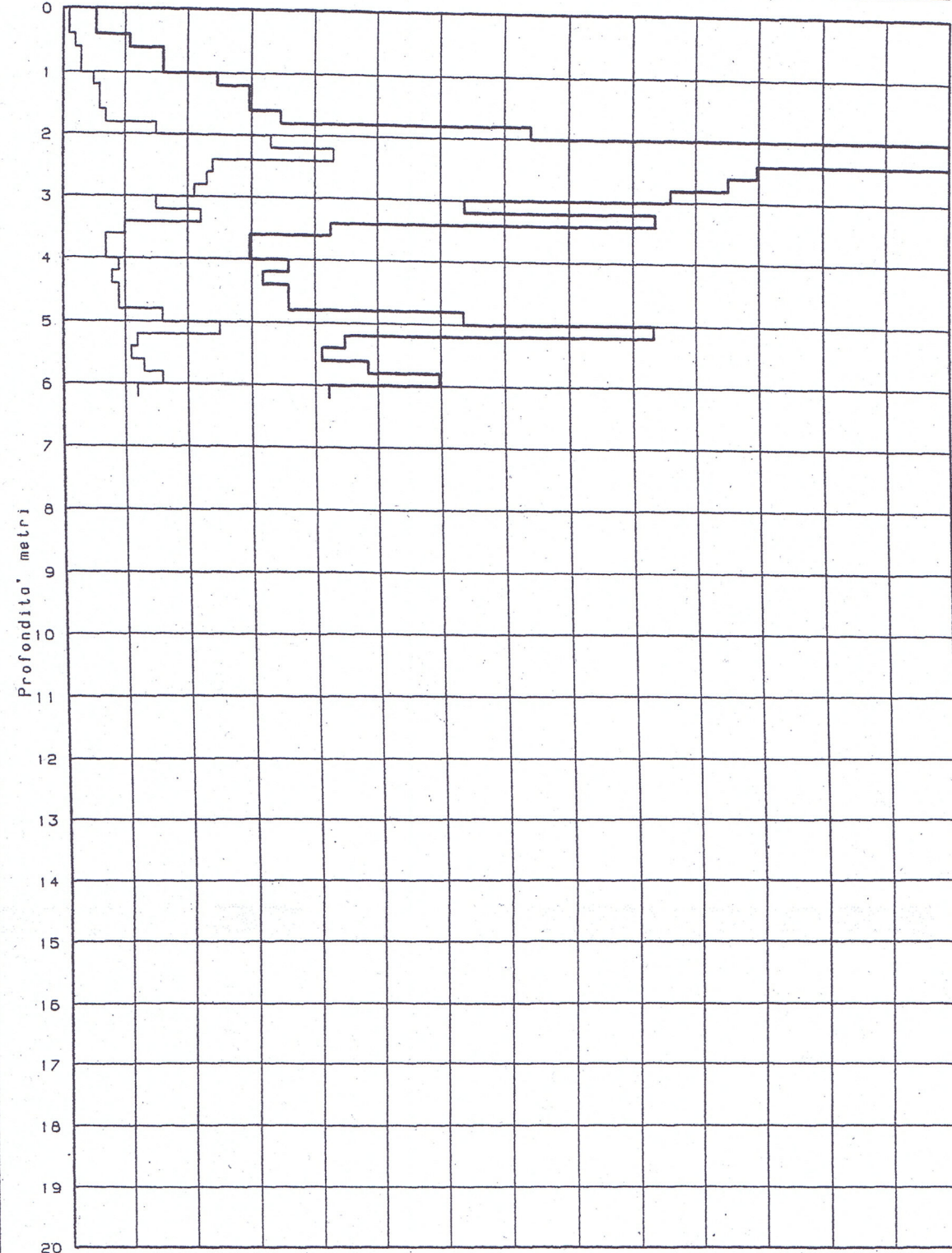
Committente: Rizzardi Renzo ed Altri

N. Certificato: D9930912

Localita': Monte San Pietro (BO)

Monte San Giovanni - C de' Ghedotti Gnocco

Od 20 40 60 80 100 140 180 220 260 (kg/cmq)  
N 10 20 30 40 50 60 70 80 90 100 120 140



Profondita' acqua da p.c.: -2.70 m

GEO-PROBE s.n.c. Indagini Geognostiche

GEO-PROBE

40133 BOLOGNA

Via R. Grileo, 7 - Tel. 051/61.45.350

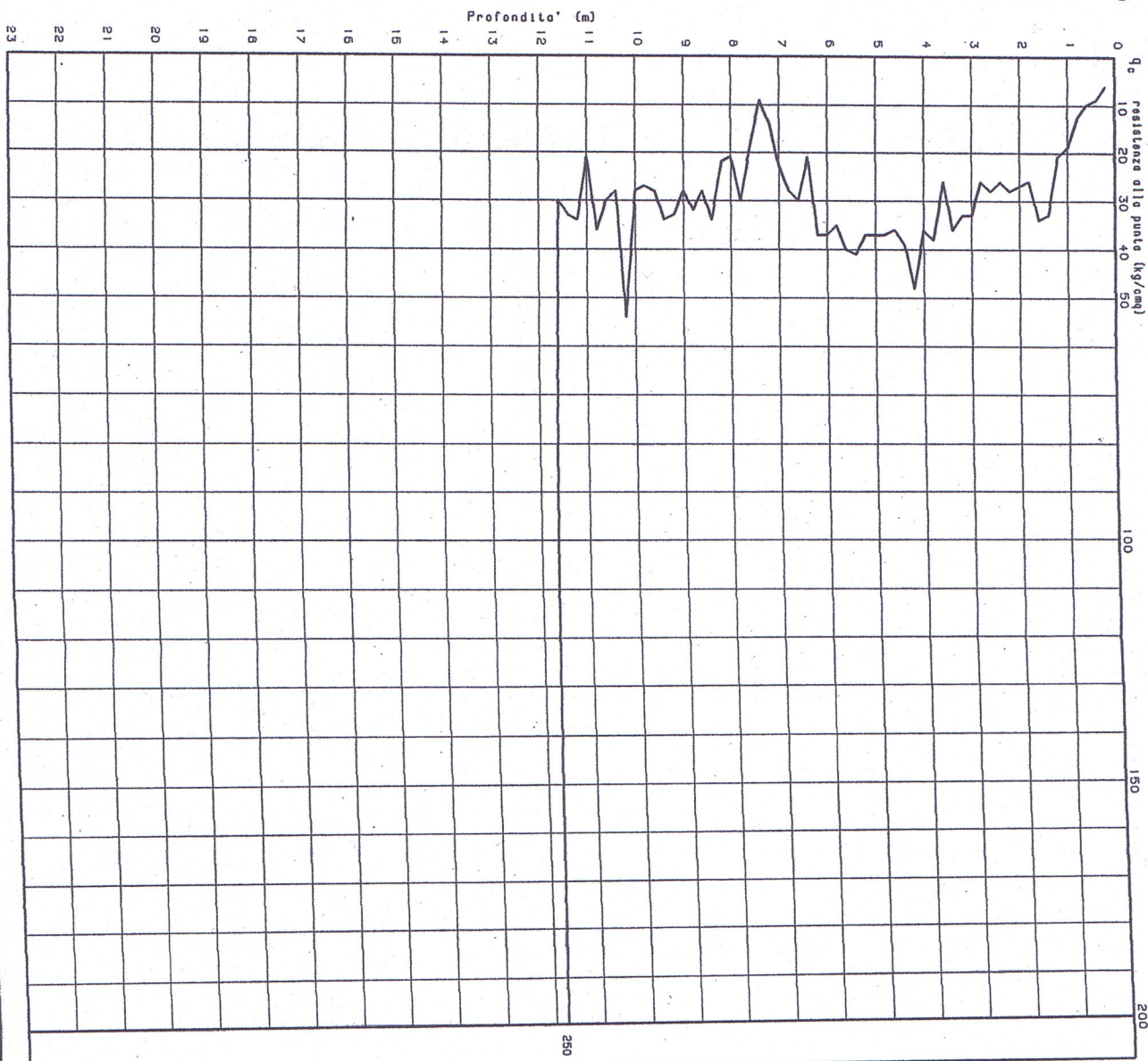
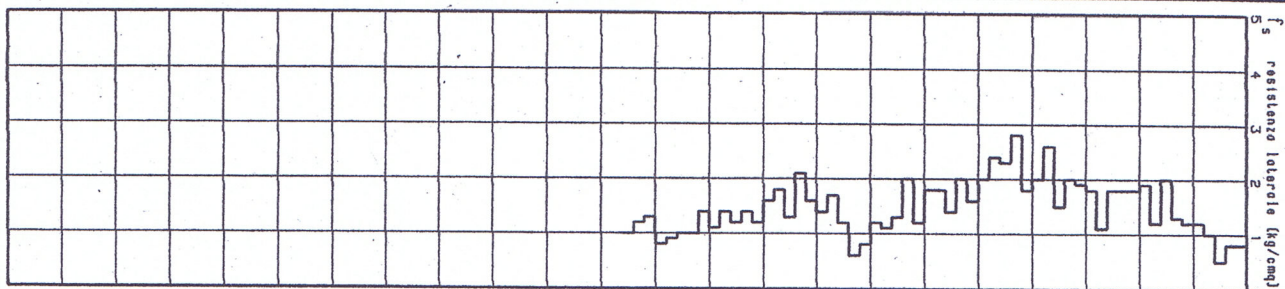
CPT (CONE PENETRATION TEST) N.4

Committente: Costruzioni Lonzerini s.r.l.

Località: Monte San Pietro (BO) via Veneto - Monte San Giovanni

N. Certificato: 99311004

Data: 09/11/99



Livello acque de p.o.: -7.20 m



Note: Posto in opera piezometro della lunghezza di 9.00 m

# GEO-PROBE

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.350

# DPSH 037042 P103 DP108

Data: 26/10/99

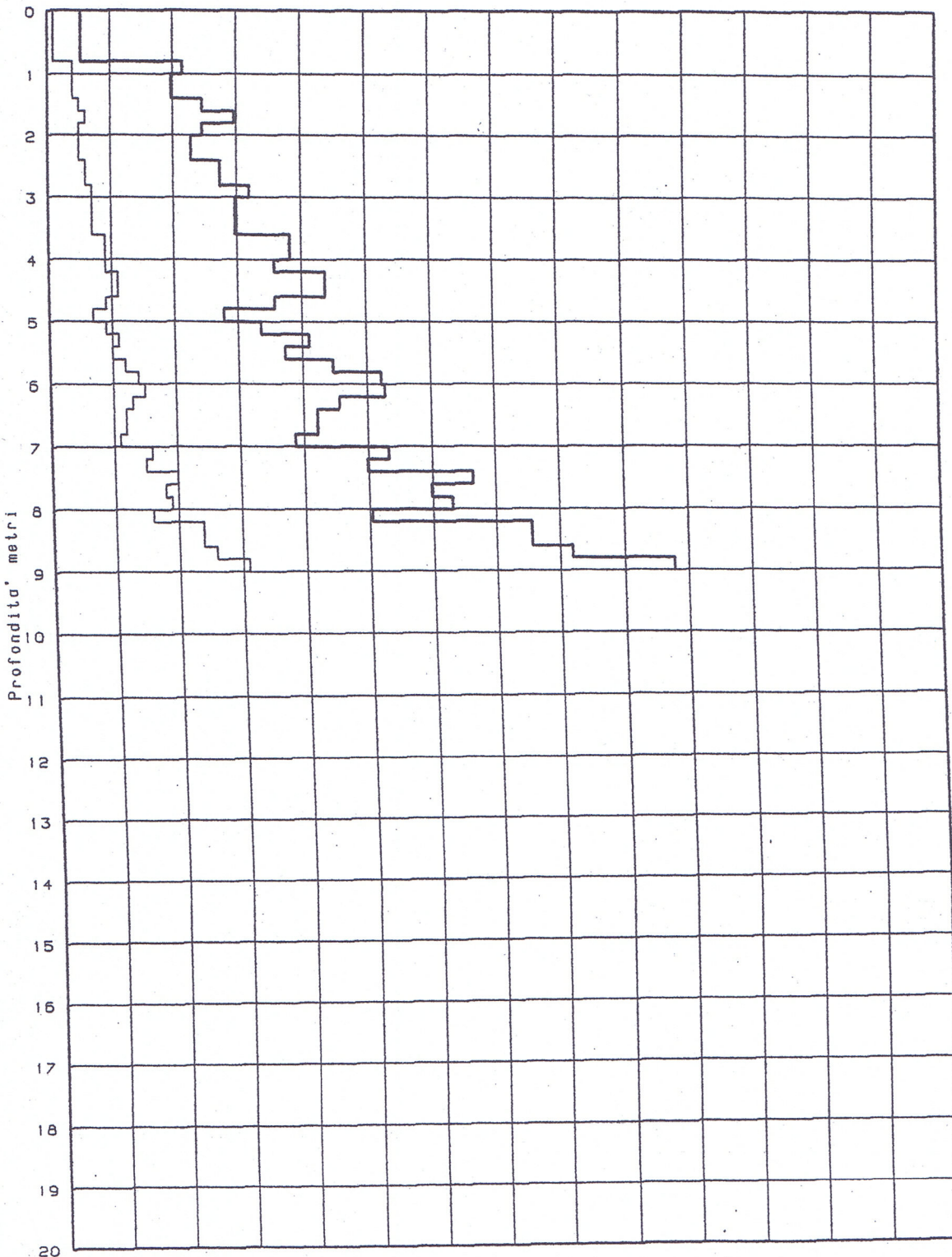
N. 1

Committente: Lantarini Costruzioni

N. Certificato: D9931101

Localita': Mont San Pietro (BO) Via Veneto - Colombara

Qd	20	40	60	80	100	140	180	220	260	(kg/cmq)		
N	10	20	30	40	50	60	70	80	90	100	120	140



GEO-PROBE s.n.c. Indagini Geognostiche

Profondita' acqua da p.c.: assente

# GEO-PROBE

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

# D P S H 037042P104DP109

Data: 09/11/99

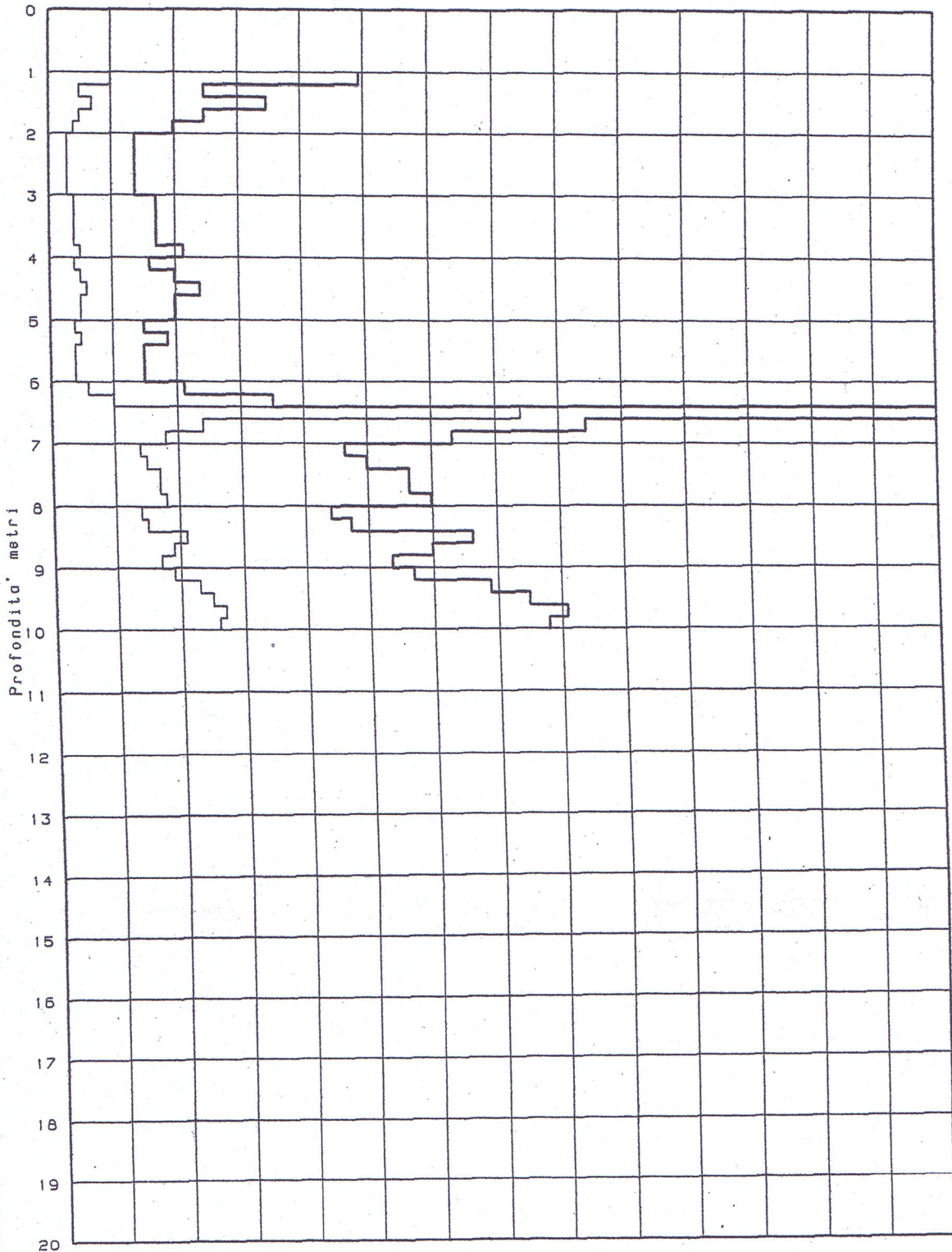
N. 5

Committente: Costruzioni Lanzarini s.r.l.

N. Certificato: D9931105

Localita': Monte San Pietro (BO) via Veneto - Colombara

Od 20 40 60 80 100 140 180 220 260 (kg/cmq)  
N 10 20 30 40 50 60 70 80 90 100 120 140



GEO-PROBE s.n.c. Indagini Geognostiche

Profondita' acqua da p.c.: assente

# GEO-PROBE

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

# DPSH 037042 P105 DP110

Data: 27/10/99

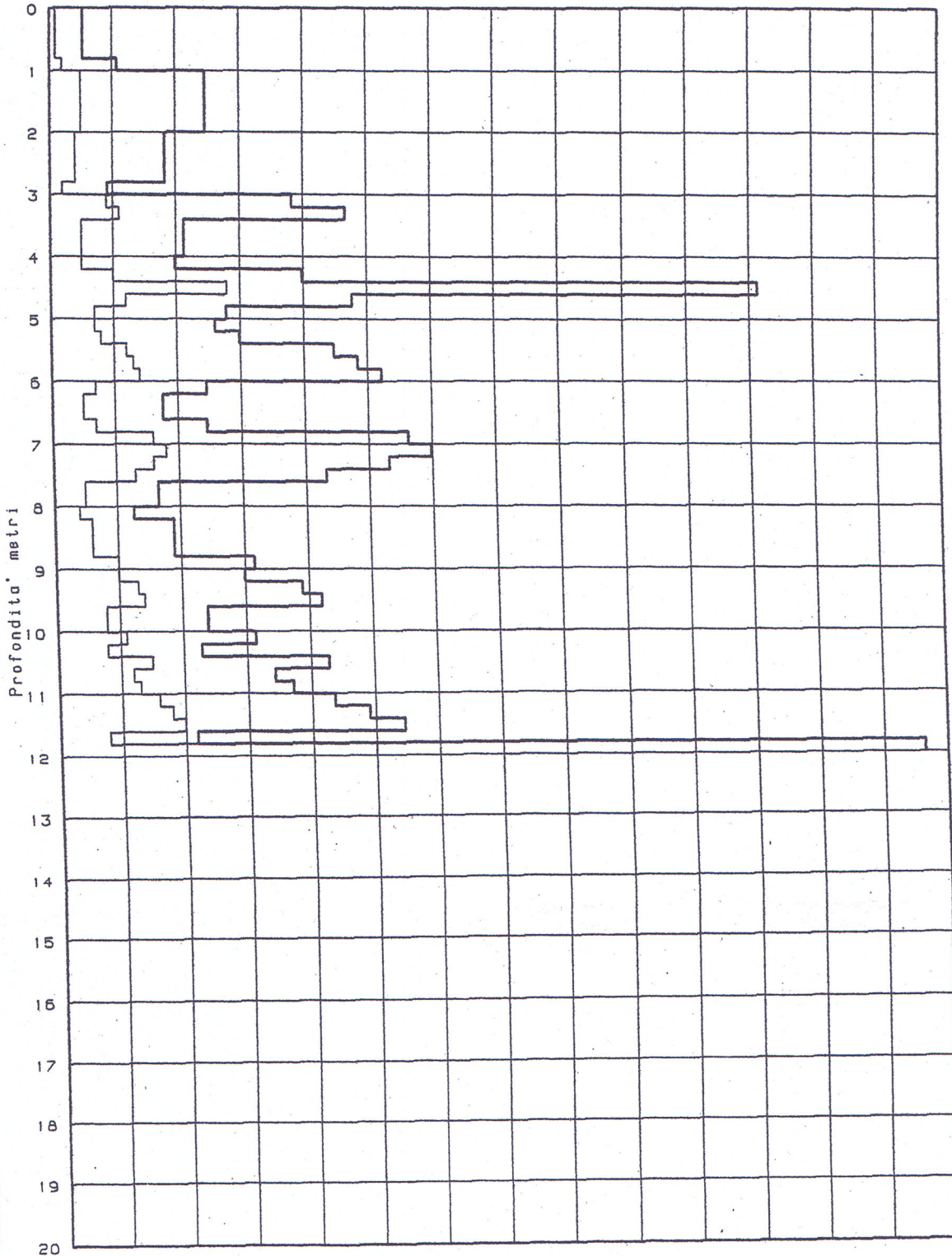
N. 6

Committente: Costruzioni Lanzarini s.r.l.

N. Certificato: D9931106

Localita': Monte San Pietro (BO) via Veneto - Colombara

Qd 20 40 60 80 100 140 180 220 260 (kg/cmq)  
N 10 20 30 40 50 60 70 80 90 100 120 140



GEO-PROBE s.n.c. Indagini Geognostiche

Profondita' acqua da p.c.: assente







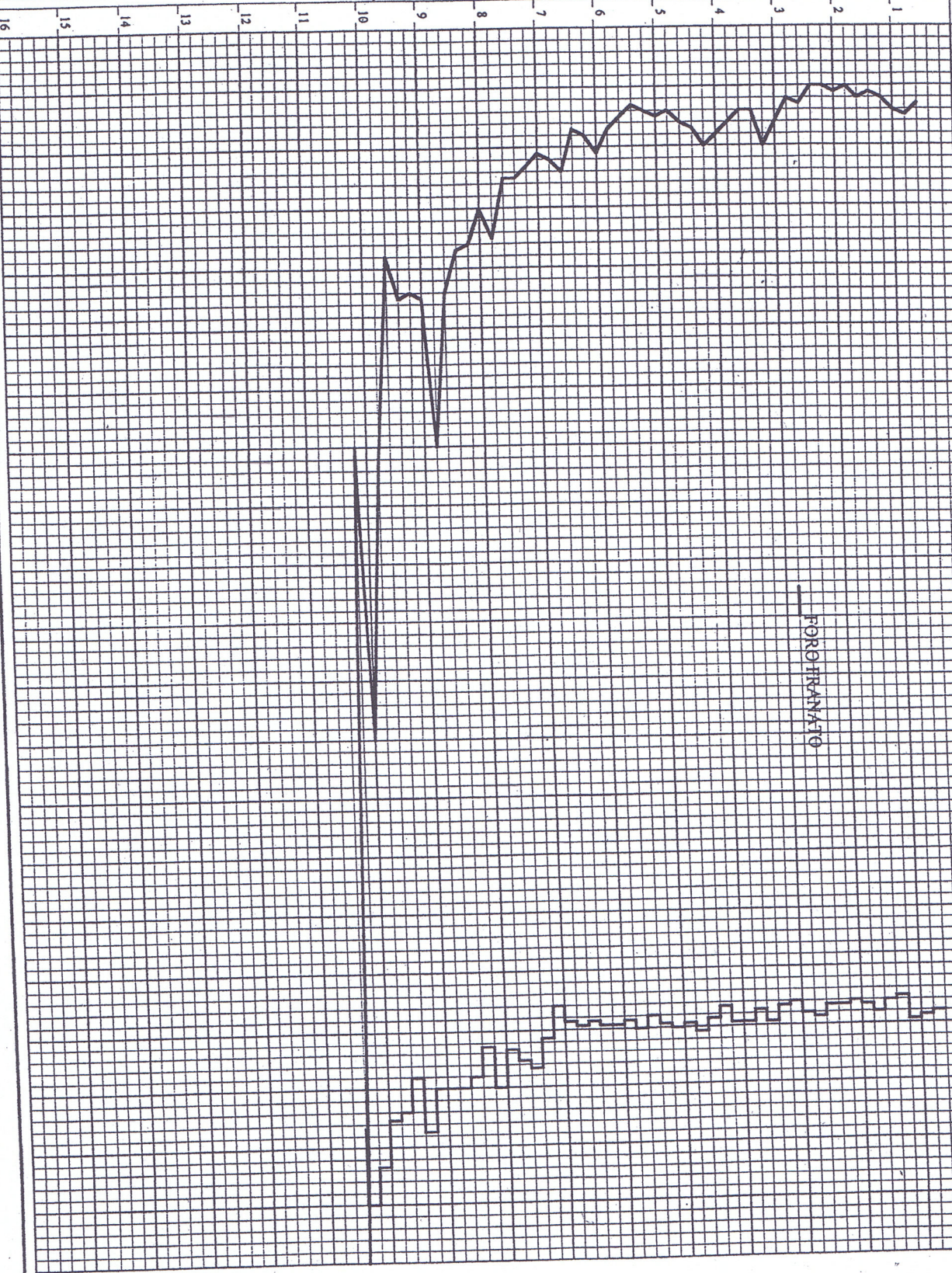
037042P108CPT113

PROFONDITA'

rp medio da m 0,0 a m 0,0 = 0,00  
rp - Resistenza alla punta (Kg/cm<sup>2</sup>)  
10 20 30 40 50 75 100 125 150 175 200

GEO-TECNICA EDILPALI srl  
Via San Giobbe, 18-20 - Fumo di Argelato  
Tel. 051864987 - Fax 051861859

PROVA PENETROMETRICA N. 3  
COMITENTE: CASTAGNETO S.A.S. - FRATELLI GHERARDI  
CANTIERE: VIA BIGNAMI MONTE S. GIOVANNI - MONTE S. PIETRO  
DATA: 14/06/2002  
ral - Resistenza di attrito locale (Kg/cm<sup>2</sup>)



FORO FRANATO

SEZIONE GEOTECNICA

IL GEOLOGO: *[Signature]*

Classificazione degli strati secondo la teoria dell'equilibrio

Argille molli	Argille	Argille sabbiose	Argille limacciose	Argille compatte
Liti calcaree	Liti argillose	Sabbie fini	Sabbie medie	Sabbie grossolane
Grassi	Sabbie			

No

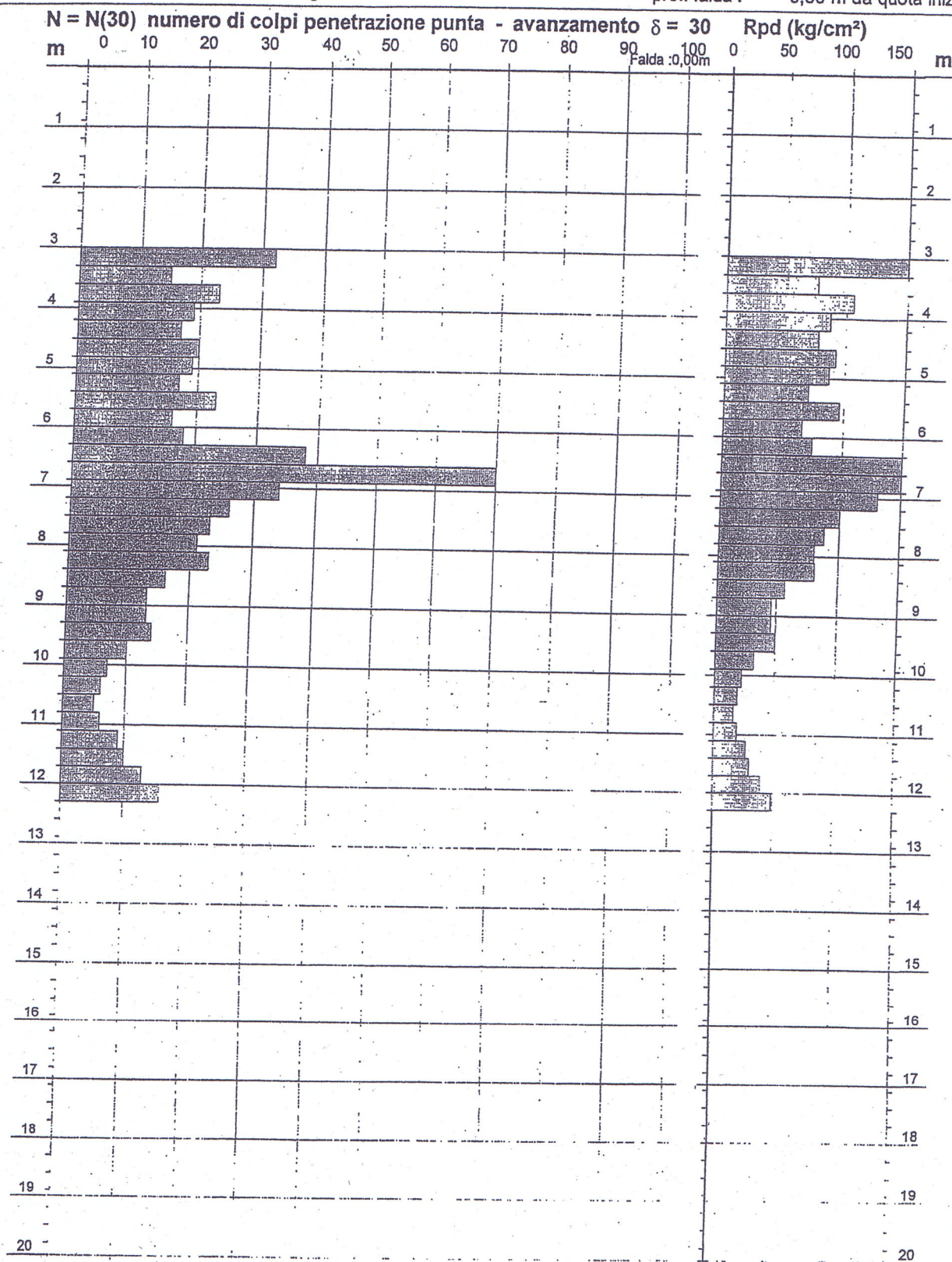
PROVA PENETROMETRICA DINAMICA  
 DIAGRAMMA NUMERO COLPI PUNTA - Rpd

n° 2

Scala 1: 100

- indagine :  
 - cantiere : Golf Club - Arch. Brini  
 - località : Crespellano - Bologna

- data : 26/05/1999  
 - quota inizio : p.c.  
 - prof. falda : 0,00 m da quota inizio



037042P109DP114

M

# GEO-PROBE

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

# CPT (CONE PENETRATION TEST)

Data: 26/09/2001

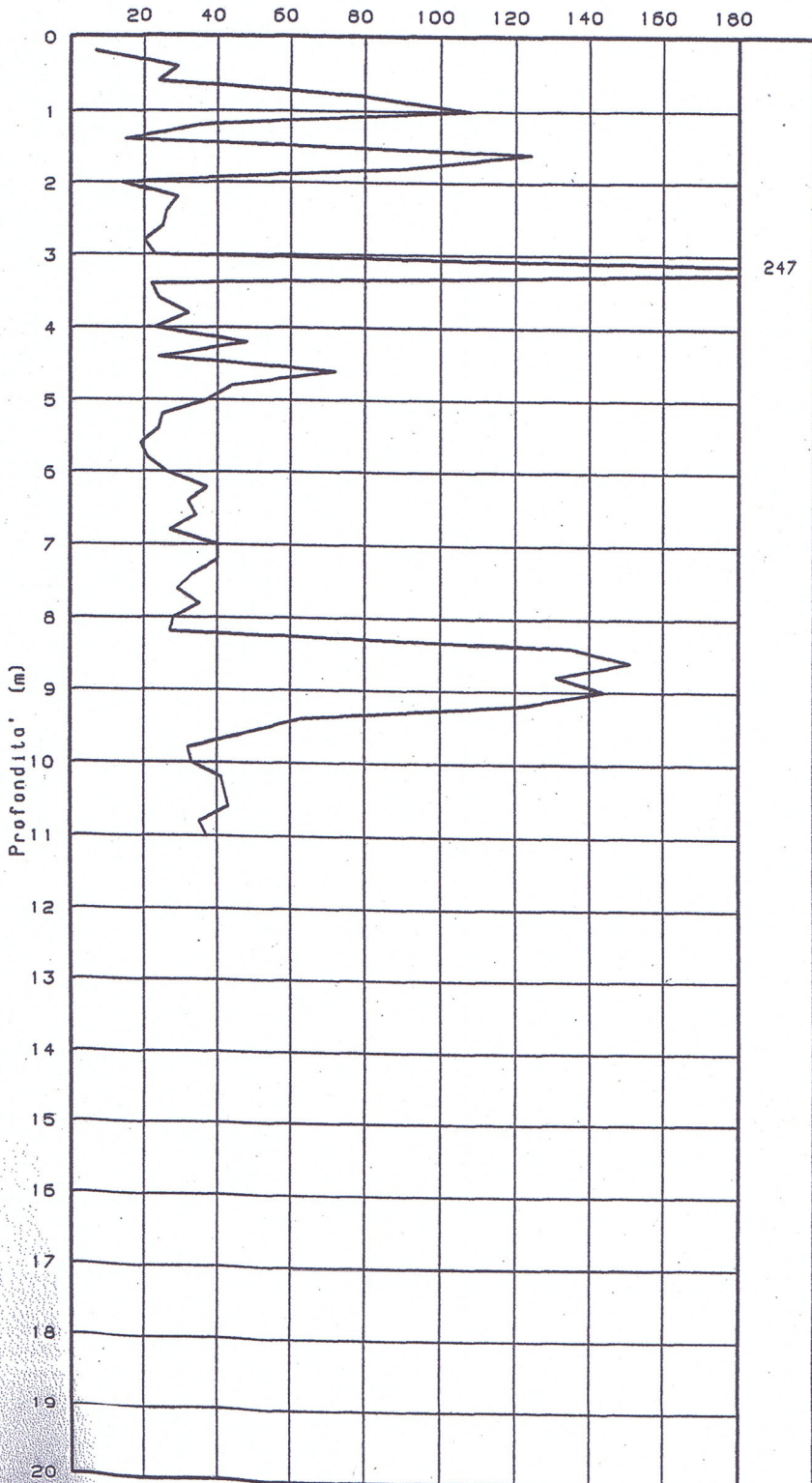
N. 1

Committente: Sig. Laganga

N. Certificato: 01270001

Localita': Monte San Pietro (BO) Montepastore - via I. Calvino

$q_c$  resistenza alla punta (kg/cmq)



CLASSIFICAZIONE  
DEI TERRENI SEC.  
SCHMERTMANN 1978

AD	7
A5	7
ASL	7
SAL	7
SG3	7
SAL	7
A4	7
SG3	7
SG2	7
AD	7
A5	7
ASL	7
A5	7
GS	7
A5	7
SG2	7
A5	7
SG2	7
ASL	7
A5	7
ASL	7
A5	7
ASL	7
SAL	7
ASL	7
SAL	7
ASL	7
A5	7
ASL	7
A5	7
ASL	7

Profondita' acqua da p.c.: assente

STUDIO GEOLOGICO ASSOCIATO

# GEO-PROBE

# CPT (CONE PENETRATION TEST)

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

Data: 26/09/2001

N. 2

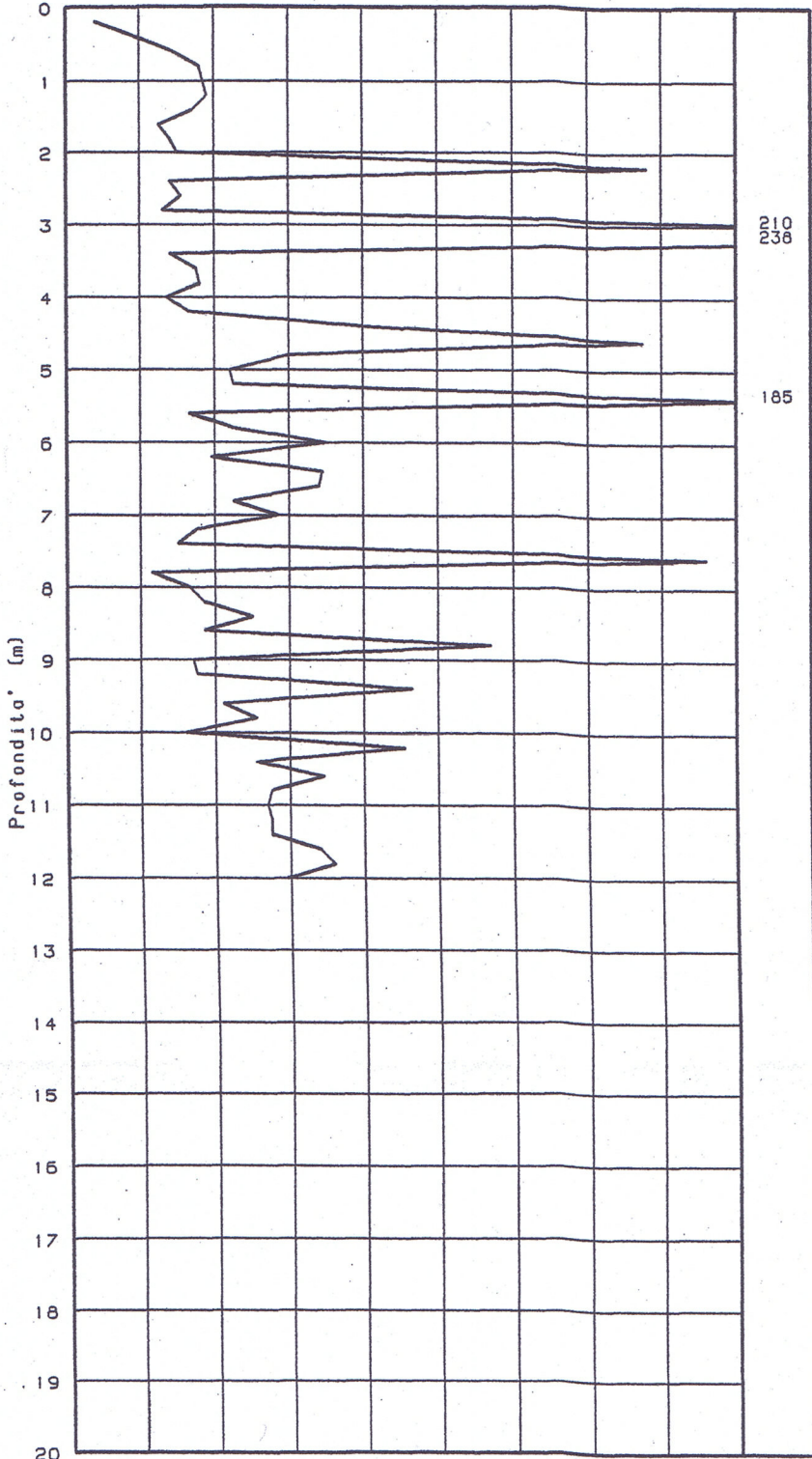
Committente: Sig. Laganga

N. Certificato: 01270002

Localita': Monte San Pietro (BO) Montepastore - via I. Calvino

$q_c$  resistenza alla punta (kg/cm<sup>2</sup>)

20 40 60 80 100 120 140 160 180



CLASSIFICAZIONE  
DEI TERRENI SEC.  
SCHMERTMANN 1978

- AD
- A5
- ASL
- A5
- SG3
- A5
- ASL
- SAL
- SG2
- GS
- SAL
- ASL
- GS
- ASL
- SAL
- ASL
- ASL
- SAL
- ASL
- A5
- SG3
- A5
- ASL
- SAL
- A5
- SG3
- A5
- ASL
- SG2
- A5
- ASL
- SAL
- ASL
- SAL
- ASL
- A5
- ASL
- SAL
- ASL

Profondita' acqua da p.c.: assente

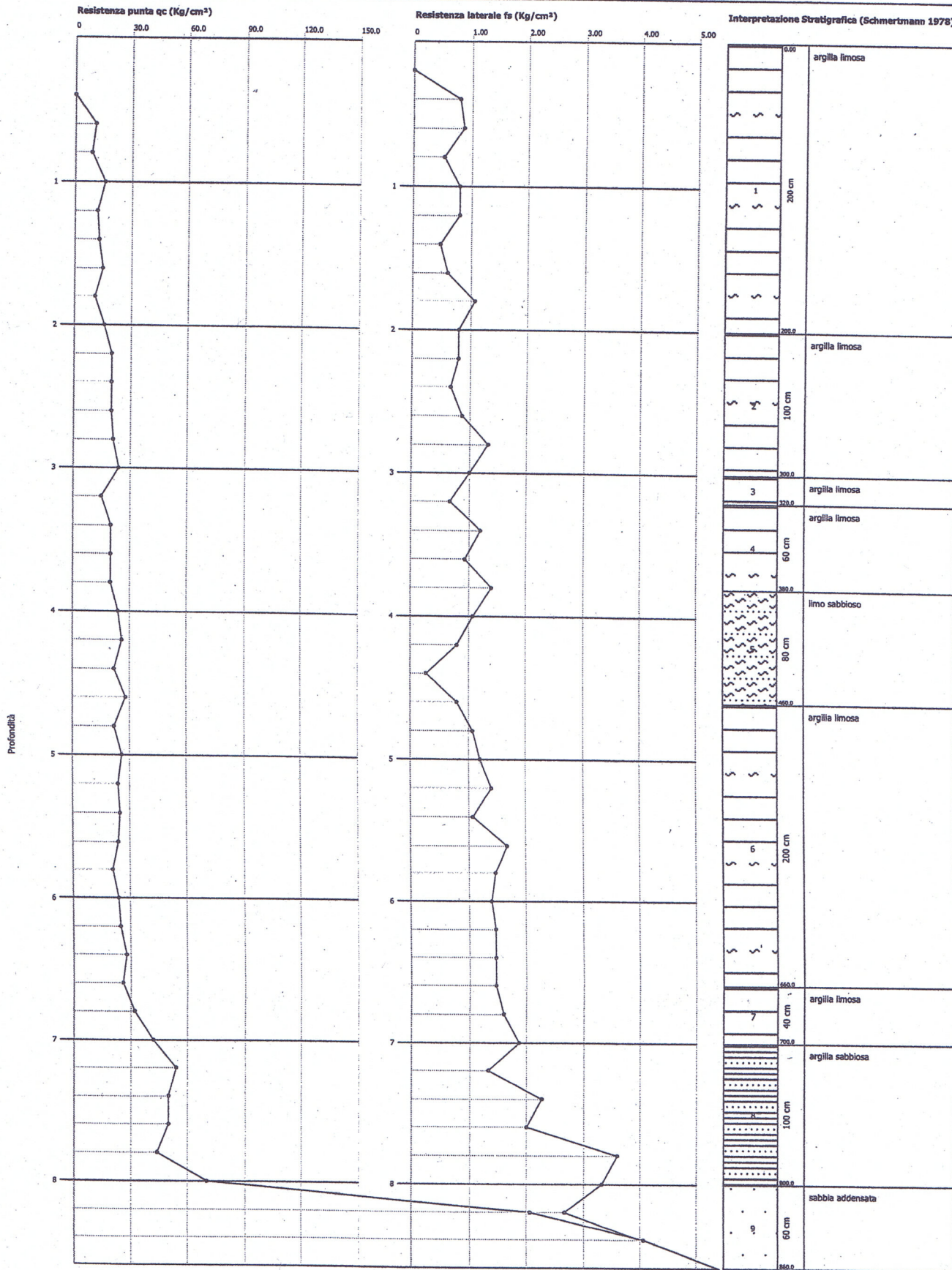
STUDIO GEOLOGICO ASSOCIATO

Probe CPT - Cone Penetration cpt1  
 Strumento utilizzato... DEEP DRILL  
 Diagramma Resistenze qc fs

Committente : Sig. Venturoli Aldo  
 Cantiere : Via Sicilia 1/3  
 Località : Monte S. Pietro-Loc S. Martino

Data :23/06/2008

Scale 1:37



GEO-PROBE S.r.l.

40033 Casalecchio di Reno (BO)

Via Cimierosa, 119 - Tel. 051/61.33.072

CPT (CONE PENETRATION TEST)

Committente:

Immobiliare Badia s.a.s

N. 1

N. Certificato: 05173001

Località:

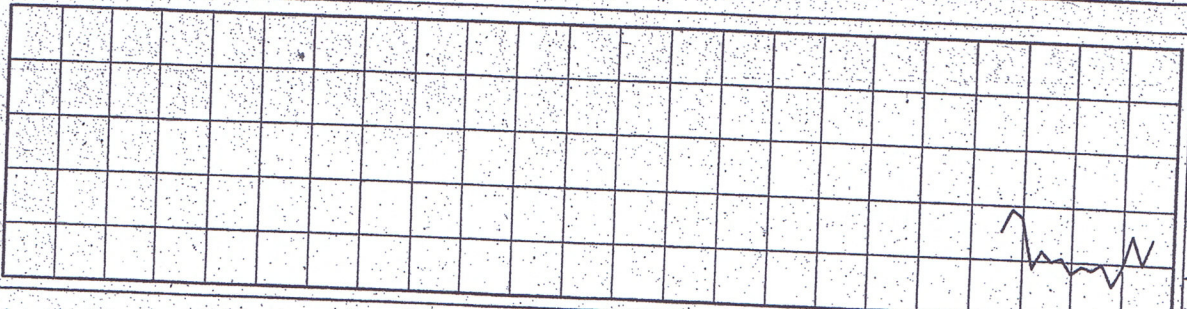
Monte San Pietro (BO)

S.P. Valle del Lavino - Loc. Case Bonazzi

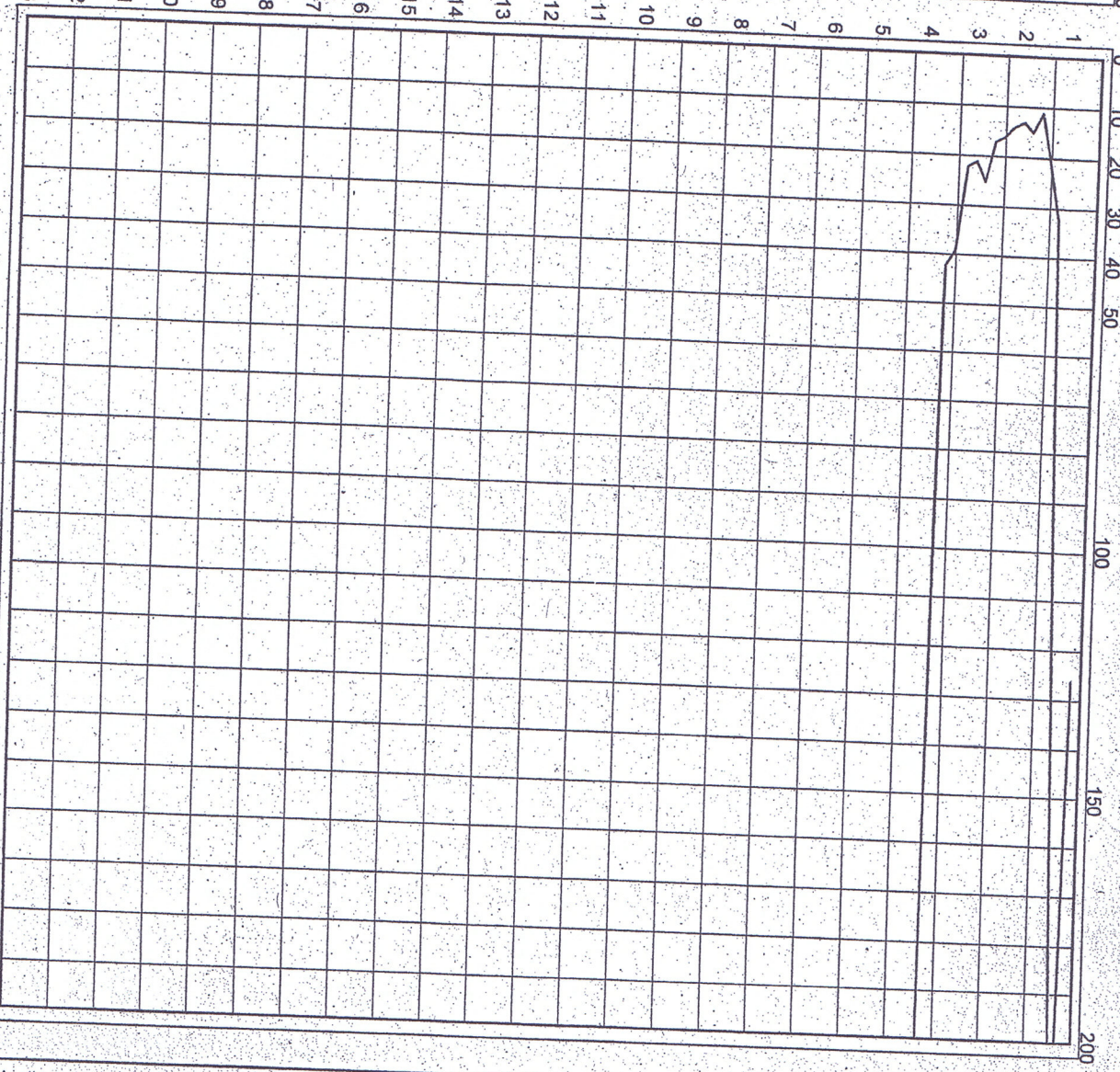
Quota: ---

Data: 08/07/05

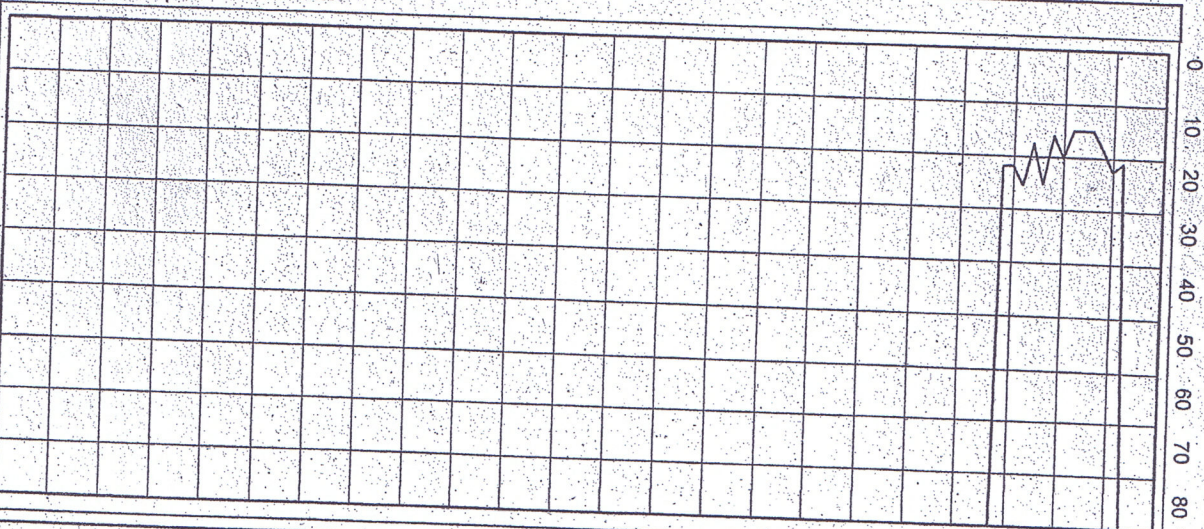
Is resistenza laterale (kg/cm<sup>2</sup>)



qc resistenza alla punta (kg/cm<sup>2</sup>)



qc/fs



Livello acqua da p.c.: assente

Note: ---

**GEO-PROBE S.r.l.**

40033 Casalechio di Reno (BO)

Via Cimara, 119 - Tel. 051/61.33.072

**CPT (CONE PENETRATION TEST)**

Committente: Immobiliare Badia s.a.s.

Località: Monte San Pietro (BO)

S.P. Valle del Lavino - Loc. Case Bonazzi

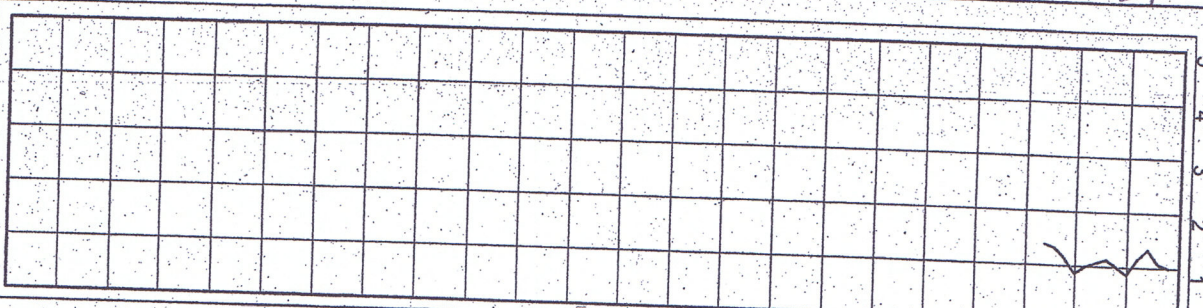
N. 2

N. Certificato: 05173002

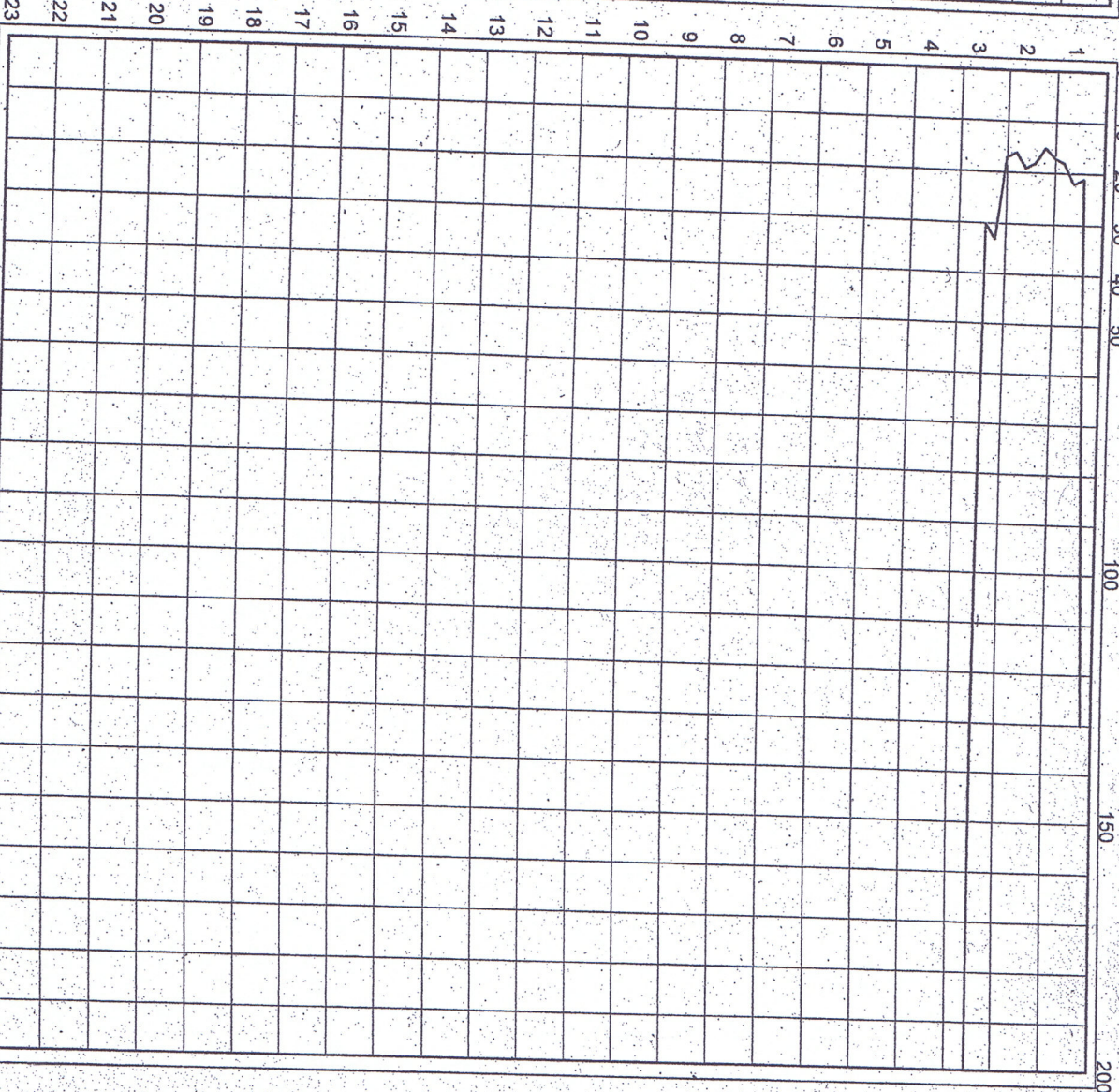
Quota: ---

Data: 08/07/05

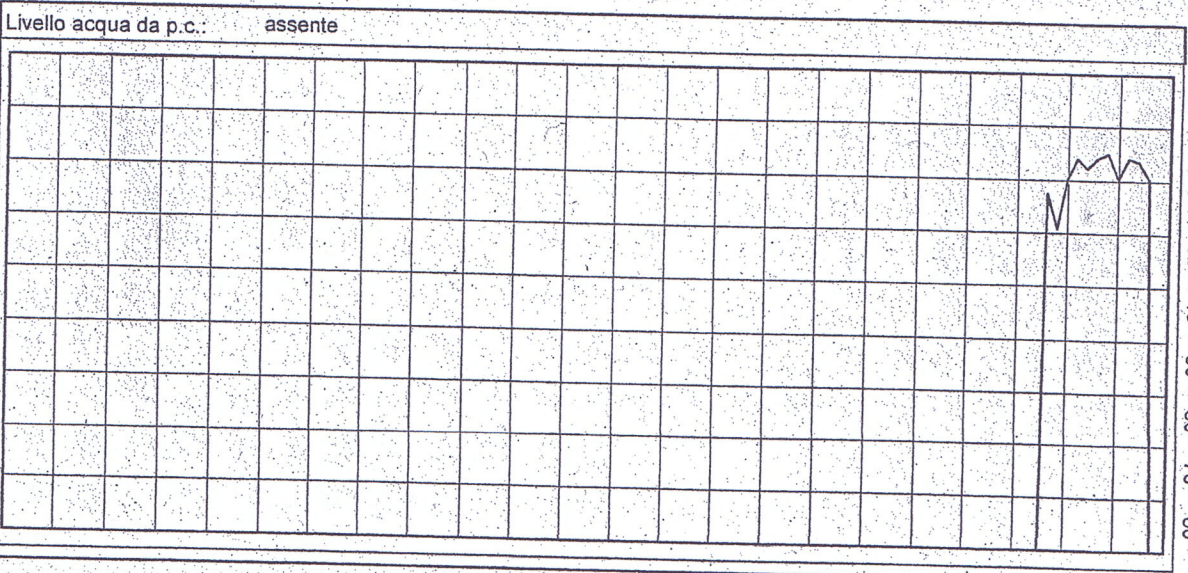
Is resistenza laterale (kg/cmq)



qc resistenza alla punta (kg/cmq)



qc/fs



Livello acqua da p.c.: assente

Note: ---



037042P115SD120

**GEO-PROBE** s.r.l.  
Indagini Geognostiche

40033 CASALECCHIO DI RENO (BO)  
Via Cimara, 119 - Tel. 051/61.33.072

Committente: Immobiliare Badia s.a.s.  
Località: Monte San Pietro (BO)  
Cantiere: S.P. Valle del Lavino - Loc. Case Bonazzi  
Perforazione: Trivellazione a secco d 120 mm  
Attrezzatura: Unimog 400L

Quota: ---  
Profondità: 4.60 m  
Data Inizio: 08/07/2005  
Data Fine: 08/07/2005  
Il geologo: Dr. Luca Conti

N. Certificato:  
**05173001**

SONDAGGIO	FOGLIO
1	1/1

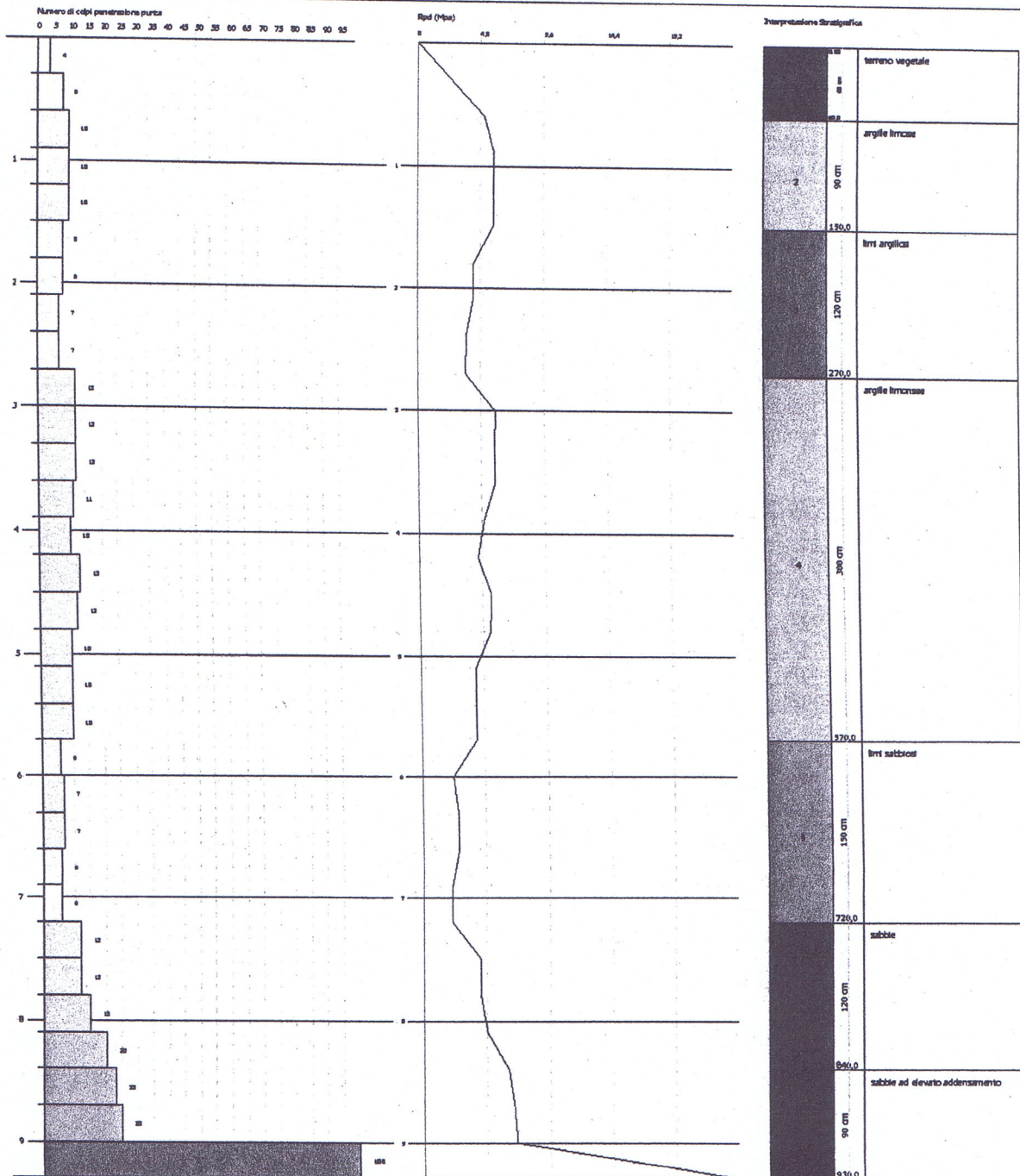
Profondità [m]	Scala 1:50	Stratigrafia	Descrizione stratigrafica	Falda	Piezometro Norton
0.50			Terreno di riporto di natura ghiaiosa.		
1.50	1		Argilla limosa di colore grigio azzurro con trovanti di natura calcareo marnosa; terreno a consistenza dura ed umidità scarsa.		
2.50	2		Ghiaia eterometrica in abbondante matrice limo argillosa di colore beige; terreno variamente addensato.		
4.10	3		Ghiaia medio grossolana in matrice limo sabbiosa; terreno ad addensamento medio.		
4.60	4		Ghiaia grossolana in matrice limo sabbiosa; terreno ad ottimo grado di addensamento.		
	5				
	6				
	7				
	8				
	9				
	10				
	11				
	12				
	13				
	14				
	15				

6,90	6	0,768	2,21	2,87	110,37	143,72
7,20	6	0,766	2,20	2,87	110,04	143,72
7,50	12	0,763	4,39	5,75	219,43	287,43
7,80	12	0,761	4,38	5,75	218,82	287,43
8,10	15	0,709	4,84	6,83	242,22	341,52
8,40	20	0,707	6,44	9,11	322,05	455,36
8,70	23	0,655	6,86	10,47	343,17	523,66
9,00	25	0,653	7,09	10,85	354,43	542,36
9,30	100	0,552	23,94	43,39	1196,88	2169,45

**PROVA PERITOMETRICA DINAMICA N°1**  
 Sperimento Utilizzato... SCPT (Standard Cone Penetration Test)

Committente: Sagginini Alessandro  
 Cantiere: San Martino in Casale  
 Località: Monte San Pietro

Data: 10/10/2009



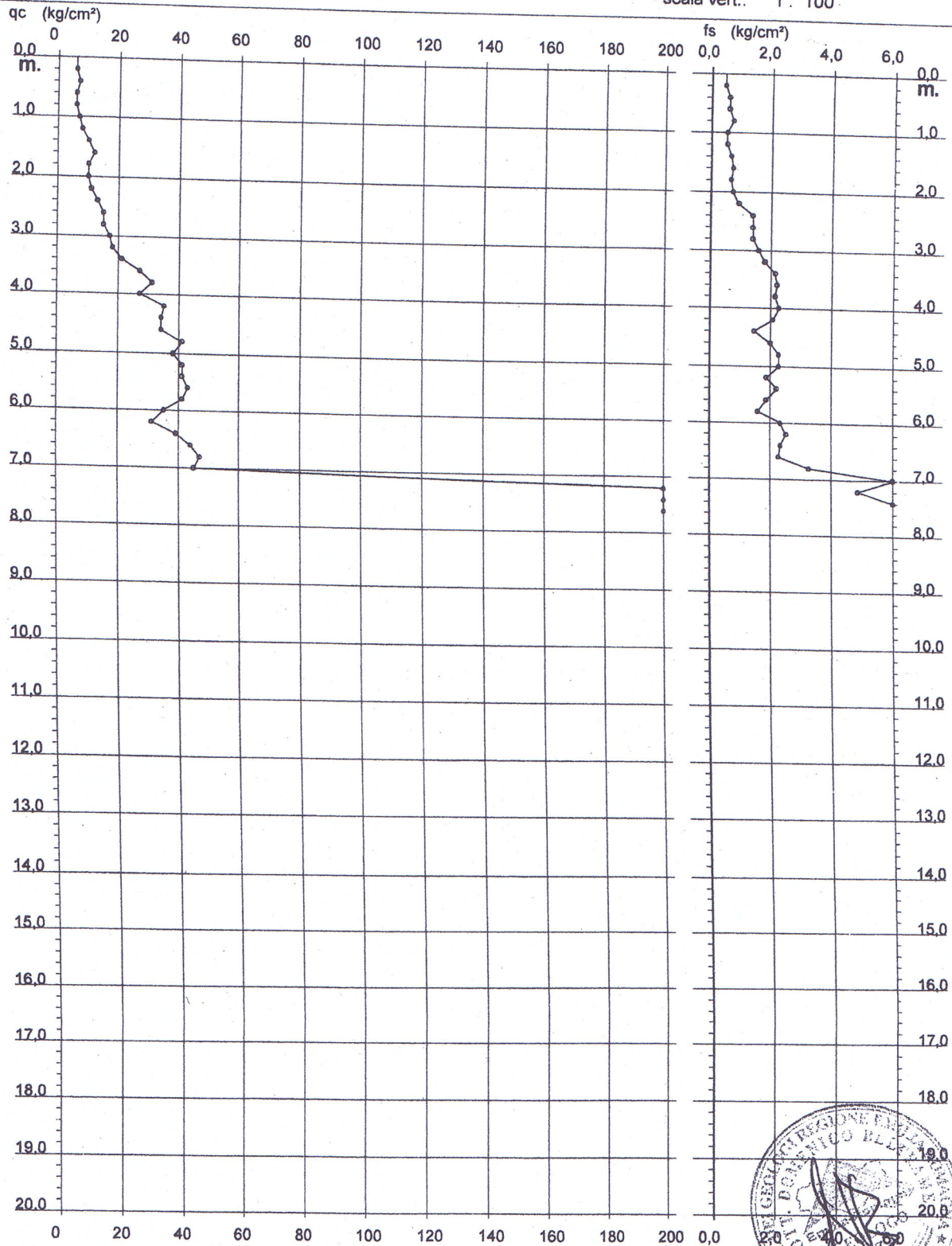
# PROVA PENETROMETRICA STATICA DIAGRAMMA DI RESISTENZA

CPT 1

2.01PG05-159

- committente : Spett.li Guarnieri e Benenati  
- lavoro : fabbricato lesionato  
- località : v. San Martino 33/35 Mte San Pietro (Bo)

- data : 23/06/2010  
- quota inizio : Piano Campagna  
- prof. falda : Falda non rilevata  
- scala vert.: 1 : 100



Il modello di sottosuolo in termini di profilo di Vs è ottenuto dal fit congiunto della curva H/V e delle curve di dispersione dalle indagini in array. Questo permette di calcolare il valore di velocità delle onde di taglio nello strato omogeneo equivalente ai primi 30 m di profondità (Vs30, Norme Tecniche per le Costruzioni, 2008) come:

$$V_{s30} = \frac{30}{\sum \frac{h_i}{V_{s_i}}}$$

dove  $h_i$  e  $V_{s_i}$  sono spessori e velocità dei singoli strati. Risulta  $V_{s30} = 270 \pm 50$  m/s (incertezza  $2\sigma$  dell'ordine del 20%, cfr. Mulargia e Castellaro, 2009, *Seism. Res. Lett.*, 80, 985-989) a partire dal piano campagna.

La presenza del bedrock sismico entro i 30 m di profondità imporrebbe per questo sito la classificazione in categoria E. Tuttavia, considerato che il bedrock sismico presenta valori di Vs molto inferiori a 800 m/s e considerata la tipologia della struttura (1 solo piano fuori terra con frequenza propria attesa maggiore di 8 Hz), il sito in esame può essere fatto ricadere in categoria C secondo l'approccio semplificato di normativa.

037042 P117 HVSR123

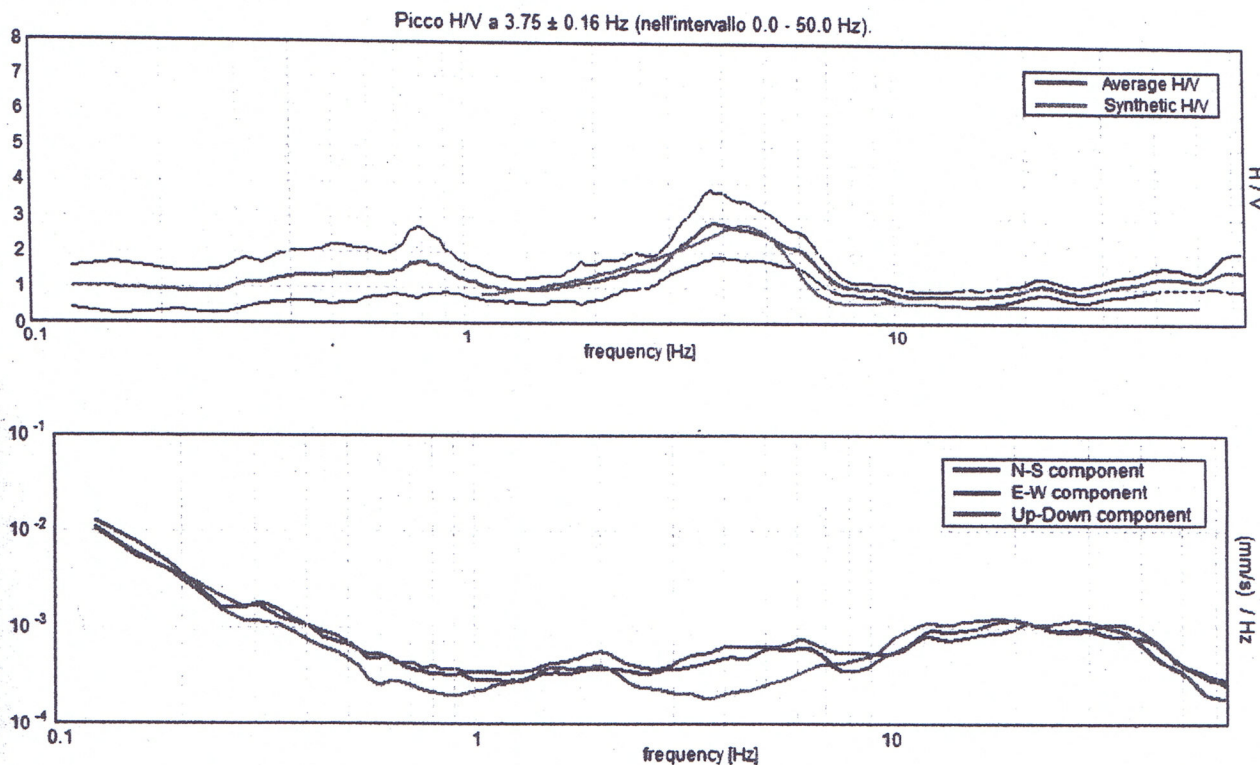


Figura 4. Alto: curva H/V sperimentale (rosso) e teorica (blu) per il modello di sottosuolo proposto per il sito, Basso: spettri di ampiezza in velocità delle componenti del moto relativi alla curva H/V mostrata sopra.

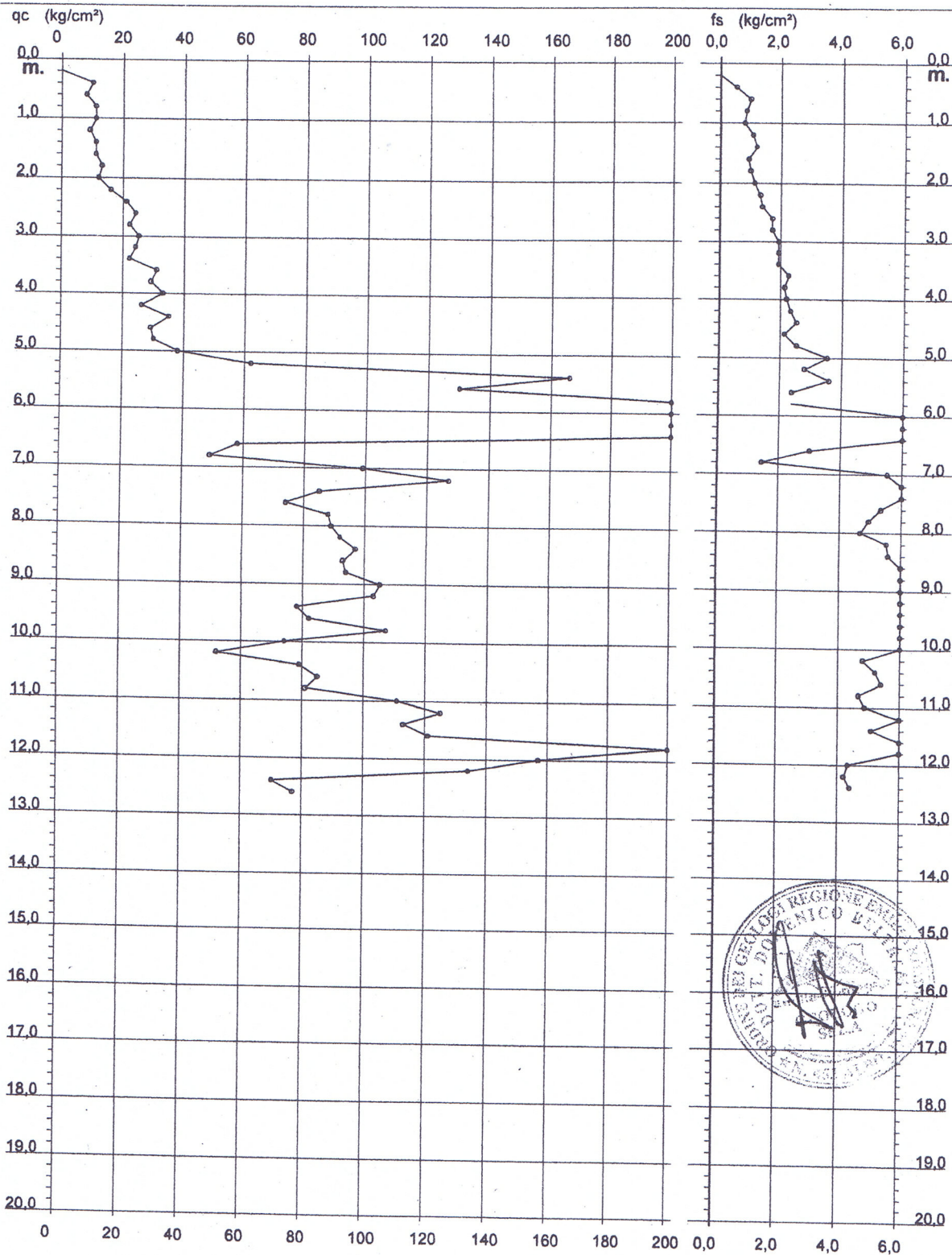
**PROVA PENETROMETRICA STATICA  
DIAGRAMMA DI RESISTENZA**

**CPT 2**

2.01PG05-159

- committente : Spett.li Guarnieri e Benenati  
- lavoro : fabbricato lesionato  
- località : v. San Martino 33/35 Mte San Pietro (Bo)

- data : 23/06/2010  
- quota inizio : Piano Campagna  
- prof. falda : Falda non rilevata  
- scala vert. : 1 : 100



# GEO-PROBE

# CPT (CONE PENETRATION TEST)

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

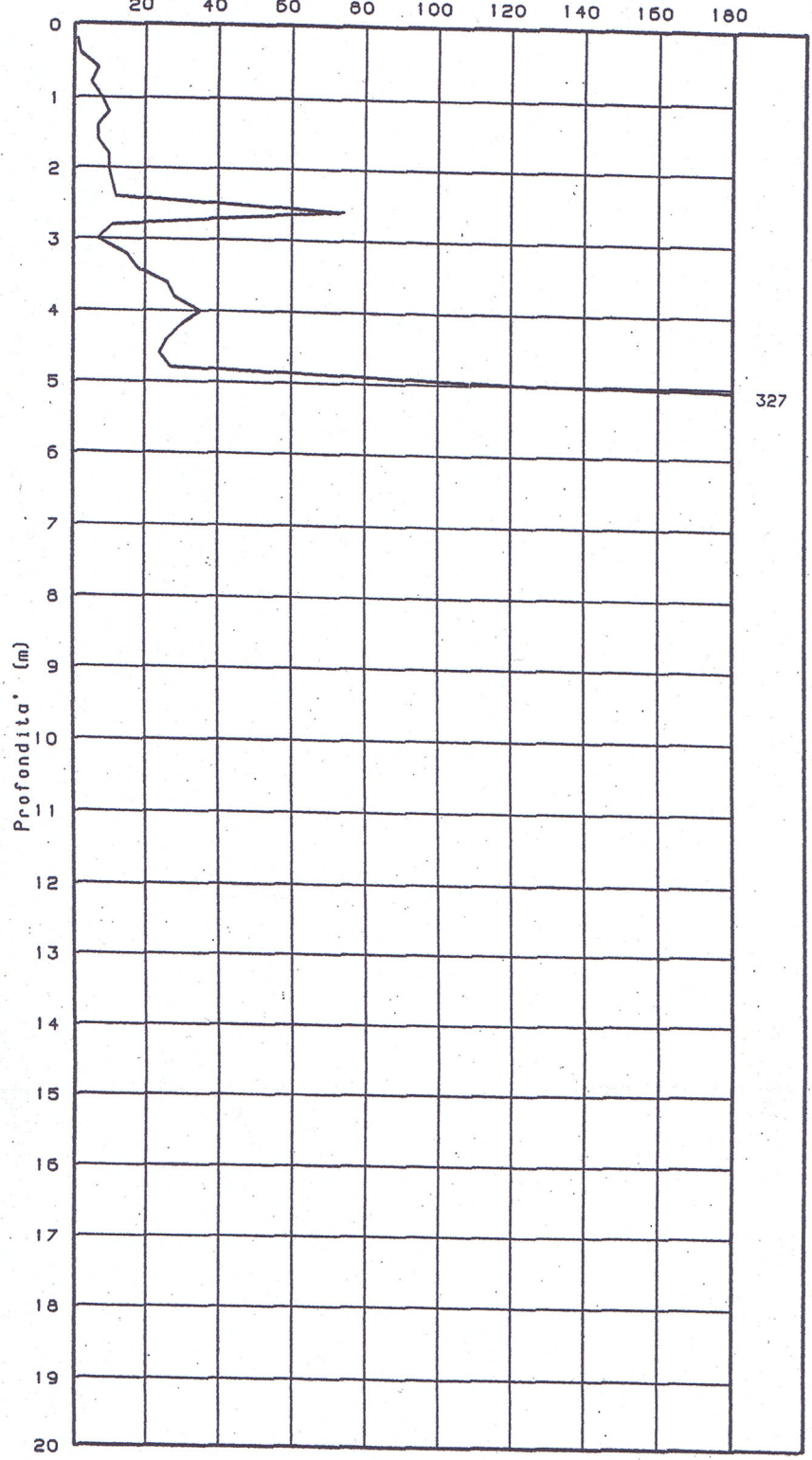
Data: 14/02/2001

N. 5

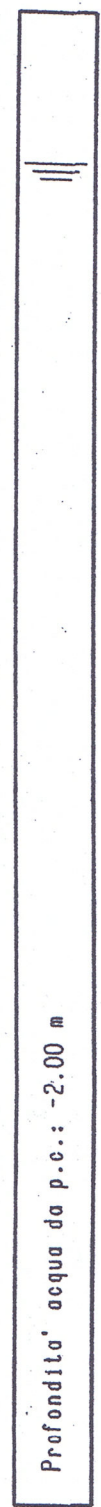
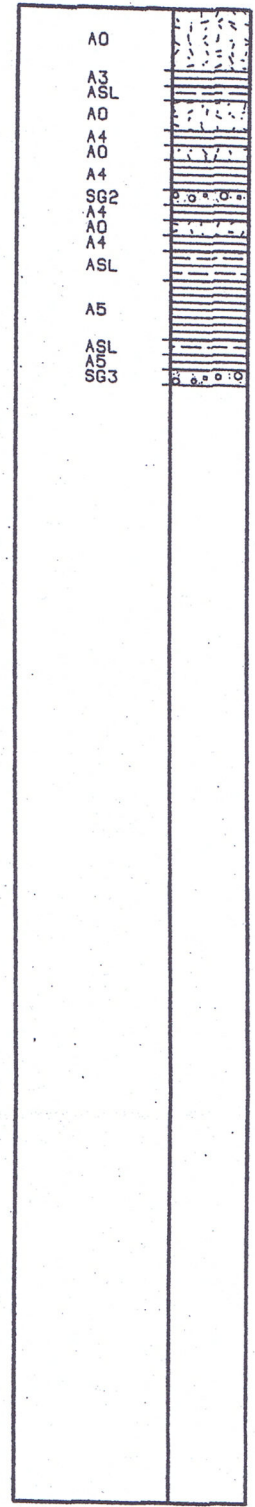
Committente: Coop. Ansaloni - Costruzioni Lanzarini N. Certificato: 01042005

Localita': Monte San Pietro (BO) Berleta - Oca

q<sub>c</sub> resistenza alla punta (kg/cm<sup>2</sup>)  
20 40 60 80 100 120 140 160 180



CLASSIFICAZIONE DEI TERRENI SEC. SCHMERTMANN 1978



STUDIO GEOLOGICO ASSOCIATO

# GEO-PROBE

# CPT (CONE PENETRATION TEST)

40133 BOLOGNA

Data: 06/03/2001

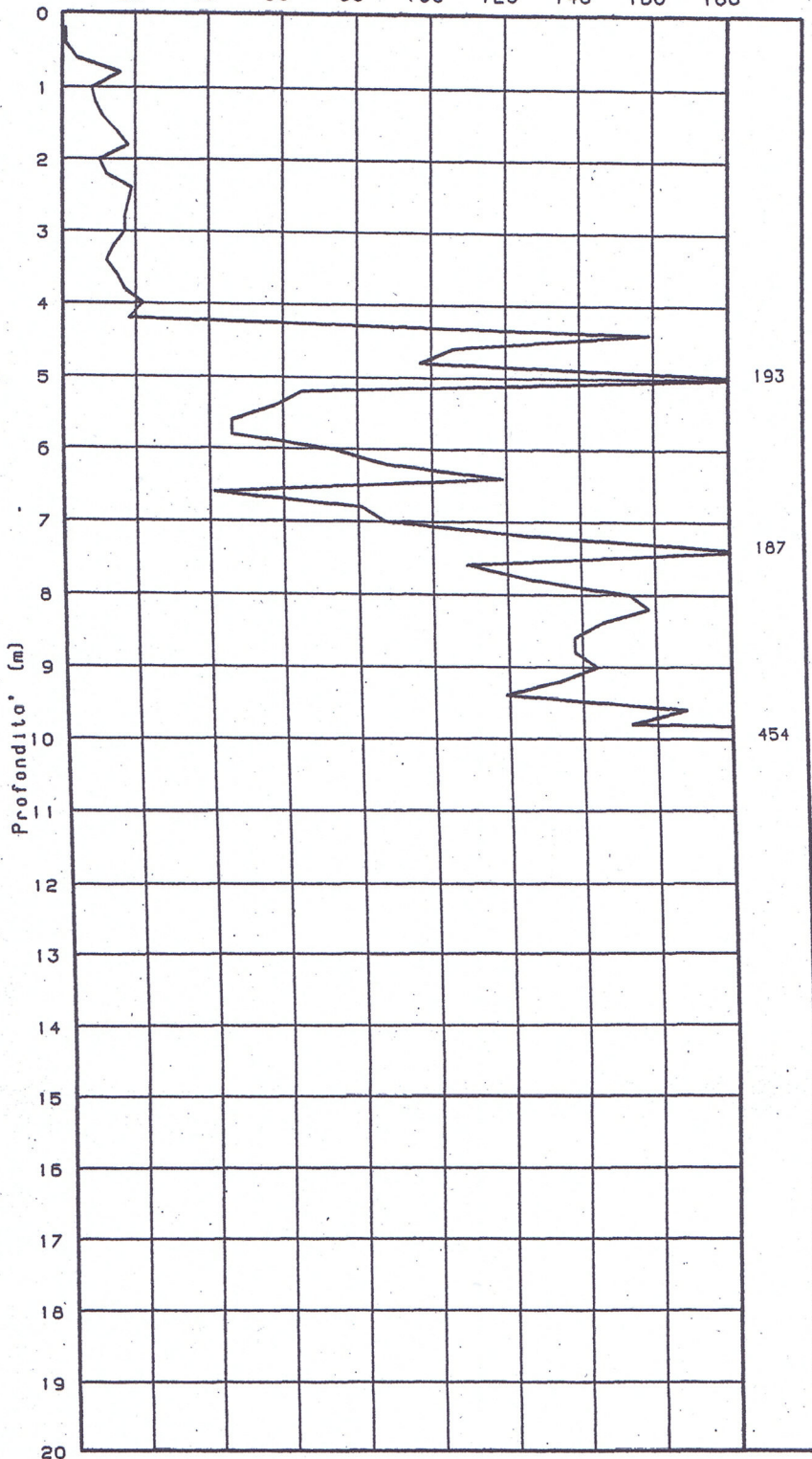
N. 6

Via R. Grieco, 7 - Tel. 051/61.45.360

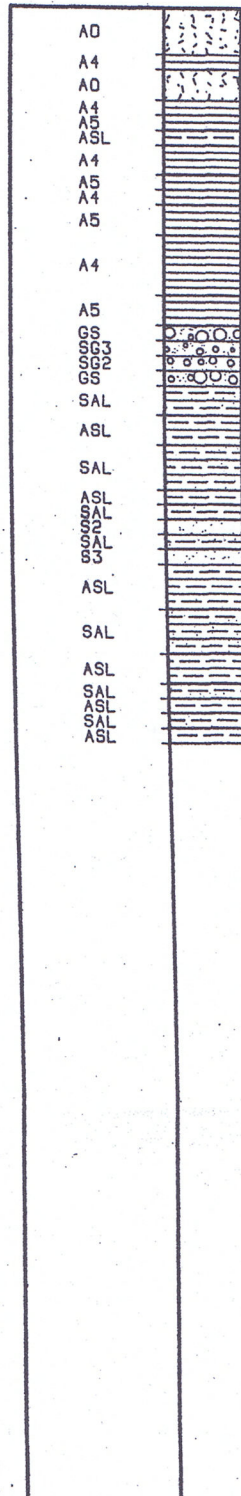
Committente: Coop. Ansaloni - Costruzioni Lanzarini N. Certificato: 01042006

Localita': Monte San Pietro (BO) Berleta - Oca

q<sub>c</sub> resistenza alla punta (kg/cmq)  
 20 40 60 80 100 120 140 160 180



## CLASSIFICAZIONE DEI TERRENI SEC. SCHMERTMANN 1978



Profondita' acqua da p.c.: -2.00 m

STUDIO GEOLOGICO ASSOCIATO

# GEO-PROBE

# CPT (CONE PENETRATION TEST)

40133 BOLOGNA

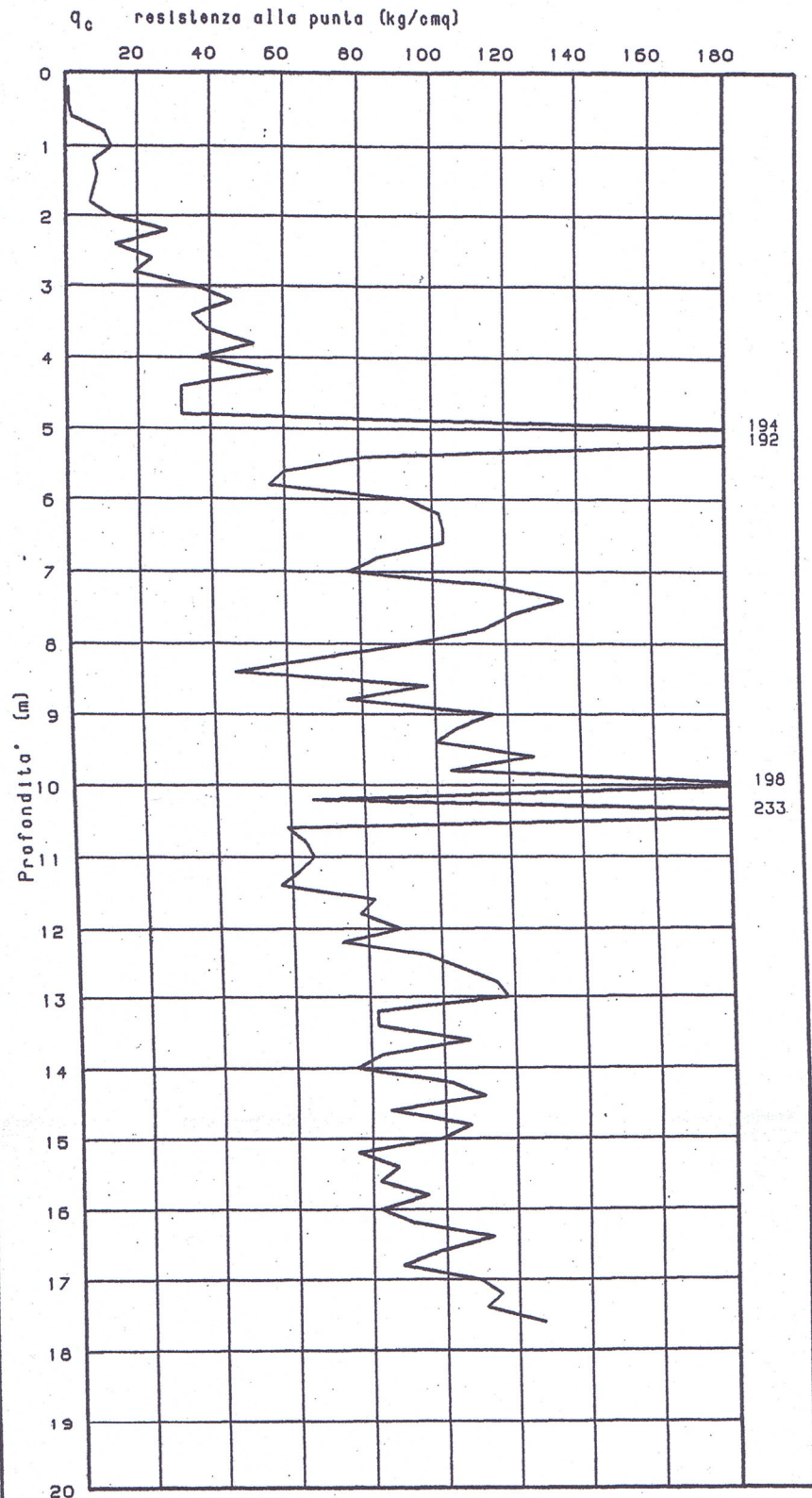
Data: 06/03/2001

N. 7

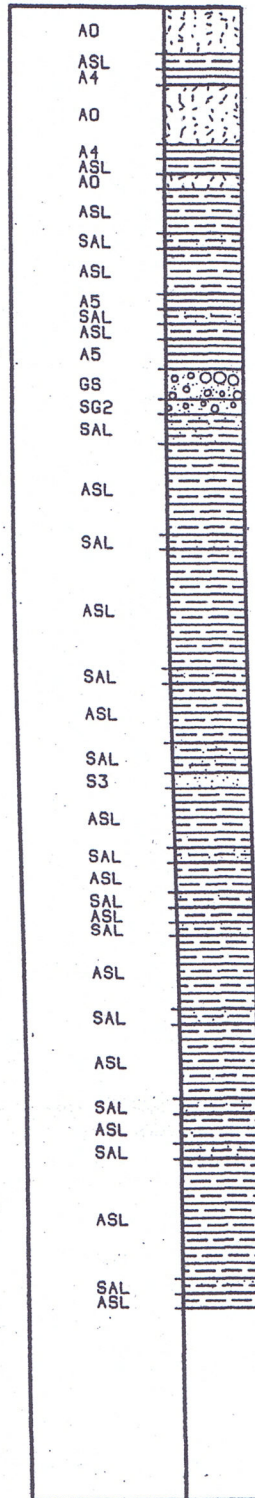
Via R. Grieco, 7 - Tel. 051/61.45.360

Committente: Coop. Ansaloni - Costruzioni Lanzarini N. Certificato: 01042007

Localita': Monte San Pietro (BO) Berleta - Oca



CLASSIFICAZIONE  
DEI TERRENI SEC.  
SCHMERTMANN 1978



Profondita' acqua da p.c.: -2.50 m

STUDIO GEOLOGICO ASSOCIATO



037042 P122 CPT 128

# GEO-PROBE

# CPT (CONE PENETRATION TEST)

40133 BOLOGNA

Data: 17/05/2001

N. 14

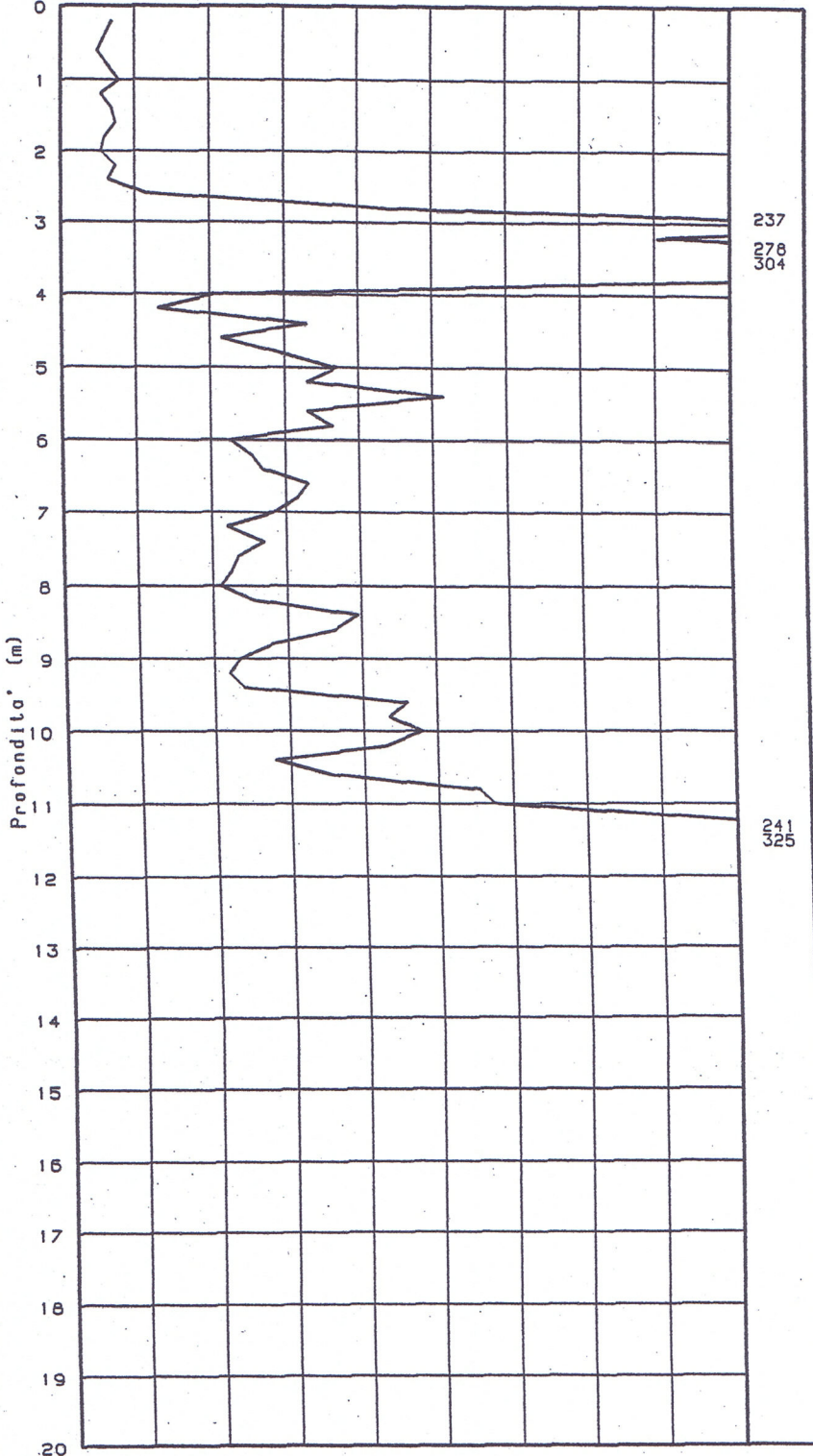
Via R. Grieco, 7 - Tel. 051/61.45.360

Committente: Coop. Ansaloni - Costruzioni Lanzarini N. Certificato: 01042014

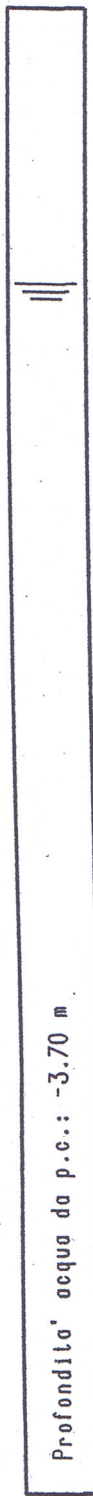
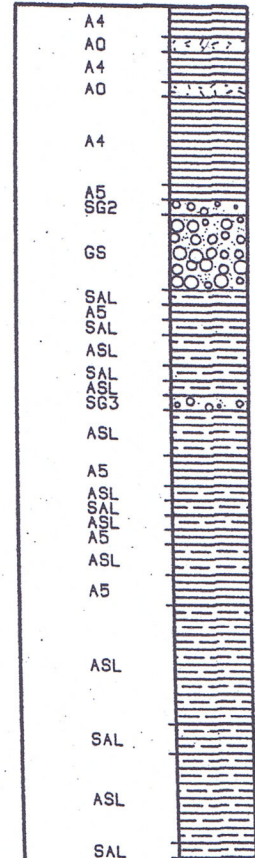
Localita': Monte San Pietro (BO) Berleta - Oca

q<sub>c</sub> resistenza alla punta (kg/cm<sup>2</sup>)

20 40 60 80 100 120 140 160 180



## CLASSIFICAZIONE DEI TERRENI SEC. SCHMERTMANN 1978



Profondità' acqua da p.c.: -3.70 m

STUDIO GEOLOGICO ASSOCIATO

037042P123CPT129

# GEO-PROBE

# CPT (CONE PENETRATION TEST)

40133 BOLOGNA

Data: 04/03/2002

N. 16

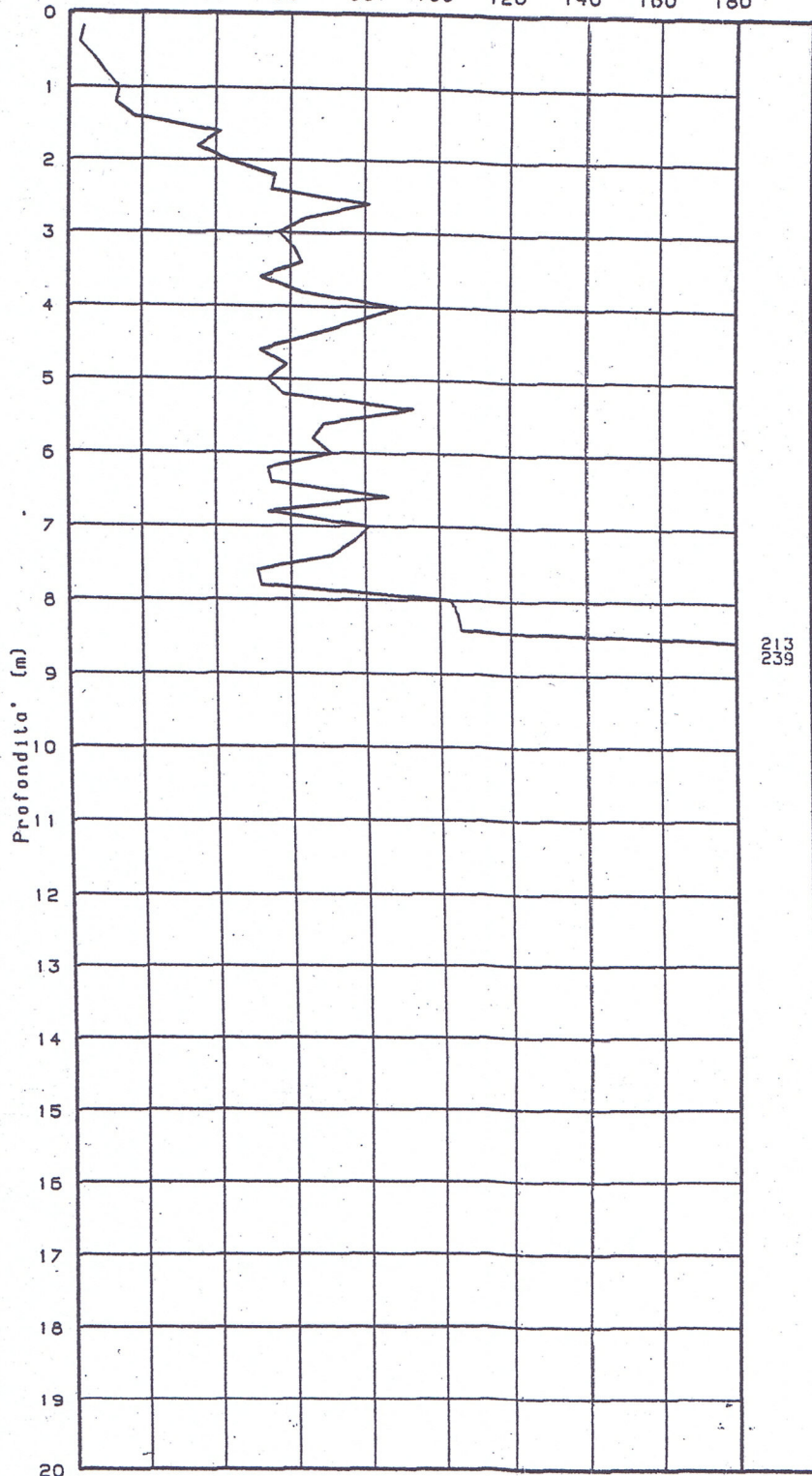
Via R. Grieco, 7 - Tel. 051/61.45.360

Committente: Coop. Ansaloni - Costruzioni Lanzarini N. Certificato: 01042016

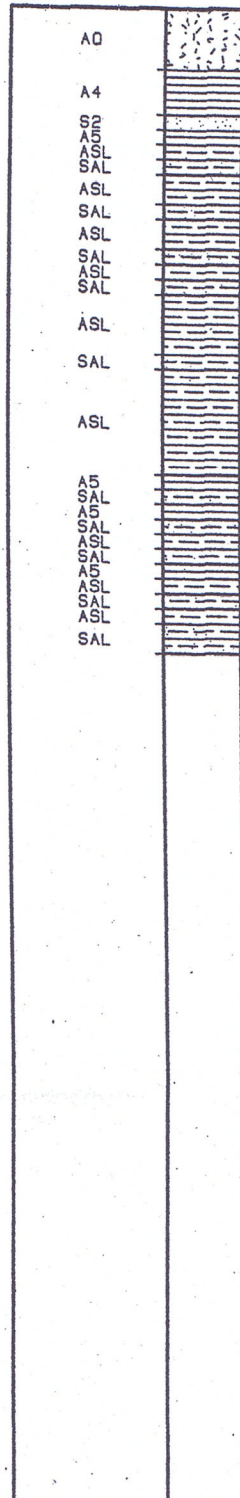
Localita': Monte San Pietro (BO) Berleta - Oca

q<sub>c</sub> resistenza alla punta (kg/cm<sup>2</sup>)

20 40 60 80 100 120 140 160 180



CLASSIFICAZIONE DEI TERRENI SEC. SCHMERTMANN 1978



Profondita' acqua da p.c.: assente

STUDIO GEOLOGICO ASSOCIATO

# GEO-PROBE

# CPT (CONE PENETRATION TEST)

40133 BOLOGNA

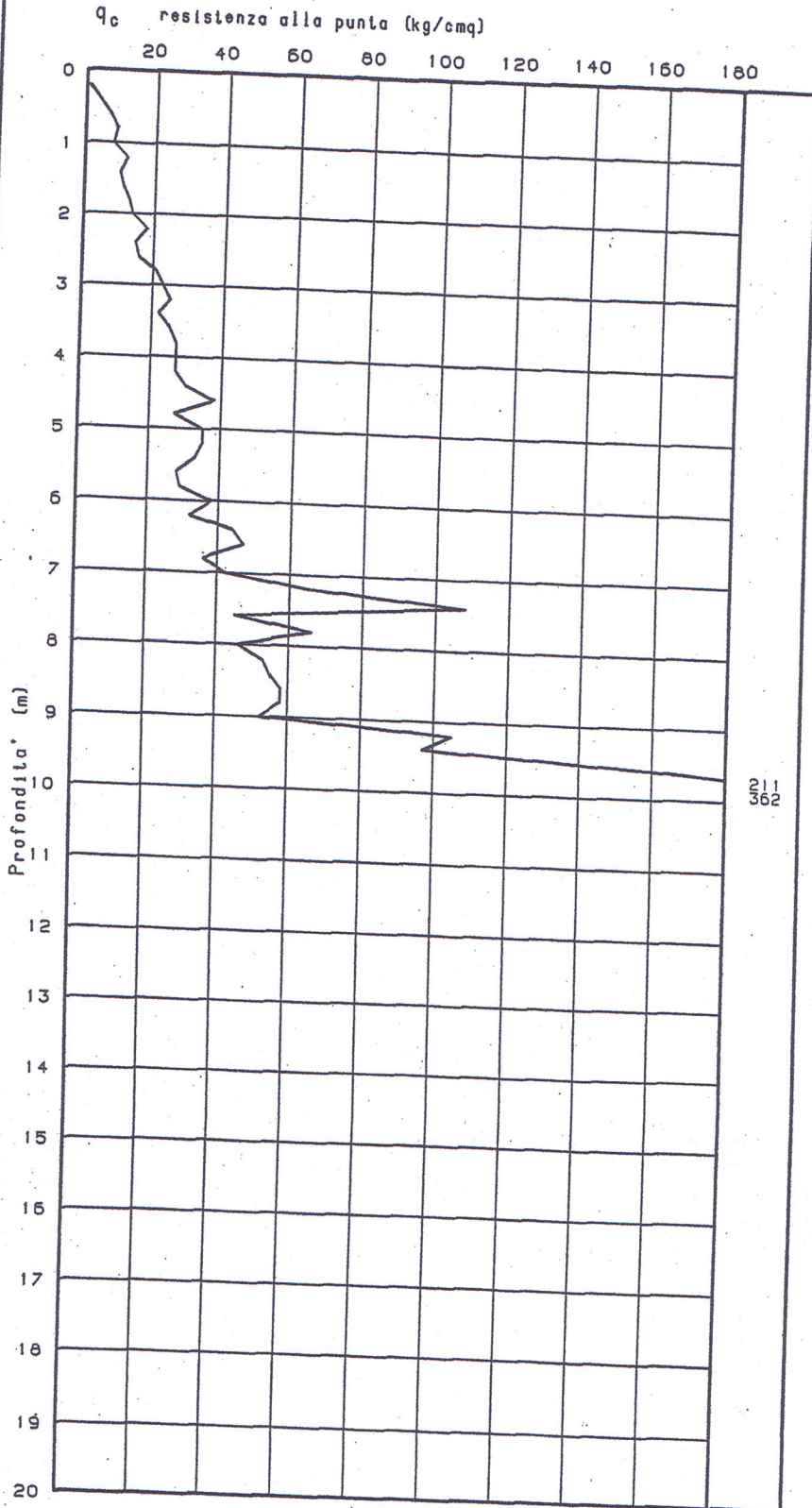
Via R. Grieco, 7 - Tel. 051/61.45.360

Data: 04/03/2002

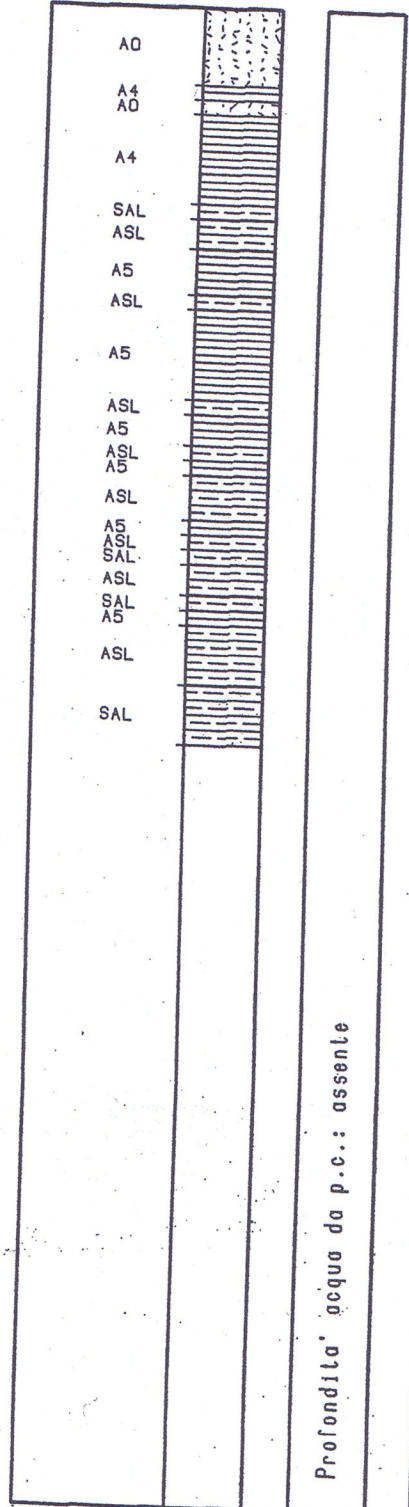
N. 17

Committente: Coop. Ansaloni - Costruzioni Lanzarini N. Certificato: 01042017

Localita': Monte San Pietro (BO) Berleta - Oca



## CLASSIFICAZIONE DEI TERRENI SEC. SCHMERTMANN 1978



STUDIO GEOLOGICO ASSOCIATO

# GEO-PROBE

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

# DPSH 037042 P1250 P131

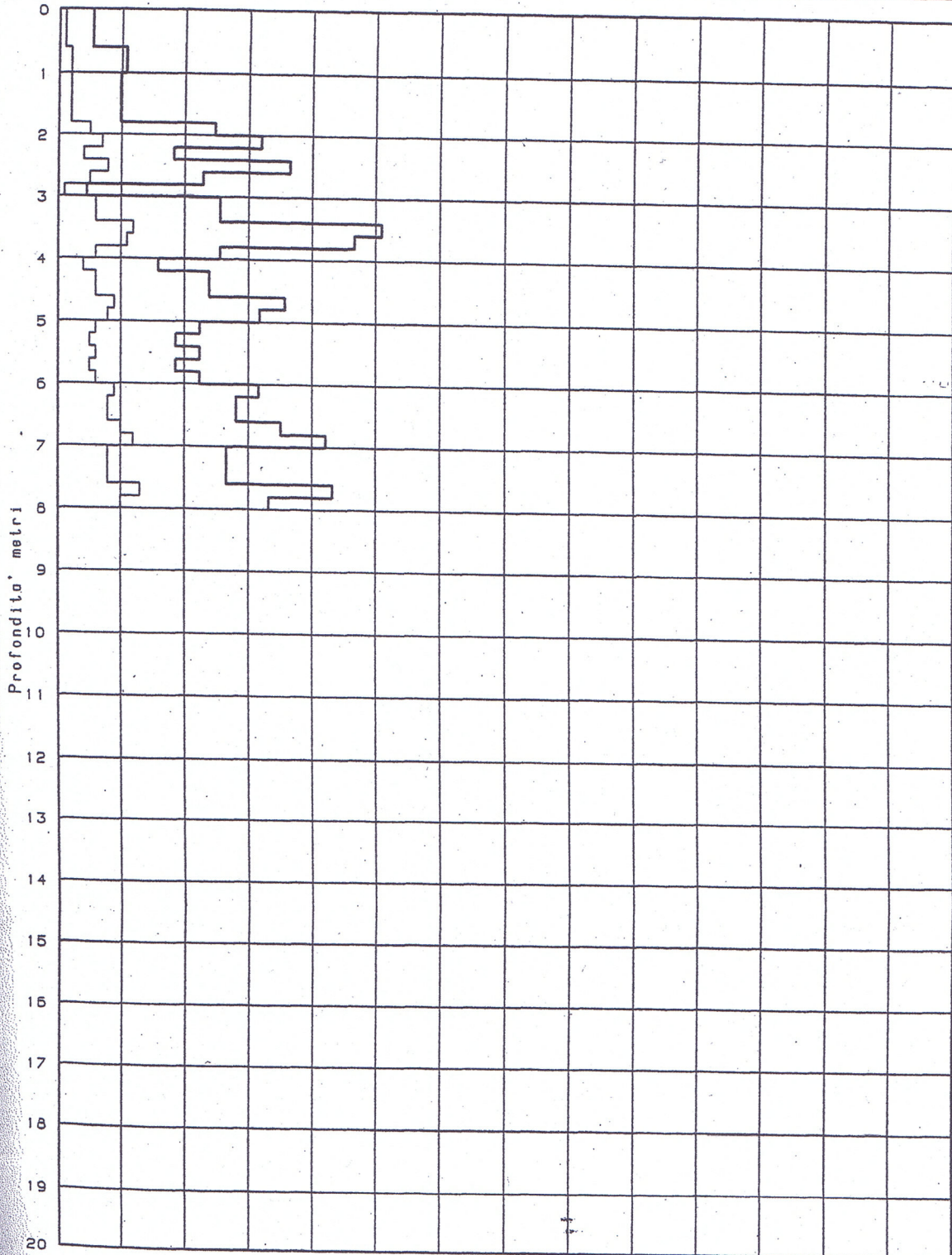
Data: 14/02/2001

N. 1

Committente: Coop Ansaloni - Costruzioni Lanzarini N. Certificato: D0104201

Localita': Monte San Pietro (BO) Berleta - Oca

Od	20	40	60	80	100	140	180	220	260	(kg/cmq)		
N	10	20	30	40	50	60	70	80	90	100	120	140



Profondita' acqua da p.c.: -3.00 m

GEO-PROBE S.r.l. - Indagini Geognostiche

22

GEO-PROBE

DPSH 037042P1260P132

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

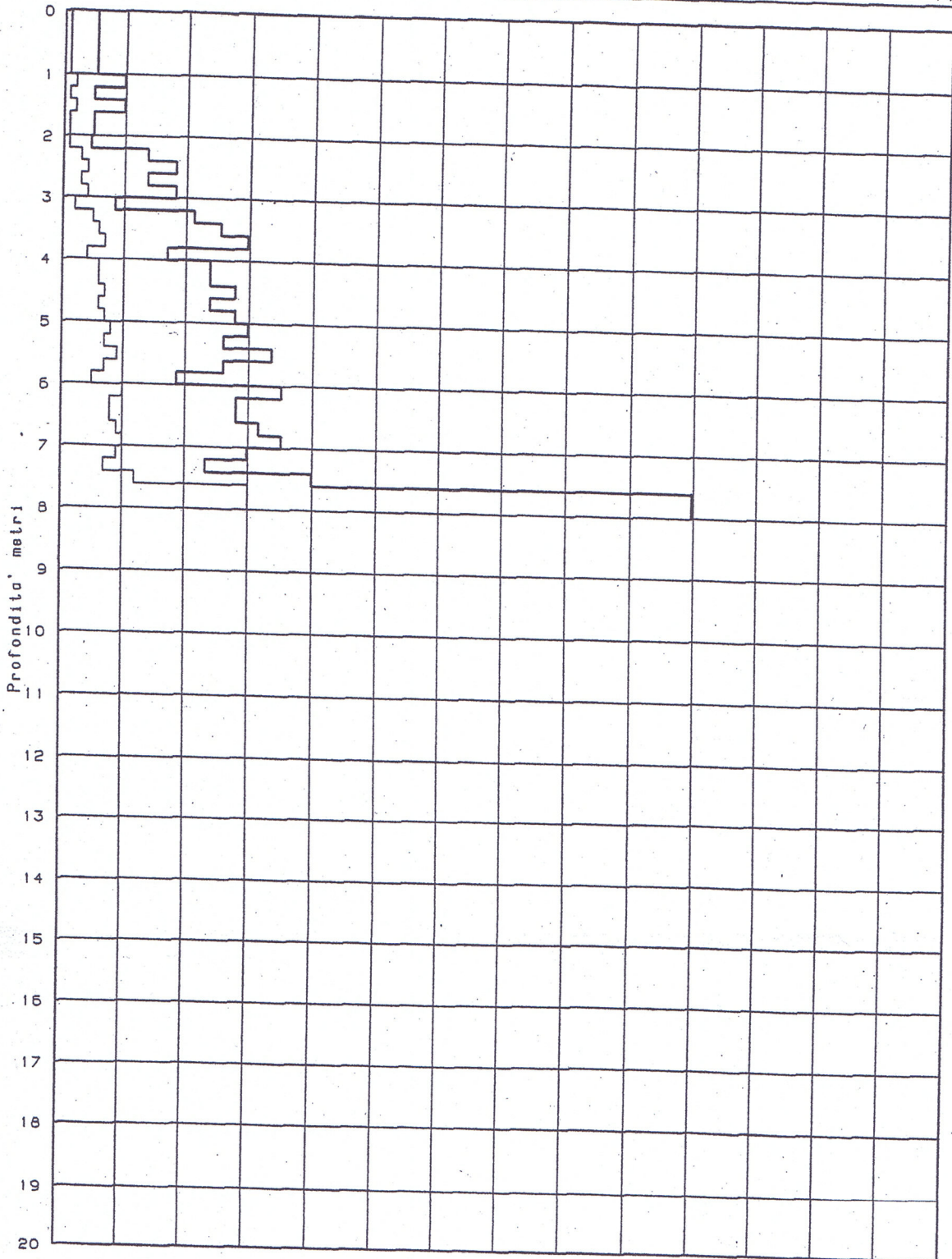
Data: 14/02/2001

N. 2

Committente: Coop Ansaloni - Costruzioni Lanzarini N. Certificato: D0104202

Localita': Monte San Pietro (BO) Berleta - Oca

Qd \_\_\_\_\_ 20 40 60 80 100 140 180 220 260 \_\_\_\_\_ (kg/cmq)  
N \_\_\_\_\_ 10 20 30 40 50 60 70 80 90 100 120 140



Profondita' acqua da p.c.: -2.60 m

GEO-PROBE S.r.l. Indagini Geognostiche

u

# GEO-PROBE

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

# DPSH 037042 P127 DP133

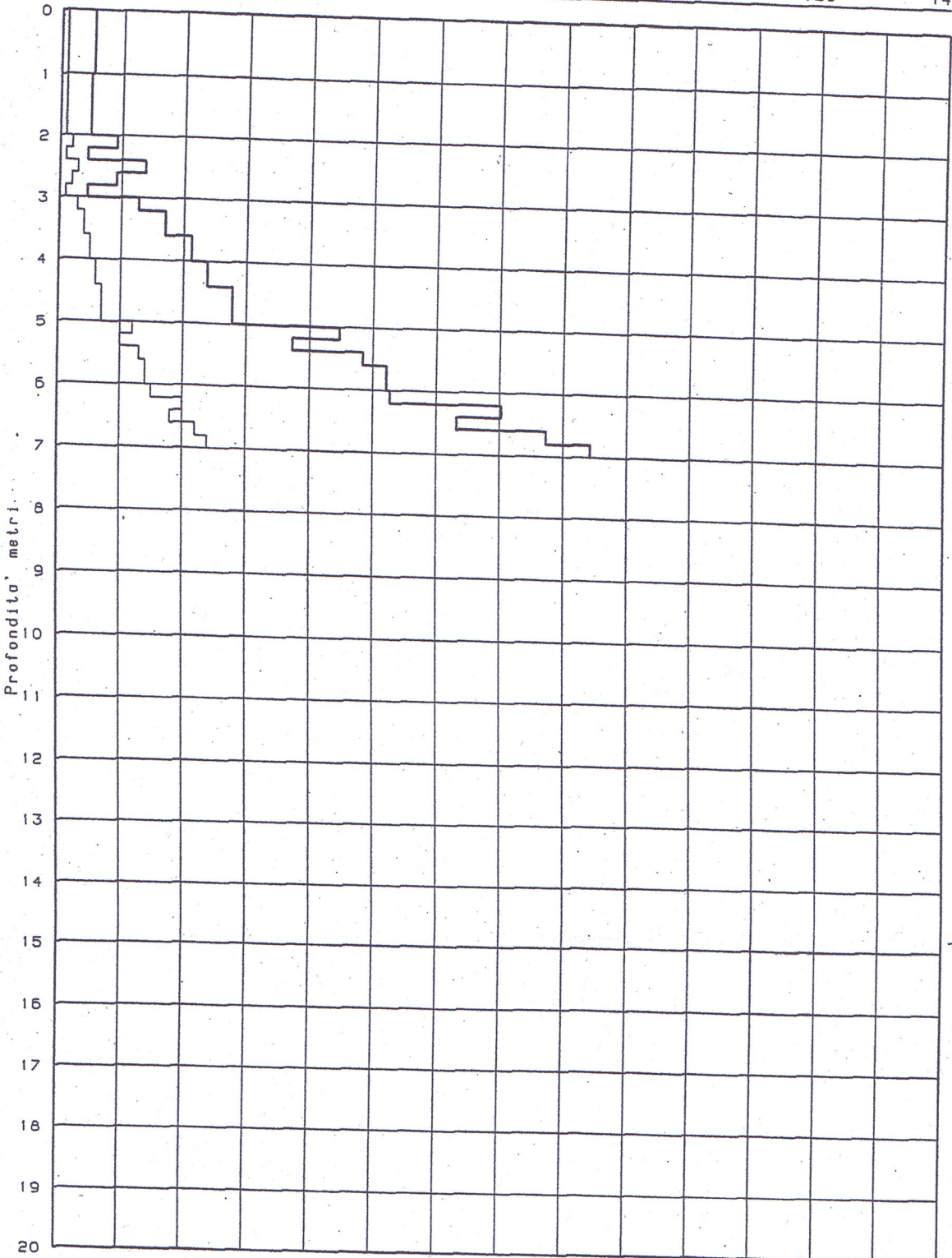
Data: 14/02/2001

N. 3

Committente: Coop Ansaloni - Costruzioni Lanzarini N. Certificato: D0104203

Localita': Monte San Pietro (BO) Berleto - Oca

Od \_\_\_\_\_ 20 40 60 80 100 140 180 220 250 \_\_\_\_\_ (kg/cmq)  
N \_\_\_\_\_ 10 20 30 40 50 60 70 80 90 100 120 140



Profondita' acqua da p.c.: -3.00 m

GEO-PROBE S.r.l. Indagini Geognostiche

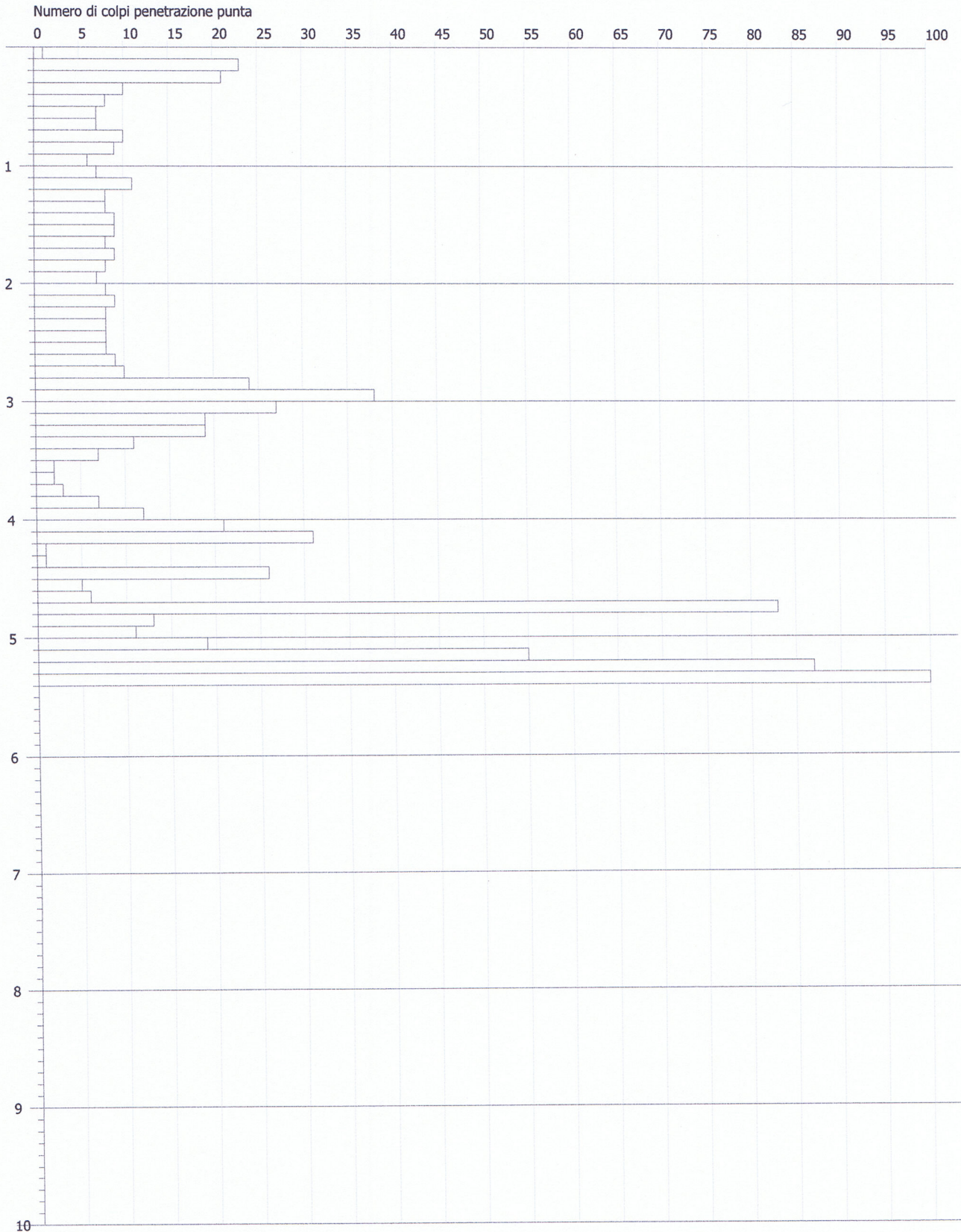
037042 P12802134

Dott. Geol. Germano Scannavini  
Via Pietro Micca, 18 - 40033 Casalecchio di Reno (Bo)  
Tel: 051.57.85.39 - 348.60.49.343 - fax: 051.33.71.651  
email: germano.scannavini@fastwebnet.it - PEC: germanoscannavini@epap.sicurezzapostale.it

PROVA PENETROMETRICA DINAMICA DPM 1  
Strumento utilizzato... DEEP DRILL DL30IT.SA

Committente: Torri Paola  
Cantiere: Nuove edificazioni  
Località: Via Landa

Data: 23/10/2012



## 11.2. Modello sismico del sottosuolo.

In data 23/10/2012 si è eseguita una acquisizione di sismica passiva per la classificazione del terreno ai sensi della normativa vigente.

Nella successiva figura 11.1 si riporta il grafico relativi a questa acquisizione dove il tratto blu rappresenta la curva delle inversioni delle velocità delle onde sismiche.

Il metodo prevede di introdurre, conosciuta la stratigrafia del luogo, le velocità delle onde s in modo da fittare il meglio possibile il grafico del rapporto H/V.

Alla fine del processo si perviene ad un valore di  $V_s$  che permette la classificazione del sito secondo la normativa cogente.

Come per le altre tecniche di inversione di dati passivi le assunzioni di fondo che risiedono nei modelli fanno sì che l'errore di stima del parametro  $V_s$  possa raggiungere, in casi sfortunati, il 30%. Questo è un limite comune a tutte le tecniche di inversione di dati passivi.

Il calcolo della  $V_{s30}$  è stato eseguito mediante le indicazioni precedentemente esposte porta ad avere una  $V_{s30}$  pari a  $416 \pm 83,20$  m/sec che porta ad un valore cautelativo di  $V_{s30}$  pari a 332,80 m/sec.

In base ai dati raccolti ed ai sensi del DM Infrastrutture 14/01/2008 i terreni del primo sottosuolo vengono quindi classificati come:

**C - Depositi di terreni a grana grossa mediamente addensati o terreni a grana fine mediamente consistenti con spessori superiori a 30 m, caratterizzati da un graduale miglioramento delle proprietà meccaniche con la profondità e da valori di  $V_{s,30}$  compresi tra 180 m/s e 360 m/s ( ovvero  $15 < N_{spt,30} < 50$  nei terreni a grana grossa e  $70 < C_{u,30} < 250$  kPa nei terreni a grana fine).**

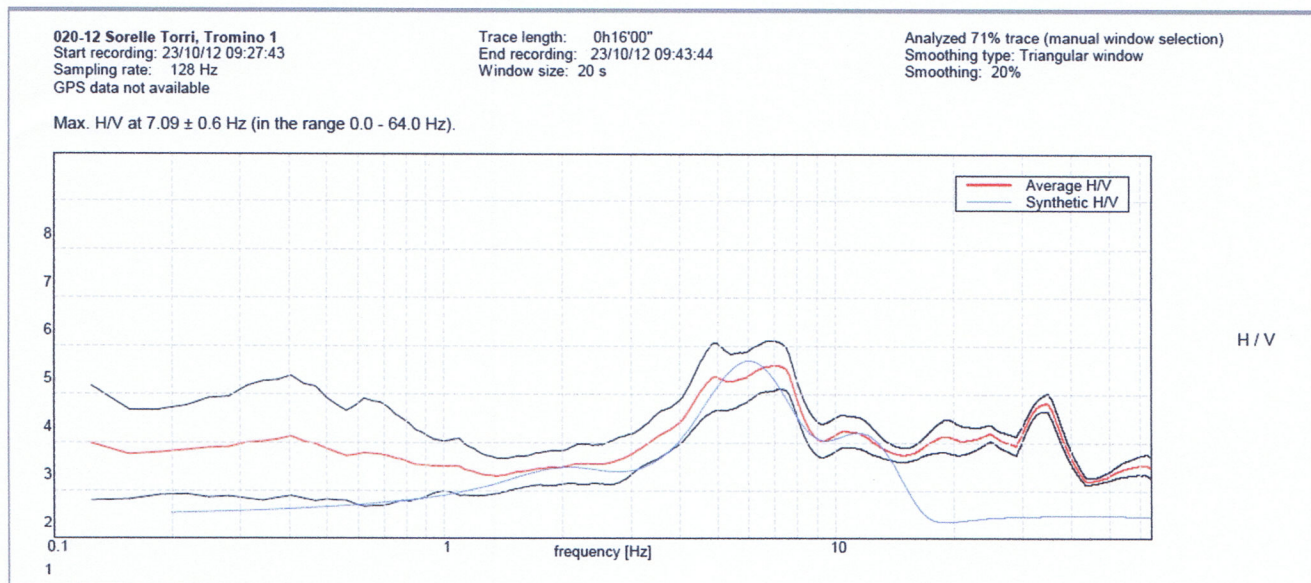


Figura 11.1: rapporti spettrali.

La combinazione tra le frequenze di vibrazione del terreno e quelle dell'edificio possono portare ad un decadimento dell'accelerazione di picco al suolo con conseguente riclassificazione della categoria sismica del terreno.

Inoltre la sovrapposizione tra le frequenze di vibrazione del terreno di sedime dell'edificio e l'opera stessa può far "andare in risonanza" la costruzione.

Questi aspetti andranno poi sviluppati, nella relazione geologica, in funzione della frequenza propria dell'edificio.

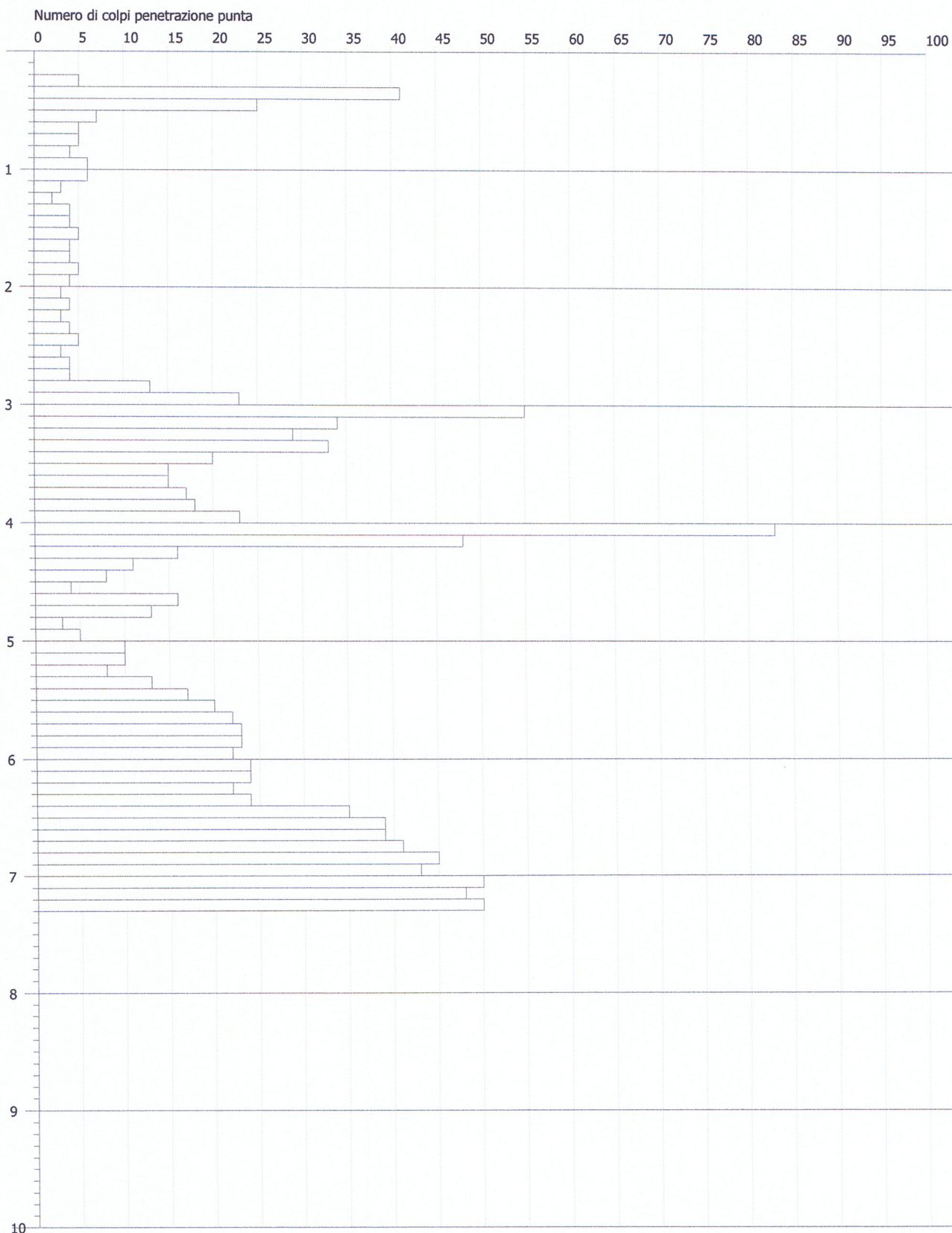
Per il calcolo dei parametri sismici si sono eseguite le seguenti ipotesi:



PROVA PENETROMETRICA DINAMICA DPM 3  
Strumento utilizzato... DEEP DRILL DL30IT.SA

Committente: Torri Paola  
Cantiere: Nuove edificazioni  
Località: Via Landa

Data: 23/10/2012



037042 P130SS 137



**GEO-TECNICA EDILPALI srl**  
 40050 FUNO di ARGELATO  
 Via San Giobbe, 18-20 - Funo di Argelato  
 Tel. 051864987 - Fax 051861859

**SONDAGGIO N. 1**  
**DATA : 31/01/2007**



COMMITTENTE :  
**ARCH. A. MARATA**

LOCALITA' :  
**VIA BORGOTTO, MONTEPASTORE**

Profondità (m)

Idrologia	Colonna stratigrafica	DESCRIZIONE TERRENI	OSSERVAZIONI	SPT N	PP Kg/cmq	Tor. come Kg/cmq
		Argille di colore grigio nocciola con rari resti carboniosi; diffusi elementi lapidei poligenici ed eterometrici.	Umidità media e consistenza plastica. Da -2,8 m umidità elevata			
		Argille di colore grigio azzurro con abbondanti spalmature e concrezioni calcaree al tetto e rari resti di lignite, diffusi elementi lapidei poligenici ed eterometrici. Da -4,3 m focature nerastre ed orizzonti di colore bruno vinaccia.	Umidità media e consistenza plastica. Da -4,3 m umidità da media a scarsa con intervalli saturi, consistenza da dura a plastica in funzione del grado di umidità.			
		Argilliti di colore grigio azzurro con minuti elementi e o orizzonti lapidei.	Umidità da scarsa ad assente e consistenza semilapidea.			
		Dopo un giorno acqua a -2,7 m dal pc.				

3,90  
7,40  
9,00



dr. Geol. Silvia Castellaro, Ph.D.  
Ordine Geologi del Veneto n. 547

Oggetto: Indagine di sismica passiva  
Località: Montepastore (BO)  
Data esecuzione lavori: aprile 2007

Direzione indagini: dr. Geol. Domenico Beltrame



### MISURE IN CAMPO LIBERO

Per ciascun sito di misura riportiamo la curva HV e i relativi spettri. In aggiunta, per i 4 siti ai vertici dell'area investigata, riportiamo la curva HV teorica ed il corrispondente modello geofisico di sottosuolo (profilo di  $V_s$ ).

T1

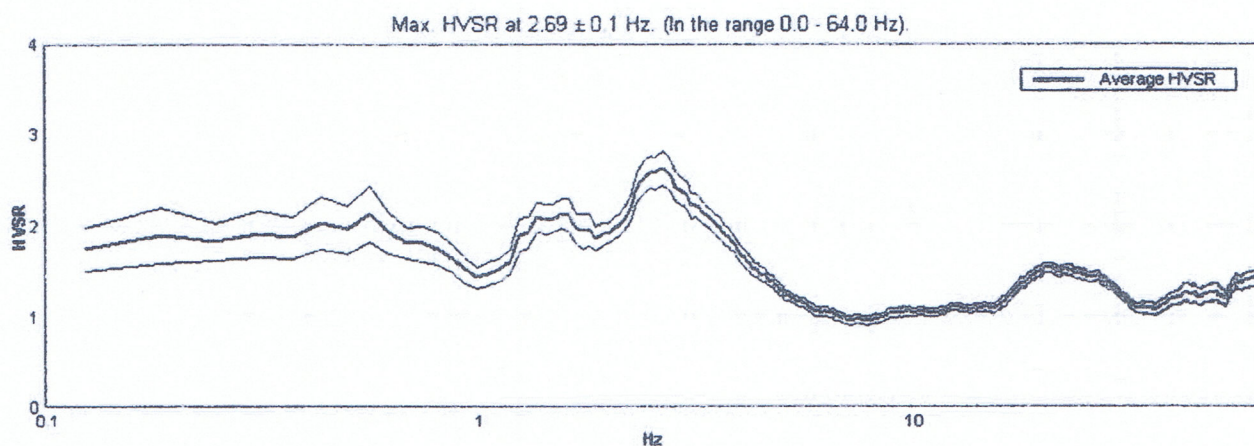


Figura 6. Curva HV (rosso) e intervallo di confidenza al 95% (nero).

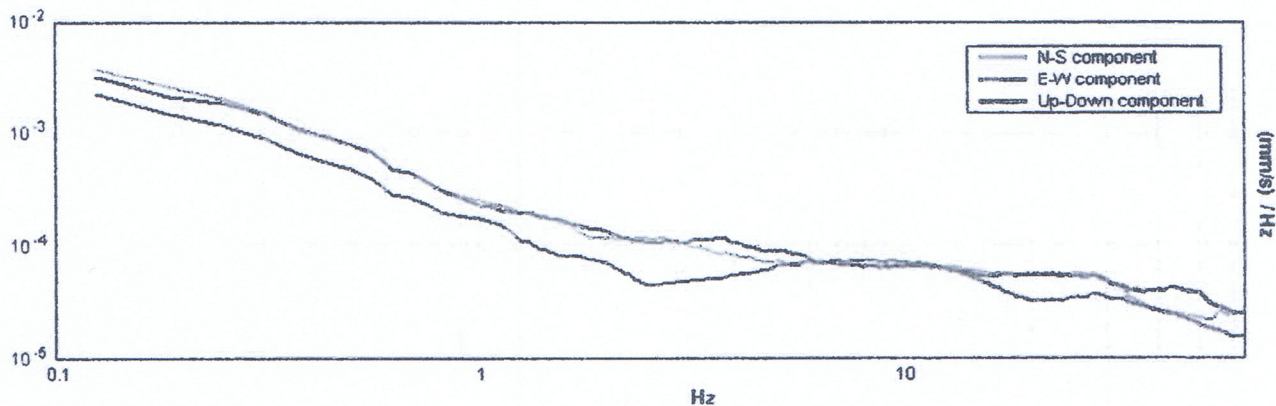


Figura 7. Spettri in velocità delle tre componenti del moto.

037042P131 HUSR 139



dr. Geol. Silvia Castellaro, Ph.D.  
Ordine Geologi del Veneto n. 547

Oggetto: Indagine di sismica passiva  
Località: Montepastore (BO)  
Data esecuzione lavori: aprile 2007

Direzione indagini: dr. Geol. Domenico Beltrame

T2

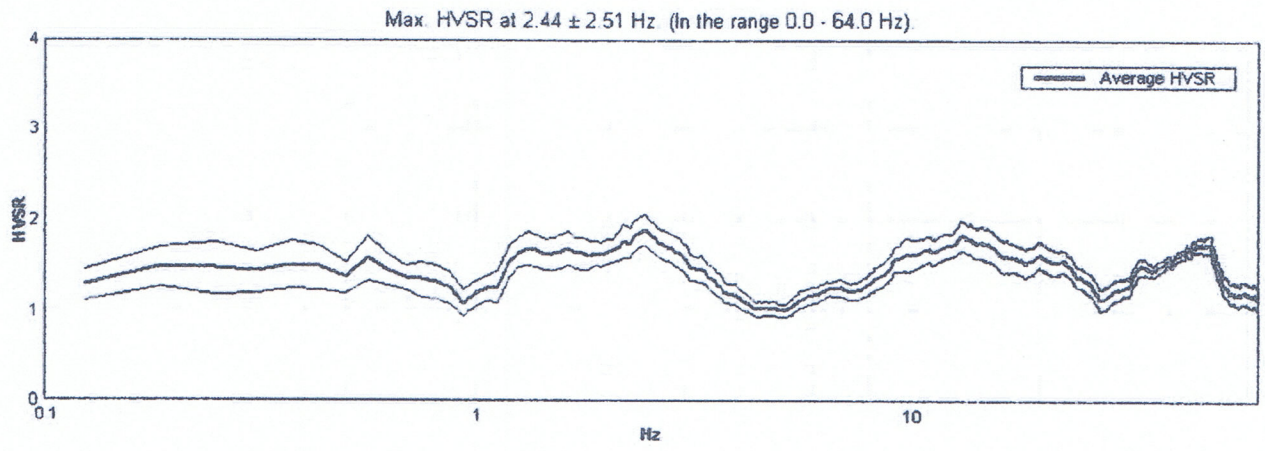


Figura 10. Curva H/V (rosso) e intervallo di confidenza al 95% (nero).

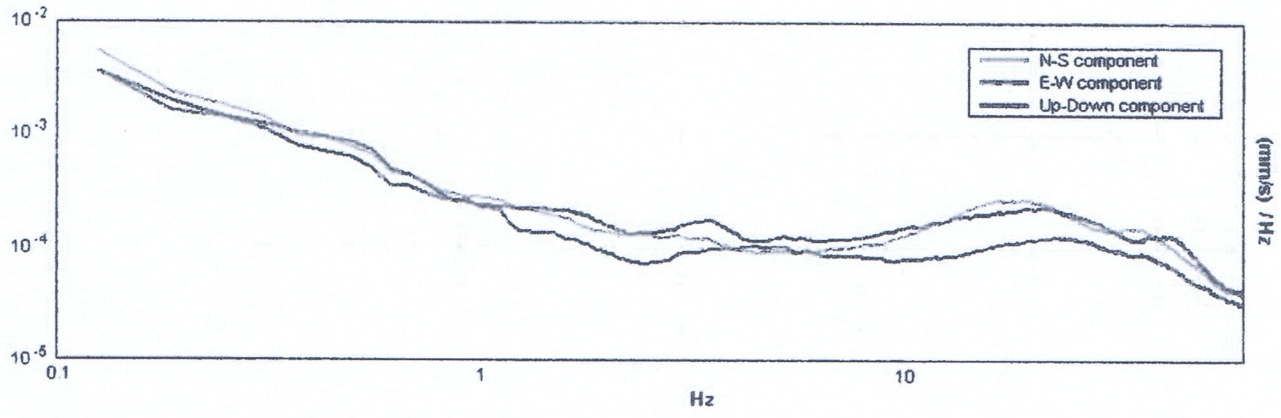
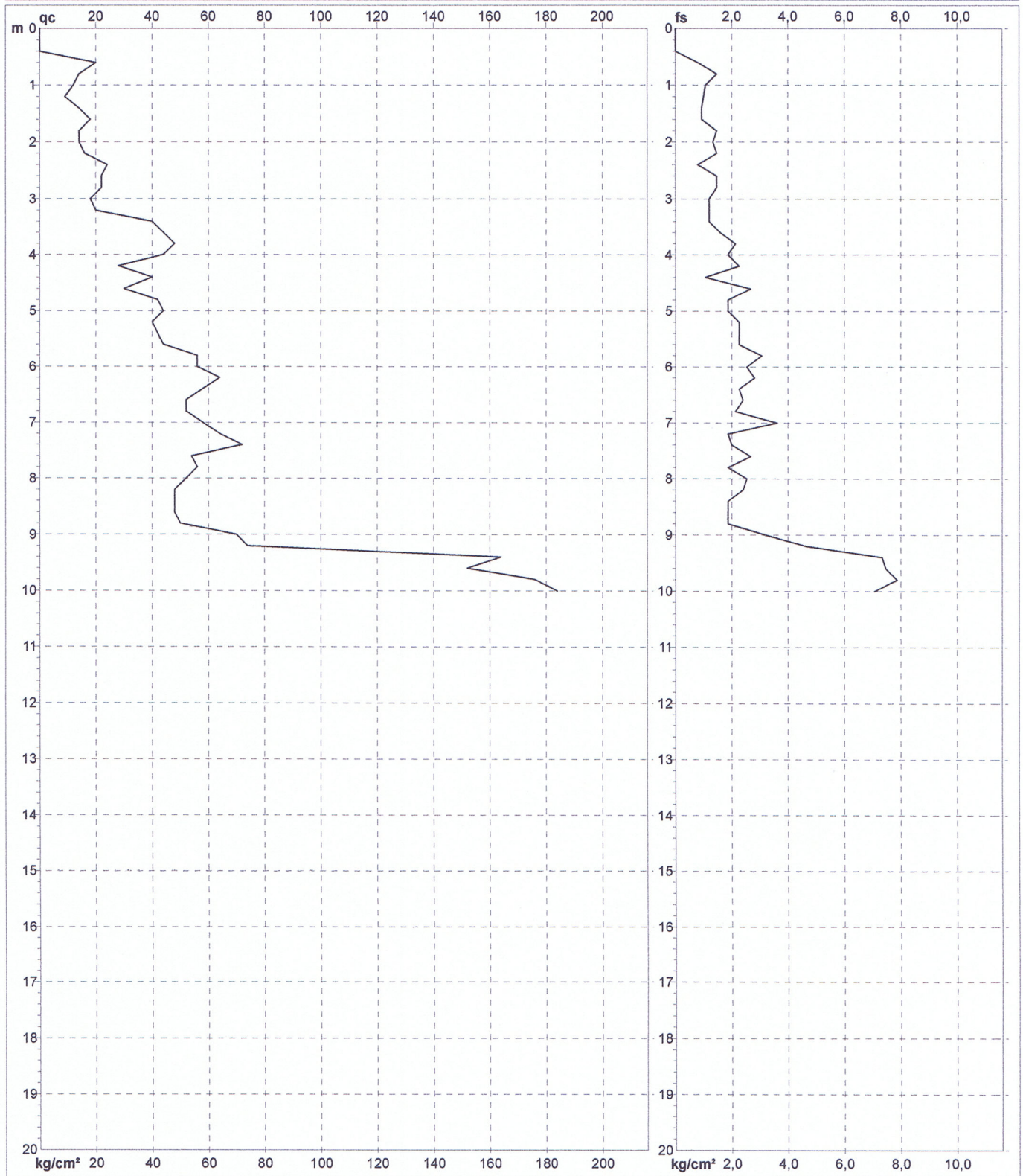


Figura 11. Spettri in velocità delle tre componenti del moto.

<b>PROVA PENETROMETRICA STATICA MECCANICA</b> <b>DIAGRAMMI DI RESISTENZA</b>	<b>CPT</b>	<b>1</b>
	riferimento	<b>010-2012</b>
	certificato n°	0707121

Committente: <b>Sig. Nigelli</b>	U.M.: <b>kg/cm²</b>	Data eseg.: <b>07/07/2012</b>
Cantiere: <b>Via San Martino</b>	Scala: <b>1:100</b>	Data certificato: <b>10/07/2012</b>
Località: <b>San Martino in Casola - Monte San Pietro</b>	Pagina: <b>1</b>	Quota inizio:
	Elaborato:	Falda: <b>Assente</b>

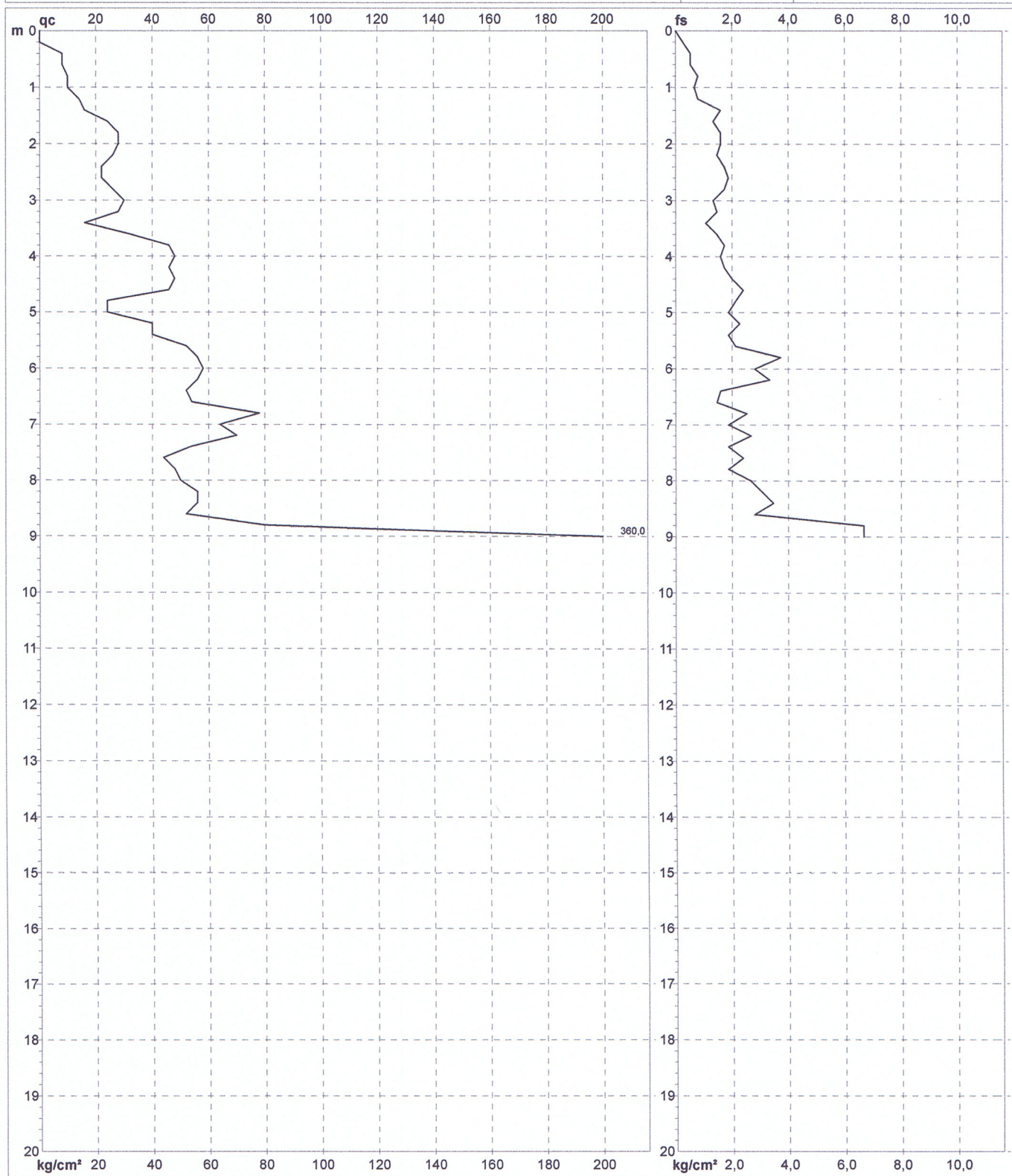


Penetrometro: <b>SP200</b>	Preforo: <b>-0,40 m</b>
Responsabile:	Corr.astine: <b>kg/ml</b>
Assistente:	Cod.ISTAT: <b>037042</b>
	Cod. punta:

3.1

<b>PROVA PENETROMETRICA STATICA MECCANICA</b> <b>DIAGRAMMI DI RESISTENZA</b>	<b>CPT</b>	<b>2</b>
	riferimento	<b>010-2012</b>
	certificato n°	0707122

Committente: <b>Sig. Nigelli</b> Cantiere: <b>Via San Martino</b> Località: <b>San Martino in Casola - Monte San Pietro</b>	U.M.: <b>kg/cm²</b> Scala: <b>1:100</b> Pagina: <b>1</b> Elaborato:	Data esec.: <b>07/07/2012</b> Data certificato: <b>10/07/2012</b> Quota inizio: Falda: <b>Assente</b>
---	--	--



	Penetrometro: <b>SP200</b> Responsabile: Assistente:	Preforo: <b>-0,20 m</b> Corro.astine: <b>kg/ml</b> Cod.ISTAT: <b>037042</b> Cod. punta:
--	--	--

037042 P133HVSR142

**VIA SAN MARTINO MONTE SAN PIETRO**

Instrument: TEN-0002/01-06

Start recording: 07/07/12 10:33:30      End recording: 07/07/12 10:45:30

Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN

GPS data not available

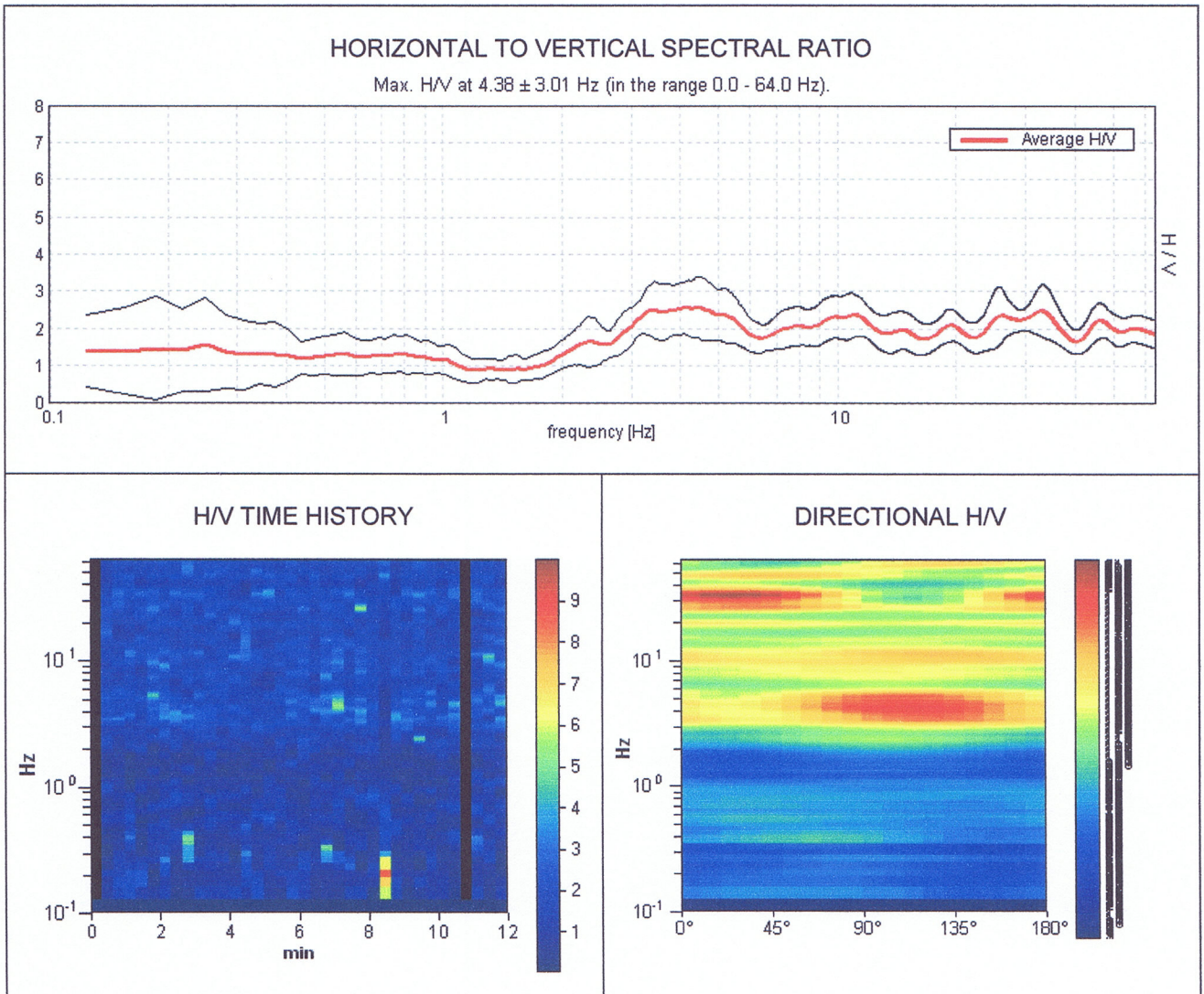
Trace length: 0h12'00".      Analyzed 94% trace (automatic window selection)

Sampling rate: 128 Hz

Window size: 20 s

Smoothing type: Triangular window

Smoothing: 10%



**GEO-PROBE S.r.l.**

- Indagini Geognostiche -

40033 CASALECCHIO DI RENO

Via Cimara, 119 - Tel. 051/61.33.072

**CPT (CONE PENETRATION TEST)**

**N. 1**

Rapporto di Prova N°:

**12.0504 /RSP**

Quota: ---

Data prova : 13/07/2012

Codice lavoro: 2012.119

Committente :

Eksi

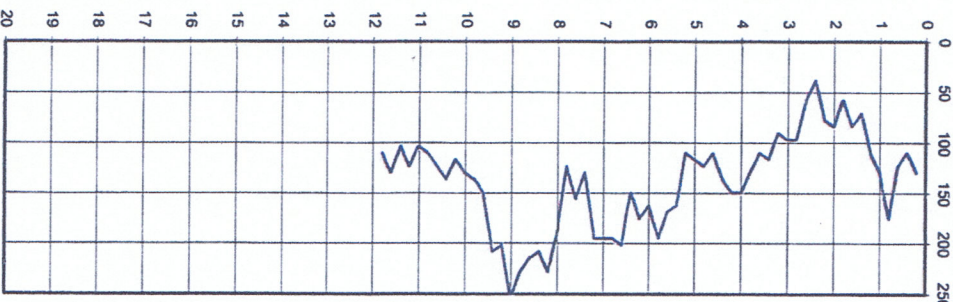
Località : Monte San Pietro (BO)

San Martino In Casola

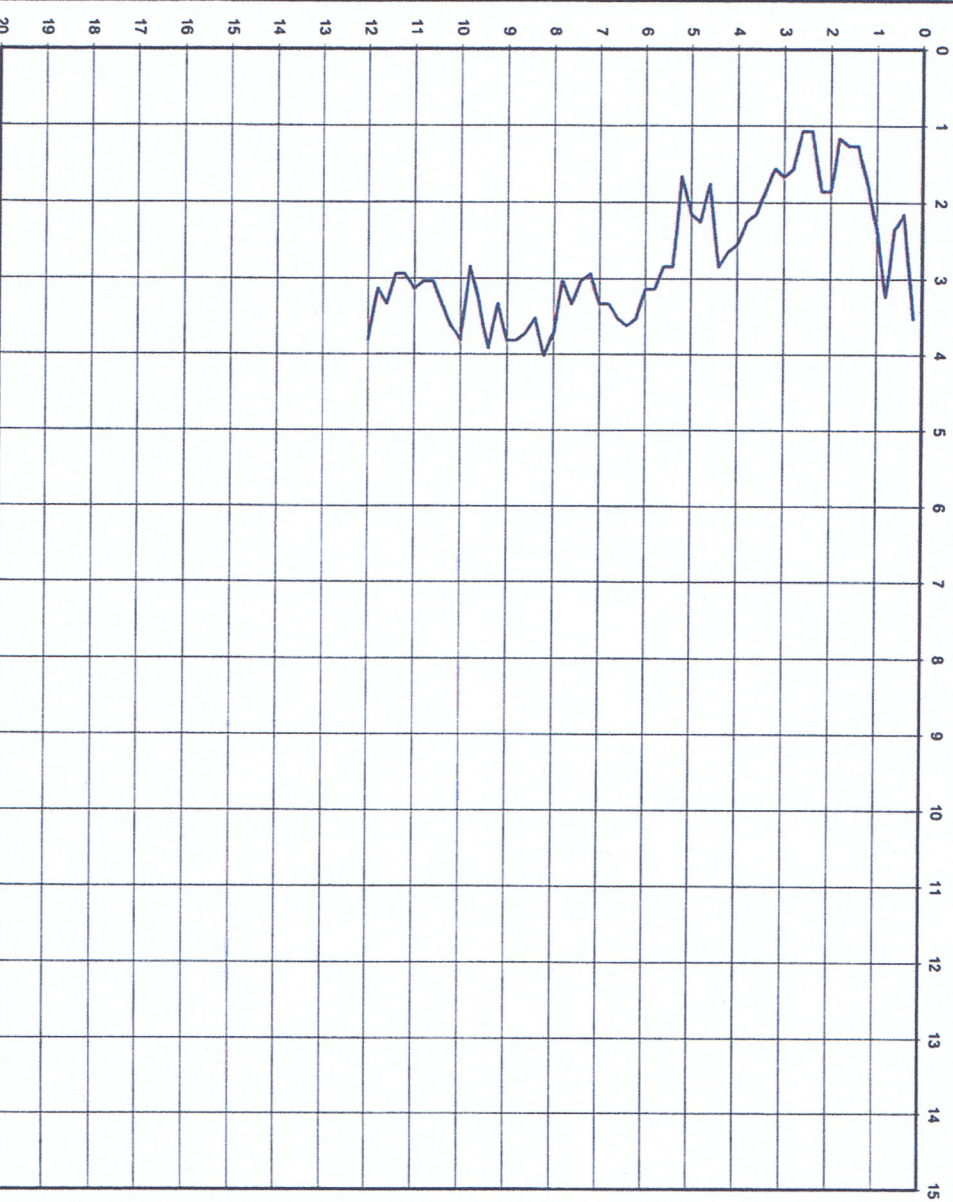
Attrezzatura :

Penetrometro da 200 kN

fs resistenza laterale (kPa)

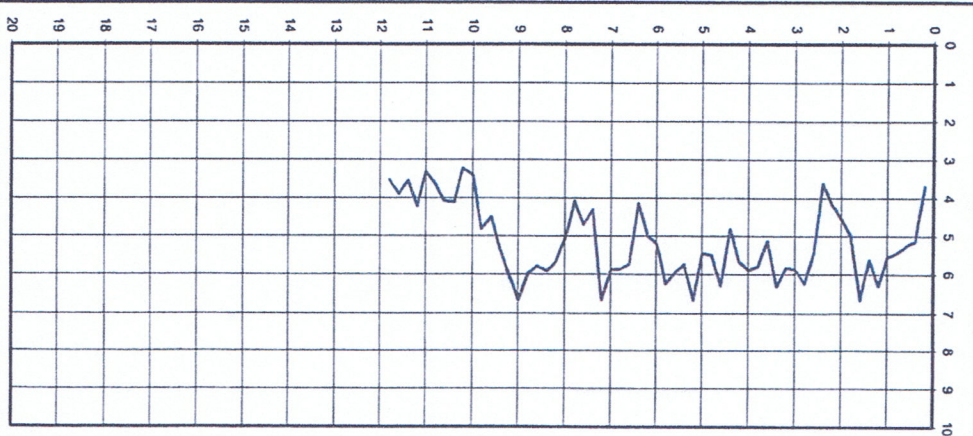


qc resistenza alla punta (MPa)



Livello acqua da p.c.: assente

Rf (%)



Note: ---

Procedura di prova	Normativa di riferimento	Rev.	Data emissione	Sperimentatore	Il Direttore di Laboratorio
IO_003	ASTM D 3441-94	0	13/07/2012	Dr. Chelli	Dr. Luca Conti



**GEO-PROBE S.r.l.**

- Indagini Geostatiche -

40033 CASALECCHIO DI RENO

Via Cimara, 119 - Tel. 051/61.33.072

**CPT (CONE PENETRATION TEST)**

Eksi

Località :

Monte San Pietro (BO)

San Martino in Casola

Attrezzatura :

Penetrometro da 200 kN

N. 4

Rapporto di Prova N°:

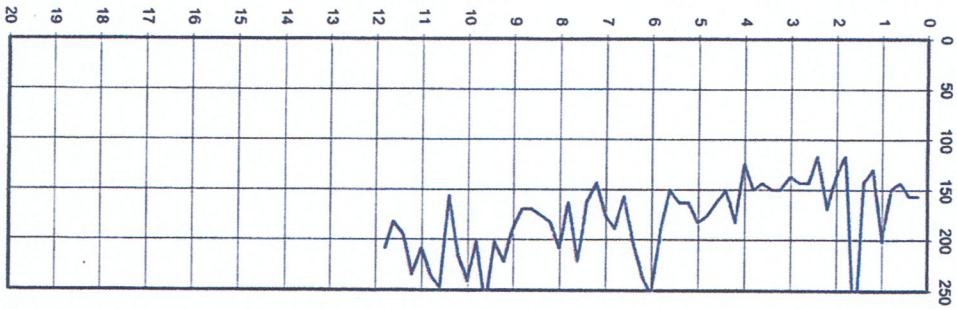
12.0507 /RSP

Quota: ---

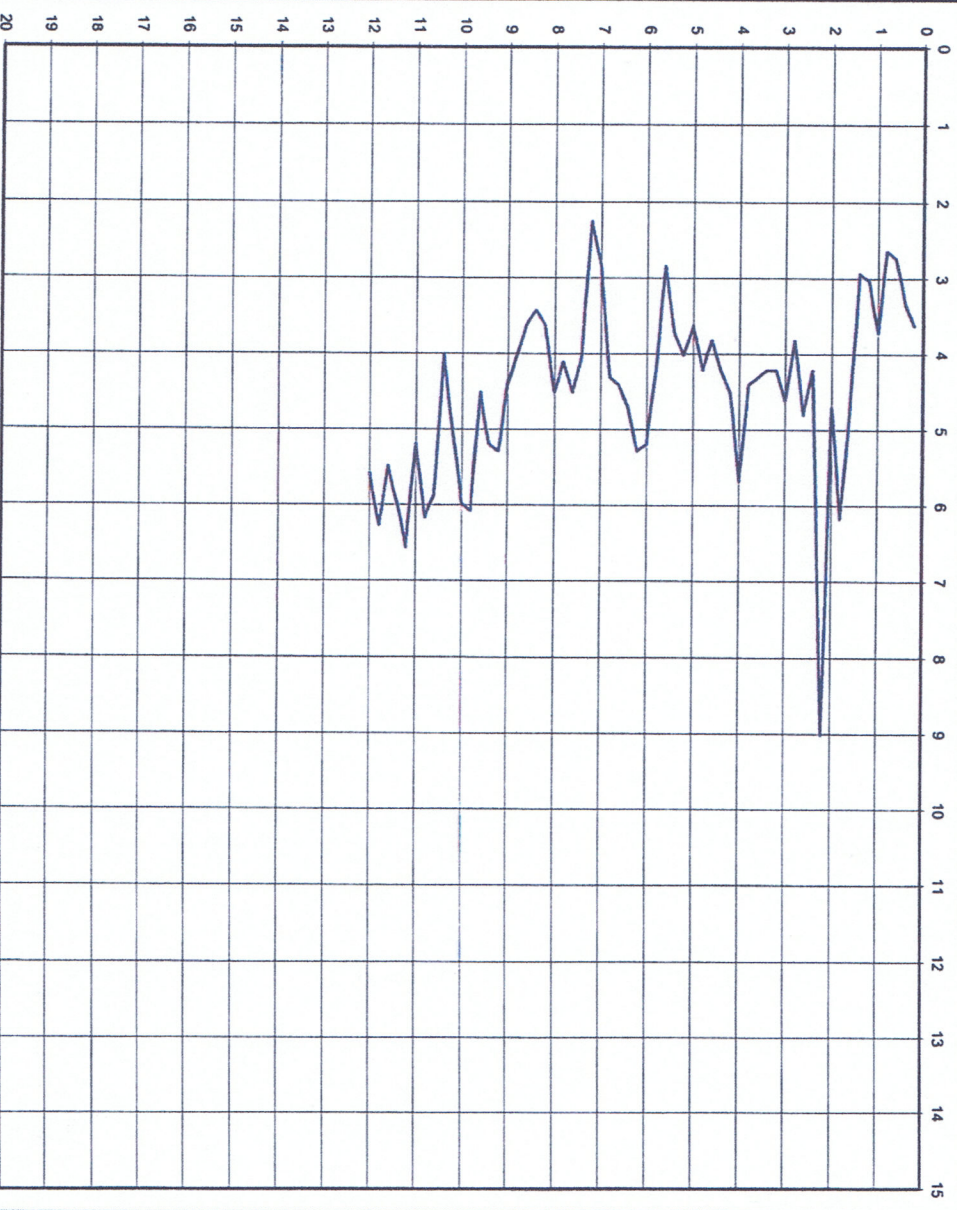
Data prova : 13/07/2012

Codice lavoro: 2012.119

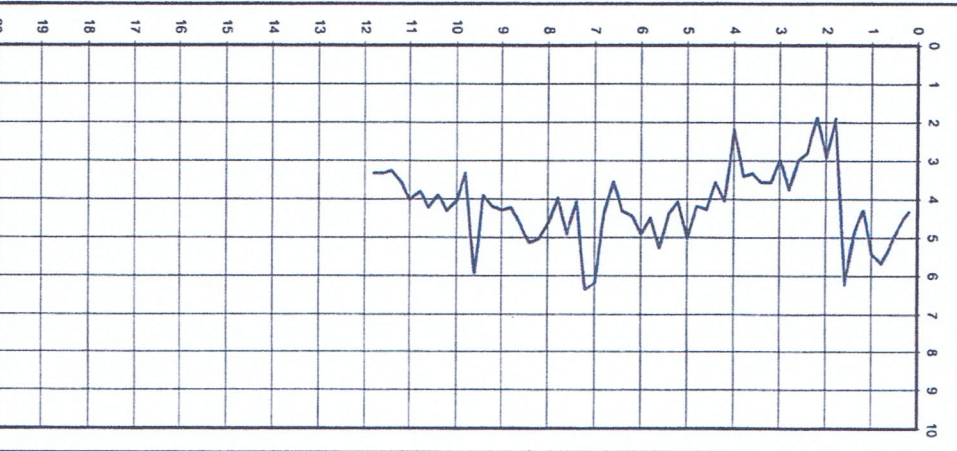
fs resistenza laterale (kPa)



qc resistenza alla punta (MPa)



Rf (%)



Note: ---

Livello acqua da p.c.: assente

Procedura di prova	Normativa di riferimento	Rev.	Data emissione	Sperimentatore	Il Direttore di Laboratorio
--	ASTM D 3441-94	0	13/07/2012	Dr. Chelli	Dr. Luca Conti

**GEO-PROBE S.r.l.**

- Indagini Geognostiche -

40033 CASALECCHIO DI RENO

Via Cimara, 119 - Tel. 051/61.33.072

**CPT (CONE PENETRATION TEST)**

**N. 5**

Rapporto di Prova N°:

**12.0508 /RSP**

Quota: ---

Data prova : 13/07/2012

Codice lavoro: 2012.119

Committente :

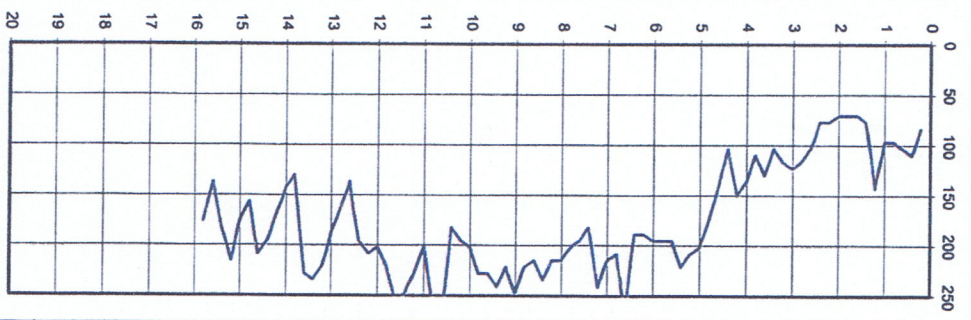
Eksi

Località : Monte San Pietro (BO)

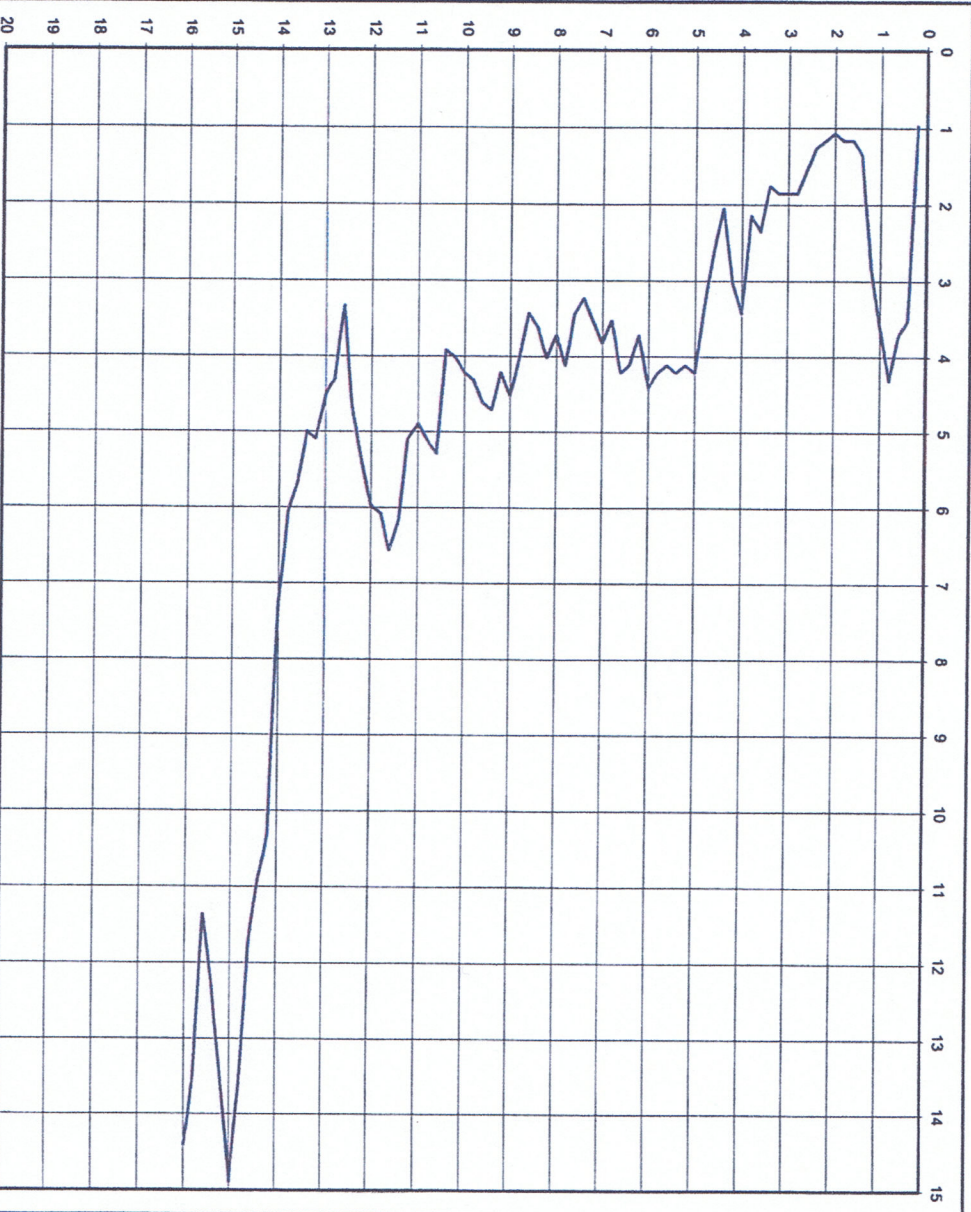
San Martino in Casola

Attrezzatura : Penetrometro da 200 kN

fs resistenza laterale (kPa)

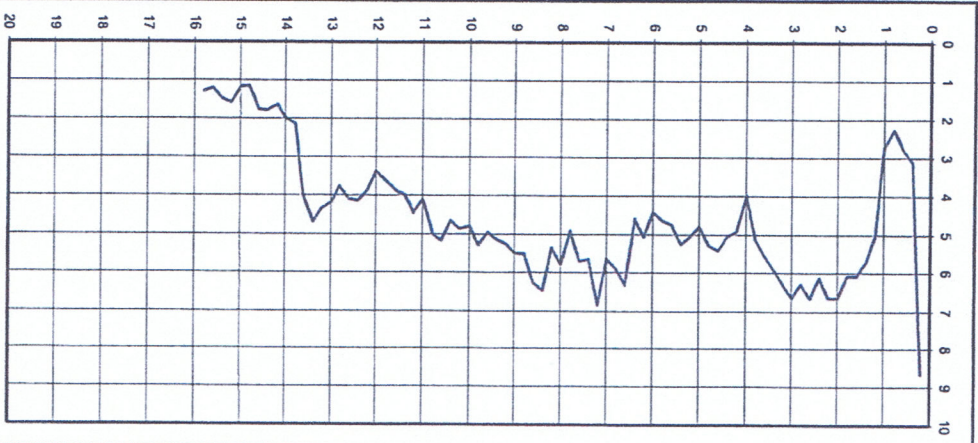


qc resistenza alla punta (MPa)



Livello acqua da p.c.: assente

Rf (%)

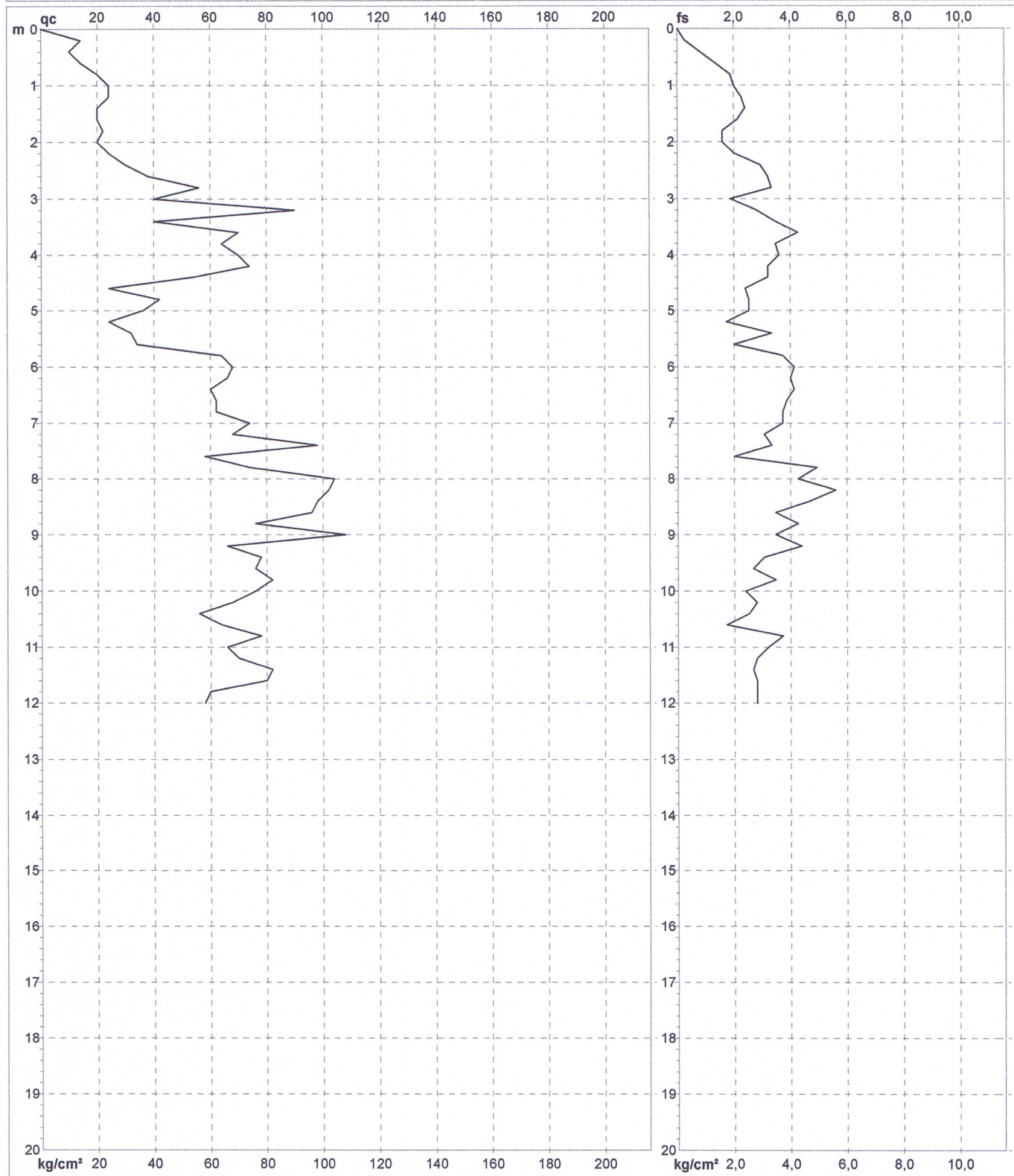


Note: ---

Procedura di prova	Normativa di riferimento	Rev.	Data emissione	Sperimentatore	Il Direttore di Laboratorio
IO_003	ASTM D 3441-94	0	13/07/2012	Dr. Tabaroni	Dr. Luca Conti

<b>PROVA PENETROMETRICA STATICA MECCANICA</b> <b>DIAGRAMMI DI RESISTENZA</b>	<b>CPT</b>	<b>1</b>
	riferimento	<b>009-2012</b>
	certificato n°	0507121

Committente: <b>Sig. Funi</b>	U.M.: <b>kg/cm<sup>2</sup></b>	Data esec.: <b>05/07/2012</b>
Cantiere: <b>Via Venturi</b>	Scala: <b>1:100</b>	Data certificato: <b>10/07/2012</b>
Località: <b>San Martino in Casola - Monte San Pietro</b>	Pagina: <b>1</b>	Quota inizio:
	Elaborato:	Falda: <b>Assente</b>

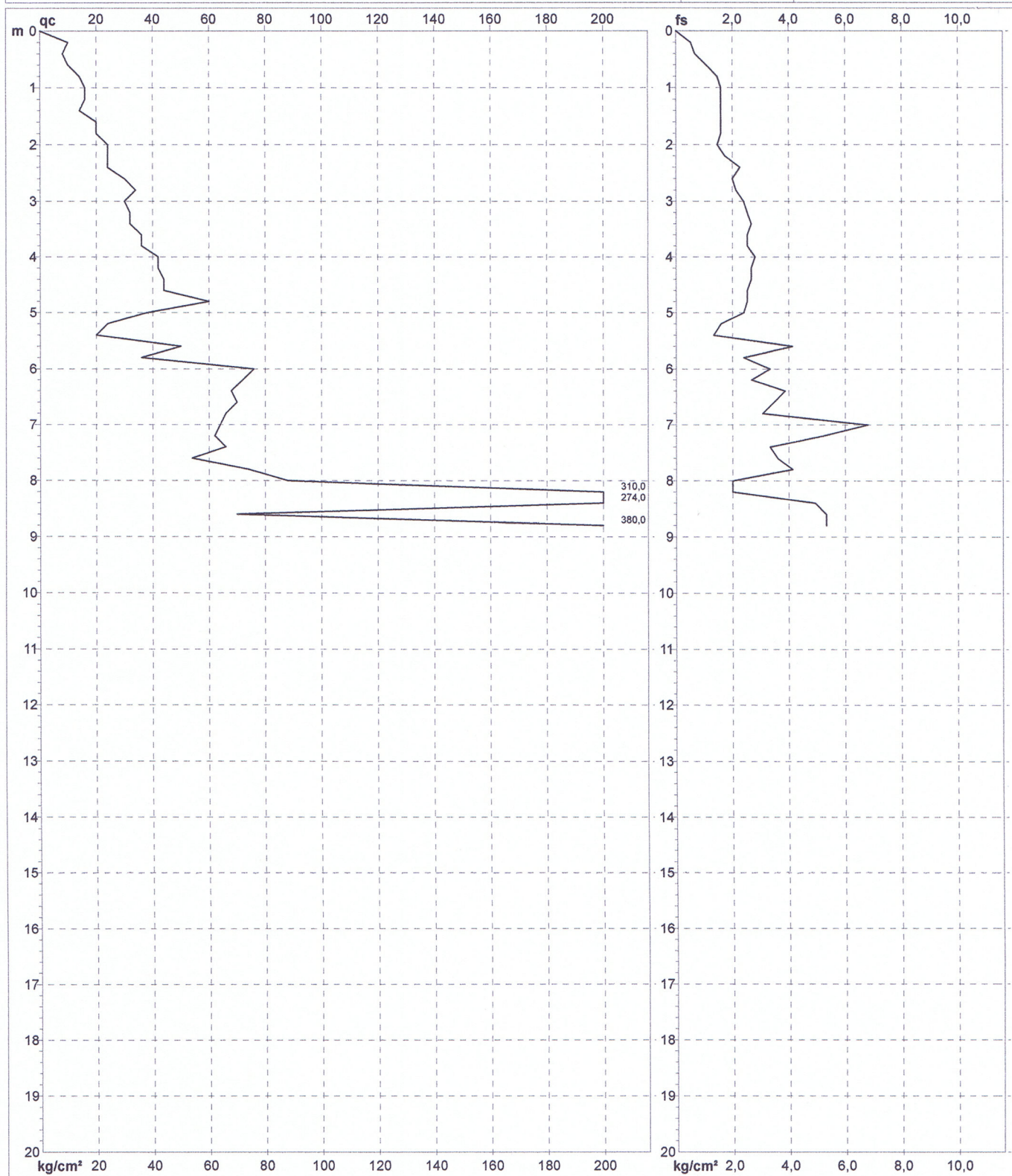


Penetrometro: <b>SP200</b>	Preforo: <b>m</b>
Responsabile:	Corr.astine: <b>kg/ml</b>
Assistente:	Cod.ISTAT: <b>037042</b>
	Cod. punta:

037042 P138CPT147

<b>PROVA PENETROMETRICA STATICA MECCANICA</b> <b>DIAGRAMMI DI RESISTENZA</b>	<b>CPT</b>	<b>2</b>
	riferimento	<b>009-2012</b>
	certificato n°	0507122

Committente: <b>Sig. Funi</b>	U.M.: <b>kg/cm²</b>	Data exec.: <b>05/07/2012</b>
Cantiere: <b>Via Venturi</b>	Scala: <b>1:100</b>	Data certificato: <b>10/07/2012</b>
Località: <b>San Martino in Casola - Monte San Pietro</b>	Pagina: <b>1</b>	Quota inizio:
	Elaborato:	Falda: <b>Assente</b>



Penetrometro: <b>SP200</b>	Preforo: <b>m</b>
Responsabile:	Corr.astine: <b>kg/ml</b>
Assistente:	Cod.ISTAT: <b>037042</b>
	Cod. punta:

9.6

037042 P138 HVSR 148

**MONTE SAN PIETRO VIA VENTURI, 25 LT**

Instrument: TEN-0002/01-06

Start recording: 07/07/12 10:53:48      End recording: 07/07/12 11:05:49

Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN

GPS data not available

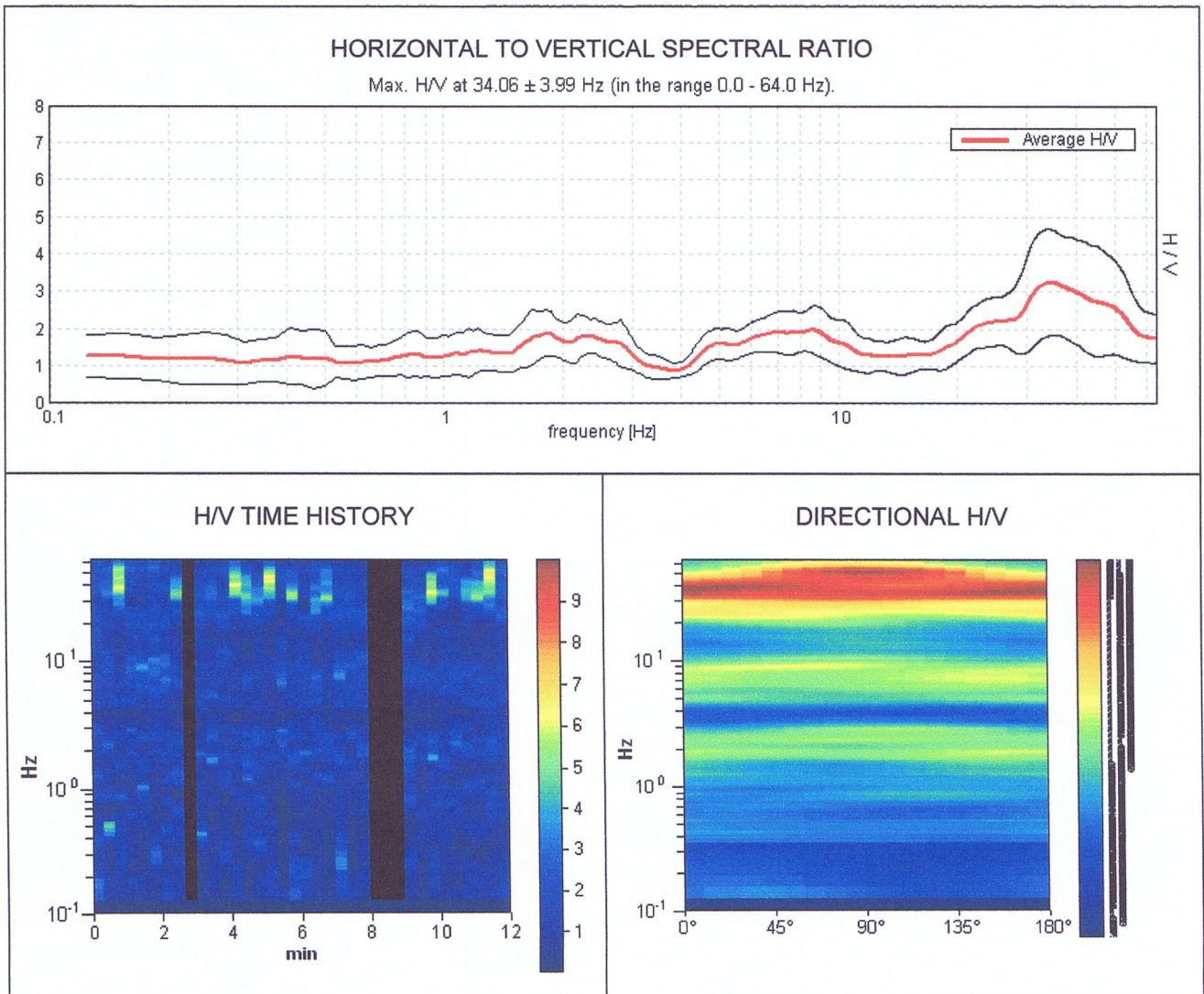
Trace length: 0h12'00".      Analyzed 89% trace (automatic window selection)

Sampling rate: 128 Hz

Window size: 20 s

Smoothing type: Triangular window

Smoothing: 10%

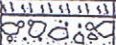


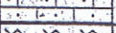

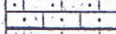



SONDAGGIO A ROTAZIONE N. 1

COMMITTENTE: Provincia di Bologna  
 CANTIERE: Calderino Parco del Lavino  
 DATA: 25/09/01

Direzione Cantiere:

037042P139SS149

SPT			NSPT o avan. 50 c	PP MPa	TV	C C D-I	SIMBOLI E DESCRIZIONE DEI TERRENI	F a l d a	P N C L I	P E R M
1	2	3								
							 Terreno vegetale			
							 ghiaia e sabbie			
				>0.5			 sabbia fine grigia con grado di cementazione da debole a media			
							 arenaria grigio chiara a grana fine			
				>0.5			 limi argilloso-sabbiosi grigi mediamente cementati con livelli debolmente cementati			
							 arenaria grigia a grana fine			
				>0.5			 marne leggermente sabbiose molto compatte			

NOTA: nessun livello acquifero

Committente: Costruzioni Lonzorini - Futuro Costruzioni  
 Località: Monte San Pietro (BO) Calderino - Case Bonozzi

Data: 12/02/99

Profondità (m)	Colonna stratigr.	Descrizione stratigrafica	Foldo	Campioni		Pocket penetrometer (kg/cmp)	Torvane (kg/cmp)	S.P.T.		Piezometro	Schema
				Profondità (m)	n. Tipo			Profondità (m)	N.		
1.30		Terreno di riparto costituito da frammenti lapidei eterogenei in matrice argilloso limosa di colore grigio scuro.	 Quota di fondo: -2.40 m								
1.50		Argilla limosa di colore ocra-rossi; - terreno a consistenza plastica ed umidità media.									
3.40		Ghiaia in abbondante matrice sabbiosa; - terreno ad addensamento scarso ed umidità medio elevata fino a totale saturazione idrica.									
7.00		Argilla limosa di colore grigio azzurro; - terreno a consistenza da plastica a dura in progressivo aumento con la profondità ed umidità media, fortemente imbibito al tetto.									

Trivellazione a secco Ø mm 152

037042P/44S151

**GEO-PROBE** s.r.l.  
Indagini Geognostiche

40033 CASALECCHIO DI RENO (BO)  
Via Cimarsa, 119 - Tel. 051/61.33.072

Committente: Agema s.r.l.  
Località: Monte San Pietro (BO)  
Cantiere: via De Gasperi - Monte San Giovanni  
Perforazione: Carotaggio Continuo d 101 mm  
Attrezzatura: Sonda Drill 830L

Quota: ---  
Profondità: 18.00 m  
Data Inizio: 19/10/2005  
Data Fine: 21/10/2005  
Il geologo: Dr. Luca Conti

N. Certificato:  
**05257001**

SONDAGGIO FOGGIO  
**1 1/1**

Profondità [m]	Scala 1:100	Stratigrafia	Descrizione stratigrafica	Percentuale Carotaggio				Falda	Prof. SPT	N° colpi SPT	P. P. [kg/cmq]	V. T. [kg/cmq]
				20	40	60	80					
0.00	1		Limo sabbioso di colore nocciola con screziature grigie, presenza di patine di alterazione e di livelli di bioclasti; terreno ad umidità media.								0.7	0.3
	2										1.5	0.7
	3										1.2	0.6
	4										1.5	0.7
4.00	5		Limo argilloso con livelli sabbiosi, presenza di clasti arenacei.						3.00	10	7	1.0
	6										2.2	1.0
	7										2.7	1.0
	8										1.5	0.9
7.30	9		Sabbia limosa di colore nocciola grigio; terreno ad umidità medio elevata.								2.0	0.9
7.80	10		Ghiaia (2<d<6 cm) in matrice limosa di colore nocciola grigiastro; terreno ad umidità da elevata alla totale saturazione idrica.								2.0	0.9
	11										1.5	0.7
	12										1.5	0.7
	13										2.4	1.2
	14										3.0	1.4
	15										3.0	1.6
9.80	16		Sabbia di colore grigio, presenza di livelli limosi e di sabbia grossa; terreno ad umidità scarsa.									
	17											
	18											
	19											
18.00	20											



GEO-PROBE

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

SONDAGGIO N. 1

N. Certificato: 99309001

Committente: Rizzardi Renzo ed altri

Località: Monte San Pietro (BO) Monte San Giovanni - Co' de' Ghedotti - Gnocco

Data: 09/11/99

Profondità (m)	Colonna stratigr.	Descrizione stratigrafica	Faldo	Campioni		Pocket penetrometer (kg/cmq)	Torvane (kg/cmq)	S.P.T.		Piezometro
				Profondità (m)	n. Tipo			Profondità (m)	N.	
1.50		Terreno di riporto grossolano.								1.00
3.20		Sabbie limose con trovanti di natura arenacea; - terreno ben addensato ed umidito elevato.								
5.50		Argilla limosa localmente sabbiosa di colore nerastro con sereziature giallastre e frammenti lapidei di piccole dimensioni; - terreno a consistenza plastica ed umidito medio.								
6.40		Limo argilloso di colore grigio scuro con trovanti di natura calcarea; - terreno a consistenza plastica dura ed umidito scuro.								
8.50		Sabbie limose di colore grigio scuro; - terreno ad addensamento elevato lievemente imbibito al tetto.								8.00
Profondità acqua da p.c.: -2.80 m										
				4.00 - 4.40	1					

Trivellazione a secco Ø mm 152

GEO-PROBE

40133 BOLOGNA

Via R. Gracco, 7 - Tel. 051/61.45.360

SONDAGGIO N. 2

N. Certificato: 99309002

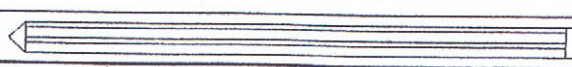
Committente: Rizzardi Renzo ed Altri

Località: Monte San Pietro (BO) Monte San Giovanni - Co' de' Ghedolli - Gnocco

Data: 09/11/99

Profondità (m)	Colonna stratigr.	Descrizione stratigrafica	Foldo	Campioni		Pocket penetrometer (kg/cmq)	Torvane (kg/cmq)	S.P.T.		Piezometro (m)
				Profondità (m)	n.			Tipo	Profondità (m)	
0.50		Terreno padogenizzato.								
1.70		Limo sabbioso di colore beige; - terreno a consistenza medio.								1.00
2.80		Ghiaia eterometrica in matrice sabbiosa - limosa; - terreno a buon grado di addensamento ed umidità medio in progressivo aumento con la profondità fino a totale soluzione idrica.								
3.50		Argilla limosa di colore grigiastro; - terreno a consistenza plastico ed umidità medio.								
5.50		Argilla limosa di colore grigiastro; - terreno a consistenza dura ed umidità scasso.								
Profondità acqua da p.c.: -2.50 m										
										6.00

Trivellazione a secco Ø mm 152



GEO-PROBE

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

SONDAGGIO

N. 3

N. Certificato: 99309003

Committente: Rizzardi Renzo ed Altri

Località: Monte San Pietro (BO) Monte San Giovanni - Co' de' Ghedotti Gnocco

Data: 09/11/99

Profondità (m)	Colonna stratigr.	Descrizione stratigrafica	Folde	Campioni		Pocket penetrometer (kg/cm²)	Torvone (kg/cm²)	S.P.T.		Piezometro (m)	Schema
				Profondità (m)	n. Tipo			Profondità (m)	N.		
0.60		Terreno pedogenizzato.									
1.40		Limo argilloso variabilmente sabbioso di color beige. - terreno a consistenza plastico duro ed umidità media.								1.00	
2.80		Ghiara eterometrica in abbondante matrice limosa sabbiosa. - terreno ad addensamento medio scarso in progressivo aumento con la profondità ed umidità media.									
3.50		Ghiara eterometrica in abbondante matrice limosa argillosa. - terreno ad addensamento elevato ed umidità media.									
4.00		Argilla sabbiosa di colore grigio chiaro: - terreno a consistenza duro ed umidità da medio a medio scarso.								4.00	
Profondità acqua da p.c.: -2.60 m											

Invegliazione a secco Ø mm 152





**Geotecnica**  
 40177 BOLOGNA  
 Viale della Repubblica 26  
 Tel. 51 53 52 51 51 89

SONDAGGIO N. 1  
 Quota iniziale:  
 Tipo avanzamento: Trivellazione a secco  
 Data: Aprile 1981

SEZIONE G-DE

Profondità (m)		COMMITTENTE: Dr. Caggese - - -	LOCALITÀ: Monte S. Giovanni (Chiesa)	PP K/g
Idrologia	Colonna stratigrafica	DESCRIZIONE TERRENI	OSSERVAZIONI	
520  730  950		Argilla abbondantemente sabbiosa marrone - con la profondità, sabbia in sensibile diminuzione.-	Terreno pseudocoerente variamente imbibito: da m. 0,00 a m. 2,50 umidità media e consistenza plastica tenera - oltre u. lieve, c. plastica dura - Terreno pseudocoerente lievemente imbibito a consistenza plastica dura.-	
		Argilla limosa grigio brunastra.-	Terreno pseudocoerente lievemente imbibito a consistenza plastica dura.-	
		Argilla sabbiosa grigio scura o grigiastria.-	Terreno pseudocoerente lievemente imbibito a consistenza dura.-	
		H <sub>2</sub> O a fine sondaggio - assente.-		
		Messo in opera un piezometro tipo Norton. Ø mm. 63, l. ml. 10,00.-		
		037042 P144 SD156		

10



**Geotecnica**

40127 BOLOGNA  
Viale della Repubblica 25  
Tel 51 83 82 51 51 89

**SONDAGGIO N.3**

SEZIONE GE

Quota iniziale:

Tipo avanzamento: trivellazione a secco

Data: Aprile 1981

COMMITTENTE :

Dr. CAGGESE

LOCALITA' :

Monte S. Giovanni (Chiesa)

Profondità (m)

Idrologia

Colonna stratigrafica

DESCRIZIONE TERRENI

OSSERVAZIONI

Limo argilloso leggermente  
sabbioso con piccoli inclusi  
arenacei.

Terreno pseudocoerente a con-  
sistenza plastica, umidità  
scarsa.

Argilla limosa marrone,  
grigiastrea, a variabile con-  
tenuto in sabbia.

Terreno pseudocoerente a con-  
sistenza da plastica a pla-  
stica dura, variamente imbi-  
bita.

037042 P28SD 157

a fine sondaggio H<sub>2</sub>O nel foro.

3.0

2

1.0

0.50

1

Committente: Studio Zibordi Fiandri  
 Località: Monte San Pietro (BO)  
 Cantiere: Golf Club  
 Perforazione: Sondaggio a carotaggio continuo  
 Attrezzatura: Sonda Drill 830L

Quota: ---  
 Profondità: 8.00  
 Data Inizio: 15/04/04  
 Data Fine: 15/04/04  
 Il geologo: Dr. Luca Conti

N. Certificato:  
**04102001**

SONDAGGIO: **1** FOGLIO: **1/1**

Profondità [m]	Scala 1:50	Stratigrafia	Descrizione stratigrafica	Percentuale Carotaggio		Falda	P.P. [kg/cmq]	V.T. [kg/cmq]		
				20	40 60 80					
1.40	1		Terreno pedogenizzato di natura limoso argilloso e/o sabbiosa di colore nocciola brunastro con striature nere e ocracee al letto.				1.3	0.7		
							1.5	0.7		
							2.2	0.9		
							1.5	0.8		
1.80	2		Limo da sabbioso a con sabbia di colore nocciola; - terreno da consistente a molto consistente ad umidità scarsa.				3.5	>2.0		
							4.2	>2.0		
3.20	3		Sabbia limosa di colore nocciola; - terreno ad addensamento medio ed umidità medio scarsa.				3.0	1.1		
							3.3			
3.80	4		Sabbia limosa di colore nocciola con rari ciottoli; - terreno ad addensamento ed umidità media.				0.7			
8.00	5-15		Ghiala (2<d<6cm) in matrice sabbiosa di colore nocciola a tratti prevalente; - terreno ad addensamento medio.				037042P145S158			

**GEO-PROBE** s.r.l.

Indagini Geognostiche

40133 BOLOGNA  
Via R. Grieco, 7 - Tel. 051/61.45.360

Committente: Studio Zibordi Fiandri

Località: Monte San Pietro (BO)

Cantiere: Golf Club

Perforazione: Sondaggio a carotaggio continuo

Attrezzatura: Sonda Drill 830L

Quota: ---

Profondità: 12.00 m

Data Inizio: 16/04/04

Data Fine: 16/04/04

Il geologo: Dr. Luca Conti

N. Certificato:

04102002

SONDAGGIO FOGLIO

2

1/1

Profondità [m]	Scala 1:50	Stratigrafia	Descrizione stratigrafica	Percentuale Carotaggio			Falda	P.P. [kg/cmq]	V.T. [kg/cmq]
				20	40	60 80			
0.45			Detrito ghiaioso e sabbioso di colore nocciola grigiastro.						
1.10	1		Limo sabbioso di colore bruno nocciola ocreaceo; - terreno da moderatamente consistente a consistente ed umidità media.					1.0	0.6
2.10	2		Limo debolmente sabbioso di colore nocciola con rare concrezioni calcaree; - terreno da consistente a molto consistente ed umidità medio scarsa.					0.7	0.4
2.60	3		Limo argilloso di colore nocciola con striature nerastre ed ocreacee; - terreno da consistente a molto consistente ad umidità scarsa.					1.0	0.4
3.60	4		Limo sabbioso di colore nocciola con striature ocreacee e rossastre; - terreno da consistente a molto consistente.					1.6	0.8
4.30	5		Limo argilloso di colore nocciola con puntinature ocreacee; - terreno molto consistente.					1.7	1.0
5.00	6		Limo sabbioso di colore nocciola con striature rossastre e ocreacee e rare concrezioni calcaree; - terreno molto consistente.					2.5	1.2
5.90	7		Limo argilloso di colore nocciola con puntinature nerastre e grosse concrezioni calcaree; - terreno molto consistente.					2.5	1.3
7.30	8		Limo debolmente sabbioso di colore nocciola con striature rossastre e grosse concrezioni calcaree; - terreno molto consistente.					1.7	0.9
	9		Limo argilloso di colore da nocciola a nocciola grigiastro con striature nerastre e rossastre a tratti prevalenti; - terreno molto consistente.					2.2	1.0
	10							1.7	0.8
	11							2.0	1.0
	12							2.0	1.1
	13							3.0	1.9
	14							3.2	1.5
	15							2.8	1.2
								3.0	1.7
								3.5	>2.0
								3.4	>2.0
								3.0	1.7
								3.4	1.7
								3.4	1.8
								2.5	1.3
								2.2	1.4
								1.7	0.9
								3.2	1.9
								3.0	1.7
								2.6	1.5
								3.0	1.6
								2.9	1.8
								3.2	>2.0
								4.0	>2.0
								4.1	>2.0
								3.3	1.7
								4.4	>2.0
								3.7	1.9
								3.3	1.8
								4.0	>2.0
								2.7	1.8
								3.3	1.7
								3.4	1.8

037042 P 14655159



**GEO-PROBE**

40133 BOLOGNA

Via R. Grileo, 7 - Tel. 051/61.45.360

**SONDAGGIO**

N. 1

N. Certificato: 01270001

Committente: Sig. Laganga

Località: Monte San Pietro (BO) Montepostore - via I. Calvino

Data: 26/09/2001

Profondità' (m)	Colonna stratigr.	Descrizione stratigrafica	Folda	Comptoni		Pocket penetrometer (kg/cmq)	Torvane (kg/cmq)	S.P.T.		Piezometro	Schema
				Profondità' (m)	n.			Profondità' (m)	N.		
5.00		Argilla limosa di colore beige con presenza di frammenti lapidei eterogenei di piccole dimensioni, più frequenti dalla profondità media di 2.10 m; - terreno di consistenza plastico dura ed umidità scassa.									
5.00		Limo argilloso di colore beige, presenza di inclusi lapidei; - terreno di consistenza duro ed umidità medio scassa.									
Profondità' acqua da p.c.: assente											

Trivellazione a secco Ø mm 152

037042 P 147 SD 161

**GEO-PROBE** s.r.l.  
*Indagini Geognostiche*  
 40033 CASALECCHIO DI RENO (BO)  
 Via Cimara, 119 - Tel. 051/61.33.072

Committente: Immobiliare Badia s.a.s.  
 Località: Monte San Pietro (BO)  
 Cantiere: S.P. Valle del Lavino - Loc. Case Bonazzi  
 Perforazione: Trivellazione a secco d 120 mm  
 Attrezzatura: Unimog 400L

Quota: ---  
 Profondità: 6.50 m  
 Data Inizio: 08/07/2005  
 Data Fine: 08/07/2005  
 Il geologo: Dr. Luca Conti

N. Certificato:  
05173002  
 SONDAGGIO: 2 FOLGIO: 1/1

Profondità [m]	Scala 1:50	Stratigrafia	Descrizione stratigrafica	Falda	Piezometro Norton
0.60	1		Terreno di riporto eterogeneo con laterizi e ciottoli ghiaiosi.		
1.30	2		Argilla limosa di colore grigio azzurro con screziature grigiastre.		
2.60	3		Ghiaia medio grossolana in matrice limo argillosa; terreno ad addensamento da medio ad elevato ed umidità scarsa.		
4.10	4		Ghiaia in abbondante matrice limo argillosa; terreno ad addensamento scarso ed umidità medio scarsa.		
5.80	5		Ghiaia medio grossolana in matrice limo argillosa; terreno a buon grado di addensamento ed umidità da media alla totale saturazione idrica.		
6.50	6		Argilla limosa di colore grigio azzurro inglobante ciottoli ghiaiosi; terreno a consistenza da plastica a plastico dura.	5.70	
	7				
	8				
	9				
	10				
	11				
	12				
	13				
	14				
	15				



037042 P134SD163

<b>GEO-PROBE</b> s.r.l. Indagini Geognostiche 40033 CASALECCHIO DI RENO (BO) Via Cimarosa, 119 - Tel. 051/61.33.072	Committente: <u>Eksi</u>	Quota: <u>--</u>	Rap. Pr. N°12.0510/RSP		
	Località: <u>Monte San Pietro (BO)</u>	Profondità: <u>4.00 m</u>	Codice Lavoro 2012.119		
	Cantiere: <u>San Martino in Casola</u>	Data Inizio: <u>13/07/2012</u>	SONDAGGIO <b>1</b>	FOGLIO <b>1/1</b>	
	Perforazione: <u>Trivellazione a secco d 120 mm</u>	Data Fine: <u>13/07/2012</u>			
Attrezzatura: <u>Unimog U400</u>		Il geologo: <u>Dr. Conti</u>			
Procedura di Prova --	Rapporto di Prova N° 12.0510/RSP	Rev. 0	Data di emissione 13/07/2012	Lo Sperimentatore Dr. Chelli	Il Direttore di Laboratorio Dr. L. Conti

Profondità [m]	Scala 1:50	Stratigrafia	Descrizione stratigrafica	Campioni	Falda	Piezometro Norton
			Argilla limosa di colore beige; terreno a consistenza plastica.			
-1.20	1		Argilla limosa di colore beige con screziature grigio biancastre, abbondanti concrezioni calcaree.			
-2.80	2					
	3		Argilla di colore marrone; terreno a consistenza plastico dura ed umidità media.			
-4.00	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11					
	12					
	13					
	14					
	15					

u.p

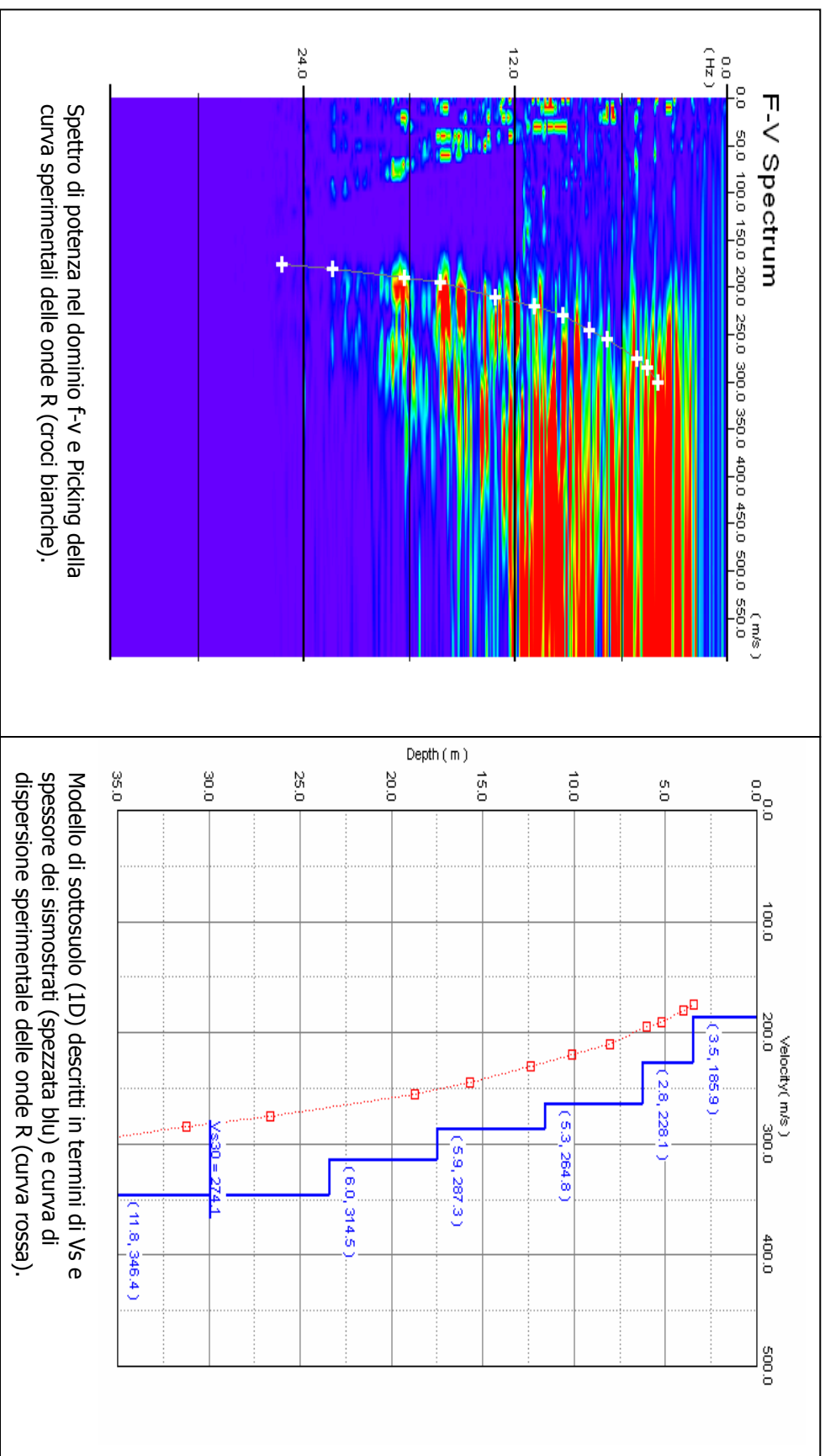
# PROSPEZIONE SISMICA DI SUPERFICIE CON METODOLOGIA RE.MI.

prova n. 037042L1REM11

Sito di indagine: Comune di Monte San Pietro

n. tracce	$\Delta x$ (m)	$\Delta t$ (ms)	T (s)	L tot (m)
25	3	2	32,0	69

$\Delta x$ : interdistanza geofonica;  $\Delta t$ : passo di campionamento; T: durata registrazione; L tot: lunghezza profilo.



Spettro di potenza nel dominio f-v e Picking della curva sperimentali delle onde R (croci bianche).

Modello di sottosuolo (1D) descritti in termini di Vs e spessore dei sismostrati (spezzata blu) e curva di dispersione sperimentale delle onde R (curva rossa).

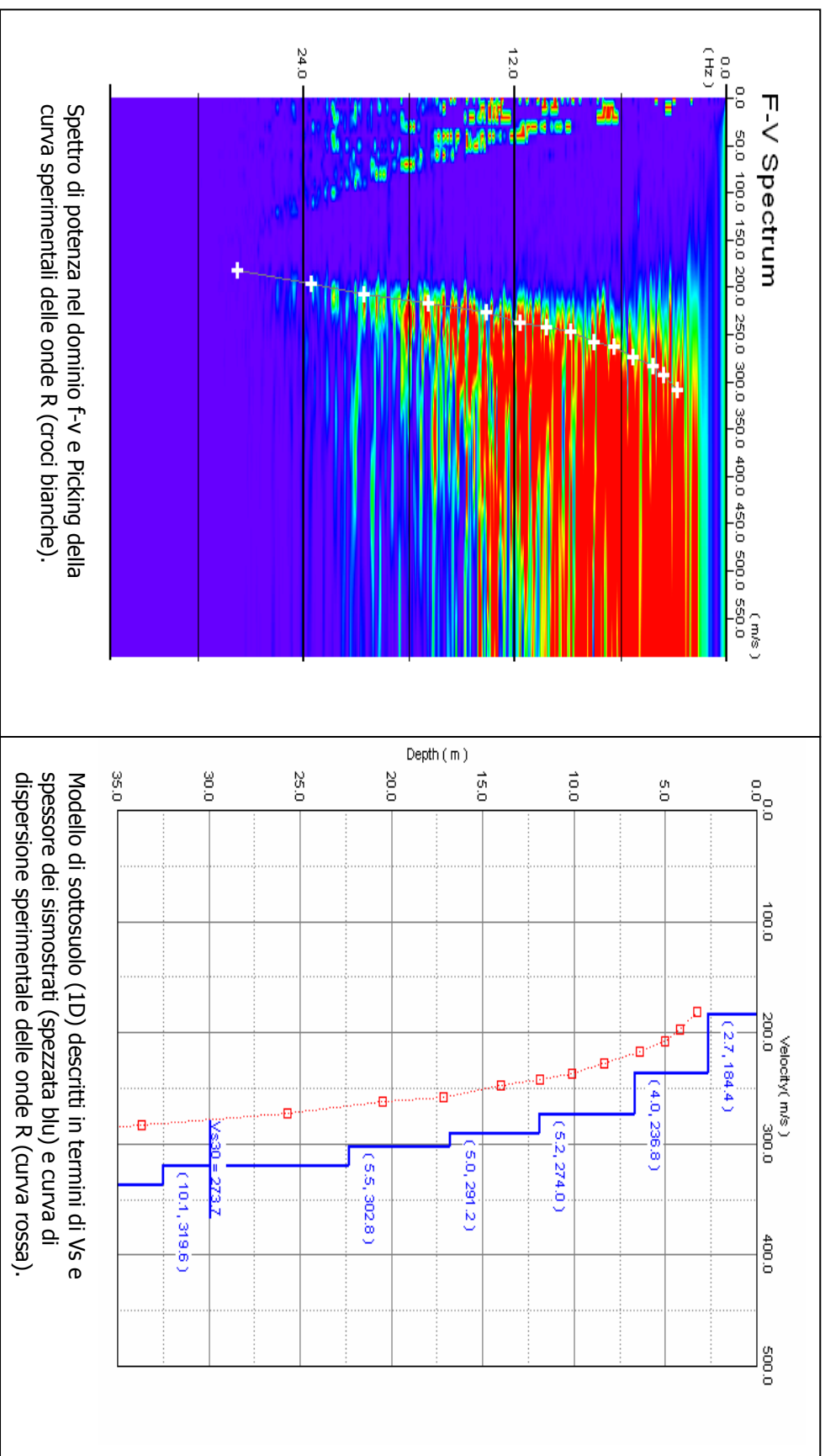
# PROSPEZIONE SISMICA DI SUPERFICIE CON METODOLOGIA RE.MI.

prova n. 037042L2REM12

Sito di indagine: Comune di Monte San Pietro

n. tracce	$\Delta x$ (m)	$\Delta t$ (ms)	T (s)	L tot (m)
25	3	2	32,0	69

$\Delta x$ : interdistanza geofonica;  $\Delta t$ : passo di campionamento; T: durata registrazione; L tot: lunghezza profilo.



Spettro di potenza nel dominio f-v e Picking della curva sperimentali delle onde R (croci bianche).

Modello di sottosuolo (1D) descritti in termini di Vs e spessore dei sismostrati (spezzata blu) e curva di dispersione sperimentale delle onde R (curva rossa).

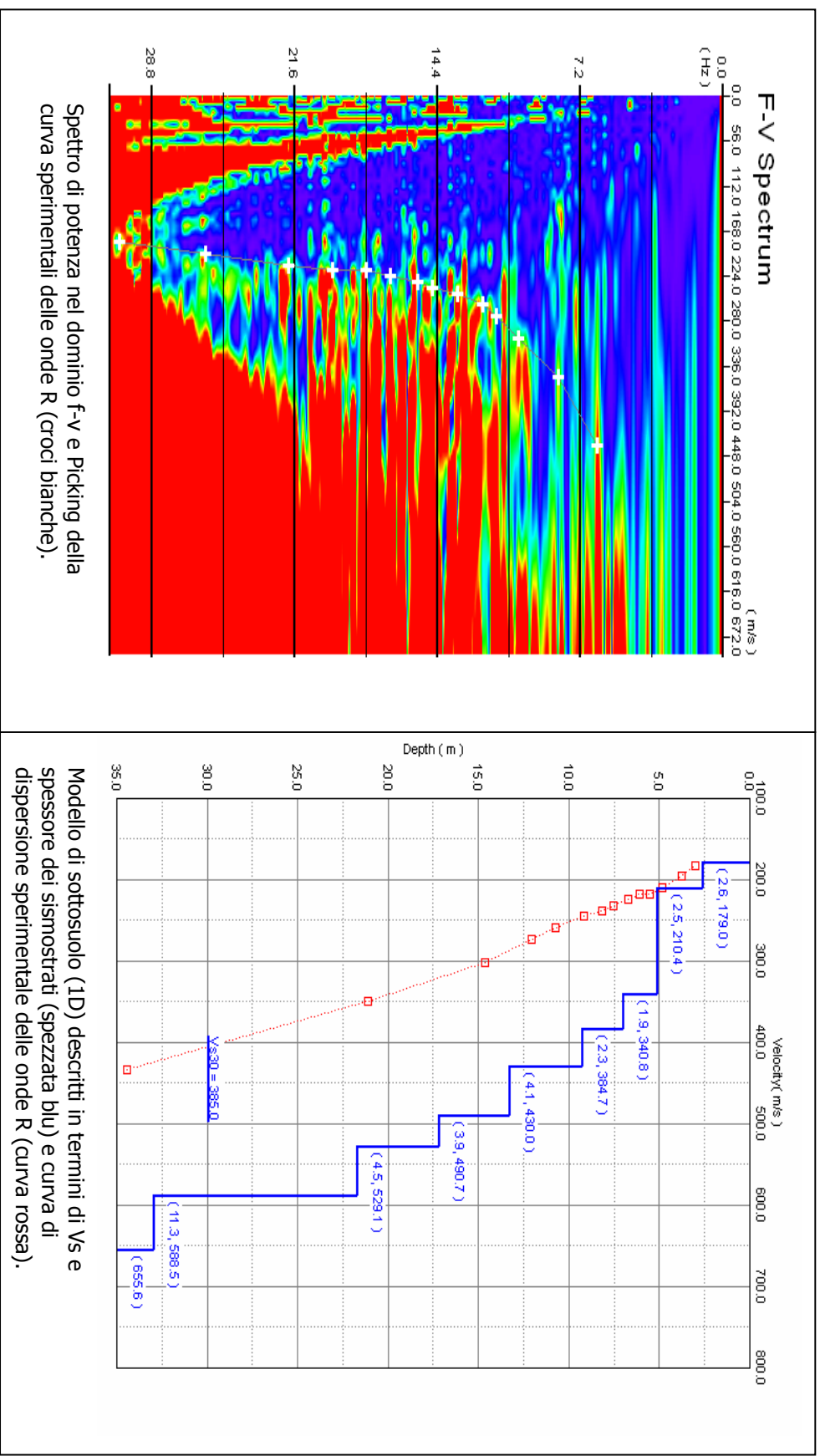
# PROSPEZIONE SISMICA DI SUPERFICIE CON METODOLOGIA RE.MI.

prova n. 037042L3REM13

Sito di indagine: Comune di Monte San Pietro

n. tracce	$\Delta x$ (m)	$\Delta t$ (ms)	T (s)	L tot (m)
25	3	2	32,0	69

$\Delta x$ : interdistanza geofonica;  $\Delta t$ : passo di campionamento; T: durata registrazione; L tot: lunghezza profilo.



Spettro di potenza nel dominio f-v e Picking della curva sperimentali delle onde R (croci bianche).

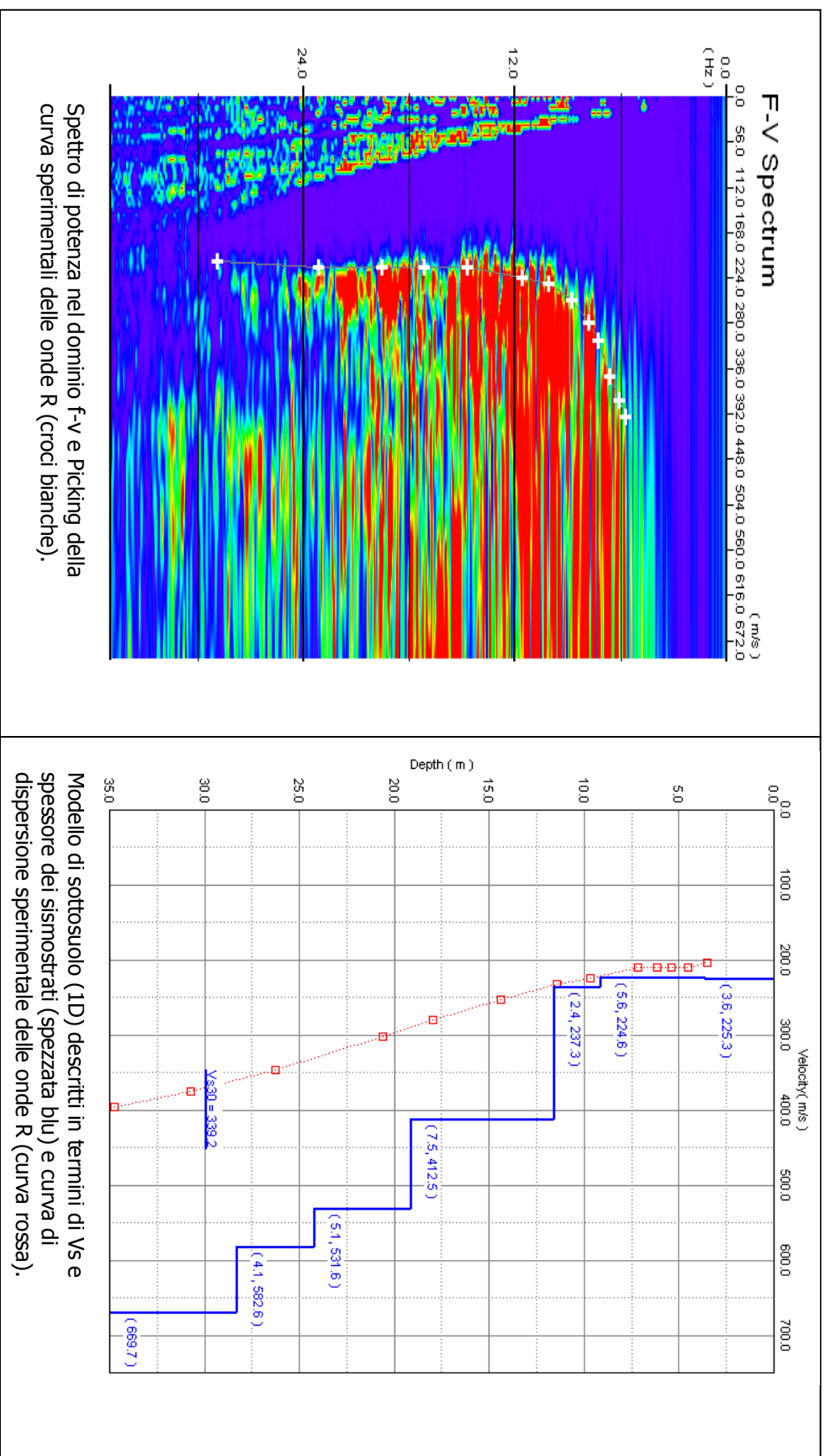
# PROSPERZIONE SISMICA DI SUPERFICIE CON METODOLOGIA RE.MI.

prova n. 037042L4REM14

Sito di indagine: Comune di Monte San Pietro

n. tracce	$\Delta x$ (m)	$\Delta t$ (ms)	T (s)	L tot (m)
25	3	2	32,0	69

$\Delta x$ : interdistanza geofonica;  $\Delta t$ : passo di campionamento; T: durata registrazione; L tot: lunghezza profilo.



Spettro di potenza nel dominio f-v e Picking della curva sperimentali delle onde R (croci bianche).

Modello di sottosuolo (1D) descritti in termini di Vs e spessore dei sismostrati (spezzata blu) e curva di dispersione sperimentale delle onde R (curva rossa).



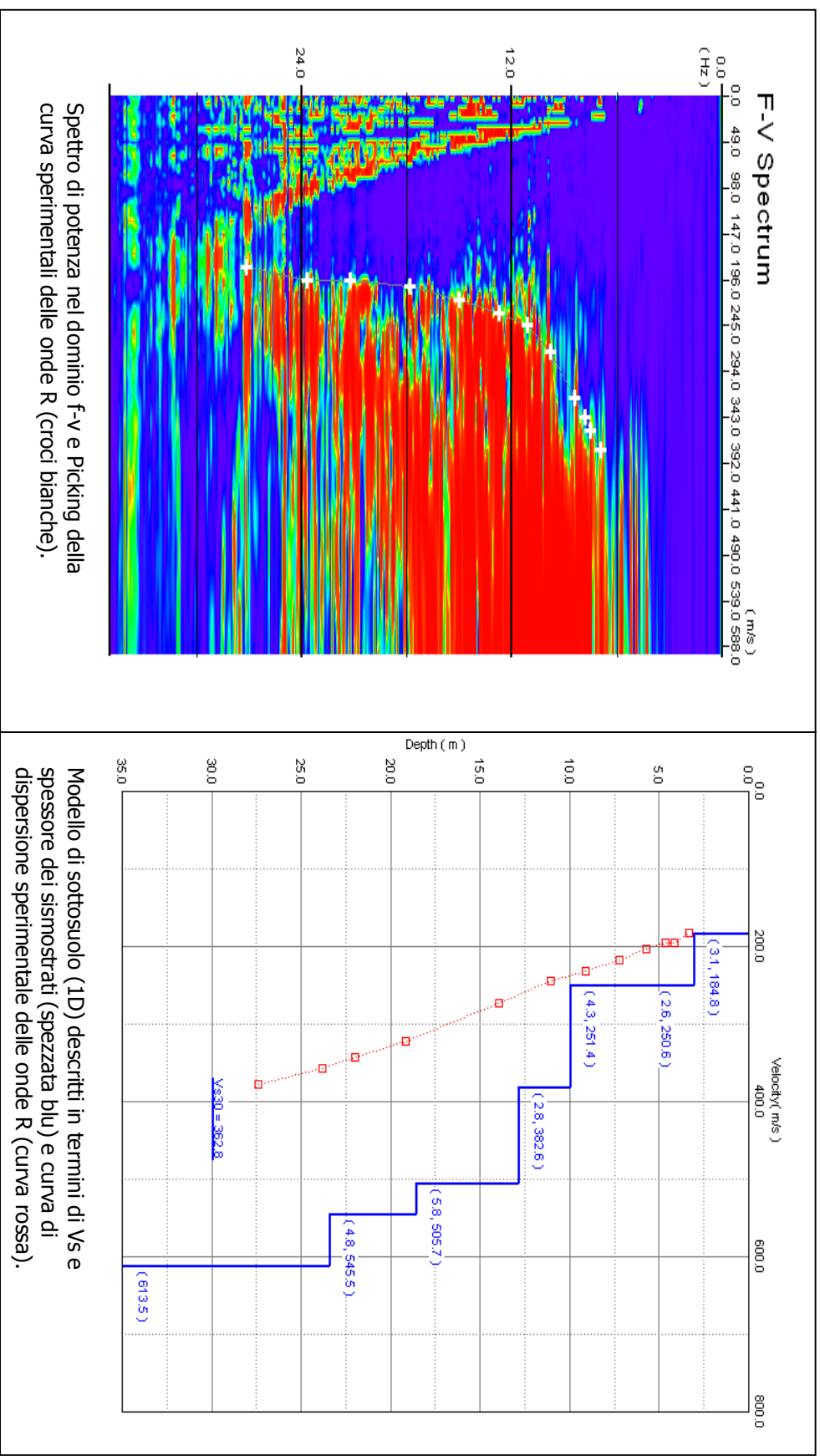
# PROSPERZIONE SISMICA DI SUPERFICIE CON METODOLOGIA RE.MI.

prova n. 037042L5REM15

Sito di indagine: Comune di Monte San Pietro

n. tracce	$\Delta x$ (m)	$\Delta t$ (ms)	T (s)	L tot (m)
25	3	2	32,0	69

$\Delta x$ : interdistanza geofonica;  $\Delta t$ : passo di campionamento; T: durata registrazione; L tot: lunghezza profilo.



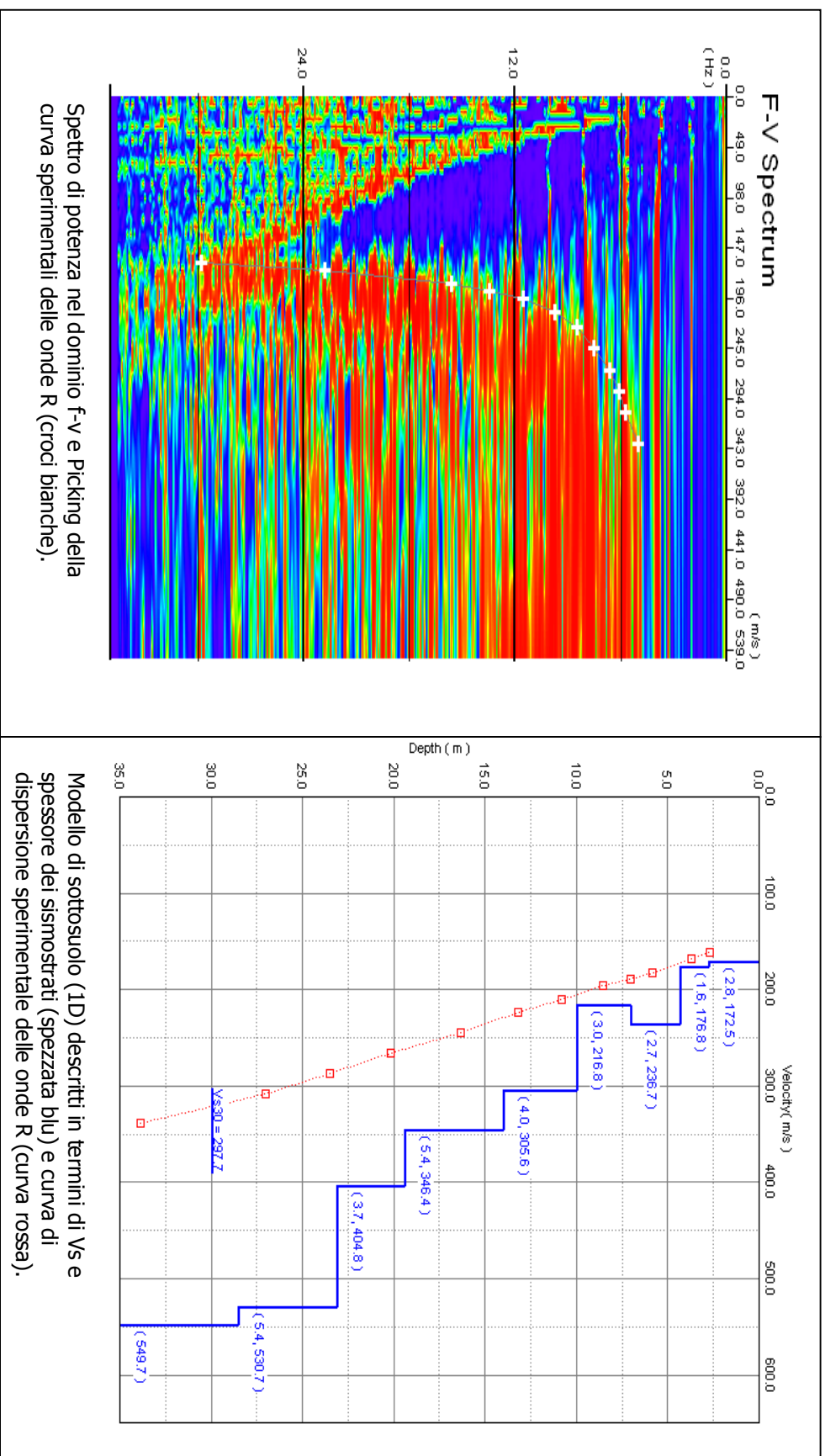
# PROSPERZIONE SISMICA DI SUPERFICIE CON METODOLOGIA RE.MI.

prova n. 037042L6REM16

Sito di indagine: Comune di Monte San Pietro

n. tracce	$\Delta x$ (m)	$\Delta t$ (ms)	T (s)	L tot (m)
25	3	2	32,0	69

$\Delta x$ : interdistanza geofonica;  $\Delta t$ : passo di campionamento; T: durata registrazione; L tot: lunghezza profilo.



Spettro di potenza nel dominio f-v e Picking della curva sperimentali delle onde R (croci bianche).

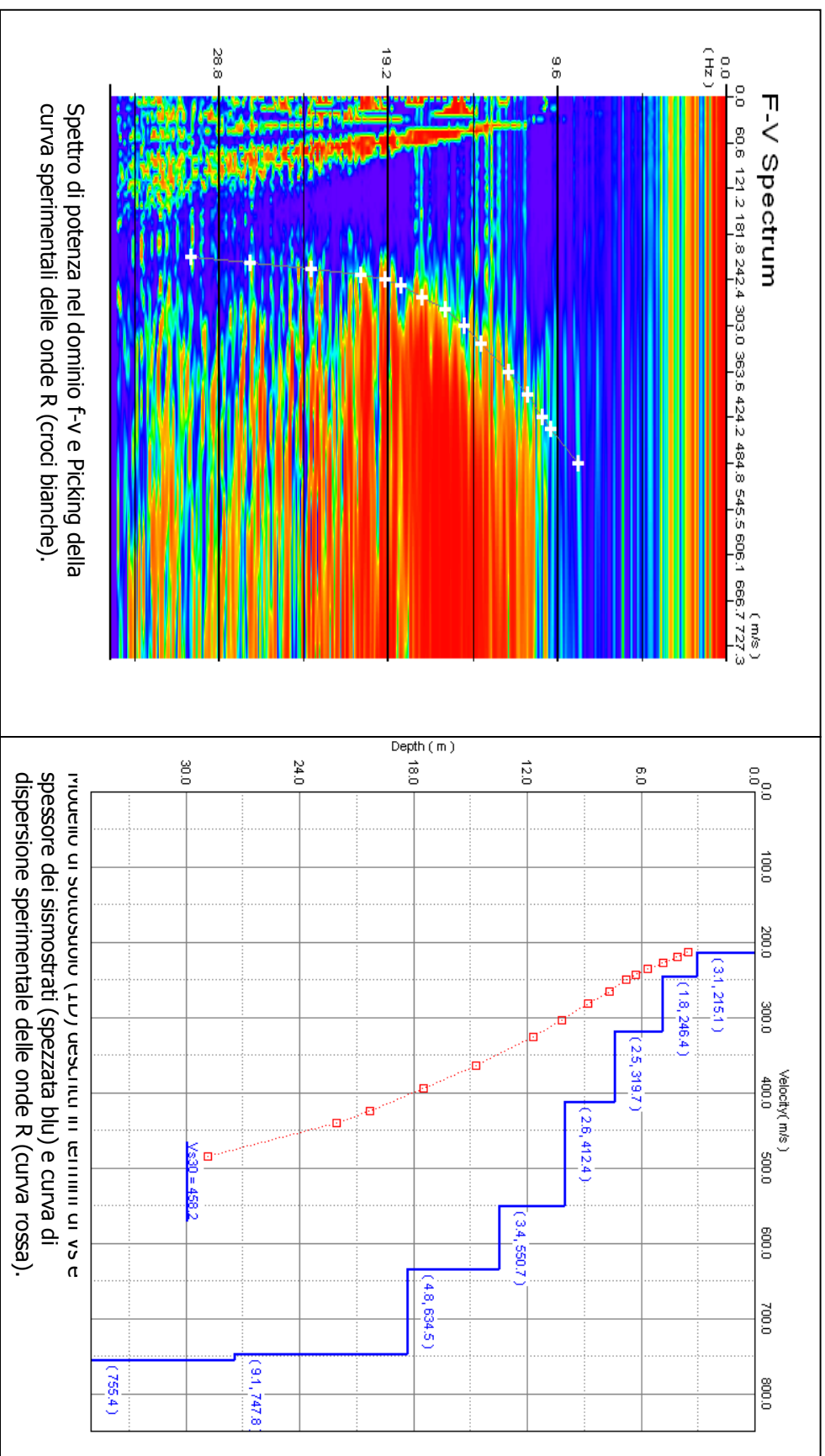
# PROSPERZIONE SISMICA DI SUPERFICIE CON METODOLOGIA RE.MI.

prova n. 037042L7REM17

Sito di indagine: Comune di Monte San Pietro

n. tracce	$\Delta x$ (m)	$\Delta t$ (ms)	T (s)	L tot (m)
25	3	2	32,0	69

$\Delta x$ : interdistanza geofonica;  $\Delta t$ : passo di campionamento; T: durata registrazione; L tot: lunghezza profilo.



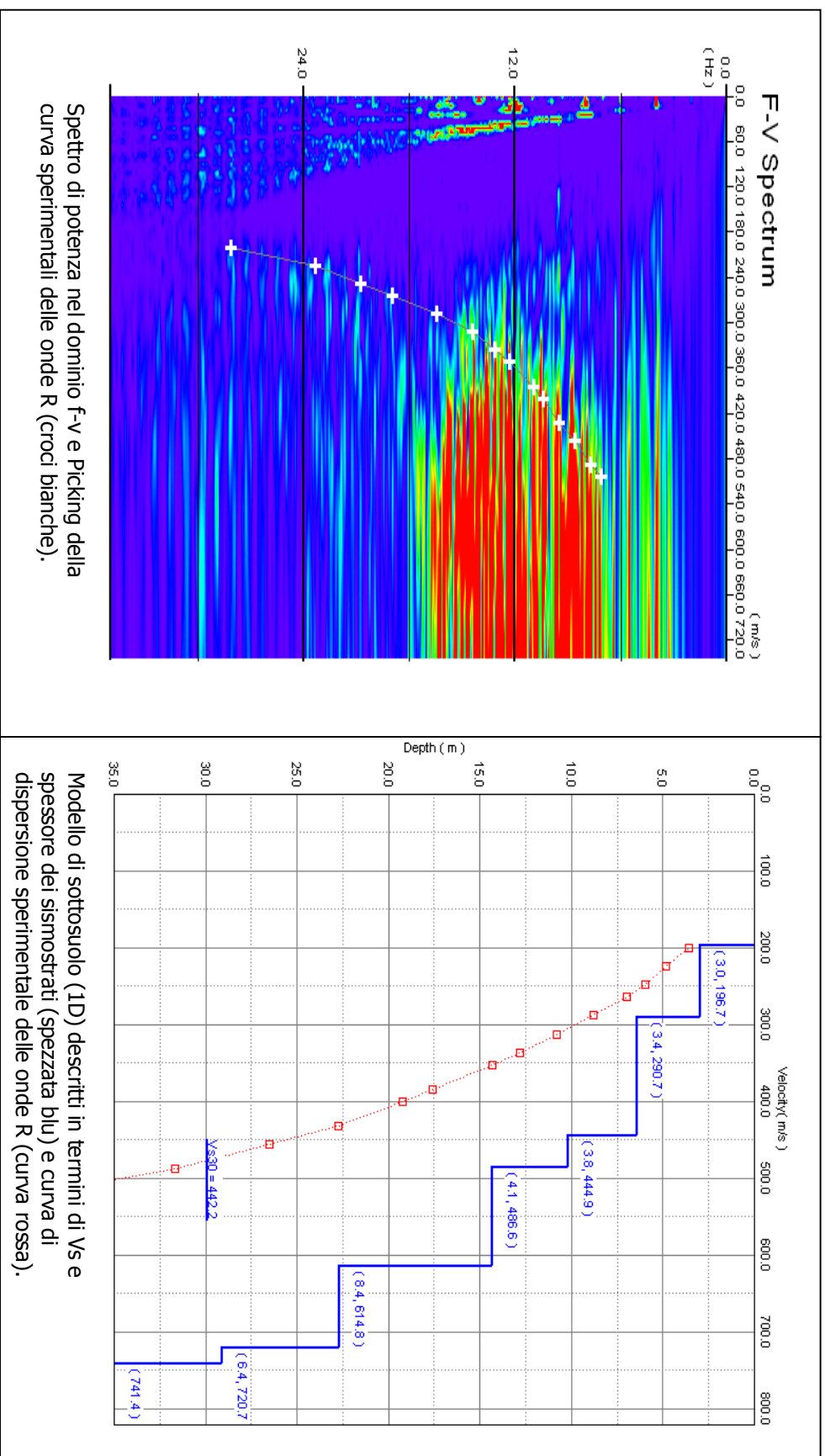
# PROSPERZIONE SISMICA DI SUPERFICIE CON METODOLOGIA RE.MI.

prova n. 037042L8REM18

Sito di indagine: Comune di Monte San Pietro

n. tracce	$\Delta x$ (m)	$\Delta t$ (ms)	T (s)	L tot (m)
25	3	2	32,0	69

$\Delta x$ : interdistanza geofonica;  $\Delta t$ : passo di campionamento; T: durata registrazione; L tot: lunghezza profilo.



Spettro di potenza nel dominio f-v e Picking della curva sperimentali delle onde R (croci bianche).

Modello di sottosuolo (1D) descritti in termini di Vs e spessore dei sismostrati (spezzata blu) e curva di dispersione sperimentale delle onde R (curva rossa).

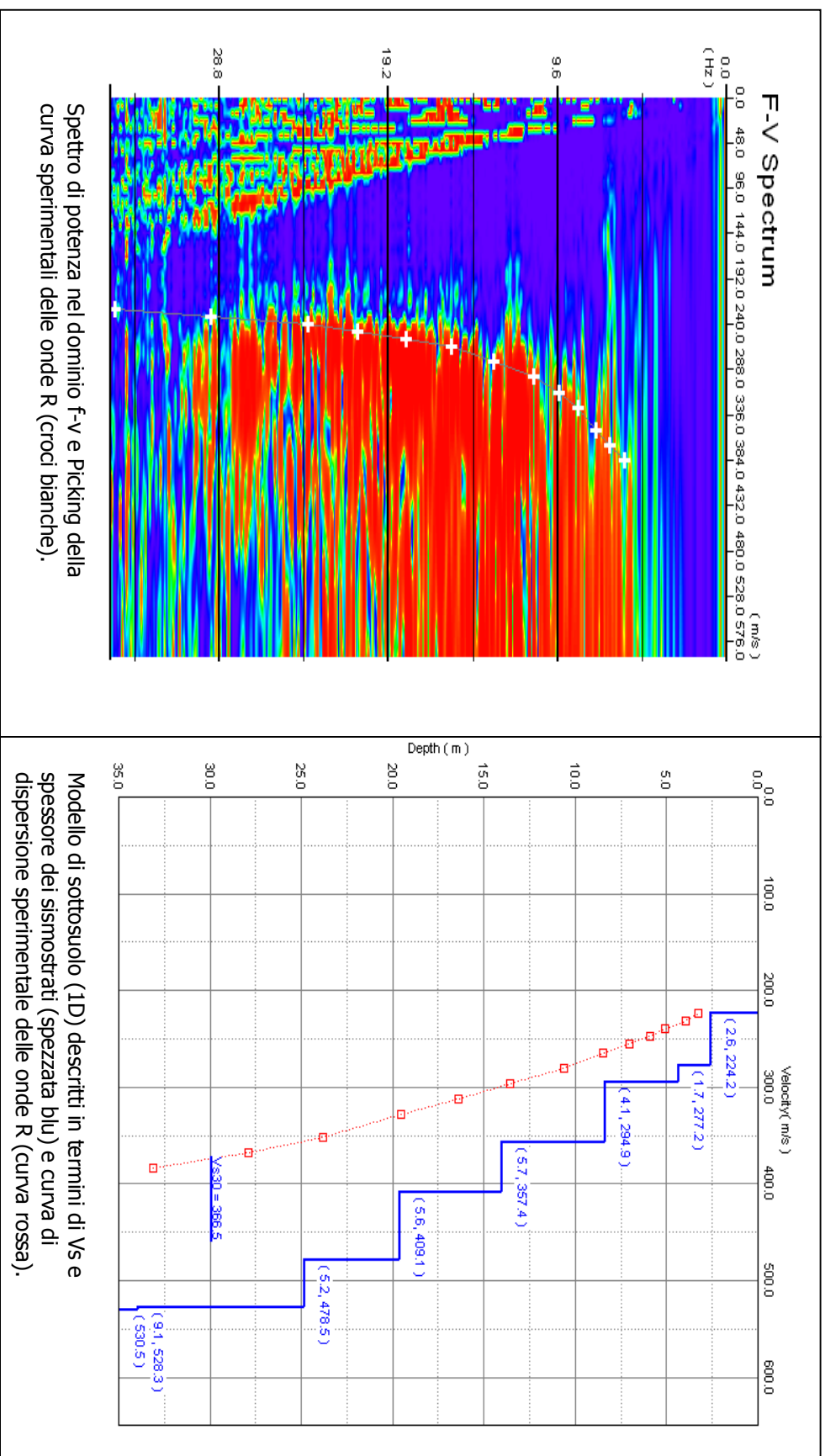
# PROSPEZIONE SISMICA DI SUPERFICIE CON METODOLOGIA RE.MI.

prova n. 037042L9REMI9

Sito di indagine: Comune di Monte San Pietro

n. tracce	$\Delta x$ (m)	$\Delta t$ (ms)	T (s)	L tot (m)
25	3	2	32,0	69

$\Delta x$ : interdistanza geofonica;  $\Delta t$ : passo di campionamento; T: durata registrazione; L tot: lunghezza profilo.



Spettro di potenza nel dominio f-v e Picking della curva sperimentali delle onde R (croci bianche).

Modello di sottosuolo (1D) descritti in termini di Vs e spessore dei sismostrati (spezzata blu) e curva di dispersione sperimentale delle onde R (curva rossa).

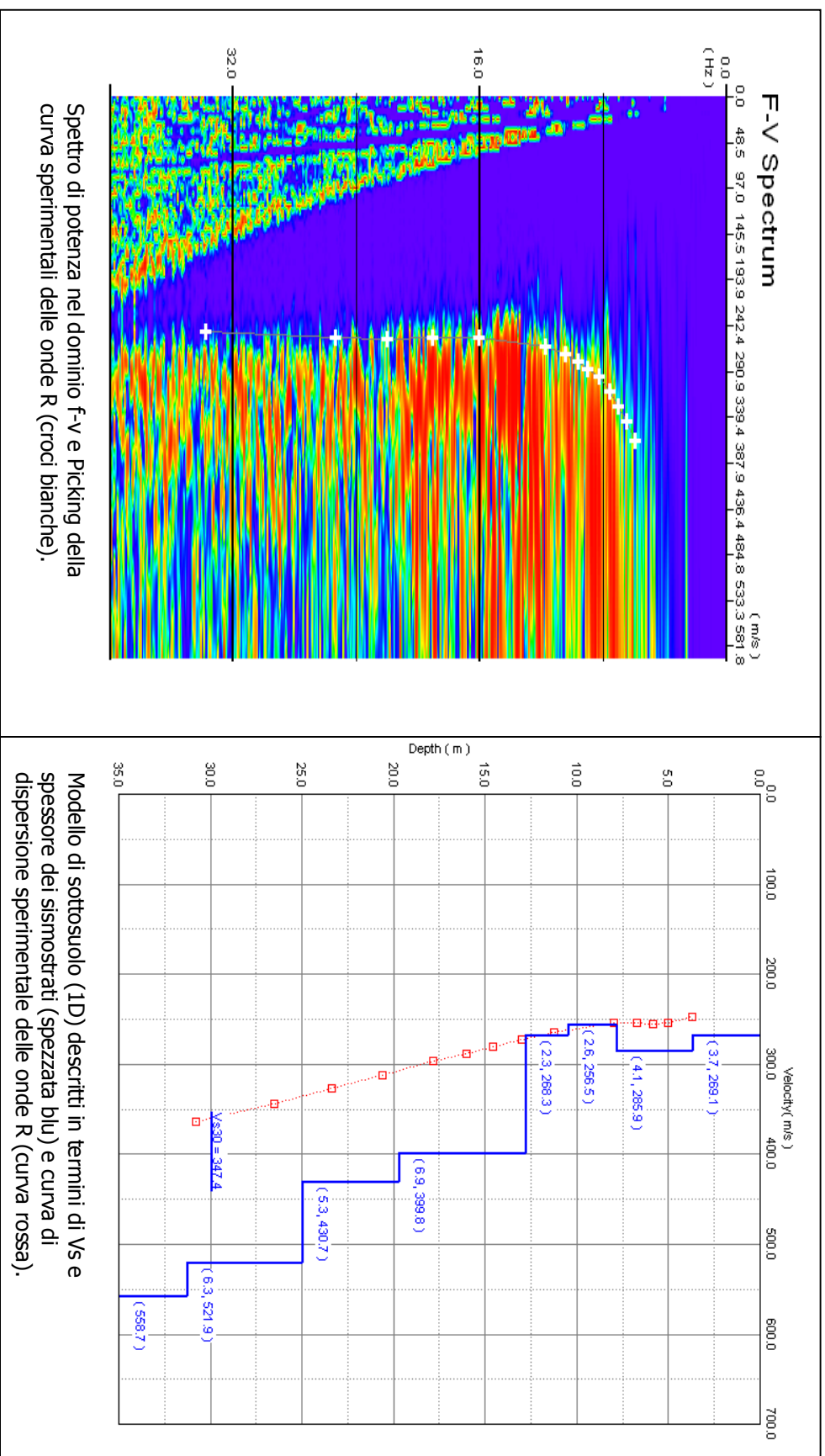
# PROSPEZIONE SISMICA DI SUPERFICIE CON METODOLOGIA RE.MI.

prova n. 037042L10REM110

Sito di indagine: Comune di Monte San Pietro

n. tracce	$\Delta x$ (m)	$\Delta t$ (ms)	T (s)	L tot (m)
25	3	2	32,0	69

$\Delta x$ : interdistanza geofonica;  $\Delta t$ : passo di campionamento; T: durata registrazione; L tot: lunghezza profilo.



Spettro di potenza nel dominio f-v e Picking della curva sperimentali delle onde R (croci bianche).

Modello di sottosuolo (1D) descritti in termini di Vs e spessore dei sismostrati (spezzata blu) e curva di dispersione sperimentale delle onde R (curva rossa).

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Indagine geofisica effettuata mediante tecnica MASW presso la località S. Martino nel Comune di Monte San Pietro (BO).

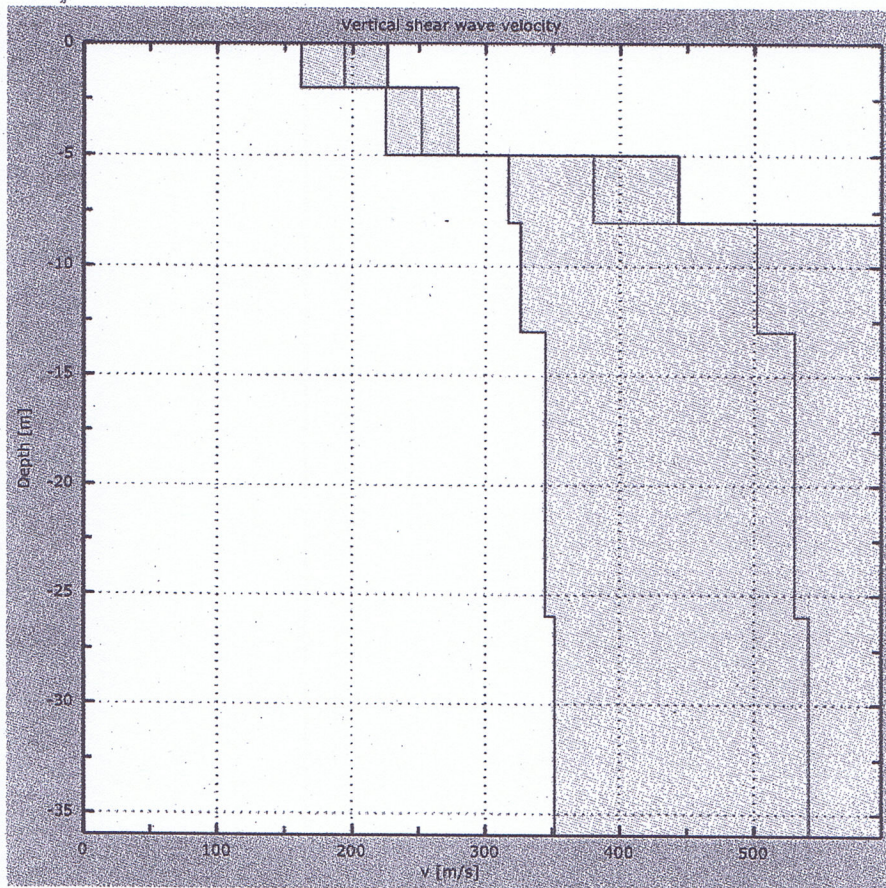
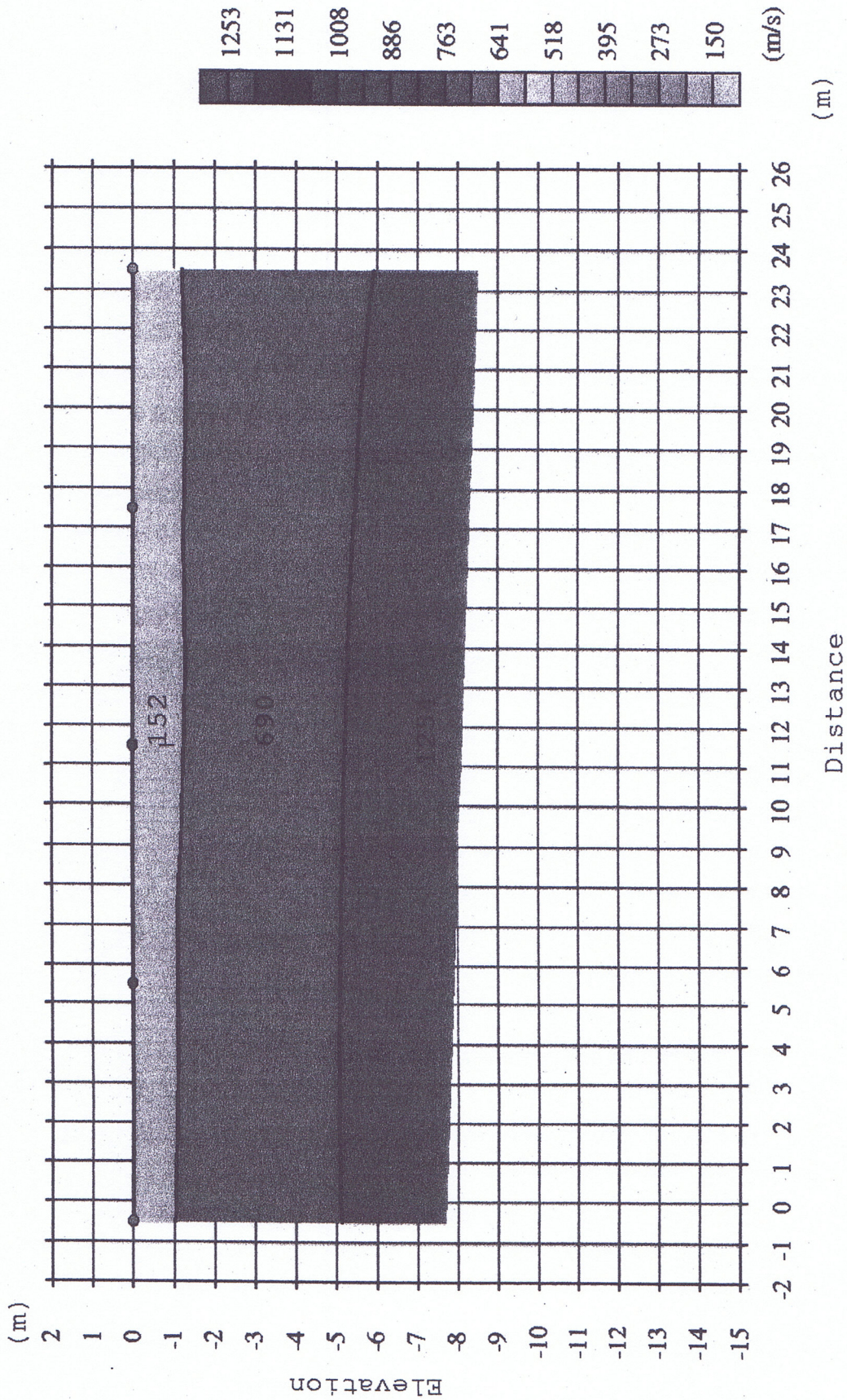


Figura 5: Profilo verticale delle Vs

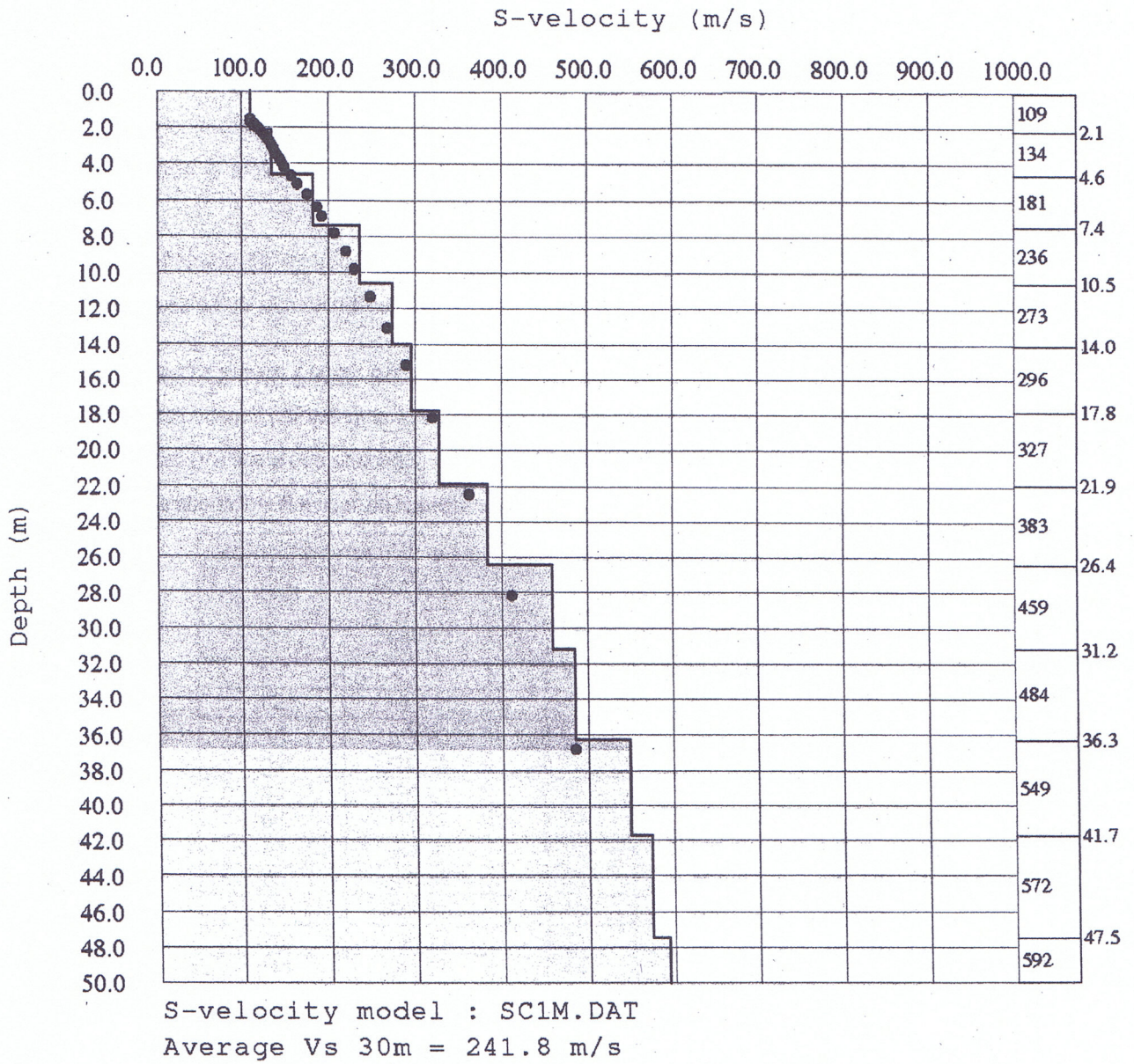
**Figura 25: SEZIONE INTERPRETATIVA**



2575-FINALE.vs



**Figura 29: ANDAMENTO DELLE VELOCITA' DI TAGLIO DELLE ONDE SISMICHE CON IL PROCESSO DI INVERSIONE**



**Figura 30: DOCUMENTAZIONE FOTOGRAFICA LINEA SISMICA EFFETTUATA**

