




















No.1

	Depth(m)
	1
	2
	3
	4
	5
	6
	7
	8
	9
	10
	11
	12
	13
	14
	15
	16
	17
	18
	19
	20
	21
	22
	23
	24
	25
	26
	27
	28
	29
	30







No.2

	Depth(m)
	1
	2
	3
	4
	5
	6
	7
	8
	9
	10
	11
	12
	13
	14
	15
	16
	17
	18
	19
	20
	21
	22
	23
	24
	25
	26
	27
	28
	29
	30

No.3

	Depth(m)
	1
	2
	3
	4
	5
	6
	7
	8
	9
	10
	11
	12
	13
	14
	15
	16
	17
	18
	19
	20
	21
	22
	23
	24
	25
	26
	27
	28
	29
	30

No.4

	Depth(m)
	1 2 3 4 5
	6 7 8 9 10
	11 12 13 14 15
	16 17 18 19 20
	21 22 23 24 25
	26 27 28 29 30

No.5

	Depth(m)
	1 2 3 4 5
	6 7 8 9 10
	11 12 13 14 15
	16 17 18 19 20
	21 22 23 24 25
	26 27 28 29 30

APPENDIX - 3

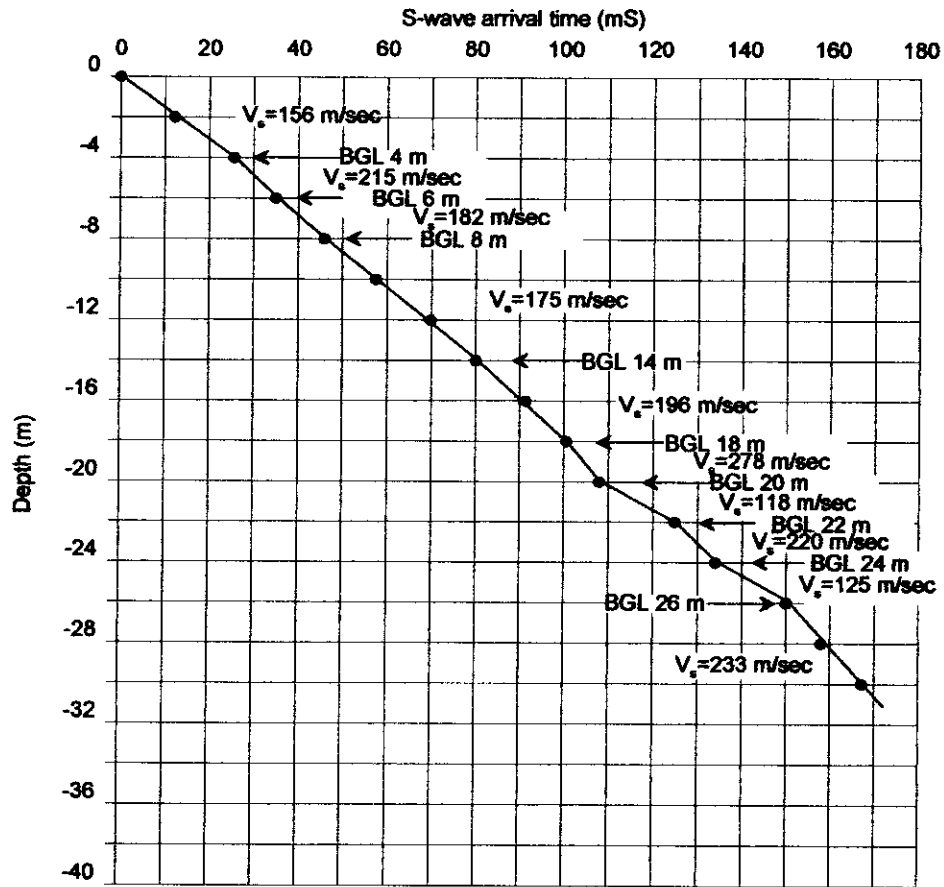
Field Data of PS Logging

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(PS Logging)

Borehole No.: 1

Location: Fire Brigade Compound

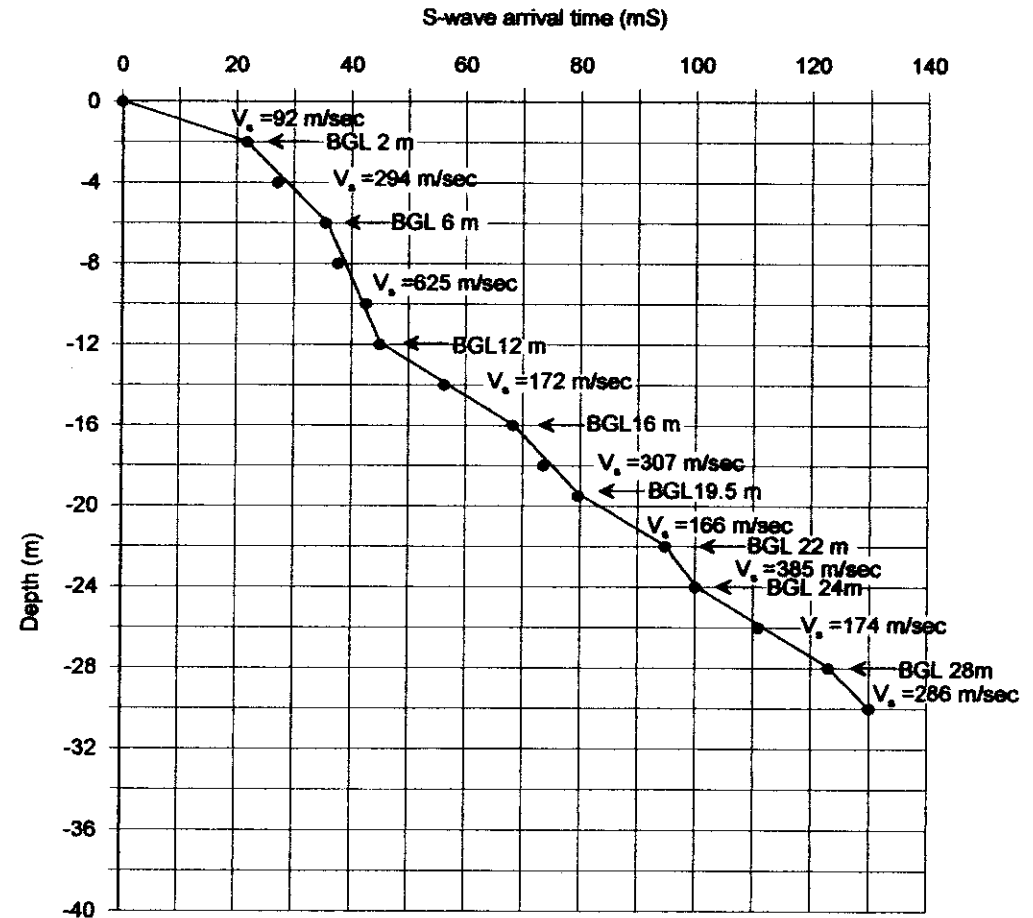


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(PS Logging)

Borehole No.: 2

Location: SinghDurbar

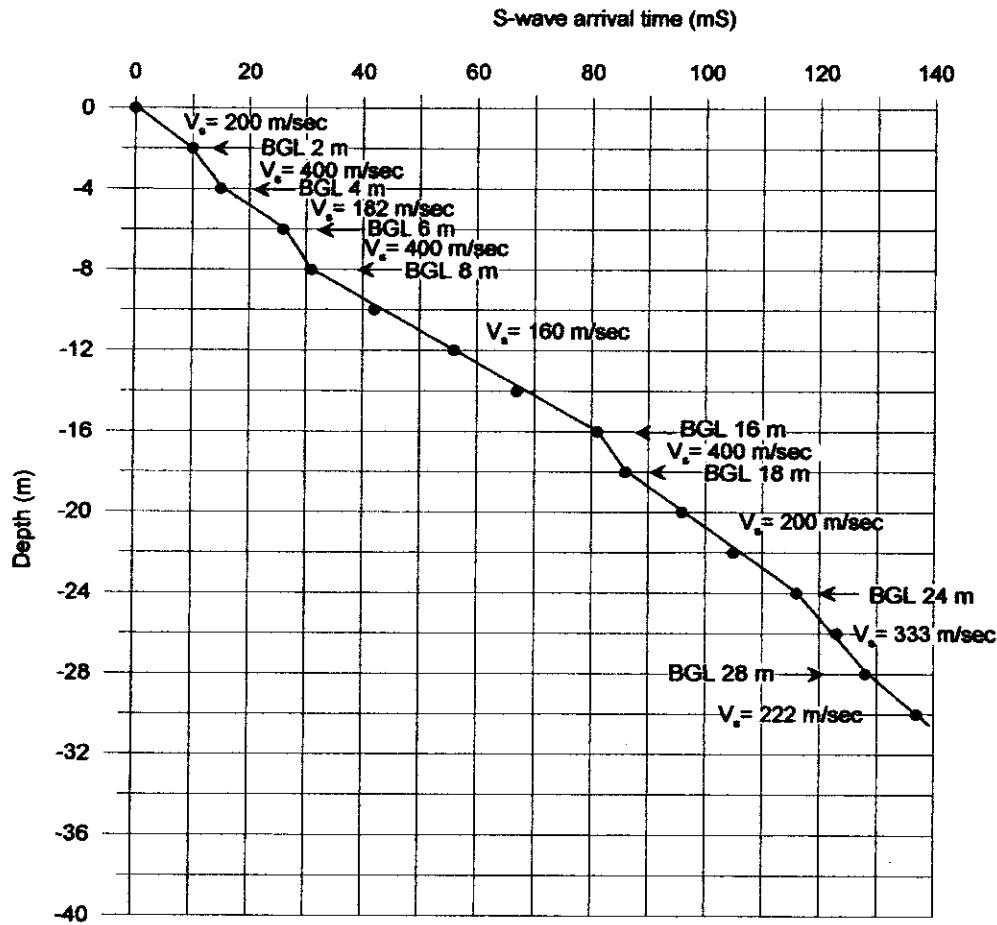


The Study on Earthquake Disaster Mitigation in Kathmandu Valley

(PS Logging)

Borehole No.: 3

Location: Jawalakhel

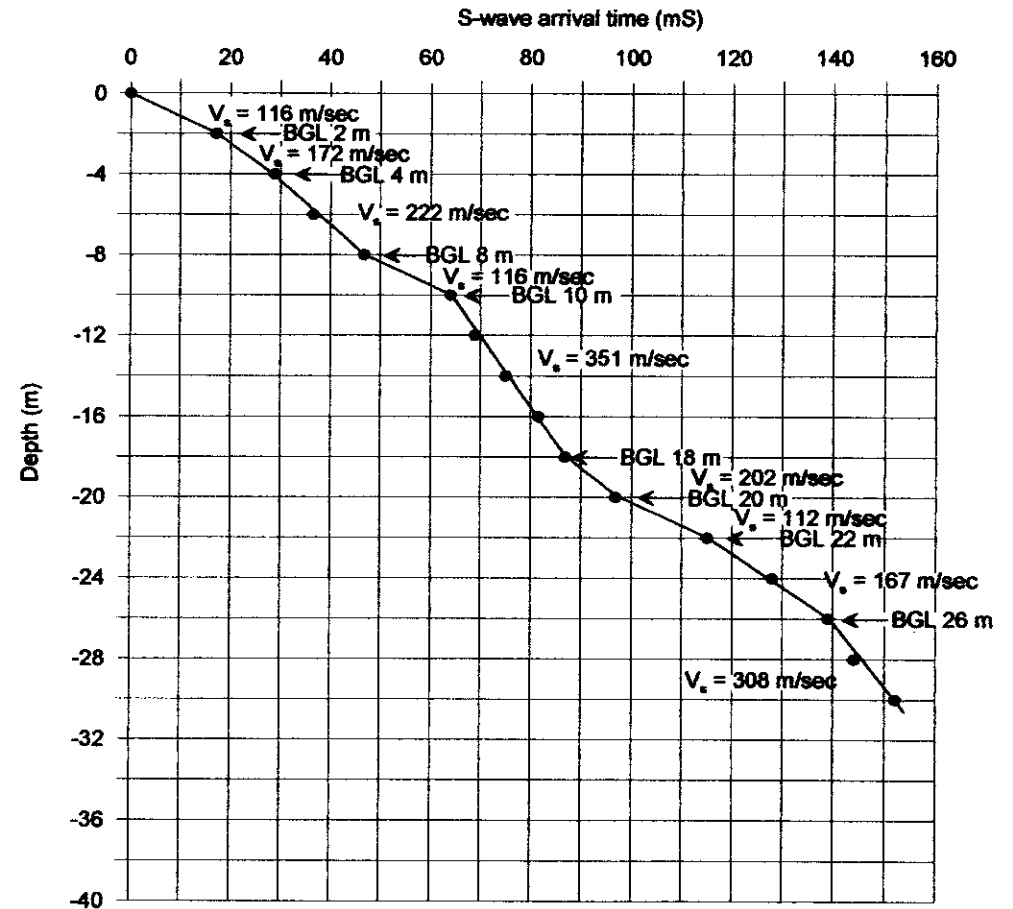


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(PS Logging)

Borehole No.: 4

Location: Thimi



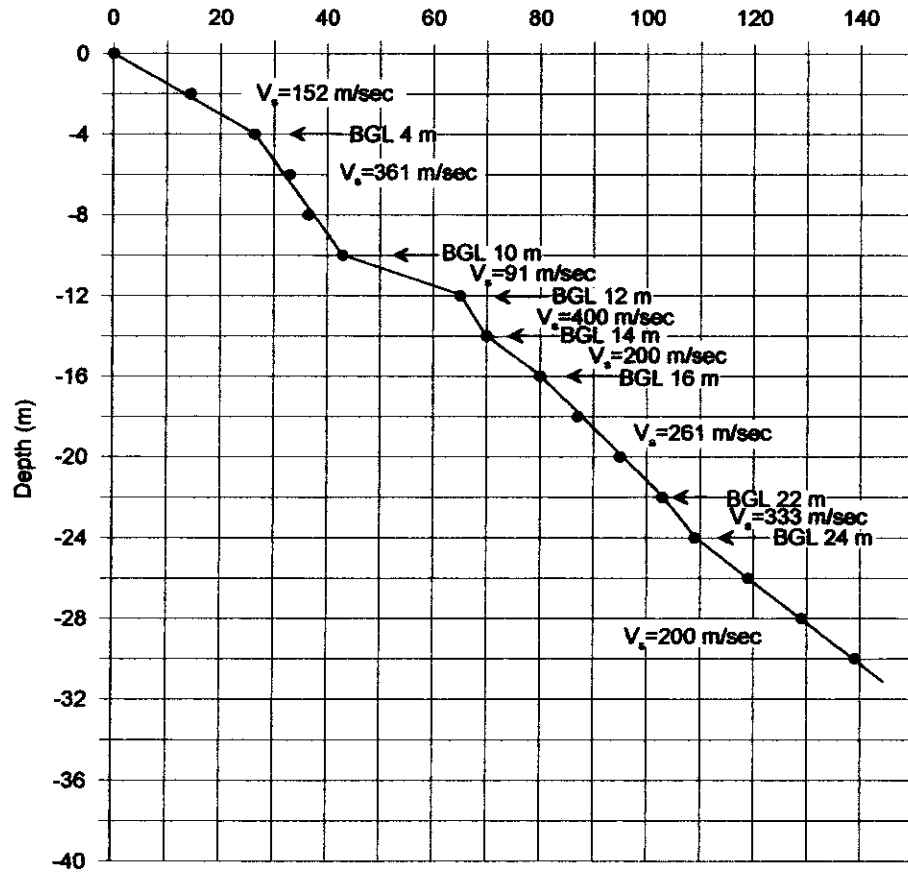
The Study on Earthquake Disaster Mitigation in Kathmandu Valley

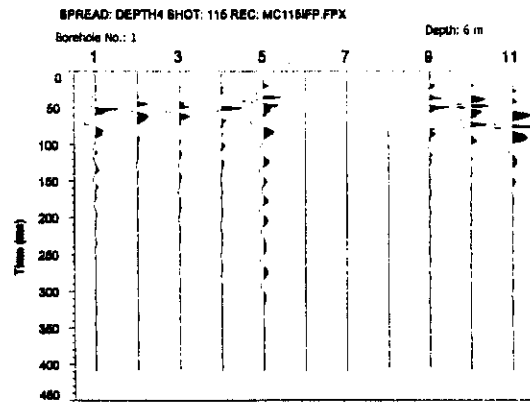
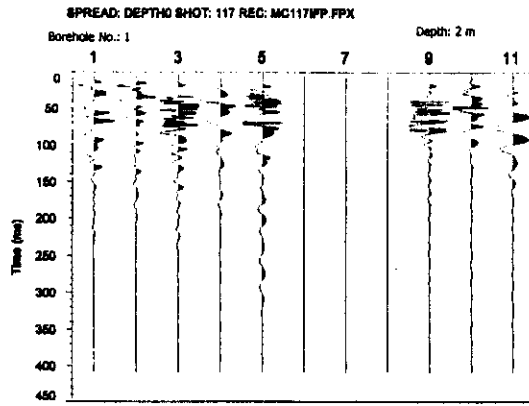
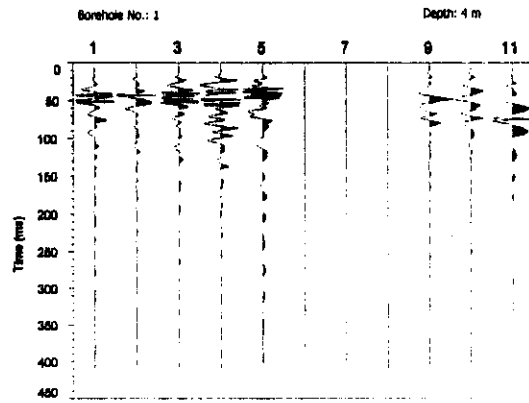
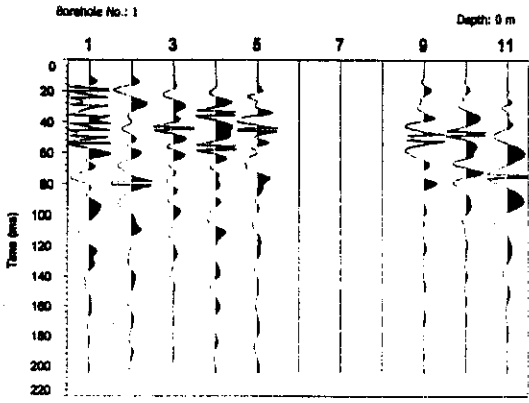
(PS Logging)

Borehole No.: 5

Location: Darbar Square
Bhaktapur

S-wave arrival time (mS)



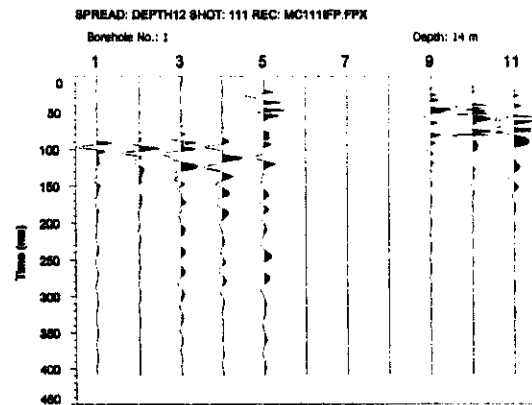
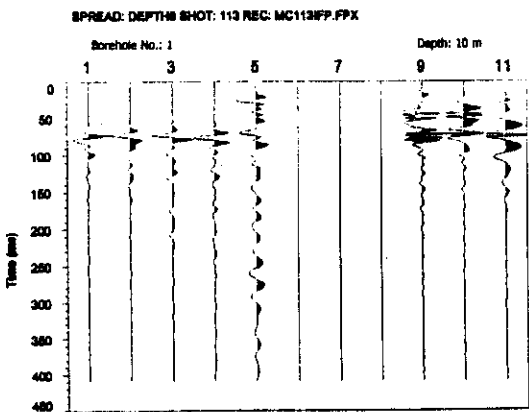
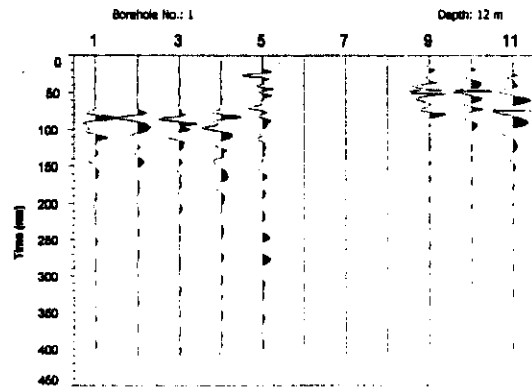
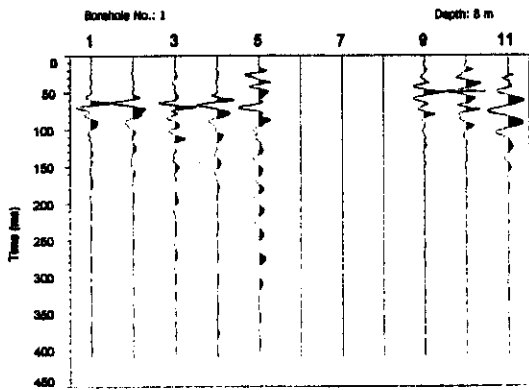


SPREAD: DEPTH2 SHOT: 118 REC: MC118FP.FPX

1 & 3 - Normal S-wave traces	9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
2 & 4 - Reverse shear wave traces	11 - trace of P-wave monitoring geophone
5 - P-wave trace	

SPREAD: DEPTH6 SHOT: 114 REC: MC114FP.FPX

1 & 3 - Normal S-wave traces	9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
2 & 4 - Reverse shear wave traces	11 - trace of P-wave monitoring geophone
5 - P-wave trace	

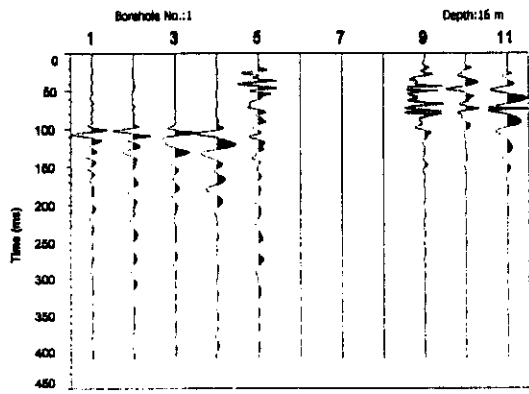


SPREAD: DEPTH10 SHOT: 112 REC: MC112FP.FPX

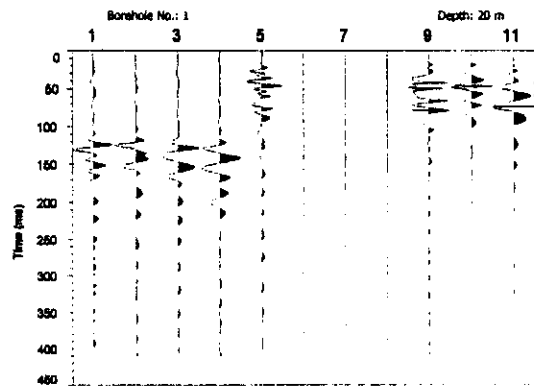
1 & 3 - Normal S-wave traces	9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
2 & 4 - Reverse shear wave traces	11 - trace of P-wave monitoring geophone

SPREAD: DEPTH14 SHOT: 108 REC: MC108FP.FPX

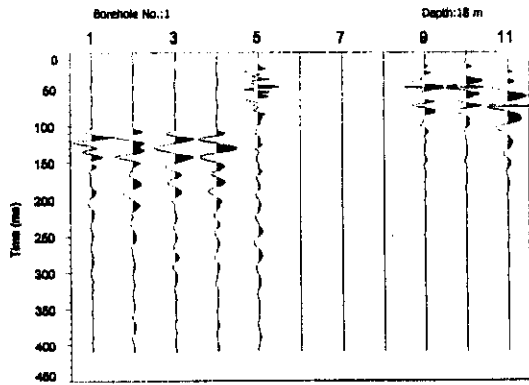
1 & 3 - Normal S-wave traces	9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
2 & 4 - Reverse shear wave traces	11 - trace of P-wave monitoring geophone
5 - P-wave trace	



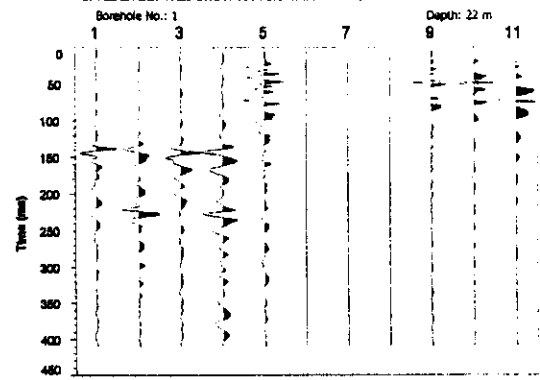
SPREAD: DEPTH16 SHOT: 108 REC: MC108FP.FPX



SPREAD: DEPTH20 SHOT: 106 REC: MC106FP.FPX



SPREAD: DEPTH18 SHOT: 107 REC: MC107FP.FPX



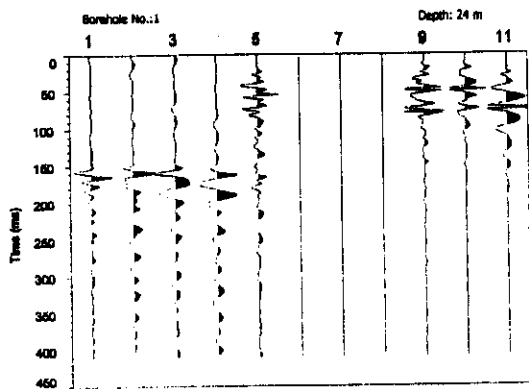
SPREAD: DEPTH22 SHOT: 105 REC: MC105FP.FPX

1 & 3- Normal S-wave traces
2 & 4- Reverse shear wave traces
5- P-wave trace

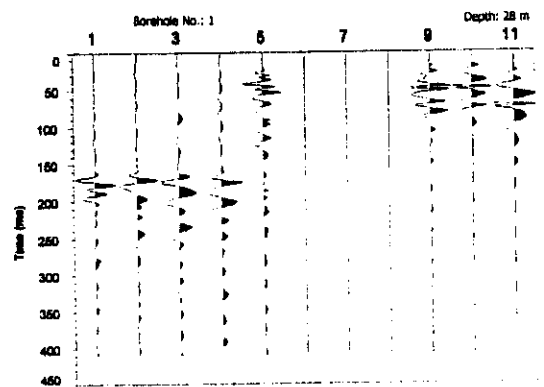
9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone

1 & 3- Normal S-wave traces
2 & 4- Reverse shear wave traces
5- P-wave trace

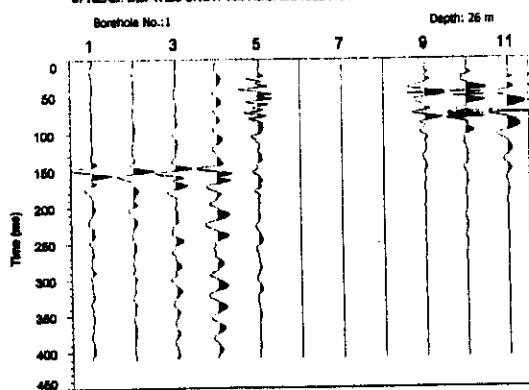
9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone



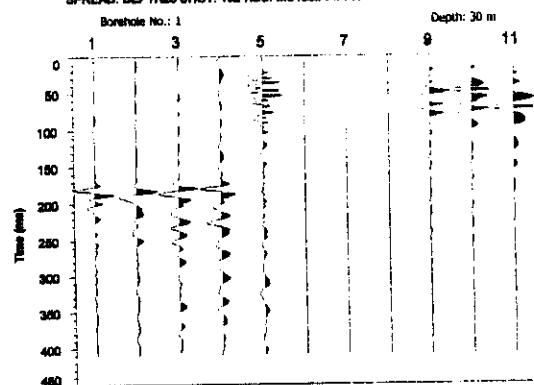
SPREAD: DEPTH24 SHOT: 103 REC: MC103FP.FPX



SPREAD: DEPTH28 SHOT: 102 REC: MC102FP.FPX



SPREAD: DEPTH26 SHOT: 104 REC: MC104FP.FPX



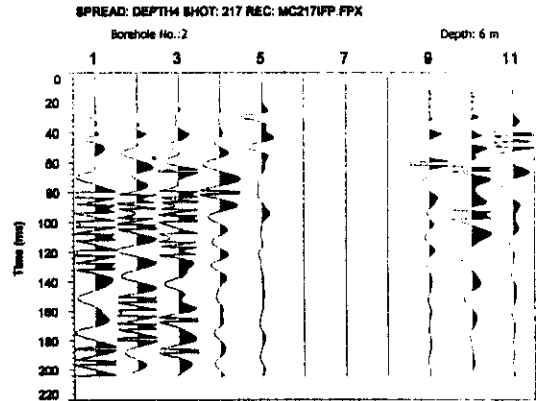
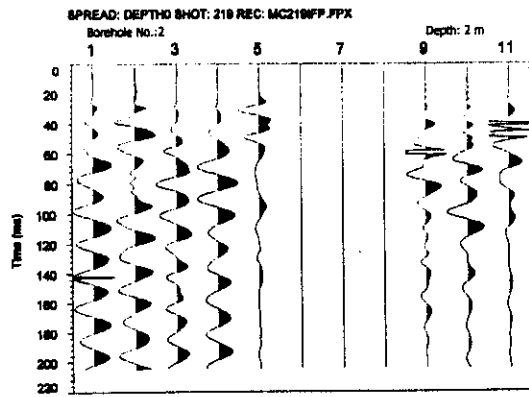
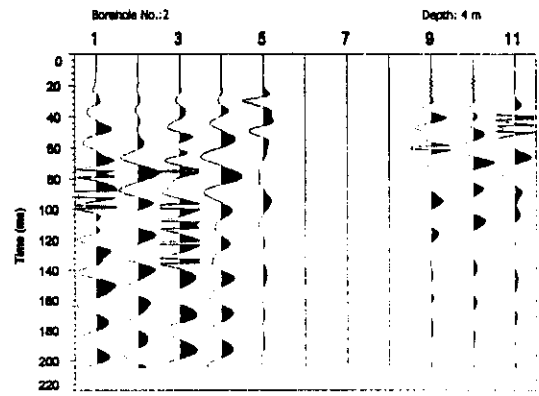
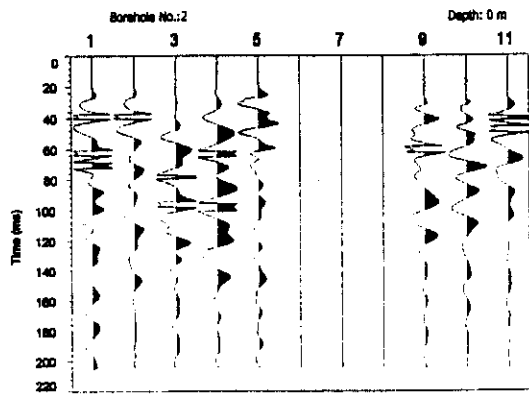
SPREAD: DEPTH30 SHOT: 101 REC: MC101FP.FPX

1 & 3- Normal S-wave traces
2 & 4- Reverse shear wave traces
5- P-wave trace

9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone

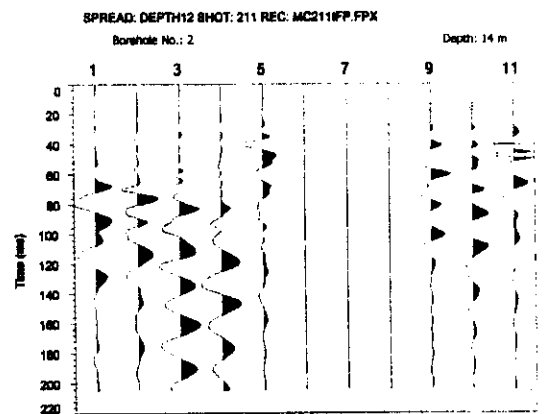
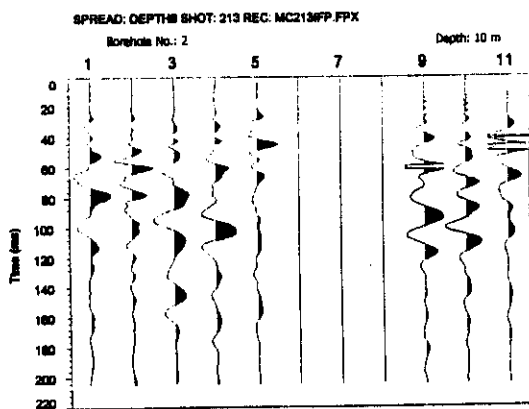
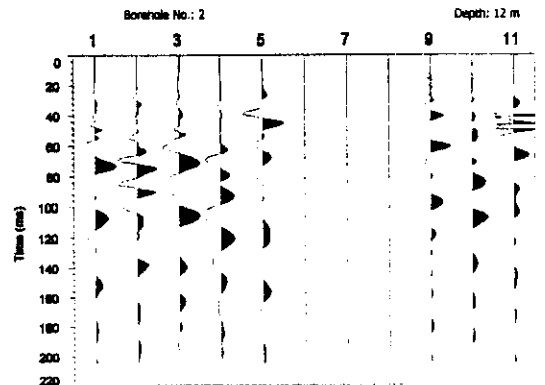
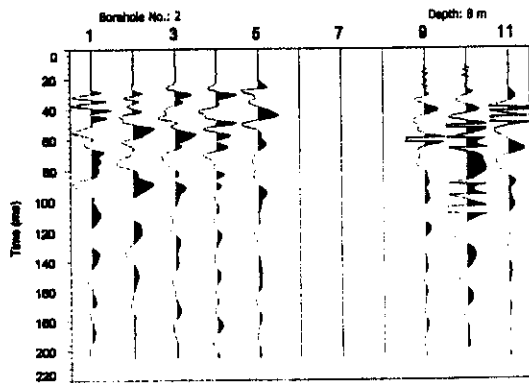
1 & 3- Normal S-wave traces
2 & 4- Reverse shear wave traces
5- P-wave trace

9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone



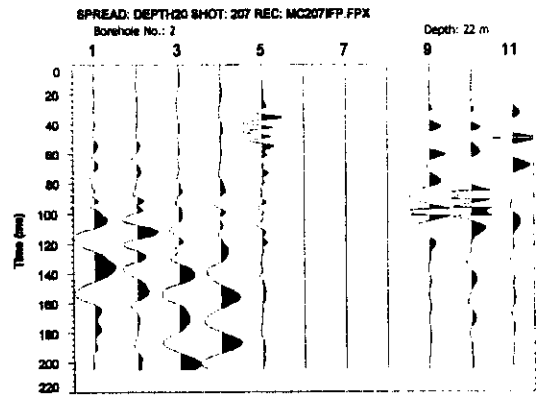
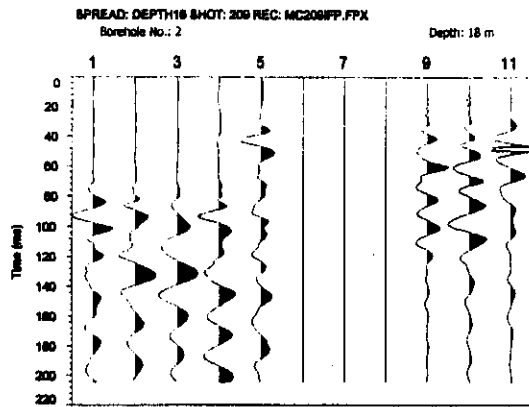
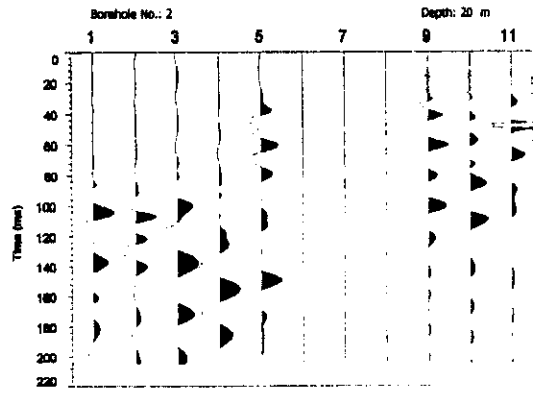
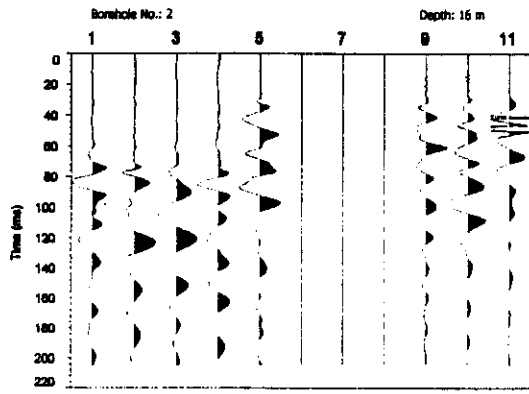
SPREAD: DEPTH2 SHOT: 218 REC: MC218FP.FPX
1 & 3- Normal S-wave traces
2 & 4- Reverse S-wave traces
5- P-wave trace
9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone

SPREAD: DEPTH6 SHOT: 214 REC: MC214FP.FPX
1 & 3- Normal S-wave traces
2 & 4- Reverse S-wave traces
5- P-wave trace
9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone



SPREAD: DEPTH10 SHOT: 212 REC: MC212FP.FPX
1 & 3- Normal S-wave traces
2 & 4- Reverse S-wave traces
5- P-wave trace
9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone

SPREAD: DEPTH14 SHOT: 210 REC: MC210FP.FPX
1 & 3- Normal S-wave traces
2 & 4- Reverse S-wave traces
5- P-wave trace
9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone



SPREAD: DEPTH18 SHOT: 208 REC: MC208FP.FPX

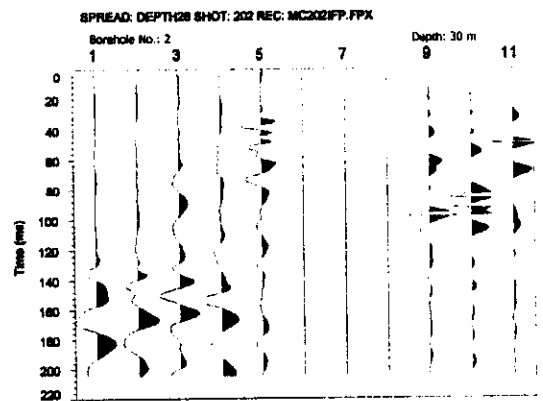
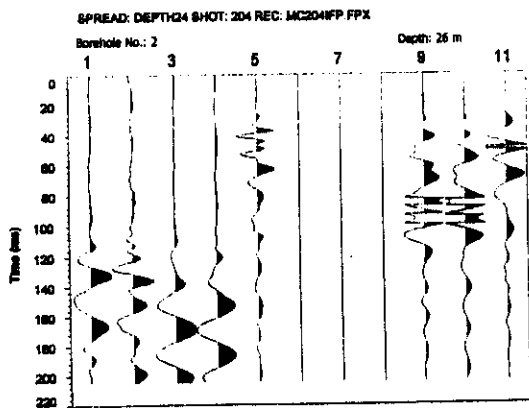
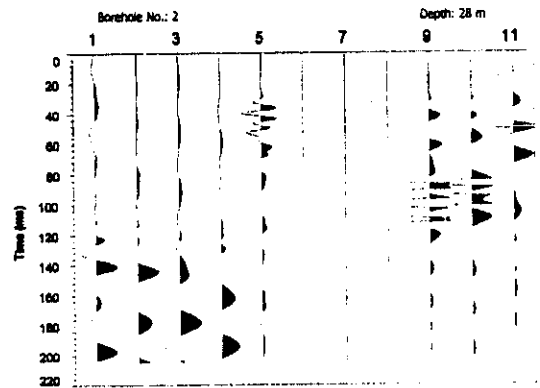
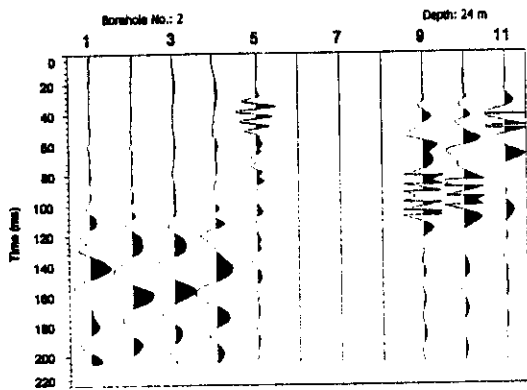
1 & 3- Normal S-wave traces
2 & 4- Reverse S-wave traces
5- P-wave trace

9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone

SPREAD: DEPTH22 SHOT: 206 REC: MC206FP.FPX

1 & 3- Normal S-wave traces
2 & 4- Reverse S-wave traces
5- P-wave trace

9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone



SPREAD: DEPTH26 SHOT: 203 REC: MC203FP.FPX

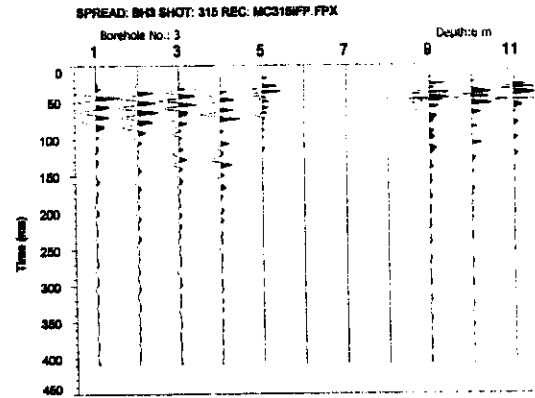
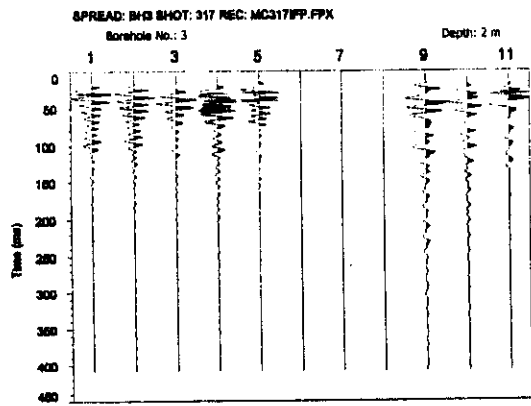
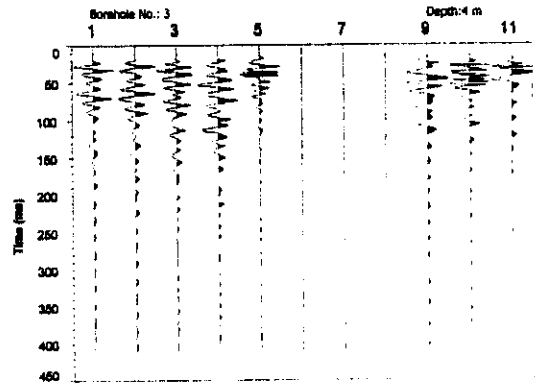
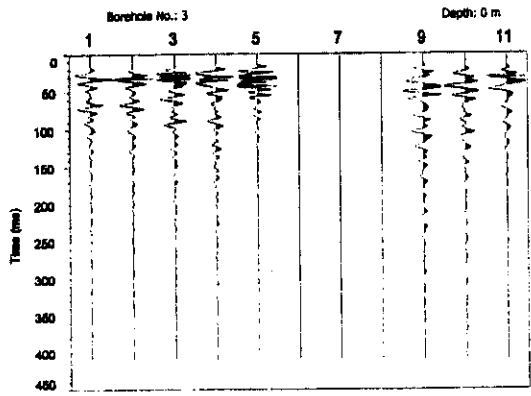
1 & 3- Normal S-wave traces
2 & 4- Reverse S-wave traces
5- P-wave trace

9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone

SPREAD: DEPTH30 SHOT: 201 REC: MC201FP.FPX

1 & 3- Normal S-wave traces
2 & 4- Reverse S-wave traces
5- P-wave trace

9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone

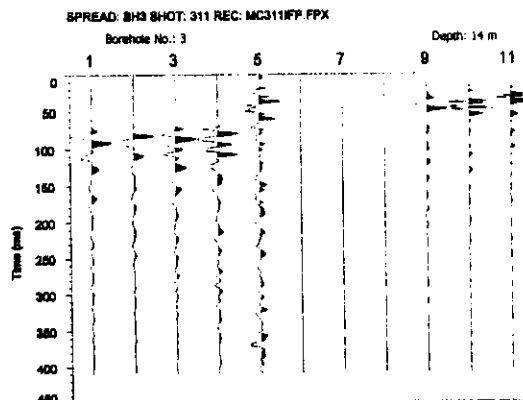
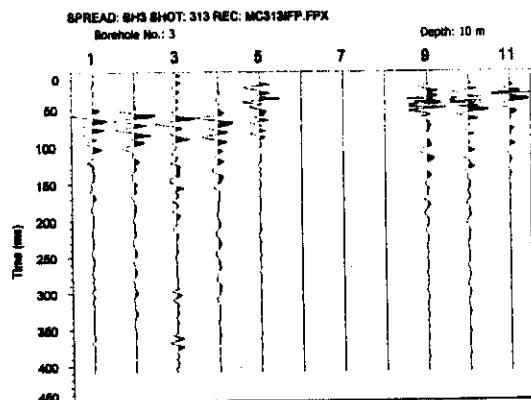
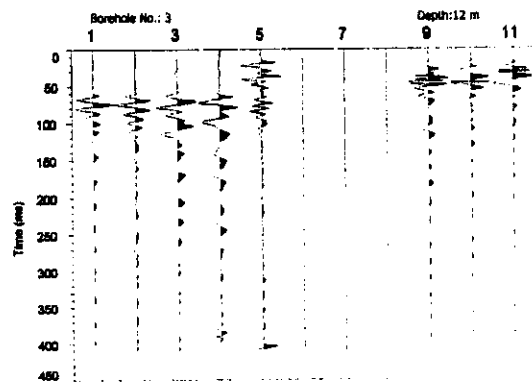
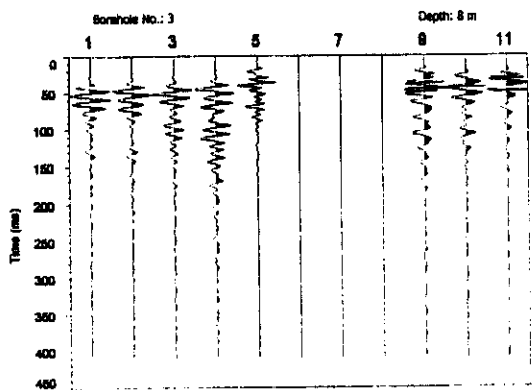


SPREAD: BHS SHOT: 318 REC: MC318FP.FPX

1 & 3 - Normal S-wave traces	9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
2 & 4 - Reverse S-wave traces	11 - trace of P-wave monitoring geophone
5 - P-wave trace	

SPREAD: BHS SHOT: 314 REC: MC314FP.FPX

1 & 3 - Normal S-wave traces	9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
2 & 4 - Reverse S-wave traces	11 - trace of P-wave monitoring geophone
5 - P-wave trace	

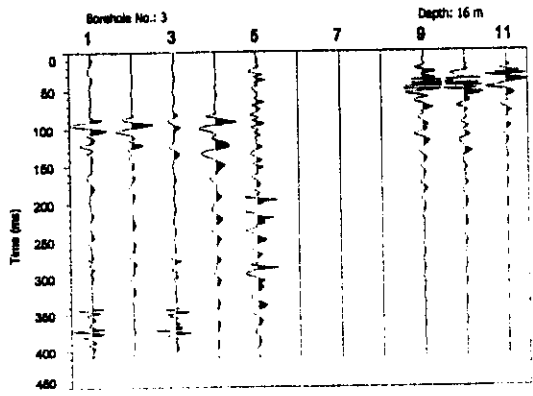


SPREAD: BHS SHOT: 312 REC: MC312FP.FPX

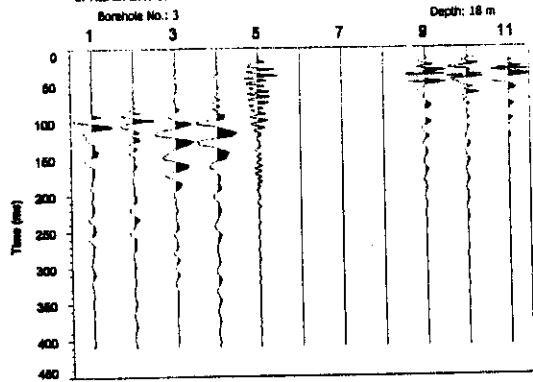
1 & 3 - Normal S-wave traces	9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
2 & 4 - Reverse S-wave traces	11 - trace of P-wave monitoring geophone
5 - P-wave trace	

SPREAD: BHS SHOT: 310 REC: MC310FP.FPX

1 & 3 - Normal S-wave traces	9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
2 & 4 - Reverse S-wave traces	11 - trace of P-wave monitoring geophone
5 - P-wave trace	



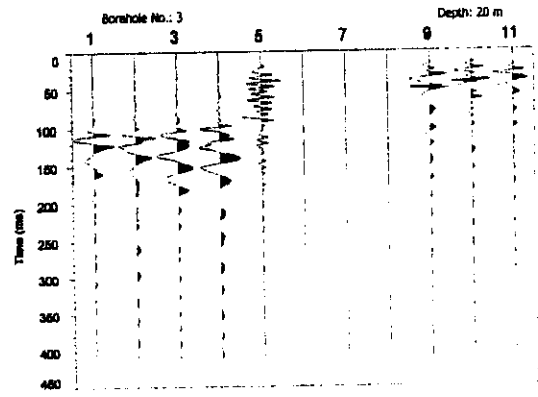
SPREAD: BH3 SHOT: 308 REC: MC308FP.FPX



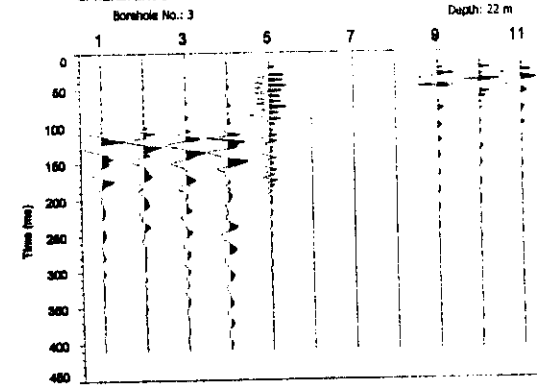
SPREAD: BH3 SHOT: 307 REC: MC307FP.FPX

1 & 3 - Normal S-wave traces
2 & 4 - Reverse S-wave traces
5 - P-wave trace

9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone



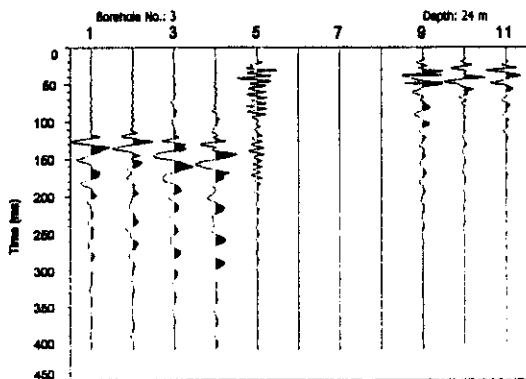
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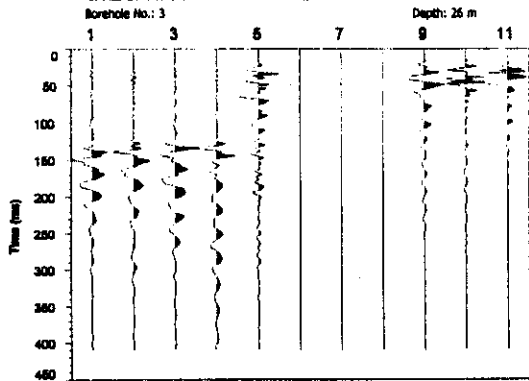
SPREAD: BH3 SHOT: 308 REC: MC308FP.FPX

1 & 3 - Normal S-wave traces
2 & 4 - Reverse S-wave traces
5 - P-wave trace

9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone



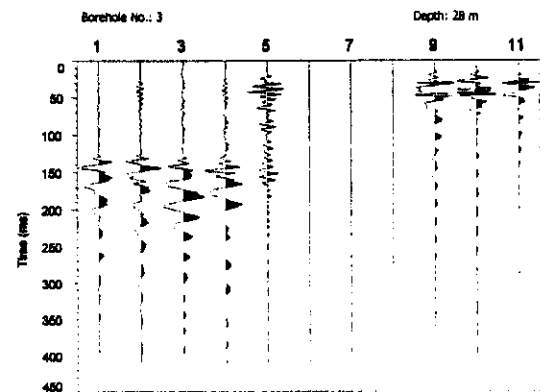
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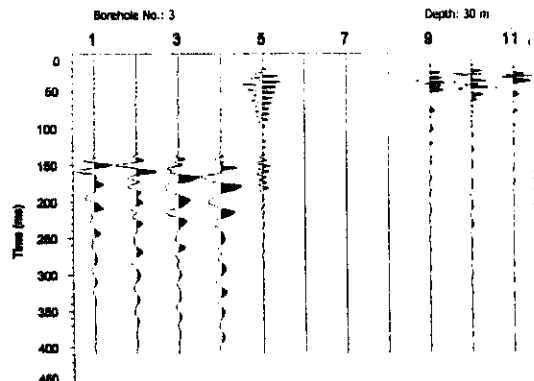
SPREAD: BH3 SHOT: 308 REC: MC308FP.FPX

1 & 3 - Normal S-wave traces
2 & 4 - Reverse S-wave traces
5 - P-wave trace

9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone



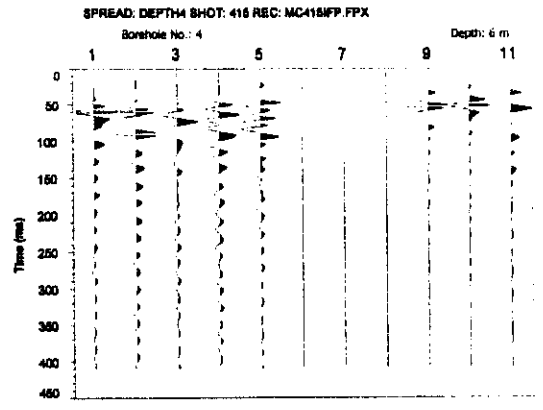
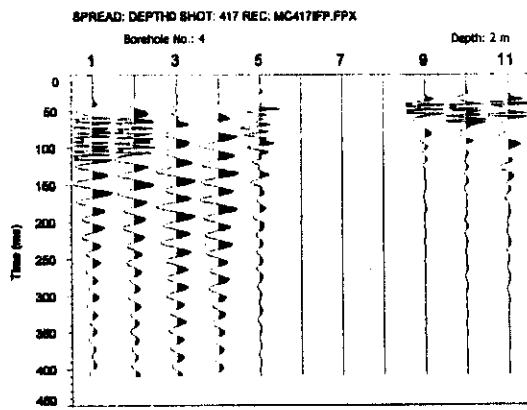
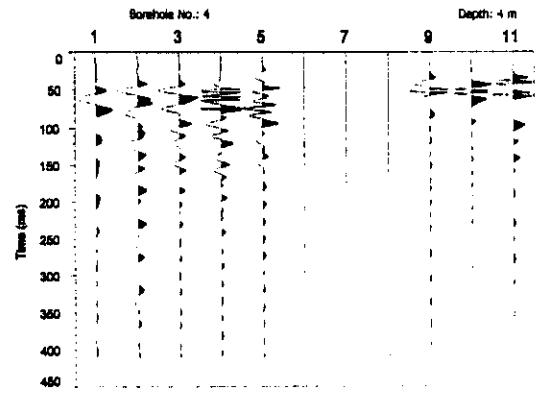
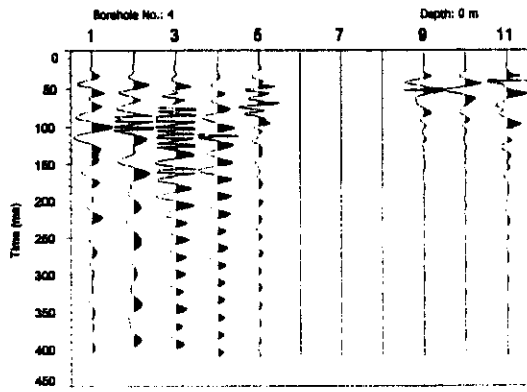
SPREAD: BH3 SHOT: 302 REC: MC302FP.FPX



SPREAD: BH3 SHOT: 301 REC: MC301FP.FPX

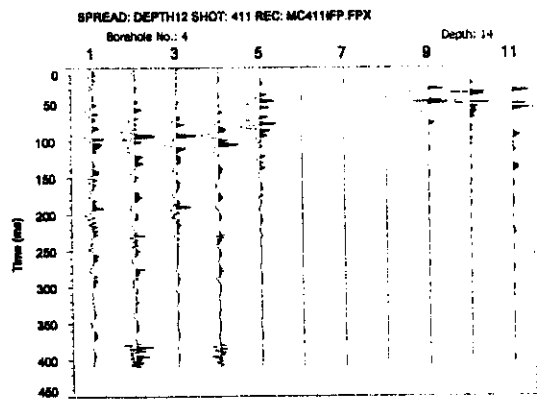
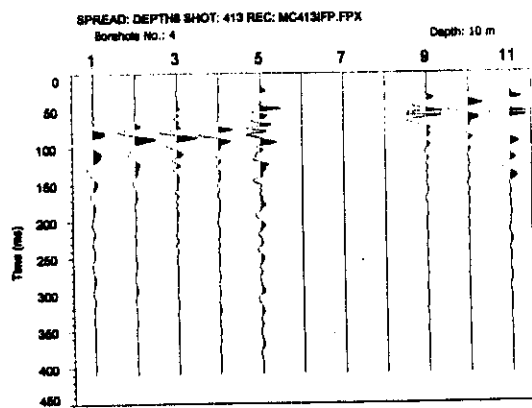
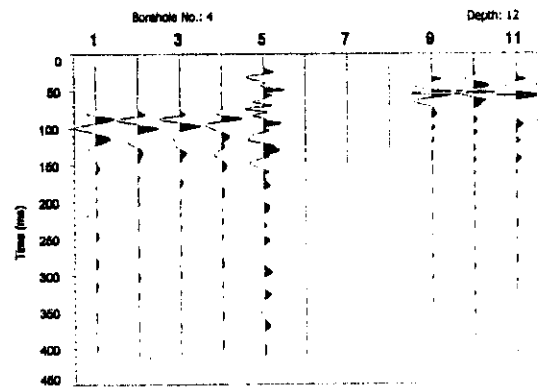
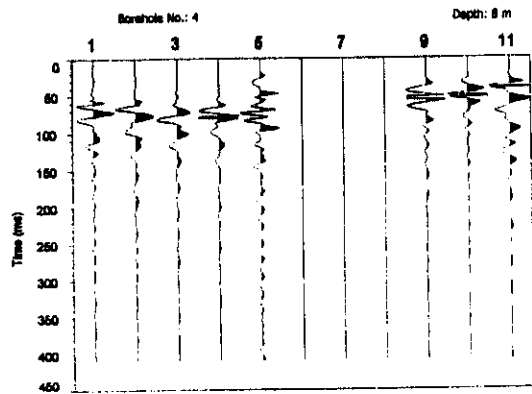
1 & 3 - Normal S-wave traces
2 & 4 - Reverse S-wave traces
5 - P-wave trace

9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone



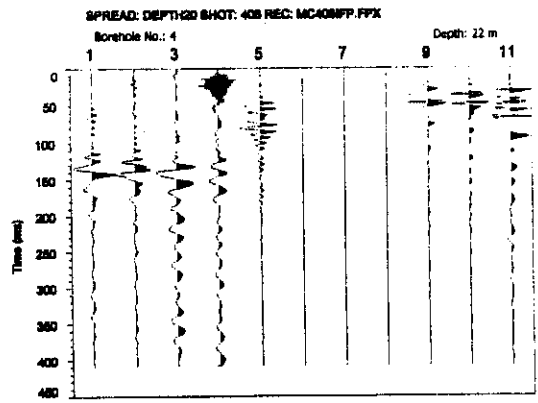
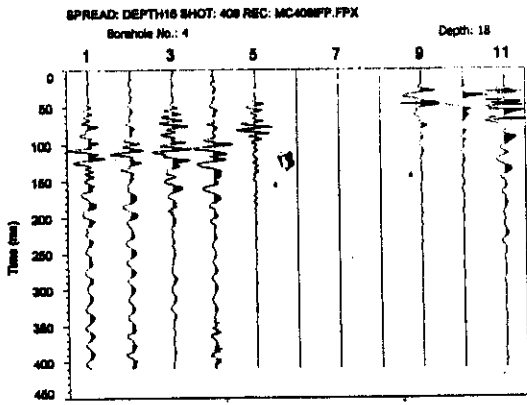
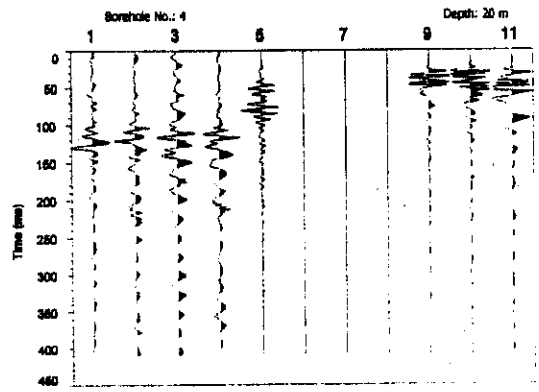
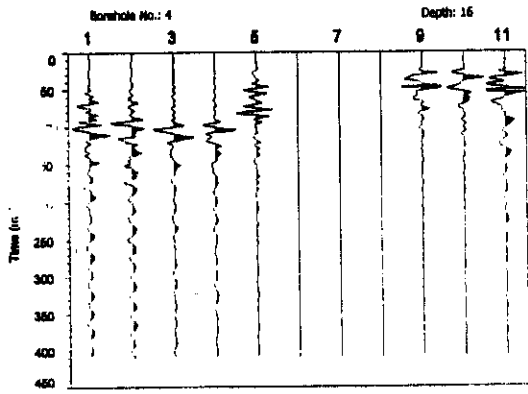
SPREAD: DEPTH2 SHOT: 418 REC: MC418FP.FPX
1 & 3 - Normal S-wave traces
2 & 4 - Reverse S-wave traces
5 - P-wave trace
9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone

SPREAD: DEPTH6 SHOT: 414 REC: MC414FP.FPX
1 & 3 - Normal S-wave traces
2 & 4 - Reverse S-wave traces
5 - P-wave trace
9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone



SPREAD: DEPTH10 SHOT: 412 REC: MC412FP.FPX
1 & 3 - Normal S-wave traces
2 & 4 - Reverse S-wave traces
5 - P-wave trace
9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone

SPREAD: DEPTH14 SHOT: 408 REC: MC408FP.FPX
1 & 3 - Normal S-wave traces
2 & 4 - Reverse S-wave traces
5 - P-wave trace
9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone

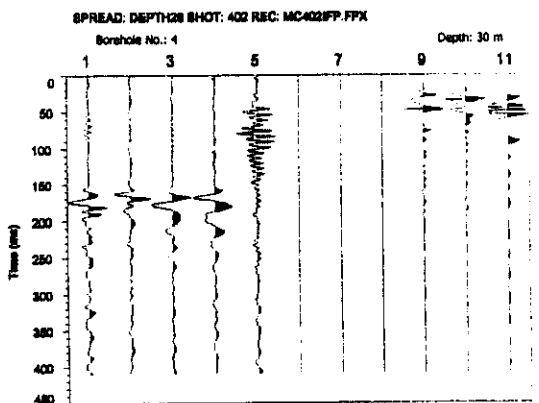
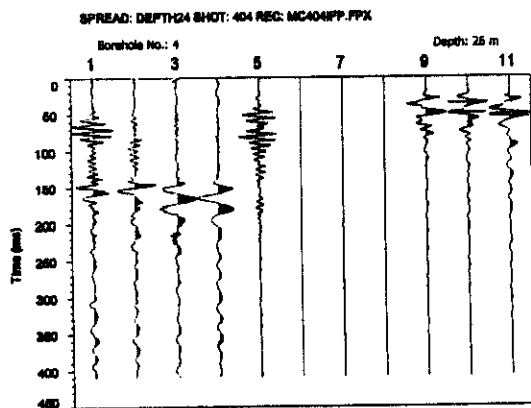
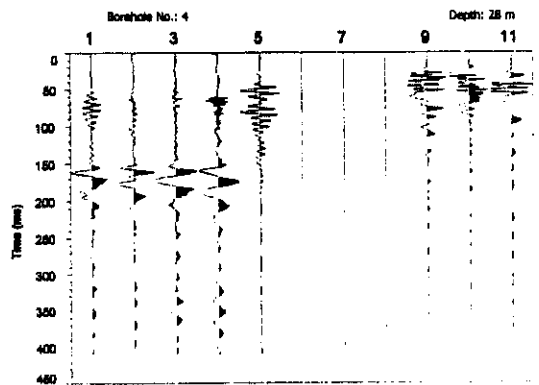
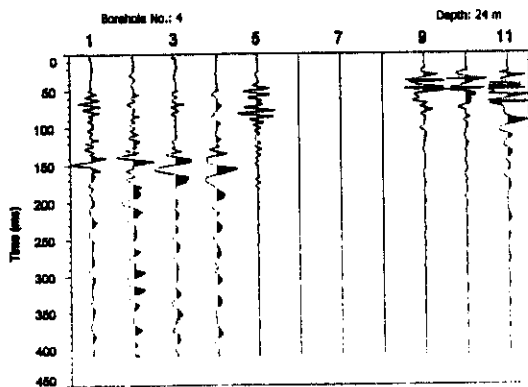


SPREAD: DEPTH18 SHOT: 407 REC: MC407FP.FPX

1 & 3 - Normal S-wave traces 9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
2 & 4 - Reverse S-wave traces 11 - trace of P-wave monitoring geophone
5 - P-wave trace

SPREAD: DEPTH22 SHOT: 408 REC: MC408FP.FPX

1 & 3 - Normal S-wave traces 9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
2 & 4 - Reverse S-wave traces 11 - trace of P-wave monitoring geophone
5 - P-wave trace

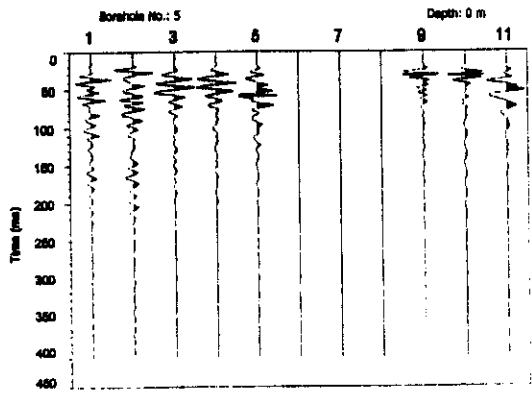


SPREAD: DEPTH26 SHOT: 403 REC: MC403FP.FPX

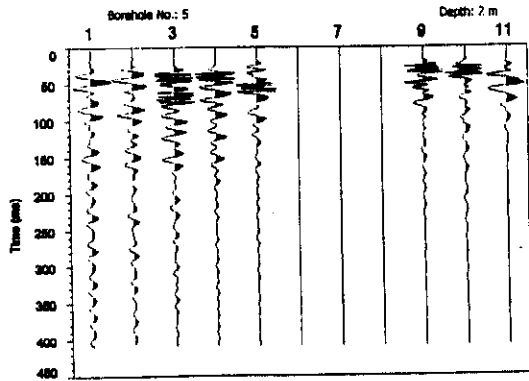
1 & 3 - Normal S-wave traces 9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
2 & 4 - Reverse S-wave traces 11 - trace of P-wave monitoring geophone
5 - P-wave trace

SPREAD: DEPTH30 SHOT: 401 REC: MC401FP.FPX

1 & 3 - Normal S-wave traces 9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
2 & 4 - Reverse S-wave traces 11 - trace of P-wave monitoring geophone
5 - P-wave trace

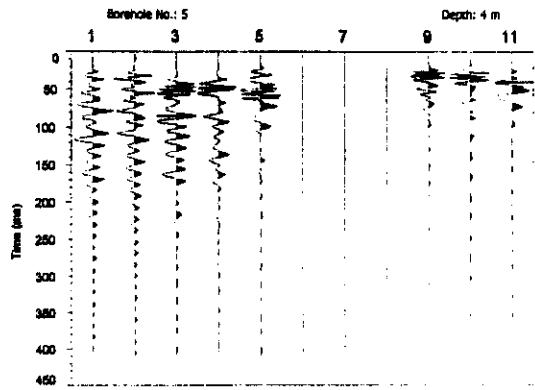


SPREAD: DEPTH0 BHOT: 517 REC: MC5171FP.FPX

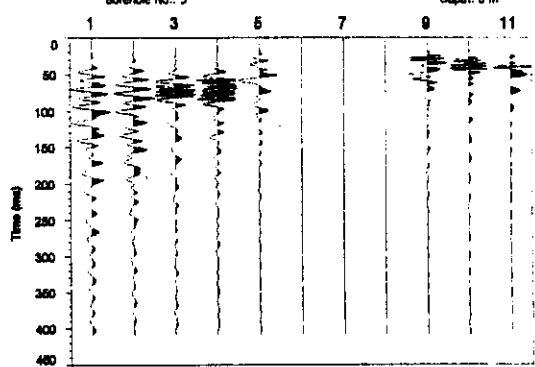


SPREAD: BH5 BHOT: 516 REC: MC516FP.FPX

- | | |
|-------------------------------|---|
| 1 & 3 - Normal S-wave traces | 9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone |
| 2 & 4 - Reverse S-wave traces | 11 - trace of P-wave monitoring geophone |
| 5 - P-wave trace | |

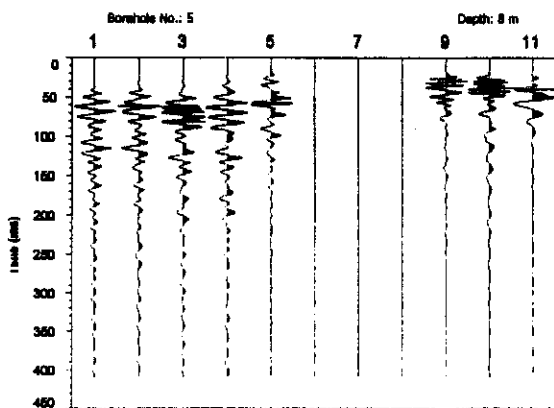


SPREAD: BH5 BHOT: 516 REC: MC516FP.FPX

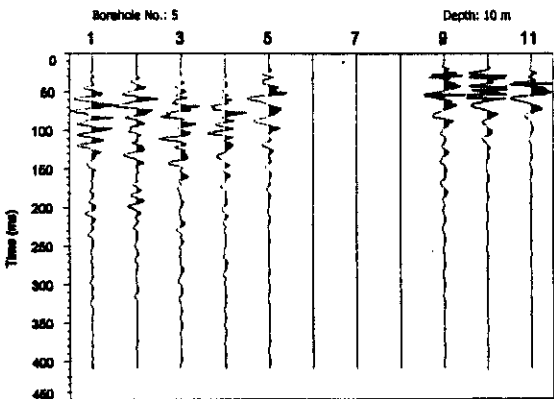


SPREAD: BH5 BHOT: 514 REC: MC514FP.FPX

- | | |
|-------------------------------|---|
| 1 & 3 - Normal S-wave traces | 9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone |
| 2 & 4 - Reverse S-wave traces | 11 - trace of P-wave monitoring geophone |
| 5 - P-wave trace | |

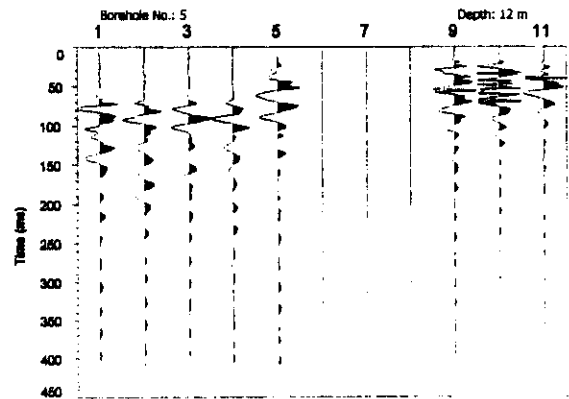


SPREAD: BH5 BHOT: 513 REC: MC513FP.FPX

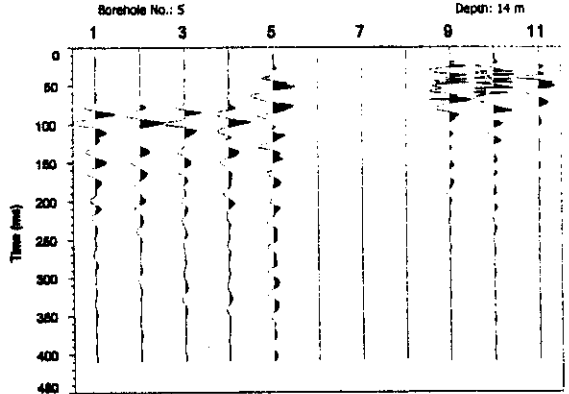


SPREAD: BH5 BHOT: 512 REC: MC512FP.FPX

- | | |
|-------------------------------|---|
| 1 & 3 - Normal S-wave traces | 9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone |
| 2 & 4 - Reverse S-wave traces | 11 - trace of P-wave monitoring geophone |
| 5 - P-wave trace | |

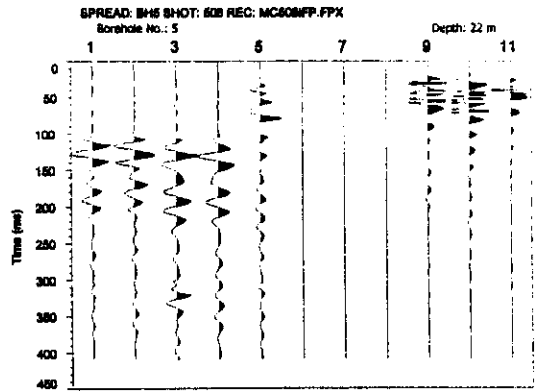
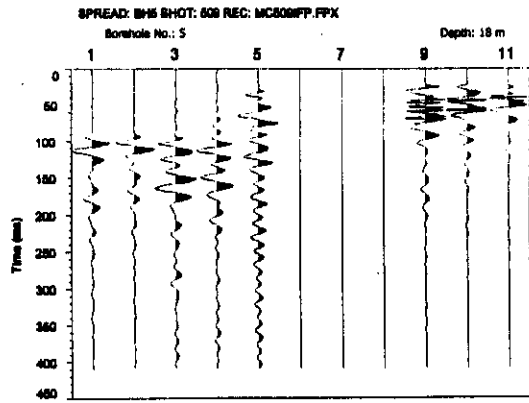
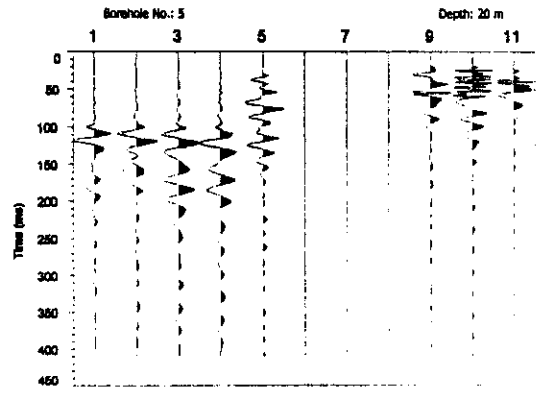
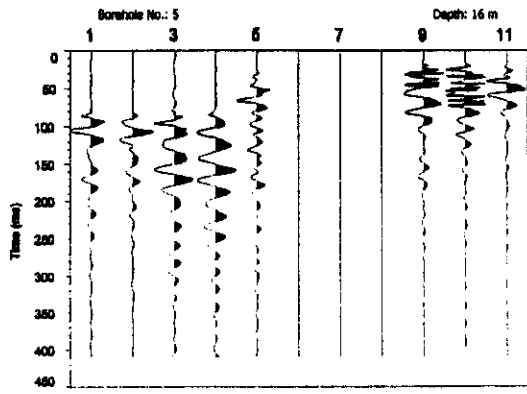


SPREAD: BH5 BHOT: 511 REC: MC511FP.FPX



SPREAD: BH5 BHOT: 510 REC: MC510FP.FPX

- | | |
|-------------------------------|---|
| 1 & 3 - Normal S-wave traces | 9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone |
| 2 & 4 - Reverse S-wave traces | 11 - trace of P-wave monitoring geophone |
| 5 - P-wave trace | |



SPREAD: BH5 SHOT: 608 REC: MC808FP.FPX

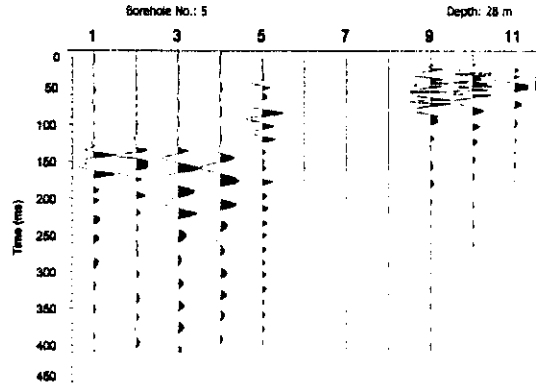
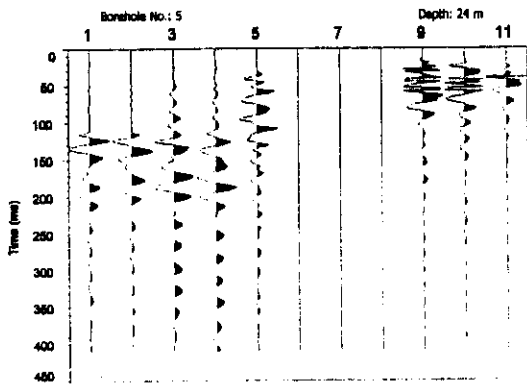
1 & 3 - Normal S-wave traces
2 & 4 - Reverse S-wave traces
5 - P-wave trace

9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone

SPREAD: BH5 SHOT: 608 REC: MC808FP.FPX

1 & 3 - Normal S-wave traces
2 & 4 - Reverse S-wave traces
5 - P-wave trace

9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone



SPREAD: BH5 SHOT: 604 REC: MC804FP.FPX

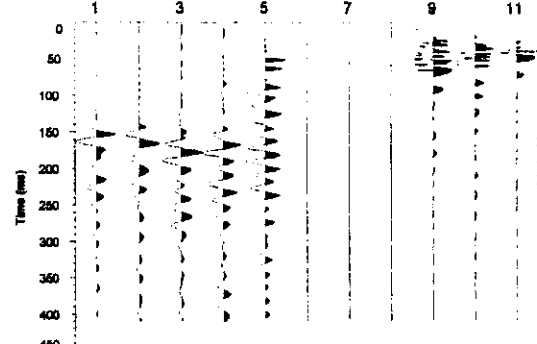
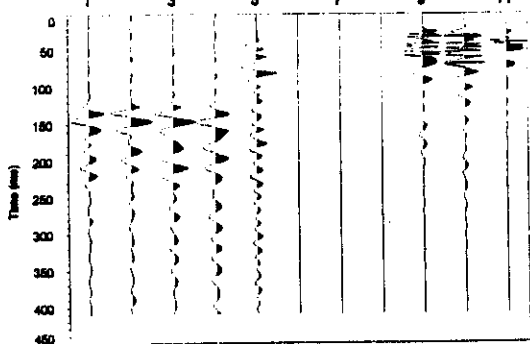
1 & 3 - Normal S-wave traces
2 & 4 - Reverse S-wave traces
5 - P-wave trace

9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone

SPREAD: BH5 SHOT: 602 REC: MC802FP.FPX

1 & 3 - Normal S-wave traces
2 & 4 - Reverse S-wave traces
5 - P-wave trace

9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone



SPREAD: BH5 SHOT: 606 REC: MC806FP.FPX

1 & 3 - Normal S-wave traces
2 & 4 - Reverse S-wave traces
5 - P-wave trace

9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone

SPREAD: BH5 SHOT: 601 REC: MC801FP.FPX

1 & 3 - Normal S-wave traces
2 & 4 - Reverse S-wave traces
5 - P-wave trace

9 & 10 - S-wave normal and reverse traces from monitoring S-wave geophone
11 - trace of P-wave monitoring geophone

APPENDIX - 4

Photo Documentation



3

Core Drilling at Singh Durbar,
Kathmandu (BH # 2)



4

PS Logging at Singh Durbar,
Kathmandu (BH # 2)



1

Core Drilling at New Road,
Kathmandu (BH # 1)



2

PS Logging at New Road, Kathmandu (BH # 1)



7

Core Drilling at Thini Madhyapur (BH # 4)



8

PS Logging at Thini Madhyapur (BH # 4)



5

Core Drilling at Jawalaket, Lalpur (BH # 3)



6

PS Logging at Jawalaket, Lalpur (BH # 3)



9

Core Drilling at Durbar Square,
Bhaktapur



10

Logging at Durbar Square, Bhaktapur

Site Records of SPT

Table 1 Summary of Standard Penetration Test Results

Hole No.	Stage	Test Section (m)		N1		N2		N3		N4		N5		Material	N
		From	To	Blows	Penet.	Blows	Penet.	Blows	Penet.	Blows	Penet.	Blows	Penet.		
BH - 1	1	1.0	1.5	1	5	2	10	1	10	1	10	2	15	Overburden Top soil	3
	2	2.0	2.5	1	"	2	"	1	"	2	"	1	"	Silty Sand	4
	3	3.0	3.5	1	"	4	"	6	"	6	"	12	"	Coarse Sand	20
	4	4.0	4.5	2	"	4	"	10	"	12	"	14	"	"	30
	5	5.0	5.5	2	"	7	"	13	"	11	"	17	"	"	35
	6	6.0	6.5	1	"	1	"	1	"	1	"	2	"	Sandy Silt	3
	7	7.0	7.5	1	"	2	"	0	"	1	"	1	"	"	2
	8	8.0	8.5	1	"	2	"	4	"	4	"	9	"	"	13
	9	9.0	9.5	1	"	6	"	5	"	6	"	9	"	Medium Sand	16
	10	10.0	10.5	1	"	2	"	3	"	4	"	10	"	"	12
	11	11.0	11.5	1	"	3	"	2	"	3	"	5	"	Silty Sand	9
	12	12.0	12.5	1	"	1	"	2	"	5	"	8	"	Silty Sand/Sandy Silt	15
	13	13.0	13.5	1	"	2	"	3	"	3	"	7	"	Sandy Silt	9
	14	14.0	14.5	1	"	2	"	2	"	2	"	4	"	"	6
	15	15.0	15.5	1	"	1	"	1	"	1	"	3	"	Silty Sand/Sandy Silt	3
	16	16.0	16.5	1	"	2	"	1	"	1	"	2	"	Sandy Silt	3
	17	17.0	17.5	1	"	2	"	2	"	1	"	3	"	"	5
	18	18.0	18.5	1	"	1	"	2	"	3	"	4	"	"	8
	19	19.0	19.5	1	"	1	"	2	"	2	"	4	"	Silty Sand	7
	20	20.0	20.5	1	"	1	"	2	"	3	"	6	"	Clayey Silt	9
	21	21.0	21.5	1	"	1	"	2	"	2	"	4	"	"	7
	22	22.0	22.5	1	"	2	"	2	"	3	"	5	"	"	9
	23	23.0	23.5	1	"	2	"	2	"	3	"	4	"	"	8
	24	24.0	24.5	1	"	1	"	2	"	2	"	3	"	"	6
	25	25.0	25.5	2	"	3	"	3	"	4	"	5	"	"	11
	26	26.0	26.5	1	"	1	"	2	"	3	"	6	"	"	9
	27	27.0	27.5	1	"	2	"	2	"	3	"	6	"	"	11
	28	28.0	28.5	1	"	2	"	2	"	3	"	4	"	"	8
	29	29.0	29.5	1	"	2	"	3	"	3	"	4	"	"	9
	30	30.0	30.5	1	"	2	"	2	"	3	"	3	"	"	6
BH - 2	1	1.0	1.5	1	15	1	15	3	15					Overburden Top soil	3
	2	2.0	2.5	3	"	4	"	4	"					Sandy Gravel	8
	3	3.0	3.5	1	"	4	"	5	"					Sand	9
	4	4.0	4.5	6	"	7	"	16	"					"	31
	5	5.0	5.5	9	"	18	"	19	"					"	36
	6	6.0	6.5	10	"	20	"	25	"					"	42
	7	7.0	7.5	18	"	> 42	11							Medium Sand with Gravel	> 60
	8	8.0	8.5	7	15	7	10	8	10	11	15			Coarse Sand	23
	9	9.0	9.5	3	"	3	"	7	"	14	"			Medium Sand	27
	10	10.0	10.5	3	5	4	"	6	"	5	10	12	15	"	18
	11	11.0	11.5	3	"	5	"	9	"	10	"	14	"	Coarse Sand	28
	12	12.0	12.5	5	"	20	"	14	"	10	"	15	"	"	32
	13	13.0	13.5	3	"	6	"	5	"	6	"	12	"	"	20
	14	14.0	14.5	3	"	7	"	8	"	7	"	12	"	"	23
	15	15.0	15.5	4	"	6	"	10	"	10	"	17	"	"	32
	16	16.0	16.5	6	"	1	"	9	"	9	"	15	"	Medium Sand	28
	17	17.0	17.5	5	"	8	"	11	"	10	"	16	"	Fine Sand	32
	18	18.0	18.5	3	"	6	"	8	"	11	"	13	"	"	27
	19	19.0	19.5	3	"	7	"	9	"	8	"	12	"	Silty Sand	24
	20	20.0	20.5	2	"	3	"	3	"	4	"	6	"	Silty Sand/Sandy Silt	12
	21	21.0	21.5	1	"	3	"	3	"	3	"	5	"	"	9
	22	22.0	22.5	2	"	2	"	3	"	3	"	4	"	Clayey Silt	8
	23	23.0	23.5	1	"	2	"	3	"	3	"	5	"	"	9
	24	24.0	24.5	1	"	2	"	2	"	3	"	4	"	"	8
	25	25.0	25.5	2	"	3	"	3	"	4	"	5	"	"	10
	26	26.0	26.5	1	"	2	"	2	"	3	"	4	"	"	8
	27	27.0	27.5	2	"	3	"	4	"	4	"	5	"	"	10
	28	28.0	28.5	2	"	3	"	2	"	2	"	4	"	"	7
	29	29.0	29.5	4	"	5	"	5	"	6	"	9	"	"	18
	30	30.0	30.5	5	"	6	"	6	"	5	"	9	"	"	17

Table 2 Summary of Standard Penetration Test Results

Hole No.	Stage	Test Section (m)		N1		N2		N3		N4		N5		Material	N
		From	To	Blows	Penet.	Blows	Penet.	Blows	Penet.	Blows	Penet.	Blows	Penet.		
BH - 3	1	1.0	1.5	2	5	5	10	3	10	4	10	6	15	Overburden Top soil	12
	2	2.0	2.5	1	"	2	"	5	"	7	"	13	"	Gravelly Sand	23
	3	3.0	3.5	5	"	17	"	10	"	18	"	-	"	Sandy Gravel	> 60
	4	4.0	4.5	3	"	5	"	8	"	10	"	15	"	Coarse Sand	30
	5	5.0	5.5	5	"	7	"	5	"	4	"	7	"	Silty Sand	14
	6	6.0	6.5	2	"	5	"	8	"	5	"	9	"	Silt-Sand-Gravel Mixture	17
	7	7.0	7.5	1	"	3	"	5	"	5	"	9	"	Silty Sand	16
	8	8.0	8.5	2	"	2	"	4	"	4	"	8	"	"	15
	9	9.0	9.5	1	"	2	"	2	"	4	"	4	"	"	9
	10	10.0	10.5	2	"	2	"	3	"	4	"	10	"	"	11
	11	11.0	11.5	2	"	6	"	8	"	11	"	15	"	Medium Sand	30
	12	12.0	12.5	1	"	2	"	3	"	6	"	8	"	Silty Sand	17
	13	13.0	13.5	1	"	2	"	2	"	3	"	5	"	"	10
	14	14.0	14.5	2	"	3	"	5	"	5	"	9	"	"	18
	15	15.0	15.5	2	"	3	"	5	"	6	"	8	"	Sandy Silt	17
	16	16.0	16.5	1	"	2	"	3	"	4	"	7	"	Silty Sand/sandy Silt	12
	17	17.0	17.5	1	"	2	"	2	"	3	"	4	"	Clayey Silt	8
	18	18.0	18.5	1	"	2	"	3	"	3	"	5	"	Sandy Silt/Silty Sand	9
	19	19.0	19.5	2	"	5	"	7	"	8	"	3	"	Silty Sand	20
	20	20.0	20.5	1	"	2	"	3	"	3	"	5	"	Sandy Silt/Silty Sand	10
	21	21.0	21.5	1	"	2	"	3	"	4	"	5	"	Clayey Silt	10
	22	22.0	22.5	2	"	3	"	4	"	3	"	9	"	"	10
	23	23.0	23.5	2	"	5	"	5	"	6	"	8	"	Sandy Silt/Silty Sand	17
	24	24.0	24.5	2	"	3	"	3	"	4	"	7	"	"	11
	25	25.0	25.5	2	"	3	"	5	"	6	"	8	"	Clayey Silt	16
	26	26.0	26.5	2	"	4	"	5	"	5	"	9	"	Sandy Silt/Silty Sand	17
	27	27.0	27.5	2	"	3	"	4	"	5	"	9	"	Clayey Silt	17
	28	28.0	28.5	2	"	4	"	5	"	8	"	10	"	Sandy Silt/Silty Sand	21
	29	29.0	29.5	2	"	3	"	4	"	6	"	9	"	Clayey Silt	18
	30	30.0	30.5	4	"	4	"	4	"	5	"	12	"	"	14
BH - 4	1	1.0	1.5	1	5	1	10	1	10	1	10	2	15	Overburden Top soil	3
	2	2.0	2.5	1	"	2	"	2	"	2	"	3	"	Silty Sand	6
	3	3.0	3.5	2	"	2	"	3	"	2	"	4	"	"	7
	4	4.0	4.5	1	"	3	"	2	"	2	"	4	"	Clayey Silt	7
	5	5.0	5.5	2	"	1	"	1	"	3	"	4	"	Silty Sand	8
	6	6.0	6.5	2	"	3	"	3	"	4	"	5	"	"	11
	7	7.0	7.5	1	"	2	"	2	"	1	"	4	"	"	8
	8	8.0	8.5	1	"	1	"	2	"	3	"	5	"	Clayey Silt	9
	9	9.0	9.5	1	"	2	"	2	"	3	"	4	"	"	8
	10	10.0	10.5	1	"	1	"	2	"	3	"	4	"	"	8
	11	11.0	11.5	1	"	2	"	2	"	3	"	5	"	"	9
	12	12.0	12.5	2	"	3	"	3	"	4	"	5	"	"	10
	13	13.0	13.5	1	"	1	"	2	"	3	"	4	"	"	8
	14	14.0	14.5	1	"	1	"	2	"	2	"	7	"	"	7
	15	15.0	15.5	1	"	1	"	2	"	2	"	3	"	"	6
	16	16.0	16.5	1	"	1	"	3	"	2	"	4	"	"	7
	17	17.0	17.5	1	"	1	"	2	"	2	"	3	"	"	6
	18	18.0	18.5	1	"	2	"	2	"	2	"	3	"	"	6
	19	19.0	19.5	1	"	1	"	1	"	2	"	4	"	"	7
	20	20.0	20.5	1	"	2	"	3	"	3	"	5	"	"	10
	21	21.0	21.5	1	"	2	"	2	"	3	"	4	"	"	8
	22	22.0	22.5	1	"	1	"	2	"	2	"	5	"	"	8
	23	23.0	23.5	1	"	2	"	2	"	1	"	3	"	"	5
	24	24.0	24.5	1	"	1	"	2	"	3	"	4	"	"	8
	25	25.0	25.5	1	"	2	"	2	"	2	"	4	"	"	7
	26	26.0	26.5	1	"	1	"	2	"	3	"	3	"	"	6
	27	27.0	27.5	1	"	2	"	1	"	2	"	3	"	"	6
	28	28.0	28.5	1	"	2	"	2	"	3	"	4	"	"	8
	29	29.0	29.5	1	"	2	"	2	"	3	"	4	"	"	8
	30	30.0	30.5	1	"	1	"	2	"	3	"	4	"	"	8

Table 3 Summary of Standard Penetration Test Results

Hole No.	Stage	Test Section (m)		N1		N2		N3		N4		N5		Material	N
		From	To	Blows	Penet.	Blows	Penet.	Blows	Penet.	Blows	Penet.	Blows	Penet.		
BH - 5	1	1.0	1.5	3	5	5	10	6	10	6	10	8	15	Overburden Top soil	18
	2	2.0	2.5	4	"	3	"	3	"	4	"	5	"	Clayey Silt	11
	3	3.0	3.5	1	"	1	"	2	"	4	"	5	"	"	13
	4	4.0	4.5	2	"	4	"	4	"	5	"	10	"	Silty Sand	19
	5	5.0	5.5	1	"	1	"	1	"	2	"	5	"	Mixture of Sand and Silt	8
	6	6.0	6.5	1	"	1	"	1	"	2	"	3	"	Silty Sand/ Sandy Silt	7
	7	7.0	7.5	1	"	2	"	2	"	4	"	4	"	"	9
	8	8.0	8.5	2	"	4	"	6	"	10	"	12	"	"	24
	9	9.0	9.5	2	"	4	"	45	"	5	"	9	"	"	16
	10	10.0	10.5	2	"	4	"	4	"	8	"	10	"	"	20
	11	11.0	11.5	2	"	7	"	7	"	12	"	14	"	Coarse Sand	29
	12	12.0	12.5	2	"	4	"	4	"	6	"	8	"	"	16
	13	13.0	13.5	2	"	2	"	3	"	5	"	6	"	Medium Sand	13
	14	14.0	14.5	6	"	8	"	12	"	12	"	12	"	Coarse Sand	32
	15	15.0	15.5	5	"	6	"	8	"	11	"	12	"	"	27
	16	16.0	16.5	3	"	5	"	18	"	24	"	-	"	"	> 60
	17	17.0	17.5	4	"	7	"	12	"	16	"	11	"	"	37
	18	18.0	18.5	2	"	6	"	10	"	13	"	19	"	Medium Sand	37
	19	19.0	19.5	3	"	4	"	6	"	4	"	6	"	"	15
	20	20.0	20.5	2	"	3	"	4	"	6	"	9	"	Sandy Silty/Silty Sand	17
	21	21.0	21.5	1	"	3	"	3	"	5	"	8	"	"	15
	22	22.0	22.5	2	"	3	"	3	"	5	"	6	"	Clayey Silt	12
	23	23.0	23.5	2	"	4	"	4	"	7	"	9	"	"	18
	24	24.0	24.5	3	"	4	"	4	"	5	"	7	"	"	14
	25	25.0	25.5	2	"	2	"	3	"	4	"	5	"	"	11
	26	26.0	26.5	1	"	1	"	3	"	3	"	5	"	"	9
	27	27.0	27.5	1	"	3	"	3	"	2	"	4	"	"	7
	28	28.0	28.5	1	"	1	"	2	"	2	"	4	"	"	7
	29	29.0	29.5	1	"	1	"	2	"	3	"	5	"	"	9
	30	30.0	30.5	1	"	2	"	3	"	4	"	7	"	"	13