

OPTION 1 -- FREE FIELD ANALYSIS FOR APR1400 Profile 2

1

10

10 1. UNITY.MOD: CONSTANT MODULUS CURVE

0.0001 0.000316 0.001 0.00316 0.01 0.0316 0.1 0.316

1.0 3.0

1.0 1.0 1.00 1.00 1.00 1.00 1.00 1.00

1.00 1.00

10 1. UNITY DAMPING CURVE

0.0001 0.000316 0.001 0.00316 0.01 0.0316 0.1 0.316

1.0 3.0

1.0 1.0 1.00 1.00 1.00 1.00 1.00 1.00

1.00 1.00

10 2. EPRI(1993): EPRI GENERIC SAND G/Gmax; 0 - 20 FT (6.096 M)

0.0001 0.000316 0.001 0.00316 0.01 0.0316 0.1 0.316

1.0 3.0

1.0 1.0 0.98 0.914 0.75 0.509 0.27 0.116

0.04 0.02

10 2. EPRI(1993): EPRI GENERIC SAND DAMPING, ORIGINAL; 0 - 20 FT.

0.0001 0.000316 0.001 0.00316 0.01 0.0316 0.1 0.316

1.0 3.0

1.4 1.5 1.8 2.80 5.0 9.3 15.3 21.9

27.0 30.0

10 3. EPRI(1993): EPRI GENERIC SAND G/Gmax; 21 - 50 FT.(15.24 M)

0.0001 0.000316 0.001 0.00316 0.01 0.0316 0.1 0.316

1.0 3.0

1.0 1.0 0.99 0.946 0.82 0.608 0.36 0.165

0.06 0.03

10 3. EPRI(1993): EPRI GENERIC SAND DAMPING, ORIGINAL; 21 - 50 FT.

0.0001 0.000316 0.001 0.00316 0.01 0.0316 0.1 0.316
1.0 3.0
1.2 1.2 1.4 2.1 3.6 7.0 12.4 19.1
24.9 28.0

10 4. EPRI(1993): EPRI GENERIC SAND G/Gmax; 51 - 120 FT.(36.57 M)

0.0001 0.000316 0.001 0.00316 0.01 0.0316 0.1 0.316
1.0 3.0
1.0 1.0 1.00 0.97 0.87 0.68 0.43 0.22
0.09 0.05

10 4. EPRI(1993): EPRI GENERIC SAND DAMPING; 51 - 120 FT.

0.0001 0.000316 0.001 0.00316 0.01 0.0316 0.1 0.316
1.0 3.0
1.0 1.0 1.2 1.64 2.8 5.49 10.2 16.5
22.9 27.0

10 5. EPRI(1993): EPRI GENERIC SAND G/Gmax; 121 - 250 FT. (76.20 M)

0.0001 0.000316 0.001 0.00316 0.01 0.0316 0.1 0.316
1.0 3.0
1.0 1.0 1.00 0.98 0.90 0.74 0.50 0.27
0.12 0.07

10 5. EPRI(1993): EPRI GENERIC SAND DAMPING; 121 - 250 FT.

0.0001 0.000316 0.001 0.00316 0.01 0.0316 0.1 0.316
1.0 3.0
0.8 0.9 1.0 1.33 2.2 4.36 8.6 14.61
21.2 25.0

10 6. EPRI(1993): EPRI GENERIC SAND G/Gmax; 251 - 500 FT. (152.39 M)

0.0001 0.000316 0.001 0.00316 0.01 0.0316 0.1 0.316
1.0 3.0
1.0 1.0 1.00 0.988 0.93 0.791 0.57 0.321
0.15 0.09

10 6. EPRI(1993): EPRI GENERIC SAND DAMPING; 251 - 500 FT.

0.0001 0.000316 0.001 0.00316 0.01 0.0316 0.1 0.316

1.0 3.0

0.7 0.8 0.8 1.12 1.8 3.53 7.1 12.78

19.3 23.0

10 7. EPRI(1993): EPRI GENERIC SAND G/Gmax; 501 - 1000 FT.

0.0001 0.000316 0.001 0.00316 0.01 0.0316 0.1 0.316

1.0 3.0

1.0 1.0 1.00 0.99 0.95 0.852 0.65 0.41

0.20 0.10

10 7. EPRI(1993): EPRI GENERIC SAND DAMPING; 501 - 1000 FT.

0.0001 0.000316 0.001 0.00316 0.01 0.0316 0.1 0.316

1.0 3.0

0.6 0.6 0.6 0.81 1.2 2.5 5.3 10.27

16.7 20.1

10 8. G/Gmax, Silva (1996) soft rock 0-20 ft

0.000100 0.000316 0.001000 0.003160 0.010000 0.031600 0.100000 0.316000

1.000000 3.000000

1.000 1.000 0.990 0.910 0.720 0.460 0.230 0.100

0.027 0.010

10 8. damping, Silva (1996) soft rock 0-20 ft

0.000100 0.000316 0.001000 0.003160 0.010000 0.031600 0.100000 0.316000

1.000000 3.000000

3.300 3.300 3.800 4.900 7.800 12.250 19.000 24.750

29.500 33.500

10 9. G/Gmax, Silva (1996) soft rock 20+ ft

0.000100 0.000316 0.001000 0.003160 0.010000 0.031600 0.100000 0.316000

1.000000 3.000000

1.000 1.000 1.000 1.000 0.950 0.825 0.575 0.340

0.145 0.030

10 9. damping, Silva (1996) soft rock 20+ ft

0.000100 0.000316 0.001000 0.003160 0.010000 0.031600 0.100000 0.316000

1.000000 3.000000

3.100 3.100 3.100 3.250 4.100 5.900 10.000 15.300

22.250 28.400

8 10. SHEAR MODULUS RATIO OF ROCK (Idriss)

.0001 .0003 .001 .003 .01 .03 .1 1.0

1.0 1.0 .9875 .9525 .9000 .8100 .7250 .5500

5 10. DAMPING RATIO OF ROCK (Idriss)

.0001 .001 .01 .1 1.0

.40 .80 1.5 3.0 4.6

10 1 2 3 4 5 6 7 8 9 10

OPTION 2 -- SOIL PROFILE

2

1 96 APR1400 - Profile 2

1 2 5.0 0.02 0.125 1020.0

2 2 5.0 0.02 0.125 1039.8

3 2 5.0 0.02 0.125 1059.6

4 2 5.0 0.02 0.125 1079.2

5 3 5.0 0.02 0.125 1098.8

6 3 5.0 0.02 0.125 1118.2

7 3 5.0 0.02 0.125 1137.6

8 3 5.0 0.02 0.125 1156.8

9 3 5.0 0.02 0.125 1176.0

10 3 5.0 0.02 0.125 1195.0

11 4 5.0 0.02 0.125 1214.0

12 4 5.0 0.02 0.125 1232.8

13 4 5.0 0.02 0.125 1251.6

14	4	5.0	0.02	0.125	1270.2
15	4	5.0	0.02	0.125	1288.8
16	4	5.0	0.02	0.125	1307.2
17	4	5.0	0.02	0.125	1325.6
18	4	5.0	0.02	0.125	1343.8
19	4	5.0	0.02	0.125	1362.0
20	4	5.0	0.02	0.125	1380.0
21	4	5.0	0.02	0.130	2198.0
22	4	5.0	0.02	0.130	2215.8
23	4	5.0	0.02	0.130	2233.6
24	4	5.0	0.02	0.130	2251.2
25	5	5.0	0.02	0.130	2268.8
26	5	5.0	0.02	0.130	2286.2
27	5	5.0	0.02	0.130	2303.6
28	5	5.0	0.02	0.130	2320.8
29	5	5.0	0.02	0.130	2338.0
30	5	5.0	0.02	0.130	2355.0
31	5	5.0	0.02	0.130	2372.0
32	5	5.0	0.02	0.130	2388.8
33	5	5.0	0.02	0.130	2405.6
34	5	5.0	0.02	0.130	2422.2
35	5	5.0	0.02	0.130	2438.8
36	5	5.0	0.02	0.130	2455.2
37	5	5.0	0.02	0.130	2471.6
38	5	5.0	0.02	0.130	2487.8
39	5	5.0	0.02	0.130	2504.0
40	5	5.0	0.02	0.130	2520.0
41	9	10.0	0.02	0.135	4243.9
42	9	10.0	0.02	0.135	4275.4

43	9	10.0	0.02	0.135	4306.5
44	9	10.0	0.02	0.135	4337.2
45	9	10.0	0.02	0.135	4367.5
46	9	10.0	0.02	0.135	4397.4
47	9	10.0	0.02	0.135	4426.9
48	9	10.0	0.02	0.135	4456.0
49	9	10.0	0.02	0.135	4484.7
50	9	10.0	0.02	0.135	4513.0
51	9	10.0	0.02	0.135	4540.9
52	9	10.0	0.02	0.135	4568.4
53	9	10.0	0.02	0.135	4595.5
54	9	10.0	0.02	0.135	4622.2
55	9	10.0	0.02	0.135	4648.5
56	9	10.0	0.02	0.135	4674.4
57	9	10.0	0.02	0.135	4699.9
58	9	10.0	0.02	0.135	4725.0
59	9	10.0	0.02	0.135	4749.7
60	9	10.0	0.02	0.135	4774.0
61	9	10.0	0.02	0.135	4797.9
62	9	10.0	0.02	0.135	4821.4
63	9	10.0	0.02	0.135	4844.5
64	9	10.0	0.02	0.135	4867.2
65	9	10.0	0.02	0.135	4889.5
66	9	10.0	0.02	0.135	4911.4
67	9	10.0	0.02	0.135	4932.9
68	9	10.0	0.02	0.135	4954.0
69	9	10.0	0.02	0.135	4974.7
70	9	10.0	0.02	0.135	4995.0
71	10	20.0	0.02	0.145	7024.7

72	10	20.0	0.02	0.145	7062.9
73	10	20.0	0.02	0.145	7099.5
74	10	20.0	0.02	0.145	7134.5
75	10	20.0	0.02	0.145	7167.9
76	10	20.0	0.02	0.145	7199.7
77	10	20.0	0.02	0.145	7229.9
78	10	20.0	0.02	0.145	7258.5
79	10	20.0	0.02	0.145	7285.5
80	10	20.0	0.02	0.145	7310.9
81	10	20.0	0.02	0.145	7334.7
82	10	20.0	0.02	0.145	7356.9
83	10	20.0	0.02	0.145	7377.5
84	10	20.0	0.02	0.145	7396.5
85	10	20.0	0.02	0.145	7413.9
86	10	20.0	0.02	0.145	7429.7
87	10	20.0	0.02	0.145	7443.9
88	10	20.0	0.02	0.145	7456.5
89	10	20.0	0.02	0.145	7467.5
90	10	20.0	0.02	0.145	7476.9
91	10	20.0	0.02	0.145	7484.7
92	10	20.0	0.02	0.145	7490.9
93	10	20.0	0.02	0.145	7495.5
94	10	20.0	0.02	0.145	7498.5
95	10	20.0	0.02	0.145	7499.9
96			0.004	0.155	9200.0