Set-up / Unit Wt.

JR / JTP
8/20/10

Ameren UE - CCP Fly Ash Study
Lakadie Blend

5000 gal

46% Fly 2/2/09 collect
20% Btm 2/2/09 "
34% D.C. "Dry" Gypsum 6/10-7/10 collect

27½% ⇒ 9:33 = 0 min ⇒ Wet, Shiney, Slurry, Soft,
137.5 9:38 = 5 min ⇒ dull appearance, becoming warm imprintable w/ finger, water surface during imprint, (Silt like), cementing
9:43 = 10 min ⇒ hard, very slightly imprintable dull, slightly warm

22½% ⇒ 9:46 = 0 min ⇒ Wet, Shiney surface, pudding texture
112.5 9:51 5 min ⇒ dull, hard, very slight imprint, Slightly warm
9:56 10 min ⇒ Same, non-imprintable

17½% ⇒ 10:12 0 min ⇒ Wetted powder, dull, wet clumps or balls, ~~soft powder~~ soft bread like texture, imprintable, trace dry particles
87.5 10:17 5 min ⇒ Slightly imprintable, rest Same Slightly warm

10:22 10 min ⇒ non-imprintable, rest Same

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Project: Ameren UE – CCP Ash Study Date: 08/25/2010
R&J Personnel: James R. David / Jason J. Pruett R&J No.: 2008012455

Ameren UE – CCP Ash Study Set-up Time and Dry Unit Weight

Dry Sample Components: **Testing Date:** 8/19/2010
30% Labadie Fly Ash + 25% Labadie Bottom Ash
+ 45% Duck Creek "Pre-pumped" Gypsum

Dry Components: 500 grams **Water Added to Dry Components:** 137.5 grams
Percent Moisture (by weight): 27.5%

After thoroughly mixing at 0 min: wet, shiny, slurry, soft

5 min set time: dull, tacky surface, imprintable, moisture to surface during imprint, "silt like"

10 min set time: dull, cemented, not imprintable,

Dry Unit Weight: 95 pcf

Dry Components: 500 grams **Water Added to Dry Components:** 112.5 grams
Percent Moisture (by weight): 22.5%

After thoroughly mixing at 0 min: wet, satin appearance, paste

5 min set time: slightly warm, slightly imprintable, dull, stiff to firm

10 min set time: dull, hard, not imprintable, cemented, slightly warm

Dry Unit Weight: 94 pcf

Ameren UE – CCP Ash Study Set-up Time and Dry Unit Weight

Dry Sample Components: **Testing Date:** 8/19/2010
30% Labadie Fly Ash + 25% Labadie Bottom Ash
+ 45% Duck Creek "Pre-pumped" Gypsum

Dry Components: 500 grams **Water Added to Dry Components:** 87.5 grams
Percent Moisture (by weight): 17.5%

After thoroughly mixing at 0 min: wet powder, small clumps, dull, imprintable, slightly warm, lightly tamped flat

5 min set time: firm, slightly imprintable, slightly warm, dull in appearance

10 min set time: not imprintable, dull, cemented, slightly warm

Dry Unit Weight: 93 pcf

Figure B-25

Reitz & Jens, Inc.

RELATIVE DENSITY TEST

(Minimum & Maximum Density Determinations)

Job Ameren UE - CCP Ash Study

Boring No. Labadie Blend

Depth 30% Fly + 25% Btm + 45% D.C. "dry" Gyp.

Sample No. _____

Mold Vol. .0253 (cu. ft.) (Vm)

Mold End Area .05106 (sq. ft.) (Am)

Lab Test by JR2 Date 8/25/10

Computed by _____ Date ___

Checked by _____ Date ___

Mold No. _____

Mold Diam. _____ (in)

Mold Wt. _____ (lb.)

$$\text{Relative Density} = \frac{\gamma' \text{max.} \left(\gamma' \text{field} - \gamma' \text{min.}\right)}{\gamma' \text{field} \left(\gamma' \text{max.} - \gamma' \text{min.}\right)} \times 100$$

MINIMUM DENSITY						
Trial No.			27½%		22½%	
Weight	Tare + Soil Dry	W				
	Tare	W				
Lb.	Soil Dry	W s	500.0g	1.1023 lb	500.0g	1.1023
Min. Dry Density pcf.		γ d				
Min. Dry Density Average pcf						
MAXIMUM DENSITY						
Method Used						
Trial No.						
Height Inches	~~Initial Dial Reading~~	h o	3.2495		3.1945	
	~~Left Dial Reading~~	h l	3.2130		3.1405	
	~~Right Dial Reading~~	h r	3.1620		3.1460	
	~~Sum~~	h l + h r	3.2165		3.2775	
	~~Average Dial Reading~~	h a		3.21025		3.17796
	Height Change	Δ h				
Volume cu. ft.	Mold Initial Volume	V m		.0253		.0253
	Volume Change *	Δ V		.01366		.01353
	Volume of Soil	V s		.011164		.01177
Weight Lb.	Tare + Soil Dry	W				
	Tare	W m				
	Soil Dry	W s				
Max. Dry Density pcf.		γ d				
Max. Dry Density Average pcf.				94.70		93.65

$$^{*}\Delta V = \frac{\Delta h \times A m}{12}$$

Sample Description & Remarks _____

Figure B-25

Reitz & Jens, Inc.

RELATIVE DENSITY TEST

(Minimum & Maximum Density Determinations)

Job _____ Lab Test by _____ Date ____

Boring No. _____ Computed by _____ Date ____

Depth _____ Checked by _____ Date ____

Sample No. _____ Mold No. _____

Mold Vol. _____ (cu. ft.) (Vm) Mold Diam. _____ (in)

Mold End Area _____ (sq. ft.) (Am) Mold Wt. _____ (lb.)

$$\text{Relative Density} = \frac{\gamma' \text{max.} \ (\gamma' \text{field} - \gamma' \text{min.})}{\gamma' \text{field} \ (\gamma' \text{max.} - \gamma' \text{min.})} \times 100$$

MINIMUM DENSITY						
Trial No.			17	2	6	
Weight Lb.	Tare + Soil Dry	W				
	Tare	W	g			
	Soil Dry	W s	300.0g	1.1023		
Min. Dry Density pcf.		γ d				
Min. Dry Density Average pcf						
	MAXIMUM DENSITY					
Method Used						
Trial No.						
Height Inches	~~Initial Dial Reading~~	h o	3.0850			
	~~Left Dial Reading~~	h l	3.1735			
	~~Right Dial Reading~~	h r	3.1980			
	~~Sum~~	h l + h r	3.1370			
	~~Average Dial Reading~~	h a		3.14838		
	Height Change	Δ h				
Volume cu. ft.	Mold Initial Volume	V m		.0253		
	Volume Change *	Δ V		.013396		
	Volume of Soil	V s		.01190		
Weight Lb.	Tare + Soil Dry	W				
	Tare	W m				
	Soil Dry	W s				
Max. Dry Density pcf.		γ d				
Max. Dry Density Average pcf.				92.63		

$$* \Delta V = \frac{\Delta h \times A m}{12}$$

Sample Description & Remarks _____

Figure B-25

Set-Time / Unit #1

JRC + JJP
8/19/10

Ameren UE - CCP Ash Study

500g

Labadie Blend

30% Fly ash collect 8/2/09
25% Btm " "
45% D.C. "Dry" Gyp. collect 6/10-7/10

27½% ⇒ 137.9g H2O
3:35 0 min = wet, shiney, slurry,
3:40 5 min = dull, tacky surface, imprintable moisture to surface during imprint
3:45 10 min = cemented, non-imprint, dull

22½% ⇒ 112.5g H2O
3:50 0 min = wet, satin appearance, paste,
3:55 5 min = slightly warm, slight imprint, dull, firm to stiff
4:00 10 min = non-imprint, dull, hard cemented, slightly warm

17½% ⇒ 87.5g H2O
4:05 0 min = wet powder, small clumps, dull imprintable, slightly warm
4:10 5 min = same, firm, slightly imprint
4:15 10 min = non-imprint, dull, cemented, slightly warm

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Project: Ameren UE – CCP Ash Study Date: 08/25/2010
R&J Personnel: James R. David / Jason J. Pruett R&J No.: 2008012455

Ameren UE – CCP Ash Study Set-up Time and Dry Unit Weight

Dry Sample Components:
36% Labadie Fly Ash
+ 64% Duck Creek "Pre-pumped" Gypsum

Testing Date: 8/19/2010

Dry Components: 500 grams
Water Added to Dry Components: 200 grams
Percent Moisture (by weight): 40%

After thoroughly mixing at 0 min: wet, shiny, liquid to thin slurry, warm

5 min set time: dull appearance, warm, very slightly imprintable

10 min set time: same as above

18 min set time: no longer imprintable, hard, warm

Dry Unit Weight: 82 pcf

Dry Components: 500 grams
Water Added to Dry Components: 175 grams
Percent Moisture (by weight): 35%

After thoroughly mixing at 0 min: wet, shiny appearance, slurry, warm

5 min set time: dull, very slightly imprintable, warm

10 min set time: dull, not imprintable, hard, cemented, warm

Dry Unit Weight: 89 pcf

Ameren UE – CCP Ash Study Set-up Time and Dry Unit Weight

Dry Sample Components:
36% Labadie Fly Ash
+ 64% Duck Creek "Pre-pumped" Gypsum

Testing Date: 8/19/2010

Dry Components: 500 grams
Water Added to Dry Components: 150 grams
Percent Moisture (by weight): 30%

After thoroughly mixing at 0 min: moist powder, large clumps, warm, easily imprinted, trace dry material

5 min set time: slightly imprintable, dull, warm, clumpy appearance

10 min set time: not imprintable, dull, warm, hard

Dry Unit Weight: 72 pcf

Figure B-26

Reitz & Jens, Inc.

RELATIVE DENSITY TEST

(Minimum & Maximum Density Determinations)

Job Ameren UE - CCP Ash Study

Boring No. Labadie Blend

Depth 30% Fly + 64% O.C. "Dry" Gyp

Sample No. _____

Mold Vol. .0253 (cu. ft.) (Vm)

Mold End Area .05106 (sq. ft.) (Am)

Lab Test by JRL Date 8/25/10

Computed by _____ Date ____

Checked by _____ Date ____

Mold No. _____

Mold Diam. _____ (in)

Mold Wt. _____ (lb.)

Relative Density = $\frac{\gamma' \text{max.} \ (\gamma' \text{field} - \gamma' \text{min.})}{\gamma' \text{field} \ (\gamma' \text{max.} - \gamma' \text{min.})} \times 100$

			MINIMUM DENSITY			
Trial No.			40%		35%	
Weight	Tare + Soil Dry	W				
	Tare	W				
Lb.	Soil Dry	W s	500.0g	1.10231#	500.0g	1.10231#
Min. Dry Density pcf.		γ d				
Min. Dry Density Average pcf						
			MAXIMUM DENSITY			
Method Used						
Trial No.						
Height Inches	~~Initial Dial Reading~~	h o	2.7410		3.0420	
	~~Left Dial Reading~~	h l	2.7410		3.0010	
	~~Right Dial Reading~~	h r	2.8010		3.0085	
	~~Sum~~	h l + h r	2.8290		3.0000	
	~~Average Dial Reading~~	h a		2.7780		3.0279
	Height Change	Δ h				
Volume cu. ft.	Mold Initial Volume	V m		.0253		.0253
	Volume Change *	Δ V		.01182		.01288
	Volume of Soil	V s		.01348		.01242
Weight Lb.	Tare + Soil Dry	W				
	Tare	W m				
	Soil Dry	W s				
Max. Dry Density pcf.		γ d				
Max. Dry Density Average pcf.				81.77		88.75

* $\Delta V = \frac{\Delta h \times A m}{12}$

Sample Description & Remarks _____

Figure B-26

Reitz & Jens, Inc.

RELATIVE DENSITY TEST

(Minimum & Maximum Density Determinations)

Job _____

Boring No. _____

Depth _____

Sample No. _____

Mold Vol. _____(cu. ft.) (Vm)

Mold End Area _____(sq. ft.) (Am)

Lab Test by _____Date ____

Computed by _____Date ____

Checked by _____Date ____

Mold No. _____

Mold Diam. _____(in)

Mold Wt. _____(lb.)

$$\text{Relative Density} = \frac{\gamma' \text{max.} \quad (\gamma' \text{field} - \gamma' \text{min.})}{\gamma' \text{field} \quad (\gamma' \text{max.} - \gamma' \text{min.})} \times 100$$

MINIMUM DENSITY						
Trial No.			30%			
Weight	Tare + Soil Dry	W				
	Tare	W				
Lb.	Soil Dry	W s	900.0g	1.1023 *		
Min. Dry Density pcf.		γ d				
Min. Dry Density Average pcf						
	MAXIMUM DENSITY					
Method Used						
Trial No.						
Height Inches	~~Initial Dial Reading~~	h o	2.3980			
	~~Left Dial Reading~~	h l	2.3470			
	~~Right Dial Reading~~	h r	2.5120			
	~~Sum~~	h l + h r	2.3530			
	~~Average Dial Reading~~	h a		2.3675		
	Height Change	Δ h				
Volume cu. ft.	Mold Initial Volume	V m		.0253		
	Volume Change *	Δ V		.01007		
	Volume of Soil	V s		.01523		
Weight Lb.	Tare + Soil Dry	W				
	Tare	W m				
	Soil Dry	W s				
Max. Dry Density pcf.		γ d				
Max. Dry Density Average pcf.			72.38			

$$* \Delta V = \frac{\Delta h \times A m}{12}$$

Sample Description & Remarks _____

Figure B-26

Set time / unit wt.

500g sample

Labadie Plant

JRe / JJP
8/19/10

36% Fly ash collect 9/2/10

+ 64% D.C. "dry" gypsum collect 6/10-7/10

2:52 40% M ⇒ 0_{min} = wet, shiney, liquid, warm
200g H_2O

2:57 5_{min} = dull, warm, very slightly imprintable

3:02 10 min = same

3:10 no longer imprintable, warm

3:08 35% M ⇒ 0 = wet, shiney, slurry, warm
175g H_2O

3:13 5 min = dull, V. Slight imprint, warm

3:18 10 min = dull, cemented, non-imprint, warm

3:20 30% ⇒ 0 = mixture has large clumps, warm, easily
150g H_2O imprinted by hand, not evenly mixed,
dry pockets (speed to high for a while)

3:25 5 min = Slightly imprintable, dull, warm,
clumpy appearance

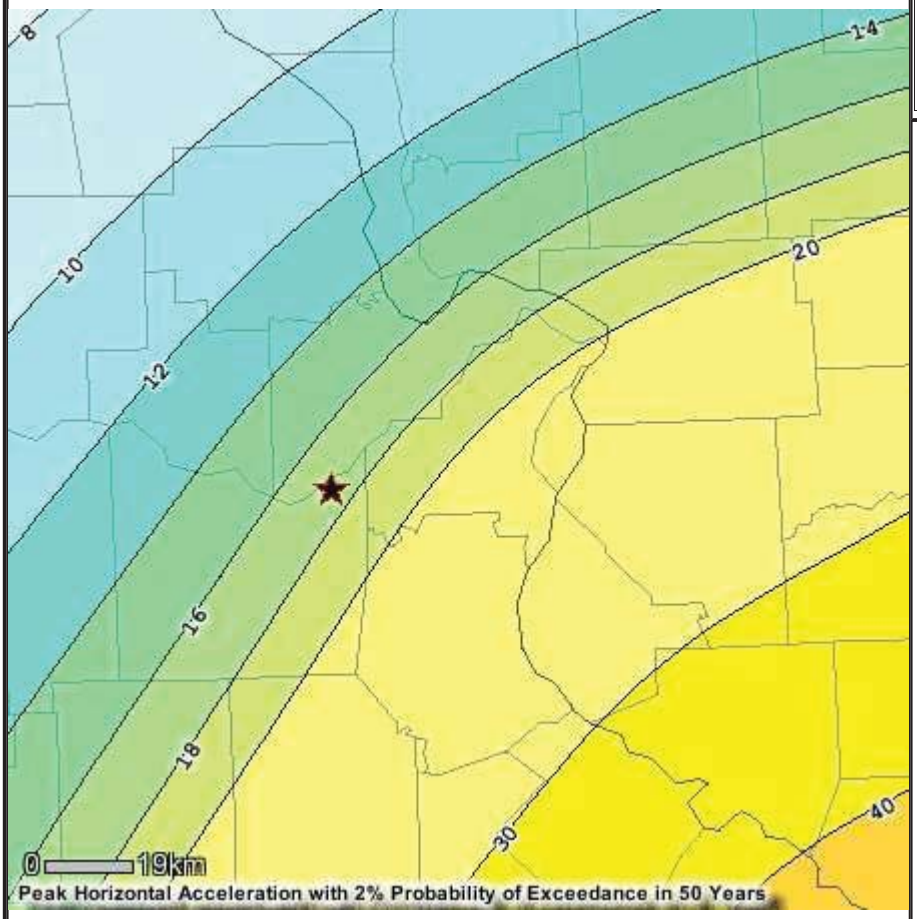
3:30 10 min = no longer imprintable, same

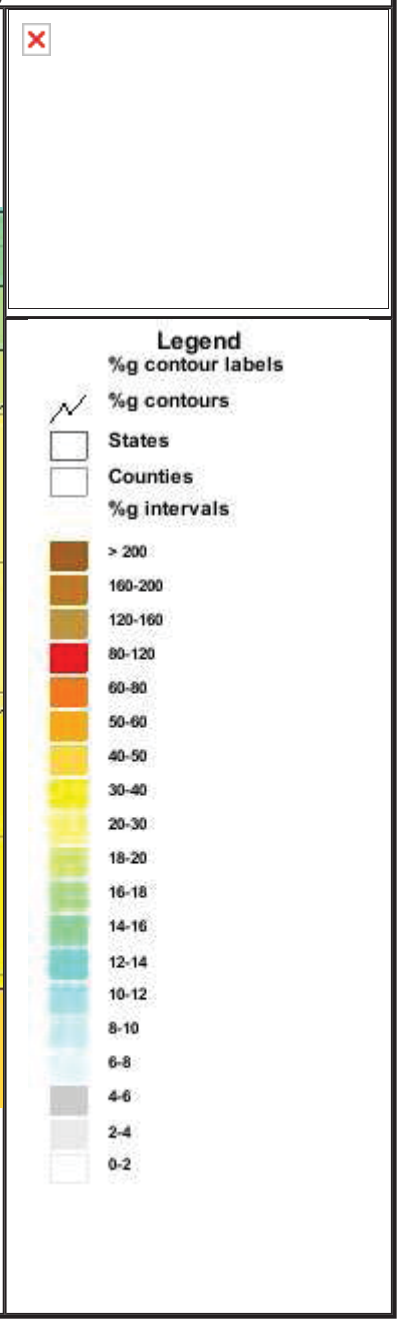
Appendix C

RESULTS OF SEISMIC RISK ANALYSES

APPENDIX C
SEISMIC ANALYSES
TABLE OF CONTENTS

USGS Seismic Hazard Maps: Labadie, MO

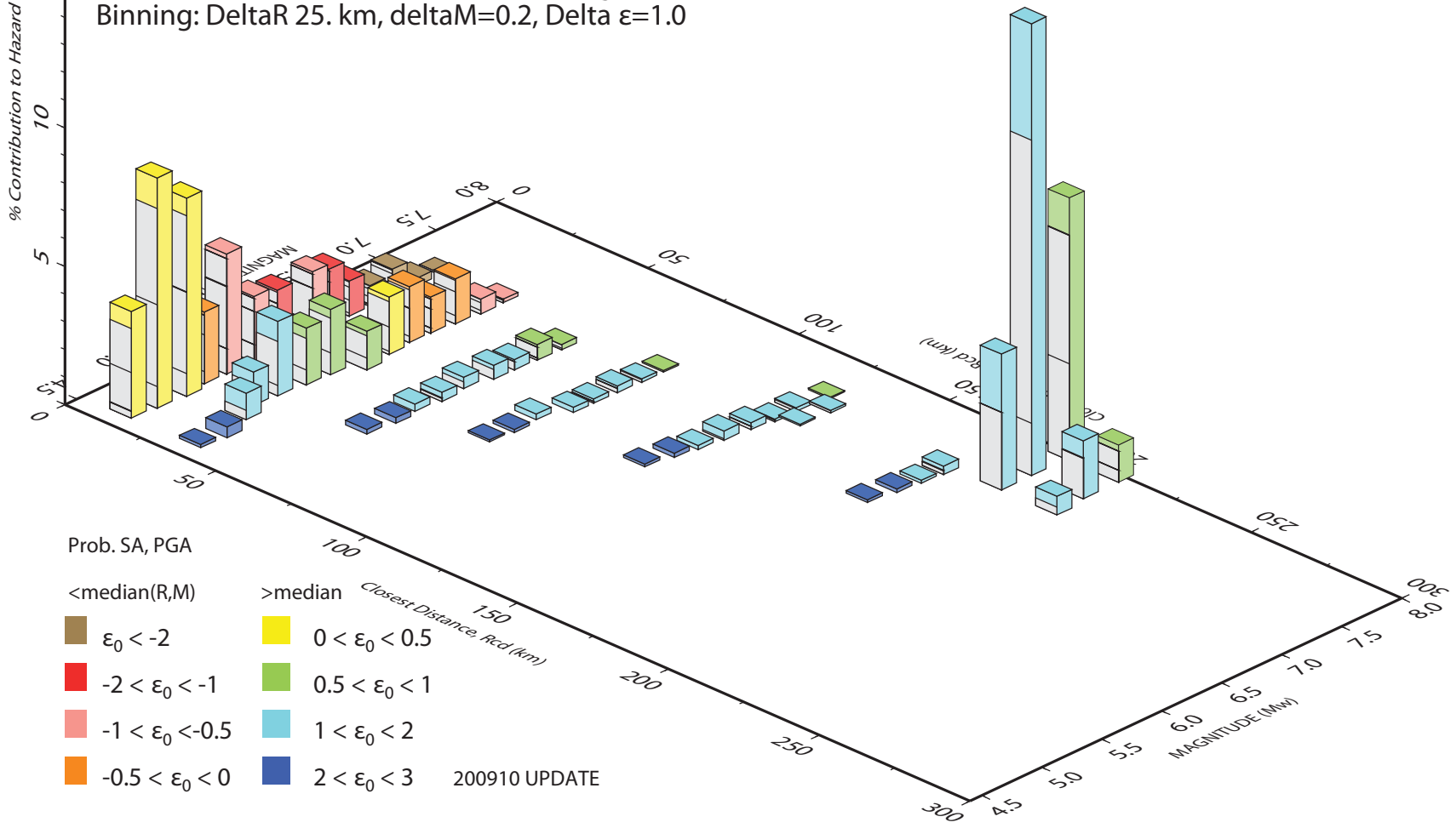




http://gldims.cr.usgs.gov/servlet/com.esri.esrimap.Esrimap?ServiceName=redirect&Form=Tr... 4/15/2011

PSH Deaggregation on NEHRP A rock
Saint_Louis 90.181° W, 38.622 N.

Peak Horiz. Ground Accel.>=0.1532 g
Ann. Exceedance Rate .404E-03. Mean Return Time 2475 years
Mean (R,M, ε_0) 85.0 km, 6.39, 0.40
Modal (R,M, ε_0) = 188.2 km, 7.70, 1.13 (from peak R,M bin)
Modal (R,M, ε^*) =188.0 km, 7.70, 1 to 2 sigma (from peak R,M, ε bin)
Binning: DeltaR 25. km, deltaM=0.2, Delta ε=1.0



GMT 2011 Apr 26 17:21:12 Distance (R), magnitude (M), epsilon (E0,E) deaggregation for a site on rock with average vs=2000. m/s top 30 m. USGS CGHT PSHA2008 UPDATE Bins with lt 0.05% contrib. omitted

PSH Deaggregation on NEHRP A rock

Labadie,_MO 90.821 ° W, 38.558 N.

Peak Horiz. Ground Accel.>=0.11108 g

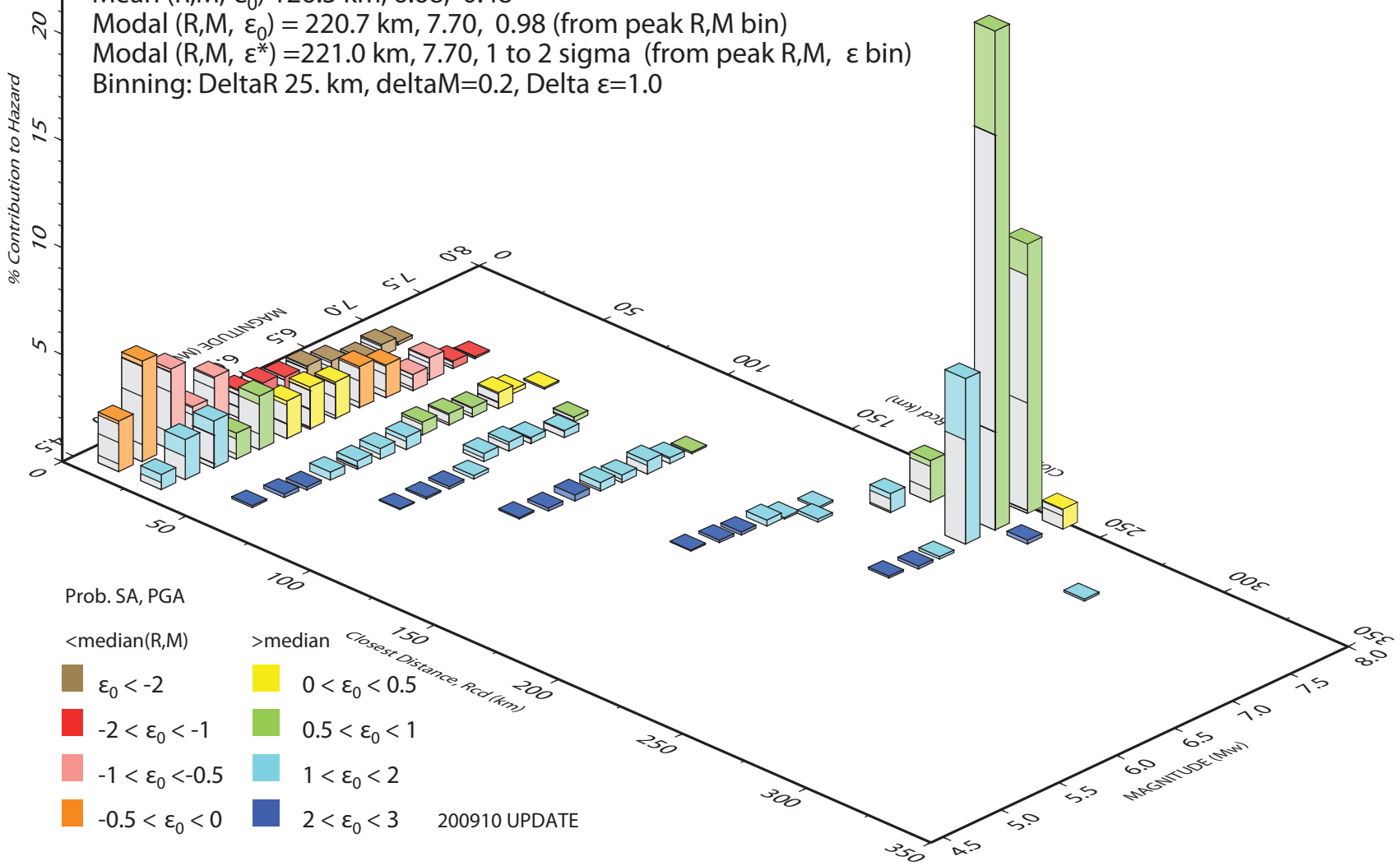
Ann. Exceedance Rate .404E-03. Mean Return Time 2475 years

Mean (R,M, ε_0) 126.3 km, 6.68, 0.48

Modal (R,M, ε_0) = 220.7 km, 7.70, 0.98 (from peak R,M bin)

Modal (R,M, ε^*) =221.0 km, 7.70, 1 to 2 sigma (from peak R,M, ε bin)

Binning: DeltaR 25. km, deltaM=0.2, Delta ε=1.0



GMT 2011 Apr 26 19:04:54 Distance (R), magnitude (M), epsilon (E0,E) deaggregation for a site on rock with average vs=2000. m/s top 30 m. USGS CGHT PSHA2008 UPDATE Bins with lt 0.05% contrib. omitted

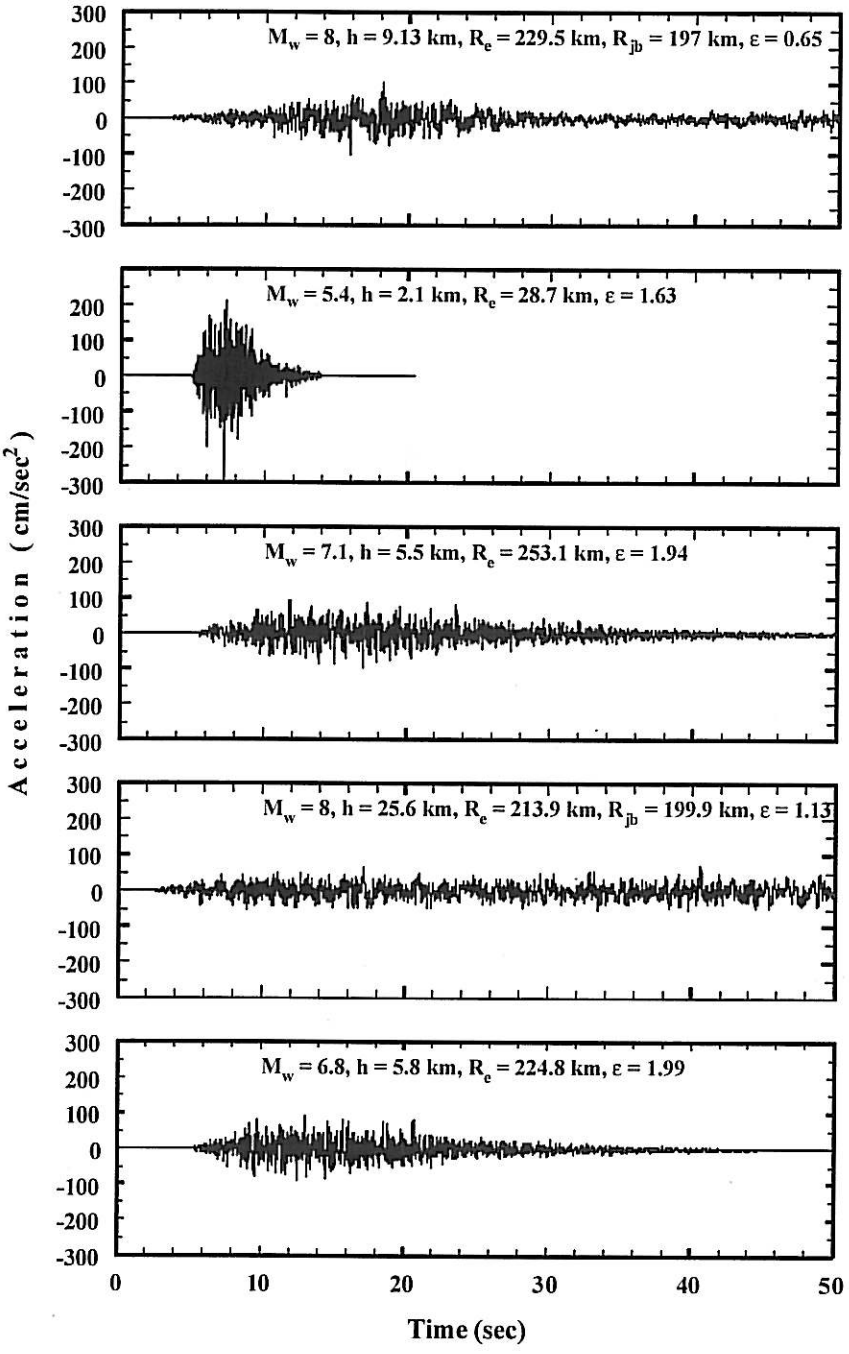


Figure 30. Suite of 2% in 50 years Ground Motions for Bedrock (Hard Rock), St. Louis, MO.

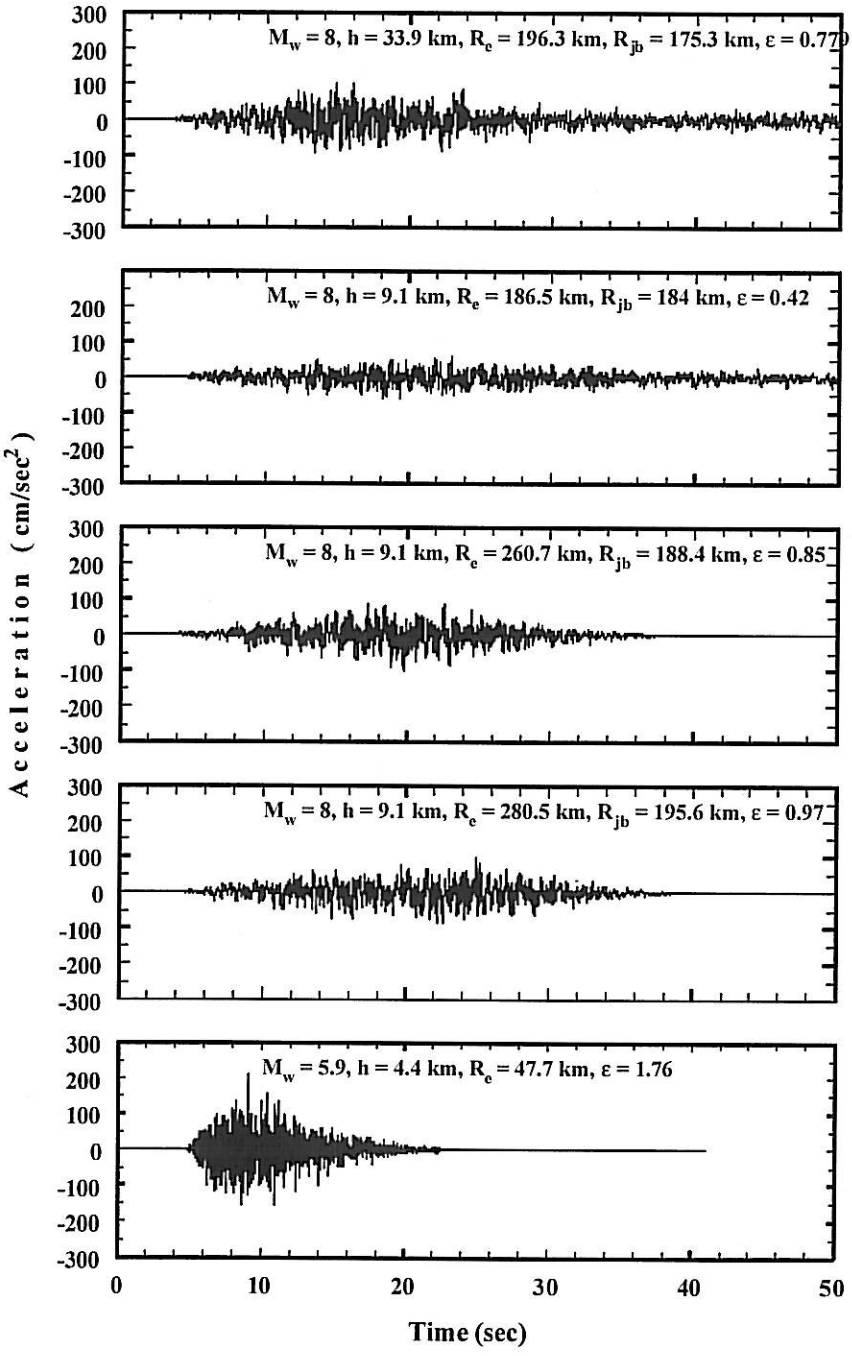


Figure 30 (continued).

Option 1 - Set No. 1 - Material No.: 1
G/Gmax - C3 (CLAY PI =20-40, Sun et al. 198)
Damping - Soil with PI=30, OCR=1-8 (Vucetic & Dobry, JGE 1/91)

Point No.	Shear Strain (%)	G/Gmax	Point No.	Shear Strain (%)	Dampin g Ratio (%)
1	.0001	1	1	.002	1.7
2	.001	.999	2	.003	2.1
3	.00316	.98	3	.004	2.5
4	.01	.92	4	.005	2.6
5	.0316	.78	5	.006	2.9
6	.1	.532	6	.008	3.3
7	.316	.293	7	.01	3.7
8	1	.137	8	.02	5.05
9	3.16	.075	9	.03	5.7
10	10	.025	10	.04	6.4
			11	.05	6.9
			12	.06	7.3
			13	.08	8.1
			14	.1	8.7
			15	.2	10.8
			16	.3	12.3
			17	.4	13.3
			18	.5	14.1
			19	.7	15.6
			20	1	16.9

Option 1 - Set No. 1 - Material No.: 2
G/Gmax - SAND, Average (Seed & Idriss 1970)
Damping for SAND, February 1971

Point No.	Shear Strain (%)	G/Gmax	Point No.	Shear Strain (%)	Dampin g Ratio (%)
1	.0001	1	1	.0001	1
2	.0003	.98	2	.001	1.6
3	.001	.95	3	.003	3.12
4	.003	.89	4	.01	5.8
5	.01	.73	5	.03	9.5
6	.03	.52	6	.1	15.4
7	.1	.29	7	.3	20.9
8	.3	.14	8	1	25
9	1	.06	9	10	30

Option 1 - Set No. 1 - Material No.: 3
G/Gmax - ROCK (Schnabel 1973)
Damping for ROCK (Schnabel 1973)

Point No.	Shear Strain (%)	G/Gmax	Point No.	Shear Strain (%)	Dampin g Ratio (%)
1	.0001	1	1	.0001	.4
2	.0003	1	2	.001	.8
3	.001	.99	3	.01	1.5
4	.003	.95	4	.1	3
5	.01	.9	5	1	4.6
6	.03	.81			
7	.1	.725			
8	1	.55			

Option 2 - Set No. 1
Option 2 -Soil Profile B/C-100
Soil Deposit No.: 1 - Soil Profile No. 2

Layer	Soil Type	Thickness (ft)	Shear Modulus (ksf)	Damping	Unit Weight (kcf)	Shear Wave Velocity (fps)
Layer	Soil Type	Thickness	Shear Modulus	Damping	Unit Weight	Shear Wave Velocity
		(ft)	(ksf)		(kcf)	(fps)
1	1	2.5	257	.05	.118	
2	2	2.5	715	.05	.108	
3	2	5	896	.05	.122	
4	2	5	1044	.05	.122	
5	2	5	1150	.05	.122	
6	2	5	1331	.05	.122	
7	2	5	1786	.05	.122	
8	2	5	1711	.05	.122	
9	2	5	1659	.05	.122	
10	2	5	1805	.05	.122	
11	2	5	2198	.05	.122	
12	2	5	2576	.05	.122	
13	2	10	2477	.05	.122	
14	2	10	2414	.05	.122	
15	2	10	2804	.05	.122	
16	2	10	3085	.05	.122	
17	2	10	3439	.05	.122	
18	2	6	3378	.05	.122	
19	3			.02	.145	2500

Option 3 - Set No. 1
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 8, h: 9.1 km, Re: 229.5
No. of acceleration values to be read for input motion: 15000
No. of values for use in Fourier Transform: 32768
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_01r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 2
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 5.4, h: 2.1 km, Re: 28.7
No. of acceleration values to be read for input motion: 2048
No. of values for use in Fourier Transform: 4096
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_02r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 3
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 7.1, h: 5.5 km, Re: 253.
No. of acceleration values to be read for input motion: 8192
No. of values for use in Fourier Transform: 16384
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_03r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25

Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 4
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 8, h: 25.6 km, Re: 213.9
No. of acceleration values to be read for input motion: 15000
No. of values for use in Fourier Transform: 32768
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_04r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 5
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 6.8, h: 5.8 km, Re: 224.
No. of acceleration values to be read for input motion: 8192
No. of values for use in Fourier Transform: 16384
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_05r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 6
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 8, h: 33.9 km, Re: 196.3
No. of acceleration values to be read for input motion: 15000
No. of values for use in Fourier Transform: 32768
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_06r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 7
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 8, h: 9.1 km, Re: 186.5
No. of acceleration values to be read for input motion: 15000
No. of values for use in Fourier Transform: 32768
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_07r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 8
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 8, h: 9.1 km, Re: 260.7
No. of acceleration values to be read for input motion: 15000

No. of values for use in Fourier Transform: 32768
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_08r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 9
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 8, h: 9.1 km, Re: 280.5
No. of acceleration values to be read for input motion: 15000
No. of values for use in Fourier Transform: 32768
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_09r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 10
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 5.9, h: 4.4 km, Re: 47.7
No. of acceleration values to be read for input motion: 4096
No. of values for use in Fourier Transform: 8192
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_10r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 4 - Set No. 1
Option 4 - Input Motion at Layer 19 - Outcrop
No. of sublayer at the top of which the object motion is assigned: 19
Object motion is assigned as outcrop motion.

Option 5 - Set No. 1
Option 5 - Number of Iterations & Strain Ratio Set No. 2
Strain-compatible soil properties are not saved after the final iteration.
Number of Iterations: 10
Ratio of equivalent uniform strain divided by maximum strain: .65

Option 6 - Set No. 1
Option 6 - Soil Profile No. 2 - Layers 1 to 15

Layer	Type	Maximum Acceleration	Time History of Acceleration
1	Outcrop	x	x
2	Within	x	
3	Within	x	
4	Within	x	
5	Within	x	
6	Within	x	

Layer	Type	Maximum Acceleration	Time History of Acceleration
7	Within	x	
8	Within	x	
9	Within	x	
10	Within	x	
11	Within	x	
12	Within	x	
13	Within	x	
14	Within	x	
15	Within	x	

Option 6 - Set No. 2
Option 6 - Soil Profile No. 2 - Layers 16 to 19

Layer	Type	Maximum Acceleration	Time History of Acceleration
16	Within	x	
17	Within	x	
18	Within	x	
19	Within	x	x

Option 1 - Set No. 1 - Material No.: 1
G/Gmax - C3 (CLAY PI =20-40, Sun et al. 198)
Damping - Soil with PI=30, OCR=1-8 (Vucetic & Dobry, JGE 1/91)

Point No.	Shear Strain (%)	G/Gmax	Point No.	Shear Strain (%)	Damping Ratio (%)
1	.0001	1	1	.002	1.7
2	.001	.999	2	.003	2.1
3	.00316	.98	3	.004	2.5
4	.01	.92	4	.005	2.6
5	.0316	.78	5	.006	2.9
6	.1	.532	6	.008	3.3
7	.316	.293	7	.01	3.7
8	1	.137	8	.02	5.05
9	3.16	.075	9	.03	5.7
10	10	.025	10	.04	6.4
			11	.05	6.9
			12	.06	7.3
			13	.08	8.1
			14	.1	8.7
			15	.2	10.8
			16	.3	12.3
			17	.4	13.3
			18	.5	14.1
			19	.7	15.6
			20	1	16.9

Option 1 - Set No. 1 - Material No.: 2
G/Gmax - SAND, Average (Seed & Idriss 1970)
Damping for SAND, February 1971

Point No.	Shear Strain (%)	G/Gmax	Point No.	Shear Strain (%)	Damping Ratio (%)
1	.0001	1	1	.0001	1
2	.0003	.98	2	.001	1.6
3	.001	.95	3	.003	3.12
4	.003	.89	4	.01	5.8
5	.01	.73	5	.03	9.5
6	.03	.52	6	.1	15.4
7	.1	.29	7	.3	20.9
8	.3	.14	8	1	25
9	1	.06	9	10	30

Option 1 - Set No. 1 - Material No.: 3
G/Gmax - ROCK (Schnabel 1973)
Damping for ROCK (Schnabel 1973)

Point No.	Shear Strain (%)	G/Gmax	Point No.	Shear Strain (%)	Damping Ratio (%)
1	.0001	1	1	.0001	.4
2	.0003	1	2	.001	.8
3	.001	.99	3	.01	1.5
4	.003	.95	4	.1	3
5	.01	.9	5	1	4.6
6	.03	.81			
7	.1	.725			
8	1	.55			

Option 2 - Set No. 1
Option 2 -Soil Profile B/C-100 w Ash
Soil Deposit No.: 1 - Soil Profile No. 2

Layer	Soil Type	Thickness (ft)	Shear Modulus (ksf)	Damping	Unit Weight (kcf)	Shear Wave Velocity (fps)
Layer	Soil Type	Thickness	Shear Modulus	Damping	Unit Weight	Shear Wave Velocity
		(ft)	(ksf)		(kcf)	(fps)
1	2	10	827	.05	.09	
2	2	10	1170	.05	.09	
3	2	10	1433	.05	.09	
4	2	10	1655	.05	.09	
5	2	10	1850	.05	.09	
6	2	10	2027	.05	.09	
7	2	10	2189	.05	.09	
8	2	10	2341	.05	.09	
9	2	10	2483	.05	.09	
10	2	10	2617	.05	.09	
11	1	2.5	257	.05	.118	
12	2	2.5	715	.05	.108	
13	2	5	896	.05	.122	
14	2	5	1044	.05	.122	
15	2	5	1150	.05	.122	
16	2	5	1331	.05	.122	
17	2	5	1786	.05	.122	
18	2	5	1711	.05	.122	
19	2	5	1659	.05	.122	
20	2	5	1805	.05	.122	
21	2	5	2198	.05	.122	
22	2	5	2576	.05	.122	
23	2	10	2477	.05	.122	
24	2	10	2414	.05	.122	
25	2	10	2804	.05	.122	
26	2	10	3085	.05	.122	
27	2	10	3439	.05	.122	
28	2	6	3378	.05	.122	
29	3			.02	.145	2500

Option 3 - Set No. 1
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 8, h: 9.1 km, Re: 229.5
No. of acceleration values to be read for input motion: 15000
No. of values for use in Fourier Transform: 32768
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_01r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 2
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 5.4, h: 2.1 km, Re: 28.7
No. of acceleration values to be read for input motion: 2048
No. of values for use in Fourier Transform: 4096
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_02r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 3
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 7.1, h: 5.5 km, Re: 253.
No. of acceleration values to be read for input motion: 8192
No. of values for use in Fourier Transform: 16384
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_03r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 4
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 8, h: 25.6 km, Re: 213.9
No. of acceleration values to be read for input motion: 15000
No. of values for use in Fourier Transform: 32768
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_04r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 5
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 6.8, h: 5.8 km, Re: 224.
No. of acceleration values to be read for input motion: 8192
No. of values for use in Fourier Transform: 16384
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_05r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 6
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 8, h: 33.9 km, Re: 196.3
No. of acceleration values to be read for input motion: 15000
No. of values for use in Fourier Transform: 32768
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_06r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 7
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 8, h: 9.1 km, Re: 186.5
No. of acceleration values to be read for input motion: 15000
No. of values for use in Fourier Transform: 32768
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_07r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1

Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 8
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 8, h: 9.1 km, Re: 260.7
No. of acceleration values to be read for input motion: 15000
No. of values for use in Fourier Transform: 32768
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_08r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 9
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 8, h: 9.1 km, Re: 280.5
No. of acceleration values to be read for input motion: 15000
No. of values for use in Fourier Transform: 32768
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_09r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 10
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 5.9, h: 4.4 km, Re: 47.7
No. of acceleration values to be read for input motion: 4096
No. of values for use in Fourier Transform: 8192
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_10r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 4 - Set No. 1
Option 4 - Input Motion at Layer 29 - Outcrop
No. of sublayer at the top of which the object motion is assigned: 29
Object motion is assigned as outcrop motion.

Option 5 - Set No. 1
Option 5 - Number of Iterations & Strain Ratio Set No. 2
Strain-compatible soil properties are not saved after the final iteration.
Number of Iterations: 10
Ratio of equivalent uniform strain divided by maximum strain: .65

Option 6 - Set No. 1

Option 6 - Soil Profile No. 2 - Layers 1 to 15

Layer	Type	Maximum Acceleration	Time History of Acceleration
1	Outcrop	x	x
2	Within	x	
3	Within	x	
4	Within	x	
5	Within	x	
6	Within	x	
7	Within	x	
8	Within	x	
9	Within	x	
10	Within	x	
11	Within	x	x
12	Within	x	
13	Within	x	
14	Within	x	
15	Within	x	

Option 6 - Set No. 2
Option 6 - Soil Profile No. 2 - Layers 16 to 29

Layer	Type	Maximum Acceleration	Time History of Acceleration
16	Within	x	
17	Within	x	
18	Within	x	
19	Within	x	
20	Within	x	
21	Within	x	
22	Within	x	
23	Within	x	
24	Within	x	
25	Within	x	
26	Within	x	
27	Within	x	
28	Within	x	
29	Within	x	

Option 1 - Set No. 1 - Material No.: 1
G/Gmax - C3 (CLAY PI =20-40, Sun et al. 198)
Damping - Soil with PI=30, OCR=1-8 (Vucetic & Dobry, JGE 1/91)

Point No.	Shear Strain (%)	G/Gmax	Point No.	Shear Strain (%)	Damping Ratio (%)
1	.0001	1	1	.002	1.7
2	.001	.999	2	.003	2.1
3	.00316	.98	3	.004	2.5
4	.01	.92	4	.005	2.6
5	.0316	.78	5	.006	2.9
6	.1	.532	6	.008	3.3
7	.316	.293	7	.01	3.7
8	1	.137	8	.02	5.05
9	3.16	.075	9	.03	5.7
10	10	.025	10	.04	6.4
			11	.05	6.9
			12	.06	7.3
			13	.08	8.1
			14	.1	8.7
			15	.2	10.8
			16	.3	12.3
			17	.4	13.3
			18	.5	14.1
			19	.7	15.6
			20	1	16.9

Option 1 - Set No. 1 - Material No.: 2
G/Gmax - SAND, Average (Seed & Idriss 1970)
Damping for SAND, February 1971

Point No.	Shear Strain (%)	G/Gmax	Point No.	Shear Strain (%)	Damping Ratio (%)
1	.0001	1	1	.0001	1
2	.0003	.98	2	.001	1.6
3	.001	.95	3	.003	3.12
4	.003	.89	4	.01	5.8
5	.01	.73	5	.03	9.5
6	.03	.52	6	.1	15.4
7	.1	.29	7	.3	20.9
8	.3	.14	8	1	25
9	1	.06	9	10	30

Option 1 - Set No. 1 - Material No.: 3
G/Gmax - ROCK (Schnabel 1973)
Damping for ROCK (Schnabel 1973)

Point No.	Shear Strain (%)	G/Gmax	Point No.	Shear Strain (%)	Damping Ratio (%)
1	.0001	1	1	.0001	.4
2	.0003	1	2	.001	.8
3	.001	.99	3	.01	1.5
4	.003	.95	4	.1	3
5	.01	.9	5	1	4.6
6	.03	.81			
7	.1	.725			
8	1	.55			

Option 1 - Set No. 1 - Material No.: 4
G/Gmax - C2 (CLAY PI =10-20, Sun et al. 198)
Damping - Soil with PI=15, OCR=1-8 (Vucetic & Dobry, JGE 1/91)

Point No.	Shear Strain (%)	G/Gmax	Point No.	Shear Strain (%)	Damping Ratio (%)
Point No.	Shear Strain (%)	G/Gmax	Point No.	Shear Strain (%)	Damping Ratio (%)
1	.0001	1	1	.003	2.5
2	.001	.997	2	.004	2.8
3	.00316	.974	3	.005	3.2
4	.01	.881	4	.006	3.5
5	.0316	.674	5	.008	4.1
6	.1	.425	6	.01	4.5
7	.316	.22	7	.02	6.4
8	1	.076	8	.03	7.6
9	3.16	.03	9	.04	8.4
10	10	.01	10	.05	9.2
			11	.07	10.3
			12	.1	11.5
			13	.2	14.3
			14	.3	15.9
			15	.4	17
			16	.5	17.6
			17	.6	18.3
			18	.7	18.8
			19	.8	19.3
			20	1	19.9

Option 2 - Set No. 1
Option 2 -Soil Profile B/C-100 w 24ft berm
Soil Deposit No.: 1 - Soil Profile No. 2

Layer	Soil Type	Thickness (ft)	Shear Modulus (ksf)	Damping	Unit Weight (kcf)	Shear Wave Velocity (fps)
1	4	1.5	2000	.05	.12	
2	4	2.5	2000	.05	.12	
3	4	2.5	2000	.05	.12	
4	4	2.5	2000	.05	.12	
5	4	2.5	2000	.05	.12	
6	4	2.5	2000	.05	.12	
7	4	2.5	2000	.05	.12	
8	4	2.5	2000	.05	.12	
9	4	2.5	2000	.05	.12	
10	4	2.5	2000	.05	.12	
11	1	2.5	257	.05	.118	
12	2	2.5	715	.05	.108	
13	2	5	896	.05	.122	
14	2	5	1044	.05	.122	
15	2	5	1150	.05	.122	
16	2	5	1331	.05	.122	
17	2	5	1786	.05	.122	
18	2	5	1711	.05	.122	
19	2	5	1659	.05	.122	
20	2	5	1805	.05	.122	
21	2	5	2198	.05	.122	
22	2	5	2576	.05	.122	
23	2	10	2477	.05	.122	
24	2	10	2414	.05	.122	
25	2	10	2804	.05	.122	
26	2	10	3085	.05	.122	
27	2	10	3439	.05	.122	
28	2	6	3378	.05	.122	
29	3			.02	.145	2500

Option 3 - Set No. 1

Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 8, h: 9.1 km, Re: 229.5
No. of acceleration values to be read for input motion: 15000
No. of values for use in Fourier Transform: 32768
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_01r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 2
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 5.4, h: 2.1 km, Re: 28.7
No. of acceleration values to be read for input motion: 2048
No. of values for use in Fourier Transform: 4096
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_02r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 3
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 7.1, h: 5.5 km, Re: 253.
No. of acceleration values to be read for input motion: 8192
No. of values for use in Fourier Transform: 16384
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_03r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 4
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 8, h: 25.6 km, Re: 213.9
No. of acceleration values to be read for input motion: 15000
No. of values for use in Fourier Transform: 32768
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_04r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 5
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 6.8, h: 5.8 km, Re: 224.
No. of acceleration values to be read for input motion: 8192
No. of values for use in Fourier Transform: 16384
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_05r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----

Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 6
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 8, h: 33.9 km, Re: 196.3
No. of acceleration values to be read for input motion: 15000
No. of values for use in Fourier Transform: 32768
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_06r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 7
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 8, h: 9.1 km, Re: 186.5
No. of acceleration values to be read for input motion: 15000
No. of values for use in Fourier Transform: 32768
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_07r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 8
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 8, h: 9.1 km, Re: 260.7
No. of acceleration values to be read for input motion: 15000
No. of values for use in Fourier Transform: 32768
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_08r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 9
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 8, h: 9.1 km, Re: 280.5
No. of acceleration values to be read for input motion: 15000
No. of values for use in Fourier Transform: 32768
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_09r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 3 - Set No. 10
Option 3 - St. Louis, MO; 2% in 50 years, Bedrock (Hard Rock); Mw: 5.9, h: 4.4 km, Re: 47.7

No. of acceleration values to be read for input motion: 4096
No. of values for use in Fourier Transform: 8192
Time interval between acceleration values (sec): .01
Name of file for input motion: c:\Program Files\GeoMotions\Quakes\SHAKE\Simulated\l02_10r.eq
Format for reading acceleration values: (8F9.6)
Multiplication factor for adjusting acceleration values: 1
Maximum acceleration to be used (g's): -----
Maximum frequency to be used in the analysis: 25
Number of header lines in object motion file: 4
Number of acceleration values per line in object motion file: 8

Option 4 - Set No. 1
Option 4 - Input Motion at Layer 29 - Outcrop
No. of sublayer at the top of which the object motion is assigned: 29
Object motion is assigned as outcrop motion.

Option 5 - Set No. 1
Option 5 - Number of Iterations & Strain Ratio Set No. 2
Strain-compatible soil properties are not saved after the final iteration.
Number of Iterations: 10
Ratio of equivalent uniform strain divided by maximum strain: .65

Option 6 - Set No. 1
Option 6 - Soil Profile No. 2 - Layers 1 to 15

Layer	Type	Maximum Acceleration	Time History of Acceleration
1	Outcrop	x	
2	Within	x	
3	Within	x	
4	Within	x	
5	Within	x	
6	Within	x	
7	Within	x	
8	Within	x	
9	Within	x	
10	Within	x	
11	Within	x	
12	Within	x	
13	Within	x	
14	Within	x	
15	Within	x	

Option 6 - Set No. 2
Option 6 - Soil Profile No. 2 - Layers 16 to 29

Layer	Type	Maximum Acceleration	Time History of Acceleration
16	Within	x	
17	Within	x	
18	Within	x	
19	Within	x	
20	Within	x	
21	Within	x	
22	Within	x	
23	Within	x	
24	Within	x	
25	Within	x	
26	Within	x	
27	Within	x	

Layer	Type	Maximum Acceleration	Time History of Acceleration
28	Within	x	
29	Within	x	

Soil Profile No. 2
Analysis No. 1 - Profile No. 1 - Soil Pro-TUJ352
C:\PROGRAM FILES\GEOMOTIONS\QUAKES\SHAKE\SIMULATED\L02_01R.EQ

Layer	Depth to Middle of Layer (ft)	Total Unit Weight (kcf)	Damping Used (%)	Shear Modulus (ksf)	Maximum Shear Strain (%)	Maximum Shear Stress (psf)	Shear Wave Velocity (fps)	Depth to Top of Layer (ft)	Peak Acceleration (g)	G/Gmax Curve	Damping Curve	Type of Motion
1	1.25	.118	2.9	243.5	.00906	22.06	257.7724	0	.14737	Clay PI=20	Soil PI=30	Outcrop
2	3.75	.108	5.2	547.4	.01177	64.42	403.988	2.5	.14498	Sand Avg.	Sand	Within
3	7.5	.122	6.9	596.4	.02154	128.48	396.7499	5	.14138	Sand Avg.	Sand	Within
4	12.5	.122	8.6	598.3	.03497	209.2	397.3814	10	.12519	Sand Avg.	Sand	Within
5	17.5	.122	9.4	601.6	.04541	273.19	398.4758	15	.10383	Sand Avg.	Sand	Within
6	22.5	.122	9.4	696.7	.04533	315.83	428.8159	20	.11127	Sand Avg.	Sand	Within
7	27.5	.122	8.4	1038.2	.03349	347.73	523.4661	25	.12279	Sand Avg.	Sand	Within
8	32.5	.122	9.2	915.6	.04264	390.44	491.5876	30	.12384	Sand Avg.	Sand	Within
9	37.5	.122	10.4	805	.05537	445.74	460.9417	35	.1215	Sand Avg.	Sand	Within
10	42.5	.122	10.7	854.1	.05898	503.74	474.7909	40	.11608	Sand Avg.	Sand	Within
11	47.5	.122	9.9	1106.6	.05033	556.97	540.4349	45	.10903	Sand Avg.	Sand	Within
12	52.5	.122	9.4	1357.4	.04451	604.14	598.5521	50	.109	Sand Avg.	Sand	Within
13	60	.122	10.4	1202.3	.05532	665.13	563.3191	55	.11236	Sand Avg.	Sand	Within
14	70	.122	11.4	1072.1	.06868	736.28	531.9437	65	.11131	Sand Avg.	Sand	Within
15	80	.122	11	1298.1	.06222	807.69	585.3318	75	.1056	Sand Avg.	Sand	Within
16	90	.122	10.7	1459.7	.05897	860.8	620.6973	85	.0944	Sand Avg.	Sand	Within
17	100	.122	10.1	1708.6	.0521	890.18	671.5344	95	.08462	Sand Avg.	Sand	Within
18	108	.122	10.3	1652.5	.05423	896.08	660.4178	105	.08484	Sand Avg.	Sand	Within
19	Base							111	.08729			Within

Notes:
Period for Soil Column: .84 sec
Average Shear Wave Velocity for Soil Column: 531 ft/sec

Soil Profile No. 2
Analysis No. 1 - Profile No. 1 - Soil Pro-TUJ352
C:\PROGRAM FILES\GEOMOTIONS\QUAKES\SHAKE\SIMULATED\L02_10R.EQ

Layer	Depth to Middle of Layer (ft)	Total Unit Weight (kcf)	Damping Used (%)	Shear Modulus (ksf)	Maximum Shear Strain (%)	Maximum Shear Stress (psf)	Shear Wave Velocity (fps)	Depth to Top of Layer (ft)	Peak Acceleration (g)	G/Gmax Curve	Damping Curve	Type of Motion
1	1.25	.118	3.2	240.4	.01145	27.53	256.1263	0	.18732	Clay PI=20	Soil PI=30	Outcrop
2	3.75	.108	5.5	534.9	.01342	71.81	399.3488	2.5	.14461	Sand Avg.	Sand	Within
3	7.5	.122	6.5	619.7	.0188	116.53	404.4257	5	.11592	Sand Avg.	Sand	Within
4	12.5	.122	7.1	686.5	.02247	154.27	425.6653	10	.11421	Sand Avg.	Sand	Within
5	17.5	.122	7.7	714.9	.02712	193.87	434.3809	15	.1151	Sand Avg.	Sand	Within
6	22.5	.122	7.8	819.8	.02794	229.06	465.1596	20	.10994	Sand Avg.	Sand	Within
7	27.5	.122	6.9	1188.1	.02159	256.5	559.9826	25	.11351	Sand Avg.	Sand	Within
8	32.5	.122	7.7	1068.4	.02672	285.52	531.025	30	.1199	Sand Avg.	Sand	Within
9	37.5	.122	8.299999	971	.0328	318.5	506.2414	35	.11349	Sand Avg.	Sand	Within
10	42.5	.122	8.299999	1064.9	.032	340.82	530.1545	40	.11594	Sand Avg.	Sand	Within
11	47.5	.122	7.6	1382.7	.02609	360.69	604.1044	45	.12018	Sand Avg.	Sand	Within
12	52.5	.122	7.1	1684.5	.02291	385.84	666.7815	50	.12776	Sand Avg.	Sand	Within
13	60	.122	7.8	1527.4	.02784	425.24	634.9279	55	.12436	Sand Avg.	Sand	Within
14	70	.122	8.1	1441.7	.03081	444.24	616.8584	65	.11424	Sand Avg.	Sand	Within
15	80	.122	7.900001	1717.6	.02844	488.48	673.3007	75	.1481	Sand Avg.	Sand	Within
16	90	.122	7.8	1897.8	.02806	532.42	707.7392	85	.16744	Sand Avg.	Sand	Within
17	100	.122	7.6	2153.3	.02649	570.36	753.8766	95	.17134	Sand Avg.	Sand	Within
18	108	.122	7.900001	2062.1	.02876	592.96	737.7393	105	.14743	Sand Avg.	Sand	Within
19	Base							111	.17222			Within

Notes:
Period for Soil Column: .75 sec
Average Shear Wave Velocity for Soil Column: 591 ft/sec

Soil Profile No. 2
Analysis No. 1 - Profile No. 1 - Soil Pro-TUJ352
C:\PROGRAM FILES\GEOMOTIONS\QUAKES\SHAKE\SIMULATED\L02_02R.EQ

Layer	Depth to Middle of Layer (ft)	Total Unit Weight (kcf)	Damping Used (%)	Shear Modulus (ksf)	Maximum Shear Strain (%)	Maximum Shear Stress (psf)	Shear Wave Velocity (fps)	Depth to Top of Layer (ft)	Peak Acceleration (g)	G/Gmax Curve	Damping Curve	Type of Motion
1	1.25	.118	3.6	237.1	.01468	34.8	254.3623	0	.23831	Clay PI=20	Soil PI=30	Outcrop
2	3.75	.108	6.2	504.7	.01745	88.06	387.9116	2.5	.18558	Sand Avg.	Sand	Within
3	7.5	.122	7.3	579.7	.02375	137.7	391.1557	5	.14486	Sand Avg.	Sand	Within
4	12.5	.122	7.7	649.2	.02709	175.88	413.9399	10	.12216	Sand Avg.	Sand	Within
5	17.5	.122	8.4	670.8	.03314	222.3	420.7698	15	.10335	Sand Avg.	Sand	Within
6	22.5	.122	8.4	777.2	.03303	256.72	452.9126	20	.13607	Sand Avg.	Sand	Within
7	27.5	.122	7.6	1117.2	.02657	296.83	543.0171	25	.12979	Sand Avg.	Sand	Within
8	32.5	.122	8.7	967.7	.03636	351.85	505.3804	30	.12849	Sand Avg.	Sand	Within
9	37.5	.122	9.3	881.6	.04348	383.33	482.3739	35	.11804	Sand Avg.	Sand	Within
10	42.5	.122	9.5	938.4	.04618	433.4	497.6707	40	.13242	Sand Avg.	Sand	Within
11	47.5	.122	8.900001	1217.1	.03869	470.88	566.7756	45	.16872	Sand Avg.	Sand	Within
12	52.5	.122	8.4	1506.1	.03291	495.6	630.4852	50	.18004	Sand Avg.	Sand	Within
13	60	.122	8.6	1421.3	.03483	495.03	612.4786	55	.16736	Sand Avg.	Sand	Within
14	70	.122	8.299999	1418	.03244	459.96	611.7672	65	.14145	Sand Avg.	Sand	Within
15	80	.122	7.3	1801.9	.0243	437.84	689.6256	75	.18078	Sand Avg.	Sand	Within
16	90	.122	7.2	2014	.02303	463.92	729.0843	85	.20159	Sand Avg.	Sand	Within
17	100	.122	7.6	2164.1	.02606	563.9	755.7648	95	.21307	Sand Avg.	Sand	Within
18	108	.122	8.1	2016.8	.03085	622.12	729.5909	105	.21864	Sand Avg.	Sand	Within
19	Base							111	.25238			Within

Notes:
Period for Soil Column: .76 sec
Average Shear Wave Velocity for Soil Column: 581 ft/sec

Soil Profile No. 2
Analysis No. 1 - Profile No. 1 - Soil Pro-TUJ352
C:\PROGRAM FILES\GEOMOTIONS\QUAKES\SHAKE\SIMULATED\L02_03R.EQ

Layer	Depth to Middle of Layer (ft)	Total Unit Weight (kcf)	Damping Used (%)	Shear Modulus (ksf)	Maximum Shear Strain (%)	Maximum Shear Stress (psf)	Shear Wave Velocity (fps)	Depth to Top of Layer (ft)	Peak Acceleration (g)	G/Gmax Curve	Damping Curve	Type of Motion
1	1.25	.118	3	242.4	.00983	23.82	257.1895	0	.16146	Clay PI=20	Soil PI=30	Outcrop
2	3.75	.108	5.3	541.5	.01252	67.8	401.805	2.5	.15403	Sand Avg.	Sand	Within
3	7.5	.122	7	592.9	.02199	130.36	395.584	5	.14471	Sand Avg.	Sand	Within
4	12.5	.122	8.4	610.9	.03282	200.5	401.5439	10	.11477	Sand Avg.	Sand	Within
5	17.5	.122	8.900001	634.1	.03917	248.37	409.0976	15	.09705	Sand Avg.	Sand	Within
6	22.5	.122	8.8	747.7	.0371	277.36	444.2339	20	.08879	Sand Avg.	Sand	Within
7	27.5	.122	7.7	1114.7	.02677	298.4	542.4092	25	.08965	Sand Avg.	Sand	Within
8	32.5	.122	8.1	1024.7	.03055	313.02	520.0515	30	.09197	Sand Avg.	Sand	Within
9	37.5	.122	8.4	963.2	.03362	323.81	504.204	35	.08884	Sand Avg.	Sand	Within
10	42.5	.122	8.1	1078.1	.0308	332.09	533.4301	40	.08065	Sand Avg.	Sand	Within
11	47.5	.122	7.3	1416.1	.02409	341.16	611.3571	45	.0739	Sand Avg.	Sand	Within
12	52.5	.122	7	1709.5	.02177	372.19	671.7112	50	.0713	Sand Avg.	Sand	Within
13	60	.122	7.5	1563.5	.0258	403.31	642.3873	55	.07548	Sand Avg.	Sand	Within
14	70	.122	8	1457.8	.02976	433.82	620.2932	65	.07601	Sand Avg.	Sand	Within
15	80	.122	7.7	1743.3	.02711	472.61	678.3192	75	.0827	Sand Avg.	Sand	Within
16	90	.122	7.5	1946.7	.02582	502.66	716.7993	85	.0873	Sand Avg.	Sand	Within
17	100	.122	7.3	2211.8	.02423	535.99	764.0485	95	.0826	Sand Avg.	Sand	Within
18	108	.122	7.6	2129.4	.02591	551.68	749.6812	105	.08033	Sand Avg.	Sand	Within
19	Base							111	.07957			Within

Notes:
Period for Soil Column: .75 sec
Average Shear Wave Velocity for Soil Column: 590 ft/sec

Soil Profile No. 2
Analysis No. 1 - Profile No. 1 - Soil Pro-TUJ352
C:\PROGRAM FILES\GEOMOTIONS\QUAKES\SHAKE\SIMULATED\L02_04R.EQ

Layer	Depth to Middle of Layer (ft)	Total Unit Weight (kcf)	Damping Used (%)	Shear Modulus (ksf)	Maximum Shear Strain (%)	Maximum Shear Stress (psf)	Shear Wave Velocity (fps)	Depth to Top of Layer (ft)	Peak Acceleration (g)	G/Gmax Curve	Damping Curve	Type of Motion
1	1.25	.118	2.4	250.1	.00555	13.89	261.2425	0	.09404	Clay PI=20	Soil PI=30	Outcrop
2	3.75	.108	3.9	602.8	.00657	39.59	423.9383	2.5	.09084	Sand Avg.	Sand	Within
3	7.5	.122	5.1	689.5	.01142	78.77	426.5944	5	.09099	Sand Avg.	Sand	Within
4	12.5	.122	6.4	729	.01816	132.38	438.6436	10	.0893	Sand Avg.	Sand	Within
5	17.5	.122	7.4	737.2	.0245	180.61	441.1037	15	.08199	Sand Avg.	Sand	Within
6	22.5	.122	7.7	830.5	.02678	222.46	468.1854	20	.07482	Sand Avg.	Sand	Within
7	27.5	.122	7	1182.3	.02196	259.62	558.6141	25	.07027	Sand Avg.	Sand	Within
8	32.5	.122	7.8	1059.6	.02745	290.89	528.8336	30	.07062	Sand Avg.	Sand	Within
9	37.5	.122	8.4	970.5	.03285	318.81	506.111	35	.07159	Sand Avg.	Sand	Within
10	42.5	.122	8.299999	1058.1	.03264	345.37	528.4591	40	.07045	Sand Avg.	Sand	Within
11	47.5	.122	7.7	1363.1	.02733	372.54	599.8075	45	.06761	Sand Avg.	Sand	Within
12	52.5	.122	7.3	1658.8	.02413	400.27	661.6755	50	.06728	Sand Avg.	Sand	Within
13	60	.122	7.900001	1510.6	.02885	435.73	631.4265	55	.066	Sand Avg.	Sand	Within
14	70	.122	8.6	1384.1	.03491	483.2	604.4102	65	.06073	Sand Avg.	Sand	Within
15	80	.122	8.299999	1647.6	.03241	534.01	659.4379	75	.06526	Sand Avg.	Sand	Within
16	90	.122	8.299999	1807.7	.03269	590.87	690.7346	85	.06249	Sand Avg.	Sand	Within
17	100	.122	8.2	2038.2	.03156	643.28	733.4515	95	.06023	Sand Avg.	Sand	Within
18	108	.122	8.6	1929.4	.03532	681.4	713.6071	105	.05591	Sand Avg.	Sand	Within
19	Base							111	.05741			Within

Notes:
Period for Soil Column: .76 sec
Average Shear Wave Velocity for Soil Column: 585 ft/sec

Soil Profile No. 2
Analysis No. 1 - Profile No. 1 - Soil Pro-TUJ352
C:\PROGRAM FILES\GEOMOTIONS\QUAKES\SHAKE\SIMULATED\L02_05R.EQ

Layer	Depth to Middle of Layer (ft)	Total Unit Weight (kcf)	Damping Used (%)	Shear Modulus (ksf)	Maximum Shear Strain (%)	Maximum Shear Stress (psf)	Shear Wave Velocity (fps)	Depth to Top of Layer (ft)	Peak Acceleration (g)	G/Gmax Curve	Damping Curve	Type of Motion
1	1.25	.118	2.6	246.7	.00717	17.69	259.4607	0	.12156	Clay PI=20	Soil PI=30	Outcrop
2	3.75	.108	4.5	576.9	.00863	49.77	414.7308	2.5	.11449	Sand Avg.	Sand	Within
3	7.5	.122	5.6	663.1	.01427	94.6	418.3478	5	.10652	Sand Avg.	Sand	Within
4	12.5	.122	6.7	709.6	.02001	142.01	432.7677	10	.09428	Sand Avg.	Sand	Within
5	17.5	.122	7.3	743.5	.02381	177.03	442.9845	15	.08422	Sand Avg.	Sand	Within
6	22.5	.122	7.3	861	.02376	204.6	476.7049	20	.08382	Sand Avg.	Sand	Within
7	27.5	.122	6.6	1218.6	.01974	240.6	567.1248	25	.09074	Sand Avg.	Sand	Within
8	32.5	.122	7.7	1062.8	.02719	288.96	529.6315	30	.07979	Sand Avg.	Sand	Within
9	37.5	.122	8.4	966.5	.03326	321.51	505.067	35	.08079	Sand Avg.	Sand	Within
10	42.5	.122	8.2	1073.5	.03122	335.15	532.2909	40	.08361	Sand Avg.	Sand	Within
11	47.5	.122	7.3	1415.1	.02415	341.72	611.1412	45	.0809	Sand Avg.	Sand	Within
12	52.5	.122	6.9	1722.7	.0212	365.16	674.2995	50	.07956	Sand Avg.	Sand	Within
13	60	.122	7.6	1550.4	.02652	411.18	639.6905	55	.08153	Sand Avg.	Sand	Within
14	70	.122	8.2	1431.5	.0315	450.97	614.6724	65	.08391	Sand Avg.	Sand	Within
15	80	.122	7.6	1755.8	.02648	465.01	680.7467	75	.08576	Sand Avg.	Sand	Within
16	90	.122	7.5	1960.2	.02524	494.69	719.2804	85	.0787	Sand Avg.	Sand	Within
17	100	.122	7.1	2255.4	.02268	511.48	771.5424	95	.06712	Sand Avg.	Sand	Within
18	108	.122	7.6	2127	.026	553.1	749.2587	105	.07488	Sand Avg.	Sand	Within
19	Base							111	.0772			Within

Notes:
Period for Soil Column: .74 sec
Average Shear Wave Velocity for Soil Column: 598 ft/sec

Soil Profile No. 2
Analysis No. 1 - Profile No. 1 - Soil Pro-TUJ352
C:\PROGRAM FILES\GEOMOTIONS\QUAKES\SHAKE\SIMULATED\L02_06R.EQ

Layer	Depth to Middle of Layer (ft)	Total Unit Weight (kcf)	Damping Used (%)	Shear Modulus (ksf)	Maximum Shear Strain (%)	Maximum Shear Stress (psf)	Shear Wave Velocity (fps)	Depth to Top of Layer (ft)	Peak Acceleration (g)	G/Gmax Curve	Damping Curve	Type of Motion
1	1.25	.118	2.7	245	.00813	19.91	258.5652	0	.13612	Clay PI=20	Soil PI=30	Outcrop
2	3.75	.108	4.8	563.1	.00998	56.19	409.7404	2.5	.12969	Sand Avg.	Sand	Within
3	7.5	.122	6.2	634.3	.01727	109.54	409.1621	5	.12381	Sand Avg.	Sand	Within
4	12.5	.122	7.900001	639.3	.02847	182.02	410.7716	10	.11906	Sand Avg.	Sand	Within
5	17.5	.122	8.900001	635.8	.03887	247.11	409.6456	15	.11376	Sand Avg.	Sand	Within
6	22.5	.122	9.3	708.9	.0432	306.3	432.5542	20	.10436	Sand Avg.	Sand	Within
7	27.5	.122	8.6	1023	.03501	358.22	519.62	25	.10418	Sand Avg.	Sand	Within
8	32.5	.122	9.5	894	.04556	407.29	485.7545	30	.1004	Sand Avg.	Sand	Within
9	37.5	.122	10.5	799.2	.0564	450.75	459.2781	35	.09388	Sand Avg.	Sand	Within
10	42.5	.122	10.5	870.4	.05625	489.61	479.3	40	.08252	Sand Avg.	Sand	Within
11	47.5	.122	9.4	1149.3	.04546	522.5	550.763	45	.07888	Sand Avg.	Sand	Within
12	52.5	.122	8.900001	1434.2	.03808	546.12	615.2518	50	.08356	Sand Avg.	Sand	Within
13	60	.122	9.6	1274.3	.04752	605.48	579.9411	55	.08791	Sand Avg.	Sand	Within
14	70	.122	10.8	1135.4	.05986	679.6	547.4223	65	.0815	Sand Avg.	Sand	Within
15	80	.122	10.1	1394.3	.05199	724.86	606.6332	75	.07876	Sand Avg.	Sand	Within
16	90	.122	9.6	1591	.0472	750.89	648.0121	85	.08153	Sand Avg.	Sand	Within
17	100	.122	9.2	1849.1	.04208	778.03	698.5994	95	.07636	Sand Avg.	Sand	Within
18	108	.122	9.6	1746	.04691	819.15	678.8442	105	.08382	Sand Avg.	Sand	Within
19	Base							111	.09626			Within

Notes:
Period for Soil Column: .82 sec
Average Shear Wave Velocity for Soil Column: 544 ft/sec

Soil Profile No. 2
Analysis No. 1 - Profile No. 1 - Soil Pro-TUJ352
C:\PROGRAM FILES\GEOMOTIONS\QUAKES\SHAKE\SIMULATED\L02_07R.EQ

Layer	Depth to Middle of Layer (ft)	Total Unit Weight (kcf)	Damping Used (%)	Shear Modulus (ksf)	Maximum Shear Strain (%)	Maximum Shear Stress (psf)	Shear Wave Velocity (fps)	Depth to Top of Layer (ft)	Peak Acceleration (g)	G/Gmax Curve	Damping Curve	Type of Motion
1	1.25	.118	2.4	249.8	.00567	14.16	261.0858	0	.09489	Clay PI=20	Soil PI=30	Outcrop
2	3.75	.108	4	599.3	.00682	40.85	422.7058	2.5	.09147	Sand Avg.	Sand	Within
3	7.5	.122	5.2	685.8	.01179	80.84	425.4483	5	.08833	Sand Avg.	Sand	Within
4	12.5	.122	6.4	725	.01853	134.32	437.4385	10	.08246	Sand Avg.	Sand	Within
5	17.5	.122	7.5	730.9	.02522	184.31	439.2148	15	.07831	Sand Avg.	Sand	Within
6	22.5	.122	7.8	819.2	.02801	229.46	464.9893	20	.07265	Sand Avg.	Sand	Within
7	27.5	.122	7.2	1164.3	.02315	269.51	554.3455	25	.06542	Sand Avg.	Sand	Within
8	32.5	.122	8	1031.8	.02989	308.41	521.8502	30	.06672	Sand Avg.	Sand	Within
9	37.5	.122	8.7	937.2	.03649	341.98	497.3523	35	.07045	Sand Avg.	Sand	Within
10	42.5	.122	8.6	1031.3	.03528	363.82	521.7237	40	.07841	Sand Avg.	Sand	Within
11	47.5	.122	7.8	1355.1	.02785	377.45	598.0447	45	.0794	Sand Avg.	Sand	Within
12	52.5	.122	7.2	1678	.02321	389.45	665.4938	50	.07628	Sand Avg.	Sand	Within
13	60	.122	7.8	1522.7	.02812	428.14	633.9503	55	.07453	Sand Avg.	Sand	Within
14	70	.122	8.8	1352	.03743	506.05	597.3603	65	.06605	Sand Avg.	Sand	Within
15	80	.122	8.6	1595.9	.03569	569.57	649.0092	75	.05944	Sand Avg.	Sand	Within
16	90	.122	8.6	1769.3	.03488	617.21	683.3588	85	.05412	Sand Avg.	Sand	Within
17	100	.122	8.299999	2026.5	.03213	651	731.3434	95	.05515	Sand Avg.	Sand	Within
18	108	.122	8.5	1953.7	.03401	664.45	718.0868	105	.05402	Sand Avg.	Sand	Within
19	Base							111	.05358			Within

Notes:
Period for Soil Column: .76 sec
Average Shear Wave Velocity for Soil Column: 582 ft/sec

Soil Profile No. 2
Analysis No. 1 - Profile No. 1 - Soil Pro-TUJ352
C:\PROGRAM FILES\GEOMOTIONS\QUAKES\SHAKE\SIMULATED\L02_08R.EQ

Layer	Depth to Middle of Layer (ft)	Total Unit Weight (kcf)	Damping Used (%)	Shear Modulus (ksf)	Maximum Shear Strain (%)	Maximum Shear Stress (psf)	Shear Wave Velocity (fps)	Depth to Top of Layer (ft)	Peak Acceleration (g)	G/Gmax Curve	Damping Curve	Type of Motion
1	1.25	.118	2.6	245.5	.00782	19.19	258.8289	0	.12957	Clay PI=20	Soil PI=30	Outcrop
2	3.75	.108	4.8	566.1	.00967	54.72	410.8304	2.5	.12276	Sand Avg.	Sand	Within
3	7.5	.122	6	642.3	.01648	105.86	411.7342	5	.12091	Sand Avg.	Sand	Within
4	12.5	.122	7.7	648.9	.02714	176.09	413.8442	10	.11751	Sand Avg.	Sand	Within
5	17.5	.122	8.8	642.4	.03771	242.26	411.7663	15	.10941	Sand Avg.	Sand	Within
6	22.5	.122	9.2	714.1	.04234	302.33	434.1377	20	.09774	Sand Avg.	Sand	Within
7	27.5	.122	8.5	1027.9	.03451	354.79	520.8629	25	.09419	Sand Avg.	Sand	Within
8	32.5	.122	9.3	905.6	.04396	398.13	488.8957	30	.09496	Sand Avg.	Sand	Within
9	37.5	.122	10.1	823.7	.05219	429.92	466.2647	35	.09464	Sand Avg.	Sand	Within
10	42.5	.122	9.8	917.7	.04904	450.01	492.151	40	.09214	Sand Avg.	Sand	Within
11	47.5	.122	8.8	1227.6	.03773	463.16	569.2151	45	.08941	Sand Avg.	Sand	Within
12	52.5	.122	8.2	1527.4	.03151	481.29	634.9279	50	.08797	Sand Avg.	Sand	Within
13	60	.122	8.8	1384.6	.03764	521.14	604.5193	55	.08687	Sand Avg.	Sand	Within
14	70	.122	9.5	1251.1	.04657	582.64	574.6376	65	.08707	Sand Avg.	Sand	Within
15	80	.122	9.3	1487.2	.04371	650.05	626.5168	75	.086	Sand Avg.	Sand	Within
16	90	.122	9.2	1655.1	.04234	700.72	660.9371	85	.08896	Sand Avg.	Sand	Within
17	100	.122	9.099999	1868.5	.04085	763.36	702.2546	95	.08907	Sand Avg.	Sand	Within
18	108	.122	9.5	1758.5	.04602	809.22	681.2699	105	.09174	Sand Avg.	Sand	Within
19	Base							111	.09083			Within

Notes:
Period for Soil Column: .8 sec
Average Shear Wave Velocity for Soil Column: 556 ft/sec

Soil Profile No. 2
Analysis No. 1 - Profile No. 1 - Soil Pro-TUJ352
C:\PROGRAM FILES\GEOMOTIONS\QUAKES\SHAKE\SIMULATED\L02_09R.EQ

Layer	Depth to Middle of Layer (ft)	Total Unit Weight (kcf)	Damping Used (%)	Shear Modulus (ksf)	Maximum Shear Strain (%)	Maximum Shear Stress (psf)	Shear Wave Velocity (fps)	Depth to Top of Layer (ft)	Peak Acceleration (g)	G/Gmax Curve	Damping Curve	Type of Motion
1	1.25	.118	2.6	246.9	.00706	17.43	259.5658	0	.12078	Clay PI=20	Soil PI=30	Outcrop
2	3.75	.108	4.5	578.8	.00846	48.97	415.4132	2.5	.11495	Sand Avg.	Sand	Within
3	7.5	.122	5.5	667.8	.01371	91.55	419.8278	5	.10767	Sand Avg.	Sand	Within
4	12.5	.122	6.7	706	.02038	143.87	431.6685	10	.08815	Sand Avg.	Sand	Within
5	17.5	.122	7.6	721.2	.02635	190.06	436.2906	15	.0832	Sand Avg.	Sand	Within
6	22.5	.122	7.900001	812.3	.02878	233.75	463.0269	20	.08748	Sand Avg.	Sand	Within
7	27.5	.122	7.3	1156.1	.02371	274.15	552.3899	25	.0891	Sand Avg.	Sand	Within
8	32.5	.122	8.1	1029.8	.03008	309.75	521.3441	30	.08987	Sand Avg.	Sand	Within
9	37.5	.122	8.6	943.8	.03574	337.32	499.1005	35	.08703	Sand Avg.	Sand	Within
10	42.5	.122	8.8	1006.3	.03793	381.68	515.3613	40	.09109	Sand Avg.	Sand	Within
11	47.5	.122	8.5	1273.4	.03384	430.89	579.7363	45	.09441	Sand Avg.	Sand	Within
12	52.5	.122	8.2	1536.5	.03094	475.33	636.8165	50	.09365	Sand Avg.	Sand	Within
13	60	.122	9	1364	.03931	536.25	600.0055	55	.09207	Sand Avg.	Sand	Within
14	70	.122	9.700001	1235.7	.04816	595.12	571.09	65	.08688	Sand Avg.	Sand	Within
15	80	.122	9.3	1496.3	.04298	643.05	628.4307	75	.09275	Sand Avg.	Sand	Within
16	90	.122	9.2	1663.9	.04171	693.98	662.6918	85	.0911	Sand Avg.	Sand	Within
17	100	.122	8.900001	1910.6	.03832	732.06	710.1219	95	.08734	Sand Avg.	Sand	Within
18	108	.122	9.099999	1837.1	.04074	748.4	696.3289	105	.0823	Sand Avg.	Sand	Within
19	Base							111	.08248			Within

Notes:
Period for Soil Column: .78 sec
Average Shear Wave Velocity for Soil Column: 566 ft/sec

Soil Profile No. 2
Analysis No. 1 - Profile No. 1 - Soil Pro-TUJ352
C:\PROGRAM FILES\GEOMOTIONS\QUAKES\SHAKE\SIMULATED\L02_10R.EQ

Layer	Depth to Middle of Layer (ft)	Total Unit Weight (kcf)	Damping Used (%)	Shear Modulus (ksf)	Maximum Shear Strain (%)	Maximum Shear Stress (psf)	Shear Wave Velocity (fps)	Depth to Top of Layer (ft)	Peak Acceleration (g)	G/Gmax Curve	Damping Curve	Type of Motion
1	5	.09	3.8	704.4	.00616	43.37	502.0146	0	.09658	Sand Avg.	Sand	Outcrop
2	15	.09	5.3	889.5	.01225	109	564.1306	10	.07779	Sand Avg.	Sand	Within
3	25	.09	5.6	1060	.0143	151.56	615.8282	20	.06757	Sand Avg.	Sand	Within
4	35	.09	5.8	1209.8	.01527	184.69	657.9055	30	.06464	Sand Avg.	Sand	Within
5	45	.09	5.9	1340.8	.01581	211.99	692.6099	40	.06682	Sand Avg.	Sand	Within
6	55	.09	6	1458.6	.01625	236.97	722.3951	50	.05828	Sand Avg.	Sand	Within
7	65	.09	5.9	1579.8	.01607	253.83	751.8094	60	.06301	Sand Avg.	Sand	Within
8	75	.09	5.9	1690.9	.01601	270.8	777.7959	70	.05968	Sand Avg.	Sand	Within
9	85	.09	5.8	1808.1	.01553	280.81	804.2997	80	.04794	Sand Avg.	Sand	Within
10	95	.09	5.6	1937.9	.01422	275.51	832.6689	90	.05804	Sand Avg.	Sand	Within
11	101.25	.118	9.9	115.9	.22709	263.29	177.8397	100	.06842	Clay PI=20	Soil PI=30	Within
12	103.75	.108	12.5	287.7	.08545	245.85	292.8775	102.5	.11404	Sand Avg.	Sand	Within
13	107.5	.122	10.5	431.8	.05633	243.23	337.5898	105	.1167	Sand Avg.	Sand	Within
14	112.5	.122	9.700001	535.7	.04786	256.35	376.0182	110	.11177	Sand Avg.	Sand	Within
15	117.5	.122	9.3	609.8	.04373	266.7	401.1823	115	.1191	Sand Avg.	Sand	Within
16	122.5	.122	8.900001	734.9	.03901	286.7	440.415	120	.12687	Sand Avg.	Sand	Within
17	127.5	.122	7.900001	1091.5	.02865	312.72	536.735	125	.11852	Sand Avg.	Sand	Within
18	132.5	.122	8.4	996.2	.03333	332	512.7684	130	.11558	Sand Avg.	Sand	Within
19	137.5	.122	8.7	941.3	.03602	339.06	498.439	135	.11652	Sand Avg.	Sand	Within
20	142.5	.122	8.2	1066.8	.03183	339.53	530.6273	140	.11977	Sand Avg.	Sand	Within
21	147.5	.122	7.3	1412.8	.02428	343.07	610.6444	145	.12428	Sand Avg.	Sand	Within
22	152.5	.122	6.7	1746.3	.0202	352.81	678.9026	150	.12527	Sand Avg.	Sand	Within
23	160	.122	7.1	1625.5	.02263	367.86	655.0003	155	.12143	Sand Avg.	Sand	Within
24	170	.122	7.1	1579.5	.02286	361.05	645.6659	165	.12993	Sand Avg.	Sand	Within
25	180	.122	6.8	1882.1	.02092	393.81	704.8057	175	.13285	Sand Avg.	Sand	Within
26	190	.122	6.8	2076.7	.02071	430.14	740.3463	185	.16175	Sand Avg.	Sand	Within
27	200	.122	6.5	2368.7	.01909	452.11	790.6842	195	.17664	Sand Avg.	Sand	Within
28	208	.122	6.8	2273.5	.02073	471.21	774.6321	205	.15768	Sand Avg.	Sand	Within
29	Base							211	.17013			Within

Notes:
Period for Soil Column: 1.32 sec
Average Shear Wave Velocity for Soil Column: 640 ft/sec

Soil Profile No. 2
Analysis No. 1 - Profile No. 1 - Soil Pro-TUJ352
C:\PROGRAM FILES\GEOMOTIONS\QUAKES\SHAKE\SIMULATED\L02_03R.EQ

Layer	Depth to Middle of Layer (ft)	Total Unit Weight (kcf)	Damping Used (%)	Shear Modulus (ksf)	Maximum Shear Strain (%)	Maximum Shear Stress (psf)	Shear Wave Velocity (fps)	Depth to Top of Layer (ft)	Peak Acceleration (g)	G/Gmax Curve	Damping Curve	Type of Motion
1	5	.09	3	741	.00413	30.64	514.8915	0	.06945	Sand Avg.	Sand	Outcrop
2	15	.09	4.5	945.9	.00852	80.57	581.7405	10	.05618	Sand Avg.	Sand	Within
3	25	.09	5.1	1109.3	.01103	122.41	629.9865	20	.05123	Sand Avg.	Sand	Within
4	35	.09	5.4	1243.3	.01311	162.95	666.9521	30	.04656	Sand Avg.	Sand	Within
5	45	.09	5.6	1372	.01409	193.35	700.6219	40	.04084	Sand Avg.	Sand	Within
6	55	.09	5.6	1501.3	.0142	213.19	732.8928	50	.04328	Sand Avg.	Sand	Within
7	65	.09	5.6	1619.6	.01428	231.34	761.2206	60	.04639	Sand Avg.	Sand	Within
8	75	.09	5.6	1730.1	.01437	248.64	786.76	70	.05034	Sand Avg.	Sand	Within
9	85	.09	5.7	1826.4	.01476	269.48	808.3597	80	.05241	Sand Avg.	Sand	Within
10	95	.09	5.8	1914.5	.0152	291.05	827.6265	90	.0554	Sand Avg.	Sand	Within
11	101.25	.118	10.9	98.1	.31769	311.52	163.6144	100	.05468	Clay PI=20	Soil PI=30	Within
12	103.75	.108	15.2	212.6	.14858	315.94	251.7664	102.5	.07969	Sand Avg.	Sand	Within
13	107.5	.122	12.9	346.5	.09268	321.18	302.4124	105	.08735	Sand Avg.	Sand	Within
14	112.5	.122	11.9	445.5	.07515	334.84	342.9035	110	.08438	Sand Avg.	Sand	Within
15	117.5	.122	11.2	520.4	.06565	341.65	370.6096	115	.08067	Sand Avg.	Sand	Within
16	122.5	.122	9.9	669.8	.05036	337.26	420.456	120	.09029	Sand Avg.	Sand	Within
17	127.5	.122	8.1	1067.4	.03073	327.99	530.7764	125	.09424	Sand Avg.	Sand	Within
18	132.5	.122	8.5	982.4	.03477	341.61	509.2045	130	.09449	Sand Avg.	Sand	Within
19	137.5	.122	9	913.3	.03935	359.36	490.9698	135	.09319	Sand Avg.	Sand	Within
20	142.5	.122	8.7	1016	.03688	374.71	517.8392	140	.09439	Sand Avg.	Sand	Within
21	147.5	.122	7.900001	1339.8	.02889	387.09	594.6591	145	.09516	Sand Avg.	Sand	Within
22	152.5	.122	7.4	1651.6	.02449	404.46	660.2379	150	.09124	Sand Avg.	Sand	Within
23	160	.122	7.900001	1509.4	.02891	436.45	631.1756	155	.08791	Sand Avg.	Sand	Within
24	170	.122	8.4	1400.1	.03372	472.05	607.8936	165	.07892	Sand Avg.	Sand	Within
25	180	.122	8	1690.2	.02992	505.75	667.9086	175	.08424	Sand Avg.	Sand	Within
26	190	.122	7.8	1910.1	.02746	524.56	710.029	185	.08702	Sand Avg.	Sand	Within
27	200	.122	7.2	2228.5	.02361	526.21	766.9276	195	.07981	Sand Avg.	Sand	Within
28	208	.122	7.3	2178.4	.02401	522.94	758.2577	205	.07571	Sand Avg.	Sand	Within
29	Base							211	.07564			Within

Notes:
Period for Soil Column: 1.34 sec
Average Shear Wave Velocity for Soil Column: 631 ft/sec

Soil Profile No. 2
Analysis No. 1 - Profile No. 1 - Soil Pro-TUJ352
C:\PROGRAM FILES\GEOMOTIONS\QUAKES\SHAKE\SIMULATED\L02_10R.EQ

Layer	Depth to Middle of Layer (ft)	Total Unit Weight (kcf)	Damping Used (%)	Shear Modulus (ksf)	Maximum Shear Strain (%)	Maximum Shear Stress (psf)	Shear Wave Velocity (fps)	Depth to Top of Layer (ft)	Peak Acceleration (g)	G/Gmax Curve	Damping Curve	Type of Motion
1	.75	.12	.2	1996.8	.00053	10.58	731.9891	0	.11749	Clay PI=10	Soil PI=15	Outcrop
2	2.75	.12	1.6	1984.4	.00196	38.84	729.7128	1.5	.11681	Clay PI=10	Soil PI=15	Within
3	5.25	.12	2.3	1958.5	.00374	73.16	724.9351	4	.11276	Clay PI=10	Soil PI=15	Within
4	7.75	.12	2.7	1929.3	.00546	105.33	719.5106	6.5	.10531	Clay PI=10	Soil PI=15	Within
5	10.25	.12	3.1	1886.1	.00714	134.57	711.4095	9	.09505	Clay PI=10	Soil PI=15	Within
6	12.75	.12	3.4	1855.2	.00864	160.23	705.5579	11.5	.08651	Clay PI=10	Soil PI=15	Within
7	15.25	.12	3.7	1832.7	.00993	181.99	701.2664	14	.0816	Clay PI=10	Soil PI=15	Within
8	17.75	.12	3.9	1816.1	.01101	199.89	698.0832	16.5	.08035	Clay PI=10	Soil PI=15	Within
9	20.25	.12	4	1803.7	.01188	214.28	695.6959	19	.08349	Clay PI=10	Soil PI=15	Within
10	22.75	.12	4.2	1791.8	.01279	229.22	693.3972	21.5	.08503	Clay PI=10	Soil PI=15	Within
11	25.25	.118	9.4	124.3	.19409	241.29	184.1715	24	.08407	Clay PI=20	Soil PI=30	Within
12	27.75	.108	12.1	299.6	.07829	234.61	298.8732	26.5	.10852	Sand Avg.	Sand	Within
13	31.5	.122	10.2	442.5	.05293	234.19	341.7469	29	.1062	Sand Avg.	Sand	Within
14	36.5	.122	9.700001	533.1	.04848	258.43	375.1046	34	.11496	Sand Avg.	Sand	Within
15	41.5	.122	9.4	604.7	.04477	270.73	399.5011	39	.11573	Sand Avg.	Sand	Within
16	46.5	.122	9.099999	724.8	.04059	294.19	437.3782	44	.117	Sand Avg.	Sand	Within
17	51.5	.122	8	1076.1	.02998	322.56	532.9351	49	.12256	Sand Avg.	Sand	Within
18	56.5	.122	8.7	967.2	.03641	352.22	505.2498	54	.11973	Sand Avg.	Sand	Within
19	61.5	.122	9.099999	897.3	.04139	371.34	486.6501	59	.11834	Sand Avg.	Sand	Within
20	66.5	.122	8.900001	1000.4	.03859	386.02	513.8483	64	.12849	Sand Avg.	Sand	Within
21	71.5	.122	8.2	1306.5	.03127	408.58	587.2225	69	.13454	Sand Avg.	Sand	Within
22	76.5	.122	7.7	1598.5	.02728	436.04	649.5377	74	.14187	Sand Avg.	Sand	Within
23	84	.122	8.4	1446.4	.03303	477.81	617.863	79	.14217	Sand Avg.	Sand	Within
24	94	.122	8.7	1365	.03639	496.68	600.2253	89	.12803	Sand Avg.	Sand	Within
25	104	.122	7.8	1723.1	.02815	485.06	674.3778	99	.14241	Sand Avg.	Sand	Within
26	114	.122	7.5	1958.9	.02529	495.47	719.0418	109	.16544	Sand Avg.	Sand	Within
27	124	.122	7.3	2212.3	.02421	535.67	764.1349	119	.168	Sand Avg.	Sand	Within
28	132	.122	7.4	2151.7	.02503	538.53	753.5965	129	.14751	Sand Avg.	Sand	Within
29	Base							135	.1656			Within

Notes:
Period for Soil Column: .9 sec
Average Shear Wave Velocity for Soil Column: 598 ft/sec

Soil Profile No. 2
Analysis No. 1 - Profile No. 1 - Soil Pro-TUJ352
C:\PROGRAM FILES\GEOMOTIONS\QUAKES\SHAKE\SIMULATED\L02_03R.EQ

Layer	Depth to Middle of Layer (ft)	Total Unit Weight (kcf)	Damping Used (%)	Shear Modulus (ksf)	Maximum Shear Strain (%)	Maximum Shear Stress (psf)	Shear Wave Velocity (fps)	Depth to Top of Layer (ft)	Peak Acceleration (g)	G/Gmax Curve	Damping Curve	Type of Motion
1	.75	.12	------	1997.6	.00039	7.77	732.1357	0	.0863	Clay PI=10	Soil PI=15	Outcrop
2	2.75	.12	1.3	1994.2	.00142	28.25	731.5124	1.5	.08615	Clay PI=10	Soil PI=15	Within
3	5.25	.12	1.9	1971.3	.00271	53.47	727.3002	4	.08526	Clay PI=10	Soil PI=15	Within
4	7.75	.12	2.3	1955.9	.00399	78.1	724.4537	6.5	.08358	Clay PI=10	Soil PI=15	Within
5	10.25	.12	2.6	1935	.00527	101.97	720.5727	9	.08119	Clay PI=10	Soil PI=15	Within
6	12.75	.12	2.9	1898.6	.0066	125.34	713.7631	11.5	.07883	Clay PI=10	Soil PI=15	Within
7	15.25	.12	3.3	1868.9	.00793	148.26	708.1583	14	.07766	Clay PI=10	Soil PI=15	Within
8	17.75	.12	3.5	1843.7	.00927	170.99	703.3677	16.5	.07681	Clay PI=10	Soil PI=15	Within
9	20.25	.12	3.8	1821.6	.01064	193.74	699.1395	19	.07577	Clay PI=10	Soil PI=15	Within
10	22.75	.12	4	1802.4	.01198	215.92	695.4452	21.5	.07415	Clay PI=10	Soil PI=15	Within
11	25.25	.118	9.4	125	.19169	239.59	184.6894	24	.07196	Clay PI=20	Soil PI=30	Within
12	27.75	.108	12.8	279.3	.09088	253.87	288.5702	26.5	.07825	Sand Avg.	Sand	Within
13	31.5	.122	11.2	406.2	.06542	265.75	327.4296	29	.08417	Sand Avg.	Sand	Within
14	36.5	.122	10.2	512.5	.05373	275.4	367.7858	34	.08524	Sand Avg.	Sand	Within
15	41.5	.122	10	575.1	.05123	294.6	389.6007	39	.0768	Sand Avg.	Sand	Within
16	46.5	.122	9.6	686.9	.04712	323.64	425.7893	44	.07675	Sand Avg.	Sand	Within
17	51.5	.122	8.4	1035.4	.03376	349.61	522.7597	49	.08324	Sand Avg.	Sand	Within
18	56.5	.122	8.900001	945.7	.03889	367.82	499.6026	54	.08268	Sand Avg.	Sand	Within
19	61.5	.122	9.2	887.5	.04268	378.75	483.9854	59	.07797	Sand Avg.	Sand	Within
20	66.5	.122	8.900001	1000.8	.03854	385.68	513.9509	64	.07772	Sand Avg.	Sand	Within
21	71.5	.122	8	1326.8	.02979	395.33	591.767	69	.07634	Sand Avg.	Sand	Within
22	76.5	.122	7.4	1642.4	.02495	409.76	658.3965	74	.07616	Sand Avg.	Sand	Within
23	84	.122	7.900001	1517.7	.02841	431.24	632.9086	79	.0733	Sand Avg.	Sand	Within
24	94	.122	8.2	1434.5	.0313	448.96	615.3161	89	.07755	Sand Avg.	Sand	Within
25	104	.122	7.7	1750.2	.02676	468.35	679.6602	99	.07438	Sand Avg.	Sand	Within
26	114	.122	7.4	1979.3	.02443	483.53	722.7762	109	.08411	Sand Avg.	Sand	Within
27	124	.122	7.1	2265.3	.02234	506.03	773.2339	119	.08319	Sand Avg.	Sand	Within
28	132	.122	7.3	2171.5	.02427	527.06	757.0559	129	.08225	Sand Avg.	Sand	Within
29	Base							135	.08006			Within

Notes:
Period for Soil Column: .9 sec
Average Shear Wave Velocity for Soil Column: 600 ft/sec

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Appendix D

RESULTS OF LIQUEFACTION ANALYSES
Revised August 2013

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Ameren Missouri: Labadie UWL
Liquefaction Factor of Safety vs. Height of Ash

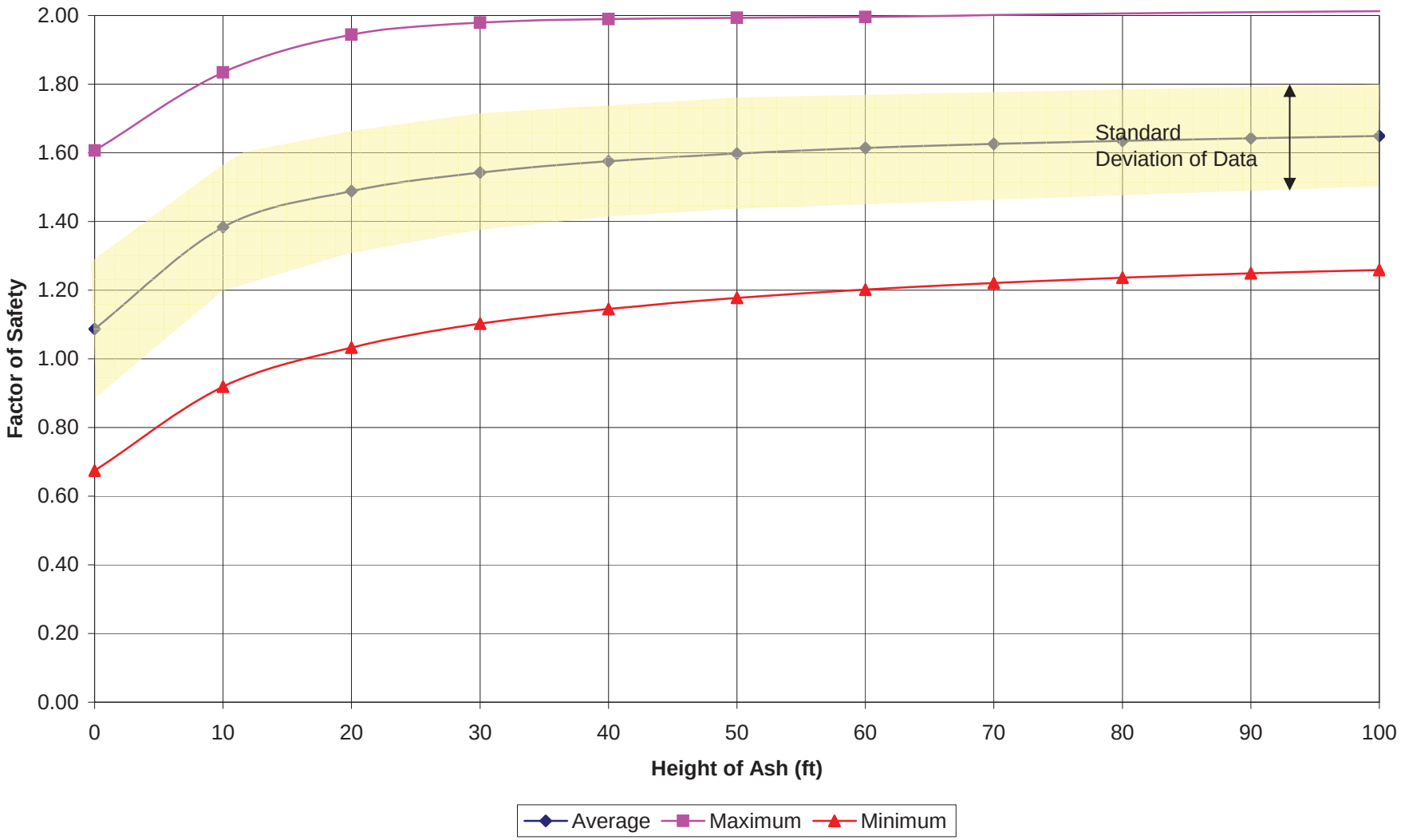


Figure D-1

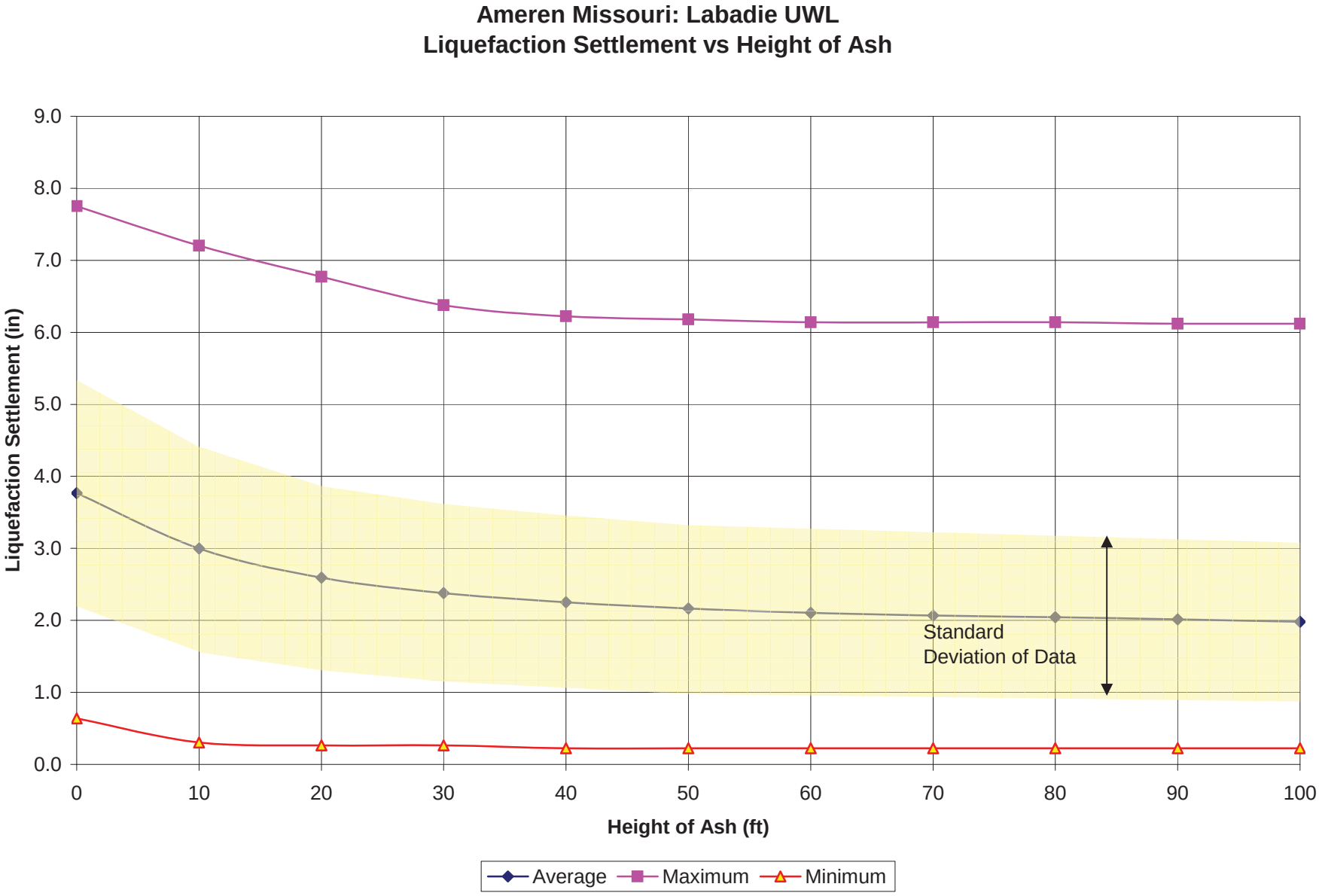
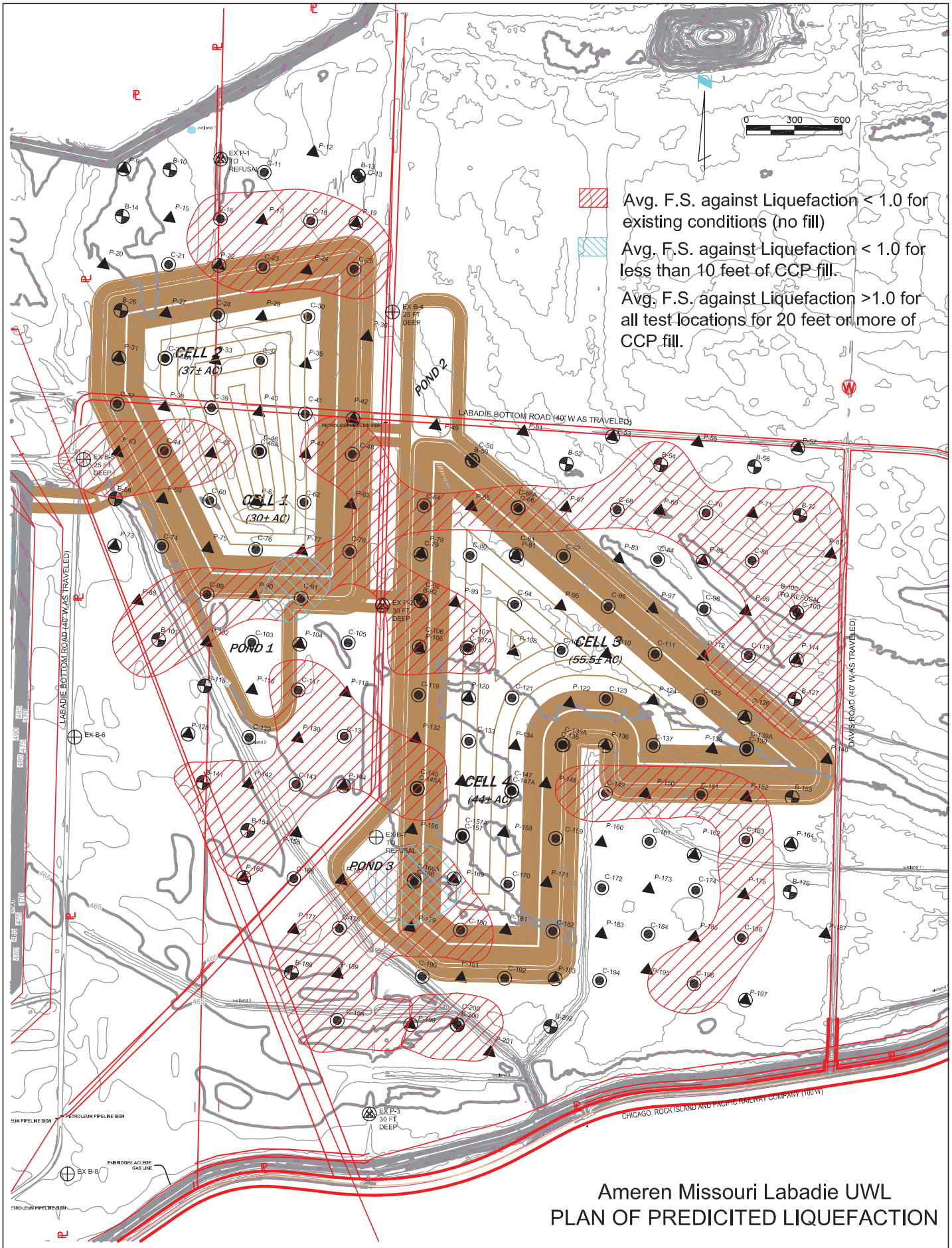

Ameren Missouri: Labadie UWL
Liquefaction Settlement vs Height of Ash
Liquefaction Settlement (in)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0
10
20
30
40
50
60
70
80
90
100
Height of Ash (ft)
Standard
Deviation of Data
Average
Maximum
Minimum

Figure D-2



Ameren Missouri Labadie UWL
PLAN OF PREDICITED LIQUEFACTION

REITZ & JENS, INC.

Figure D-3

Ameren Missouri: Labadie UWL
Liquefaction Analysis
0' of ASH M: 7.5
PGA: 2% probability of exceedence in 50 yrs: 0.1792 GW: 0.0'

C-11		C-13		C-16		C-18		C-21		C-23		C-25		C-28		C-30		C-32		C-34		C-37		C-39	
S (ft)	0.32	S (ft)	0.19	S (ft)	0.40	S (ft)	0.51	S (ft)	0.28	S (ft)	0.45	S (ft)	0.42	S (ft)	0.35	S (ft)	0.33	S (ft)	0.26	S (ft)	0.27	S (ft)	0.31	S (ft)	0.18
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	0.39	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	n.a	6.25	0.45	6.25	0.26	6.25	n.a	6.25	0.53	6.25	0.59	6.25	n.a	6.25	0.31	6.25	n.a	6.25	0.37	6.25	n.a	6.25	n.a
8.75	n.a	8.75	0.66	8.75	0.55	8.75	n.a	8.75	n.a	8.75	0.48	8.75	0.42	8.75	0.32	8.75	0.81	8.75	0.51	8.75	n.a	8.75	0.40	8.75	n.a
11.25	0.26	11.25	2.00	11.25	0.34	11.25	0.47	11.25	0.54	11.25	0.63	11.25	1.97	11.25	n.a	11.25	1.82	11.25	1.39	11.25	n.a	11.25	1.47	11.25	0.60
13.75	n.a	13.75	2.00	13.75	0.53	13.75	0.92	13.75	2.00	13.75	1.03	13.75	0.47	13.75	n.a	13.75	2.00	13.75	1.12	13.75	0.46	13.75	0.97	13.75	1.08
16.25	0.28	16.25	2.00	16.25	0.79	16.25	0.98	16.25	2.00	16.25	1.00	16.25	1.23	16.25	0.76	16.25	0.86	16.25	0.55	16.25	2.11	16.25	2.00	16.25	1.56
18.75	2.00	18.75	2.00	18.75	0.84	18.75	0.61	18.75	1.92	18.75	0.44	18.75	0.69	18.75	0.79	18.75	1.06	18.75	1.27	18.75	1.20	18.75	2.00	18.75	0.82
21.25	1.64	21.25	1.28	21.25	1.42	21.25	0.48	21.25	0.75	21.25	1.08	21.25	1.24	21.25	0.89	21.25	0.93	21.25	1.22	21.25	2.00	21.25	1.07	21.25	2.00
23.75	1.29	23.75	2.00	23.75	2.00	23.75	0.84	23.75	0.96	23.75	2.00	23.75	0.63	23.75	1.34	23.75	1.05	23.75	0.76	23.75	2.00	23.75	0.58	23.75	0.82
26.25	2.00	26.25	0.83	26.25	1.32	26.25	2.00	26.25	0.98	26.25	2.00	26.25	0.67	26.25	1.27	26.25	2.00	26.25	0.74	26.25	2.00	26.25	0.71	26.25	1.40
28.75	2.00	28.75	1.96	28.75	2.00	28.75	2.00	28.75	0.94	28.75	0.84	28.75	0.95	28.75	1.18	28.75	2.00	28.75	2.00	28.75	0.99	28.75	2.00	28.75	2.00
31.25	2.12	31.25	0.84	31.25	2.00	31.25	0.87	31.25	1.43	31.25	2.00	31.25	1.52	31.25	0.86	31.25	1.52	31.25	2.00	31.25	1.78	31.25	0.73	31.25	2.00
33.75	2.00	33.75	0.92	33.75	2.00	33.75	2.00	33.75	0.96	33.75	2.00	33.75	1.71	33.75	2.00	33.75	0.63	33.75	2.00	33.75	2.00	33.75	2.00	33.75	2.07
		36.25	2.00	36.25	2.00	36.25	1.12	36.25	0.87	36.25	2.00	36.25	2.00	36.25	0.74	36.25	2.00	36.25	2.00	36.25	0.60	36.25	2.00	36.25	1.92
		38.75	2.00																			38.75	2.00		
		41.25	2.00																			41.25	2.00		
Inv Avg	1.02	Inv Avg	1.44	Inv Avg	0.92	Inv Avg	0.83	Inv Avg	1.18	Inv Avg	0.86	Inv Avg	0.90	Inv Avg	1.02	Inv Avg	1.04	Inv Avg	1.14	Inv Avg	1.11	Inv Avg	1.16	Inv Avg	1.38
Risk	Moderate	Risk	Low	Risk	High	Risk	High	Risk	Moderate	Risk	High	Risk	High	Risk	Moderate	Risk	Moderate	Risk	Moderate	Risk	Moderate	Risk	Moderate	Risk	Low

Figure D-4

C-41		C-44		C-46		C-46A		C-48		C-50		C-60		C-62		C-64		C-66		C-66A		C-68		C-70	
S (ft)	0.24	S (ft)	0.44	S (ft)	0.30	S (ft)	0.34	S (ft)	0.45	S (ft)	0.31	S (ft)	0.21	S (ft)	0.18	S (ft)	0.50	S (ft)	0.05	S (ft)	0.32	S (ft)	0.38	S (ft)	0.41
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	0.38	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	0.47	6.25	n.a	6.25	n.a	6.25	0.38	6.25	0.28	6.25	n.a	6.25	0.39	6.25	n.a	6.25	n.a	6.25	0.39	6.25	0.33	6.25	0.73
8.75	n.a	8.75	0.47	8.75	n.a	8.75	n.a	8.75	0.47	8.75	1.13	8.75	0.35	8.75	n.a	8.75	0.29	8.75	n.a	8.75	0.41	8.75	0.67	8.75	0.78
11.25	0.36	11.25	0.83	11.25	0.93	11.25	0.75	11.25	0.71	11.25	0.48	11.25	0.72	11.25	n.a	11.25	0.62	11.25	2.00	11.25	2.05	11.25	0.56	11.25	0.81
13.75	0.58	13.75	0.70	13.75	0.53	13.75	0.54	13.75	0.58	13.75	1.91	13.75	0.83	13.75	0.72	13.75	0.59	13.75	2.00	13.75	2.00	13.75	2.00	13.75	0.57
16.25	0.58	16.25	0.74	16.25	1.09	16.25	1.00	16.25	0.37	16.25	2.00	16.25	1.43	16.25	2.00	16.25	0.31	16.25	0.93	16.25	0.78	16.25	2.00	16.25	n.a
18.75	1.50	18.75	0.78	18.75	1.16	18.75	1.83	18.75	2.00	18.75	2.00	18.75	1.26	18.75	2.00	18.75	0.98	18.75	1.25	18.75	1.00	18.75	2.14	18.75	0.55
21.25	1.51	21.25	0.58	21.25	0.60	21.25	0.78	21.25	0.67	21.25	2.00	21.25	1.88	21.25	2.00	21.25	1.14	21.25	2.00	21.25	2.00	21.25	2.00	21.25	1.39
23.75	1.12	23.75	0.72	23.75	0.84	23.75	0.88	23.75	1.88	23.75	1.17	23.75	2.00	23.75	1.05	23.75	2.00	23.75	1.18	23.75	2.00	23.75	0.65	23.75	1.12
26.25	1.40	26.25	2.00	26.25	0.75	26.25	0.90	26.25	2.00	26.25	2.00	26.25	2.14	26.25	1.18	26.25	2.00			26.25	2.00	26.25	0.67	26.25	1.23
28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	1.14	28.75	2.00	28.75	2.00	28.75	2.00			28.75	1.67	28.75	2.00	28.75	0.74
31.25	1.74	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.91	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.15			31.25	0.98	31.25	2.00	31.25	2.00
33.75	2.00	33.75	n.a	33.75	1.73	33.75	2.00	33.75	2.12	33.75	2.00			33.75	1.83	33.75	0.78			33.75	n.a	33.75	1.37	33.75	1.63
36.25	2.00	36.25	n.a	36.25	1.02	36.25	0.55	36.25	0.95	36.25	0.75			36.25	2.00	36.25	0.60					36.25	0.85	36.25	0.47
				38.75	1.22	38.75	1.73			38.75	2.00														
				41.25	2.13	41.25	1.64			41.25	2.00														
				43.75	2.00	43.75	2.00																		
Inv Avg	1.14	Inv Avg	0.93	Inv Avg	1.18	Inv Avg	1.18	Inv Avg	0.87	Inv Avg	1.13	Inv Avg	1.19	Inv Avg	1.33	Inv Avg	0.82	Inv Avg	1.61	Inv Avg	0.93	Inv Avg	0.99	Inv Avg	0.94
Risk	Moderate	Risk	High	Risk	Moderate	Risk	Moderate	Risk	High	Risk	Moderate	Risk	Moderate	Risk	Low	Risk	High	Risk	Low	Risk	High	Risk	High	Risk	High

Figure D-4

C-74		C-76		C-78		C-79		C-80		C-81		C-82		C-84		C-86		C-89		C-91		C-92		C-94	
S (ft)	0.32	S (ft)	0.16	S (ft)	0.42	S (ft)	0.27	S (ft)	0.28	S (ft)	0.27	S (ft)	0.10	S (ft)	0.26	S (ft)	0.39	S (ft)	0.46	S (ft)	0.65	S (ft)	0.22	S (ft)	0.23
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	0.41	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	n.a	6.25	0.40	6.25	0.47	6.25	0.34	6.25	n.a	6.25	n.a	6.25	n.a	6.25	0.85	6.25	n.a	6.25	n.a	6.25	0.41	6.25	0.41
8.75	n.a	8.75	n.a	8.75	n.a	8.75	0.62	8.75	n.a	8.75	0.46	8.75	n.a	8.75	0.58	8.75	0.43	8.75	0.50	8.75	0.32	8.75	0.61	8.75	0.70
11.25	n.a	11.25	n.a	11.25	0.30	11.25	n.a	11.25	n.a	11.25	0.32	11.25	n.a	11.25	0.82	11.25	0.59	11.25	0.59	11.25	0.43	11.25	0.43	11.25	n.a
13.75	0.29	13.75	0.40	13.75	0.38	13.75	0.56	13.75	0.39	13.75	1.21	13.75	2.00	13.75	2.00	13.75	2.00	13.75	0.62	13.75	0.34	13.75	1.74	13.75	n.a
16.25	0.55	16.25	0.75	16.25	2.00	16.25	1.03	16.25	0.59	16.25	1.92	16.25	2.00	16.25	1.15	16.25	1.29	16.25	0.55	16.25	0.62	16.25	2.00	16.25	0.74
18.75	1.13	18.75	1.13	18.75	1.70	18.75	2.00	18.75	2.00	18.75	0.68	18.75	1.23	18.75	1.37	18.75	1.96	18.75	0.44	18.75	0.78	18.75	2.00	18.75	1.03
21.25	0.68	21.25	2.00	21.25	0.73	21.25	1.43	21.25	1.03	21.25	1.15	21.25	2.00	21.25	1.16	21.25	2.00	21.25	0.85	21.25	1.69	21.25	2.00	21.25	2.00
23.75	1.75	23.75	2.00	23.75	2.00	23.75	0.67	23.75	2.00	23.75	1.88	23.75	2.00	23.75	0.91	23.75	0.66	23.75	0.84	23.75	1.26	23.75	2.00	23.75	1.37
26.25	1.29	26.25	2.00	26.25	0.92	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.08	26.25	0.43			26.25	2.00
28.75	1.11	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	1.95	28.75	1.23	28.75	1.06	28.75	0.57			28.75	2.00
31.25	0.78	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.16	31.25	2.00	31.25	2.11	31.25	2.00	31.25	0.97	31.25	0.78	31.25	0.51			31.25	1.28
33.75	n.a	33.75	2.00	33.75	0.87	33.75	2.00	33.75	1.78	33.75	1.20	33.75	1.43	33.75	2.00	33.75	1.09	33.75	2.00	33.75	1.07			33.75	1.13
36.25	n.a	36.25	2.00	36.25	1.75	36.25	2.00	36.25	2.00	36.25	2.00	36.25	0.48	36.25	0.38	36.25	1.05	36.25	1.96	36.25	0.88			36.25	2.00
Inv Avg	1.03	Inv Avg	1.40	Inv Avg	0.90	Inv Avg	1.14	Inv Avg	1.06	Inv Avg	1.09	Inv Avg	1.57	Inv Avg	1.14	Inv Avg	0.93	Inv Avg	0.88	Inv Avg	0.67	Inv Avg	1.00	Inv Avg	1.19
Risk	Moderate	Risk	Low	Risk	High	Risk	Moderate	Risk	Moderate	Risk	Moderate	Risk	Low	Risk	Moderate	Risk	High	Risk	High	Risk	High	Risk	Moderate	Risk	Moderate

Figure D-4

C-96		C-98		C-100		C-103		C-105		C-106		C-107		C-107A		C-109		C-111		C-113		C-117		C-119	
S (ft)	0.23	S (ft)	0.30	S (ft)	0.28	S (ft)	0.28	S (ft)	0.15	S (ft)	0.48	S (ft)	0.28	S (ft)	0.25	S (ft)	0.30	S (ft)	0.24	S (ft)	0.42	S (ft)	0.44	S (ft)	0.17
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	0.37	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	n.a	6.25	1.31	6.25	n.a	6.25	n.a	6.25	0.47	6.25	0.36	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a
8.75	n.a	8.75	0.27	8.75	2.00	8.75	n.a	8.75	n.a	8.75	0.38	8.75	0.38	8.75	0.57	8.75	n.a	8.75	n.a	8.75	0.38	8.75	0.24	8.75	0.37
11.25	n.a	11.25	0.59	11.25	1.25	11.25	0.47	11.25	n.a	11.25	0.61	11.25	0.45	11.25	0.64	11.25	0.25	11.25	0.34	11.25	1.08	11.25	1.36	11.25	0.74
13.75	0.36	13.75	1.27	13.75	0.91	13.75	1.72	13.75	n.a	13.75	1.29	13.75	1.02	13.75	0.91	13.75	1.08	13.75	0.43	13.75	0.39	13.75	0.62	13.75	1.14
16.25	0.59	16.25	1.97	16.25	1.04	16.25	1.35	16.25	1.49	16.25	0.89	16.25	1.81	16.25	2.00	16.25	2.00	16.25	0.78	16.25	1.03	16.25	0.55	16.25	1.74
18.75	0.63	18.75	1.83	18.75	2.00	18.75	0.49	18.75	2.00	18.75	0.47	18.75	1.78	18.75	2.00	18.75	0.87	18.75	2.00	18.75	0.64	18.75	0.56	18.75	2.00
21.25	1.70	21.25	2.00	21.25	1.70	21.25	0.54	21.25	2.05	21.25	0.51	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.10	21.25	2.00	21.25	2.00	21.25	2.00
23.75	2.00	23.75	1.31	23.75	1.08	23.75	0.89	23.75	1.35	23.75	1.12	23.75	2.00	23.75	0.84	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00
26.25	1.34	26.25	2.00	26.25	1.64	26.25	0.88	26.25	2.00	26.25	0.93			26.25	2.00	26.25	2.00	26.25	2.00	26.25	0.83	26.25	2.00	26.25	2.00
28.75	2.00	28.75	0.78	28.75	0.50	28.75	n.a	28.75	0.49	28.75	2.00			28.75	0.78	28.75	1.14	28.75	2.00	28.75	0.77	28.75	2.00	28.75	2.00
31.25	2.00	31.25	1.05	31.25	0.83	31.25	n.a	31.25	1.70	31.25	2.00			31.25	2.00	31.25	1.65	31.25	2.00	31.25	1.42	31.25	2.00	31.25	2.00
33.75	1.63	33.75	2.00			33.75	n.a	33.75	2.00	33.75	0.80			33.75	2.00	33.75	1.29	33.75	2.00	33.75	0.81	33.75	1.47	33.75	2.00
		36.25	2.00			36.25	n.a	36.25	0.74	36.25	1.21			36.25	2.00	36.25	0.92			36.25	0.93	36.25	1.16		
Inv Avg	1.16	Inv Avg	1.09	Inv Avg	0.99	Inv Avg	1.10	Inv Avg	1.44	Inv Avg	0.81	Inv Avg	0.85	Inv Avg	1.26	Inv Avg	1.12	Inv Avg	1.16	Inv Avg	0.90	Inv Avg	0.96	Inv Avg	1.33
Risk	Moderate	Risk	Moderate	Risk	High	Risk	Moderate	Risk	Low	Risk	High	Risk	High	Risk	Low	Risk	Moderate	Risk	Moderate	Risk	High	Risk	High	Risk	Low

Figure D-4

C-121		C-123		C-125		C-129		C-131		C-133		C-135		C-135A		C-137		C-139		C-139A		C-143		C-145	
S (ft)	0.22	S (ft)	0.24	S (ft)	0.30	S (ft)	0.38	S (ft)	0.48	S (ft)	0.18	S (ft)	0.07	S (ft)	0.14	S (ft)	0.08	S (ft)	0.13	S (ft)	0.15	S (ft)	0.40	S (ft)	0.28
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	0.29	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	0.37	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	0.27	6.25	0.32
8.75	n.a	8.75	1.99	8.75	n.a	8.75	n.a	8.75	0.32	8.75	0.57	8.75	n.a	8.75	n.a	8.75	n.a	8.75	n.a	8.75	n.a	8.75	0.80	8.75	0.83
11.25	0.58	11.25	1.13	11.25	n.a	11.25	n.a	11.25	0.28	11.25	1.12	11.25	0.54	11.25	0.54	11.25	n.a	11.25	n.a	11.25	n.a	11.25	0.96	11.25	0.51
13.75	2.00	13.75	2.00	13.75	0.47	13.75	n.a	13.75	0.59	13.75	1.30	13.75	2.00	13.75	2.00	13.75	1.19	13.75	0.30	13.75	0.38	13.75	1.44	13.75	2.00
16.25	2.00	16.25	1.79	16.25	0.93	16.25	0.26	16.25	0.72	16.25	2.00	16.25	2.00	16.25	2.00	16.25	0.95	16.25	2.00	16.25	1.31	16.25	1.64	16.25	2.00
18.75	2.00	18.75	1.00	18.75	2.00	18.75	2.00	18.75	0.94	18.75	0.99	18.75	2.00	18.75	2.00	18.75	1.30	18.75	2.00	18.75	2.00	18.75	0.69	18.75	0.66
21.25	2.00	21.25	0.97	21.25	2.00	21.25	2.00	21.25	2.00	21.25	1.11			21.25	2.00	21.25	1.08	21.25	2.00	21.25	2.00	21.25	1.05	21.25	2.00
23.75	1.65	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.54	23.75	0.75			23.75	2.00	23.75	2.00			23.75	2.00	23.75	0.76	23.75	2.00
26.25	0.64	26.25	2.00	26.25	2.00	26.25	0.62	26.25	1.08	26.25	1.34			26.25	1.91	26.25	1.26			26.25	2.00	26.25	1.41	26.25	2.00
28.75	0.95	28.75	1.62	28.75	2.00	28.75	0.70	28.75	0.66	28.75	1.30			28.75	0.57	28.75	1.40			28.75	2.00	28.75	1.10		
31.25	0.58	31.25	0.60	31.25	0.71	31.25	2.00	31.25	1.57	31.25	2.00			31.25	1.52	31.25	2.00			31.25	0.76	31.25	0.86		
33.75	2.00	33.75	1.39	33.75	1.38	33.75	0.73	33.75	2.00	33.75	2.00					32.25	2.00					33.75	2.00		
		36.25	1.51	36.25	1.69	36.25	0.68	36.25	1.33	36.25	2.00											36.25	2.00		
Inv Avg	1.25	Inv Avg	1.17	Inv Avg	1.08	Inv Avg	1.02	Inv Avg	0.84	Inv Avg	1.29	Inv Avg	1.50	Inv Avg	1.40	Inv Avg	1.54	Inv Avg	1.23	Inv Avg	1.34	Inv Avg	0.95	Inv Avg	0.97
Risk	Low	Risk	Moderate	Risk	Moderate	Risk	Moderate	Risk	High	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	High	Risk	High

Figure D-4

C-145A		C-147		C-149		C-151		C-157		C-157A		C-159		C-161		C-163		C-166		C-168		C-168A		C-170	
S (ft)	0.36	S (ft)	0.17	S (ft)	0.45	S (ft)	0.50	S (ft)	0.23	S (ft)	0.26	S (ft)	0.37	S (ft)	0.20	S (ft)	0.65	S (ft)	0.28	S (ft)	0.41	S (ft)	0.62	S (ft)	0.32
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	0.31	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	0.40	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	1.15	6.25	n.a	6.25	n.a	6.25	0.26	6.25	0.26	6.25	2.00	6.25	0.39	6.25	n.a	6.25	0.63	6.25	0.39	6.25	0.32	6.25	n.a
8.75	0.54	8.75	2.00	8.75	0.40	8.75	n.a	8.75	1.70	8.75	1.56	8.75	0.80	8.75	0.51	8.75	n.a	8.75	2.00	8.75	0.61	8.75	0.60	8.75	0.28
11.25	0.56	11.25	0.60	11.25	0.64	11.25	0.23	11.25	0.84	11.25	0.57	11.25	0.74	11.25	1.46	11.25	n.a	11.25	2.00	11.25	0.66	11.25	0.46	11.25	0.86
13.75	2.00	13.75	1.48	13.75	1.04	13.75	0.56	13.75	2.00	13.75	2.00	13.75	1.16	13.75	1.29	13.75	0.22	13.75	0.93	13.75	0.75	13.75	0.50	13.75	0.81
16.25	2.00	16.25	0.84	16.25	1.64	16.25	2.00	16.25	2.00	16.25	2.00	16.25	1.89	16.25	1.13	16.25	1.07	16.25	1.47	16.25	0.48	16.25	0.59	16.25	2.00
18.75	0.55	18.75	2.00	18.75	2.00	18.75	0.65	18.75	2.00	18.75	2.00	18.75	2.00	18.75	1.30	18.75	0.91	18.75	2.00	18.75	0.61	18.75	0.70	18.75	2.00
21.25	2.00	21.25	0.75	21.25	1.82	21.25	0.96	21.25	2.00	21.25	2.00	21.25	2.00	21.25	1.13	21.25	0.63	21.25	2.00	21.25	0.86	21.25	0.71	21.25	0.67
23.75	2.00	23.75	2.00	23.75	2.12	23.75	0.87	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.58	23.75	0.66	23.75	2.00	23.75	1.93	23.75	1.64	23.75	1.02
26.25	2.00			26.25	0.67	26.25	1.78			26.25	2.00	26.25	0.66	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00
28.75	1.70			28.75	0.57	28.75	1.46			28.75	1.18	28.75	0.68	28.75	2.00	28.75	1.27	28.75	2.00	28.75	2.00	28.75	n.a	28.75	1.50
31.25	0.78			31.25	0.59	31.25	2.00			31.25	1.97	31.25	0.87	31.25	2.00	31.25	1.91	31.25	0.45	31.25	2.00	31.25	0.37	31.25	1.58
33.75	0.57			33.75	2.00	33.75	2.00					33.75	0.79					32.25	0.71	32.25	2.00	33.75	0.55	33.75	2.00
36.25	0.63			36.25	2.00							36.25	0.59					33.25	1.46					36.25	1.05
Inv Avg	1.03	Inv Avg	1.21	Inv Avg	0.87	Inv Avg	0.96	Inv Avg	1.09	Inv Avg	1.12	Inv Avg	1.06	Inv Avg	1.11	Inv Avg	0.93	Inv Avg	1.06	Inv Avg	0.91	Inv Avg	0.68	Inv Avg	1.06
Risk	Moderate	Risk	Low	Risk	High	Risk	High	Risk	Moderate	Risk	Moderate	Risk	Moderate	Risk	Moderate	Risk	High	Risk	Moderate	Risk	High	Risk	High	Risk	Moderate

Figure D-4

C-172		C-174		C-178		C-180		C-182		C-184		C-186		C-190		C-192		C-194		C-196		C-198		C-200	
S (ft)	0.33	S (ft)	0.14	S (ft)	0.35	S (ft)	0.55	S (ft)	0.17	S (ft)	0.37	S (ft)	0.44	S (ft)	0.18	S (ft)	0.23	S (ft)	0.34	S (ft)	0.36	S (ft)	0.46	S (ft)	0.60
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	0.28	6.25	0.62	6.25	n.a	6.25	0.34	6.25	n.a	6.25	n.a	6.25	0.30	6.25	n.a	6.25	0.32	6.25	0.35	6.25	n.a	6.25	0.37	6.25	0.44
8.75	0.70	8.75	1.20	8.75	0.37	8.75	0.90	8.75	0.59	8.75	0.30	8.75	1.70	8.75	n.a	8.75	2.00	8.75	n.a	8.75	0.45	8.75	0.41	8.75	n.a
11.25	1.07	11.25	2.00	11.25	0.84	11.25	0.54	11.25	0.74	11.25	0.71	11.25	1.78	11.25	n.a	11.25	1.25	11.25	0.70	11.25	0.75	11.25	0.67	11.25	n.a
13.75	2.00	13.75	2.00	13.75	0.83	13.75	0.45	13.75	1.15	13.75	1.85	13.75	1.98	13.75	n.a	13.75	2.06	13.75	0.51	13.75	1.65	13.75	2.00	13.75	0.56
16.25	1.73	16.25	1.03	16.25	0.46	16.25	0.42	16.25	1.30	16.25	0.80	16.25	2.00	16.25	0.31	16.25	2.00	16.25	1.02	16.25	0.67	16.25	2.00	16.25	0.62
18.75	2.00	18.75	0.88	18.75	1.32	18.75	0.65	18.75	1.36	18.75	0.82	18.75	0.72	18.75	1.39	18.75	0.45	18.75	0.59	18.75	0.99	18.75	0.93	18.75	1.67
21.25	0.81	21.25	2.05	21.25	0.86	21.25	0.59	21.25	1.08	21.25	2.00	21.25	0.57	21.25	0.81	21.25	2.00	21.25	2.00	21.25	1.04	21.25	n.a	21.25	0.79
23.75	0.84	23.75	1.48	23.75	0.64	23.75	0.62	23.75	2.00	23.75	2.00	23.75	0.67	23.75	1.84	23.75	2.00	23.75	2.00	23.75	1.12	23.75	0.43	23.75	1.06
26.25	1.09	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	0.49	26.25	2.00	26.25	1.45	26.25	2.00	26.25	2.00	26.25	0.98	26.25	0.84
28.75	1.52	28.75	1.91	28.75	1.21	28.75	2.00	28.75	2.00	28.75	1.21	28.75	0.50	28.75	2.16	28.75	1.55	28.75	2.00	28.75	2.00	28.75	0.72	28.75	2.00
31.25	1.11	31.25	2.14	31.25	2.00	31.25	1.02	31.25	1.68	31.25	0.99	31.25	2.00	31.25	2.00	31.25	1.80	31.25	1.10	31.25	n.a	31.25	0.77	31.25	2.00
33.75	1.64	33.75	2.00	33.75	2.00	33.75	1.03	33.75	1.16	33.75	1.06	33.75	1.33	33.75	2.00	33.75	1.33	33.75	0.97	33.75	0.30	33.75	1.87	33.75	0.80
36.25	2.00			36.25	2.00	36.25	2.00			36.25	0.73			36.25	2.00	36.25	2.00	36.25	2.00			36.25	2.00	36.25	2.00
																								38.75	2.00
																								41.25	2.00
																								43.75	1.52
																								46.25	0.92
																								48.75	0.70
																								51.25	0.84
																								53.75	0.76
																								56.25	2.00
																								58.75	2.00
																								61.25	2.00
																								63.75	2.00
																								66.25	0.83
Inv Avg	1.03	Inv Avg	1.44	Inv Avg	0.99	Inv Avg	0.76	Inv Avg	1.30	Inv Avg	1.01	Inv Avg	0.85	Inv Avg	1.34	Inv Avg	1.17	Inv Avg	1.01	Inv Avg	0.95	Inv Avg	0.87	Inv Avg	1.11
Risk	Moderate	Risk	Low	Risk	High	Risk	High	Risk	Low	Risk	Moderate	Risk	High	Risk	Low	Risk	Moderate	Risk	Moderate	Risk	High	Risk	High	Risk	Moderate

Figure D-4

Ameren Missouri: Labadie UWL
Liquefaction Analysis
10' of ASH M: 7.5
PGA: 2% probability of exceedence in 50 yrs: 0.1792 GW: 0.0'

C-11		C-13		C-16		C-18		C-21		C-23		C-25		C-28		C-30		C-32		C-34		C-37		C-39	
S (ft)	0.32	S (ft)	0.09	S (ft)	0.33	S (ft)	0.40	S (ft)	0.14	S (ft)	0.37	S (ft)	0.34	S (ft)	0.22	S (ft)	0.22	S (ft)	0.21	S (ft)	0.25	S (ft)	0.24	S (ft)	0.10
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	0.75	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	n.a	6.25	0.79	6.25	0.46	6.25	n.a	6.25	0.93	6.25	1.04	6.25	n.a	6.25	0.54	6.25	n.a	6.25	0.64	6.25	n.a	6.25	n.a
8.75	n.a	8.75	1.08	8.75	0.89	8.75	n.a	8.75	n.a	8.75	0.78	8.75	0.69	8.75	0.53	8.75	1.32	8.75	0.84	8.75	n.a	8.75	0.66	8.75	n.a
11.25	0.41	11.25	2.00	11.25	0.53	11.25	0.73	11.25	0.84	11.25	0.97	11.25	2.00	11.25	n.a	11.25	2.00	11.25	2.16	11.25	n.a	11.25	2.00	11.25	0.94
13.75	n.a	13.75	2.00	13.75	0.80	13.75	1.37	13.75	2.00	13.75	1.53	13.75	0.71	13.75	n.a	13.75	2.00	13.75	1.67	13.75	0.68	13.75	1.45	13.75	1.61
16.25	0.40	16.25	2.00	16.25	1.14	16.25	1.42	16.25	2.00	16.25	1.44	16.25	1.78	16.25	1.09	16.25	1.23	16.25	0.80	16.25	2.00	16.25	2.00	16.25	2.00
18.75	2.00	18.75	2.00	18.75	1.18	18.75	0.85	18.75	2.00	18.75	0.61	18.75	0.97	18.75	1.10	18.75	1.48	18.75	1.78	18.75	1.67	18.75	2.00	18.75	1.14
21.25	2.00	21.25	1.75	21.25	1.93	21.25	0.66	21.25	1.02	21.25	1.47	21.25	1.69	21.25	1.22	21.25	1.27	21.25	1.66	21.25	2.00	21.25	1.46	21.25	2.00
23.75	1.72	23.75	2.00	23.75	2.00	23.75	1.12	23.75	1.29	23.75	2.00	23.75	0.84	23.75	1.79	23.75	1.41	23.75	1.02	23.75	2.00	23.75	0.78	23.75	1.10
26.25	2.00	26.25	1.09	26.25	1.74	26.25	2.00	26.25	1.29	26.25	2.00	26.25	0.88	26.25	1.67	26.25	2.00	26.25	0.97	26.25	2.00	26.25	0.93	26.25	1.84
28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	1.22	28.75	1.09	28.75	1.23	28.75	1.52	28.75	2.00	28.75	2.00	28.75	1.28	28.75	2.00	28.75	2.00
31.25	2.00	31.25	1.07	31.25	2.00	31.25	1.11	31.25	1.83	31.25	2.00	31.25	1.93	31.25	1.10	31.25	1.94	31.25	2.00	31.25	2.00	31.25	0.93	31.25	2.00
33.75	2.00	33.75	1.15	33.75	2.00	33.75	2.00	33.75	1.21	33.75	2.00	33.75	2.15	33.75	2.00	33.75	0.79	33.75	2.00	33.75	2.00	33.75	2.00	33.75	2.00
		36.25	2.00	36.25	2.00	36.25	1.39	36.25	1.08	36.25	2.00	36.25	2.00	36.25	0.92	36.25	2.00	36.25	2.00	36.25	0.75	36.25	2.00	36.25	2.00
		38.75	2.00																			38.75	2.00		
		41.25	2.00																			41.25	2.00		
Inv Avg	1.27	Inv Avg	1.66	Inv Avg	1.27	Inv Avg	1.14	Inv Avg	1.45	Inv Avg	1.22	Inv Avg	1.24	Inv Avg	1.32	Inv Avg	1.38	Inv Avg	1.47	Inv Avg	1.40	Inv Avg	1.44	Inv Avg	1.66
Risk	Low	Risk	Low	Risk	Low	Risk	Moderate	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-5

C-41		C-44		C-46		C-46A		C-48		C-50		C-60		C-62		C-64		C-66		C-66A		C-68		C-70	
S (ft)	0.22	S (ft)	0.31	S (ft)	0.21	S (ft)	0.20	S (ft)	0.38	S (ft)	0.28	S (ft)	0.13	S (ft)	0.13	S (ft)	0.45	S (ft)	0.03	S (ft)	0.24	S (ft)	0.32	S (ft)	0.27
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	0.82	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	0.82	6.25	n.a	6.25	n.a	6.25	0.66	6.25	0.50	6.25	n.a	6.25	0.68	6.25	n.a	6.25	n.a	6.25	0.69	6.25	0.57	6.25	1.27
8.75	n.a	8.75	0.77	8.75	n.a	8.75	n.a	8.75	0.77	8.75	1.85	8.75	0.57	8.75	n.a	8.75	0.48	8.75	n.a	8.75	0.67	8.75	1.10	8.75	1.27
11.25	0.56	11.25	1.29	11.25	1.44	11.25	1.17	11.25	1.10	11.25	0.75	11.25	1.13	11.25	n.a	11.25	0.97	11.25	2.00	11.25	2.00	11.25	0.88	11.25	1.26
13.75	0.87	13.75	1.04	13.75	0.78	13.75	0.80	13.75	0.87	13.75	2.00	13.75	1.23	13.75	1.07	13.75	0.87	13.75	2.00	13.75	2.00	13.75	2.00	13.75	0.85
16.25	0.84	16.25	1.07	16.25	1.57	16.25	1.44	16.25	0.53	16.25	2.00	16.25	2.06	16.25	2.00	16.25	0.44	16.25	1.33	16.25	1.13	16.25	2.00	16.25	n.a
18.75	2.10	18.75	1.10	18.75	1.62	18.75	2.00	18.75	2.00	18.75	2.00	18.75	1.76	18.75	2.00	18.75	1.37	18.75	1.75	18.75	1.40	18.75	2.00	18.75	0.76
21.25	2.06	21.25	0.79	21.25	0.82	21.25	1.07	21.25	0.92	21.25	2.00	21.25	2.00	21.25	2.00	21.25	1.55	21.25	2.00	21.25	2.00	21.25	2.00	21.25	1.90
23.75	1.50	23.75	0.96	23.75	1.12	23.75	1.18	23.75	2.00	23.75	1.56	23.75	2.00	23.75	1.40	23.75	2.00	23.75	1.58	23.75	2.00	23.75	0.87	23.75	1.50
26.25	1.83	26.25	2.00	26.25	0.99	26.25	1.18	26.25	2.00	26.25	2.00	26.25	2.00	26.25	1.55	26.25	2.00			26.25	2.00	26.25	0.88	26.25	1.61
28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	1.47	28.75	2.00	28.75	2.00	28.75	2.00			28.75	2.15	28.75	2.00	28.75	0.96
31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00			31.25	1.25	31.25	2.00	31.25	2.00
33.75	2.00	33.75	n.a	33.75	2.17	33.75	2.00	33.75	2.00	33.75	2.00			33.75	2.00	33.75	0.98			33.75	n.a	33.75	1.72	33.75	2.05
36.25	2.00	36.25	n.a	36.25	1.27	36.25	0.68	36.25	1.18	36.25	0.93			36.25	2.00	36.25	0.74					36.25	1.05	36.25	0.58
				38.75	1.50	38.75	2.13			38.75	2.00														
				41.25	2.00	41.25	1.99			41.25	2.00														
				43.75	2.00	43.75	2.00																		
Inv Avg	1.46	Inv Avg	1.26	Inv Avg	1.47	Inv Avg	1.45	Inv Avg	1.18	Inv Avg	1.44	Inv Avg	1.53	Inv Avg	1.62	Inv Avg	1.09	Inv Avg	1.83	Inv Avg	1.33	Inv Avg	1.29	Inv Avg	1.26
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Moderate	Risk	Low	Risk	Low	Risk	Low	Risk	Moderate	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-5

C-74		C-76		C-78		C-79		C-80		C-81		C-82		C-84		C-86		C-89		C-91		C-92		C-94	
S (ft)	0.28	S (ft)	0.12	S (ft)	0.36	S (ft)	0.22	S (ft)	0.26	S (ft)	0.25	S (ft)	0.10	S (ft)	0.18	S (ft)	0.30	S (ft)	0.36	S (ft)	0.58	S (ft)	0.19	S (ft)	0.14
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	0.77	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	n.a	6.25	0.70	6.25	0.83	6.25	0.59	6.25	n.a	6.25	n.a	6.25	n.a	6.25	1.49	6.25	n.a	6.25	n.a	6.25	0.72	6.25	0.71
8.75	n.a	8.75	n.a	8.75	n.a	8.75	1.02	8.75	n.a	8.75	0.75	8.75	n.a	8.75	0.95	8.75	0.70	8.75	0.82	8.75	0.53	8.75	1.00	8.75	1.15
11.25	n.a	11.25	n.a	11.25	0.47	11.25	n.a	11.25	n.a	11.25	0.50	11.25	n.a	11.25	1.27	11.25	0.92	11.25	0.92	11.25	0.67	11.25	0.66	11.25	n.a
13.75	0.44	13.75	0.60	13.75	0.57	13.75	0.84	13.75	0.58	13.75	1.80	13.75	2.00	13.75	2.00	13.75	2.00	13.75	0.93	13.75	0.50	13.75	2.00	13.75	n.a
16.25	0.79	16.25	1.07	16.25	2.00	16.25	1.48	16.25	0.85	16.25	2.00	16.25	2.00	16.25	1.65	16.25	1.85	16.25	0.79	16.25	0.89	16.25	2.00	16.25	1.07
18.75	1.59	18.75	1.59	18.75	2.00	18.75	2.00	18.75	2.00	18.75	0.95	18.75	1.73	18.75	1.92	18.75	2.00	18.75	0.62	18.75	1.09	18.75	2.00	18.75	1.43
21.25	0.93	21.25	2.00	21.25	1.00	21.25	1.95	21.25	1.41	21.25	1.57	21.25	2.00	21.25	1.59	21.25	2.00	21.25	1.16	21.25	2.00	21.25	2.00	21.25	2.00
23.75	2.00	23.75	2.00	23.75	2.00	23.75	0.89	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.22	23.75	0.88	23.75	1.12	23.75	1.68	23.75	2.00	23.75	1.83
26.25	1.70	26.25	2.00	26.25	1.21	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	0.57			26.25	2.00
28.75	1.44	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	1.59	28.75	1.37	28.75	0.73			28.75	2.00
31.25	0.99	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.48	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.23	31.25	0.99	31.25	0.65			31.25	1.63
33.75	n.a	33.75	2.00	33.75	1.09	33.75	2.00	33.75	2.00	33.75	1.51	33.75	1.79	33.75	2.00	33.75	1.37	33.75	2.00	33.75	1.34			33.75	1.42
36.25	n.a	36.25	2.00	36.25	2.17	36.25	2.00	36.25	2.00	36.25	2.00	36.25	0.60	36.25	0.47	36.25	1.31	36.25	2.00	36.25	1.09			36.25	2.00
Inv Avg	1.30	Inv Avg	1.63	Inv Avg	1.20	Inv Avg	1.47	Inv Avg	1.37	Inv Avg	1.40	Inv Avg	1.70	Inv Avg	1.42	Inv Avg	1.29	Inv Avg	1.18	Inv Avg	0.92	Inv Avg	1.35	Inv Avg	1.54
Risk	Low	Risk	Low	Risk	Moderate	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Moderate	Risk	High	Risk	Low	Risk	Low

Figure D-5

C-96		C-98		C-100		C-103		C-105		C-106		C-107		C-107A		C-109		C-111		C-113		C-117		C-119	
S (ft)	0.21	S (ft)	0.24	S (ft)	0.21	S (ft)	0.23	S (ft)	0.13	S (ft)	0.39	S (ft)	0.27	S (ft)	0.14	S (ft)	0.24	S (ft)	0.20	S (ft)	0.32	S (ft)	0.42	S (ft)	0.13
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	0.71	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	n.a	6.25	2.00	6.25	n.a	6.25	n.a	6.25	0.81	6.25	0.62	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a
8.75	n.a	8.75	0.45	8.75	2.00	8.75	n.a	8.75	n.a	8.75	0.62	8.75	0.62	8.75	0.92	8.75	n.a	8.75	n.a	8.75	0.62	8.75	0.39	8.75	0.60
11.25	n.a	11.25	0.92	11.25	1.95	11.25	0.73	11.25	n.a	11.25	0.95	11.25	0.70	11.25	0.99	11.25	0.39	11.25	0.52	11.25	1.68	11.25	2.12	11.25	1.16
13.75	0.53	13.75	1.89	13.75	1.36	13.75	2.00	13.75	n.a	13.75	1.93	13.75	1.51	13.75	1.36	13.75	1.61	13.75	0.63	13.75	0.58	13.75	0.92	13.75	1.70
16.25	0.85	16.25	2.00	16.25	1.50	16.25	1.95	16.25	2.14	16.25	1.28	16.25	2.00	16.25	2.00	16.25	2.00	16.25	1.12	16.25	1.48	16.25	0.79	16.25	2.00
18.75	0.88	18.75	2.00	18.75	2.00	18.75	0.69	18.75	2.00	18.75	0.66	18.75	2.00	18.75	2.00	18.75	1.22	18.75	2.00	18.75	0.89	18.75	0.79	18.75	2.00
21.25	2.00	21.25	2.00	21.25	2.00	21.25	0.74	21.25	2.00	21.25	0.69	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00
23.75	2.00	23.75	1.74	23.75	1.45	23.75	1.19	23.75	1.80	23.75	1.50	23.75	2.00	23.75	1.13	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00
26.25	1.75	26.25	2.00	26.25	2.15	26.25	1.16	26.25	2.00	26.25	1.22			26.25	2.00	26.25	2.00	26.25	2.00	26.25	1.09	26.25	2.00	26.25	2.00
28.75	2.00	28.75	1.00	28.75	0.65	28.75	n.a	28.75	0.63	28.75	2.00			28.75	1.00	28.75	1.47	28.75	2.00	28.75	0.99	28.75	2.00	28.75	2.00
31.25	2.00	31.25	1.33	31.25	1.06	31.25	n.a	31.25	2.16	31.25	2.00			31.25	2.00	31.25	2.11	31.25	2.00	31.25	1.81	31.25	2.00	31.25	2.00
33.75	2.04	33.75	2.00			33.75	n.a	33.75	2.00	33.75	1.01			33.75	2.00	33.75	1.62	33.75	2.00	33.75	1.02	33.75	1.85	33.75	2.00
		36.25	2.00			36.25	n.a	36.25	0.91	36.25	1.51			36.25	2.00	36.25	1.15			36.25	1.16	36.25	1.45		
Inv Avg	1.43	Inv Avg	1.40	Inv Avg	1.37	Inv Avg	1.38	Inv Avg	1.64	Inv Avg	1.13	Inv Avg	1.20	Inv Avg	1.54	Inv Avg	1.41	Inv Avg	1.42	Inv Avg	1.20	Inv Avg	1.26	Inv Avg	1.62
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Moderate	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Moderate	Risk	Low	Risk	Low

Figure D-5

C-121		C-123		C-125		C-129		C-131		C-133		C-135		C-135A		C-137		C-139		C-139A		C-143		C-145	
S (ft)	0.19	S (ft)	0.19	S (ft)	0.26	S (ft)	0.34	S (ft)	0.40	S (ft)	0.11	S (ft)	0.07	S (ft)	0.14	S (ft)	0.04	S (ft)	0.13	S (ft)	0.14	S (ft)	0.26	S (ft)	0.23
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	0.55	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	0.64	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	0.48	6.25	0.56
8.75	n.a	8.75	2.00	8.75	n.a	8.75	n.a	8.75	0.52	8.75	0.93	8.75	n.a	8.75	n.a	8.75	n.a	8.75	n.a	8.75	n.a	8.75	1.31	8.75	1.36
11.25	0.90	11.25	1.76	11.25	n.a	11.25	n.a	11.25	0.43	11.25	1.74	11.25	0.84	11.25	0.84	11.25	n.a	11.25	n.a	11.25	n.a	11.25	1.49	11.25	0.79
13.75	2.00	13.75	2.00	13.75	0.70	13.75	n.a	13.75	0.88	13.75	1.94	13.75	2.00	13.75	2.00	13.75	1.78	13.75	0.45	13.75	0.57	13.75	2.15	13.75	2.00
16.25	2.00	16.25	2.00	16.25	1.34	16.25	0.38	16.25	1.04	16.25	2.00	16.25	2.00	16.25	2.00	16.25	1.37	16.25	2.00	16.25	1.89	16.25	2.00	16.25	2.00
18.75	2.00	18.75	1.40	18.75	2.00	18.75	2.00	18.75	1.32	18.75	1.39	18.75	2.00	18.75	2.00	18.75	1.82	18.75	2.00	18.75	2.00	18.75	0.97	18.75	0.93
21.25	2.00	21.25	1.32	21.25	2.00	21.25	2.00	21.25	2.00	21.25	1.52			21.25	2.00	21.25	1.47	21.25	2.00	21.25	2.00	21.25	1.43	21.25	2.00
23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.05	23.75	1.01			23.75	2.00	23.75	2.00			23.75	2.00	23.75	1.01	23.75	2.00
26.25	0.84	26.25	2.00	26.25	2.00	26.25	0.81	26.25	1.42	26.25	1.76			26.25	2.00	26.25	1.66			26.25	2.00	26.25	1.85	26.25	2.00
28.75	1.22	28.75	2.09	28.75	2.00	28.75	0.91	28.75	0.85	28.75	1.67			28.75	0.73	28.75	1.81			28.75	2.00	28.75	1.42		
31.25	0.73	31.25	0.76	31.25	0.91	31.25	2.00	31.25	2.00	31.25	2.00			31.25	1.94	31.25	2.00			31.25	0.97	31.25	1.09		
33.75	2.00	33.75	1.75	33.75	1.73	33.75	0.92	33.75	2.00	33.75	2.00					32.25	2.00					33.75	2.00		
		36.25	1.88	36.25	2.10	36.25	0.85	36.25	1.65	36.25	2.00											36.25	2.00		
Inv Avg	1.47	Inv Avg	1.50	Inv Avg	1.41	Inv Avg	1.23	Inv Avg	1.15	Inv Avg	1.63	Inv Avg	1.71	Inv Avg	1.61	Inv Avg	1.82	Inv Avg	1.44	Inv Avg	1.56	Inv Avg	1.32	Inv Avg	1.31
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Moderate	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-5

C-145A		C-147		C-149		C-151		C-157		C-157A		C-159		C-161		C-163		C-166		C-168		C-168A		C-170	
S (ft)	0.34	S (ft)	0.08	S (ft)	0.42	S (ft)	0.43	S (ft)	0.20	S (ft)	0.25	S (ft)	0.24	S (ft)	0.18	S (ft)	0.60	S (ft)	0.22	S (ft)	0.28	S (ft)	0.57	S (ft)	0.22
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	0.59	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	0.76	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	2.01	6.25	n.a	6.25	n.a	6.25	0.45	6.25	0.46	6.25	2.00	6.25	0.67	6.25	n.a	6.25	1.09	6.25	0.69	6.25	0.56	6.25	n.a
8.75	0.89	8.75	2.00	8.75	0.65	8.75	n.a	8.75	2.00	8.75	2.00	8.75	1.31	8.75	0.84	8.75	n.a	8.75	2.00	8.75	1.00	8.75	0.99	8.75	0.46
11.25	0.87	11.25	0.94	11.25	0.99	11.25	0.36	11.25	1.30	11.25	0.88	11.25	1.15	11.25	2.00	11.25	n.a	11.25	2.00	11.25	1.03	11.25	0.72	11.25	1.34
13.75	2.00	13.75	2.00	13.75	1.56	13.75	0.83	13.75	2.00	13.75	2.00	13.75	1.73	13.75	1.92	13.75	0.33	13.75	1.38	13.75	1.11	13.75	0.74	13.75	1.21
16.25	2.00	16.25	1.20	16.25	2.00	16.25	2.00	16.25	2.00	16.25	2.00	16.25	2.00	16.25	1.63	16.25	1.54	16.25	2.12	16.25	0.70	16.25	0.84	16.25	2.00
18.75	0.78	18.75	2.00	18.75	2.00	18.75	0.91	18.75	2.00	18.75	2.00	18.75	2.00	18.75	1.81	18.75	1.28	18.75	2.00	18.75	0.86	18.75	0.98	18.75	2.00
21.25	2.00	21.25	1.02	21.25	2.00	21.25	1.32	21.25	2.00	21.25	2.00	21.25	2.00	21.25	1.55	21.25	0.86	21.25	2.00	21.25	1.17	21.25	0.97	21.25	0.91
23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.16	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.12	23.75	0.88	23.75	2.00	23.75	2.00	23.75	2.20	23.75	1.36
26.25	2.00			26.25	0.88	26.25	2.00			26.25	2.00	26.25	0.86	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00
28.75	2.19			28.75	0.73	28.75	1.89			28.75	1.53	28.75	0.87	28.75	2.00	28.75	1.64	28.75	2.00	28.75	2.00	28.75	n.a	28.75	1.93
31.25	1.00			31.25	0.76	31.25	2.00			31.25	2.00	31.25	1.11	31.25	2.00	31.25	2.00	31.25	0.57	31.25	2.00	31.25	0.47	31.25	2.01
33.75	0.71			33.75	2.00	33.75	2.00					33.75	0.99					32.25	0.90	32.25	2.00	33.75	0.69	33.75	2.00
36.25	0.79			36.25	2.00							36.25	0.73					33.25	1.84					36.25	1.30
Inv Avg	1.28	Inv Avg	1.57	Inv Avg	1.18	Inv Avg	1.24	Inv Avg	1.43	Inv Avg	1.45	Inv Avg	1.33	Inv Avg	1.53	Inv Avg	1.19	Inv Avg	1.38	Inv Avg	1.24	Inv Avg	0.95	Inv Avg	1.38
Risk	Low	Risk	Low	Risk	Moderate	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Moderate	Risk	Low	Risk	Low	Risk	High	Risk	Low

Figure D-5

C-172		C-174		C-178		C-180		C-182		C-184		C-186		C-190		C-192		C-194		C-196		C-198		C-200	
S (ft)	0.21	S (ft)	0.07	S (ft)	0.26	S (ft)	0.48	S (ft)	0.10	S (ft)	0.23	S (ft)	0.40	S (ft)	0.15	S (ft)	0.22	S (ft)	0.26	S (ft)	0.27	S (ft)	0.36	S (ft)	0.45
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	0.49	6.25	1.08	6.25	n.a	6.25	0.60	6.25	n.a	6.25	n.a	6.25	0.52	6.25	n.a	6.25	0.55	6.25	0.61	6.25	n.a	6.25	0.64	6.25	0.76
8.75	1.15	8.75	1.96	8.75	0.60	8.75	1.47	8.75	0.97	8.75	0.50	8.75	2.00	8.75	n.a	8.75	2.00	8.75	n.a	8.75	0.74	8.75	0.67	8.75	n.a
11.25	1.67	11.25	2.00	11.25	1.30	11.25	0.84	11.25	1.14	11.25	1.10	11.25	2.00	11.25	n.a	11.25	1.93	11.25	1.09	11.25	1.17	11.25	1.04	11.25	n.a
13.75	2.00	13.75	2.00	13.75	1.24	13.75	0.67	13.75	1.71	13.75	2.00	13.75	2.00	13.75	n.a	13.75	2.00	13.75	0.75	13.75	2.00	13.75	2.00	13.75	0.83
16.25	2.00	16.25	1.49	16.25	0.66	16.25	0.60	16.25	1.87	16.25	1.15	16.25	2.00	16.25	0.44	16.25	2.00	16.25	1.47	16.25	0.96	16.25	2.00	16.25	0.89
18.75	2.00	18.75	1.23	18.75	1.85	18.75	0.92	18.75	1.90	18.75	1.14	18.75	1.00	18.75	1.95	18.75	0.62	18.75	0.82	18.75	1.38	18.75	1.30	18.75	2.00
21.25	1.11	21.25	2.00	21.25	1.18	21.25	0.80	21.25	1.47	21.25	2.00	21.25	0.77	21.25	1.11	21.25	2.00	21.25	2.00	21.25	1.42	21.25	n.a	21.25	1.08
23.75	1.12	23.75	1.98	23.75	0.85	23.75	0.82	23.75	2.00	23.75	2.00	23.75	0.90	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.50	23.75	0.57	23.75	1.42
26.25	1.43	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	0.65	26.25	2.00	26.25	1.90	26.25	2.00	26.25	2.00	26.25	1.29	26.25	1.10
28.75	1.96	28.75	2.00	28.75	1.56	28.75	2.00	28.75	2.00	28.75	1.56	28.75	0.65	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	0.93	28.75	2.00
31.25	1.41	31.25	2.00	31.25	2.00	31.25	1.30	31.25	2.14	31.25	1.25	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.40	31.25	n.a	31.25	0.97	31.25	2.00
33.75	2.07	33.75	2.00	33.75	2.00	33.75	1.30	33.75	1.46	33.75	1.33	33.75	1.67	33.75	2.00	33.75	1.67	33.75	1.22	33.75	0.38	33.75	2.00	33.75	1.00
36.25	2.00			36.25	2.00	36.25	2.00			36.25	0.90			36.25	2.00	36.25	2.00	36.25	2.00			36.25	2.00	36.25	2.00
																								38.75	2.00
																								41.25	2.00
																								43.75	1.83
																								46.25	1.11
																								48.75	0.83
																								51.25	0.99
																								53.75	0.89
																								56.25	2.00
																								58.75	2.00
																								61.25	2.00
																								63.75	2.00
																								66.25	0.95
Inv Avg	1.40	Inv Avg	1.77	Inv Avg	1.31	Inv Avg	1.05	Inv Avg	1.67	Inv Avg	1.31	Inv Avg	1.12	Inv Avg	1.55	Inv Avg	1.49	Inv Avg	1.33	Inv Avg	1.22	Inv Avg	1.16	Inv Avg	1.35
Risk	Low	Risk	Low	Risk	Low	Risk	Moderate	Risk	Low	Risk	Low	Risk	Moderate	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Moderate	Risk	Low

Figure D-5

Ameren Missouri: Labadie UWL
Liquefaction Analysis
20' of ASH M: 7.5
PGA: 2% probability of exceedence in 50 yrs: 0.1792 GW: 0.0'

C-11		C-13		C-16		C-18		C-21		C-23		C-25		C-28		C-30		C-32		C-34		C-37		C-39	
S (ft)	0.32	S (ft)	0.06	S (ft)	0.28	S (ft)	0.39	S (ft)	0.10	S (ft)	0.30	S (ft)	0.26	S (ft)	0.17	S (ft)	0.21	S (ft)	0.15	S (ft)	0.24	S (ft)	0.21	S (ft)	0.06
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	0.82	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	n.a	6.25	0.88	6.25	0.51	6.25	n.a	6.25	1.04	6.25	1.16	6.25	n.a	6.25	0.60	6.25	n.a	6.25	0.71	6.25	n.a	6.25	n.a
8.75	n.a	8.75	1.23	8.75	1.01	8.75	n.a	8.75	n.a	8.75	0.89	8.75	0.79	8.75	0.60	8.75	1.50	8.75	0.95	8.75	n.a	8.75	0.75	8.75	n.a
11.25	0.47	11.25	2.00	11.25	0.61	11.25	0.83	11.25	0.97	11.25	1.11	11.25	2.00	11.25	n.a	11.25	2.00	11.25	2.00	11.25	n.a	11.25	2.00	11.25	1.08
13.75	n.a	13.75	2.00	13.75	0.91	13.75	1.58	13.75	2.00	13.75	1.76	13.75	0.81	13.75	n.a	13.75	2.00	13.75	1.92	13.75	0.79	13.75	1.66	13.75	1.85
16.25	0.46	16.25	2.00	16.25	1.31	16.25	1.63	16.25	2.00	16.25	1.66	16.25	2.05	16.25	1.26	16.25	1.42	16.25	0.92	16.25	2.00	16.25	2.00	16.25	2.00
18.75	2.00	18.75	2.00	18.75	1.36	18.75	0.98	18.75	2.00	18.75	0.71	18.75	1.11	18.75	1.27	18.75	1.71	18.75	2.05	18.75	1.93	18.75	2.00	18.75	1.32
21.25	2.00	21.25	2.02	21.25	2.00	21.25	0.76	21.25	1.18	21.25	1.69	21.25	1.95	21.25	1.40	21.25	1.47	21.25	1.91	21.25	2.00	21.25	1.68	21.25	2.00
23.75	1.98	23.75	2.00	23.75	2.00	23.75	1.29	23.75	1.48	23.75	2.00	23.75	0.96	23.75	2.05	23.75	1.62	23.75	1.17	23.75	2.00	23.75	0.90	23.75	1.26
26.25	2.00	26.25	1.25	26.25	1.99	26.25	2.00	26.25	1.48	26.25	2.00	26.25	1.01	26.25	1.91	26.25	2.00	26.25	1.11	26.25	2.00	26.25	1.06	26.25	2.11
28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	1.39	28.75	1.24	28.75	1.40	28.75	1.74	28.75	2.00	28.75	2.00	28.75	1.46	28.75	2.00	28.75	2.00
31.25	2.00	31.25	1.22	31.25	2.00	31.25	1.26	31.25	2.08	31.25	2.00	31.25	2.00	31.25	1.25	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.06	31.25	2.00
33.75	2.00	33.75	1.31	33.75	2.00	33.75	2.00	33.75	1.38	33.75	2.00	33.75	2.00	33.75	2.00	33.75	0.90	33.75	2.00	33.75	2.00	33.75	2.00	33.75	2.00
		36.25	2.00	36.25	2.00	36.25	1.57	36.25	1.23	36.25	2.00	36.25	2.00	36.25	1.04	36.25	2.00	36.25	2.00	36.25	0.85	36.25	2.00	36.25	2.00
		38.75	2.00																			38.75	2.00		
		41.25	2.00																			41.25	2.00		
Inv Avg	1.36	Inv Avg	1.75	Inv Avg	1.38	Inv Avg	1.25	Inv Avg	1.58	Inv Avg	1.34	Inv Avg	1.36	Inv Avg	1.46	Inv Avg	1.50	Inv Avg	1.59	Inv Avg	1.49	Inv Avg	1.54	Inv Avg	1.77
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-6

C-41		C-44		C-46		C-46A		C-48		C-50		C-60		C-62		C-64		C-66		C-66A		C-68		C-70	
S (ft)	0.21	S (ft)	0.23	S (ft)	0.16	S (ft)	0.16	S (ft)	0.34	S (ft)	0.26	S (ft)	0.13	S (ft)	0.12	S (ft)	0.36	S (ft)	0.02	S (ft)	0.24	S (ft)	0.23	S (ft)	0.24
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	0.85	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	0.91	6.25	n.a	6.25	n.a	6.25	0.74	6.25	0.55	6.25	n.a	6.25	0.76	6.25	n.a	6.25	n.a	6.25	0.77	6.25	0.64	6.25	1.42
8.75	n.a	8.75	0.88	8.75	n.a	8.75	n.a	8.75	0.88	8.75	2.10	8.75	0.65	8.75	n.a	8.75	0.55	8.75	n.a	8.75	0.76	8.75	1.24	8.75	1.45
11.25	0.65	11.25	1.48	11.25	1.65	11.25	1.34	11.25	1.26	11.25	0.86	11.25	1.29	11.25	n.a	11.25	1.11	11.25	2.00	11.25	2.00	11.25	1.00	11.25	1.44
13.75	1.00	13.75	1.20	13.75	0.90	13.75	0.92	13.75	1.00	13.75	2.00	13.75	1.42	13.75	1.23	13.75	1.01	13.75	2.00	13.75	2.00	13.75	2.00	13.75	0.98
16.25	0.97	16.25	1.23	16.25	1.81	16.25	1.66	16.25	0.61	16.25	2.00	16.25	2.00	16.25	2.00	16.25	0.51	16.25	1.54	16.25	1.30	16.25	2.00	16.25	n.a
18.75	2.00	18.75	1.26	18.75	1.86	18.75	2.00	18.75	2.00	18.75	2.00	18.75	2.03	18.75	2.00	18.75	1.57	18.75	2.02	18.75	1.61	18.75	2.00	18.75	0.88
21.25	2.00	21.25	0.91	21.25	0.94	21.25	1.23	21.25	1.05	21.25	2.00	21.25	2.00	21.25	2.00	21.25	1.79	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.19
23.75	1.72	23.75	1.11	23.75	1.29	23.75	1.36	23.75	2.00	23.75	1.79	23.75	2.00	23.75	1.61	23.75	2.00	23.75	1.82	23.75	2.00	23.75	1.00	23.75	1.72
26.25	2.10	26.25	2.00	26.25	1.13	26.25	1.35	26.25	2.00	26.25	2.00	26.25	2.00	26.25	1.78	26.25	2.00			26.25	2.00	26.25	1.01	26.25	1.85
28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	1.68	28.75	2.00	28.75	2.00	28.75	2.00			28.75	2.00	28.75	2.00	28.75	1.10
31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00			31.25	1.42	31.25	2.00	31.25	2.00
33.75	2.00	33.75	n.a	33.75	2.00	33.75	2.00	33.75	2.00	33.75	2.00			33.75	2.00	33.75	1.12			33.75	n.a	33.75	1.95	33.75	2.00
36.25	2.00	36.25	n.a	36.25	1.44	36.25	0.77	36.25	1.34	36.25	1.06			36.25	2.00	36.25	0.84					36.25	1.20	36.25	0.66
				38.75	1.70	38.75	2.00			38.75	2.00														
				41.25	2.00	41.25	2.00			41.25	2.00														
				43.75	2.00	43.75	2.00																		
Inv Avg	1.56	Inv Avg	1.38	Inv Avg	1.59	Inv Avg	1.56	Inv Avg	1.29	Inv Avg	1.54	Inv Avg	1.62	Inv Avg	1.70	Inv Avg	1.20	Inv Avg	1.92	Inv Avg	1.41	Inv Avg	1.40	Inv Avg	1.39
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-6

C-74		C-76		C-78		C-79		C-80		C-81		C-82		C-84		C-86		C-89		C-91		C-92		C-94	
S (ft)	0.22	S (ft)	0.11	S (ft)	0.32	S (ft)	0.17	S (ft)	0.25	S (ft)	0.22	S (ft)	0.10	S (ft)	0.15	S (ft)	0.24	S (ft)	0.26	S (ft)	0.53	S (ft)	0.18	S (ft)	0.12
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	0.84	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	n.a	6.25	0.79	6.25	0.92	6.25	0.66	6.25	n.a	6.25	n.a	6.25	n.a	6.25	1.66	6.25	n.a	6.25	n.a	6.25	0.80	6.25	0.80
8.75	n.a	8.75	n.a	8.75	n.a	8.75	1.16	8.75	n.a	8.75	0.85	8.75	n.a	8.75	1.08	8.75	0.79	8.75	0.93	8.75	0.60	8.75	1.14	8.75	1.31
11.25	n.a	11.25	n.a	11.25	0.53	11.25	n.a	11.25	n.a	11.25	0.58	11.25	n.a	11.25	1.45	11.25	1.05	11.25	1.05	11.25	0.77	11.25	0.76	11.25	n.a
13.75	0.50	13.75	0.69	13.75	0.65	13.75	0.96	13.75	0.67	13.75	2.07	13.75	2.00	13.75	2.00	13.75	2.00	13.75	1.06	13.75	0.58	13.75	2.00	13.75	n.a
16.25	0.91	16.25	1.24	16.25	2.00	16.25	1.70	16.25	0.98	16.25	2.00	16.25	2.00	16.25	1.90	16.25	2.13	16.25	0.91	16.25	1.03	16.25	2.00	16.25	1.24
18.75	1.83	18.75	1.83	18.75	2.00	18.75	2.00	18.75	2.00	18.75	1.10	18.75	1.99	18.75	2.00	18.75	2.00	18.75	0.72	18.75	1.25	18.75	2.00	18.75	1.65
21.25	1.07	21.25	2.00	21.25	1.15	21.25	2.00	21.25	1.62	21.25	1.81	21.25	2.00	21.25	1.83	21.25	2.00	21.25	1.33	21.25	2.00	21.25	2.00	21.25	2.00
23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.02	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.40	23.75	1.02	23.75	1.29	23.75	1.93	23.75	2.00	23.75	2.11
26.25	1.94	26.25	2.00	26.25	1.38	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	0.65			26.25	2.00
28.75	1.64	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	1.82	28.75	1.56	28.75	0.84			28.75	2.00
31.25	1.13	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.68	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.40	31.25	1.13	31.25	0.75			31.25	1.86
33.75	n.a	33.75	2.00	33.75	1.24	33.75	2.00	33.75	2.00	33.75	1.72	33.75	2.04	33.75	2.00	33.75	1.55	33.75	2.00	33.75	1.52			33.75	1.61
36.25	n.a	36.25	2.00	36.25	2.00	36.25	2.00	36.25	2.00	36.25	2.00	36.25	0.68	36.25	0.54	36.25	1.48	36.25	2.00	36.25	1.24			36.25	2.00
Inv Avg	1.42	Inv Avg	1.70	Inv Avg	1.30	Inv Avg	1.57	Inv Avg	1.46	Inv Avg	1.51	Inv Avg	1.77	Inv Avg	1.54	Inv Avg	1.42	Inv Avg	1.30	Inv Avg	1.03	Inv Avg	1.44	Inv Avg	1.65
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Moderate	Risk	Low	Risk	Low

Figure D-6

C-96		C-98		C-100		C-103		C-105		C-106		C-107		C-107A		C-109		C-111		C-113		C-117		C-119	
S (ft)	0.17	S (ft)	0.21	S (ft)	0.19	S (ft)	0.21	S (ft)	0.10	S (ft)	0.35	S (ft)	0.27	S (ft)	0.08	S (ft)	0.23	S (ft)	0.20	S (ft)	0.25	S (ft)	0.37	S (ft)	0.12
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	0.77	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	n.a	6.25	2.00	6.25	n.a	6.25	n.a	6.25	0.91	6.25	0.69	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a
8.75	n.a	8.75	0.51	8.75	2.00	8.75	n.a	8.75	n.a	8.75	0.70	8.75	0.70	8.75	1.05	8.75	n.a	8.75	n.a	8.75	0.71	8.75	0.45	8.75	0.68
11.25	n.a	11.25	1.05	11.25	2.00	11.25	0.84	11.25	n.a	11.25	1.09	11.25	0.80	11.25	1.13	11.25	0.45	11.25	0.60	11.25	1.93	11.25	2.00	11.25	1.32
13.75	0.61	13.75	2.18	13.75	1.56	13.75	2.00	13.75	n.a	13.75	2.00	13.75	1.74	13.75	1.57	13.75	1.86	13.75	0.73	13.75	0.66	13.75	1.06	13.75	1.96
16.25	0.98	16.25	2.00	16.25	1.72	16.25	2.00	16.25	2.00	16.25	1.48	16.25	2.00	16.25	2.00	16.25	2.00	16.25	1.29	16.25	1.71	16.25	0.91	16.25	2.00
18.75	1.01	18.75	2.00	18.75	2.00	18.75	0.79	18.75	2.00	18.75	0.76	18.75	2.00	18.75	2.00	18.75	1.40	18.75	2.00	18.75	1.03	18.75	0.91	18.75	2.00
21.25	2.00	21.25	2.00	21.25	2.00	21.25	0.85	21.25	2.00	21.25	0.80	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00
23.75	2.00	23.75	2.00	23.75	1.66	23.75	1.36	23.75	2.07	23.75	1.73	23.75	2.00	23.75	1.29	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00
26.25	2.01	26.25	2.00	26.25	2.00	26.25	1.33	26.25	2.00	26.25	1.40			26.25	2.00	26.25	2.00	26.25	2.00	26.25	1.25	26.25	2.00	26.25	2.00
28.75	2.00	28.75	1.14	28.75	0.74	28.75	n.a	28.75	0.72	28.75	2.00			28.75	1.14	28.75	1.68	28.75	2.00	28.75	1.14	28.75	2.00	28.75	2.00
31.25	2.00	31.25	1.52	31.25	1.21	31.25	n.a	31.25	2.00	31.25	2.00			31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.06	31.25	2.00	31.25	2.00
33.75	2.00	33.75	2.00			33.75	n.a	33.75	2.00	33.75	1.15			33.75	2.00	33.75	1.84	33.75	2.00	33.75	1.16	33.75	2.10	33.75	2.00
		36.25	2.00			36.25	n.a	36.25	1.04	36.25	1.71			36.25	2.00	36.25	1.30			36.25	1.32	36.25	1.64		
Inv Avg	1.53	Inv Avg	1.51	Inv Avg	1.48	Inv Avg	1.48	Inv Avg	1.70	Inv Avg	1.26	Inv Avg	1.30	Inv Avg	1.64	Inv Avg	1.51	Inv Avg	1.50	Inv Avg	1.33	Inv Avg	1.37	Inv Avg	1.70
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-6

C-121		C-123		C-125		C-129		C-131		C-133		C-135		C-135A		C-137		C-139		C-139A		C-143		C-145	
S (ft)	0.14	S (ft)	0.18	S (ft)	0.24	S (ft)	0.29	S (ft)	0.35	S (ft)	0.07	S (ft)	0.06	S (ft)	0.13	S (ft)	0.03	S (ft)	0.13	S (ft)	0.11	S (ft)	0.21	S (ft)	0.20
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	0.60	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	0.72	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	0.54	6.25	0.62
8.75	n.a	8.75	2.00	8.75	n.a	8.75	n.a	8.75	0.59	8.75	1.06	8.75	n.a	8.75	n.a	8.75	n.a	8.75	n.a	8.75	n.a	8.75	1.49	8.75	1.55
11.25	1.03	11.25	2.01	11.25	n.a	11.25	n.a	11.25	0.49	11.25	1.99	11.25	0.96	11.25	0.96	11.25	n.a	11.25	n.a	11.25	n.a	11.25	1.71	11.25	0.90
13.75	2.00	13.75	2.00	13.75	0.81	13.75	n.a	13.75	1.02	13.75	2.00	13.75	2.00	13.75	2.00	13.75	2.05	13.75	0.51	13.75	0.65	13.75	2.00	13.75	2.00
16.25	2.00	16.25	2.00	16.25	1.54	16.25	0.44	16.25	1.20	16.25	2.00	16.25	2.00	16.25	2.00	16.25	1.58	16.25	2.00	16.25	2.18	16.25	2.00	16.25	2.00
18.75	2.00	18.75	1.62	18.75	2.00	18.75	2.00	18.75	1.52	18.75	1.60	18.75	2.00	18.75	2.00	18.75	2.09	18.75	2.00	18.75	2.00	18.75	1.11	18.75	1.07
21.25	2.00	21.25	1.52	21.25	2.00	21.25	2.00	21.25	2.00	21.25	1.75			21.25	2.00	21.25	1.69	21.25	2.00	21.25	2.00	21.25	1.65	21.25	2.00
23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.16			23.75	2.00	23.75	2.00			23.75	2.00	23.75	1.16	23.75	2.00
26.25	0.96	26.25	2.00	26.25	2.00	26.25	0.93	26.25	1.62	26.25	2.02			26.25	2.00	26.25	1.90			26.25	2.00	26.25	2.12	26.25	2.00
28.75	1.40	28.75	2.00	28.75	2.00	28.75	1.04	28.75	0.98	28.75	1.92			28.75	0.84	28.75	2.07			28.75	2.00	28.75	1.63		
31.25	0.84	31.25	0.86	31.25	1.03	31.25	2.00	31.25	2.00	31.25	2.00			31.25	2.00	31.25	2.00			31.25	1.11	31.25	1.24		
33.75	2.00	33.75	1.99	33.75	1.97	33.75	1.04	33.75	2.00	33.75	2.00					32.25	2.00					33.75	2.00		
		36.25	2.13	36.25	2.00	36.25	0.96	36.25	1.87	36.25	2.00											36.25	2.00		
Inv Avg	1.57	Inv Avg	1.61	Inv Avg	1.50	Inv Avg	1.32	Inv Avg	1.26	Inv Avg	1.76	Inv Avg	1.76	Inv Avg	1.68	Inv Avg	1.94	Inv Avg	1.51	Inv Avg	1.65	Inv Avg	1.44	Inv Avg	1.41
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-6

C-145A		C-147		C-149		C-151		C-157		C-157A		C-159		C-161		C-163		C-166		C-168		C-168A		C-170	
S (ft)	0.27	S (ft)	0.05	S (ft)	0.36	S (ft)	0.40	S (ft)	0.20	S (ft)	0.22	S (ft)	0.19	S (ft)	0.17	S (ft)	0.56	S (ft)	0.20	S (ft)	0.24	S (ft)	0.48	S (ft)	0.20
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	0.65	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	0.82	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	2.00	6.25	n.a	6.25	n.a	6.25	0.50	6.25	0.51	6.25	2.00	6.25	0.75	6.25	n.a	6.25	1.22	6.25	0.77	6.25	0.63	6.25	n.a
8.75	1.01	8.75	2.00	8.75	0.74	8.75	n.a	8.75	2.00	8.75	2.00	8.75	1.48	8.75	0.95	8.75	n.a	8.75	2.00	8.75	1.14	8.75	1.12	8.75	0.52
11.25	1.00	11.25	1.07	11.25	1.13	11.25	0.41	11.25	1.49	11.25	1.01	11.25	1.32	11.25	2.00	11.25	n.a	11.25	2.00	11.25	1.18	11.25	0.82	11.25	1.53
13.75	2.00	13.75	2.00	13.75	1.79	13.75	0.96	13.75	2.00	13.75	2.00	13.75	1.99	13.75	2.00	13.75	0.38	13.75	1.59	13.75	1.28	13.75	0.85	13.75	1.39
16.25	2.00	16.25	1.39	16.25	2.00	16.25	2.00	16.25	2.00	16.25	2.00	16.25	2.00	16.25	1.88	16.25	1.78	16.25	2.00	16.25	0.80	16.25	0.97	16.25	2.00
18.75	0.89	18.75	2.00	18.75	2.00	18.75	1.05	18.75	2.00	18.75	2.00	18.75	2.00	18.75	2.09	18.75	1.47	18.75	2.00	18.75	0.99	18.75	1.13	18.75	2.00
21.25	2.00	21.25	1.17	21.25	2.00	21.25	1.51	21.25	2.00	21.25	2.00	21.25	2.00	21.25	1.78	21.25	0.99	21.25	2.00	21.25	1.34	21.25	1.12	21.25	1.05
23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.33	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.01	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.57
26.25	2.00			26.25	1.01	26.25	2.00			26.25	2.00	26.25	0.99	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00
28.75	2.00			28.75	0.84	28.75	2.16			28.75	1.75	28.75	1.00	28.75	2.00	28.75	1.88	28.75	2.00	28.75	2.00	28.75	n.a	28.75	2.00
31.25	1.14			31.25	0.86	31.25	2.00			31.25	2.00	31.25	1.27	31.25	2.00	31.25	2.00	31.25	0.65	31.25	2.00	31.25	0.54	31.25	2.00
33.75	0.81			33.75	2.00	33.75	2.00					33.75	1.13					32.25	1.02	32.25	2.00	33.75	0.78	33.75	2.00
36.25	0.89			36.25	2.00							36.25	0.82					33.25	2.09					36.25	1.47
Inv Avg	1.38	Inv Avg	1.66	Inv Avg	1.28	Inv Avg	1.36	Inv Avg	1.50	Inv Avg	1.52	Inv Avg	1.45	Inv Avg	1.64	Inv Avg	1.31	Inv Avg	1.48	Inv Avg	1.36	Inv Avg	1.05	Inv Avg	1.49
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Moderate	Risk	Low

Figure D-6

C-172		C-174		C-178		C-180		C-182		C-184		C-186		C-190		C-192		C-194		C-196		C-198		C-200	
S (ft)	0.19	S (ft)	0.04	S (ft)	0.24	S (ft)	0.43	S (ft)	0.06	S (ft)	0.19	S (ft)	0.36	S (ft)	0.14	S (ft)	0.21	S (ft)	0.24	S (ft)	0.24	S (ft)	0.31	S (ft)	0.33
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	0.55	6.25	1.21	6.25	n.a	6.25	0.67	6.25	n.a	6.25	n.a	6.25	0.59	6.25	n.a	6.25	0.62	6.25	0.69	6.25	n.a	6.25	0.72	6.25	0.85
8.75	1.31	8.75	2.00	8.75	0.68	8.75	1.67	8.75	1.10	8.75	0.56	8.75	2.00	8.75	n.a	8.75	2.00	8.75	n.a	8.75	0.84	8.75	0.76	8.75	n.a
11.25	1.91	11.25	2.00	11.25	1.49	11.25	0.96	11.25	1.31	11.25	1.26	11.25	2.00	11.25	n.a	11.25	2.00	11.25	1.24	11.25	1.34	11.25	1.19	11.25	n.a
13.75	2.00	13.75	2.00	13.75	1.42	13.75	0.77	13.75	1.97	13.75	2.00	13.75	2.00	13.75	n.a	13.75	2.00	13.75	0.87	13.75	2.00	13.75	2.00	13.75	0.95
16.25	2.00	16.25	1.72	16.25	0.75	16.25	0.69	16.25	2.16	16.25	1.33	16.25	2.00	16.25	0.51	16.25	2.00	16.25	1.69	16.25	1.11	16.25	2.00	16.25	1.03
18.75	2.00	18.75	1.41	18.75	2.13	18.75	1.05	18.75	2.19	18.75	1.32	18.75	1.15	18.75	2.00	18.75	0.72	18.75	0.94	18.75	1.59	18.75	1.49	18.75	2.00
21.25	1.27	21.25	2.00	21.25	1.36	21.25	0.92	21.25	1.70	21.25	2.00	21.25	0.89	21.25	1.28	21.25	2.00	21.25	2.00	21.25	1.64	21.25	n.a	21.25	1.24
23.75	1.28	23.75	2.00	23.75	0.98	23.75	0.95	23.75	2.00	23.75	2.00	23.75	1.03	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.72	23.75	0.66	23.75	1.63
26.25	1.63	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	0.74	26.25	2.00	26.25	2.18	26.25	2.00	26.25	2.00	26.25	1.48	26.25	1.26
28.75	2.00	28.75	2.00	28.75	1.79	28.75	2.00	28.75	2.00	28.75	1.79	28.75	0.74	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	1.07	28.75	2.00
31.25	1.61	31.25	2.00	31.25	2.00	31.25	1.48	31.25	2.00	31.25	1.43	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.60	31.25	n.a	31.25	1.11	31.25	2.00
33.75	2.00	33.75	2.00	33.75	2.00	33.75	1.48	33.75	1.66	33.75	1.51	33.75	1.90	33.75	2.00	33.75	1.90	33.75	1.39	33.75	0.43	33.75	2.00	33.75	1.14
36.25	2.00			36.25	2.00	36.25	2.00			36.25	1.02			36.25	2.00	36.25	2.00	36.25	2.00			36.25	2.00	36.25	2.00
																								38.75	2.00
																								41.25	2.00
																								43.75	2.06
																								46.25	1.24
																								48.75	0.93
																								51.25	1.10
																								53.75	0.99
																								56.25	2.00
																								58.75	2.00
																								61.25	2.00
																								63.75	2.00
																								66.25	1.05
Inv Avg	1.51	Inv Avg	1.84	Inv Avg	1.44	Inv Avg	1.17	Inv Avg	1.80	Inv Avg	1.43	Inv Avg	1.23	Inv Avg	1.62	Inv Avg	1.58	Inv Avg	1.44	Inv Avg	1.34	Inv Avg	1.28	Inv Avg	1.46
Risk	Low	Risk	Low	Risk	Low	Risk	Moderate	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-6

Ameren Missouri: Labadie UWL
Liquefaction Analysis
30' of ASH M: 7.5
PGA: 2% probability of exceedence in 50 yrs: 0.1792 GW: 0.0'

C-11		C-13		C-16		C-18		C-21		C-23		C-25		C-28		C-30		C-32		C-34		C-37		C-39	
S (ft)	0.31	S (ft)	0.05	S (ft)	0.27	S (ft)	0.36	S (ft)	0.07	S (ft)	0.29	S (ft)	0.23	S (ft)	0.16	S (ft)	0.20	S (ft)	0.11	S (ft)	0.23	S (ft)	0.18	S (ft)	0.05
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	0.84	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	n.a	6.25	0.93	6.25	0.54	6.25	n.a	6.25	1.09	6.25	1.22	6.25	n.a	6.25	0.63	6.25	n.a	6.25	0.75	6.25	n.a	6.25	n.a
8.75	n.a	8.75	1.30	8.75	1.08	8.75	n.a	8.75	n.a	8.75	0.94	8.75	0.83	8.75	0.64	8.75	1.59	8.75	1.01	8.75	n.a	8.75	0.79	8.75	n.a
11.25	0.50	11.25	2.00	11.25	0.65	11.25	0.89	11.25	1.03	11.25	1.19	11.25	2.00	11.25	n.a	11.25	2.00	11.25	2.00	11.25	n.a	11.25	2.00	11.25	1.15
13.75	n.a	13.75	2.00	13.75	0.98	13.75	1.70	13.75	2.00	13.75	1.89	13.75	0.87	13.75	n.a	13.75	2.00	13.75	2.06	13.75	0.85	13.75	1.79	13.75	1.99
16.25	0.50	16.25	2.00	16.25	1.41	16.25	1.76	16.25	2.00	16.25	1.79	16.25	2.00	16.25	1.36	16.25	1.53	16.25	0.99	16.25	2.00	16.25	2.00	16.25	2.00
18.75	2.00	18.75	2.00	18.75	1.47	18.75	1.06	18.75	2.00	18.75	0.77	18.75	1.21	18.75	1.38	18.75	1.85	18.75	2.00	18.75	2.09	18.75	2.00	18.75	1.43
21.25	2.00	21.25	2.19	21.25	2.00	21.25	0.82	21.25	1.27	21.25	1.83	21.25	2.11	21.25	1.52	21.25	1.59	21.25	2.08	21.25	2.00	21.25	1.82	21.25	2.00
23.75	2.15	23.75	2.00	23.75	2.00	23.75	1.40	23.75	1.60	23.75	2.00	23.75	1.04	23.75	2.00	23.75	1.75	23.75	1.27	23.75	2.00	23.75	0.98	23.75	1.37
26.25	2.00	26.25	1.36	26.25	2.17	26.25	2.00	26.25	1.61	26.25	2.00	26.25	1.10	26.25	2.08	26.25	2.00	26.25	1.21	26.25	2.00	26.25	1.15	26.25	2.00
28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	1.51	28.75	1.35	28.75	1.53	28.75	1.89	28.75	2.00	28.75	2.00	28.75	1.59	28.75	2.00	28.75	2.00
31.25	2.00	31.25	1.32	31.25	2.00	31.25	1.37	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.36	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.15	31.25	2.00
33.75	2.00	33.75	1.43	33.75	2.00	33.75	2.00	33.75	1.50	33.75	2.00	33.75	2.00	33.75	2.00	33.75	0.98	33.75	2.00	33.75	2.00	33.75	2.00	33.75	2.00
		36.25	2.00	36.25	2.00	36.25	1.71	36.25	1.34	36.25	2.00	36.25	2.00	36.25	1.13	36.25	2.00	36.25	2.00	36.25	0.92	36.25	2.00	36.25	2.00
		38.75	2.00																			38.75	2.00		
		41.25	2.00																			41.25	2.00		
Inv Avg	1.40	Inv Avg	1.80	Inv Avg	1.44	Inv Avg	1.32	Inv Avg	1.65	Inv Avg	1.40	Inv Avg	1.43	Inv Avg	1.53	Inv Avg	1.56	Inv Avg	1.65	Inv Avg	1.54	Inv Avg	1.60	Inv Avg	1.81
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-7

C-41		C-44		C-46		C-46A		C-48		C-50		C-60		C-62		C-64		C-66		C-66A		C-68		C-70	
S (ft)	0.16	S (ft)	0.21	S (ft)	0.13	S (ft)	0.16	S (ft)	0.30	S (ft)	0.24	S (ft)	0.13	S (ft)	0.12	S (ft)	0.35	S (ft)	0.02	S (ft)	0.24	S (ft)	0.20	S (ft)	0.19
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	0.86	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	0.96	6.25	n.a	6.25	n.a	6.25	0.78	6.25	0.58	6.25	n.a	6.25	0.80	6.25	n.a	6.25	n.a	6.25	0.81	6.25	0.67	6.25	1.49
8.75	n.a	8.75	0.93	8.75	n.a	8.75	n.a	8.75	0.93	8.75	2.00	8.75	0.69	8.75	n.a	8.75	0.58	8.75	n.a	8.75	0.80	8.75	1.32	8.75	1.53
11.25	0.69	11.25	1.58	11.25	1.76	11.25	1.43	11.25	1.34	11.25	0.92	11.25	1.38	11.25	n.a	11.25	1.18	11.25	2.00	11.25	2.00	11.25	1.07	11.25	1.54
13.75	1.07	13.75	1.29	13.75	0.97	13.75	0.99	13.75	1.07	13.75	2.00	13.75	1.52	13.75	1.32	13.75	1.08	13.75	2.00	13.75	2.00	13.75	2.00	13.75	1.05
16.25	1.04	16.25	1.33	16.25	1.95	16.25	1.80	16.25	0.66	16.25	2.00	16.25	2.00	16.25	2.00	16.25	0.55	16.25	1.66	16.25	1.40	16.25	2.00	16.25	n.a
18.75	2.00	18.75	1.37	18.75	2.02	18.75	2.00	18.75	2.00	18.75	2.00	18.75	2.20	18.75	2.00	18.75	1.70	18.75	2.18	18.75	1.74	18.75	2.00	18.75	0.95
21.25	2.00	21.25	0.99	21.25	1.02	21.25	1.34	21.25	1.14	21.25	2.00	21.25	2.00	21.25	2.00	21.25	1.94	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00
23.75	1.87	23.75	1.20	23.75	1.40	23.75	1.47	23.75	2.00	23.75	1.94	23.75	2.00	23.75	1.75	23.75	2.00	23.75	1.97	23.75	2.00	23.75	1.08	23.75	1.87
26.25	2.00	26.25	2.00	26.25	1.23	26.25	1.47	26.25	2.00	26.25	2.00	26.25	2.00	26.25	1.93	26.25	2.00			26.25	2.00	26.25	1.09	26.25	2.01
28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	1.82	28.75	2.00	28.75	2.00	28.75	2.00			28.75	2.00	28.75	2.00	28.75	1.19
31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00			31.25	1.55	31.25	2.00	31.25	2.00
33.75	2.00	33.75	n.a	33.75	2.00	33.75	2.00	33.75	2.00	33.75	2.00			33.75	2.00	33.75	1.21			33.75	n.a	33.75	2.12	33.75	2.00
36.25	2.00	36.25	n.a	36.25	1.56	36.25	0.84	36.25	1.46	36.25	1.15			36.25	2.00	36.25	0.91					36.25	1.30	36.25	0.72
				38.75	1.84	38.75	2.00			38.75	2.00														
				41.25	2.00	41.25	2.00			41.25	2.00														
				43.75	2.00	43.75	2.00																		
Inv Avg	1.60	Inv Avg	1.45	Inv Avg	1.67	Inv Avg	1.63	Inv Avg	1.35	Inv Avg	1.58	Inv Avg	1.67	Inv Avg	1.75	Inv Avg	1.27	Inv Avg	1.97	Inv Avg	1.46	Inv Avg	1.46	Inv Avg	1.46
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-7

C-74		C-76		C-78		C-79		C-80		C-81		C-82		C-84		C-86		C-89		C-91		C-92		C-94	
S (ft)	0.21	S (ft)	0.11	S (ft)	0.32	S (ft)	0.13	S (ft)	0.23	S (ft)	0.21	S (ft)	0.09	S (ft)	0.14	S (ft)	0.22	S (ft)	0.24	S (ft)	0.50	S (ft)	0.18	S (ft)	0.12
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	0.87	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	n.a	6.25	0.82	6.25	0.97	6.25	0.70	6.25	n.a	6.25	n.a	6.25	n.a	6.25	1.75	6.25	n.a	6.25	n.a	6.25	0.84	6.25	0.84
8.75	n.a	8.75	n.a	8.75	n.a	8.75	1.23	8.75	n.a	8.75	0.90	8.75	n.a	8.75	1.14	8.75	0.84	8.75	0.99	8.75	0.63	8.75	1.21	8.75	1.39
11.25	n.a	11.25	n.a	11.25	0.57	11.25	n.a	11.25	n.a	11.25	0.62	11.25	n.a	11.25	1.55	11.25	1.13	11.25	1.12	11.25	0.82	11.25	0.81	11.25	n.a
13.75	0.54	13.75	0.74	13.75	0.70	13.75	1.03	13.75	0.72	13.75	2.00	13.75	2.00	13.75	2.00	13.75	2.00	13.75	1.14	13.75	0.62	13.75	2.00	13.75	n.a
16.25	0.99	16.25	1.33	16.25	2.00	16.25	1.84	16.25	1.06	16.25	2.00	16.25	2.00	16.25	2.05	16.25	2.00	16.25	0.98	16.25	1.11	16.25	2.00	16.25	1.33
18.75	1.98	18.75	1.98	18.75	2.00	18.75	2.00	18.75	2.00	18.75	1.19	18.75	2.15	18.75	2.00	18.75	2.00	18.75	0.78	18.75	1.36	18.75	2.00	18.75	1.79
21.25	1.16	21.25	2.00	21.25	1.24	21.25	2.00	21.25	1.76	21.25	1.96	21.25	2.00	21.25	1.98	21.25	2.00	21.25	1.44	21.25	2.00	21.25	2.00	21.25	2.00
23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.11	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.52	23.75	1.10	23.75	1.40	23.75	2.10	23.75	2.00	23.75	2.00
26.25	2.11	26.25	2.00	26.25	1.50	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	0.71			26.25	2.00
28.75	1.78	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	1.98	28.75	1.70	28.75	0.91			28.75	2.00
31.25	1.23	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.83	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.53	31.25	1.23	31.25	0.81			31.25	2.02
33.75	n.a	33.75	2.00	33.75	1.34	33.75	2.00	33.75	2.00	33.75	1.87	33.75	2.00	33.75	2.00	33.75	1.69	33.75	2.00	33.75	1.65			33.75	1.75
36.25	n.a	36.25	2.00	36.25	2.00	36.25	2.00	36.25	2.00	36.25	2.00	36.25	0.73	36.25	0.58	36.25	1.61	36.25	2.00	36.25	1.35			36.25	2.00
Inv Avg	1.49	Inv Avg	1.74	Inv Avg	1.35	Inv Avg	1.62	Inv Avg	1.52	Inv Avg	1.56	Inv Avg	1.80	Inv Avg	1.60	Inv Avg	1.49	Inv Avg	1.38	Inv Avg	1.10	Inv Avg	1.48	Inv Avg	1.71
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Moderate	Risk	Low	Risk	Low

Figure D-7

C-96		C-98		C-100		C-103		C-105		C-106		C-107		C-107A		C-109		C-111		C-113		C-117		C-119	
S (ft)	0.15	S (ft)	0.19	S (ft)	0.19	S (ft)	0.20	S (ft)	0.10	S (ft)	0.33	S (ft)	0.27	S (ft)	0.06	S (ft)	0.23	S (ft)	0.20	S (ft)	0.22	S (ft)	0.36	S (ft)	0.12
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	0.79	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	n.a	6.25	2.00	6.25	n.a	6.25	n.a	6.25	0.96	6.25	0.73	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a
8.75	n.a	8.75	0.54	8.75	2.00	8.75	n.a	8.75	n.a	8.75	0.74	8.75	0.74	8.75	1.11	8.75	n.a	8.75	n.a	8.75	0.75	8.75	0.47	8.75	0.72
11.25	n.a	11.25	1.12	11.25	2.00	11.25	0.89	11.25	n.a	11.25	1.16	11.25	0.85	11.25	1.21	11.25	0.48	11.25	0.64	11.25	2.06	11.25	2.00	11.25	1.42
13.75	0.65	13.75	2.00	13.75	1.68	13.75	2.00	13.75	n.a	13.75	2.00	13.75	1.87	13.75	1.68	13.75	1.99	13.75	0.78	13.75	0.71	13.75	1.13	13.75	2.10
16.25	1.06	16.25	2.00	16.25	1.86	16.25	2.00	16.25	2.00	16.25	1.59	16.25	2.00	16.25	2.00	16.25	2.00	16.25	1.39	16.25	1.84	16.25	0.98	16.25	2.00
18.75	1.09	18.75	2.00	18.75	2.00	18.75	0.86	18.75	2.00	18.75	0.82	18.75	2.00	18.75	2.00	18.75	1.52	18.75	2.00	18.75	1.11	18.75	0.98	18.75	2.00
21.25	2.00	21.25	2.00	21.25	2.00	21.25	0.92	21.25	2.00	21.25	0.87	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00
23.75	2.00	23.75	2.18	23.75	1.81	23.75	1.48	23.75	2.00	23.75	1.88	23.75	2.00	23.75	1.40	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00
26.25	2.19	26.25	2.00	26.25	2.00	26.25	1.44	26.25	2.00	26.25	1.52			26.25	2.00	26.25	2.00	26.25	2.00	26.25	1.36	26.25	2.00	26.25	2.00
28.75	2.00	28.75	1.24	28.75	0.81	28.75	n.a	28.75	0.78	28.75	2.00			28.75	1.24	28.75	1.83	28.75	2.00	28.75	1.24	28.75	2.00	28.75	2.00
31.25	2.00	31.25	1.65	31.25	1.32	31.25	n.a	31.25	2.00	31.25	2.00			31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00
33.75	2.00	33.75	2.00			33.75	n.a	33.75	2.00	33.75	1.24			33.75	2.00	33.75	2.00	33.75	2.00	33.75	1.26	33.75	2.00	33.75	2.00
		36.25	2.00			36.25	n.a	36.25	1.13	36.25	1.85			36.25	2.00	36.25	1.41			36.25	1.43	36.25	1.78		
Inv Avg	1.58	Inv Avg	1.56	Inv Avg	1.54	Inv Avg	1.54	Inv Avg	1.73	Inv Avg	1.33	Inv Avg	1.35	Inv Avg	1.70	Inv Avg	1.58	Inv Avg	1.55	Inv Avg	1.40	Inv Avg	1.42	Inv Avg	1.74
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-7

C-121		C-123		C-125		C-129		C-131		C-133		C-135		C-135A		C-137		C-139		C-139A		C-143		C-145	
S (ft)	0.11	S (ft)	0.17	S (ft)	0.23	S (ft)	0.24	S (ft)	0.33	S (ft)	0.05	S (ft)	0.03	S (ft)	0.09	S (ft)	0.03	S (ft)	0.13	S (ft)	0.11	S (ft)	0.21	S (ft)	0.19
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	0.62	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	0.76	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	0.56	6.25	0.65
8.75	n.a	8.75	2.00	8.75	n.a	8.75	n.a	8.75	0.62	8.75	1.12	8.75	n.a	8.75	n.a	8.75	n.a	8.75	n.a	8.75	n.a	8.75	1.58	8.75	1.64
11.25	1.10	11.25	2.15	11.25	n.a	11.25	n.a	11.25	0.52	11.25	2.12	11.25	1.03	11.25	1.03	11.25	n.a	11.25	n.a	11.25	n.a	11.25	1.82	11.25	0.97
13.75	2.00	13.75	2.00	13.75	0.87	13.75	n.a	13.75	1.09	13.75	2.00	13.75	2.00	13.75	2.00	13.75	2.20	13.75	0.55	13.75	0.70	13.75	2.00	13.75	2.00
16.25	2.00	16.25	2.00	16.25	1.67	16.25	0.47	16.25	1.29	16.25	2.00	16.25	2.00	16.25	2.00	16.25	1.70	16.25	2.00	16.25	2.00	16.25	2.00	16.25	2.00
18.75	2.00	18.75	1.75	18.75	2.00	18.75	2.00	18.75	1.65	18.75	1.73	18.75	2.00	18.75	2.00	18.75	2.00	18.75	2.00	18.75	2.00	18.75	1.21	18.75	1.16
21.25	2.00	21.25	1.65	21.25	2.00	21.25	2.00	21.25	2.00	21.25	1.90			21.25	2.00	21.25	1.83	21.25	2.00	21.25	2.00	21.25	1.79	21.25	2.00
23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.26			23.75	2.00	23.75	2.00			23.75	2.00	23.75	1.26	23.75	2.00
26.25	1.04	26.25	2.00	26.25	2.00	26.25	1.01	26.25	1.76	26.25	2.20			26.25	2.00	26.25	2.06			26.25	2.00	26.25	2.00	26.25	2.00
28.75	1.52	28.75	2.00	28.75	2.00	28.75	1.13	28.75	1.06	28.75	2.08			28.75	0.91	28.75	2.00			28.75	2.00	28.75	1.77		
31.25	0.91	31.25	0.94	31.25	1.12	31.25	2.00	31.25	2.00	31.25	2.00			31.25	2.00	31.25	2.00			31.25	1.20	31.25	1.35		
33.75	2.00	33.75	2.16	33.75	2.14	33.75	1.13	33.75	2.00	33.75	2.00					32.25	2.00					33.75	2.00		
		36.25	2.00	36.25	2.00	36.25	1.05	36.25	2.03	36.25	2.00											36.25	2.00		
Inv Avg	1.62	Inv Avg	1.67	Inv Avg	1.54	Inv Avg	1.38	Inv Avg	1.33	Inv Avg	1.83	Inv Avg	1.79	Inv Avg	1.72	Inv Avg	1.98	Inv Avg	1.55	Inv Avg	1.68	Inv Avg	1.51	Inv Avg	1.46
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-7

C-145A		C-147		C-149		C-151		C-157		C-157A		C-159		C-161		C-163		C-166		C-168		C-168A		C-170	
S (ft)	0.22	S (ft)	0.04	S (ft)	0.34	S (ft)	0.36	S (ft)	0.20	S (ft)	0.22	S (ft)	0.14	S (ft)	0.14	S (ft)	0.53	S (ft)	0.19	S (ft)	0.21	S (ft)	0.44	S (ft)	0.19
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	0.67	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	0.85	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	2.00	6.25	n.a	6.25	n.a	6.25	0.52	6.25	0.54	6.25	2.00	6.25	0.79	6.25	n.a	6.25	1.28	6.25	0.81	6.25	0.66	6.25	n.a
8.75	1.07	8.75	2.00	8.75	0.79	8.75	n.a	8.75	2.00	8.75	2.00	8.75	1.57	8.75	1.01	8.75	n.a	8.75	2.00	8.75	1.21	8.75	1.19	8.75	0.55
11.25	1.07	11.25	1.15	11.25	1.21	11.25	0.44	11.25	1.60	11.25	1.08	11.25	1.41	11.25	2.00	11.25	n.a	11.25	2.00	11.25	1.26	11.25	0.88	11.25	1.64
13.75	2.00	13.75	2.00	13.75	1.92	13.75	1.03	13.75	2.00	13.75	2.00	13.75	2.14	13.75	2.00	13.75	0.40	13.75	1.71	13.75	1.37	13.75	0.92	13.75	1.50
16.25	2.00	16.25	1.50	16.25	2.00	16.25	2.00	16.25	2.00	16.25	2.00	16.25	2.00	16.25	2.03	16.25	1.92	16.25	2.00	16.25	0.87	16.25	1.05	16.25	2.00
18.75	0.97	18.75	2.00	18.75	2.00	18.75	1.14	18.75	2.00	18.75	2.00	18.75	2.00	18.75	2.00	18.75	1.59	18.75	2.00	18.75	1.07	18.75	1.22	18.75	2.00
21.25	2.00	21.25	1.27	21.25	2.00	21.25	1.64	21.25	2.00	21.25	2.00	21.25	2.00	21.25	1.93	21.25	1.07	21.25	2.00	21.25	1.46	21.25	1.21	21.25	1.14
23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.44	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.10	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.70
26.25	2.00			26.25	1.09	26.25	2.00			26.25	2.00	26.25	1.07	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00
28.75	2.00			28.75	0.91	28.75	2.00			28.75	1.90	28.75	1.08	28.75	2.00	28.75	2.04	28.75	2.00	28.75	2.00	28.75	n.a	28.75	2.00
31.25	1.24			31.25	0.94	31.25	2.00			31.25	2.00	31.25	1.38	31.25	2.00	31.25	2.00	31.25	0.71	31.25	2.00	31.25	0.59	31.25	2.00
33.75	0.88			33.75	2.00	33.75	2.00					33.75	1.23					32.25	1.11	32.25	2.00	33.75	0.85	33.75	2.00
36.25	0.97			36.25	2.00							36.25	0.90					33.25	2.00					36.25	1.60
Inv Avg	1.45	Inv Avg	1.72	Inv Avg	1.34	Inv Avg	1.41	Inv Avg	1.53	Inv Avg	1.56	Inv Avg	1.53	Inv Avg	1.67	Inv Avg	1.37	Inv Avg	1.52	Inv Avg	1.42	Inv Avg	1.11	Inv Avg	1.55
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Moderate	Risk	Low

Figure D-7

C-172		C-174		C-178		C-180		C-182		C-184		C-186		C-190		C-192		C-194		C-196		C-198		C-200	
S (ft)	0.19	S (ft)	0.04	S (ft)	0.22	S (ft)	0.35	S (ft)	0.05	S (ft)	0.18	S (ft)	0.34	S (ft)	0.14	S (ft)	0.21	S (ft)	0.21	S (ft)	0.24	S (ft)	0.29	S (ft)	0.24
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	0.58	6.25	1.27	6.25	n.a	6.25	0.70	6.25	n.a	6.25	n.a	6.25	0.61	6.25	n.a	6.25	0.65	6.25	0.72	6.25	n.a	6.25	0.76	6.25	0.89
8.75	1.39	8.75	2.00	8.75	0.72	8.75	1.77	8.75	1.16	8.75	0.60	8.75	2.00	8.75	n.a	8.75	2.00	8.75	n.a	8.75	0.89	8.75	0.81	8.75	n.a
11.25	2.04	11.25	2.00	11.25	1.59	11.25	1.03	11.25	1.40	11.25	1.34	11.25	2.00	11.25	n.a	11.25	2.00	11.25	1.33	11.25	1.43	11.25	1.28	11.25	n.a
13.75	2.00	13.75	2.00	13.75	1.53	13.75	0.83	13.75	2.12	13.75	2.00	13.75	2.00	13.75	n.a	13.75	2.00	13.75	0.93	13.75	2.00	13.75	2.00	13.75	1.02
16.25	2.00	16.25	1.85	16.25	0.81	16.25	0.75	16.25	2.00	16.25	1.43	16.25	2.00	16.25	0.55	16.25	2.00	16.25	1.82	16.25	1.19	16.25	2.00	16.25	1.11
18.75	2.00	18.75	1.53	18.75	2.00	18.75	1.14	18.75	2.00	18.75	1.43	18.75	1.25	18.75	2.00	18.75	0.78	18.75	1.02	18.75	1.73	18.75	1.62	18.75	2.00
21.25	1.38	21.25	2.00	21.25	1.47	21.25	1.00	21.25	1.84	21.25	2.00	21.25	0.96	21.25	1.39	21.25	2.00	21.25	2.00	21.25	1.77	21.25	n.a	21.25	1.35
23.75	1.39	23.75	2.00	23.75	1.06	23.75	1.03	23.75	2.00	23.75	2.00	23.75	1.12	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.87	23.75	0.71	23.75	1.77
26.25	1.78	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	0.81	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	1.60	26.25	1.37
28.75	2.00	28.75	2.00	28.75	1.95	28.75	2.00	28.75	2.00	28.75	1.94	28.75	0.81	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	1.16	28.75	2.00
31.25	1.75	31.25	2.00	31.25	2.00	31.25	1.61	31.25	2.00	31.25	1.56	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.73	31.25	n.a	31.25	1.21	31.25	2.00
33.75	2.00	33.75	2.00	33.75	2.00	33.75	1.61	33.75	1.80	33.75	1.64	33.75	2.07	33.75	2.00	33.75	2.06	33.75	1.51	33.75	0.47	33.75	2.00	33.75	1.24
36.25	2.00			36.25	2.00	36.25	2.00			36.25	1.11			36.25	2.00	36.25	2.00	36.25	2.00			36.25	2.00	36.25	2.00
																								38.75	2.00
																								41.25	2.00
																								43.75	2.00
																								46.25	1.35
																								48.75	1.00
																								51.25	1.19
																								53.75	1.07
																								56.25	2.00
																								58.75	2.00
																								61.25	2.00
																								63.75	2.00
																								66.25	1.12
Inv Avg	1.57	Inv Avg	1.87	Inv Avg	1.50	Inv Avg	1.24	Inv Avg	1.83	Inv Avg	1.50	Inv Avg	1.29	Inv Avg	1.66	Inv Avg	1.61	Inv Avg	1.50	Inv Avg	1.41	Inv Avg	1.34	Inv Avg	1.52
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-7

Ameren Missouri: Labadie UWL
Liquefaction Analysis
40' of ASH M: 7.5
PGA: 2% probability of exceedence in 50 yrs: 0.1792 GW: 0.0'

C-11		C-13		C-16		C-18		C-21		C-23		C-25		C-28		C-30		C-32		C-34		C-37		C-39	
S (ft)	0.31	S (ft)	0.05	S (ft)	0.23	S (ft)	0.35	S (ft)	0.07	S (ft)	0.27	S (ft)	0.20	S (ft)	0.15	S (ft)	0.18	S (ft)	0.09	S (ft)	0.23	S (ft)	0.15	S (ft)	0.05
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	0.86	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	n.a	6.25	0.95	6.25	0.55	6.25	n.a	6.25	1.12	6.25	1.25	6.25	n.a	6.25	0.65	6.25	n.a	6.25	0.77	6.25	n.a	6.25	n.a
8.75	n.a	8.75	1.35	8.75	1.11	8.75	n.a	8.75	n.a	8.75	0.98	8.75	0.86	8.75	0.66	8.75	1.65	8.75	1.05	8.75	n.a	8.75	0.82	8.75	n.a
11.25	0.52	11.25	2.00	11.25	0.67	11.25	0.92	11.25	1.08	11.25	1.24	11.25	2.00	11.25	n.a	11.25	2.00	11.25	2.00	11.25	n.a	11.25	2.00	11.25	1.20
13.75	n.a	13.75	2.00	13.75	1.03	13.75	1.78	13.75	2.00	13.75	1.98	13.75	0.91	13.75	n.a	13.75	2.00	13.75	2.16	13.75	0.88	13.75	1.87	13.75	2.08
16.25	0.52	16.25	2.00	16.25	1.48	16.25	1.85	16.25	2.00	16.25	1.88	16.25	2.00	16.25	1.43	16.25	1.61	16.25	1.04	16.25	2.00	16.25	2.00	16.25	2.00
18.75	2.00	18.75	2.00	18.75	1.54	18.75	1.11	18.75	2.00	18.75	0.81	18.75	1.27	18.75	1.45	18.75	1.95	18.75	2.00	18.75	2.20	18.75	2.00	18.75	1.50
21.25	2.00	21.25	2.00	21.25	2.00	21.25	0.86	21.25	1.34	21.25	1.93	21.25	2.00	21.25	1.60	21.25	1.68	21.25	2.19	21.25	2.00	21.25	1.92	21.25	2.00
23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.48	23.75	1.69	23.75	2.00	23.75	1.10	23.75	2.00	23.75	1.85	23.75	1.34	23.75	2.00	23.75	1.03	23.75	1.45
26.25	2.00	26.25	1.43	26.25	2.00	26.25	2.00	26.25	1.70	26.25	2.00	26.25	1.16	26.25	2.20	26.25	2.00	26.25	1.28	26.25	2.00	26.25	1.22	26.25	2.00
28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	1.60	28.75	1.43	28.75	1.62	28.75	2.00	28.75	2.00	28.75	2.00	28.75	1.68	28.75	2.00	28.75	2.00
31.25	2.00	31.25	1.40	31.25	2.00	31.25	1.46	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.44	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.22	31.25	2.00
33.75	2.00	33.75	1.51	33.75	2.00	33.75	2.00	33.75	1.59	33.75	2.00	33.75	2.00	33.75	2.00	33.75	1.04	33.75	2.00	33.75	2.00	33.75	2.00	33.75	2.00
		36.25	2.00	36.25	2.00	36.25	1.81	36.25	1.42	36.25	2.00	36.25	2.00	36.25	1.20	36.25	2.00	36.25	2.00	36.25	0.98	36.25	2.00	36.25	2.00
		38.75	2.00																			38.75	2.00		
		41.25	2.00																			41.25	2.00		
Inv Avg	1.42	Inv Avg	1.83	Inv Avg	1.47	Inv Avg	1.37	Inv Avg	1.70	Inv Avg	1.44	Inv Avg	1.47	Inv Avg	1.58	Inv Avg	1.60	Inv Avg	1.69	Inv Avg	1.58	Inv Avg	1.64	Inv Avg	1.84
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-8

C-41		C-44		C-46		C-46A		C-48		C-50		C-60		C-62		C-64		C-66		C-66A		C-68		C-70	
S (ft)	0.15	S (ft)	0.19	S (ft)	0.10	S (ft)	0.14	S (ft)	0.28	S (ft)	0.23	S (ft)	0.13	S (ft)	0.12	S (ft)	0.33	S (ft)	0.02	S (ft)	0.24	S (ft)	0.17	S (ft)	0.16
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	0.86	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	0.99	6.25	n.a	6.25	n.a	6.25	0.80	6.25	0.60	6.25	n.a	6.25	0.82	6.25	n.a	6.25	n.a	6.25	0.83	6.25	0.69	6.25	1.53
8.75	n.a	8.75	0.96	8.75	n.a	8.75	n.a	8.75	0.96	8.75	2.00	8.75	0.71	8.75	n.a	8.75	0.60	8.75	n.a	8.75	0.83	8.75	1.37	8.75	1.59
11.25	0.72	11.25	1.65	11.25	1.83	11.25	1.49	11.25	1.40	11.25	0.96	11.25	1.43	11.25	n.a	11.25	1.23	11.25	2.00	11.25	2.00	11.25	1.11	11.25	1.60
13.75	1.12	13.75	1.34	13.75	1.01	13.75	1.03	13.75	1.12	13.75	2.00	13.75	1.59	13.75	1.38	13.75	1.13	13.75	2.00	13.75	2.00	13.75	2.00	13.75	1.10
16.25	1.10	16.25	1.40	16.25	2.05	16.25	1.88	16.25	0.69	16.25	2.00	16.25	2.00	16.25	2.00	16.25	0.58	16.25	1.74	16.25	1.47	16.25	2.00	16.25	n.a
18.75	2.00	18.75	1.44	18.75	2.12	18.75	2.00	18.75	2.00	18.75	2.00	18.75	2.00	18.75	2.00	18.75	1.79	18.75	2.00	18.75	1.83	18.75	2.00	18.75	1.00
21.25	2.00	21.25	1.04	21.25	1.08	21.25	1.41	21.25	1.21	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.04	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00
23.75	1.98	23.75	1.27	23.75	1.48	23.75	1.56	23.75	2.00	23.75	2.05	23.75	2.00	23.75	1.85	23.75	2.00	23.75	2.08	23.75	2.00	23.75	1.14	23.75	1.97
26.25	2.00	26.25	2.00	26.25	1.30	26.25	1.55	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.05	26.25	2.00			26.25	2.00	26.25	1.16	26.25	2.13
28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	1.93	28.75	2.00	28.75	2.00	28.75	2.00			28.75	2.00	28.75	2.00	28.75	1.26
31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00			31.25	1.64	31.25	2.00	31.25	2.00
33.75	2.00	33.75	n.a	33.75	2.00	33.75	2.00	33.75	2.00	33.75	2.00			33.75	2.00	33.75	1.29			33.75	n.a	33.75	2.00	33.75	2.00
36.25	2.00	36.25	n.a	36.25	1.66	36.25	0.89	36.25	1.54	36.25	1.22			36.25	2.00	36.25	0.97					36.25	1.38	36.25	0.76
				38.75	1.96	38.75	2.00			38.75	2.00														
				41.25	2.00	41.25	2.00			41.25	2.00														
				43.75	2.00	43.75	2.00																		
Inv Avg	1.63	Inv Avg	1.49	Inv Avg	1.72	Inv Avg	1.67	Inv Avg	1.39	Inv Avg	1.61	Inv Avg	1.68	Inv Avg	1.77	Inv Avg	1.31	Inv Avg	1.98	Inv Avg	1.49	Inv Avg	1.49	Inv Avg	1.52
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-8

C-74		C-76		C-78		C-79		C-80		C-81		C-82		C-84		C-86		C-89		C-91		C-92		C-94	
S (ft)	0.18	S (ft)	0.11	S (ft)	0.32	S (ft)	0.13	S (ft)	0.22	S (ft)	0.20	S (ft)	0.09	S (ft)	0.13	S (ft)	0.22	S (ft)	0.18	S (ft)	0.50	S (ft)	0.18	S (ft)	0.12
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	0.89	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	n.a	6.25	0.85	6.25	1.00	6.25	0.72	6.25	n.a	6.25	n.a	6.25	n.a	6.25	1.79	6.25	n.a	6.25	n.a	6.25	0.86	6.25	0.86
8.75	n.a	8.75	n.a	8.75	n.a	8.75	1.27	8.75	n.a	8.75	0.93	8.75	n.a	8.75	1.18	8.75	0.87	8.75	1.02	8.75	0.66	8.75	1.25	8.75	1.44
11.25	n.a	11.25	n.a	11.25	0.59	11.25	n.a	11.25	n.a	11.25	0.64	11.25	n.a	11.25	1.62	11.25	1.17	11.25	1.17	11.25	0.86	11.25	0.84	11.25	n.a
13.75	0.57	13.75	0.78	13.75	0.74	13.75	1.08	13.75	0.75	13.75	2.00	13.75	2.00	13.75	2.00	13.75	2.00	13.75	1.20	13.75	0.65	13.75	2.00	13.75	n.a
16.25	1.03	16.25	1.40	16.25	2.00	16.25	1.93	16.25	1.11	16.25	2.00	16.25	2.00	16.25	2.15	16.25	2.00	16.25	1.03	16.25	1.16	16.25	2.00	16.25	1.40
18.75	2.08	18.75	2.08	18.75	2.00	18.75	2.00	18.75	2.00	18.75	1.25	18.75	2.00	18.75	2.00	18.75	2.00	18.75	0.82	18.75	1.43	18.75	2.00	18.75	1.88
21.25	1.23	21.25	2.00	21.25	1.31	21.25	2.00	21.25	1.85	21.25	2.07	21.25	2.00	21.25	2.09	21.25	2.00	21.25	1.52	21.25	2.00	21.25	2.00	21.25	2.00
23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.17	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.61	23.75	1.17	23.75	1.48	23.75	2.00	23.75	2.00	23.75	2.00
26.25	2.00	26.25	2.00	26.25	1.59	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	0.75			26.25	2.00
28.75	1.89	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.09	28.75	1.80	28.75	0.96			28.75	2.00
31.25	1.30	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.94	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.62	31.25	1.30	31.25	0.86			31.25	2.14
33.75	n.a	33.75	2.00	33.75	1.42	33.75	2.00	33.75	2.00	33.75	1.98	33.75	2.00	33.75	2.00	33.75	1.79	33.75	2.00	33.75	1.75			33.75	1.86
36.25	n.a	36.25	2.00	36.25	2.00	36.25	2.00	36.25	2.00	36.25	2.00	36.25	0.78	36.25	0.62	36.25	1.71	36.25	2.00	36.25	1.43			36.25	2.00
Inv Avg	1.53	Inv Avg	1.77	Inv Avg	1.39	Inv Avg	1.65	Inv Avg	1.55	Inv Avg	1.59	Inv Avg	1.81	Inv Avg	1.64	Inv Avg	1.53	Inv Avg	1.43	Inv Avg	1.15	Inv Avg	1.51	Inv Avg	1.74
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Moderate	Risk	Low	Risk	Low

Figure D-8

C-96		C-98		C-100		C-103		C-105		C-106		C-107		C-107A		C-109		C-111		C-113		C-117		C-119	
S (ft)	0.13	S (ft)	0.19	S (ft)	0.19	S (ft)	0.19	S (ft)	0.10	S (ft)	0.32	S (ft)	0.27	S (ft)	0.06	S (ft)	0.22	S (ft)	0.20	S (ft)	0.22	S (ft)	0.31	S (ft)	0.12
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	0.81	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	n.a	6.25	2.00	6.25	n.a	6.25	n.a	6.25	0.98	6.25	0.75	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a
8.75	n.a	8.75	0.56	8.75	2.00	8.75	n.a	8.75	n.a	8.75	0.77	8.75	0.77	8.75	1.15	8.75	n.a	8.75	n.a	8.75	0.78	8.75	0.49	8.75	0.75
11.25	n.a	11.25	1.17	11.25	2.00	11.25	0.93	11.25	n.a	11.25	1.21	11.25	0.89	11.25	1.26	11.25	0.50	11.25	0.67	11.25	2.14	11.25	2.00	11.25	1.47
13.75	0.68	13.75	2.00	13.75	1.75	13.75	2.00	13.75	n.a	13.75	2.00	13.75	1.96	13.75	1.76	13.75	2.08	13.75	0.82	13.75	0.74	13.75	1.19	13.75	2.20
16.25	1.11	16.25	2.00	16.25	1.95	16.25	2.00	16.25	2.00	16.25	1.67	16.25	2.00	16.25	2.00	16.25	2.00	16.25	1.46	16.25	1.93	16.25	1.03	16.25	2.00
18.75	1.15	18.75	2.00	18.75	2.00	18.75	0.90	18.75	2.00	18.75	0.86	18.75	2.00	18.75	2.00	18.75	1.60	18.75	2.00	18.75	1.17	18.75	1.03	18.75	2.00
21.25	2.00	21.25	2.00	21.25	2.00	21.25	0.97	21.25	2.00	21.25	0.91	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00
23.75	2.00	23.75	2.00	23.75	1.91	23.75	1.56	23.75	2.00	23.75	1.98	23.75	2.00	23.75	1.48	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00
26.25	2.00	26.25	2.00	26.25	2.00	26.25	1.53	26.25	2.00	26.25	1.61			26.25	2.00	26.25	2.00	26.25	2.00	26.25	1.44	26.25	2.00	26.25	2.00
28.75	2.00	28.75	1.32	28.75	0.86	28.75	n.a	28.75	0.83	28.75	2.00			28.75	1.32	28.75	1.93	28.75	2.00	28.75	1.31	28.75	2.00	28.75	2.00
31.25	2.00	31.25	1.75	31.25	1.40	31.25	n.a	31.25	2.00	31.25	2.00			31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00
33.75	2.00	33.75	2.00			33.75	n.a	33.75	2.00	33.75	1.32			33.75	2.00	33.75	2.12	33.75	2.00	33.75	1.34	33.75	2.00	33.75	2.00
		36.25	2.00			36.25	n.a	36.25	1.20	36.25	1.97			36.25	2.00	36.25	1.50			36.25	1.52	36.25	1.89		
Inv Avg	1.60	Inv Avg	1.58	Inv Avg	1.58	Inv Avg	1.58	Inv Avg	1.76	Inv Avg	1.38	Inv Avg	1.37	Inv Avg	1.73	Inv Avg	1.62	Inv Avg	1.57	Inv Avg	1.45	Inv Avg	1.45	Inv Avg	1.76
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-8

C-121		C-123		C-125		C-129		C-131		C-133		C-135		C-135A		C-137		C-139		C-139A		C-143		C-145	
S (ft)	0.10	S (ft)	0.17	S (ft)	0.22	S (ft)	0.22	S (ft)	0.31	S (ft)	0.05	S (ft)	0.03	S (ft)	0.09	S (ft)	0.03	S (ft)	0.13	S (ft)	0.11	S (ft)	0.21	S (ft)	0.16
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	0.63	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	0.78	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	0.58	6.25	0.67
8.75	n.a	8.75	2.00	8.75	n.a	8.75	n.a	8.75	0.64	8.75	1.16	8.75	n.a	8.75	n.a	8.75	n.a	8.75	n.a	8.75	n.a	8.75	1.63	8.75	1.70
11.25	1.14	11.25	2.00	11.25	n.a	11.25	n.a	11.25	0.54	11.25	2.00	11.25	1.07	11.25	1.07	11.25	n.a	11.25	n.a	11.25	n.a	11.25	1.90	11.25	1.01
13.75	2.00	13.75	2.00	13.75	0.91	13.75	n.a	13.75	1.14	13.75	2.00	13.75	2.00	13.75	2.00	13.75	2.00	13.75	0.58	13.75	0.73	13.75	2.00	13.75	2.00
16.25	2.00	16.25	2.00	16.25	1.75	16.25	0.49	16.25	1.36	16.25	2.00	16.25	2.00	16.25	2.00	16.25	1.78	16.25	2.00	16.25	2.00	16.25	2.00	16.25	2.00
18.75	2.00	18.75	1.84	18.75	2.00	18.75	2.00	18.75	1.73	18.75	1.82	18.75	2.00	18.75	2.00	18.75	2.00	18.75	2.00	18.75	2.00	18.75	1.27	18.75	1.22
21.25	2.00	21.25	1.74	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00			21.25	2.00	21.25	1.93	21.25	2.00	21.25	2.00	21.25	1.89	21.25	2.00
23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.33			23.75	2.00	23.75	2.00			23.75	2.00	23.75	1.33	23.75	2.00
26.25	1.10	26.25	2.00	26.25	2.00	26.25	1.07	26.25	1.87	26.25	2.00			26.25	2.00	26.25	2.18			26.25	2.00	26.25	2.00	26.25	2.00
28.75	1.61	28.75	2.00	28.75	2.00	28.75	1.20	28.75	1.12	28.75	2.00			28.75	0.96	28.75	2.00			28.75	2.00	28.75	1.87		
31.25	0.96	31.25	1.00	31.25	1.19	31.25	2.00	31.25	2.00	31.25	2.00			31.25	2.00	31.25	2.00			31.25	1.28	31.25	1.43		
33.75	2.00	33.75	2.00	33.75	2.00	33.75	1.20	33.75	2.00	33.75	2.00					32.25	2.00					33.75	2.00		
		36.25	2.00	36.25	2.00	36.25	1.11	36.25	2.16	36.25	2.00											36.25	2.00		
Inv Avg	1.66	Inv Avg	1.68	Inv Avg	1.56	Inv Avg	1.42	Inv Avg	1.37	Inv Avg	1.84	Inv Avg	1.80	Inv Avg	1.74	Inv Avg	1.99	Inv Avg	1.57	Inv Avg	1.70	Inv Avg	1.55	Inv Avg	1.49
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-8

C-145A		C-147		C-149		C-151		C-157		C-157A		C-159		C-161		C-163		C-166		C-168		C-168A		C-170	
S (ft)	0.14	S (ft)	0.04	S (ft)	0.33	S (ft)	0.36	S (ft)	0.20	S (ft)	0.20	S (ft)	0.11	S (ft)	0.13	S (ft)	0.52	S (ft)	0.19	S (ft)	0.19	S (ft)	0.42	S (ft)	0.19
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	0.68	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	0.87	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	2.00	6.25	n.a	6.25	n.a	6.25	0.54	6.25	0.55	6.25	2.00	6.25	0.81	6.25	n.a	6.25	1.32	6.25	0.83	6.25	0.68	6.25	n.a
8.75	1.11	8.75	2.00	8.75	0.81	8.75	n.a	8.75	2.00	8.75	2.00	8.75	1.63	8.75	1.05	8.75	n.a	8.75	2.00	8.75	1.25	8.75	1.23	8.75	0.57
11.25	1.11	11.25	1.19	11.25	1.26	11.25	0.45	11.25	1.66	11.25	1.12	11.25	1.46	11.25	2.00	11.25	n.a	11.25	2.00	11.25	1.31	11.25	0.91	11.25	1.71
13.75	2.00	13.75	2.00	13.75	2.01	13.75	1.08	13.75	2.00	13.75	2.00	13.75	2.00	13.75	2.00	13.75	0.42	13.75	1.79	13.75	1.43	13.75	0.96	13.75	1.57
16.25	2.00	16.25	1.57	16.25	2.00	16.25	2.00	16.25	2.00	16.25	2.00	16.25	2.00	16.25	2.13	16.25	2.01	16.25	2.00	16.25	0.91	16.25	1.10	16.25	2.00
18.75	1.02	18.75	2.00	18.75	2.00	18.75	1.20	18.75	2.00	18.75	2.00	18.75	2.00	18.75	2.00	18.75	1.68	18.75	2.00	18.75	1.13	18.75	1.28	18.75	2.00
21.25	2.00	21.25	1.34	21.25	2.00	21.25	1.73	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.04	21.25	1.13	21.25	2.00	21.25	1.54	21.25	1.28	21.25	1.20
23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.52	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.16	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.79
26.25	2.00			26.25	1.16	26.25	2.00			26.25	2.00	26.25	1.13	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00
28.75	2.00			28.75	0.97	28.75	2.00			28.75	2.01	28.75	1.15	28.75	2.00	28.75	2.16	28.75	2.00	28.75	2.00	28.75	n.a	28.75	2.00
31.25	1.31			31.25	0.99	31.25	2.00			31.25	2.00	31.25	1.46	31.25	2.00	31.25	2.00	31.25	0.75	31.25	2.00	31.25	0.62	31.25	2.00
33.75	0.93			33.75	2.00	33.75	2.00					33.75	1.30					32.25	1.18	32.25	2.00	33.75	0.90	33.75	2.00
36.25	1.03			36.25	2.00							36.25	0.95					33.25	2.00					36.25	1.70
Inv Avg	1.49	Inv Avg	1.75	Inv Avg	1.38	Inv Avg	1.44	Inv Avg	1.55	Inv Avg	1.58	Inv Avg	1.57	Inv Avg	1.70	Inv Avg	1.42	Inv Avg	1.55	Inv Avg	1.46	Inv Avg	1.16	Inv Avg	1.59
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Moderate	Risk	Low

Figure D-8

C-172		C-174		C-178		C-180		C-182		C-184		C-186		C-190		C-192		C-194		C-196		C-198		C-200	
S (ft)	0.19	S (ft)	0.04	S (ft)	0.21	S (ft)	0.35	S (ft)	0.05	S (ft)	0.17	S (ft)	0.31	S (ft)	0.14	S (ft)	0.21	S (ft)	0.21	S (ft)	0.23	S (ft)	0.29	S (ft)	0.22
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	0.59	6.25	1.31	6.25	n.a	6.25	0.72	6.25	n.a	6.25	n.a	6.25	0.63	6.25	n.a	6.25	0.66	6.25	0.74	6.25	n.a	6.25	0.78	6.25	0.92
8.75	1.44	8.75	2.00	8.75	0.75	8.75	1.83	8.75	1.21	8.75	0.62	8.75	2.00	8.75	n.a	8.75	2.00	8.75	n.a	8.75	0.92	8.75	0.83	8.75	n.a
11.25	2.12	11.25	2.00	11.25	1.66	11.25	1.07	11.25	1.46	11.25	1.40	11.25	2.00	11.25	n.a	11.25	2.00	11.25	1.38	11.25	1.49	11.25	1.33	11.25	n.a
13.75	2.00	13.75	2.00	13.75	1.60	13.75	0.87	13.75	2.00	13.75	2.00	13.75	2.00	13.75	n.a	13.75	2.00	13.75	0.97	13.75	2.00	13.75	2.00	13.75	1.07
16.25	2.00	16.25	1.94	16.25	0.85	16.25	0.79	16.25	2.00	16.25	1.50	16.25	2.00	16.25	0.57	16.25	2.00	16.25	1.91	16.25	1.25	16.25	2.00	16.25	1.16
18.75	2.00	18.75	1.61	18.75	2.00	18.75	1.20	18.75	2.00	18.75	1.50	18.75	1.31	18.75	2.00	18.75	0.82	18.75	1.07	18.75	1.82	18.75	1.70	18.75	2.00
21.25	1.46	21.25	2.00	21.25	1.55	21.25	1.06	21.25	1.94	21.25	2.00	21.25	1.02	21.25	1.46	21.25	2.00	21.25	2.00	21.25	1.87	21.25	n.a	21.25	1.42
23.75	1.47	23.75	2.00	23.75	1.12	23.75	1.08	23.75	2.00	23.75	2.00	23.75	1.18	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.97	23.75	0.75	23.75	1.86
26.25	1.88	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	0.85	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	1.70	26.25	1.45
28.75	2.00	28.75	2.00	28.75	2.06	28.75	2.00	28.75	2.00	28.75	2.06	28.75	0.85	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	1.23	28.75	2.00
31.25	1.86	31.25	2.00	31.25	2.00	31.25	1.70	31.25	2.00	31.25	1.65	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.84	31.25	n.a	31.25	1.28	31.25	2.00
33.75	2.00	33.75	2.00	33.75	2.00	33.75	1.70	33.75	1.91	33.75	1.74	33.75	2.19	33.75	2.00	33.75	2.19	33.75	1.60	33.75	0.50	33.75	2.00	33.75	1.31
36.25	2.00			36.25	2.00	36.25	2.00			36.25	1.18			36.25	2.00	36.25	2.00	36.25	2.00			36.25	2.00	36.25	2.00
																								38.75	2.00
																								41.25	2.00
																								43.75	2.00
																								46.25	1.43
																								48.75	1.06
																								51.25	1.27
																								53.75	1.13
																								56.25	2.00
																								58.75	2.00
																								61.25	2.00
																								63.75	2.00
																								66.25	1.19
Inv Avg	1.61	Inv Avg	1.89	Inv Avg	1.54	Inv Avg	1.28	Inv Avg	1.85	Inv Avg	1.55	Inv Avg	1.34	Inv Avg	1.68	Inv Avg	1.63	Inv Avg	1.54	Inv Avg	1.45	Inv Avg	1.38	Inv Avg	1.57
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-8

Ameren Missouri: Labadie UWL
Liquefaction Analysis
50' of ASH M: 7.5
PGA: 2% probability of exceedence in 50 yrs: 0.1792 GW: 0.0'

C-11		C-13		C-16		C-18		C-21		C-23		C-25		C-28		C-30		C-32		C-34		C-37		C-39	
S (ft)	0.31	S (ft)	0.05	S (ft)	0.23	S (ft)	0.35	S (ft)	0.06	S (ft)	0.27	S (ft)	0.19	S (ft)	0.15	S (ft)	0.18	S (ft)	0.08	S (ft)	0.20	S (ft)	0.15	S (ft)	0.04
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	0.87	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	n.a	6.25	0.97	6.25	0.56	6.25	n.a	6.25	1.14	6.25	1.27	6.25	n.a	6.25	0.66	6.25	n.a	6.25	0.78	6.25	n.a	6.25	n.a
8.75	n.a	8.75	1.38	8.75	1.14	8.75	n.a	8.75	n.a	8.75	1.00	8.75	0.88	8.75	0.68	8.75	1.68	8.75	1.07	8.75	n.a	8.75	0.84	8.75	n.a
11.25	0.53	11.25	2.00	11.25	0.69	11.25	0.95	11.25	1.10	11.25	1.27	11.25	2.00	11.25	n.a	11.25	2.00	11.25	2.00	11.25	n.a	11.25	2.00	11.25	1.23
13.75	n.a	13.75	2.00	13.75	1.06	13.75	1.83	13.75	2.00	13.75	2.04	13.75	0.94	13.75	n.a	13.75	2.00	13.75	2.00	13.75	0.91	13.75	1.92	13.75	2.14
16.25	0.54	16.25	2.00	16.25	1.53	16.25	1.91	16.25	2.00	16.25	1.94	16.25	2.00	16.25	1.48	16.25	1.66	16.25	1.07	16.25	2.00	16.25	2.00	16.25	2.00
18.75	2.00	18.75	2.00	18.75	1.60	18.75	1.15	18.75	2.00	18.75	0.83	18.75	1.31	18.75	1.50	18.75	2.02	18.75	2.00	18.75	2.00	18.75	2.00	18.75	1.56
21.25	2.00	21.25	2.00	21.25	2.00	21.25	0.90	21.25	1.39	21.25	2.01	21.25	2.00	21.25	1.66	21.25	1.74	21.25	2.00	21.25	2.00	21.25	1.99	21.25	2.00
23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.54	23.75	1.76	23.75	2.00	23.75	1.15	23.75	2.00	23.75	1.93	23.75	1.39	23.75	2.00	23.75	1.07	23.75	1.51
26.25	2.00	26.25	1.49	26.25	2.00	26.25	2.00	26.25	1.77	26.25	2.00	26.25	1.21	26.25	2.00	26.25	2.00	26.25	1.33	26.25	2.00	26.25	1.27	26.25	2.00
28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	1.67	28.75	1.49	28.75	1.69	28.75	2.09	28.75	2.00	28.75	2.00	28.75	1.75	28.75	2.00	28.75	2.00
31.25	2.00	31.25	1.46	31.25	2.00	31.25	1.52	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.50	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.27	31.25	2.00
33.75	2.00	33.75	1.58	33.75	2.00	33.75	2.00	33.75	1.66	33.75	2.00	33.75	2.00	33.75	2.00	33.75	1.08	33.75	2.00	33.75	2.00	33.75	2.00	33.75	2.00
		36.25	2.00	36.25	2.00	36.25	1.89	36.25	1.48	36.25	2.00	36.25	2.00	36.25	1.25	36.25	2.00	36.25	2.00	36.25	1.02	36.25	2.00	36.25	2.00
		38.75	2.00																			38.75	2.00		
		41.25	2.00																			41.25	2.00		
Inv Avg	1.44	Inv Avg	1.85	Inv Avg	1.49	Inv Avg	1.40	Inv Avg	1.74	Inv Avg	1.47	Inv Avg	1.49	Inv Avg	1.60	Inv Avg	1.63	Inv Avg	1.70	Inv Avg	1.59	Inv Avg	1.66	Inv Avg	1.85
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-9

C-41		C-44		C-46		C-46A		C-48		C-50		C-60		C-62		C-64		C-66		C-66A		C-68		C-70	
S (ft)	0.13	S (ft)	0.15	S (ft)	0.08	S (ft)	0.13	S (ft)	0.28	S (ft)	0.23	S (ft)	0.13	S (ft)	0.12	S (ft)	0.31	S (ft)	0.02	S (ft)	0.24	S (ft)	0.17	S (ft)	0.15
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	0.87	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	1.00	6.25	n.a	6.25	n.a	6.25	0.81	6.25	0.61	6.25	n.a	6.25	0.84	6.25	n.a	6.25	n.a	6.25	0.84	6.25	0.70	6.25	1.55
8.75	n.a	8.75	0.98	8.75	n.a	8.75	n.a	8.75	0.99	8.75	2.00	8.75	0.73	8.75	n.a	8.75	0.61	8.75	n.a	8.75	0.85	8.75	1.40	8.75	1.62
11.25	0.74	11.25	1.69	11.25	1.88	11.25	1.53	11.25	1.44	11.25	0.98	11.25	1.47	11.25	n.a	11.25	1.26	11.25	2.00	11.25	2.00	11.25	1.14	11.25	1.64
13.75	1.15	13.75	1.38	13.75	1.04	13.75	1.06	13.75	1.16	13.75	2.00	13.75	1.64	13.75	1.42	13.75	1.16	13.75	2.00	13.75	2.00	13.75	2.00	13.75	1.13
16.25	1.13	16.25	1.44	16.25	2.12	16.25	1.95	16.25	0.71	16.25	2.00	16.25	2.00	16.25	2.00	16.25	0.60	16.25	1.80	16.25	1.52	16.25	2.00	16.25	n.a
18.75	2.00	18.75	1.49	18.75	2.20	18.75	2.00	18.75	2.00	18.75	2.00	18.75	2.00	18.75	2.00	18.75	1.85	18.75	2.00	18.75	1.90	18.75	2.00	18.75	1.04
21.25	2.00	21.25	1.08	21.25	1.12	21.25	1.46	21.25	1.25	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.12	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00
23.75	2.05	23.75	1.32	23.75	1.54	23.75	1.62	23.75	2.00	23.75	2.13	23.75	2.00	23.75	1.92	23.75	2.00	23.75	2.17	23.75	2.00	23.75	1.19	23.75	2.05
26.25	2.00	26.25	2.00	26.25	1.36	26.25	1.61	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.13	26.25	2.00			26.25	2.00	26.25	1.20	26.25	2.00
28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.01	28.75	2.00	28.75	2.00	28.75	2.00			28.75	2.00	28.75	2.00	28.75	1.31
31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00			31.25	1.71	31.25	2.00	31.25	2.00
33.75	2.00	33.75	n.a	33.75	2.00	33.75	2.00	33.75	2.00	33.75	2.00			33.75	2.00	33.75	1.34			33.75	n.a	33.75	2.00	33.75	2.00
36.25	2.00	36.25	n.a	36.25	1.73	36.25	0.93	36.25	1.61	36.25	1.28			36.25	2.00	36.25	1.01					36.25	1.44	36.25	0.80
				38.75	2.05	38.75	2.00			38.75	2.00														
				41.25	2.00	41.25	2.00			41.25	2.00														
				43.75	2.00	43.75	2.00																		
Inv Avg	1.65	Inv Avg	1.52	Inv Avg	1.75	Inv Avg	1.70	Inv Avg	1.41	Inv Avg	1.63	Inv Avg	1.70	Inv Avg	1.79	Inv Avg	1.34	Inv Avg	1.99	Inv Avg	1.51	Inv Avg	1.52	Inv Avg	1.54
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-9

C-74		C-76		C-78		C-79		C-80		C-81		C-82		C-84		C-86		C-89		C-91		C-92		C-94	
S (ft)	0.18	S (ft)	0.11	S (ft)	0.32	S (ft)	0.08	S (ft)	0.22	S (ft)	0.20	S (ft)	0.09	S (ft)	0.13	S (ft)	0.21	S (ft)	0.18	S (ft)	0.47	S (ft)	0.18	S (ft)	0.12
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	0.90	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	n.a	6.25	0.86	6.25	1.01	6.25	0.73	6.25	n.a	6.25	n.a	6.25	n.a	6.25	1.83	6.25	n.a	6.25	n.a	6.25	0.88	6.25	0.87
8.75	n.a	8.75	n.a	8.75	n.a	8.75	1.30	8.75	n.a	8.75	0.95	8.75	n.a	8.75	1.21	8.75	0.89	8.75	1.05	8.75	0.67	8.75	1.28	8.75	1.47
11.25	n.a	11.25	n.a	11.25	0.61	11.25	n.a	11.25	n.a	11.25	0.66	11.25	n.a	11.25	1.66	11.25	1.20	11.25	1.20	11.25	0.88	11.25	0.86	11.25	n.a
13.75	0.58	13.75	0.80	13.75	0.76	13.75	1.11	13.75	0.77	13.75	2.00	13.75	2.00	13.75	2.00	13.75	2.00	13.75	1.23	13.75	0.67	13.75	2.00	13.75	n.a
16.25	1.07	16.25	1.45	16.25	2.00	16.25	1.99	16.25	1.15	16.25	2.00	16.25	2.00	16.25	2.00	16.25	2.00	16.25	1.06	16.25	1.20	16.25	2.00	16.25	1.44
18.75	2.15	18.75	2.16	18.75	2.00	18.75	2.00	18.75	2.00	18.75	1.30	18.75	2.00	18.75	2.00	18.75	2.00	18.75	0.85	18.75	1.48	18.75	2.00	18.75	1.95
21.25	1.27	21.25	2.00	21.25	1.36	21.25	2.00	21.25	1.92	21.25	2.15	21.25	2.00	21.25	2.17	21.25	2.00	21.25	1.58	21.25	2.00	21.25	2.00	21.25	2.00
23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.22	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.67	23.75	1.21	23.75	1.54	23.75	2.00	23.75	2.00	23.75	2.00
26.25	2.00	26.25	2.00	26.25	1.66	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	0.78			26.25	2.00
28.75	1.97	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.18	28.75	1.87	28.75	1.00			28.75	2.00
31.25	1.36	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.02	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.69	31.25	1.36	31.25	0.90			31.25	2.00
33.75	n.a	33.75	2.00	33.75	1.49	33.75	2.00	33.75	2.00	33.75	2.07	33.75	2.00	33.75	2.00	33.75	1.87	33.75	2.00	33.75	1.83			33.75	1.94
36.25	n.a	36.25	2.00	36.25	2.00	36.25	2.00	36.25	2.00	36.25	2.00	36.25	0.81	36.25	0.65	36.25	1.79	36.25	2.00	36.25	1.49			36.25	2.00
Inv Avg	1.56	Inv Avg	1.79	Inv Avg	1.41	Inv Avg	1.67	Inv Avg	1.57	Inv Avg	1.61	Inv Avg	1.82	Inv Avg	1.66	Inv Avg	1.56	Inv Avg	1.46	Inv Avg	1.18	Inv Avg	1.52	Inv Avg	1.75
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Moderate	Risk	Low	Risk	Low

Figure D-9

C-96		C-98		C-100		C-103		C-105		C-106		C-107		C-107A		C-109		C-111		C-113		C-117		C-119	
S (ft)	0.13	S (ft)	0.19	S (ft)	0.19	S (ft)	0.16	S (ft)	0.09	S (ft)	0.31	S (ft)	0.26	S (ft)	0.06	S (ft)	0.22	S (ft)	0.20	S (ft)	0.22	S (ft)	0.31	S (ft)	0.12
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	0.82	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	n.a	6.25	2.00	6.25	n.a	6.25	n.a	6.25	1.00	6.25	0.76	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a
8.75	n.a	8.75	0.57	8.75	2.00	8.75	n.a	8.75	n.a	8.75	0.79	8.75	0.79	8.75	1.18	8.75	n.a	8.75	n.a	8.75	0.79	8.75	0.50	8.75	0.76
11.25	n.a	11.25	1.20	11.25	2.00	11.25	0.96	11.25	n.a	11.25	1.24	11.25	0.91	11.25	1.29	11.25	0.51	11.25	0.69	11.25	2.00	11.25	2.00	11.25	1.51
13.75	0.70	13.75	2.00	13.75	1.81	13.75	2.00	13.75	n.a	13.75	2.00	13.75	2.02	13.75	1.81	13.75	2.15	13.75	0.84	13.75	0.77	13.75	1.22	13.75	2.00
16.25	1.14	16.25	2.00	16.25	2.02	16.25	2.00	16.25	2.00	16.25	1.72	16.25	2.00	16.25	2.00	16.25	2.00	16.25	1.50	16.25	2.00	16.25	1.06	16.25	2.00
18.75	1.19	18.75	2.00	18.75	2.00	18.75	0.94	18.75	2.00	18.75	0.89	18.75	2.00	18.75	2.00	18.75	1.65	18.75	2.00	18.75	1.21	18.75	1.07	18.75	2.00
21.25	2.00	21.25	2.00	21.25	2.00	21.25	1.00	21.25	2.00	21.25	0.95	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00
23.75	2.00	23.75	2.00	23.75	1.98	23.75	1.63	23.75	2.00	23.75	2.06	23.75	2.00	23.75	1.54	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00
26.25	2.00	26.25	2.00	26.25	2.00	26.25	1.59	26.25	2.00	26.25	1.68			26.25	2.00	26.25	2.00	26.25	2.00	26.25	1.50	26.25	2.00	26.25	2.00
28.75	2.00	28.75	1.37	28.75	0.89	28.75	n.a	28.75	0.86	28.75	2.00			28.75	1.37	28.75	2.02	28.75	2.00	28.75	1.36	28.75	2.00	28.75	2.00
31.25	2.00	31.25	1.83	31.25	1.46	31.25	n.a	31.25	2.00	31.25	2.00			31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00
33.75	2.00	33.75	2.00			33.75	n.a	33.75	2.00	33.75	1.38			33.75	2.00	33.75	2.00	33.75	2.00	33.75	1.40	33.75	2.00	33.75	2.00
		36.25	2.00			36.25	n.a	36.25	1.25	36.25	2.06			36.25	2.00	36.25	1.57			36.25	1.58	36.25	1.98		
Inv Avg	1.62	Inv Avg	1.60	Inv Avg	1.61	Inv Avg	1.60	Inv Avg	1.77	Inv Avg	1.41	Inv Avg	1.39	Inv Avg	1.75	Inv Avg	1.64	Inv Avg	1.59	Inv Avg	1.48	Inv Avg	1.47	Inv Avg	1.76
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-9

C-121		C-123		C-125		C-129		C-131		C-133		C-135		C-135A		C-137		C-139		C-139A		C-143		C-145	
S (ft)	0.07	S (ft)	0.15	S (ft)	0.22	S (ft)	0.21	S (ft)	0.31	S (ft)	0.05	S (ft)	0.02	S (ft)	0.07	S (ft)	0.02	S (ft)	0.13	S (ft)	0.11	S (ft)	0.20	S (ft)	0.16
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	0.64	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	0.79	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	0.59	6.25	0.68
8.75	n.a	8.75	2.00	8.75	n.a	8.75	n.a	8.75	0.66	8.75	1.19	8.75	n.a	8.75	n.a	8.75	n.a	8.75	n.a	8.75	n.a	8.75	1.67	8.75	1.74
11.25	1.17	11.25	2.00	11.25	n.a	11.25	n.a	11.25	0.56	11.25	2.00	11.25	1.10	11.25	1.10	11.25	n.a	11.25	n.a	11.25	n.a	11.25	1.95	11.25	1.03
13.75	2.00	13.75	2.00	13.75	0.93	13.75	n.a	13.75	1.18	13.75	2.00	13.75	2.00	13.75	2.00	13.75	2.00	13.75	0.59	13.75	0.76	13.75	2.00	13.75	2.00
16.25	2.00	16.25	2.00	16.25	1.80	16.25	0.51	16.25	1.40	16.25	2.00	16.25	2.00	16.25	2.00	16.25	1.84	16.25	2.00	16.25	2.00	16.25	2.00	16.25	2.00
18.75	2.00	18.75	1.90	18.75	2.00	18.75	2.00	18.75	1.79	18.75	1.88	18.75	2.00	18.75	2.00	18.75	2.00	18.75	2.00	18.75	2.00	18.75	1.31	18.75	1.26
21.25	2.00	21.25	1.80	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.08			21.25	2.00	21.25	2.01	21.25	2.00	21.25	2.00	21.25	1.96	21.25	2.00
23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.38			23.75	2.00	23.75	2.00			23.75	2.00	23.75	1.38	23.75	2.00
26.25	1.15	26.25	2.00	26.25	2.00	26.25	1.12	26.25	1.94	26.25	2.00			26.25	2.00	26.25	2.00			26.25	2.00	26.25	2.00	26.25	2.00
28.75	1.67	28.75	2.00	28.75	2.00	28.75	1.25	28.75	1.17	28.75	2.00			28.75	1.01	28.75	2.00			28.75	2.00	28.75	1.95		
31.25	1.00	31.25	1.04	31.25	1.24	31.25	2.00	31.25	2.00	31.25	2.00			31.25	2.00	31.25	2.00			31.25	1.33	31.25	1.50		
33.75	2.00	33.75	2.00	33.75	2.00	33.75	1.26	33.75	2.00	33.75	2.00					32.25	2.00					33.75	2.00		
		36.25	2.00	36.25	2.00	36.25	1.16	36.25	2.00	36.25	2.00											36.25	2.00		
Inv Avg	1.68	Inv Avg	1.70	Inv Avg	1.58	Inv Avg	1.45	Inv Avg	1.39	Inv Avg	1.86	Inv Avg	1.81	Inv Avg	1.76	Inv Avg	1.99	Inv Avg	1.58	Inv Avg	1.72	Inv Avg	1.58	Inv Avg	1.51
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-9

C-145A		C-147		C-149		C-151		C-157		C-157A		C-159		C-161		C-163		C-166		C-168		C-168A		C-170	
S (ft)	0.14	S (ft)	0.03	S (ft)	0.27	S (ft)	0.35	S (ft)	0.20	S (ft)	0.20	S (ft)	0.11	S (ft)	0.13	S (ft)	0.52	S (ft)	0.19	S (ft)	0.19	S (ft)	0.41	S (ft)	0.18
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	0.69	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	0.88	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	2.00	6.25	n.a	6.25	n.a	6.25	0.55	6.25	0.56	6.25	2.00	6.25	0.83	6.25	n.a	6.25	1.34	6.25	0.84	6.25	0.69	6.25	n.a
8.75	1.13	8.75	2.00	8.75	0.83	8.75	n.a	8.75	2.00	8.75	2.00	8.75	1.66	8.75	1.07	8.75	n.a	8.75	2.00	8.75	1.27	8.75	1.26	8.75	0.58
11.25	1.14	11.25	1.22	11.25	1.30	11.25	0.46	11.25	1.70	11.25	1.15	11.25	1.50	11.25	2.00	11.25	n.a	11.25	2.00	11.25	1.35	11.25	0.94	11.25	1.75
13.75	2.00	13.75	2.00	13.75	2.07	13.75	1.11	13.75	2.00	13.75	2.00	13.75	2.00	13.75	2.00	13.75	0.43	13.75	1.84	13.75	1.48	13.75	0.99	13.75	1.61
16.25	2.00	16.25	1.62	16.25	2.00	16.25	2.00	16.25	2.00	16.25	2.00	16.25	2.00	16.25	2.20	16.25	2.08	16.25	2.00	16.25	0.94	16.25	1.14	16.25	2.00
18.75	1.05	18.75	2.00	18.75	2.00	18.75	1.24	18.75	2.00	18.75	2.00	18.75	2.00	18.75	2.00	18.75	1.74	18.75	2.00	18.75	1.17	18.75	1.33	18.75	2.00
21.25	2.00	21.25	1.39	21.25	2.00	21.25	1.80	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.12	21.25	1.17	21.25	2.00	21.25	1.59	21.25	1.33	21.25	1.24
23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.58	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.21	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.87
26.25	2.00			26.25	1.20	26.25	2.00			26.25	2.00	26.25	1.18	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00
28.75	2.00			28.75	1.01	28.75	2.00			28.75	2.09	28.75	1.20	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	n.a	28.75	2.00
31.25	1.37			31.25	1.04	31.25	2.00			31.25	2.00	31.25	1.53	31.25	2.00	31.25	2.00	31.25	0.79	31.25	2.00	31.25	0.65	31.25	2.00
33.75	0.98			33.75	2.00	33.75	2.00					33.75	1.36					32.25	1.23	32.25	2.00	33.75	0.94	33.75	2.00
36.25	1.08			36.25	2.00							36.25	0.99					33.25	2.00					36.25	1.77
Inv Avg	1.52	Inv Avg	1.77	Inv Avg	1.40	Inv Avg	1.47	Inv Avg	1.56	Inv Avg	1.60	Inv Avg	1.60	Inv Avg	1.72	Inv Avg	1.44	Inv Avg	1.58	Inv Avg	1.48	Inv Avg	1.18	Inv Avg	1.61
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Moderate	Risk	Low

Figure D-9

C-172		C-174		C-178		C-180		C-182		C-184		C-186		C-190		C-192		C-194		C-196		C-198		C-200	
S (ft)	0.19	S (ft)	0.04	S (ft)	0.21	S (ft)	0.34	S (ft)	0.04	S (ft)	0.17	S (ft)	0.31	S (ft)	0.21	S (ft)	0.14	S (ft)	0.17	S (ft)	0.23	S (ft)	0.29	S (ft)	0.19
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	0.60	6.25	1.33	6.25	n.a	6.25	0.73	6.25	n.a	6.25	n.a	6.25	0.64	6.25	n.a	6.25	0.67	6.25	0.75	6.25	n.a	6.25	0.79	6.25	0.93
8.75	1.47	8.75	2.00	8.75	0.77	8.75	1.87	8.75	1.23	8.75	0.63	8.75	2.00	8.75	n.a	8.75	2.00	8.75	n.a	8.75	0.94	8.75	0.85	8.75	n.a
11.25	2.18	11.25	2.00	11.25	1.70	11.25	1.10	11.25	1.50	11.25	1.43	11.25	2.00	11.25	n.a	11.25	2.00	11.25	1.42	11.25	1.53	11.25	1.36	11.25	n.a
13.75	2.00	13.75	2.00	13.75	1.65	13.75	0.89	13.75	2.00	13.75	2.00	13.75	2.00	13.75	n.a	13.75	2.00	13.75	1.00	13.75	2.00	13.75	2.00	13.75	1.10
16.25	2.00	16.25	2.01	16.25	0.88	16.25	0.81	16.25	2.00	16.25	1.55	16.25	2.00	16.25	0.59	16.25	2.00	16.25	1.97	16.25	1.29	16.25	2.00	16.25	1.20
18.75	2.00	18.75	1.67	18.75	2.00	18.75	1.24	18.75	2.00	18.75	1.55	18.75	1.36	18.75	2.00	18.75	0.85	18.75	1.11	18.75	1.88	18.75	1.76	18.75	2.00
21.25	1.51	21.25	2.00	21.25	1.61	21.25	1.10	21.25	2.01	21.25	2.00	21.25	1.06	21.25	1.52	21.25	2.00	21.25	2.00	21.25	1.94	21.25	n.a	21.25	1.47
23.75	1.53	23.75	2.00	23.75	1.17	23.75	1.13	23.75	2.00	23.75	2.00	23.75	1.23	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.05	23.75	0.78	23.75	1.94
26.25	1.96	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	0.89	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	1.77	26.25	1.51
28.75	2.00	28.75	2.00	28.75	2.15	28.75	2.00	28.75	2.00	28.75	2.14	28.75	0.89	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	1.28	28.75	2.00
31.25	1.94	31.25	2.00	31.25	2.00	31.25	1.78	31.25	2.00	31.25	1.72	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.92	31.25	n.a	31.25	1.34	31.25	2.00
33.75	2.00	33.75	2.00	33.75	2.00	33.75	1.78	33.75	1.99	33.75	1.82	33.75	2.00	33.75	2.00	33.75	2.00	33.75	1.67	33.75	0.52	33.75	2.00	33.75	1.37
36.25	2.00			36.25	2.00	36.25	2.00			36.25	1.23			36.25	2.00	36.25	2.00	36.25	2.00			36.25	2.00	36.25	2.00
																								38.75	2.00
																								41.25	2.00
																								43.75	2.00
																								46.25	1.49
																								48.75	1.11
																								51.25	1.32
																								53.75	1.19
																								56.25	2.00
																								58.75	2.00
																								61.25	2.00
																								63.75	2.00
																								66.25	1.25
Inv Avg	1.64	Inv Avg	1.90	Inv Avg	1.57	Inv Avg	1.32	Inv Avg	1.87	Inv Avg	1.58	Inv Avg	1.36	Inv Avg	1.70	Inv Avg	1.64	Inv Avg	1.57	Inv Avg	1.48	Inv Avg	1.41	Inv Avg	1.60
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-9

Ameren Missouri: Labadie UWL
Liquefaction Analysis
60' of ASH M: 7.5
PGA: 2% probability of exceedence in 50 yrs: 0.1792 GW: 0.0'

C-11		C-13		C-16		C-18		C-21		C-23		C-25		C-28		C-30		C-32		C-34		C-37		C-39	
S (ft)	0.31	S (ft)	0.05	S (ft)	0.23	S (ft)	0.34	S (ft)	0.06	S (ft)	0.24	S (ft)	0.19	S (ft)	0.15	S (ft)	0.17	S (ft)	0.07	S (ft)	0.20	S (ft)	0.14	S (ft)	0.04
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	0.88	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	n.a	6.25	0.98	6.25	0.57	6.25	n.a	6.25	1.15	6.25	1.29	6.25	n.a	6.25	0.67	6.25	n.a	6.25	0.79	6.25	n.a	6.25	n.a
8.75	n.a	8.75	1.40	8.75	1.16	8.75	n.a	8.75	n.a	8.75	1.01	8.75	0.90	8.75	0.69	8.75	1.71	8.75	1.09	8.75	n.a	8.75	0.85	8.75	n.a
11.25	0.54	11.25	2.00	11.25	0.71	11.25	0.97	11.25	1.13	11.25	1.30	11.25	2.00	11.25	n.a	11.25	2.00	11.25	2.00	11.25	n.a	11.25	2.00	11.25	1.25
13.75	n.a	13.75	2.00	13.75	1.08	13.75	1.87	13.75	2.00	13.75	2.08	13.75	0.96	13.75	n.a	13.75	2.00	13.75	2.00	13.75	0.93	13.75	1.97	13.75	2.18
16.25	0.55	16.25	2.00	16.25	1.57	16.25	1.95	16.25	2.00	16.25	1.98	16.25	2.00	16.25	1.51	16.25	1.70	16.25	1.10	16.25	2.00	16.25	2.00	16.25	2.00
18.75	2.00	18.75	2.00	18.75	1.64	18.75	1.18	18.75	2.00	18.75	0.86	18.75	1.35	18.75	1.54	18.75	2.07	18.75	2.00	18.75	2.00	18.75	2.00	18.75	1.60
21.25	2.00	21.25	2.00	21.25	2.00	21.25	0.92	21.25	1.43	21.25	2.06	21.25	2.00	21.25	1.71	21.25	1.79	21.25	2.00	21.25	2.00	21.25	2.05	21.25	2.00
23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.59	23.75	1.81	23.75	2.00	23.75	1.18	23.75	2.00	23.75	1.98	23.75	1.43	23.75	2.00	23.75	1.10	23.75	1.55
26.25	2.00	26.25	1.54	26.25	2.00	26.25	2.00	26.25	1.83	26.25	2.00	26.25	1.25	26.25	2.00	26.25	2.00	26.25	1.37	26.25	2.00	26.25	1.31	26.25	2.00
28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	1.72	28.75	1.54	28.75	1.74	28.75	2.16	28.75	2.00	28.75	2.00	28.75	1.81	28.75	2.00	28.75	2.00
31.25	2.00	31.25	1.51	31.25	2.00	31.25	1.57	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.55	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.32	31.25	2.00
33.75	2.00	33.75	1.63	33.75	2.00	33.75	2.00	33.75	1.71	33.75	2.00	33.75	2.00	33.75	2.00	33.75	1.12	33.75	2.00	33.75	2.00	33.75	2.00	33.75	2.00
		36.25	2.00	36.25	2.00	36.25	1.96	36.25	1.53	36.25	2.00	36.25	2.00	36.25	1.29	36.25	2.00	36.25	2.00	36.25	1.06	36.25	2.00	36.25	2.00
		38.75	2.00																			38.75	2.00		
		41.25	2.00																			41.25	2.00		
Inv Avg	1.45	Inv Avg	1.86	Inv Avg	1.50	Inv Avg	1.42	Inv Avg	1.76	Inv Avg	1.49	Inv Avg	1.52	Inv Avg	1.62	Inv Avg	1.65	Inv Avg	1.71	Inv Avg	1.61	Inv Avg	1.68	Inv Avg	1.87
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-10

C-41		C-44		C-46		C-46A		C-48		C-50		C-60		C-62		C-64		C-66		C-66A		C-68		C-70	
S (ft)	0.13	S (ft)	0.14	S (ft)	0.08	S (ft)	0.13	S (ft)	0.25	S (ft)	0.20	S (ft)	0.13	S (ft)	0.12	S (ft)	0.31	S (ft)	0.02	S (ft)	0.24	S (ft)	0.17	S (ft)	0.15
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	0.87	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	1.01	6.25	n.a	6.25	n.a	6.25	0.82	6.25	0.61	6.25	n.a	6.25	0.85	6.25	n.a	6.25	n.a	6.25	0.85	6.25	0.71	6.25	1.57
8.75	n.a	8.75	1.00	8.75	n.a	8.75	n.a	8.75	1.00	8.75	2.00	8.75	0.74	8.75	n.a	8.75	0.62	8.75	n.a	8.75	0.86	8.75	1.42	8.75	1.65
11.25	0.75	11.25	1.72	11.25	1.92	11.25	1.56	11.25	1.46	11.25	1.00	11.25	1.50	11.25	n.a	11.25	1.29	11.25	2.00	11.25	2.00	11.25	1.17	11.25	1.68
13.75	1.18	13.75	1.41	13.75	1.07	13.75	1.09	13.75	1.18	13.75	2.00	13.75	1.67	13.75	1.45	13.75	1.19	13.75	2.00	13.75	2.00	13.75	2.00	13.75	1.16
16.25	1.16	16.25	1.48	16.25	2.17	16.25	1.99	16.25	0.73	16.25	2.00	16.25	2.00	16.25	2.00	16.25	0.61	16.25	1.84	16.25	1.56	16.25	2.00	16.25	n.a
18.75	2.00	18.75	1.53	18.75	2.00	18.75	2.00	18.75	2.00	18.75	2.00	18.75	2.00	18.75	2.00	18.75	1.90	18.75	2.00	18.75	1.95	18.75	2.00	18.75	1.06
21.25	2.00	21.25	1.11	21.25	1.15	21.25	1.50	21.25	1.29	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.18	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00
23.75	2.11	23.75	1.36	23.75	1.58	23.75	1.66	23.75	2.00	23.75	2.20	23.75	2.00	23.75	1.98	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.22	23.75	2.11
26.25	2.00	26.25	2.00	26.25	1.40	26.25	1.66	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.20	26.25	2.00			26.25	2.00	26.25	1.24	26.25	2.00
28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.08	28.75	2.00	28.75	2.00	28.75	2.00			28.75	2.00	28.75	2.00	28.75	1.36
31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00			31.25	1.77	31.25	2.00	31.25	2.00
33.75	2.00	33.75	n.a	33.75	2.00	33.75	2.00	33.75	2.00	33.75	2.00			33.75	2.00	33.75	1.39			33.75	n.a	33.75	2.00	33.75	2.00
36.25	2.00	36.25	n.a	36.25	1.79	36.25	0.96	36.25	1.67	36.25	1.32			36.25	2.00	36.25	1.04					36.25	1.49	36.25	0.82
				38.75	2.12	38.75	2.00			38.75	2.00														
				41.25	2.00	41.25	2.00			41.25	2.00														
				43.75	2.00	43.75	2.00																		
Inv Avg	1.66	Inv Avg	1.54	Inv Avg	1.77	Inv Avg	1.72	Inv Avg	1.43	Inv Avg	1.65	Inv Avg	1.71	Inv Avg	1.80	Inv Avg	1.36	Inv Avg	1.98	Inv Avg	1.52	Inv Avg	1.54	Inv Avg	1.57
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-10

C-74		C-76		C-78		C-79		C-80		C-81		C-82		C-84		C-86		C-89		C-91		C-92		C-94	
S (ft)	0.17	S (ft)	0.11	S (ft)	0.32	S (ft)	0.08	S (ft)	0.22	S (ft)	0.20	S (ft)	0.09	S (ft)	0.13	S (ft)	0.20	S (ft)	0.17	S (ft)	0.47	S (ft)	0.18	S (ft)	0.11
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	0.90	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	n.a	6.25	0.87	6.25	1.02	6.25	0.74	6.25	n.a	6.25	n.a	6.25	n.a	6.25	1.85	6.25	n.a	6.25	n.a	6.25	0.89	6.25	0.88
8.75	n.a	8.75	n.a	8.75	n.a	8.75	1.32	8.75	n.a	8.75	0.97	8.75	n.a	8.75	1.23	8.75	0.90	8.75	1.06	8.75	0.68	8.75	1.30	8.75	1.49
11.25	n.a	11.25	n.a	11.25	0.62	11.25	n.a	11.25	n.a	11.25	0.67	11.25	n.a	11.25	1.69	11.25	1.23	11.25	1.22	11.25	0.90	11.25	0.88	11.25	n.a
13.75	0.60	13.75	0.82	13.75	0.77	13.75	1.14	13.75	0.79	13.75	2.00	13.75	2.00	13.75	2.00	13.75	2.00	13.75	1.26	13.75	0.68	13.75	2.00	13.75	n.a
16.25	1.09	16.25	1.48	16.25	2.00	16.25	2.04	16.25	1.17	16.25	2.00	16.25	2.00	16.25	2.00	16.25	2.00	16.25	1.09	16.25	1.23	16.25	2.00	16.25	1.48
18.75	2.00	18.75	2.00	18.75	2.00	18.75	2.00	18.75	2.00	18.75	1.33	18.75	2.00	18.75	2.00	18.75	2.00	18.75	0.87	18.75	1.52	18.75	2.00	18.75	2.00
21.25	1.31	21.25	2.00	21.25	1.40	21.25	2.00	21.25	1.97	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00	21.25	1.62	21.25	2.00	21.25	2.00	21.25	2.00
23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.26	23.75	2.00	23.75	2.00	23.75	2.00	23.75	1.72	23.75	1.25	23.75	1.58	23.75	2.00	23.75	2.00	23.75	2.00
26.25	2.00	26.25	2.00	26.25	1.71	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	2.00	26.25	0.81			26.25	2.00
28.75	2.03	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	2.00	28.75	1.93	28.75	1.03			28.75	2.00
31.25	1.41	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.09	31.25	2.00	31.25	2.00	31.25	2.00	31.25	1.74	31.25	1.41	31.25	0.93			31.25	2.00
33.75	n.a	33.75	2.00	33.75	1.54	33.75	2.00	33.75	2.00	33.75	2.14	33.75	2.00	33.75	2.00	33.75	1.93	33.75	2.00	33.75	1.89			33.75	2.00
36.25	n.a	36.25	2.00	36.25	2.00	36.25	2.00	36.25	2.00	36.25	2.00	36.25	0.84	36.25	0.67	36.25	1.85	36.25	2.00	36.25	1.54			36.25	2.00
Inv Avg	1.57	Inv Avg	1.79	Inv Avg	1.43	Inv Avg	1.69	Inv Avg	1.59	Inv Avg	1.62	Inv Avg	1.83	Inv Avg	1.67	Inv Avg	1.58	Inv Avg	1.48	Inv Avg	1.20	Inv Avg	1.53	Inv Avg	1.77
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-10

C-96		C-98		C-100		C-103		C-105		C-106		C-107		C-107A		C-109		C-111		C-113		C-117		C-119	
S (ft)	0.13	S (ft)	0.19	S (ft)	0.18	S (ft)	0.16	S (ft)	0.09	S (ft)	0.27	S (ft)	0.26	S (ft)	0.06	S (ft)	0.22	S (ft)	0.20	S (ft)	0.21	S (ft)	0.31	S (ft)	0.12
Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.	Depth	F.S.
1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a	1.25	n.a
3.75	n.a	3.75	n.a	3.75	0.82	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a	3.75	n.a
6.25	n.a	6.25	n.a	6.25	2.00	6.25	n.a	6.25	n.a	6.25	1.01	6.25	0.77	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a	6.25	n.a
8.75	n.a	8.75	0.58	8.75	2.00	8.75	n.a	8.75	n.a	8.75	0.80	8.75	0.80	8.75	1.20	8.75	n.a	8.75	n.a	8.75	0.81	8.75	0.51	8.75	0.78
11.25	n.a	11.25	1.22	11.25	2.00	11.25	0.97	11.25	n.a	11.25	1.27	11.25	0.93	11.25	1.32	11.25	0.52	11.25	0.70	11.25	2.00	11.25	2.00	11.25	1.54
13.75	0.72	13.75	2.00	13.75	1.84	13.75	2.00	13.75	n.a	13.75	2.00	13.75	2.06	13.75	1.85	13.75	2.19	13.75	0.86	13.75	0.78	13.75	1.25	13.75	2.00
16.25	1.17	16.25	2.00	16.25	2.07	16.25	2.00	16.25	2.00	16.25	1.77	16.25	2.00	16.25	2.00	16.25	2.00	16.25	1.54	16.25	2.04	16.25	1.09	16.25	2.00
18.75	1.22	18.75	2.00	18.75	2.00	18.75	0.96	18.75	2.00	18.75	0.91	18.75	2.00	18.75	2.00	18.75	1.70	18.75	2.00	18.75	1.24	18.75	1.10	18.75	2.00
21.25	2.00	21.25	2.00	21.25	2.00	21.25	1.03	21.25	2.00	21.25	0.97	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00	21.25	2.00
23.75	2.00	23.75	2.00	23.75	2.04	23.75	1.67	23.75	2.00	23.75	2.12	23.75	2.00	23.75	1.59	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00	23.75	2.00
26.25	2.00	26.25	2.00	26.25	2.00	26.25	1.64	26.25	2.00	26.25	1.73			26.25	2.00	26.25	2.00	26.25	2.00	26.25	1.54	26.25	2.00	26.25	2.00
28.75	2.00	28.75	1.42	28.75	0.92	28.75	n.a	28.75	0.89	28.75	2.00			28.75	1.42	28.75	2.08	28.75	2.00	28.75	1.41	28.75	2.00	28.75	2.00
31.25	2.00	31.25	1.89	31.25	1.50	31.25	n.a	31.25	2.00	31.25	2.00			31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00	31.25	2.00
33.75	2.00	33.75	2.00			33.75	n.a	33.75	2.00	33.75	1.43			33.75	2.00	33.75	2.00	33.75	2.00	33.75	1.44	33.75	2.00	33.75	2.00
		36.25	2.00			36.25	n.a	36.25	1.29	36.25	2.13			36.25	2.00	36.25	1.62			36.25	1.64	36.25	2.04		
Inv Avg	1.64	Inv Avg	1.62	Inv Avg	1.63	Inv Avg	1.62	Inv Avg	1.79	Inv Avg	1.44	Inv Avg	1.41	Inv Avg	1.77	Inv Avg	1.65	Inv Avg	1.60	Inv Avg	1.50	Inv Avg	1.49	Inv Avg	1.76
Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low	Risk	Low

Figure D-10