

PARAMETER	NILAI TIAP ZONA			
	CLAY	FILTER	RANDOM TANAH	BATU
Jumlah data	83	10	34	3
Rata-rata (mean)	1.775	2.093	1.937	2.431
Nilai minimum	1.687	2.056	1.744	2.360
Nilai maksimum	1.883	2.189	2.148	2.526
Standar deviasi	0.034	0.038	0.063	0.085
PENENTUAN KELAS DISTRIBUSI FREKUENSI				
Rentang data	0.196	0.133	0.404	0.166
Jumlah kelas	7	5	7	3
Nilai tengah	1.775	2.085	1.938	2.408

$\gamma_{wet} / \gamma_{sat}$ (gr/cm ³)					
NO	CLAY	FILTER	RANDOM TANAH	BATU	RIP-RAP
1	1.811	2.077	1.906	2.526	
2	1.786	2.059	1.904	2.360	
3	1.775	2.091	1.902	2.408	
4	1.773	2.056	1.871		
5	1.775	2.117	1.979		
6	1.754	2.079	1.970		
7	1.792	2.093	1.995		
8	1.752	2.189	1.957		
9	1.789	2.073	1.886		
10	1.741	2.091	1.905		
11	1.767		1.954		
12	1.779		1.977		
13	1.784		1.915		
14	1.801		1.890		
15	1.763		1.981		
16	1.775		1.952		
17	1.792		1.988		
18	1.806		1.954		
19	1.764		2.148		
20	1.781		1.744		
21	1.768		1.944		
22	1.780		1.919		
23	1.787		1.906		
24	1.770		1.946		
25	1.768		1.890		
26	1.792		1.937		
27	1.785		1.911		
28	1.759		1.939		
29	1.801		2.044		
30	1.766		1.907		
31	1.761		1.885		
32	1.763		1.962		
33	1.796		1.955		
34	1.825		1.935		
35	1.826				
36	1.795				
37	1.799				
38	1.832				
39	1.827				
40	1.780				
41	1.767				
42	1.784				
43	1.759				
44	1.784				
45	1.705				
46	1.702				

47	1.883				
48	1.804				
49	1.743				
50	1.721				
51	1.756				
52	1.771				
53	1.779				
54	1.715				
55	1.817				
56	1.760				
57	1.764				
58	1.762				
59	1.789				
60	1.727				
61	1.746				
62	1.687				
63	1.807				
64	1.742				
65	1.716				
66	1.793				
67	1.734				
68	1.839				
69	1.798				
70	1.768				
71	1.765				
72	1.816				
73	1.748				
74	1.798				
75	1.817				
76	1.782				
77	1.719				
78	1.820				
79	1.797				
80	1.765				
81	1.722				
82	1.782				
83	1.719				

kohesi (kg/cm ²)					
NO	CLAY	FILTER	RANDOM TANAH	BATU	RIP-RAP
1	0.147	0	0	0	0
2	0.144				
3	0.151				
4	0.144				
5	0.140				
6	0.139				
7	0.133				
8	0.130				
9					
10					
11					
12					
13					
14					
15					
16					
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37					
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39					
40					
41					
42					
43					
44					

phi (°)					
NO	CLAY	FILTER	RANDOM TANAH	BATU	RIP-RAP
1	9.61	30	35	38	37
2	10.09				
3	9.53				
4	10.03				
5	10.94				
6	9.33				
7	11.47				
8	12.03				
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
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37					
38					
39					
40					
41					
42					
43					
44					

permeabilitas (k) (cm/detik)					
NO	CLAY	FILTER	RANDOM TANAH	BATU	RIP-RAP
1	1.98E-06	9.75E-03	1.70E-03		
2	4.54E-06	1.24E-02	1.88E-03		
3		9.94E-03	1.49E-03		
4		8.91E-03	7.86E-04		
5	4.51E-06	9.76E-03	1.91E-03		
6	2.05E-05	9.62E-03	3.15E-03		
7		5.12E-03	1.01E-03		
8		2.34E-02	2.00E-03		
9		1.03E-02	2.18E-03		
10		3.90E-03	1.65E-03		
11	4.37E-06		3.42E-03		
12	5.50E-06		1.66E-03		
13			1.71E-03		
14			1.16E-03		
15	1.30E-05		1.56E-03		
16	1.00E-05		1.37E-03		
17			3.31E-03		
18			1.22E-03		
19	1.09E-05		5.22E-03		
20	7.45E-06		1.51E-03		
21			8.44E-04		
22					
23	1.03E-05				
24	7.64E-06				
25					
26					
27	9.23E-06				
28	1.77E-05				
29					
30					
31	1.58E-05				
32	8.61E-06				
33					
34					
35	9.14E-06				
36	1.26E-05				
37					
38					
39	4.57E-06				
40	1.14E-05				
41					
42					
43	3.98E-06				
44	2.26E-06				

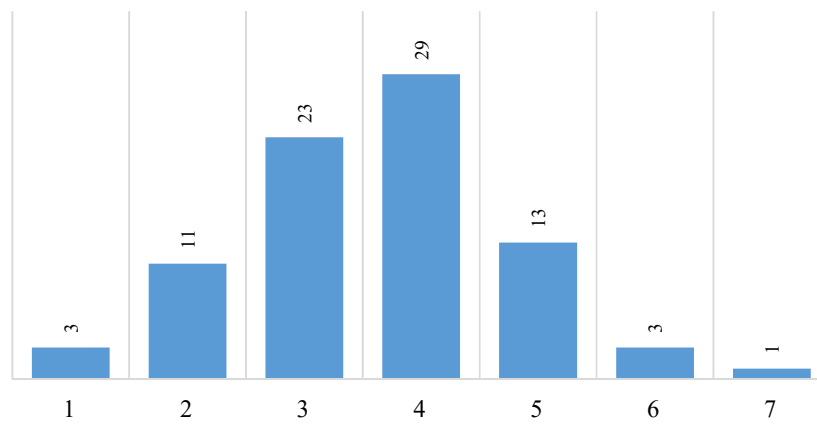
PENENTUAN KELAS DISTRIBUSI FREKUENSI

PARAMETER		NILAI TIAP ZONA			
		CLAY	FILTER	RANDOM TANAH	BATU
Jumlah data	83	10	34	3	
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Nilai maksimum	1.883	2.189	2.148	2.526	
Standar deviasi	0.034	0.038	0.063	0.085	
PENENTUAN KELAS DISTRIBUSI FREKUENSI					
Rentang data	0.196	0.133	0.404	0.166	
Jumlah kelas	7	5	7	3	
Nilai tengah	1.775	2.085	1.938	2.408	
Interval data	0.028	0.027	0.058	0.055	

DISTRIBUSI FREKUENSI CLAY		
Kelas	Rentang Data	Frekuensi
Kelas 1	1.687 - 1.715	3
Kelas 2	1.715 - 1.743	11
Kelas 3	1.743 - 1.771	23
Kelas 4	1.771 - 1.799	29
Kelas 5	1.799 - 1.827	13
Kelas 6	1.827 - 1.855	3
Kelas 7	1.855 - 1.883	1

Jumlah data 83

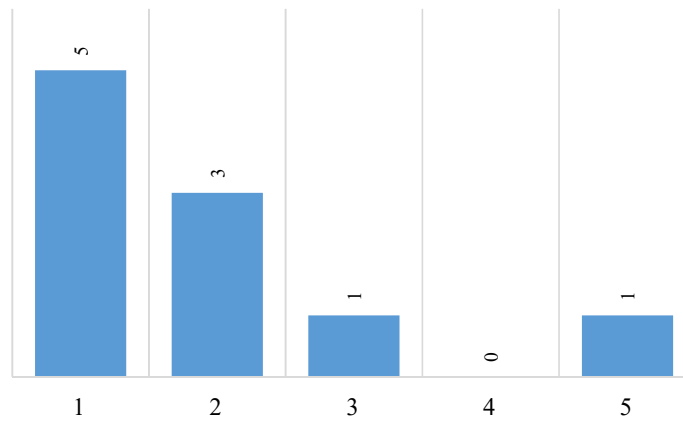
DISTRIBUSI FREKUENSI CLAY



DISTRIBUSI FREKUENSI FILTER		
Kelas	Rentang Data	Frekuensi
Kelas 1	2.056 - 2.083	5
Kelas 2	2.083 - 2.109	3
Kelas 3	2.109 - 2.136	1
Kelas 4	2.136 - 2.162	0
Kelas 5	2.162 - 2.189	1

Jumlah data 10

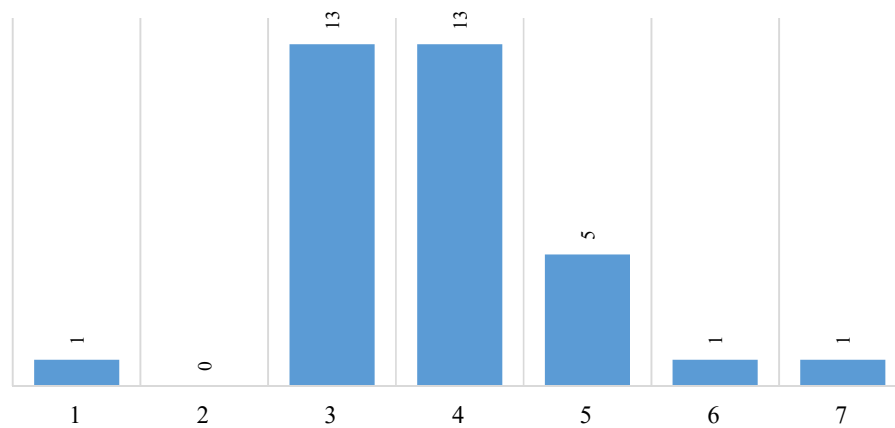
DISTRIBUSI FREKUENSI FILTER



DISTRIBUSI FREKUENSI RANDOM TANAH			
Kela	Rentang Data		Frekuensi
Kela	1.744	- 1.802	1
Kela	1.802	- 1.860	0
Kela	1.860	- 1.917	13
Kela	1.917	- 1.975	13
Kela	1.975	- 2.033	5
Kela	2.033	- 2.090	1
Kela	2.090	- 2.148	1

Jumlah data 34

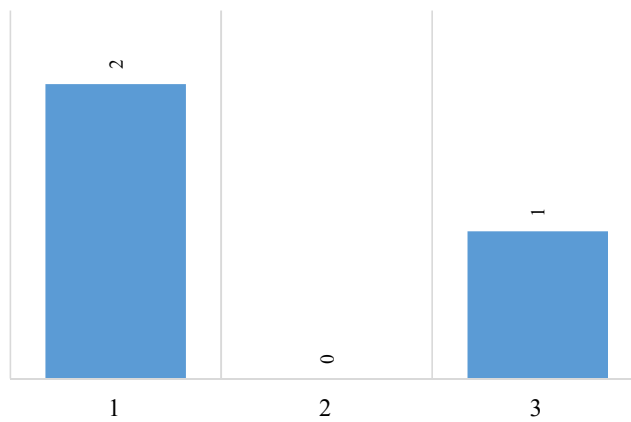
DISTRIBUSI FREKUENSI RANDOM TANAH



DISTRIBUSI FREKUENSI BATU			
Kelas	Rentang Data		
Frekuensi			
Kelas 1	2.360	-	2.415
Kelas 2	2.415	-	2.471
Kelas 3	2.471	-	2.526
Kelas 4			
Kelas 5			
Kelas 6			
Kelas 7			

Jumlah data 3

DISTRIBUSI FREKUENSI BATU



	kosong hulu				
	Factor of Safety	Frequency (%)		Factor of Safety	Frequency (%)
1	1.93877	1.5		1.9389735	0.804631
2	1.93918	0.5		1.9393835	1.41635
3	1.93959	3.5		1.9397935	2.32468
4	1.93999	3		1.9401935	3.52392
5	1.9404	7.5		1.9406035	5.03725
6	1.94081	4.5		1.9410135	6.71395
7	1.94121	11		1.9414135	8.3069
8	1.94162	8.5		1.9418235	9.6427
9	1.94203	5.5		1.9422335	10.437
10	1.94244	13.5		1.9426435	10.5334
11	1.94284	8		1.9430435	9.93543
12	1.94325	12		1.9434535	8.73285
13	1.94366	6		1.9438635	7.1572
14	1.94406	6		1.9442635	5.51007
15	1.94447	2.5		1.9446735	3.93296
16	1.94488	2		1.9450835	2.61757
17	1.94528	2.5		1.9454835	1.64479
18	1.94569	1.5		1.9458935	0.953378
19	1.9461	0		1.9463035	0.515273
20	1.94651	0.5		1.9467135	0.259673
	≥ 5%	9		≥ 5%	10
1	-	-		-	-
2	-	-		-	-
3	-	-		-	-
4	-	-		-	-
5	1.9404	7.5		1.9406035	5.03725
6	-	-		1.9410135	6.71395
7	1.94121	11		1.9414135	8.3069
8	1.94162	8.5		1.9418235	9.6427
9	1.94203	5.5		1.9422335	10.437
10	1.94244	13.5		1.9426435	10.5334
11	1.94284	8		1.9430435	9.93543
12	1.94325	12		1.9434535	8.73285
13	1.94366	6		1.9438635	7.1572
14	1.94406	6		1.9442635	5.51007
15	-	-		-	-
16	-	-		-	-
17	-	-		-	-
18	-	-		-	-
19	-	-		-	-
20	-	-		-	-
min	1.940		max	1.944	

	kosong hilir				
	Factor of Safety	Frequency (%)		Factor of Safety	Frequency (%)
1	1.70134	2		1.70172	0.494747
2	1.7021	0		1.70248	1.26241
3	1.70286	2		1.70324	2.77634
4	1.70362	6		1.704	5.26263
5	1.70438	6		1.70476	8.59785
6	1.70514	9.5		1.70552	12.1069
7	1.7059	18		1.70628	14.6938
8	1.70666	18		1.70704	15.3707
9	1.70742	18		1.7078	13.8583
10	1.70818	7.5		1.70856	10.7691
11	1.70894	7		1.70932	7.2129
12	1.7097	3.5		1.71008	4.16386
13	1.71046	0.5		1.71084	2.07176
14	1.71122	1		1.7116	0.888464
15	1.71198	0.5		1.71236	0.328395
16	1.71274	0		1.71312	0.104619
17	1.7135	0		1.71388	0.0287265
18	1.71426	0		1.71464	0.00679846
19	1.71502	0		1.7154	0.00138674
20	1.71578	0.5		1.71616	0.000243802
	≥ 5%	8		≥ 5%	8
1	-	-		-	-
2	-	-		-	-
3	-	-		-	-
4	1.70362	6		1.704	5.26263
5	1.70438	6		1.70476	8.59785
6	1.70514	9.5		1.70552	12.1069
7	1.7059	18		1.70628	14.6938
8	1.70666	18		1.70704	15.3707
9	1.70742	18		1.7078	13.8583
10	1.70818	7.5		1.70856	10.7691
11	1.70894	7		1.70932	7.2129
12	-	-		-	-
13	-	-		-	-
14	-	-		-	-
15	-	-		-	-
16	-	-		-	-
17	-	-		-	-
18	-	-		-	-
19	-	-		-	-
20	-	-		-	-
min	1.704		max	1.709	

	kosong hulu gempa obe				
	Factor of Safety	Frequency (%)		Factor of Safety	Frequency (%)
1	1.3983	0.5		1.3983935	0.0028512
2	1.39848	0		1.3985735	0.0110187
3	1.39867	0		1.3987635	0.0404407
4	1.39886	0		1.3989535	0.130314
5	1.39905	0.5		1.3991435	0.368679
6	1.39923	0.5		1.3993235	0.87579
7	1.39942	2		1.3995135	1.92308
8	1.39961	3		1.3997035	3.70748
9	1.39979	4		1.3998835	6.12383
10	1.39998	8.5		1.4000735	9.16318
11	1.40017	16.5		1.4002635	12.0379
12	1.40035	15		1.4004435	13.8257
13	1.40054	10.5		1.4006335	14.0973
14	1.40073	15		1.4008235	12.6202
15	1.40092	10		1.4010135	9.91932
16	1.4011	5		1.4011935	7.00274
17	1.40129	4.5		1.4013835	4.27193
18	1.40148	3		1.4015735	2.28804
19	1.40166	1		1.4017535	1.12316
20	1.40185	0.5		1.4019435	0.466899
	≥ 5%	6		≥ 5%	8
1	-	-		-	-
2	-	-		-	-
3	-	-		-	-
4	-	-		-	-
5	-	-		-	-
6	-	-		-	-
7	-	-		-	-
8	-	-		-	-
9	-	-		1.3998835	6.12383
10	1.39998	8.5		1.4000735	9.16318
11	1.40017	16.5		1.4002635	12.0379
12	1.40035	15		1.4004435	13.8257
13	1.40054	10.5		1.4006335	14.0973
14	1.40073	15		1.4008235	12.6202
15	1.40092	10		1.4010135	9.91932
16	1.4011	5		1.4011935	7.00274
17	-	-		-	-
18	-	-		-	-
19	-	-		-	-
20	-	-		-	-
min	1.400		max	1.401	

	kosong hilir gempa obe				
	Factor of Safety	Frequency (%)		Factor of Safety	Frequency (%)
1	1.20982	1		1.209999	0.397078
2	1.21018	2		1.210359	0.906967
3	1.21054	0.5		1.210719	1.8544
4	1.2109	3.5		1.211079	3.39402
5	1.21126	6		1.211439	5.56058
6	1.21161	6.5		1.211789	8.08079
7	1.21197	10		1.212149	10.6412
8	1.21233	11.5		1.212509	12.5436
9	1.21269	14		1.212869	13.2359
10	1.21305	12.5		1.213229	12.502
11	1.2134	14		1.213579	10.636
12	1.21376	9.5		1.213939	8.07485
13	1.21412	4.5		1.214299	5.48767
14	1.21448	2		1.214659	3.3384
15	1.21484	1		1.215019	1.81797
16	1.21519	0.5		1.215369	0.905415
17	1.21555	0.5		1.215729	0.396301
18	1.21591	0		1.216089	0.155274
19	1.21627	0		1.216449	0.054459
20	1.21663	0.5		1.216809	0.0170977
	≥ 5%	8		≥ 5%	9
1	-	-		-	-
2	-	-		-	-
3	-	-		-	-
4	-	-		-	-
5	1.21126	6		1.211439	5.56058
6	1.21161	6.5		1.211789	8.08079
7	1.21197	10		1.212149	10.6412
8	1.21233	11.5		1.212509	12.5436
9	1.21269	14		1.212869	13.2359
10	1.21305	12.5		1.213229	12.502
11	1.2134	14		1.213579	10.636
12	1.21376	9.5		1.213939	8.07485
13	-	-		1.214299	5.48767
14	-	-		-	-
15	-	-		-	-
16	-	-		-	-
17	-	-		-	-
18	-	-		-	-
19	-	-		-	-
20	-	-		-	-
min	1.211		max	1.214	

	langgeng hulu				
	Factor of Safety	Frequency (%)		Factor of Safety	Frequency (%)
1	1.94977	1		1.95054	0.178152
2	1.95131	0		1.95208	0.35999
3	1.95285	0		1.95362	0.680537
4	1.95439	0.5		1.95516	1.20357
5	1.95593	3.5		1.9567	1.99139
6	1.95747	3		1.95824	3.08247
7	1.95901	5.5		1.95978	4.46378
8	1.96055	5		1.96132	6.04738
9	1.96209	6.5		1.96286	7.66467
10	1.96363	9		1.9644	9.08824
11	1.96517	12		1.96594	10.0815
12	1.96671	7.5		1.96748	10.4625
13	1.96825	9		1.96902	10.1579
14	1.96979	10.5		1.97056	9.22645
15	1.97133	8		1.9721	7.84016
16	1.97287	5		1.97364	6.23271
17	1.97441	4		1.97518	4.63542
18	1.97595	6		1.97672	3.22524
19	1.97749	2		1.97826	2.09941
20	1.97903	2		1.9798	1.27847
	≥ 5%	9		≥ 5%	9
1	-	-		-	-
2	-	-		-	-
3	-	-		-	-
4	-	-		-	-
5	-	-		-	-
6	-	-		-	-
7	1.95901	5.5		-	-
8	1.96055	5		1.96132	6.04738
9	1.96209	6.5		1.96286	7.66467
10	1.96363	9		1.9644	9.08824
11	1.96517	12		1.96594	10.0815
12	1.96671	7.5		1.96748	10.4625
13	1.96825	9		1.96902	10.1579
14	1.96979	10.5		1.97056	9.22645
15	1.97133	8		1.9721	7.84016
16	1.97287	5		1.97364	6.23271
17	-	-		-	-
18	1.97595	6		-	-
19	-	-		-	-
20	-	-		-	-
min	1.959		max	1.974	

	langgeng hilir				
	Factor of Safety	Frequency (%)		Factor of Safety	Frequency (%)
1	1.70134	2		1.70172	0.494747
2	1.7021	0		1.70248	1.26241
3	1.70286	2		1.70324	2.77634
4	1.70362	6		1.704	5.26263
5	1.70438	6		1.70476	8.59785
6	1.70514	9.5		1.70552	12.1069
7	1.7059	18		1.70628	14.6938
8	1.70666	18		1.70704	15.3707
9	1.70742	18		1.7078	13.8583
10	1.70818	7.5		1.70856	10.7691
11	1.70894	7		1.70932	7.2129
12	1.7097	3.5		1.71008	4.16386
13	1.71046	0.5		1.71084	2.07176
14	1.71122	1		1.7116	0.888464
15	1.71198	0.5		1.71236	0.328395
16	1.71274	0		1.71312	0.104619
17	1.7135	0		1.71388	0.0287265
18	1.71426	0		1.71464	0.00679846
19	1.71502	0		1.7154	0.00138674
20	1.71578	0.5		1.71616	0.000243802
	≥ 5%	8		≥ 5%	8
1	-	-		-	-
2	-	-		-	-
3	-	-		-	-
4	1.70362	6		1.704	5.26263
5	1.70438	6		1.70476	8.59785
6	1.70514	9.5		1.70552	12.1069
7	1.7059	18		1.70628	14.6938
8	1.70666	18		1.70704	15.3707
9	1.70742	18		1.7078	13.8583
10	1.70818	7.5		1.70856	10.7691
11	1.70894	7		1.70932	7.2129
12	-	-		-	-
13	-	-		-	-
14	-	-		-	-
15	-	-		-	-
16	-	-		-	-
17	-	-		-	-
18	-	-		-	-
19	-	-		-	-
20	-	-		-	-
min	1.704		max	1.709	

	langgeng hulu gempa obe				
	Factor of Safety	Frequency (%)		Factor of Safety	Frequency (%)
1	1.02244	0.5		1.0225645	0.353501
2	1.02269	1		1.0228145	0.666358
3	1.02294	2		1.0230645	1.17598
4	1.02318	0.5		1.0233045	1.90675
5	1.02343	6		1.0235545	2.95719
6	1.02368	2.5		1.0238045	4.29379
7	1.02393	4.5		1.0240545	5.83682
8	1.02418	6		1.0243045	7.42827
9	1.02443	9		1.0245545	8.85061
10	1.02468	11.5		1.0248045	9.87265
11	1.02493	9.5		1.0250545	10.3102
12	1.02518	9.5		1.0253045	10.0804
13	1.02543	8.5		1.0255545	9.22708
14	1.02567	9.5		1.0257945	7.96628
15	1.02592	5.5		1.0260445	6.40818
16	1.02617	4		1.0262945	4.82602
17	1.02642	6		1.0265445	3.40266
18	1.02667	2.5		1.0267945	2.24607
19	1.02692	0.5		1.0270445	1.38804
20	1.02717	1		1.0272945	0.803075
	≥ 5%	10		≥ 5%	9
1	-	-		-	-
2	-	-		-	-
3	-	-		-	-
4	-	-		-	-
5	1.02343	6		-	-
6	-	-		-	-
7	-	-		1.0240545	5.83682
8	1.02418	6		1.0243045	7.42827
9	1.02443	9		1.0245545	8.85061
10	1.02468	11.5		1.0248045	9.87265
11	1.02493	9.5		1.0250545	10.3102
12	1.02518	9.5		1.0253045	10.0804
13	1.02543	8.5		1.0255545	9.22708
14	1.02567	9.5		1.0257945	7.96628
15	1.02592	5.5		1.0260445	6.40818
16	-	-		-	-
17	1.02642	6		-	-
18	-	-		-	-
19	-	-		-	-
20	-	-		-	-
min	1.023		max	1.026	

	langgeng hilir gempa obe				
	Factor of Safety	Frequency (%)		Factor of Safety	Frequency (%)
1	1.20379	0.5		1.203938	0.165726
2	1.20409	0.5		1.204238	0.359697
3	1.20438	0		1.204528	0.705878
4	1.20468	1		1.204828	1.31209
5	1.20498	4		1.205128	2.25407
6	1.20527	4		1.205418	3.52861
7	1.20557	4.5		1.205718	5.19153
8	1.20586	4.5		1.206008	6.9962
9	1.20616	10		1.206308	8.81535
10	1.20646	9.5		1.206608	10.2657
11	1.20675	10.5		1.206898	11.0357
12	1.20705	11.5		1.207198	11.0062
13	1.20734	8		1.207488	10.1853
14	1.20764	12		1.207788	8.69958
15	1.20794	5		1.208088	6.86742
16	1.20823	5.5		1.208378	5.06964
17	1.20853	5		1.208678	3.42735
18	1.20882	2.5		1.208968	2.17807
19	1.20912	1		1.209268	1.26107
20	1.20942	0.5		1.209568	0.674806
	≥ 5%	7		≥ 5%	10
1	-	-		-	-
2	-	-		-	-
3	-	-		-	-
4	-	-		-	-
5	-	-		-	-
6	-	-		-	-
7	-	-		1.205718	5.19153
8	-	-		1.206008	6.9962
9	1.20616	10		1.206308	8.81535
10	1.20646	9.5		1.206608	10.2657
11	1.20675	10.5		1.206898	11.0357
12	1.20705	11.5		1.207198	11.0062
13	1.20734	8		1.207488	10.1853
14	1.20764	12		1.207788	8.69958
15	1.20794	5		1.208088	6.86742
16	1.20823	5.5		1.208378	5.06964
17	1.20853	5		-	-
18	-	-		-	-
19	-	-		-	-
20	-	-		-	-
min	1.206		max	1.208	

	surut cepat hulu				
	Factor of Safety	Frequency (%)		Factor of Safety	Frequency (%)
1	1.73115	0.5		1.73174	0.186004
2	1.73233	0.5		1.73292	0.413278
3	1.73351	0		1.7341	0.843091
4	1.73469	2		1.73528	1.57913
5	1.73587	5		1.73646	2.71564
6	1.73705	3		1.73764	4.28785
7	1.73823	6		1.73882	6.21609
8	1.73941	6		1.74	8.27384
9	1.74059	11.5		1.74118	10.1113
10	1.74177	10		1.74236	11.3454
11	1.74295	11		1.74354	11.6881
12	1.74413	13.5		1.74472	11.0556
13	1.74531	8.5		1.7459	9.60128
14	1.74649	8		1.74708	7.65576
15	1.74767	5.5		1.74826	5.60478
16	1.74885	3.5		1.74944	3.76739
17	1.75003	4		1.75062	2.32506
18	1.75121	1		1.7518	1.31747
19	1.75239	0		1.75298	0.685421
20	1.75357	0.5		1.75416	0.327405
	≥ 5%	9		≥ 5%	9
1	-	-		-	-
2	-	-		-	-
3	-	-		-	-
4	-	-		-	-
5	1.73587	5		-	-
6	-	-		-	-
7	1.73823	6		1.73882	6.21609
8	1.73941	6		1.74	8.27384
9	1.74059	11.5		1.74118	10.1113
10	1.74177	10		1.74236	11.3454
11	1.74295	11		1.74354	11.6881
12	1.74413	13.5		1.74472	11.0556
13	1.74531	8.5		1.7459	9.60128
14	1.74649	8		1.74708	7.65576
15	1.74767	5.5		1.74826	5.60478
16	-	-		-	-
17	-	-		-	-
18	-	-		-	-
19	-	-		-	-
20	-	-		-	-
min	1.736		max	1.748	

	surut cepat hilir				
	Factor of Safety	Frequency (%)		Factor of Safety	Frequency (%)
1	1.68607	2		1.6864695	0.592956
2	1.68687	1		1.6872695	1.35843
3	1.68767	2		1.6880695	2.74558
4	1.68847	4.5		1.6888695	4.89567
5	1.68927	8		1.6896695	7.70141
6	1.69007	9		1.6904695	10.6883
7	1.69086	11.5		1.6912595	13.0637
8	1.69166	14		1.6920595	14.1335
9	1.69246	16.5		1.6928595	13.49
10	1.69326	15.5		1.6936595	11.3594
11	1.69406	8		1.6944595	8.43881
12	1.69486	4		1.6952595	5.53079
13	1.69566	2		1.6960595	3.19797
14	1.69646	1		1.6968595	1.63133
15	1.69726	0		1.6976595	0.734162
16	1.69806	0.5		1.6984595	0.291489
17	1.69885	0		1.6992495	0.10353
18	1.69965	0		1.7000495	0.0320433
19	1.70045	0		1.7008495	0.00874966
20	1.70125	0.5		1.7016495	0.00210778
	≥ 5%	7		≥ 5%	8
1	-	-		-	-
2	-	-		-	-
3	-	-		-	-
4	-	-		-	-
5	1.68927	8		1.6896695	7.70141
6	1.69007	9		1.6904695	10.6883
7	1.69086	11.5		1.6912595	13.0637
8	1.69166	14		1.6920595	14.1335
9	1.69246	16.5		1.6928595	13.49
10	1.69326	15.5		1.6936595	11.3594
11	1.69406	8		1.6944595	8.43881
12	-	-		1.6952595	5.53079
13	-	-		-	-
14	-	-		-	-
15	-	-		-	-
16	-	-		-	-
17	-	-		-	-
18	-	-		-	-
19	-	-		-	-
20	-	-		-	-
min	1.689		max	1.695	

surut cepat hulu gempa obe					
	Factor of Safety	Frequency (%)		Factor of Safety	Frequency (%)
1	1.03484	2		1.035113	0.515678
2	1.03539	0		1.035663	1.32101
3	1.03594	2.5		1.036213	2.90707
4	1.03648	6		1.036753	5.43981
5	1.03703	5.5		1.037303	8.85869
6	1.03757	11.5		1.037843	12.3343
7	1.03812	17		1.038393	14.8641
8	1.03867	18.5		1.038943	15.388
9	1.03921	16.5		1.039483	13.7328
10	1.03976	10		1.040033	10.5206
11	1.0403	4.5		1.040573	6.98609
12	1.04085	3.5		1.041123	3.96054
13	1.0414	0.5		1.041673	1.92883
14	1.04194	1		1.042213	0.820959
15	1.04249	0.5		1.042763	0.295868
16	1.04303	0		1.043303	0.0937005
17	1.04358	0		1.043853	0.0249895
18	1.04413	0		1.044403	0.00572522
19	1.04467	0		1.044943	0.00116217
20	1.04522	0.5		1.045493	0.000197035
	≥ 5%	7		≥ 5%	8
1	-	-		-	-
2	-	-		-	-
3	-	-		-	-
4	1.03648	6		1.036753	5.43981
5	1.03703	5.5		1.037303	8.85869
6	1.03757	11.5		1.037843	12.3343
7	1.03812	17		1.038393	14.8641
8	1.03867	18.5		1.038943	15.388
9	1.03921	16.5		1.039483	13.7328
10	1.03976	10		1.040033	10.5206
11	-	-		1.040573	6.98609
12	-	-		-	-
13	-	-		-	-
14	-	-		-	-
15	-	-		-	-
16	-	-		-	-
17	-	-		-	-
18	-	-		-	-
19	-	-		-	-
20	-	-		-	-
min	1.036		max	1.041	

	surut cepat hilir gempa obe				
	Factor of Safety	Frequency (%)		Factor of Safety	Frequency (%)
1	1.16982	2		1.16983855	0.494865
2	1.16986	0		1.16987855	1.34307
3	1.16989	2		1.16990855	2.5386
4	1.16993	6		1.16994855	5.10857
5	1.16997	6		1.16998855	8.66506
6	1.17	8		1.17001855	11.5123
7	1.17004	19		1.17005855	14.4786
8	1.17008	17.5		1.17009855	15.3482
9	1.17012	17.5		1.17013855	13.7138
10	1.17015	9		1.17016855	11.2659
11	1.17019	6.5		1.17020855	7.46375
12	1.17023	4		1.17024855	4.16788
13	1.17026	0.5		1.17027855	2.40669
14	1.1703	1		1.17031855	0.996485
15	1.17034	0.5		1.17035855	0.347768
16	1.17038	0		1.17039855	0.1023
17	1.17041	0		1.17042855	0.0365257
18	1.17045	0		1.17046855	0.00796666
19	1.17049	0		1.17050855	0.00146461
20	1.17052	0.5		1.17053855	0.00036757
	≥ 5%	8		≥ 5%	8
1	-	-		-	-
2	-	-		-	-
3	-	-		-	-
4	1.16993	6		1.16994855	5.10857
5	1.16997	6		1.16998855	8.66506
6	1.17	8		1.17001855	11.5123
7	1.17004	19		1.17005855	14.4786
8	1.17008	17.5		1.17009855	15.3482
9	1.17012	17.5		1.17013855	13.7138
10	1.17015	9		1.17016855	11.2659
11	1.17019	6.5		1.17020855	7.46375
12	-	-		-	-
13	-	-		-	-
14	-	-		-	-
15	-	-		-	-
16	-	-		-	-
17	-	-		-	-
18	-	-		-	-
19	-	-		-	-
20	-	-		-	-
min	1.170		max	1.170	

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FOTO DOKUMENTASI PERMEABILITY CLAY



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