BAB V

KESIMPULAN DAN SARAN

5.1. Kesimpulan

Beberapa kesimpulan yang dapat ditarik dari penelitian yang telah dilakukan adalah sebagai berikut:

1. Dalam analisis hidrologi diperlukan data yang cukup baik dari segi panjang maupun validitas data,

2. Metode HSS yang paling mendekati hidograf dari debit terukur di DAS Progo adalah metode HSS Nakayasu,

3. Debit banjir rencana yang dihasilkan dari metode HSS Nakayasu berdasarkan kala ulang 2 tahun, 5 tahun, 10 tahun, 20 tahun, 50 tahun, dan 100 tahun berturut-turut adalah 792,55 m^3/s, 1398,84 m^3/s, 1792,62 m^3/s, 2163,99 m^3/s, 2614,97 m^3/s, 2998,41 m^3/s,

4. Hasil debit banjir rencana metode hidograf satuan sintetik yang terpaut jauh dengan analisis frekuensi debit terukur dengan kala ulang 2 tahun, 5 tahun, 10 tahun, 20 tahun, 50 tahun, dan 100 tahun, yaitu berturut-turut adalah 344,33 m^3/s, 416,79 m^3/2, 456,1 m^3/s, 499,05 m^3/s, 527,3 m^3/s, dan 553,17 m^3/s dapat diakibatkan karena perhitungan metode HSS menggunakan permodelan parameter DAS, salah satunya luas DAS. Luas DAS Progo yang diteliti memiliki luas yang sangat besar, yaitu 2231,15 km^2 yang menyebabkan data hasil debit rencana menjadi jauh lebih besar dari debit terukur,

5. Debit andalan yang dipakai adalah debit terukur, karena nilai debit terukur lebih kecil dari nilai debit metode HSS Nakayasu. Besaran debit andalah di lokasi penelitian adalah 5,1 m^3/s,

6. Daya listrik yang akan dihasilkan suatu PLTMH dari data debit andalan DAS progo adalah 0,242 kW.

5.2. Saran

Beberapa saran yang dapat diberikan peneliti adalah sebagai berikut:

1. Dalam melakukan analisis hidrologi harus memiliki data yang lengkap,

2. Metode HSS sebaiknya tidak digunakan apabila lokasi penelitian memiliki luas yang besar (> 1000 km^2),

3. DAS Progo memiliki potensi debit yang dapat dimanfaatkan untuk kebutuhan PLTMH.

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Lampiran 1

Tabel Faktor frekuensi K untuk distribusi log-normal 2 parameter

Koefisien Variasi (Cv)	Kala Ulang (Tahun)					
	2	5	10	20	50	100
0,05	-0,025	0,8334	1,2965	1,6863	2,1341	2,437
0,1	-0,0496	0,8222	1,3078	1,7247	2,213	2,5489
0,15	-0,0738	0,8085	1,3156	1,7598	2,2899	2,2607
0,2	-0,0971	0,7926	1,32	1,7598	2,364	2,7716
0,25	-0,1194	0,7746	1,3209	1,7911	2,4318	2,8805
0,3	-0,1406	0,7647	1,3183	1,8183	2,5015	2,9866
0,35	-0,1604	0,7333	1,3126	1,8414	2,5638	3,089
0,4	-0,1788	0,71	1,3037	1,8602	2,6212	3,187
0,45	-0,1957	0,687	1,29	1,8746	2,6731	3,2799
0,5	-0,2111	0,6626	1,2778	1,8848	2,7202	3,3673
0,55	-0,2251	0,6379	1,2613	1,8909	2,7613	3,4488
0,6	-0,2375	0,6129	1,2428	1,8931	2,7971	3,5211
0,65	-0,2185	0,5879	1,2226	1,8951	2,8279	3,393
0,7	-0,2582	0,5631	1,2011	1,8866	2,8532	3,3663
0,75	-0,2667	0,5387	1,1784	1,8677	2,8735	3,7118
0,8	-0,2739	0,5118	1,1548	1,8543	2,8891	3,7617
0,85	-0,2801	0,4914	1,1306	1,8388	2,9002	3,8056
0,9	-0,2852	0,4686	1,106	1,8212	2,9071	3,8137
0,95	-0,2895	0,4466	1,081	1,8021	2,9103	3,8762
1	-0,2929	0,4254	1,056	1,7815	2,9098	3,9035

(Sumber: Sri Harto, 1993)

Lampiran 2

Tabel Faktor frekuensi K untuk distribusi Person III dengan koefisien skewness positif

Koef. Skew	Kala Ulang (Tahun)							
	1,01	2	5	10	25	50	100	200
3,0	-0,667	-0,396	0,420	1,180	2,278	3,152	4,051	4,970
2,9	-0,690	-0,390	0,440	1,195	2,277	3,134	4,013	4,904
2,8	-0,714	-0,384	0,460	1,210	2,275	3,114	3,973	4,847
2,7	-0,740	-0,376	0,479	1,224	2,272	3,093	3,932	4,783
2,6	-0,769	-0,368	0,499	1,238	2,267	3,071	3,889	4,718
2,5	-0,799	-0,360	0,518	1,250	2,262	3,048	3,845	4,652
2,4	-0,832	-0,351	0,537	1,262	2,256	3,023	3,800	4,584
2,3	-0,867	-0,341	0,555	1,274	2,248	2,997	3,753	4,515
2,2	-0,905	-0,330	0,574	1,284	2,240	2,970	3,705	4,444
2,1	-0,946	-0,319	0,592	1,294	2,230	2,942	3,656	4,372
2,0	-0,990	-0,307	0,609	1,302	2,219	2,912	3,605	4,298
1,9	-1,037	-0,294	0,627	1,310	2,207	2,881	3,553	4,223
1,8	-1,087	-0,282	0,643	1,318	2,193	2,848	3,499	4,147
1,7	-1,140	-0,268	0,660	1,324	2,179	2,815	3,444	4,069
1,6	-1,197	-0,254	0,675	1,329	2,163	2,780	3,388	3,990
1,5	-1,256	-0,240	0,690	1,333	2,146	2,743	3,330	3,910
1,4	-1,318	-0,225	0,705	1,337	2,128	2,706	3,271	3,828
1,3	-1,383	-0,210	0,719	1,339	2,108	2,666	3,211	3,745
1,2	-1,449	-0,195	0,732	1,340	2,087	2,626	3,149	3,661
1,1	-1,518	-0,180	0,745	1,341	2,066	2,585	3,087	3,575
1,0	-1,588	-0,164	0,758	1,340	2,043	2,542	3,022	3,489
0,9	-1,660	-0,148	0,769	1,339	2,018	2,498	2,975	3,401
0,8	-1,733	-0,132	0,780	1,336	1,993	2,453	2,891	3,312
0,7	-1,806	-0,116	0,790	1,333	1,967	2,407	2,824	3,223
0,6	-1,880	-0,099	0,800	1,328	1,939	2,359	2,755	3,132
0,5	-1,955	-0,083	0,808	1,33	1,910	2,231	2,686	3,041
0,4	-2,029	-0,066	0,816	1,317	1,880	2,261	2,615	2,949
0,3	-2,104	-0,050	0,824	1,309	1,849	2,211	2,544	2,856
0,2	-2,178	-0,033	0,830	1,301	1,818	2,159	2,472	2,763
0,1	-2,252	-0,017	0,836	1,292	1,785	2,107	2,400	2,670
0,0	-2,326	0	0,842	1,282	1,751	2,054	2,326	2,576

(Sumber: Sri Harto, 1993)

Lampiran 3

Tabel faktor frekuensi K_T untuk distribusi Pearson Tipe III
dengan skewness negatif

Koef. Skew	Kala Ulang (Tahun)							
	1,01	2	5	10	25	50	100	200
-0,0	-2,326	0,000	0,842	1,282	1,751	2,054	2,326	2,576
-0,1	-2,400	0,017	0,846	1,270	1,716	2,000	2,252	2,482
-0,2	-2,472	0,033	0,850	1,258	1,680	1,945	2,178	2,388
-0,3	-2,544	0,050	0,853	1,245	1,643	1,890	2,104	2,294
-0,4	-2,615	0,066	0,855	1,231	1,606	1,834	2,029	2,201
-0,5	-2,686	0,083	0,856	1,216	1,567	1,777	1,955	2,108
-0,6	-2,755	0,099	0,857	1,200	1,528	1,720	1,880	2,016
-0,7	-2,824	0,116	0,857	1,183	1,488	1,663	1,806	1,926
-0,8	-2,891	0,132	0,856	1,166	1,448	1,606	1,733	1,837
-0,9	-2,975	0,148	0,854	1,147	1,407	1,549	1,660	1,749
-1,0	-3,022	0,164	0,852	1,128	1,366	1,492	1,588	1,664
-1,1	-3,087	0,180	0,848	1,107	1,324	1,435	1,518	1,581
-1,2	-3,149	0,195	0,844	1,086	1,282	1,379	1,449	1,501
-1,3	-3,211	0,210	0,838	1,064	1,240	1,324	1,383	1,424
-1,4	-3,271	0,225	0,832	1,041	1,198	1,270	1,318	1,351
-1,5	-3,330	0,240	0,825	1,018	1,157	1,217	1,256	1,282
-1,6	-3,388	0,254	0,817	0,994	1,116	1,166	1,197	1,216
-1,7	-3,444	0,268	0,808	0,970	1,075	1,116	1,140	1,155
-1,8	-3,499	0,282	0,799	0,945	1,035	1,069	1,087	1,097
-1,9	-3,553	0,294	0,788	0,920	0,996	1,023	1,037	1,044
-2,0	-3,605	0,307	0,777	0,895	0,959	0,980	0,990	0,995
-2,1	-3,656	0,319	0,765	0,869	0,923	0,939	0,946	0,949
-2,2	-3,705	0,330	0,752	0,844	0,888	0,900	0,905	0,907
-2,3	-3,753	0,341	0,739	0,819	0,855	0,864	0,867	0,869
-2,4	-3,800	0,351	0,725	0,795	0,823	0,830	0,832	0,833
-2,5	-3,845	0,360	0,711	0,771	0,793	0,798	0,799	0,800
-2,6	-3,889	0,368	0,696	0,747	0,764	0,768	0,769	0,769
-2,7	-3,932	0,376	0,681	0,724	0,738	0,740	0,740	0,741
-2,8	-3,973	0,384	0,666	0,702	0,712	0,714	0,714	0,714
-2,9	-4,013	0,390	0,651	0,681	0,683	0,689	0,690	0,690
-3,0	-4,051	0,396	0,636	0,660	0,666	0,666	0,667	0,667

(Sumber: Sri Harto, 1993)

Lampiran 4

Tabel harga χ^2 untuk berbagai nilai *DK* dan α

DK	Distribusi χ^2											
	0.99	0.95	0.90	0.80	0.70	0.50	0.30	0.20	0.10	0.05	0.01	0.001
1	.0016	.004	.0158	.0642	.148	0.455	1.074	1.642	2.706	3.841	6.635	10.827
2	.0201	.103	.211	.446	.713	1.386	2.408	3.219	4.604	5.991	9.210	13.815
3	.115	.352	.584	1.005	1.424	2.366	3.665	4.642	6.251	7.815	11.345	16.268
4	.297	.711	1.084	1.649	2.195	3.357	4.878	5.989	7.779	9.488	13.277	18.465
5	.554	1.145	1.610	2.343	3.000	4.351	6.064	7.289	9.236	11.070	15.089	20.517
6	.872	1.635	2.204	3.070	3.828	5.348	7.231	8.558	10.645	12.592	16.812	22.457
7	1.239	2.167	2.833	3.822	4.671	6.346	8.383	9.803	12.017	14.067	18.475	24.322
8	1.646	2.733	3.290	4.594	5.527	7.344	9.524	11.030	13.362	15.507	20.090	26.425
9	2.038	3.325	4.168	5.380	6.393	8.343	10.656	12.242	14.684	16.919	21.666	27.877
10	2.558	3.940	4.791	6.179	7.267	9.342	11.781	13.442	15.987	18.307	23.209	29.588
11	3.053	4.575	5.578	6.989	8.148	10.341	12.899	14.641	17.275	19.675	24.725	31.264
12	3.571	5.226	6.304	7.807	9.034	11.340	14.011	15.812	18.549	21.026	26.217	32.909
13	4.107	5.892	7.042	8.634	9.926	12.340	15.119	16.985	19.812	22.362	27.688	34.528
14	4.660	6.571	7.790	9.467	10.821	13.339	16.222	18.151	21.064	23.685	29.141	36.123
15	5.229	7.261	8.547	10.307	11.721	14.339	17.322	19.311	22.307	24.996	30.578	37.697
16	5.812	7.962	9.312	11.152	12.624	15.338	18.418	20.465	23.542	26.296	32.000	39.252
17	6.408	8.672	10.085	12.002	13.531	16.338	19.511	21.615	24.769	27.587	33.409	40.790
18	7.005	9.390	10.865	12.857	14.440	17.338	20.601	22.760	25.989	28.869	34.809	42.312
19	7.635	10.117	11.651	13.716	15.352	18.338	21.689	23.900	27.204	30.141	36.191	43.820
20	8.260	10.851	12.443	14.578	16.266	19.337	22.775	25.038	28.412	31.410	37.566	45.315
21	8.897	11.501	13.240	15.445	17.182	20.337	23.858	26.171	29.615	32.671	38.932	46.797
22	9.542	12.338	14.041	16.314	18.101	21.337	24.939	27.301	30.823	33.924	40.289	48.268
23	10.196	13.091	14.848	17.187	19.021	22.337	26.018	28.429	32.007	35.175	41.638	49.728
24	10.856	13.848	15.659	18.062	19.943	23.337	27.096	29.553	33.196	36.415	42.980	51.179
25	11.524	14.611	16.473	18.940	20.867	24.337	28.172	30.675	34.382	37.652	44.314	52.620
26	12.198	15.379	17.292	19.820	21.792	25.336	19.246	31.795	35.563	38.885	45.642	54.052
27	12.879	16.151	18.114	20.703	22.719	26.336	30.319	32.912	36.741	40.113	46.963	55.476
28	13.565	16.928	18.939	21.588	23.647	27.336	31.391	34.027	37.916	41.337	48.278	56.893
29	14.256	17.708	19.768	22.457	14.577	28.336	32.461	35.139	39.087	42.557	49.588	58.302
30	15.953	18.493	20.599	23.364	25.508	29.336	33.530	36.250	40.256	43.773	50.892	59.703

(Sumber: Sri Harto, 1993)

Lampiran 5

Tabel Nilai Δ kritik untuk uji Smirnov Kolmogorov

α n	0.20	0.10	0.05	0.01
5	0.45	0.51	0.56	0.67
10	0.32	0.37	0.41	0.49
15	0.27	0.30	0.34	0.40
20	0.23	0.26	0.29	0.36
25	0.21	0.24	0.27	0.32
30	0.19	0.22	0.24	0.29
35	0.18	0.20	0.23	0.27
40	0.17	0.19	0.21	0.25
45	0.16	0.18	0.20	0.24
50	0.15	0.17	0.19	0.23
n > 50	$\dfrac{1,07}{\sqrt{n}}$	$\dfrac{1.22}{\sqrt{n}}$	$\dfrac{1.36}{\sqrt{n}}$	$\dfrac{1.63}{\sqrt{n}}$

(Sumber: Charles T. Haan, 1993)

Lampiran 6

Tabel Hitungan hidograf kala ulang 2 tahun dengan metode HSS Gamma 1

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
0	6,4261	25,28	0	0	0				0
1	44,271		18,991	22,2078	0	0			0
2	11,507		0	44,4156	0	421,751	0		421,751
2,9247	8,072		0	64,9504	0	843,503	0	0	843,503
3				64,1828	0	1233,48	0	0	1233,48
4				54,813	0	1218,9	0	0	1218,9
5				46,811	0	1040,96	0	0	1040,96
6				39,9772	0	888,994	0	0	888,994
7				34,1411	0	759,212	0	0	759,212
8				29,1569	0	648,378	0	0	648,378
9				24,9004	0	553,723	0	0	553,723
10				21,2653	0	472,887	0	0	472,887
11				18,1608	0	403,852	0	0	403,852
12				15,5096	0	344,895	0	0	344,895
13				13,2454	0	294,545	0	0	294,545
14				11,3118	0	251,545	0	0	251,545
15				9,6604	0	214,823	0	0	214,823
16				8,25011	0	183,462	0	0	183,462
17				7,0457	0	156,679	0	0	156,679
18				6,01712	0	133,806	0	0	133,806
19				5,13871	0	114,272	0	0	114,272
20				4,38852	0	97,5898	0	0	97,5898
21				3,74786	0	83,343	0	0	83,343
22				3,20072	0	71,176	0	0	71,176
23				2,73346	0	60,7853	0	0	60,7853
24				2,33441	0	51,9114	0	0	51,9114
25				1,99362	0	44,3331	0	0	44,3331
26				1,70258	0	37,861	0	0	37,861
27				1,45402	0	32,3338	0	0	32,3338
28				1,24176	0	27,6135	0	0	27,6135
29				1,06048	0	23,5823	0	0	23,5823
30				0,90566	0	20,1396	0	0	20,1396
31				0,77345	0	17,1995	0	0	17,1995
32				0,66053	0	14,6886	0	0	14,6886
33				0,5641	0	12,5443	0	0	12,5443
34				0,48175	0	10,713	0	0	10,713
35				0,41142	0	9,14902	0	0	9,14902
36				0,35136	0	7,81339	0	0	7,81339
37				0,30007	0	6,67274	0	0	6,67274
38				0,25626	0	5,69861	0	0	5,69861

Tabel Hitungan hidograf kala ulang 2 tahun dengan metode HSS Gamma 1 (lanjutan)

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
39				0,21885	0	4,86669	0	0	4,86669
40				0,1869	0	4,15622	0	0	4,15622
41				0,15962	0	3,54947	0	0	3,54947
42				0,13631	0	3,03129	0	0	3,03129
43				0,11641	0	2,58876	0	0	2,58876
44				0,09942	0	2,21084	0	0	2,21084
45				0,08491	0	1,88809	0	0	1,88809
46				0,07251	0	1,61245	0	0	1,61245
47				0,06192	0	1,37705	0	0	1,37705
48				0,05288	0	1,17602	0	0	1,17602
49				0,04516	0	1,00434	0	0	1,00434
50				0,03857	0	0,85772	0	0	0,85772
						0,7325	0	0	
							0	0	
								0	

Lampiran 7

Tabel Hitungan hidograf kala ulang 2 tahun dengan metode HSS Nakayasu

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
0	6,4261	25,28	0	0	0				0
1	44,271		18,991	0,1841	0	0			0
2	11,507		0	0,9717	0	3,49632	0		3,49632
3	8,072		0	2,57129	0	18,4537	0	0	18,4537
4				5,12866	0	48,8317	0	0	48,8317
5				8,7617	0	97,3991	0	0	97,3991
6				13,5714	0	166,394	0	0	166,394
7				19,647	0	257,735	0	0	257,735
8				27,0692	0	373,118	0	0	373,118
9				35,9122	0	514,075	0	0	514,075
10				41,7324	0	682,013	0	0	682,013
11				36,1853	0	792,545	0	0	792,545
12				32,7246	0	687,2	0	0	687,2
13				29,5948	0	621,477	0	0	621,477
14				26,7644	0	562,039	0	0	562,039
15				24,2046	0	508,286	0	0	508,286
16				21,8897	0	459,673	0	0	459,673
17				19,7962	0	415,71	0	0	415,71
18				17,9029	0	375,952	0	0	375,952
19				16,1907	0	339,996	0	0	339,996
20				14,6422	0	307,479	0	0	307,479
21				13,2418	0	278,072	0	0	278,072
22				11,9754	0	251,477	0	0	251,477
23				11,3663	0	227,426	0	0	227,426
24				10,6295	0	215,859	0	0	215,859
25				9,94048	0	201,866	0	0	201,866
26				9,29612	0	188,781	0	0	188,781
27				8,69353	0	176,544	0	0	176,544
28				8,13	0	165,1	0	0	165,1
29				7,60299	0	154,398	0	0	154,398
30				7,11015	0	144,389	0	0	144,389
31				6,64926	0	135,03	0	0	135,03
32				6,21824	0	126,277	0	0	126,277
33				5,81516	0	118,091	0	0	118,091
34				5,43821	0	110,436	0	0	110,436
35				5,0857	0	103,278	0	0	103,278
36				4,75603	0	96,5831	0	0	96,5831
37				4,44774	0	90,3224	0	0	90,3224
38				4,15943	0	84,4676	0	0	84,4676
39				3,88981	0	78,9922	0	0	78,9922
40				3,63766	0	73,8718	0	0	73,8718

Tabel Hitungan hidograf kala ulang 2 tahun dengan metode HSS Nakayasu (lanjutan)

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
41				3,48712	0	69,0833	0	0	69,0833
42				3,31617	0	66,2242	0	0	66,2242
43				3,15361	0	62,9778	0	0	62,9778
44				2,99902	0	59,8906	0	0	59,8906
45				2,852	0	56,9547	0	0	56,9547
46				2,71219	0	54,1627	0	0	54,1627
47				2,57923	0	51,5075	0	0	51,5075
48				2,4528	0	48,9826	0	0	48,9826
49				2,33256	0	46,5814	0	0	46,5814
50				2,21821	0	44,2979	0	0	44,2979
				0,03857	0	42,1263	0	0	42,1263
						0,7325	0	0	
							0	0	
								0	

Lampiran 8

Tabel Hitungan hidograf kala ulang 2 tahun dengan metode HSS ITB-1

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
0	6,4261	25,28	0	0	0				0
1	44,271		18,991	0,69069	0	0			0
2	11,507		0	20,8275	0	13,117	0		13,117
3	8,072		0	52,9601	0	395,537	0	0	395,537
4				72,5691	0	1005,77	0	0	1005,77
4,9461				77,6652	0	1378,17	0	0	1378,17
5				77,6515	0	1474,95	0	0	1474,95
6				73,4255	0	1474,69	0	0	1474,69
7				64,6929	0	1394,43	0	0	1394,43
8				54,5365	0	1228,59	0	0	1228,59
9				44,6407	0	1035,71	0	0	1035,71
10				35,7952	0	847,778	0	0	847,778
11				28,2755	0	679,792	0	0	679,792
12				22,0858	0	536,983	0	0	536,983
13				17,1025	0	419,434	0	0	419,434
14				13,154	0	324,796	0	0	324,796
15				10,0622	0	249,809	0	0	249,809
16				7,66322	0	191,092	0	0	191,092
17				5,815	0	145,533	0	0	145,533
18				4,39919	0	110,433	0	0	110,433
19				3,31961	0	83,5455	0	0	83,5455
20				2,49953	0	63,043	0	0	63,043
21				1,87855	0	47,4689	0	0	47,4689
22				1,40958	0	35,6758	0	0	35,6758
23				1,05621	0	26,7695	0	0	26,7695
24				0,79046	0	20,0586	0	0	20,0586
25				0,59094	0	15,0117	0	0	15,0117
26				0,44136	0	11,2226	0	0	11,2226
27				0,32936	0	8,38192	0	0	8,38192
28				0,2456	0	6,25499	0	0	6,25499
29				0,18302	0	4,66424	0	0	4,66424
30				0,1363	0	3,4757	0	0	3,4757
31				0,10145	0	2,58844	0	0	2,58844
32				0,07547	0	1,92662	0	0	1,92662
33				0,05612	0	1,4333	0	0	1,4333
34				0,04172	0	1,06581	0	0	1,06581
35				0,031	0	0,79222	0	0	0,79222
36				0,02302	0	0,58863	0	0	0,58863
37				0,01709	0	0,43722	0	0	0,43722
38				0,01269	0	0,32464	0	0	0,32464
39				0,00942	0	0,24099	0	0	0,24099

Tabel Hitungan hidograf kala ulang 2 tahun dengan metode HSS ITB-1 (lanjutan)

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
40				0,00699	0	0,17884	0	0	0,17884
41				0,00518	0	0,13268	0	0	0,13268
42				0,00384	0	0,09842	0	0	0,09842
43				0,00285	0	0,07299	0	0	0,07299
44				0,00211	0	0,05411	0	0	0,05411
45				0,00157	0	0,04012	0	0	0,04012
46				0,00116	0	0,02973	0	0	0,02973
47				0,00086	0	0,02203	0	0	0,02203
48				0,00064	0	0,01633	0	0	0,01633
49				0,00047	0	0,01209	0	0	0,01209
50				0,00035	0	0,00896	0	0	0,00896
						0,00664	0	0	
							0	0	
								0	

Lampiran 9

Tabel Hitungan hidograf kala ulang 2 tahun dengan metode HSS Limantara

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
0	6,4261	25,28	0	0	0				0
1	44,271		18,991	5,69787	0	0			0
2	11,507		0	12,2731	0	108,209	0		108,209
3	8,072		0	19,2259	0	233,079	0	0	233,079
4				26,4358	0	365,121	0	0	365,121
5				33,8433	0	502,046	0	0	502,046
6				41,412	0	642,722	0	0	642,722
7				49,1175	0	786,46	0	0	786,46
8				56,9421	0	932,796	0	0	932,796
9				64,8723	0	1081,39	0	0	1081,39
9,5812				69,526	0	1232	0	0	1232
10				64,6132	0	1320,38	0	0	1320,38
11				54,24	0	1227,08	0	0	1227,08
12				45,5322	0	1030,08	0	0	1030,08
13				38,2223	0	864,707	0	0	864,707
14				32,086	0	725,884	0	0	725,884
15				26,9348	0	609,349	0	0	609,349
16				22,6106	0	511,522	0	0	511,522
17				18,9806	0	429,401	0	0	429,401
18				15,9334	0	360,463	0	0	360,463
19				13,3754	0	302,594	0	0	302,594
20				11,2281	0	254,014	0	0	254,014
21				9,4255	0	213,234	0	0	213,234
22				7,9123	0	179,001	0	0	179,001
23				6,64204	0	150,263	0	0	150,263
24				5,57571	0	126,14	0	0	126,14
25				4,68056	0	105,889	0	0	105,889
26				3,92913	0	88,8892	0	0	88,8892
27				3,29834	0	74,6186	0	0	74,6186
28				2,76881	0	62,6391	0	0	62,6391
29				2,3243	0	52,5829	0	0	52,5829
30				1,95115	0	44,1411	0	0	44,1411
31				1,63791	0	37,0545	0	0	37,0545
32				1,37495	0	31,1057	0	0	31,1057
33				1,15421	0	26,1119	0	0	26,1119
34				0,96891	0	21,9198	0	0	21,9198
35				0,81336	0	18,4007	0	0	18,4007
36				0,68278	0	15,4466	0	0	15,4466
37				0,57317	0	12,9668	0	0	12,9668
38				0,48115	0	10,8851	0	0	10,8851
39				0,4039	0	9,13753	0	0	9,13753

Tabel Hitungan hidograf kala ulang 2 tahun dengan metode HSS Limantara (lanjutan)

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
40				0,33906	0	7,67057	0	0	7,67057
41				0,28463	0	6,43911	0	0	6,43911
42				0,23893	0	5,40536	0	0	5,40536
43				0,20057	0	4,53756	0	0	4,53756
44				0,16837	0	3,80909	0	0	3,80909
45				0,14134	0	3,19757	0	0	3,19757
46				0,11865	0	2,68422	0	0	2,68422
47				0,0996	0	2,25329	0	0	2,25329
48				0,08361	0	1,89154	0	0	1,89154
49				0,07019	0	1,58787	0	0	1,58787
50				0,05892	0	1,33294	0	0	1,33294
						1,11895	0	0	
							0	0	
								0	

Lampiran 10

Tabel Hitungan hidograf kala ulang 5 tahun dengan metode HSS Gamma 1

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
0	8,53484	25,28	0	0	0				0
1	58,79954		33,519	22,2078	0	0			0
2	15,28324		0	44,4156	0	744,388	0		744,388
2,9247	10,72083		0	64,9504	0	1488,78	0	0	1488,78
3				64,1828	0	2177,08	0	0	2177,08
4				54,813	0	2151,35	0	0	2151,35
5				46,811	0	1837,29	0	0	1837,29
6				39,9772	0	1569,07	0	0	1569,07
7				34,1411	0	1340	0	0	1340
8				29,1569	0	1144,38	0	0	1144,38
9				24,9004	0	977,317	0	0	977,317
10				21,2653	0	834,642	0	0	834,642
11				18,1608	0	712,795	0	0	712,795
12				15,5096	0	608,737	0	0	608,737
13				13,2454	0	519,869	0	0	519,869
14				11,3118	0	443,975	0	0	443,975
15				9,6604	0	379,161	0	0	379,161
16				8,25011	0	323,808	0	0	323,808
17				7,0457	0	276,537	0	0	276,537
18				6,01712	0	236,166	0	0	236,166
19				5,13871	0	201,689	0	0	201,689
20				4,38852	0	172,245	0	0	172,245
21				3,74786	0	147,1	0	0	147,1
22				3,20072	0	125,625	0	0	125,625
23				2,73346	0	107,286	0	0	107,286
24				2,33441	0	91,6233	0	0	91,6233
25				1,99362	0	78,2475	0	0	78,2475
26				1,70258	0	66,8244	0	0	66,8244
27				1,45402	0	57,0689	0	0	57,0689
28				1,24176	0	48,7376	0	0	48,7376
29				1,06048	0	41,6226	0	0	41,6226
30				0,90566	0	35,5463	0	0	35,5463
31				0,77345	0	30,357	0	0	30,357
32				0,66053	0	25,9253	0	0	25,9253
33				0,5641	0	22,1405	0	0	22,1405
34				0,48175	0	18,9083	0	0	18,9083
35				0,41142	0	16,148	0	0	16,148
36				0,35136	0	13,7906	0	0	13,7906
37				0,30007	0	11,7773	0	0	11,7773
38				0,25626	0	10,058	0	0	10,058
39				0,21885	0	8,58966	0	0	8,58966

Tabel Hitungan hidograf kala ulang 5 tahun dengan metode HSS Gamma 1 (lanjutan)

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
40				0,1869	0	7,33569	0	0	7,33569
41				0,15962	0	6,26478	0	0	6,26478
42				0,13631	0	5,3502	0	0	5,3502
43				0,11641	0	4,56915	0	0	4,56915
44				0,09942	0	3,90211	0	0	3,90211
45				0,08491	0	3,33246	0	0	3,33246
46				0,07251	0	2,84596	0	0	2,84596
47				0,06192	0	2,43049	0	0	2,43049
48				0,05288	0	2,07567	0	0	2,07567
49				0,04516	0	1,77265	0	0	1,77265
50				0,03857	0	1,51387	0	0	1,51387
						1,29286	0	0	
							0	0	
								0	

Lampiran 11

Tabel Hitungan hidograf kala ulang 5 tahun dengan metode HSS Nakayasu

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
0	8,53484	25,28	0	0	0				0
1	58,79954		33,519	0,1841	0	0			0
2	15,28324		0	0,9717	0	6,17097	0		6,17097
3	10,72083		0	2,57129	0	32,5706	0	0	32,5706
4				5,12866	0	86,1875	0	0	86,1875
5				8,7617	0	171,909	0	0	171,909
6				13,5714	0	293,685	0	0	293,685
7				19,647	0	454,901	0	0	454,901
8				27,0692	0	658,55	0	0	658,55
9				35,9122	0	907,339	0	0	907,339
10				41,7324	0	1203,75	0	0	1203,75
11				36,1853	0	1398,84	0	0	1398,84
12				32,7246	0	1212,9	0	0	1212,9
13				29,5948	0	1096,9	0	0	1096,9
14				26,7644	0	991,994	0	0	991,994
15				24,2046	0	897,12	0	0	897,12
16				21,8897	0	811,32	0	0	811,32
17				19,7962	0	733,725	0	0	733,725
18				17,9029	0	663,552	0	0	663,552
19				16,1907	0	600,09	0	0	600,09
20				14,6422	0	542,698	0	0	542,698
21				13,2418	0	490,794	0	0	490,794
22				11,9754	0	443,855	0	0	443,855
23				11,3663	0	401,405	0	0	401,405
24				10,6295	0	380,989	0	0	380,989
25				9,94048	0	356,292	0	0	356,292
26				9,29612	0	333,197	0	0	333,197
27				8,69353	0	311,598	0	0	311,598
28				8,13	0	291,4	0	0	291,4
29				7,60299	0	272,511	0	0	272,511
30				7,11015	0	254,846	0	0	254,846
31				6,64926	0	238,326	0	0	238,326
32				6,21824	0	222,878	0	0	222,878
33				5,81516	0	208,43	0	0	208,43
34				5,43821	0	194,919	0	0	194,919
35				5,0857	0	182,284	0	0	182,284
36				4,75603	0	170,468	0	0	170,468
37				4,44774	0	159,418	0	0	159,418
38				4,15943	0	149,085	0	0	149,085
39				3,88981	0	139,421	0	0	139,421
40				3,63766	0	130,383	0	0	130,383

Tabel Hitungan hidograf kala ulang 5 tahun dengan metode HSS Nakayasu (lanjutan)

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
41				3,48712	0	121,931	0	0	121,931
42				3,31617	0	116,885	0	0	116,885
43				3,15361	0	111,155	0	0	111,155
44				2,99902	0	105,706	0	0	105,706
45				2,852	0	100,525	0	0	100,525
46				2,71219	0	95,5967	0	0	95,5967
47				2,57923	0	90,9104	0	0	90,9104
48				2,4528	0	86,4538	0	0	86,4538
49				2,33256	0	82,2157	0	0	82,2157
50				2,21821	0	78,1854	0	0	78,1854
				0,03857	0	74,3526	0	0	74,3526
						1,29286	0	0	
							0	0	
								0	

Lampiran 12

Tabel Hitungan hidograf kala ulang 5 tahun dengan
metode HSS ITB-1

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
0	8,53484	25,28	0	0	0				0
1	58,79954		33,519	0,69069	0	0			0
2	15,28324		0	20,8275	0	23,1515	0		23,1515
3	10,72083		0	52,9601	0	698,12	0	0	698,12
4				72,5691	0	1775,18	0	0	1775,18
4,9461				77,6652	0	2432,45	0	0	2432,45
5				77,6515	0	2603,27	0	0	2603,27
6				73,4255	0	2602,82	0	0	2602,82
7				64,6929	0	2461,16	0	0	2461,16
8				54,5365	0	2168,45	0	0	2168,45
9				44,6407	0	1828,02	0	0	1828,02
10				35,7952	0	1496,32	0	0	1496,32
11				28,2755	0	1199,83	0	0	1199,83
12				22,0858	0	947,771	0	0	947,771
13				17,1025	0	740,297	0	0	740,297
14				13,154	0	573,262	0	0	573,262
15				10,0622	0	440,91	0	0	440,91
16				7,66322	0	337,277	0	0	337,277
17				5,815	0	256,865	0	0	256,865
18				4,39919	0	194,914	0	0	194,914
19				3,31961	0	147,457	0	0	147,457
20				2,49953	0	111,27	0	0	111,27
21				1,87855	0	83,7822	0	0	83,7822
22				1,40958	0	62,9675	0	0	62,9675
23				1,05621	0	47,248	0	0	47,248
24				0,79046	0	35,4033	0	0	35,4033
25				0,59094	0	26,4956	0	0	26,4956
26				0,44136	0	19,8078	0	0	19,8078
27				0,32936	0	14,794	0	0	14,794
28				0,2456	0	11,04	0	0	11,04
29				0,18302	0	8,23235	0	0	8,23235
30				0,1363	0	6,13458	0	0	6,13458
31				0,10145	0	4,56858	0	0	4,56858
32				0,07547	0	3,40046	0	0	3,40046
33				0,05612	0	2,52976	0	0	2,52976
34				0,04172	0	1,88115	0	0	1,88115
35				0,031	0	1,39826	0	0	1,39826
36				0,02302	0	1,03893	0	0	1,03893
37				0,01709	0	0,77168	0	0	0,77168
38				0,01269	0	0,57299	0	0	0,57299

Tabel Hitungan hidograf kala ulang 5 tahun dengan metode HSS ITB-1 (lanjutan)

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
39				0,00942	0	0,42534	0	0	0,42534
40				0,00699	0	0,31565	0	0	0,31565
41				0,00518	0	0,23418	0	0	0,23418
42				0,00384	0	0,17371	0	0	0,17371
43				0,00285	0	0,12882	0	0	0,12882
44				0,00211	0	0,09551	0	0	0,09551
45				0,00157	0	0,0708	0	0	0,0708
46				0,00116	0	0,05248	0	0	0,05248
47				0,00086	0	0,03889	0	0	0,03889
48				0,00064	0	0,02881	0	0	0,02881
49				0,00047	0	0,02135	0	0	0,02135
50				0,00035	0	0,01581	0	0	0,01581
						0,01171	0	0	
							0	0	
								0	

Lampiran 13

Tabel Hitungan hidograf kala ulang 5 tahun dengan metode HSS Limantara

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
0	8,53484	25,28	0	0	0				0
1	58,79954		33,519	5,69787	0	0			0
2	15,28324		0	12,2731	0	190,988	0		190,988
3	10,72083		0	19,2259	0	411,383	0	0	411,383
4				26,4358	0	644,435	0	0	644,435
5				33,8433	0	886,107	0	0	886,107
6				41,412	0	1134,4	0	0	1134,4
7				49,1175	0	1388,1	0	0	1388,1
8				56,9421	0	1646,38	0	0	1646,38
9				64,8723	0	1908,65	0	0	1908,65
9,5812				69,526	0	2174,47	0	0	2174,47
10				64,6132	0	2330,45	0	0	2330,45
11				54,24	0	2165,78	0	0	2165,78
12				45,5322	0	1818,08	0	0	1818,08
13				38,2223	0	1526,2	0	0	1526,2
14				32,086	0	1281,18	0	0	1281,18
15				26,9348	0	1075,5	0	0	1075,5
16				22,6106	0	902,832	0	0	902,832
17				18,9806	0	757,889	0	0	757,889
18				15,9334	0	636,215	0	0	636,215
19				13,3754	0	534,075	0	0	534,075
20				11,2281	0	448,333	0	0	448,333
21				9,4255	0	376,356	0	0	376,356
22				7,9123	0	315,935	0	0	315,935
23				6,64204	0	265,214	0	0	265,214
24				5,57571	0	222,636	0	0	222,636
25				4,68056	0	186,893	0	0	186,893
26				3,92913	0	156,889	0	0	156,889
27				3,29834	0	131,701	0	0	131,701
28				2,76881	0	110,558	0	0	110,558
29				2,3243	0	92,8083	0	0	92,8083
30				1,95115	0	77,9086	0	0	77,9086
31				1,63791	0	65,4009	0	0	65,4009
32				1,37495	0	54,9013	0	0	54,9013
33				1,15421	0	46,0873	0	0	46,0873
34				0,96891	0	38,6883	0	0	38,6883
35				0,81336	0	32,4771	0	0	32,4771
36				0,68278	0	27,2632	0	0	27,2632
37				0,57317	0	22,8863	0	0	22,8863
38				0,48115	0	19,212	0	0	19,212
39				0,4039	0	16,1277	0	0	16,1277

Tabel Hitungan hidograf kala ulang 5 tahun dengan metode HSS Limantara (lanjutan)

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
40				0,33906	0	13,5385	0	0	13,5385
41				0,28463	0	11,365	0	0	11,365
42				0,23893	0	9,54041	0	0	9,54041
43				0,20057	0	8,00876	0	0	8,00876
44				0,16837	0	6,72301	0	0	6,72301
45				0,14134	0	5,64368	0	0	5,64368
46				0,11865	0	4,73763	0	0	4,73763
47				0,0996	0	3,97703	0	0	3,97703
48				0,08361	0	3,33855	0	0	3,33855
49				0,07019	0	2,80257	0	0	2,80257
50				0,05892	0	2,35264	0	0	2,35264
						1,97494	0	0	
							0	0	
								0	

Lampiran 14

Tabel Hitungan hidograf kala ulang 10 tahun dengan metode
HSS Gamma 1

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
0	9,9045	25,28	0	0	0				0
1	68,235		42,955	22,2078	0	0			0
2	17,736		0	44,4156	0	953,939	0		953,939
2,9247	12,441		0	64,9504	0	1907,88	0	0	1907,88
3				64,1828	0	2789,95	0	0	2789,95
4				54,813	0	2756,98	0	0	2756,98
5				46,811	0	2354,5	0	0	2354,5
6				39,9772	0	2010,77	0	0	2010,77
7				34,1411	0	1717,23	0	0	1717,23
8				29,1569	0	1466,53	0	0	1466,53
9				24,9004	0	1252,44	0	0	1252,44
10				21,2653	0	1069,6	0	0	1069,6
11				18,1608	0	913,453	0	0	913,453
12				15,5096	0	780,101	0	0	780,101
13				13,2454	0	666,217	0	0	666,217
14				11,3118	0	568,958	0	0	568,958
15				9,6604	0	485,898	0	0	485,898
16				8,25011	0	414,963	0	0	414,963
17				7,0457	0	354,384	0	0	354,384
18				6,01712	0	302,649	0	0	302,649
19				5,13871	0	258,466	0	0	258,466
20				4,38852	0	220,734	0	0	220,734
21				3,74786	0	188,509	0	0	188,509
22				3,20072	0	160,99	0	0	160,99
23				2,73346	0	137,487	0	0	137,487
24				2,33441	0	117,416	0	0	117,416
25				1,99362	0	100,275	0	0	100,275
26				1,70258	0	85,636	0	0	85,636
27				1,45402	0	73,1343	0	0	73,1343
28				1,24176	0	62,4577	0	0	62,4577
29				1,06048	0	53,3397	0	0	53,3397
30				0,90566	0	45,5528	0	0	45,5528
31				0,77345	0	38,9027	0	0	38,9027
32				0,66053	0	33,2234	0	0	33,2234
33				0,5641	0	28,3733	0	0	28,3733
34				0,48175	0	24,2311	0	0	24,2311
35				0,41142	0	20,6937	0	0	20,6937
36				0,35136	0	17,6727	0	0	17,6727
37				0,30007	0	15,0927	0	0	15,0927
38				0,25626	0	12,8894	0	0	12,8894

Tabel Hitungan hidograf kala ulang 10 tahun dengan metode HSS Gamma 1 (lanjutan)

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
39				0,21885	0	11,0077	0	0	11,0077
40				0,1869	0	9,40074	0	0	9,40074
41				0,15962	0	8,02836	0	0	8,02836
42				0,13631	0	6,85633	0	0	6,85633
43				0,11641	0	5,8554	0	0	5,8554
44				0,09942	0	5,00059	0	0	5,00059
45				0,08491	0	4,27057	0	0	4,27057
46				0,07251	0	3,64712	0	0	3,64712
47				0,06192	0	3,11469	0	0	3,11469
48				0,05288	0	2,65999	0	0	2,65999
49				0,04516	0	2,27167	0	0	2,27167
50				0,03857	0	1,94003	0	0	1,94003
						1,65681	0	0	
							0	0	
								0	

Lampiran 15

Tabel Hitungan hidograf kala ulang 10 tahun dengan metode HSS Nakayasu

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
0	9,9045	25,28	0	0	0				0
1	68,235		42,955	0,1841	0	0			0
2	17,736		0	0,9717	0	7,90815	0		7,90815
3	12,441		0	2,57129	0	41,7395	0	0	41,7395
4				5,12866	0	110,45	0	0	110,45
5				8,7617	0	220,302	0	0	220,302
6				13,5714	0	376,359	0	0	376,359
7				19,647	0	582,959	0	0	582,959
8				27,0692	0	843,937	0	0	843,937
9				35,9122	0	1162,76	0	0	1162,76
10				41,7324	0	1542,61	0	0	1542,61
11				36,1853	0	1792,62	0	0	1792,62
12				32,7246	0	1554,34	0	0	1554,34
13				29,5948	0	1405,69	0	0	1405,69
14				26,7644	0	1271,25	0	0	1271,25
15				24,2046	0	1149,67	0	0	1149,67
16				21,8897	0	1039,71	0	0	1039,71
17				19,7962	0	940,275	0	0	940,275
18				17,9029	0	850,347	0	0	850,347
19				16,1907	0	769,02	0	0	769,02
20				14,6422	0	695,471	0	0	695,471
21				13,2418	0	628,957	0	0	628,957
22				11,9754	0	568,804	0	0	568,804
23				11,3663	0	514,403	0	0	514,403
24				10,6295	0	488,24	0	0	488,24
25				9,94048	0	456,591	0	0	456,591
26				9,29612	0	426,994	0	0	426,994
27				8,69353	0	399,316	0	0	399,316
28				8,13	0	373,431	0	0	373,431
29				7,60299	0	349,225	0	0	349,225
30				7,11015	0	326,587	0	0	326,587
31				6,64926	0	305,417	0	0	305,417
32				6,21824	0	285,62	0	0	285,62
33				5,81516	0	267,105	0	0	267,105
34				5,43821	0	249,791	0	0	249,791
35				5,0857	0	233,599	0	0	233,599
36				4,75603	0	218,457	0	0	218,457
37				4,44774	0	204,296	0	0	204,296
38				4,15943	0	191,053	0	0	191,053
39				3,88981	0	178,669	0	0	178,669
40				3,63766	0	167,087	0	0	167,087

Tabel Hitungan hidograf kala ulang 10 tahun dengan metode HSS Nakayasu (lanjutan)

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
41				3,48712	0	156,256	0	0	156,256
42				3,31617	0	149,789	0	0	149,789
43				3,15361	0	142,446	0	0	142,446
44				2,99902	0	135,464	0	0	135,464
45				2,852	0	128,823	0	0	128,823
46				2,71219	0	122,508	0	0	122,508
47				2,57923	0	116,502	0	0	116,502
48				2,4528	0	110,791	0	0	110,791
49				2,33256	0	105,36	0	0	105,36
50				2,21821	0	100,195	0	0	100,195
				0,03857	0	95,2835	0	0	95,2835
						1,65681	0	0	
							0	0	
								0	

Lampiran 16

Tabel Hitungan hidograf kala ulang 10 tahun dengan metode HSS ITB-1

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
0	9,9045	25,28	0	0	0				0
1	68,235		42,955	0,69069	0	0			0
2	17,736		0	20,8275	0	29,6688	0		29,6688
3	12,441		0	52,9601	0	894,646	0	0	894,646
4				72,5691	0	2274,91	0	0	2274,91
4,9461				77,6652	0	3117,21	0	0	3117,21
5				77,6515	0	3336,12	0	0	3336,12
6				73,4255	0	3335,53	0	0	3335,53
7				64,6929	0	3154	0	0	3154
8				54,5365	0	2778,89	0	0	2778,89
9				44,6407	0	2342,62	0	0	2342,62
10				35,7952	0	1917,55	0	0	1917,55
11				28,2755	0	1537,59	0	0	1537,59
12				22,0858	0	1214,58	0	0	1214,58
13				17,1025	0	948,697	0	0	948,697
14				13,154	0	734,64	0	0	734,64
15				10,0622	0	565,03	0	0	565,03
16				7,66322	0	432,223	0	0	432,223
17				5,815	0	329,174	0	0	329,174
18				4,39919	0	249,784	0	0	249,784
19				3,31961	0	188,967	0	0	188,967
20				2,49953	0	142,594	0	0	142,594
21				1,87855	0	107,368	0	0	107,368
22				1,40958	0	80,6933	0	0	80,6933
23				1,05621	0	60,5486	0	0	60,5486
24				0,79046	0	45,3696	0	0	45,3696
25				0,59094	0	33,9543	0	0	33,9543
26				0,44136	0	25,3839	0	0	25,3839
27				0,32936	0	18,9587	0	0	18,9587
28				0,2456	0	14,1478	0	0	14,1478
29				0,18302	0	10,5498	0	0	10,5498
30				0,1363	0	7,86151	0	0	7,86151
31				0,10145	0	5,85467	0	0	5,85467
32				0,07547	0	4,35772	0	0	4,35772
33				0,05612	0	3,24191	0	0	3,24191
34				0,04172	0	2,41071	0	0	2,41071
35				0,031	0	1,79188	0	0	1,79188
36				0,02302	0	1,3314	0	0	1,3314
37				0,01709	0	0,98892	0	0	0,98892
38				0,01269	0	0,7343	0	0	0,7343
39				0,00942	0	0,54507	0	0	0,54507

Tabel Hitungan hidograf kala ulang 10 tahun dengan metode HSS ITB-1 (lanjutan)

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
40				0,00699	0	0,4045	0	0	0,4045
41				0,00518	0	0,30011	0	0	0,30011
42				0,00384	0	0,22261	0	0	0,22261
43				0,00285	0	0,16508	0	0	0,16508
44				0,00211	0	0,1224	0	0	0,1224
45				0,00157	0	0,09073	0	0	0,09073
46				0,00116	0	0,06725	0	0	0,06725
47				0,00086	0	0,04984	0	0	0,04984
48				0,00064	0	0,03693	0	0	0,03693
49				0,00047	0	0,02736	0	0	0,02736
50				0,00035	0	0,02026	0	0	0,02026
						0,01501	0	0	
							0	0	
								0	

Lampiran 17

Tabel Hitungan hidograf kala ulang 10 tahun dengan metode HSS
Limantara

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
0	9,9045	25,28	0	0	0				0
1	68,235		42,955	5,69787	0	0			0
2	17,736		0	12,2731	0	244,753	0		244,753
3	12,441		0	19,2259	0	527,19	0	0	527,19
4				26,4358	0	825,849	0	0	825,849
5				33,8433	0	1135,55	0	0	1135,55
6				41,412	0	1453,74	0	0	1453,74
7				49,1175	0	1778,86	0	0	1778,86
8				56,9421	0	2109,85	0	0	2109,85
9				64,8723	0	2445,95	0	0	2445,95
9,5812				69,526	0	2786,59	0	0	2786,59
10				64,6132	0	2986,49	0	0	2986,49
11				54,24	0	2775,47	0	0	2775,47
12				45,5322	0	2329,88	0	0	2329,88
13				38,2223	0	1955,84	0	0	1955,84
14				32,086	0	1641,84	0	0	1641,84
15				26,9348	0	1378,26	0	0	1378,26
16				22,6106	0	1156,99	0	0	1156,99
17				18,9806	0	971,24	0	0	971,24
18				15,9334	0	815,314	0	0	815,314
19				13,3754	0	684,421	0	0	684,421
20				11,2281	0	574,542	0	0	574,542
21				9,4255	0	482,304	0	0	482,304
22				7,9123	0	404,873	0	0	404,873
23				6,64204	0	339,874	0	0	339,874
24				5,57571	0	285,309	0	0	285,309
25				4,68056	0	239,505	0	0	239,505
26				3,92913	0	201,054	0	0	201,054
27				3,29834	0	168,776	0	0	168,776
28				2,76881	0	141,68	0	0	141,68
29				2,3243	0	118,935	0	0	118,935
30				1,95115	0	99,8405	0	0	99,8405
31				1,63791	0	83,8118	0	0	83,8118
32				1,37495	0	70,3564	0	0	70,3564
33				1,15421	0	59,0612	0	0	59,0612
34				0,96891	0	49,5793	0	0	49,5793
35				0,81336	0	41,6197	0	0	41,6197
36				0,68278	0	34,938	0	0	34,938
37				0,57317	0	29,3289	0	0	29,3289
38				0,48115	0	24,6204	0	0	24,6204

Tabel Hitungan hidograf kala ulang 10 tahun dengan metode HSS Limantara (lanjutan)

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
39				0,4039	0	20,6677	0	0	20,6677
40				0,33906	0	17,3497	0	0	17,3497
41				0,28463	0	14,5643	0	0	14,5643
42				0,23893	0	12,2261	0	0	12,2261
43				0,20057	0	10,2633	0	0	10,2633
44				0,16837	0	8,61559	0	0	8,61559
45				0,14134	0	7,23242	0	0	7,23242
46				0,11865	0	6,07131	0	0	6,07131
47				0,0996	0	5,0966	0	0	5,0966
48				0,08361	0	4,27838	0	0	4,27838
49				0,07019	0	3,59151	0	0	3,59151
50				0,05892	0	3,01492	0	0	3,01492
						2,5309	0	0	
							0	0	
								0	

Lampiran 18

Tabel Hitungan hidograf kala ulang 20 tahun dengan metode
HSS Gamma 1

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
0	11,196	25,28	0	0	0				0
1	77,134		51,854	22,2078	0	0			0
2	20,049		0	44,4156	0	1151,57	0		1151,57
2,9247	14,064		0	64,9504	0	2303,13	0	0	2303,13
3				64,1828	0	3367,95	0	0	3367,95
4				54,813	0	3328,14	0	0	3328,14
5				46,811	0	2842,28	0	0	2842,28
6				39,9772	0	2427,34	0	0	2427,34
7				34,1411	0	2072,98	0	0	2072,98
8				29,1569	0	1770,36	0	0	1770,36
9				24,9004	0	1511,91	0	0	1511,91
10				21,2653	0	1291,19	0	0	1291,19
11				18,1608	0	1102,69	0	0	1102,69
12				15,5096	0	941,715	0	0	941,715
13				13,2454	0	804,237	0	0	804,237
14				11,3118	0	686,829	0	0	686,829
15				9,6604	0	586,561	0	0	586,561
16				8,25011	0	500,931	0	0	500,931
17				7,0457	0	427,802	0	0	427,802
18				6,01712	0	365,349	0	0	365,349
19				5,13871	0	312,013	0	0	312,013
20				4,38852	0	266,463	0	0	266,463
21				3,74786	0	227,563	0	0	227,563
22				3,20072	0	194,342	0	0	194,342
23				2,73346	0	165,971	0	0	165,971
24				2,33441	0	141,741	0	0	141,741
25				1,99362	0	121,049	0	0	121,049
26				1,70258	0	103,377	0	0	103,377
27				1,45402	0	88,2856	0	0	88,2856
28				1,24176	0	75,3971	0	0	75,3971
29				1,06048	0	64,3901	0	0	64,3901
30				0,90566	0	54,99	0	0	54,99
31				0,77345	0	46,9622	0	0	46,9622
32				0,66053	0	40,1064	0	0	40,1064
33				0,5641	0	34,2514	0	0	34,2514
34				0,48175	0	29,2511	0	0	29,2511
35				0,41142	0	24,9809	0	0	24,9809
36				0,35136	0	21,334	0	0	21,334
37				0,30007	0	18,2195	0	0	18,2195
38				0,25626	0	15,5597	0	0	15,5597

Tabel Hitungan hidograf kala ulang 20 tahun dengan metode HSS
Gamma 1 (lanjutan)

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
39				0,21885	0	13,2882	0	0	13,2882
40				0,1869	0	11,3483	0	0	11,3483
41				0,15962	0	9,6916	0	0	9,6916
42				0,13631	0	8,27676	0	0	8,27676
43				0,11641	0	7,06846	0	0	7,06846
44				0,09942	0	6,03656	0	0	6,03656
45				0,08491	0	5,15531	0	0	5,15531
46				0,07251	0	4,4027	0	0	4,4027
47				0,06192	0	3,75997	0	0	3,75997
48				0,05288	0	3,21106	0	0	3,21106
49				0,04516	0	2,74229	0	0	2,74229
50				0,03857	0	2,34195	0	0	2,34195
						2,00006	0	0	
							0	0	
								0	

Lampiran 19

Tabel Hitungan hidograf kala ulang 20 tahun dengan metode HSS Nakayasu

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
0	11,196	25,28	0	0	0				0
1	77,134		51,854	0,1841	0	0			0
2	20,049		0	0,9717	0	9,54648	0		9,54648
3	14,064		0	2,57129	0	50,3866	0	0	50,3866
4				5,12866	0	133,332	0	0	133,332
5				8,7617	0	265,942	0	0	265,942
6				13,5714	0	454,33	0	0	454,33
7				19,647	0	703,731	0	0	703,731
8				27,0692	0	1018,78	0	0	1018,78
9				35,9122	0	1403,65	0	0	1403,65
10				41,7324	0	1862,2	0	0	1862,2
11				36,1853	0	2164	0	0	2164
12				32,7246	0	1876,36	0	0	1876,36
13				29,5948	0	1696,91	0	0	1696,91
14				26,7644	0	1534,61	0	0	1534,61
15				24,2046	0	1387,84	0	0	1387,84
16				21,8897	0	1255,11	0	0	1255,11
17				19,7962	0	1135,07	0	0	1135,07
18				17,9029	0	1026,51	0	0	1026,51
19				16,1907	0	928,339	0	0	928,339
20				14,6422	0	839,553	0	0	839,553
21				13,2418	0	759,258	0	0	759,258
22				11,9754	0	686,643	0	0	686,643
23				11,3663	0	620,973	0	0	620,973
24				10,6295	0	589,389	0	0	589,389
25				9,94048	0	551,184	0	0	551,184
26				9,29612	0	515,455	0	0	515,455
27				8,69353	0	482,042	0	0	482,042
28				8,13	0	450,795	0	0	450,795
29				7,60299	0	421,574	0	0	421,574
30				7,11015	0	394,247	0	0	394,247
31				6,64926	0	368,691	0	0	368,691
32				6,21824	0	344,792	0	0	344,792
33				5,81516	0	322,441	0	0	322,441
34				5,43821	0	301,54	0	0	301,54
35				5,0857	0	281,994	0	0	281,994
36				4,75603	0	263,714	0	0	263,714
37				4,44774	0	246,62	0	0	246,62
38				4,15943	0	230,634	0	0	230,634
39				3,88981	0	215,683	0	0	215,683
40				3,63766	0	201,702	0	0	201,702

Tabel Hitungan hidograf kala ulang 20 tahun dengan metode HSS Nakayasu (lanjutan)

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
41				3,48712	0	188,628	0	0	188,628
42				3,31617	0	180,821	0	0	180,821
43				3,15361	0	171,957	0	0	171,957
44				2,99902	0	163,528	0	0	163,528
45				2,852	0	155,511	0	0	155,511
46				2,71219	0	147,888	0	0	147,888
47				2,57923	0	140,638	0	0	140,638
48				2,4528	0	133,744	0	0	133,744
49				2,33256	0	127,188	0	0	127,188
50				2,21821	0	120,953	0	0	120,953
				0,03857	0	115,023	0	0	115,023
						2,00006	0	0	
							0	0	
								0	

Lampiran 20

Tabel Hitungan hidograf kala ulang 20 tahun dengan metode HSS ITB-1

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
0	11,196	25,28	0	0	0				0
1	77,134		51,854	0,69069	0	0			0
2	20,049		0	20,8275	0	35,8153	0		35,8153
3	14,064		0	52,9601	0	1079,99	0	0	1079,99
4				72,5691	0	2746,2	0	0	2746,2
4,9461				77,6652	0	3763	0	0	3763
5				77,6515	0	4027,26	0	0	4027,26
6				73,4255	0	4026,55	0	0	4026,55
7				64,6929	0	3807,41	0	0	3807,41
8				54,5365	0	3354,59	0	0	3354,59
9				44,6407	0	2827,94	0	0	2827,94
10				35,7952	0	2314,81	0	0	2314,81
11				28,2755	0	1856,13	0	0	1856,13
12				22,0858	0	1466,2	0	0	1466,2
13				17,1025	0	1145,24	0	0	1145,24
14				13,154	0	886,836	0	0	886,836
15				10,0622	0	682,087	0	0	682,087
16				7,66322	0	521,766	0	0	521,766
17				5,815	0	397,369	0	0	397,369
18				4,39919	0	301,532	0	0	301,532
19				3,31961	0	228,116	0	0	228,116
20				2,49953	0	172,135	0	0	172,135
21				1,87855	0	129,611	0	0	129,611
22				1,40958	0	97,4106	0	0	97,4106
23				1,05621	0	73,0926	0	0	73,0926
24				0,79046	0	54,7689	0	0	54,7689
25				0,59094	0	40,9886	0	0	40,9886
26				0,44136	0	30,6427	0	0	30,6427
27				0,32936	0	22,8863	0	0	22,8863
28				0,2456	0	17,0789	0	0	17,0789
29				0,18302	0	12,7354	0	0	12,7354
30				0,1363	0	9,49018	0	0	9,49018
31				0,10145	0	7,06758	0	0	7,06758
32				0,07547	0	5,26051	0	0	5,26051
33				0,05612	0	3,91353	0	0	3,91353
34				0,04172	0	2,91013	0	0	2,91013
35				0,031	0	2,1631	0	0	2,1631
36				0,02302	0	1,60723	0	0	1,60723
37				0,01709	0	1,19379	0	0	1,19379
38				0,01269	0	0,88642	0	0	0,88642
39				0,00942	0	0,658	0	0	0,658

114

Tabel Hitungan hidograf kala ulang 20 tahun dengan metode HSS ITB-1 (lanjutan)

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
40				0,00699	0	0,4883	0	0	0,4883
41				0,00518	0	0,36228	0	0	0,36228
42				0,00384	0	0,26872	0	0	0,26872
43				0,00285	0	0,19928	0	0	0,19928
44				0,00211	0	0,14776	0	0	0,14776
45				0,00157	0	0,10953	0	0	0,10953
46				0,00116	0	0,08118	0	0	0,08118
47				0,00086	0	0,06016	0	0	0,06016
48				0,00064	0	0,04458	0	0	0,04458
49				0,00047	0	0,03302	0	0	0,03302
50				0,00035	0	0,02446	0	0	0,02446
						0,01812	0	0	
							0	0	
								0	

Lampiran 21

Tabel Hitungan hidograf kala ulang 20 tahun dengan metode HSS
Limantara

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
0	11,196	25,28	0	0	0				0
1	77,134		51,854	5,69787	0	0			0
2	20,049		0	12,2731	0	295,458	0		295,458
3	14,064		0	19,2259	0	636,409	0	0	636,409
4				26,4358	0	996,94	0	0	996,94
5				33,8433	0	1370,81	0	0	1370,81
6				41,412	0	1754,91	0	0	1754,91
7				49,1175	0	2147,38	0	0	2147,38
8				56,9421	0	2546,94	0	0	2546,94
9				64,8723	0	2952,68	0	0	2952,68
9,5812				69,526	0	3363,9	0	0	3363,9
10				64,6132	0	3605,21	0	0	3605,21
11				54,24	0	3350,46	0	0	3350,46
12				45,5322	0	2812,57	0	0	2812,57
13				38,2223	0	2361,03	0	0	2361,03
14				32,086	0	1981,98	0	0	1981,98
15				26,9348	0	1663,79	0	0	1663,79
16				22,6106	0	1396,68	0	0	1396,68
17				18,9806	0	1172,45	0	0	1172,45
18				15,9334	0	984,224	0	0	984,224
19				13,3754	0	826,214	0	0	826,214
20				11,2281	0	693,571	0	0	693,571
21				9,4255	0	582,223	0	0	582,223
22				7,9123	0	488,751	0	0	488,751
23				6,64204	0	410,286	0	0	410,286
24				5,57571	0	344,417	0	0	344,417
25				4,68056	0	289,123	0	0	289,123
26				3,92913	0	242,707	0	0	242,707
27				3,29834	0	203,742	0	0	203,742
28				2,76881	0	171,032	0	0	171,032
29				2,3243	0	143,574	0	0	143,574
30				1,95115	0	120,525	0	0	120,525
31				1,63791	0	101,175	0	0	101,175
32				1,37495	0	84,9322	0	0	84,9322
33				1,15421	0	71,2969	0	0	71,2969
34				0,96891	0	59,8507	0	0	59,8507
35				0,81336	0	50,2421	0	0	50,2421
36				0,68278	0	42,1761	0	0	42,1761
37				0,57317	0	35,405	0	0	35,405
38				0,48115	0	29,721	0	0	29,721

Tabel Hitungan hidograf kala ulang 20 tahun dengan metode HSS Limantara (lanjutan)

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
39				0,4039	0	24,9495	0	0	24,9495
40				0,33906	0	20,944	0	0	20,944
41				0,28463	0	17,5816	0	0	17,5816
42				0,23893	0	14,759	0	0	14,759
43				0,20057	0	12,3895	0	0	12,3895
44				0,16837	0	10,4005	0	0	10,4005
45				0,14134	0	8,73077	0	0	8,73077
46				0,11865	0	7,3291	0	0	7,3291
47				0,0996	0	6,15247	0	0	6,15247
48				0,08361	0	5,16473	0	0	5,16473
49				0,07019	0	4,33557	0	0	4,33557
50				0,05892	0	3,63953	0	0	3,63953
						3,05523	0	0	
							0	0	
								0	

117

Lampiran 22

Tabel Hitungan hidograf kala ulang 50 tahun dengan metode HSS Gamma 1

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
0	12,859	25,28	0	0	0				0
1	88,588		63,307	22,2078	0	0			0
2	23,026		0	44,4156	0	1405,92	0		1405,92
2,9247	16,152		0	64,9504	0	2811,84	0	0	2811,84
3				64,1828	0	4111,84	0	0	4111,84
4				54,813	0	4063,24	0	0	4063,24
5				46,811	0	3470,06	0	0	3470,06
6				39,9772	0	2963,48	0	0	2963,48
7				34,1411	0	2530,85	0	0	2530,85
8				29,1569	0	2161,38	0	0	2161,38
9				24,9004	0	1845,85	0	0	1845,85
10				21,2653	0	1576,38	0	0	1576,38
11				18,1608	0	1346,25	0	0	1346,25
12				15,5096	0	1149,72	0	0	1149,72
13				13,2454	0	981,872	0	0	981,872
14				11,3118	0	838,532	0	0	838,532
15				9,6604	0	716,118	0	0	716,118
16				8,25011	0	611,574	0	0	611,574
17				7,0457	0	522,293	0	0	522,293
18				6,01712	0	446,045	0	0	446,045
19				5,13871	0	380,928	0	0	380,928
20				4,38852	0	325,318	0	0	325,318
21				3,74786	0	277,826	0	0	277,826
22				3,20072	0	237,267	0	0	237,267
23				2,73346	0	202,629	0	0	202,629
24				2,33441	0	173,048	0	0	173,048
25				1,99362	0	147,785	0	0	147,785
26				1,70258	0	126,211	0	0	126,211
27				1,45402	0	107,786	0	0	107,786
28				1,24176	0	92,0504	0	0	92,0504
29				1,06048	0	78,6123	0	0	78,6123
30				0,90566	0	67,1359	0	0	67,1359
31				0,77345	0	57,335	0	0	57,335
32				0,66053	0	48,9648	0	0	48,9648
33				0,5641	0	41,8166	0	0	41,8166
34				0,48175	0	35,712	0	0	35,712
35				0,41142	0	30,4985	0	0	30,4985
36				0,35136	0	26,0461	0	0	26,0461
37				0,30007	0	22,2437	0	0	22,2437
38				0,25626	0	18,9965	0	0	18,9965

Tabel Hitungan hidograf kala ulang 50 tahun dengan metode HSS Gamma 1 (lanjutan)

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
39				0,21885	0	16,2232	0	0	16,2232
40				0,1869	0	13,8549	0	0	13,8549
41				0,15962	0	11,8322	0	0	11,8322
42				0,13631	0	10,1049	0	0	10,1049
43				0,11641	0	8,62971	0	0	8,62971
44				0,09942	0	7,36988	0	0	7,36988
45				0,08491	0	6,29398	0	0	6,29398
46				0,07251	0	5,37514	0	0	5,37514
47				0,06192	0	4,59044	0	0	4,59044
48				0,05288	0	3,9203	0	0	3,9203
49				0,04516	0	3,34799	0	0	3,34799
50				0,03857	0	2,85923	0	0	2,85923
						2,44182	0	0	
							0	0	
								0	

Lampiran 23

Tabel Hitungan hidograf kala ulang 50 tahun dengan metode HSS
Nakayasu

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
0	12,859	25,28	0	0	0				0
1	88,588		63,307	0,1841	0	0			0
2	23,026		0	0,9717	0	11,6551	0		11,6551
3	16,152		0	2,57129	0	61,5158	0	0	61,5158
4				5,12866	0	162,782	0	0	162,782
5				8,7617	0	324,682	0	0	324,682
6				13,5714	0	554,68	0	0	554,68
7				19,647	0	859,167	0	0	859,167
8				27,0692	0	1243,8	0	0	1243,8
9				35,9122	0	1713,68	0	0	1713,68
10				41,7324	0	2273,51	0	0	2273,51
11				36,1853	0	2641,97	0	0	2641,97
12				32,7246	0	2290,8	0	0	2290,8
13				29,5948	0	2071,71	0	0	2071,71
14				26,7644	0	1873,57	0	0	1873,57
15				24,2046	0	1694,38	0	0	1694,38
16				21,8897	0	1532,33	0	0	1532,33
17				19,7962	0	1385,78	0	0	1385,78
18				17,9029	0	1253,24	0	0	1253,24
19				16,1907	0	1133,39	0	0	1133,39
20				14,6422	0	1024,99	0	0	1024,99
21				13,2418	0	926,959	0	0	926,959
22				11,9754	0	838,305	0	0	838,305
23				11,3663	0	758,13	0	0	758,13
24				10,6295	0	719,57	0	0	719,57
25				9,94048	0	672,926	0	0	672,926
26				9,29612	0	629,306	0	0	629,306
27				8,69353	0	588,513	0	0	588,513
28				8,13	0	550,364	0	0	550,364
29				7,60299	0	514,689	0	0	514,689
30				7,11015	0	481,326	0	0	481,326
31				6,64926	0	450,125	0	0	450,125
32				6,21824	0	420,947	0	0	420,947
33				5,81516	0	393,661	0	0	393,661
34				5,43821	0	368,143	0	0	368,143
35				5,0857	0	344,279	0	0	344,279
36				4,75603	0	321,962	0	0	321,962
37				4,44774	0	301,092	0	0	301,092
38				4,15943	0	281,575	0	0	281,575
39				3,88981	0	263,322	0	0	263,322

Tabel Hitungan hidograf kala ulang 50 tahun dengan metode HSS Nakayasu (lanjutan)

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
40				3,63766	0	246,253	0	0	246,253
41				3,48712	0	230,291	0	0	230,291
42				3,31617	0	220,76	0	0	220,76
43				3,15361	0	209,938	0	0	209,938
44				2,99902	0	199,647	0	0	199,647
45				2,852	0	189,86	0	0	189,86
46				2,71219	0	180,553	0	0	180,553
47				2,57923	0	171,702	0	0	171,702
48				2,4528	0	163,285	0	0	163,285
49				2,33256	0	155,28	0	0	155,28
50				2,21821	0	147,668	0	0	147,668
				0,03857	0	140,429	0	0	140,429
						2,44182	0	0	
							0	0	
								0	

Lampiran 24

Tabel Hitungan hidograf kala ulang 50 tahun dengan metode HSS ITB-1

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
0	12,859	25,28	0	0	0				0
1	88,588		63,307	0,69069	0	0			0
2	23,026		0	20,8275	0	43,726	0		43,726
3	16,152		0	52,9601	0	1318,53	0	0	1318,53
4				72,5691	0	3352,77	0	0	3352,77
4,9461				77,6652	0	4594,16	0	0	4594,16
5				77,6515	0	4916,78	0	0	4916,78
6				73,4255	0	4915,91	0	0	4915,91
7				64,6929	0	4648,37	0	0	4648,37
8				54,5365	0	4095,54	0	0	4095,54
9				44,6407	0	3452,56	0	0	3452,56
10				35,7952	0	2826,09	0	0	2826,09
11				28,2755	0	2266,1	0	0	2266,1
12				22,0858	0	1790,05	0	0	1790,05
13				17,1025	0	1398,19	0	0	1398,19
14				13,154	0	1082,72	0	0	1082,72
15				10,0622	0	832,743	0	0	832,743
16				7,66322	0	637,011	0	0	637,011
17				5,815	0	485,138	0	0	485,138
18				4,39919	0	368,132	0	0	368,132
19				3,31961	0	278,501	0	0	278,501
20				2,49953	0	210,155	0	0	210,155
21				1,87855	0	158,239	0	0	158,239
22				1,40958	0	118,926	0	0	118,926
23				1,05621	0	89,2368	0	0	89,2368
24				0,79046	0	66,8659	0	0	66,8659
25				0,59094	0	50,042	0	0	50,042
26				0,44136	0	37,4108	0	0	37,4108
27				0,32936	0	27,9413	0	0	27,9413
28				0,2456	0	20,8511	0	0	20,8511
29				0,18302	0	15,5484	0	0	15,5484
30				0,1363	0	11,5863	0	0	11,5863
31				0,10145	0	8,62863	0	0	8,62863
32				0,07547	0	6,42243	0	0	6,42243
33				0,05612	0	4,77793	0	0	4,77793
34				0,04172	0	3,55291	0	0	3,55291
35				0,031	0	2,64088	0	0	2,64088
36				0,02302	0	1,96223	0	0	1,96223
37				0,01709	0	1,45747	0	0	1,45747
38				0,01269	0	1,08221	0	0	1,08221
39				0,00942	0	0,80333	0	0	0,80333

Tabel Hitungan hidograf kala ulang 50 tahun dengan metode HSS ITB-1 (lanjutan)

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
40				0,00699	0	0,59616	0	0	0,59616
41				0,00518	0	0,4423	0	0	0,4423
42				0,00384	0	0,32808	0	0	0,32808
43				0,00285	0	0,2433	0	0	0,2433
44				0,00211	0	0,18039	0	0	0,18039
45				0,00157	0	0,13373	0	0	0,13373
46				0,00116	0	0,09911	0	0	0,09911
47				0,00086	0	0,07345	0	0	0,07345
48				0,00064	0	0,05442	0	0	0,05442
49				0,00047	0	0,04032	0	0	0,04032
50				0,00035	0	0,02986	0	0	0,02986
						0,02212	0	0	
							0	0	
								0	

Lampiran 25

Tabel Hitungan hidograf kala ulang 50 tahun dengan metode HSS imantara

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
0	12,859	25,28	0	0	0				0
1	88,588		63,307	5,69787	0	0			0
2	23,026		0	12,2731	0	360,717	0		360,717
3	16,152		0	19,2259	0	776,975	0	0	776,975
4				26,4358	0	1217,14	0	0	1217,14
5				33,8433	0	1673,58	0	0	1673,58
6				41,412	0	2142,53	0	0	2142,53
7				49,1175	0	2621,68	0	0	2621,68
8				56,9421	0	3109,5	0	0	3109,5
9				64,8723	0	3604,85	0	0	3604,85
9,5812				69,526	0	4106,89	0	0	4106,89
10				64,6132	0	4401,51	0	0	4401,51
11				54,24	0	4090,49	0	0	4090,49
12				45,5322	0	3433,79	0	0	3433,79
13				38,2223	0	2882,52	0	0	2882,52
14				32,086	0	2419,75	0	0	2419,75
15				26,9348	0	2031,28	0	0	2031,28
16				22,6106	0	1705,17	0	0	1705,17
17				18,9806	0	1431,42	0	0	1431,42
18				15,9334	0	1201,61	0	0	1201,61
19				13,3754	0	1008,7	0	0	1008,7
20				11,2281	0	846,763	0	0	846,763
21				9,4255	0	710,821	0	0	710,821
22				7,9123	0	596,704	0	0	596,704
23				6,64204	0	500,907	0	0	500,907
24				5,57571	0	420,49	0	0	420,49
25				4,68056	0	352,983	0	0	352,983
26				3,92913	0	296,314	0	0	296,314
27				3,29834	0	248,743	0	0	248,743
28				2,76881	0	208,809	0	0	208,809
29				2,3243	0	175,286	0	0	175,286
30				1,95115	0	147,145	0	0	147,145
31				1,63791	0	123,522	0	0	123,522
32				1,37495	0	103,692	0	0	103,692
33				1,15421	0	87,0446	0	0	87,0446
34				0,96891	0	73,0702	0	0	73,0702
35				0,81336	0	61,3393	0	0	61,3393
36				0,68278	0	51,4917	0	0	51,4917
37				0,57317	0	43,2251	0	0	43,2251
38				0,48115	0	36,2856	0	0	36,2856
39				0,4039	0	30,4602	0	0	30,4602

Tabel Hitungan hidograf kala ulang 50 tahun dengan metode HSS Limantara (lanjutan)

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
40				0,33906	0	25,57	0	0	25,57
41				0,28463	0	21,4649	0	0	21,4649
42				0,23893	0	18,0189	0	0	18,0189
43				0,20057	0	15,1261	0	0	15,1261
44				0,16837	0	12,6977	0	0	12,6977
45				0,14134	0	10,6592	0	0	10,6592
46				0,11865	0	8,94791	0	0	8,94791
47				0,0996	0	7,51139	0	0	7,51139
48				0,08361	0	6,30549	0	0	6,30549
49				0,07019	0	5,29319	0	0	5,29319
50				0,05892	0	4,4434	0	0	4,4434
						3,73005	0	0	
							0	0	
								0	

Lampiran 26

Tabel Hitungan hidograf kala ulang 100 tahun dengan metode
HSS Gamma 1

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
0	14,098	25,28	0	0	0				0
1	97,129		71,848	22,2078	0	0			0
2	25,246		0	44,4156	0	1595,6	0		1595,6
2,9247	17,709		0	64,9504	0	3191,2	0	0	3191,2
3				64,1828	0	4666,59	0	0	4666,59
4				54,813	0	4611,44	0	0	4611,44
5				46,811	0	3938,23	0	0	3938,23
6				39,9772	0	3363,3	0	0	3363,3
7				34,1411	0	2872,3	0	0	2872,3
8				29,1569	0	2452,99	0	0	2452,99
9				24,9004	0	2094,88	0	0	2094,88
10				21,2653	0	1789,06	0	0	1789,06
11				18,1608	0	1527,88	0	0	1527,88
12				15,5096	0	1304,83	0	0	1304,83
13				13,2454	0	1114,34	0	0	1114,34
14				11,3118	0	951,663	0	0	951,663
15				9,6604	0	812,733	0	0	812,733
16				8,25011	0	694,085	0	0	694,085
17				7,0457	0	592,758	0	0	592,758
18				6,01712	0	506,223	0	0	506,223
19				5,13871	0	432,321	0	0	432,321
20				4,38852	0	369,208	0	0	369,208
21				3,74786	0	315,309	0	0	315,309
22				3,20072	0	269,278	0	0	269,278
23				2,73346	0	229,967	0	0	229,967
24				2,33441	0	196,395	0	0	196,395
25				1,99362	0	167,724	0	0	167,724
26				1,70258	0	143,238	0	0	143,238
27				1,45402	0	122,328	0	0	122,328
28				1,24176	0	104,469	0	0	104,469
29				1,06048	0	89,2182	0	0	89,2182
30				0,90566	0	76,1936	0	0	76,1936
31				0,77345	0	65,0703	0	0	65,0703
32				0,66053	0	55,5709	0	0	55,5709
33				0,5641	0	47,4583	0	0	47,4583
34				0,48175	0	40,53	0	0	40,53
35				0,41142	0	34,6132	0	0	34,6132
36				0,35136	0	29,5601	0	0	29,5601
37				0,30007	0	25,2448	0	0	25,2448
38				0,25626	0	21,5594	0	0	21,5594

Tabel Hitungan hidograf kala ulang 100 tahun dengan metode HSS
Gamma 1 (lanjutan)

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
39				0,21885	0	18,412	0	0	18,412
40				0,1869	0	15,7241	0	0	15,7241
41				0,15962	0	13,4286	0	0	13,4286
42				0,13631	0	11,4682	0	0	11,4682
43				0,11641	0	9,79398	0	0	9,79398
44				0,09942	0	8,36419	0	0	8,36419
45				0,08491	0	7,14313	0	0	7,14313
46				0,07251	0	6,10033	0	0	6,10033
47				0,06192	0	5,20977	0	0	5,20977
48				0,05288	0	4,44921	0	0	4,44921
49				0,04516	0	3,79968	0	0	3,79968
50				0,03857	0	3,24498	0	0	3,24498
						2,77126	0	0	
							0	0	
								0	

Lampiran 27

Tabel Hitungan hidograf kala ulang 100 tahun dengan metode HSS Nakayasu

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
0	14,098	25,28	0	0	0				0
1	97,129		71,848	0,1841	0	0			0
2	25,246		0	0,9717	0	13,2275	0		13,2275
3	17,709		0	2,57129	0	69,8152	0	0	69,8152
4				5,12866	0	184,743	0	0	184,743
5				8,7617	0	368,487	0	0	368,487
6				13,5714	0	629,515	0	0	629,515
7				19,647	0	975,081	0	0	975,081
8				27,0692	0	1411,6	0	0	1411,6
9				35,9122	0	1944,88	0	0	1944,88
10				41,7324	0	2580,24	0	0	2580,24
11				36,1853	0	2998,41	0	0	2998,41
12				32,7246	0	2599,86	0	0	2599,86
13				29,5948	0	2351,21	0	0	2351,21
14				26,7644	0	2126,34	0	0	2126,34
15				24,2046	0	1922,98	0	0	1922,98
16				21,8897	0	1739,07	0	0	1739,07
17				19,7962	0	1572,74	0	0	1572,74
18				17,9029	0	1422,33	0	0	1422,33
19				16,1907	0	1286,3	0	0	1286,3
20				14,6422	0	1163,27	0	0	1163,27
21				13,2418	0	1052,02	0	0	1052,02
22				11,9754	0	951,405	0	0	951,405
23				11,3663	0	860,413	0	0	860,413
24				10,6295	0	816,651	0	0	816,651
25				9,94048	0	763,714	0	0	763,714
26				9,29612	0	714,208	0	0	714,208
27				8,69353	0	667,912	0	0	667,912
28				8,13	0	624,617	0	0	624,617
29				7,60299	0	584,128	0	0	584,128
30				7,11015	0	546,264	0	0	546,264
31				6,64926	0	510,854	0	0	510,854
32				6,21824	0	477,739	0	0	477,739
33				5,81516	0	446,771	0	0	446,771
34				5,43821	0	417,811	0	0	417,811
35				5,0857	0	390,727	0	0	390,727
36				4,75603	0	365,4	0	0	365,4
37				4,44774	0	341,714	0	0	341,714
38				4,15943	0	319,563	0	0	319,563
39				3,88981	0	298,849	0	0	298,849
40				3,63766	0	279,477	0	0	279,477

Tabel Hitungan hidograf kala ulang 100 tahun dengan metode HSS Nakayasu (lanjutan)

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
41				3,48712	0	261,36	0	0	261,36
42				3,31617	0	250,544	0	0	250,544
43				3,15361	0	238,262	0	0	238,262
44				2,99902	0	226,582	0	0	226,582
45				2,852	0	215,475	0	0	215,475
46				2,71219	0	204,912	0	0	204,912
47				2,57923	0	194,867	0	0	194,867
48				2,4528	0	185,314	0	0	185,314
49				2,33256	0	176,23	0	0	176,23
50				2,21821	0	167,591	0	0	167,591
				0,03857	0	159,375	0	0	159,375
						2,77126	0	0	
							0	0	
								0	

Lampiran 28

Tabel Hitungan hidograf kala ulang 100 tahun dengan metode HSS ITB-1

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
0	14,098	25,28	0	0	0				0
1	97,129		71,848	0,69069	0	0			0
T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
2	25,246		0	20,8275	0	49,6253	0		49,6253
3	17,709		0	52,9601	0	1496,42	0	0	1496,42
4				72,5691	0	3805,1	0	0	3805,1
4,9461				77,6652	0	5213,98	0	0	5213,98
5				77,6515	0	5580,13	0	0	5580,13
6				73,4255	0	5579,15	0	0	5579,15
7				64,6929	0	5275,51	0	0	5275,51
8				54,5365	0	4648,09	0	0	4648,09
9				44,6407	0	3918,36	0	0	3918,36
10				35,7952	0	3207,37	0	0	3207,37
11				28,2755	0	2571,83	0	0	2571,83
12				22,0858	0	2031,55	0	0	2031,55
13				17,1025	0	1586,83	0	0	1586,83
14				13,154	0	1228,79	0	0	1228,79
15				10,0622	0	945,093	0	0	945,093
16				7,66322	0	722,954	0	0	722,954
17				5,815	0	550,591	0	0	550,591
18				4,39919	0	417,799	0	0	417,799
19				3,31961	0	316,075	0	0	316,075
20				2,49953	0	238,509	0	0	238,509
21				1,87855	0	179,588	0	0	179,588
22				1,40958	0	134,971	0	0	134,971
23				1,05621	0	101,276	0	0	101,276
24				0,79046	0	75,8871	0	0	75,8871
25				0,59094	0	56,7934	0	0	56,7934
26				0,44136	0	42,4581	0	0	42,4581
27				0,32936	0	31,7111	0	0	31,7111
28				0,2456	0	23,6643	0	0	23,6643
29				0,18302	0	17,6461	0	0	17,6461
30				0,1363	0	13,1495	0	0	13,1495
31				0,10145	0	9,79276	0	0	9,79276
32				0,07547	0	7,28891	0	0	7,28891
33				0,05612	0	5,42255	0	0	5,42255
34				0,04172	0	4,03225	0	0	4,03225
35				0,031	0	2,99717	0	0	2,99717
36				0,02302	0	2,22696	0	0	2,22696
37				0,01709	0	1,6541	0	0	1,6541
38				0,01269	0	1,22821	0	0	1,22821

Tabel Hitungan hidograf kala ulang 100 tahun dengan metode HSS ITB-1 (lanjutan)

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
39				0,00942	0	0,91171	0	0	0,91171
40				0,00699	0	0,67659	0	0	0,67659
41				0,00518	0	0,50198	0	0	0,50198
42				0,00384	0	0,37234	0	0	0,37234
43				0,00285	0	0,27612	0	0	0,27612
44				0,00211	0	0,20473	0	0	0,20473
45				0,00157	0	0,15177	0	0	0,15177
46				0,00116	0	0,11249	0	0	0,11249
47				0,00086	0	0,08336	0	0	0,08336
48				0,00064	0	0,06176	0	0	0,06176
49				0,00047	0	0,04576	0	0	0,04576
50				0,00035	0	0,03389	0	0	0,03389
						0,0251	0	0	
							0	0	
								0	

Lampiran 29

Tabel Hitungan hidograf kala ulang 100 tahun dengan metode HSS Limantara

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
0	14,098	25,28	0	0	0				0
1	97,129		71,848	5,69787	0	0			0
2	25,246		0	12,2731	0	409,384	0		409,384
3	17,709		0	19,2259	0	881,801	0	0	881,801
4				26,4358	0	1381,35	0	0	1381,35
5				33,8433	0	1899,38	0	0	1899,38
6				41,412	0	2431,59	0	0	2431,59
7				49,1175	0	2975,39	0	0	2975,39
8				56,9421	0	3529,02	0	0	3529,02
9				64,8723	0	4091,2	0	0	4091,2
9,5812				69,526	0	4660,98	0	0	4660,98
10				64,6132	0	4995,34	0	0	4995,34
11				54,24	0	4642,36	0	0	4642,36
12				45,5322	0	3897,06	0	0	3897,06
13				38,2223	0	3271,42	0	0	3271,42
14				32,086	0	2746,21	0	0	2746,21
15				26,9348	0	2305,33	0	0	2305,33
16				22,6106	0	1935,22	0	0	1935,22
17				18,9806	0	1624,54	0	0	1624,54
18				15,9334	0	1363,73	0	0	1363,73
19				13,3754	0	1144,79	0	0	1144,79
20				11,2281	0	961,004	0	0	961,004
21				9,4255	0	806,721	0	0	806,721
22				7,9123	0	677,208	0	0	677,208
23				6,64204	0	568,487	0	0	568,487
24				5,57571	0	477,22	0	0	477,22
25				4,68056	0	400,606	0	0	400,606
26				3,92913	0	336,292	0	0	336,292
27				3,29834	0	282,302	0	0	282,302
28				2,76881	0	236,981	0	0	236,981
29				2,3243	0	198,935	0	0	198,935
30				1,95115	0	166,997	0	0	166,997
31				1,63791	0	140,187	0	0	140,187
32				1,37495	0	117,681	0	0	117,681
33				1,15421	0	98,7882	0	0	98,7882
34				0,96891	0	82,9285	0	0	82,9285
35				0,81336	0	69,6149	0	0	69,6149
36				0,68278	0	58,4387	0	0	58,4387
37				0,57317	0	49,0568	0	0	49,0568
38				0,48115	0	41,1811	0	0	41,1811

Tabel Hitungan hidograf kala ulang 100 tahun dengan metode HSS Limantara (lanjutan)

T	P	Phi	Pe	UH	UH*P1	UH*P2	UH*P3	UH*P4	Q
39				0,4039	0	34,5697	0	0	34,5697
40				0,33906	0	29,0198	0	0	29,0198
41				0,28463	0	24,3609	0	0	24,3609
42				0,23893	0	20,4499	0	0	20,4499
43				0,20057	0	17,1668	0	0	17,1668
44				0,16837	0	14,4108	0	0	14,4108
45				0,14134	0	12,0973	0	0	12,0973
46				0,11865	0	10,1551	0	0	10,1551
47				0,0996	0	8,52479	0	0	8,52479
48				0,08361	0	7,1562	0	0	7,1562
49				0,07019	0	6,00732	0	0	6,00732
50				0,05892	0	5,04289	0	0	5,04289
						4,23329	0	0	
							0	0	
								0	