

BAB V

KESIMPULAN DAN SARAN

5.1 Kesimpulan

Berdasarkan dari hasil pembahasan yang telah dilakukan di lokasi studi, maka dapat diambil beberapa kesimpulan sebagai berikut :

1. Data curah hujan selama 10 tahun yang digunakan memenuhi uji tren, uji stasioner, dan uji presistensi yang menghasilkan nilai $CV = 0,355$; $CS = 1,547$; $CK=1,692$ sehingga, perhitungan analisis frekuensi yang digunakan adalah Log Pearson III dan telah memenuhi uji kebaikan suai.
2. Intensitas hujan maksimum dengan kala ulang 2, 5, dan 10 tahun berturut-turut adalah 111,74 mm/jam ; 151,13 mm/jam ; 178,39 mm/jam ,yang selanjutnya akan digunakan untuk analisis hidrolika guna mencari nilai Qaliran untuk mendesain dimensi rencana saluran.
3. Genangan yang terjadi di lokasi saluran D disebabkan karena kapasitas existing saluran D sudah tidak mampu untuk menampung debit aliran untuk kala ulang 2, 5, maupun 10 tahun, serta jumlah inlet yang kurang dan tidak efektif untuk mengalirkan air dari lahan menuju saluran membuat waktu konsentrasi aliran semakin lama dan menyebabkan genangan.
4. Terdapat 13 saluran *existing* tidak mampu menampung debit aliran yang ada dengan perhitungan kala ulang 2, 5, 10 tahun, serta banyak beberapa saluran yang belum optimal karena banyaknya tumpukan sedimen dan sampah yang mengurangi kapasitas saluran.

5. Dengan debit 2, 5, 10 tahun, saluran eko-drainase rencana dengan spesifikasi sumur resapan $H = 3 \text{ m}$; $D = 0,8$ sebanyak 569 resapan yang dibangun setiap 20 m sepanjang saluran dapat mereduksi berturut-turut 9,021 % ; 6,775 % ; 5,997 % debit aliran total yang ada di lokasi studi.
6. Berdasarkan analisis perhitungan dapat dilihat bahwa saluran eko-drainase belum cukup efektif untuk mengendalikan debit aliran dan permasalahan genangan yang terjadi di lokasi studi, namun penerapan saluran eko-drainase cukup efektif untuk meresapkan air yang melimpas guna konservasi air tanah serta menekan laju erosi di hulu saluran.

5.2 Saran

Sebagai akhir penutup dari studi ini, saran yang dapat dilakukan dalam penyempurnaan studi kasus ini antara lain :

1. Pemecahan masalah yang dilakukan untuk mengatasi genangan adalah mengubah dimensi saluran untuk kala ulang 5 tahun agar tidak terlalu boros serta menambah lebih banyak inlet.
2. Inlet yang dipakai disarankan cukup kuat untuk menahan beban kendaraan dan mempunyai cukup rongga agar jalannya air menuju saluran lebih optimal.
3. Perlu dilakukan penelitian lebih lanjut mengenai perancangan saluran eko-drainase dengan pendekatan kualitas air dan pemodelan drainase ramah lingkungan untuk teknologi eko-drainase lainnya selain sumur resapan.
4. Perlu dilakukan perubahan dimensi dan letak sumur yang disesuaikan lebar saluran drainase.

5. Letak sumur resapan harus dimodifikasi dan disesuaikan dengan situasi dan kondisi saluran maupun jalan raya agar tidak terjadi penumpukan sedimen dan vegetasi yang mengurangi kemampuan baik kapasitas saluran maupun resapan.
6. Perlu adanya penelitian lanjutan yang terintegrasi dengan mempertimbangkan berbagai aspek terjadinya banjir sehingga berguna dalam perencanaan tata ruang kawasan yang mengacu pada konsep eko-drainase ramah lingkungan.
7. Perlunya peran serta masyarakat untuk menyadari tentang kebersihan lingkungan yang lebih bertujuan merawat saluran ekodrainase untuk tujuan konservasi air dan peran pemerintah untuk merancang ulang regulasi operasional dan pemeliharaan saluran baik primer, sekunder, maupun tersier.
8. Perlu diterapkan Peraturan Daerah tentang aplikasi konsep eko-drainase pada setiap bangunan agar memiliki sumur resapan guna konservasi sumber daya air.

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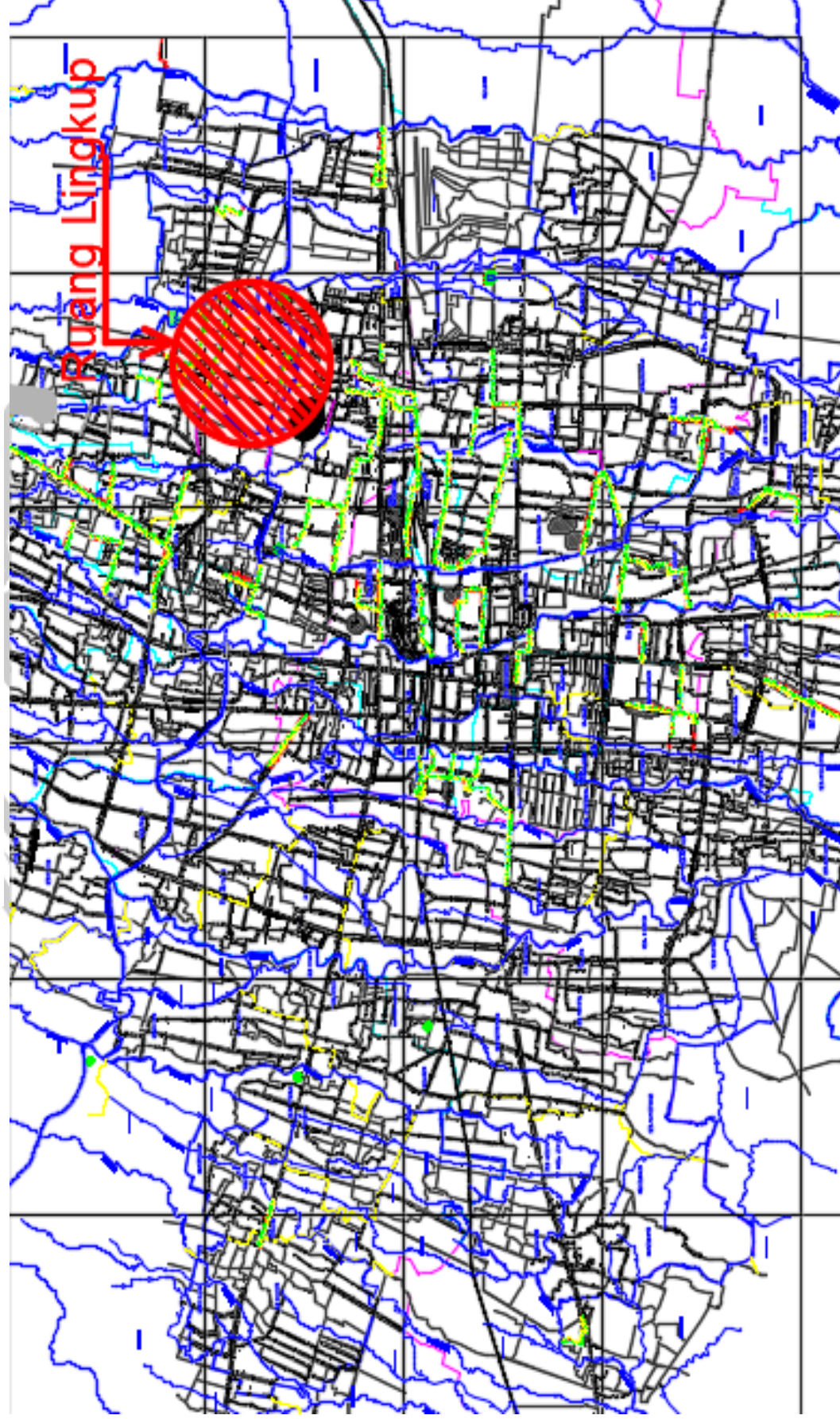
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Lampiran 1 Ruang Lingkup Studi



Lampiran 2 Daftar Saluran Drainase *Existing*

A1	A2	A3	A4
			
A5	A6	A7	A8
			
A9	B1	B2	B3
			

Lampiran 2 Daftar Saluran Drainase *Existing*

B4	B5	C1	C2
			
C3	C4	D	E
			

Nama Stasiun	Santan		
No Stasiun	52f		Elevasi
No In Data	069PH		Tipe alat
Lintang Selatan	07° 47' 12"		Pemilik
Bujur Timur	110° 24' 59"		Operator

[illegible][illegible]

[illegible]

Nama Stasiun	Santan		
No Stasiun	52f	Elevasi	
No In Datab	069PH	Tipe alat	
Lintang Selatan	07° 47' 12"	Pemilik	
Bujur Timur	110° 24' 59"	Operator	

[illegible][illegible]

Nama Stasiun	Santan	Elevasi	
No Stasiun	52f	Tipe alat	
No In Data	069PH	Pemilik	
Lintang Selatan	07° 47' 12"	Operator	
Bujur Timur	110° 24' 59"		

Tahun	2008													
Tanggal	Bulan												Tahunan	
	Jan	Feb	Mar	Apr	Mei	Jun	Jul	Ags	Sep	Okt	Nop	Des		
1	38	0	0	0	0	0	0	0	0	0	0	0	0	68 1825 77
2	0	13	0	0	0	0	0	0	0	0	41	0	0	
3	0	5	13	0	8	0	0	0	0	0	0	0	0	
4	14	9	23	66	0	0	0	0	0	0	22	0	0	
5	12	44	0	28	0	0	0	0	0	0	0	0	0	
6	0	0	8	25	26	0	0	0	0	0	30	0	0	
7	0	0	0	7	5	0	0	0	0	0	0	0	0	
8	9	0	12	39	0	0	0	0	0	0	42	40	0	
9	0	0	11	0	0	0	0	0	0	38	15	0	0	
10	0	0	0	20	0	0	0	0	0	0	17	24	0	
11	0	50	12	0	0	0	0	0	0	0	10	26	0	
12	0	0	0	0	0	0	0	0	0	0	0	0	0	
13	0	0	24	68	0	0	0	0	0	0	0	0	0	
14	7	0	15	0	0	10	0	0	0	0	28	0	0	
15	0	55	4	0	0	0	0	0	0	0	0	46	0	
16	28	0	0	0	0	0	0	0	0	0	0	19	0	
17	0	0	20	15	0	0	0	0	0	0	38	0	0	
18	0	15	0	0	0	0	0	0	0	0	0	0	0	
19	0	35	0	0	0	0	0	0	0	0	12	0	0	
20	0	0	7	0	0	0	0	0	0	23	9	0	0	
21	0	0	13	5	0	0	0	0	0	0	0	0	0	
22	0	0	0	0	64	0	0	0	0	20	26	0	0	
23	0	0	27	0	0	0	0	0	0	0	0	0	0	
24	0	0	18	0	0	0	0	0	0	0	0	8	0	
25	0	5	0	0	0	0	0	0	0	0	42	7	0	
26	0	19	0	0	0	0	0	0	0	0	16	0	0	
27	65	0	0	0	0	0	0	0	0	59	0	0	0	
28	0	0	0	0	0	0	0	0	0	0	0	11	0	
29	0	0	0	0	0	0	0	0	0	50	0	15	0	
30	40		11	0	0	0	0	0	0	9	0	15	0	
31	0				0		0			0				
Hujan Maxi	0	55	27	68	64	10	0	0	0	59	42	46	68	
Jml Curah H	213	250	218	273	103	10	0	0	0	199	348	211	1825	
Jml. Hari H	8	10	15	9	4	1	0	0	0	6	14	10	77	
Jml. Hujan (	80	176	122	253	39	10	0	0	0	38	205	136		
Jml. data ko	0	0	0	0	0	0	0	0	0	0	0	0		
Jml Hujan (	133	74	96	20	64	0	0	0	0	161	143	75		
Jml. data ko	0	0	0	0	0	0	0	0	0	0	0	0		

Tahun	2009													Tahunan
Tanggal	Bulan													
	Jan	Feb	Mar	Apr	Mei	Jun	Jul	Ags	Sep	Okt	Nop	Des		
1	0	0	0	0	0	0	0	0	0	0	0	0	0	98 1576 46
2	0	19	0	23	0	0	0	0	0	0	0	0	0	
3	60	98	29	36	0	0	0	0	0	0	0	0	0	
4	0	8	0	6	0	0	0	0	0	0	0	0	0	
5	0	0	0	0	0	0	0	0	0	0	0	0	0	
6	0	0	0	0	0	0	0	0	0	0	0	0	0	
7	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	18	0	34	39	0	0	0	0	0	0	0	0	0	
10	6	14	0	0	0	0	0	0	0	0	0	0	0	
11	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	0	69	0	0	0	0	0	0	0	0	0	0	0	
13	0	41	0	0	0	0	0	0	0	0	0	0	0	
14	42	10	0	0	0	0	0	0	0	0	0	0	0	
15	40	0	0	0	0	0	0	0	0	0	20	0	0	
16	0	0	0	0	0	0	0	0	0	0	0	0	0	
17	0	0	0	0	0	0	0	0	0	0	0	0	0	
18	0	15	0	0	0	0	0	0	0	0	0	0	0	
19	0	0	0	0	0	0	0	0	0	0	45	0	0	
20	0	0	0	0	0	0	0	0	0	0	22	0	0	
21	0	0	0	43	59	0	0	0	0	0	0	0	0	
22	6	0	97	0	0	0	0	0	0	0	0	57	0	
23	0	0	31	9	0	0	0	0	0	0	0	0	0	
24	30	0	0	0	0	0	0	0	0	0	0	0	0	
25	0	0	0	10	16	0	0	0	0	74	0	0	0	
26	0	52	24	0	0	0	0	0	0	0	0	0	0	
27	0	12	0	0	66	0	0	0	0	0	0	0	0	
28	55	0	0	57	0	0	0	0	0	0	10	47	0	
29	24	0	0	0	0	0	0	0	0	0	0	0	0	
30	0		18	0	0	0	0	0	0	0	0	0	0	
31	17		52		0		0	0		0		16	0	
Hujan Maxi	60	98	97	57	66	0	0	0	0	74	45	57	98	
Jml Curah H	298	338	285	223	141	0	0	0	0	74	97	120	1576	
Jml. Hari H	10	10	7	8	3	0	0	0	0	1	4	3	46	
Jml. Hujan (	166	259	63	104	0	0	0	0	0	0	20	0		
Jml. data ko	0	0	0	0	0	0	0	0	0	0	0	0		
Jml Hujan (	132	79	222	119	141	0	0	0	0	74	77	120		
Jml. data ko	0	0	0	0	0	0	0	0	0	0	0	0		

Lampiran 4 Tabel Nilai K untuk Distribusi Log Person III

Kemencengan (CS)	Periode Ulang (tahun)							
	2	5	10	25	50	100	200	1000
	Peluang (%)							
	50	20	10	4	2	1	0.5	0.1
3.0	-0.360	0.420	1.180	2.278	3.152	4.051	4.970	7.250
2.5	-0.360	0.518	1.250	2.262	3.048	3.845	4.652	6.600
2.2	-0.330	0.574	1.284	2.240	2.970	3.705	4.444	6.200
2.0	-0.307	0.609	1.302	2.215	2.912	3.605	4.298	5.910
1.8	-0.282	0.643	1.318	2.193	2.848	3.499	4.147	5.660
1.6	-0.254	0.675	1.329	2.163	2.780	3.388	3.990	5.390
1.4	-0.255	0.705	1.337	2.128	2.706	3.271	3.828	5.110
1.2	-0.195	0.732	1.340	2.087	2.626	3.149	3.661	4.820
1.0	-0.164	0.758	1.340	2.043	2.542	3.022	3.489	4.540
0.9	-0.148	0.763	1.339	2.018	2.498	2.957	3.401	4.395
0.8	-0.132	0.780	1.336	1.998	2.453	2.891	3.312	4.250
0.7	-0.116	0.790	1.333	1.967	2.407	2.824	3.223	4.105
0.6	-0.099	0.800	1.328	1.939	2.359	2.755	3.132	3.960
0.5	-0.083	0.808	1.323	1.910	2.311	2.686	3.041	3.815
0.4	-0.066	0.816	1.317	1.880	2.261	2.615	2.949	3.670
0.3	-0.050	0.824	1.309	1.849	2.211	2.544	2.856	3.525
0.2	-0.033	0.830	1.301	1.818	2.159	2.472	2.763	3.380
0.1	-0.017	0.836	1.292	1.785	2.107	2.400	2.670	3.235
0.0	0.000	0.842	1.282	1.751	2.054	2.326	2.576	3.090
-0.1	0.017	0.836	1.270	1.761	2.000	2.252	2.482	3.950
-0.2	0.033	0.850	1.258	1.680	1.945	2.128	2.388	2.810
-0.3	0.050	0.853	1.245	1.643	1.890	2.104	2.294	2.675
-0.4	0.066	0.855	1.231	1.606	1.834	2.029	2.201	2.540
-0.5	0.083	0.856	1.216	1.567	1.777	1.955	2.108	2.400
-0.6	0.099	0.857	1.200	1.528	1.720	1.880	2.016	2.275
-0.7	0.116	0.857	1.183	1.488	1.663	1.806	1.926	2.150
-0.8	0.132	0.856	1.166	1.448	1.606	1.733	1.837	2.035
-0.9	0.148	0.854	1.147	1.407	1.549	1.660	1.749	1.910
-1.0	0.164	0.852	1.128	1.366	1.492	1.588	1.664	1.800
-1.2	0.195	0.844	1.086	1.282	1.379	1.449	1.501	1.625
-1.4	0.225	0.832	1.041	1.198	1.270	1.318	1.351	1.465
-1.6	0.254	0.817	0.994	1.116	1.166	1.197	1.216	1.280
-1.8	0.282	0.799	0.945	1.035	1.069	1.087	1.097	1.130
-2.0	0.307	0.777	0.895	0.959	0.980	0.990	1.995	1.000
-2.2	0.330	0.752	0.844	0.888	0.900	0.905	0.907	0.910
-2.5	0.360	0.711	0.771	0.792	0.798	0.799	0.800	0.802
-3.0	0.396	0.636	0.660	0.666	0.666	0.667	0.667	0.668

Lampiran 5 Tiral and Error

2 TAHUN			
1			
R2= 111.7485066			A1
A= 0.062602			
Lo= 187.4592	n= 0.013		
L1= 529.1601	B= 1.50		
C= 0.5	y= 0.388492		
So= 0.010242647	As= 0.582738		
(So)*0.5	0.101206	P= 2.276984	
V= 0.000745	R= 0.255925		
W= 4.656188	V= 3.1381		
X= 0.032309	Qs= 1.8287		
Y= 0.018881	Qt= 1.8287		
CekA(Qs-Qt)	0.0000		
y.persamaan	y	Δ	
	2		
0.2803	1.14016	0.859845	
0.3051	0.72261	0.417549	
0.3339	0.52826	0.19435	
0.3591	0.44369	0.08457	
0.3752	0.40945	0.034236	
0.3831	0.39629	0.013158	
0.3864	0.39137	0.004922	
0.3877	0.38955	0.00182	
0.3882	0.38888	0.00067	
0.3884	0.38863	0.000246	
0.3885	0.38854	9.04E-05	
2			
R2= 111.7485066			A2
A= 0.068114			
Lo= 163.6777	n= 0.013		
L1= 464.5171	B= 1.00		
C= 0.5	y= 0.899859		
So= 0.002518745	As= 0.899859		
(So)*0.5	0.050187	P= 2.799717	
V= 0.002452	R= 0.321411		
W= 4.656188	V= 1.8114		
X= 0.035511	Qs= 1.6300		
Y= 0.033423	Qt= 1.6300		
CekA(Qs-Qt)	0.0000		
y.persamaan	y	Δ	
	2		
1.0276	1.51378	0.48622	
0.8485	1.18116	0.332622	
0.8705	1.02583	0.155325	
0.8850	0.95541	0.070423	
0.8929	0.92415	0.031263	
0.8967	0.91043	0.013713	
0.8985	0.90445	0.005979	
0.8993	0.90185	0.0026	
0.8996	0.90072	0.001129	
0.8997	0.90023	0.00049	
0.8998	0.90002	0.000213	
0.8998	0.89993	9.23E-05	
3			
R2= 111.7485066			A3
A= 0.040366			
Lo= 99.175	n= 0.7		
L1= 288.717	B= 1.40		
C= 0.5	y= 2.167261		
So= 0.003186511	As= 0.3034166		
(So)*0.5	0.056449	P= 5.734523	
V= 0.049698	R= 0.529105		
W= 4.656188	V= 0.0528		
X= 0.062316	Qs= 0.1601		
Y= 0.994512	Qt= 0.1621		
CekA(Qs-Qt)	-0.0021		
y.persamaan	y	Δ	
	2		
14.6838	8.3419	6.341903	
2.0657	5.20378	3.138119	
2.0886	3.64618	1.557601	
2.1136	2.8799	0.766279	
2.1351	2.50749	0.372412	
2.1498	2.32865	0.178838	
2.1584	2.24353	0.085122	
2.1629	2.20323	0.040299	
2.1652	2.18421	0.019023	
2.1663	2.17524	0.008967	
2.1668	2.17102	0.004224	
2.1670	2.16903	0.001989	
2.1672	2.16809	0.000936	
2.1672	2.16765	0.000441	
2.1672	2.16745	0.000208	
2.1673	2.16735	9.77E-05	
4			
R2= 111.7485066			A4
A= 0.093702			
Lo= 271.5987	n= 0.013		
L1= 592.9643	B= 1.00		
C= 0.5	y= 0.851209		
So= 0.006627718	As= 0.851209		
(So)*0.5	0.081411	P= 2.702417	
V= 0.002080	R= 0.31498		
W= 4.656188	V= 2.8991		
X= 0.035645	Qs= 2.4677		
Y= 0.026302	Qt= 2.4677		
CekA(Qs-Qt)	0.0000		
y.persamaan	y	Δ	
	2		
0.8703	1.43516	0.564844	
0.7975	1.11633	0.318824	
0.8207	0.96852	0.147817	
0.8359	0.90222	0.066296	
0.8441	0.87318	0.029039	
0.8481	0.86063	0.012551	
0.8498	0.85524	0.00539	
0.8506	0.85293	0.002308	
0.8510	0.85194	0.000987	
0.8511	0.85152	0.000422	
0.8512	0.85134	0.00018	
0.8512	0.85127	7.7E-05	
0.8512	0.85123	3.29E-05	

5 TAHUN			
1			
R5= 151.137662			A1
A= 0.062602			
Lo= 187.4592	n= 0.013		
L1= 529.1601	B= 1.50		
C= 0.5	y= 0.49386		
So= 0.01024265	As= 0.74079		
(So)*0.5	0.101206	P= 2.48772	
V= 0.000745	R= 0.29778		
W= 6.297403	V= 3.4716		
X= 0.032309	Qs= 2.5717		
Y= 0.018881	Qt= 2.5717		
CekA(Qs-Qt)	0.0000		
y.persamaan	y	Δ	
	2		
0.3791	1.1895572	0.81044	
0.4095	0.799547	0.39001	
0.4419	0.6207255	0.17882	
0.4674	0.544041	0.07668	
0.4822	0.5131316	0.03091	
0.4892	0.5011563	0.01198	
0.4921	0.4966054	0.00455	
0.4932	0.4948899	0.00172	
0.4936	0.4942454	0.00064	
0.4938	0.4940035	0.00024	
0.4938	0.4939127	9.1E-05	
2			
R5= 151.137662			A2
A= 0.068114			
Lo= 163.6777	n= 0.013		
L1= 464.5171	B= 1.00		
C= 0.5	y= 1.17773		
So= 0.00251874	As= 1.17773		
(So)*0.5	0.050187	P= 3.35545	
V= 0.002452	R= 0.350999		
W= 6.297403	V= 1.9209		
X= 0.035511	Qs= 2.2623		
Y= 0.033423	Qt= 2.2623		
CekA(Qs-Qt)	0.0000		
y.persamaan	y	Δ	
	2		
1.3898	1.6948769	0.30512	
1.1359	1.4153967	0.27948	
1.1551	1.2852548	0.13014	
1.1666	1.2259153	0.05934	
1.1725	1.1992155	0.0267	
1.1754	1.1872865	0.01193	
1.1767	1.1819749	0.00531	
1.1773	1.1796136	0.00236	
1.1775	1.1785647	0.00105	
1.1776	1.1780988	0.00047	
1.1777	1.177892	0.00021	
1.1777	1.1778001	9.2E-05	
3			
R5= 151.137662			A3
A= 0.040366			
Lo= 99.175	n= 0.7		
L1= 288.717	B= 0.70		
C= 0.5	y= 6.54694		
So= 0.00318651	As= 4.58286		
(So)*0.5	0.056449	P= 13.7939	
V= 0.099397	R= 0.33224		
W= 6.297403	V= 0.0387		
X= 0.062316	Qs= 0.1773		
Y= 0.994512	Qt= 0.1790		
CekA(Qs-Qt)	-0.0017		
y.persamaan	y	Δ	
	2		
52.5818	27.290921	25.2909	
6.4866	16.888764	10.4022	
6.4985	11.693625	5.19514	
6.5122	9.1029316	2.59069	
6.5249	7.813903	1.28903	
6.5342	7.1740662	0.63984	
6.5401	6.8570823	0.31698	
6.5434	6.700243	0.15684	
6.5452	6.6226978	0.07755	
6.5460	6.5843724	0.03833	
6.5465	6.5654347	0.01894	
6.5467	6.5560779	0.00936	
6.5468	6.5514551	0.00462	
6.5469	6.5491712	0.00228	
6.5469	6.5480429	0.00113	
6.5469	6.5474855	0.00056	
4			
R5= 151.137662			A4
A= 0.093702			
Lo= 271.5987	n= 0.013		
L1= 592.9643	B= 1.00		
C= 0.5	y= 1.11068		
So= 0.00662772	As= 1.11068		
(So)*0.5	0.081411	P= 3.22136	
V= 0.002080	R= 0.34479		
W= 6.297403	V= 3.0792		
X= 0.035645	Qs= 3.4200		
Y= 0.026302	Qt= 3.4200		
CekA(Qs-Qt)	0.0000		
y.persamaan	y	Δ	
	2		
1.1771	1.58854	0.41146	
1.0676	1.3280729	0.26047	
1.0876	1.2078595	0.12021	
1.0995	1.1536667	0.05419	
1.1055	1.1295916	0.02408	
1.1084	1.1189781	0.01061	
1.1097	1.1143163	0.00466	
1.1102	1.112272	0.00204	
1.1105	1.1113763	0.0009	
1.1106	1.1109839	0.00039	
1.1106	1.1108121	0.00017	
1.1107	1.1107368	7.5E-05	
1.1107	1.1107039	3.3E-05	

10 TAHUN			
1			
R5= 178.3947956			A1
A= 0.062602			
Lo= 187.4592	n= 0.013		
L1= 529.1601	B= 1.50		
C= 0.5	y= 0.56421162		
So= 0.010242647	As= 0.84631743		
(So)*0.5	P= 2.62842324		
V= 0.000745	R= 0.32198674		
W= 7.433116	V= 3.6573		
X= 0.032309	Qs= 3.0952		
Y= 0.018881	Qt= 3.0952		
CekA(Qs-Qt)	0.0000		
y.persamaan	y	Δ	
	2		
0.4475	1.22374	0.77625678	
0.4811	0.8524	0.37134464	
0.5147	0.68357	0.16883292	
0.5396	0.6116	0.07196081	
0.5535	0.58258	0.0290294	
0.5599	0.57125	0.01132939	
0.5625	0.56689	0.00435266	
0.5636	0.56523	0.00166131	
0.5640	0.5646	0.00063244	
0.5641	0.56436	0.00024052	
0.5642	0.56427	9.1439E-05	
2			
R5= 178.3947956			A2
A= 0.068114			
Lo= 163.6777	n= 0.013		
L1= 464.5171	B= 1.00		
C= 0.5	y= 1.368086		
So= 0.002518745	As= 1.368086		
(So)*0.5	P= 3.73617201		
V= 0.002452	R= 0.36617318		
W= 7.433116	V= 1.9759		
X= 0.035511	Qs= 2.7033		
Y= 0.033423	Qt= 2.7033		
CekA(Qs-Qt)	0.0000		
y.persamaan	y	Δ	
	2		
1.6404	1.8202	0.17980452	
1.3327	1.57644	0.24375605	
1.3495	1.46296	0.11347466	
1.3590	1.411	0.05196843	
1.3639	1.38743	0.02357105	
1.3661	1.37679	0.01063773	
1.3672	1.372	0.00478937	
1.3677	1.36984	0.00215389	
1.3679	1.36888	0.00096817	
1.3680	1.36844	0.00043509	
1.3681	1.36825	0.00019551	
1.3681	1.36816	8.746E-05	
3			
R5= 178.3947956			A3
A= 0.040366			
Lo= 99.175	n= 0.7		
L1= 288.717	B= 1.00		
C= 0.5	y= 7.71366499		
So= 0.003186511	As= 5.39956549		
(So)*0.5	P= 16.12733		
V= 0.099397	R= 0.33480484		
W= 7.433116	V= 0.0389		
X= 0.062316	Qs= 0.2100		
Y= 0.994512	Qt= 0.2120		
CekA(Qs-Qt)	-0.0020		
y.persamaan	y	Δ	
	2		
62.0648	32.0324	30.03239399	
7.6531	19.8427	12.18966615	
7.6650	13.7539	6.08886448	
7.6788	10.7163	3.03752825	
7.6915	9.20391	1.51242411	
7.7009	8.45239	0.75115717	
7.7068	8.07958	0.37281143	
7.7101	7.89484	0.18474348	
7.7119	7.80335	0.09149085	
7.7128	7.75805	0.05254901	
7.7132	7.73563	0.02241963	
7.7134	7.72454	0.01109632	
7.7136	7.71905	0.00549174	
7.7136	7.71633	0.00271789	
7.7136	7.71498	0.00134508	
7.7137	7.71432	0.00066568	
4			
R5= 178.3947956			A4
A= 0.093702			
Lo= 271.5987	n= 0.013		
L1= 592.9643	B= 1.00		
C= 0.5	y= 1.2881751		
So= 0.006627718	As= 1.2881751		
(So)*0.5	P= 3.57653021		
V= 0.081411	R= 0.36019266		
W= 7.433116	V= 3.1703		
X= 0.035645	Qs= 4.0839		
Y= 0.026302	Qt= 4.0839		
CekA(Qs-Qt)	0.0000		
y.persamaan	y	Δ	
	2		
1.3894	1.69468	0.30531891	
1.2524	1.47355	0.22113542	
1.2697	1.3716	0.10194406	
1.2793	1.32544	0.04615791	
1.2841	1.30476	0.02606165	
1.2863	1.29554	0.00921757	
1.2873	1.29145	0.00409786	
1.2878	1.28963	0.00181977	
1.2880	1.28882	0.00080764	
1.2881	1.28846	0.00035837	
1.2881	1.2883	0.0001595	
1.2882	1.28823	7.0545E-05	
1.2882	1.2882	3.1297E-05	

5				
R2= 111.7485066				A5
A= 0.067634	n= 0.013			
Lo= 142.4456	B= 0.50			
L1= 288.8139				
C= 0.5	y= 2.196092			
So= 0.004154925	As= 1.098046			
(So)*0.5	P= 4.892185			
V= 0.003792	R= 0.224449			
W= 4.656188	V= 1.8313			
X= 0.033276	Qs= 2.0108			
Y= 0.016180	Qt= 2.0108			
CekΔ(Qs-Qt)	0.0000			
y.persamaan				
y	2	Δ		
2.0755	2.03776	0.037764		
2.2033	2.12053	0.082764		
2.1994	2.15996	0.039436		
2.1976	2.1788	0.018841		
2.1968	2.18782	0.009012		
2.1964	2.19213	0.004313		
2.1963	2.1942	0.002065		
2.1962	2.19518	0.000989		
2.1961	2.19566	0.000473		
2.1961	2.19588	0.000227		
2.1961	2.19599	0.000109		
2.1961	2.19604	5.2E-05		
6				
R2= 111.7485066				A6
A= 0.042646	n= 0.013			
Lo= 125.6607	B= 0.50			
L1= 288.8139				
C= 0.5	y= 1.336503			
So= 0.005262905	As= 0.668251			
(So)*0.5	P= 3.173006			
V= 0.002124	R= 0.210605			
W= 4.656188	V= 1.9754			
X= 0.031950	Qs= 1.3200			
Y= 0.014376	Qt= 1.3200			
CekΔ(Qs-Qt)	0.0000			
y.persamaan				
y	2	Δ		
1.1751	1.58755	0.412445		
1.3225	1.455	0.132552		
1.3293	1.39215	0.062852		
1.3330	1.36256	0.029588		
1.3348	1.34869	0.013873		
1.3357	1.3422	0.006492		
1.3361	1.33916	0.003035		
1.3363	1.33775	0.001418		
1.3364	1.33708	0.000662		
1.3365	1.33677	0.000309		
1.3365	1.33663	0.000145		
1.3365	1.33656	6.75E-05		
7				
R2= 111.7485066				A7
A= 0.10263	n= 0.013			
Lo= 263.5378	B= 1.00			
L1= 675.099				
C= 0.5	y= 0.915026			
So= 0.005599179	As= 0.915026			
(So)*0.5	P= 2.830052			
V= 0.002478	R= 0.323325			
W= 4.656188	V= 2.7115			
X= 0.035969	Qs= 2.4811			
Y= 0.032580	Qt= 2.4811			
CekΔ(Qs-Qt)	0.0000			
y.persamaan				
y	2	Δ		
1.0339	1.51696	0.483035		
0.8641	1.19051	0.326453		
0.8861	1.03828	0.152228		
0.9004	0.96935	0.068936		
0.9082	0.93877	0.030579		
0.9120	0.92536	0.013407		
0.9137	0.91952	0.005845		
0.9144	0.91698	0.002541		
0.9148	0.91587	0.001104		
0.9149	0.91539	0.000479		
0.9150	0.91519	0.000208		
0.9150	0.9151	9.02E-05		
8				
R2= 111.7485066				A8
A= 0.092388	n= 0.013			
Lo= 230.1523	B= 0.50			
L1= 475.6005				
C= 0.5	y= 3.452464			
So= 0.000862068	As= 1.726232			
(So)*0.5	P= 7.404927			
V= 0.011372	R= 0.233119			
W= 4.656188	V= 0.8555			
X= 0.041111	Qs= 1.4768			
Y= 0.058494	Qt= 1.4768			
CekΔ(Qs-Qt)	0.0000			
y.persamaan				
y	2	Δ		
5.8679	3.93397	1.933968		
3.4434	3.6887	0.245271		
3.4477	3.56822	0.120477		
3.4501	3.50915	0.059073		
3.4513	3.48021	0.028936		
3.4519	3.46604	0.014167		
3.4522	3.45911	0.006934		
3.4523	3.45572	0.003394		
3.4524	3.45406	0.001661		
3.4524	3.45324	0.000813		
3.4524	3.45284	0.000398		
3.4525	3.45265	0.000195		
3.4525	3.45255	9.52E-05		
3.4525	3.45251	4.66E-05		
3.4525	3.45249	2.28E-05		
3.4525	3.45247	1.12E-05		
3.4525	3.45247	5.46E-06		

5				
R5= 151.137662				A5
A= 0.067634	n= 0.013			
Lo= 142.4456	B= 0.50			
L1= 288.8139				
C= 0.5	y= 2.93811			
So= 0.00415492	As= 1.46906			
(So)*0.5	P= 6.37622			
V= 0.003792	R= 0.2304			
W= 6.297403	V= 1.8635			
X= 0.033276	Qs= 2.7375			
Y= 0.016180	Qt= 2.7375			
CekΔ(Qs-Qt)	0.0000			
y.persamaan				
y	2	Δ		
2.8071	2.4035554	0.40356		
2.9593	2.6814204	0.27787		
2.9473	2.8143396	0.13292		
2.9423	2.8783296	0.06399		
2.9401	2.9092145	0.03088		
2.9391	2.9241381	0.01492		
2.9386	2.931353	0.00721		
2.9383	2.934842	0.00349		
2.9382	2.9365294	0.00169		
2.9382	2.9373456	0.00082		
2.9381	2.9377403	0.00039		
2.9381	2.9379312	0.00019		
6				
R5= 151.137662				A6
A= 0.042646	n= 0.013			
Lo= 125.6607	B= 0.50			
L1= 288.8139				
C= 0.5	y= 1.77761			
So= 0.0052629	As= 0.8888			
(So)*0.5	P= 4.05522			
V= 0.002124	R= 0.21918			
W= 6.297403	V= 2.0286			
X= 0.031950	Qs= 1.8030			
Y= 0.014376	Qt= 1.8030			
CekΔ(Qs-Qt)	0.0000			
y.persamaan				
y	2	Δ		
1.5893	1.7946562	0.20534		
1.7767	1.7856941	0.00896		
1.7772	1.7814425	0.00425		
1.7774	1.7794263	0.00202		
1.7775	1.7784703	0.00096		
1.7776	1.7780171	0.00045		
1.7776	1.7778023	0.00021		
1.7776	1.7777004	0.0001		
1.7776	1.7776521	4.8E-05		
1.7776	1.7776292	2.3E-05		
1.7776	1.7776184	1.1E-05		
1.7776	1.7776132	5.1E-06		
7				
R5= 151.137662				A7
A= 0.10263	n= 0.013			
Lo= 263.5378	B= 1.00			
L1= 675.099				
C= 0.5	y= 1.19758			
So= 0.00559918	As= 1.19758			
(So)*0.5	P= 3.39516			
V= 0.002478	R= 0.35273			
W= 6.297403	V= 2.8735			
X= 0.035969	Qs= 3.4413			
Y= 0.032580	Qt= 3.4413			
CekΔ(Qs-Qt)	0.0000			
y.persamaan				
y	2	Δ		
1.3984	1.699185	0.30082		
1.1565	1.4278668	0.27132		
1.1755	1.301699	0.12617		
1.1868	1.244225	0.05747		
1.1925	1.2183772	0.02585		
1.1953	1.2068312	0.01155		
1.1965	1.2016905	0.00514		
1.1971	1.1994051	0.00229		
1.1974	1.1983898	0.00102		
1.1975	1.1979389	0.00045		
1.1975	1.1977386	0.0002		
1.1976	1.1976497	8.9E-05		
8				
R5= 151.137662				A8
A= 0.092388	n= 0.013			
Lo= 230.1523	B= 0.50			
L1= 475.6005				
C= 0.5	y= 4.64367			
So= 0.00086207	As= 2.32184			
(So)*0.5	P= 9.78734			
V= 0.011372	R= 0.23723			
W= 6.297403	V= 0.8655			
X= 0.041111	Qs= 2.0096			
Y= 0.058494	Qt= 2.0096			
CekΔ(Qs-Qt)	0.0000			
y.persamaan				
y	2	Δ		
7.9363	4.9681344	2.96813		
4.6388	4.8034473	0.16469		
4.6412	4.7223094	0.08114		
4.6424	4.6823648	0.03994		
4.6431	4.6627076	0.01966		
4.6434	4.653036	0.00967		
4.6435	4.6482779	0.00476		
4.6436	4.6459373	0.00234		
4.6436	4.6447858	0.00115		
4.6437	4.6442194	0.00057		
4.6437	4.6439408	0.00028		
4.6437	4.6438037	0.00014		
4.6437	4.6437363	6.7E-05		
4.6437	4.6437031	3.3E-05		
4.6437	4.6436868	1.6E-05		
4.6437	4.6436788	8E-06		
4.6437	4.6436748	3.9E-06		

5				
R5= 178.3947956				A5
A= 0.067634	n= 0.013			
Lo= 142.4456	B= 0.50			
L1= 288.8139				
C= 0.5	y= 3.45109737			
So= 0.004154925	As= 1.72554868			
(So)*0.5	P= 7.40219474			
V= 0.003792	R= 0.23311312			
W= 7.433116	V= 1.8781			
X= 0.033276	Qs= 3.2407			
Y= 0.016180	Qt= 3.2407			
CekΔ(Qs-Qt)	0.0000			
y.persamaan	y	Δ		
	2	2		
3.3134	2.65668	0.65668151		
3.4799	3.06831	0.41162608		
3.4632	3.26574	0.19743689		
3.4566	3.36117	0.09542997		
3.4537	3.40743	0.04626038		
3.4523	3.42989	0.02245362		
3.4517	3.44079	0.01090483		
3.4514	3.44609	0.00529752		
3.4512	3.44866	0.00257386		
3.4512	3.44992	0.00125062		
3.4511	3.45052	0.00060768		
3.4511	3.45082	0.00029528		
6				
R5= 178.3947956				A6
A= 0.042646	n= 0.013			
Lo= 125.6607	B= 0.50			
L1= 288.8139				
C= 0.5	y= 2.08216058			
So= 0.005262905	As= 1.04108029			
(So)*0.5	P= 4.66432117			
V= 0.002124	R= 0.22320067			
W= 7.433116	V= 2.0534			
X= 0.031950	Qs= 2.1377			
Y= 0.014376	Qt= 2.1377			
CekΔ(Qs-Qt)	0.0000			
y.persamaan	y	Δ		
	2	2		
1.8759	1.93797	0.06203038		
2.0892	2.01356	0.07559041		
2.0854	2.04946	0.0359032		
2.0837	2.06656	0.01709984		
2.0829	2.07472	0.00815423		
2.0825	2.07861	0.00385903		
2.0823	2.08046	0.00185683		
2.0822	2.08135	0.00088963		
2.0822	2.08177	0.00042307		
2.0822	2.08198	0.00020196		
2.0822	2.08207	0.6408E-05		
2.0822	2.08212	4.6022E-05		
7				
R5= 178.3947956				A7
A= 0.10263	n= 0.013			
Lo= 263.5378	B= 1.00			
L1= 675.099				
C= 0.5	y= 1.39116465			
So= 0.005599179	As= 1.39116465			
(So)*0.5	P= 3.78232393			
V= 0.002478	R= 0.36780069			
W= 7.433116	V= 2.9548			
X= 0.035969	Qs= 4.1106			
Y= 0.032580	Qt= 4.1106			
CekΔ(Qs-Qt)	0.0000			
y.persamaan	y	Δ		
	2	2		
1.6506	1.82528	0.17471952		
1.3568	1.59104	0.23424435		
1.3732	1.48213	0.1089031		
1.3825	1.4323	0.04983538		
1.3871	1.4097	0.02259539		
1.3893	1.39951	0.01096371		
1.3903	1.39492	0.00459072		
1.3908	1.39285	0.00206473		
1.3910	1.39192	0.00091819		
1.3911	1.39151	0.00042718		
1.3911	1.39132	0.00018748		
1.3911	1.39123	8.4252E-05		
8				
R5= 178.3947956				A8
A= 0.092388	n= 0.013			
Lo= 230.1523	B= 0.50			
L1= 475.6005				
C= 0.5	y= 5.46773894			
So= 0.000862068	As= 2.73386947			
(So)*0.5	P= 11.47547991			
V= 0.011372	R= 0.23906911			
W= 7.433116	V= 0.8700			
X= 0.041111	Qs= 2.3784			
Y= 0.058494	Qt= 2.3784			
CekΔ(Qs-Qt)	0.0000			
y.persamaan	y	Δ		
	2	2		
9.3675	5.68377	3.68377317		
5.4649	5.57432	0.10945796		
5.4663	5.5203	0.05401265		
5.4670	5.49366	0.02662527		
5.4674	5.48052	0.01313927		
5.4676	5.47404	0.00647923		
5.4677	5.47085	0.00319488		
5.4677	5.46927	0.00015734		
5.4677	5.46849	0.00077677		
5.4677	5.46811	0.000383		
5.4677	5.46792	0.00018885		
5.4677	5.46783	9.3116E-05		
5.4677	5.46778	4.5913E-05		
5.4677	5.46776	2.2638E-05		
5.4677	5.46775	1.1162E-05		
5.4677	5.46774	5.5038E-06		
5.4677	5.46774	2.7138E-06		

9			
R2= 111.7485066			A9
A= 0.018454	n= 0.013		
Lo= 91.6633	B= 1.00		
L1= 234.6115	C= 0.5	y= 0.396211	
So= 0.002259054	As= 0.396211		
(So)*0.5	P= 1.792422		
V= 0.000702	R= 0.221048		
W= 4.656188	V= 1.3366		
X= 0.032528	Qs= 0.5296		
Y= 0.017825	Qt= 0.5296		
CekΔ(Qs-Qt)	0.0000		
y.persamaan			
y	2	Δ	
0.3026	1.15129	0.848708	
0.3277	0.73951	0.411781	
0.3503	0.54491	0.194605	
0.3705	0.45771	0.087195	
0.3840	0.42084	0.036872	
0.3910	0.4059	0.014935	
0.3941	0.4	0.005908	
0.3954	0.39768	0.002312	
0.3959	0.39678	0.000901	
0.3961	0.39643	0.00035	
0.3962	0.3963	0.000136	
0.3962	0.39624	5.29E-05	
10			
R2= 111.7485066			B1
A= 0.150557	n= 0.013		
Lo= 151.4449	B= 1.50		
L1= 1127.553	C= 0.5	y= 0.717981	
So= 0.004505331	As= 1.076971		
(So)*0.5	P= 2.935962		
V= 0.002702	R= 0.366821		
W= 4.656188	V= 2.6458		
X= 0.033392	Qs= 2.8494		
Y= 0.060662	Qt= 2.8494		
CekΔ(Qs-Qt)	0.0000		
y.persamaan			
y	2	Δ	
1.0045	1.50227	0.497728	
0.6485	1.07537	0.426898	
0.6759	0.87562	0.199754	
0.6960	0.7858	0.089818	
0.7077	0.74673	0.039072	
0.7134	0.73008	0.016653	
0.7160	0.72305	0.007024	
0.7172	0.7201	0.002948	
0.7176	0.71887	0.001235	
0.7178	0.71835	0.000517	
0.7179	0.71814	0.000216	
0.7180	0.71805	9.05E-05	
11			
R2= 111.7485066			B2
A= 0.0574251	n= 0.013		
Lo= 99.945	B= 1.40		
L1= 578.3415	C= 0.5	y= 0.740553	
So= 0.000363107	As= 1.036774		
(So)*0.5	P= 2.881106		
V= 0.003890	R= 0.359853		
W= 4.656188	V= 0.7416		
X= 0.038443	Qs= 0.7688		
Y= 0.109599	Qt= 0.7688		
CekΔ(Qs-Qt)	0.0000		
y.persamaan			
y	2	Δ	
1.4056	1.7028	0.297195	
0.6735	1.18816	0.514648	
0.6979	0.94305	0.245112	
0.7172	0.8301	0.112944	
0.7291	0.77959	0.050515	
0.7353	0.75744	0.022149	
0.7382	0.74783	0.009607	
0.7395	0.74368	0.004146	
0.7401	0.7419	0.001785	
0.7404	0.74113	0.000768	
0.7405	0.7408	0.00033	
0.7405	0.74066	0.000142	
0.7405	0.7406	6.09E-05	
12			
R2= 111.7485066			B3
A= 0.023211	n= 0.013		
Lo= 89.8416	B= 1.20		
L1= 322.6224	C= 0.5	y= 0.289347	
So= 0.006292186	As= 0.347217		
(So)*0.5	P= 1.778695		
V= 0.000441	R= 0.195209		
W= 4.656188	V= 2.0533		
X= 0.029761	Qs= 0.7129		
Y= 0.014687	Qt= 0.7129		
CekΔ(Qs-Qt)	0.0000		
y.persamaan			
y	2	Δ	
0.1837	1.09185	0.908151	
0.2159	0.65389	0.437964	
0.2374	0.44564	0.208248	
0.2589	0.35226	0.09338	
0.2746	0.31344	0.038821	
0.2832	0.29831	0.015126	
0.2870	0.29264	0.005671	
0.2885	0.29055	0.002089	
0.2890	0.28979	0.000764	
0.2892	0.28951	0.000279	
0.2893	0.28941	0.000102	
0.2893	0.28937	3.7E-05	
0.2893	0.28935	1.35E-05	
0.2893	0.28935	4.91E-06	
0.2893	0.28935	1.79E-06	
0.2893	0.28935	6.52E-07	

9			
R5= 151.137662			A9
A= 0.018454	n= 0.013		
Lo= 91.6633	B= 1.00		
L1= 234.6115	C= 0.5	y= 0.50816	
So= 0.00225905	As= 0.50816		
(So)*0.5	P= 2.01633		
V= 0.000702	R= 0.25202		
W= 6.297403	V= 1.4588		
X= 0.032528	Qs= 0.7413		
Y= 0.017825	Qt= 0.7413		
CekΔ(Qs-Qt)	0.0000		
y.persamaan			
y	2	Δ	
0.4092	1.2046189	0.79538	
0.4407	0.8226396	0.38198	
0.4655	0.6440712	0.17857	
0.4855	0.5647653	0.07931	
0.4976	0.5311918	0.03357	
0.5037	0.5174222	0.01377	
0.5063	0.5118665	0.00556	
0.5074	0.5096413	0.00223	
0.5079	0.5087528	0.00089	
0.5080	0.5083985	0.00035	
0.5081	0.5082573	0.00014	
0.5081	0.508201	5.6E-05	
10			
R5= 151.137662			B1
A= 0.150557	n= 0.013		
Lo= 151.4449	B= 1.00		
L1= 1127.553	C= 0.5	y= 1.45029	
So= 0.00450533	As= 1.45029		
(So)*0.5	P= 3.90057		
V= 0.004053	R= 0.37181		
W= 6.297403	V= 2.6697		
X= 0.033392	Qs= 3.8719		
Y= 0.060662	Qt= 3.8719		
CekΔ(Qs-Qt)	0.0000		
y.persamaan			
y	2	Δ	
2.3442	2.1720979	0.1721	
1.4092	1.7906338	0.38146	
1.4271	1.60889	0.18174	
1.4384	1.5236482	0.08524	
1.4445	1.4840822	0.03957	
1.4476	1.4658237	0.01826	
1.4490	1.4574228	0.0084	
1.4497	1.453563	0.00386	
1.4500	1.4517907	0.00177	
1.4502	1.4509772	0.00081	
1.4502	1.4506039	0.00037	
1.4503	1.4504325	0.00017	
11			
R5= 151.137662			B2
A= 0.0574251	n= 0.013		
Lo= 99.945	B= 1.40		
L1= 578.3415	C= 0.5	y= 0.96693	
So= 0.00036311	As= 1.3537		
(So)*0.5	P= 3.33386		
V= 0.003890	R= 0.40605		
W= 6.297403	V= 0.8038		
X= 0.038443	Qs= 1.0880		
Y= 0.109599	Qt= 1.0880		
CekΔ(Qs-Qt)	0.0000		
y.persamaan			
y	2	Δ	
1.9011	1.9505297	0.04947	
0.9006	1.4255431	0.52499	
0.9262	1.1758471	0.2497	
0.9450	1.0604377	0.11541	
0.9562	1.0083387	0.0521	
0.9620	0.9851664	0.02317	
0.9647	0.9749406	0.01023	
0.9659	0.9704449	0.0045	
0.9665	0.9684718	0.00197	
0.9667	0.9676065	0.00087	
0.9668	0.9672271	0.00038	
0.9669	0.9670608	0.00017	
0.9669	0.9669879	7.3E-05	
12			
R5= 151.137662			B3
A= 0.023211	n= 0.013		
Lo= 89.8416	B= 1.20		
L1= 322.6224	C= 0.5	y= 0.3674	
So= 0.00629218	As= 0.44088		
(So)*0.5	P= 1.9348		
V= 0.000441	R= 0.22787		
W= 6.297403	V= 2.2764		
X= 0.029761	Qs= 1.0036		
Y= 0.014687	Qt= 1.0036		
CekΔ(Qs-Qt)	0.0000		
y.persamaan			
y	2	Δ	
0.2484	1.1242243	0.87578	
0.2907	0.7074492	0.41678	
0.3159	0.5116808	0.19577	
0.3389	0.4252734	0.08641	
0.3541	0.3897088	0.03556	
0.3619	0.3758205	0.01389	
0.3653	0.3705495	0.00527	
0.3666	0.3685741	0.00198	
0.3671	0.3678375	0.00074	
0.3673	0.3675633	0.00027	
0.3674	0.3674614	0.0001	
0.3674	0.3674235	3.8E-05	
0.3674	0.3674094	1.4E-05	
0.3674	0.3674041	5.2E-06	
0.3674	0.3674022	1.9E-06	
0.3674	0.3674015	7.2E-07	

9			
R5= 178.3947956			A9
A= 0.018454	n= 0.013		
Lo= 91.6633	B= 1.00		
L1= 234.6115	C= 0.5	y= 0.58365258	
So= 0.002259054	As= 0.58365258		
(So)*0.5	P= 2.16730517		
V= 0.000702	R= 0.26929876		
W= 7.433116	V= 1.5247		
X= 0.032528	Qs= 0.8899		
Y= 0.017825	Qt= 0.8899		
CekΔ(Qs-Qt)	0.0000		
y.persamaan		y	Δ
		2	2
0.4830	1.24152	0.75847885	
0.5182	0.87984	0.36168238	
0.5437	0.71175	0.16808707	
0.5629	0.63733	0.07442185	
0.5741	0.60572	0.03160782	
0.5796	0.59264	0.01308031	
0.5820	0.5873	0.00534295	
0.5830	0.58513	0.0021698	
0.5834	0.58425	0.00087901	
0.5835	0.58389	0.00035574	
0.5836	0.58375	0.00014391	
0.5836	0.58369	5.8207E-05	
10			
R5= 178.3947956			B1
A= 0.150557	n= 0.013		
Lo= 151.4449	B= 1.50		
L1= 1127.553	C= 0.5	y= 1.07852177	
So= 0.004505331	As= 1.61778265		
(So)*0.5	P= 3.65704354		
V= 0.002702	R= 0.44237446		
W= 7.433116	V= 2.9976		
X= 0.033392	Qs= 4.8495		
Y= 0.060662	Qt= 4.8495		
CekΔ(Qs-Qt)	0.0000		
y.persamaan		y	Δ
		2	2
1.6036	1.80182	0.19817586	
1.0155	1.40865	0.39317836	
1.0429	1.22576	0.18288951	
1.0606	1.14319	0.0825669	
1.0702	1.10669	0.03650157	
1.0748	1.09074	0.01594807	
1.0769	1.08381	0.00692783	
1.0778	1.08081	0.00300149	
1.0782	1.07951	0.00129888	
1.0784	1.07895	0.00056179	
1.0785	1.07871	0.00024293	
1.0785	1.0786	0.00010504	
11			
R5= 178.3947956			B2
A= 0.0574251	n= 0.013		
Lo= 99.945	B= 1.40		
L1= 578.3415	C= 0.5	y= 1.12141738	
So= 0.000363107	As= 1.56998434		
(So)*0.5	P= 3.64283477		
V= 0.003890	R= 0.43097874		
W= 7.433116	V= 0.8363		
X= 0.038443	Qs= 1.3130		
Y= 0.109599	Qt= 1.3130		
CekΔ(Qs-Qt)	0.0000		
y.persamaan		y	Δ
		2	2
2.2439	2.12195	0.12195434	
1.0560	1.58898	0.53297116	
1.0819	1.33545	0.25353614	
1.1004	1.21792	0.11752523	
1.1112	1.16454	0.05337824	
1.1167	1.1406	0.02394221	
1.1193	1.12993	0.01066895	
1.1205	1.12519	0.00473932	
1.1210	1.12309	0.00210225	
1.1212	1.12216	0.00093199	
1.1213	1.12175	0.00041298	
1.1214	1.12156	0.00018299	
1.1214	1.12148	8.108E-05	
12			
R5= 178.3947956			B3
A= 0.023211	n= 0.013		
Lo= 89.8416	B= 1.20		
L1= 322.6224	C= 0.5	y= 0.41943758	
So= 0.006292186	As= 0.50332545		
(So)*0.5	P= 2.03887576		
V= 0.000441	R= 0.24686421		
W= 7.433116	V= 2.4012		
X= 0.029761	Qs= 1.2086		
Y= 0.014687	Qt= 1.2086		
CekΔ(Qs-Qt)	0.0000		
y.persamaan		y	Δ
		2	2
0.2933	1.14663	0.85337226	
0.3420	0.74433	0.40229597	
0.3691	0.55673	0.18760211	
0.3924	0.47456	0.08217238	
0.4071	0.44082	0.03733634	
0.4144	0.42759	0.01323178	
0.4175	0.42252	0.00506838	
0.4187	0.4206	0.00192146	
0.4192	0.41988	0.00027544	
0.4193	0.4196	0.00027345	
0.4194	0.4195	0.00010301	
0.4194	0.41946	3.8798E-05	
0.4194	0.41945	1.4611E-05	
0.4194	0.41944	5.5024E-06	
0.4194	0.41944	2.0721E-06	
0.4194	0.41944	7.8037E-07	

13				
R2= 111.7485066				B4
A= 0.038215	n= 0.013			
Lo= 99.175	B= 0.70			
L1= 244.6719	C= 0.5	y= 0.837867		
So= 0.005681077	As= 0.586507			
(So)*0.5	P= 2.375373			
V= 0.001309	R= 0.246874			
W= 4.656188	V= 2.2817			
X= 0.030516	Qs= 1.3382			
Y= 0.011722	Qt= 1.3382			
CekΔ(Qs-Qt)	0.0000			
y.persamaan	y	Δ		
	2			
0.6518	1.32588	0.674122		
0.7956	1.06072	0.26516		
0.8141	0.93743	0.123288		
0.8260	0.88172	0.055711		
0.8323	0.85703	0.024686		
0.8354	0.84621	0.010821		
0.8368	0.84149	0.004718		
0.8374	0.83944	0.002052		
0.8377	0.83855	0.000892		
0.8378	0.83816	0.000387		
0.8378	0.838	0.000168		
0.8378	0.83792	7.3E-05		
14				
R2= 111.7485066				B5
A= 0.13954	n= 0.013			
Lo= 264.2726	B= 1.20			
L1= 854.3594	C= 0.5	y= 0.98892		
So= 0.003569926	As= 1.186704			
(So)*0.5	P= 3.177839			
V= 0.003517	R= 0.373431			
W= 4.656188	V= 2.3834			
X= 0.037364	Qs= 2.8284			
Y= 0.051636	Qt= 2.8284			
CekΔ(Qs-Qt)	0.0000			
y.persamaan	y	Δ		
	2			
1.3563	1.67817	0.321829		
0.9325	1.30534	0.372832		
0.9566	1.13096	0.174379		
0.9725	1.05172	0.079238		
0.9812	1.01645	0.035267		
0.9854	1.00094	0.015512		
0.9874	0.99416	0.006783		
0.9882	0.9912	0.002958		
0.9886	0.98991	0.001288		
0.9888	0.98935	0.000561		
0.9889	0.98911	0.000244		
0.9889	0.989	0.000106		
0.9889	0.98896	4.62E-05		
15				
R2= 111.7485066				C1
A= 0.029557	n= 0.013			
Lo= 151.0401	B= 1.00			
L1= 342.8568	C= 0.5	y= 0.462033		
So= 0.00335417	As= 0.462033			
(So)*0.5	P= 1.924067			
V= 0.000922	R= 0.240134			
W= 4.656188	V= 1.7211			
X= 0.034209	Qs= 0.7952			
Y= 0.021378	Qt= 0.7952			
CekΔ(Qs-Qt)	0.0000			
y.persamaan	y	Δ		
	2			
0.3912	1.19562	0.804381		
0.3954	0.7955	0.400121		
0.4187	0.6071	0.188396		
0.4384	0.52273	0.084373		
0.4508	0.48678	0.035948		
0.4572	0.47199	0.014792		
0.4600	0.46601	0.005975		
0.4612	0.46362	0.002393		
0.4617	0.46267	0.000955		
0.4619	0.46229	0.000381		
0.4620	0.46213	0.000152		
0.4620	0.46207	6.04E-05		
16				
R2= 111.7485066				C2
A= 0.134128	n= 0.013			
Lo= 148.6414	B= 0.60			
L1= 1089.4413	C= 0.5	y= 1.791978		
So= 0.004846521	As= 1.075187			
(So)*0.5	P= 4.183957			
V= 0.005802	R= 0.256979			
W= 4.656188	V= 2.1646			
X= 0.033085	Qs= 2.3273			
Y= 0.056511	Qt= 2.3273			
CekΔ(Qs-Qt)	0.0000			
y.persamaan	y	Δ		
	2			
2.9822	2.4911	0.491104		
1.7694	2.13027	0.360835		
1.7793	1.95479	0.175476		
1.7854	1.87008	0.084712		
1.7887	1.82938	0.040704		
1.7904	1.80987	0.019507		
1.7912	1.80053	0.009336		
1.7916	1.79607	0.004465		
1.7918	1.79393	0.002135		
1.7919	1.79291	0.001021		
1.7919	1.79243	0.000488		
1.7920	1.79219	0.000233		
1.7920	1.79208	0.000111		
1.7920	1.79203	5.33E-05		
1.7920	1.792	2.55E-05		
1.7920	1.79199	1.22E-05		

13				
R5= 151.137662				B4
A= 0.038215	n= 0.013			
Lo= 99.175	B= 0.70			
L1= 244.6719	C= 0.5	y= 1.09701		
So= 0.00568108	As= 0.76791			
(So)*0.5	P= 2.89403			
V= 0.001309	R= 0.26534			
W= 6.297403	V= 2.3941			
X= 0.030516	Qs= 1.8385			
Y= 0.011722	Qt= 1.8385			
CekΔ(Qs-Qt)	0.0000			
y.persamaan	y	Δ		
	2			
0.8815	1.4407441	0.55926		
1.0678	1.2542547	0.18649		
1.0818	1.1680267	0.08623		
1.0897	1.1288519	0.03917		
1.0936	1.1112363	0.01762		
1.0955	1.1033565	0.00788		
1.0963	1.0998405	0.00352		
1.0967	1.0982734	0.00157		
1.0969	1.0975754	0.0007		
1.0970	1.0972645	0.00031		
1.0970	1.097126	0.00014		
1.0970	1.0970644	6.2E-05		
14				
R5= 151.137662				B5
A= 0.13954	n= 0.013			
Lo= 264.2726	B= 1.20			
L1= 854.3594	C= 0.5	y= 1.2949		
So= 0.00356993	As= 1.55388			
(So)*0.5	P= 3.7898			
V= 0.003517	R= 0.41002			
W= 6.297403	V= 2.5366			
X= 0.037364	Qs= 3.9416			
Y= 0.051636	Qt= 3.9416			
CekΔ(Qs-Qt)	0.0000			
y.persamaan	y	Δ		
	2			
1.8344	1.9172132	0.08279		
1.2463	1.5817814	0.33543		
1.2683	1.4250449	0.15674		
1.2817	1.3533587	0.07169		
1.2887	1.3210216	0.03234		
1.2921	1.306543	0.01448		
1.2936	1.3000839	0.00646		
1.2943	1.2972073	0.00288		
1.2946	1.2959272	0.00128		
1.2948	1.2953578	0.00057		
1.2949	1.2951045	0.00025		
1.2949	1.2949918	0.00011		
1.2949	1.2949417	5E-05		
15				
R5= 151.137662				C1
A= 0.029557	n= 0.013			
Lo= 151.0401	B= 1.00			
L1= 342.8568	C= 0.5	y= 0.59504		
So= 0.00335417	As= 0.59504			
(So)*0.5	P= 2.19008			
V= 0.000922	R= 0.2717			
W= 6.297403	V= 1.8688			
X= 0.034209	Qs= 1.1120			
Y= 0.021378	Qt= 1.1120			
CekΔ(Qs-Qt)	0.0000			
y.persamaan	y	Δ		
	1			
0.5729	0.7864538	0.21355		
0.5673	0.6768865	0.10957		
0.5816	0.6292349	0.04765		
0.5891	0.60915	0.02008		
0.5925	0.6008287	0.00832		
0.5940	0.5974089	0.00342		
0.5946	0.5960083	0.0014		
0.5949	0.5954356	0.00057		
0.5950	0.5952016	0.00023		
0.5950	0.5951059	9.6E-05		
0.5950	0.5950669	3.9E-05		
0.5950	0.5950509	1.6E-05		
16				
R5= 151.137662				C2
A= 0.134128	n= 0.013			
Lo= 148.6414	B= 0.60			
L1= 1089.4413	C= 0.5	y= 2.39627		
So= 0.00484652	As= 1.43776			
(So)*0.5	P= 5.39253			
V= 0.005802	R= 0.26662			
W= 6.297403	V= 2.2184			
X= 0.033085	Qs= 3.1895			
Y= 0.056511	Qt= 3.1895			
CekΔ(Qs-Qt)	0.0000			
y.persamaan	y	Δ		
	2			
4.0334	3.0166885	1.01669		
2.3792	2.6979228	0.31877		
2.3870	2.5424642	0.15546		
2.3915	2.4669897	0.07547		
2.3939	2.4304449	0.03654		
2.3951	2.4127753	0.01767		
2.3957	2.4042382	0.00854		
2.3960	2.400115	0.00412		
2.3961	2.3981239	0.00199		
2.3962	2.3971625	0.00096		
2.3962	2.3966983	0.00046		
2.3963	2.3964742	0.00022		
2.3963	2.3963666	0.00011		
2.3963	2.3963138	5.2E-05		
2.3963	2.3962886	2.5E-05		
2.3963	2.3962764	1.2E-05		

13				
R5= 178.3947956				B4
A= 0.038215	n= 0.013			
Lo= 99.175	B= 0.70			
L1= 244.6719	C= 0.5	y= 1.27484819		
So= 0.005681077	As= 0.89239374			
(So)*0.5	P= 3.24969639			
V= 0.001309	R= 0.27460834			
W= 7.433116	V= 2.4495			
X= 0.030516	Qs= 2.1859			
Y= 0.011722	Qt= 2.1859			
CekΔ(Qs-Qt)	0.0000			
y.persamaan	y	Δ		
	2			
1.0405	1.52023	0.47976925		
1.2544	1.38733	0.1329017		
1.2647	1.32599	0.06133728		
1.2700	1.298	0.02798855		
1.2726	1.28531	0.01269351		
1.2738	1.27957	0.00573957		
1.2744	1.27698	0.00259158		
1.2746	1.27581	0.00116942		
1.2748	1.27528	0.00052753		
1.2748	1.27504	0.00023794		
1.2748	1.27494	0.00010731		
1.2748	1.27489	4.8399E-05		
14				
R5= 178.3947956				B5
A= 0.13954	n= 0.013			
Lo= 264.2726	B= 1.20			
L1= 854.3594	C= 0.5	y= 1.50446216		
So= 0.003569926	As= 1.80535459			
(So)*0.5	P= 4.20892431			
V= 0.003517	R= 0.42893491			
W= 7.433116	V= 2.6140			
X= 0.037364	Qs= 4.7193			
Y= 0.051636	Qt= 4.7193			
CekΔ(Qs-Qt)	0.0000			
y.persamaan	y	Δ		
	2			
	2			
2.1653	2.08263	0.08262996		
1.4611	1.77188	0.13074496		
1.4813	1.62658	0.14530523		
1.4930	1.55981	0.0667735		
1.4991	1.52945	0.03035999		
1.5020	1.51572	0.01372658		
1.5033	1.50953	0.00618928		
1.5040	1.50674	0.00278719		
1.5042	1.50549	0.00125441		
1.5044	1.50492	0.00056462		
1.5044	1.50467	0.00025393		
1.5044	1.50456	0.00011423		
1.5045	1.5045	5.1389E-05		
15				
R5= 178.3947956				C1
A= 0.029557	n= 0.013			
Lo= 151.0401	B= 1.00			
L1= 342.8568	C= 0.5	y= 0.68505856		
So= 0.00335417	As= 0.68505856			
(So)*0.5	P= 2.37011711			
V= 0.000922	R= 0.28903996			
W= 7.433116	V= 1.9475			
X= 0.034209	Qs= 1.3342			
Y= 0.021378	Qt= 1.3342			
CekΔ(Qs-Qt)	0.0000			
y.persamaan	y	Δ		
	2			
	2			
0.6246	1.31229	0.68771451		
0.6242	0.96823	0.34405933		
0.6491	0.80864	0.15958477		
0.6667	0.73767	0.07097109		
0.6766	0.70714	0.03053135		
0.6814	0.69426	0.01287791		
0.6835	0.68883	0.00537907		
0.6844	0.68664	0.002237		
0.6848	0.68572	0.00092855		
0.6849	0.68533	0.00038513		
0.6850	0.68517	0.00015968		
0.6850	0.68511	6.62E-05		
16				
R5= 178.3947956				C2
A= 0.134128	n= 0.013			
Lo= 148.6414	B= 0.60			
L1= 1089.4413	C= 0.5	y= 2.8138902		
So= 0.004846521	As= 1.66833492			
(So)*0.5	P= 6.22778041			
V= 0.0005802	R= 0.27109725			
W= 7.433116	V= 2.2431			
X= 0.033085	Qs= 3.7872			
Y= 0.056511	Qt= 3.7872			
CekΔ(Qs-Qt)	0.0000			
y.persamaan	y	Δ		
	2			
	2			
4.7608	3.38039	1.38039098		
2.7997	3.09006	0.29033493		
2.8064	2.94821	0.14184902		
2.8101	2.87913	0.06907481		
2.8120	2.84556	0.03357331		
2.8130	2.82926	0.01630184		
2.8134	2.82135	0.00791153		
2.8137	2.81751	0.00383863		
2.8138	2.81564	0.00186225		
2.8138	2.81474	0.00090339		
2.8139	2.8143	0.00043828		
2.8139	2.81409	0.00021253		
2.8139	2.81399	0.00010312		
2.8139	2.81394	5.002E-05		
2.8139	2.81391	2.4264E-05		
2.8139	2.8139	1.177E-05		

17			
R2= 111.7485066		C3	
A= 0.139423	n= 0.013		
Lo= 149.3088	B= 0.60		
L1= 1089.4413			
C= 0.5	y= 1.859553		
So= 0.004846521	As= 1.115732		
(So)*0.5	0.069617	P= 4.319107	
V= 0.006032	R= 0.258325		
W= 4.656188	V= 2.1721		
X= 0.033110	Qs= 2.4235		
Y= 0.056511	Qt= 2.4235		
CekΔ(Qs-Qt)	0.0000		
y.persamaan	y	Δ	
	2		
3.0993	2.54965	0.549646	
1.8377	2.19367	0.355973	
1.8473	2.02051	0.173165	
1.8532	1.93685	0.083657	
1.8564	1.89661	0.040238	
1.8580	1.87731	0.019307	
1.8588	1.86805	0.009252	
1.8592	1.86362	0.004431	
1.8594	1.8615	0.002121	
1.8595	1.86049	0.001016	
1.8595	1.86	0.000486	
1.8595	1.85977	0.000233	
1.8595	1.85966	0.000111	
1.8595	1.8596	5.33E-05	

18			
R2= 111.7485066		C4	
A= 0.064381	n= 0.013		
Lo= 236.892	B= 0.80		
L1= 410.727			
C= 0.5	y= 1.395675		
So= 0.001071271	As= 1.11654		
(So)*0.5	0.032730	P= 3.59135	
V= 0.004443	R= 0.310897		
W= 4.656188	V= 1.1554		
X= 0.040567	Qs= 1.2901		
Y= 0.045315	Qt= 1.2901		
CekΔ(Qs-Qt)	0.0000		
y.persamaan	y	Δ	
	2		
1.9310	1.96549	0.034509	
1.3631	1.6643	0.301193	
1.3778	1.52103	0.143267	
1.3866	1.45381	0.067217	
1.3913	1.42255	0.031263	
1.3936	1.40808	0.014472	
1.3947	1.40139	0.006683	
1.3952	1.39831	0.003083	
1.3955	1.39689	0.001421	
1.3956	1.39624	0.000655	
1.3956	1.39593	0.000302	
1.3957	1.39579	0.000139	
1.3957	1.39573	6.41E-05	

19			
R2= 111.7485066		D	
A= 0.082413	n= 0.013		
Lo= 150.7696	B= 2.00		
L1= 796.3043			
C= 0.5	y= 0.44214		
So= 0.002159978	As= 0.88428		
(So)*0.5	0.046476	P= 2.88428	
V= 0.001602	R= 0.306586		
W= 4.656188	V= 1.6255		
X= 0.035479	Qs= 1.4374		
Y= 0.061872	Qt= 1.4374		
CekΔ(Qs-Qt)	0.0000		
y.persamaan	y	Δ	
	2		
0.5294	1.26469	0.735308	
0.3628	0.81374	0.450948	
0.3908	0.6023	0.211447	
0.4143	0.50829	0.094003	
0.4291	0.4687	0.039595	
0.4366	0.45264	0.016054	
0.4399	0.44627	0.006377	
0.4412	0.44376	0.00251	
0.4418	0.44277	0.000984	
0.4420	0.44239	0.000385	
0.4421	0.44224	0.000151	
0.4421	0.44218	5.9E-05	

20			
R2= 111.7485066		E	
A= 0.057739	n= 0.013		
Lo= 76.1945	B= 3.50		
L1= 496.9559			
C= 0.5	y= 0.208746		
So= 0.006378836	As= 0.730609		
(So)*0.5	0.079868	P= 3.917491	
V= 0.000373	R= 0.186499		
W= 4.656188	V= 2.0055		
X= 0.028921	Qs= 1.4652		
Y= 0.022469	Qt= 1.4652		
CekΔ(Qs-Qt)	0.0000		
y.persamaan	y	Δ	
	2		
0.1135	1.05677	0.943227	
0.1266	0.59168	0.465095	
0.1501	0.37088	0.2208	
0.1738	0.27235	0.098526	
0.1918	0.23209	0.040261	
0.2019	0.21697	0.01512	
0.2062	0.21159	0.005381	
0.2079	0.20972	0.001868	
0.2084	0.20908	0.000642	
0.2086	0.20886	0.00022	
0.2087	0.20878	7.53E-05	

17			
R5= 151.137662		C3	
A= 0.139423	n= 0.013		
Lo= 149.3088	B= 0.60		
L1= 1089.4413			
C= 0.5	y= 2.48747		
So= 0.00484652	As= 1.49248		
(So)*0.5	0.069617	P= 5.57495	
V= 0.006032	R= 0.26771		
W= 6.297403	V= 2.2244		
X= 0.033110	Qs= 3.3199		
Y= 0.056511	Qt= 3.3199		
CekΔ(Qs-Qt)	0.0000		
y.persamaan	y	Δ	
	2		
4.1917	3.0958656	1.09587	
2.4711	2.7834629	0.3124	
2.4786	2.6310461	0.15242	
2.4829	2.5569962	0.07405	
2.4852	2.5211088	0.03589	
2.4864	2.5037393	0.01737	
2.4869	2.4953381	0.0084	
2.4872	2.491276	0.00406	
2.4873	2.4893122	0.00196	
2.4874	2.488363	0.00095	
2.4874	2.4879041	0.00046	
2.4875	2.4876823	0.00022	
2.4875	2.4875751	0.00011	
2.4875	2.4875233	5.2E-05	

18			
R5= 151.137662		C4	
A= 0.064381	n= 0.013		
Lo= 236.892	B= 0.80		
L1= 410.727			
C= 0.5	y= 1.85044		
So= 0.001071271	As= 1.48035		
(So)*0.5	0.032730	P= 4.50088	
V= 0.004443	R= 0.3289		
W= 6.297403	V= 1.1996		
X= 0.040567	Qs= 1.7759		
Y= 0.045315	Qt= 1.7759		
CekΔ(Qs-Qt)	0.0000		
y.persamaan	y	Δ	
	2		
2.6116	2.305807	0.30581	
1.8270	2.0664206	0.23939	
1.8381	1.9522791	0.11414	
1.8443	1.8983013	0.05398	
1.8475	1.8728952	0.02541	
1.8490	1.8609665	0.01193	
1.8498	1.8553724	0.00559	
1.8501	1.8527506	0.00262	
1.8503	1.8515221	0.00123	
1.8504	1.8509466	0.00058	
1.8504	1.850677	0.00027	
1.8504	1.8505507	0.00013	
1.8504	1.8504915	5.9E-05	

19			
R5= 151.137662		D	
A= 0.082413	n= 0.013		
Lo= 150.7696	B= 2.00		
L1= 796.3043			
C= 0.5	y= 0.56722		
So= 0.002159978	As= 1.13445		
(So)*0.5	0.046476	P= 3.13445	
V= 0.001602	R= 0.36193		
W= 6.297403	V= 1.8156		
X= 0.035479	Qs= 2.0597		
Y= 0.061872	Qt= 2.0597		
CekΔ(Qs-Qt)	0.0000		
y.persamaan	y	Δ	
	2		
0.7160	1.3579906	0.64201	
0.4854	0.9217193	0.43627	
0.5169	0.7193059	0.20241	
0.5410	0.6301665	0.08914	
0.5552	0.5927044	0.03746	
0.5621	0.5774258	0.01528	
0.5652	0.5712886	0.00614	
0.5664	0.56884	0.00245	
0.5669	0.5678657	0.00097	
0.5671	0.5674785	0.00039	
0.5672	0.5673247	0.00015	
0.5672	0.5672636	6.1E-05	

20			
R5= 151.137662		E	
A= 0.057739	n= 0.013		
Lo= 76.1945	B= 3.50		
L1= 496.9559			
C= 0.5	y= 0.26251		
So= 0.00637884	As= 0.91879		
(So)*0.5	0.079868	P= 4.02502	
V= 0.000373	R= 0.22827		
W= 6.297403	V= 2.2947		
X= 0.028921	Qs= 2.1083		
Y= 0.022469	Qt= 2.1083		
CekΔ(Qs-Qt)	0.0000		
y.persamaan	y	Δ	
	2		
0.1536	1.0767849	0.92322	
0.1703	0.6235538	0.45323	
0.1997	0.4116443	0.21191	
0.2274	0.3195353	0.09211	
0.2465	0.2830403	0.03649	
0.2563	0.2696604	0.01338	
0.2603	0.2649656	0.00469	
0.2617	0.2633489	0.00162	
0.2622	0.2627962	0.00055	
0.2624	0.2626076	0.00019	
0.2625	0.2625434	6.4E-05	

17			
R5= 178.3947956		C3	
A= 0.139423	n= 0.013		
Lo= 149.3088	B= 0.60		
L1= 1089.4413			
C= 0.5	y= 2.92146811		
So= 0.004846521	As= 1.75288087		
(So)*0.5	0.069617	P= 6.44293622	
V= 0.006032	R= 0.27206243		
W= 7.433116	V= 2.2485		
X= 0.033110	Qs= 3.9413		
Y= 0.056511	Qt= 3.9413		
CekΔ(Qs-Qt)	0.0000		
y.persamaan	y	Δ	
	2		
4.9477	3.47385	1.47384743	
2.9080	3.19091	0.28293662	
2.9143	3.05262	0.13829369	
2.9178	2.98523	0.06738912	
2.9197	2.95245	0.03278129	
2.9206	2.93651	0.0159319	
2.9210	2.92878	0.00773945	
2.9213	2.92502	0.00375884	
2.9214	2.92319	0.00182536	
2.9214	2.9223	0.00088638	
2.9214	2.92187	0.00043041	
2.9215	2.92167	0.00020899	
2.9215	2.92156	0.00010148	
2.9215	2.92151	4.9276E-05	

18			
R5= 178.3947956		C4	
A= 0.064381	n= 0.013		
Lo= 236.892	B= 0.80		
L1= 410.727			
C= 0.5	y= 2.16397084		
So= 0.001071271	As= 1.73117667		
(So)*0.5	0.032730	P= 5.12794168	
V= 0.004443	R= 0.33759679		
W= 7.433116	V= 1.2207		
X= 0.040567	Qs= 2.1132		
Y= 0.045315	Qt= 2.1132		
CekΔ(Qs-Qt)	0.0000		
y.persamaan	y	Δ	
	2		
3.0826	2.5413	0.54130456	
2.1459	2.34361	0.1976939	
2.1547	2.24915	0.09445838	
2.1594	2.20428	0.04487685	
2.1618	2.18302	0.02125464	
2.1629	2.17297	0.01005075	
2.1635	2.16822	0.00474905	
2.1637	2.16598	0.00224313	
2.1639	2.16492	0.00105931	
2.1639	2.16442	0.00050022	
2.1639	2.16418	0.0002362	
2.1640	2.16407	0.00011153	
2.1640	2.16402	5.2661E-05	

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Lampiran 6 Perhitungan Redesign Saluran

ANALISIS TAMPANG SALURAN 2 TH

ANALISIS TAMPANG SALURAN 2 TH			RENCANA									
NO	KODE	DATA TEKNIS	to Jam	td Jam	tc Jam	Cs	I mm/jam	Q m3/dt	Aperlu m2	b m	h m	h pakai
1	A1	C= 0.5 Lo = 187.4592 m L1= 529.1601 m So= 0.0102426 v= 3.1381344 m/dt	0.032	0.047	0.079	1.000	210.156	3.393	1.081	1.50	0.72	1.40
		Qtambahan = m3/dt 0.6 1.5										
2	A2	C= 0.5 Lo = 163.6777 m L1= 464.5171 m So= 0.0025187 v= 1.8114324 m/dt	0.036	0.071	0.107	1.000	172.165	1.630	0.900	1.00	0.90	1.50
		Qtambahan = m3/dt 0.6 1										
3	A3	C= 0.5 Lo = 99.175 m L1= 288.717 m So= 0.0031865 v= 0.0527539 m/dt	0.032	1.520	1.552	1.000	28.897	0.162	3.074	1.50	2.05	2.50
		Qtambahan = m3/dt 0.4 1.5										
4	A4	C= 0.5 Lo = 271.5987 m L1= 592.9643 m So= 0.0066277 v= 2.8990858 m/dt	0.036	0.057	0.092	1.000	189.467	2.630	0.907	1.00	0.91	1.60
		Qtambahan = m3/dt h jagaan 0.6 1										
5	A5	C= 0.5 Lo = 142.4456 m L1= 288.8139 m So= 0.0041549 v= 2.3482512 m/dt	0.033	0.034	0.067	1.000	233.826	2.198	0.936	1.00	0.94	1.60
		Qtambahan = m3/dt 0.6 1										
6	A6	C= 0.5 Lo = 125.6607 m L1= 288.8139 m So= 0.0052629 v= 2.3452388 m/dt	0.032	0.034	0.066	1.000	236.838	1.404	0.599	1.00	0.60	1.10
		Qtambahan = m3/dt 0.5 1										
7	A7	C= 0.5 Lo = 263.5378 m L1= 675.099 m So= 0.0055992 v= 2.7715204 m/dt	0.036	0.068	0.104	1.000	175.594	7.737	2.792	1.50	1.86	2.70
		Qtambahan = m3/dt 0.75 1.5										

8	A8	C= 0.5 Lo = 230.1523 m L1= 475.6005 m So= 0.0008621 v= 1.2269047 m/dt Hrenc (2th) = 111.749 mm Kekerasan Manning n= 0.013	0.041	0.108	0.149	1.000	137.972	1.772	1.444	1.20	1.90
			a Lo 230.152 b c L1 Ruas Qtambahan = m3/dt 1.2 1.90								
9	A9	C= 0.5 Lo = 91.6633 m L1= 234.6115 m So= 0.0022591 v= 1.1936908 m/dt Hrenc (2th) = 111.749 mm Kekerasan Manning n= 0.013	0.033	0.055	0.087	1.000	197.128	4.907	4.111	1.80	2.90
			a Lo 91.6633 b c L1 Ruas Qtambahan = m3/dt 1.8 2.90								
10	B1	C= 0.5 Lo = 151.4449 m L1= 1127.553 m So= 0.0045053 v= 2.6457928 m/dt Hrenc (2th) = 111.749 mm Kekerasan Manning n= 0.013	0.033	0.118	0.152	1.000	136.158	2.849	1.077	1.00	1.70
			a Lo 151.445 b c L1 Ruas Qtambahan = m3/dt 1 1.70								
11	B2	C= 0.5 Lo = 99.945 m L1= 578.3415 m So= 0.0003631 v= 0.7415789 m/dt Hrenc (2th) = 111.749 mm Kekerasan Manning n= 0.013	0.038	0.217	0.255	1.000	96.322	1.564	2.109	1.40	2.20
			a Lo 99.945 b c L1 Ruas Qtambahan = m3/dt 1.4 2.20								
12	B3	C= 0.5 Lo = 89.8416 m L1= 322.6224 m So= 0.0062922 v= 2.0533213 m/dt Hrenc (2th) = 111.749 mm Kekerasan Manning n= 0.013	0.030	0.044	0.073	1.000	220.978	0.713	0.347	1.00	0.90
			a Lo 89.8416 b c L1 Ruas Qtambahan = m3/dt 1 0.90								
13	B4	C= 0.5 Lo = 99.175 m L1= 244.6719 m So= 0.0056811 v= 2.3967187 m/dt Hrenc (2th) = 111.749 mm Kekerasan Manning n= 0.013	0.031	0.028	0.059	1.000	255.992	1.360	0.567	1.00	1.10
			a Lo 99.175 b c L1 Ruas Qtambahan = m3/dt 1 1.10								
14	B5	C= 0.5 Lo = 264.2726 m L1= 854.3594 m So= 0.0035699 v= 2.3833792 m/dt Hrenc (2th) = 111.749 mm Kekerasan Manning n= 0.013	0.037	0.100	0.137	1.000	145.822	4.901	2.056	1.20	2.40
			a Lo 264.273 b c L1 Ruas Qtambahan = m3/dt 1.2 2.40								
15	C1	C= 0.5 Lo = 151.0401 m L1= 342.8568 m So= 0.0033542 v= 1.721147 m/dt Hrenc (2th) = 111.749 mm Kekerasan Manning n= 0.013	0.034	0.055	0.090	1.000	193.560	0.795	0.462	1.00	1.00
			a Lo 151.04 b c L1 Ruas Qtambahan = m3/dt 1 1.00								

ANALISIS TAMPANG SALURAN 5 TH

ANALISIS TAMPARAN SALURAN 5 TH			RENCANA										
NO	KODE	DATA TEKNIS	to Jam	td Jam	tc Jam	Cs	I mm/jam	A km2	Q m3/dt	Aperlu m2	b m	h m	h pakai
1	A1	C= 0.5 Lo = 187.4592 m L1= 529.1601 m So= 0.010243	0.032	0.042	0.075	1.000	295.539	luasan cad 0.0626	4.772	1.375	1.50	0.92	1.60
		a Lo 187.4592 b 0.042 c 0.075 Qtambahan = 2.200 m3/dt B2 L1 529.1601 Ruas A1 0.6 1.60											
		Hrenc (5th) = 151.138 mm Kekerasan Manning n= 0.013											
2	A2	C= 0.5 Lo = 163.6777 m L1= 464.5171 m So= 0.002519	0.036	0.065	0.100	1.000	242.543	luasan cad 0.0681	2.296	1.155	1.20	0.96	1.60
		a Lo 163.6777 b 0.065 c 0.100 Qtambahan = 0 m3/dt A3 L1 464.5171 Ruas A2 0.6 1.60											
		Hrenc (5th) = 151.138 mm Kekerasan Manning n= 0.013											
3	A3	C= 0.5 Lo = 99.175 m L1= 288.717 m So= 0.003187	0.032	2.073	2.105	1.000	31.898	luasan cad 0.0404	0.179	4.627	1.80	2.57	3.00
		a Lo 99.175 b 2.073 c 2.105 Qtambahan = 0 m3/dt A3 L1 288.717 Ruas A3 0.4 3.00											
		Hrenc (5th) = 151.138 mm Kekerasan Manning n= 0.013											
4	A4	C= 0.5 Lo = 271.5987 m L1= 592.9643 m So= 0.006628	0.036	0.052	0.087	1.000	265.862	luasan cad 0.0937	3.642	1.146	1.20	0.96	1.60
		a Lo 271.5987 b 0.052 c 0.087 Qtambahan = 0.179 m3/dt A3 L1 592.9643 Ruas A4 0.6 1.60											
		Hrenc (5th) = 151.138 mm Kekerasan Manning n= 0.013											
5	A5	C= 0.5 Lo = 142.4456 m L1= 288.8139 m So= 0.004155	0.033	0.031	0.064	1.000	326.933	luasan cad 0.0676	3.074	1.183	1.30	0.91	1.60
		a Lo 142.4456 b 0.031 c 0.064 Qtambahan = 0 m3/dt A3 L1 288.8139 Ruas A5 0.6 1.60											
		Hrenc (5th) = 151.138 mm Kekerasan Manning n= 0.013											
6	A6	C= 0.5 Lo = 125.6607 m L1= 288.8139 m So= 0.005263	0.032	0.032	0.064	1.000	328.215	luasan cad 0.0426	1.946	0.772	1.00	0.77	1.40
		a Lo 125.6607 b 0.032 c 0.064 Qtambahan = 0 m3/dt A3 L1 288.8139 Ruas A6 0.6 1.40											
		Hrenc (5th) = 151.138 mm Kekerasan Manning n= 0.013											
7	A7	C= 0.5 Lo = 263.5378 m L1= 675.099 m So= 0.005599	0.036	0.063	0.099	1.000	244.576	luasan cad 0.1026	10.804	3.641	2.00	1.82	2.70
		a Lo 263.5378 b 0.063 c 0.099 Qtambahan = 7.315 m3/dt A5+A6+A2 L1 675.099 Ruas A7 0.85 2.70											
		Hrenc (5th) = 151.138 mm Kekerasan Manning n= 0.013											

8	A8	C= 0.5 Lo= 230.1523 m L1= 475.6005 m So= 0.000862 v= 1.369502 m/dt Hrenc (5th)= 151.138 mm Kekerasan Manning n= 0.013	0.041	0.096	0.138	1.000	196.609	0.0924	2.525	1.844	1.60	1.15	1.80
			a Lo 230.1523 b c Qtambahan = 0 m3/dt L1 475.6005 Ruas A8 1.6 1.80										
9	A9	C= 0.5 Lo= 91.6633 m L1= 234.6115 m So= 0.002259 v= 1.306442 m/dt Hrenc (5th)= 151.138 mm Kekerasan Manning n= 0.013	0.033	0.050	0.082	1.000	276.680	0.0185	6.876	5.263	2.00	2.63	3.40
			a Lo 91.6633 b c Qtambahan = 6.167 m3/dt A8+A4 L1 234.6115 Ruas A9 2 3.40										
10	B1	C= 0.5 Lo= 151.4449 m L1= 1127.553 m So= 0.004505 v= 2.859872 m/dt Hrenc (5th)= 151.138 mm Kekerasan Manning n= 0.013	0.033	0.110	0.143	1.000	191.687	0.1506	4.012	1.403	1.20	1.17	1.80
			a Lo 151.4449 b c Qtambahan = m3/dt L1 1127.553 Ruas B1 1.2 1.80										
11	B2	C= 0.5 Lo= 99.945 m L1= 578.3415 m So= 0.000363 v= 0.803757 m/dt Hrenc (5th)= 151.138 mm Kekerasan Manning n= 0.013	0.038	0.200	0.238	1.000	136.311	0.0574	2.200	2.737	1.40	1.96	2.60
			a Lo 99.945 b c Qtambahan = 1.112 m3/dt C1 L1 578.3415 Ruas B2 1.4 2.60										
12	B3	C= 0.5 Lo= 89.8416 m L1= 322.6224 m So= 0.006292 v= 2.276394 m/dt Hrenc (5th)= 151.138 mm Kekerasan Manning n= 0.013	0.030	0.039	0.069	1.000	311.072	0.0232	1.004	0.441	1.00	0.44	1.00
			a Lo 89.8416 b c Qtambahan = 0 m3/dt L1 322.6224 Ruas B3 1 1.00										
13	B4	C= 0.5 Lo= 99.175 m L1= 244.6719 m So= 0.005681 v= 2.579207 m/dt Hrenc (5th)= 151.138 mm Kekerasan Manning n= 0.013	0.031	0.026	0.057	1.000	354.321	0.0382	1.882	0.730	1.00	0.73	1.40
			a Lo 99.175 b c Qtambahan = 0 m3/dt L1 244.6719 Ruas B4 1 1.40										
14	B5	C= 0.5 Lo= 264.2726 m L1= 854.3594 m So= 0.00357 v= 2.62538 m/dt Hrenc (5th)= 151.138 mm Kekerasan Manning n= 0.013	0.037	0.090	0.128	1.000	206.557	0.1395	6.892	2.625	1.50	1.75	2.60
			a Lo 264.2726 b c Qtambahan = 2.886 m3/dt Q.B3+Q.B4 L1 854.3594 Ruas B5 1.5 2.60										
15	C1	C= 0.5 Lo= 151.0401 m L1= 342.8568 m So= 0.003354 v= 1.868845 m/dt Hrenc (5th)= 151.138 mm Kekerasan Manning n= 0.013	0.034	0.051	0.085	1.000	270.673	0.0296	1.112	0.595	1.00	0.60	1.10
			a Lo 151.0401 b c Qtambahan = 0 m3/dt L1 342.8568 1 1.10										

16	C2	C= 0.5 Lo = 148.6414 m L1 = 1089.441 m So = 0.004847 v= 2.829326 m/dt Hrenc (5th) = 151.138 mm Kekerasan Manning n= 0.013	0.033 0.107 0.140 1.000 194.293 luas an cad 0.1341 3.622 1.280 1.20 1.07 1.70	
17	C3	C= 0.5 Lo = 149.3088 m L1 = 1089.441 m So = 0.004847 v= 2.852633 m/dt Hrenc (5th) = 151.138 mm Kekerasan Manning n= 0.013	0.033 0.106 0.139 1.000 195.083 luas an cad 0.1394 3.781 1.325 1.20 1.10 1.80	
18	C4	C= 0.5 Lo = 236.892 m L1 = 410.727 m So = 0.001071 v= 1.365614 m/dt Hrenc (5th) = 151.138 mm Kekerasan Manning n= 0.013	0.041 0.084 0.124 1.000 210.584 luas an cad 0.0644 9.288 6.801 2.20 3.09 3.90	
19	D	C= 0.5 Lo = 150.7696 m L1 = 796.3043 m So = 0.00216 v= 1.491075 m/dt Hrenc (5th) = 151.138 mm Kekerasan Manning n= 0.013	0.035 0.148 0.184 1.000 162.068 luas an cad 0.0824 39.729 26.644 4.00 6.66 7.70	
20	E	C= 0.5 Lo = 76.1945 m L1 = 496.9559 m So = 0.006379 v= 2.294694 m/dt Hrenc (5th) = 151.138 mm Kekerasan Manning n= 0.013	0.029 0.060 0.089 1.000 262.697 luas an cad 0.0577 41.837 18.232 4.00 4.56 5.60	

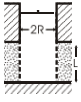
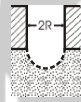
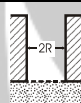
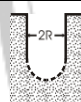
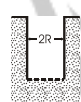
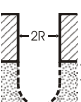
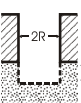
ANALISIS TAMPANG SALURAN 10 TH

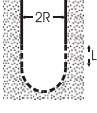
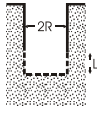
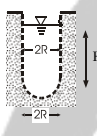
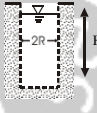
ANALISIS TAMPANG SALURAN 10 TH			RENCANA										
NO	KODE	DATA TEKNIS	to Jam	td Jam	tc Jam	Cs	I mm/jam	A km2	Q m3/dt	Aperlu m2	b m	h m	h pakai
1	A1	C= 0.5 Lo = 187.4592 m L1= 529.1601 m So= 0.010243	0.032	0.040	0.073	1.000	355.701	luasan cad 0.0626	5.752	1.573	1.00	1.57	2.40
		Qtambahan = 2.657 m3/dt B2 a Lo 187.459 b c L1 529.16 Ruas A1 1 2.40											
		v= 3.657251 m/dt Hrenc (10 th) = 178.395 mm Kekerasan Manning n= 0.013											
2	A2	C= 0.5 Lo = 163.6777 m L1= 464.5171 m So= 0.002519	0.036	0.061	0.097	1.000	293.167	luasan cad 0.0681	2.776	1.320	1.40	0.94	1.60
		Qtambahan = 0 m3/dt a Lo 163.678 b c L1 464.517 Ruas A2 1.4 1.60											
		v= 2.102091 m/dt Hrenc (10 th) = 178.395 mm Kekerasan Manning n= 0.013											
3	A3	C= 0.5 Lo = 99.175 m L1= 288.717 m So= 0.003187	0.032	2.063	2.095	1.000	37.778	luasan cad 0.0404	0.212	5.451	2.00	2.73	3.20
		Qtambahan = 0 m3/dt a Lo 99.175 b c L1 288.717 Ruas A3 2 3.20											
		v= 0.038883 m/dt Hrenc (10 th) = 178.395 mm Kekerasan Manning n= 0.013											
4	A4	C= 0.5 Lo = 271.5987 m L1= 592.9643 m So= 0.006628	0.036	0.049	0.085	1.000	320.476	luasan cad 0.0937	4.386	1.308	1.40	0.93	1.60
		Qtambahan = 0.212 m3/dt A3 a Lo 271.599 b c L1 592.964 Ruas A4 1.4 1.60											
		v= 3.352505 m/dt Hrenc (10 th) = 178.395 mm Kekerasan Manning n= 0.013											
5	A5	C= 0.5 Lo = 142.4456 m L1= 288.8139 m So= 0.004155	0.033	0.030	0.063	1.000	391.518	luasan cad 0.0676	3.681	1.354	1.40	0.97	1.60
		Qtambahan = 0 m3/dt a Lo 142.446 b c L1 288.814 Ruas A5 1.4 1.60											
		v= 2.718898 m/dt Hrenc (10 th) = 178.395 mm Kekerasan Manning n= 0.013											
6	A6	C= 0.5 Lo = 125.6607 m L1= 288.8139 m So= 0.005263	0.032	0.030	0.062	1.000	394.492	luasan cad 0.0426	2.338	0.878	1.20	0.73	1.40
		Qtambahan = 0 m3/dt a Lo 125.661 b c L1 288.814 Ruas A6 1.2 1.40											
		v= 2.663144 m/dt Hrenc (10 th) = 178.395 mm Kekerasan Manning n= 0.013											
7	A7	C= 0.5 Lo = 263.5378 m L1= 675.099 m So= 0.005599	0.036	0.061	0.097	1.000	293.914	luasan cad 0.1026	12.988	4.194	2.20	1.91	2.80
		Qtambahan = 8.795 m3/dt A5+A6+A2 a Lo 263.538 b c L1 675.099 Ruas A7 2.2 2.80											
		v= 3.096812 m/dt Hrenc (10 th) = 178.395 mm Kekerasan Manning n= 0.013											

8	A8	C= 0.5 Lo = 230.1523 m L1= 475.6005 m So= 0.000862 v= 1.441447 m/dt Hrenc (10 th) = 178.395 mm Kekerasan Manning n= 0.013	0.041	0.092	0.133	1.000	237.644	0.0924	3.052	2.117	1.80	1.80	1.80
			Qtambahan = 0 m3/dt Lo 230.152 a b c L1 475.601 Ruas A8 1.80 1.8										
9	A9	C= 0.5 Lo = 91.6633 m L1= 234.6115 m So= 0.002259 v= 1.321481 m/dt Hrenc (10 th) = 178.395 mm Kekerasan Manning n= 0.013	0.033	0.049	0.082	1.000	328.087	luas cad 0.0185	8.279	6.265	2.40	2.61	3.40
			Qtambahan = 7.438 m3/dt A8+A4 Lo 91.6633 a b c L1 234.612 Ruas A9 3.40 2.4										
10	B1	C= 0.5 Lo = 151.4449 m L1= 1127.553 m So= 0.004505 v= 2.884739 m/dt Hrenc (10 th) = 178.395 mm Kekerasan Manning n= 0.013	0.033	0.109	0.142	1.000	227.259	luas cad 0.1506	4.756	1.649	1.20	1.37	2.00
			Qtambahan = m3/dt Lo 151.445 a b c L1 1127.55 Ruas B1 2.00 1.2										
11	B2	C= 0.5 Lo = 99.945 m L1= 578.3415 m So= 0.000363 v= 0.847375 m/dt Hrenc (10 th) = 178.395 mm Kekerasan Manning n= 0.013	0.038	0.190	0.228	1.000	165.698	luas cad 0.0574	2.657	3.135	1.60	1.96	2.60
			Qtambahan = 1.334 m3/dt C1 Lo 99.945 a b c L1 578.342 Ruas B2 2.60 1.6										
12	B3	C= 0.5 Lo = 89.8416 m L1= 322.6224 m So= 0.006292 v= 2.401206 m/dt Hrenc (10 th) = 178.395 mm Kekerasan Manning n= 0.013	0.030	0.037	0.067	1.000	374.602	luas cad 0.0232	1.209	0.503	1.00	0.50	1.10
			Qtambahan = 0 m3/dt Lo 89.8416 a b c L1 322.622 Ruas B3 1.10 1										
13	B4	C= 0.5 Lo = 99.175 m L1= 244.6719 m So= 0.005681 v= 2.675099 m/dt Hrenc (10 th) = 178.395 mm Kekerasan Manning n= 0.013	0.031	0.025	0.056	1.000	422.918	luas cad 0.0382	2.246	0.840	1.00	0.84	1.50
			Qtambahan = 0 m3/dt Lo 99.175 a b c L1 244.672 Ruas B4 1.50 1										
14	B5	C= 0.5 Lo = 264.2726 m L1= 854.3594 m So= 0.00357 v= 2.702502 m/dt Hrenc (10 th) = 178.395 mm Kekerasan Manning n= 0.013	0.037	0.088	0.125	1.000	247.147	luas cad 0.1395	8.249	3.052	1.40	2.18	3.00
			Qtambahan = 3.455 m3/dt Q.B3+Q.B4 Lo 264.273 a b c L1 854.359 Ruas B5 3.00 1.4										
15	C1	C= 0.5 Lo = 151.0401 m L1= 342.8568 m So= 0.003354 v= 1.947546 m/dt Hrenc (10 th) = 178.395 mm Kekerasan Manning n= 0.013	0.034	0.049	0.083	1.000	324.743	luas cad 0.0296	1.334	0.685	1.00	0.69	1.20
			Qtambahan = 0 m3/dt Lo 151.04 a b c L1 342.857 1.20 1										

16	C2	C= 0.5 Lo = 148.6414 m L1= 1089.441 m So= 0.004847 v= 3.002012 m/dt Hrenc (10 th) = 178.395 mm Kekerasan Manning n= 0.013	0.033	0.101	0.134	1.000	236.306	luasan cad 0.1341	4.406	1.468	1.40	1.05	1.70
			Qtambahan = m3/dt Lo 148.641 a b c L1 1089.44 Ruas C2 0.6 1.70 1.4										
17	C3	C= 0.5 Lo = 149.3088 m L1= 1089.441 m So= 0.004847 v= 3.029182 m/dt Hrenc (10 th) = 178.395 mm Kekerasan Manning n= 0.013	0.033	0.100	0.133	1.000	237.347	0.1394	4.600	1.518	1.40	1.08	1.70
			Qtambahan = 0 m3/dt Lo 149.309 a b c L1 1089.44 Ruas C3 0.6 1.70 1.4										
18	C4	C= 0.5 Lo = 236.892 m L1= 410.727 m So= 0.001071 v= 1.444007 m/dt Hrenc (10 th) = 178.395 mm Kekerasan Manning n= 0.013	0.041	0.079	0.120	1.000	254.808	luasan cad 0.0644	11.286	7.816	2.20	3.55	4.50
			Qtambahan = 9.005 m3/dt Lo 236.892 a b c L1 410.727 Ruas C4 0.85 4.50 2.2										
19	D	C= 0.5 Lo = 150.7696 m L1= 796.3043 m So= 0.00216 v= 1.606958 m/dt Hrenc (10 th) = 178.395 mm Kekerasan Manning n= 0.013	0.035	0.138	0.173	1.000	199.098	luasan cad 0.0824	47.838	29.769	4.00	7.44	8.50
			Qtambahan = 45.557 m3/dt Lo 150.77 a b c L1 796.304 Ruas D 1 8.50 4										
20	E	C= 0.5 Lo = 76.1945 m L1= 496.9559 m So= 0.006379 v= 2.466629 m/dt Hrenc (10 th) = 178.395 mm Kekerasan Manning n= 0.013	0.029	0.056	0.085	1.000	320.203	luasan cad 0.0577	50.408	20.436	4.50	4.54	5.60
			Qtambahan = 47.838 m3/dt Lo 76.1945 a b c L1 496.956 Ruas E 1 5.60 4.5										

Lampiran 7 Tabel Faktor Geometrik Sumur

N o	Conditions	Shape factor (F)	Value of F when R=1; H=0; L=0 Except for $F_1 \Rightarrow L=1$	Referenses
1		$F_1 = \frac{2\pi L}{\ln \left\{ \frac{2(L+2R)}{R} + \sqrt{\left(\frac{L}{R}\right)^2 + 1} \right\}}$	2,980	Sunjoto (1989a)
2		$F_{2a} = 4\pi R$	12,566	Samsioe (1931) Dachler (1936) Aravin (1965)
		$F_{2b} = 18R$	18,000	Sunjoto (2002)
3		$F_{3a} = 2\pi R$	6,283	Samsioe (1931) Dachler (1936) Aravin (1965)
		$F_{3b} = 4R$	4,000	Forchheimer (1930) Dachler (1936) Aravin (1965)
4		$F_{4a} = \pi^2 R$	9,870	Sunjoto (2002)
		$F_{4b} = 5,50R$	5,50	Harza (1935) Taylor (1948) Hvorslev (1951)
		$F_{4b} = 2\pi R$	6,283	Sunjoto (2002)
5		$F_{5a} = \frac{2\pi L + \pi^2 R \ln 2}{\ln \left\{ \frac{L+2R}{R} + \sqrt{\left(\frac{L}{R}\right)^2 + 1} \right\}}$	6,227	Sunjoto (2002)
		$F_{5b} = \frac{2\pi L}{\ln \left\{ \frac{L}{R} + \sqrt{\left(\frac{L}{R}\right)^2 + 1} \right\}}$	0/0	Dachler (1936)
		$F_{5b} = \frac{2\pi L + 2\pi R \ln 2}{\ln \left\{ \frac{L+2R}{R} + \sqrt{\left(\frac{L}{R}\right)^2 + 1} \right\}}$	3,964	Sunjoto (2002)

6		$F_{6a} = \frac{2\pi L + \pi^2 R \ln 2}{\ln \left\{ \frac{L + 2R}{2R} + \sqrt{\left(\frac{L}{2R}\right)^2 + 1} \right\}}$	9,870	Sunjoto (2002)
		$F_{6b} = \frac{2\pi L}{\ln \left\{ \frac{L}{2R} + \sqrt{\left(\frac{L}{2R}\right)^2 + 1} \right\}}$	0/0	Dachler (1936)
		$F_{6b} = \frac{2\pi L + 2\pi R \ln 2}{\ln \left\{ \frac{L + 2R}{2R} + \sqrt{\left(\frac{L}{2R}\right)^2 + 1} \right\}}$	6,283	Sunjoto (2002)
7		$F_{7a} = \frac{2\pi H + \pi^2 R \ln 2}{\ln \left\{ \frac{H + 2R}{3R} + \sqrt{\left(\frac{H}{3R}\right)^2 + 1} \right\}}$	13,392	Sunjoto (2002)
		$F_{7b} = \frac{2\pi H + 2\pi R \ln 2}{\ln \left\{ \frac{H + 2R}{3R} + \sqrt{\left(\frac{H}{3R}\right)^2 + 1} \right\}}$	8,525	Sunjoto (2002)

Diskripsi tentang kondisi sumur

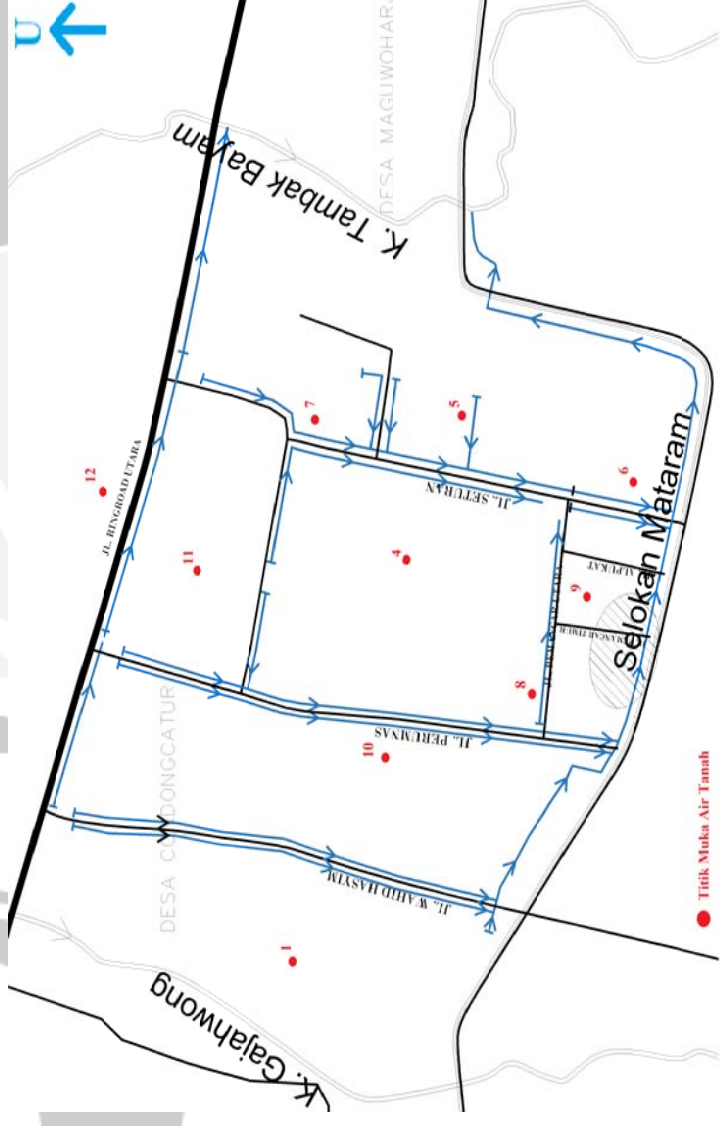
Conditions	Description
1	Resapan pada tanah porous terletak diantara tanah bersifat kedap air di bagian dasar dan bagian atas dengan dinding porous setinggi L.
2.a	Resapan berbentuk bola berdinding porous dengan saluran vertikal kedap air dan seluruhnya berada di tanah yang bersifat porous.
2.b	Resapan kubus berdinding porous dengan saluran vertikal kedap air dan seluruhnya berada di tanah yang bersifat porous.
3.a	Resapan terletak pada tanah bersifat kedap air di bagian atas dan tanah porous dibagian bawah dengan dasar berbentuk setengah bola
3.b	Idem 3.a namun dasar rata
4.a	Resapan terletak pada tanah yang seluruhnya porous dengan dinding resapan kedap air dan dasar berbentuk setengah bola.
4.b	Idem ditto 4.a namun dasar rata
5.a	Resapan terletak pada tanah yang kedap air di bagian atas dan porous dibagian bawah dengan dinding sumur permeabel setinggi L dan dasar berbentuk setengah bola
5.b	Idem ditto 5.a namun dasar rata
6.a	Resapan terletak pada tanah yang seluruhnya porous dengan dinding sumur bagian atas impermeabel dan bagian bawah permeabel setinggi L dan dasar berbentuk setengah bola
6.b	Idem ditto 6.a namun dasar rata
7.a	Resapan terletak pada tanah yang seluruhnya porous dengan seluruh dinding sumur permeabel dan dasar berbentuk setengah bola
7.b	Idem ditto 7.a namun dasar rata

Lampiran 8 Perhitungan Sumur Resapan

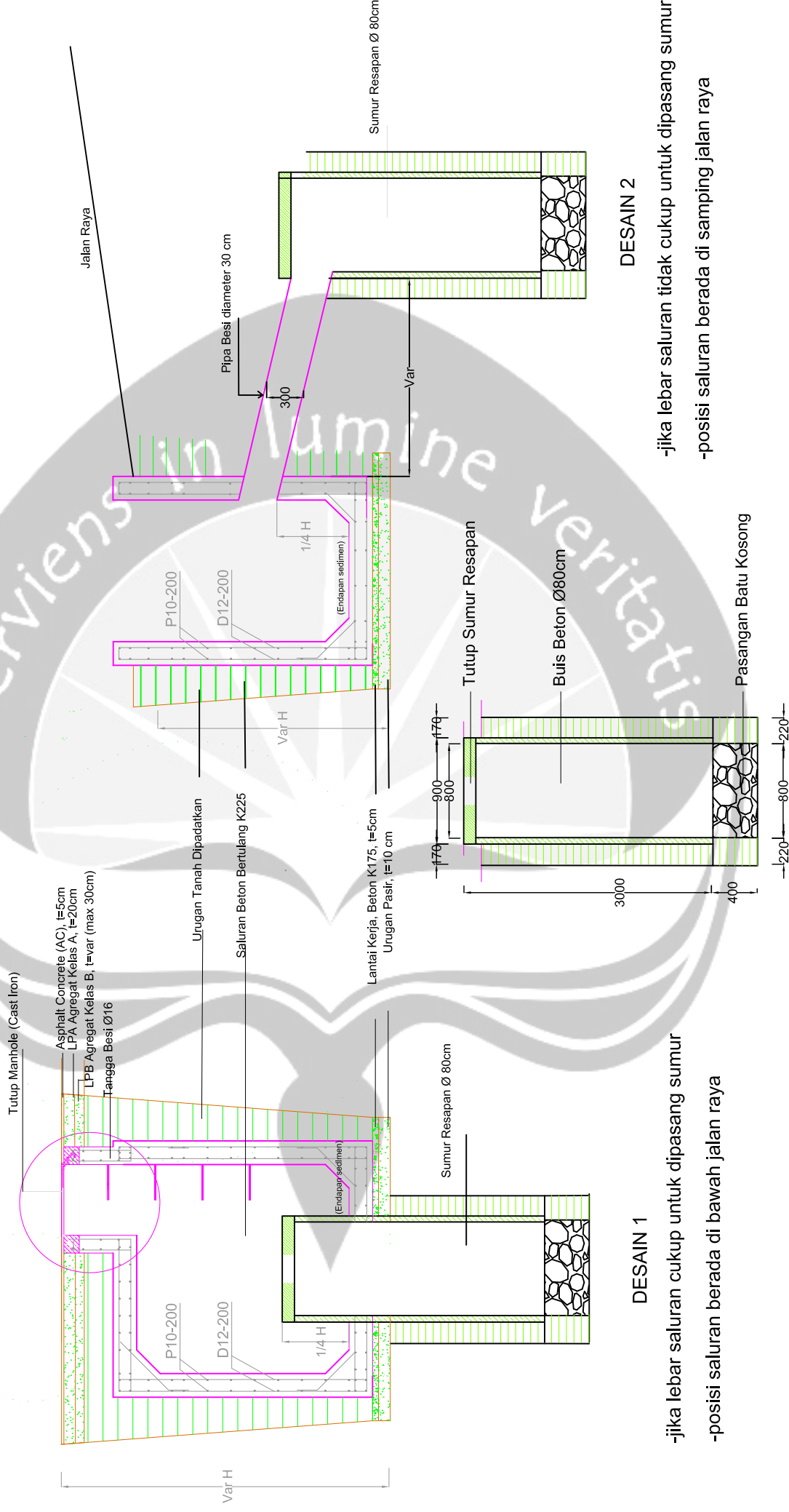
NO	KODE	DATA TEKNIS				Td (jam)				FK	π.R ²	exp(-F.K.Td/π.R ²)			1-exp(-F.K.Td/π.R ²)			Qresapan/sumur (m ³ /jam)					resapan/20m		
		D (m)	H (m)	L (m)	R (m)	F	K	2	5			10	2	5	10	2	5	10	2	5	10				
1	A1	0.8	3	529.16	0.4	2.514	0.005	0.0468396	0.04234	0.04019	0.01257	0.50286	0.9988297	0.99894	0.99896	0.00117	0.001058	0.001	32.22605	35.648	37.553826	0.0090	0.0099	0.0104	26.46
2	A2	0.8	3	464.517	0.4	2.514	0.005	0.0712323	0.06717	0.0653	0.01257	0.50286	0.9982208	0.99832	0.998369	0.001779	0.0016779	0.00163	21.19705	22.4772	23.12034	0.0059	0.0062	0.0064	23.23
3	A3	0.8	3	288.717	0.4	2.514	0.005	1.5202516	2.07321	2.06259	0.01257	0.50286	0.9627069	0.94949	0.949742	0.037293	0.05051	0.05026	1.011294	0.74667	0.7504164	0.0003	0.0002	0.0002	14.44
4	A4	0.8	3	592.964	0.4	2.514	0.005	0.0568153	0.05349	0.05196	0.01257	0.50286	0.9985806	0.99866	0.998702	0.001419	0.0013364	0.0013	26.57109	28.2207	29.054745	0.0074	0.0078	0.0081	30.00
5	A5	0.8	3	288.814	0.4	2.514	0.005	0.0438092	0.04305	0.04272	0.01257	0.50286	0.9989054	0.99892	0.998933	0.001095	0.0010757	0.00107	34.45388	35.0595	35.334439	0.0096	0.0097	0.0098	15.00
6	A6	0.8	3	288.814	0.4	2.514	0.005	0.0406132	0.03955	0.03907	0.01257	0.50286	0.9989852	0.99901	0.999024	0.001015	0.0009882	0.00098	37.16375	38.1647	38.630378	0.0103	0.0106	0.0107	14.44
7	A7	0.8	3	675.099	0.4	2.514	0.005	0.0691598	0.06526	0.06346	0.01257	0.50286	0.9982725	0.99837	0.998415	0.001728	0.0016302	0.00159	21.83171	23.135	23.789045	0.0061	0.0064	0.0066	33.75
8	A8	0.8	3	475.601	0.4	2.514	0.005	0.1544283	0.15264	0.15186	0.01257	0.50286	0.9961467	0.99619	0.996211	0.003853	0.0038087	0.00379	9.78762	9.90208	9.9531356	0.0027	0.0028	0.0028	23.78
9	A9	0.8	3	234.612	0.4	2.514	0.005	0.0487569	0.04468	0.04274	0.01257	0.50286	0.9987818	0.99888	0.998932	0.001218	0.0011163	0.00107	30.95954	33.7865	35.312403	0.0086	0.0094	0.0098	24.00
10	B1	0.8	3	1127.55	0.4	2.514	0.005	0.1183801	0.11732	0.10449	0.01257	0.50286	0.9970449	0.99707	0.997391	0.002955	0.0029286	0.00261	12.76232	12.8777	14.457013	0.0035	0.0036	0.0040	56.38
11	B2	0.8	3	578.342	0.4	2.514	0.005	0.2166329	0.19987	0.19209	0.01257	0.50286	0.9945988	0.99502	0.995209	0.005401	0.0049844	0.00479	6.982596	7.56647	7.8723503	0.0019	0.0021	0.0022	28.92
12	B3	0.8	3	322.622	0.4	2.514	0.005	0.0436451	0.03937	0.03732	0.01257	0.50286	0.9989095	0.99902	0.999067	0.001091	0.0009837	0.00093	34.5834	38.3385	40.439516	0.0096	0.0106	0.0112	16.13
13	B4	0.8	3	244.672	0.4	2.514	0.005	0.029787	0.02839	0.02775	0.01257	0.50286	0.9992556	0.99929	0.999307	0.000744	0.0007095	0.00069	50.66423	53.1596	54.389623	0.0141	0.0148	0.0151	12.23
14	B5	0.8	3	854.359	0.4	2.514	0.005	0.0995738	0.09356	0.09079	0.01257	0.50286	0.9975138	0.99766	0.997733	0.002486	0.0023362	0.00227	15.16915	16.1432	16.635444	0.0042	0.0045	0.0046	42.72
15	C1	0.8	3	342.857	0.4	2.514	0.005	0.055334	0.05096	0.0489	0.01257	0.50286	0.9986176	0.99873	0.998778	0.001382	0.0012732	0.00122	27.28186	29.6214	30.868024	0.0076	0.0082	0.0086	43.00
16	C2	0.8	3	1089.44	0.4	2.514	0.005	0.1398079	0.13642	0.13491	0.01257	0.50286	0.9965109	0.9966	0.996633	0.003489	0.0034046	0.00337	10.80918	11.0774	11.200872	0.0030	0.0031	0.0031	54.47
17	C3	0.8	3	1089.44	0.4	2.514	0.005	0.1393218	0.13605	0.13459	0.01257	0.50286	0.996523	0.9966	0.996641	0.003477	0.0033954	0.00336	10.84683	11.1076	11.227397	0.0030	0.0031	0.0031	55.00
18	C4	0.8	3	410.727	0.4	2.514	0.005	0.0987416	0.0951	0.09346	0.01257	0.50286	0.9975345	0.99763	0.997666	0.002465	0.0023748	0.00233	15.29684	15.8812	16.15949	0.0042	0.0044	0.0045	20.54
19	D	0.8	3	796.304	0.4	2.514	0.005	0.1360798	0.12183	0.11506	0.01257	0.50286	0.9966038	0.99696	0.997128	0.003396	0.0030411	0.00287	11.1048	12.4017	13.130607	0.0031	0.0034	0.0036	39.82
20	E	0.8	3	496.956	0.4	2.514	0.005	0.068834	0.09775	0.05596	0.01257	0.50286	0.9982806	0.99756	0.998602	0.001719	0.0024409	0.0014	21.93493	15.4511	26.974797	0.0061	0.0043	0.0075	24.85

Lampiran 9 Kedalaman Muka Air Tanah

No.	Nama proyek & alamat	Kedalaman MAT (meter)	Tahun	Uji
1	PENINGKATAN JEMBATAN GAJAHWONG di Jl. Selokan Mataram Yogyakarta	9		bor mesin
2	Kost-Kost'an di Jl. Seturan Raya, Yogyakarta	7		bor mesin
3	Klinik Kecantikan Estetika Larissa di Jl. Seturan Raya Yogyakarta	18	2015	
4	Rumah Tinggal di Perum Villa Seturan Indah Kav. A4 RT. 17 RW. 03 Seturan, Caturtunggal, Sleman, Yogyakarta	11		
5	Rumah Pemandokan di Jl. Lawu Raya, Seturan, Caturtunggal, Depok, Sleman	15		
6	Horison Hotel & Residences di Jl. Seturan Raya Kav. 10A Caturtunggal, Depok, Sleman, Yogyakarta	9		bor mesin
7	Hotel di Jl. Raya Seturan Yogyakarta	20	2014	
8	Seturan Junction Yogyakarta	14		
9	Rumah Tinggal di Perum Deppen, Jl. Dian Nuswantoro 1 No. 82 Yogyakarta	12		
10	Pembangunan Ruko Jl. Perumnas RT.04 / RW.02 Catur Tunggal Depok Sleman Yogyakarta	7		
11	Gedung Fakultas Teknik Perminyakan di Kampus UPN Veteran Yogyakarta Jl. SWK 104 (Lingkar Utara) Condongcatur, Sleman Yk	7		bor mesin
12	BANK SINARMAS Jl. Ring Road Utara, Mancasan Indah, Condong Catur, Depok, Sleman, Yogyakarta	14		bor mesin



Lampiran 10. Desain Saluran Eko-Drainase



DESAIN 1

- jika lebar saluran cukup untuk dipasang sumur
- posisi saluran berada di bawah jalan raya

DESAIN 2

- jika lebar saluran tidak cukup untuk dipasang sumur
- posisi saluran berada di samping jalan raya