BAB VI

KESIMPULAN DAN SARAN

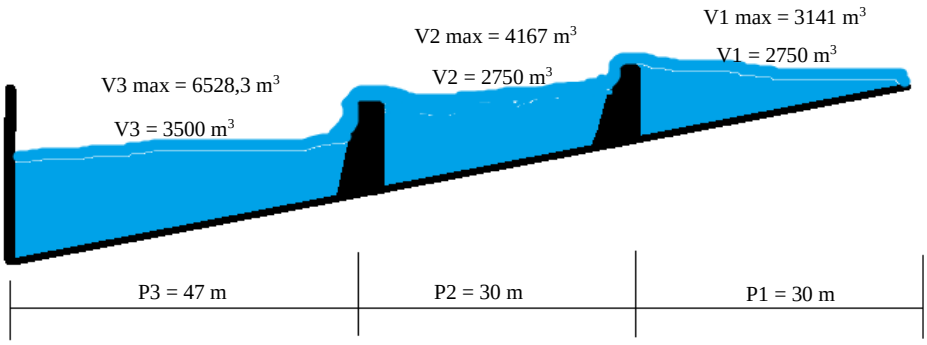
6.1. Kesimpulan

Dari hasil perhitungan dapat diketahui bahwa debit andalan yang mampu melayani kebutuhan adalah sebesar 0,0208; 0,0262; 0,0128; 0,0108; 0,0083; 0,0073; 0,0048; 0,0036; 0,0028; 0,0023; 0,0088 dan 0,0118 m^3/s untuk debit andalan 80% dan 0,0327; 0,0365; 0,0215; 0,0234; 0,0203; 0,0179; 0,0114; 0,0089; 0,0075; 0,0143; 0,0246 dan 0,0260 m^3/s untuk debit andalan rerata. Hasil ini akan digunakan untuk analisis neraca air sebagai volume *inflow*.

Setelah perhitungan debit andalan dilakukan, perhitungan analisis neraca untuk mengetahui volume air yang dapat ditampung embung dapat dilakukan. Dari hasil perhitungan diketahui bahwa selama satu tahun, volume yang ditampung oleh embung dapat melayani kebutuhan air masyarakat. Untuk kapasitas air pada satu tampungan diperoleh air tertampung sebesar 1006,83 m^3 pada bulan januari, dan bulan-bulan selanjutnya sebesar 2439,99; 2676,87; 2724,19; 2604,98; 2321,53; 1776,87; 1297,47; 758,21; 185,93; 177,56 dan 367,96 m^3. Hasil ini merupakan air yang dapat ditampung oleh embung setelah digunakan untuk kebutuhan pengairan lahan pertanian dan peternakan. Kondisi ini membuat embung yang dibuat harus memiliki kapasitas maksimal sebesar 2750 m^3. Kemudian untuk perancangan kapasitas total embung (3 buah tampungan), yang digunakan adalah debit andalan rerata. Dari hasil analisis diperoleh hasil sebesar 2039,38; 4360,21; 5352,67; 6483,18; 7399,82; 8031,56; 8059,75; 8039,52; 7904,11; 8364,04; 9719,95 dan

10425,67 m^3. Keadaan seperti ini membuat embung harus memiliki kapasitas total sebesar 9000 m^3 agar air yang ditampung tidak banyak terbuang.

Dari hasil perhitungan dapat di desain volume tampungan embung pertama dan kedua sebesar 2750 m^3 air, sedangkan volume tampungan air ketiga akan dibuat sebesar 3500 m^3 sehingga total keseluruhan tampungan adalah sebesar 9000 $m^{3.}$ Hal ini bisa dilakukan karena volume total embung yang bisa dibuat di daerah grigak adalah sebesar 13836,3 m^3 Pembuatan embung dengan kapasitas penampungan 9000 m^3 tidak menjadi masalah, dikarenakan lokasi cekungan antar bukit yang akan dijadikan embung masih cukup lebar, yang tidak bisa dilakukan adalah memperpanjang penampang embung, hal ini dikarenakan keterbatasan lahan kepemilikan. Embung hanya bisa dirancang sepanjang lahan kepemilikan milik Romo Mangun. Potongan memanjang perencanaan kapasitas embung pada Wilayah Grigak dapat dilihat pada Gambar 6.1.



Gambar 6.1. Kapasitas Embung

Kemudian untuk perencanaan dimensi bendung digunakan perhitungan debit banjir. Dari perencanaan dimensi bendung dengan debit banjir kala ulang 50 tahun sebesar 15,08 m^3/s didapatkan 2 buah bendung dengan dimensi berbeda.

Bendung 1 didapatkan nilai P = 2,5 m, R = 0,9159 m, Be = 19,4248 m, , serta tidak perlu dibuat kolam olak karena nilai *Froude* kurang dari syarat yaitu 1,7 dan bendung 2 didapatkan nilai P = 2,5 m, R = 0,7961 m, Be = 29,4996 m, serta tidak perlu dibuat kolam olak karena nilai *Froude* kurang dari syarat yaitu 1,7.

6.2. Saran

Beberapa perbaikan baik dari segi data maupun analisis perlu dilakukan supaya embung dapat direalisasikan pada Wilayah Grigak. Perbaikan tersebut di antaranya data curah hujan harus diambil dari lapangan secara langsung, karena pada perencanaan kali ini, data curah hujan hanya diperoleh dari stasiun yang berada jauh dari Wilayah Grigak.

Dikarenakan lokasi yang terletak diantara perbukitan terjal, penulis mengalami kesulitan jika harus melakukan pengukuran langsung di lapangan dengan alat manual. Akan lebih baik jika semua pengukuran, baik pengukuran luasan embung maupun elevasi dilakukan langsung di lapangan, tentunya dengan alat yang lebih *modern*, misalnya dengan bantuan *Drone* dan *Theodolite*.

Data untuk menghitung evaporasi dan evapotranspirasi hanya menggunakan data klimatologi tahun 2015 sebagai acuan untuk perhitungan selama 26 tahun karena kurang lengkapnya data yang di dapat. Akan lebih baik jika perhitungan menggunakan data yang sesuai dengan tahun yang ada agar hasil yang di dapat mendekati hasil yang sebenarnya.

Analsisis kekuatan bendung dengan analisis stabilitas juga perlu dilakukan guna mengetahui kemampuan bendung sehingga terhindar dari kerusakan. Untuk

itu penelitian lanjutan, misalnya penelitian tanah perlu dilakukan, guna mendapatkan data-data yang diperlukan.

Hitungan *Mock* pada Tugas Akhir ini masih dalam prediksi, yang artinya semua parameter yang dipakai masih dalam perkiraan dengan melihat keadaan di lapangan. Untuk hasil yang lebih akurat diperlukan pengujian langsung di lapangan untuk mendapatkan data-data yang lebih lengkap dan sesuai dengan keadaan sebenarnya di lapangan. Data-data tersebut meliputi data *soil storage moisture*, faktor resesi aliran tanah dan koefisien infiltrasi.

DAFTAR PUSTAKA

Alexander dan Harahab, Syarifuddin. 2009. Perencanaan Embung Tambaboyo Kabupaten Sleman D.I.Y. S1 Thesis. Universitas Diponegoro. Semarang.

Data Curah Hujan Kabupaten Gunungkidul (1980 – 2017). Dinas Pertanian dan Pangan Kabupaten Gunungkidul.

Data Klimatologi Yogyakarta (2015). Dinas Pekerjaan Umum Perumahan dan Energi Sumber Daya Mineral Provinsi Daerah Istimewa Yogyakarta (Dinas PUP-ESDM DIY).

Davidoff, Dicky Dionisius. 2016. Analisis *Water Balance* Serayu Berdasarkan Debit Sungai Utama. S1 Thesis. Universitas Atma Jaya Yogyakarta. Yogyakarta.

Departemen Pekerjaan Umum Direktorat Jendral Pengairan. 1986. Standar Perencanaan Irigasi: Kriteria Perencanaan Bagian Bangunan Utama KP-02. Penerbit C.V. Galang Persada. Bandung.

Departemen Pekerjaan Umum Direktorat Jendral Pengairan. 1986. Standar Perencanaan Irigasi: Kriteria Perencanaan Bagian Bangunan Irigasi, KP-04. Penerbit C.V. Galang Persada. Bandung.

Kalwa, Usfi Ula. 2016. Perencanaan Embung Memanjang Desa Ngawu Kecamatan Playen Kabupaten Gunung Kidul Yogyakarta. S1 Thesis. Universitas Atma Jaya Yogyakarta. Yogyakarta.

Kusuma, Gideon Budi. 2016. Evaluasi Perhitungan Neraca Air Pembangunan Waduk Pasuruhan, Kabupaten Magelang. S1 Thesis. Universitas Atma Jaya Yogyakarta. Yogyakarta.

Marsudi, Suwanto. Diktat Kuliah Teknik Pengairan. Morfologi Sungai. Universitas Brawijaya.

Mawardi, Erman Drs.,dan Ir. Moch Memed. 2004. *Desain Hidraulik Bendung Tetap.* Penerbit Alfabeta. Bandung.

Purwantara, Suhadi, dkk. 2012. Studi Air Permukaan di Wilayah Topografi Karst Gunungkidul. Penelitian. Universitas Negeri Yogyakarta.

Simanjuntak, ST, M.Plan, Entatarina, dkk. 2014. Peluang Investasi Infrastruktur Bidang Pekerjaan Umum. Penerbit Dinas Pekerjaan Umum

SNI 19-6728.1-2002. 2002. Penyusunan Neraca Sumber Daya - Bagian 1: Sumber Daya Air Spasial. Penerbit Badan Standardisasi Nasional Indonesia.

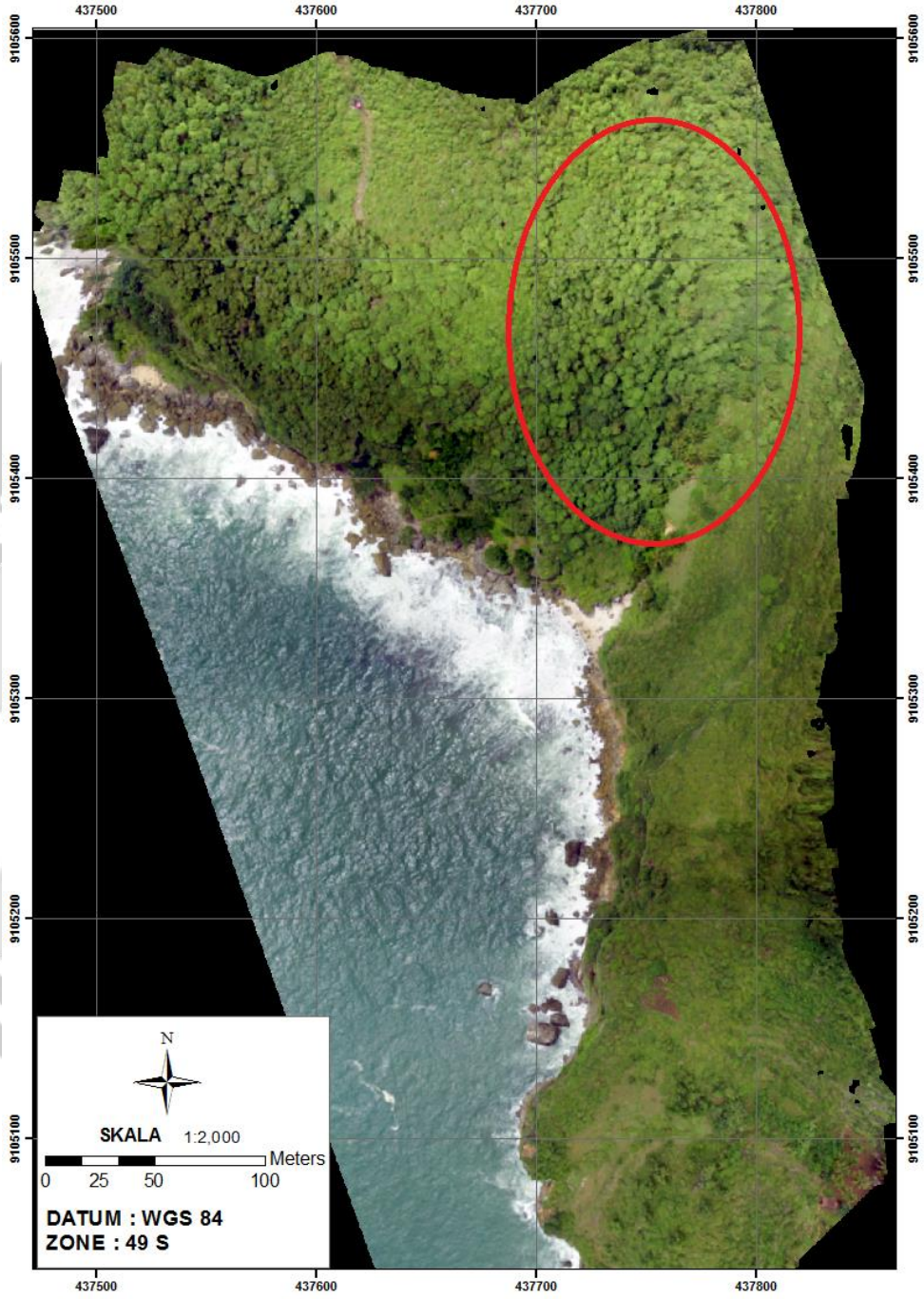
Soewarno. 1995. Hidrologi Aplikasi Metode Statistik Untuk Analisa Data Jilid I. Penerbit Nova. Bandung.

Sumarni, Ratna Sri. 2009. Perencanaan Embung Robatal Kabupaten Sampang. S1 Thesis. Institut Teknologi Sepuluh Nopember. Surabaya.

Triatmodjo, Prof.Dr.Ir.Bambang. 2010. *Hidrologi Terapan.* Penerbit Beta Offset, Yogyakarta.

LAMPIRAN

LOKASI PEMBUATAN EMBUNG



Lampiran 1

PERBEDAAN KETINGGIAN DI LOKASI EMBUNG

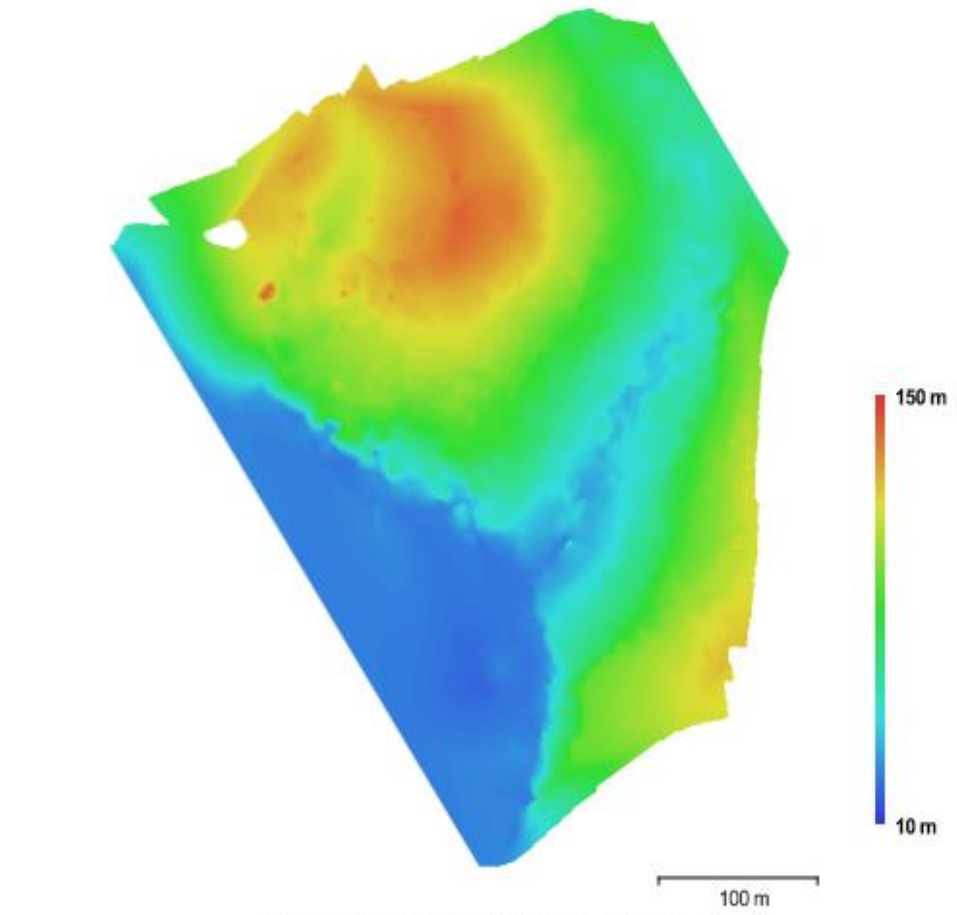
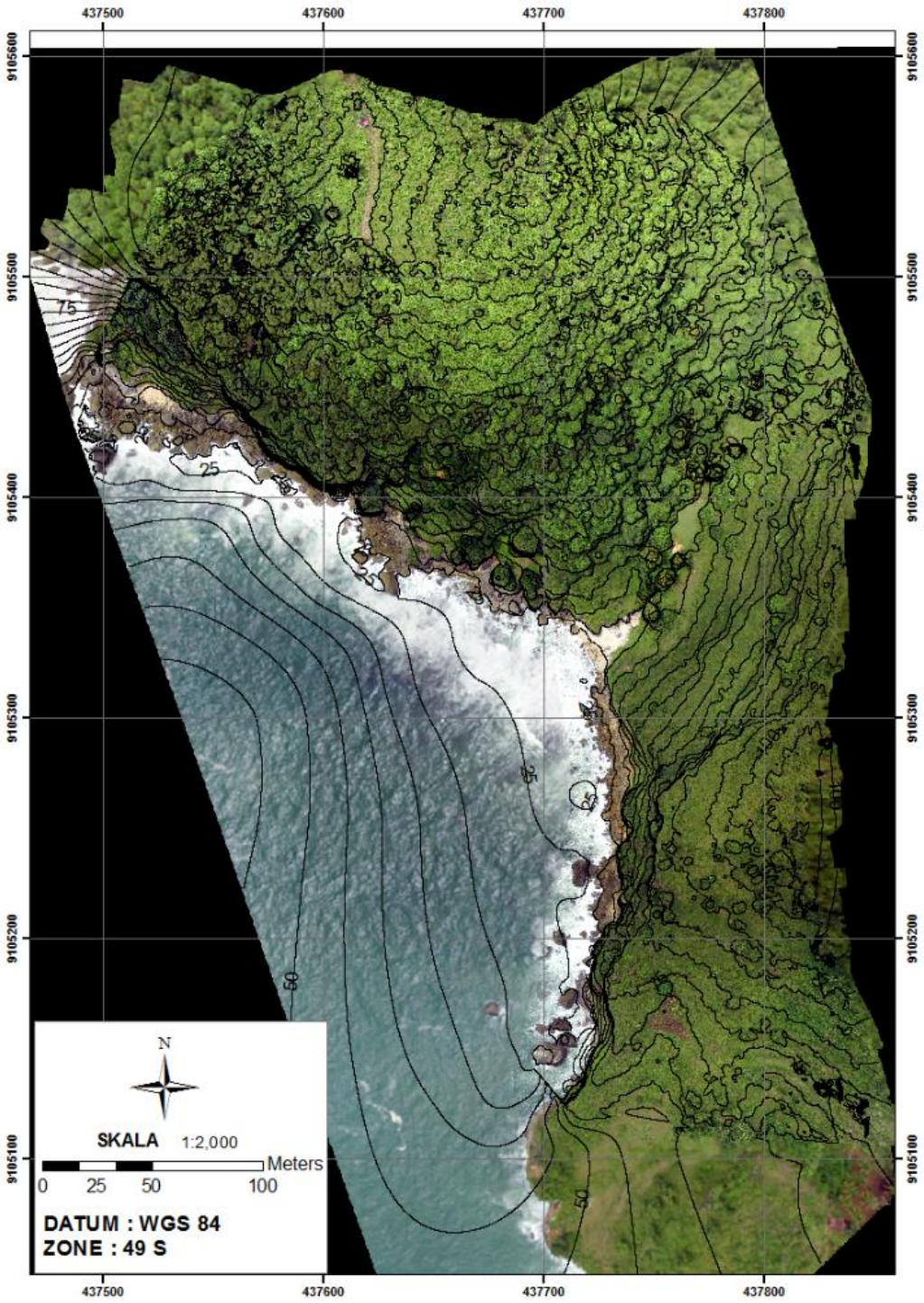


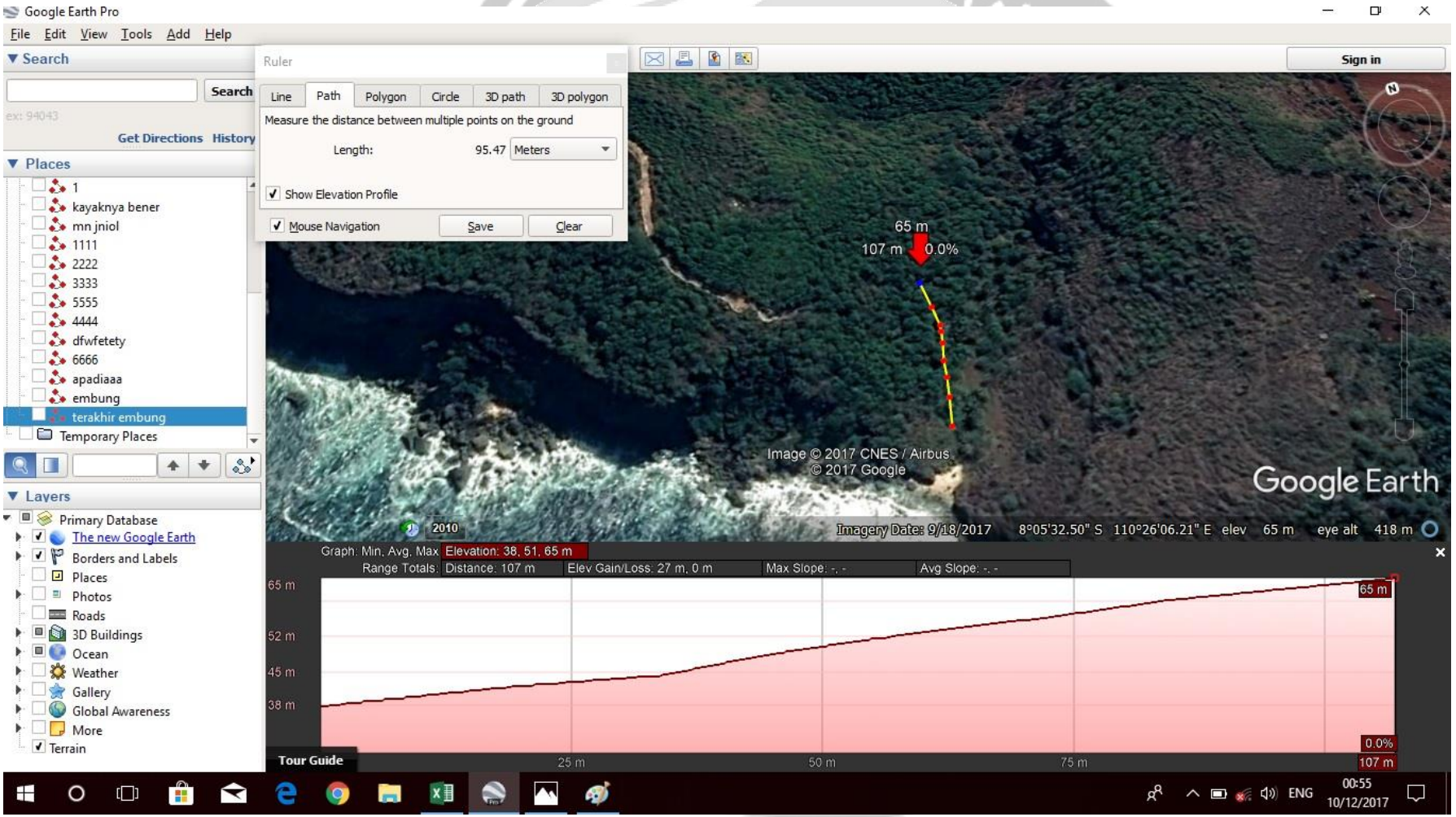
Fig. 4. Reconstructed digital elevation model.

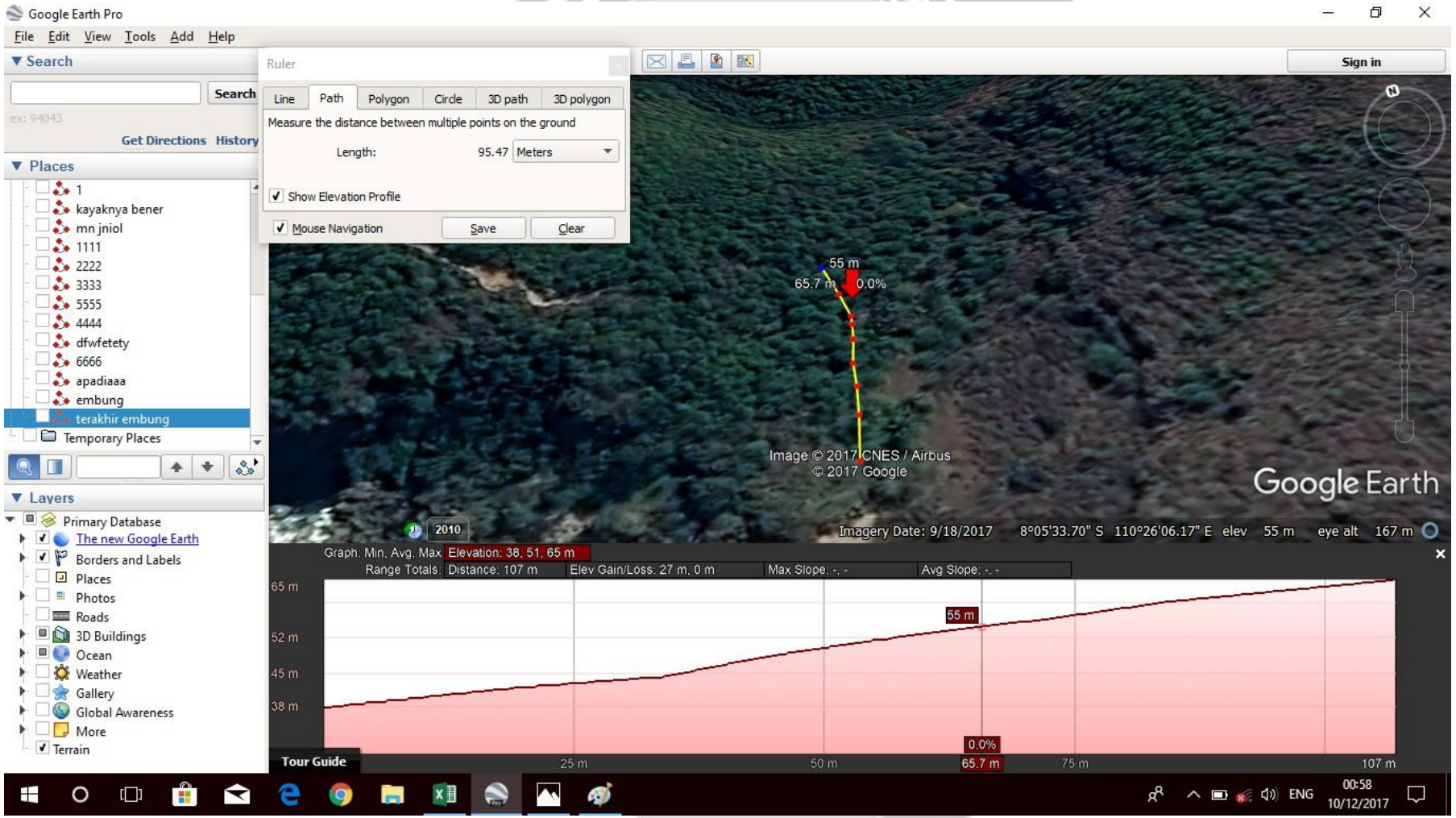
Resolution:	1.1 m/pix
Point density:	0.822637 points per sq m

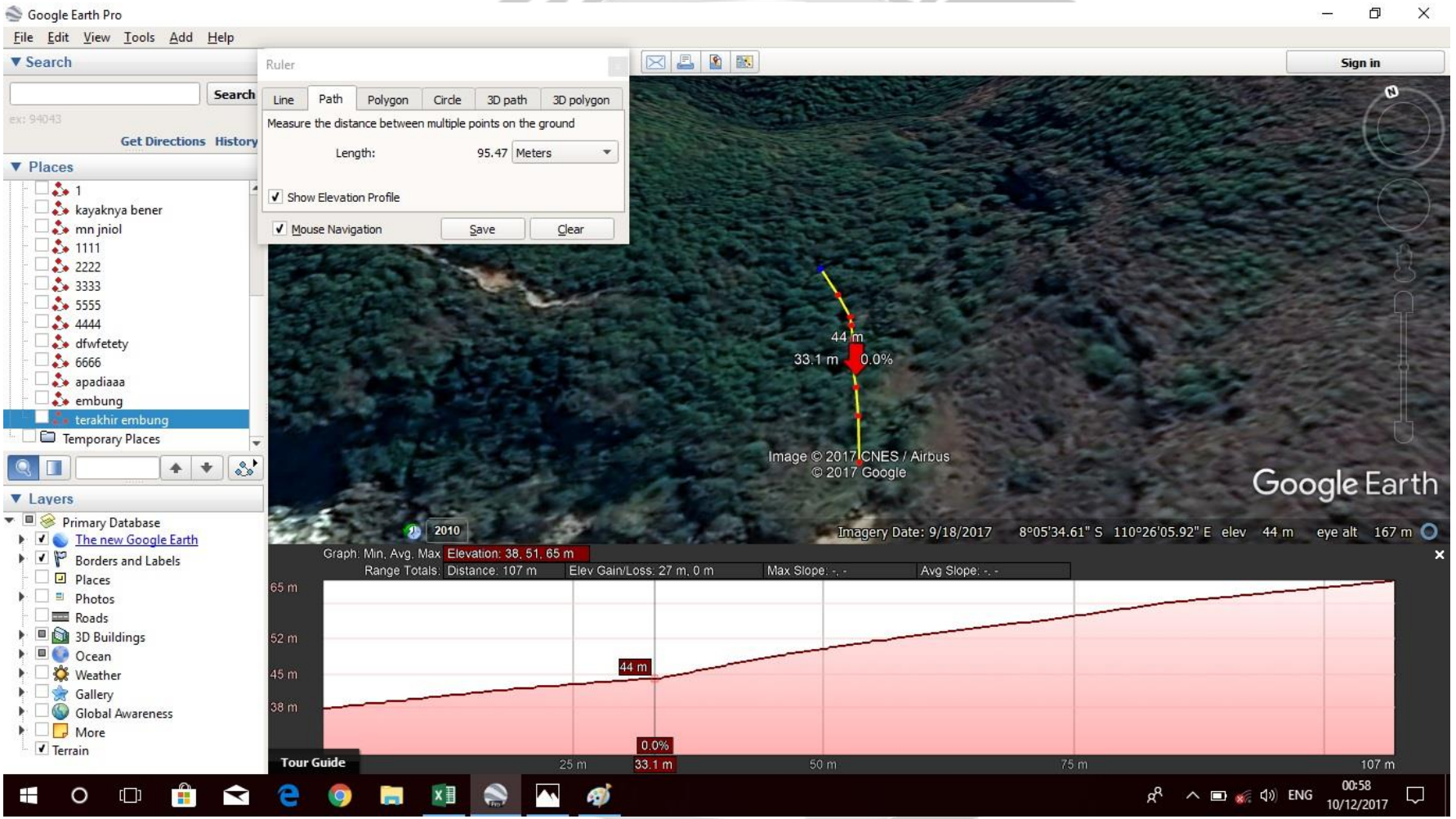
PETA KONTUR LOKASI

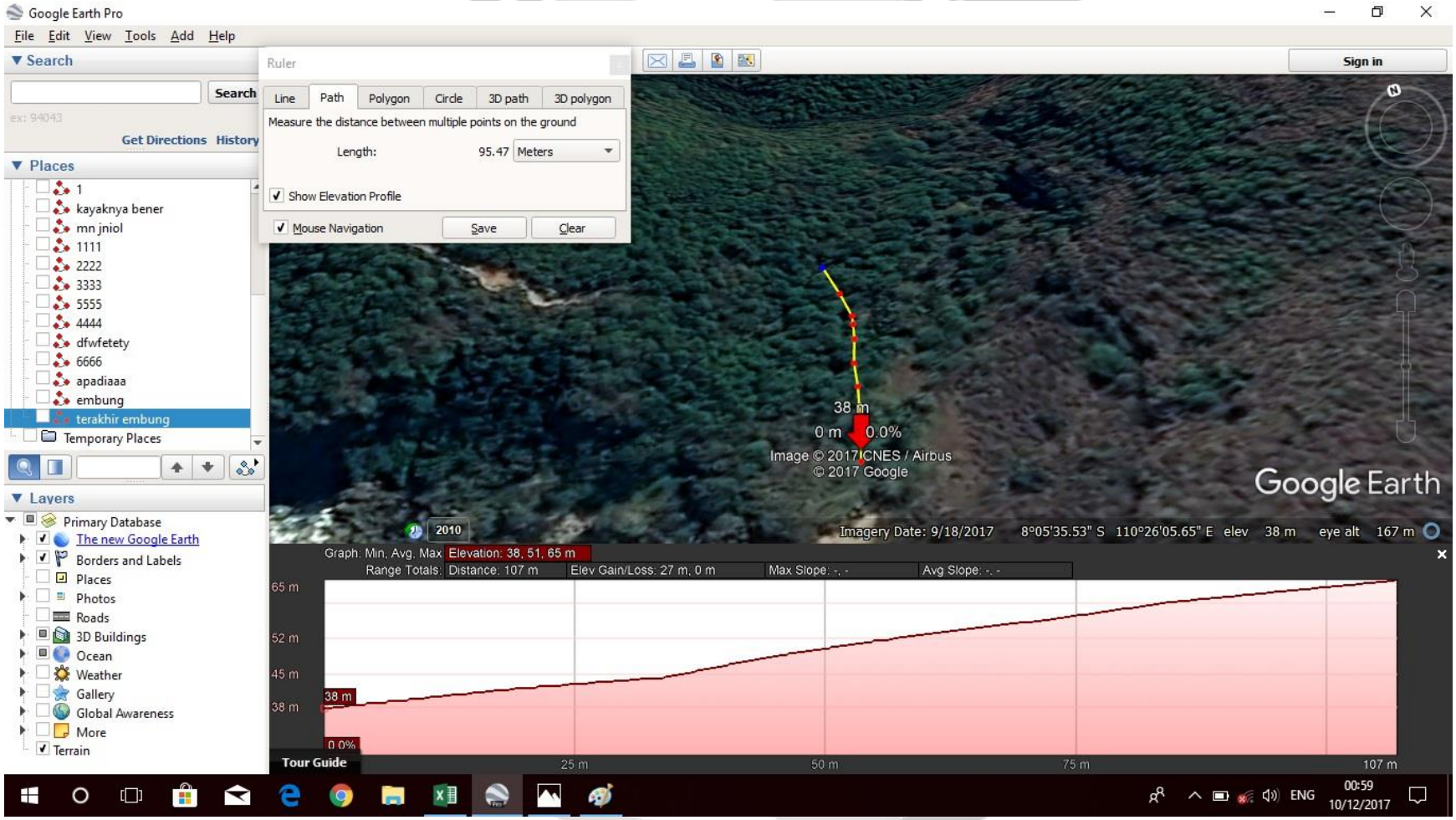


Lampiran 3


Google Earth Pro
File Edit View Tools Add Help
Search
Search
Get Directions History
Places
1
kayaknya bener
mn jniol
1111
2222
3333
5555
4444
dfwfetety
6666
apadiaaa
embung
terakhir embung
Temporary Places
Layers
Primary Database
The new Google Earth
Borders and Labels
Places
Photos
Roads
3D Buildings
Ocean
Weather
Gallery
Global Awareness
More
Terrain
Ruler
Line
Path
Polygon
Circle
3D path
3D polygon
Measure the distance between multiple points on the ground
Length:
95.47
Meters
Show Elevation Profile
Mouse Navigation
Save
Clear
Sign in
65 m
107 m
0.0%
Image © 2017 CNES / Airbus
© 2017 Google
Google Earth
2010
Imagery Date: 9/18/2017
8°05'32.50" S 110°26'06.21" E elev 65 m eye alt 418 m
Graph: Min, Avg, Max
Elevation: 38, 51, 65 m
Range Totals:
Distance: 107 m
Elev Gain/Loss: 27 m, 0 m
Max Slope: -, -
Avg Slope: -, -
65 m
52 m
45 m
38 m
25 m
50 m
75 m
0.0%
107 m
Tour Guide
ENG
00:55
10/12/2017

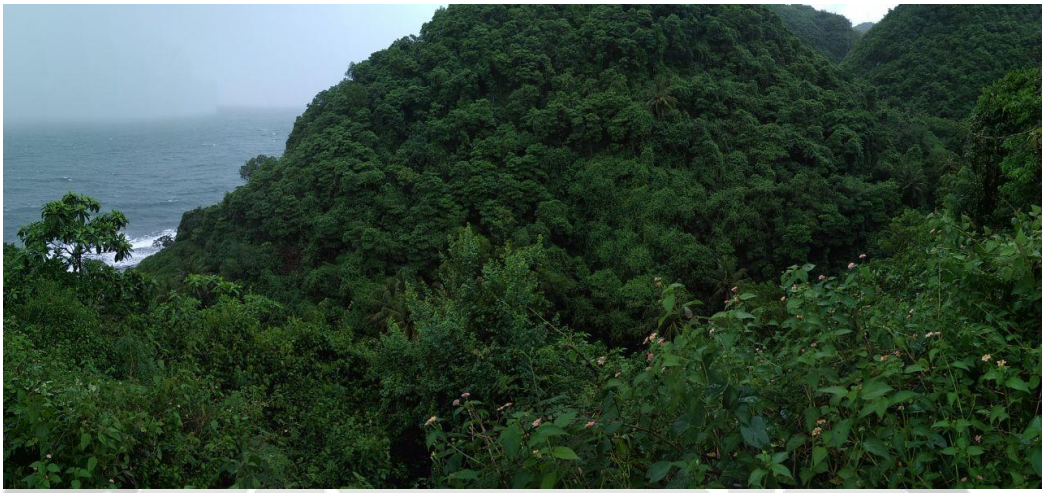

Google Earth Pro
File Edit View Tools Add Help
Search
Search
Get Directions History
Places
1
kayaknya bener
mn jniol
1111
2222
3333
5555
4444
dfwfetety
6666
apadiaaa
embung
terakhir embung
Temporary Places
Layers
Primary Database
The new Google Earth
Borders and Labels
Places
Photos
Roads
3D Buildings
Ocean
Weather
Gallery
Global Awareness
More
Terrain
Ruler
Line
Path
Polygon
Circle
3D path
3D polygon
Measure the distance between multiple points on the ground
Length:
95.47
Meters
Show Elevation Profile
Mouse Navigation
Save
Clear
Sign in
55 m
65.7 m
0.0%
Image © 2017 CNES / Airbus
© 2017 Google
Google Earth
2010
Imagery Date: 9/18/2017 8°05'33.70" S 110°26'06.17" E elev 55 m eye alt 167 m
Graph: Min, Avg, Max Elevation: 38, 51, 65 m
Range Totals: Distance: 107 m
Elev Gain/Loss: 27 m, 0 m
Max Slope: -, -
Avg Slope: -, -
65 m
52 m
45 m
38 m
55 m
0.0%
Tour Guide
25 m
50 m
65.7 m
75 m
107 m
ENG
00:58
10/12/2017


Google Earth Pro
File Edit View Tools Add Help
Search
Search
Get Directions History
Places
1
kayaknya bener
mn jniol
1111
2222
3333
5555
4444
dfwfetety
6666
apadiaaa
embung
terakhir embung
Temporary Places
Layers
Primary Database
The new Google Earth
Borders and Labels
Places
Photos
Roads
3D Buildings
Ocean
Weather
Gallery
Global Awareness
More
Terrain
Ruler
Line
Path
Polygon
Circle
3D path
3D polygon
Measure the distance between multiple points on the ground
Length:
95.47
Meters
Show Elevation Profile
Mouse Navigation
Save
Clear
Sign in
44 m
33.1 m
0.0%
Image © 2017 CNES / Airbus
© 2017 Google
Google Earth
2010
Imagery Date: 9/18/2017
8°05'34.61" S 110°26'05.92" E elev 44 m eye alt 167 m
Graph: Min, Avg, Max Elevation: 38, 51, 65 m
Range Totals: Distance: 107 m
Elev Gain/Loss: 27 m, 0 m
Max Slope: -, -
Avg Slope: -, -
65 m
52 m
45 m
38 m
44 m
0.0%
Tour Guide
25 m
33.1 m
50 m
75 m
107 m
ENG
00:58
10/12/2017


Google Earth Pro
File Edit View Tools Add Help
Search
Get Directions History
Places
1
kayaknya bener
mn jniol
1111
2222
3333
5555
4444
dfwfetety
6666
apadiaaa
embung
terakhir embung
Temporary Places
Layers
Primary Database
The new Google Earth
Borders and Labels
Places
Photos
Roads
3D Buildings
Ocean
Weather
Gallery
Global Awareness
More
Terrain
Ruler
Line
Path
Polygon
Circle
3D path
3D polygon
Measure the distance between multiple points on the ground
Length:
95.47
Meters
Show Elevation Profile
Mouse Navigation
Save
Clear
Sign in
38 m
0 m
0.0%
Image © 2017 CNES / Airbus
© 2017 Google
Google Earth
2010
Imagery Date: 9/18/2017
8°05'35.53" S 110°26'05.65" E elev 38 m eye alt 167 m
Graph: Min, Avg, Max Elevation: 38, 51, 65 m
Range Totals: Distance: 107 m
Elev Gain/Loss: 27 m, 0 m
Max Slope: -, -
Avg Slope: -, -
65 m
52 m
45 m
38 m
0.0%
Tour Guide
25 m
50 m
75 m
107 m
ENG
00:59
10/12/2017

KEADAAN DI LOKASI PEMBUATAN EMBUNG

Lampiran 4



TABEL CHI KUADRAT

Degrees of Freedom	Probability of a larger value of x^2								
	0.99	0.95	0.90	0.75	0.50	0.25	0.10	0.05	0.01
1	0.000	0.004	0.016	0.102	0.455	1.32	2.71	3.84	6.63
2	0.020	0.103	0.211	0.575	1.386	2.77	4.61	5.99	9.21
3	0.115	0.352	0.584	1.212	2.366	4.11	6.25	7.81	11.34
4	0.297	0.711	1.064	1.923	3.357	5.39	7.78	9.49	13.28
5	0.554	1.145	1.610	2.675	4.351	6.63	9.24	11.07	15.09
6	0.872	1.635	2.204	3.455	5.348	7.84	10.64	12.59	16.81
7	1.239	2.167	2.833	4.255	6.346	9.04	12.02	14.07	18.48
8	1.647	2.733	3.490	5.071	7.344	10.22	13.36	15.51	20.09
9	2.088	3.325	4.168	5.899	8.343	11.39	14.68	16.92	21.67
10	2.558	3.940	4.865	6.737	9.342	12.55	15.99	18.31	23.21
11	3.053	4.575	5.578	7.584	10.341	13.70	17.28	19.68	24.72
12	3.571	5.226	6.304	8.438	11.340	14.85	18.55	21.03	26.22
13	4.107	5.892	7.042	9.299	12.340	15.98	19.81	22.36	27.69
14	4.660	6.571	7.790	10.165	13.339	17.12	21.06	23.68	29.14
15	5.229	7.261	8.547	11.037	14.339	18.25	22.31	25.00	30.58
16	5.812	7.962	9.312	11.912	15.338	19.37	23.54	26.30	32.00
17	6.408	8.672	10.085	12.792	16.338	20.49	24.77	27.59	33.41
18	7.015	9.390	10.865	13.675	17.338	21.60	25.99	28.87	34.80
19	7.633	10.117	11.651	14.562	18.338	22.72	27.20	30.14	36.19
20	8.260	10.851	12.443	15.452	19.337	23.83	28.41	31.41	37.57
22	9.542	12.338	14.041	17.240	21.337	26.04	30.81	33.92	40.29
24	10.856	13.848	15.659	19.037	23.337	28.24	33.20	36.42	42.98
26	12.198	15.379	17.292	20.843	25.336	30.43	35.56	38.89	45.64
28	13.565	16.928	18.939	22.657	27.336	32.62	37.92	41.34	48.28
30	14.953	18.493	20.599	24.478	29.336	34.80	40.26	43.77	50.89
40	22.164	26.509	29.051	33.660	39.335	45.62	51.80	55.76	63.69
50	27.707	34.764	37.689	42.942	49.335	56.33	63.17	67.50	76.15
60	37.485	43.188	46.459	52.294	59.335	66.98	74.40	79.08	88.38

TABEL Yn DAN Sn DISTRIBUSI GUMBEL

Tabel 7.6. Nilai y_n dan σn fungsi jumlah data

n	y_n	σ_n	n	y_n	σ_n	n	y_n	σ_n
8	0,4843	0,9043	39	0,5430	1,1388	70	0,5548	1,1854
9	0,4902	0,9288	40	0,5436	1,1413	71	0,5550	1,1863
10	0,4952	0,9497	41	0,5442	1,1436	72	0,5552	1,1873
11	0,4996	0,9676	42	0,5448	1,1458	73	0,5555	1,1881
12	0,5053	0,9833	43	0,5453	1,1480	74	0,5557	1,1890
13	0,5070	0,9972	44	0,5258	1,1490	75	0,5559	1,1898
14	0,5100	1,0098	45	0,5463	1,1518	76	0,5561	1,1906
15	0,5128	1,0206	46	0,5468	1,1538	77	0,5563	1,1915
16	0,5157	1,0316	47	0,5473	1,1557	78	0,5565	1,1923
17	0,5181	1,0411	48	0,5447	1,1574	79	0,5567	1,1930
18	0,5202	1,0493	49	0,5481	1,1590	80	0,5569	1,1938
19	0,5220	1,0566	50	0,5485	1,1607	81	0,5570	1,1945
20	0,5235	1,0629	51	0,5489	1,1623	82	0,5572	1,1953
21	0,5252	1,0696	52	0,5493	1,1638	83	0,5574	1,1959
22	0,5268	1,0754	53	0,5497	1,1653	84	0,5576	1,1967
23	0,5283	1,0811	54	0,5501	1,1667	85	0,5578	1,1973
24	0,5296	1,0864	55	0,5504	1,1681	86	0,5580	1,1980
25	0,5309	1,0914	56	0,5508	1,1696	87	0,5581	1,1987
26	0,5320	1,0961	57	0,5511	1,1708	88	0,5583	1,1994
27	0,5332	1,1004	58	0,5515	1,1721	89	0,5585	1,2001
28	0,5343	1,1047	59	0,5518	1,1734	90	0,5586	1,2007
29	0,5353	1,1086	60	0,5521	1,1747	91	0,5587	1,2013
30	0,5362	1,1124	61	0,5524	1,1759	92	0,5589	1,2020
31	0,5371	1,1159	62	0,5527	1,1770	93	0,5591	1,2026
32	0,5380	1,1193	63	0,5530	1,1782	94	0,5592	1,2032
33	0,5388	1,1226	64	0,5533	1,1793	95	0,5593	1,2038
34	0,5396	1,1255	65	0,5535	1,1803	96	0,5595	1,2044
35	0,5403	1,1285	66	0,5538	1,1814	97	0,5596	1,2049
36	0,5410	1,1313	67	0,5540	1,1824	98	0,5598	1,2055
37	0,5418	1,1339	68	0,5543	1,1834	99	0,5599	1,2060
38	0,5424	1,1363	69	0,5545	1,1844	100	0,5600	1,2065

DATA CURAH HUJAN MAKSIMAL TIAP TAHUN STASIUN PANGGANG

No	Tahun	Bulan												Maks
		Jan	Feb	Mar	Apr	Mei	Jun	Jul	Ags	Sep	Okt	Nov	Des	
1	1991	54	107	19	59	3	-	-	-	-	7	91	76	107
2	1992	39	41	45	196	24	4	9	136	42	53	102	60	196
3	1993	35	65	48	44	24	16	-	23	3	7	69	90	90
4	1994	89	68	23	28	7	-	2	-	-	5	3	27	89
5	1995	92	28	76	23	6	40	8	-	7	21	134	140	140
6	1996	76	75	31	45	2	-	7	10	-	64	122	80	122
7	1997	70	79	28	26	10	-	-	-	-	-	5	32	79
8	1998	78	41	54	48	34	156	46	-	-	-	47	107	156
9	1999	108	-	40	46	27	-	-	-	-	10	97	89	108
10	2000	110	70	-	-	26	11	3	1	8	146	213	-	213
11	2001	159	89	59	16	10	49	2	-	4	113	-	-	159
12	2002	114	102	21	41	4	-	-	-	-	4	54	99	114
13	2003	112	89	49	19	41	-	-	-	-	33	80	85	112
14	2004	85	45	68	6	83	22	38	-	-	5	76	99	99
15	2005	111	47	33	14	-	18	50	-	7	110	162	141	162
16	2006	77	72	106	130	60	-	-	-	-	-	-	52	130
17	2007	57	-	-	-	31	37	-	-	5	29	19	62	62
18	2008	82	59	95	46	58	-	-	-	-	95	104	36	104
19	2009	82	81	11	54	109	156	-	-	-	31	23	35	156
20	2010	103	75	78	110	241	78	40	-	67	69	78	85	241
21	2011	89	125	43	40	61	-	-	-	-	-	75	95	125
22	2012	100	34	53	102	52	-	0	-	-	62	61	64	102
23	2013	79	54	61	41	25	62	54	-	-	25	64	-	79
24	2014	67	68	42	41	33	22	51	-	-	5	62	76	76
25	2015	103	56	84	67	52	11	11	-	-	-	43	94	103
26	2016	49	85	47	69	37	127	19	23	57	79	68	134	134

DATA KLIMATOLOGI STASIUN PLAYEN TAHUN 2015

No	Bulan	Suhu	R.H.	Kecepatan Angin (u2)		Radiasi Matahari	
		(˚C)	(%)	Km/hari	m/s	(cal/cm2/hari)	En(mm/hari)
1	jan	26.5	96	122.68	1.4199	1507.30	25.9208
2	feb	25.5	78	71.06	0.8225	1484.99	25.5372
3	mar	25.5	76	83.44	0.9657	1249.95	21.4953
4	apr	26.5	77	104.46	1.2090	1231.57	21.1792
5	may	25.5	80.5	76.61	0.8867	1305.10	22.4436
6	jun	25.5	72	109	1.2616	1433.77	24.6564
7	jul	23.5	68.5	135.38	1.5669	1231.57	21.1792
8	aug	25.5	97	166.39	1.9258	1360.24	23.3920
9	sep	25	98	170.63	1.9749	1323.48	22.7598
10	oct	26.5	99	173.8	2.0116	1397.01	24.0242
11	nov	27.5	99	178.37	2.0645	1654.35	28.4497
12	dec	27.5	92.5	158.53	1.8348	1672.73	28.7658

PERHITUNGAN DEBIT ANDALAN SELAMA 26 TAHUN

Perhitungan Debit Andalan tahun 1991

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	54	107	19	59	3	0	0	0	0	7	91	76
[1]			(mm/bln)	1674	2996	589	1770	93	0	0	0	0	217	2730	2356
[2]	JlH HARI HUJAN	(N)	hr	23	23	8	15	2	0	0	0	0	2	12	13
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.90	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
[5]	(m/20) * (18 - N)			-0.08	-0.08	0.15	0.05	0.24	0.27	0.27	0.27	0.27	0.24	0.09	0.08
[6]	dE	[5] x [3]	mm	-45.86	-40.57	76.08	22.14	126.47	152.79	133.84	147.08	137.33	135.74	59.02	51.72
[7]	Etl = Eto -dE	[3] - [6]	mm	657.27	581.46	431.10	469.87	400.50	413.10	361.88	397.65	371.31	429.83	596.80	637.89
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	1016.73	2414.54	157.90	1300.13	-307.50	-413.10	-361.88	-397.65	-371.31	-212.83	2133.20	1718.11
[9]	Soil Storage		mm	0.00	0.00	0.00	0.00	307.50	413.10	361.88	397.65	371.31	212.83	0.00	0.00
[10]	Soil Moisture		mm	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
[11]	Water Surplus	[8] - [9]	mm	1016.73	2414.54	157.90	1300.13	0.00	0.00	0.00	0.00	0.00	0.00	2133.20	1718.11
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	508.36	1207.27	78.95	650.07	0.00	0.00	0.00	0.00	0.00	0.00	1066.60	859.06
[13]	0,5 x (1 + k) x 1 x [12]		mm	444.82	1056.36	69.08	568.81	0.00	0.00	0.00	0.00	0.00	0.00	933.27	751.67
[14]	K x (Vn-1)		mm	1231.97	1231.90	1716.20	1338.96	1430.82	1073.12	804.84	603.63	452.72	339.54	254.66	890.95
[15]	Storage Volume	[13] + [14]	mm	1676.79	2288.26	1785.28	1907.77	1430.82	1073.12	804.84	603.63	452.72	339.54	1187.93	1642.62
[16]	dVn = Vn - Vn-1		mm	34.25	611.48	-502.99	122.49	-476.94	-357.71	-268.28	-201.21	-150.91	-113.18	848.39	454.69
[17]	Base Flow	[12] - [16]	mm	474.12	595.79	581.93	527.58	476.94	357.71	268.28	201.21	150.91	113.18	218.21	404.36
[18]	Direct Runoff	[11] - [12]	mm	508.36	1207.27	78.95	650.07	0.00	0.00	0.00	0.00	0.00	0.00	1066.60	859.06
[19]	Runoff	[17] + [18]	mm	982.48	1803.06	660.88	1177.64	476.94	357.71	268.28	201.21	150.91	113.18	1284.81	1263.42
[20]	Runoff	[17] + [18]	m^3/dt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
[21]	CA		km^2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
[22]	Debit Terukur	[19] x A	lt/dt	20.14	40.92	13.55	24.94	9.78	7.58	5.50	4.12	3.20	2.32	27.21	25.90
[23]	Debit Terukur	[19] x A	m^3/dt	0.02	0.04	0.01	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.03	0.03

Perhitungan Debit Andalan tahun 1992

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	39	41	45	196	24	4	9	136	42	53	102	60
[1]			(mm/bln)	1209	1189	1395	5880	744	120	279	4216	1260	1643	3060	1860
[2]	JlH HARI HUJAN		(N)	15	16	15	21	5	3	1	5	14	20	16	17
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			0.045	0.03	0.045	-0.045	0.195	0.225	0.255	0.195	0.06	-0.03	0.03	0.015
[6]	dE	[5] x [3]	mm	27.514	16.227	22.823	-22.14	102.76	127.32	126.41	106.22	30.518	-16.967	19.675	10.344
[7]	Etl = Eto -dE	[3] - [6]	mm	583.9	524.67	484.36	514.15	424.22	438.56	369.31	438.5	478.12	582.54	636.15	679.26
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	625.1	664.33	910.64	5365.8	319.78	-318.56	-90.312	3777.5	781.88	1060.5	2423.8	1180.7
[9]	Soil Storage		mm	0	0	0	0	0	318.56	90.312	0	0	0	0	0
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	625.1	664.33	910.64	5365.8	319.78	0	0	3777.5	781.88	1060.5	2423.8	1180.7
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	312.55	332.17	455.32	2682.9	159.89	0	0	1888.7	390.94	530.23	1211.9	590.37
[13]	0,5 x (1 + k) x 1 x [12]		mm	273.48	290.64	398.41	2347.6	139.9	0	0	1652.7	342.07	463.95	1060.4	516.57
[14]	K x (Vn-1)		mm	1989.1	1989.1	1709.8	1581.1	2946.5	2314.8	1736.1	1302.1	2216.1	1918.6	1786.9	2135.5
[15]	Storage Volume	[13] + [14]	mm	2262.5	2279.7	2108.2	3928.7	3086.4	2314.8	1736.1	2954.7	2558.1	2382.5	2847.3	2652.1
[16]	dVn = Vn - Vn-1		mm	-389.54	17.164	-171.52	1820.5	-842.27	-771.61	-578.71	1218.6	-396.61	-175.58	464.8	-195.26
[17]	Base Flow	[12] - [16]	mm	702.09	315	626.84	862.41	1002.2	771.61	578.71	670.12	787.55	705.81	747.13	785.63
[18]	Direct Runoff	[11] - [12]	mm	312.55	332.17	455.32	2682.9	159.89	0	0	1888.7	390.94	530.23	1211.9	590.37
[19]	Runoff	[17] + [18]	mm	1014.6	647.17	1082.2	3545.3	1162.1	771.61	578.71	2558.9	1178.5	1236	1959.1	1376
[20]	Runoff	[17] + [18]	m^3/dt	0.0004	0.0003	0.0004	0.0014	0.0004	0.0003	0.0002	0.001	0.0005	0.0005	0.0008	0.0005
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	20.797	14.18	22.181	75.092	23.819	16.343	11.862	52.45	24.961	25.336	41.494	28.204
[23]	Debit Terukur	[19] x A	m^3/dt	0.0208	0.0142	0.0222	0.0751	0.0238	0.0163	0.0119	0.0524	0.025	0.0253	0.0415	0.0282

Perhitungan Debit Andalan tahun 1993

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	35	65	48	44	24	16	0	23	3	7	69	90
[1]			(mm/bln)	1085	1820	1488	1320	744	480	0	713	90	217	2070	2790
[2]	JlH HARI HUJAN		(N)	17	15	14	12	5	6	0	5	2	2	17	19
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			0.015	0.045	0.06	0.09	0.195	0.18	0.27	0.195	0.24	0.24	0.015	-0.015
[6]	dE	[5] x [3]	mm	9.1712	24.34	30.431	44.281	102.76	101.86	133.84	106.22	122.07	135.74	9.8374	-10.344
[7]	Etl = Eto -dE	[3] - [6]	mm	602.25	516.56	476.75	447.73	424.22	464.03	361.88	438.5	386.57	429.83	645.99	699.95
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	482.75	1303.4	1011.2	872.27	319.78	15.972	-361.88	274.5	-296.57	-212.83	1424	2090
[9]	Soil Storage		mm	0	0	0	0	0	0	361.88	0	296.57	212.83	0	0
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	482.75	1303.4	1011.2	872.27	319.78	15.972	0	274.5	0	0	1424	2090
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	241.38	651.72	505.62	436.14	159.89	7.9861	0	137.25	0	0	712.01	1045
[13]	0,5 x (1 + k) x 1 x [12]		mm	211.21	570.26	442.42	381.62	139.9	6.9879	0	120.09	0	0	623.01	914.4
[14]	K x (Vn-1)		mm	1208.4	1208.4	1334	1332.3	1285.4	1069	806.99	605.24	544	408	306	696.75
[15]	Storage Volume	[13] + [14]	mm	1419.6	1778.6	1776.4	1713.9	1425.3	1076	806.99	725.34	544	408	929.01	1611.2
[16]	dVn = Vn - Vn-1		mm	-191.58	359.05	-2.2336	-62.478	-288.57	-349.35	-269	-81.656	-181.33	-136	521	682.14
[17]	Base Flow	[12] - [16]	mm	432.96	292.67	507.86	498.61	448.46	357.33	269	218.9	181.33	136	191	362.88
[18]	Direct Runoff	[11] - [12]	mm	241.38	651.72	505.62	436.14	159.89	7.9861	0	137.25	0	0	712.01	1045
[19]	Runoff	[17] + [18]	mm	674.34	944.39	1013.5	934.75	608.35	365.32	269	356.15	181.33	136	903.01	1407.9
[20]	Runoff	[17] + [18]	m^3/dt	0.0003	0.0004	0.0004	0.0004	0.0002	0.0001	0.0001	0.0001	7E-05	5E-05	0.0003	0.0005
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	13.822	21.432	20.774	19.799	12.47	7.7376	5.5137	7.3002	3.8408	2.7876	19.126	28.858
[23]	Debit Terukur	[19] x A	m^3/dt	0.0138	0.0214	0.0208	0.0198	0.0125	0.0077	0.0055	0.0073	0.0038	0.0028	0.0191	0.0289

Perhitungan Debit Andalan tahun 1994

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	89	68	23	28	7	0	2	0	0	5	3	27
[1]			(mm/bln)	2759	1904	713	840	217	0	62	0	0	155	90	837
[2]	JlH HARI HUJAN		(N)	24	27	19	7	1	0	1	0	0	1	7	12
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			-0.09	-0.135	-0.015	0.165	0.255	0.27	0.255	0.27	0.27	0.255	0.165	0.09
[6]	dE	[5] x [3]	mm	-55.027	-73.021	-7.6077	81.182	134.38	152.79	126.41	147.08	137.33	144.22	108.21	62.065
[7]	Etl = Eto -dE	[3] - [6]	mm	666.44	613.92	514.79	410.83	392.6	413.1	369.31	397.65	371.31	421.35	547.61	627.54
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	2092.6	1290.1	198.21	429.17	-175.6	-413.1	-307.31	-397.65	-371.31	-266.35	-457.61	209.46
[9]	Soil Storage		mm	0	0	0	0	175.6	413.1	307.31	397.65	371.31	266.35	457.61	0
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	2092.6	1290.1	198.21	429.17	0	0	0	0	0	0	0	209.46
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	1046.3	645.04	99.105	214.59	0	0	0	0	0	0	0	104.73
[13]	0,5 x (1 + k) x 1 x [12]		mm	915.49	564.41	86.717	187.76	0	0	0	0	0	0	0	91.638
[14]	K x (Vn-1)		mm	116.47	116.47	510.66	448.03	476.85	357.63	268.23	201.17	150.88	113.16	84.868	63.651
[15]	Storage Volume	[13] + [14]	mm	1032	680.88	597.38	635.79	476.85	357.63	268.23	201.17	150.88	113.16	84.868	155.29
[16]	dVn = Vn - Vn-1		mm	-876.67	-351.08	-83.503	-38.419	-158.95	-119.21	-89.409	-67.056	-50.292	-37.719	-28.289	-70.421
[17]	Base Flow	[12] - [16]	mm	169.61	996.12	182.61	176.17	158.95	119.21	89.409	67.056	50.292	37.719	28.289	34.308
[18]	Direct Runoff	[11] - [12]	mm	1046.3	645.04	99.105	214.59	0	0	0	0	0	0	0	104.73
[19]	Runoff	[17] + [18]	mm	1215.9	1641.2	281.71	390.75	158.95	119.21	89.409	67.056	50.292	37.719	28.289	139.04
[20]	Runoff	[17] + [18]	m^3/dt	0.0005	0.0007	0.0001	0.0002	6E-05	5E-05	3E-05	3E-05	2E-05	1E-05	1E-05	5E-05
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	24.922	37.244	5.7744	8.2764	3.258	2.525	1.8326	1.3745	1.0652	0.7731	0.5992	2.8499
[23]	Debit Terukur	[19] x A	m^3/dt	0.0249	0.0372	0.0058	0.0083	0.0033	0.0025	0.0018	0.0014	0.0011	0.0008	0.0006	0.0028

Perhitungan Debit Andalan tahun 1995

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	92	28	76	23	6	40	8	0	7	21	134	140
[1]			(mm/bln)	2852	784	2356	690	186	1200	248	0	210	651	4020	4340
[2]	JlH HARI HUJAN		(N)	22	20	21	10	1	8	4	0	2	6	19	26
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			-0.06	-0.03	-0.045	0.12	0.255	0.15	0.21	0.27	0.24	0.18	-0.015	-0.12
[6]	dE	[5] x [3]	mm	-36.685	-16.227	-22.823	59.041	134.38	84.883	104.1	147.08	122.07	101.8	-9.8374	-82.753
[7]	Etl = Eto -dE	[3] - [6]	mm	648.1	557.12	530.01	432.97	392.6	481	391.62	397.65	386.57	463.77	665.66	772.36
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	2203.9	226.88	1826	257.03	-206.6	719	-143.62	-397.65	-176.57	187.23	3354.3	3567.6
[9]	Soil Storage		mm	0	0	0	0	206.6	0	143.62	397.65	176.57	0	0	0
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	2203.9	226.88	1826	257.03	0	719	0	0	0	187.23	3354.3	3567.6
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	1101.9	113.44	913	128.52	0	359.5	0	0	0	93.617	1677.2	1783.8
[13]	0,5 x (1 + k) x 1 x [12]		mm	964.21	99.259	798.87	112.45	0	314.56	0	0	0	81.915	1467.5	1560.8
[14]	K x (Vn-1)		mm	2224.2	2224.2	1742.6	1906.1	1513.9	1135.4	1087.5	815.63	611.72	458.79	405.53	1404.8
[15]	Storage Volume	[13] + [14]	mm	3188.4	2323.5	2541.5	2018.6	1513.9	1450	1087.5	815.63	611.72	540.7	1873.1	2965.6
[16]	dVn = Vn - Vn-1		mm	-222.8	-864.95	-218	-522.92	-504.64	-63.92	-362.5	-271.88	-203.91	-71.015	-1332.3	-1092.6
[17]	Base Flow	[12] - [16]	mm	879.15	978.39	694.99	651.44	504.64	423.42	362.5	271.88	203.91	164.63	344.82	691.24
[18]	Direct Runoff	[11] - [12]	mm	1101.9	113.44	913	128.52	0	359.5	0	0	0	93.617	1677.2	1783.8
[19]	Runoff	[17] + [18]	mm	1981.1	1091.8	1608	779.95	504.64	782.92	362.5	271.88	203.91	258.25	2022	2475.1
[20]	Runoff	[17] + [18]	m^3/dt	0.0007	0.0005	0.0006	0.0003	0.0002	0.0003	0.0001	0.0001	8E-05	1E-04	0.0008	0.0009
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	40.607	24.777	32.96	16.52	10.344	16.583	7.4303	5.5727	4.3189	5.2934	42.827	50.732
[23]	Debit Terukur	[19] x A	m^3/dt	0.0406	0.0248	0.033	0.0165	0.0103	0.0166	0.0074	0.0056	0.0043	0.0053	0.0428	0.0507

Perhitungan Debit Andalan tahun 1996

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	76	75	31	45	2	0	7	10	0	64	122	80
[1]			(mm/bln)	2356	2175	961	1350	62	0	217	310	0	1984	3660	2480
[2]	JlH HARI HUJAN		(N)	23	23	14	6	1	0	2	1	0	11	20	26
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			-0.075	-0.075	0.06	0.18	0.255	0.27	0.24	0.255	0.27	0.105	-0.03	-0.12
[6]	dE	[5] x [3]	mm	-45.856	-40.567	30.431	88.562	134.38	152.79	118.97	138.9	137.33	59.385	-19.675	-82.753
[7]	Etl = Eto -dE	[3] - [6]	mm	657.27	581.46	476.75	403.45	392.6	413.1	376.75	405.82	371.31	506.18	675.5	772.36
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	1698.7	1593.5	484.25	946.55	-330.6	-413.1	-159.75	-95.82	-371.31	1477.8	2984.5	1707.6
[9]	Soil Storage		mm	0	0	0	0	330.6	413.1	159.75	95.82	371.31	0	0	0
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	1698.7	1593.5	484.25	946.55	0	0	0	0	0	1477.8	2984.5	1707.6
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	849.36	796.77	242.12	473.28	0	0	0	0	0	738.91	1492.2	853.82
[13]	0,5 x (1 + k) x 1 x [12]		mm	743.19	697.17	211.86	414.12	0	0	0	0	0	646.54	1305.7	747.09
[14]	K x (Vn-1)		mm	1712.3	1712.3	1807.1	1514.2	1446.3	1084.7	813.53	610.15	457.61	343.21	742.31	1536
[15]	Storage Volume	[13] + [14]	mm	2455.5	2409.5	2019	1928.4	1446.3	1084.7	813.53	610.15	457.61	989.75	2048	2283.1
[16]	dVn = Vn - Vn-1		mm	-172.41	-46.021	-390.52	-90.631	-482.09	-361.57	-271.18	-203.38	-152.54	532.14	1058.3	235.08
[17]	Base Flow	[12] - [16]	mm	676.95	842.79	632.64	563.91	482.09	361.57	271.18	203.38	152.54	206.77	433.97	618.74
[18]	Direct Runoff	[11] - [12]	mm	849.36	796.77	242.12	473.28	0	0	0	0	0	738.91	1492.2	853.82
[19]	Runoff	[17] + [18]	mm	1526.3	1639.6	874.77	1037.2	482.09	361.57	271.18	203.38	152.54	945.67	1926.2	1472.6
[20]	Runoff	[17] + [18]	m^3/dt	0.0006	0.0007	0.0003	0.0004	0.0002	0.0001	0.0001	8E-05	6E-05	0.0004	0.0007	0.0005
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	31.285	35.924	17.93	21.968	9.8815	7.6582	5.5584	4.1688	3.2308	19.384	40.798	30.183
[23]	Debit Terukur	[19] x A	m^3/dt	0.0313	0.0359	0.0179	0.022	0.0099	0.0077	0.0056	0.0042	0.0032	0.0194	0.0408	0.0302

Perhitungan Debit Andalan tahun 1997

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	70	79	28	26	10	0	0	0	0	0	5	32
[1]			(mm/bln)	2170	2212	868	780	310	0	0	0	0	0	150	992
[2]	JLH HARI HUJAN		(N)	12	23	11	4	4	0	0	0	0	0	6	15
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			0.09	-0.075	0.105	0.21	0.21	0.27	0.27	0.27	0.27	0.27	0.18	0.045
[6]	dE	[5] x [3]	mm	55.027	-40.567	53.254	103.32	110.67	152.79	133.84	147.08	137.33	152.7	118.05	31.032
[7]	Etl = Eto -dE	[3] - [6]	mm	556.39	581.46	453.93	388.69	416.31	413.1	361.88	397.65	371.31	412.86	537.78	658.57
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	1613.6	1630.5	414.07	391.31	-106.31	-413.1	-361.88	-397.65	-371.31	-412.86	-387.78	333.43
[9]	Soil Storage		mm	0	0	0	0	106.31	413.1	361.88	397.65	371.31	412.86	387.78	0
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	1613.6	1630.5	414.07	391.31	0	0	0	0	0	0	0	333.43
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	806.81	815.27	207.04	195.66	0	0	0	0	0	0	0	166.71
[13]	0,5 x (1 + k) x 1 x [12]		mm	705.95	713.36	181.16	171.2	0	0	0	0	0	0	0	145.87
[14]	K x (Vn-1)		mm	169.76	169.76	662.34	632.62	602.87	452.15	339.11	254.33	190.75	143.06	107.3	80.473
[15]	Storage Volume	[13] + [14]	mm	875.71	883.12	843.5	803.82	602.87	452.15	339.11	254.33	190.75	143.06	107.3	226.35
[16]	dVn = Vn - Vn-1		mm	649.37	7.4047	-39.623	-39.675	-200.96	-150.72	-113.04	-84.778	-63.584	-47.688	-35.766	119.05
[17]	Base Flow	[12] - [16]	mm	157.44	807.86	246.66	235.33	200.96	150.72	113.04	84.778	63.584	47.688	35.766	47.663
[18]	Direct Runoff	[11] - [12]	mm	806.81	815.27	207.04	195.66	0	0	0	0	0	0	0	166.71
[19]	Runoff	[17] + [18]	mm	964.24	1623.1	453.7	430.99	200.96	150.72	113.04	84.778	63.584	47.688	35.766	214.38
[20]	Runoff	[17] + [18]	m^3/dt	0.0004	0.0007	0.0002	0.0002	8E-05	6E-05	4E-05	3E-05	2E-05	2E-05	1E-05	8E-05
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	19.764	36.834	9.2995	9.1285	4.119	3.1923	2.317	1.7377	1.3467	0.9775	0.7575	4.3941
[23]	Debit Terukur	[19] x A	m^3/dt	0.0198	0.0368	0.0093	0.0091	0.0041	0.0032	0.0023	0.0017	0.0013	0.001	0.0008	0.0044

Perhitungan Debit Andalan tahun 1998

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	78	41	54	48	34	156	46	0	0	0	47	107
[1]			(mm/bln)	2418	1148	1674	1440	1054	4680	1426	0	0	0	1410	3317
[2]	JLH HARI HUJAN		(N)	13	17	16	12	6	13	13	0	0	0	23	28
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			0.075	0.015	0.03	0.09	0.18	0.075	0.075	0.27	0.27	0.27	-0.075	-0.15
[6]	dE	[5] x [3]	mm	45.856	8.1134	15.215	44.281	94.856	42.442	37.179	147.08	137.33	152.7	-49.187	-103.44
[7]	Etl = Eto -dE	[3] - [6]	mm	565.56	532.78	491.97	447.73	432.12	523.45	458.54	397.65	371.31	412.86	705.01	793.05
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	1852.4	615.22	1182	992.27	621.88	4156.6	967.46	-397.65	-371.31	-412.86	704.99	2524
[9]	Soil Storage		mm	0	0	0	0	0	0	0	397.65	371.31	412.86	0	0
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	1852.4	615.22	1182	992.27	621.88	4156.6	967.46	0	0	0	704.99	2524
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	926.22	307.61	591.02	496.14	310.94	2078.3	483.73	0	0	0	352.49	1262
[13]	0,5 x (1 + k) x 1 x [12]		mm	810.44	269.16	517.14	434.12	272.07	1818.5	423.26	0	0	0	308.43	1104.2
[14]	K x (Vn-1)		mm	1482.7	1482.7	1313.9	1373.3	1355.5	1220.7	2279.4	2027	1520.2	1140.2	855.14	872.68
[15]	Storage Volume	[13] + [14]	mm	2293.1	1751.8	1831	1807.4	1627.6	3039.2	2702.7	2027	1520.2	1140.2	1163.6	1976.9
[16]	dVn = Vn - Vn-1		mm	-316.22	-541.29	-79.18	-23.636	-179.77	-1411.6	-336.54	-675.67	-506.75	-380.06	23.386	813.34
[17]	Base Flow	[12] - [16]	mm	610	848.89	511.84	519.77	490.71	666.69	820.27	675.67	506.75	380.06	329.11	448.64
[18]	Direct Runoff	[11] - [12]	mm	926.22	307.61	591.02	496.14	310.94	2078.3	483.73	0	0	0	352.49	1262
[19]	Runoff	[17] + [18]	mm	1536.2	1156.5	1102.9	1015.9	801.65	2745	1304	675.67	506.75	380.06	681.6	1710.6
[20]	Runoff	[17] + [18]	m^3/dt	0.0006	0.0005	0.0004	0.0004	0.0003	0.0011	0.0005	0.0003	0.0002	0.0001	0.0003	0.0006
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	31.488	26.245	22.606	21.517	16.432	58.14	26.728	13.849	10.733	7.7902	14.437	35.063
[23]	Debit Terukur	[19] x A	m^3/dt	0.0315	0.0262	0.0226	0.0215	0.0164	0.0581	0.0267	0.0138	0.0107	0.0078	0.0144	0.0351

Perhitungan Debit Andalan tahun 1999

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	108	0	40	46	27	0	0	0	0	10	97	89
[1]			(mm/bln)	3348	0	1240	1380	837	0	0	0	0	310	2910	2759
[2]	JLH HARI HUJAN		(N)	16	0	16	13	5	0	0	0	0	2	12	21
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			0.03	0.27	0.03	0.075	0.195	0.27	0.27	0.27	0.27	0.24	0.09	-0.045
[6]	dE	[5] x [3]	mm	18.342	146.04	15.215	36.901	102.76	152.79	133.84	147.08	137.33	135.74	59.024	-31.032
[7]	Etl = Eto -dE	[3] - [6]	mm	593.07	394.85	491.97	455.11	424.22	413.1	361.88	397.65	371.31	429.83	596.8	720.64
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	2754.9	-394.85	748.03	924.89	412.78	-413.1	-361.88	-397.65	-371.31	-119.83	2313.2	2038.4
[9]	Soil Storage		mm	0	394.85	0	0	0	413.1	361.88	397.65	371.31	119.83	0	0
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	2754.9	0	748.03	924.89	412.78	0	0	0	0	0	2313.2	2038.4
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	1377.5	0	374.02	462.45	206.39	0	0	0	0	0	1156.6	1019.2
[13]	0,5 x (1 + k) x 1 x [12]		mm	1205.3	0	327.26	404.64	180.59	0	0	0	0	0	1012	891.78
[14]	K x (Vn-1)		mm	1362.5	1362.5	1021.9	1011.9	1062.4	932.23	699.18	524.38	393.29	294.96	221.22	924.94
[15]	Storage Volume	[13] + [14]	mm	2567.8	1362.5	1349.2	1416.5	1243	932.23	699.18	524.38	393.29	294.96	1233.2	1816.7
[16]	dVn = Vn - Vn-1		mm	751.1	-1205.3	-13.37	67.347	-173.54	-310.74	-233.06	-174.79	-131.1	-98.322	938.28	583.47
[17]	Base Flow	[12] - [16]	mm	626.36	1205.3	387.39	395.1	379.93	310.74	233.06	174.79	131.1	98.322	218.32	435.71
[18]	Direct Runoff	[11] - [12]	mm	1377.5	0	374.02	462.45	206.39	0	0	0	0	0	1156.6	1019.2
[19]	Runoff	[17] + [18]	mm	2003.8	1205.3	761.4	857.54	586.32	310.74	233.06	174.79	131.1	98.322	1374.9	1454.9
[20]	Runoff	[17] + [18]	m^3/dt	0.0007	0.0005	0.0003	0.0003	0.0002	0.0001	9E-05	7E-05	5E-05	4E-05	0.0005	0.0005
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	41.073	27.352	15.607	18.163	12.018	6.5817	4.7771	3.5828	2.7767	2.0153	29.121	29.821
[23]	Debit Terukur	[19] x A	m^3/dt	0.0411	0.0274	0.0156	0.0182	0.012	0.0066	0.0048	0.0036	0.0028	0.002	0.0291	0.0298

Perhitungan Debit Andalan tahun 2000

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	110	70	0	0	26	11	3	1	8	146	213	0
[1]			(mm/bln)	3410	2030	0	0	806	330	93	31	240	4526	6390	0
[2]	JLH HARI HUJAN		(N)	22	20	0	0	11	3	3	0	2	13	21	14
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			-0.06	-0.03	0.27	0.27	0.105	0.225	0.225	0.27	0.24	0.075	-0.045	0.06
[6]	dE	[5] x [3]	mm	-36.685	-16.227	136.94	132.84	55.333	127.32	111.54	147.08	122.07	42.418	-29.512	41.376
[7]	Etl = Eto -dE	[3] - [6]	mm	648.1	557.12	370.24	359.17	471.65	438.56	384.18	397.65	386.57	523.15	685.34	648.23
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	2761.9	1472.9	-370.24	-359.17	334.35	-108.56	-291.18	-366.65	-146.57	4002.8	5704.7	-648.23
[9]	Soil Storage		mm	0	0	370.24	359.17	0	108.56	291.18	366.65	146.57	0	0	648.23
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	2761.9	1472.9	0	0	334.35	0	0	0	0	4002.8	5704.7	0
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	1380.9	736.44	0	0	167.18	0	0	0	0	2001.4	2852.3	0
[13]	0,5 x (1 + k) x 1 x [12]		mm	1208.3	644.38	0	0	146.28	0	0	0	0	1751.2	2495.8	0
[14]	K x (Vn-1)		mm	2280.9	2280.9	2193.9	1645.5	1234.1	1035.3	776.46	582.35	436.76	327.57	1559.1	3041.2
[15]	Storage Volume	[13] + [14]	mm	3489.2	2925.3	2193.9	1645.5	1380.4	1035.3	776.46	582.35	436.76	2078.8	4054.9	3041.2
[16]	dVn = Vn - Vn-1		mm	-448.04	-563.95	-731.32	-548.49	-265.09	-345.09	-258.82	-194.12	-145.59	1642.1	1976.1	-1013.7
[17]	Base Flow	[12] - [16]	mm	932.91	1300.4	731.32	548.49	432.26	345.09	258.82	194.12	145.59	359.37	876.25	1013.7
[18]	Direct Runoff	[11] - [12]	mm	1380.9	736.44	0	0	167.18	0	0	0	0	2001.4	2852.3	0
[19]	Runoff	[17] + [18]	mm	2313.9	2036.8	731.32	548.49	599.44	345.09	258.82	194.12	145.59	2360.8	3728.6	1013.7
[20]	Runoff	[17] + [18]	m^3/dt	0.0009	0.0008	0.0003	0.0002	0.0002	0.0001	1E-04	7E-05	6E-05	0.0009	0.0014	0.0004
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	47.428	44.629	14.99	11.617	12.287	7.3093	5.3051	3.9788	3.0836	48.39	78.973	20.779
[23]	Debit Terukur	[19] x A	m^3/dt	0.0474	0.0446	0.015	0.0116	0.0123	0.0073	0.0053	0.004	0.0031	0.0484	0.079	0.0208

Perhitungan Debit Andalan tahun 2001

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	159	89	59	16	10	49	2	0	4	113	0	0
[1]			(mm/bln)	4929	2492	1829	480	310	1470	62	0	120	3503	0	0
[2]	JLH HARI HUJAN		(N)	26	21	28	12	2	5	1	0	1	14	0	0
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			-0.12	-0.045	-0.15	0.09	0.24	0.195	0.255	0.27	0.255	0.06	0.27	0.27
[6]	dE	[5] x [3]	mm	-73.37	-24.34	-76.077	44.281	126.47	110.35	126.41	147.08	129.7	33.934	177.07	186.19
[7]	Etl = Eto -dE	[3] - [6]	mm	684.79	565.24	583.26	447.73	400.5	455.54	369.31	397.65	378.94	531.63	478.75	503.41
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	4244.2	1926.8	1245.7	32.271	-90.504	1014.5	-307.31	-397.65	-258.94	2971.4	-478.75	-503.41
[9]	Soil Storage		mm	0	0	0	0	90.504	0	307.31	397.65	258.94	0	478.75	503.41
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	4244.2	1926.8	1245.7	32.271	0	1014.5	0	0	0	2971.4	0	0
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	2122.1	963.38	622.87	16.135	0	507.23	0	0	0	1485.7	0	0
[13]	0,5 x (1 + k) x 1 x [12]		mm	1856.8	842.96	545.01	14.119	0	443.83	0	0	0	1300	0	0
[14]	K x (Vn-1)		mm	704.79	704.79	1160.8	1279.4	970.11	727.59	878.56	658.92	494.19	370.64	1253	939.72
[15]	Storage Volume	[13] + [14]	mm	2561.6	1547.7	1705.8	1293.5	970.11	1171.4	878.56	658.92	494.19	1670.6	1253	939.72
[16]	dVn = Vn - Vn-1		mm	1621.9	-1013.9	158.07	-412.34	-323.37	201.3	-292.85	-219.64	-164.73	1176.4	-417.65	-313.24
[17]	Base Flow	[12] - [16]	mm	500.19	1977.3	464.8	428.47	323.37	305.93	292.85	219.64	164.73	309.26	417.65	313.24
[18]	Direct Runoff	[11] - [12]	mm	2122.1	963.38	622.87	16.135	0	507.23	0	0	0	1485.7	0	0
[19]	Runoff	[17] + [18]	mm	2622.3	2940.6	1087.7	444.61	323.37	813.16	292.85	219.64	164.73	1794.9	417.65	313.24
[20]	Runoff	[17] + [18]	m^3/dt	0.001	0.0012	0.0004	0.0002	0.0001	0.0003	0.0001	8E-05	6E-05	0.0007	0.0002	0.0001
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	53.75	66.733	22.294	9.4171	6.6282	17.223	6.0027	4.502	3.4891	36.791	8.8461	6.4206
[23]	Debit Terukur	[19] x A	m^3/dt	0.0538	0.0667	0.0223	0.0094	0.0066	0.0172	0.006	0.0045	0.0035	0.0368	0.0088	0.0064

Perhitungan Debit Andalan tahun 2002

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	114	102	21	41	4	0	0	0	0	4	54	99
[1]			(mm/bln)	3534	2856	651	1230	124	0	0	0	0	124	1620	3069
[2]	JLH HARI HUJAN		(N)	24	22	18	6	2	0	0	0	0	1	10	15
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			-0.09	-0.06	0	0.18	0.24	0.27	0.27	0.27	0.27	0.255	0.12	0.045
[6]	dE	[5] x [3]	mm	-55.027	-32.454	0	88.562	126.47	152.79	133.84	147.08	137.33	144.22	78.699	31.032
[7]	Etl = Eto -dE	[3] - [6]	mm	666.44	573.35	507.18	403.45	400.5	413.1	361.88	397.65	371.31	421.35	577.13	658.57
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	2867.6	2282.6	143.82	826.55	-276.5	-413.1	-361.88	-397.65	-371.31	-297.35	1042.9	2410.4
[9]	Soil Storage		mm	0	0	0	0	276.5	413.1	361.88	397.65	371.31	297.35	0	0
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	2867.6	2282.6	143.82	826.55	0	0	0	0	0	0	1042.9	2410.4
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	1433.8	1141.3	71.909	413.28	0	0	0	0	0	0	521.44	1205.2
[13]	0,5 x (1 + k) x 1 x [12]		mm	1254.6	998.66	62.92	361.62	0	0	0	0	0	0	456.26	1054.6
[14]	K x (Vn-1)		mm	1169.8	1169.8	1626.4	1267	1221.4	916.08	687.06	515.3	386.47	289.85	217.39	505.24
[15]	Storage Volume	[13] + [14]	mm	2424.4	2168.5	1689.3	1628.6	1221.4	916.08	687.06	515.3	386.47	289.85	673.65	1559.8
[16]	dVn = Vn - Vn-1		mm	864.61	-255.9	-479.21	-60.709	-407.15	-305.36	-229.02	-171.77	-128.82	-96.618	383.79	886.15
[17]	Base Flow	[12] - [16]	mm	569.17	1397.2	551.12	473.98	407.15	305.36	229.02	171.77	128.82	96.618	137.64	319.06
[18]	Direct Runoff	[11] - [12]	mm	1433.8	1141.3	71.909	413.28	0	0	0	0	0	0	521.44	1205.2
[19]	Runoff	[17] + [18]	mm	2002.9	2538.5	623.02	887.26	407.15	305.36	229.02	171.77	128.82	96.618	659.08	1524.3
[20]	Runoff	[17] + [18]	m^3/dt	0.0007	0.001	0.0002	0.0003	0.0002	0.0001	9E-05	6E-05	5E-05	4E-05	0.0003	0.0006
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	41.055	57.608	12.77	18.793	8.3454	6.4677	4.6943	3.5207	2.7286	1.9804	13.96	31.244
[23]	Debit Terukur	[19] x A	m^3/dt	0.0411	0.0576	0.0128	0.0188	0.0083	0.0065	0.0047	0.0035	0.0027	0.002	0.014	0.0312

Perhitungan Debit Andalan tahun 2003

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	112	89	49	19	41	0	0	0	0	33	80	85
[1]			(mm/bln)	3472	2492	1519	570	1271	0	0	0	0	1023	2400	2635
[2]	JLH HARI HUJAN		(N)	25	28	15	6	5	0	0	0	0	12	16	23
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			-0.105	-0.15	0.045	0.18	0.195	0.27	0.27	0.27	0.27	0.09	0.03	-0.075
[6]	dE	[5] x [3]	mm	-64.199	-81.134	22.823	88.562	102.76	152.79	133.84	147.08	137.33	50.901	19.675	-51.721
[7]	Etl = Eto -dE	[3] - [6]	mm	675.61	622.03	484.36	403.45	424.22	413.1	361.88	397.65	371.31	514.67	636.15	741.33
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	2796.4	1870	1034.6	166.55	846.78	-413.1	-361.88	-397.65	-371.31	508.33	1763.8	1893.7
[9]	Soil Storage		mm	0	0	0	0	0	413.1	361.88	397.65	371.31	0	0	0
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	2796.4	1870	1034.6	166.55	846.78	0	0	0	0	508.33	1763.8	1893.7
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	1398.2	934.98	517.32	83.276	423.39	0	0	0	0	254.17	881.92	946.84
[13]	0,5 x (1 + k) x 1 x [12]		mm	1223.4	818.11	452.66	72.866	370.47	0	0	0	0	222.4	771.68	828.48
[14]	K x (Vn-1)		mm	1307.1	1307.1	1593.9	1534.9	1205.8	1182.2	886.67	665	498.75	374.06	447.34	914.27
[15]	Storage Volume	[13] + [14]	mm	2530.5	2125.2	2046.5	1607.8	1576.3	1182.2	886.67	665	498.75	596.46	1219	1742.8
[16]	dVn = Vn - Vn-1		mm	-787.73	-405.31	-78.638	-438.77	-31.475	-394.07	-295.56	-221.67	-166.25	97.708	622.57	523.72
[17]	Base Flow	[12] - [16]	mm	610.46	1340.3	595.96	522.04	454.87	394.07	295.56	221.67	166.25	156.46	259.35	423.11
[18]	Direct Runoff	[11] - [12]	mm	1398.2	934.98	517.32	83.276	423.39	0	0	0	0	254.17	881.92	946.84
[19]	Runoff	[17] + [18]	mm	2008.7	2275.3	1113.3	605.32	878.26	394.07	295.56	221.67	166.25	410.62	1141.3	1369.9
[20]	Runoff	[17] + [18]	m^3/dt	0.0007	0.0009	0.0004	0.0002	0.0003	0.0002	0.0001	8E-05	6E-05	0.0002	0.0004	0.0005
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	41.172	51.634	22.819	12.821	18.002	8.3467	6.0581	4.5436	3.5213	8.4167	24.173	28.08
[23]	Debit Terukur	[19] x A	m^3/dt	0.0412	0.0516	0.0228	0.0128	0.018	0.0083	0.0061	0.0045	0.0035	0.0084	0.0242	0.0281

Perhitungan Debit Andalan tahun 2004

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	85	45	68	6	83	22	38	0	0	5	76	99
[1]			(mm/bln)	2635	1305	2108	180	2573	660	1178	0	0	155	2280	3069
[2]	JLH HARI HUJAN		(N)	18	22	18	3	6	4	2	0	0	2	14	17
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			0	-0.06	0	0.225	0.18	0.21	0.24	0.27	0.27	0.24	0.06	0.015
[6]	dE	[5] x [3]	mm	0	-32.454	0	110.7	94.856	118.84	118.97	147.08	137.33	135.74	39.35	10.344
[7]	Etl = Eto -dE	[3] - [6]	mm	611.42	573.35	507.18	381.31	432.12	447.05	376.75	397.65	371.31	429.83	616.48	679.26
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	2023.6	731.65	1600.8	-201.31	2140.9	212.95	801.25	-397.65	-371.31	-274.83	1663.5	2389.7
[9]	Soil Storage		mm	0	0	0	201.31	0	0	0	397.65	371.31	274.83	0	0
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	2023.6	731.65	1600.8	0	2140.9	212.95	801.25	0	0	0	1663.5	2389.7
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	1011.8	365.82	800.41	0	1070.4	106.47	400.63	0	0	0	831.76	1194.9
[13]	0,5 x (1 + k) x 1 x [12]		mm	885.32	320.1	700.36	0	936.63	93.165	350.55	0	0	0	727.79	1045.5
[14]	K x (Vn-1)		mm	1477.5	1477.5	1348.2	1536.4	1152.3	1566.7	1244.9	1196.6	897.44	673.08	504.81	924.45
[15]	Storage Volume	[13] + [14]	mm	2362.8	1797.6	2048.5	1536.4	2088.9	1659.9	1595.4	1196.6	897.44	673.08	1232.6	1970
[16]	dVn = Vn - Vn-1		mm	-392.83	-565.22	-250.97	-512.13	-552.53	-429.07	-64.419	-398.86	-299.15	-224.36	-559.52	-737.36
[17]	Base Flow	[12] - [16]	mm	618.96	931.05	549.44	512.13	517.9	535.54	465.04	398.86	299.15	224.36	272.24	457.51
[18]	Direct Runoff	[11] - [12]	mm	1011.8	365.82	800.41	0	1070.4	106.47	400.63	0	0	0	831.76	1194.9
[19]	Runoff	[17] + [18]	mm	1630.8	1296.9	1349.9	512.13	1588.3	642.02	865.67	398.86	299.15	224.36	1104	1652.4
[20]	Runoff	[17] + [18]	m^3/dt	0.0006	0.0005	0.0005	0.0002	0.0006	0.0002	0.0003	0.0001	0.0001	8E-05	0.0004	0.0006
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	33.426	28.416	27.668	10.847	32.557	13.598	17.744	8.1756	6.3361	4.5988	23.383	33.869
[23]	Debit Terukur	[19] x A	m^3/dt	0.0334	0.0284	0.0277	0.0108	0.0326	0.0136	0.0177	0.0082	0.0063	0.0046	0.0234	0.0339

Perhitungan Debit Andalan tahun 2005

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	111	47	33	14	0	18	50	0	7	110	162	141
[1]			(mm/bln)	3441	1316	1023	420	0	540	1550	0	210	3410	4860	4371
[2]	JLH HARI HUJAN		(N)	20	14	14	6	0	4	8	0	3	12	11	19
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			-0.03	0.06	0.06	0.18	0.27	0.21	0.15	0.27	0.225	0.09	0.105	-0.015
[6]	dE	[5] x [3]	mm	-18.342	32.454	30.431	88.562	142.28	118.84	74.358	147.08	114.44	50.901	68.862	-10.344
[7]	Etl = Eto -dE	[3] - [6]	mm	629.76	508.44	476.75	403.45	384.69	447.05	421.36	397.65	394.2	514.67	586.96	699.95
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	2811.2	807.56	546.25	16.552	-384.69	92.949	1128.6	-397.65	-184.2	2895.3	4273	3671
[9]	Soil Storage		mm	0	0	0	0	384.69	0	0	397.65	184.2	0	0	0
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	2811.2	807.56	546.25	16.552	0	92.949	1128.6	0	0	2895.3	4273	3671
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	1405.6	403.78	273.12	8.2759	0	46.474	564.32	0	0	1447.7	2136.5	1835.5
[13]	0,5 x (1 + k) x 1 x [12]		mm	1229.9	353.31	238.98	7.2414	0	40.665	493.78	0	0	1266.7	1869.5	1606.1
[14]	K x (Vn-1)		mm	3041.2	3041.2	2545.9	2088.6	1571.9	1178.9	914.7	1056.4	792.27	594.2	1395.7	2448.9
[15]	Storage Volume	[13] + [14]	mm	4271.1	3394.5	2784.9	2095.9	1571.9	1219.6	1408.5	1056.4	792.27	1860.9	3265.1	4054.9
[16]	dVn = Vn - Vn-1		mm	-216.18	-876.61	-609.64	-688.97	-523.97	-352.31	-188.88	-352.12	-264.09	1068.6	1404.2	789.8
[17]	Base Flow	[12] - [16]	mm	1189.4	1280.4	882.77	697.25	523.97	398.79	375.44	352.12	264.09	379.03	732.29	1045.7
[18]	Direct Runoff	[11] - [12]	mm	1405.6	403.78	273.12	8.2759	0	46.474	564.32	0	0	1447.7	2136.5	1835.5
[19]	Runoff	[17] + [18]	mm	2595.1	1684.2	1155.9	705.53	523.97	445.26	939.76	352.12	264.09	1826.7	2868.8	2881.2
[20]	Runoff	[17] + [18]	m^3/dt	0.001	0.0007	0.0004	0.0003	0.0002	0.0002	0.0004	0.0001	0.0001	0.0007	0.0011	0.0011
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	53.192	38.22	23.693	14.943	10.74	9.4309	19.263	7.2175	5.5936	37.442	60.763	59.058
[23]	Debit Terukur	[19] x A	m^3/dt	0.0532	0.0382	0.0237	0.0149	0.0107	0.0094	0.0193	0.0072	0.0056	0.0374	0.0608	0.0591

Perhitungan Debit Andalan tahun 2006

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	77	72	106	130	60	0	0	0	0	0	0	52
[1]			(mm/bln)	2387	2016	3286	3900	1860	0	0	0	0	0	0	1612
[2]	JLH HARI HUJAN		(N)	21	17	14	7	8	0	0	0	0	0	0	18
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			-0.045	0.015	0.06	0.165	0.15	0.27	0.27	0.27	0.27	0.27	0.27	0
[6]	dE	[5] x [3]	mm	-27.514	8.1134	30.431	81.182	79.047	152.79	133.84	147.08	137.33	152.7	177.07	0
[7]	Etl = Eto -dE	[3] - [6]	mm	638.93	532.78	476.75	410.83	447.93	413.1	361.88	397.65	371.31	412.86	478.75	689.61
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	1748.1	1483.2	2809.2	3489.2	1412.1	-413.1	-361.88	-397.65	-371.31	-412.86	-478.75	922.39
[9]	Soil Storage		mm	0	0	0	0	0	413.1	361.88	397.65	371.31	412.86	478.75	0
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	1748.1	1483.2	2809.2	3489.2	1412.1	0	0	0	0	0	0	922.39
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	874.04	741.61	1404.6	1744.6	706.03	0	0	0	0	0	0	461.2
[13]	0,5 x (1 + k) x 1 x [12]		mm	764.78	648.91	1229	1526.5	617.78	0	0	0	0	0	0	403.55
[14]	K x (Vn-1)		mm	601.13	601.13	937.53	1624.9	2363.6	2236	1677	1257.8	943.32	707.49	530.62	397.96
[15]	Storage Volume	[13] + [14]	mm	1365.9	1250	2166.6	3151.4	2981.4	2236	1677	1257.8	943.32	707.49	530.62	801.51
[16]	dVn = Vn - Vn-1		mm	-564.4	-115.87	-916.54	-984.87	-170.08	-745.34	-559.01	-419.25	-314.44	-235.83	-176.87	270.89
[17]	Base Flow	[12] - [16]	mm	309.63	857.48	488.09	759.72	876.12	745.34	559.01	419.25	314.44	235.83	176.87	190.3
[18]	Direct Runoff	[11] - [12]	mm	874.04	741.61	1404.6	1744.6	706.03	0	0	0	0	0	0	461.2
[19]	Runoff	[17] + [18]	mm	1183.7	1599.1	1892.7	2504.3	1582.1	745.34	559.01	419.25	314.44	235.83	176.87	651.5
[20]	Runoff	[17] + [18]	m^3/dt	0.0004	0.0007	0.0007	0.001	0.0006	0.0003	0.0002	0.0002	0.0001	9E-05	7E-05	0.0002
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	24.262	36.289	38.796	53.043	32.43	15.787	11.458	8.5936	6.66	4.8339	3.7463	13.354
[23]	Debit Terukur	[19] x A	m^3/dt	0.0243	0.0363	0.0388	0.053	0.0324	0.0158	0.0115	0.0086	0.0067	0.0048	0.0037	0.0134

Perhitungan Debit Andalan tahun 2007

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	57	0	0	0	31	37	0	0	5	29	19	62
[1]			(mm/bln)	1767	0	0	0	961	1110	0	0	150	899	570	1922
[2]	JLH HARI HUJAN		(N)	15	0	0	0	4	4	0	0	2	3	8	24
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			0.045	0.27	0.27	0.27	0.21	0.21	0.27	0.27	0.24	0.225	0.15	-0.09
[6]	dE	[5] x [3]	mm	27.514	146.04	136.94	132.84	110.67	118.84	133.84	147.08	122.07	127.25	98.374	-62.065
[7]	Etl = Eto -dE	[3] - [6]	mm	583.9	394.85	370.24	359.17	416.31	447.05	361.88	397.65	386.57	438.32	557.45	751.67
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	1183.1	-394.85	-370.24	-359.17	544.69	662.95	-361.88	-397.65	-236.57	460.68	12.548	1170.3
[9]	Soil Storage		mm	0	394.85	370.24	359.17	0	0	361.88	397.65	236.57	0	0	0
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	1183.1	0	0	0	544.69	662.95	0	0	0	460.68	12.548	1170.3
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	591.55	0	0	0	272.34	331.47	0	0	0	230.34	6.274	585.16
[13]	0,5 x (1 + k) x 1 x [12]		mm	517.61	0	0	0	238.3	290.04	0	0	0	201.55	5.4898	512.02
[14]	K x (Vn-1)		mm	558.28	558.28	418.71	314.03	235.53	355.37	484.06	363.04	272.28	204.21	304.32	232.36
[15]	Storage Volume	[13] + [14]	mm	1075.9	558.28	418.71	314.03	473.83	645.41	484.06	363.04	272.28	405.76	309.81	744.38
[16]	dVn = Vn - Vn-1		mm	331.51	-517.61	-139.57	-104.68	159.79	171.58	-161.35	-121.01	-90.761	133.48	-95.951	434.57
[17]	Base Flow	[12] - [16]	mm	260.04	517.61	139.57	104.68	112.55	159.89	161.35	121.01	90.761	96.863	102.22	150.6
[18]	Direct Runoff	[11] - [12]	mm	591.55	0	0	0	272.34	331.47	0	0	0	230.34	6.274	585.16
[19]	Runoff	[17] + [18]	mm	851.59	517.61	139.57	104.68	384.89	491.37	161.35	121.01	90.761	327.21	108.5	735.76
[20]	Runoff	[17] + [18]	m^3/dt	0.0003	0.0002	5E-05	4E-05	0.0001	0.0002	6E-05	5E-05	4E-05	0.0001	4E-05	0.0003
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	17.455	11.746	2.8608	2.2171	7.8893	10.407	3.3073	2.4805	1.9224	6.7068	2.2981	15.081
[23]	Debit Terukur	[19] x A	m^3/dt	0.0175	0.0117	0.0029	0.0022	0.0079	0.0104	0.0033	0.0025	0.0019	0.0067	0.0023	0.0151

Perhitungan Debit Andalan tahun 2008

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	82	59	95	46	58	0	0	0	0	95	104	36
[1]			(mm/bln)	2542	1711	2945	1380	1798	0	0	0	0	2945	3120	1116
[2]	JLH HARI HUJAN		(N)	14	20	16	7	1	0	0	0	0	5	16	13
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			0.06	-0.03	0.03	0.165	0.255	0.27	0.27	0.27	0.27	0.195	0.03	0.075
[6]	dE	[5] x [3]	mm	36.685	-16.227	15.215	81.182	134.38	152.79	133.84	147.08	137.33	110.29	19.675	51.721
[7]	Etl = Eto -dE	[3] - [6]	mm	574.73	557.12	491.97	410.83	392.6	413.1	361.88	397.65	371.31	455.28	636.15	637.89
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	1967.3	1153.9	2453	969.17	1405.4	-413.1	-361.88	-397.65	-371.31	2489.7	2483.8	478.11
[9]	Soil Storage		mm	0	0	0	0	0	413.1	361.88	397.65	371.31	0	0	0
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	1967.3	1153.9	2453	969.17	1405.4	0	0	0	0	2489.7	2483.8	478.11
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	983.63	576.94	1226.5	484.59	702.7	0	0	0	0	1244.9	1241.9	239.06
[13]	0,5 x (1 + k) x 1 x [12]		mm	860.68	504.82	1073.2	424.01	614.86	0	0	0	0	1089.3	1086.7	209.17
[14]	K x (Vn-1)		mm	1464.7	1464.7	1477.1	1912.7	1752.6	1775.6	1331.7	998.76	749.07	561.8	1238.3	1743.7
[15]	Storage Volume	[13] + [14]	mm	2325.4	1969.5	2550.3	2336.8	2367.4	1775.6	1331.7	998.76	749.07	1651.1	2325	1952.9
[16]	dVn = Vn - Vn-1		mm	-372.45	-355.86	-580.83	-213.57	-30.673	-591.86	-443.89	-332.92	-249.69	-901.98	-673.92	-372.07
[17]	Base Flow	[12] - [16]	mm	611.18	932.8	645.69	698.16	672.03	591.86	443.89	332.92	249.69	342.87	568	611.13
[18]	Direct Runoff	[11] - [12]	mm	983.63	576.94	1226.5	484.59	702.7	0	0	0	0	1244.9	1241.9	239.06
[19]	Runoff	[17] + [18]	mm	1594.8	1509.7	1872.2	1182.7	1374.7	591.86	443.89	332.92	249.69	1587.7	1809.9	850.18
[20]	Runoff	[17] + [18]	m^3/dt	0.0006	0.0006	0.0007	0.0005	0.0005	0.0002	0.0002	0.0001	1E-04	0.0006	0.0007	0.0003
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	32.689	33.08	38.375	25.051	28.178	12.536	9.0986	6.824	5.2886	32.544	38.335	17.426
[23]	Debit Terukur	[19] x A	m^3/dt	0.0327	0.0331	0.0384	0.0251	0.0282	0.0125	0.0091	0.0068	0.0053	0.0325	0.0383	0.0174

Perhitungan Debit Andalan tahun 2009

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	82	81	11	54	109	156	0	0	0	31	23	35
[1]			(mm/bln)	2542	2268	341	1620	3379	4680	0	0	0	961	690	1085
[2]	JLH HARI HUJAN		(N)	13	12	5	7	6	1	0	0	0	3	7	4
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			0.075	0.09	0.195	0.165	0.18	0.255	0.27	0.27	0.27	0.225	0.165	0.21
[6]	dE	[5] x [3]	mm	45.856	48.681	98.901	81.182	94.856	144.3	133.84	147.08	137.33	127.25	108.21	144.82
[7]	Etl = Eto -dE	[3] - [6]	mm	565.56	492.22	408.28	410.83	432.12	421.59	361.88	397.65	371.31	438.32	547.61	544.79
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	1976.4	1775.8	-67.282	1209.2	2946.9	4258.4	-361.88	-397.65	-371.31	522.68	142.39	540.21
[9]	Soil Storage		mm	0	0	67.282	0	0	0	361.88	397.65	371.31	0	0	0
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	1976.4	1775.8	0	1209.2	2946.9	4258.4	0	0	0	522.68	142.39	540.21
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	988.22	887.89	0	604.59	1473.4	2129.2	0	0	0	261.34	71.193	270.11
[13]	0,5 x (1 + k) x 1 x [12]		mm	864.69	776.91	0	529.01	1289.3	1863.1	0	0	0	228.67	62.294	236.34
[14]	K x (Vn-1)		mm	792.53	792.53	1177.1	882.81	1058.9	1761.1	2718.1	2038.6	1528.9	1146.7	1031.5	820.37
[15]	Storage Volume	[13] + [14]	mm	1657.2	1569.4	1177.1	1411.8	2348.1	3624.2	2718.1	2038.6	1528.9	1375.4	1093.8	1056.7
[16]	dVn = Vn - Vn-1		mm	-600.51	-87.787	-392.36	-234.74	-936.3	-1276	-906.04	-679.53	-509.65	-153.56	-281.55	-37.115
[17]	Base Flow	[12] - [16]	mm	387.71	975.68	392.36	369.84	537.14	853.18	906.04	679.53	509.65	414.9	352.74	307.22
[18]	Direct Runoff	[11] - [12]	mm	988.22	887.89	0	604.59	1473.4	2129.2	0	0	0	261.34	71.193	270.11
[19]	Runoff	[17] + [18]	mm	1375.9	1863.6	392.36	974.43	2010.6	2982.4	906.04	679.53	509.65	676.24	423.94	577.33
[20]	Runoff	[17] + [18]	m^3/dt	0.0005	0.0008	0.0001	0.0004	0.0008	0.0012	0.0003	0.0003	0.0002	0.0003	0.0002	0.0002
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	28.203	42.291	8.0423	20.639	41.211	63.169	18.571	13.929	10.795	13.861	8.9792	11.834
[23]	Debit Terukur	[19] x A	m^3/dt	0.0282	0.0423	0.008	0.0206	0.0412	0.0632	0.0186	0.0139	0.0108	0.0139	0.009	0.0118

Perhitungan Debit Andalan tahun 2010

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	103	75	78	110	241	78	40	0	67	69	78	85
[1]			(mm/bln)	3193	2100	2418	3300	7471	2340	1240	0	2010	2139	2340	2635
[2]	JLH HARI HUJAN		(N)	12	8	5	8	8	3	3	0	9	5	5	13
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			0.09	0.15	0.195	0.15	0.15	0.225	0.225	0.27	0.135	0.195	0.195	0.075
[6]	dE	[5] x [3]	mm	55.027	81.134	98.901	73.802	79.047	127.32	111.54	147.08	68.667	110.29	127.89	51.721
[7]	Etl = Eto -dE	[3] - [6]	mm	556.39	459.76	408.28	418.21	447.93	438.56	384.18	397.65	439.97	455.28	527.94	637.89
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	2636.6	1640.2	2009.7	2881.8	7023.1	1901.4	855.82	-397.65	1570	1683.7	1812.1	1997.1
[9]	Soil Storage		mm	0	0	0	0	0	0	0	397.65	0	0	0	0
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	2636.6	1640.2	2009.7	2881.8	7023.1	1901.4	855.82	0	1570	1683.7	1812.1	1997.1
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	1318.3	820.12	1004.9	1440.9	3511.5	950.72	427.91	0	785.01	841.86	906.03	998.56
[13]	0,5 x (1 + k) x 1 x [12]		mm	1153.5	717.6	879.25	1260.8	3072.6	831.88	374.42	0	686.89	736.63	792.78	873.74
[14]	K x (Vn-1)		mm	2390.1	2390.1	2330.7	2407.5	2751.2	4367.9	3899.8	3205.7	2404.2	2318.4	2291.2	2313
[15]	Storage Volume	[13] + [14]	mm	3543.6	3107.7	3210	3668.3	5823.8	5199.7	4274.2	3205.7	3091.1	3055	3084	3186.7
[16]	dVn = Vn - Vn-1		mm	-356.83	-435.91	102.34	458.28	2155.5	-624.07	-925.51	-1068.6	-114.53	-36.157	29.032	102.73
[17]	Base Flow	[12] - [16]	mm	961.47	1256	902.52	982.61	1356	1574.8	1353.4	1068.6	899.54	878.02	877	895.82
[18]	Direct Runoff	[11] - [12]	mm	1318.3	820.12	1004.9	1440.9	3511.5	950.72	427.91	0	785.01	841.86	906.03	998.56
[19]	Runoff	[17] + [18]	mm	2279.8	2076.2	1907.4	2423.5	4867.5	2525.5	1781.3	1068.6	1684.6	1719.9	1783	1894.4
[20]	Runoff	[17] + [18]	m^3/dt	0.0009	0.0009	0.0007	0.0009	0.0018	0.001	0.0007	0.0004	0.0006	0.0006	0.0007	0.0007
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	46.729	47.115	39.096	51.331	99.772	53.492	36.512	21.902	35.68	35.253	37.766	38.83
[23]	Debit Terukur	[19] x A	m^3/dt	0.0467	0.0471	0.0391	0.0513	0.0998	0.0535	0.0365	0.0219	0.0357	0.0353	0.0378	0.0388

Perhitungan Debit Andalan tahun 2011

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	89	125	43	40	61	0	0	0	0	0	75	95
[1]			(mm/bln)	2759	3500	1333	1200	1891	0	0	0	0	0	2250	2945
[2]	JLH HARI HUJAN		(N)	8	13	21	24	5	0	0	0	0	0	8	12
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			0.15	0.075	-0.045	-0.09	0.195	0.27	0.27	0.27	0.27	0.27	0.15	0.09
[6]	dE	[5] x [3]	mm	91.712	40.567	-22.823	-44.281	102.76	152.79	133.84	147.08	137.33	152.7	98.374	62.065
[7]	Etl = Eto -dE	[3] - [6]	mm	519.7	500.33	530.01	536.29	424.22	413.1	361.88	397.65	371.31	412.86	557.45	627.54
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	2239.3	2999.7	802.99	663.71	1466.8	-413.1	-361.88	-397.65	-371.31	-412.86	1692.5	2317.5
[9]	Soil Storage		mm	0	0	0	0	0	413.1	361.88	397.65	371.31	412.86	0	0
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	2239.3	2999.7	802.99	663.71	1466.8	0	0	0	0	0	1692.5	2317.5
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	1119.6	1499.8	401.5	331.85	733.39	0	0	0	0	0	846.27	1158.7
[13]	0,5 x (1 + k) x 1 x [12]		mm	979.69	1312.4	351.31	290.37	641.72	0	0	0	0	0	740.49	1013.9
[14]	K x (Vn-1)		mm	1397.2	1397.2	2032.2	1787.6	1558.5	1650.2	1237.6	928.21	696.16	522.12	391.59	849.06
[15]	Storage Volume	[13] + [14]	mm	2376.9	2709.6	2383.5	2078	2200.2	1650.2	1237.6	928.21	696.16	522.12	1132.1	1862.9
[16]	dVn = Vn - Vn-1		mm	513.96	332.66	-326.08	-305.5	122.22	-550.05	-412.54	-309.4	-232.05	-174.04	609.96	730.87
[17]	Base Flow	[12] - [16]	mm	605.69	1167.2	727.58	637.35	611.17	550.05	412.54	309.4	232.05	174.04	236.31	427.86
[18]	Direct Runoff	[11] - [12]	mm	1119.6	1499.8	401.5	331.85	733.39	0	0	0	0	0	846.27	1158.7
[19]	Runoff	[17] + [18]	mm	1725.3	2667	1129.1	969.21	1344.6	550.05	412.54	309.4	232.05	174.04	1082.6	1586.6
[20]	Runoff	[17] + [18]	m^3/dt	0.0006	0.0011	0.0004	0.0004	0.0005	0.0002	0.0002	0.0001	9E-05	6E-05	0.0004	0.0006
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	35.365	60.524	23.143	20.528	27.56	11.65	8.4559	6.342	4.915	3.5673	22.93	32.521
[23]	Debit Terukur	[19] x A	m^3/dt	0.0354	0.0605	0.0231	0.0205	0.0276	0.0117	0.0085	0.0063	0.0049	0.0036	0.0229	0.0325

Perhitungan Debit Andalan tahun 2012

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	100	34	53	102	52	0	0	0	0	62	61	64
[1]			(mm/bln)	3100	986	1643	3060	1612	0	0	0	0	1922	1830	1984
[2]	JLH HARI HUJAN		(N)	18	10	10	2	6	0	0	0	0	4	8	16
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			0	0.12	0.12	0.24	0.18	0.27	0.27	0.27	0.27	0.21	0.15	0.03
[6]	dE	[5] x [3]	mm	0	64.908	60.862	118.08	94.856	152.79	133.84	147.08	137.33	118.77	98.374	20.688
[7]	Etl = Eto -dE	[3] - [6]	mm	611.42	475.99	446.32	373.93	432.12	413.1	361.88	397.65	371.31	446.8	557.45	668.92
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	2488.6	510.01	1196.7	2686.1	1179.9	-413.1	-361.88	-397.65	-371.31	1475.2	1272.5	1315.1
[9]	Soil Storage		mm	0	0	0	0	0	413.1	361.88	397.65	371.31	0	0	0
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	2488.6	510.01	1196.7	2686.1	1179.9	0	0	0	0	1475.2	1272.5	1315.1
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	1244.3	255.01	598.34	1343	589.94	0	0	0	0	737.6	636.27	657.54
[13]	0,5 x (1 + k) x 1 x [12]		mm	1088.8	223.13	523.55	1175.2	516.2	0	0	0	0	645.4	556.74	575.35
[14]	K x (Vn-1)		mm	1248.5	1248.5	1103.7	1220.5	1796.7	1734.7	1301	975.76	731.82	548.86	895.7	1089.3
[15]	Storage Volume	[13] + [14]	mm	2337.3	1471.6	1627.3	2395.6	2312.9	1734.7	1301	975.76	731.82	1194.3	1452.4	1664.7
[16]	dVn = Vn - Vn-1		mm	-672.59	-865.63	-155.64	-768.34	-82.707	-578.23	-433.67	-325.25	-243.94	462.45	258.17	212.24
[17]	Base Flow	[12] - [16]	mm	571.71	1120.6	442.7	574.7	672.65	578.23	433.67	325.25	243.94	275.15	378.1	445.3
[18]	Direct Runoff	[11] - [12]	mm	1244.3	255.01	598.34	1343	589.94	0	0	0	0	737.6	636.27	657.54
[19]	Runoff	[17] + [18]	mm	1816	1375.6	1041	1917.7	1262.6	578.23	433.67	325.25	243.94	1012.8	1014.4	1102.8
[20]	Runoff	[17] + [18]	m^3/dt	0.0007	0.0005	0.0004	0.0007	0.0005	0.0002	0.0002	0.0001	9E-05	0.0004	0.0004	0.0004
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	37.223	30.141	21.339	40.619	25.88	12.247	8.8891	6.6668	5.1668	20.759	21.485	22.605
[23]	Debit Terukur	[19] x A	m^3/dt	0.0372	0.0301	0.0213	0.0406	0.0259	0.0122	0.0089	0.0067	0.0052	0.0208	0.0215	0.0226

Perhitungan Debit Andalan tahun 2013

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	79	54	61	41	25	62	54	0	0	25	64	0
[1]			(mm/bln)	2449	1512	1891	1230	775	1860	1674	0	0	775	1920	0
[2]	JLH HARI HUJAN		(N)	22	13	13	13	7	13	10	0	0	3	11	0
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			-0.06	0.075	0.075	0.075	0.165	0.075	0.12	0.27	0.27	0.225	0.105	0.27
[6]	dE	[5] x [3]	mm	-36.685	40.567	38.039	36.901	86.951	42.442	59.487	147.08	137.33	127.25	68.862	186.19
[7]	Etl = Eto -dE	[3] - [6]	mm	648.1	500.33	469.14	455.11	440.03	523.45	436.23	397.65	371.31	438.32	586.96	503.41
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	1800.9	1011.7	1421.9	774.89	334.97	1336.6	1237.8	-397.65	-371.31	336.68	1333	-503.41
[9]	Soil Storage		mm	0	0	0	0	0	0	0	397.65	371.31	0	0	503.41
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	1800.9	1011.7	1421.9	774.89	334.97	1336.6	1237.8	0	0	336.68	1333	0
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	900.45	505.84	710.93	387.45	167.49	668.28	618.88	0	0	168.34	666.52	0
[13]	0,5 x (1 + k) x 1 x [12]		mm	787.89	442.61	622.06	339.01	146.55	584.74	541.52	0	0	147.3	583.2	0
[14]	K x (Vn-1)		mm	687.51	687.51	847.59	1102.2	1080.9	920.62	1129	1252.9	939.68	704.76	639.04	916.69
[15]	Storage Volume	[13] + [14]	mm	1475.4	1130.1	1469.7	1441.3	1227.5	1505.4	1670.5	1252.9	939.68	852.06	1222.2	916.69
[16]	dVn = Vn - Vn-1		mm	-558.72	-345.29	-339.53	-28.398	-213.76	-277.87	-165.18	-417.64	-313.23	-87.621	-370.19	-305.56
[17]	Base Flow	[12] - [16]	mm	341.73	851.12	371.4	415.84	381.25	390.41	453.7	417.64	313.23	255.96	296.33	305.56
[18]	Direct Runoff	[11] - [12]	mm	900.45	505.84	710.93	387.45	167.49	668.28	618.88	0	0	168.34	666.52	0
[19]	Runoff	[17] + [18]	mm	1242.2	1357	1082.3	803.29	548.74	1058.7	1072.6	417.64	313.23	424.31	962.85	305.56
[20]	Runoff	[17] + [18]	m^3/dt	0.0005	0.0006	0.0004	0.0003	0.0002	0.0004	0.0004	0.0002	0.0001	0.0002	0.0004	0.0001
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	25.461	30.794	22.185	17.014	11.248	22.424	21.985	8.5604	6.6343	8.6971	20.394	6.2632
[23]	Debit Terukur	[19] x A	m^3/dt	0.0255	0.0308	0.0222	0.017	0.0112	0.0224	0.022	0.0086	0.0066	0.0087	0.0204	0.0063

Perhitungan Debit Andalan tahun 2014

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	67	68	42	41	33	22	51	0	0	5	62	76
[1]			(mm/bln)	2077	1904	1302	1230	1023	660	1581	0	0	155	1860	2356
[2]	JLH HARI HUJAN		(N)	19	14	4	9	3	3	5	0	0	1	17	26
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			-0.015	0.06	0.21	0.135	0.225	0.225	0.195	0.27	0.27	0.255	0.015	-0.12
[6]	dE	[5] x [3]	mm	-9.1712	32.454	106.51	66.421	118.57	127.32	96.666	147.08	137.33	144.22	9.8374	-82.753
[7]	Etl = Eto -dE	[3] - [6]	mm	620.59	508.44	400.67	425.59	408.41	438.56	399.06	397.65	371.31	421.35	645.99	772.36
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	1456.4	1395.6	901.33	804.41	614.59	221.44	1181.9	-397.65	-371.31	-266.35	1214	1583.6
[9]	Soil Storage		mm	0	0	0	0	0	0	0	397.65	371.31	266.35	0	0
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	1456.4	1395.6	901.33	804.41	614.59	221.44	1181.9	0	0	0	1214	1583.6
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	728.21	697.78	450.66	402.21	307.3	110.72	590.97	0	0	0	607.01	791.82
[13]	0,5 x (1 + k) x 1 x [12]		mm	637.18	610.56	394.33	351.93	268.88	96.879	517.1	0	0	0	531.13	692.84
[14]	K x (Vn-1)		mm	1069.9	1069.9	1260.3	1241	1194.7	1097.7	895.92	1059.8	794.82	596.12	447.09	733.66
[15]	Storage Volume	[13] + [14]	mm	1707.1	1680.4	1654.7	1592.9	1463.6	1194.6	1413	1059.8	794.82	596.12	978.22	1426.5
[16]	dVn = Vn - Vn-1		mm	-280.55	-26.624	-25.779	-61.734	-129.35	-269.02	-218.46	-353.26	-264.94	-198.71	382.1	448.29
[17]	Base Flow	[12] - [16]	mm	447.65	724.4	476.44	463.94	436.64	379.73	372.51	353.26	264.94	198.71	224.91	343.53
[18]	Direct Runoff	[11] - [12]	mm	728.21	697.78	450.66	402.21	307.3	110.72	590.97	0	0	0	607.01	791.82
[19]	Runoff	[17] + [18]	mm	1175.9	1422.2	927.11	866.15	743.94	490.45	963.48	353.26	264.94	198.71	831.91	1135.4
[20]	Runoff	[17] + [18]	m^3/dt	0.0004	0.0006	0.0003	0.0003	0.0003	0.0002	0.0004	0.0001	0.0001	7E-05	0.0003	0.0004
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	24.102	32.274	19.003	18.345	15.249	10.388	19.749	7.2408	5.6116	4.0729	17.62	23.272
[23]	Debit Terukur	[19] x A	m^3/dt	0.0241	0.0323	0.019	0.0183	0.0152	0.0104	0.0197	0.0072	0.0056	0.0041	0.0176	0.0233

Perhitungan Debit Andalan tahun 2015

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	103	56	84	67	52	11	11	0	0	0	43	94
[1]			(mm/bln)	3193	1568	2604	2010	1612	330	341	0	0	0	1290	2914
[2]	JLH HARI HUJAN		(N)	18	9	14	13	5	1	1	0	0	0	5	6
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			0	0.135	0.06	0.075	0.195	0.255	0.255	0.27	0.27	0.27	0.195	0.18
[6]	dE	[5] x [3]	mm	0	73.021	30.431	36.901	102.76	144.3	126.41	147.08	137.33	152.7	127.89	124.13
[7]	Etl = Eto -dE	[3] - [6]	mm	611.42	467.88	476.75	455.11	424.22	421.59	369.31	397.65	371.31	412.86	527.94	565.48
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	2581.6	1100.1	2127.2	1554.9	1187.8	-91.586	-28.312	-397.65	-371.31	-412.86	762.06	2348.5
[9]	Soil Storage		mm	0	0	0	0	0	91.586	28.312	397.65	371.31	412.86	0	0
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	2581.6	1100.1	2127.2	1554.9	1187.8	0	0	0	0	0	762.06	2348.5
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	1290.8	550.06	1063.6	777.45	593.89	0	0	0	0	0	381.03	1174.3
[13]	0,5 x (1 + k) x 1 x [12]		mm	1129.4	481.3	930.67	680.26	519.65	0	0	0	0	0	333.4	1027.5
[14]	K x (Vn-1)		mm	1184	1184	1249	1634.7	1736.2	1691.9	1268.9	951.71	713.78	535.34	401.5	551.18
[15]	Storage Volume	[13] + [14]	mm	2313.4	1665.3	2179.6	2315	2255.9	1691.9	1268.9	951.71	713.78	535.34	734.9	1578.7
[16]	dVn = Vn - Vn-1		mm	-734.78	-648.14	-514.35	-135.35	-59.095	-563.98	-422.98	-317.24	-237.93	-178.45	199.57	843.75
[17]	Base Flow	[12] - [16]	mm	556.01	1198.2	549.28	642.09	652.99	563.98	422.98	317.24	237.93	178.45	181.46	330.51
[18]	Direct Runoff	[11] - [12]	mm	1290.8	550.06	1063.6	777.45	593.89	0	0	0	0	0	381.03	1174.3
[19]	Runoff	[17] + [18]	mm	1846.8	1748.3	1612.9	1419.5	1246.9	563.98	422.98	317.24	237.93	178.45	562.49	1504.8
[20]	Runoff	[17] + [18]	m^3/dt	0.0007	0.0007	0.0006	0.0005	0.0005	0.0002	0.0002	0.0001	9E-05	7E-05	0.0002	0.0006
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	37.855	39.674	33.06	30.067	25.558	11.945	8.67	6.5025	5.0394	3.6577	11.914	30.844
[23]	Debit Terukur	[19] x A	m^3/dt	0.0379	0.0397	0.0331	0.0301	0.0256	0.0119	0.0087	0.0065	0.005	0.0037	0.0119	0.0308

Perhitungan Debit Andalan tahun 2016

no	uraian		satuan	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
	CURAH HUJAN	(P)	(mm/hr)	49	85	47	69	37	127	19	23	57	79	68	134
[1]			(mm/bln)	1519	2465	1457	2070	1147	3810	589	713	1710	2449	2040	4154
[2]	JLH HARI HUJAN		(N)	10	15	11	7	8	10	4	7	11	15	23	20
	LIMITED EVAPOTRANSPIRATION														
[3]	Evapotranspiration	(Et0)	mm	611.42	540.9	507.18	492.01	526.98	565.89	495.72	544.72	508.64	565.57	655.83	689.61
[4]	Exposed surface	(m)	%	30	30	30	30	30	30	30	30	30	30	30	30
[5]	(m/20) * (18 - N)			0.12	0.045	0.105	0.165	0.15	0.12	0.21	0.165	0.105	0.045	-0.075	-0.03
[6]	dE	[5] x [3]	mm	73.37	24.34	53.254	81.182	79.047	67.906	104.1	89.88	53.407	25.451	-49.187	-20.688
[7]	Etl = Eto -dE	[3] - [6]	mm	538.05	516.56	453.93	410.83	447.93	497.98	391.62	454.84	455.23	540.12	705.01	710.3
	WATER BALANCED														
[8]	P-Etl	[1] - [7]	mm	980.95	1948.4	1003.1	1659.2	699.07	3312	197.38	258.16	1254.8	1908.9	1335	3443.7
[9]	Soil Storage		mm	0	0	0	0	0	0	0	0	0	0	0	0
[10]	Soil Moisture		mm	50	50	50	50	50	50	50	50	50	50	50	50
[11]	Water Surplus	[8] - [9]	mm	980.95	1948.4	1003.1	1659.2	699.07	3312	197.38	258.16	1254.8	1908.9	1335	3443.7
	RUNOFF AND GROUDWATER STORAGE														
[12]	Infiltration	0,5 x [11]	mm	490.48	974.22	501.54	829.59	349.53	1656	98.69	129.08	627.38	954.44	667.49	1721.9
[13]	0,5 x (1 + k) x 1 x [12]		mm	429.17	852.44	438.84	725.89	305.84	1449	86.354	112.94	548.96	835.14	584.06	1506.6
[14]	K x (Vn-1)		mm	2470.3	2470.3	2492	2198.2	2193	1874.2	2492.4	1934	1535.2	1563.2	1798.7	1787.1
[15]	Storage Volume	[13] + [14]	mm	2899.4	3322.7	2930.9	2924.1	2498.9	3323.2	2578.7	2047	2084.2	2398.3	2382.8	3293.7
[16]	dVn = Vn - Vn-1		mm	-394.26	-423.28	-391.84	-6.8333	-425.17	-824.29	-744.44	-531.74	37.212	314.09	-15.515	910.93
[17]	Base Flow	[12] - [16]	mm	884.73	550.94	893.37	836.42	774.7	831.72	843.13	660.82	590.17	640.36	683.01	810.92
[18]	Direct Runoff	[11] - [12]	mm	490.48	974.22	501.54	829.59	349.53	1656	98.69	129.08	627.38	954.44	667.49	1721.9
[19]	Runoff	[17] + [18]	mm	1375.2	1525.2	1394.9	1666	1124.2	2487.7	941.82	789.89	1217.6	1594.8	1350.5	2532.8
[20]	Runoff	[17] + [18]	m^3/dt	0.0005	0.0006	0.0005	0.0006	0.0004	0.001	0.0004	0.0003	0.0005	0.0006	0.0005	0.0009
[21]	CA		km^2	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549	0.0549
[22]	Debit Terukur	[19] x A	lt/dt	28.188	33.418	28.592	35.287	23.044	52.692	19.305	16.191	25.788	32.689	28.604	51.915
[23]	Debit Terukur	[19] x A	m^3/dt	0.0282	0.0334	0.0286	0.0353	0.023	0.0527	0.0193	0.0162	0.0258	0.0327	0.0286	0.0519

REKAPITULASI DEBIT ANDALAN

No	Tahun	Debit Andalan (m^3/detik)											
		Bulan											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1991	0.0201	0.0409	0.0135	0.0249	0.0098	0.0076	0.0055	0.0041	0.0032	0.0023	0.0272	0.0259
2	1992	0.0208	0.0142	0.0222	0.0751	0.0238	0.0163	0.0119	0.0524	0.0250	0.0253	0.0415	0.0282
3	1993	0.0138	0.0214	0.0208	0.0198	0.0125	0.0077	0.0055	0.0073	0.0038	0.0028	0.0191	0.0289
4	1994	0.0249	0.0372	0.0058	0.0083	0.0033	0.0025	0.0018	0.0014	0.0011	0.0008	0.0006	0.0028
5	1995	0.0406	0.0248	0.0330	0.0165	0.0103	0.0166	0.0074	0.0056	0.0043	0.0053	0.0428	0.0507
6	1996	0.0313	0.0359	0.0179	0.0220	0.0099	0.0077	0.0056	0.0042	0.0032	0.0194	0.0408	0.0302
7	1997	0.0198	0.0368	0.0093	0.0091	0.0041	0.0032	0.0023	0.0017	0.0013	0.0010	0.0008	0.0044
8	1998	0.0315	0.0262	0.0226	0.0215	0.0164	0.0581	0.0267	0.0138	0.0107	0.0078	0.0144	0.0351
9	1999	0.0411	0.0274	0.0156	0.0182	0.0120	0.0066	0.0048	0.0036	0.0028	0.0020	0.0291	0.0298
10	2000	0.0474	0.0446	0.0150	0.0116	0.0123	0.0073	0.0053	0.0040	0.0031	0.0484	0.0790	0.0208
11	2001	0.0538	0.0667	0.0223	0.0094	0.0066	0.0172	0.0060	0.0045	0.0035	0.0368	0.0088	0.0064
12	2002	0.0411	0.0576	0.0128	0.0188	0.0083	0.0065	0.0047	0.0035	0.0027	0.0020	0.0140	0.0312
13	2003	0.0412	0.0516	0.0228	0.0128	0.0180	0.0083	0.0061	0.0045	0.0035	0.0084	0.0242	0.0281
14	2004	0.0334	0.0284	0.0277	0.0108	0.0326	0.0136	0.0177	0.0082	0.0063	0.0046	0.0234	0.0339
15	2005	0.0532	0.0382	0.0237	0.0149	0.0107	0.0094	0.0193	0.0072	0.0056	0.0374	0.0608	0.0591
16	2006	0.0243	0.0363	0.0388	0.0530	0.0324	0.0158	0.0115	0.0086	0.0067	0.0048	0.0037	0.0134
17	2007	0.0175	0.0117	0.0029	0.0022	0.0079	0.0104	0.0033	0.0025	0.0019	0.0067	0.0023	0.0151
18	2008	0.0327	0.0331	0.0384	0.0251	0.0282	0.0125	0.0091	0.0068	0.0053	0.0325	0.0383	0.0174
19	2009	0.0282	0.0423	0.0080	0.0206	0.0412	0.0632	0.0186	0.0139	0.0108	0.0139	0.0090	0.0118
20	2010	0.0467	0.0471	0.0391	0.0513	0.0998	0.0535	0.0365	0.0219	0.0357	0.0353	0.0378	0.0388
21	2011	0.0354	0.0605	0.0231	0.0205	0.0276	0.0117	0.0085	0.0063	0.0049	0.0036	0.0229	0.0325
22	2012	0.0372	0.0301	0.0213	0.0406	0.0259	0.0122	0.0089	0.0067	0.0052	0.0208	0.0215	0.0226
23	2013	0.0255	0.0308	0.0222	0.0170	0.0112	0.0224	0.0220	0.0086	0.0066	0.0087	0.0204	0.0063
24	2014	0.0241	0.0323	0.0190	0.0183	0.0152	0.0104	0.0197	0.0072	0.0056	0.0041	0.0176	0.0233
25	2015	0.0379	0.0397	0.0331	0.0301	0.0256	0.0119	0.0087	0.0065	0.0050	0.0037	0.0119	0.0308
26	2016	0.0282	0.0334	0.0286	0.0353	0.0230	0.0527	0.0193	0.0162	0.0258	0.0327	0.0286	0.0519
Q_{and} rerata		0.033	0.0365	0.0215	0.023	0.0203	0.018	0.011	0.009	0.007	0.014	0.025	0.026

Lampiran 10

PENENTUAN DEBIT ANDALAN UNTUK AIR BAKU

No	Debit Andalan (m^3/detik)											
	Bulan											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0138	0.0117	0.0029	0.0022	0.0033	0.0025	0.0018	0.0014	0.0011	0.0008	0.0006	0.0028
2	0.0175	0.0142	0.0058	0.0083	0.0041	0.0032	0.0023	0.0017	0.0013	0.0010	0.0008	0.0044
3	0.0198	0.0214	0.0080	0.0091	0.0066	0.0065	0.0033	0.0025	0.0019	0.0020	0.0023	0.0063
4	0.0201	0.0248	0.0093	0.0094	0.0079	0.0066	0.0047	0.0035	0.0027	0.0020	0.0037	0.0064
5	0.0208	0.0262	0.0128	0.0108	0.0083	0.0073	0.0048	0.0036	0.0028	0.0023	0.0088	0.0118
6	0.0241	0.0274	0.0135	0.0116	0.0098	0.0076	0.0053	0.0040	0.0031	0.0028	0.0090	0.0134
7	0.0243	0.0284	0.0150	0.0128	0.0099	0.0077	0.0055	0.0041	0.0032	0.0036	0.0119	0.0151
8	0.0249	0.0301	0.0156	0.0149	0.0103	0.0077	0.0055	0.0042	0.0032	0.0037	0.0140	0.0174
9	0.0255	0.0308	0.0179	0.0165	0.0107	0.0083	0.0056	0.0045	0.0035	0.0041	0.0144	0.0208
10	0.0282	0.0323	0.0190	0.0170	0.0112	0.0094	0.0060	0.0045	0.0035	0.0046	0.0176	0.0226
11	0.0282	0.0331	0.0208	0.0182	0.0120	0.0104	0.0061	0.0056	0.0038	0.0048	0.0191	0.0233
12	0.0313	0.0334	0.0213	0.0183	0.0123	0.0104	0.0074	0.0063	0.0043	0.0053	0.0204	0.0259
13	0.0315	0.0359	0.0222	0.0188	0.0125	0.0117	0.0085	0.0065	0.0049	0.0067	0.0215	0.0281
14	0.0327	0.0363	0.0222	0.0198	0.0152	0.0119	0.0087	0.0067	0.0050	0.0078	0.0229	0.0282
15	0.0334	0.0368	0.0223	0.0205	0.0164	0.0122	0.0089	0.0068	0.0052	0.0084	0.0234	0.0289
16	0.0354	0.0372	0.0226	0.0206	0.0180	0.0125	0.0091	0.0072	0.0053	0.0087	0.0242	0.0298
17	0.0372	0.0382	0.0228	0.0215	0.0230	0.0136	0.0115	0.0072	0.0056	0.0139	0.0272	0.0302
18	0.0379	0.0397	0.0231	0.0220	0.0238	0.0158	0.0119	0.0073	0.0056	0.0194	0.0286	0.0308
19	0.0406	0.0409	0.0237	0.0249	0.0256	0.0163	0.0177	0.0082	0.0063	0.0208	0.0291	0.0312
20	0.0411	0.0423	0.0277	0.0251	0.0259	0.0166	0.0186	0.0086	0.0066	0.0253	0.0378	0.0325
21	0.0411	0.0446	0.0286	0.0301	0.0276	0.0172	0.0193	0.0086	0.0067	0.0325	0.0383	0.0339
22	0.0412	0.0471	0.0330	0.0353	0.0282	0.0224	0.0193	0.0138	0.0107	0.0327	0.0408	0.0351
23	0.0467	0.0516	0.0331	0.0406	0.0324	0.0527	0.0197	0.0139	0.0108	0.0353	0.0415	0.0388
24	0.0474	0.0576	0.0384	0.0513	0.0326	0.0535	0.0220	0.0219	0.0250	0.0368	0.0428	0.0507
25	0.0532	0.0605	0.0388	0.0530	0.0412	0.0581	0.0267	0.0524	0.0258	0.0374	0.0608	0.0519
26	0.0538	0.0667	0.0391	0.0751	0.0998	0.0632	0.0365	0.0162	0.0357	0.0484	0.0790	0.0591

Lampiran 11

ITERASI NILAI K.V(n-1) PADA PERHITUNGAN DEBIT ANDALAN

Lampiran 12

1991

vn =	1642.54											
k=	0.75											
0,5 x (1 + k) x 1 x [12]	444.82	1056.36	69.08	568.81	0.00	0.00	0.00	0.00	0.00	0.00	933.27	751.67
K x (Vn-1)	1231.97	1231.90	1716.20	1338.96	1430.82	1073.12	804.84	603.63	452.72	339.54	254.66	890.95
Storage Volume	1676.79	2288.26	1785.28	1907.77	1430.82	1073.12	804.84	603.63	452.72	339.54	1187.93	1642.62

1992

vn =	2652.08											
k=	0.75											
0,5 x (1 + k) x 1 x [12]	273.48	290.64	398.41	2347.56	139.90	0.00	0.00	1652.65	342.07	463.95	1060.43	516.57
K x (Vn-1)	1989.06	1989.06	1709.78	1581.14	2946.52	2314.82	1736.12	1302.09	2216.06	1918.60	1786.91	2135.51
Storage Volume	2262.54	2279.71	2108.18	3928.70	3086.43	2314.82	1736.12	2954.74	2558.13	2382.55	2847.35	2652.08

1993

vn =	1611.15											
k=	0.75											
0,5 x (1 + k) x 1 x [12]	211.21	570.26	442.42	381.62	139.90	6.99	0.00	120.09	0.00	0.00	623.01	914.40
K x (Vn-1)	1208.36	1208.36	1333.96	1332.29	1285.43	1069.00	806.99	605.24	544.00	408.00	306.00	696.75
Storage Volume	1419.57	1778.62	1776.39	1713.91	1425.34	1075.99	806.99	725.34	544.00	408.00	929.01	1611.15

1994

vn =	155.29											
k=	0.75											
0,5 x (1 + k) x 1 x [12]	915.49	564.41	86.72	187.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	91.64
K x (Vn-1)	116.47	116.47	510.66	448.03	476.85	357.63	268.23	201.17	150.88	113.16	84.87	63.65
Storage Volume	1031.96	680.88	597.38	635.79	476.85	357.63	268.23	201.17	150.88	113.16	84.87	155.29

1995

vn = 2965.63
k= 0.75

0,5 x (1 + k) x 1 x [12]	964.21	99.26	798.87	112.45	0.00	314.56	0.00	0.00	0.00	81.91	1467.52	1560.84
K x (Vn-1)	2224.22	2224.22	1742.61	1906.11	1513.92	1135.44	1087.50	815.63	611.72	458.79	405.53	1404.79
Storage Volume	3188.43	2323.48	2541.48	2018.56	1513.92	1450.00	1087.50	815.63	611.72	540.70	1873.05	2965.63

1996

vn = 2283.12
k= 0.75

0,5 x (1 + k) x 1 x [12]	743.19	697.17	211.86	414.12	0.00	0.00	0.00	0.00	0.00	646.54	1305.72	747.09
K x (Vn-1)	1712.34	1712.34	1807.13	1514.24	1446.27	1084.70	813.53	610.15	457.61	343.21	742.31	1536.02
Storage Volume	2455.53	2409.51	2018.99	1928.36	1446.27	1084.70	813.53	610.15	457.61	989.75	2048.03	2283.12

1997

vn = 226.35
k= 0.75

0,5 x (1 + k) x 1 x [12]	705.95	713.36	181.16	171.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	145.87
K x (Vn-1)	169.76	169.76	662.34	632.62	602.87	452.15	339.11	254.33	190.75	143.06	107.30	80.47
Storage Volume	875.71	883.12	843.50	803.82	602.87	452.15	339.11	254.33	190.75	143.06	107.30	226.35

1998

vn = 1976.91
k= 0.75

0,5 x (1 + k) x 1 x [12]	810.44	269.16	517.14	434.12	272.07	1818.49	423.26	0.00	0.00	0.00	308.43	1104.23
K x (Vn-1)	1482.68	1482.68	1313.88	1373.26	1355.54	1220.71	2279.40	2027.00	1520.25	1140.19	855.14	872.68
Storage Volume	2293.12	1751.84	1831.02	1807.38	1627.61	3039.20	2702.66	2027.00	1520.25	1140.19	1163.57	1976.91

1999

vn =	1816.72											
k=	0.75											
0,5 x (1 + k) x 1 x [12]	1205.28	0.00	327.26	404.64	180.59	0.00	0.00	0.00	0.00	0.00	1012.02	891.78
K x (Vn-1)	1362.54	1362.54	1021.90	1011.88	1062.39	932.23	699.18	524.38	393.29	294.96	221.22	924.94
Storage Volume	2567.82	1362.54	1349.17	1416.52	1242.98	932.23	699.18	524.38	393.29	294.96	1233.25	1816.72

2000

vn =	3041.18											
k=	0.75											
0,5 x (1 + k) x 1 x [12]	1208.33	644.38	0.00	0.00	146.28	0.00	0.00	0.00	0.00	1751.25	2495.79	0.00
K x (Vn-1)	2280.88	2280.88	2193.95	1645.46	1234.10	1035.28	776.46	582.35	436.76	327.57	1559.11	3041.18
Storage Volume	3489.21	2925.27	2193.95	1645.46	1380.38	1035.28	776.46	582.35	436.76	2078.82	4054.90	3041.18

2001

vn =	939.72											
k=	0.75											
0,5 x (1 + k) x 1 x [12]	1856.84	842.96	545.01	14.12	0.00	443.83	0.00	0.00	0.00	1299.97	0.00	0.00
K x (Vn-1)	704.79	704.79	1160.81	1279.37	970.11	727.59	878.56	658.92	494.19	370.64	1252.96	939.72
Storage Volume	2561.63	1547.75	1705.82	1293.49	970.11	1171.41	878.56	658.92	494.19	1670.61	1252.96	939.72

2002

vn =	1559.80											
k=	0.75											
0,5 x (1 + k) x 1 x [12]	1254.56	998.66	62.92	361.62	0.00	0.00	0.00	0.00	0.00	0.00	456.26	1054.56
K x (Vn-1)	1169.85	1169.85	1626.38	1266.98	1221.44	916.08	687.06	515.30	386.47	289.85	217.39	505.24
Storage Volume	2424.40	2168.51	1689.30	1628.59	1221.44	916.08	687.06	515.30	386.47	289.85	673.65	1559.80

2003

vn =	1742.75											
k=	0.75											
0,5 x (1 + k) x 1 x [12]	1223.42	818.11	452.66	72.87	370.47	0.00	0.00	0.00	0.00	222.40	771.68	828.48
K x (Vn-1)	1307.06	1307.06	1593.88	1534.90	1205.83	1182.22	886.67	665.00	498.75	374.06	447.34	914.27
Storage Volume	2530.48	2125.18	2046.54	1607.77	1576.29	1182.22	886.67	665.00	498.75	596.46	1219.03	1742.75

2004

vn =	1969.96											
k=	0.75											
0,5 x (1 + k) x 1 x [12]	885.32	320.10	700.36	0.00	936.63	93.17	350.55	0.00	0.00	0.00	727.79	1045.51
K x (Vn-1)	1477.47	1477.47	1348.18	1536.40	1152.30	1566.70	1244.90	1196.59	897.44	673.08	504.81	924.45
Storage Volume	2362.79	1797.57	2048.53	1536.40	2088.93	1659.87	1595.45	1196.59	897.44	673.08	1232.60	1969.96

2005

vn =	4054.94											
k=	0.75											
0,5 x (1 + k) x 1 x [12]	1229.92	353.31	238.98	7.24	0.00	40.67	493.78	0.00	0.00	1266.71	1869.45	1606.08
K x (Vn-1)	3041.20	3041.20	2545.88	2088.65	1571.92	1178.94	914.70	1056.36	792.27	594.20	1395.68	2448.85
Storage Volume	4271.12	3394.51	2784.87	2095.89	1571.92	1219.60	1408.48	1056.36	792.27	1860.91	3265.14	4054.94

2006

vn =	801.51											
k=	0.75											
0,5 x (1 + k) x 1 x [12]	764.78	648.91	1229.05	1526.51	617.78	0.00	0.00	0.00	0.00	0.00	0.00	403.55
K x (Vn-1)	601.13	601.13	937.53	1624.93	2363.58	2236.02	1677.02	1257.76	943.32	707.49	530.62	397.96
Storage Volume	1365.91	1250.04	2166.58	3151.45	2981.36	2236.02	1677.02	1257.76	943.32	707.49	530.62	801.51

2007

vn = 744.38
k= 0.75

0,5 x (1 + k) x 1 x [12]	517.61	0.00	0.00	0.00	238.30	290.04	0.00	0.00	0.00	201.55	5.49	512.02
K x (Vn-1)	558.28	558.28	418.71	314.03	235.53	355.37	484.06	363.04	272.28	204.21	304.32	232.36
Storage Volume	1075.89	558.28	418.71	314.03	473.83	645.41	484.06	363.04	272.28	405.76	309.81	744.38

2008

vn = 1952.91
k= 0.75

0,5 x (1 + k) x 1 x [12]	860.68	504.82	1073.20	424.01	614.86	0.00	0.00	0.00	0.00	1089.25	1086.68	209.17
K x (Vn-1)	1464.68	1464.68	1477.13	1912.75	1752.57	1775.57	1331.68	998.76	749.07	561.80	1238.29	1743.73
Storage Volume	2325.36	1969.50	2550.33	2336.76	2367.43	1775.57	1331.68	998.76	749.07	1651.05	2324.97	1952.91

2009

vn = 1056.71
k= 0.75

0,5 x (1 + k) x 1 x [12]	864.69	776.91	0.00	529.01	1289.26	1863.06	0.00	0.00	0.00	228.67	62.29	236.34
K x (Vn-1)	792.53	792.53	1177.08	882.81	1058.87	1761.09	2718.11	2038.58	1528.94	1146.70	1031.53	820.37
Storage Volume	1657.23	1569.44	1177.08	1411.82	2348.13	3624.15	2718.11	2038.58	1528.94	1375.38	1093.83	1056.71

2010

vn = 3186.74
k= 0.75

0,5 x (1 + k) x 1 x [12]	1153.52	717.60	879.25	1260.78	3072.59	831.88	374.42	0.00	686.89	736.63	792.78	873.74
K x (Vn-1)	2390.06	2390.06	2330.75	2407.50	2751.21	4367.85	3899.80	3205.66	2404.25	2318.35	2291.23	2313.01
Storage Volume	3543.58	3107.66	3210.00	3668.28	5823.80	5199.73	4274.22	3205.66	3091.13	3054.98	3084.01	3186.74

2011

vn =	1862.95											
k=	0.75											
0,5 x (1 + k) x 1 x [12]	979.69	1312.36	351.31	290.37	641.72	0.00	0.00	0.00	0.00	0.00	740.49	1013.89
K x (Vn-1)	1397.21	1397.21	2032.17	1787.61	1558.49	1650.16	1237.62	928.21	696.16	522.12	391.59	849.06
Storage Volume	2376.90	2709.57	2383.48	2077.99	2200.21	1650.16	1237.62	928.21	696.16	522.12	1132.08	1862.95

2012

vn =	1664.68											
k=	0.75											
0,5 x (1 + k) x 1 x [12]	1088.76	223.13	523.55	1175.16	516.20	0.00	0.00	0.00	0.00	645.40	556.74	575.35
K x (Vn-1)	1248.51	1248.51	1103.73	1220.46	1796.71	1734.68	1301.01	975.76	731.82	548.86	895.70	1089.33
Storage Volume	2337.26	1471.64	1627.28	2395.61	2312.91	1734.68	1301.01	975.76	731.82	1194.26	1452.44	1664.68

2013

vn =	916.69											
k=	0.75											
0,5 x (1 + k) x 1 x [12]	787.89	442.61	622.06	339.01	146.55	584.74	541.52	0.00	0.00	147.30	583.20	0.00
K x (Vn-1)	687.51	687.51	847.59	1102.24	1080.94	920.62	1129.02	1252.91	939.68	704.76	639.04	916.69
Storage Volume	1475.41	1130.12	1469.65	1441.25	1227.49	1505.36	1670.54	1252.91	939.68	852.06	1222.25	916.69

2014

vn =	1426.51											
k=	0.75											
0,5 x (1 + k) x 1 x [12]	637.18	610.56	394.33	351.93	268.88	96.88	517.10	0.00	0.00	0.00	531.13	692.84
K x (Vn-1)	1069.88	1069.88	1260.33	1240.99	1194.69	1097.68	895.92	1059.77	794.82	596.12	447.09	733.66
Storage Volume	1707.06	1680.44	1654.66	1592.92	1463.58	1194.56	1413.02	1059.77	794.82	596.12	978.22	1426.51

2015

vn =	1578.66
k=	0.75

0,5 x (1 + k) x 1 x [12]	1129.44	481.30	930.67	680.26	519.65	0.00	0.00	0.00	0.00	0.00	333.40	1027.48
K x (Vn-1)	1183.99	1183.99	1248.97	1634.73	1736.25	1691.93	1268.95	951.71	713.78	535.34	401.50	551.18
Storage Volume	2313.44	1665.30	2179.64	2315.00	2255.90	1691.93	1268.95	951.71	713.78	535.34	734.90	1578.66

2016

vn =	3293.70
k=	0.75

0,5 x (1 + k) x 1 x [12]	429.17	852.44	438.84	725.89	305.84	1449.01	86.35	112.94	548.96	835.14	584.06	1506.62
K x (Vn-1)	2470.28	2470.28	2492.04	2198.16	2193.04	1874.16	2492.38	1934.05	1535.24	1563.15	1798.72	1787.08
Storage Volume	2899.44	3322.72	2930.88	2924.05	2498.88	3323.17	2578.73	2046.99	2084.20	2398.29	2382.77	3293.70

PERHITUNGAN NERACA AIR

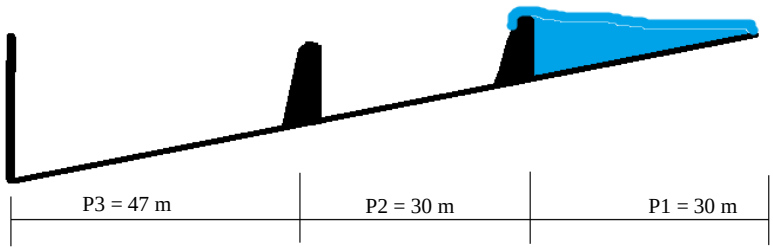
Perhitungan Neraca Air (Q andalan 80%)

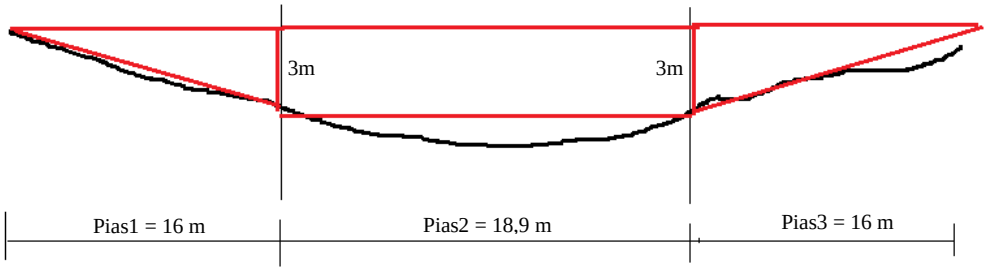
Bln	inflow	Outflow				selisih	kapasitas embung (m^3)	volume tersedia (m3)	Tertampung (m^3)	keadaan embung
	Volume	ptrnk	prtnian	evaporasi	jumlah					
	m^3	m^3	m^3	m^3	m^3					
jan	1796.89	12	734.4	43.66	790.06	1006.83	2750	1006.83	1006.83	terisi
feb	2267.57	12	734.4	88.00	834.40	1433.17	2750	2439.99	2439.99	terisi
mar	1103.36	12	734.4	120.08	866.48	236.87	2750	2676.87	2676.87	terisi
apr	937.20	12	734.4	143.48	889.88	47.33	2750	2724.19	2724.19	terisi
may	721.05	12	734.4	93.85	840.25	-119.21	2750	2604.98	2604.98	terisi
jun	631.52	12	734.4	168.58	914.98	-283.46	2750	2321.53	2321.53	terisi
jul	412.74	12	734.4	210.99	957.39	-544.65	2750	1776.87	1776.87	terisi
aug	309.55	12	734.4	42.56	788.96	-479.40	2750	1297.47	1297.47	terisi
sep	239.90	12	734.4	32.76	779.16	-539.26	2750	758.21	758.21	terisi
oct	200.44	12	734.4	26.33	772.73	-572.29	2750	185.92	185.92	terisi
nov	764.31	12	734.4	26.26	772.66	-8.36	2750	177.56	177.56	terisi
dec	1022.42	12	734.4	85.63	832.03	190.40	2750	367.96	367.96	terisi

Perhitungan Neraca Air (Q andalan Rerata selama 26 tahun)

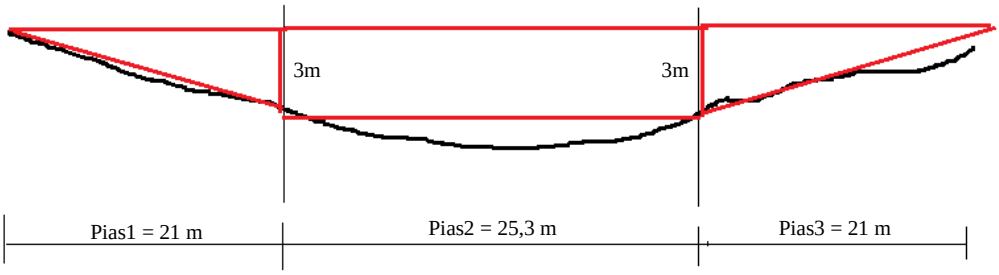
Bln	inflow	Outflow				selisih	kapasitas embung (m^3)	volume tersedia (m3)	Tertampung (m^3)	keadaan embung
	V rata2	ptrnk	prtnian	evaporasi	jumlah					
	m^3	m^3	m^3	m^3	m^3					
jan	2829.45	12	734.4	43.66	790.06	2039.38	9000	2039.38	2039.38	terisi
feb	3155.23	12	734.4	88.00	834.40	2320.83	9000	4360.21	4360.21	terisi
mar	1858.94	12	734.4	120.08	866.48	992.46	9000	5352.67	5352.67	terisi
apr	2020.39	12	734.4	143.48	889.88	1130.51	9000	6483.18	6483.18	terisi
may	1756.89	12	734.4	93.85	840.25	916.64	9000	7399.82	7399.82	terisi
jun	1546.72	12	734.4	168.58	914.98	631.74	9000	8031.56	8031.56	terisi
jul	985.58	12	734.4	210.99	957.39	28.19	9000	8059.75	8059.75	terisi
aug	768.73	12	734.4	42.56	788.96	-20.23	9000	8039.52	8039.52	terisi
sep	643.76	12	734.4	32.76	779.16	-135.41	9000	7904.11	7904.11	terisi
oct	1232.66	12	734.4	26.33	772.73	459.93	9000	8364.04	8364.04	terisi
nov	2128.57	12	734.4	26.26	772.66	1355.91	9000	9719.95	9000.00	penuh
dec	2257.69	12	734.4	85.63	832.03	1425.67	9000	10425.67	9000.00	penuh

TAMPUNGAN EMBUNG

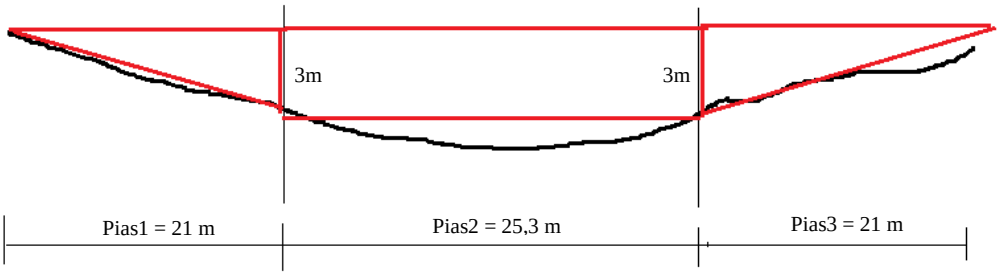




Tampungan 1



Tampungan 2



Tampungan 3

Lampiran 14


serviens in lumine veritatis