

APÊNDICE D - Planilhas com o resumo dos resultados da calibração e simulação do modelo matemático do rio Bengalas.

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Rio: Bengalas
Local: Nova Friburgo

Procedimento: Calibração
Evento: Hietograma chuva 1

Escoamento:
Condição de Contorno: Normal Depth

Steady Flow
Regime: Mix Flow
Perfil: Chuva 0

Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	8449.32	87.1		87.1		12.94	841.25	844.14		844.52	0.000702	2.71	32.19	0.37	0.02	0.06	0.55
Alto	8399.309	87.1		87.1		16.79	841.25	844.26		844.44	0.000282	1.88	46.42	0.18	0.01	0.01	0.36
Alto	8349.302	87.1		87.1		17.3	841	844.27		844.42	0.00022	1.72	50.69	0.15	0.01	0	0.32
Alto	8299.3	87.1		87.1		17.56	841	844.26		844.4	0.000192	1.63	53.32	0.14	0.01	0	0.3
Alto	8249.299	87.1		87.1		17.6	841	844.26		844.39	0.000182	1.59	54.61	0.13	0	0	0.29
Alto	8222.821	87.1		87.1		17.62	840.75	844.26		844.38	0.000158	1.52	57.13	0.12	0	0	0.27
Alto	8199.353	87.1		87.1		17.65	840.75	844.26		844.38	0.000151	1.5	58.04	0.11	0.01	0	0.26
Alto	8149.295	87.1		87.1		17.83	840.75	844.26		844.37	0.000138	1.45	60.25	0.11	0	0	0.25
Alto	8119.148	87.1		87.1		17.94	840.75	844.26		844.36	0.000131	1.42	61.34	0.1	0.01	0.01	0.25
Alto	8049.292	87.1		87.1	0	19.9	840.5	844.26		844.35	0.000103	1.29	67.49	0.08	0	0	0.22
Alto	8027.169	87.1		87.1		18.5	840.5	844.26	841.83	844.34	0.000095	1.26	68.96	0.08	0	0	0.21
Alto	8024.782 T10	Bridge															
Alto	8018.111	87.1		87.1		18.22	840.34	844.24		844.33	0.000095	1.27	68.63	0.08	0	0	0.21
Alto	7999.291	87.1		87.1		17.98	840.25	844.24		844.32	0.000095	1.27	68.36	0.08	0	0	0.21
Alto	7949.291	87.1		87.1		17.35	840.25	844.23		844.32	0.000099	1.3	66.78	0.09	0.01	0	0.21
Alto	7899.291	87.1		87.1		16.9	840.25	844.22		844.31	0.000105	1.34	65.21	0.09	0.01	0	0.22
Alto	7849.291	87.1		87.1		16.42	840	844.22		844.31	0.000104	1.34	65.04	0.09	0.01	0	0.21
Alto	7799.291	87.1		87.1		16.03	840	844.21		844.3	0.000106	1.36	64.26	0.09	0	0	0.22
Alto	7749.291	87.1		87.1		16.75	840	844.21		844.29	0.000093	1.29	67.66	0.08	0	0	0.2
Alto	7699.291	87.1		87.1		17.38	839.75	844.21		844.29	0.000079	1.22	71.64	0.08	0	0	0.19
Alto	7649.291	87.1		87.1		17.24	839.75	844.21		844.28	0.000078	1.21	72.2	0.07	0	0	0.19
Alto	7611.167	87.1		87.1		18.3	839.75	844.21	841.27	844.28	0.000065	1.12	77.5	0.06	0	0	0.17
Alto	7605.934 T9	Bridge															
Alto	7600.285	87.1		87.1		18.49	839.72	844.2		844.27	0.000064	1.11	78.24	0.06	0	0	0.17
Alto	7549.258	87.1	0.06	86.97	0.07	31.09	839.75	844.18		844.26	0.000077	1.23	72.84	0.08	0	0	0.19
Alto	7499.258	87.1	0.09	87.01	0.01	23.27	839.75	844.17		844.26	0.000088	1.29	68.14	0.09	0	0	0.21
Alto	7449.258	87.1	0.13	86.9	0.07	32.38	839.75	844.16		844.25	0.000096	1.33	67.81	0.09	0	0	0.22
Alto	7399.258	87.1	0.15	86.7	0.25	42.82	839.75	844.16		844.25	0.000093	1.3	70.54	0.09	0	0.01	0.22
Alto	7336.31	87.1	0.4	85.74	0.97	73.82	839.5	844.19	841.35	844.23	0.000035	0.85	109.55	0.04	0	0	0.14
Alto	7333.883 T8	Bridge															
Alto	7321.573	87.1	0.46	86.49	0.15	68.24	840	844.16		844.21	0.000043	0.93	101.14	0.04	0	0.01	0.15
Alto	7299.261	87.1	0.19	86.9	0.02	26.8	839.75	844.1		844.2	0.000107	1.38	64.66	0.1	0.01	0	0.23
Alto	7293.445	87.1	0.21	86.88	0.01	27.4	839.75	844.1		844.19	0.000108	1.38	64.48	0.1	0	0	0.23
Alto	7249.261	87.1	0.35	86.75	0	27.88	839.75	844.09		844.19	0.000108	1.39	64.72	0.1	0.01	0	0.22
Alto	7199.258	87.1	0.52	86.58		25.93	839.5	844.09		844.18	0.0001	1.35	66.65	0.09	0.01	0.01	0.21
Alto	7129.429	87.1	0.59	86.51		26.4	839.5	844.11	840.97	844.17	0.00006	1.1	81.01	0.06	0	0.01	0.17
Alto	7121.824 T7	Bridge															
Alto	7120.426	87.1	0.36	86.74		25.95	839.5	844.07		844.13	0.000058	1.08	82.28	0.06	0	0	0.16
Alto	7099.259	87.1	0.76	86.34		28.44	839.25	844.07		844.13	0.000059	1.1	82.11	0.06	0	0	0.17

<u>Rio:</u>	Bengalas	<u>Procedimento:</u> Calibração						<u>Escoamento:</u>			Steady Flow		<u>Regime:</u> Mix Flow				
<u>Local:</u>	Nova Friburgo	<u>Evento:</u> Hietograma chuva 1						<u>Condição de Contorno:</u>			Normal Depth		<u>Perfil:</u> Chuva 0				
Reach	River Sta	Q Total	Q Left	Q Channel	Q Right	Top Width	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Vel Head	Frctn Loss	C & E Loss	Froude #
		(m3/s)	(m3/s)	(m3/s)	(m3/s)	(m)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	(m)	(m)	Chl
Alto	7049.26	87.1	0.37	86.73		27.99	839.25	844.06		844.13	0.00006	1.11	80.83	0.06	0	0	0.16
Alto	6999.26	87.1	0.18	86.92		26.72	839	844.05		844.12	0.000068	1.15	77.06	0.07	0	0	0.17
Alto	6949.26	87.1	0.02	87.08		20.6	839	844.05		844.12	0.000066	1.16	75.76	0.07	0	0	0.17
Alto	6899.26	87.1	0	87.1		17.95	838.75	844.05		844.11	0.000058	1.1	79.37	0.06	0	0	0.16
Alto	6849.26	87.1	0	87.1		17.71	838.5	844.05		844.11	0.00005	1.04	83.73	0.06	0	0	0.14
Alto	6818.892	87.1	0	87.1		17.07	838.5	844.05		844.11	0.000045	1	86.9	0.05	0	0	0.14
Alto	6785.786	87.1		87.1		16.97	838.5	844.06		844.1	0.00004	0.95	91.27	0.05	0	0	0.13
Alto	6749.258	87.1		87.1		17.55	838.25	844.06		844.1	0.000034	0.9	96.95	0.04	0	0	0.12
Alto	6721.286	87.1		87.1		17.96	838.25	844.06		844.1	0.000031	0.87	100.25	0.04	0	0	0.12
Alto	6677.863	87.1		87.1		17.94	838	844.06		844.1	0.000029	0.85	102.82	0.04	0	0	0.11
Alto	6642.27	87.1		87.1		16.95	838	844.06	839.57	844.1	0.000032	0.88	99.03	0.04	0	0	0.12
Alto	6633.780 T6	Bridge															
Alto	6631.452	87.1		87.1		16.75	838	844.03		844.07	0.000034	0.9	97.19	0.04	0	0	0.12
Alto	6599.255	87.1		87.1		18.01	838	844.03		844.07	0.000164	0.87	99.99	0.04	0.01	0	0.12
Alto	6549.265	87.1	0.03	87.07	0	35.3	838	844.03		844.06	0.000112	0.76	115.68	0.03	0.01	0	0.1
Alto	6499.265	87.1	1.56	85.52	0.02	62.1	838	844.03		844.06	0.000113	0.76	119.6	0.03	0.01	0	0.11
Alto	6449.265	87.1	1.58	84.99	0.53	69.63	838	844.02		844.05	0.000115	0.78	121.3	0.03	0.01	0	0.11
Alto	6399.265	87.1	4.12	81.24	1.73	89.82	838	844.02		844.04	0.000099	0.73	139.45	0.03	0	0	0.11
Alto	6349.265	87.1	21.97	62.41	2.72	175.48	838	844.02		844.04	0.000063	0.58	274.09	0.01	0	0	0.09
Alto	6299.265	87.1	31.77	51.47	3.86	187.75	838	844.02		844.03	0.000043	0.47	348.39	0.01	0	0	0.07
Alto	6249.265	87.1	37.84	44.74	4.53	188.08	838	844.02		844.03	0.000032	0.4	394.93	0	0	0	0.06
Alto	6185.989 S15	87.1	35.76	47.14	4.21	156.07	838	844.02		844.03	0.000037	0.45	337.58	0.01	0	0	0.07
Alto	6149.272	87.1	35.71	47.97	3.43	147.21	838.25	844.02		844.03	0.000041	0.45	324.39	0.01	0	0	0.07
Alto	6099.267	87.1	39.7	44.12	3.28	136.1	838.25	844.02		844.02	0.000043	0.46	317.11	0.01	0	0	0.07
Alto	6049.264	87.1	33.36	50.44	3.3	160.71	838.25	844.01		844.02	0.000066	0.56	270.85	0.01	0	0	0.09
Alto	5999.264	87.1	15.21	65.61	6.28	46.98	838.25	843.99		844.01	0.000113	0.73	124.13	0.03	0	0.01	0.11
Alto	5949.266	87.1	8.39	40.03	38.68	112.31	838.25	844		844.01	0.00004	0.44	195.5	0.01	0	0	0.07
Alto	5899.266	87.1	12.03	49.77	25.31	153.42	838.25	843.99		844	0.000054	0.52	224.66	0.01	0	0	0.08
Alto	5849.266	87.1	7.89	40.6	38.6	116.1	838.25	843.99		844	0.000035	0.42	256.9	0.01	0	0	0.06
Alto	5799.266	87.1	7.54	53.65	25.91	127.57	838.25	843.99		844	0.000061	0.55	201.66	0.01	0	0	0.09
Alto	5749.266	87.1	11.1	56.95	19.05	178.91	838.25	843.98		843.99	0.000065	0.58	216.93	0.01	0	0	0.09
Alto	5699.266	87.1	15.9	43.14	28.05	165.76	838.25	843.98		843.99	0.000033	0.42	270.42	0.01	0	0	0.06
Alto	5649.266	87.1	16.25	36.4	34.45	182.3	838.25	843.98		843.99	0.000021	0.34	395.43	0	0	0	0.05
Alto	5598.734	87.1	31.88	17.58	37.64	205.83	838.25	843.99	840.06	843.99	0.000004	0.14	475.71	0	0	0	0.02
Alto	5593.126 T5	Bridge															
Alto	5587.957	87.1	46.65	26.5	13.95	177.22	838.25	843.98		843.99	0.000009	0.22	379.54	0	0	0	0.03
Alto	5543.313	87.1	36.37	26.63	24.1	261.07	838.25	843.98	840.46	843.98	0.000018	0.28	357.96	0	0	0	0.05
Alto	5535.894 T4	Bridge															
Alto	5531.686	87.1	32.69	32.12	22.28	260.27	838.25	843.98		843.98	0.000019	0.31	359.18	0	0	0	0.05

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Escoamento: Steady Flow
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Perfil: Chuva 0

Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	5528.385	87.1	21.36	38.58	27.16	260.14	838.25	843.98		843.98	0.000029	0.37	355.24	0	0	0	0.06
Alto	5499.265	87.1	13.29	42.25	31.57	161.06	838.25	843.97		843.98	0.000087	0.6	183.54	0.01	0.01	0	0.1
Alto	5449.271	87.1	4.52	60.19	22.39	120.37	838.25	843.95		843.97	0.000182	0.84	136.85	0.03	0.01	0	0.14
Alto	5399.302	87.1	6.94	65.25	14.91	113.38	838.25	843.92		843.96	0.000233	0.97	121.53	0.04	0.02	0	0.16
Alto	5349.307	87.1	5.95	63.78	17.38	97.68	838.25	843.89		843.95	0.000415	1.21	97.41	0.06	0.02	0	0.2
Alto	5289.961	87.1	2.04	47.08	37.98	53.97	838.25	843.87		843.93	0.000241	0.91	90.49	0.05	0.01	0	0.15
Alto	5249.313	87.1	1.51	77.05	8.54	80.4	838.25	843.85		843.91	0.000351	1.18	106.09	0.06	0.02	0	0.19
Alto	5199.299	87.1	1.77	85.26	0.07	28.79	838.25	843.84		843.9	0.000277	1.08	83.59	0.06	0.01	0	0.17
Alto	5149.283	87.1	1.36	85.74	0	32.99	838.25	843.84		843.88	0.000214	0.91	97.83	0.04	0.01	0	0.15
Alto	5119.450 S13	87.1	0.47	86.63	0	31.74	838.25	843.83		843.87	0.000173	0.86	104.89	0.04	0.02	0	0.14
Alto	5049.23	87.1	0.95	86.15	0	31.35	838.5	843.8		843.86	0.00028	1.05	85.62	0.06	0.01	0	0.17
Alto	4999.153	87.1	0.4	86.69	0	29.9	838.5	843.79		843.84	0.000226	0.95	93.93	0.05	0.01	0	0.16
Alto	4949.088	87.1	0.21	86.89	0	28.47	838.5	843.77		843.83	0.000271	1.01	87.35	0.05	0.02	0	0.17
Alto	4899.062	87.1	0.34	86.75	0.01	27.06	838.75	843.74		843.81	0.000393	1.16	75.86	0.07	0.03	0	0.2
Alto	4849.056	87.1	0.08	87.01	0.01	23.55	838.75	843.67		843.78	0.000661	1.48	59.32	0.11	0.05	0.01	0.25
Alto	4799.154	87.1		87.1		13.08	838.75	843.49		843.72	0.001698	2.11	41.35	0.23	0.09	0	0.38
Alto	4749.154	87.1		87.1		12.86	838.75	843.38		843.63	0.00188	2.2	39.59	0.25	0.14	0.02	0.4
Alto	4699.178	87.1		87.1		9.65	839	842.98		843.47	0.004362	3.07	28.35	0.48	0.17	0.04	0.57
Alto	4649.212	87.1		87.1		12.05	839	842.91		843.25	0.002836	2.57	33.85	0.34	0.13	0.01	0.49
Alto	4599.202	87.1		87.1		12.62	839.25	842.8		843.1	0.002523	2.43	35.8	0.3	0.1	0	0.46
Alto	4561.047	87.1		87.1		14.03	839.25	842.71		843	0.00248	2.39	36.52	0.29	0.06	0.02	0.47
Alto	4535.883 S12	87.1		87.1		16.78	839.5	842.69		842.93	0.002117	2.16	40.26	0.24	0.08	0	0.45
Alto	4499.18	87.1		87.1		16.84	839.25	842.62		842.85	0.001992	2.13	40.89	0.23	0.09	0.01	0.44
Alto	4449.196	87.1		87.1		18.04	839	842.55		842.75	0.001763	2.01	43.26	0.21	0.09	0	0.42
Alto	4399.197	87.1		87.1		18.23	839	842.46		842.67	0.001715	1.99	43.75	0.2	0.06	0.02	0.41
Alto	4349.205	87.1	9.01	78.09		26.24	838.75	842.45		842.58	0.000987	1.57	54.88	0.13	0.02	0.02	0.31
Alto	4320.028	87.1	19.06	68.04		83.13	838.5	842.47		842.54	0.000644	1.27	73.94	0.07	0.05	0	0.25
Alto	4249.201	87.1		87.1		23.68	838.25	842.37		842.48	0.000925	1.5	57.93	0.12	0.03	0	0.31
Alto	4214.434	87.1		87.1		24.52	838.25	842.34		842.45	0.000868	1.46	59.78	0.11	0.01	0	0.3
Alto	4199.201	87.1		87.1		24.72	838	842.33		842.43	0.000834	1.43	60.72	0.1	0.03	0.01	0.29
Alto	4149.204	87.1	16.55	70.55		61.63	838	842.33		842.39	0.000429	1.06	83.65	0.06	0.02	0	0.21
Alto	4099.198	87.1		87.1		27.16	837.75	842.3		842.37	0.000482	1.17	74.26	0.07	0.01	0	0.23
Alto	4081.474 S11	87.1		87.1		27.62	837.75	842.29		842.36	0.000449	1.14	76.54	0.07	0.02	0	0.22
Alto	4049.185	87.1		87.1		24.33	837.75	842.25		842.34	0.000611	1.31	66.56	0.09	0.04	0	0.25
Alto	3999.199	87.1		87.1		22.28	837.75	842.18		842.3	0.000887	1.51	57.58	0.12	0.05	0	0.3
Alto	3949.209	87.1		87.1		21.61	837.75	842.11		842.25	0.001076	1.62	53.7	0.13	0.06	0	0.33
Alto	3899.258	87.1		87.1		21.02	837.75	842.02		842.18	0.001491	1.81	48.23	0.17	0.07	0	0.38
Alto	3849.281	87.1		87.1		21.32	837.75	841.95		842.11	0.001347	1.75	49.81	0.16	0.08	0.01	0.37
Alto	3799.282	87.1		87.1		17.13	838	841.8		842.02	0.001891	2.09	41.73	0.22	0.1	0	0.43

<u>Rio:</u>	Bengalas	<u>Procedimento:</u> Calibração						<u>Escoamento:</u>			Steady Flow			<u>Regime:</u> Mix Flow			
<u>Local:</u>	Nova Friburgo	<u>Evento:</u> Hietograma chuva 1						<u>Condição de Contorno:</u>			Normal Depth			<u>Perfil:</u> Chuva 0			
Reach	River Sta	Q Total	Q Left	Q Channel	Q Right	Top Width	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Vel Head	Frctn Loss	C & E Loss	Froude # Chl
		(m3/s)	(m3/s)	(m3/s)	(m3/s)	(m)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	(m)	(m)	
Alto	3749.292	87.1		87.1		16.35	838	841.66		841.92	0.002235	2.23	38.97	0.25	0.06	0	0.46
Alto	3723.315	87.1		87.1		17.04	838	841.61		841.86	0.002255	2.21	39.33	0.25	0.05	0	0.47
Alto	3699.295	87.1		87.1		17.21	838	841.56		841.8	0.002248	2.2	39.52	0.25	0.03	0	0.46
Alto	3686.538	87.1		87.1		17.27	838	841.53		841.77	0.002248	2.2	39.58	0.25	0.08	0	0.46
Alto	3649.29	87.1		87.1		17.14	838	841.45		841.69	0.002198	2.19	39.86	0.24	0.05	0	0.46
Alto	3628.303	87.1		87.1		17.5	838	841.41		841.64	0.002095	2.14	40.64	0.23	0.04	0.01	0.45
Alto	3609.762 S10	87.1		87.1		19.2	838.25	841.38		841.6	0.002006	2.06	42.29	0.22	0.06	0.01	0.44
Alto	3574.84	87.1		87.1		17.87	838	841.33		841.53	0.001657	1.97	44.11	0.2	0.04	0	0.4
Alto	3549.256	87.1		87.1		17.78	838	841.28		841.49	0.00168	1.99	43.85	0.2	0.1	0	0.4
Alto	3499.259	87.1		87.1		16.61	837.75	841.14		841.39	0.002195	2.21	39.45	0.25	0.05	0	0.46
Alto	3476.621	87.1		87.1		16.3	837.75	841.07		841.33	0.002383	2.28	38.21	0.26	0.07	0	0.48
Alto	3449.258	87.1		87.1		16.04	837.75	840.98		841.26	0.002681	2.38	36.64	0.29	0.13	0.01	0.5
Alto	3399.261	87.1		87.1		16.14	837.5	840.86		841.13	0.002432	2.3	37.87	0.27	0.12	0.01	0.48
Alto	3349.259	87.1		87.1		16.75	837.5	840.76		841.01	0.002271	2.22	39.16	0.25	0.11	0.01	0.46
Alto	3299.259	87.1		87.1		17.84	837.25	840.67		840.89	0.001955	2.08	41.86	0.22	0.09	0.01	0.43
Alto	3249.258	87.1		87.1		18.64	837.25	840.6		840.79	0.001675	1.95	44.61	0.19	0.08	0.01	0.4
Alto	3199.258	87.1		87.1		19.11	837	840.54		840.71	0.001461	1.86	46.8	0.18	0.07	0.01	0.38
Alto	3149.258	87.1		87.1		19.79	836.75	840.48		840.64	0.001246	1.75	49.71	0.16	0.05	0.01	0.35
Alto	3099.247	87.1		86.97	0.13	27.25	836.75	840.45		840.57	0.00092	1.53	57.24	0.12	0.03	0.01	0.31
Alto	3058.003 S9	87.1		86.94	0.16	27.61	836.5	840.45		840.53	0.000613	1.31	66.6	0.09	0.04	0	0.26
Alto	2999.242	87.1		87.08	0.02	22.61	836.5	840.36		840.48	0.000981	1.59	54.84	0.13	0.05	0	0.32
Alto	2949.221	87.1		87.1	0	22.02	836.25	840.29		840.43	0.001118	1.65	52.87	0.14	0.05	0	0.34
Alto	2899.194	87.1		86.34	0.76	33.5	836.25	840.25		840.37	0.000944	1.55	56.9	0.12	0.04	0	0.31
Alto	2849.2	87.1		86.71	0.39	28.55	836	840.22		840.33	0.000801	1.5	58.7	0.11	0.04	0	0.28
Alto	2799.187	87.1		86.95	0.15	23.31	836	840.17		840.29	0.000776	1.51	57.93	0.12	0.04	0	0.28
Alto	2749.187	87.1		87.07	0.03	19.67	835.75	840.13		840.25	0.000758	1.52	57.38	0.12	0.04	0	0.27
Alto	2699.212	87.1		87.09	0.01	18.93	835.72	840.09		840.21	0.0008	1.56	56.03	0.12	0.02	0	0.28
Alto	2677.167	87.1		87.07	0.03	21.74	835.5	840.08		840.19	0.000772	1.52	57.41	0.12	0.02	0	0.28
Alto	2649.215	87.1		87.09	0.01	19.06	835.5	840.05		840.17	0.000787	1.54	56.51	0.12	0.03	0.01	0.28
Alto	2599.223	87.1		87.1	0	20.87	835.25	840.04		840.13	0.000592	1.37	63.62	0.1	0.03	0.01	0.24
Alto	2552.887	87.1		87.1	0	24.04	835.25	840.02	837.45	840.1	0.000467	1.24	70.21	0.08	0	0	0.22
Alto	2547.430 T3 Bridge																
Alto	2543.247	87.1		87.1		23.57	835.25	840		840.07	0.000447	1.19	73.14	0.07	0.01	0	0.22
Alto	2525.589	87.1		87.1		22.17	835.25	839.99		840.06	0.000393	1.17	74.64	0.07	0.01	0	0.2
Alto	2499.225	87.1		87.1		22.99	835.25	839.99		840.05	0.000354	1.12	77.99	0.06	0.02	0	0.19
Alto	2449.235	87.1		87.1		24.55	835.25	839.98		840.03	0.000311	1.05	82.79	0.06	0.02	0	0.18
Alto	2380.636	87.1		87.1		26.12	835.25	839.96	837.17	840.01	0.000281	1	86.82	0.05	0.01	0	0.18
Alto	2349.239	87.1		87.1		26.78	835.25	839.95	837.16	840	0.000281	1	87.53	0.05	0.01	0	0.18
Alto	2299.246	87.1		76.65	10.45	181.49	835.25	839.94	837.27	839.98	0.000246	0.92	110.72	0.04	0.01	0	0.16

Rio: Bengalas		Procedimento: Calibração				Escoamento:				Steady Flow		Regime: Mix Flow					
Local: Nova Friburgo		Evento: Hietograma chuva 1				Condição de Contorno:				Normal Depth		Perfil: Chuva 0					
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	2249.258	87.1		81.97	5.13	138.88	835.5	839.92	837.3	839.97	0.000292	1.01	106.91	0.05	0.01	0.01	0.18
Alto	2199.258	87.1	0.01	52.5	34.59	132.59	835.5	839.94	837.28	839.95	0.000109	0.62	195.42	0.01	0	0	0.11
Alto	2173.195	87.1		22.94	64.16	221.15	835.5	839.94	837.28	839.95	0.000021	0.27	344.65	0	0	0	0.05
Alto	2149.258	87.1	0	37.62	49.48	177.16	835.5	839.94	837.29	839.95	0.000054	0.44	293.29	0.01	0.01	0	0.08
Baixo	2094.28	152.2	1.67	63.06	87.47	333.19	835.5	839.92		839.94	0.000139	0.7	378.25	0.01	0	0	0.13
Baixo	2086.245	152.2	2.43	60.89	88.88	327.8	835.5	839.92	837.83	839.94	0.000129	0.68	386.57	0.01	0	0	0.12
Baixo	2081.187 T2 Bridge																
Baixo	2076.63	152.2	3.7	60.6	87.9	318.22	835.5	839.91		839.93	0.000134	0.69	394.7	0.01	0	0	0.12
Baixo	2049.26	152.2	0.53	74.17	77.5	137.59	835.5	839.9	837.88	839.92	0.000202	0.85	244.32	0.02	0	0	0.15
Baixo	1999.26	152.2	0.07	24.59	127.5	224.44	835.5	839.9	837.9	839.91	0.000023	0.29	358.24	0.01	0	0.01	0.05
Baixo	1949.26	152.2	0.21	127.94	24.04	143.7	835.25	839.79	837.83	839.9	0.000695	1.57	138.03	0.11	0.04	0.01	0.28
Baixo	1899.26	152.2	0.52	145.07	6.61	54.04	835.25	839.69	837.73	839.86	0.000922	1.8	89.48	0.16	0.04	0	0.32
Baixo	1849.26	152.2	0.86	146.74	4.6	54.16	835.25	839.66	837.61	839.81	0.000856	1.76	92.83	0.15	0.02	0.01	0.31
Baixo	1819.457	152.2	2.7	145.47	4.03	99.99	835	839.65	837.48	839.78	0.000735	1.67	105.44	0.14	0.02	0.01	0.29
Baixo	1785.207	152.2	5.61	145.17	1.42	101.5	835	839.63	837.37	839.75	0.000629	1.55	110.64	0.12	0.02	0	0.27
Baixo	1749.264	152.2	4.37	146.64	1.18	106.44	835	839.62	837.27	839.73	0.000566	1.46	116.78	0.11	0.03	0	0.25
Baixo	1699.257	152.2	5.14	145.95	1.11	132.22	835	839.59	837.18	839.7	0.000528	1.44	120.63	0.1	0.01	0	0.25
Baixo	1674.594	152.2	5.29	146.9	0.01	45.36	835	839.58	837.19	839.68	0.000551	1.47	111.49	0.11	0.01	0	0.25
Baixo	1649.256	152.2	5.74	146.45	0	42.59	834.75	839.56	837.19	839.67	0.000577	1.49	110.15	0.11	0.02	0	0.26
Baixo	1622.255	152.2	8.17	144.03		42.17	834.75	839.54	837.18	839.65	0.000577	1.5	111.36	0.11	0.01	0	0.26
Baixo	1599.256	152.2	13.08	139.12		80.74	834.75	839.54		839.64	0.000554	1.47	126.44	0.1	0.02	0.02	0.25
Baixo	1549.264	152.2	77.34	74.86		183.68	834.75	839.57		839.6	0.00019	0.87	192.7	0.03	0.01	0.01	0.14
Baixo	1525.865	152.2	14.5	137.7		42.26	834.75	839.42		839.58	0.000929	1.84	93.07	0.16	0.02	0.01	0.31
Baixo	1506.375 S6	152.2	14.94	137.26		35.74	834.75	839.33		839.55	0.00139	2.17	77.77	0.22	0.04	0.01	0.37
Baixo	1483.175	152.2	14.02	138.18		31.11	834.5	839.18		839.5	0.002202	2.6	64.27	0.32	0.06	0.04	0.45
Baixo	1449.256	152.2	35.44	116.76		114.54	834.5	839.23		839.4	0.001355	2.09	118.34	0.17	0.03	0.04	0.36
Baixo	1399.256	152.2	89.41	62.6	0.18	203.42	834.5	839.3		839.33	0.000348	1.09	304.44	0.03	0.01	0	0.18
Baixo	1349.258	152.2	99.86	52.2	0.14	169.15	834.5	839.29		839.31	0.000237	0.9	341.48	0.02	0.02	0	0.15
Baixo	1299.258	152.2	63.23	88.39	0.59	194.05	834.25	839.22		839.29	0.000615	1.48	218.18	0.07	0.03	0.01	0.25
Baixo	1267.092	152.2	33.8	117.86	0.55	202.09	834.25	839.1		839.25	0.00109	1.96	150.05	0.15	0.02	0.01	0.34
Baixo	1249.258	152.2	17.27	134.37	0.57	84.49	834.25	838.98		839.22	0.001558	2.3	88.2	0.24	0.09	0.01	0.4
Baixo	1199.258	152.2	11.73	139.57	0.9	60.62	834.25	838.82		839.13	0.00209	2.55	72.96	0.31	0.08	0.02	0.46
Baixo	1171.129	152.2	2.12	149.44	0.64	51.8	834.25	838.52	837.54	839.03	0.003671	3.19	55.08	0.51	0.08	0	0.6
Baixo	1149.258	152.2	1.38	150.02	0.8	45.89	834	838.44	837.38	838.95	0.003475	3.17	54.05	0.5	0.14	0.05	0.58
Baixo	1099.235	152.2	1.25	146.1	4.85	72.46	834	838.42		838.76	0.00231	2.63	72.84	0.34	0.08	0.05	0.49
Baixo	1049.229 S5	152.2	0.81	139.66	11.73	83.21	833.81	838.46		838.63	0.001059	1.89	110.66	0.17	0.05	0	0.34
Baixo	999.1276	152.2	0.56	134.06	17.58	104.75	833.5	838.4		838.58	0.00109	1.95	116.51	0.17	0.04	0	0.34
Baixo	968.833	152.2	0.29	130.78	21.12	114.07	833.25	838.33		838.54	0.001481	2.14	115.37	0.2	0.03	0	0.39
Baixo	949.0698	152.2	0.16	132.51	19.53	70.14	833.25	838.28		838.51	0.001714	2.25	96.46	0.23	0.09	0	0.42

Rio: Bengalas Procedimento: Calibração Escoamento: Steady Flow Regime: Mix Flow
Local: Nova Friburgo Evento: Hietograma chuva 1 Condição de Contorno: Normal Depth Perfil: Chuva 0

Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Baixo	899.0942	152.2	0.18	140.81	11.21	98.17	833.25	838.18		838.42	0.001703	2.23	95.93	0.23	0.11	0.01	0.42
Baixo	849.143	152.2		151.77	0.43	30.46	833	837.92		838.3	0.002906	2.72	57.47	0.38	0.14	0.01	0.54
Baixo	799.143	152.2		152.2	0	23.38	832.75	837.8		838.15	0.002646	2.64	57.7	0.35	0.13	0	0.51
Baixo	749.1328	152.2		152.2		19.28	832.5	837.64		838.02	0.002654	2.72	55.89	0.38	0.14	0	0.51
Baixo	699.1328	152.2		152.2		18.45	832.25	837.48		837.88	0.0028	2.8	54.28	0.4	0.14	0	0.52
Baixo	649.1328	152.2		152.2		17.27	831.75	837.33		837.74	0.002766	2.83	53.75	0.41	0.13	0.01	0.51
Baixo	599.1347	152.2		152.2		17.72	831.5	837.22		837.59	0.002479	2.7	56.33	0.37	0.12	0.01	0.48
Baixo	549.1295	152.2		152.2		19	831.25	837.12		837.47	0.002381	2.61	58.41	0.35	0.11	0.01	0.47
Baixo	499.045	152.2		152.2		18.44	831.25	837.04		837.35	0.001887	2.45	62.15	0.31	0.11	0.01	0.43
Baixo	448.9738	152.2		152.2		17.4	831.5	836.86		837.23	0.002441	2.71	56.1	0.38	0.23	0.08	0.48
Baixo	398.9491	152.2		152.2		14.36	832.25	835.79	835.79	836.93	0.0113	4.73	32.16	1.14	0.25	0.24	1.01
Baixo	352.748	152.2		152.2		27.84	832.88	836.03	835.19	836.35	0.002928	2.52	60.29	0.32	0.01	0	0.55
Baixo	348.9313 T1	Bridge															
Baixo	343.9721	152.2		152.2		28.28	832.75	835.9		836.18	0.00241	2.36	64.39	0.28	0.04	0.06	0.5
Baixo	298.9281	152.2	0.32	151.88		30.91	829.65	836		836.09	0.000418	1.34	115.38	0.09	0.01	0.02	0.21
Baixo	248.9493	152.2	0.79	151.41		55.49	825.25	836.04		836.06	0.000074	0.67	235.62	0.02	0	0	0.09
Baixo	199.1468	152.2	1.13	151.07		44.46	827.5	836.02		836.05	0.000106	0.82	192.75	0.03	0	0	0.11
Baixo	160.6351	152.2	0.01	152.19		45.78	829.84	836.02	832	836.05	0.000102	0.74	204.51	0.03			0.11
Baixo	158.6960 Bar. Catet	Inl Struct															
Baixo	155.7292	152.2		152.2		33.81	830.07	832.02	832.02	832.67	0.011932	3.56	42.71	0.65	0.23	0	1.01
Baixo	136.5043	152.2		152.2		25.3	827.75	829.27	830	831.97	0.085507	7.28	20.9	2.7	0.49	0.21	2.56
Baixo	99.03893	152.2		152.2		16.77	824.65	826.67	827.53	829.45	0.053748	7.38	20.61	2.78	2.51	0.01	2.13
Baixo	49.06651	152.2		152.2		11.93	819.75	822.32	823.5	826.33	0.067184	8.87	17.15	4.01	2.99	0.12	2.36

Rio: Bengalas		Procedimento: Validação					Escoamento: Steady Flow					Regime: Mix Flow					
Local: Nova Friburgo		Evento: Hietograma chuva 1					Condição de Contorno: Normal Depth					Perfil: Chuva 1					
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	8449.32	41.8		41.8		12.71	841.25	842.71	842.66	843.18	0.002141	3.04	13.75	0.47	0.05	0.09	0.93
Alto	8399.309	41.8		41.8		16.63	841.25	842.87		843.03	0.000542	1.8	23.24	0.16	0.02	0.01	0.49
Alto	8349.302	41.8		41.8		17.14	841	842.88		843	0.000356	1.56	26.77	0.12	0.02	0.01	0.4
Alto	8299.3	41.8		41.8		17.4	841	842.87		842.98	0.000282	1.44	28.99	0.11	0.01	0	0.36
Alto	8249.299	41.8		41.8		17.44	841	842.86		842.96	0.000255	1.39	30.18	0.1	0.01	0	0.34
Alto	8222.821	41.8		41.8		17.47	840.75	842.87		842.95	0.000198	1.28	32.66	0.08	0	0	0.3
Alto	8199.353	41.8		41.8		17.49	840.75	842.87		842.95	0.000182	1.25	33.55	0.08	0.01	0	0.29
Alto	8149.295	41.8		41.8		17.66	840.75	842.86		842.94	0.000157	1.18	35.49	0.07	0	0	0.27
Alto	8119.148	41.8		41.8		17.77	840.75	842.86		842.93	0.000145	1.15	36.41	0.07	0.01	0	0.26
Alto	8049.292	41.8		41.8		18.2	840.5	842.87		842.92	0.000098	1	41.84	0.05	0	0	0.21
Alto	8027.169	41.8		41.8		18.42	840.5	842.87	841.32	842.91	0.00009	0.97	43.15	0.05	0	0	0.2
Alto	8024.782 T10	Bridge															
Alto	8018.111	41.8		41.8		18.07	840.34	842.86		842.91	0.000085	0.96	43.59	0.05	0	0	0.2
Alto	7999.291	41.8		41.8		17.82	840.25	842.86		842.91	0.000083	0.96	43.67	0.05	0	0	0.2
Alto	7949.291	41.8		41.8		17.21	840.25	842.86		842.9	0.000084	0.97	43	0.05	0	0	0.2
Alto	7899.291	41.8		41.8		16.73	840.25	842.85		842.9	0.000088	0.99	42.12	0.05	0	0	0.2
Alto	7849.291	41.8		41.8		16.25	840	842.85		842.9	0.000082	0.98	42.65	0.05	0	0	0.19
Alto	7799.291	41.8		41.8		15.9	840	842.84		842.89	0.000082	0.99	42.43	0.05	0	0	0.19
Alto	7749.291	41.8		41.8		16.6	840	842.84		842.89	0.000072	0.93	44.83	0.04	0	0	0.18
Alto	7699.291	41.8		41.8		17.16	839.75	842.84		842.88	0.000059	0.87	47.97	0.04	0	0	0.17
Alto	7649.291	41.8		41.8		17.08	839.75	842.84		842.88	0.000057	0.86	48.7	0.04	0	0	0.16
Alto	7611.167	41.8		41.8		18.16	839.75	842.84	840.75	842.87	0.000047	0.8	52.49	0.03	0	0	0.15
Alto	7605.934 T9	Bridge															
Alto	7600.285	41.8		41.8		18.32	839.72	842.84		842.87	0.000046	0.79	53.18	0.03	0	0	0.15
Alto	7549.258	41.8		41.8		17.13	839.75	842.83		842.87	0.000061	0.88	47.42	0.04	0	0	0.17
Alto	7499.258	41.8		41.8		16.74	839.75	842.82		842.86	0.000072	0.94	44.47	0.05	0	0	0.18
Alto	7449.258	41.8		41.8		16.79	839.75	842.81		842.86	0.000082	0.98	42.55	0.05	0	0	0.2
Alto	7399.258	41.8		41.8		17.53	839.75	842.81		842.86	0.000084	0.98	42.57	0.05	0	0.01	0.2
Alto	7336.31	41.8		41.8		26.04	839.5	842.82	840.91	842.85	0.000034	0.65	64.56	0.02	0	0	0.13
Alto	7333.883 T8	Bridge															
Alto	7321.573	41.8		41.8		25.3	840	842.82		842.84	0.000042	0.71	59.09	0.03	0	0	0.15
Alto	7299.261	41.8		41.8		17.04	839.75	842.78		842.84	0.000098	1.04	40.26	0.05	0	0	0.22
Alto	7293.445	41.8		41.8		16.88	839.75	842.78		842.83	0.000097	1.04	40.26	0.05	0	0	0.21
Alto	7249.261	41.8		41.8		15.93	839.75	842.78		842.83	0.000086	1.01	41.47	0.05	0	0	0.2
Alto	7199.258	41.8		41.8		15.28	839.5	842.77		842.82	0.000073	0.96	43.64	0.05	0	0.01	0.18
Alto	7129.429	41.8		41.8		17.56	839.5	842.78	840.43	842.81	0.00004	0.76	55.34	0.03	0	0	0.14
Alto	7121.824 T7	Bridge															
Alto	7120.426	41.8		41.8		17.95	839.5	842.78		842.8	0.000038	0.73	57.03	0.03	0	0	0.13
Alto	7099.259	41.8		41.8		17.01	839.25	842.77		842.8	0.000038	0.75	56.06	0.03	0	0	0.13

Rio: Bengalas		Procedimento: Validação				Escoamento: Steady Flow				Regime: Mix Flow							
Local: Nova Friburgo		Evento: Hietograma chuva 1				Condição de Contorno: Normal Depth				Perfil: Chuva 1							
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	7049.26	41.8		41.8		16.59	839.25	842.77		842.8	0.000036	0.74	56.68	0.03	0	0	0.13
Alto	6999.26	41.8		41.8		15.52	839	842.77		842.8	0.000037	0.76	55.26	0.03	0	0	0.13
Alto	6949.26	41.8		41.8		15.2	839	842.77		842.8	0.000037	0.75	55.62	0.03	0	0	0.13
Alto	6899.26	41.8		41.8		15.5	838.75	842.77		842.79	0.000003	0.7	59.33	0.03	0	0	0.11
Alto	6849.26	41.8		41.8		15.83	838.5	842.77		842.79	0.000026	0.66	63.29	0.02	0	0	0.11
Alto	6818.892	41.8		41.8		16.25	838.5	842.77		842.79	0.000023	0.63	65.93	0.02	0	0	0.1
Alto	6785.786	41.8		41.8		16.85	838.5	842.77		842.79	0.000002	0.6	69.52	0.02	0	0	0.09
Alto	6749.258	41.8		41.8		17.43	838.25	842.77		842.79	0.000017	0.56	74.42	0.02	0	0	0.09
Alto	6721.286	41.8		41.8		17.85	838.25	842.77		842.79	0.000015	0.54	77.18	0.01	0	0	0.08
Alto	6677.863	41.8		41.8		17.82	838	842.77		842.79	0.000014	0.52	79.78	0.01	0	0	0.08
Alto	6642.27	41.8		41.8		16.91	838	842.77	839.03	842.78	0.000015	0.54	77.27	0.01	0	0	0.08
Alto	6633.780 T6	Bridge															
Alto	6631.452	41.8		41.8		16.73	838	842.77		842.78	0.000016	0.55	75.99	0.02	0	0	0.08
Alto	6599.255	41.8		41.8		17.6	838	842.77		842.78	0.000077	0.54	77.45	0.01	0	0	0.08
Alto	6549.265	41.8		41.8		20.94	838	842.77		842.78	0.000056	0.47	88.18	0.01	0	0	0.07
Alto	6499.265	41.8		41.8		20.77	838	842.76		842.77	0.000006	0.49	84.98	0.01	0	0	0.08
Alto	6449.265	41.8		41.8		21.11	838	842.76		842.77	0.0000067	0.51	81.9	0.01	0	0	0.08
Alto	6399.265	41.8		41.8		22.39	838	842.75		842.77	0.0000068	0.51	82.53	0.01	0	0	0.08
Alto	6349.265	41.8		41.8		22.46	838	842.75		842.76	0.0000078	0.53	78.85	0.01	0	0	0.09
Alto	6299.265	41.8	3.74	38.06		142.51	838	842.75		842.76	0.0000069	0.49	131.46	0.01	0	0	0.09
Alto	6249.265	41.8	10.11	31.6	0.09	147.13	838	842.75		842.75	0.000005	0.4	181.5	0.01	0	0	0.07
Alto	6185.989 S15	41.8	9.86	31.88	0.06	117.55	838	842.74		842.75	0.000048	0.42	161.02	0.01	0	0	0.07
Alto	6149.272	41.8	10.58	31.19	0.04	111.35	838.25	842.74		842.75	0.000059	0.42	155.65	0.01	0	0	0.08
Alto	6099.267	41.8	11.87	29.89	0.04	113.86	838.25	842.74		842.75	0.000064	0.44	158.41	0.01	0	0	0.08
Alto	6049.264	41.8	5.23	36.53	0.04	92.34	838.25	842.73		842.74	0.000117	0.58	93.97	0.02	0.01	0	0.11
Alto	5999.264	41.8	1.92	39.83	0.05	36.12	838.25	842.71		842.73	0.000141	0.64	68.15	0.02	0.01	0	0.12
Alto	5949.266	41.8	1.23	36.98	3.59	65.61	838.25	842.71		842.73	0.000112	0.59	79.36	0.02	0.01	0	0.11
Alto	5899.266	41.8	0.81	37.5	3.49	70.98	838.25	842.71		842.72	0.000104	0.56	82.07	0.01	0	0	0.11
Alto	5849.266	41.8	0.7	29.06	12.04	93.02	838.25	842.71		842.72	0.000006	0.43	122.03	0.01	0	0	0.08
Alto	5799.266	41.8	0.51	39.28	2.02	47.97	838.25	842.69		842.71	0.00011	0.58	76.59	0.02	0.01	0	0.11
Alto	5749.266	41.8	0.5	39.22	2.08	54.21	838.25	842.69		842.7	0.000102	0.57	78.98	0.02	0	0	0.11
Alto	5699.266	41.8	1.47	34.33	6	91.03	838.25	842.69		842.7	0.000067	0.47	100.74	0.01	0	0	0.09
Alto	5649.266	41.8	1.54	27.38	12.88	149.71	838.25	842.69		842.69	0.000039	0.36	173.2	0	0	0	0.07
Alto	5598.734	41.8	5.11	18.48	18.2	205.83	838.25	842.69	839.48	842.69	0.000012	0.21	209.19	0	0	0	0.04
Alto	5593.126 T5	Bridge															
Alto	5587.957	41.8	6.59	31.06	4.16	177.22	838.25	842.68		842.69	0.000004	0.37	148.94	0.01	0	0	0.07
Alto	5543.313	41.8	3.15	38.26	0.39	151.29	838.25	842.67	839.77	842.68	0.000142	0.61	83.62	0.02	0	0	0.12
Alto	5535.894 T4	Bridge															
Alto	5531.686	41.8	1.46	40.13	0.21	147.8	838.25	842.65		842.66	0.000107	0.57	84.38	0.02	0.01	0	0.11

Rio: Bengalas		Procedimento: Validação				Escoamento: Steady Flow				Regime: Mix Flow							
Local: Nova Friburgo		Evento: Hietograma chuva 1				Condição de Contorno: Normal Depth				Perfil: Chuva 1							
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	5528.385	41.8	0.39	41.26	0.14	143.87	838.25	842.64		842.66	0.000125	0.6	79.87	0.02	0.01	0	0.11
Alto	5499.265	41.8	0.04	41.74	0.02	29.07	838.25	842.61		842.65	0.000342	0.91	46.65	0.04	0.02	0	0.18
Alto	5449.271	41.8		41.8		18.35	838.25	842.59		842.63	0.000381	0.93	44.92	0.04	0.02	0	0.19
Alto	5399.302	41.8		41.8		16.34	838.25	842.56		842.61	0.000374	0.96	43.46	0.05	0.03	0	0.19
Alto	5349.307	41.8		41.8		12.8	838.25	842.5		842.58	0.000716	1.25	33.35	0.08	0.04	0	0.25
Alto	5289.961	41.8		39.14	2.66	22.8	838.25	842.47		842.54	0.000651	1.19	35.82	0.07	0.02	0.01	0.23
Alto	5249.313	41.8		41.5	0.3	25.22	838.25	842.47		842.51	0.000369	0.97	45.56	0.05	0.01	0	0.19
Alto	5199.299	41.8		41.8		18.36	838.25	842.46		842.49	0.000233	0.8	52.06	0.03	0.01	0	0.15
Alto	5149.283	41.8		41.8		22.4	838.25	842.46		842.48	0.000189	0.71	59.15	0.03	0	0	0.14
Alto	5119.450 S13	41.8		41.8		23.54	838.25	842.46		842.48	0.000138	0.63	66.12	0.02	0.01	0	0.12
Alto	5049.23	41.8		41.8		18.95	838.5	842.43		842.46	0.000221	0.78	53.72	0.03	0.01	0	0.15
Alto	4999.153	41.8		41.8		21.1	838.5	842.43		842.45	0.000179	0.7	59.41	0.03	0.01	0	0.13
Alto	4949.088	41.8		41.8		20.67	838.5	842.41		842.44	0.000224	0.77	54.6	0.03	0.01	0	0.15
Alto	4899.062	41.8		41.8		18.22	838.75	842.38		842.43	0.000327	0.9	46.58	0.04	0.02	0	0.18
Alto	4849.056	41.8		41.8		14.51	838.75	842.34		842.4	0.000521	1.11	37.72	0.06	0.04	0.01	0.22
Alto	4799.154	41.8		41.8		10.57	838.75	842.23		842.36	0.001215	1.56	26.71	0.12	0.07	0	0.31
Alto	4749.154	41.8		41.8		10.73	838.75	842.15		842.29	0.001441	1.66	25.25	0.14	0.1	0.01	0.34
Alto	4699.178	41.8		41.8		8.63	839	841.92		842.18	0.00317	2.25	18.61	0.26	0.13	0.02	0.49
Alto	4649.212	41.8		41.8		10.6	839	841.83		842.02	0.002264	1.93	21.64	0.19	0.11	0.01	0.43
Alto	4599.202	41.8		41.8		11.69	839.25	841.74		841.91	0.002101	1.83	22.86	0.17	0.08	0	0.42
Alto	4561.047	41.8		41.8		12.4	839.25	841.65		841.82	0.00231	1.87	22.4	0.18	0.06	0	0.44
Alto	4535.883 S12	41.8		41.8		13.93	839.5	841.6		841.76	0.002212	1.78	23.48	0.16	0.08	0	0.44
Alto	4499.18	41.8		41.8		14.04	839.25	841.53		841.68	0.00207	1.75	23.94	0.16	0.1	0	0.43
Alto	4449.196	41.8		41.8		14.95	839	841.43		841.58	0.001925	1.68	24.91	0.14	0.1	0	0.41
Alto	4399.197	41.8		41.8		15.1	839	841.34		841.48	0.001909	1.67	25.04	0.14	0.08	0.01	0.41
Alto	4349.205	41.8		41.8		15.98	838.75	841.29		841.39	0.001255	1.44	29.12	0.1	0.03	0	0.34
Alto	4320.028	41.8		41.8		16.49	838.5	841.27		841.36	0.001045	1.34	31.16	0.09	0.06	0.01	0.31
Alto	4249.201	41.8		41.8		17.65	838.25	841.21		841.29	0.000812	1.21	34.47	0.07	0.03	0	0.28
Alto	4214.434	41.8		41.8		18	838.25	841.19		841.26	0.000747	1.17	35.6	0.07	0.01	0	0.27
Alto	4199.201	41.8		41.8		18.1	838	841.18		841.25	0.000705	1.15	36.35	0.07	0.03	0	0.26
Alto	4149.204	41.8		41.8		18.99	838	841.16		841.21	0.00053	1.04	40.38	0.05	0.02	0	0.23
Alto	4099.198	41.8		41.8		21.01	837.75	841.15		841.19	0.000369	0.89	46.76	0.04	0.01	0	0.19
Alto	4081.474 S11	41.8		41.8		21.79	837.75	841.14		841.18	0.000349	0.86	48.35	0.04	0.01	0	0.19
Alto	4049.185	41.8		41.8		18.86	837.75	841.12		841.17	0.000458	0.99	42.19	0.05	0.03	0	0.21
Alto	3999.199	41.8		41.8		17.3	837.75	841.06		841.13	0.000733	1.18	35.44	0.07	0.04	0	0.26
Alto	3949.209	41.8		41.8		16.81	837.75	841.01		841.09	0.000947	1.29	32.45	0.08	0.06	0	0.3
Alto	3899.258	41.8		41.8		15.7	837.75	840.92		841.03	0.001419	1.49	28.08	0.11	0.07	0	0.36
Alto	3849.281	41.8		41.8		16.49	837.75	840.86		840.96	0.001327	1.44	29.01	0.11	0.08	0	0.35
Alto	3799.282	41.8		41.8		14.06	838	840.74		840.88	0.001751	1.66	25.2	0.14	0.1	0	0.4

Rio: Bengalas		Procedimento: Validação				Escoamento: Steady Flow				Regime: Mix Flow							
Local: Nova Friburgo		Evento: Hietograma chuva 1				Condição de Contorno: Normal Depth				Perfil: Chuva 1							
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	3749.292	41.8		41.8		13.66	838	840.62		840.78	0.002172	1.79	23.3	0.16	0.06	0	0.44
Alto	3723.315	41.8		41.8		14.08	838	840.56		840.73	0.002354	1.82	22.94	0.17	0.06	0	0.46
Alto	3699.295	41.8		41.8		14.2	838	840.5		840.67	0.002378	1.82	22.94	0.17	0.03	0	0.46
Alto	3686.538	41.8		41.8		14.23	838	840.47		840.64	0.002386	1.82	22.95	0.17	0.09	0	0.46
Alto	3649.29	41.8		41.8		14.36	838	840.38		840.55	0.002368	1.81	23.13	0.17	0.05	0	0.45
Alto	3628.303	41.8		41.8		14.6	838	840.34		840.5	0.002276	1.78	23.5	0.16	0.04	0	0.45
Alto	3609.762 S10	41.8		41.8		15.73	838.25	840.29		840.45	0.002547	1.8	23.2	0.17	0.07	0.01	0.47
Alto	3574.84	41.8		41.8		15.27	838	840.24		840.37	0.001699	1.6	26.14	0.13	0.04	0	0.39
Alto	3549.256	41.8		41.8		15.23	838	840.19		840.33	0.001738	1.61	25.94	0.13	0.1	0	0.39
Alto	3499.259	41.8		41.8		13.9	837.75	840.06		840.22	0.002285	1.81	23.09	0.17	0.05	0	0.45
Alto	3476.621	41.8		41.8		13.51	837.75	839.99		840.17	0.002494	1.88	22.26	0.18	0.07	0	0.47
Alto	3449.258	41.8		41.8		13.1	837.75	839.89		840.1	0.002917	1.99	20.99	0.2	0.14	0	0.5
Alto	3399.261	41.8		41.8		13.32	837.5	839.77		839.95	0.002602	1.91	21.87	0.19	0.13	0	0.48
Alto	3349.259	41.8		41.8		13.7	837.5	839.65		839.82	0.00248	1.86	22.42	0.18	0.11	0.01	0.47
Alto	3299.259	41.8		41.8		14.34	837.25	839.55		839.7	0.00211	1.75	23.95	0.16	0.1	0.01	0.43
Alto	3249.258	41.8		41.8		15.02	837.25	839.47		839.6	0.001761	1.62	25.75	0.13	0.08	0	0.4
Alto	3199.258	41.8		41.8		15.49	837	839.4		839.52	0.001512	1.54	27.21	0.12	0.07	0	0.37
Alto	3149.258	41.8		41.8		16.18	836.75	839.34		839.44	0.001263	1.43	29.18	0.1	0.05	0.01	0.34
Alto	3099.247	41.8		41.8		18.25	836.75	839.3		839.38	0.000938	1.25	33.31	0.08	0.03	0.01	0.3
Alto	3058.003 S9	41.8		41.8		20.57	836.5	839.29		839.34	0.000604	1.05	39.77	0.06	0.04	0	0.24
Alto	2999.242	41.8		41.8		17.38	836.5	839.21		839.3	0.000954	1.28	32.57	0.08	0.05	0	0.3
Alto	2949.221	41.8		41.8		16.77	836.25	839.15		839.24	0.001057	1.34	31.19	0.09	0.05	0	0.31
Alto	2899.194	41.8		41.8		17.27	836.25	839.12		839.19	0.00085	1.24	33.75	0.08	0.04	0	0.28
Alto	2849.2	41.8		41.8		17.33	836	839.09		839.15	0.000671	1.15	36.48	0.07	0.03	0	0.25
Alto	2799.187	41.8		41.8		16.69	836	839.06		839.12	0.000595	1.11	37.51	0.06	0.03	0	0.24
Alto	2749.187	41.8		41.8		16.23	835.75	839.03		839.09	0.000547	1.09	38.2	0.06	0.03	0	0.23
Alto	2699.212	41.8		41.8		15.73	835.72	839		839.06	0.000557	1.11	37.73	0.06	0.01	0	0.23
Alto	2677.167	41.8		41.8		16.12	835.5	838.99		839.05	0.000536	1.09	38.47	0.06	0.02	0	0.22
Alto	2649.215	41.8		41.8		15.88	835.5	838.97		839.03	0.000538	1.09	38.31	0.06	0.02	0	0.22
Alto	2599.223	41.8		41.8		17.26	835.25	838.96		839.01	0.000384	0.96	43.68	0.05	0.02	0	0.19
Alto	2552.887	41.8		41.8		19.06	835.25	838.95	836.79	838.99	0.000304	0.86	48.34	0.04	0	0	0.17
Alto	2547.430 T3	Bridge															
Alto	2543.247	41.8		41.8		19.88	835.25	838.94		838.98	0.000285	0.84	50	0.04	0	0	0.17
Alto	2525.589	41.8		41.8		19.77	835.25	838.94		838.97	0.000243	0.8	52.57	0.03	0.01	0	0.16
Alto	2499.225	41.8		41.8		20.71	835.25	838.94		838.97	0.00022	0.76	55.03	0.03	0.01	0	0.15
Alto	2449.235	41.8		41.8		22.11	835.25	838.93		838.95	0.000195	0.72	58.36	0.03	0.01	0	0.14
Alto	2380.636	41.8		41.8		23.36	835.25	838.92	836.56	838.94	0.000176	0.68	61.05	0.02	0.01	0	0.14
Alto	2349.239	41.8		41.8		23.71	835.25	838.91	836.53	838.93	0.000177	0.68	61.31	0.02	0.01	0	0.14
Alto	2299.246	41.8		41.8		22.75	835.25	838.9	836.62	838.93	0.000205	0.72	57.78	0.03	0.01	0	0.14

Rio: Bengalas		Procedimento: Validação				Escoamento:				Steady Flow		Regime: Mix Flow					
Local: Nova Friburgo		Evento: Hietograma chuva 1				Condição de Contorno:				Normal Depth		Perfil: Chuva 1					
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	2249.258	41.8		41.8		22.61	835.5	838.89	836.7	838.91	0.000218	0.74	56.61	0.03	0.01	0	0.15
Alto	2199.258	41.8		40.43	1.37	79.05	835.5	838.88	836.68	838.9	0.000197	0.7	69.51	0.02	0	0.01	0.14
Alto	2173.195	41.8		21.69	20.11	159.93	835.5	838.89	836.69	838.89	0.000057	0.37	135.8	0.01	0	0	0.08
Alto	2149.258	41.8		29.49	12.31	120.68	835.5	838.88	836.7	838.89	0.000105	0.5	124.5	0.01	0.01	0	0.1
Baixo	2094.28	80.1		56.78	23.32	185.09	835.5	838.84		838.88	0.000386	0.94	140.94	0.03	0	0	0.2
Baixo	2086.245	80.1		56.85	23.25	187.64	835.5	838.84	837.16	838.87	0.000383	0.94	143.73	0.03	0	0	0.2
Baixo	2081.187 T2 Bridge																
Baixo	2076.63	80.1		57.47	22.63	189.47	835.5	838.81		838.85	0.000408	0.97	140.53	0.04	0.01	0	0.2
Baixo	2049.26	80.1		61.61	18.49	109.56	835.5	838.79	837.16	838.83	0.000489	1.06	106.85	0.05	0.01	0.01	0.22
Baixo	1999.26	80.1		36.15	43.95	171.72	835.5	838.79	837.17	838.81	0.000168	0.63	128.55	0.02	0.02	0.01	0.13
Baixo	1949.26	80.1		80.1		22.89	835.25	838.67	837.1	838.78	0.000931	1.48	54.08	0.11	0.05	0	0.31
Baixo	1899.26	80.1		80.1		22.45	835.25	838.63	836.99	838.74	0.000872	1.46	54.88	0.11	0.04	0	0.3
Baixo	1849.26	80.1		80.1		22.99	835.25	838.6	836.88	838.7	0.000771	1.39	57.5	0.1	0.02	0	0.28
Baixo	1819.457	80.1		80.1		23.6	835	838.58	836.78	838.67	0.000662	1.32	60.85	0.09	0.02	0	0.26
Baixo	1785.207	80.1		80.1		25.46	835	838.57	836.69	838.65	0.000573	1.23	65.29	0.08	0.02	0	0.24
Baixo	1749.264	80.1		80.1		27.28	835	838.56	836.61	838.62	0.000503	1.15	69.65	0.07	0.02	0	0.23
Baixo	1699.257	80.1		80.1		26.92	835	838.53	836.53	838.6	0.000458	1.12	71.46	0.06	0.01	0	0.22
Baixo	1674.594	80.1		80.1		26.76	835	838.52	836.54	838.59	0.000471	1.13	70.69	0.07	0.01	0	0.22
Baixo	1649.256	80.1		80.1		26.38	834.75	838.51	836.51	838.57	0.000496	1.16	69.21	0.07	0.01	0	0.23
Baixo	1622.255	80.1		80.1		25.83	834.75	838.49	836.5	838.56	0.000519	1.18	67.74	0.07	0.01	0	0.23
Baixo	1599.256	80.1		80.1		25.4	834.75	838.47		838.55	0.000537	1.2	66.65	0.07	0.03	0	0.24
Baixo	1549.264	80.1	0	80.1		22.55	834.75	838.43		838.52	0.000671	1.33	60.3	0.09	0.02	0	0.26
Baixo	1525.865	80.1	0	80.1		21.95	834.75	838.38		838.5	0.000924	1.51	52.99	0.12	0.02	0	0.3
Baixo	1506.375 S6	80.1	0	80.1		18.83	834.75	838.31		838.47	0.001412	1.79	44.67	0.16	0.04	0.01	0.36
Baixo	1483.175	80.1		80.1		14.95	834.5	838.19		838.42	0.002084	2.13	37.58	0.23	0.07	0	0.43
Baixo	1449.256	80.1	0.01	80.09		21.01	834.5	838.13		838.35	0.001952	2.08	38.59	0.22	0.08	0.03	0.42
Baixo	1399.256	80.1	14.62	65.48		137.9	834.5	838.12		838.24	0.001284	1.69	89.95	0.12	0.04	0.02	0.34
Baixo	1349.258	80.1	33.56	46.54		154.06	834.5	838.13		838.18	0.000641	1.19	148.26	0.04	0.05	0.02	0.24
Baixo	1299.258	80.1		80.1		15.48	834.25	837.87		838.11	0.002141	2.14	37.45	0.23	0.07	0	0.44
Baixo	1267.092	80.1		80.1		15.94	834.25	837.81		838.04	0.002066	2.11	37.98	0.23	0.04	0	0.44
Baixo	1249.258	80.1		80.1		15.81	834.25	837.77		838	0.002132	2.14	37.51	0.23	0.12	0.01	0.44
Baixo	1199.258	80.1		80.1		14.59	834.25	837.59		837.87	0.002703	2.36	34.01	0.28	0.09	0.01	0.49
Baixo	1171.129	80.1		80.1		13.12	834.25	837.42		837.78	0.003572	2.66	30.14	0.36	0.07	0.01	0.56
Baixo	1149.258	80.1		80.1		13.23	834	837.36		837.7	0.003186	2.56	31.25	0.33	0.14	0.02	0.53
Baixo	1099.235	80.1		80.1	0	15.75	834	837.28		837.54	0.002428	2.25	35.58	0.26	0.08	0.04	0.47
Baixo	1049.229 S5	80.1		80.01	0.09	24.29	833.81	837.28		837.42	0.001095	1.66	48.96	0.14	0.06	0	0.33
Baixo	999.1276	80.1		80.06	0.04	21.6	833.5	837.19		837.36	0.001447	1.81	44.49	0.17	0.05	0.01	0.37
Baixo	968.833	80.1		80.1		16.17	833.25	837.08		837.3	0.002091	2.11	38.03	0.23	0.04	0	0.44
Baixo	949.0698	80.1		80.1		15.44	833.25	837.01		837.26	0.002233	2.18	36.67	0.24	0.12	0	0.45

Rio: Bengalas		Procedimento: Validação				Escoamento: Steady Flow				Regime: Mix Flow							
Local: Nova Friburgo		Evento: Hietograma chuva 1				Condição de Contorno: Normal Depth				Perfil: Chuva 1							
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Baixo	899.0942	80.1		80.1		17.7	833.25	836.9		837.14	0.002454	2.17	37	0.24	0.14	0	0.48
Baixo	849.143	80.1		80.1		16.11	833	836.71		837	0.002992	2.38	33.72	0.29	0.15	0	0.52
Baixo	799.143	80.1		80.1		16.75	832.75	836.58		836.85	0.002869	2.31	34.63	0.27	0.14	0	0.51
Baixo	749.1328	80.1		80.1		16.16	832.5	836.43		836.71	0.002827	2.32	34.5	0.27	0.14	0	0.51
Baixo	699.1328	80.1		80.1		15.56	832.25	836.28		836.56	0.00289	2.37	33.87	0.28	0.13	0.01	0.51
Baixo	649.1328	80.1		80.1		14.66	831.75	836.16		836.42	0.002497	2.29	35.01	0.27	0.12	0.01	0.47
Baixo	599.1347	80.1		80.1		15.05	831.5	836.06		836.3	0.002132	2.15	37.28	0.24	0.1	0	0.44
Baixo	549.1295	80.1		80.1		15.74	831.25	835.97		836.19	0.00206	2.09	38.38	0.22	0.08	0.01	0.43
Baixo	499.045	80.1		80.1		15.64	831.25	835.91		836.09	0.001414	1.87	42.91	0.18	0.08	0	0.36
Baixo	448.9738	80.1		80.1		15.11	831.5	835.79		836	0.001873	2.07	38.71	0.22	0.15	0.03	0.41
Baixo	398.9491	80.1		80.1		13.29	832.25	835.35		835.83	0.005587	3.07	26.07	0.48	0.15	0.09	0.7
Baixo	352.748	80.1		80.1		25.39	832.88	835.41	834.56	835.58	0.002029	1.82	43.99	0.17	0.01	0	0.44
Baixo	348.9313 T1	Bridge															
Baixo	343.9721	80.1		80.1		25.99	832.75	835.34		835.48	0.00144	1.62	49.3	0.13	0.02	0.03	0.38
Baixo	298.9281	80.1	0.02	80.08		28	829.65	835.4		835.43	0.000182	0.82	97.66	0.03	0	0.01	0.14
Baixo	248.9493	80.1	0.04	80.06		46.37	825.25	835.41		835.42	0.000029	0.4	203.08	0.01	0	0	0.06
Baixo	199.1468	80.1	0.11	79.99		40.79	827.5	835.41		835.42	0.000042	0.49	166.54	0.01	0	0	0.07
Baixo	160.6351	80.1		80.1		44.43	829.84	835.41	831.51	835.42	0.000044	0.45	176.75	0.01			0.07
Baixo	158.6960 Bar. Catet	Inl Struct															
Baixo	155.7292	80.1		80.1		32.87	830.07	831.56	831.56	832	0.013619	2.92	27.47	0.43	0.25	0.01	1.02
Baixo	136.5043	80.1		80.1		21.68	827.75	828.89	829.46	831.21	0.127088	6.76	11.86	2.33	0.59	0.19	2.92
Baixo	99.03893	80.1		80.1		13.65	824.65	826.17	826.78	828.14	0.054023	6.23	12.86	1.98	2.97	0.11	2.05
Baixo	49.06651	80.1		80.1		9.45	819.75	821.67	822.57	824.83	0.076795	7.87	10.18	3.16	3.19	0.12	2.42

Rio: Bengalas		Procedimento: Validação					Escoamento: Steady Flow					Regime: Mix Flow					
Local: Nova Friburgo		Evento: Hietograma chuva 2					Condição de Contorno: Normal Depth					Perfil: Chuva 2					
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	8449.32	66.3		66.3		12.87	841.25	843.57		843.93	0.000886	2.68	24.77	0.36	0.03	0.06	0.62
Alto	8399.309	66.3		66.3		16.72	841.25	843.68		843.85	0.00033	1.8	36.79	0.17	0.01	0.01	0.39
Alto	8349.302	66.3		66.3		17.24	841	843.69		843.82	0.000246	1.63	40.76	0.13	0.01	0	0.34
Alto	8299.3	66.3		66.3		17.49	841	843.69		843.81	0.000208	1.53	43.22	0.12	0.01	0	0.31
Alto	8249.299	66.3		66.3		17.53	841	843.68		843.8	0.000195	1.49	44.49	0.11	0	0	0.3
Alto	8222.821	66.3		66.3		17.56	840.75	843.69		843.79	0.000164	1.41	46.99	0.1	0	0	0.28
Alto	8199.353	66.3		66.3		17.58	840.75	843.69		843.78	0.000155	1.38	47.89	0.1	0.01	0	0.27
Alto	8149.295	66.3		66.3		17.76	840.75	843.68		843.77	0.000139	1.33	49.99	0.09	0	0	0.25
Alto	8119.148	66.3		66.3		17.87	840.75	843.68		843.77	0.000131	1.3	51.02	0.09	0.01	0	0.25
Alto	8049.292	66.3		66.3		18.3	840.5	843.69		843.75	0.000098	1.17	56.8	0.07	0	0	0.21
Alto	8027.169	66.3		66.3		18.47	840.5	843.69	841.61	843.75	0.000091	1.14	58.28	0.07	0	0	0.2
Alto	8024.782 T10	Bridge															
Alto	8018.111	66.3		66.3		18.16	840.34	843.68		843.75	0.000088	1.13	58.43	0.07	0	0	0.2
Alto	7999.291	66.3		66.3		17.92	840.25	843.68		843.75	0.000088	1.14	58.3	0.07	0	0	0.2
Alto	7949.291	66.3		66.3		17.29	840.25	843.67		843.74	0.000091	1.16	57.1	0.07	0	0	0.2
Alto	7899.291	66.3		66.3		16.84	840.25	843.67		843.74	0.000096	1.19	55.81	0.07	0	0	0.21
Alto	7849.291	66.3		66.3		16.35	840	843.66		843.73	0.000093	1.19	55.93	0.07	0	0	0.2
Alto	7799.291	66.3		66.3		15.98	840	843.65		843.73	0.000094	1.2	55.38	0.07	0	0	0.21
Alto	7749.291	66.3		66.3		16.69	840	843.65		843.72	0.000082	1.14	58.37	0.07	0	0	0.19
Alto	7699.291	66.3		66.3		17.29	839.75	843.66		843.71	0.00007	1.07	62	0.06	0	0	0.18
Alto	7649.291	66.3		66.3		17.17	839.75	843.65		843.71	0.000068	1.06	62.64	0.06	0	0	0.18
Alto	7611.167	66.3		66.3		18.24	839.75	843.66	841.04	843.71	0.000057	0.98	67.32	0.05	0	0	0.16
Alto	7605.934 T9	Bridge															
Alto	7600.285	66.3		66.3		18.42	839.72	843.66		843.7	0.000055	0.97	68.15	0.05	0	0	0.16
Alto	7549.258	66.3		66.3		17.26	839.75	843.64		843.7	0.000071	1.08	61.37	0.06	0	0	0.18
Alto	7499.258	66.3		66.3		16.86	839.75	843.63		843.7	0.000082	1.14	58.05	0.07	0	0	0.2
Alto	7449.258	66.3		66.3		16.94	839.75	843.62		843.69	0.000091	1.18	56.17	0.07	0	0	0.21
Alto	7399.258	66.3		66.3		17.69	839.75	843.62		843.69	0.00009	1.17	56.81	0.07	0	0.01	0.21
Alto	7336.31	66.3		66.3		26.38	839.5	843.64	841.16	843.67	0.000035	0.77	85.95	0.03	0	0	0.14
Alto	7333.883 T8	Bridge															
Alto	7321.573	66.3		66.3		25.53	840	843.62		843.66	0.000042	0.83	79.55	0.04	0	0	0.15
Alto	7299.261	66.3		66.3		17.27	839.75	843.57		843.65	0.000103	1.23	53.83	0.08	0.01	0	0.22
Alto	7293.445	66.3		66.3		17.1	839.75	843.57		843.65	0.000103	1.24	53.68	0.08	0	0	0.22
Alto	7249.261	66.3		66.3		16.1	839.75	843.56		843.64	0.000099	1.23	54.1	0.08	0	0	0.21
Alto	7199.258	66.3	0	66.3		15.94	839.5	843.56		843.63	0.00009	1.19	55.74	0.07	0.01	0.01	0.2
Alto	7129.429	66.3	0	66.3		18.44	839.5	843.58	840.74	843.62	0.000052	0.96	69.31	0.05	0	0.01	0.15
Alto	7121.824 T7	Bridge															
Alto	7120.426	66.3	0	66.3		18.44	839.5	843.54		843.59	0.000051	0.94	70.85	0.04	0	0	0.15
Alto	7099.259	66.3	0	66.3		18.11	839.25	843.54		843.59	0.000051	0.96	69.17	0.05	0	0	0.15

Rio: Bengalas		Procedimento: Validação				Escoamento: Steady Flow				Regime: Mix Flow							
Local: Nova Friburgo		Evento: Hietograma chuva 2				Condição de Contorno: Normal Depth				Perfil: Chuva 2							
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	7049.26	66.3	0	66.3		16.84	839.25	843.54		843.59	0.000051	0.96	69.43	0.05	0	0	0.15
Alto	6999.26	66.3		66.3		15.6	839	843.53		843.58	0.000053	0.99	67.15	0.05	0	0	0.15
Alto	6949.26	66.3		66.3		15.28	839	843.53		843.58	0.000054	0.99	67.25	0.05	0	0	0.15
Alto	6899.26	66.3		66.3		15.58	838.75	843.53		843.58	0.000045	0.93	71.19	0.04	0	0	0.14
Alto	6849.26	66.3		66.3		15.89	838.5	843.53		843.57	0.000039	0.88	75.4	0.04	0	0	0.13
Alto	6818.892	66.3		66.3		16.31	838.5	843.53		843.57	0.000035	0.85	78.37	0.04	0	0	0.12
Alto	6785.786	66.3		66.3		16.92	838.5	843.53		843.57	0.000031	0.8	82.43	0.03	0	0	0.12
Alto	6749.258	66.3		66.3		17.5	838.25	843.54		843.57	0.000026	0.76	87.79	0.03	0	0	0.11
Alto	6721.286	66.3		66.3		17.91	838.25	843.54		843.56	0.000024	0.73	90.87	0.03	0	0	0.1
Alto	6677.863	66.3		66.3		17.89	838	843.54		843.56	0.000022	0.71	93.45	0.03	0	0	0.1
Alto	6642.27	66.3		66.3		16.93	838	843.53	839.34	843.56	0.000024	0.74	90.2	0.03	0	0	0.1
Alto	6633.780 T6	Bridge															
Alto	6631.452	66.3		66.3		16.74	838	843.52		843.55	0.000025	0.75	88.65	0.03	0	0	0.1
Alto	6599.255	66.3		66.3		17.84	838	843.52		843.55	0.000124	0.73	90.85	0.03	0.01	0	0.1
Alto	6549.265	66.3		66.3		21.44	838	843.52		843.54	0.000087	0.64	104.21	0.02	0	0	0.09
Alto	6499.265	66.3		66.3		21.39	838	843.52		843.54	0.000093	0.66	100.87	0.02	0	0	0.1
Alto	6449.265	66.3	0	66.3		22.69	838	843.51		843.53	0.000101	0.68	98.14	0.02	0	0	0.1
Alto	6399.265	66.3	0.38	65.9	0.02	45.78	838	843.51		843.53	0.000096	0.66	102.94	0.02	0	0	0.1
Alto	6349.265	66.3	8.71	57.3	0.29	175.48	838	843.51		843.52	0.000078	0.6	183.28	0.02	0	0	0.09
Alto	6299.265	66.3	18.45	46.32	1.54	174.41	838	843.51		843.52	0.000052	0.48	254.82	0.01	0	0	0.08
Alto	6249.265	66.3	24.97	39.01	2.32	171.13	838	843.51		843.51	0.000037	0.4	302.25	0.01	0	0	0.06
Alto	6185.989 S15	66.3	23.68	40.74	1.88	142.16	838	843.5		843.51	0.00004	0.44	260.59	0.01	0	0	0.07
Alto	6149.272	66.3	23.82	41.33	1.15	137.08	838.25	843.5		843.51	0.000048	0.44	250.84	0.01	0	0	0.07
Alto	6099.267	66.3	27.03	38.33	0.94	126.71	838.25	843.5		843.51	0.000049	0.45	248.96	0.01	0	0	0.07
Alto	6049.264	66.3	19.68	45.69	0.93	153.55	838.25	843.49		843.5	0.000084	0.58	187.95	0.01	0.01	0	0.1
Alto	5999.264	66.3	8.93	55.36	2.01	46.98	838.25	843.47		843.5	0.000125	0.71	99.93	0.02	0	0	0.12
Alto	5949.266	66.3	5.53	39.47	21.3	94.8	838.25	843.48		843.49	0.000059	0.5	141.78	0.01	0	0	0.08
Alto	5899.266	66.3	6.17	45.16	14.97	117.77	838.25	843.47		843.48	0.000069	0.54	155.35	0.01	0	0	0.09
Alto	5849.266	66.3	4.5	35.8	26	107.16	838.25	843.47		843.48	0.000042	0.42	198.88	0.01	0	0	0.07
Alto	5799.266	66.3	4.32	49.11	12.86	112.18	838.25	843.46		843.48	0.000079	0.58	138.22	0.01	0	0	0.1
Alto	5749.266	66.3	5.46	51	9.84	116.56	838.25	843.46		843.47	0.00008	0.59	139.53	0.02	0	0	0.1
Alto	5699.266	66.3	9.14	39.15	18.01	139.11	838.25	843.46		843.47	0.000041	0.43	189.55	0.01	0	0	0.07
Alto	5649.266	66.3	8.89	32.25	25.16	182.3	838.25	843.46		843.47	0.000026	0.34	300.03	0	0	0	0.06
Alto	5598.734	66.3	20.3	16.93	29.07	205.83	838.25	843.46	839.82	843.46	0.000005	0.15	368	0	0	0	0.02
Alto	5593.126 T5	Bridge															
Alto	5587.957	66.3	29.92	26.42	9.96	177.22	838.25	843.46		843.46	0.000014	0.25	286.7	0	0	0	0.04
Alto	5543.313	66.3	24.36	28.78	13.16	219.65	838.25	843.46	840.18	843.46	0.000033	0.35	231.55	0	0	0	0.06
Alto	5535.894 T4	Bridge															
Alto	5531.686	66.3	20.61	34.04	11.65	217.82	838.25	843.45		843.46	0.000034	0.37	233.2	0	0	0	0.06

Rio: Bengalas		Procedimento: Validação				Escoamento: Steady Flow				Regime: Mix Flow							
Local: Nova Friburgo		Evento: Hietograma chuva 2				Condição de Contorno: Normal Depth				Perfil: Chuva 2							
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	5528.385	66.3	12.8	39.92	13.58	217.54	838.25	843.45		843.46	0.000005	0.45	228.86	0.01	0	0	0.08
Alto	5499.265	66.3	5.64	46.03	14.63	119.08	838.25	843.43		843.45	0.000167	0.76	108.13	0.02	0.01	0	0.13
Alto	5449.271	66.3	1.73	57.2	7.37	79.3	838.25	843.4		843.44	0.000284	0.94	82.4	0.04	0.02	0	0.17
Alto	5399.302	66.3	1.74	61.38	3.17	68.91	838.25	843.37		843.42	0.000347	1.07	70.97	0.05	0.02	0	0.19
Alto	5349.307	66.3	1.08	61.98	3.23	56.33	838.25	843.3		843.4	0.000695	1.4	53.86	0.09	0.03	0.01	0.25
Alto	5289.961	66.3	0.3	44.7	21.3	43.84	838.25	843.3		843.36	0.000381	1.02	62.34	0.06	0.02	0	0.18
Alto	5249.313	66.3	0.16	63.03	3.11	43.48	838.25	843.28		843.34	0.000396	1.13	72.89	0.06	0.02	0	0.2
Alto	5199.299	66.3	0.17	66.13		25.18	838.25	843.27		843.32	0.000273	0.98	68.63	0.05	0.01	0	0.17
Alto	5149.283	66.3	0.1	66.2		30.88	838.25	843.27		843.3	0.000218	0.84	79.86	0.04	0.01	0	0.15
Alto	5119.450 S13	66.3	0.07	66.23		30.23	838.25	843.27		843.3	0.000163	0.77	87.42	0.03	0.01	0	0.13
Alto	5049.23	66.3	0.03	66.27		23.48	838.5	843.23		843.28	0.00027	0.95	70.26	0.05	0.01	0	0.17
Alto	4999.153	66.3	0.02	66.28		25.8	838.5	843.23		843.27	0.00022	0.85	77.9	0.04	0.01	0	0.15
Alto	4949.088	66.3		66.3		23.67	838.5	843.21		843.25	0.000266	0.92	72.25	0.04	0.02	0	0.17
Alto	4899.062	66.3		66.3		21.23	838.75	843.18		843.24	0.000388	1.07	62.11	0.06	0.02	0	0.2
Alto	4849.056	66.3		66.3		16.1	838.75	843.12		843.21	0.000621	1.34	49.58	0.09	0.05	0.01	0.24
Alto	4799.154	66.3		66.3		11.77	838.75	842.97		843.15	0.001509	1.9	34.84	0.18	0.08	0	0.35
Alto	4749.154	66.3		66.3		11.78	838.75	842.87		843.07	0.001702	1.99	33.31	0.2	0.12	0.02	0.38
Alto	4699.178	66.3		66.3		9.24	839	842.55		842.93	0.003869	2.74	24.22	0.38	0.16	0.03	0.54
Alto	4649.212	66.3		66.3		11.46	839	842.47		842.74	0.002609	2.32	28.62	0.27	0.12	0.01	0.47
Alto	4599.202	66.3		66.3		12.24	839.25	842.36		842.61	0.002333	2.18	30.36	0.24	0.09	0	0.44
Alto	4561.047	66.3		66.3		13.36	839.25	842.28		842.52	0.002392	2.17	30.5	0.24	0.06	0.01	0.46
Alto	4535.883 S12	66.3		66.3		15.6	839.5	842.24		842.45	0.00214	2.01	32.96	0.21	0.08	0	0.44
Alto	4499.18	66.3		66.3		15.71	839.25	842.17		842.37	0.00201	1.98	33.53	0.2	0.1	0.01	0.43
Alto	4449.196	66.3		66.3		16.78	839	842.09		842.27	0.001804	1.88	35.3	0.18	0.09	0	0.41
Alto	4399.197	66.3		66.3		16.94	839	842		842.18	0.001759	1.86	35.66	0.18	0.07	0.02	0.41
Alto	4349.205	66.3	2.05	64.25		24.72	838.75	841.97		842.09	0.001165	1.58	42.58	0.12	0.03	0	0.34
Alto	4320.028	66.3		66.3		18.75	838.5	841.94		842.06	0.001079	1.54	43.01	0.12	0.07	0.01	0.32
Alto	4249.201	66.3		66.3		20.61	838.25	841.88		841.98	0.00088	1.4	47.27	0.1	0.03	0	0.3
Alto	4214.434	66.3		66.3		21.42	838.25	841.86		841.95	0.000834	1.36	48.71	0.09	0.01	0	0.29
Alto	4199.201	66.3		66.3		21.68	838	841.85		841.94	0.000802	1.34	49.56	0.09	0.03	0.01	0.28
Alto	4149.204	66.3	2.53	63.77		39.78	838	841.83		841.9	0.000583	1.17	58.07	0.07	0.03	0	0.24
Alto	4099.198	66.3		66.3		24.38	837.75	841.81		841.87	0.000447	1.07	61.78	0.06	0.01	0	0.22
Alto	4081.474 S11	66.3		66.3		24.96	837.75	841.81		841.86	0.000417	1.04	63.82	0.05	0.02	0	0.21
Alto	4049.185	66.3		66.3		21.88	837.75	841.77		841.84	0.000564	1.19	55.49	0.07	0.03	0	0.24
Alto	3999.199	66.3		66.3		20.22	837.75	841.71		841.81	0.000856	1.4	47.51	0.1	0.05	0	0.29
Alto	3949.209	66.3		66.3		19.56	837.75	841.64		841.76	0.00106	1.51	44	0.12	0.06	0	0.32
Alto	3899.258	66.3		66.3		18.73	837.75	841.54		841.69	0.001527	1.71	38.84	0.15	0.07	0	0.38
Alto	3849.281	66.3		66.3		19.3	837.75	841.48		841.62	0.001398	1.65	40.16	0.14	0.08	0.01	0.37
Alto	3799.282	66.3		66.3		15.82	838	841.34		841.53	0.001912	1.94	34.09	0.19	0.1	0	0.42

Rio: Bengalas		Procedimento: Validação				Escoamento: Steady Flow				Regime: Mix Flow							
Local: Nova Friburgo		Evento: Hietograma chuva 2				Condição de Contorno: Normal Depth				Perfil: Chuva 2							
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	3749.292	66.3		66.3		15.17	838	841.2		841.42	0.002309	2.09	31.66	0.22	0.06	0	0.46
Alto	3723.315	66.3		66.3		15.75	838	841.14		841.36	0.002403	2.1	31.61	0.22	0.06	0	0.47
Alto	3699.295	66.3		66.3		15.84	838	841.08		841.3	0.00241	2.09	31.67	0.22	0.03	0	0.47
Alto	3686.538	66.3		66.3		15.83	838	841.05		841.27	0.00241	2.09	31.67	0.22	0.09	0	0.47
Alto	3649.29	66.3		66.3		15.79	838	840.96		841.18	0.002374	2.08	31.88	0.22	0.05	0	0.47
Alto	3628.303	66.3		66.3		16.08	838	840.92		841.13	0.002277	2.05	32.41	0.21	0.04	0	0.46
Alto	3609.762 S10	66.3		66.3		17.63	838.25	840.88		841.09	0.002325	2	33.07	0.2	0.07	0.01	0.47
Alto	3574.84	66.3		66.3		16.55	838	840.83		841.01	0.001763	1.87	35.5	0.18	0.05	0	0.41
Alto	3549.256	66.3		66.3		16.47	838	840.78		840.96	0.001799	1.88	35.22	0.18	0.1	0	0.41
Alto	3499.259	66.3		66.3		15.14	837.75	840.62		840.85	0.002394	2.12	31.33	0.23	0.06	0	0.47
Alto	3476.621	66.3		66.3		14.78	837.75	840.55		840.8	0.00263	2.2	30.18	0.25	0.08	0	0.49
Alto	3449.258	66.3		66.3		14.41	837.75	840.44		840.72	0.003076	2.33	28.51	0.28	0.15	0	0.53
Alto	3399.261	66.3		66.3		14.54	837.5	840.3		840.56	0.002832	2.26	29.34	0.26	0.14	0	0.51
Alto	3349.259	66.3		66.3		14.92	837.5	840.17		840.42	0.002731	2.21	29.94	0.25	0.13	0.01	0.5
Alto	3299.259	66.3		66.3		15.69	837.25	840.06		840.29	0.0024	2.09	31.68	0.22	0.11	0.01	0.47
Alto	3249.258	66.3		66.3		16.26	837.25	839.97		840.17	0.002069	1.97	33.61	0.2	0.1	0	0.44
Alto	3199.258	66.3		66.3		16.85	837	839.88		840.06	0.001852	1.89	35.09	0.18	0.09	0.01	0.42
Alto	3149.258	66.3		66.3		17.58	836.75	839.81		839.97	0.001605	1.78	37.17	0.16	0.07	0.01	0.39
Alto	3099.247	66.3		66.3		19.96	836.75	839.77		839.89	0.001218	1.57	42.21	0.13	0.04	0.01	0.34
Alto	3058.003 S9	66.3		66.3		22.45	836.5	839.75		839.84	0.000814	1.33	49.76	0.09	0.06	0	0.29
Alto	2999.242	66.3		66.3		18.89	836.5	839.64		839.78	0.001328	1.64	40.32	0.14	0.07	0	0.36
Alto	2949.221	66.3		66.3		18.3	836.25	839.55		839.7	0.001538	1.74	38.13	0.15	0.07	0.01	0.38
Alto	2899.194	66.3		66.3		18.55	836.25	839.49		839.63	0.001293	1.64	40.48	0.14	0.06	0	0.35
Alto	2849.2	66.3		66.3		18.35	836	839.44		839.56	0.001076	1.55	42.85	0.12	0.05	0	0.32
Alto	2799.187	66.3		66.3		17.44	836	839.39		839.51	0.001003	1.53	43.24	0.12	0.05	0	0.31
Alto	2749.187	66.3		66.3		16.83	835.75	839.34		839.46	0.000957	1.53	43.39	0.12	0.05	0	0.3
Alto	2699.212	66.3		66.3		16.27	835.72	839.29		839.41	0.001011	1.57	42.34	0.12	0.02	0	0.31
Alto	2677.167	66.3		66.3		16.74	835.5	839.27		839.39	0.000984	1.54	43.07	0.12	0.03	0	0.31
Alto	2649.215	66.3		66.3		16.37	835.5	839.24		839.36	0.001004	1.56	42.58	0.12	0.04	0.01	0.31
Alto	2599.223	66.3		66.3		17.87	835.25	839.22		839.31	0.000738	1.38	48.13	0.1	0.03	0.01	0.27
Alto	2552.887	66.3		66.3		19.67	835.25	839.19	837.17	839.27	0.000589	1.25	53.07	0.08	0	0	0.24
Alto	2547.430 T3 Bridge																
Alto	2543.247	66.3		66.3		20.43	835.25	839.18		839.25	0.000553	1.21	54.76	0.07	0.01	0	0.24
Alto	2525.589	66.3		66.3		20.3	835.25	839.17		839.24	0.000481	1.16	57.24	0.07	0.01	0	0.22
Alto	2499.225	66.3		66.3		21.21	835.25	839.16		839.23	0.000435	1.11	59.83	0.06	0.02	0	0.21
Alto	2449.235	66.3		66.3		22.62	835.25	839.15		839.2	0.000387	1.05	63.31	0.06	0.03	0	0.2
Alto	2380.636	66.3		66.3		23.91	835.25	839.13	836.93	839.18	0.000354	1	66.02	0.05	0.01	0	0.19
Alto	2349.239	66.3		66.3		24.31	835.25	839.12	836.9	839.17	0.000357	1	66.22	0.05	0.02	0	0.19
Alto	2299.246	66.3		66.3		23.27	835.25	839.09	837	839.15	0.000417	1.07	62.17	0.06	0.02	0	0.21

Rio: Bengalas		Procedimento: Validação				Escoamento: Steady Flow				Regime: Mix Flow							
Local: Nova Friburgo		Evento: Hietograma chuva 2				Condição de Contorno: Normal Depth				Perfil: Chuva 2							
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	2249.258	66.3		66.3		23.07	835.5	839.06	837.06	839.13	0.00045	1.09	60.66	0.06	0.02	0	0.22
Alto	2199.258	66.3		60.92	5.38	113.33	835.5	839.05	837.03	839.1	0.000366	0.98	86.45	0.05	0	0.01	0.2
Alto	2173.195	66.3		29.52	36.78	176.58	835.5	839.08	837.03	839.08	0.000085	0.47	167.24	0.01	0	0	0.09
Alto	2149.258	66.3		43.18	23.12	144.32	835.5	839.06	837.04	839.08	0.000182	0.68	148.11	0.02	0.02	0	0.14
Baixo	2094.28	89.7		56.89	32.81	191.61	835.5	839.04		839.06	0.0003	0.87	177.97	0.03	0	0	0.18
Baixo	2086.245	89.7		56.36	33.34	193.32	835.5	839.04	837.26	839.06	0.000291	0.86	181.32	0.03	0	0	0.18
Baixo	2081.187 T2	Bridge															
Baixo	2076.63	89.7		56.88	32.82	195.23	835.5	839.01		839.04	0.000306	0.89	179.82	0.03	0.01	0	0.18
Baixo	2049.26	89.7		63.17	26.53	114.58	835.5	838.99	837.26	839.03	0.000394	1	129.88	0.04	0.01	0.01	0.2
Baixo	1999.26	89.7		31.6	58.1	196.47	835.5	839	837.29	839.01	0.000101	0.51	166.83	0.01	0.01	0.01	0.1
Baixo	1949.26	89.7		89.7		23.53	835.25	838.87	837.21	838.99	0.000924	1.53	58.73	0.12	0.04	0	0.31
Baixo	1899.26	89.7		89.7		23.1	835.25	838.83	837.1	838.95	0.000874	1.51	59.43	0.12	0.04	0	0.3
Baixo	1849.26	89.7		89.7		23.6	835.25	838.8	836.99	838.9	0.000775	1.44	62.15	0.11	0.02	0	0.28
Baixo	1819.457	89.7		89.7		24.16	835	838.78	836.88	838.88	0.000669	1.37	65.62	0.1	0.02	0	0.26
Baixo	1785.207	89.7	0	89.7		27.3	835	838.77	836.79	838.85	0.000578	1.27	70.47	0.08	0.02	0	0.25
Baixo	1749.264	89.7	0	89.7		30.85	835	838.76	836.71	838.83	0.000508	1.19	75.3	0.07	0.02	0	0.23
Baixo	1699.257	89.7		89.7		27.54	835	838.74	836.63	838.8	0.000465	1.17	76.92	0.07	0.01	0	0.22
Baixo	1674.594	89.7	0	89.7		29.66	835	838.72	836.63	838.79	0.000477	1.18	76.13	0.07	0.01	0	0.23
Baixo	1649.256	89.7	0.01	89.69		35.37	834.75	838.71	836.62	838.78	0.000504	1.2	74.86	0.07	0.01	0	0.23
Baixo	1622.255	89.7	0.46	89.24		41.1	834.75	838.69	836.61	838.77	0.00052	1.22	75.81	0.08	0.01	0	0.24
Baixo	1599.256	89.7	0.16	89.54		39.75	834.75	838.67		838.75	0.00054	1.25	72.95	0.08	0.03	0	0.24
Baixo	1549.264	89.7	0.11	89.59		40.91	834.75	838.62		838.72	0.00067	1.38	65.89	0.1	0.02	0	0.26
Baixo	1525.865	89.7	0.09	89.61		32.94	834.75	838.58		838.7	0.000917	1.57	57.88	0.13	0.02	0.01	0.3
Baixo	1506.375 S6	89.7	0.09	89.61		23.56	834.75	838.5		838.67	0.001397	1.86	48.75	0.18	0.04	0.01	0.36
Baixo	1483.175	89.7	0.02	89.68		19.68	834.5	838.38		838.63	0.002167	2.22	40.65	0.25	0.07	0	0.44
Baixo	1449.256	89.7	0.64	89.06		47.67	834.5	838.32		838.55	0.002008	2.15	44.66	0.23	0.07	0.04	0.42
Baixo	1399.256	89.7	25.36	64.34		174.9	834.5	838.35		838.44	0.000975	1.52	126.54	0.09	0.03	0.02	0.3
Baixo	1349.258	89.7	44.3	45.4		166.81	834.5	838.36		838.39	0.000479	1.06	184.86	0.03	0.04	0.02	0.21
Baixo	1299.258	89.7	0.18	89.52		52.83	834.25	838.08		838.33	0.002147	2.2	42.63	0.25	0.07	0	0.44
Baixo	1267.092	89.7		89.7		16.83	834.25	838.01		838.25	0.002104	2.17	41.34	0.24	0.04	0	0.44
Baixo	1249.258	89.7		89.7		16.59	834.25	837.97		838.22	0.002153	2.2	40.83	0.25	0.12	0.01	0.45
Baixo	1199.258	89.7		89.7		15.7	834.25	837.79		838.09	0.002805	2.42	37.01	0.3	0.09	0.01	0.5
Baixo	1171.129	89.7		89.7		13.93	834.25	837.61		837.99	0.003704	2.75	32.66	0.38	0.08	0.01	0.57
Baixo	1149.258	89.7		89.7	0	13.93	834	837.55		837.91	0.003296	2.66	33.73	0.36	0.14	0.03	0.54
Baixo	1099.235	89.7		89.66	0.04	18.25	834	837.47		837.74	0.002412	2.33	38.76	0.28	0.08	0.04	0.48
Baixo	1049.229 S5	89.7		89.31	0.39	31.36	833.81	837.48		837.63	0.001096	1.72	54.3	0.15	0.06	0	0.33
Baixo	999.1276	89.7		89.48	0.22	31.03	833.5	837.38		837.56	0.001445	1.87	49.35	0.18	0.05	0.01	0.38
Baixo	968.833	89.7		89.7	0	18.06	833.25	837.26		837.5	0.002146	2.18	41.09	0.24	0.04	0	0.45
Baixo	949.0698	89.7		89.7		16.02	833.25	837.2		837.46	0.0023	2.27	39.52	0.26	0.12	0	0.46

Rio: Bengalas		Procedimento: Validação				Escoamento: Steady Flow				Regime: Mix Flow							
Local: Nova Friburgo		Evento: Hietograma chuva 2				Condição de Contorno: Normal Depth				Perfil: Chuva 2							
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Baixo	899.0942	89.7		89.7		18.52	833.25	837.08		837.34	0.00246	2.23	40.31	0.25	0.14	0.01	0.48
Baixo	849.143	89.7		89.7		16.72	833	836.89		837.19	0.002995	2.45	36.64	0.31	0.15	0.01	0.53
Baixo	799.143	89.7		89.7		17.37	832.75	836.76		837.04	0.002852	2.38	37.69	0.29	0.14	0	0.52
Baixo	749.1328	89.7		89.7		16.62	832.5	836.61		836.9	0.002821	2.4	37.41	0.29	0.14	0	0.51
Baixo	699.1328	89.7		89.7		15.98	832.25	836.45		836.76	0.002909	2.45	36.62	0.31	0.14	0	0.52
Baixo	649.1328	89.7		89.7		15.07	831.75	836.32		836.62	0.002589	2.39	37.52	0.29	0.12	0.01	0.48
Baixo	599.1347	89.7		89.7		15.46	831.5	836.23		836.49	0.002237	2.25	39.79	0.26	0.11	0	0.45
Baixo	549.1295	89.7		89.7		16.21	831.25	836.13		836.37	0.00217	2.19	40.93	0.24	0.09	0.01	0.44
Baixo	499.045	89.7		89.7		16.03	831.25	836.07		836.27	0.001528	1.98	45.36	0.2	0.09	0	0.38
Baixo	448.9738	89.7		89.7		15.41	831.5	835.93		836.17	0.002021	2.19	40.87	0.25	0.17	0.03	0.43
Baixo	398.9491	89.7		89.7		13.43	832.25	835.41		835.97	0.006434	3.34	26.88	0.57	0.17	0.11	0.75
Baixo	352.748	89.7		89.7		25.73	832.88	835.5	834.66	835.69	0.002195	1.94	46.26	0.19	0.01	0	0.46
Baixo	348.9313 T1	Bridge															
Baixo	343.9721	89.7		89.7		26.32	832.75	835.42		835.58	0.001601	1.75	51.39	0.16	0.02	0.03	0.4
Baixo	298.9281	89.7	0.03	89.67		28.49	829.65	835.48		835.52	0.000213	0.9	100.12	0.04	0	0.01	0.15
Baixo	248.9493	89.7	0.08	89.62		48.01	825.25	835.5		835.51	0.000035	0.44	207.32	0.01	0	0	0.06
Baixo	199.1468	89.7	0.19	89.51		41.32	827.5	835.49		835.51	0.000005	0.54	170.19	0.01	0	0	0.07
Baixo	160.6351	89.7		89.7		44.62	829.84	835.49	831.58	835.51	0.000052	0.5	180.71	0.01			0.08
Baixo	158.6960 Bar. Catet	Inl Struct															
Baixo	155.7292	89.7		89.7		33	830.07	831.63	831.63	832.1	0.013297	3.02	29.69	0.47	0.25	0.01	1.02
Baixo	136.5043	89.7		89.7		22.26	827.75	828.94	829.54	831.34	0.118858	6.85	13.09	2.39	0.56	0.19	2.85
Baixo	99.03893	89.7		89.7		14.13	824.65	826.24	826.89	828.35	0.054359	6.44	13.94	2.11	2.9	0.09	2.07
Baixo	49.06651	89.7		89.7		9.84	819.75	821.77	822.72	825.06	0.074912	8.04	11.16	3.29	3.17	0.12	2.41

<u>Rio:</u> Bengalas		<u>Procedimento:</u> Validação						<u>Escoamento:</u>			Steady Flow		<u>Regime:</u> Mix Flow				
<u>Local:</u> Nova Friburgo		<u>Evento:</u> Hietograma chuva 3						<u>Condição de Contorno:</u>			Normal Depth		<u>Perfil:</u> Chuva 3				
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	8449.32	24.1		24.1		11.32	841.25	842.3	842.3	842.69	0.002705	2.77	8.7	0.39	0.12	0.04	1.01
Alto	8399.309	24.1		24.1		13.55	841.25	841.84	842.02	842.45	0.006988	3.47	6.95	0.61	0.21	0.02	1.55
Alto	8349.302	24.1		24.1		16.55	841	842.09	841.86	842.25	0.001051	1.81	13.33	0.17	0.04	0.01	0.64
Alto	8299.3	24.1		24.1		17.3	841	842.07		842.2	0.000752	1.61	15.01	0.13	0.03	0	0.55
Alto	8249.299	24.1		24.1		17.35	841	842.04		842.16	0.000645	1.52	15.86	0.12	0.01	0.01	0.51
Alto	8222.821	24.1		24.1		17.39	840.75	842.05		842.14	0.000399	1.31	18.38	0.09	0.01	0	0.41
Alto	8199.353	24.1		24.1		17.4	840.75	842.05		842.13	0.000348	1.25	19.21	0.08	0.02	0	0.38
Alto	8149.295	24.1		24.1		17.56	840.75	842.04		842.11	0.000271	1.15	20.95	0.07	0.01	0	0.34
Alto	8119.148	24.1		24.1		17.67	840.75	842.03		842.1	0.000242	1.11	21.74	0.06	0.01	0.01	0.32
Alto	8049.292	24.1		24.1		18.1	840.5	842.04		842.08	0.000129	0.9	26.8	0.04	0	0	0.24
Alto	8027.169	24.1		24.1		18.36	840.5	842.04	841.07	842.07	0.000116	0.86	27.9	0.04	0	0	0.22
Alto	8024.782 T10	Bridge															
Alto	8018.111	24.1		24.1		18	840.34	842.03		842.07	0.000103	0.84	28.65	0.04	0	0	0.21
Alto	7999.291	24.1		24.1		17.72	840.25	842.03		842.07	0.000098	0.83	28.95	0.04	0	0	0.21
Alto	7949.291	24.1		24.1		17.12	840.25	842.03		842.06	0.000096	0.84	28.79	0.04	0	0	0.21
Alto	7899.291	24.1		24.1		16.63	840.25	842.02		842.06	0.000099	0.85	28.32	0.04	0	0	0.21
Alto	7849.291	24.1		24.1		16.16	840	842.02		842.05	0.000086	0.82	29.25	0.03	0	0	0.2
Alto	7799.291	24.1		24.1		15.82	840	842.01		842.05	0.000084	0.82	29.32	0.03	0	0	0.19
Alto	7749.291	24.1		24.1		16.5	840	842.01		842.04	0.000072	0.77	31.14	0.03	0	0	0.18
Alto	7699.291	24.1		24.1		17.03	839.75	842.01		842.04	0.000057	0.71	33.81	0.03	0	0	0.16
Alto	7649.291	24.1		24.1		16.98	839.75	842.01		842.04	0.000053	0.7	34.6	0.02	0	0	0.16
Alto	7611.167	24.1		24.1		18.08	839.75	842.01	840.5	842.03	0.000044	0.64	37.47	0.02	0	0	0.14
Alto	7605.934 T9	Bridge															
Alto	7600.285	24.1		24.1		18.23	839.72	842.01		842.03	0.000042	0.63	38.04	0.02	0	0	0.14
Alto	7549.258	24.1		24.1		17	839.75	842		842.03	0.000059	0.72	33.32	0.03	0	0	0.16
Alto	7499.258	24.1		24.1		16.61	839.75	841.99		842.03	0.000074	0.79	30.7	0.03	0	0	0.18
Alto	7449.258	24.1		24.1		16.63	839.75	841.99		842.02	0.00009	0.84	28.74	0.04	0	0	0.2
Alto	7399.258	24.1		24.1		17.37	839.75	841.98		842.02	0.0001	0.86	28.11	0.04	0	0.01	0.22
Alto	7336.31	24.1		24.1		25.91	839.5	841.99	840.63	842.01	0.00004	0.56	42.92	0.02	0	0	0.14
Alto	7333.883 T8	Bridge															
Alto	7321.573	24.1		24.1		25.08	840	841.98		842	0.000056	0.63	38.08	0.02	0	0	0.16
Alto	7299.261	24.1		24.1		16.81	839.75	841.96		842	0.00012	0.92	26.27	0.04	0.01	0	0.23
Alto	7293.445	24.1		24.1		16.66	839.75	841.95		841.99	0.000117	0.91	26.38	0.04	0	0	0.23
Alto	7249.261	24.1		24.1		15.76	839.75	841.95		841.99	0.00009	0.85	28.37	0.04	0	0	0.2
Alto	7199.258	24.1		24.1		15.13	839.5	841.95		841.98	0.000067	0.78	31.08	0.03	0	0	0.17
Alto	7129.429	24.1		24.1		17.45	839.5	841.96	840.18	841.97	0.000033	0.59	40.84	0.02	0	0	0.12
Alto	7121.824 T7	Bridge															
Alto	7120.426	24.1		24.1		17.93	839.5	841.96		841.97	0.000031	0.57	42.3	0.02	0	0	0.12
Alto	7099.259	24.1		24.1		16.92	839.25	841.95		841.97	0.000029	0.57	42.16	0.02	0	0	0.12

Rio: Bengalas		Procedimento: Validação				Escoamento: Steady Flow				Regime: Mix Flow							
Local: Nova Friburgo		Evento: Hietograma chuva 3				Condição de Contorno: Normal Depth				Perfil: Chuva 3							
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	7049.26	24.1		24.1		16.51	839.25	841.95		841.97	0.000027	0.56	43.13	0.02	0	0	0.11
Alto	6999.26	24.1		24.1		15.44	839	841.95		841.97	0.000026	0.57	42.61	0.02	0	0	0.11
Alto	6949.26	24.1		24.1		15.12	839	841.95		841.97	0.000025	0.56	43.24	0.02	0	0	0.11
Alto	6899.26	24.1		24.1		15.42	838.75	841.95		841.96	0.00002	0.52	46.7	0.01	0	0	0.09
Alto	6849.26	24.1		24.1		15.76	838.5	841.95		841.96	0.000017	0.48	50.38	0.01	0	0	0.09
Alto	6818.892	24.1		24.1		16.17	838.5	841.95		841.96	0.000015	0.46	52.68	0.01	0	0	0.08
Alto	6785.786	24.1		24.1		16.78	838.5	841.95		841.96	0.000013	0.43	55.76	0.01	0	0	0.08
Alto	6749.258	24.1		24.1		17.36	838.25	841.95		841.96	0.00001	0.4	60.18	0.01	0	0	0.07
Alto	6721.286	24.1		24.1		17.78	838.25	841.95		841.96	0.000009	0.38	62.6	0.01	0	0	0.07
Alto	6677.863	24.1		24.1		17.75	838	841.95		841.96	0.000008	0.37	65.22	0.01	0	0	0.06
Alto	6642.27	24.1		24.1		16.89	838	841.95	838.77	841.96	0.000009	0.38	63.44	0.01	0	0	0.06
Alto	6633.780 T6	Bridge															
Alto	6631.452	24.1		24.1		16.72	838	841.95		841.96	0.000009	0.39	62.36	0.01	0	0	0.06
Alto	6599.255	24.1		24.1		17.36	838	841.95		841.96	0.000046	0.38	63.21	0.01	0	0	0.06
Alto	6549.265	24.1		24.1		20.42	838	841.95		841.96	0.000034	0.34	71.33	0.01	0	0	0.06
Alto	6499.265	24.1		24.1		20.12	838	841.95		841.95	0.000038	0.35	68.34	0.01	0	0	0.06
Alto	6449.265	24.1		24.1		20.11	838	841.95		841.95	0.000043	0.37	65.17	0.01	0	0	0.07
Alto	6399.265	24.1		24.1		20.85	838	841.94		841.95	0.000044	0.37	64.99	0.01	0	0	0.07
Alto	6349.265	24.1		24.1		20.49	838	841.94		841.95	0.000052	0.39	61.47	0.01	0	0	0.07
Alto	6299.265	24.1		24.1		20.95	838	841.94		841.94	0.000057	0.4	60.07	0.01	0	0	0.08
Alto	6249.265	24.1	1.23	22.87		87.52	838	841.93		841.94	0.000056	0.39	84.06	0.01	0	0	0.07
Alto	6185.989 S15	24.1	1.11	22.99		79.49	838	841.93		841.94	0.000057	0.4	78.07	0.01	0	0	0.08
Alto	6149.272	24.1	2.03	22.07		72.18	838.25	841.93		841.94	0.000072	0.41	77.25	0.01	0	0	0.08
Alto	6099.267	24.1	1.27	22.83		88.48	838.25	841.92		841.93	0.000092	0.46	69.45	0.01	0.01	0	0.09
Alto	6049.264	24.1		24.1		19.36	838.25	841.91		841.93	0.00013	0.53	45.5	0.01	0.01	0	0.11
Alto	5999.264	24.1		24.1		19.51	838.25	841.9		841.92	0.000134	0.54	44.97	0.01	0.01	0	0.11
Alto	5949.266	24.1		24.1		19.55	838.25	841.9		841.91	0.000122	0.52	46.13	0.01	0.01	0	0.11
Alto	5899.266	24.1		24.1		20.82	838.25	841.89		841.91	0.000111	0.5	48.35	0.01	0	0	0.1
Alto	5849.266	24.1		21.32	2.78	52.51	838.25	841.89		841.9	0.000084	0.43	62.35	0.01	0	0	0.09
Alto	5799.266	24.1		24.1		21.19	838.25	841.88		841.9	0.000106	0.49	49.08	0.01	0.01	0	0.1
Alto	5749.266	24.1		24.1		21.4	838.25	841.88		841.89	0.000098	0.48	50.48	0.01	0	0	0.1
Alto	5699.266	24.1		24.1		22.23	838.25	841.87		841.89	0.000083	0.45	53.85	0.01	0	0	0.09
Alto	5649.266	24.1		20.5	3.6	66.71	838.25	841.87		841.88	0.000054	0.36	78.91	0.01	0	0	0.07
Alto	5598.734	24.1		19.35	4.75	78.9	838.25	841.87	839.17	841.88	0.000033	0.29	92.1	0	0	0	0.06
Alto	5593.126 T5	Bridge															
Alto	5587.957	24.1		23.98	0.12	29.35	838.25	841.86		841.87	0.00006	0.38	64.35	0.01	0	0	0.08
Alto	5543.313	24.1		24.1		18.84	838.25	841.85	839.4	841.86	0.000119	0.53	45.75	0.01	0	0	0.11
Alto	5535.894 T4	Bridge															
Alto	5531.686	24.1		24.1		21.64	838.25	841.84		841.86	0.000088	0.46	52.56	0.01	0.01	0	0.09

Rio: Bengalas		Procedimento: Validação				Escoamento: Steady Flow						Regime: Mix Flow					
Local: Nova Friburgo		Evento: Hietograma chuva 3				Condição de Contorno: Normal Depth						Perfil: Chuva 3					
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	5528.385	24.1		24.1		21.05	838.25	841.84		841.85	0.000091	0.47	51.33	0.01	0	0	0.1
Alto	5499.265	24.1		24.1		13.99	838.25	841.82		841.84	0.000228	0.71	34.12	0.03	0.01	0	0.14
Alto	5449.271	24.1		24.1		14.2	838.25	841.8		841.83	0.000266	0.74	32.57	0.03	0.01	0	0.16
Alto	5399.302	24.1		24.1		13.91	838.25	841.79		841.82	0.000284	0.76	31.74	0.03	0.02	0	0.16
Alto	5349.307	24.1		24.1		10.81	838.25	841.75		841.8	0.000534	0.99	24.42	0.05	0.03	0	0.21
Alto	5289.961	24.1		24.1		10.93	838.25	841.71		841.76	0.000574	1.01	23.94	0.05	0.02	0.01	0.22
Alto	5249.313	24.1		24.1		13.78	838.25	841.71		841.74	0.000283	0.76	31.66	0.03	0.01	0	0.16
Alto	5199.299	24.1		24.1		16.53	838.25	841.71		841.73	0.000174	0.62	38.9	0.02	0.01	0	0.13
Alto	5149.283	24.1		24.1		18.33	838.25	841.7		841.72	0.00013	0.55	43.92	0.02	0	0	0.11
Alto	5119.450 S13	24.1		24.1		20.82	838.25	841.7		841.71	0.000102	0.49	49.39	0.01	0.01	0	0.1
Alto	5049.23	24.1		24.1		17.12	838.5	841.69		841.7	0.000163	0.6	40.35	0.02	0.01	0	0.12
Alto	4999.153	24.1		24.1		19.37	838.5	841.68		841.7	0.000137	0.54	44.36	0.02	0.01	0	0.11
Alto	4949.088	24.1		24.1		18.67	838.5	841.67		841.69	0.000179	0.6	40.03	0.02	0.01	0	0.13
Alto	4899.062	24.1		24.1		16.4	838.75	841.65		841.68	0.000267	0.71	33.88	0.03	0.02	0	0.16
Alto	4849.056	24.1		24.1		13.17	838.75	841.62		841.66	0.000409	0.87	27.74	0.04	0.03	0	0.19
Alto	4799.154	24.1		24.1		9.69	838.75	841.55		841.63	0.000926	1.22	19.78	0.08	0.05	0	0.27
Alto	4749.154	24.1		24.1		9.76	838.75	841.49		841.57	0.001147	1.31	18.43	0.09	0.08	0.01	0.3
Alto	4699.178	24.1		24.1		7.96	839	841.33		841.48	0.002469	1.76	13.69	0.16	0.11	0.01	0.43
Alto	4649.212	24.1		24.1		9.83	839	841.24		841.37	0.001901	1.54	15.63	0.12	0.1	0	0.39
Alto	4599.202	24.1		24.1		11.15	839.25	841.15		841.27	0.001927	1.49	16.21	0.11	0.08	0	0.39
Alto	4561.047	24.1		24.1		11.47	839.25	841.06		841.19	0.002296	1.56	15.42	0.12	0.06	0	0.43
Alto	4535.883 S12	24.1		24.1		12.52	839.5	841.01		841.13	0.002403	1.54	15.63	0.12	0.08	0	0.44
Alto	4499.18	24.1		24.1		12.48	839.25	840.92		841.04	0.002214	1.51	15.95	0.12	0.11	0	0.43
Alto	4449.196	24.1		24.1		13.07	839	840.82		840.93	0.002179	1.48	16.24	0.11	0.11	0	0.43
Alto	4399.197	24.1		24.1		13.04	839	840.7		840.82	0.002256	1.5	16.04	0.12	0.08	0.01	0.43
Alto	4349.205	24.1		24.1		13.98	838.75	840.65		840.72	0.001308	1.24	19.47	0.08	0.03	0	0.33
Alto	4320.028	24.1		24.1		14.44	838.5	840.62		840.69	0.001034	1.14	21.19	0.07	0.06	0	0.3
Alto	4249.201	24.1		24.1		15.43	838.25	840.57		840.62	0.000762	1.01	23.81	0.05	0.03	0	0.26
Alto	4214.434	24.1		24.1		15.7	838.25	840.54		840.59	0.000685	0.97	24.76	0.05	0.01	0	0.25
Alto	4199.201	24.1		24.1		15.8	838	840.54		840.58	0.000632	0.95	25.46	0.05	0.03	0	0.24
Alto	4149.204	24.1		24.1		16.72	838	840.52		840.55	0.000444	0.83	28.96	0.04	0.02	0	0.2
Alto	4099.198	24.1		24.1		18.53	837.75	840.51		840.53	0.000293	0.71	34.13	0.03	0	0	0.17
Alto	4081.474 S11	24.1		24.1		18.49	837.75	840.5		840.53	0.000264	0.68	35.34	0.02	0.01	0	0.16
Alto	4049.185	24.1		24.1		16.69	837.75	840.49		840.52	0.000357	0.78	31	0.03	0.02	0	0.18
Alto	3999.199	24.1		24.1		14.94	837.75	840.45		840.49	0.000595	0.95	25.5	0.05	0.03	0	0.23
Alto	3949.209	24.1		24.1		14.11	837.75	840.4		840.46	0.000775	1.04	23.07	0.06	0.05	0	0.26
Alto	3899.258	24.1		24.1		12.99	837.75	840.33		840.41	0.001197	1.22	19.68	0.08	0.06	0	0.32
Alto	3849.281	24.1		24.1		13.74	837.75	840.28		840.35	0.001145	1.19	20.25	0.07	0.07	0	0.31
Alto	3799.282	24.1		24.1		12.35	838	840.19		840.28	0.001512	1.35	17.87	0.09	0.09	0	0.36

Rio: Bengalas		Procedimento: Validação				Escoamento: Steady Flow				Regime: Mix Flow							
Local: Nova Friburgo		Evento: Hietograma chuva 3				Condição de Contorno: Normal Depth				Perfil: Chuva 3							
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	3749.292	24.1		24.1		12.22	838	840.08		840.19	0.001989	1.48	16.33	0.11	0.06	0	0.41
Alto	3723.315	24.1		24.1		12.52	838	840.02		840.14	0.002277	1.53	15.78	0.12	0.06	0	0.43
Alto	3699.295	24.1		24.1		12.69	838	839.96		840.08	0.002349	1.53	15.71	0.12	0.03	0	0.44
Alto	3686.538	24.1		24.1		12.75	838	839.93		840.05	0.00238	1.54	15.68	0.12	0.09	0	0.44
Alto	3649.29	24.1		24.1		13	838	839.84		839.96	0.002427	1.53	15.74	0.12	0.05	0	0.44
Alto	3628.303	24.1		24.1		13.22	838	839.79		839.91	0.002359	1.51	15.93	0.12	0.05	0	0.44
Alto	3609.762 S10	24.1		24.1		13.92	838.25	839.72		839.86	0.003135	1.63	14.82	0.13	0.08	0.01	0.5
Alto	3574.84	24.1		24.1		14.05	838	839.67		839.77	0.001764	1.35	17.8	0.09	0.05	0	0.38
Alto	3549.256	24.1		24.1		14.03	838	839.62		839.72	0.001837	1.37	17.57	0.1	0.11	0	0.39
Alto	3499.259	24.1		24.1		12.67	837.75	839.49		839.61	0.002437	1.55	15.53	0.12	0.06	0	0.45
Alto	3476.621	24.1		24.1		12.24	837.75	839.42		839.55	0.002674	1.62	14.91	0.13	0.08	0	0.47
Alto	3449.258	24.1		24.1		11.71	837.75	839.32		839.47	0.003257	1.74	13.82	0.15	0.16	0	0.51
Alto	3399.261	24.1		24.1		11.96	837.5	839.17		839.31	0.003	1.69	14.27	0.15	0.15	0	0.49
Alto	3349.259	24.1		24.1		12.21	837.5	839.01		839.16	0.003142	1.7	14.18	0.15	0.15	0	0.5
Alto	3299.259	24.1		24.1		12.61	837.25	838.87		839.01	0.00283	1.63	14.82	0.13	0.13	0	0.48
Alto	3249.258	24.1		24.1		13.24	837.25	838.74		838.87	0.002556	1.55	15.56	0.12	0.12	0	0.46
Alto	3199.258	24.1		24.1		13.45	837	838.63		838.74	0.002293	1.49	16.15	0.11	0.11	0	0.43
Alto	3149.258	24.1		24.1		13.86	836.75	838.53		838.63	0.00197	1.41	17.1	0.1	0.09	0.01	0.41
Alto	3099.247	24.1		24.1		15.42	836.75	838.46		838.54	0.001528	1.26	19.19	0.08	0.05	0.01	0.36
Alto	3058.003 S9	24.1		24.1		17.25	836.5	838.43		838.49	0.000882	1.02	23.65	0.05	0.07	0	0.28
Alto	2999.242	24.1		24.1		14.51	836.5	838.33		838.41	0.001606	1.3	18.48	0.09	0.09	0	0.37
Alto	2949.221	24.1		24.1		13.3	836.25	838.23		838.33	0.001806	1.39	17.29	0.1	0.08	0	0.39
Alto	2899.194	24.1		24.1		13.94	836.25	838.16		838.24	0.001454	1.28	18.81	0.08	0.06	0	0.35
Alto	2849.2	24.1		24.1		14.46	836	838.11		838.18	0.001082	1.15	20.9	0.07	0.05	0	0.31
Alto	2799.187	24.1		24.1		14.43	836	838.06		838.12	0.000912	1.09	22.05	0.06	0.04	0	0.28
Alto	2749.187	24.1		24.1		14.3	835.75	838.02		838.08	0.000806	1.06	22.83	0.06	0.04	0	0.27
Alto	2699.212	24.1		24.1		13.9	835.72	837.98		838.04	0.000807	1.06	22.67	0.06	0.02	0	0.27
Alto	2677.167	24.1		24.1		13.9	835.5	837.97		838.02	0.000758	1.04	23.12	0.06	0.02	0	0.26
Alto	2649.215	24.1		24.1		13.87	835.5	837.94		838	0.000775	1.05	22.98	0.06	0.03	0	0.26
Alto	2599.223	24.1		24.1		14.83	835.25	837.92		837.97	0.000494	0.89	27.05	0.04	0.02	0	0.21
Alto	2552.887	24.1		24.1		16.44	835.25	837.91	836.42	837.94	0.000402	0.81	29.83	0.03	0	0	0.19
Alto	2547.430 T3 Bridge																
Alto	2543.247	24.1		24.1		17.17	835.25	837.9		837.93	0.000388	0.79	30.59	0.03	0.01	0	0.19
Alto	2525.589	24.1		24.1		17.37	835.25	837.89		837.92	0.000307	0.73	33.12	0.03	0.01	0	0.17
Alto	2499.225	24.1		24.1		18.41	835.25	837.89		837.91	0.000285	0.7	34.51	0.02	0.01	0	0.16
Alto	2449.235	24.1		24.1		19.71	835.25	837.87		837.9	0.00026	0.66	36.35	0.02	0.02	0	0.16
Alto	2380.636	24.1		24.1		20.6	835.25	837.86	836.22	837.88	0.000237	0.64	37.81	0.02	0.01	0	0.15
Alto	2349.239	24.1		24.1		20.62	835.25	837.85	836.19	837.87	0.000237	0.64	37.82	0.02	0.01	0	0.15
Alto	2299.246	24.1		24.1		19.88	835.25	837.83	836.26	837.86	0.00029	0.69	35.11	0.02	0.02	0	0.16

Rio: Bengalas		Procedimento: Validação				Escoamento:				Steady Flow		Regime: Mix Flow					
Local: Nova Friburgo		Evento: Hietograma chuva 3				Condição de Contorno:				Normal Depth		Perfil: Chuva 3					
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	2249.258	24.1		24.1		19.81	835.5	837.82	836.38	837.84	0.000322	0.71	33.93	0.03	0.02	0	0.17
Alto	2199.258	24.1		24.1		20.21	835.5	837.8	836.37	837.83	0.000317	0.7	34.3	0.03	0.01	0	0.17
Alto	2173.195	24.1		24.1		20.21	835.5	837.79	836.37	837.82	0.000327	0.71	33.96	0.03	0.01	0	0.17
Alto	2149.258	24.1		24.1		20.53	835.5	837.78	836.38	837.81	0.000336	0.71	33.84	0.03	0.04	0	0.18
Baixo	2094.28	37.1		37.1		20.96	835.5	837.71		837.77	0.000842	1.11	33.51	0.06	0.01	0	0.28
Baixo	2086.245	37.1		37.1		20.89	835.5	837.7	836.58	837.76	0.00083	1.1	33.63	0.06	0	0	0.28
Baixo	2081.187 T2 Bridge																
Baixo	2076.63	37.1		37.1		20.48	835.5	837.66		837.73	0.00089	1.14	32.67	0.07	0.03	0	0.29
Baixo	2049.26	37.1		37.1		20.27	835.5	837.63	836.58	837.7	0.000954	1.16	31.87	0.07	0.05	0	0.3
Baixo	1999.26	37.1		37.1		19.81	835.5	837.57	836.58	837.65	0.001104	1.23	30.24	0.08	0.06	0	0.32
Baixo	1949.26	37.1		37.1		18.95	835.25	837.51	836.49	837.59	0.001107	1.25	29.78	0.08	0.05	0	0.32
Baixo	1899.26	37.1		37.1		18.7	835.25	837.47	836.4	837.54	0.000966	1.2	30.92	0.07	0.05	0	0.3
Baixo	1849.26	37.1		37.1		19.44	835.25	837.43	836.32	837.49	0.000845	1.14	32.69	0.07	0.02	0	0.28
Baixo	1819.457	37.1		37.1		20.29	835	837.41	836.21	837.47	0.000704	1.06	35.11	0.06	0.02	0	0.26
Baixo	1785.207	37.1		37.1		21.63	835	837.39	836.14	837.44	0.000608	0.99	37.58	0.05	0.02	0	0.24
Baixo	1749.264	37.1		37.1		22.94	835	837.38	836.08	837.42	0.000532	0.93	40.02	0.04	0.03	0	0.22
Baixo	1699.257	37.1		37.1		23.32	835	837.35	836.03	837.39	0.000472	0.89	41.81	0.04	0.01	0	0.21
Baixo	1674.594	37.1		37.1		23.17	835	837.34	836.03	837.38	0.000492	0.9	41.17	0.04	0.01	0	0.22
Baixo	1649.256	37.1		37.1		22.37	834.75	837.33	835.99	837.37	0.000501	0.92	40.45	0.04	0.01	0	0.22
Baixo	1622.255	37.1		37.1		21.72	834.75	837.31	835.97	837.36	0.000512	0.93	39.72	0.04	0.01	0	0.22
Baixo	1599.256	37.1		37.1		21.27	834.75	837.3		837.34	0.000522	0.95	39.19	0.05	0.03	0	0.22
Baixo	1549.264	37.1		37.1		18.82	834.75	837.26		837.32	0.000569	1.01	36.77	0.05	0.02	0	0.23
Baixo	1525.865	37.1		37.1		16.62	834.75	837.23		837.3	0.000812	1.17	31.6	0.07	0.02	0	0.27
Baixo	1506.375 S6	37.1		37.1		14.25	834.75	837.18		837.28	0.0012	1.39	26.72	0.1	0.03	0	0.32
Baixo	1483.175	37.1		37.1		12.17	834.5	837.11		837.24	0.001706	1.62	22.9	0.13	0.06	0	0.38
Baixo	1449.256	37.1		37.1		12.54	834.5	837.06		837.18	0.001586	1.57	23.61	0.13	0.08	0	0.37
Baixo	1399.256	37.1		37.1		12.45	834.5	836.96		837.1	0.001777	1.64	22.67	0.14	0.09	0	0.39
Baixo	1349.258	37.1	0.17	36.93		33.34	834.5	836.85		837	0.00201	1.71	23.13	0.15	0.1	0	0.41
Baixo	1299.258	37.1		37.1		12.51	834.25	836.76		836.9	0.001944	1.68	22.02	0.14	0.06	0	0.41
Baixo	1267.092	37.1		37.1		12.86	834.25	836.7		836.84	0.001941	1.68	22.13	0.14	0.03	0	0.41
Baixo	1249.258	37.1		37.1		12.73	834.25	836.66		836.8	0.001967	1.69	21.95	0.15	0.11	0	0.41
Baixo	1199.258	37.1		37.1		11.89	834.25	836.52		836.69	0.002443	1.85	20.08	0.17	0.08	0	0.45
Baixo	1171.129	37.1		37.1		11.01	834.25	836.38		836.61	0.003348	2.09	17.75	0.22	0.07	0.01	0.53
Baixo	1149.258	37.1		37.1		11.2	834	836.33		836.53	0.002867	1.98	18.71	0.2	0.13	0.01	0.49
Baixo	1099.235	37.1		37.1		12.65	834	836.23		836.39	0.002269	1.78	20.89	0.16	0.07	0.02	0.44
Baixo	1049.229 S5	37.1		37.1		16.5	833.81	836.22		836.3	0.001017	1.27	29.26	0.08	0.06	0	0.3
Baixo	999.1276	37.1		37.1		15.08	833.5	836.14		836.24	0.001269	1.4	26.57	0.1	0.04	0	0.34
Baixo	968.833	37.1		37.1		13.25	833.25	836.06		836.19	0.00172	1.59	23.29	0.13	0.04	0	0.38
Baixo	949.0698	37.1		37.1		13	833.25	836.02		836.16	0.001826	1.64	22.66	0.14	0.1	0	0.4

Rio: Bengalas		Procedimento: Validação				Escoamento: Steady Flow				Regime: Mix Flow							
Local: Nova Friburgo		Evento: Hietograma chuva 3				Condição de Contorno: Normal Depth				Perfil: Chuva 3							
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Baixo	899.0942	37.1		37.1		13.77	833.25	835.9		836.05	0.00231	1.74	21.34	0.15	0.13	0	0.45
Baixo	849.143	37.1		37.1		12.84	833	835.74		835.92	0.002812	1.88	19.68	0.18	0.14	0	0.49
Baixo	799.143	37.1		37.1		13.24	832.75	835.61		835.78	0.002747	1.85	20.06	0.17	0.13	0	0.48
Baixo	749.1328	37.1		37.1		13.12	832.5	835.48		835.65	0.002607	1.82	20.39	0.17	0.12	0	0.47
Baixo	699.1328	37.1		37.1		12.73	832.25	835.36		835.52	0.002359	1.78	20.84	0.16	0.1	0.01	0.44
Baixo	649.1328	37.1		37.1		12.45	831.75	835.28		835.41	0.001672	1.6	23.16	0.13	0.07	0.01	0.38
Baixo	599.1347	37.1		37.1		12.97	831.5	835.22		835.33	0.001296	1.45	25.54	0.11	0.06	0	0.33
Baixo	549.1295	37.1		37.1		13.41	831.25	835.17		835.27	0.001178	1.39	26.75	0.1	0.04	0.01	0.31
Baixo	499.045	37.1		37.1		13.89	831.25	835.14		835.21	0.000705	1.18	31.56	0.07	0.04	0	0.25
Baixo	448.9738	37.1		37.1		13.65	831.5	835.09		835.17	0.000932	1.3	28.65	0.09	0.07	0.01	0.29
Baixo	398.9491	37.1		37.1		12.28	832.25	834.93		835.1	0.002254	1.78	20.79	0.16	0.07	0.03	0.44
Baixo	352.748	37.1		37.1		23.37	832.88	834.93	834.03	834.99	0.001105	1.16	32.09	0.07	0.01	0	0.31
Baixo	348.9313 T1	Bridge															
Baixo	343.9721	37.1		37.1		24.14	832.75	834.9		834.94	0.000657	0.97	38.07	0.05	0.01	0.01	0.25
Baixo	298.9281	37.1		37.1		25.63	829.65	834.92		834.93	0.000058	0.44	84.87	0.01	0	0	0.08
Baixo	248.9493	37.1		37.1		37.76	825.25	834.92		834.92	0.000008	0.2	182.72	0	0	0	0.03
Baixo	199.1468	37.1		37.1		31.23	827.5	834.92		834.92	0.000012	0.25	148.49	0	0	0	0.04
Baixo	160.6351	37.1		37.1		43.48	829.84	834.92	831.12	834.92	0.000014	0.24	155.41	0			0.04
Baixo	158.6960 Bar. Catet	Inl Struct															
Baixo	155.7292	37.1		37.1		30.89	830.07	831.22	831.22	831.48	0.01544	2.29	16.2	0.27	0.29	0.01	1.01
Baixo	136.5043	37.1		37.1		18.58	827.75	828.59	829.01	830.57	0.219785	6.23	5.96	1.98	0.74	0.17	3.51
Baixo	99.03893	37.1		37.1		10.99	824.65	825.74	826.12	826.95	0.04913	4.86	7.63	1.21	3.39	0.23	1.86
Baixo	49.06651	37.1		37.1		7.29	819.75	821.1	821.76	823.51	0.094695	6.87	5.4	2.41	3.32	0.12	2.55

Rio: Bengalas		Procedimento: Simulação					Escoamento: Steady Flow					Regime: Mix Flow					
Local: Nova Friburgo		Evento: Chuva TR-10 anos					Condição de Contorno: Normal Depth					Perfil: TR10					
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	8449.32	100.3		100.3		12.97	841.25	844.46		844.85	0.000658	2.77	36.24	0.39	0.02	0.06	0.53
Alto	8399.309	100.3		100.3		16.83	841.25	844.58		844.77	0.000271	1.94	51.76	0.19	0.01	0.01	0.35
Alto	8349.302	100.3		100.3		17.34	841	844.58		844.75	0.000215	1.78	56.21	0.16	0.01	0	0.32
Alto	8299.3	100.3		100.3		17.6	841	844.58		844.73	0.000189	1.7	58.92	0.15	0.01	0	0.3
Alto	8249.299	100.3		100.3		17.63	841	844.58		844.72	0.00018	1.67	60.23	0.14	0	0	0.29
Alto	8222.821	100.3		100.3		17.66	840.75	844.58		844.71	0.000159	1.6	62.75	0.13	0	0	0.27
Alto	8199.353	100.3		100.3		17.68	840.75	844.58		844.71	0.000152	1.58	63.67	0.13	0.01	0	0.26
Alto	8149.295	100.3		100.29	0.01	24.38	840.75	844.58		844.7	0.00014	1.52	66.2	0.12	0	0	0.25
Alto	8119.148	100.3		100.29	0.01	29.78	840.75	844.58		844.69	0.000133	1.5	67.53	0.11	0.01	0.01	0.25
Alto	8049.292	100.3	0	99.79	0.51	48.09	840.5	844.58		844.68	0.000103	1.36	78.05	0.09	0	0	0.22
Alto	8027.169	100.3	0.01	100.23	0.06	30.12	840.5	844.58	841.96	844.67	0.000098	1.34	75.49	0.09	0	0.01	0.21
Alto	8024.782 T10	Bridge															
Alto	8018.111	100.3	0	100.3	0	22.66	840.34	844.55		844.64	0.000101	1.35	74.34	0.09	0	0	0.21
Alto	7999.291	100.3	0	100.3	0	21.94	840.25	844.55		844.64	0.0001	1.36	73.97	0.09	0.01	0	0.21
Alto	7949.291	100.3	0	100.3	0	20.11	840.25	844.54		844.64	0.000105	1.39	72.13	0.1	0.01	0	0.22
Alto	7899.291	100.3	0	100.3	0	18.78	840.25	844.53		844.63	0.000112	1.43	70.39	0.1	0.01	0	0.22
Alto	7849.291	100.3	0	100.3	0	17.86	840	844.52		844.62	0.000111	1.43	70.04	0.1	0.01	0	0.22
Alto	7799.291	100.3	0	100.3	0	16.76	840	844.51		844.62	0.000114	1.45	69.12	0.11	0.01	0	0.22
Alto	7749.291	100.3	0	100.3	0	17.44	840	844.51		844.61	0.0001	1.38	72.74	0.1	0	0	0.21
Alto	7699.291	100.3	0	100.3	0	18.27	839.75	844.52		844.6	0.000085	1.3	76.92	0.09	0	0	0.2
Alto	7649.291	100.3	0	100.3	0	17.83	839.75	844.51		844.6	0.000084	1.3	77.43	0.09	0	0	0.2
Alto	7611.167	100.3	0	100.3	0	19.43	839.75	844.52	841.4	844.59	0.000072	1.21	83.07	0.07	0	0	0.18
Alto	7605.934 T9	Bridge															
Alto	7600.285	100.3	0.09	99.9	0.31	51.91	839.72	844.5		844.57	0.000071	1.19	87.22	0.07	0	0	0.18
Alto	7549.258	100.3	0.67	98.66	0.97	49.95	839.75	844.48		844.57	0.000079	1.3	85.03	0.08	0	0	0.2
Alto	7499.258	100.3	0.86	99.39	0.04	27.8	839.75	844.47		844.56	0.00009	1.38	75.9	0.1	0	0	0.21
Alto	7449.258	100.3	1.2	98.45	0.65	49.92	839.75	844.46		844.56	0.000096	1.4	80.03	0.1	0	0	0.22
Alto	7399.258	100.3	1.21	96.69	2.4	55.71	839.75	844.46		844.55	0.000089	1.35	86.28	0.09	0	0.02	0.21
Alto	7336.31	100.3	1.89	94.06	4.35	110.55	839.5	844.49	841.46	844.53	0.000033	0.87	137.43	0.04	0	0	0.14
Alto	7333.883 T8	Bridge															
Alto	7321.573	100.3	2.09	96.97	1.24	110.28	840	844.47		844.51	0.000041	0.96	128.43	0.05	0	0.01	0.15
Alto	7299.261	100.3	1.34	98.91	0.05	27.47	839.75	844.4		844.51	0.000107	1.45	72.86	0.11	0.01	0	0.23
Alto	7293.445	100.3	1.24	98.99	0.07	27.4	839.75	844.39		844.5	0.000108	1.46	72.66	0.11	0	0	0.23
Alto	7249.261	100.3	1.75	98.5	0.04	27.88	839.75	844.39		844.5	0.000109	1.46	73.04	0.11	0.01	0	0.23
Alto	7199.258	100.3	2.07	98.22	0.01	28.29	839.5	844.39		844.49	0.000103	1.43	74.68	0.1	0.01	0.01	0.22
Alto	7129.429	100.3	1.88	98.39	0.03	36.35	839.5	844.41	841.1	844.47	0.000063	1.17	90.08	0.07	0	0.01	0.17
Alto	7121.824 T7	Bridge															
Alto	7120.426	100.3	1.37	98.92	0.01	36.73	839.5	844.37		844.44	0.000062	1.15	91.39	0.07	0	0	0.17
Alto	7099.259	100.3	2.4	97.9	0	29.52	839.25	844.37		844.44	0.000062	1.17	90.81	0.07	0	0	0.17
Alto	7049.26	100.3	1.72	98.57	0.01	30.67	839.25	844.37		844.44	0.000064	1.18	89.59	0.07	0	0	0.17

Rio: Bengalas		Procedimento: Simulação				Escoamento: Steady Flow				Regime: Mix Flow							
Local: Nova Friburgo		Evento: Chuva TR-10 anos				Condição de Contorno: Normal Depth				Perfil: TR10							
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	6999.26	100.3	1.31	98.99		26.73	839	844.35		844.43	0.000073	1.24	85.09	0.08	0	0	0.17
Alto	6949.26	100.3	0.63	99.67		26.18	839	844.35		844.43	0.000073	1.25	83.26	0.08	0	0	0.17
Alto	6899.26	100.3	0.35	99.95		26.25	838.75	844.35		844.42	0.000064	1.19	86.46	0.07	0	0	0.16
Alto	6849.26	100.3	0.21	100.09		26.33	838.5	844.35		844.42	0.000056	1.13	90.45	0.07	0	0	0.15
Alto	6818.892	100.3	0.07	100.23		26.63	838.5	844.35		844.41	0.000051	1.09	92.97	0.06	0	0	0.15
Alto	6785.786	100.3	0.02	100.28		26.67	838.5	844.36		844.41	0.000045	1.04	96.86	0.06	0	0	0.14
Alto	6749.258	100.3	0.01	100.29		25.31	838.25	844.36		844.41	0.000039	0.98	102.63	0.05	0	0	0.13
Alto	6721.286	100.3	0.01	100.29		23.52	838.25	844.36		844.41	0.000036	0.95	105.94	0.05	0	0	0.13
Alto	6677.863	100.3		100.3		17.97	838	844.36		844.4	0.000033	0.93	108.2	0.04	0	0	0.12
Alto	6642.27	100.3		100.3	0	18.72	838	844.35	839.71	844.4	0.000037	0.96	104.16	0.05	0	0.01	0.12
Alto	6633.780 T6	Bridge															
Alto	6631.452	100.3	0.08	100.22	0	21.79	838	844.32		844.37	0.000039	0.98	102.67	0.05	0	0	0.13
Alto	6599.255	100.3	0.01	100.29	0	24	838	844.32		844.37	0.000187	0.95	105.44	0.05	0.01	0	0.13
Alto	6549.265	100.3	1.42	98.85	0.03	42.57	838	844.32		844.36	0.000121	0.81	126.69	0.03	0.01	0	0.11
Alto	6499.265	100.3	6.65	92.91	0.74	90.43	838	844.32		844.35	0.000111	0.79	142.67	0.03	0.01	0	0.11
Alto	6449.265	100.3	4.23	93.81	2.26	89.34	838	844.31		844.34	0.000116	0.81	144.61	0.03	0.01	0	0.11
Alto	6399.265	100.3	8.25	88.14	3.9	109.33	838	844.31		844.34	0.000096	0.74	168.72	0.03	0	0	0.11
Alto	6349.265	100.3	30.58	65.11	4.61	175.48	838	844.32		844.33	0.000056	0.57	325.87	0.01	0	0	0.08
Alto	6299.265	100.3	40.71	54.26	5.33	197.62	838	844.32		844.33	0.000039	0.47	405.09	0.01	0	0	0.07
Alto	6249.265	100.3	46.33	47.89	6.07	201.42	838	844.32		844.32	0.000029	0.41	452.76	0	0	0	0.06
Alto	6185.989 S15	100.3	43.95	50.66	5.69	163.03	838	844.32		844.32	0.000035	0.46	384.74	0.01	0	0	0.07
Alto	6149.272	100.3	43.69	51.63	4.97	147.21	838.25	844.31		844.32	0.000038	0.45	367.81	0.01	0	0	0.07
Alto	6099.267	100.3	47.91	47.35	5.04	140.99	838.25	844.31		844.32	0.000039	0.46	358.01	0.01	0	0	0.07
Alto	6049.264	100.3	42	53.07	5.24	165.51	838.25	844.31		844.32	0.000058	0.55	319.3	0.01	0	0	0.08
Alto	5999.264	100.3	19.22	71.67	9.41	46.98	838.25	844.28		844.31	0.000107	0.75	137.92	0.03	0	0.01	0.11
Alto	5949.266	100.3	9.94	40.41	49.96	122.66	838.25	844.29		844.3	0.000032	0.42	230.25	0.01	0	0	0.06
Alto	5899.266	100.3	15.92	52.2	32.18	170.23	838.25	844.29		844.3	0.000048	0.51	272.84	0.01	0	0	0.08
Alto	5849.266	100.3	10.04	43.58	46.68	121.2	838.25	844.29		844.3	0.000032	0.42	291.99	0.01	0	0	0.06
Alto	5799.266	100.3	9.4	55.94	34.95	134.36	838.25	844.28		844.29	0.000053	0.54	240.59	0.01	0	0	0.08
Alto	5749.266	100.3	15.56	59.26	25.48	212.75	838.25	844.28		844.29	0.000056	0.56	275.59	0.01	0	0	0.08
Alto	5699.266	100.3	20.15	45.6	34.55	173.39	838.25	844.28		844.29	0.000029	0.41	320.92	0.01	0	0	0.06
Alto	5649.266	100.3	21.06	39.11	40.14	182.3	838.25	844.28		844.29	0.00002	0.34	449.71	0	0	0	0.05
Alto	5598.734	100.3	39.01	18.27	43.02	205.83	838.25	844.28	840.19	844.29	0.000003	0.14	536.99	0	0	0	0.02
Alto	5593.126 T5	Bridge															
Alto	5587.957	100.3	56.8	27.14	16.37	177.22	838.25	844.28		844.28	0.000008	0.22	432.32	0	0	0	0.03
Alto	5543.313	100.3	43.15	26.39	30.75	284.49	838.25	844.28	840.63	844.28	0.000014	0.26	439.34	0	0	0	0.04
Alto	5535.894 T4	Bridge															
Alto	5531.686	100.3	39.49	31.94	28.87	284.1	838.25	844.28		844.28	0.000015	0.29	440.44	0	0	0	0.04
Alto	5528.385	100.3	26.14	38.62	35.54	283.65	838.25	844.28		844.28	0.000023	0.35	436.61	0	0	0	0.05
Alto	5499.265	100.3	17.47	41.24	41.59	184.59	838.25	844.27		844.28	0.000065	0.55	235.63	0.01	0	0	0.08

<u>Rio:</u> Bengalas		<u>Procedimento:</u> Simulação					<u>Escoamento:</u> Steady Flow					<u>Regime:</u> Mix Flow					
<u>Local:</u> Nova Friburgo		<u>Evento:</u> Chuva TR-10 anos					<u>Condição de Contorno:</u> Normal Depth					<u>Perfil:</u> TR10					
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	5449.271	100.3	6.77	61.14	32.39	208.68	838.25	844.25		844.27	0.000143	0.78	185.77	0.02	0.01	0	0.13
Alto	5399.302	100.3	10.05	66.4	23.84	138.5	838.25	844.23		844.27	0.000187	0.92	160.55	0.03	0.01	0	0.14
Alto	5349.307	100.3	8.76	63.8	27.73	128.11	838.25	844.21		844.25	0.000315	1.12	133.57	0.04	0.01	0	0.18
Alto	5289.961	100.3	3.75	48.83	47.71	67.87	838.25	844.19		844.24	0.000198	0.87	110.05	0.05	0.01	0	0.14
Alto	5249.313	100.3	3.15	80.25	16.91	118.06	838.25	844.17		844.23	0.000291	1.13	139.8	0.05	0.01	0	0.18
Alto	5199.299	100.3	3.07	96.68	0.56	33.31	838.25	844.15		844.21	0.000276	1.13	93.25	0.06	0.01	0.01	0.18
Alto	5149.283	100.3	2.38	97.67	0.26	37.86	838.25	844.15		844.2	0.00021	0.95	108.86	0.05	0.01	0	0.16
Alto	5119.450 S13	100.3	0.8	99.35	0.15	37.97	838.25	844.15		844.19	0.000174	0.91	115.49	0.04	0.02	0	0.14
Alto	5049.23	100.3	2.38	97.75	0.17	38.78	838.5	844.11		844.17	0.000275	1.1	96.53	0.06	0.01	0	0.17
Alto	4999.153	100.3	0.79	99.33	0.18	34.34	838.5	844.11		844.16	0.000226	1	103.94	0.05	0.01	0	0.16
Alto	4949.088	100.3	0.48	99.63	0.19	32.91	838.5	844.09		844.14	0.000268	1.06	96.91	0.06	0.02	0	0.17
Alto	4899.062	100.3	1.01	98.94	0.35	33.08	838.75	844.05		844.13	0.000378	1.21	85.22	0.07	0.02	0	0.2
Alto	4849.056	100.3	1.44	98.3	0.56	39.89	838.75	843.98		844.1	0.000631	1.53	69.44	0.12	0.05	0.01	0.25
Alto	4799.154	100.3	0.27	99.98	0.06	23.07	838.75	843.79		844.04	0.001696	2.2	46.55	0.25	0.09	0	0.38
Alto	4749.154	100.3		100.27	0.03	15.76	838.75	843.67		843.94	0.001953	2.31	43.69	0.27	0.14	0.03	0.41
Alto	4699.178	100.3		100.3		10.08	839	843.23		843.77	0.004705	3.26	30.75	0.54	0.18	0.05	0.6
Alto	4649.212	100.3		100.3		12.38	839	843.16		843.54	0.002971	2.72	36.89	0.38	0.14	0.01	0.5
Alto	4599.202	100.3		100.3		12.83	839.25	843.05		843.38	0.002651	2.58	38.9	0.34	0.1	0.01	0.47
Alto	4561.047	100.3		100.3		14.42	839.25	842.96		843.28	0.002552	2.51	39.98	0.32	0.06	0.02	0.48
Alto	4535.883 S12	100.3		100.3		17.43	839.5	842.94		843.2	0.002122	2.25	44.54	0.26	0.08	0	0.45
Alto	4499.18	100.3		100.3		17.46	839.25	842.87		843.12	0.002	2.22	45.19	0.25	0.09	0.01	0.44
Alto	4449.196	100.3		100.3		18.74	839	842.8		843.02	0.001761	2.09	47.9	0.22	0.09	0	0.42
Alto	4399.197	100.3		100.3		18.95	839	842.72		842.93	0.001714	2.07	48.45	0.22	0.06	0.02	0.41
Alto	4349.205	100.3	13.81	86.49		27.79	838.75	842.71		842.85	0.000956	1.57	61.87	0.14	0.02	0.03	0.31
Alto	4320.028	100.3	40.03	60.27		99.83	838.5	842.75		842.8	0.000393	1.01	100.23	0.05	0.04	0.01	0.2
Alto	4249.201	100.3		100.3		25.5	838.25	842.63		842.76	0.000944	1.56	64.48	0.12	0.03	0	0.31
Alto	4214.434	100.3		100.3		26.22	838.25	842.61		842.72	0.000879	1.51	66.53	0.12	0.01	0	0.3
Alto	4199.201	100.3		100.3		26.61	838	842.6		842.71	0.000854	1.49	67.53	0.11	0.03	0.02	0.3
Alto	4149.204	100.3	29.4	70.89	0.01	75.07	838	842.61		842.66	0.000331	0.96	102.71	0.05	0.02	0	0.19
Alto	4099.198	100.3	0	100.29	0.01	30.54	837.75	842.56		842.64	0.000503	1.23	81.81	0.08	0.01	0	0.23
Alto	4081.474 S11	100.3	0	100.29	0.01	31.54	837.75	842.56		842.63	0.000464	1.19	84.23	0.07	0.02	0	0.22
Alto	4049.185	100.3		100.3	0	26.12	837.75	842.52		842.61	0.000633	1.37	73.2	0.1	0.04	0	0.26
Alto	3999.199	100.3		100.3		23.42	837.75	842.44		842.57	0.000903	1.58	63.58	0.13	0.05	0	0.31
Alto	3949.209	100.3		100.3		22.74	837.75	842.38		842.52	0.001086	1.69	59.51	0.14	0.06	0	0.33
Alto	3899.258	100.3		100.3		22.3	837.75	842.28		842.46	0.001473	1.86	53.91	0.18	0.07	0	0.38
Alto	3849.281	100.3		100.3		22.43	837.75	842.22		842.38	0.00133	1.81	55.56	0.17	0.08	0.01	0.37
Alto	3799.282	100.3		100.3		17.86	838	842.06		842.3	0.001899	2.17	46.19	0.24	0.1	0	0.43
Alto	3749.292	100.3		100.3		16.99	838	841.91		842.19	0.002238	2.32	43.14	0.28	0.06	0	0.47
Alto	3723.315	100.3		100.3		17.74	838	841.86		842.13	0.002231	2.29	43.72	0.27	0.05	0	0.47
Alto	3699.295	100.3		100.3		17.95	838	841.81		842.07	0.002221	2.28	43.98	0.27	0.03	0	0.47

Rio: Bengalas		Procedimento: Simulação				Escoamento: Steady Flow				Regime: Mix Flow							
Local: Nova Friburgo		Evento: Chuva TR-10 anos				Condição de Contorno: Normal Depth				Perfil: TR10							
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	3686.538	100.3		100.3		18.04	838	841.78		842.04	0.002221	2.28	44.06	0.26	0.08	0	0.46
Alto	3649.29	100.3		100.3		17.84	838	841.7		841.96	0.002173	2.26	44.31	0.26	0.04	0	0.46
Alto	3628.303	100.3		100.3		18.25	838	841.66		841.91	0.002071	2.22	45.2	0.25	0.04	0.01	0.45
Alto	3609.762 S10	100.3		100.3		20.03	838.25	841.64		841.87	0.001936	2.12	47.39	0.23	0.06	0	0.44
Alto	3574.84	100.3		100.3		18.59	838	841.59		841.8	0.001661	2.06	48.81	0.22	0.04	0	0.4
Alto	3549.256	100.3		100.23	0.07	61.53	838	841.54		841.76	0.00168	2.07	49.81	0.22	0.1	0.01	0.41
Alto	3499.259	100.3		100.3		17.38	837.75	841.39		841.66	0.002195	2.29	43.78	0.27	0.05	0	0.46
Alto	3476.621	100.3		100.3		17.1	837.75	841.32		841.61	0.00238	2.36	42.46	0.28	0.07	0	0.48
Alto	3449.258	100.3		100.3		16.87	837.75	841.23		841.54	0.002657	2.46	40.84	0.31	0.13	0.01	0.5
Alto	3399.261	100.3		100.3		16.94	837.5	841.12		841.41	0.002425	2.38	42.1	0.29	0.12	0.01	0.48
Alto	3349.259	100.3		100.3		17.62	837.5	841.01		841.28	0.002261	2.3	43.58	0.27	0.1	0.01	0.47
Alto	3299.259	100.3		100.3		18.81	837.25	840.93		841.17	0.001947	2.15	46.62	0.24	0.09	0.01	0.44
Alto	3249.258	100.3		100.3		19.65	837.25	840.86		841.07	0.001676	2.02	49.6	0.21	0.08	0.01	0.41
Alto	3199.258	100.3		100.28	0.02	25.15	837	840.8		840.99	0.001469	1.93	52.01	0.19	0.07	0.01	0.38
Alto	3149.258	100.3		98.43	1.87	35.53	836.75	840.75		840.91	0.001176	1.78	57.7	0.16	0.05	0.01	0.35
Alto	3099.247	100.3		97.88	2.42	36.24	836.75	840.73		840.85	0.000849	1.55	66.13	0.12	0.03	0.01	0.3
Alto	3058.003 S9	100.3		98.94	1.36	35.19	836.5	840.72		840.81	0.000588	1.36	75.11	0.09	0.04	0	0.25
Alto	2999.242	100.3		99.67	0.63	26.98	836.5	840.63		840.76	0.000947	1.64	61.53	0.14	0.05	0	0.32
Alto	2949.221	100.3		99.77	0.53	31.47	836.25	840.57		840.71	0.001058	1.7	60.05	0.15	0.05	0.01	0.33
Alto	2899.194	100.3		94.62	5.68	38.57	836.25	840.54		840.66	0.000813	1.53	67.67	0.12	0.04	0	0.29
Alto	2849.2	100.3		96.17	4.13	35.64	836	840.5		840.62	0.000755	1.5	68.17	0.11	0.04	0	0.28
Alto	2799.187	100.3		98.34	1.96	30.42	836	840.46		840.58	0.00077	1.56	65.54	0.12	0.04	0	0.28
Alto	2749.187	100.3		99.68	0.62	22.99	835.75	840.41		840.54	0.000782	1.6	63.26	0.13	0.04	0	0.28
Alto	2699.212	100.3		99.7	0.6	22.97	835.72	840.36		840.5	0.00083	1.64	61.77	0.14	0.02	0	0.29
Alto	2677.167	100.3		98.4	1.9	33.08	835.5	840.35		840.48	0.000776	1.57	65.09	0.12	0.02	0	0.28
Alto	2649.215	100.3		99.46	0.84	26.49	835.5	840.32		840.46	0.000814	1.62	62.7	0.13	0.04	0.01	0.28
Alto	2599.223	100.3		99.57	0.73	29.25	835.25	840.31		840.41	0.000618	1.44	70.44	0.11	0.03	0.01	0.25
Alto	2552.887	100.3		98.04	2.26	45.44	835.25	840.3	837.61	840.38	0.000472	1.29	80.47	0.08	0	0	0.22
Alto	2547.430 T3 Bridge																
Alto	2543.247	100.3	0.12	97.92	2.26	61.71	835.25	840.26		840.34	0.000444	1.23	84.9	0.08	0.01	0	0.22
Alto	2525.589	100.3	0.11	98.31	1.88	45.8	835.25	840.26		840.33	0.000404	1.22	84.85	0.07	0.01	0	0.21
Alto	2499.225	100.3	0.08	98.42	1.8	50.24	835.25	840.25		840.32	0.000365	1.17	88.83	0.07	0.02	0	0.2
Alto	2449.235	100.3	0.08	99.02	1.2	45.31	835.25	840.24		840.3	0.000324	1.11	92.73	0.06	0.02	0	0.19
Alto	2380.636	100.3		96.77	3.53	86.47	835.25	840.22	837.31	840.28	0.000278	1.03	103.3	0.05	0.01	0	0.18
Alto	2349.239	100.3		99.13	1.17	44.12	835.25	840.21	837.3	840.27	0.000291	1.05	97.81	0.06	0.01	0.01	0.18
Alto	2299.246	100.3		62.48	37.82	203.22	835.25	840.23	837.4	840.25	0.000126	0.69	167.35	0.02	0.01	0	0.12
Alto	2249.258	100.3	0.03	83.8	16.47	147.23	835.5	840.2	837.46	840.24	0.000236	0.95	146.27	0.04	0.01	0.01	0.16
Alto	2199.258	100.3	0.22	53.99	46.09	142.39	835.5	840.21	837.42	840.22	0.000089	0.59	233.93	0.01	0	0	0.1
Alto	2173.195	100.3	0.07	23.73	76.5	240.74	835.5	840.22	837.43	840.22	0.000017	0.26	409.24	0	0	0	0.04
Alto	2149.258	100.3	0.15	39.15	61	193.7	835.5	840.21	837.44	840.22	0.000045	0.42	345.58	0.01	0.01	0	0.07

Rio: Bengalas		Procedimento: Simulação						Escoamento:			Steady Flow		Regime: Mix Flow				
Local: Nova Friburgo		Evento: Chuva TR-10 anos						Condição de Contorno:			Normal Depth		Perfil: TR10				
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Baixo	2094.28	179.7	6.14	67.09	106.5	342.24	835.5	840.2		840.21	0.000119	0.69	472.37	0.01	0	0	0.12
Baixo	2086.245	179.7	7.36	64.59	107.8	343.34	835.5	840.2	838.44	840.21	0.00011	0.66	480.79	0.01	0	0	0.11
Baixo	2081.187 T2	Bridge															
Baixo	2076.63	179.7	8.66	64.4	106.6	343.86	835.5	840.19		840.2	0.000114	0.67	489.08	0.01	0	0	0.12
Baixo	2049.26	179.7	1.32	80.83	97.55	137.59	835.5	840.17	838.41	840.2	0.000182	0.86	282.37	0.03	0	0	0.15
Baixo	1999.26	179.7	0.28	25.54	153.9	224.44	835.5	840.18	838.46	840.19	0.000019	0.28	420.38	0.01	0	0.01	0.05
Baixo	1949.26	179.7	1.3	135.18	43.22	144	835.25	840.09	838.08	840.18	0.00058	1.52	180.49	0.09	0.04	0.01	0.26
Baixo	1899.26	179.7	1.96	162.76	14.98	61.14	835.25	839.97	837.97	840.14	0.000888	1.87	104.25	0.17	0.04	0	0.32
Baixo	1849.26	179.7	2.45	165.27	11.98	78.23	835.25	839.93	837.84	840.09	0.000834	1.83	108.86	0.16	0.02	0.01	0.31
Baixo	1819.457	179.7	4.67	158.57	16.46	185.74	835	839.93	837.7	840.06	0.000668	1.67	146.32	0.13	0.02	0	0.28
Baixo	1785.207	179.7	8.97	158.93	11.8	198.05	835	839.92	837.59	840.03	0.000576	1.56	153.99	0.11	0.02	0	0.26
Baixo	1749.264	179.7	7.07	162.29	10.34	194.65	835	839.91	837.49	840.01	0.000529	1.49	157.86	0.1	0.03	0	0.25
Baixo	1699.257	179.7	7.98	159.48	12.24	195.8	835	839.88	837.38	839.98	0.000484	1.45	166.05	0.1	0.01	0	0.24
Baixo	1674.594	179.7	8.57	169.69	1.44	78.8	835	839.85	837.4	839.97	0.000574	1.57	127.23	0.12	0.01	0	0.26
Baixo	1649.256	179.7	9.18	170.3	0.22	58.07	834.75	839.83	837.4	839.95	0.00061	1.61	122.4	0.13	0.02	0	0.27
Baixo	1622.255	179.7	12.28	167.39	0.03	53.07	834.75	839.81	837.4	839.93	0.000619	1.62	122.88	0.13	0.01	0.01	0.27
Baixo	1599.256	179.7	21.68	158	0.02	101.2	834.75	839.81		839.92	0.000567	1.55	150.14	0.11	0.01	0.02	0.26
Baixo	1549.264	179.7	113.28	66.37	0.05	193.52	834.75	839.85		839.88	0.000121	0.71	245.25	0.03	0.01	0.01	0.12
Baixo	1525.865	179.7	23.04	156.66		56.87	834.75	839.68		839.86	0.00096	1.95	105.5	0.17	0.02	0.01	0.32
Baixo	1506.375 S6	179.7	23.87	155.82	0.01	41.61	834.75	839.59		839.83	0.001431	2.29	87.09	0.24	0.04	0.01	0.38
Baixo	1483.175	179.7	24.05	155.65		58.36	834.5	839.44		839.78	0.002218	2.72	75.44	0.34	0.05	0.06	0.46
Baixo	1449.256	179.7	55.32	124.1	0.28	148.95	834.5	839.52		839.67	0.001174	2.05	156.72	0.15	0.03	0.04	0.34
Baixo	1399.256	179.7	112.12	65.61	1.97	222.33	834.5	839.58		839.61	0.000296	1.05	364.56	0.03	0.01	0	0.17
Baixo	1349.258	179.7	122.28	57.16	0.26	172.65	834.5	839.57		839.59	0.000221	0.92	389.18	0.02	0.02	0	0.15
Baixo	1299.258	179.7	87.75	90.65	1.3	207.82	834.25	839.52		839.57	0.000495	1.4	278.2	0.05	0.02	0	0.23
Baixo	1267.092	179.7	64.2	114.33	1.17	217.49	834.25	839.45		839.55	0.000745	1.73	223.22	0.1	0.02	0.01	0.28
Baixo	1249.258	179.7	35.57	142.81	1.31	133.64	834.25	839.31		839.52	0.001279	2.22	124.02	0.2	0.07	0.01	0.37
Baixo	1199.258	179.7	26.5	151.28	1.92	84.27	834.25	839.17		839.44	0.001728	2.49	96.82	0.27	0.07	0.02	0.43
Baixo	1171.129	179.7	8.98	169.22	1.5	79.2	834.25	838.84	837.89	839.35	0.003323	3.26	76.02	0.51	0.07	0	0.58
Baixo	1149.258	179.7	6.3	171.67	1.73	70.25	834	838.74	837.73	839.27	0.00332	3.3	71.27	0.53	0.13	0.06	0.58
Baixo	1099.235	179.7	6.15	163.85	9.7	121.95	834	838.75	837.39	839.08	0.002032	2.65	105.17	0.33	0.07	0.05	0.47
Baixo	1049.229 S5	179.7	2.05	157.9	19.75	106.94	833.81	838.8		838.96	0.00097	1.94	142.37	0.17	0.05	0	0.33
Baixo	999.1276	179.7	2.1	146.29	31.31	126	833.5	838.76		838.91	0.000923	1.93	157.35	0.16	0.03	0	0.32
Baixo	968.833	179.7	1.96	139.84	37.9	149.61	833.25	838.72		838.88	0.001146	2.03	165.66	0.17	0.02	0	0.35
Baixo	949.0698	179.7	1.66	145.98	32.06	75.11	833.25	838.65		838.85	0.001405	2.2	123.91	0.2	0.07	0	0.38
Baixo	899.0942	179.7	1.84	151.55	26.31	126.26	833.25	838.59		838.78	0.001266	2.1	141.75	0.19	0.09	0.02	0.37
Baixo	849.143	179.7	0.32	176.99	2.39	39.8	833	838.29		838.67	0.00255	2.78	70.16	0.39	0.12	0.01	0.51
Baixo	799.143	179.7	0.16	178.21	1.33	54.07	832.75	838.18		838.55	0.002371	2.7	72.31	0.37	0.12	0	0.5
Baixo	749.1328	179.7	0.04	174.6	5.05	85.75	832.5	838.06	836.64	838.43	0.002374	2.7	81.96	0.36	0.13	0.01	0.49
Baixo	699.1328	179.7	0.01	179.69		20.75	832.25	837.86		838.29	0.002766	2.92	61.51	0.44	0.14	0	0.52

Rio: Bengalas **Procedimento:** Simulação **Escoamento:** Steady Flow **Regime:** Mix Flow
Local: Nova Friburgo **Evento:** Chuva TR-10 anos **Condição de Contorno:** Normal Depth **Perfil:** TR10

Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Baixo	649.1328	179.7		179.7		18.08	831.75	837.7		838.15	0.002816	2.98	60.29	0.45	0.13	0.01	0.52
Baixo	599.1347	179.7		179.7		18.53	831.5	837.59		838.01	0.002544	2.85	63.01	0.41	0.12	0.01	0.49
Baixo	549.1295	179.7		179.7		20.02	831.25	837.49		837.87	0.002421	2.74	65.63	0.38	0.11	0.01	0.48
Baixo	499.045	179.7		179.7		19.27	831.25	837.4		837.75	0.001982	2.6	69.01	0.35	0.11	0.01	0.44
Baixo	448.9738	179.7		179.7		18.3	831.5	837.21		837.63	0.002576	2.88	62.32	0.42	0.23	0.08	0.5
Baixo	398.9491	179.7		179.7		15.12	832.25	836.1	836.1	837.32	0.01094	4.89	36.74	1.22	0.26	0.25	1
Baixo	352.748	179.7		179.7		28.73	832.88	836.23	835.39	836.6	0.00316	2.72	65.97	0.38	0.02	0	0.57
Baixo	348.9313 T1 Bridge																
Baixo	343.9721	179.7		179.7		29.02	832.75	836.08		836.42	0.002692	2.58	69.58	0.34	0.04	0.07	0.53
Baixo	298.9281	179.7	0.55	179.15		31.81	829.65	836.19		836.31	0.000509	1.51	121.51	0.12	0.01	0.03	0.23
Baixo	248.9493	179.7	1.41	178.29		56.11	825.25	836.24		836.27	0.000092	0.76	247.14	0.03	0.01	0	0.1
Baixo	199.1468	179.7	1.79	177.91		45.66	827.5	836.22		836.27	0.000132	0.94	201.83	0.04	0	0	0.12
Baixo	160.6351	179.7	0.02	179.68		46.23	829.84	836.22	832.15	836.26	0.000123	0.84	213.81	0.04			0.12
Baixo	158.6960 Bar. Catet Inl Struct																
Baixo	155.7292	179.7		179.7		34.39	830.07	832.18	832.18	832.89	0.011556	3.74	47.99	0.71	0.22	0	1.01
Baixo	136.5043	179.7		179.7		31.75	827.75	830.16	830.16	830.92	0.011186	3.85	46.67	0.76	0.41	0.02	1.01
Baixo	99.03893	179.7		179.7		23.66	824.65	827.75	827.75	828.67	0.010766	4.24	42.41	0.91	0.54	0.02	1.01
Baixo	49.06651	179.7		179.7		18.05	819.75	823.78	823.78	824.87	0.01084	4.64	38.77	1.09			1.01

<u>Rio:</u> Bengalas		<u>Procedimento:</u> Simulação						<u>Escoamento:</u>			Steady Flow		<u>Regime:</u> Mix Flow				
<u>Local:</u> Nova Friburgo		<u>Evento:</u> Chuva TR-20 anos						<u>Condição de Contorno:</u>			Normal Depth		<u>Perfil:</u> TR20				
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	8449.32	119.5		119.5		13.02	841.25	844.85		845.28	0.000637	2.89	41.37	0.43	0.02	0.06	0.52
Alto	8399.309	119.5		119.5		16.88	841.25	844.98		845.19	0.000267	2.04	58.59	0.21	0.01	0.01	0.35
Alto	8349.302	119.5		119.5		17.39	841	844.99		845.17	0.000216	1.89	63.25	0.18	0.01	0	0.32
Alto	8299.3	119.5		119.5		17.65	841	844.99		845.16	0.000192	1.81	66.07	0.17	0.01	0	0.3
Alto	8249.299	119.5		119.5		17.67	841	844.98		845.14	0.000184	1.77	67.39	0.16	0	0.01	0.29
Alto	8222.821	119.5		117.72	1.78	93.14	840.75	844.99		845.13	0.000157	1.68	79.42	0.14	0	0	0.27
Alto	8199.353	119.5		118.81	0.69	34.57	840.75	844.99		845.13	0.000155	1.68	74.51	0.14	0.01	0	0.27
Alto	8149.295	119.5	0.42	117.4	1.68	50.67	840.75	844.99		845.12	0.000136	1.6	82.83	0.13	0	0	0.25
Alto	8119.148	119.5	0.69	113.82	4.99	137	840.75	845		845.11	0.000121	1.52	98.98	0.11	0.01	0.01	0.24
Alto	8049.292	119.5	0.39	111.99	7.12	107.01	840.5	845.01		845.1	0.000092	1.37	110.04	0.09	0	0	0.21
Alto	8027.169	119.5	0.83	115.81	2.86	52.09	840.5	845	842.14	845.09	0.000095	1.4	93.02	0.1	0	0.01	0.21
Alto	8024.782 T10	Bridge															
Alto	8018.111	119.5	0.38	118.26	0.86	51.92	840.34	844.95		845.06	0.000103	1.45	89.96	0.11	0	0	0.22
Alto	7999.291	119.5	0.35	117.81	1.34	87.26	840.25	844.95		845.05	0.000101	1.45	93.1	0.11	0.01	0	0.22
Alto	7949.291	119.5	0.33	118.51	0.66	51.01	840.25	844.93		845.05	0.000108	1.5	86.48	0.11	0.01	0	0.22
Alto	7899.291	119.5	0.28	118.63	0.59	49.83	840.25	844.92		845.04	0.000116	1.54	83.95	0.12	0.01	0	0.23
Alto	7849.291	119.5	0.32	118.29	0.89	77.41	840	844.92		845.04	0.000115	1.54	86.92	0.12	0.01	0	0.23
Alto	7799.291	119.5	0.24	118.84	0.42	45.71	840	844.9		845.03	0.00012	1.57	81.41	0.13	0.01	0	0.23
Alto	7749.291	119.5	0.24	119.01	0.25	45.18	840	844.91		845.02	0.000106	1.5	84.5	0.11	0	0	0.22
Alto	7699.291	119.5	0.34	119	0.16	43.32	839.75	844.91		845.01	0.00009	1.42	88.78	0.1	0	0	0.21
Alto	7649.291	119.5	0.28	119.1	0.12	42.01	839.75	844.91		845.01	0.00009	1.41	88.67	0.1	0	0	0.2
Alto	7611.167	119.5	0.51	118.04	0.94	64.25	839.75	844.91	841.58	845	0.000075	1.3	97.78	0.09	0	0.01	0.19
Alto	7605.934 T9	Bridge															
Alto	7600.285	119.5	1.88	112.59	5.03	91.52	839.72	844.9		844.97	0.000067	1.23	116.95	0.07	0	0	0.18
Alto	7549.258	119.5	2.7	112.53	4.26	58.21	839.75	844.87		844.96	0.000077	1.36	106.54	0.09	0	0	0.2
Alto	7499.258	119.5	3.09	116.24	0.17	29.38	839.75	844.85		844.96	0.000093	1.48	86.86	0.11	0	0	0.22
Alto	7449.258	119.5	4.09	112	3.41	61.67	839.75	844.85		844.95	0.000092	1.45	101.99	0.1	0	0	0.22
Alto	7399.258	119.5	3.63	107.33	8.54	55.71	839.75	844.85		844.94	0.00008	1.36	108.3	0.09	0	0.02	0.21
Alto	7336.31	119.5	5.94	100.16	13.41	160.54	839.5	844.89	841.61	844.92	0.000027	0.84	191.47	0.03	0	0	0.13
Alto	7333.883 T8	Bridge															
Alto	7321.573	119.5	5.51	107.37	6.62	163.1	840	844.87		844.91	0.000037	0.96	183.39	0.04	0	0.01	0.15
Alto	7299.261	119.5	3.87	115.12	0.51	44.96	839.75	844.79		844.91	0.000106	1.54	85.6	0.12	0.01	0	0.24
Alto	7293.445	119.5	3.38	115.66	0.46	42.46	839.75	844.78		844.9	0.000108	1.55	84.79	0.12	0	0	0.24
Alto	7249.261	119.5	4.61	114.65	0.24	39.8	839.75	844.78		844.9	0.00011	1.55	84.66	0.12	0.01	0	0.23
Alto	7199.258	119.5	5.12	114.26	0.12	36.19	839.5	844.77		844.89	0.000105	1.53	85.93	0.12	0.01	0.01	0.22
Alto	7129.429	119.5	5.28	112.85	1.37	98.1	839.5	844.8	841.29	844.87	0.000063	1.24	114.28	0.07	0	0	0.17
Alto	7121.824 T7	Bridge															
Alto	7120.426	119.5	5.27	113.26	0.97	94.26	839.5	844.77		844.85	0.000062	1.22	115.38	0.07	0	0	0.17
Alto	7099.259	119.5	5.6	113.84	0.06	30.66	839.25	844.77		844.84	0.000065	1.26	102.88	0.08	0	0	0.18
Alto	7049.26	119.5	4.59	114.81	0.11	32.13	839.25	844.76		844.84	0.000067	1.28	101.72	0.08	0	0	0.18

Rio: Bengalas		Procedimento: Simulação				Escoamento: Steady Flow				Regime: Mix Flow							
Local: Nova Friburgo		Evento: Chuva TR-20 anos				Condição de Contorno: Normal Depth				Perfil: TR20							
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	6999.26	119.5	3.89	115.56	0.05	30.69	839	844.75		844.84	0.000078	1.34	96.52	0.09	0	0	0.18
Alto	6949.26	119.5	2.71	116.74	0.05	30.7	839	844.74		844.83	0.000079	1.36	94.5	0.09	0	0	0.18
Alto	6899.26	119.5	2.05	117.4	0.05	30.72	838.75	844.74		844.83	0.00007	1.3	97.72	0.09	0	0	0.17
Alto	6849.26	119.5	1.65	117.8	0.05	30.73	838.5	844.74		844.82	0.000062	1.24	101.73	0.08	0	0	0.16
Alto	6818.892	119.5	1.24	118.17	0.09	53.05	838.5	844.74		844.82	0.000057	1.2	106.63	0.07	0	0	0.16
Alto	6785.786	119.5	1.03	118.38	0.08	51.96	838.5	844.75		844.81	0.000051	1.15	110.54	0.07	0	0	0.15
Alto	6749.258	119.5	0.89	118.58	0.03	30.76	838.25	844.75		844.81	0.000044	1.09	114.13	0.06	0	0	0.14
Alto	6721.286	119.5	0.76	118.71	0.03	30.77	838.25	844.75		844.81	0.000041	1.05	117.35	0.06	0	0	0.14
Alto	6677.863	119.5	1.14	118.33	0.03	92.45	838	844.75		844.81	0.000038	1.03	125.68	0.05	0	0	0.13
Alto	6642.27	119.5	1.28	117.87	0.34	91.92	838	844.75	839.9	844.8	0.000042	1.06	123.63	0.06	0	0.01	0.13
Alto	6633.780 T6	Bridge															
Alto	6631.452	119.5	1.01	118.37	0.12	79.25	838	844.7		844.76	0.000045	1.09	117.62	0.06	0	0	0.14
Alto	6599.255	119.5	1.56	117.71	0.23	69.61	838	844.7		844.76	0.000209	1.05	120.34	0.06	0.01	0.01	0.13
Alto	6549.265	119.5	5.2	113.08	1.22	63.42	838	844.7		844.74	0.000127	0.87	146.86	0.04	0.01	0	0.11
Alto	6499.265	119.5	20.24	96.07	3.19	115.33	838	844.71		844.73	0.000094	0.76	182.62	0.03	0.01	0	0.1
Alto	6449.265	119.5	9.58	104.3	5.62	114.7	838	844.7		844.73	0.000113	0.84	183.57	0.03	0.01	0	0.11
Alto	6399.265	119.5	15.88	96.22	7.4	125.94	838	844.7		844.72	0.00009	0.75	212.19	0.02	0	0	0.1
Alto	6349.265	119.5	42.86	69.26	7.38	175.48	838	844.7		844.71	0.000049	0.56	393.19	0.01	0	0	0.08
Alto	6299.265	119.5	54.04	58.06	7.41	208.41	838	844.7		844.71	0.000034	0.46	483.14	0.01	0	0	0.06
Alto	6249.265	119.5	58.38	51.94	9.18	204.09	838	844.7		844.71	0.000027	0.41	530.92	0	0	0	0.06
Alto	6185.989 S15	119.5	56.33	55.42	7.75	163.03	838	844.7		844.71	0.000032	0.46	447.28	0.01	0	0	0.06
Alto	6149.272	119.5	55.4	56.91	7.19	147.21	838.25	844.7		844.7	0.000035	0.46	424.29	0.01	0	0	0.07
Alto	6099.267	119.5	59.81	51.98	7.71	142.99	838.25	844.7		844.7	0.000036	0.46	412.76	0.01	0	0	0.07
Alto	6049.264	119.5	54.53	56.86	8.12	165.51	838.25	844.69		844.7	0.000051	0.54	382.98	0.01	0	0	0.08
Alto	5999.264	119.5	25.14	80.22	14.14	52.9	838.25	844.66		844.69	0.000102	0.77	156.66	0.03	0	0.01	0.11
Alto	5949.266	119.5	11.97	40.87	66.65	141.02	838.25	844.68		844.68	0.000025	0.39	281.01	0.01	0	0	0.06
Alto	5899.266	119.5	21.74	55.75	42.01	189.76	838.25	844.67		844.68	0.000041	0.5	342.05	0.01	0	0	0.07
Alto	5849.266	119.5	13.13	47.98	58.39	128.58	838.25	844.67		844.68	0.000029	0.42	339.81	0.01	0	0	0.06
Alto	5799.266	119.5	11.96	59.43	48.11	143.53	838.25	844.67		844.68	0.000045	0.53	294.06	0.01	0	0	0.08
Alto	5749.266	119.5	23.12	60.95	35.43	236.26	838.25	844.67		844.68	0.000045	0.53	362.98	0.01	0	0	0.08
Alto	5699.266	119.5	26.65	49.25	43.6	183.26	838.25	844.67		844.67	0.000026	0.41	389.75	0.01	0	0	0.06
Alto	5649.266	119.5	28.04	43.21	48.25	182.3	838.25	844.67		844.67	0.000019	0.35	520.05	0	0	0	0.05
Alto	5598.734	119.5	49.17	19.5	50.83	205.83	838.25	844.67	840.37	844.67	0.000003	0.14	616.38	0	0	0	0.02
Alto	5593.126 T5	Bridge															
Alto	5587.957	119.5	71.16	28.54	19.8	177.22	838.25	844.67		844.67	0.000007	0.21	500.67	0	0	0	0.03
Alto	5543.313	119.5	52.42	26.84	40.24	314.83	838.25	844.67	840.85	844.67	0.000001	0.24	555.05	0	0	0	0.04
Alto	5535.894 T4	Bridge															
Alto	5531.686	119.5	48.69	32.49	38.31	314.24	838.25	844.67		844.67	0.000012	0.27	556.03	0	0	0	0.04
Alto	5528.385	119.5	32.55	39.48	47.47	313.86	838.25	844.66		844.67	0.000018	0.33	552.24	0	0	0	0.05
Alto	5499.265	119.5	22.88	41.03	55.59	213.98	838.25	844.66		844.67	0.000048	0.5	313.11	0.01	0	0	0.07

Rio: Bengalas		Procedimento: Simulação					Escoamento: Steady Flow					Regime: Mix Flow					
Local: Nova Friburgo		Evento: Chuva TR-20 anos					Condição de Contorno: Normal Depth					Perfil: TR20					
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	5449.271	119.5	13.31	60.8	45.38	238.87	838.25	844.65		844.66	0.000103	0.71	274.04	0.02	0.01	0	0.11
Alto	5399.302	119.5	14.06	68.06	37.38	188.27	838.25	844.63		844.66	0.000145	0.86	222.79	0.02	0.01	0	0.13
Alto	5349.307	119.5	12.14	63.96	43.4	168.12	838.25	844.61		844.65	0.00023	1.02	193.37	0.03	0.01	0	0.15
Alto	5289.961	119.5	7.8	51.2	60.5	74.15	838.25	844.59		844.63	0.000158	0.83	138.54	0.04	0.01	0	0.13
Alto	5249.313	119.5	6.22	79.3	33.98	133.91	838.25	844.59		844.62	0.000208	1.02	192.34	0.04	0.01	0	0.15
Alto	5199.299	119.5	5.29	111.32	2.88	44.53	838.25	844.54		844.61	0.000273	1.2	108.31	0.07	0.01	0.01	0.18
Alto	5149.283	119.5	4.1	113.25	2.15	49.65	838.25	844.54		844.59	0.000204	1	125.82	0.05	0.01	0	0.16
Alto	5119.450 S13	119.5	2.03	115.73	1.74	50.77	838.25	844.54		844.59	0.000174	0.96	132.88	0.05	0.01	0	0.15
Alto	5049.23	119.5	6.06	111.7	1.74	48.95	838.5	844.51		844.57	0.000263	1.14	113.82	0.06	0.01	0	0.17
Alto	4999.153	119.5	1.43	116.44	1.62	42.32	838.5	844.5		844.55	0.000228	1.07	118.73	0.06	0.01	0	0.16
Alto	4949.088	119.5	0.92	116.79	1.79	39.57	838.5	844.48		844.54	0.000265	1.13	110.94	0.06	0.02	0	0.18
Alto	4899.062	119.5	2.09	114.26	3.14	41.39	838.75	844.45		844.53	0.000356	1.26	99.85	0.08	0.02	0	0.2
Alto	4849.056	119.5	5.93	107.19	6.37	52.7	838.75	844.39		844.5	0.000529	1.51	88.62	0.11	0.04	0.01	0.24
Alto	4799.154	119.5	4.76	114.44	0.3	33.68	838.75	844.2		844.45	0.001519	2.25	58.52	0.25	0.08	0.01	0.37
Alto	4749.154	119.5	0.66	118.51	0.33	28.59	838.75	844.06		844.35	0.001878	2.43	51.53	0.3	0.15	0.03	0.41
Alto	4699.178	119.5		119.5	0	12.53	839	843.55		844.17	0.005305	3.5	34.18	0.62	0.2	0.06	0.64
Alto	4649.212	119.5		119.5	0	13.52	839	843.48		843.91	0.003238	2.91	41.01	0.43	0.15	0.01	0.53
Alto	4599.202	119.5		119.49	0.01	14.84	839.25	843.36		843.75	0.002846	2.78	43.01	0.39	0.11	0.01	0.49
Alto	4561.047	119.5		119.5	0	15.38	839.25	843.27		843.63	0.002712	2.68	44.54	0.37	0.06	0.02	0.5
Alto	4535.883 S12	119.5		119.5	0	18.63	839.5	843.26		843.55	0.002188	2.38	50.23	0.29	0.08	0	0.46
Alto	4499.18	119.5		119.5		18.24	839.25	843.19		843.47	0.00205	2.35	50.82	0.28	0.1	0.01	0.45
Alto	4449.196	119.5		119.5	0	20.2	839	843.12		843.36	0.001806	2.21	54	0.25	0.09	0	0.43
Alto	4399.197	119.5		119.5	0	20.83	839	843.03		843.27	0.001829	2.19	54.61	0.24	0.06	0.03	0.43
Alto	4349.205	119.5	20.64	98.86	0	30.61	838.75	843.03		843.18	0.000956	1.59	71.09	0.15	0.01	0.03	0.31
Alto	4320.028	119.5	65.74	53.73	0.03	121.79	838.5	843.1		843.14	0.000227	0.79	138.1	0.04	0.03	0.01	0.15
Alto	4249.201	119.5		119.37	0.13	29.95	838.25	842.96		843.1	0.00096	1.63	73.46	0.14	0.03	0	0.32
Alto	4214.434	119.5		119.13	0.37	37.32	838.25	842.94		843.06	0.000881	1.58	76.29	0.13	0.01	0	0.31
Alto	4199.201	119.5		119.32	0.18	31.43	838	842.92		843.05	0.000857	1.56	76.9	0.12	0.02	0.02	0.3
Alto	4149.204	119.5	48.03	70.86	0.61	93.88	838	842.96		843	0.000226	0.84	132.15	0.04	0.02	0	0.16
Alto	4099.198	119.5	0.29	118.11	1.11	47.49	837.75	842.9		842.98	0.00048	1.29	94.42	0.08	0.01	0	0.23
Alto	4081.474 S11	119.5	0.43	117.78	1.29	49.64	837.75	842.9		842.97	0.000443	1.25	97.62	0.08	0.02	0	0.22
Alto	4049.185	119.5	0.01	118.34	1.15	39.62	837.75	842.85		842.96	0.000628	1.45	83.9	0.11	0.04	0	0.26
Alto	3999.199	119.5		112.89	6.61	62.13	837.75	842.8		842.92	0.000793	1.57	80.42	0.12	0.05	0	0.29
Alto	3949.209	119.5		118.23	1.27	34.8	837.75	842.72		842.87	0.001058	1.75	69.2	0.16	0.06	0	0.33
Alto	3899.258	119.5		119.46	0.04	25.76	837.75	842.61		842.81	0.001452	1.94	61.78	0.19	0.07	0	0.38
Alto	3849.281	119.5		119.5	0	24.77	837.75	842.55		842.73	0.001326	1.89	63.37	0.18	0.08	0.01	0.37
Alto	3799.282	119.5		119.5		18.76	838	842.38		842.64	0.001943	2.29	52.07	0.27	0.11	0	0.44
Alto	3749.292	119.5		119.5		17.79	838	842.23		842.54	0.00229	2.46	48.6	0.31	0.06	0	0.47
Alto	3723.315	119.5		119.5		18.6	838	842.18		842.47	0.002256	2.42	49.44	0.3	0.05	0	0.47
Alto	3699.295	119.5		119.5		18.87	838	842.12		842.42	0.002245	2.4	49.77	0.29	0.03	0	0.47

<u>Rio:</u> Bengalas		<u>Procedimento:</u> Simulação						<u>Escoamento:</u>			Steady Flow		<u>Regime:</u> Mix Flow				
<u>Local:</u> Nova Friburgo		<u>Evento:</u> Chuva TR-20 anos						<u>Condição de Contorno:</u>			Normal Depth		<u>Perfil:</u> TR20				
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	3686.538	119.5		119.5		18.99	838	842.1		842.39	0.002245	2.4	49.89	0.29	0.08	0	0.47
Alto	3649.29	119.5		119.5		18.7	838	842.01		842.3	0.002207	2.39	50.02	0.29	0.05	0	0.47
Alto	3628.303	119.5		119.5		19.17	838	841.98		842.26	0.002104	2.34	51.06	0.28	0.04	0.01	0.46
Alto	3609.762 S10	119.5		119.5		21.05	838.25	841.96		842.21	0.001922	2.22	53.9	0.25	0.06	0	0.44
Alto	3574.84	119.5		119.05	0.45	60.62	838	841.9		842.14	0.001704	2.17	57.5	0.24	0.04	0.01	0.41
Alto	3549.256	119.5		113.51	5.99	94.06	838	841.89		842.09	0.001525	2.06	77.16	0.21	0.09	0.01	0.39
Alto	3499.259	119.5		119.5		18.28	837.75	841.69		841.99	0.002294	2.44	49.03	0.3	0.05	0	0.48
Alto	3476.621	119.5		119.5		18.03	837.75	841.61		841.93	0.002493	2.51	47.55	0.32	0.07	0	0.49
Alto	3449.258	119.5		119.5		17.8	837.75	841.52		841.86	0.00278	2.61	45.77	0.35	0.13	0	0.52
Alto	3399.261	119.5		119.5		17.8	837.5	841.39		841.72	0.002575	2.55	46.9	0.33	0.12	0.01	0.5
Alto	3349.259	119.5		119.5		18.52	837.5	841.28		841.59	0.002415	2.47	48.45	0.31	0.11	0.01	0.49
Alto	3299.259	119.5		119.5		19.81	837.25	841.2		841.47	0.002095	2.31	51.74	0.27	0.1	0.01	0.46
Alto	3249.258	119.5		119.42	0.08	24.18	837.25	841.12		841.36	0.001804	2.18	55.06	0.24	0.08	0.01	0.43
Alto	3199.258	119.5		115.45	4.05	35.25	837	841.07		841.27	0.001435	2.01	61.21	0.2	0.06	0.01	0.38
Alto	3149.258	119.5		110.12	9.38	36.02	836.75	841.04		841.2	0.001085	1.8	67.88	0.16	0.05	0.01	0.34
Alto	3099.247	119.5		110.41	9.09	36.9	836.75	841.01		841.14	0.000803	1.58	76.54	0.12	0.03	0.01	0.29
Alto	3058.003 S9	119.5	0	113.57	5.92	38.13	836.5	841		841.1	0.000608	1.41	85.6	0.1	0.04	0.01	0.26
Alto	2999.242	119.5	0.03	116.54	2.93	38.78	836.5	840.9		841.05	0.000969	1.75	70.09	0.15	0.05	0	0.32
Alto	2949.221	119.5		114.63	4.87	38.45	836.25	840.85		841	0.001027	1.76	70.23	0.15	0.04	0.01	0.33
Alto	2899.194	119.5		104.94	14.56	38.96	836.25	840.83		840.95	0.00074	1.54	78.83	0.12	0.04	0	0.28
Alto	2849.2	119.5		107.9	11.6	35.88	836	840.79		840.91	0.000711	1.54	78.48	0.12	0.04	0	0.27
Alto	2799.187	119.5		111.85	7.65	33.69	836	840.74		840.87	0.000774	1.62	74.99	0.13	0.04	0	0.28
Alto	2749.187	119.5		116.82	2.68	26.59	835.75	840.68		840.83	0.000861	1.73	70.09	0.15	0.04	0	0.3
Alto	2699.212	119.5		116.69	2.81	26.9	835.72	840.63		840.79	0.000918	1.77	68.4	0.16	0.02	0.01	0.3
Alto	2677.167	119.5		111.17	8.33	43.81	835.5	840.63		840.76	0.000792	1.64	75.99	0.13	0.02	0	0.28
Alto	2649.215	119.5		115.22	4.28	32.75	835.5	840.59		840.74	0.000884	1.74	70.47	0.15	0.04	0.01	0.3
Alto	2599.223	119.5		115.32	4.18	34.7	835.25	840.57		840.69	0.000674	1.55	78.99	0.12	0.03	0.01	0.26
Alto	2552.887	119.5		109.63	9.87	53.67	835.25	840.56	837.83	840.65	0.000478	1.33	93.77	0.09	0	0	0.23
Alto	2547.430 T3 Bridge																
Alto	2543.247	119.5	1.41	106.49	11.6	74.97	835.25	840.53		840.6	0.000417	1.24	103.14	0.07	0.01	0	0.21
Alto	2525.589	119.5	1.11	110.87	7.52	53.62	835.25	840.52		840.6	0.000422	1.28	97.67	0.08	0.01	0	0.21
Alto	2499.225	119.5	0.97	110.8	7.72	56.74	835.25	840.51		840.58	0.000379	1.23	102.76	0.07	0.02	0	0.2
Alto	2449.235	119.5	1.05	113.26	5.19	52.66	835.25	840.5		840.56	0.000348	1.18	105.47	0.07	0.02	0.01	0.2
Alto	2380.636	119.5	0.05	101.1	18.35	118.29	835.25	840.49	837.5	840.54	0.000244	1	132.41	0.05	0.01	0	0.17
Alto	2349.239	119.5	0.03	114.45	5.02	51.38	835.25	840.46	837.49	840.53	0.000312	1.13	109.51	0.06	0.01	0.01	0.19
Alto	2299.246	119.5	0.15	54.82	64.53	219.56	835.25	840.49	837.59	840.51	0.000076	0.56	224.32	0.01	0.01	0	0.09
Alto	2249.258	119.5	0.35	88.54	30.6	151.63	835.5	840.46	837.62	840.5	0.000208	0.93	186.22	0.03	0.01	0.01	0.15
Alto	2199.258	119.5	0.65	58.71	60.14	142.39	835.5	840.47	837.62	840.49	0.000083	0.6	271.23	0.01	0	0	0.1
Alto	2173.195	119.5	0.27	25.98	93.26	242.19	835.5	840.48	837.62	840.48	0.000016	0.26	472.53	0	0	0	0.04
Alto	2149.258	119.5	0.49	42.97	76.03	193.7	835.5	840.48	837.63	840.48	0.000042	0.43	396.34	0.01	0	0	0.07

Rio: Bengalas		Procedimento: Simulação						Escoamento:			Steady Flow		Regime: Mix Flow				
Local: Nova Friburgo		Evento: Chuva TR-20 anos						Condição de Contorno:			Normal Depth		Perfil: TR20				
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Baixo	2094.28	216.1	12.5	73.81	129.8	342.24	835.5	840.46		840.48	0.000113	0.7	562.19	0.01	0	0	0.12
Baixo	2086.245	216.1	14.27	70.91	130.9	343.34	835.5	840.46	838.61	840.47	0.000104	0.67	570.93	0.01	0	0	0.11
Baixo	2081.187 T2 Bridge																
Baixo	2076.63	216.1	15.56	70.84	129.7	343.86	835.5	840.45		840.47	0.000108	0.68	579.66	0.01	0	0	0.11
Baixo	2049.26	216.1	2.33	91.12	122.7	137.59	835.5	840.43	838.58	840.46	0.000182	0.9	318.25	0.03	0	0	0.15
Baixo	1999.26	216.1	0.55	27.84	187.7	224.44	835.5	840.44	838.56	840.45	0.000018	0.28	479.14	0.01	0	0.01	0.05
Baixo	1949.26	216.1	2.79	148.01	65.31	144	835.25	840.36	838.36	840.44	0.000545	1.55	218.91	0.09	0.03	0.01	0.25
Baixo	1899.26	216.1	3.85	185.5	26.75	61.14	835.25	840.2	838.25	840.4	0.000928	1.99	118.77	0.2	0.04	0.01	0.33
Baixo	1849.26	216.1	4.43	187.29	24.38	94.72	835.25	840.17	838.12	840.35	0.000859	1.94	131.4	0.17	0.02	0.02	0.32
Baixo	1819.457	216.1	6.61	168.33	41.16	207.48	835	840.19	837.99	840.31	0.000599	1.66	200.16	0.11	0.01	0.02	0.27
Baixo	1785.207	216.1	55.21	131.42	29.47	314.17	835	840.23	837.85	840.27	0.000302	1.19	365.52	0.05	0.01	0	0.19
Baixo	1749.264	216.1	57.38	131.05	27.67	333.04	835	840.22	837.75	840.26	0.000262	1.11	361.31	0.04	0.01	0	0.18
Baixo	1699.257	216.1	80.34	111.32	24.44	369.53	835	840.22	837.64	840.25	0.000178	0.93	453.87	0.03	0	0	0.15
Baixo	1674.594	216.1	99.79	109.71	6.59	238.83	835	840.21	837.66	840.24	0.000176	0.93	383.57	0.03	0.01	0	0.15
Baixo	1649.256	216.1	81.35	129.91	4.84	234.27	834.75	840.19	837.67	840.23	0.000259	1.12	387.01	0.04	0	0.01	0.18
Baixo	1622.255	216.1	128.93	83.92	3.26	279.42	834.75	840.21	837.68	840.22	0.000111	0.73	426.94	0.02	0	0.01	0.12
Baixo	1599.256	216.1	33.55	179.21	3.34	142.73	834.75	840.09		840.21	0.000057	1.63	186.67	0.11	0.01	0.03	0.26
Baixo	1549.264	216.1	151.06	63.3	1.74	208.21	834.75	840.15		840.17	0.000086	0.63	305.05	0.03	0	0.02	0.1
Baixo	1525.865	216.1	34.91	180.92	0.27	83.22	834.75	839.95		840.15	0.001023	2.1	123.52	0.2	0.02	0.01	0.34
Baixo	1506.375 S6	216.1	35.74	180	0.36	58.6	834.75	839.84		840.12	0.001523	2.47	100.87	0.27	0.04	0.01	0.4
Baixo	1483.175	216.1	40.34	173.5	2.25	120.58	834.5	839.74	838.84	840.07	0.00212	2.8	101.05	0.33	0.05	0.06	0.45
Baixo	1449.256	216.1	84.04	130.46	1.61	148.95	834.5	839.83		839.96	0.000099	1.99	203.76	0.13	0.02	0.03	0.31
Baixo	1399.256	216.1	139.56	70.3	6.24	242.81	834.5	839.88		839.91	0.000264	1.05	435.19	0.02	0.01	0	0.16
Baixo	1349.258	216.1	150.23	63.7	2.17	205.5	834.5	839.87		839.89	0.000213	0.95	447.49	0.02	0.01	0	0.15
Baixo	1299.258	216.1	117.75	95.97	2.38	233.14	834.25	839.83		839.88	0.000428	1.37	345.62	0.05	0.02	0	0.21
Baixo	1267.092	216.1	97.9	116.18	2.03	228.84	834.25	839.78		839.86	0.00058	1.61	298.51	0.08	0.01	0.01	0.25
Baixo	1249.258	216.1	62.79	150.86	2.46	194.69	834.25	839.67		839.84	0.001053	2.14	183.09	0.17	0.06	0.01	0.34
Baixo	1199.258	216.1	48.14	164.52	3.44	120.82	834.25	839.52		839.77	0.001476	2.46	133.49	0.24	0.06	0.02	0.4
Baixo	1171.129	216.1	25.48	187.55	3.07	114.63	834.25	839.23	838.47	839.69	0.002791	3.22	113.65	0.46	0.06	0	0.54
Baixo	1149.258	216.1	22.23	190.32	3.55	90.43	834	839.14	838.17	839.62	0.002773	3.25	105.27	0.48	0.1	0.07	0.54
Baixo	1099.235	216.1	20.3	172	23.79	144.09	834	839.21		839.45	0.001455	2.44	166.69	0.24	0.05	0.03	0.4
Baixo	1049.229 S5	216.1	3.9	176.85	35.36	134.89	833.81	839.21		839.37	0.000835	1.94	192.97	0.16	0.04	0.01	0.31
Baixo	999.1276	216.1	5.68	158.01	52.41	163.48	833.5	839.19		839.33	0.000738	1.86	219.66	0.13	0.02	0	0.29
Baixo	968.833	216.1	6.19	143.17	66.74	200.93	833.25	839.18		839.3	0.000787	1.83	247.62	0.12	0.02	0.01	0.3
Baixo	949.0698	216.1	4.95	162.84	48.31	82.31	833.25	839.09		839.27	0.001159	2.17	157.25	0.19	0.05	0.01	0.36
Baixo	899.0942	216.1	7.15	161.63	47.32	159.13	833.25	839.06		839.21	0.000092	1.96	208.98	0.15	0.07	0.02	0.32
Baixo	849.143	216.1	2.92	207.49	5.69	52.77	833	838.72		839.12	0.002226	2.85	90.25	0.4	0.1	0.01	0.49
Baixo	799.143	216.1	2.29	204.84	8.97	100.16	832.75	838.65		839	0.001926	2.68	108.54	0.35	0.09	0.02	0.46
Baixo	749.1328	216.1	1.66	189.14	25.3	116.87	832.5	838.61		838.89	0.001618	2.49	137.72	0.28	0.1	0.02	0.42
Baixo	699.1328	216.1	0.9	209.45	5.75	71.73	832.25	838.35	836.83	838.78	0.00234	2.94	82.92	0.43	0.13	0.01	0.49

Rio: Bengalas **Procedimento:** Simulação **Escoamento:** Steady Flow **Regime:** Mix Flow
Local: Nova Friburgo **Evento:** Chuva TR-20 anos **Condição de Contorno:** Normal Depth **Perfil:** TR20

Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Baixo	649.1328	216.1	0.4	215.69	0.01	28.85	831.75	838.14		838.64	0.002792	3.15	70.06	0.5	0.13	0.01	0.53
Baixo	599.1347	216.1	0.16	215.94		25.61	831.5	838.03		838.5	0.002569	3.02	72.25	0.47	0.12	0.01	0.5
Baixo	549.1295	216.1	0.05	216.05		24.74	831.25	837.94		838.36	0.002428	2.89	75.2	0.42	0.11	0.01	0.49
Baixo	499.045	216.1	0	216.1		21.4	831.25	837.85		838.24	0.002072	2.78	77.78	0.39	0.12	0.01	0.45
Baixo	448.9738	216.1	0.13	215.97		23.8	831.5	837.63		838.11	0.002727	3.07	70.98	0.48	0.24	0.08	0.52
Baixo	398.9491	216.1		216.1		16	832.25	836.46	836.46	837.78	0.010744	5.1	42.33	1.33	0.27	0.26	1
Baixo	352.748	216.1		216.1		29.89	832.88	836.47	835.63	836.92	0.003423	2.95	73.15	0.44	0.02	0	0.6
Baixo	348.9313 T1 Bridge																
Baixo	343.9721	216.1		216.1		29.91	832.75	836.3		836.71	0.003013	2.84	76.11	0.41	0.05	0.08	0.57
Baixo	298.9281	216.1	0.97	215.13		32.93	829.65	836.43		836.58	0.000626	1.71	129.31	0.15	0.01	0.03	0.26
Baixo	248.9493	216.1	2.47	213.63		56.88	825.25	836.5		836.54	0.000115	0.87	261.59	0.04	0.01	0	0.11
Baixo	199.1468	216.1	2.9	213.2		47.15	827.5	836.47		836.53	0.000166	1.08	213.38	0.06	0.01	0	0.14
Baixo	160.6351	216.1	0.05	216.05		46.8	829.84	836.47	832.33	836.52	0.000152	0.96	225.43	0.05			0.14
Baixo	158.6960 Bar. Catet Inl Struct																
Baixo	155.7292	216.1		216.1		35.04	830.07	832.37	832.37	833.16	0.011147	3.95	54.65	0.8	0.21	0	1.01
Baixo	136.5043	216.1		216.1		32.41	827.75	830.36	830.36	831.21	0.010804	4.06	53.18	0.84	0.4	0.02	1.01
Baixo	99.03893	216.1		216.1		25.05	824.65	828.02	828.02	829.01	0.010516	4.42	48.84	1	0.52	0.02	1.01
Baixo	49.06651	216.1		216.1		19.5	819.75	824.12	824.12	825.28	0.010417	4.78	45.24	1.16			1

Rio: Bengalas		Procedimento: Simulação						Escoamento:			Steady Flow		Regime: Mix Flow				
Local: Nova Friburgo		Evento: Chuva TR-50 anos						Condição de Contorno:			Normal Depth		Perfil: TR50				
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	8449.32	144.9	0.02	144.88		18.02	841.25	845.23		845.73	0.000679	3.13	46.58	0.5	0.02	0.08	0.53
Alto	8399.309	144.9	0.24	144.64	0.02	30.44	841.25	845.38		845.63	0.000284	2.21	66.45	0.25	0.01	0.01	0.36
Alto	8349.302	144.9	0.57	143.81	0.52	50.42	841	845.4		845.61	0.000226	2.04	75.69	0.21	0.01	0.01	0.33
Alto	8299.3	144.9	0.86	141.11	2.93	50.46	841	845.4		845.59	0.000191	1.92	83.91	0.18	0.01	0	0.3
Alto	8249.299	144.9	2.21	139.78	2.91	60.9	841	845.4		845.57	0.000179	1.87	90.69	0.17	0	0.02	0.29
Alto	8222.821	144.9	2.68	118.67	23.55	193.68	840.75	845.45		845.55	0.000111	1.52	152.64	0.1	0	0.01	0.23
Alto	8199.353	144.9	2.4	138.38	4.12	79.8	840.75	845.39		845.54	0.000153	1.77	103.29	0.15	0.01	0	0.27
Alto	8149.295	144.9	2.8	136.27	5.83	50.67	840.75	845.39		845.53	0.000134	1.69	103.05	0.14	0	0.02	0.26
Alto	8119.148	144.9	7.22	112.13	25.55	169	840.75	845.43		845.51	0.000084	1.36	165.39	0.07	0.01	0	0.2
Alto	8049.292	144.9	2.15	117.75	25	132.12	840.5	845.43		845.5	0.000074	1.32	160.22	0.07	0	0	0.19
Alto	8027.169	144.9	3.44	131.69	9.77	71.17	840.5	845.39	842.36	845.49	0.000092	1.46	117.05	0.1	0	0	0.21
Alto	8024.782 T10	Bridge															
Alto	8018.111	144.9	2.29	138.85	3.76	51.92	840.34	845.35		845.47	0.000107	1.56	110.52	0.12	0	0.01	0.23
Alto	7999.291	144.9	2.14	129.55	13.21	110.33	840.25	845.36		845.46	0.000091	1.46	134.91	0.1	0.01	0	0.21
Alto	7949.291	144.9	2.16	139.17	3.58	51.01	840.25	845.32		845.45	0.000114	1.62	106.14	0.13	0.01	0	0.23
Alto	7899.291	144.9	2.12	139.2	3.58	51.27	840.25	845.31		845.44	0.000121	1.67	103.62	0.14	0.01	0.01	0.24
Alto	7849.291	144.9	3.99	130.84	10.07	117.79	840	845.32		845.43	0.000107	1.57	127.55	0.11	0.01	0	0.22
Alto	7799.291	144.9	1.96	139.86	3.08	45.71	840	845.28		845.42	0.000129	1.72	98.38	0.15	0.01	0	0.24
Alto	7749.291	144.9	1.88	140.6	2.41	45.18	840	845.28		845.41	0.000114	1.64	101.26	0.13	0.01	0	0.23
Alto	7699.291	144.9	2.02	141.02	1.86	44.32	839.75	845.28		845.4	0.000099	1.56	105.21	0.12	0	0	0.22
Alto	7649.291	144.9	1.97	141.25	1.68	60.21	839.75	845.28		845.4	0.000099	1.56	105.68	0.12	0	0.01	0.22
Alto	7611.167	144.9	5.04	133.76	6.11	175.32	839.75	845.3	841.8	845.38	0.000075	1.37	140.6	0.09	0	0	0.19
Alto	7605.934 T9	Bridge															
Alto	7600.285	144.9	6.25	121.56	17.09	173.35	839.72	845.3		845.36	0.00006	1.22	165.59	0.06	0	0	0.17
Alto	7549.258	144.9	5.74	129.59	9.58	59.67	839.75	845.26		845.36	0.000079	1.45	129.54	0.1	0	0	0.2
Alto	7499.258	144.9	6.32	137.85	0.73	43.24	839.75	845.22		845.35	0.000101	1.62	100.14	0.13	0	0.01	0.23
Alto	7449.258	144.9	8.63	128.54	7.73	69.91	839.75	845.23		845.34	0.000092	1.54	127.32	0.11	0	0.01	0.22
Alto	7399.258	144.9	6.89	120.98	17.02	55.71	839.75	845.24		845.33	0.000077	1.41	129.82	0.09	0	0.02	0.21
Alto	7336.31	144.9	13.25	103.56	28.08	190.02	839.5	845.28	841.79	845.31	0.000022	0.8	261.06	0.02	0	0	0.12
Alto	7333.883 T8	Bridge															
Alto	7321.573	144.9	10.21	117.95	16.74	202.1	840	845.26		845.3	0.000033	0.97	255.53	0.04	0	0.01	0.14
Alto	7299.261	144.9	7.19	134.21	3.49	61.72	839.75	845.16		845.29	0.000109	1.65	106.52	0.13	0.01	0	0.24
Alto	7293.445	144.9	6.16	135.76	2.98	59.76	839.75	845.15		845.28	0.000113	1.68	104.67	0.14	0.01	0	0.25
Alto	7249.261	144.9	8.31	133.7	2.89	59.56	839.75	845.15		845.28	0.000115	1.68	104.22	0.13	0.01	0	0.24
Alto	7199.258	144.9	9.08	133.38	2.44	57.63	839.5	845.14		845.27	0.000112	1.66	104.73	0.13	0.01	0.02	0.23
Alto	7129.429	144.9	15.06	120.13	9.71	145.42	839.5	845.18	841.52	845.25	0.000056	1.23	164.18	0.07	0	0	0.17
Alto	7121.824 T7	Bridge															
Alto	7120.426	144.9	15.44	120.47	8.99	146.11	839.5	845.18		845.24	0.000054	1.2	167.53	0.06	0	0	0.16
Alto	7099.259	144.9	9.98	133.77	1.15	53.8	839.25	845.15		845.24	0.000071	1.38	119.87	0.09	0	0	0.19
Alto	7049.26	144.9	8.62	134.59	1.69	57.72	839.25	845.14		845.23	0.000073	1.4	120.73	0.09	0	0	0.19

Rio: Bengalas		Procedimento: Simulação						Escoamento:		Steady Flow			Regime: Mix Flow				
Local: Nova Friburgo		Evento: Chuva TR-50 anos						Condição de Contorno:		Normal Depth			Perfil: TR50				
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	6999.26	144.9	7.49	136.02	1.39	58.99	839	845.12		845.23	0.000087	1.48	114.25	0.11	0	0	0.19
Alto	6949.26	144.9	5.85	137.94	1.11	55.24	839	845.11		845.22	0.000089	1.51	110.62	0.11	0	0	0.2
Alto	6899.26	144.9	4.77	139.14	1	54.45	838.75	845.12		845.22	0.00008	1.45	113.68	0.1	0	0	0.19
Alto	6849.26	144.9	4.09	139.81	1	54.94	838.5	845.12		845.21	0.000072	1.39	117.85	0.1	0	0	0.18
Alto	6818.892	144.9	3.39	139.75	1.76	88.88	838.5	845.12		845.21	0.000065	1.34	135.18	0.09	0	0	0.17
Alto	6785.786	144.9	3.14	139.71	2.04	95.58	838.5	845.12		845.2	0.000058	1.28	140.66	0.08	0	0	0.16
Alto	6749.258	144.9	2.9	141.14	0.86	66.95	838.25	845.13		845.2	0.000051	1.22	131.89	0.07	0	0	0.15
Alto	6721.286	144.9	2.78	141.54	0.59	72.87	838.25	845.13		845.2	0.000048	1.18	135.35	0.07	0	0	0.15
Alto	6677.863	144.9	11.41	132.95	0.53	122.84	838	845.14		845.19	0.00004	1.09	166.77	0.06	0	0	0.13
Alto	6642.27	144.9	14	127.86	3.04	199.17	838	845.14	840.13	845.19	0.00004	1.09	188.88	0.05	0	0	0.13
Alto	6633.780 T6	Bridge															
Alto	6631.452	144.9	13.86	128.38	2.66	198.98	838	845.12		845.18	0.000043	1.11	184.19	0.06	0	0	0.14
Alto	6599.255	144.9	7.3	132.61	4.99	109.23	838	845.12		845.17	0.000214	1.11	158.2	0.06	0.01	0.01	0.14
Alto	6549.265	144.9	12.75	126.22	5.93	115.47	838	845.12		845.16	0.000126	0.91	186.96	0.04	0	0.01	0.11
Alto	6499.265	144.9	42.17	95.8	6.93	138.55	838	845.13		845.15	0.000074	0.71	236.82	0.02	0	0	0.09
Alto	6449.265	144.9	19.28	114.76	10.86	148.02	838	845.11		845.14	0.000108	0.86	239.57	0.03	0	0	0.11
Alto	6399.265	144.9	27.95	104.67	12.29	167.6	838	845.11		845.14	0.000083	0.76	274.59	0.02	0	0	0.1
Alto	6349.265	144.9	58.23	75.33	11.34	189.08	838	845.12		845.13	0.000045	0.56	469.93	0.01	0	0	0.07
Alto	6299.265	144.9	70.97	63.17	10.76	212.79	838	845.12		845.13	0.000031	0.47	571.72	0.01	0	0	0.06
Alto	6249.265	144.9	73.78	57.43	13.69	204.09	838	845.12		845.13	0.000025	0.42	616.19	0	0	0	0.06
Alto	6185.989 S15	144.9	72.71	61.89	10.3	163.03	838	845.12		845.12	0.000031	0.48	515.37	0.01	0	0	0.06
Alto	6149.272	144.9	70.69	64.22	9.99	147.21	838.25	845.12		845.12	0.000034	0.47	485.78	0.01	0	0	0.07
Alto	6099.267	144.9	75.28	58.4	11.22	142.99	838.25	845.11		845.12	0.000035	0.48	472.48	0.01	0	0	0.07
Alto	6049.264	144.9	70.57	62.49	11.84	165.51	838.25	845.11		845.12	0.000047	0.55	452.23	0.01	0	0	0.08
Alto	5999.264	144.9	33.66	91.01	20.23	52.9	838.25	845.08		845.11	0.0001	0.81	178.57	0.04	0	0.01	0.11
Alto	5949.266	144.9	14.25	40.89	89.76	152.65	838.25	845.09		845.1	0.000019	0.36	342.76	0.01	0	0	0.05
Alto	5899.266	144.9	30.27	60.53	54.11	206.56	838.25	845.09		845.1	0.000037	0.5	425.58	0.01	0	0	0.07
Alto	5849.266	144.9	17.55	53.9	73.45	145.49	838.25	845.09		845.1	0.000028	0.44	397.71	0.01	0	0	0.06
Alto	5799.266	144.9	15.79	64.42	64.68	154.95	838.25	845.09		845.1	0.00004	0.53	356.99	0.01	0	0	0.07
Alto	5749.266	144.9	34.58	62.81	47.51	246.09	838.25	845.09		845.09	0.000037	0.51	464.54	0.01	0	0	0.07
Alto	5699.266	144.9	35.84	54.31	54.75	185.98	838.25	845.09		845.09	0.000024	0.42	467.47	0.01	0	0	0.06
Alto	5649.266	144.9	37.1	49	58.8	182.3	838.25	845.09		845.09	0.000018	0.36	596.34	0	0	0	0.05
Alto	5598.734	144.9	62.26	21.46	61.18	205.83	838.25	845.09	840.6	845.09	0.000003	0.14	702.53	0	0	0	0.02
Alto	5593.126 T5	Bridge															
Alto	5587.957	144.9	89.63	31.01	24.26	177.22	838.25	845.08		845.09	0.000006	0.21	574.77	0	0	0	0.03
Alto	5543.313	144.9	63.99	28.29	52.63	341.67	838.25	845.09	841.12	845.09	0.000009	0.23	693.56	0	0	0	0.03
Alto	5535.894 T4	Bridge															
Alto	5531.686	144.9	60.05	34.18	50.67	340.65	838.25	845.08		845.09	0.00001	0.26	694.18	0	0	0	0.04
Alto	5528.385	144.9	40.35	41.64	62.92	340.37	838.25	845.08		845.09	0.000015	0.32	690.32	0	0	0	0.04
Alto	5499.265	144.9	29.2	42.22	73.48	240.14	838.25	845.08		845.08	0.000038	0.47	409.38	0.01	0	0	0.07

Rio: Bengalas		Procedimento: Simulação				Escoamento: Steady Flow				Regime: Mix Flow							
Local: Nova Friburgo		Evento: Chuva TR-50 anos				Condição de Contorno: Normal Depth				Perfil: TR50							
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	5449.271	144.9	22.09	61.49	61.32	266.22	838.25	845.07		845.08	0.000077	0.65	381.93	0.01	0	0	0.1
Alto	5399.302	144.9	20.72	69.63	54.55	245.19	838.25	845.06		845.08	0.000113	0.8	316.79	0.02	0.01	0	0.11
Alto	5349.307	144.9	17.06	64.54	63.3	214.53	838.25	845.05		845.07	0.000172	0.93	276.94	0.02	0.01	0	0.14
Alto	5289.961	144.9	14.82	54.68	75.41	80.57	838.25	845.02		845.06	0.000133	0.81	171.67	0.04	0.01	0	0.12
Alto	5249.313	144.9	10.76	78.64	55.5	144.94	838.25	845.02		845.05	0.000152	0.92	253.6	0.03	0.01	0	0.13
Alto	5199.299	144.9	10.25	125.5	9.15	57.81	838.25	844.96		845.04	0.000259	1.23	130.02	0.07	0.01	0.01	0.18
Alto	5149.283	144.9	7.98	128.73	8.2	64.67	838.25	844.97		845.02	0.000192	1.04	150.1	0.05	0.01	0	0.15
Alto	5119.450 S13	144.9	5.3	132.18	7.43	64.71	838.25	844.96		845.01	0.000168	1	157.4	0.05	0.01	0	0.14
Alto	5049.23	144.9	13.02	125.35	6.53	60.1	838.5	844.93		845	0.000244	1.17	137.14	0.06	0.01	0	0.17
Alto	4999.153	144.9	3.24	135.33	6.33	53.79	838.5	844.92		844.98	0.000226	1.13	139.15	0.06	0.01	0	0.16
Alto	4949.088	144.9	2.51	135.44	6.95	52.65	838.5	844.9		844.97	0.000259	1.19	130.66	0.07	0.01	0	0.18
Alto	4899.062	144.9	3.71	128.97	12.21	59.22	838.75	844.88		844.96	0.000322	1.28	121.17	0.08	0.02	0	0.19
Alto	4849.056	144.9	12.23	114	18.67	69.97	838.75	844.85		844.94	0.000425	1.44	115.69	0.09	0.03	0.01	0.21
Alto	4799.154	144.9	15.07	126.43	3.4	65.76	838.75	844.67		844.89	0.001253	2.21	79.41	0.22	0.07	0.01	0.34
Alto	4749.154	144.9	8.41	135.4	1.09	43.51	838.75	844.52		844.81	0.001625	2.46	67.99	0.29	0.14	0.04	0.39
Alto	4699.178	144.9	0.14	144.45	0.31	17.48	839	843.91	842.86	844.63	0.005543	3.78	39.28	0.72	0.22	0.07	0.66
Alto	4649.212	144.9	0.01	143.75	1.14	36.56	839	843.86		844.34	0.003501	3.11	49.86	0.49	0.17	0.01	0.56
Alto	4599.202	144.9		143.47	1.43	31.79	839.25	843.71		844.16	0.003376	3	50.43	0.45	0.12	0.01	0.54
Alto	4561.047	144.9		143.38	1.52	28.55	839.25	843.61		844.03	0.002846	2.88	51.7	0.42	0.06	0.03	0.52
Alto	4535.883 S12	144.9		143.37	1.53	33.43	839.5	843.62		843.94	0.002137	2.52	59.26	0.32	0.08	0	0.46
Alto	4499.18	144.9		144.2	0.7	29.68	839.25	843.54		843.86	0.002138	2.51	58.81	0.32	0.1	0.01	0.46
Alto	4449.196	144.9		144.37	0.53	29.33	839	843.47		843.75	0.002016	2.36	62.31	0.28	0.1	0	0.45
Alto	4399.197	144.9		144.57	0.33	27.65	839	843.37		843.65	0.002011	2.33	62.84	0.28	0.07	0.03	0.45
Alto	4349.205	144.9	29.69	114.62	0.59	50	838.75	843.39		843.55	0.000931	1.61	85.15	0.16	0.01	0.04	0.31
Alto	4320.028	144.9	95.14	49.13	0.63	141.52	838.5	843.47		843.5	0.00013	0.63	188.07	0.03	0.02	0.01	0.12
Alto	4249.201	144.9	1.12	141.65	2.13	47.09	838.25	843.33		843.47	0.000907	1.7	87.5	0.14	0.03	0.01	0.31
Alto	4214.434	144.9	1.48	136.73	6.69	58.84	838.25	843.31		843.43	0.000764	1.59	94.1	0.13	0.01	0	0.29
Alto	4199.201	144.9	1.38	141.09	2.43	52.31	838	843.29		843.42	0.000787	1.62	92.41	0.13	0.01	0.03	0.3
Alto	4149.204	144.9	69.37	71.93	3.6	105.76	838	843.34		843.38	0.000155	0.76	170.49	0.04	0.01	0	0.13
Alto	4099.198	144.9	3.69	134.42	6.79	51.73	837.75	843.28		843.36	0.000427	1.31	113.83	0.08	0.01	0	0.22
Alto	4081.474 S11	144.9	3.61	134.07	7.23	50.87	837.75	843.27		843.35	0.000397	1.28	116.86	0.08	0.02	0	0.21
Alto	4049.185	144.9	1.76	135.53	7.61	49.19	837.75	843.23		843.34	0.000561	1.47	101.38	0.11	0.03	0.01	0.25
Alto	3999.199	144.9	0.19	113.32	31.39	85.15	837.75	843.21		843.3	0.000529	1.38	110.54	0.09	0.03	0.01	0.24
Alto	3949.209	144.9		135.61	9.29	35.74	837.75	843.11		843.26	0.000944	1.76	82.99	0.16	0.06	0	0.32
Alto	3899.258	144.9		142.39	2.51	34.76	837.75	843		843.2	0.001361	2.01	73.35	0.2	0.07	0	0.38
Alto	3849.281	144.9		143.12	1.78	35.23	837.75	842.94		843.13	0.001263	1.97	74.73	0.2	0.08	0.01	0.37
Alto	3799.282	144.9		140.61	4.29	31.05	838	842.77		843.05	0.001817	2.35	62.83	0.28	0.1	0.01	0.43
Alto	3749.292	144.9		143.91	0.99	48.1	838	842.6		842.94	0.002315	2.6	57.12	0.34	0.06	0	0.48
Alto	3723.315	144.9		144.87	0.03	23.01	838	842.54		842.88	0.002311	2.56	56.58	0.33	0.06	0	0.48
Alto	3699.295	144.9		144.78	0.12	28.46	838	842.49		842.82	0.002282	2.54	57.24	0.33	0.03	0.01	0.48

Rio: Bengalas		Procedimento: Simulação				Escoamento: Steady Flow				Regime: Mix Flow							
Local: Nova Friburgo		Evento: Chuva TR-50 anos				Condição de Contorno: Normal Depth				Perfil: TR50							
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Alto	3686.538	144.9		140.1	4.8	51.55	838	842.49		842.78	0.002088	2.43	62.37	0.29	0.08	0	0.46
Alto	3649.29	144.9		144.9		19.66	838	842.36		842.7	0.002296	2.55	56.73	0.33	0.05	0	0.48
Alto	3628.303	144.9		144.9	0	34.66	838	842.33		842.64	0.002188	2.5	58.01	0.32	0.04	0.01	0.47
Alto	3609.762 S10	144.9		143.9	1	77.21	838.25	842.32		842.59	0.001923	2.33	66.34	0.28	0.06	0.02	0.45
Alto	3574.84	144.9		133.52	11.38	113.74	838	842.3		842.52	0.001477	2.13	91.77	0.21	0.03	0.02	0.39
Alto	3549.256	144.9		119.37	25.53	165.65	838	842.31		842.46	0.001137	1.88	131.65	0.15	0.08	0.01	0.34
Alto	3499.259	144.9		138.81	6.09	108.23	837.75	842.07	840.65	842.37	0.002138	2.46	72.65	0.3	0.05	0.01	0.46
Alto	3476.621	144.9		144.9		19.06	837.75	841.94		842.31	0.002665	2.71	53.56	0.37	0.08	0	0.52
Alto	3449.258	144.9		144.89	0.01	19.94	837.75	841.83		842.23	0.003013	2.82	51.49	0.4	0.15	0	0.55
Alto	3399.261	144.9		144.82	0.08	20.12	837.5	841.69		842.08	0.002813	2.77	52.45	0.39	0.14	0.01	0.53
Alto	3349.259	144.9		144.71	0.19	28.61	837.5	841.57		841.94	0.002639	2.68	54.3	0.37	0.12	0.02	0.51
Alto	3299.259	144.9		142.81	2.09	33.97	837.25	841.49		841.8	0.002185	2.48	59.77	0.31	0.1	0.01	0.47
Alto	3249.258	144.9		142.08	2.82	35.09	837.25	841.42		841.69	0.001865	2.33	63.7	0.27	0.08	0.02	0.44
Alto	3199.258	144.9	0	130.09	14.81	36.08	837	841.38		841.59	0.00133	2.03	72.41	0.2	0.06	0.01	0.37
Alto	3149.258	144.9	0	123.44	21.45	37.73	836.75	841.35		841.52	0.000991	1.82	79.4	0.17	0.04	0.01	0.33
Alto	3099.247	144.9	0.05	125.56	19.29	40.28	836.75	841.33		841.47	0.00074	1.62	88.73	0.14	0.03	0.01	0.29
Alto	3058.003 S9	144.9	0.17	131.15	13.58	43.02	836.5	841.32		841.43	0.00058	1.48	98.6	0.11	0.04	0	0.26
Alto	2999.242	144.9	1.14	132.55	11.22	51.25	836.5	841.23		841.39	0.000884	1.79	84.66	0.16	0.04	0	0.31
Alto	2949.221	144.9	0.09	128.93	15.88	45.17	836.25	841.19		841.34	0.000911	1.77	83.89	0.15	0.04	0.01	0.32
Alto	2899.194	144.9	0.04	117.32	27.54	42.13	836.25	841.17		841.29	0.000662	1.54	92.29	0.13	0.03	0	0.27
Alto	2849.2	144.9	0.02	121.82	23.07	37.93	836	841.13		841.26	0.00066	1.57	90.74	0.13	0.03	0	0.27
Alto	2799.187	144.9	0	126.73	18.16	34.45	836	841.08		841.23	0.000734	1.67	86.5	0.14	0.04	0	0.28
Alto	2749.187	144.9	0	137.32	7.58	28.62	835.75	841.01		841.18	0.0009	1.85	79.17	0.17	0.05	0	0.3
Alto	2699.212	144.9		136.01	8.89	30.54	835.72	840.96		841.14	0.000957	1.89	78.02	0.18	0.02	0.01	0.31
Alto	2677.167	144.9		123.1	21.8	48.92	835.5	840.97		841.1	0.000738	1.65	92.33	0.13	0.02	0	0.27
Alto	2649.215	144.9		130.57	14.33	41.31	835.5	840.92		841.08	0.000877	1.8	82.98	0.16	0.04	0.01	0.3
Alto	2599.223	144.9		131.37	13.53	39.15	835.25	840.9		841.03	0.000687	1.61	91.31	0.13	0.03	0.01	0.27
Alto	2552.887	144.9		118.7	26.2	64.22	835.25	840.91	838.09	840.99	0.00043	1.31	113.98	0.08	0	0.01	0.22
Alto	2547.430 T3 Bridge																
Alto	2543.247	144.9	5.8	109.56	29.54	93.5	835.25	840.87		840.94	0.00033	1.16	132.27	0.06	0.01	0	0.19
Alto	2525.589	144.9	4.99	121.8	18.11	56.35	835.25	840.85		840.93	0.000401	1.29	115.81	0.08	0.01	0	0.21
Alto	2499.225	144.9	4.17	121.67	19.05	60.11	835.25	840.84		840.92	0.000361	1.24	122.07	0.07	0.02	0	0.2
Alto	2449.235	144.9	6.11	125.71	13.08	129.29	835.25	840.83		840.9	0.000331	1.2	138.47	0.07	0.02	0.01	0.19
Alto	2380.636	144.9	0.45	99	45.44	132.79	835.25	840.83	837.73	840.87	0.000175	0.9	176.02	0.04	0.01	0	0.14
Alto	2349.239	144.9	0.52	131.39	12.99	63.14	835.25	840.79	837.71	840.86	0.00031	1.19	128.79	0.07	0	0.02	0.19
Alto	2299.246	144.9	0.49	48.65	95.77	221.73	835.25	840.83	837.83	840.84	0.000045	0.46	298.29	0.01	0	0	0.07
Alto	2249.258	144.9	1.1	93.19	50.61	151.63	835.5	840.8	837.87	840.83	0.000173	0.9	237.66	0.03	0.01	0.01	0.14
Alto	2199.258	144.9	1.4	64.49	79.01	142.39	835.5	840.81	837.84	840.82	0.000075	0.6	319.1	0.01	0	0	0.09
Alto	2173.195	144.9	0.62	28.76	115.5	242.4	835.5	840.81	837.86	840.82	0.000015	0.27	554.02	0	0	0	0.04
Alto	2149.258	144.9	1.11	47.68	96.11	193.7	835.5	840.81	837.87	840.82	0.000039	0.43	461.48	0.01	0	0	0.07

<u>Rio:</u> Bengalas		<u>Procedimento:</u> Simulação						<u>Escoamento:</u>			Steady Flow		<u>Regime:</u> Mix Flow				
<u>Local:</u> Nova Friburgo		<u>Evento:</u> Chuva TR-50 anos						<u>Condição de Contorno:</u>			Normal Depth		<u>Perfil:</u> TR50				
Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Baixo	2094.28	266.8	22.8	82.6	161.4	342.24	835.5	840.8		840.81	0.000106	0.72	677.38	0.01	0	0	0.11
Baixo	2086.245	266.8	25.31	79.2	162.3	343.34	835.5	840.8	838.83	840.81	0.000097	0.69	686.51	0.01	0	0	0.11
Baixo	2081.187 T2	Bridge															
Baixo	2076.63	266.8	26.47	79.33	161	343.86	835.5	840.79		840.8	0.000101	0.7	695.65	0.01	0	0	0.11
Baixo	2049.26	266.8	3.91	104.89	158	137.59	835.5	840.77	838.78	840.8	0.000182	0.95	364.14	0.03	0	0.01	0.15
Baixo	1999.26	266.8	0.97	31.05	234.8	224.44	835.5	840.78	838.65	840.79	0.000016	0.29	554.33	0.01	0	0.01	0.04
Baixo	1949.26	266.8	5.13	164.63	97.04	144	835.25	840.7	838.72	840.78	0.000507	1.58	267.81	0.09	0.03	0.01	0.25
Baixo	1899.26	266.8	6.89	213.46	46.45	61.14	835.25	840.5	838.62	840.73	0.000949	2.12	137.22	0.23	0.04	0.02	0.34
Baixo	1849.26	266.8	7.46	210.95	48.39	95.07	835.25	840.5	838.47	840.67	0.000833	2.02	161.96	0.18	0.02	0.03	0.32
Baixo	1819.457	266.8	8.96	174.95	82.89	207.85	835	840.54	838.34	840.63	0.000491	1.59	271.34	0.09	0.01	0.02	0.24
Baixo	1785.207	266.8	71.07	137.5	58.22	325.87	835	840.56	838.2	840.6	0.000253	1.15	472.85	0.04	0.01	0	0.18
Baixo	1749.264	266.8	78.7	133.48	54.62	336.41	835	840.56	838.08	840.59	0.000207	1.04	474.45	0.03	0.01	0	0.16
Baixo	1699.257	266.8	104.83	115.92	46.05	375.24	835	840.56	837.98	840.58	0.000149	0.9	579.65	0.02	0	0	0.14
Baixo	1674.594	266.8	132.2	119.71	14.89	242.37	835	840.55	837.99	840.57	0.000162	0.94	463.88	0.03	0	0	0.14
Baixo	1649.256	266.8	109.54	143.76	13.5	257.17	834.75	840.53	838	840.57	0.000244	1.14	469.37	0.04	0	0.01	0.17
Baixo	1622.255	266.8	164.72	91.39	10.69	323.51	834.75	840.54	838.02	840.56	0.000101	0.74	527.17	0.02	0	0.01	0.11
Baixo	1599.256	266.8	50.84	202.44	13.51	148.32	834.75	840.43		840.54	0.000557	1.7	235.15	0.12	0.01	0.03	0.26
Baixo	1549.264	266.8	198.03	63.1	5.67	210.42	834.75	840.48		840.51	0.000066	0.58	375.15	0.03	0	0.02	0.09
Baixo	1525.865	266.8	51.84	210.93	4.03	90.72	834.75	840.26		840.48	0.001085	2.28	151.13	0.22	0.03	0.01	0.35
Baixo	1506.375 S6	266.8	53.04	211.93	1.83	62.58	834.75	840.13		840.45	0.001672	2.71	117.97	0.32	0.04	0.03	0.42
Baixo	1483.175	266.8	67.01	168.82	30.97	175.59	834.5	840.17		840.38	0.001414	2.45	169.94	0.21	0.04	0.03	0.38
Baixo	1449.256	266.8	122.1	140.79	3.91	152.09	834.5	840.2		840.31	0.000865	1.97	258.74	0.12	0.02	0.03	0.3
Baixo	1399.256	266.8	175.51	77.01	14.29	251.69	834.5	840.24		840.27	0.00024	1.05	524.71	0.02	0.01	0	0.16
Baixo	1349.258	266.8	186.18	71.94	8.68	215.03	834.5	840.23		840.25	0.000206	0.98	523.6	0.02	0.01	0	0.15
Baixo	1299.258	266.8	155.63	102.15	9.02	309.78	834.25	840.2		840.24	0.000366	1.34	453.03	0.04	0.01	0	0.2
Baixo	1267.092	266.8	141.61	122.19	3	234.2	834.25	840.16		840.22	0.00048	1.55	385.51	0.06	0.01	0.01	0.23
Baixo	1249.258	266.8	103.8	158.86	4.14	211.66	834.25	840.07		840.2	0.00085	2.05	265.29	0.13	0.05	0.01	0.31
Baixo	1199.258	266.8	83.24	177.81	5.75	162.76	834.25	839.94		840.15	0.001223	2.39	192.6	0.2	0.04	0.01	0.37
Baixo	1171.129	266.8	68.82	192.17	5.81	166.97	834.25	839.79		840.09	0.001805	2.85	193.21	0.3	0.04	0.01	0.45
Baixo	1149.258	266.8	53.37	206.77	6.66	92.89	834	839.66		840.04	0.002122	3.1	152.23	0.39	0.07	0.06	0.48
Baixo	1099.235	266.8	39.53	184.06	43.21	183.09	834	839.72		839.91	0.001087	2.3	248.83	0.19	0.04	0.01	0.36
Baixo	1049.229 S5	266.8	6.56	198.22	62.02	182.39	833.81	839.71		839.85	0.000705	1.93	270.46	0.14	0.03	0.01	0.29
Baixo	999.1276	266.8	15.47	165.67	85.67	188.92	833.5	839.71		839.81	0.000545	1.73	313.12	0.1	0.02	0.01	0.26
Baixo	968.833	266.8	13.34	143.09	110.4	250.66	833.25	839.71		839.79	0.000515	1.61	367.67	0.08	0.01	0.01	0.24
Baixo	949.0698	266.8	10.06	185.38	71.36	120.04	833.25	839.59		839.76	0.000993	2.18	207	0.18	0.04	0.02	0.34
Baixo	899.0942	266.8	17.09	174.4	75.3	188.21	833.25	839.59		839.71	0.000692	1.85	301.21	0.12	0.05	0.03	0.29
Baixo	849.143	266.8	11.68	244.91	10.21	68.24	833	839.22		839.62	0.001972	2.93	120.32	0.4	0.08	0.03	0.47
Baixo	799.143	266.8	10.47	227.98	28.35	148.84	832.75	839.21		839.5	0.00145	2.57	178.49	0.29	0.06	0.02	0.41
Baixo	749.1328	266.8	6.58	204.02	56.2	137.6	832.5	839.2		839.41	0.001141	2.31	212.94	0.21	0.06	0.01	0.36
Baixo	699.1328	266.8	7.07	216.19	43.54	115.03	832.25	839.08		839.35	0.001363	2.54	155.87	0.27	0.09	0.03	0.39

Rio: Bengalas **Procedimento:** Simulação **Escoamento:** Steady Flow **Regime:** Mix Flow
Local: Nova Friburgo **Evento:** Chuva TR-50 anos **Condição de Contorno:** Normal Depth **Perfil:** TR50

Reach	River Sta	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Top Width (m)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Vel Head (m)	Frctn Loss (m)	C & E Loss (m)	Froude # Chl
Baixo	649.1328	266.8	4.41	261.63	0.76	46.83	831.75	838.67		839.23	0.002613	3.34	90.54	0.56	0.13	0.01	0.52
Baixo	599.1347	266.8	3.15	263.42	0.23	47.36	831.5	838.57		839.09	0.002483	3.22	91.33	0.52	0.12	0.01	0.5
Baixo	549.1295	266.8	2.05	264.71	0.04	34.13	831.25	838.48		838.95	0.002362	3.05	91.68	0.47	0.11	0	0.49
Baixo	499.045	266.8	0.79	266.01		27.98	831.25	838.38		838.83	0.002129	3	91.22	0.46	0.12	0.01	0.47
Baixo	448.9738	266.8	1.45	265.35		24.83	831.5	838.16		838.7	0.002736	3.27	83.88	0.54	0.24	0.09	0.53
Baixo	398.9491	266.8		266.8		16.95	832.25	836.9	836.9	838.37	0.010545	5.37	49.65	1.47	0.28	0.28	1
Baixo	352.748	266.8		266.8		31.72	832.88	836.8	835.95	837.32	0.003688	3.21	83.17	0.52	0.02	0	0.63
Baixo	348.9313 T1 Bridge																
Baixo	343.9721	266.8		266.8		31.19	832.75	836.59		837.1	0.003381	3.14	84.93	0.5	0.06	0.09	0.61
Baixo	298.9281	266.8	1.77	265.03		34.36	829.65	836.74		836.94	0.000783	1.97	139.7	0.2	0.01	0.04	0.29
Baixo	248.9493	266.8	4.37	262.43		57.87	825.25	836.83		836.88	0.000146	1.01	280.53	0.05	0.01	0	0.13
Baixo	199.1468	266.8	4.89	261.91		49.06	827.5	836.79		836.87	0.000214	1.26	228.78	0.08	0.01	0	0.16
Baixo	160.6351	266.8	0.12	266.68		47.53	829.84	836.79	832.56	836.86	0.000189	1.11	240.6	0.06			0.16
Baixo	158.6960 Bar. Catet Inl Struct																
Baixo	155.7292	266.8		266.8		35.8	830.07	832.61	832.61	833.52	0.010721	4.21	63.37	0.9	0.2	0	1.01
Baixo	136.5043	266.8		266.8		33.3	827.75	830.64	830.64	831.58	0.010162	4.29	62.24	0.94	0.38	0.02	1
Baixo	99.03893	266.8		266.8		25.92	824.65	828.33	828.33	829.45	0.01019	4.69	56.86	1.12	0.51	0.01	1.01
Baixo	49.06651	266.8		266.8		21.1	819.75	824.52	824.52	825.79	0.010176	4.99	53.44	1.27			1