

PLANILLA DE CÁLCULO HIDRÁULICO N° 2

OBRA: ACUEDUCTO QUEBRADA DE MOREIRA - PLANTA 1

Datos: Caudal total 1 m³/s con derivaciones estimadas en puntos intermedios

n = 0.00001 m²/seg
 k = 0.01 mm PRFV
 k = 0.005 mm PVC
 C_{HW} = 145 PRFV

OBSERVACIONES	CÁMARAS	PROGRESIVA (m)	DISTANCIA C.D.	DISTANCIA V.A.	DISTANCIAS PARCIALES (m)	COTA TERRENO (m)	COTA INTRADOS (m)	TAPADA (m)	PENDIENTE TUBERIA (mm/m)	CAUDAL RAMAL (m³/h)	CAUDAL DERIVADO (m³/h)	CAUDAL TOTAL (m³/h)	CAUDAL (m³/seg)	DIAMETRO NOMINAL (mm)	j H-W	j Darcy	COTA PIEZOM. (m)	PRESION SERVICIO (m)	PRESION ESTÁTICA (m)	PRESION MAXIMA (kg/cm²)	CLASE CALC.	VELOCIDAD (m/seg)
De Moreira - V. Sec.	V. Aire	0.00	0.00	0.00	0.00	655.00	656.30	-1.30	-		0.00	3600.00	1.000	900	0.00177	0.00157	660.00	3.70	3.70	0.37	6	1.57
	V. Aire	700.00	700.00	700.00	700.00	598.75	600.05	-1.30	-80.36		0.00	3600.00	1.000	900	0.00177	0.00157	658.90	58.85	59.95	6.00	6	1.57
	V. Desag	933.40	933.40	233.40	233.40	580.00	581.30	-1.30	-80.33		0.00	3600.00	1.000	900	0.00177	0.00157	658.53	77.23	78.70	7.87	10	1.57
		940.00	6.60	240.00	6.60	580.00	578.79	1.21	-380.00		0.00	3600.00	1.000	900	0.00177	0.00157	658.52	79.73	81.21	8.12	10	1.57
V. Secc.	V. Aire	1400.00	466.60	700.00	460.00	560.00	558.78	1.22	-43.50		0.00	3600.00	1.000	900	0.00177	0.00157	657.80	99.02	101.22	10.12	>10	1.57
		1569.40	636.00	169.40	169.40	560.00	558.10	1.90	-4.00		0.00	3600.00	1.000	900	0.00177	0.00157	657.53	99.43	101.90	10.19	>10	1.57
	V. Desag	1729.40	796.00	329.40	160.00	546.81	545.37	1.44	-79.60		0.00	3600.00	1.000	900	0.00177	0.00157	657.28	111.91	114.63	11.46	>10	1.57
	V. Aire	1950.40	1017.00	550.40	221.00	544.90	543.60	1.30	-8.00		0.00	3600.00	1.000	900	0.00177	0.00157	656.93	113.33	116.40	11.64	>10	1.57
	V. Aire	2110.40	160.00	710.40	160.00	545.20	543.92	1.28	2.00		0.00	3600.00	1.000	900	0.00177	0.00157	656.68	112.76	116.08	11.61	>10	1.57
		2261.90	311.50	151.50	151.50	546.35	544.94	1.41	6.70		0.00	3600.00	1.000	900	0.00177	0.00157	656.44	111.51	115.06	11.51	>10	1.57
	V. Aire	2552.90	602.50	442.50	291.00	548.30	546.89	1.41	6.70		0.00	3600.00	1.000	900	0.00177	0.00157	655.98	109.10	113.11	11.31	>10	1.57
		2778.60	828.20	668.20	225.70	550.03	548.40	1.63	6.70		0.00	3600.00	1.000	900	0.00177	0.00157	655.63	107.23	111.60	11.16	>10	1.57
	V. Desag	2859.30	908.90	80.70	80.70	554.35	548.94	5.41	6.70		0.00	3600.00	1.000	900	0.00177	0.00157	655.50	106.56	111.06	11.11	>10	1.57
	V. Aire	2910.70	960.30	132.10	51.40	550.47	549.07	1.40	2.50		0.00	3600.00	1.000	900	0.00177	0.00157	655.42	106.35	110.93	11.09	>10	1.57
	V. Desag	2972.50	1022.10	193.90	61.80	550.25	549.22	1.03	2.50		0.00	3600.00	1.000	900	0.00177	0.00157	655.32	106.10	110.78	11.08	>10	1.57
		3034.00	61.50	255.40	61.50	551.51	549.37	2.14	2.50		0.00	3600.00	1.000	900	0.00177	0.00157	655.23	105.85	110.63	11.06	>10	1.57
	V. Aire	3101.60	129.10	323.00	67.60	553.34	549.54	3.80	2.50		0.00	3600.00	1.000	900	0.00177	0.00157	655.12	105.58	110.46	11.05	>10	1.57
		3165.30	192.80	386.70	63.70	551.79	549.70	2.09	2.50		0.00	3600.00	1.000	900	0.00177	0.00157	655.02	105.32	110.30	11.03	>10	1.57
	V. Desag	3234.30	261.80	455.70	69.00	552.58	549.88	2.70	2.50		0.00	3600.00	1.000	900	0.00177	0.00157	654.91	105.04	110.12	11.01	>10	1.57
		3309.00	336.50	530.40	74.70	552.57	550.06	2.51	2.50		0.00	3600.00	1.000	900	0.00177	0.00157	654.79	104.73	109.94	10.99	>10	1.57
	V. Aire	3378.00	405.50	599.40	69.00	552.95	550.23	2.72	2.50		0.00	3600.00	1.000	900	0.00177	0.00157	654.69	104.45	109.77	10.98	>10	1.57
		3447.00	474.50	668.40	69.00	554.27	550.41	3.86	2.50		0.00	3600.00	1.000	900	0.00177	0.00157	654.58	104.17	109.59	10.96	>10	1.57
	V. Desag	3516.70	544.20	69.70	69.70	552.89	550.58	2.31	2.50		0.00	3600.00	1.000	900	0.00177	0.00157	654.47	103.89	109.42	10.94	>10	1.57
		3597.70	625.20	150.70	81.00	552.92	551.72	1.20	14.00		0.00	3600.00	1.000	900	0.00177	0.00157	654.34	102.62	108.28	10.83	>10	1.57
	V. Desag	3755.90	783.40	308.90	158.20	556.49	553.93	2.56	14.00		0.00	3600.00	1.000	900	0.00177	0.00157	654.09	100.16	106.07	10.61	>10	1.57
		3830.90	858.40	383.90	75.00	557.36	554.98	2.38	14.00		0.00	3600.00	1.000	900	0.00177	0.00157	653.97	98.99	105.02	10.50	>10	1.57
	V. Aire	3902.90	72.00	455.90	72.00	557.28	555.99	1.29	14.00		0.00	3600.00	1.000	900	0.00177	0.00157	653.86	97.87	104.01	10.40	>10	1.57
		3980.90	150.00	533.90	78.00	559.44	557.08	2.36	14.00		0.00	3600.00	1.000	900	0.00177	0.00157	653.74	96.66	102.92	10.29	>10	1.57
	V. Desag	4060.70	229.80	613.70	79.80	563.31	562.27	1.04	65.00		0.00	3600.00	1.000	900	0.00177	0.00157	653.61	91.34	97.73	9.77	10	1.57
		4138.70	307.80	691.70	78.00	568.97	567.34	1.63	65.00		0.00	3600.00	1.000	900	0.00177	0.00157	653.49	86.15	92.66	9.27	10	1.57
V. Secc.	V. Aire	4177.30	346.40	730.30	38.60	568.85	567.41	1.44	2.00	684.00	684.00	2916.00	0.810	900	0.00119	0.00106	653.45	86.03	92.59	9.26	10	1.27
	V. Desag	4234.70	403.80	787.70	57.40	568.85	567.53	1.32	2.00		0.00	2916.00	0.810	800	0.00212	0.00190	653.34	85.81	92.47	9.25	10	1.61
	V. Aire	4684.70	853.80	450.00	450.00	563.86	562.58	1.27	-11.00		0.00	2916.00	0.810	800	0.00212	0.00190	652.49	89.91	97.42	9.74	10	1.61
	V. Desag	5134.70	450.00	900.00	450.00	568.85	567.53	1.32	11.00		0.00	2916.00	0.810	800	0.00212	0.00190	651.63	84.10	92.47	9.25	10	1.61
	V. Aire	5196.60	511.90	61.90	61.90	558.16	557.01	1.15	-170.00		0.00	2916.00	0.810	800	0.00212	0.00190	651.52	94.51	102.99	10.30	>10	1.61
	V. Desag	5288.60	92.00	153.90	92.00	558.50	557.19	1.31	2.00		0.00	2916.00	0.810	800	0.00212	0.00190	651.34	94.15	102.81	10.28	>10	1.61
	V. Aire	5378.90	182.30	244.20	90.30	558.39	557.37	1.02	2.00		0.00	2916.00	0.810	800	0.00212	0.00190	651.17	93.80	102.63	10.26	>10	1.61
	V. Desag	5464.90	268.30	86.00	86.00	556.24	554.79	1.45	-30.00		0.00	2916.00	0.810	800	0.00212	0.00190	651.01	96.22	105.21	10.52	>10	1.61
	V. Aire	5554.90	90.00	176.00	90.00	556.03	554.97	1.06	2.00		0.00	2916.00	0.810	800	0.00212	0.00190	650.84	95.87	105.03	10.50	>10	1.61
	V. Desag	5648.00	183.10	269.10	93.10	556.45	555.16	1.29	2.00		0.00	2916.00	0.810	800	0.00212	0.00190	650.66	95.50	104.84	10.48	>10	1.61
	V. Aire	5736.40	271.50	88.40	88.40	551.86	550.74	1.12	-50.00		0.00	2916.00	0.810	800	0.00212	0.00190	650.49	99.76	109.26	10.93	>10	1.61
	V. Desag	5820.30	355.40	172.30	83.90	549.63	546.54	3.09	-50.00	493.20	493.20	2422.80	0.673	800	0.00150	0.00134	650.38	103.84	113.46	11.35	>10	1.34
	V. Aire	5909.20	88.90	261.20	88.90	550.45	548.32	2.13	20.00		0.00	2422.80	0.673	800	0.00150	0.00134	650.26	101.94	111.68	11.17	>10	1.34
	V. Desag	6021.70	201.40	373.70	112.50	552.63	550.57	2.06	20.00		0.00	2422.80	0.673	800	0.00150	0.00134	650.11	99.54	109.43	10.94	>10	1.34
	V. Aire	6100.00	279.70	452.00	78.30	554.11	552.14	1.97	20.00		0.00	2422.80	0.673	800	0.00150	0.00134	650.00	97.87	107.86	10.79	>10	1.34
	V. Desag	6176.50	356.20	76.50	76.50	552.06	550.84	1.22	-17.00		0.00	2422.80	0.673	800	0.00150	0.00134	649.90	99.07	109.16	10.92	>10	1.34
	V. Aire	6288.60	112.10	188.60	112.10	555.01	553.53	1.48	24.00		0.00	2422.80	0.673	800								

OBSERVACIONES	CÁMARAS	PROGRESIVA (m)	DISTANCIA C.D.	DISTANCIA V.A.	DISTANCIAS PARCIALES (m)	COTA TERRENO (m)	COTA INTRADOS (m)	TAPADA (m)	PENDIENTE TUBERIA (mm/m)	CAUDAL RAMAL (m³/h)	CAUDAL DERIVADO (m³/h)	CAUDAL TOTAL (m³/h)	CAUDAL (m³/seg)	DIAMETRO NOMINAL (mm)	j H-W	j Darcy	COTA PIEZOM. (m)	PRESION SERVICIO (m)	PRESION ESTÁTICA (m)	PRESION MAXIMA (kg/cm²)	CLASE CALC.	VELOCIDAD (m/seg)	
V. Secc.	V. Aire	7051.40	874.90	951.40	191.20	559.39	558.09	1.30	4.50		0.00	2422.80	0.673	800	0.00150	0.00134	648.73	90.64	101.91	10.19	>10	1.34	
		7221.40	1044.90	170.00	170.00	552.60	551.29	1.31	-40.00		0.00	2422.80	0.673	800	0.00150	0.00134	648.50	97.21	108.71	10.87	>10	1.34	
	V. Desag	7320.60	1144.10	269.20	99.20	551.94	550.90	1.04	-4.00		0.00	2422.80	0.673	800	0.00150	0.00134	648.37	97.47	109.10	10.91	>10	1.34	
		7364.60	44.00	313.20	44.00	553.18	551.42	1.76	12.00		0.00	2422.80	0.673	800	0.00150	0.00134	648.31	96.89	108.58	10.86	>10	1.34	
	V. Aire	7430.60	110.00	379.20	66.00	553.92	552.22	1.70	12.00		0.00	2422.80	0.673	800	0.00150	0.00134	648.22	96.01	107.78	10.78	>10	1.34	
		7509.40	188.80	458.00	78.80	554.46	553.16	1.30	12.00		0.00	2422.80	0.673	800	0.00150	0.00134	648.12	94.95	106.84	10.68	>10	1.34	
	V. Desag	7568.40	247.80	59.00	59.00	552.70	551.39	1.31	-30.00	0.00	0.00	2422.80	0.673	800	0.00150	0.00134	648.04	96.64	108.61	10.86	>10	1.34	
		7642.60	74.20	133.20	74.20	561.49	557.33	4.16	80.00		0.00	2422.80	0.673	800	0.00150	0.00134	647.94	90.61	102.67	10.27	>10	1.34	
	V. Aire	7712.60	144.20	203.20	70.00	564.21	562.93	1.28	80.00		0.00	2422.80	0.673	800	0.00150	0.00134	647.84	84.92	97.07	9.71	10	1.34	
		7800.80	232.40	291.40	88.20	571.02	569.98	1.04	80.00		0.00	2422.80	0.673	800	0.00150	0.00134	647.73	77.74	90.02	9.00	10	1.34	
	V. Desag	7862.80	294.40	353.40	62.00	575.95	574.94	1.01	80.00		0.00	2422.80	0.673	800	0.00150	0.00134	647.64	72.70	85.06	8.51	10	1.34	
		7992.80	424.40	130.00	130.00	575.29	574.16	1.13	-6.00		0.00	2422.80	0.673	800	0.00150	0.00134	647.47	73.30	85.84	8.58	10	1.34	
	V. Aire	8133.20	564.80	270.40	140.40	576.26	573.32	2.94	-6.00		0.00	2422.80	0.673	800	0.00150	0.00134	647.28	73.96	86.68	8.67	10	1.34	
		8196.40	63.20	333.60	63.20	580.61	578.25	2.36	78.00		0.00	2422.80	0.673	800	0.00150	0.00134	647.19	68.94	81.75	8.17	10	1.34	
	V. Desag	8304.90	171.70	442.10	108.50	579.64	578.47	1.17	2.00		0.00	2422.80	0.673	800	0.00150	0.00134	647.05	68.58	81.53	8.15	10	1.34	
		8442.30	309.10	579.50	137.40	583.03	579.57	3.46	8.00		0.00	2422.80	0.673	800	0.00150	0.00134	646.87	67.30	80.43	8.04	10	1.34	
	V. Aire	8473.80	340.60	611.00	31.50	581.14	579.82	1.32	8.00		0.00	2422.80	0.673	800	0.00150	0.00134	646.82	67.00	80.18	8.02	10	1.34	
		8598.00	464.80	735.20	124.20	582.87	580.81	2.06	8.00		0.00	2422.80	0.673	800	0.00150	0.00134	646.66	65.84	79.19	7.92	10	1.34	
	V. Desag	8664.50	531.30	66.50	66.50	583.16	581.34	1.82	8.00		0.00	2422.80	0.673	800	0.00150	0.00134	646.57	65.22	78.66	7.87	10	1.34	
		8704.50	571.30	106.50	40.00	583.34	581.66	1.68	8.00		0.00	2422.80	0.673	800	0.00150	0.00134	646.51	64.85	78.34	7.83	10	1.34	
	V. Aire	8792.30	659.10	194.30	87.80	583.81	582.37	1.44	8.00		0.00	2422.80	0.673	800	0.00150	0.00134	646.40	64.03	77.63	7.76	10	1.34	
		8860.30	727.10	262.30	68.00	585.08	582.91	2.17	8.00		0.00	2422.80	0.673	800	0.00150	0.00134	646.30	63.39	77.09	7.71	10	1.34	
	V. Desag	8922.30	62.00	324.30	62.00	586.88	583.41	3.47	8.00		0.00	2422.80	0.673	800	0.00150	0.00134	646.22	62.81	76.59	7.66	10	1.34	
		8991.70	131.40	393.70	69.40	586.63	583.96	2.67	8.00		0.00	2422.80	0.673	800	0.00150	0.00134	646.13	62.17	76.04	7.60	10	1.34	
	V. Aire	9057.30	197.00	459.30	65.60	588.05	584.49	3.56	8.00		0.00	2422.80	0.673	800	0.00150	0.00134	646.04	61.55	75.51	7.55	10	1.34	
		9124.60	264.30	526.60	67.30	589.04	585.03	4.01	8.00		0.00	2422.80	0.673	800	0.00150	0.00134	645.95	60.93	74.97	7.50	10	1.34	
	V. Desag	9228.60	368.30	630.60	104.00	587.72	585.86	1.86	8.00		0.00	2422.80	0.673	800	0.00150	0.00134	645.81	59.95	74.14	7.41	10	1.34	
		9264.60	404.30	666.60	36.00	587.26	586.15	1.11	8.00		0.00	2422.80	0.673	800	0.00150	0.00134	645.76	59.62	73.85	7.39	10	1.34	
	Planta 1 - V. Secc.	V. Aire	9379.60	519.30	781.60	115.00	599.00	597.65	1.35	100.00		0.00	2422.80	0.673	800	0.00150	0.00134	645.61	47.96	62.35	6.24	10	1.34