OPENCHANNELFLOW

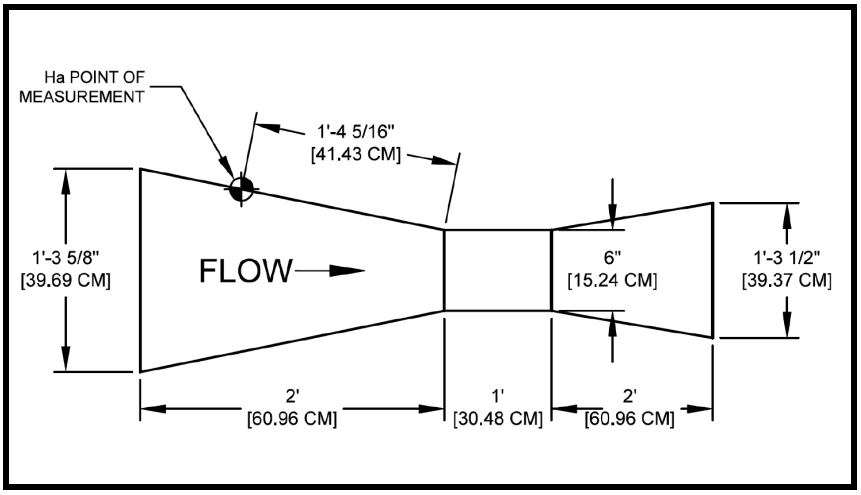
6-Inch Parshall Flume Discharge Table

60% Submergence Transition ±3-5% Accuracy

Formulas (H in feet): CFS = 2.06 $H_{ft.}^{1.58}$ GPM = 924.5 $H_{ft.}^{1.58}$ MGD = 1.331 $H_{ft.}^{1.58}$

Formulas (H in meters): L/S = 381.2 $H_{m}^{1.58}$ M3/HR = 1372 $H_{m}^{1.58}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
0.01	0.12	0.0030	Excessive error due to fluid-flow properties and boundary conditions				
0.02	0.24	0.0061					
0.03	0.36	0.0091					
0.04	0.48	0.0122					
0.05	0.60	0.0152					
0.06	0.72	0.0183					
0.07	0.84	0.0213					
0.08	0.96	0.0244					
0.09	1.08	0.0274					
0.10	1.20	0.0305	0.0542	24.32	0.0350	1.534	5.521
0.11	1.32	0.0335	0.0630	28.27	0.0407	1.784	6.419
0.12	1.44	0.0366	0.0723	32.44	0.0467	2.047	7.365
0.13	1.56	0.0396	0.0820	36.81	0.0530	2.323	8.357
0.14	1.68	0.0427	0.0922	41.38	0.0596	2.611	9.396
0.15	1.80	0.0457	0.1028	46.15	0.0665	2.912	10.48
0.16	1.92	0.0488	0.1139	51.10	0.0736	3.225	11.60
0.17	2.04	0.0518	0.1253	56.24	0.0810	3.549	12.77
0.18	2.16	0.0549	0.1372	61.55	0.0886	3.884	13.98
0.19	2.28	0.0579	0.1494	67.04	0.0965	4.230	15.22
0.20	2.40	0.0610	0.1620	72.70	0.1047	4.588	16.51
0.21	2.52	0.0640	0.1750	78.53	0.1131	4.955	17.83
0.22	2.64	0.0671	0.1883	84.52	0.1217	5.333	19.19
0.23	2.76	0.0701	0.2020	90.67	0.1306	5.721	20.59
0.24	2.88	0.0732	0.2161	96.97	0.1396	6.119	22.02
0.25	3.00	0.0762	0.2305	103.4	0.1490	6.527	23.48
0.26	3.12	0.0792	0.2452	110.0	0.1585	6.944	24.99
0.27	3.24	0.0823	0.2603	116.8	0.1682	7.371	26.52
0.28	3.36	0.0853	0.2757	123.7	0.1782	7.807	28.09
0.29	3.48	0.0884	0.2914	130.8	0.1883	8.252	29.69
0.30	3.60	0.0914	0.3074	138.0	0.1987	8.706	31.33



Sources: Water Measurement Manual, 3rd Edition, United States Department of the Interior, Bureau of Reclamation

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Formulas (H in meters): L/S = 381.2 $H_{m}^{1.58}$ M3/HR = 1372 $H_{m}^{1.58}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
0.31	3.72	0.0945	0.3238	145.3	0.2092	9.169	32.99
0.32	3.84	0.0975	0.3404	152.8	0.2200	9.640	34.69
0.33	3.96	0.1006	0.3574	160.4	0.2310	10.12	36.42
0.34	4.08	0.1036	0.3746	168.1	0.2421	10.61	38.17
0.35	4.20	0.1067	0.3922	176.0	0.2535	11.11	39.96
0.36	4.32	0.1097	0.4100	184.0	0.2650	11.61	41.78
0.37	4.44	0.1128	0.4282	192.2	0.2767	12.13	43.63
0.38	4.56	0.1158	0.4466	200.4	0.2886	12.65	45.51
0.39	4.68	0.1189	0.4653	208.8	0.3007	13.18	47.42
0.40	4.80	0.1219	0.4843	217.4	0.3130	13.72	49.35
0.41	4.92	0.1250	0.5036	226.0	0.3255	14.26	51.31
0.42	5.04	0.1280	0.5231	234.8	0.3381	14.81	53.31
0.43	5.16	0.1311	0.5429	243.7	0.3509	15.38	55.33
0.44	5.28	0.1341	0.5630	252.7	0.3639	15.94	57.37
0.45	5.40	0.1372	0.5834	261.8	0.3770	16.52	59.45
0.46	5.52	0.1402	0.6040	271.1	0.3904	17.10	61.55
0.47	5.64	0.1433	0.6249	280.4	0.4038	17.70	63.67
0.48	5.76	0.1463	0.6460	289.9	0.4175	18.29	65.83
0.49	5.88	0.1494	0.6674	299.5	0.4313	18.90	68.01
0.50	6.00	0.1524	0.6890	309.2	0.4453	19.51	70.21
0.51	6.12	0.1554	0.7109	319.1	0.4595	20.13	72.44
0.52	6.24	0.1585	0.7331	329.0	0.4738	20.76	74.70
0.53	6.36	0.1615	0.7555	339.1	0.4883	21.40	76.98
0.54	6.48	0.1646	0.7781	349.2	0.5029	22.04	79.29
0.55	6.60	0.1676	0.8010	359.5	0.5177	22.68	81.62
0.56	6.72	0.1707	0.8241	369.9	0.5326	23.34	83.98
0.57	6.84	0.1737	0.8475	380.4	0.5478	24.00	86.36
0.58	6.96	0.1768	0.8711	391.0	0.5630	24.67	88.77
0.59	7.08	0.1798	0.8950	401.7	0.5784	25.35	91.20
0.60	7.20	0.1829	0.9191	412.5	0.5940	26.03	93.65
0.61	7.32	0.1859	0.9434	423.4	0.6097	26.72	96.13
0.62	7.44	0.1890	0.9679	434.4	0.6256	27.41	98.63
0.63	7.56	0.1920	0.9927	445.5	0.6416	28.11	101.2
0.64	7.68	0.1951	1.018	456.8	0.6578	28.82	103.7
0.65	7.80	0.1981	1.043	468.1	0.6741	29.54	106.3
0.66	7.92	0.2012	1.068	479.5	0.6905	30.26	108.9
0.67	8.04	0.2042	1.094	491.0	0.7071	30.99	111.5
0.68	8.16	0.2073	1.120	502.7	0.7239	31.72	114.1
0.69	8.28	0.2103	1.146	514.4	0.7408	32.46	116.8
0.70	8.40	0.2134	1.173	526.2	0.7578	33.21	119.5
0.71	8.52	0.2164	1.199	538.2	0.7750	33.96	122.2
0.72	8.64	0.2195	1.226	550.2	0.7923	34.72	124.9
0.73	8.76	0.2225	1.253	562.3	0.8098	35.48	127.7
0.74	8.88	0.2256	1.280	574.5	0.8273	36.25	130.4
0.75	9.00	0.2286	1.308	586.8	0.8451	37.03	133.2
0.76	9.12	0.2316	1.335	599.2	0.8630	37.81	136.1
0.77	9.24	0.2347	1.363	611.8	0.8810	38.60	138.9
0.78	9.36	0.2377	1.391	624.4	0.8991	39.40	141.8
0.79	9.48	0.2408	1.419	637.0	0.9174	40.20	144.6
0.80	9.60	0.2438	1.448	649.8	0.9358	41.01	147.5

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FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
0.81	9.72	0.2469	1.477	662.7	0.9544	41.82	150.5
0.82	9.84	0.2499	1.506	675.7	0.9730	42.64	153.4
0.83	9.96	0.2530	1.535	688.8	0.9918	43.46	156.4
0.84	10.08	0.2560	1.564	701.9	1.011	44.29	159.4
0.85	10.20	0.2591	1.593	715.2	1.030	45.13	162.4
0.86	10.32	0.2621	1.623	728.5	1.049	45.97	165.4
0.87	10.44	0.2652	1.653	741.9	1.068	46.82	168.5
0.88	10.56	0.2682	1.683	755.4	1.088	47.67	171.5
0.89	10.68	0.2713	1.714	769.1	1.107	48.53	174.6
0.90	10.80	0.2743	1.744	782.8	1.127	49.39	177.7
0.91	10.92	0.2774	1.775	796.5	1.147	50.26	180.9
0.92	11.04	0.2804	1.806	810.4	1.167	51.14	184.0
0.93	11.16	0.2835	1.837	824.4	1.187	52.02	187.2
0.94	11.28	0.2865	1.868	838.4	1.207	52.91	190.4
0.95	11.40	0.2896	1.900	852.6	1.228	53.80	193.6
0.96	11.52	0.2926	1.931	866.8	1.248	54.70	196.8
0.97	11.64	0.2957	1.963	881.1	1.269	55.60	200.1
0.98	11.76	0.2987	1.995	895.5	1.290	56.51	203.3
0.99	11.88	0.3018	2.028	910.0	1.310	57.42	206.6
1.00	12.00	0.3048	2.060	924.5	1.331	58.34	209.9
1.01	12.12	0.3078	2.093	939.2	1.352	59.26	213.2
1.02	12.24	0.3109	2.125	953.9	1.374	60.19	216.6
1.03	12.36	0.3139	2.158	968.7	1.395	61.13	220.0
1.04	12.48	0.3170	2.192	983.6	1.416	62.07	223.3
1.05	12.60	0.3200	2.225	998.6	1.438	63.01	226.7
1.06	12.72	0.3231	2.259	1014	1.460	63.97	230.2
1.07	12.84	0.3261	2.292	1029	1.482	64.92	233.6
1.08	12.96	0.3292	2.326	1044	1.504	65.88	237.1
1.09	13.08	0.3322	2.360	1059	1.526	66.85	240.5
1.10	13.20	0.3353	2.395	1075	1.548	67.82	244.0
1.11	13.32	0.3383	2.429	1090	1.570	68.80	247.5
1.12	13.44	0.3414	2.464	1106	1.592	69.78	251.1
1.13	13.56	0.3444	2.499	1121	1.615	70.77	254.6
1.14	13.68	0.3475	2.534	1137	1.638	71.76	258.2
1.15	13.80	0.3505	2.569	1153	1.660	72.76	261.8
1.16	13.92	0.3536	2.604	1169	1.683	73.76	265.4
1.17	14.04	0.3566	2.640	1185	1.706	74.76	269.0
1.18	14.16	0.3597	2.676	1201	1.729	75.78	272.7
1.19	14.28	0.3627	2.712	1217	1.753	76.79	276.3
1.20	14.40	0.3658	2.748	1233	1.776	77.82	280.0
1.21	14.52	0.3688	2.784	1249	1.799	78.84	283.7
1.22	14.64	0.3719	2.820	1266	1.823	79.87	287.4
1.23	14.76	0.3749	2.857	1282	1.847	80.91	291.1
1.24	14.88	0.3780	2.894	1299	1.870	81.95	294.9
1.25	15.00	0.3810	2.931	1315	1.894	83.00	298.6
1.26	15.12	0.3840	2.968	1332	1.918	84.05	302.4
1.27	15.24	0.3871	3.005	1349	1.942	85.11	306.2
1.28	15.36	0.3901	3.043	1366	1.966	86.17	310.1
1.29	15.48	0.3932	3.080	1382	1.991	87.24	313.9
1.30	15.60	0.3962	3.118	1399	2.015	88.31	317.7

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FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
1.31	15.72	0.3993	3.156	1416	2.040	89.38	321.6
1.32	15.84	0.4023	3.194	1434	2.064	90.46	325.5
1.33	15.96	0.4054	3.233	1451	2.089	91.55	329.4
1.34	16.08	0.4084	3.271	1468	2.114	92.64	333.3
1.35	16.20	0.4115	3.310	1485	2.139	93.73	337.3
1.36	16.32	0.4145	3.349	1503	2.164	94.83	341.2
1.37	16.44	0.4176	3.388	1520	2.189	95.94	345.2
1.38	16.56	0.4206	3.427	1538	2.215	97.04	349.2
1.39	16.68	0.4237	3.466	1556	2.240	98.16	353.2
1.40	16.80	0.4267	3.505	1573	2.266	99.28	357.2
1.41	16.92	0.4298	3.545	1591	2.291	100.4	361.2
1.42	17.04	0.4328	3.585	1609	2.317	101.5	365.3
1.43	17.16	0.4359	3.625	1627	2.343	102.7	369.4
1.44	17.28	0.4389	3.665	1645	2.369	103.8	373.5
1.45	17.40	0.4420	3.705	1663	2.395	104.9	377.6
1.46	17.52	0.4450	3.746	1681	2.421	106.1	381.7
1.47	17.64	0.4481	3.786	1699	2.447	107.2	385.8
1.48	17.76	0.4511	3.827	1718	2.474	108.4	390.0
1.49	17.88	0.4542	3.868	1736	2.500	109.5	394.2
1.50	18.00	0.4572	3.909	1754	2.527	110.7	398.4

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