OPENCHANNELFLOW

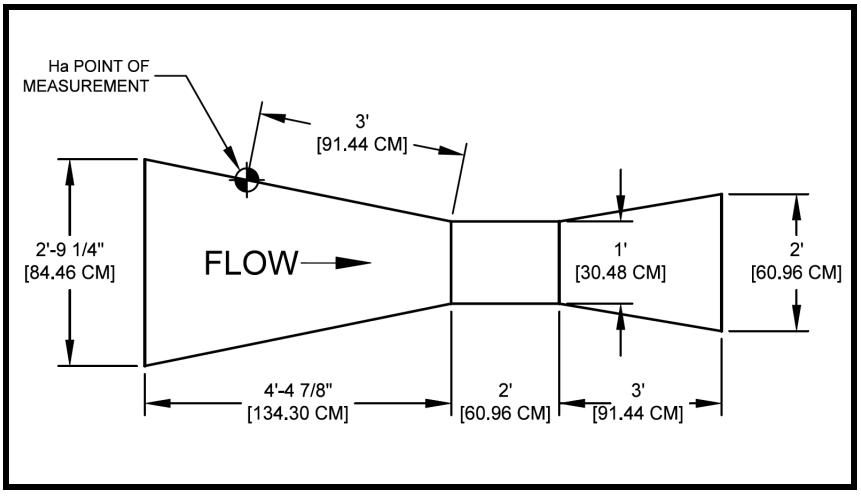
12-Inch Parshall Flume Discharge Table

70% Submergence Transition ±3-5% Accuracy

Formulas (H in feet): CFS = 4 $H_{ft.}^{1.522}$ GPM = 1795 $H_{ft.}^{1.522}$ MGD = 2.585 $H_{ft.}^{1.522}$

Formulas (H in meters): L/S = 690.9 $H_{m}^{1.522}$ M3/HR = 2487 $H_{m}^{1.522}$

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	0.1202	53.97	0.0777	3.405	12.25
0.11	1.32	0.0335	0.1390	62.39	0.0898	3.937	14.17
0.12	1.44	0.0366	0.1587	71.22	0.1026	4.494	16.17
0.13	1.56	0.0396	0.1793	80.45	0.1159	5.077	18.27
0.14	1.68	0.0427	0.2007	90.06	0.1297	5.683	20.45
0.15	1.80	0.0457	0.2229	100.0	0.1440	6.312	22.71
0.16	1.92	0.0488	0.2459	110.4	0.1589	6.963	25.06
0.17	2.04	0.0518	0.2697	121.0	0.1743	7.637	27.48
0.18	2.16	0.0549	0.2942	132.0	0.1901	8.331	29.97
0.19	2.28	0.0579	0.3194	143.3	0.2064	9.045	32.55
0.20	2.40	0.0610	0.3453	155.0	0.2232	9.780	35.19
0.21	2.52	0.0640	0.3719	166.9	0.2404	10.53	37.90
0.22	2.64	0.0671	0.3992	179.2	0.2580	11.31	40.68
0.23	2.76	0.0701	0.4272	191.7	0.2761	12.10	43.53
0.24	2.88	0.0732	0.4558	204.5	0.2946	12.91	46.44
0.25	3.00	0.0762	0.4850	217.7	0.3134	13.73	49.42
0.26	3.12	0.0792	0.5148	231.0	0.3327	14.58	52.46
0.27	3.24	0.0823	0.5452	244.7	0.3524	15.44	55.56
0.28	3.36	0.0853	0.5763	258.6	0.3725	16.32	58.72
0.29	3.48	0.0884	0.6079	272.8	0.3929	17.22	61.94
0.30	3.60	0.0914	0.6401	287.3	0.4137	18.13	65.22



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

ASTM D 1941-91 (2007): Standard Test Method for Open Channel Flow Measurement of Water with Parshall Flume

OPENCHANNELFLOW

12-Inch Parshall Flume Discharge Table

70% Submergence Transition ±3-5% Accuracy

Formulas (H in feet): CFS = 4 $H_{ft.}^{1.522}$ GPM = 1795 $H_{ft.}^{1.522}$ MGD = 2.585 $H_{ft.}^{1.522}$

Formulas (H in meters): L/S = 690.9 $H_{m}^{1.522}$ M3/HR = 2487 $H_{m}^{1.522}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
0.31	3.72	0.0945	0.6728	302.0	0.4349	19.05	68.56
0.32	3.84	0.0975	0.7062	316.9	0.4564	20.00	71.96
0.33	3.96	0.1006	0.7400	332.1	0.4783	20.96	75.41
0.34	4.08	0.1036	0.7744	347.6	0.5005	21.93	78.91
0.35	4.20	0.1067	0.8093	363.2	0.5231	22.92	82.47
0.36	4.32	0.1097	0.8448	379.1	0.5460	23.92	86.08
0.37	4.44	0.1128	0.8808	395.3	0.5692	24.94	89.75
0.38	4.56	0.1158	0.9173	411.7	0.5928	25.98	93.47
0.39	4.68	0.1189	0.9542	428.3	0.6167	27.02	97.24
0.40	4.80	0.1219	0.9917	445.1	0.6410	28.09	101.1
0.41	4.92	0.1250	1.030	462.1	0.6655	29.16	104.9
0.42	5.04	0.1280	1.068	479.4	0.6904	30.25	108.8
0.43	5.16	0.1311	1.107	496.9	0.7155	31.35	112.8
0.44	5.28	0.1341	1.147	514.6	0.7410	32.47	116.8
0.45	5.40	0.1372	1.186	532.5	0.7668	33.60	120.9
0.46	5.52	0.1402	1.227	550.6	0.7929	34.74	125.0
0.47	5.64	0.1433	1.268	568.9	0.8193	35.90	129.2
0.48	5.76	0.1463	1.309	587.4	0.8459	37.07	133.4
0.49	5.88	0.1494	1.351	606.2	0.8729	38.25	137.6
0.50	6.00	0.1524	1.393	625.1	0.9002	39.44	141.9
0.51	6.12	0.1554	1.435	644.2	0.9277	40.65	146.3
0.52	6.24	0.1585	1.478	663.5	0.9555	41.87	150.7
0.53	6.36	0.1615	1.522	683.1	0.9837	43.10	155.1
0.54	6.48	0.1646	1.566	702.8	1.012	44.35	159.6
0.55	6.60	0.1676	1.610	722.7	1.041	45.60	164.1
0.56	6.72	0.1707	1.655	742.8	1.070	46.87	168.6
0.57	6.84	0.1737	1.700	763.1	1.099	48.15	173.3
0.58	6.96	0.1768	1.746	783.5	1.128	49.44	177.9
0.59	7.08	0.1798	1.792	804.2	1.158	50.74	182.6
0.60	7.20	0.1829	1.838	825.0	1.188	52.06	187.3
0.61	7.32	0.1859	1.885	846.0	1.218	53.39	192.1
0.62	7.44	0.1890	1.932	867.2	1.249	54.72	196.9
0.63	7.56	0.1920	1.980	888.6	1.280	56.07	201.8
0.64	7.68	0.1951	2.028	910.2	1.311	57.43	206.7
0.65	7.80	0.1981	2.076	931.9	1.342	58.80	211.6
0.66	7.92	0.2012	2.125	953.8	1.374	60.19	216.6
0.67	8.04	0.2042	2.174	975.9	1.405	61.58	221.6
0.68	8.16	0.2073	2.224	998.1	1.437	62.98	226.6
0.69	8.28	0.2103	2.274	1021	1.470	64.40	231.7
0.70	8.40	0.2134	2.324	1043	1.502	65.83	236.9
0.71	8.52	0.2164	2.375	1066	1.535	67.26	242.0
0.72	8.64	0.2195	2.426	1089	1.568	68.71	247.2
0.73	8.76	0.2225	2.478	1112	1.601	70.17	252.5
0.74	8.88	0.2256	2.529	1135	1.635	71.63	257.8
0.75	9.00	0.2286	2.582	1159	1.669	73.11	263.1
0.76	9.12	0.2316	2.634	1182	1.703	74.60	268.4
0.77	9.24	0.2347	2.687	1206	1.737	76.10	273.8
0.78	9.36	0.2377	2.740	1230	1.771	77.61	279.3
0.79	9.48	0.2408	2.794	1254	1.806	79.13	284.7
0.80	9.60	0.2438	2.848	1278	1.841	80.66	290.2

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

ASTM D 1941-91 (2007): Standard Test Method for Open Channel Flow Measurement of Water with Parshall Flume

OPENCHANNELFLOW

12-Inch Parshall Flume Discharge Table

70% Submergence Transition ±3-5% Accuracy

Formulas (H in feet): CFS = 4 $H_{ft.}^{1.522}$ GPM = 1795 $H_{ft.}^{1.522}$ MGD = 2.585 $H_{ft.}^{1.522}$

Formulas (H in meters): L/S = 690.9 $H_{m}^{1.522}$ M3/HR = 2487 $H_{m}^{1.522}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
0.81	9.72	0.2469	2.903	1303	1.876	82.20	295.8
0.82	9.84	0.2499	2.957	1327	1.911	83.75	301.3
0.83	9.96	0.2530	3.012	1352	1.947	85.31	307.0
0.84	10.08	0.2560	3.068	1377	1.983	86.88	312.6
0.85	10.20	0.2591	3.123	1402	2.019	88.46	318.3
0.86	10.32	0.2621	3.180	1427	2.055	90.05	324.0
0.87	10.44	0.2652	3.236	1452	2.091	91.64	329.7
0.88	10.56	0.2682	3.293	1478	2.128	93.25	335.5
0.89	10.68	0.2713	3.350	1503	2.165	94.87	341.4
0.90	10.80	0.2743	3.407	1529	2.202	96.50	347.2
0.91	10.92	0.2774	3.465	1555	2.240	98.13	353.1
0.92	11.04	0.2804	3.523	1581	2.277	99.78	359.0
0.93	11.16	0.2835	3.582	1607	2.315	101.4	365.0
0.94	11.28	0.2865	3.640	1634	2.353	103.1	371.0
0.95	11.40	0.2896	3.700	1660	2.391	104.8	377.0
0.96	11.52	0.2926	3.759	1687	2.429	106.5	383.0
0.97	11.64	0.2957	3.819	1714	2.468	108.1	389.1
0.98	11.76	0.2987	3.879	1741	2.507	109.8	395.3
0.99	11.88	0.3018	3.939	1768	2.546	111.6	401.4
1.00	12.00	0.3048	4.000	1795	2.585	113.3	407.6
1.01	12.12	0.3078	4.061	1823	2.625	115.0	413.8
1.02	12.24	0.3109	4.122	1850	2.664	116.7	420.1
1.03	12.36	0.3139	4.184	1878	2.704	118.5	426.4
1.04	12.48	0.3170	4.246	1906	2.744	120.2	432.7
1.05	12.60	0.3200	4.308	1934	2.784	122.0	439.0
1.06	12.72	0.3231	4.371	1962	2.825	123.8	445.4
1.07	12.84	0.3261	4.434	1990	2.866	125.6	451.8
1.08	12.96	0.3292	4.497	2018	2.906	127.4	458.3
1.09	13.08	0.3322	4.561	2047	2.948	129.2	464.7
1.10	13.20	0.3353	4.624	2075	2.989	131.0	471.2
1.11	13.32	0.3383	4.689	2104	3.030	132.8	477.8
1.12	13.44	0.3414	4.753	2133	3.072	134.6	484.3
1.13	13.56	0.3444	4.818	2162	3.114	136.4	490.9
1.14	13.68	0.3475	4.883	2191	3.156	138.3	497.6
1.15	13.80	0.3505	4.948	2221	3.198	140.1	504.2
1.16	13.92	0.3536	5.014	2250	3.240	142.0	510.9
1.17	14.04	0.3566	5.080	2280	3.283	143.9	517.6
1.18	14.16	0.3597	5.146	2309	3.326	145.7	524.4
1.19	14.28	0.3627	5.212	2339	3.369	147.6	531.1
1.20	14.40	0.3658	5.279	2369	3.412	149.5	538.0
1.21	14.52	0.3688	5.346	2399	3.455	151.4	544.8
1.22	14.64	0.3719	5.414	2430	3.499	153.3	551.7
1.23	14.76	0.3749	5.481	2460	3.543	155.2	558.6
1.24	14.88	0.3780	5.549	2491	3.587	157.2	565.5
1.25	15.00	0.3810	5.618	2521	3.631	159.1	572.4
1.26	15.12	0.3840	5.686	2552	3.675	161.0	579.4
1.27	15.24	0.3871	5.755	2583	3.719	163.0	586.4
1.28	15.36	0.3901	5.824	2614	3.764	164.9	593.5
1.29	15.48	0.3932	5.894	2645	3.809	166.9	600.6
1.30	15.60	0.3962	5.963	2676	3.854	168.9	607.7

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

ASTM D 1941-91 (2007): Standard Test Method for Open Channel Flow Measurement of Water with Parshall Flume

OPENCHANNELFLOW

12-Inch Parshall Flume Discharge Table

70% Submergence Transition ±3-5% Accuracy

Formulas (H in feet): CFS = 4 $H_{ft.}^{1.522}$ GPM = 1795 $H_{ft.}^{1.522}$ MGD = 2.585 $H_{ft.}^{1.522}$

Formulas (H in meters): L/S = 690.9 $H_{m}^{1.522}$ M3/HR = 2487 $H_{m}^{1.522}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
1.31	15.72	0.3993	6.033	2708	3.899	170.9	614.8
1.32	15.84	0.4023	6.103	2739	3.945	172.8	621.9
1.33	15.96	0.4054	6.174	2771	3.990	174.8	629.1
1.34	16.08	0.4084	6.245	2803	4.036	176.9	636.3
1.35	16.20	0.4115	6.316	2835	4.082	178.9	643.6
1.36	16.32	0.4145	6.387	2867	4.128	180.9	650.8
1.37	16.44	0.4176	6.459	2899	4.174	182.9	658.1
1.38	16.56	0.4206	6.531	2931	4.221	184.9	665.5
1.39	16.68	0.4237	6.603	2963	4.267	187.0	672.8
1.40	16.80	0.4267	6.675	2996	4.314	189.0	680.2
1.41	16.92	0.4298	6.748	3028	4.361	191.1	687.6
1.42	17.04	0.4328	6.821	3061	4.408	193.2	695.1
1.43	17.16	0.4359	6.894	3094	4.456	195.2	702.5
1.44	17.28	0.4389	6.968	3127	4.503	197.3	710.0
1.45	17.40	0.4420	7.041	3160	4.551	199.4	717.5
1.46	17.52	0.4450	7.115	3193	4.599	201.5	725.1
1.47	17.64	0.4481	7.190	3227	4.647	203.6	732.6
1.48	17.76	0.4511	7.264	3260	4.695	205.7	740.2
1.49	17.88	0.4542	7.339	3294	4.743	207.8	747.9
1.50	18.00	0.4572	7.414	3328	4.792	210.0	755.5
1.51	18.12	0.4602	7.490	3361	4.841	212.1	763.2
1.52	18.24	0.4633	7.565	3395	4.889	214.2	770.9
1.53	18.36	0.4663	7.641	3429	4.938	216.4	778.6
1.54	18.48	0.4694	7.717	3464	4.988	218.6	786.4
1.55	18.60	0.4724	7.794	3498	5.037	220.7	794.2
1.56	18.72	0.4755	7.870	3532	5.087	222.9	802.0
1.57	18.84	0.4785	7.947	3567	5.136	225.1	809.8
1.58	18.96	0.4816	8.024	3601	5.186	227.3	817.7
1.59	19.08	0.4846	8.102	3636	5.236	229.4	825.6
1.60	19.20	0.4877	8.180	3671	5.286	231.6	833.5
1.61	19.32	0.4907	8.258	3706	5.337	233.9	841.4
1.62	19.44	0.4938	8.336	3741	5.387	236.1	849.4
1.63	19.56	0.4968	8.414	3776	5.438	238.3	857.4
1.64	19.68	0.4999	8.493	3812	5.489	240.5	865.4
1.65	19.80	0.5029	8.572	3847	5.540	242.8	873.5
1.66	19.92	0.5060	8.651	3883	5.591	245.0	881.5
1.67	20.04	0.5090	8.730	3918	5.642	247.2	889.6
1.68	20.16	0.5121	8.810	3954	5.694	249.5	897.7
1.69	20.28	0.5151	8.890	3990	5.746	251.8	905.9
1.70	20.40	0.5182	8.970	4026	5.797	254.0	914.1
1.71	20.52	0.5212	9.051	4062	5.849	256.3	922.3
1.72	20.64	0.5243	9.131	4098	5.902	258.6	930.5
1.73	20.76	0.5273	9.212	4134	5.954	260.9	938.7
1.74	20.88	0.5304	9.293	4171	6.006	263.2	947.0
1.75	21.00	0.5334	9.375	4207	6.059	265.5	955.3
1.76	21.12	0.5364	9.456	4244	6.112	267.8	963.6
1.77	21.24	0.5395	9.538	4281	6.165	270.1	972.0
1.78	21.36	0.5425	9.621	4318	6.218	272.5	980.3
1.79	21.48	0.5456	9.703	4355	6.271	274.8	988.7
1.80	21.60	0.5486	9.786	4392	6.324	277.1	997.1

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

ASTM D 1941-91 (2007): Standard Test Method for Open Channel Flow Measurement of Water with Parshall Flume

OPENCHANNELFLOW

12-Inch Parshall Flume Discharge Table

70% Submergence Transition ±3-5% Accuracy

Formulas (H in feet): CFS = 4 $H_{ft.}^{1.522}$ GPM = 1795 $H_{ft.}^{1.522}$ MGD = 2.585 $H_{ft.}^{1.522}$

Formulas (H in meters): L/S = 690.9 $H_{m}^{1.522}$ M3/HR = 2487 $H_{m}^{1.522}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
1.81	21.72	0.5517	9.868	4429	6.378	279.5	1006
1.82	21.84	0.5547	9.952	4466	6.432	281.8	1014
1.83	21.96	0.5578	10.03	4504	6.486	284.2	1023
1.84	22.08	0.5608	10.12	4541	6.540	286.6	1031
1.85	22.20	0.5639	10.20	4579	6.594	288.9	1040
1.86	22.32	0.5669	10.29	4616	6.648	291.3	1048
1.87	22.44	0.5700	10.37	4654	6.703	293.7	1057
1.88	22.56	0.5730	10.46	4692	6.757	296.1	1065
1.89	22.68	0.5761	10.54	4730	6.812	298.5	1074
1.90	22.80	0.5791	10.62	4768	6.867	300.9	1083
1.91	22.92	0.5822	10.71	4807	6.922	303.3	1091
1.92	23.04	0.5852	10.80	4845	6.977	305.7	1100
1.93	23.16	0.5883	10.88	4883	7.033	308.2	1109
1.94	23.28	0.5913	10.97	4922	7.088	310.6	1118
1.95	23.40	0.5944	11.05	4961	7.144	313.0	1126
1.96	23.52	0.5974	11.14	5000	7.200	315.5	1135
1.97	23.64	0.6005	11.23	5038	7.256	317.9	1144
1.98	23.76	0.6035	11.31	5077	7.312	320.4	1153
1.99	23.88	0.6066	11.40	5116	7.368	322.9	1162
2.00	24.00	0.6096	11.49	5156	7.424	325.3	1171
2.01	24.12	0.6126	11.58	5195	7.481	327.8	1180
2.02	24.24	0.6157	11.66	5234	7.538	330.3	1188
2.03	24.36	0.6187	11.75	5274	7.595	332.8	1197
2.04	24.48	0.6218	11.84	5313	7.652	335.3	1206
2.05	24.60	0.6248	11.93	5353	7.709	337.8	1215
2.06	24.72	0.6279	12.02	5393	7.766	340.3	1224
2.07	24.84	0.6309	12.11	5433	7.823	342.8	1234
2.08	24.96	0.6340	12.19	5473	7.881	345.3	1243
2.09	25.08	0.6370	12.28	5513	7.939	347.9	1252
2.10	25.20	0.6401	12.37	5553	7.997	350.4	1261
2.11	25.32	0.6431	12.46	5593	8.055	352.9	1270
2.12	25.44	0.6462	12.55	5634	8.113	355.5	1279
2.13	25.56	0.6492	12.64	5674	8.171	358.1	1288
2.14	25.68	0.6523	12.73	5715	8.230	360.6	1298
2.15	25.80	0.6553	12.82	5756	8.288	363.2	1307
2.16	25.92	0.6584	12.92	5796	8.347	365.8	1316
2.17	26.04	0.6614	13.01	5837	8.406	368.3	1325
2.18	26.16	0.6645	13.10	5878	8.465	370.9	1335
2.19	26.28	0.6675	13.19	5919	8.524	373.5	1344
2.20	26.40	0.6706	13.28	5960	8.583	376.1	1353
2.21	26.52	0.6736	13.37	6002	8.643	378.7	1363
2.22	26.64	0.6767	13.47	6043	8.702	381.3	1372
2.23	26.76	0.6797	13.56	6085	8.762	383.9	1382
2.24	26.88	0.6828	13.65	6126	8.822	386.6	1391
2.25	27.00	0.6858	13.74	6168	8.882	389.2	1400
2.26	27.12	0.6888	13.84	6210	8.942	391.8	1410
2.27	27.24	0.6919	13.93	6251	9.003	394.5	1419
2.28	27.36	0.6949	14.02	6293	9.063	397.1	1429
2.29	27.48	0.6980	14.12	6336	9.124	399.8	1438
2.30	27.60	0.7010	14.21	6378	9.184	402.4	1448

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

ASTM D 1941-91 (2007): Standard Test Method for Open Channel Flow Measurement of Water with Parshall Flume

OPENCHANNELFLOW

12-Inch Parshall Flume Discharge Table

70% Submergence Transition ±3-5% Accuracy

Formulas (H in feet): CFS = 4 $H_{ft.}^{1.522}$ GPM = 1795 $H_{ft.}^{1.522}$ MGD = 2.585 $H_{ft.}^{1.522}$

Formulas (H in meters): L/S = 690.9 $H_{m}^{1.522}$ M3/HR = 2487 $H_{m}^{1.522}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
2.31	27.72	0.7041	14.305	6420	9.245	405.1	1458
2.32	27.84	0.7071	14.399	6462	9.306	407.8	1467
2.33	27.96	0.7102	14.49	6505	9.367	410.5	1477
2.34	28.08	0.7132	14.59	6547	9.428	413.1	1487
2.35	28.20	0.7163	14.68	6590	9.490	415.8	1496
2.36	28.32	0.7193	14.78	6633	9.551	418.5	1506
2.37	28.44	0.7224	14.87	6675	9.613	421.2	1516
2.38	28.56	0.7254	14.97	6718	9.675	423.9	1525
2.39	28.68	0.7285	15.07	6761	9.737	426.7	1535
2.40	28.80	0.7315	15.16	6804	9.799	429.4	1545
2.41	28.92	0.7346	15.26	6848	9.861	432.1	1555
2.42	29.04	0.7376	15.35	6891	9.923	434.8	1565
2.43	29.16	0.7407	15.45	6934	9.986	437.6	1574
2.44	29.28	0.7437	15.55	6978	10.05	440.3	1584
2.45	29.40	0.7468	15.64	7021	10.11	443.1	1594
2.46	29.52	0.7498	15.74	7065	10.17	445.8	1604
2.47	29.64	0.7529	15.84	7109	10.24	448.6	1614
2.48	29.76	0.7559	15.94	7153	10.30	451.3	1624
2.49	29.88	0.7590	16.04	7197	10.36	454.1	1634
2.50	30.00	0.7620	16.13	7241	10.43	456.9	1644

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

ASTM D 1941-91 (2007): Standard Test Method for Open Channel Flow Measurement of Water with Parshall Flume