

PROPERTY OF THE STATE OF IDAHO

Form No. 300-W

WATERMASTER'S  
**DAILY RECORD**

Stream Little Canyon Creek

Water District 61-D

Month of Mar - Nov, 1994

Watermaster Dan Hall

P. O. Address Box 644 Glenns Ar  
ID 83623

Ten days after the close of the Irrigation season the Watermaster must forward this book to

## MEASUREMENT OF WATER

### Hydraulic Equivalents Which Will Be Found Useful To Irrigators

A cubic foot of water per second of time shall be the legal standard for the measurement of water in this state.

1. One Idaho Miner's inch equals approximately 1/50th of a cubic foot per second, or 9 gallons per minute.
2. A cubic foot per second equals approximately 50 miner's inches, or 450 gallons per minute.
3. One cubic foot per second for 24 hours equals approximately 2 acre feet.
4. One acre foot equals enough water to cover one acre exactly one foot in depth, or 43,560 cubic feet.
5. One miner's inch per acre for 100 days equals 3.97 feet deep on the land.
6. One miner's inch per acre for 150 days equals 5.95 feet deep on the land.
7. Five-eighths miner's inch per acre for 100 days equals 2.48 feet deep on the land.
8. Five-eighths miner's inch per acre for 150 days equals

## THE CIPPOLETTI WEIR

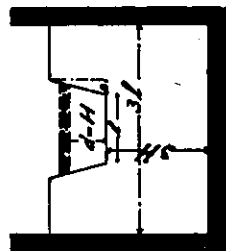
This form of measuring device is illustrated on page 5. It has a thin horizontal crest and thin sides; the weirs notch is wider across the top than at the bottom, the sides having a slope of one inch out to four inches up, or a 1:4 slope.

The essential requirements in setting, and the method of using the weir are as follows:

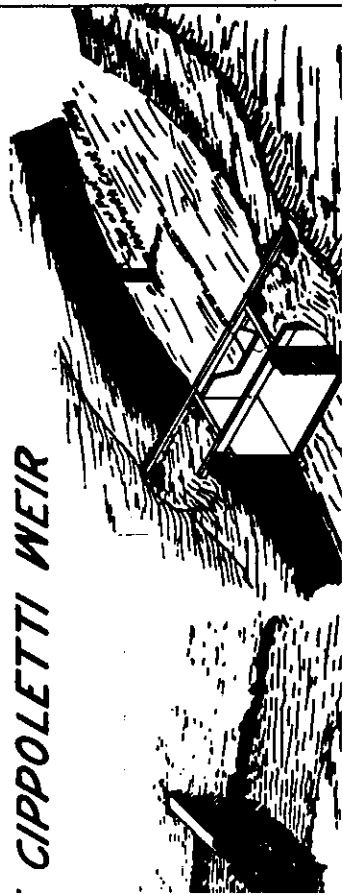
1. It should be set at the lower end of a stilling pool of sufficient length, width and depth to give an even, smooth current with a velocity of approach to the weir of not over one-half foot per second. This pool should be straight and of constant cross section, and the center line should pass through the middle of the weir crest.
2. The crest of the weir should be at right angles to the direction of the flow, and the face of the weir should be perpendicular.
3. The crest of the weir should be level so that the water passing over it will be of the same depth at all points along the crest.
4. The height of the crest above the bottom of the pool should be about three times the depth of the water flowing over it, and the sides of the pool, or box should be a distance from the sides of the crest at least twice the depth of the water passing over it.
5. The length of the crest should be at least three times the depth of the water passing over it, and of even feet, or multiples thereof, to conform to the accompanying tables.
6. The crest should be placed high enough to retard the flow above the weir to the required velocity; and so that the downstream water surface is far enough below the crest that air

**Discharge of Cippoletti Weirs in Cubic Feet per Second**  
**Discharge Computed for head in inches, and length of crest in inches.**

LENGTH OF WEIR—INCHES					LENGTH OF WEIR—INCHES				
Head in Ins.	12	18	24	36	Head in Ins.	12	18	24	36
1	.08	.12	.16	.24	6 <sup>3</sup> / <sub>8</sub>	.....	2.07	2.76	4.14
1 <sup>1</sup> / <sub>8</sub>	.10	.15	.19	.29	6 <sup>3</sup> / <sub>4</sub>	.....	2.13	2.84	4.26
1 <sup>1</sup> / <sub>4</sub>	.11	.17	.23	.34	6 <sup>7</sup> / <sub>8</sub>	.....	2.19	2.92	4.38
1 <sup>3</sup> / <sub>8</sub>	.13	.20	.26	.39	7	.....	2.25	3.00	4.50
1 <sup>1</sup> / <sub>2</sub>	.15	.22	.30	.45	7 <sup>1</sup> / <sub>8</sub>	.....	.....	3.08	4.62
1 <sup>5</sup> / <sub>8</sub>	.17	.25	.33	.50	7 <sup>1</sup> / <sub>4</sub>	.....	.....	3.16	4.74
1 <sup>3</sup> / <sub>4</sub>	.19	.28	.38	.56	7 <sup>3</sup> / <sub>8</sub>	.....	.....	3.25	4.87
1 <sup>7</sup> / <sub>8</sub>	.21	.31	.42	.62	7 <sup>1</sup> / <sub>2</sub>	.....	.....	3.33	4.99
2	.23	.34	.46	.69	7 <sup>5</sup> / <sub>8</sub>	.....	.....	3.41	5.12
2 <sup>1</sup> / <sub>8</sub>	.25	.38	.50	.75	7 <sup>3</sup> / <sub>4</sub>	.....	.....	3.50	5.24
2 <sup>1</sup> / <sub>4</sub>	.27	.41	.55	.82	7 <sup>7</sup> / <sub>8</sub>	.....	.....	3.58	5.37
2 <sup>3</sup> / <sub>8</sub>	.30	.45	.59	.89	8	.....	.....	3.67	5.50
2 <sup>1</sup> / <sub>2</sub>	.32	.48	.64	.96	8 <sup>1</sup> / <sub>8</sub>	.....	.....	3.75	5.63
2 <sup>5</sup> / <sub>8</sub>	.34	.52	.69	1.03	8 <sup>1</sup> / <sub>4</sub>	.....	.....	3.84	5.76
2 <sup>3</sup> / <sub>4</sub>	.37	.55	.74	1.11	8 <sup>3</sup> / <sub>8</sub>	.....	.....	3.93	5.89
2 <sup>7</sup> / <sub>8</sub>	.40	.59	.79	1.19	8 <sup>1</sup> / <sub>2</sub>	.....	.....	4.01	6.02
3	.42	.63	.84	1.26	8 <sup>5</sup> / <sub>8</sub>	.....	.....	4.11	6.16
3 <sup>1</sup> / <sub>8</sub>	.45	.67	.89	1.34	8 <sup>3</sup> / <sub>4</sub>	.....	.....	4.19	6.29
3 <sup>1</sup> / <sub>4</sub>	.47	.71	.95	1.42	8 <sup>7</sup> / <sub>8</sub>	.....	.....	4.29	6.43
3 <sup>3</sup> / <sub>8</sub>	.50	.75	1.00	1.51	9	.....	.....	4.37	6.56
3 <sup>1</sup> / <sub>2</sub>	.53	.80	1.06	1.59	9 <sup>1</sup> / <sub>8</sub>	.....	.....	.....	6.69
3 <sup>5</sup> / <sub>8</sub>	.56	.84	1.12	1.68	9 <sup>1</sup> / <sub>4</sub>	.....	.....	.....	6.84
3 <sup>3</sup> / <sub>4</sub>	.59	.88	1.17	1.76	9 <sup>3</sup> / <sub>8</sub>	.....	.....	.....	6.98
3 <sup>7</sup> / <sub>8</sub>	.62	.93	1.24	1.86	9 <sup>1</sup> / <sub>2</sub>	.....	.....	.....	7.12
4	.65	.97	1.29	1.94	9 <sup>5</sup> / <sub>8</sub>	.....	.....	.....	7.26
4 <sup>1</sup> / <sub>8</sub>	.68	1.02	1.36	2.04	9 <sup>3</sup> / <sub>4</sub>	.....	.....	.....	7.40
4 <sup>1</sup> / <sub>4</sub>	.71	1.06	1.42	2.13	9 <sup>7</sup> / <sub>8</sub>	.....	.....	.....	7.54
4 <sup>3</sup> / <sub>8</sub>	.74	1.11	1.48	2.22	10	.....	.....	.....	7.69
4 <sup>1</sup> / <sub>2</sub>	.77	1.16	1.55	2.32	10 <sup>1</sup> / <sub>8</sub>	.....	.....	.....	7.84
4 <sup>5</sup> / <sub>8</sub>	.80	1.21	1.61	2.42	10 <sup>1</sup> / <sub>4</sub>	.....	.....	.....	7.97
4 <sup>3</sup> / <sub>4</sub>	.84	1.26	1.68	2.52	10 <sup>3</sup> / <sub>8</sub>	.....	.....	.....	8.11



**CIPPOLETTI WEIR**



Month of march - Nov 94 19

NOTE—Figures to be given in cubic feet per second for 24-hour periods, or 24-hour  feet. Give name of owner of water  not tenant.

Wa  
Right  
Ident.  
No.

Amount  
Second Feet  
(cfs)

DAYS OF MONTH

Name of Present Owner	Address	Wa Right Ident. No.	Amount Second Feet (cfs)	DAYS OF MONTH					Acres Culti- vated	Sec.	Twp.
				1	2	3	4	5			
mar 21	Viners put a headgate in pond diversion down based on 1992 decision stating they have 1/2 the water at that point										
	↳ not at the 50/50 diversion (Call to WFR) Headgate Plus weir Viners part closed Batuel headgate ↳ locked their own open										
mar 22	Viners - remeasured water										
mar 23	Viners adjusted Pond Diver.										
mar 26	Batuel - (took water)										
mar 28	IRW came down to make Ruling										
mar 28	Rain Viners wants water told to wait for IRW										
mar 28	met with IRW Sheriff										

Phone  
IRW

Month of March - Nov 94 19

Wa  
Right  
Ident.

mount  
and Feet  
(cfs)

NOTE—Figures to be given in cubic feet per second for 24-hour periods, or 24-hour feet. Give name of owner of water if not tenant.

DAYS OF MONTH

Name of Present Owner	DESCRIPTION OF LAND Subdivision	Acres Cultivated	Sec.	Twp.
mar 21 Vi in pond d on 1992 de have 1/2 the not at the (Call to W I U Veners pa locked t	April 9 Viner - called to check Sand Spring gulch April 16 - toured Little Canyon Adjusted water Gravity Ditch nowerr Apr 19 Adjusted Stock water <del>Blockwell</del> morrows Res. ditch for Viner			
Oct 15 - closed for winter				
mar 22 - V				
mar 23 V				
mar 26 B				
mar 28 JK				
Ru				
Mar 28				
told				
mar 28 1				

# Time of Water Master and Assistants

MONTH OF .....

NAMES	1	2	3	4	5	6	7	8
	9	10	11	12	13	14	15	16
	17	18	19	20	21	22	23	24
	25	26	27	28	29	30	31	Total

REMARKS

## THE SUBMERGED ORIFICE

This form of measuring device is illustrated on page 19. The submerged orifice may be used where physical conditions or lack of fall in ditch make it impracticable to use a weir. The essential requirements in setting and the methods of using the submerged orifice are as follows:

1. The front should be set at right angles to the direction of the flow and in a perpendicular position.
2. The orifice opening should be rectangular and have sharp edges. It should have an area of one square foot or 144 square inches, or an easy multiple thereof, to conform to standard discharge tables.
3. The depth of submergence (the distance from the water surface to the top of the orifice opening) should not be less than the height of the orifice opening, and more is desirable.
4. The bottom of the orifice opening should be not less than the height of the orifice opening above the grade of the ditch—to prevent silt from obstructing the opening.
5. With the orifice two gages are required, indicating the level of water on each side of the orifice opening. The difference between these two elevations is called the effective head, which should not be less than one inch.
6. Care should be taken at all times to see that the submerged opening is not obstructed by trash or silt.

The discharge of the submerged orifice is found by first obtaining the effective head, then looking down the left-hand column of the table printed on page 18, till you find this particular effective head, and then across to the discharge column. As this discharge is computed for an opening of one square foot only, any other size opening must be computed as a fraction, or multiple of this discharge.

## Discharge of Submerged Rectangular Orifices in Cubic Feet per Second

Discharge computed for head in inches

Effective Head in Inches	Discharge in Sec. Feet	Effective Head in Inches	Discharge in Sec. Feet	Effective Head in Inches	Discharge in Sec. Feet
1/2	.999	4 3/8	2.956	8 1/4	4.059
3/8	1.117	4 1/2	2.998	8 3/8	4.090
3/4	1.224	4 5/8	3.039	8 1/2	4.120
7/8	1.322	4 3/4	3.080	8 5/8	4.150
		4 7/8	3.120	8 3/4	4.180
1	1.413			8 7/8	4.210
1 1/8	1.499	5	3.160		
1 1/4	1.580	5 1/8	3.200	9	4.239
1 1/2	1.656	5 1/4	3.238	9 1/8	4.269
1 3/4	1.731	5 3/8	3.276	9 1/4	4.298
1 7/8	1.801	5 1/2	3.314	9 3/8	4.311
1 3/4	1.869	5 5/8	3.352	9 1/2	4.356
1 7/8	1.935	5 3/4	3.388	9 5/8	4.385
		5 7/8	3.425	9 3/4	4.412
				9 7/8	4.440
2	1.998				
2 1/8	2.060	6	3.461		
2 1/4	2.120	6 1/8	3.496	10	4.469
2 3/8	2.178	6 1/4	3.533	10 1/8	4.496
2 1/2	2.235	6 3/8	3.566	10 1/4	4.524
2 5/8	2.289	6 1/2	3.603	10 3/8	4.551
2 3/4	2.343	6 3/4	3.635	10 1/2	4.579
2 7/8	2.396	6 5/8	3.671	10 5/8	4.606
		6 7/8	3.706	10 3/4	4.633
				10 7/8	4.661
3	2.448				
3 1/8	2.498	7	3.739		
3 1/4	2.547	7 1/8	3.772	11	4.686
3 3/8	2.596	7 1/4	3.805	11 1/8	4.713
3 1/2	2.644	7 3/8	3.838	11 1/4	4.739
3 5/8	2.690	7 1/2	3.870	11 3/8	4.765
3 3/4	2.736	7 5/8	3.913	11 1/2	4.792
3 7/8	2.782	7 3/4	3.934	11 5/8	4.817
		7 7/8	3.965	11 3/4	4.844
				11 7/8	4.869
4	2.826				
4 1/8	2.870	8	3.997		
4 1/4	2.913	8 1/8	4.028	12	4.895

To convert discharge to miner's inches, multiply discharge in cubic feet per second by 50.

Above discharges are for an area of orifice of one square foot.

