State of Idaho
DEPARTMENT OF WATER RESOURCES
322 East Front Street • P.O. Box 83720 • Boise, Idaho 83720-0098
Phone: (208) 287-4800 • Fax: (208) 287-6700 • Web Site: www.idwr.idaho.gov

C. L. "BUTCH" OTTER
Governor

DAVID R. TUTHILL, JR.
Interim Director

July 19, 2007

JOHN REMBER
P.O. BOX 195
STANLEY, ID 83278

RE: Measurement and Control for Water Right Nos. 71-4025 and 71-4026

Dear Mr. Rember:

This letter responds to your letter of May 31, 2007 and our subsequent phone conversations. You had asked to be exempted from the February 20, 2007 order requiring controlling works and measuring devices in Water District No. 170 (the Order) because your water rights authorize irrigation of less than five acres. As we discussed, although your water rights authorize irrigation for a combined total of less than five acres, the maximum diversion rates exceed the 0.24 cubic feet per second (CFS) threshold stated in the Order. As such, your diversions are not exempt from the controlling works and measuring device requirements of the Order. However, I have visited your property and met with Mrs. Rember and your neighbor Mrs. Watkins and we have developed some thoughts on how you can, relatively simply and inexpensively, bring your diversions into compliance with the Order.

Water Right 71-4025 lists two points of diversion, one is at your pump (Diversion S39E) and the other is slightly upstream. Since you only pump from S39E, the second point of diversion does not require control and measurement. The pump at S39E can be controlled by removing or disconnecting the pump or the intake, and it can most easily be measured by a time clock device attached to the gas motor that runs the pump. A time clock is simply an hour-meter that tracks the number of hours the pump is running. IDWR will arrange with you to visit your property when the pump is running and measure the flow rate of your sprinkler system. Your use will then be calculated by multiplying the number of hours of usage by the flow rate.

Time clocks (also called hour meters, or motor meters) are relatively inexpensive and readily available from suppliers on the Internet and perhaps locally. The Department will require an hour meter that does not have volatile memory and cannot be manually reset. Electric or mechanical meters are acceptable.

You had asked in your letter about whether you may continue to keep the channel to your pump open to the river. I spoke with Terry Blau of IDWR Southern Region about this issue and he confirmed that the law does not prohibit you from performing that kind of work to bring water to your legal point of diversion on your water right. In other words, it is within your right to continue keeping that channel open to the river.

It appears the majority of the water entering your property is from the springs on Mrs. Watkins' property under water right 71-4026. The collection ditch from these springs carries water for yourself and Mrs. Watkins. Given the configuration of the ditch, measurement can best be accomplished by either a flume or a weir in the collection ditch near the head. Although

flumes require less maintenance than weirs, they are, generally, considerably more expensive. I have attached some literature for your reference to help you plan the measuring device for your ditch. I spoke with Mrs. Watkins and we discussed likely locations for the device.

Controlling the amount of water passing the measuring device can be accomplished by installing a bypass gate on the side of the ditch to spill any excess water onto the downhill slope where the springs would naturally flow. This gate can be a simple slide gate or a pipe through the ditch bank that can be stopped with a locking cap.

Please note that the general plans presented above for compliance with the Order are by no means your only options. Other options likely exist that would be acceptable to the Department. However you plan to measure and control your diversions, please submit a written description of your plans to IDWR by October 15 to allow time for review and approval, and then for installation before the start of the 2008 irrigation season.

I hope this information is helpful. Feel free to contact me if I can be of any further help or if you have any questions regarding this issue. Please forward your plans for complying with the order to IDWR as early as possible to allow time for review and approval prior to construction.

Sincerely,

Nick Miller, P.E.
Water Distribution Section

enclosures:
Literature regarding measuring and reporting – (10 double-sided pages)

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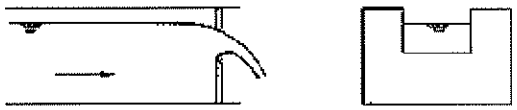
MEASUREMENT DEVICE SELECTION CONSIDERATIONS:

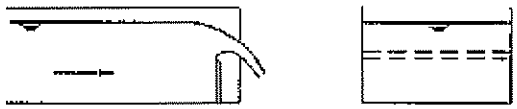
- Accuracy requirements
- Cost
- Legal constraints
- Range of flow rates
- Head loss
- Adaptability to site conditions
- Adaptability to variable operating conditions
- Type of measurements and records needed
- Operating requirements
- Ability to pass sediment and debris
- Longevity of device for given environment
- Maintenance requirements
- Construction and installation requirements
- Device standardization and calibration
- Field verification, troubleshooting, and repair
- User acceptance of new methods
- Vandalism potential
- Impact on environment

STANDARD WEIRS:

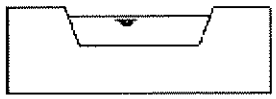
Sharp-Crested Weirs:



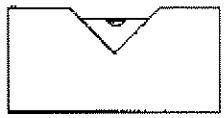
Contracted Rectangular



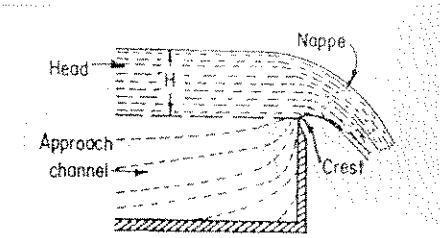
Suppressed Rectangular



Cipolletti Contracted



Contracted Triangular or V-Notch



Rectangular Weirs:
- Simple to construct
- Fairly accurate

Trapezoidal Weirs:
- More accurate than rectangular
- 1:4 side slopes are standard

V-Notch Weirs:
- Best choice for small flows (<1 cfs)
- Comparable accuracy from 1 to 10 cfs
- Requires the most head drop

Table 6.—Capacities of standard weirs in second-feet. (See sec. 13.)

Length in feet	Contracted rectangular		Suppressed rectangular		Cipolletti	
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
1.0	0.590	0.286	0.631	0.298	0.638	0.301
1.5	1.65	.435	1.77	.447	1.79	.452
2.0	3.34	.584	3.65	.596	3.69	.602
2.5	5.87	.732	6.30	.744	6.37	.753
3.0	9.32	.881	10.0	.893	10.1	.903
3.5	13.8	1.03	14.8	1.04	15.0	1.05
4.0	19.1	1.18	20.4	1.19	20.6	1.20
4.5	25.7	1.33	27.5	1.34	27.8	1.35
5.0	33.5	1.48	36.0	1.49	36.4	1.51
5.5	42.3	1.63	45.3	1.64	45.8	1.66
6.0	52.7	1.78	56.6	1.79	57.2	1.81
7.0	77.4	2.07	82.9	2.08	83.8	2.11
8.0	108.5	2.37	116.2	2.38	117.5	2.41
9.0	145.3	2.67	155.9	2.68	157.6	2.71
10.0	188.8	2.97	202.4	2.98	204.6	3.01
12.0	298.4	3.56	320.0	3.57	323.6	3.61
14.0	439.1	4.16	470.4	4.17	475.6	4.21
16.0	612.0	4.75	656.5	4.76	663.8	4.82
18.0	822.4	5.35	882.0	5.36	891.8	5.42

NOTE.—Limits follow the prescribed practice of $h > 0.2$ foot and $h < \frac{1}{3}L$.

Requirements for all Sharp-Crested Weirs:

(a) The upstream face of the weir plates and bulkhead should be plumb, smooth, and normal to the axis of the channel.

(b) The entire crest should be level for rectangular and trapezoidal shapes, and the bisector of V-notch angles should be plumb.

(c) The edges of the weir opening should be located in one plane, and the corners should have proper specified angles.

(d) The top thickness of the crest and side plates should be between 0.03 and 0.08 inch (in).

(e) All weir plates should have the same thickness for the entire boundary of the overflow crest. If the plates are thicker than specified in condition (d), the plate edges shall be reduced to the required thickness by chamfering the downstream edge of the crest and sides to an angle of at least 45 degrees; 60 degrees is highly recommended for a V-notch to help prevent water from clinging to the downstream face of the weir.

(f) The upstream edges of the weir opening plates must be straight and sharp. Edges of plates require machining or filing perpendicular to the upstream face to remove burrs or scratches and should not be smoothed off with abrasive cloth or paper. Avoid knife-edges because they are a safety hazard and damage easily.

(g) The bottom edge plates and fastener projection upstream should be located a distance of at least two measuring heads from the crest. If not, the plates must be inset flush with the upstream face of the supporting bulkhead, and the fasteners must be countersunk on the upstream poolside. Upstream faces of the plates must be free of grease and oil.

(h) The overflow sheet or nappe should touch only the upstream faces of the crest and side plates.

(i) Maximum downstream water surface level should be at least 0.2 foot (ft) below crest elevation. However, when measuring close to the crest, frequent observations are necessary to verify that the nappe is continually ventilated without waves periodically filling the under nappe cavity.

(j) To prevent the nappe from clinging to the downstream face of the weir, the head measurement should be greater than 0.2 ft. Conditions (d), (e), and (f) also help to prevent clinging. If measurements must be made at heads approaching this value for substantial periods, operators must ensure the head measuring system has commensurate precision with respect to needed accuracy and must continually check for clinging.

(k) The measurement of head on the weir is the difference in elevation between the crest and the water surface at a point located upstream from the weir a distance of at least four times the maximum head on the crest.

(l) The length of rectangular and trapezoidal weir crests should be at least three times the usual head.

FLUMES:

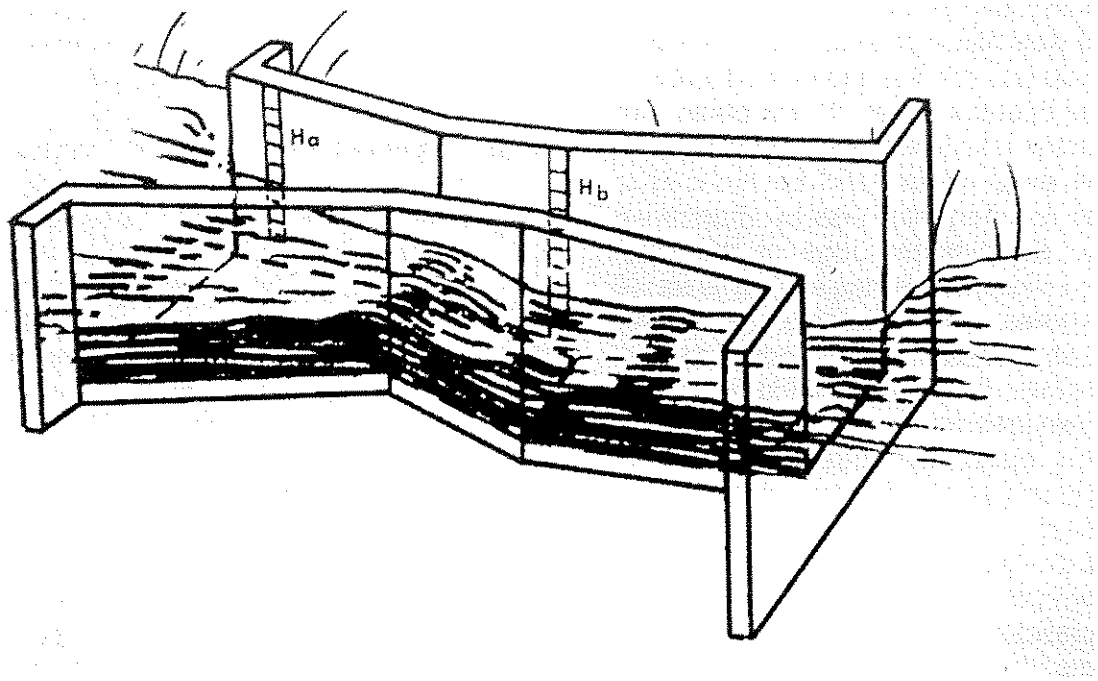
Parshall Flume is most common –

Advantages include:

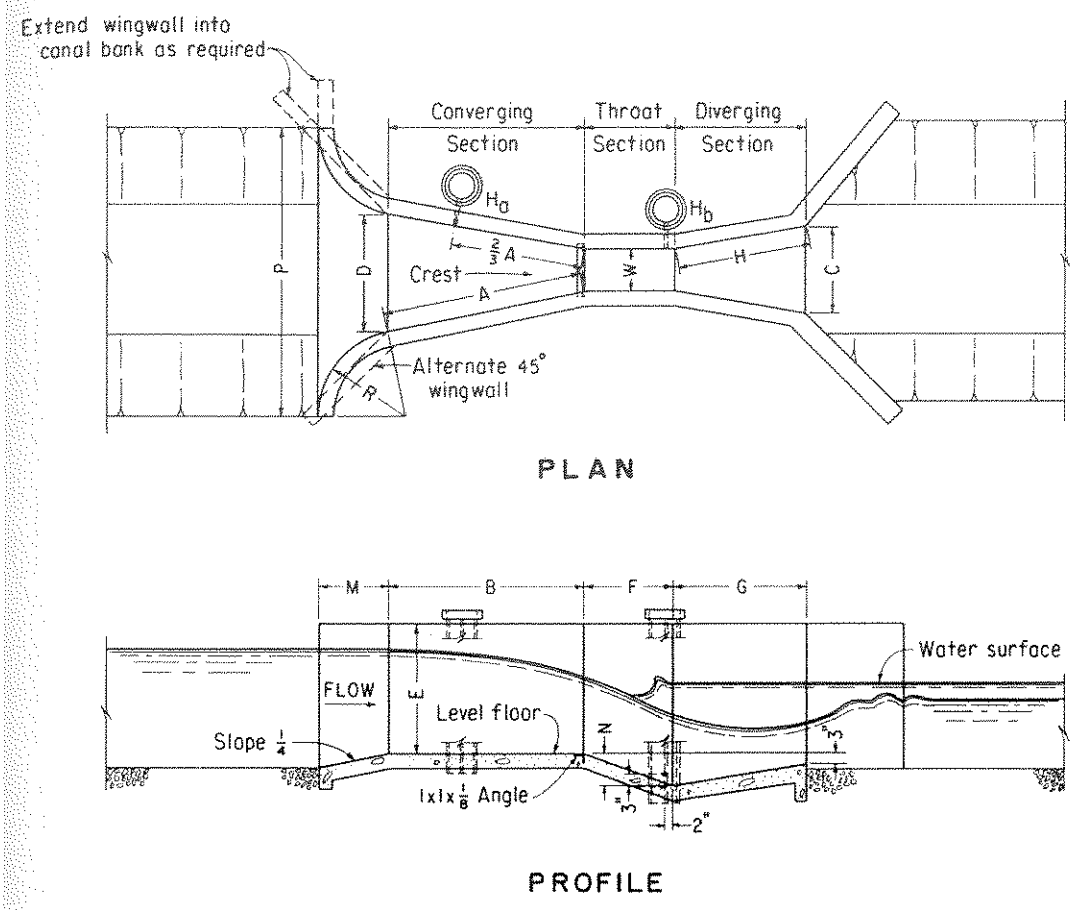
- Very low head loss
- Insensitive to velocity of approach
- Self cleaning
- Can measure a wide range of flows
- Can tolerate significant submergence

Requirements:

- Must be set level and plumb
- A section of straight flow above and below the flume
- Staff gage must be accurately placed



Parshall Flume



Schematic showing profile and plan views of Parshall Flume.

Submerged Orifices

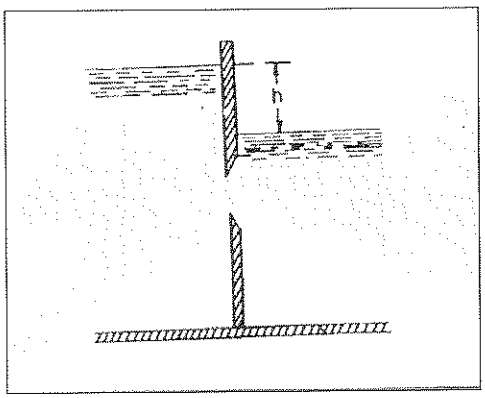
Typically not encouraged due to silting and clogging problems.

Appropriate where:

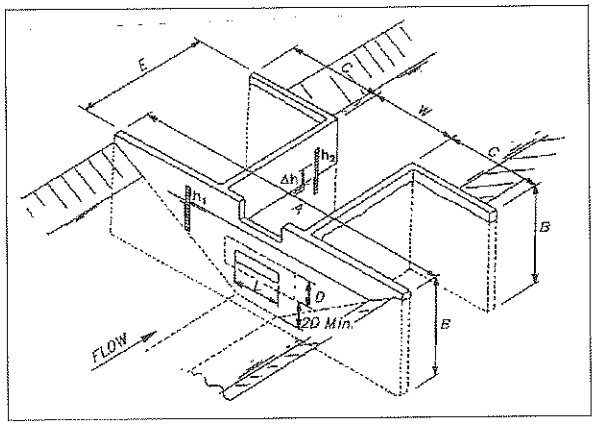
- Low available head
- Economics or other site conditions preclude the use of a Parshall flume

Disadvantages include:

- Two measurements are required (upstream head and downstream head)
- Subject to clogging or accumulation of debris



Cross-section view.



Angled view of installation.

Installation Requirements:

(a) The upstream edges of the orifice should be straight, sharp, and smooth.
(b) The upstream face of the orifice wall should be vertical.
(c) The top and bottom edges of the orifice opening should be level.
(d) The sides of the opening should be truly vertical.
(e) The inset orifice plates must be flush, and the upstream face of the supporting bulkhead with the fasteners must be countersunk on the upstream side.
(f) The distance from the opening edges to the boundary and the water surface, both on the upstream and downstream sides, should be greater than twice the least dimension of the orifice opening.
(g) The face of the plates must be free of grease and oil.
(h) Avoid orifice plate knife-edges because they are a safety hazard and can damage easily; orifice opening plate perimeter should be between 0.03 and 0.08 inch (in) thick.
(i) If the plates are thicker than condition (h), the plate edges should be reduced to the required thickness by chamfering the downstream edge of the orifice plates to an angle of at least 45 degrees.
(j) Flow edges of plates require machining or filing perpendicular to the upstream face to remove burrs or scratches and should not be smoothed off with abrasive cloth or paper.
(k) The edges of the supporting bulkhead wall cutout to receive the orifice opening plate should be located at least one wall thickness from the orifice opening edges.
(l) For submerged flow, the effective head on the orifice is the actual difference in elevation between the water surfaces upstream and downstream from the orifice wall. The differential head should be at least 0.2 foot (ft).
(m) For free flow, the effective head on the orifice is the difference in elevation between the upstream water surface and the center of the orifice opening.

(n) The cross-sectional area of the water prism 20 to 30 ft upstream from the orifice should be at least eight times the cross-sectional area of the orifice.
(o) The selected type of head measuring device must be compatible with required project accuracy and the amount of head loss that is acceptable.

Information Sheet

This information sheet is intended to provide additional information for users affected by this order.

Diversions on Federal Lands:

Diversions on United States Forest Service (USFS) Lands.
Installation of headgates and flow measuring devices on USFS lands may require a special use permit or other authorization. Please contact the appropriate USFS office for further information prior to initiating any ground disturbing activity on USFS land. If your diversion is within the Sawtooth National Forest, please contact the Sawtooth National Recreation Area office at the number below.

Diversions in the Sawtooth National Recreation Area (SNRA).
This includes all diversions within the SNRA, including those on private and those on public lands. All structures associated with diversions within the Sawtooth National Recreation Area must meet scenic easement requirements on lands on which the United States owns an easement. Private lands within the Sawtooth National Recreation Area that are not encumbered by a scenic easement must be in conformance with the Private Lands Regulations (36 CFR Part 292). Diversions within the SNRA on United States Forest Service lands must also comply with permitting requirements of the United States Forest Service. Prior to constructing or developing plans for headgates and measuring devices, users should contact the SNRA office and identify any special considerations or requirements of the SNRA.

Diversions on Bureau of Land Management (BLM) Lands.
Water right owners with points of diversion on BLM lands should contact the agency and identify any special requirements prior to developing plans for headgates and measuring devices.

SNRA Office
HC 64, Box 8291
5 North Fork Canyon Rd
Ketchum, ID 83340
208-727-5000

Salmon-Challis Nat. Forest
Forest Supervisor's Office
1206 So. Challis Street
Salmon, ID 83467
(208) 756-5100

BLM Challis Field Office
Tim Vanek
801 Blue Mountain Road
Challis, Idaho 83226
(208) 879-6200

Other Considerations:

Ownership Change and Water Right Updates.

IDWR recognizes that changes in water right ownership and points of diversion have occurred and are not always reflected in the IDWR records. Some of the diversion locations listed in this order may no longer be in use, or may have been moved or consolidated with other diversions. Water right ownership may not be up to date, and the points of diversion listed in this order may include unused diversions. If the water right ownership and/or point of diversion information listed in the order do not appear to be correct, please contact IDWR to correct the information.

IDWR Workshop.

IDWR plans to hold a one-day workshop during the week of March 12, 2007. The workshop will focus on design and construction of control works and measuring devices. The workshop will also discuss other opportunities available to users to improve their water distribution systems and spread the cost of construction. These opportunities include: consolidating diversions, revising distribution systems, and participating in existing state and federal programs that may provide some funding to the user. IDWR will send notice of the workshop to water users when the time and location have been scheduled.

Fish Screens.

Some of the diversions listed in this order may be scheduled to have a fish screen installed by the Idaho Department of Fish and Game (IDFG). Users should contact IDFG at the address below to ensure the plans for fish screens will not conflict with the user's plans for measuring devices and headgates. In some cases, up to 75% of the cost for installation of controlling works is provided with the installation of the fish screen. Additionally, users who are not already scheduled to have a fish screen installed should contact IDFG to determine if a fish screen might be required in the future.

IDFG Screen Shop
97 HWY 93 North.
P.O. Box 1336
Salmon, ID 83467
(208) 756-6022

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES (IDWR)

MINIMUM ACCEPTABLE STANDARDS FOR OPEN CHANNEL AND CLOSED CONDUIT MEASURING DEVICES

The source and means of diversion of water, whether surface or ground water, generally determines the measurement and reporting process. Surface water sources such as streams, springs and waste channels are normally diverted into open channels (ditches or canals), but closed conduits (pipes or culverts) are also used. Ground water is usually diverted into pipes (which may also discharge into open channels).

Measuring devices are required at or near the point of diversion from the public water source.

OPEN CHANNEL

SURFACE WATER DIVERSIONS

I. Flow Measurement

The following discussion is applicable only to diversions from surface water sources. Measurement of a ground water diversion with an open channel measuring device must be pre-approved by the Department.

A. Standard Open Channel Measuring Devices

Standard weirs, flumes and submerged orifices are pre-calibrated devices commonly used for measuring water in open channels. The installation of one of these devices provides a fixed relationship between the stage and flow.

Various size weirs, flumes and submerged orifices are available and each type and size has a separate rating, or relationship between head and flow. Standard designs and information about installation and use of different measuring devices, including rating tables, can be provided by the department. All open channel flow diversions should be measured using one of the following standard open channel flow measuring devices commonly used in Idaho:

- contracted rectangular weir
- suppressed rectangular weir
- Cipolletti weir
- 90 degree V-notch weir
- Parshall flume
- trapezoidal flume
- submerged rectangular orifice
- constant head orifice
- ramped broad crested weir (or ramped flume)

Construction and installation of these devices should follow published guidelines. Additional information is available on the IDWR Internet site at the addresses below. Additional references are available upon request.

http://www.idwr.idaho.gov/water/districts/water_measurement.htm

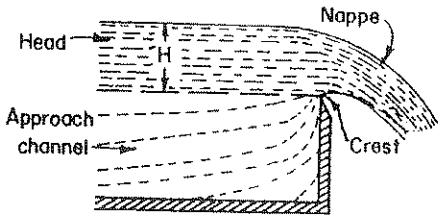


Figure 1. Generalized profile of a standard sharp-crested weir.

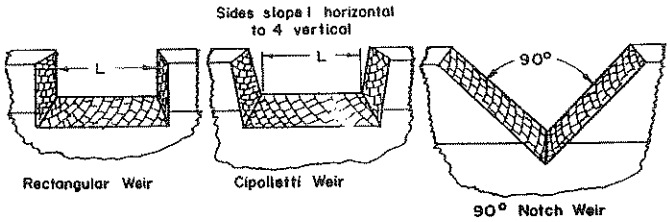


Figure 2. Examples of common weir types.

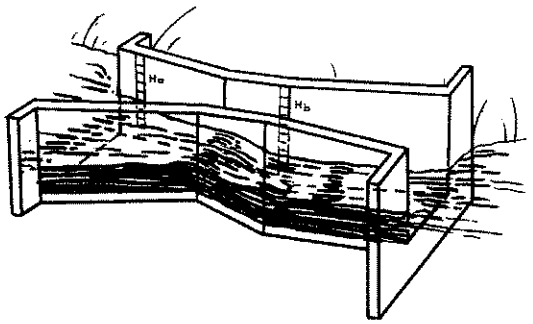


Figure 3. Parshall Flume.

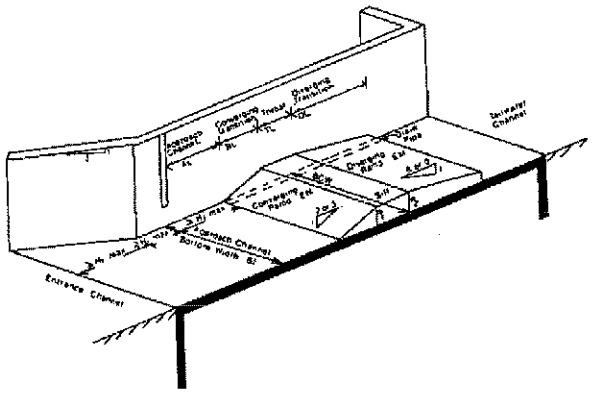


Figure 4. Ramped Flume.

B. Non-standard open channel devices: Rated Structures or Rated Sections

IDWR may authorize the use of non-standard devices and rated sections provided the device or section is rated or calibrated against a set of flow measurements using an acceptable open channel current meter or a standard portable measuring device. Further restrictions and requirements are available from the Department upon request.

C. Closed Conduit Measuring Devices

Refer to the Ground Water measuring section for installation, accuracy, and calibration standards of closed conduit measuring devices.

GROUND WATER DIVERSIONS

Ground water diverters have the option of installing a flowmeter, or using power records to estimate water withdrawals. Information regarding the use of power records will follow this discussion of flowmeters.

I. Flow Measurement

There are many flowmeters on the market, with costs ranging from several hundred dollars to several thousand dollars. In general, the higher priced meters are more accurate and require less maintenance. Most meters on the market have an acceptable accuracy rating for IDWR's guidelines. However, some types and designs are much more prone to maintenance problems. Moving parts tend to wear when sand or silt is present, and moss often plugs small orifices and slows moving parts. No single flowmeter is best for every situation. We recommend that you visit with qualified dealers and discuss your needs with them.

A. Minimum Standards

The following are minimum standards for closed conduit flowmeters:

- Minimum manufacturers' design accuracy of +/- 2 percent of reading
- Installed accuracy of at least +/- 10 percent of reading
- Meter must be calibrated with an independent, secondary measuring device when installed, and at least once every four years thereafter. In many cases, IDWR or the water district will perform this calibration.
- Must read instantaneous flow or be capable of flow rate calculation
- Must record total volume
- Non-volatile memory (power outage does not zero volume reading)
- Sufficient digits to assure "roll-over" to zero does not occur within 2 years
- Volume reading cannot be "reset" to zero
- Installed to manufacturers' specifications

Meter manufacturers typically specify that a meter must be located in a section of straight pipe at least 10 pipe diameters downstream and 5 pipe diameters upstream of any valves, bends, contractions, or other interferences which will distort the flow pattern. However, some types of meters will produce acceptable results when installed in shorter sections of

straight pipe. For example, at least one electro-magnetic flowmeter provides excellent measurement accuracy with only 5 lengths of straight pipe upstream from the meter.

Each manufacturer should provide the installation specifications for its meters. These **specifications must be adhered to** in order to achieve the accuracy required for the water measurement program. Again, we stress the importance of visiting with a qualified dealer and discussing your specific needs with them.

B. Types of Measuring Devices for Closed Conduits

Types	Pipe Sizes	Maintenance Required	Relative Purchase Price
Differential Head • Orifice • Venturi • Annubar	small to large	Low to high. Sand wears on sharp edges, and particles can plug small orifices and tubes.	low to medium
Force Velocity • Turbine • Propeller • Impeller	small to large	Typically moderate to high. Often problematic when exposed to sand or moss. Some cannot measure low velocities	low to medium
Ultrasonic	small to large	Low. Typically non-invasive with no moving parts to wear	high
Vortex	small to medium (about 12 to 14 inch maximum pipe diameter	Low. Few or no moving parts to wear.	high
Electro-Magnetic	small to medium (about 12 to 14 inch maximum pipe diameter	Low. No moving parts. Can provide good results with shorter lengths of straight pipe.	high

Power Records

An alternative to installing flowmeters is the use of power records and other information to estimate the annual diversion from a pump. This method, which we call the Power Consumption Coefficient (PCC) method, utilizes information obtained from the pumping plant while running at or near full capacity. Two parameters are measured while the pump is operating: flow rate and input power. With this information, one can calculate the number of kilowatt-hours required to pump one acre-foot of water. This number is unique to each well and pumping plant due to the physical attributes of the system.

To determine the rate of flow, a portable measuring device, such as an ultrasonic non-invasive meter or a differential head device, can be used. Simultaneous with the flow measurement, power is measured using the utility's kilowatt-hour meter. A qualified individual with the necessary equipment will be required to perform these measurements.

With the power consumption coefficient, an annual volume of water pumped can be calculated from the total annual kilowatt-hours of energy consumed by the pumping plant. The total power usage for each pumping plant will be supplied to the Department by electric utilities.

Some complex systems cannot use this method due to the potential for large errors. See the discussion on page 5 to see if this method can be used.

Because systems wear and water levels change, it is necessary to occasionally verify the flow to power ratio. Therefore, the power consumption coefficient must be re-calibrated at least once every four years.

Can power records be used to estimate my diversion?

Only irrigation water users may use power records to estimate their diversion because the utilities will only provide consumption information for irrigation uses. If you are not an irrigation user, but want to use power records, you must propose a method of reporting your power consumption data.

Owners of **surface water diversions** must have a flow-measuring device in most cases. The alternate method of estimating water withdrawals with power records cannot be used unless you pump from a public water source and can show the Department that it will yield reliable results (case by case determination).

Owners of **ground water diversions** can either install a totalizing flowmeter or ask the Department to use power records to estimate withdrawals. If the pump discharges to an open channel, an open channel measuring device can be employed to measure the water diverted if the device and a method of tracking hours of operation are pre-approved by the Department. Flow meters which register only instantaneous flow rate are not acceptable unless the water user can demonstrate a reliable method of tracking the number of hours the pump operates

through the season (the flow measuring device must then be read and flow rate recorded at least once per week).

Estimating total water diversion from power records requires the derivation of a relationship between power demand and flow. Flow rate and power demand must be measured simultaneously to determine the number of kilowatt hours needed to pump an acre-foot of water. This relationship, called a power consumption coefficient, is applied to the year-end power records to determine the total acre-feet diverted.

The total water diverted can be accurately estimated if the system configuration or operation is not complex. Unfortunately, power records will not always yield acceptable results, and it will be necessary to install a flowmeter. **Flowmeters must be installed** if any of the following conditions exist:

- The well flows (artesian) so that water can be diverted when the pump is off.

- The energy consumption meter that records power used by the pump also records power used by other devices not integral to the irrigation system. For example, if the meter also records power used by a home, shop, cellar, etc., a flowmeter must be installed because power used by the pump cannot be isolated from the other devices. However, if the meter also records power used by center pivots, booster pumps, or other devices which operate when the main pump operates, the alternate method may be acceptable.

- The energy consumption meter records the power used by more than one well pump. If a deep well pump which discharges to an open pond or ditch and a relift pump are both connected to the same electrical meter, the discharge from the well pump can be measured, and a time clock can be installed to record the total number of hours of pump operation which can be multiplied by the flow rate to determine the total volume of water diverted.

- The energy supplied to the pump cannot be accurately and reliably measured. For example, most diesel and propane driven pumps do not have provisions to measure the fuel used by the engine. These will be reviewed on a case-by-case basis.

- The flow rate from the pump varies significantly due to changes in demand or operation. For example, pumps that discharge into a pressurized system some times and then open discharge at other times, or pumps that supply multiple pivots, would likely have flow rates that change drastically. These changes would alter the flow to power ratio, causing inaccurate estimates of diversions. The alternate method of estimating water withdrawals with power records may only be used if the water user can propose an acceptable method of tracking these changes in operation.

- Changing water levels cause the flow or operating pressures to vary significantly over the irrigation season.

Manufacturers/Distributors of Headgates:

GNI Waterman LLC,
25500 Road 204
Exeter, California 93221
PO Box 458
Phone: 559-562-4000
Toll Free: 800-331-0808
Fax: (559) 562-2277
Email: sales@watermanusa.com
www.watermanusa.com

A•M VALVE COMPANY LLC
7425 W Sunnyview Ave
Visalia, CA 93291
Phone: 559-651-2066
Toll Free: 866-462-8700
Fax: 559-651-2065
Email: sales@amvalve.com
Email: support@amvalve.com
Email: info@amvalve
www.amvalve.com

Fresno Valves & Castings, Inc.
7736 East Springfield Avenue
P.O. Box 40
Selma, CA 93662
Phone: 800-333-1658
Fax: 559-834-2017
e-mail: info@fresnovalves.com
www.fresnovalves.com

Local Warehouse:
211 Bridon Way
Jerome, ID 83338-6143
Phone: 208-324-2963

Manufacturers/Distributors of Headgates (cont'd):

Contech Construction Products – Steel fabrication
1510 W Sunnyside Rd
Idaho Falls, ID 83402-4357
Phone: 208-522-1713

Irrigation Centers - They can fabricate steel gates, weirs, and flumes.
410 S Front St
Arco, ID 83213
Phone: 208-527-3075

Amcor – Concrete applications
2240 S Yellowstone
Idaho Falls, ID 83402-4323
Phone: 208-522-6150

Manufacturers of Flumes and Weirs:

Irrigation Centers - Fabrication and sales of steel gates, weirs, and flumes.
410 S Front St
Arco, ID 83213
Phone: 208-527-3075

Intermountain Environmental Inc.
601 West 1700 South, Suite B
Logan, UT 84321
Phone: 435-755-0774
Toll Free: 800-948-6236
Fax: 435-755-0794
Email: info@inmtn.com
www.inmtn.com

Plasti-Fab, Inc. – Plastic flumes

PO Box 100
Tualatin, Oregon
97062-0100
Phone: 503-692-5460
Fax: 503-692-1145
Email: sales@plasti-fab.com
http://www.plasti-fab.com/flumes/flumes.html

Manufacturers of Flumes and Weirs (Cont'd):

Honkers Supreme – Goose Decoys, but can manufacture fiberglass flumes
317 Addison Ave W
Twin Falls, ID 83301-5003
Phone: 208-734-2060

Distributors of Inline Flow meters:

Rust Automation & Controls
8070 South 1300 West
PO Box 367
West Jordan, UT 84084
Phone: 801-566-7878
Fax: 801-566-9260

Irrigation Components Northwest
5902 Oakesdale Road
Oakesdale, WA 99158
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Phone 2: 509-285-5403
Fax: 509-285-5403
Email: kenhanson@palousenet.com

Western Engineering
4306 South Main St.
Salt Lake City, UT 84107-2600
Phone: 801-268-3333
Fax: 801-268-3358
Email: office@WEngineering.com
www.WEngineering.com

Controls Warehouse
356 Cypress Road
Ocala, FL 34472
Phone: 352-687-0351
Toll Free: 800-321-6056
Fax: 352-687-8925
Email: sales@controlswarehouse.com
www.controlswarehouse.com/waste.htm

Distributors of Inline Flow meters (Cont'd):

Daniel L. Jerman Co.
275 Railroad Place
Hackensack, NJ 07601
Phone: 800-654-3733
Fax: 201-487-3953
Email: sales@watermeters.com
www.watermeters.com

Mountain States Instruments
3620 West 2100 South
Salt Lake City, UT 84044
Phone: 801-521-8045
Fax: 801-521-8043
E-mail: kima@iwestco.com
www.msinst.com

Branom Instrument Co
4090 W State St SUITE Unit 28
Boise, ID 83703-4445
Phone: 208-336-5444

Manufacturers of Inline Flow meters:

McCrometer, Inc.
3255 W. Stetson Ave.
Hemet, California 92545
Phone: 951-652-6811
Toll Free: 800-220-2279
Fax: 951-652-3078
www.mccrometer.com

ABB Automation
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Toll Free: 800-435-7365 or 800-HELP-365
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http://www.dynasonics.com

Manufacturers of Inline Flow meters (Cont'd):

Badger Meter, Inc.
(Distributed by Rust Automation & Controls – See above)
P.O. Box 245036
Milwaukee, WI 53224-9536
Phone: 877-243-1010
Email: flow@badgermeter.com

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Seametrics, Inc
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Phone: 253-872-0284
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