

A photograph of a concrete weir structure in a stream. A vertical staff with measurement markings is placed against the weir to measure water level. The background shows dry grass and some green shrubs.

# Water Rights Measurement and Reporting



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June 2016



# Primary Components of the New Law

- Reporting
- Measurement

**4. AMOUNT OF WATER DIVERTED AND USED**

**Note:** Please report only the amounts diverted and used under this supplemental statement only. Do not report water diverted under other water rights, groundwater, or water supplied or purchased from others.

4a. Choose the unit:  
☐ Gallons ☒ Acre-feet (AF) **2**

4b. ☒ Check this box if the amount of water used is the same as the amount directly diverted. Do not check this box if your use of water is non-consumptive or if you have no use of water. If no use, enter 0 (zero) **2**

4c. Enter numerals only (no commas or letters). If no water was diverted or used, enter 0 (zero)

	Amount directly diverted	Amount diverted or collected to storage	Amount used <b>2</b>
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			
Total	0	0	0

4d. If the total water diverted or used above is 0, please provide an explanation. Pre-1914 claim holders may lose their rights for



# Reporting Requirements

- Applies to all water rights
- Report once a year:
  - Statements of diversion and use: due July 1
  - All other claims of right: due April 1
- During times of water shortage in a watershed or sub-watershed, monthly or more frequent reporting may be required.

# Reporting Requirements

- What do I report? In general:
  - Report the quantity of water directly diverted, quantity diverted to storage, and the quantity used each month under each water right
  - Describe your diversion works and how you divert
  - Tell us who you are

# Reporting Exception in Watermaster Service Areas

Water Code, § 5101: a statement of water diversion and use is not required to be filed if the diversion is any of the following:

- (d) **Regulated by a watermaster appointed by the department and included in annual reports filed with a court or the board by the watermaster**, which reports identify the persons who have diverted water and describe the general purposes and the place, the use, and the quantity of water that has been diverted from each source.
- (e) **Included in annual reports filed with a court or the board by a watermaster appointed by a court or pursuant to statute** to administer a final judgment determining rights to water, which reports identify the persons who have diverted water and give the general place of use and the quantity of water that has been diverted from each source.
- Registrations, permits, licenses, and certificates are required to measure (Wat. Code, §§ 1840, 1841).

# Benefits

- Increase understanding of water use through more accurate measurement
- Improve water rights administration and transparency of records
- Provide more accurate data on available water supplies

# Benefits, Continued

- Assure compliance with the quantity and season limitations of existing water rights
- Protect senior rights in accordance with priorities
- Provide for efficient management and use of water during times of shortage
- Improve forecasting of water demand

# Am I Required to Measure?

- Applies to diversions greater than 10 acre-feet
- For diversions under multiple claims of right, you are required to measure if:
  - All diversions serving the same place of use exceed 10 acre-feet; or
  - All diversions from the same point of diversion exceed 10 acre-feet



# Measurement Requirements

- If you are required to measure, you must:
  - Install and maintain a measurement device, or
  - Employ a measurement method
- Basic requirements - the device or method must be able to measure:
  - The rate of diversion
  - The rate of collection of water to storage
  - The rate of withdrawal or release from storage
  - The total volume of water diverted or collected to storage

# Special Protection for Stockponds

- For stockponds, the place of use is defined as the pond itself, not the ranch
- If you have more than one stockpond on the same ranch, you are only required to measure any ponds that are larger than 10 acre-feet
- Applies to:
  - Stockpond registrations (Water Code § 1228.1)
  - Stockpond certificates (Water Code § 1226.1)

# Qualified Individual

- A qualified individual may:
  - Install and calibrate measurement devices
  - Prepare a measurement method
  - Approve reports certifying measurement device and measurement method accuracy
  - Certify an alternative compliance plan

# Who is a Qualified Individual?

- For diversions less than 100 acre-feet:
  - A qualified individual is a person trained and experienced in water measurement and reporting
  - Ranchers and farmers are qualified individuals
  - Your employees, contractors, and other people you hire to do work can be qualified individuals



# Qualified Individual (cont.)

- For diversions of 100 acre-feet or more:
  - California-registered Professional Engineer
  - A person under the supervision of a California-registered Professional Engineer
  - Licensed contractor for well drilling (C-57), limited specialty (C-61) or machinery and pumps (D-21)

# Measurement Devices

- Any measurement device qualifies if:
  - It meets the basic requirements, and
  - It meets accuracy and monitoring rate requirements for the size of the diversion
  - A qualified individual installs and certifies it
- Must be installed by a qualified individual and calibrated every five years
- Common examples:
  - Staff gauge and logbook
  - Flow meter
  - Weir

# Measurement Requirements

Type of Diversion	Installation Deadline	Required Accuracy	Required Monitoring	Installation And Certification
Direct Diversion $\geq$ 1000 afa	July 1, 2016	10%	Hourly	Engineer/Contractor/ Professional
Direct Diversion $\geq$ 100 afa / Storage $\geq$ 200 af	January 1, 2017	10%	Daily	Engineer/Contractor/ Professional
Direct Diversion $>$ 10 afa / Storage $\geq$ 50 af	January 1, 2018	15%	Weekly	Individual experienced with measurement and monitoring
Storage $>$ 10 af	January 1, 2018	15%	Monthly	Individual experienced with measurement and monitoring

# Measurement Device Accuracy

- Existing devices:
  - Must be accurate to within  $\pm 15$  percent
  - Applies to devices installed on or before January 1, 2016
- New devices have stricter accuracy requirements.
- Laboratory certifications:
  - Must be accurate to within  $\pm 5$  percent
  - Measurement device's accuracy is already certified when you install it



# Measurement Devices - Telemetry

- Telemetry requirements for:
  - Diversions or storage over 10,000 acre-feet
  - Diversions > 30 CFS between June 1 and Sept. 30
  - Diverts > 20 percent of streamflow in certain protected fish streams

# Example

15 AFA pond that uses a staff gauge and logbook

- Basic requirements: the device or method must be able to measure:
  - The rate of diversion: YES (monthly change in reading)
  - The rate of collection of water to storage: YES (monthly change in reading)
  - The rate of withdrawal or release from storage: YES (monthly change in reading)
  - The total volume of water diverted or collected to storage: YES (monthly change in reading)

# Example

Flood irrigated pasture measured with a weir

- Basic requirements: the device or method must be able to measure:
  - The rate of diversion: YES (hourly change in reading)
  - The rate of collection of water to storage: N/A (not storage)
  - The rate of withdrawal or release from storage: YES (change in reading)
  - The total volume of water diverted or collected to storage: N/A (not storage)

# Measurement Method

- A measurement method is a way to measure diversions without installing a measuring device at every point of diversion
- Typically: device + math
- Examples:
  - Measuring diversions with pump electrical readings and a formula for the pump's capacity
  - Measuring multiple landowner's diversions through a shared ditch system with one device and assigning a percentage of the total diversion to each landowner



# Measurement Method Examples

- A water right holder has a pond that collects water from two creeks, and also has a diversion from a stream to the pond. The right holder uses three different water rights to do this.
  - The measurement method may include a single staff gage on the pond.
  - The percentage flow from each of the two creeks can be calculated based on drainage basin areas.
  - The diversion from the stream to the pond can be measured using an inline flow meter.

# Measurement Method Examples

- There are five water right holders on a creek. They can collaborate on measurement by moving their points of diversion to a single stream gage. The measured flow can be parsed out to the individual right holders using a formula. (Device + math).

# Measurement Method Requirements

- Summary of requirements:
  - Tell us who you are
  - Tell us what water rights you are measuring and where the water is used
  - Tell us how you will meet the accuracy, monitoring, and other requirements for measurement
- The Board is developing forms
- Renew a measurement method every 5 years

# Alternative Compliance Plans

- Available where strict compliance with measurement requirements:
  - Is not feasible,
  - Would unreasonably affect public trust uses,
  - Would result in the waste or unreasonable use of water, or
  - Would be unreasonably expensive
- Plans must document why alternative compliance is necessary
- When strict compliance is unreasonable expensive, the plan must include a cost analysis



# Alternative Compliance Plans

- Does not eliminate measurement entirely
- Must still achieve the closest attainable compliance, including Plans claiming that strict compliance is unreasonably expensive
- See generally: Cal. Code Regs., tit. 23, § 935, subd. (b)(2).

# Alternative Compliance Plan Examples

- A rancher who cannot read a staff gauge at a remote pond during the winter months because of snow.
  - The alternative compliance plan will need to specify how the pond will be measured (staff gauge), and fully document the proposed measuring schedule. For example, the plan must state that measuring will occur during September, October, November, March, April and May.

# Alternative Compliance Plan Examples

- No power available at site
  - Canal diversion – measure flow with flumes, weirs and standard canal meter gates using a staff gage to record differential head
  - Reservoir diversion – same as above
  - Pipes – Battery powered flowmeter

There are four ways to measure and record differential head measurements for canals and reservoirs when there is no electricity

# Alternative Compliance Plan

- An alternative compliance plan is not appropriate if it results in missing diversion data
- For example, if water is routed through a reservoir for domestic use in the winter months, measurement must occur during those months in order to determine the total quantity diverted

# Summary of Alternative Compliance Plan Content Requirements

- Plans must include:
  - Contact information
  - A detailed description of the area served by the plan
  - The proposed measurement method and frequency
  - A schedule and explanation for how to achieve measurement requirements
  - A budget
  - A list of any permits that must be obtained to implement the plan, and a schedule for obtaining them