

Summary

Alternative Compliance Plan for Water Right (S005231)

You completed the survey on 06/30/2017 16:00:17

[Return to Dashboard](#)

INTRODUCTION

See [Information and Instruction Sheet](#) for assistance in completing this form. The form shall be completed by the water right owner, their agent, or for an Alternative Compliance Plan filed for a group, the designated contact. The vast majority of water right owners should be able to meet the measurement requirements. Participation in an Alternative Compliance Plan does not relieve the participant of the independent obligation to file an online annual Report of Water Diversion and Use.

All sections of the form below must be completed. An incomplete form does not excuse non-compliance with the regulation or release you from the obligation to measure. The Alternative Compliance Plan may not be used to avoid measurement and monitoring, but should be used to describe an alternative method of measurement and monitoring which will provide the information required by the Regulation. Estimated diversion records may not meet the Regulation's accuracy requirements without supporting documentation.

Note: The large text boxes in the form have a character limit of 2,000 characters. Responses requiring more than 2,000 characters for a particular text box should be submitted as an attachment in Section I of this form. Additional information should be attached in Section I.

SECTION A - WATER RIGHT OWNER INFORMATION

This section of the form describes the information that is required for each water right or claimed right covered under the Alternative Compliance Plan.

In Section I, attach a table (in Microsoft Excel .xlsx, comma-separated .csv, or tab-separated .txt format) containing the Application or Statement Number for each water right covered under the Alternative Compliance Plan. For your water right, answer the questions below.

(1) Owner Name(s) *

Halstead-Taylor Ditch

(2) Email Address *

[REDACTED]

(3) Phone Number *

[REDACTED]

(4) Mailing Address Line 1 *

[REDACTED]

(5) Mailing Address Line 2:

(6) City *

Three Rivers

(7) State *

CA

(8) Zip Code *

93271

(9) Is the Water Right Owner also the Primary Contact? *

☒ Yes

☐ No

On questions 10 through 13, please tell us what you understand the requirements of the regulation to be for this water right to be.

(9) Installation Deadline *

☐ January 1, 2017

- ☒ July 1, 2017
☐ January 1, 2018

(10) Measurement Accuracy *

- ☐ 10%
☐ 15%
☒ Other, as specified in the Alternative Compliance Plan (if submitted)

(11) Required Monitoring Frequency *

- ☐ Hourly
☐ Daily
☐ Weekly
☒ Monthly

(12) Qualifications of the Individual Installing/Certifying *

- ☐ A California Licensed Professional Engineer (PE), a person working under the supervision of a California PE, a California-licensed contractor authorized by the State License Board for C- 57 well drilling or C- 61 Limited Specialty/D-21 Machinery and Pumps, or a Hydrologist or Engineer employed by a Federal Agency
☒ A person trained and experienced in water measurement (for diversions less than 100 acre-feet per year)

SECTION B - INFORMATION ON PRIMARY CONTACT

This section of the form includes the contact information for the primary contact associated with the Alternative Compliance Plan.

(1) Name(s): *

(2) Phone Number: *

(3) Email Address: *

(4) Mailing Address Line 1: *

(5) Mailing Address Line 2:

(6) City: *

(7) State: *

(8) Zip Code: *

(8) The Alternative Compliance Plan Primary Contact is a(n): *

- ☐ Water Right Owner
☐ Agent
☐ Designated Contact

SECTION C - INFORMATION ON QUALIFIED INDIVIDUAL

This section of the form includes the contact information for the Qualified Individual certifying the Alternative Compliance Plan.

| | |
|--|--|
| (1) Name(s): * | <input type="text" value="Bradford Bloetscher"/> |
| (2) Phone Number: * | <input type="text" value=""/> |
| (3) Email Address: * | <input type="text" value=""/> |
| (4) Mailing Address Line 1: * | <input type="text" value=""/> |
| (5) Mailing Address Line 2: | <input type="text" value=""/> |
| (6) City: * | <input type="text" value="Three Rivers"/> |
| (7) State: * | <input type="text" value="CA"/> |
| (8) Zip Code: * | <input type="text" value="93271"/> |
| (9) The qualifications of the individual certifying the Alternative Compliance Plan are: * | <div><div><input type="radio"/> California Licensed Professional Engineer (PE)</div><div><input type="radio"/> Person working under the supervision of a California Professional Engineer</div><div><input type="radio"/> California-licensed contractor authorized by the State License Board for C- 57 well drilling or C-61 Limited Specialty/D-21 Machinery and Pumps</div><div><input type="radio"/> Hydrologist or Engineer employed by a Federal Agency</div><div><input checked="" type="radio"/> Person trained and experienced in water measurement (for diversions of less than 100 acre-feet per year)</div></div> |
| (10) Qualifying Individual's PE or Contractor license number, if applicable: | <input type="text" value=""/> |

SECTION D - REQUEST FOR ALTERNATIVE COMPLIANCE

Water right holders who divert more than 10 acre-feet of water per year are required to measure the water they divert. A diverter may choose any measuring device, or combination of devices, that meet the measurement and monitoring requirements of the regulation. The measurement requirements are summarized on the [Reporting and Measurement Webpage](#).

For each box checked in questions 1a through 3 below, submit a detailed explanation and attach substantiating documentation.



(1a) Diverter is seeking alternative compliance from the requirement(s) checked below. *

- ☐ Measuring Device Location
- ☒ Required Accuracy
- ☒ Certification of Accuracy
- ☐ Installation and Maintenance
- ☒ Monitoring Frequency
- ☒ Telemetry
- ☐ Other (describe in Section 1b)

(1b) Provide additional information for each of the reasons selected in question 1a: *

The Halstead-Taylor Ditch (HTD) has diverted water from the North Fork of the Kaweah River located in Tulare County, California, since 1892. The property owners were accorded the lawful right to divert water from the North Fork of the Kaweah on November 7, 1895 by the Tulare County Board of Supervisors sitting as the Water Commission. Since 1892 the water has been continuously diverted and used for domestic and agricultural purposes. The water is delivered to its members entirely by gravity in a hand-dug, earthen ditch that runs approximately 3 miles. There is no road that leads to the diversion on the North Fork of the Kaweah and is only accessible by foot for approximately ½ mile from the nearest road. The HTD does not own or operate any vehicle or equipment other than a few machetes, shovels and rubber boots. The HTD, a membership organization led by a volunteer Board of Directors, relies entirely on the fees paid by its members to maintain and operate the water diversion and ditch. The HTD does not receive any additional federal, state, or local government funding. With a limited annual budget of less than \$15,000, the organization pays about 75% of that for annual cleaning, maintenance, and repairs of the ditch and diversion, with the remaining funds used for annual general operations (insurance, legal and general business expenses). There is no permanent full-time staff, but just one part-time temporary Ditch Tender-Water Master. The new water measurement and monitoring requirements of Title 23, Division 3, Chapter 2.8, sections 933 or 934 of the CCR are extremely burdensome for our organization/members as the regulations require: 1) very expensive up-front costs and continued repair-maintenance costs for installation of monitoring and measurement devices; 2) easy and safe access to the measurement-monitoring station and diversion; 3) a diversion point that has a stable, even water flow and; 4) highly skilled trained personnel to regulate and repair all devices. The HTD has always made every effort to comply with all California water laws and regulations and accepts the responsibility to continue doing so. To that end, we respectfully submit our Alternative Compliance Plan. Telemetry-Remote location not suitable for telemetry The HTD is a 3-mile long hand dug earthen ditch dating to 1892. Water is diverted from the North Fork of the Kaweah River in Tulare County at a remote location ½ mile from the nearest road or vehicle access. The diversion point is accessible only by unimproved foot trail not suitable to any type of vehicle or pack animal. Any construction materials of the diversion or measurement devices must be hand carried over flood plain and foothill terrain. The diversion point and the first 1000 feet of the ditch are subject to periodic flooding and consequent damage. The remoteness of the diversion makes it vulnerable to vandalism and theft. There is no utility-supplied power source available. Solar or battery power sources will be subject to vandalism, theft, and flood damage from rain events such as we experienced in Oct. 2015, Dec. 2016, and Jan. 2017. Monitoring Frequency-Remote location not suitable for hourly or frequent monitoring The HTD diverts water from the North Fork of the Kaweah River in Tulare County at a remote location ½ mile from the nearest road or vehicle access. There is no utility-supplied power source available. Solar or battery power sources would be subject to vandalism, theft, and periodic flood damage. Monitoring of any measurement device would require trained personnel on site to observe and record the measurement data. The HTD does not have the resources to train, and employ an individual to monitor a measuring device on an hourly, daily, or weekly basis. The closest engineering firm that could provide monitoring services is in Visalia, an hour away. The firm charges \$90 per hour not counting travel time, which is far beyond the level of cost effectiveness the annual budget of the HTD can support. Required Accuracy – the required accuracy will impose a burden on the HTD that it cannot meet The HTD does not have the resources to support monitoring technology that may be appropriate for larger organizations with proportionately larger budgets. With an annual operating budget of approximately \$15,000, there are no funds to purchase, install, monitor, and maintain a commercially available measurement device that can be relied upon to meet strict compliance requirements required by the new regulations. Certification of accuracy- strict compliance to the level of accuracy is not applicable for the alternative compliance plan proposed by the HTD. It is not physically feasible or financially possible for the HTD to purchase, install, and maintain a certifiable measuring device. Currently, the HTD has an established method of measuring water flow that would substantially comply with the accuracy requirements of monitoring and measurement.

(5000 character max.)

?

(2a) Alternative compliance is being pursued because strict compliance with one or more of the requirements for measuring and monitoring (check all that apply):*

- ☒ Is not feasible.
- ☐ Would unreasonably affect public trust resources.*
- ☐ Is unreasonably expensive.**
- ☐ Would result in the waste or unreasonable use of water.

* Including fish, wildlife, recreation, navigation, and aesthetic values.

** Plans claiming that strict compliance is unreasonably expensive shall be accompanied by an attached supporting cost analysis. The cost analysis should compare the cost of the proposed alternate measuring devices to the cost of the measurement devices required by the Regulation. All Plans shall include a budget and shall identify sources of financing. The budget should provide sufficient detail to show the cost of the proposed alternate measuring devices, the cost of obtaining any necessary permits, and the cost of installation.

(2b) Provide additional information for each justification selected in question 2a: *

Cost Analysis The strict compliance standards imposed by the recent Title 23 regulations are financially impossible for the HTD to achieve. Strict compliance will require a device such as a Parshall Flume and telemetry to be installed at the point of diversion. The annual budget for the HTD is less than \$15,000. A quote for a certifiable measuring device (Parshall Flume) from a company (Open Channel Flow) that specializes in flow measurement stated the cost in June 2016 at \$3,100 before taxes, shipping, and installation. These additional costs are estimated at \$1,500. The cost of telemetry is complicated by the absence of a power source within ½ mile of the diversion, but has been estimated at \$1,000 just for installation. Repair and replacement costs would be significant due to the diversion site being located in the flood plain of the North Fork of the Kaweah River. Any measurement flume, pressure transducer, data logging device would be severely damaged or swept away during the periodic fluctuations in the North Fork due to weather events such as those experienced in December 2016 and January 2017, as well as other rain historic events. The estimated total cost to install a device to meet strict compliance standards is \$8,600 or more than 57% of the annual Halstead-Taylor Ditch budget, making it financially unfeasible. Along with the initial expense of purchase, installation, and monitoring, there would be significant continued replacement and installation expenses due to the exposure of these devices to damage and destruction by floods and vandalism.

(5000 character max.)

(3a) Alternative compliance is requested under the following categories (check all that apply): *

- ☒ Highly variable flow rate at point of diversion.
- ☒ Point of diversion is inaccessible a portion of the year due to weather or other on-site conditions.
- ☐ Point of diversion is under tidal influence
- ☒ There is an existing measuring device or measurement method in use.
- ☐ Water is corrosive to measurement equipment.
- ☐ The diversion is measured by another entity (identify entity and method of measurement used).
- ☐ Other (provide complete description in section 3b)

(3b) Provide additional information for each of the categories selected in question 3a: *

Highly Variable Flow at the point of Diversion The HTD diverts water from the North Fork of the Kaweah River in Tulare County. The North Fork drainage stretches from Kings Canyon National Park to the north, Sequoia National Park to the east, and undeveloped foothills to the west. There are no dams or other structures to check the flow of precipitation over a wide area drained by the North Fork. Damaging high water and flood conditions are common, even in drought years. Measuring devices such as Parshall Flumes will regularly be damaged or swept away. Point of Diversion is inaccessible for a portion of the year due to weather. The point of diversion is accessible only by an unimproved foot trail approximately ½ miles long. For most of December 2016 and January 2017 the point of diversion has been under fast flowing water. Damage from recent rains has completely obliterated the ditch channel for several hundred feet from the point of diversion downstream. In any given year, from November-December through April-May the point of diversion is subject to high water flows and is a safety hazard. Any measuring devices would have been damaged or swept away several times in the past 15 months (October 2015, December 2016, January 2017). The relative inaccessibility of the point of diversion make strict compliance with the requirement to monitor frequently unfeasible. Existing Measurement Method in use The HTD is currently using an existing feature of the ditch infrastructure in conjunction with an accepted method of channel flow measurement. Within close proximity (100') to the point of diversion the HTD maintains a cement flume approximately 25 feet in length. A ten foot section of this flume has been marked off and measured to provide a cross-section profile that remains constant. By measuring the depth of water and its velocity the HTD can accurately determine the water flow from the North Fork of the Kaweah River into the ditch. This cross-sectional method of measurement was first used by HTD in 2015 and continues to be used today.

(5000 character max.)

(4) Alternative Compliance Plans shall include alternative, objective measurement and performance standards that achieve the closest attainable compliance. Describe the measurement or alternative to measurement that will be used at each point of diversion in the plan to achieve closest attainable compliance. *

It is not practical or financially possible for the Halstead-Taylor Ditch to purchase, install, and maintain a certifiable open channel flow measuring device. In order to attain the most reasonable compliance to the new regulations, the HTD proposes to substitute an established method of measuring water flow (the amount being diverted) for the measuring device required by strict

compliance. Water is diverted from the North Fork of the Kaweah River by the Halstead-Taylor Ditch. At a point approximately 100 feet below the diversion the water flows through a cement and rock flume 25 feet long. A ten-foot section of this flume was selected by 4Creeks Engineering of Visalia, CA to provide flow measurement data at the request of the Halstead-Taylor Ditch. Using the "cross-sectional" or "float" method 4Creeks measured the width of the flume at several points and then measured the depth of water to provide a profile of the channel. A tennis ball and stopwatch were used to provide velocity. Several runs were timed and recorded to provide an average channel flow measurement. The engineers from 4Creeks demonstrated the technique to the HTD Ditch Tender-Water Master, Mr. Brad Bloetscher. Once the data is collected the velocity is multiplied by the cross-sectional area average to produce the flow rate (in cubic feet per second). HTD improved on the technique by permanently marking off the ten-foot section so the cross section used will always be the same. The flume is measured at 11 points one foot apart indicated with paint for a ten-foot run. The depth of the water is measured at the same 11 points. That data is used to provide an average channel cross section. Using a stopwatch, a tennis ball is floated through the ten-foot marked section of the flume ten times. The length of the measuring section (10 feet) is divided by the average time the tennis ball takes to float the measured section to get velocity. This number is multiplied by a friction correction factor of 0.8. The resulting corrected velocity multiplied by the cross-sectional area average yields the flow rate expressed in volume/time. For HTD that would be cubic feet per second (CFS). The process is expressed: $Q=AV$. We have attached a copy of the data collection form used since June 2016 by the HTD Ditch Tender-Water Master to measure channel flow. This measurement method will be completed monthly throughout the year. All data collected will be accurately reported in the annual Statement of Water Diversion and more frequently if the SWRCB requires it. All data documentation will be kept on file for future reference. All persons collecting this data will be properly trained and monitored for accuracy and completeness. This plan will be implemented as per the deadline of July 1, 2017.

(5000 character max.)

SECTION E - AREA COVERED BY THE ALTERNATIVE COMPLIANCE PLAN

Summarize the following for each water right covered by the Alternative Compliance Plan. In Section I, attach maps, aerial photographs, or other renderings showing the area covered by the Alternative Compliance Plan and delineating the acreage of each place of use served. For the area covered by the Alternative Compliance Plan, include a list of assessor's parcel numbers and the current owner of each parcel.

(1) Provide a general description of the area covered by the Alternative Compliance Plan. *

General Description: The area covered by this plan is located in the foothills of the Sierra Nevada, along the canyon of the North Fork of the Kaweah River. The property covered by this plan is located in Section 2, 3, 10, 11, 14, and 15 of Township 17 South Range 28 East located in the County of Tulare, State of California. The point of diversion is approximately 3.7 miles north of the intersection of State Highway 198 and North Fork Drive in the unincorporated community of Three Rivers, CA. The service area begins approximately ½ mile south of the point of diversion along the west side of North Fork Drive and extends to a point approximately 1.1 miles north of the intersection of state highway 198 and North Fork Drive. The water in the ditch flows entirely by gravity through foothill topography.

(5000 character max.)

(2) Describe all diversion and conveyance works covered by the Alternative Compliance Plan. *

The diversion is located on property owned by the US BLM, APN 067-020-005. The HTD diverts water from the North Fork of the Kaweah River at a point approximately 3.7 miles north of the intersection of State Highway 198 and North Fork Drive in the unincorporated community of Three Rivers, CA. A hand-dug channel allows water from a natural pool in the North Fork to be diverted by gravity into the Halstead-Taylor Ditch. The ditch was hand dug in 1892 and is approximately 16,101 feet long. The ditch is an open channel earthen ditch that travels through various types of soil. Portions of the ditch have been improved to minimize channel seepage by the placement of concrete troweled into the ditch bottom and sides. Areas where the ditch traverses ravines and gulches wooden/metal flumes and pipelines are utilized. The water is transported entirely by gravity without the use of pumps or other machinery.

(5000 character max.)

(3) Describe the type(s) of Beneficial Use(s). *

The members of the HTD beneficially use the water for domestic purposes (irrigation of home gardens, fruit orchards), irrigation of mixed crops, and watering of stock (horses, sheep, cattle, chickens, and pigs).

(5000 character max.)

(4) Have you attached a list of assessor's parcel numbers and the current owner of each parcel covered by the Alternative Compliance Plan? (Attachments may be made under Section I of this form.) *

☒ Yes | ☐ No

SECTION F - MEASUREMENT AND MONITORING

(1) For each Point of Diversion listed in the Alternative Compliance Plan, describe how the water is measured. *

Water is diverted from the North Fork of the Kaweah River by the Halstead-Taylor Ditch. At a point approximately 100 feet below the diversion the water flows through a cement and rock flume 25 feet long. A ten-foot section of this flume was selected by 4Creeks Engineering of Visalia, CA to provide flow measurement data at the request of the Halstead-Taylor Ditch. Using the "cross-sectional" or "float" method 4Creeks measured the width of the flume at several points and then measured the depth of water to provide a profile of the channel. A tennis ball and stopwatch were used to provide velocity. Several runs were timed and recorded to provide an average channel flow measurement. The engineers from 4Creeks demonstrated the technique to the HTD Ditch Tender-Water Master, Mr. Brad Bloetscher. Once the data is collected the velocity is multiplied by the cross-sectional area average to produce the flow rate. (in cubic feet per second) HTD improved on the technique by permanently marking off the ten-foot section so the cross section used will always be the same. The flume is measured at 11 points one foot apart indicated with paint for a ten-foot run. The depth of the water is measured at the same 11 points. That data is used to provide an average channel cross section. Using a stopwatch, a tennis ball is floated through the ten-foot marked section of the flume ten times. The length of the measuring section (10 feet) is divided by the average time the tennis ball takes to float the measured section to get velocity. This number is multiplied by a friction correction factor of 0.8. The resulting corrected velocity multiplied by the cross-sectional area average yields the flow rate expressed in volume/time. For HTD that would be cubic feet per second (CFS). The process is expressed: $Q=AV$. We have attached a copy of the data collection form used since June 2016 by the HTD Ditch Tender-Water Master to measure channel flow. In order to attain reasonable compliance with regulations, this measurement method will be completed monthly throughout the year. All data collected will be accurately reported in the annual Statement of Water Diversion and more frequently if the SWRCB requires it. All data documentation will be kept on file for future reference. All persons collecting this data will be properly trained and monitored for accuracy and completeness.

(5000 character max.)

(2) Identify the measurement accuracy associated with the measurement devices. *

According to the "Estimating Discharge and Stream Flows: A Guide for Sand and Gravel Operators, July 2005", this water flow measurement method provides "a reasonable estimate" of water flow.

(5000 character max.)

(3) Describe how the accuracy of the Alternative Compliance Plan was calculated. *

The water flow measurement incorporated in the HTD Alternative Compliance Plan, as described in Section F (1) provides a reasonable estimate of water flow. This determination was made by the Washington Department of Ecology in their publication "Estimating Discharge and Stream Flows: A Guide for Sand and Gravel Operators, July 2005", page 8. This method is also adapted from "Streamkeeper's Field Guide" (Murdoch, Cheo, and O'Laughlin 1996.)

(5000 character max.)

SECTION G - IMPLEMENTATION SCHEDULE (IF NECESSARY)

(1) If applicable, describe the implementation schedule for the Alternative Compliance Plan, including objective milestones from date of filing through final implementation. Milestones should include date of completion for construction and testing, expected dates of issuance of required permits, and expected date for compliance with the California Environmental Quality Act:

This plan will be implemented as per the deadline of July 1, 2017.

(5000 character max.)

An Alternative Compliance Plan shall be submitted and implemented by the established regulatory deadlines (see form instructions for additional information) unless a Request for Additional Time has been granted.

SECTION H - OTHER PERMITS

(1) Describe any other permits required to implement the Alternative Compliance Plan. Include information on the agency that will issue the permit, and the expected date of issuance.

None required at this time.

(5000 character max.)

SECTION I - ATTACHMENTS



(1) Attach documents that support the Alternative Compliance Plan.

Choose File No file selected

Upload

(Uploaded files:)

[HTD memb. parcel #s.xls](#)
[HTD members and APNs 17.01.14.xls](#)
[HTD Cost Analysis of Measurement Device.xlsx](#)
[HTD service area map.pdf](#)
[HTD Google map.pdf](#)
[HTD Rock Flume Water Flow Data Collection Sheet.pdf](#)

0%

(2) Provide a brief description of the attached documents.

1. Section D(2a) Cost Analysis of Measurement Device 2. Section E: List of Halstead-Taylor Ditch members and APNs 17.01.14 3. Section E Halstead-Taylor Ditch Map of service area (map with parcel numbers) 4. Section E Google map of Halstead-Taylor Ditch on the North Fork of the Kaweah River 5. Section F(1) Water Flow Data Collection Sheet (used to collect the water flow data at the Rock Flume as described)

(5000 character max.)

SECTION J - IMPORTANT INFORMATION AND SIGNATURES

Each participant in an Alternative Compliance Plan (Plan) must sign this form or an "opt-in" form that must be retained by the Plan manager. Attach a listing of participants, as needed, in Microsoft Excel .xlsx, comma-separated .csv, or tab-separated .txt format. By signing this form or the Plan's "opt-in" form, each Plan participant acknowledges that the Plan will be timely implemented and that the measurement of diversions will substantially comply with the Measurement Regulation. Further, each Plan participant acknowledges that the water rights covered by the Plan will not be exercised outside the scope of the Plan. Each Plan participant is responsible for promptly informing the Division of Water Rights or Delta Watermaster, as appropriate, if the participant withdraws from the Plan. The Plan manager is responsible for promptly informing the Division of Water Rights or the Delta Watermaster, as appropriate, if the Plan is modified or abandoned or if the Implementation Schedule is adjusted.

I hereby certify that the information in this Alternative Compliance Plan is true to the best of my knowledge and belief and that the Alternative Compliance Plan is in compliance with the requirements of Title 23, Division 3, Chapter 2.8, Section 931 through 938 of the California Code of Regulations. *

☒ Yes | ☐ No

Printed Name *

Margaret Bloetscher

Division of Water Rights and Delta Watermaster staff may or may not evaluate the contents of an Alternative Compliance Plan at the time of receipt. Staff will initially determine if all the information has been filled out, and accept the Alternative Compliance Plan as complete or return it as incomplete. An Alternative Compliance Plan may be reviewed for compliance purposes at any time or as part of a systematic audit.
