

Alternative Compliance Plan

Statement of Water Diversion and Use Nos. 15506 and 15913

Graeagle Land and Water Company

June 29, 2018

Alternative Compliance Plan – Statement Nos. 15506 and 15913

Introduction:

Graeagle Land & Water Company (Company) holds riparian and pre-1914 claims of right identified in Statements of Water Diversion and Use (Statement) 15506 and 15913. The Statements document diversion and use of water from Mohawk Creek at two points of diversion (POD) for irrigation, stockwatering, and domestic uses at their property located in Plumas County. The Company also holds Statement 15914 associated with Mohawk Creek; however, this POD was destroyed during the 1997 flood and has not been repaired at this time. Because there is currently no use under Statement 15914, measurement is not required. Statement 15914 is not further addressed in this Alternative Compliance Plan (Plan); however, the Company will implement measurement prior to any future diversions at this POD. A summary of the water rights is included as Attachment 1.

The property is located in Mohawk Valley, approximately 3 miles southeast of Graeagle, California. Water is currently diverted by gravity from Mohawk Creek from two locations. The water is used to irrigate approximately 240 acres of pasture and provide water for cattle and sheep. Water is also used for domestic and landscape purposes at one house. From each POD, the diverted water flows through irregularly shaped culverts, then through earthen ditches to flood irrigate pasture. Water that is not required for stockwatering and for evapotranspiration by the pasture returns to the local streams; therefore, a portion of the water diverted is not consumptively used. This flood irrigation using unlined ditches and the natural contours of the land is a common method of irrigation in this and other areas. The two PODs are located in remote, forested areas without available power supply. The Company experiences snow and freezing temperatures in the winter. These factors make installation of measuring equipment exceedingly difficult.

Under this Alternative Compliance Plan (Plan), the Company is proposing to estimate water use based on crop data and the Cal Poly Irrigation Training and Research Center Method (ITRC Method) for estimating crop evapotranspiration and adjusted for actual effective precipitation, cultural practices, and system irrigation efficiencies. The crop coefficient used for this Plan is from calculations by ITRC modeled on a daily basis for zones established by the Department of Water Resources. The Company will rely on crop evapotranspiration data for Zone 13 – Northern Sierra Nevada. Precipitation and reference evapotranspiration data will be collected from the nearby Western Regional Climate Center (WRCC) Remote Automated Weather Station (RAWS) for Mohawk California. The area irrigated by diversions under these Statements is located within a 2.25-mile radius of the RAWS; therefore, this station provides very applicable data. The consumptive use will be adjusted according to the timing of the application of water. Typically, there is enough soil moisture and sub-irrigation to maintain the pasture during the spring until about mid-April when the Company begins irrigating. The typical irrigation season is from about mid-April to mid-October. At the tail end of the irrigation, the available surface water may fall below the consumptive use of pasture. When diversions are greater than the consumptive use of the pasture, the excess water returns to the Middle Fork of the Feather River as either surface or sub-surface flow or percolates to the groundwater aquifer. We believe estimating diversions based on consumptive use using the ITRC Method is an appropriate approach for estimating water diversions and use within the Company.

The basis for the submittal of this Plan is “not feasible” and “unreasonably expensive”. Strict compliance with the requirements for measuring and monitoring at each of the PODs is not feasible due to the difficulty and expense of installing measurement equipment to accurately measure diversions. The Company obtained a cost estimate to purchase and install measurement equipment at each POD in order to comply with the Measurement Regulation. The estimate was \$26,400 for the first year, \$2,000 for the second year and every even year thereafter, and \$4,000 for the third year and every odd year thereafter

(Attachment 2). The estimate does not include time for Company staff to inspect the measurement equipment for debris and to perform regular maintenance. However, the estimate does include time to download and process the data from the devices. Summer grazing on the Ranch is leased to a cattle producer. The annual rent for the grazing lease does not cover all Ranch expenses, including but not limited to ditch and fence maintenance and real property taxes. It is not possible to raise the annual grazing fees to a level which would cover the cost to purchase and install measurement equipment, much less the maintenance and other unknown costs for that equipment.

The cost to prepare this Plan is approximately \$2,500. The annual cost to download and review RAWS data, perform the water use calculations, and submit the annual water right reports is approximately \$1,000. Therefore, over the anticipated five-year use of this Plan, the total cost will be \$4,500. It is estimated that the installation, data retrieval, and processing associated with strict compliance for the same period is \$38,400. This cost difference does not justify the installation of measurement devices for a relatively small amount of water use. In addition, the measurement devices may provide diversion information; however, substantial amounts of water return to the surface water system after flowing through the Company. The measurement devices would not provide an accurate measurement of water use, which the proposed Plan should be able to provide more accurately.

For the above reasons, the Company has determined that the cost to install and maintain measurement equipment in order to comply is excessive and unreasonable, and therefore, is submitting this Plan pursuant to Section 935 of the California Code of Regulations.

Section A – Water Right Owner Information

(1) Owner Name(s)	Harvey West III
(2) Email Address	Harvey@PlayGraeagle.com
(3) Phone Number	(530) 836-2523
(4) Mailing Address Line 1	PO Box 310
(5) Mailing Address Line 2	
(3) City	Graeagle
(4) State	California
(5) Zip Code	96103
(6) Is the Water Right Owner also the Primary Contact?	No
(7) Installation Deadline	July 1, 2017
(8) Measurement Accuracy	10%
(9) Required Monitoring Frequency	Daily
(10) Qualifications of the Individual Installing/Certifying	California Licensed Professional Engineer (PE)

Section B – Information on Primary Contact

(1) Name(s)	MBK Engineers c/o Angela Bezzone
(2) Phone Number	(916) 456-4400
(3) Email Address	bezzone@mbkengineers.com
(4) Mailing Address Line 1	455 University Avenue
(5) Mailing Address Line 2	Suite 100
(6) City	Sacramento
(7) State	California
(8) Zip Code	95825
(9) The Alternative Compliance Plan Primary Contact is a(n)	Authorized Representative

Section C – Information on Qualified Individual

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| (1) Name(s) | Angela Bezzone |
| (2) Phone Number | (916) 456-4400 |
| (3) Email Address | bezzone@mbkengineers.com |
| (4) Mailing Address Line 1 | 455 University Avenue |
| (5) Mailing Address Line 2 | Suite 100 |
| (6) City | Sacramento |
| (7) State | California |
| (8) Zip Code | 95825 |
| (9) The qualifications of the individual certifying the Alternative Compliance Plan are | California Licensed Professional Engineer (PE) |
| (10) Qualifying Individual's PE or Contractor License number, if applicable | 83636 |

Section D – Request for Alternative Compliance

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| (1a) Diverter is seeking alternative compliance from the requirement(s) | Measuring Device Location, Installation and Maintenance, Monitoring Frequency |
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(1b) Provide additional information for each of the reasons selected in question 1a: As described on Page 2 of this Plan it is “not feasible” and “unreasonably expensive”. Strict compliance with the requirements for measuring and monitoring at each of the points of diversion (PODs) is not feasible due to the difficulty and expense of installing measurement equipment to accurately estimate water use.

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| (2a) Alternative Compliance is being pursued because strict compliance with one of more of the requirements for measuring and monitoring (check all that apply) | Is not feasible; is unreasonably expensive |
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| (2b) Provide additional information for each justification selected in 2a: | See pages 2 and 3, and Attachment 2 |
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| (3a) Alternative compliance is requested under the following categories (check all that apply) | There is an existing measurement device or measurement method in use. Other – See 3b. |
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(3b) Provide additional information for each of the categories selected in question 3a: The Company currently estimates water diversions and use based upon the proposed methodology. Under this Plan, the Company is proposing to estimate water diversions and use based upon crop data and the ITRC Method adjusted for effective precipitation, cultural practices, and system irrigation efficiencies. Precipitation and reference evapotranspiration data will be collected from the Mohawk California RAWS. See pages 2 and 3 for more detailed description of site conditions.

(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:

Under this Plan, the Company is proposing to estimate water diversions and use based upon crop data and the ITRC Method adjusted for effective precipitation, cultural practices, and system irrigation efficiencies. Precipitation and reference evapotranspiration data will be collected from the Mohawk California RAWS.

Section E – Area Covered by the Alternative Compliance Plan

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

The Company is near the Feather River in Plumas County. For additional detail, see Attachment 3.

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

See Attachment 3 for an overview of the Company and the POD locations. In addition, the Plan covers the earthen ditches that convey water to the irrigated pasture within the Company. As shown on the attached map, both PODs serve the same place of use. The PODs are integrated and there are no intervening water users in between them.

(3) Describe the type(s) of Beneficial Use:

Irrigation, Domestic, Stockwatering

(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 under Section I of this form) Yes

Section F – Measurement and Monitoring

(1) For each point of diversion listed in the Alternative Compliance Plan, describe how the water is measured:

Under this Plan, the Company is proposing to estimate water use based upon actual crop data and acreage, and measured precipitation and reference evapotranspiration data collected from the Western Regional Climate Center (WRCC) Remote Automated Weather Station (RAWS) for Mohawk California. Using a method developed by Cal Poly San Luis Obispo, ITRC, the measured precipitation and evapotranspiration, together with known cultural practices and estimates of system irrigation efficiencies, will be used to calculate the diversion quantity for each month. This approach also has the benefit of providing the consumptive use of the crops within the POU; which, due to the proximity to the water supply source, is believed to be a better representation of the reduction of available flow to downstream water users.

(2) Identify the measurement accuracy associated with the measurement devices:

The measurement device proposed for use in this Plan is used to measure precipitation and evapotranspiration. It is maintained and calibrated by the Desert Research Institute (DRI)

and data are published to the WRCC website. DRI generally observes weather station data on a weekly basis to determine if the station is operational, performs maintenance on the stations twice each year, and calibrates the sensors annually. Based on my experience and observations as a qualified individual, the use of this accurate data, in conjunction with the method developed by Cal Poly, ITRC, provides the most practical estimate of diversions and use by the Company.

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

The accuracy of the Plan has not been calculated; however, based on use of accurate Et and precipitation data it is my opinion this Plan represents the best available approach for measuring diversions and the net reduction to the water source. This approach has been used by many within the industry and has not been objected to by the Division.

Section G – Implementation Schedule

- (1) If applicable, describe the implementation schedule for the Alternative Compliance Plan, including objective milestones from date of filing through final implementation. Milestone's 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:**

The Company plans to use the method identified in this Plan for its 2018 annual water right reporting and each year thereafter.

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.**

Not applicable.

Section I – Attachments

- (1) Attach documents that support the Alternative Compliance Plan.**
(2) Provide a brief description of the attached documents:

Attachment 1 – Water Rights Covered Under this Alternative Compliance Plan
Attachment 2 – Cost Estimate to Install Measurement Equipment
Attachment 3 – Place of Use Map on file with the Division of Water Rights
Attachment 4 – APNs and Landowner Information for Each Parcel Covered Under the Plan

Section J – Important information and signatures

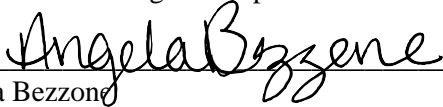
Yes

Angela Bezzone

Certification:

I, Angela Bezzone, 455 University Avenue, Suite 100, Sacramento, California, hereby certify that this Alternative Compliance Plan is in compliance with Chapter 2.8, Section 935 of the California Code of

Regulations. The compliance is based on the use of crop data and the ITRC Method adjusted for effective precipitation, cultural practices, and system irrigation efficiencies which is an industry standard and the most feasible approach to comply with Chapter 2.8, Section 933 of the California Code of Regulations to determine the diversion and use under each Statement. This Alternative Compliance Plan is reasonable and practical (based on my September 9, 2016 site visit and knowledge of the water rights and operations of the Company), and facilitates the Ranch's water right reporting and the Division's overall water right management and regulation pursuant to Title 23, California Code of Regulations.



Angela Bezzone
CA PE # 83636

Attachment 1:

Water Rights Covered Under Alternative Compliance Plan

Statement No. 15506**Riparian & Pre-1914 Claims**

Filed	July 24, 2002
Year of First Use	1820's
Source	Mohawk Creek Diversion #1 tributary to Middle Fork Feather River
Purpose	Irrigation, Domestic, Stockwatering
Season	January 1 – December 31
Place of Use	240 acres pasture, 250 cows, 1 residence

Statement No. 15913**Riparian & Pre-1914 Claims**

Filed	July 1, 2005
Year of First Use	1820
Source	Mohawk Creek Diversion #2 tributary to Middle Fork Feather River
Purpose	Irrigation, Stockwatering, Domestic
Season	January 1 – December 31
Place of Use	240 acres pasture, 250 cows, 1 residence

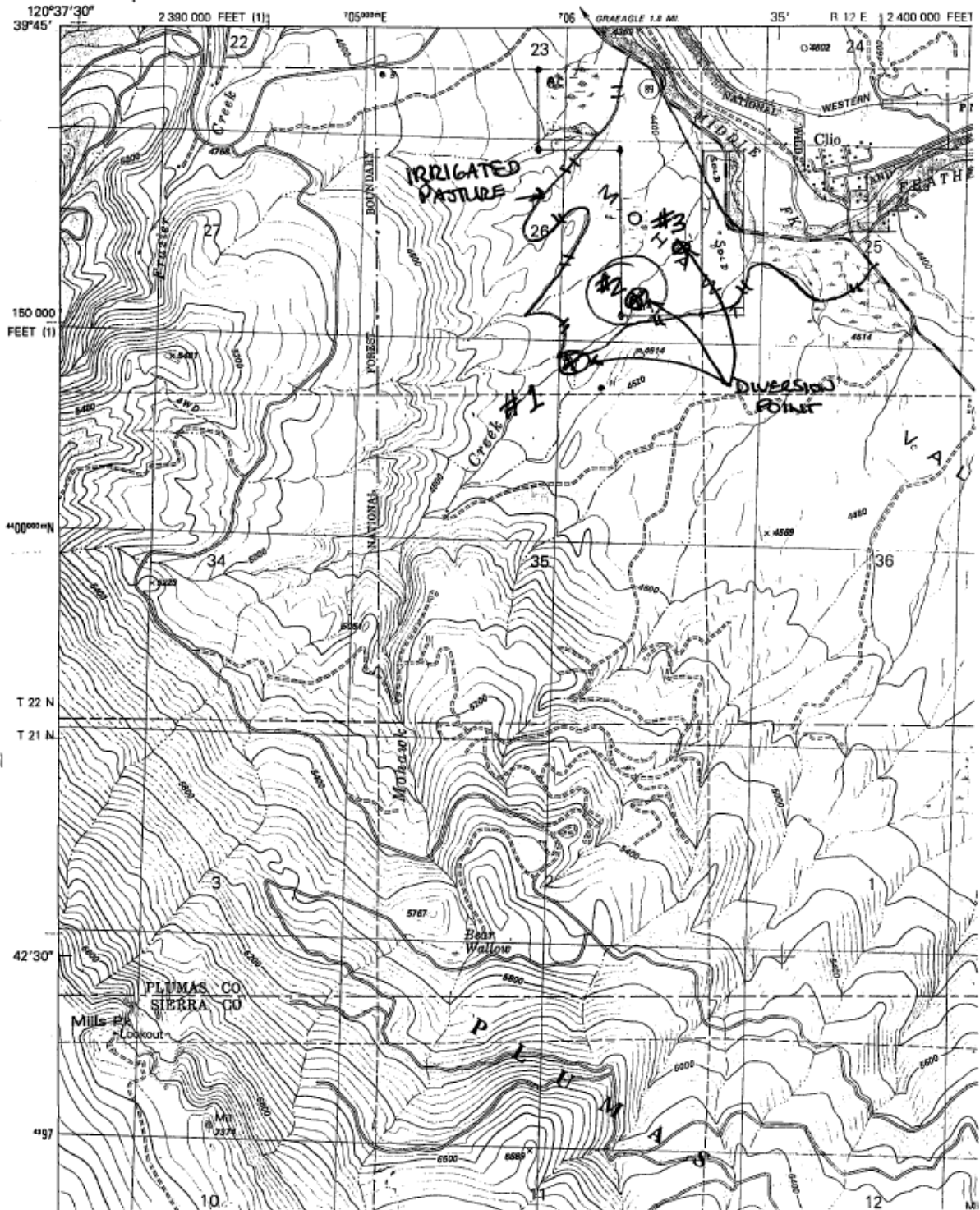
Statement No. 15914**Riparian & Pre-1914 Claims**

Filed	July 1, 2005
Year of First Use	1820's
Source	Mohawk Creek Diversion #3 tributary to Middle Fork Feather River
Purpose	Irrigation, Domestic, Stockwatering
Season	January 1 – December 31
Place of Use	240 acres pasture, 250 cows, 1 residence

Attachment 2:

Place of Use Map

GEOLOGICAL SURVEY



Attachment 3:

Cost Estimate to Install Measurement Equipment

Cost Estimate

Point of Diversion and Item	Device Cost	Engineering Cost	Quantity	Total
POD #1 (Area Velocity Meter)	\$12,000 ¹	\$1,200 ²	1 EA	\$13,200
POD #2 (Area Velocity Meter)	\$12,000	\$1,200	1 EA	\$13,200
Total Cost for First Year				\$26,400
Total Cost for 2 nd Year (and every other year thereafter)				\$2,000 ³
Total Cost for 3 rd Year (and every other year thereafter)				\$4,000 ⁴

¹ Cost includes estimate for tax, shipping, and installation.

² Cost includes engineer effort including travel, inspection, and certification of installed device.

³ This is the annual cost to download, process, and perform quality control and assurance of the data from each meter. This cost is estimated to be an average of \$1,000 per year per meter.

⁴ This includes the annual cost described above plus the biennial cost to inspect and repair the measurement equipment, as necessary. This cost is estimated to be an additional \$1,000 per meter.

Attachment 4:

APNs and Landowner Information for Each Parcel
Covered Under the Plan

Owner's Name	Plumas County Parcel Number
Graeagle Land & Water Company	130-050-005
Graeagle Land & Water Company	130-050-015
Daniel and Leah West	133-070-029