CALIFORNIA
Water Boards

GAVIN NEWSOM
GOVERNOR

JARED BLUMENFELD
SECRETARY FOR
ENVIRONMENTAL PROTECTION

State Water Resources Control Board

August 10, 2021

Water Right ID Login: [redacted]
Password: [redacted]

AUSTIN CREEK MUTUAL WATER COMPANY, C/O JOE NIGEL
PO BOX 86
CAZADERO, CA

ORDER TO CEASE DIVERSIONS PURSUANT TO PERMIT 21323

Enclosed with this letter is an Order directing AUSTIN CREEK MUTUAL WATER COMPANY to cease diversions under Permit 21323. The Order is being issued pursuant to an emergency regulation adopted by the State Water Resources Control Board (State Water Board) on June 15, 2021, to address water supply shortages in the Russian River watershed. You or your agent are responsible for immediately providing notice of this Order to everyone diverting under Permit 21323. This letter describes where you can find information about the enclosed curtailment order and what the order requires you to do.

Emergency Regulation
On June 15, 2021, the State Water Board adopted an emergency regulation for the Curtailment of Diversions to Protect Water Supplies and Threatened and Endangered Fish in the Russian River Watershed (California Code of Regulations, title 23, sections 877 through 879.2) (Regulation). The Regulation was reviewed and approved by the Office of Administrative Law and went into effect on July 12, 2021. The Regulation is available at: https://www.waterboards.ca.gov/drought/russian_river/.

Curtailment of Water Rights in the Russian River Watershed
The State Water Board is requiring water right holders in the Russian River Watershed to stop diverting under their water rights until water supply conditions improve in the watershed and there is no longer a risk to water supplies for minimum human health and safety needs or for injury to senior diverters. Rescission or modification of the enclosed curtailment order will be posted on the State Water Board website and can be accessed from https://www.waterboards.ca.gov/drought/russian_river/. Updated information will also be issued through an email distribution list. You should visit the following website and subscribe to "Russian River Drought" at:
https://www.waterboards.ca.gov/resources/email_subscriptions/swrcb_subscribe.html

AUSTIN CREEK MUTUAL WATER COMPANY
PERMIT 21323

Exceptions to Curtailment
If your diversion is your only source for human health and safety purposes or the diversion is non-consumptive, then it may be authorized pursuant to section 878 (if use is non-consumptive) or section 878.1 (if the use is for a minimum human health and safety need) of the Regulation. If you are seeking an exception to continue these diversions, you must submit additional information to the Board using the forms available at https://public.waterboards.ca.gov/WRInfo.

Required Response - Curtailment Certification Form
Within seven calendar days of issuance of this curtailment order, **all water right holders or their agents receiving this order are required to submit, under penalty of perjury, an Online Curtailment Certification Form (Form)**. The Form confirms cessation of diversion under your water right and whether you are pursuing an exception to the curtailment order. Timely and accurate completion of the Form can avoid unnecessary enforcement proceedings. Your login and password are given at the top of this letter. Complete the Form at https://public.waterboards.ca.gov/WRInfo.

Potential Enforcement:
Those who are found to be diverting water beyond what is legally available to them, or violating the enclosed order or the Regulation, may be subject to administrative fines, a cease and desist order, or prosecution in court. The State Water Board may levy fines of up to $1,000 per day of violation and up to $2,500 for each acre-foot diverted or used in excess of a valid water right. (See Water Code §§ 1052, 1055, 1846.) Additionally, if the State Water Board issues a cease and desist order, violation of any such order can result in a fine of $10,000 per day. (See Water Code, §§ 1831, 1845.) Additional penalties may apply based on the specific circumstances of the violation.

Request for Reconsideration:
You may submit a petition within 30 days to request that the State Water Board reconsider the enclosed order. The process and grounds for reconsideration are provided by California Code of Regulations, title 23, sections 769 through 771.
If you have any questions, please review the fact sheets and FAQs available at the websites listed above, or contact us at RussianRiverDrought@waterboards.ca.gov or (916) 341-5318.

Sincerely,

Erik Ekdahl, Deputy Director
Division of Water Rights

STATE OF CALIFORNIA
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
STATE WATER RESOURCES CONTROL BOARD

DIVISION OF WATER RIGHTS

IN THE MATTER OF PERMIT 21323 OF AUSTIN CREEK MUTUAL WATER COMPANY

CURTAILMENT ORDER FOR DIVERSION OF WATER FROM THE LOWER RUSSIAN RIVER WATERSHED

ISSUED AUGUST 10, 2021

FINDINGS:

1. On April 21, 2021, Governor Gavin Newsom issued an executive order declaring a drought State of Emergency in Mendocino and Sonoma counties due to severe drought conditions in the Russian River Watershed. The April 2021 Proclamation finds that it is necessary to act expeditiously to mitigate the effects of drought conditions in the Russian River Watershed, both to ensure the protection of health, safety, and the environment and to prepare for potential sustained drought conditions

2. On June 15, 2021, the State Water Resources Control Board (State Water Board, or Board) adopted an emergency Regulation for the Curtailment of Diversions to Protect Water Supplies and Threatened and Endangered Fish in the Russian River Watershed (California Code of Regulations, title 23, sections 877 through 879.2) (Regulation). The resolution adopting the Regulation describes the need for the Regulation and its intent; the resolution is incorporated by reference into this Order. The Regulation was approved by the Office of Administrative Law and filed with the Secretary of State on July 12, 2021.

3. The Regulation establishes definitions for the Lower Russian River watershed. Section 877.2 of the Regulation establishes when curtailment orders will be issued to diverters in the Lower Russian River Watershed. The Deputy Director may issue curtailment orders to water right holders in the Lower Russian River Watershed when flows there are insufficient to support all diversions.

4. Per the Regulation, when surface waters are insufficient to meet the needs of all water right diverters, junior diverters will be curtailed in order of water right priority. This curtailment is based on a comparison of available supply and water right demand through use of the Drought Water Rights Allocation Tool (DWRAT) identified in the Regulation. Demand data is based on annual water use reports

submitted to the Division of Water Rights from 2017 through 2019. In addition to data from Annual Water Diversion and Use Reports, staff modified the United States Geological Survey (USGS) Russian River Precipitation Runoff Modeling System (PRMS) in conjunction with the Santa Rosa Plain Hydrologic Model to identify available supplies. DWRAT analyzed demand and available streamflow to generate optimal allocations of available water that maximize diversions for each priority of water right based on available supplies at their location. A more detailed explanation of the use of DWRAT for the specific application to this Order is included as an attachment to this Order and incorporated by reference.

5. In accordance with section 877.2 of the Regulation, the Deputy Director of the Division of Water Rights (Deputy Director) has determined that flows in the Lower Russian River Watershed are insufficient to satisfy the needs of all diverters in the watershed. The Deputy Director has considered the information in the attachment to this order, which describes the demand data, basis for water availability projections, and application of the DWRAT tool pursuant to the Regulation. Based on the analysis described in the attachment, the Deputy Director has concluded that water is unavailable for Permit 21323 and issuance of a curtailment order pursuant to the Regulation is necessary.

IT IS HEREBY ORDERED:

1. This curtailment order shall be effective on August 11, 2021.

2. Diversion of water pursuant to Permit 21323 shall cease on August 11, 2021, or upon delivery of this Order, whichever is later. Diversions under this right may be permitted to continue only if authorized under an exception to curtailment as described by sections 878 or 878.1 of the Regulation.

3. In accordance with section 877.2, subdivision (e) of the Regulation, water rights holders or agents of record who receive this Order are responsible for immediately providing notice of this Order to all diverters exercising the water right covered by this Order.

4. AUSTIN CREEK MUTUAL WATER COMPANY or its agent is required, within seven calendar days of issuance of this Order, to submit under penalty of perjury a Curtailment Certification Form in accordance with section 879. The Online Curtailment Certification Form shall be accessed via the following website link: https://public.waterboards.ca.gov/WRInfo.

5. AUSTIN CREEK MUTUAL WATER COMPANY shall receive all subsequent modifications to this Order through electronic notification via information issued through the State Water Board's email distribution list or as posted to the State Water Board's Russian River Drought Response website at https://www.waterboards.ca.gov/drought/russian_river.

6. In accordance with section 879.2, diversion or use in violation of this curtailment order constitutes an unauthorized diversion or use. Violation of this Order shall be subject to further enforcement and any applicable penalties pursuant to Water Code sections 1052, 1058.5, 1831, 1845, 1846. To the extent of any conflict between the requirements of this curtailment order and any other applicable orders or conditions of approval, the diverter must comply with the requirements that are most stringent.

7. Nothing in this Order is intended to or shall be construed to limit or preclude the State Water Board from exercising its authority under any statute, regulation, ordinance, or other law, including but not limited to, the authority to bring enforcement against diverters for unauthorized diversion or use in violation of Water Code section 1052.

8. Nothing in this Order shall excuse individual water right holders from meeting any more stringent requirements that may be imposed by applicable legally binding legislation, regulations, or a water right permit requirement. This Order does not authorize any act which results in the taking of a threatened, endangered or candidate species or any act which is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the federal Endangered Species Act (16 U.S.C.A sections 1531 to 1544). If a "take" will result from any act authorized under this Order, the diverter shall obtain authorization for an incidental take prior to construction or operation. Diverter shall be responsible for meeting all requirements of the applicable Endangered Species Act for the long-term changes authorized under this Order.

STATE WATER RESOURCES CONTROL BOARD

Erik Ekdahl

Erik Ekdahl, Deputy Director
Division of Water Rights

Dated: August 10, 2021

ATTACHMENT TO THE CURTAILMENT ORDER FOR DIVERSION OF WATER FROM THE LOWER RUSSIAN RIVER WATERSHED

DATA AND METHODS USED TO DETERMINE WATER AVAILABILITY IN THE LOWER RUSSIAN RIVER WATERSHED

The Drought Water Rights Allocation Tool (DWRAT) described in section 877.2 of the Regulation for the Curtailment of Diversions to Protect Water Supplies and Threatened and Endangered Fish in the Russian River Watershed (California Code of Regulations, title 23, sections 877 through 879.2) (Regulation) was applied to allocate available supply based on the water right priority of each demand within the Lower Russian River (LRR). DWRAT works by solving equations that maximize the allocation of water to diverters based upon their demand and priority of right, subject to streamflow mass balance equations and certain legal constraints applicable to each water right. The stream network is mathematically represented by a series of sub-basins and a connectivity matrix that characterizes the connection between each sub-basin, and the tool routes water through this network. Allocations are made at the sub-basin level, ensuring that they are made where flow is physically available. In the first module of DWRAT, allocations are made for riparian demands in the sub-basin demands, based upon the principle of equal seniority, and sharing of any shortfall. If all riparian demand is satisfied, any remaining basin flow is then allocated to appropriative users according to their demand and priority of right, via a second independent module. Water users may receive curtailments based on unavailability of flow, or due to a more senior downstream right.

Available water supplies in the Lower Russian River (LRR) were compared to the water rights demand to determine whether there is adequate supply to meet all demand. In the LRR, available supply is based on the quantity of water derived from precipitation falling within the LRR watershed that remains instream after losses, such as evapotranspiration from natural vegetation and percolation to groundwater. All water rights with points of diversion within the boundary of the LRR rely on this supply and reduce the amount of water that would otherwise drain from the outlet of the LRR watershed. Once water demand exceeds available supply, there is insufficient water to satisfy all water rights and shortages will occur. When there is insufficient water to supply all riparian right holders, they must share the shortage. Appropriative water rights are curtailed completely in reverse order of priority (i.e., junior appropriators curtailed first).

DWRAT was applied by dividing the LRR into 13 sub-basins and calculating the water supply available for diversion in each of those sub-basins. Sub-basin delineations were based on a combination of existing hydrologic model basin delineations and the Hydrologic Unit Code 12 Digit (HUC 12) Watershed Boundary Dataset from the United States Geological Survey (USGS). Each sub-basin drains to another sub-basin until ultimately draining to the Pacific Ocean. This connectivity of sub-basins results in a network of demand from water rights and supply flows across the entire LRR, which allows a finer spatial resolution of assessing the quantity of water supply that might be available for diversion in any given sub-basin relative to both other water right priorities in the sub-basin and downstream sub-basins. The resolution of assessing available

supply against demand was further refined by classifying water rights within downstream sub-basins as either mainstem or tributary. This results in only water rights on the mainstem of each downstream sub-basin being allocated flows entering from an upstream sub-basin, which ensures DWRAT is allocating available supply only to diversions along the flow path of that supply.

Two separate existing hydrologic models, the Russian River Precipitation Runoff Modeling System (PRMS) and the Santa Rosa Plain Hydrologic Model (SRPHM), were used to forecast unimpaired surface water runoff at sub-basin outlets, which is used to estimate local sub-basin supply contributions to the flow network. The existing modeled outputs from the Russian River PRMS model were used to inform the delineation of eight of the sub-basins located within the area covered by the PRMS model. For the remaining five sub-basins covered by the SRPHM, sub-basin boundaries were delineated to match the drainage outlets of the HUC 12 watershed boundaries.

Watershed hydrologic modeling accounts for hydrologic processes such as solar radiation, evapotranspiration, soil infiltration, runoff, groundwater, and streamflow to produce a timeseries of surface water flows. The Precipitation Runoff Modeling System (PRMS) identified above is a spatially distributed physical-based model developed by USGS that simulates a watershed's hydrological processes, including surface and groundwater flow, evapotranspiration, soil moisture dynamics, and streamflow. Sub-basins within PRMS are developed with defined outlet points, which provides for analysis of water availability at various locations of interest.

USGS developed a specific application of the PRMS model for the Russian River, referred to as the Russian River PRMS model. State Water Board staff updated the model calibration to better simulate the spring recession and summer streamflow timing and rate. State Water Board staff calibrated parameters that impact hydraulic conductivity as well as groundwater and subsurface flow to better simulate natural runoff and streamflow for the months of April to October, while still holding the calibration quality for the other months. The calibrated parameters include 'ssr2gw_rate,' 'ssr2gw_exp,' 'gwflow_coef,' 'slowcoef_lin,' and 'slowcoef_sq.'

The Russian River PRMS model originally simulated conditions from 1/1/1990 to 12/31/2015. To extend the model to 2021, staff extended the climate observation data for the Russian River PRMS model from 1/1/2016 to 06/30/2021 using updated records from the same observation stations originally used in the model. Any data gaps in the observed stations were filled using Oregon State University's Parameter-elevation Regressions on Independent Slopes (PRISM) datasets at the respective climate station locations. Finally, the model was run from 1/1/1990 to 6/30/2021. This method will be used to continue incorporating updated climate observation data through 2021.

USGS, in cooperation with Sonoma County Water Agency (SCWA) and others, developed a hydrologic model known as the Santa Rosa Plain Hydrologic Model

(SRPHM).[270] The SRPHM simulates the interaction of the groundwater system and the surface water system when estimating available surface flows. The surface water component of SRPHM is modeled using PRMS while the groundwater component is modeled by the USGS Modular Groundwater Flow Model (MODFLOW_NWT). The SRPHM has been completed and the final report is available at the following location: https://pubs.usgs.gov/sir/2014/5052/pdf/sir2014-5052.pdf.

State Water Board staff extended the climate inputs of the SRPHM to 6/30/2021 by updating the model meteorological precipitation and temperature stations using spatial interpolation with Oregon State University's PRISM 4k daily climate values. The existing Santa Rosa Plain Hydrologic model has groundwater pumping demand calculated from October 1, 1974 to December 31, 2018. While extending the SRPHM climate inputs and resulting simulation of hydrology is feasible, updating simulated groundwater pumping to present day is a time-intensive process that is not feasible to complete this summer. The model's simulation of the effects of groundwater pumping demand on streamflow was extended from 2018 to 2021 by calculating the modeled percent reduction in streamflow at the HUC 12 sub-basin scale with simulated groundwater pumping demand on versus off. Since 2020 and 2021 were drought years, the dry years of 2001, 2008, 2009, 2014 and 2015 were used to determine the average percent reduction in streamflow due to groundwater pumping demand in 2020 and 2021. The SRPHM was then executed with groundwater pumping off from 2019 to 2021 and the percent reductions in streamflow were applied to the stream flows calculated at each sub-basin outlet point for each month of 2020 and 2021. 2019 was not a dry year, so the average of the last 10 years was used to determine monthly percent reductions in streamflow due to groundwater pumping demand for each month of 2019.

The precipitation input used to forecast flows for both the Russian River PRMS model and the SRPHM will be set to zero inches/mm from mid-May, or the most recent update to the hydrologic models based on observed climate station data, through September 2021, given the lack of appreciable precipitation since May and that precipitation is unlikely to occur in August or September based on historical observed precipitation. The year 2014 shows similar temperature variability to 2021 from January to April, so the 2014 temperature minimum and maximum daily values were used from mid-May, or the most recent update to the hydrologic models based on observed climate station data, through September 2021. The precipitation and temperature inputs will be updated, and resulting model outputs assessed, once appreciable precipitation in the LRR occurs. Outputs from the SRPHM and the Russian River PRMS model were tabulated as acre-feet per month of surface water available for diversion in each of the 13 sub-basins in the Lower Russian River.

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[270] The Santa Rosa Plain is a subarea of the LRR, located on the southeast side of the Russian River watershed.

Water right demand estimates are based on information from annual reports of water diversion and use (annual water reports) submitted to the State Water Board for the calendar years of 2017 through 2019. Staff applied the Standardized Demand QA/QC Methodology (QA/QC Methodology), as noticed and discussed at an April 16, 2021 Board workshop. Staff identified the water rights to include in the analysis using the "watershed" field in the eWRIMS database. The dataset was further refined by geospatially identifying each point of diversion (POD) associated with a water right to ensure it was within one of the HUC 12 watershed boundaries of the Russian River Watershed. The priority date for each water right was manually reviewed and assigned based on Division of Water Rights file for each water right and information available in the eWRIMS database. The monthly reported direct diversion and diversion to storage values were averaged over the 2017, 2018, and 2019 calendar years to estimate monthly demands in acre-feet per month.

A subset of data flags from the QA/QC Methodology representing the most important sources of error were selected for the Russian River watershed dataset to expedite the data review process. These related to excessive reported diversions, duplicate reporting, unit conversion errors, missing water use reports, confirming priority dates, and identifying primary beneficial use. Staff manually reviewed the flagged records and associated water rights records to identify probable data errors and apply corrections. The most common correction made was to annual water reports that reported the same amount of direct diversions and diversions to storage, including for water rights that do not have a storage component. This error had the effect of doubling monthly demands; the correction removed the diversion to storage value in most cases. The next most common correction was in converting overreported usage due to incorrect units of measurement, where the annual water reports listed diversion amounts meant to be in gallons per month that were inadvertently recorded as acre-feet per month, greatly inflating monthly demand. Often the two corrections above were applied in conjunction. The quality control for these corrections was applied by reviewing the corrected and uncorrected data against other annual water reports for the affected water right and against the affected water rights' permit, license, or initial reported use.

In summary, DWRAT was used to allocate available supply amongst water right holders based on their respective water right priority, water demands, and location in the watershed. Available supply was estimated using a combination of two hydrologic models, the Russian River PRMS model that covered the majority of the LRR, and the SRPHM for a portion of the LRR where the Russian River PRMS model had not been developed. Demand was based on annual water reports submitted by water right holders for the calendar years of 2017, 2018, 2019; average demands were calculated for each month. Water right priority was based on the Board's water right files and the eWRIMS database. DWRAT allocated available supply to water rights demands across 13 sub-basins across the LRR and provided a result that identifies which priority of water right can be satisfied within each sub-basin.