ATTACHMENT 1

Question #3 – Water Permit Application for Domaine Anderson / Roederer Estate

I. Project Overview: Roederer Estate Indian Creek Streamflow Enhancement Project

The Applicant has been working closely with The Nature Conservancy (TNC) in preparing and submitting this Application to enhance summer streamflow for rearing coho salmon and steelhead trout (and for the suite of freshwater biodiversity associated with these indicator species) in Indian Creek in the Navarro River watershed (the “Project”).

TNC has been engaged in the Navarro River watershed since 2013, gathering data on streamflow dynamics, conducting human water needs analyses, examining local water use patterns, and building relationships with local landowners. Since 2013, TNC has installed a network of 16 streamflow and temperature gauges which it monitors on a regular basis. Using this data, TNC has identified Mill and Indian Creeks in the Navarro River watershed as key salmonid spawning and rearing tributaries which have reasonable water temperatures and high streamflow restoration potential.

Through this project TNC and RE are working together to (1) retire RE’s existing summer diversion through a forbearance agreement; (2) dedicate that water to instream beneficial uses through a §1707 designation; and (3) secure a permit for RE to divert water during high flow periods of the year – and store that water for use during low flow periods. The Applicant and TNC believe these actions will enhance streamflow during summer months when species are experiencing critical low flow conditions while providing a more secure water supply for RE.

This project utilizes the State Water Resources Control Board’s (SWRCB) Policy for Maintaining Instream Flows in Northern California Coastal Streams, which is designed to assist landowners who wish to apply for expedited water use permits to store water during the winter and early spring and thereby reduce diversions during seasonal recession and the summer low flow period.

Currently, RE has an appropriative right to divert approximately 71 acre feet of water from Indian Creek during May through October under License #A021256B for use on the Domaine Anderson vineyard (map attached). Based on summer streamflow data and an analysis of the site specific instream flow study, Applicant, in conjunction with TNC and its consultants, believes that forbearing on this diversion during the summer could have significant benefits to streamflow and summer habitat conditions for salmonid juvenile rearing in Indian Creek.

The elements of the Project are:

1. A forbearance agreement between TNC and RE for the existing summer diversion right.

   RE has agreed to enter into a forbearance agreement with TNC to refrain from exercising its right to divert water during the summer under license #A021256B for a period of at least 10 years with automatic renewals unless RE formally requests to terminate the agreement.

   RE is not requesting the right to divert more water than it is currently legally allowed to under License #A021256B. In fact, the new permit application is for 20 acre feet less than License
#A021256B. TNC will request State Water Resources Control Board (SWRCB) condition the new permit on the requirement that if RE does not renew the forbearance agreement with TNC and re-activates License #A021256B, it will not be allowed to divert any water under this new permit.

2. **Application for a new water permit for RE to secure a winter diversion and storage right as per The Policy for Maintaining Instream Flows in Northern California Coastal Streams:**

As part of the project, RE is submitting an Application as well as the required accompanying studies and analyses with the assistance of TNC and its consultants. This water permit would allow RE to enter into a forbearance agreement with TNC on its existing right to divert water during the summer, and substitute water diverted and stored during the winter. Applicant and TNC believe that this water permit application is aligned with the Instream Flow Policy’s “principles and guidelines for maintaining instream flows for the protection of fishery resources, while minimizing water supply impacts on other beneficial uses of water, such as irrigation, municipal use, and domestic use.”

Applicant, with the assistance of TNC and its consultants, McBain Associates, Trout Unlimited (TU) and Center for Ecosystem Management and Restoration (CEMAR), has prepared the permit application according to requirements established in The Policy for Maintaining Instream Flows in Northern California Coastal Streams (“Instream Flow Policy”); the application includes the required studies and analyses necessary to prove compliance with the protective measures of the Instream Flow Policy, including a Site Specific Instream Flow Study, Water Availability Analysis, and Cumulative Diversion Analysis. TNC has worked with McBain Associates to complete the “site specific study” according to Appendix C in the Instream Flow Policy, and has shared the study methodologies with Wes Stokes, Jane Arnold, and Paige Uttley of the California Department of Fish and Wildlife (CDFW); Jane Arnold and Paige Uttley provided feedback on the study, and their suggestions were incorporated into the study plan, and the final study report. The objective of this study is to identify instream flow thresholds that protect key steelhead and coho life history needs during their freshwater residence at points of interest (POIs) in Indian Creek. This study has identified site-specific flow thresholds that protect four primary life history needs for coho salmon and steelhead including: (1) adult and juvenile passage and migration, (2) adult spawning habitat, (3) juvenile rearing and foraging habitat, and (4) food, using productive benthic macroinvertebrate (BMI) habitat as an indicator of salmonid food production.

Similarly, TNC has worked with TU to produce the Cumulative Diversion and Water Availability analyses and used the results to create the proposed diversion rates and periods in the Water Diversion Management Schedule below in Section III. Trout Unlimited has extensive familiarity with producing these analyses for other successful water permit applications under the terms of the Instream Flow Policy.

The water diverted under the new permit will be diverted from Indian Creek at the same point of diversion as the existing right (#A021256B), pumped through existing infrastructure, and stored in an already existing and permitted storage pond on Domaine Anderson (and visible in the attached map). There is no new construction proposed under this project. The stored water will be used for irrigating the vineyard (15 acre feet), frost protection (30 acre feet), landscaping (3 acre feet), and heat protection (2 acre feet). The existing permit allows RE to divert a total of 70 acre feet from May – November. With the new permit RE is requesting the right to divert 50 acre feet to storage for the same existing uses during the spring and summer.
3. A §1707 designation for RE’s existing summer diversion right.

RE will dedicate its existing summer diversion right to instream beneficial use through a §1707 designation.

II. Conservation Goals of the Project

The activities captured in the Indian Creek Streamflow Enhancement Project have been identified as key conservation strategies for improving habitat for coho salmon and steelhead trout by TNC and several public agencies including the National Marine Fisheries Service (NMFS). Coho salmon are listed as endangered in the Navarro watershed under both the Federal and State Endangered Species Acts. Steelhead trout are listed as threatened under the Federal Endangered Species Act. Coho salmon and steelhead trout require sufficient water quantity and quality instream at several key points in their lifecycle.

In their Recovery Plans for coho salmon and steelhead trout, NMFS identified the availability of summer rearing habitat for juvenile fish as a limiting factor in the Navarro watershed; it specifically identified summer water diversion as a key factor limiting recovery of salmonids in the watershed. Some water users in the Navarro watershed are currently diverting water from creeks in the summertime and those diversions are reducing the availability and quality of salmonid habitat, in some cases completely drying streams during that critical part of the salmon lifecycle. Accordingly, switching water diverters from summer water diversion to winter water diversion and storage for later use has the potential to improve stream flow and summer habitat availability in key sub-watersheds such as Indian Creek.

As explained by the SWRCB, the Instream Flow Policy “establishes principles and guidelines for maintaining instream flows for the protection of fishery resources, while minimizing water supply impacts on other beneficial uses of water, such as irrigation, municipal use, and domestic use.” The geographic scope of the Instream Flow Policy encompasses the Navarro River watershed and its provisions apply to applications to appropriate water. The policy “includes principles to ensure that new water appropriations and changes to existing water right permits and licenses will not affect the instream flows needed for fish spawning, migration and rearing, or the flows needed to maintain natural flow variability, which protects the various biological functions that are dependent on that variability.”

The Instream Flow Policy prescribes protective measures regarding the season of diversion, minimum bypass flow, and maximum cumulative diversion. As described above in in Section I, Applicant, with the assistance of TNC, has completed the necessary studies and analyses to prove compliance with the protective measures including the site specific study for the relevant reach of Indian Creek, which has established site specific ecological flow thresholds that have been incorporated into the new winter water right permit. These flow thresholds ensure the new water right protects four primary life history needs for coho salmon and steelhead including: (1) adult and juvenile passage and migration, (2) adult spawning habitat, (3) juvenile rearing and foraging habitat, and (4) food, using productive benthic macroinvertebrate (BMI) habitat as an indicator of salmonid food production. The Water Availability Analysis (Cumulative Diversion and Water Supply Reports) is included as Attachment 3.

The project is also aligned with the North Coast Regional Water Quality Control Board’s Action Plan to Address Elevated Water Temperatures in the Navarro River Watershed.
This plan specifically calls out the activities involved in this project as those supported by the Regional Water Board. The two relevant actions are copied below:

“Action: Work with other agencies and non-governmental organizations to support off-stream storage projects for water diverters currently diverting directly from streams during summer. Work with other agencies and non-governmental organizations to streamline the permitting process for conversion of on-stream to off-stream storage.

Action
The Regional Water Board encourages all water users to implement water conservation practices and develop off-stream storage facilities to minimize water diversions during low flow periods.”

III. Conservation Justification for Flow Thresholds

The applicants propose a diversion schedule with different diversion rates triggered at flow thresholds protective of different life cycle stages for coho salmon and steelhead trout. As opposed to a diversion schedule that utilizes a single flow threshold that is most protective of adult migration (33 ft³/s), the proposed schedule is adapted to the natural variability of a coastal stream such as Indian Creek. A single diversion rate would mean that, in dry years, RE would not meet its water needs (as analyzed in Attachment 2). The applicant proposes a schedule that protects fishery resources and supports the natural hydrologic variability in Indian Creek, while also supporting reasonable beneficial use of its water. The proposed winter/spring variable diversion rate should ensure that RE can obtain and store the water needed for summer uses, given the natural inter-annual variability, and still provide adequate salmonid protections; thus RE can confidently commit to forbear on the use of their existing summer diversion.

Attachment 2 details how the proposed diversion schedule ensures beneficial use of Indian Creek while still protecting fishery resources -- detailing the frequency of bypass flow exceedence in different water year types and associated volumes of water that could be stored based on the proposed water diversion schedule. In the variable diversion rate in Attachment 2, on behalf of Applicant, TNC and TU have calculated how much water could be stored under this diversion schedule in dry year-type conditions, demonstrating how much water could be stored under a worst case scenario, while providing adequate salmonid protections under receding flow conditions.

In order to protect fisheries resources, the proposed diversion schedule in Section IV proposes diversion rates that represent no more than 0.8% to 5% of instream flow thresholds, depending on the targeted flow threshold. Applicant, based on the conclusions of TNC and TU, believes this proposed diversion schedule enhances protection of fishery resources for 4 reasons:

1. Most importantly, the winter diversion schedule will allow Roederer to refrain from diverting during the critical low flow summer season, which is the current diversion period for its existing right (#A021256B). In Recovery Plans for coho and steelhead, NMFS has specifically identified summer water diversion as a key factor limiting recovery of salmonids in the watershed. This project will help meet Federal Recovery Planning goals by switching a significant water diverter
from summer water diversion to winter water diversion in a key salmonid sub-watershed in the Navarro basin.

2. Based on the results of the Cumulative Effects Analysis (Attachment 3), under the proposed winter/spring diversion schedule, the new permit would not reduce the number of days when flow exceeds bypass thresholds by more than 10% in Indian Creek during any month it would operate; and as described above, bypass conditions ensure that it would reduce streamflow by more than 5% at any time. The impact of this proposed diversion would likely also be smaller in the mainstem Navarro River. While existing, permitted instream diversions from the Navarro have a significant cumulative effect on the mainstem during periods of low flow in March, April, and May, the proposed diversion would not change the number of days when flow would fall below the bypass threshold at the mainstem Navarro Points of Analysis (POAs) by more than 1% (final column, Tables 3B and 3C of Attachment 3).

3. The diversion rates represent just 0.8% - 5% of instantaneous streamflow. Diverting ≤ 5% of instantaneous flow is arguably de minimus, given that the Unites States Geological Survey (USGS) cites 5% as the range of uncertainty for calculating flows.

4. Based on an analysis conducted by McBain Associates (see Attachment 7a), which analyzed the impacts of the proposed water diversion schedule on salmonid adult and smolt passage during each diversion period, we feel that the proposed diversion schedule doesn’t significantly alter ambient flow conditions and adult or juvenile passage. The analysis calculated the change in riffle crest thalweg (RCT) depth under the proposed water diversion management schedule. RCT depth is an indicator of suitability for salmonid migratory conditions, and the study relied on RCT90 values -- the conservative value at which 90% of RCT depths for all riffles surveyed in the study reach are equal or greater. The analysis determined that the decreases in RCT90 depth due to the proposed diversion schedule for all diversion period thresholds were less than 0.015 ft or 4.447 mm, with most less than 0.005 ft, and account for very negligible changes in depths over ambient conditions (see Attachment 7a, Table 1, Columns 6-8).

The protective flow thresholds are derived from the site specific study McBain Associates prepared for lower Indian Creek. The study identifies the following instream flow thresholds for life cycle stages such as adult migration, spawning, smolt outmigration, food production, and juvenile rearing (for the full threshold / life cycle table see Attachment 4):

<table>
<thead>
<tr>
<th>Applicable Diversion Period</th>
<th>Flow Threshold (At Indian Creek Gauge)</th>
<th>Associated Life History Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov 1 – March 31</td>
<td>&gt;33 ft³/s</td>
<td>Adult steelhead and adult coho migration</td>
</tr>
<tr>
<td>April 1 – April 30</td>
<td>26 ft³/s</td>
<td>Adult steelhead spawning</td>
</tr>
<tr>
<td>May 1 – May 31</td>
<td>10 ft³/s</td>
<td>Benthic macroinvertebrate production</td>
</tr>
</tbody>
</table>
Most importantly, under the proposed diversion schedule, RE can forgo diverting during the critical low flow months of July – October, while protecting salmonid life stages along the continuum of the natural flow variability of a coastal stream during the diversion period. TNC, CEMAR, and McBain believe that the requested change is fully consistent with the Board’s 2010 Policy for Maintaining Instream Flows in Northern California Coastal Streams, as demonstrated in the attached Water Availability Analysis and Water Supply Report.

IV. Proposed Water Diversion Management Schedule

RE seeks to appropriate water from December – May in compliance with bypass flow thresholds that are protective of the coho salmon and steelhead trout life cycle stages listed in Section III, variable diversion rates, and seasons of diversion which were established through a site specific instream flow study (as per the Policy for Maintaining Instream Flows in Northern California Coastal Streams).

The table below lists the bypass flow derived through the site specific study in Indian Creek (column 2), along with the equivalent flow at the Navarro River USGS gauge which RE will consult to determine whether its diversion can operate (column 3). RE will use real-time data from the USGS streamflow gauge on the Navarro River (number 11468000) as a reference to determine whether bypass flows in Indian Creek are exceeded at any given time. The equivalent Navarro River USGS gauge flow was estimated using the equation in the “Adjustment of Streamflow Records Method,” outlined in the Instream Flow Policy Appendix B.2.1.3 (Q at POD = Q at USGS gauge * [POD drainage area / USGS gauge drainage area] * [avg annual precip above POD / avg annual precip above gauge]). Using this formula, the scaling ratio of drainage area and average annual upstream precipitation from the USGS gauge to the Indian Creek POD is 0.137; thus, to derive equivalent flows that the Navarro River USGS gauge that correspond to Indian Creek, Indian Creek bypass flows were divided by 0.137.
<table>
<thead>
<tr>
<th>Diversion Period</th>
<th>Flow Threshold / Indian Creek</th>
<th>Flow Threshold / USGS Navarro Gauge</th>
<th>Diversion Rate</th>
<th>% of Flow</th>
<th>Difference in RCT90 depth (ft)</th>
<th>Difference in RCT90 depth (mm)</th>
<th>% change in depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov. 1 – March 31</td>
<td>≥33 ft³/s</td>
<td>≥ 254 ft³/s</td>
<td>0.5 ft³/s (224 gpm)</td>
<td>≤1.5%</td>
<td>≤0.004 ft</td>
<td>≤1.308 mm</td>
<td>≤0.6%</td>
</tr>
<tr>
<td></td>
<td>10 – 32.99 ft³/s</td>
<td>77 – 253 ft³/s</td>
<td>0.25 ft³/s (112 gpm)</td>
<td>≤2.5%</td>
<td>0.005 ft to 0.002 ft</td>
<td>1.390 mm to 0.522 mm</td>
<td>1.0% to 0.4%</td>
</tr>
<tr>
<td>April 1 – April 30</td>
<td>≥26 ft³/s</td>
<td>≥ 200 ft³/s</td>
<td>0.5 ft³/s (224 gpm)</td>
<td>≤1.9%</td>
<td>≤0.005 ft</td>
<td>≤1.513 mm</td>
<td>≤0.8%</td>
</tr>
<tr>
<td></td>
<td>10 – 25.99 ft³/s</td>
<td>77 – 199 ft³/s</td>
<td>0.25 ft³/s (112 gpm)</td>
<td>≤2.5%</td>
<td>0.005 ft to 0.002 ft</td>
<td>1.390 mm to 0.603 mm</td>
<td>1.0% to 0.4%</td>
</tr>
<tr>
<td>May 1 – May 31</td>
<td>≥10 ft³/s</td>
<td>≥77</td>
<td>0.25 ft³/s (112 gpm)</td>
<td>≤2.5%</td>
<td>≤0.005 ft</td>
<td>≤1.390 mm</td>
<td>≤1.0%</td>
</tr>
<tr>
<td></td>
<td>3 – 9.99 ft³/s</td>
<td>23 – 76 ft³/s</td>
<td>0.10 ft³/s (45 gpm)</td>
<td>≤3.3%</td>
<td>0.006 ft to 0.004 ft</td>
<td>2.213 mm to 0.460 mm</td>
<td>2.5% to 0.5%</td>
</tr>
</tbody>
</table>

*gpm = gallons per minute
The following analyses describe the frequency of bypass flow exceedance and associated volumes of water that could be stored based on a variable diversion rate diversion schedule. This analysis relies on rates of diversion The Nature Conservancy and CEMAR/TU assume to be protective of key salmonid life stages, according to resource agency standards. To analyze how the proposed diversion schedule ensures beneficial use of Indian Creek while still protecting fishery resources, we have calculated how much water could be stored under dry year conditions. The purpose of this analysis is to demonstrate how much water could be stored at the lower limits of availability when conditions are most challenging for salmonids as well as water users.

**Diversion Period of December 15–March 31**

Figure 1 shows the number of days, based on historical records from the Navarro River USGS streamflow gauge, during the diversion period of December 15 – March 31 when flow in Indian Creek is estimated to equal or exceed flow thresholds protective of critical salmonid life stages including (from top to bottom): 33 ft³/s (adult migration), and 10 ft³/s (food production), from top to bottom. These graphs show that the number of days with flow exceeding the upper and middle bypass flow varies considerably from one year to the next. In 30% of all years there are more than 90 days when flow exceeds the upper bypass flow threshold (33 ft³/s); and in 6% of years, the upper flow threshold is exceeded 30 days or less. Lower bypass flows are exceeded more often; the lowest bypass flow 10 ft³/s is exceeded on more than 60 days in all but 3 years (i.e., 95% of all years).

**Translating protective thresholds to water storage opportunity in dry years and typical years:**

*Example scenario for a drought year based on 2014 data:* If Roederer Estate (RE) diverts at a rate of 224 gallons per minute (as proposed), RE can divert 0.99 acre feet to storage in a 24-hour period. This bypass flow was exceeded on 20 days in 2014. Assuming that RE could pump on 80% (17) of the days above 33 ft³/s and the stream is too turbid to divert on the remaining 20% of the days, the proposed diversion schedule would result in 16.6 acre feet pumped into storage. 16.6 acre feet is just 37% of RE’s requested diversion amount of 45 acre feet (and 45 acre feet is already a drastic reduction in their existing legal right to divert 70 acre feet.)

If a lower bypass threshold is set at 10 ft³/s, then there would be an additional 34 days when water could be diverted (i.e., 34 days in 2014 with flow above 10 ft³/s). If water is pumped at a rate of 112 gallons per minute (diverting, at most, 2.5% of flow and producing appx 0.5 acre-ft per day), this would result in an additional 16.6 acre-ft of water in storage.

In sum, this management scenario in a very dry year would result in 33.3 acre-ft of water if pumped continuously for 24 hours on each day when the bypass flow is exceeded.

*Example scenario for typical years based on 2009 or 1985 data:* In a more typical dry year like 2009 or 1985, where the bypass flow of 33 ft³/s is exceeded 40 days or more (representing conditions exceeded 55 of 63 years, or 87% of all years), if water is diverted on 80% of all days (33 pumping days), a pump rate of 224 gallons per minute for 24 hours would result in 31.7 acre-ft diverted into storage.

*Example scenario for extreme drought years based on 1977 data:* In a very dry year like 1977, conditions would yield much less water. If water were diverted at 224 gallons per minute on both the days when flow exceeds 33 ft³/s and at 112 gallons per minute on all 20 days when flow exceeds 9.9 ft³/s, it would result in 11.9 acre-ft in storage.
Summary of tables, April 1 – April 30

Figure 2 shows the number of days, based on historical records from the Navarro River USGS streamflow gauge, during the diversion period of April 1 – April 30 when flow in Indian Creek is estimated to equal or exceed flow thresholds protective of critical salmonid life stages including (from top to bottom): -26 ft³/s (spawning), and 10 ft³/s (food production), from top to bottom.

These figures illustrate that in 35% of all years there are more than 25 days when flow exceeds the upper bypass flow threshold (26 ft³/s), but in another 33% of years, the upper flow threshold is exceeded 10 days or less. Lower bypass flows are exceeded more often.
Translating protective thresholds to water storage opportunity in dry years:

The April diversion season is critical because it is during frost protection season. After a frost protection event, RE needs to be able to replenish its storage pond in order to ensure it has adequate irrigation water stored for the summer. If RE diverts at the proposed rate of 112 gallons per minute when flows are >10 ft³/s (2.5% of flow), in a very dry year like 1990 (the second- or third-driest April over 63 years), 10 ft³/s is exceeded on 6 days. None of these days exceeded 26 ft³/s (the proposed upper threshold), so all are days when water is likely not too turbid and thus can be diverted. If pumping for 24 hours, this would result in 3.0 acre feet pumped into storage. 3.0 acre feet of water is enough for approximately 2 frost protection events.

Figure 2
Summary of tables, May 1 – May 30

In some years, May can be a critical month for frost protection. Figure 3 shows the number of days, based on historical records from the Navarro River USGS streamflow gauge, during the diversion period of May 1 – May 30 when flow in Indian Creek is estimated to equal or exceed flow thresholds protective of critical salmonid life stages including (from top to bottom): 10 ft$^3$/s (food production), and 3 ft$^3$/s Coho YOY* and 1+ rearing. These figures tell us that, in many years, flow in May is greater than 10 ft$^3$/s over during the entire month; but in other years, flow never exceeds 10 ft$^3$/s. If a flow threshold were set at 10 ft$^3$/s, RE would not be allowed to pump water during May in some years. The flow of 3 ft$^3$/s is exceeded throughout the month in almost all years. The applicant proposes the right to divert at 45 gpm (5% of the bypass flow) at this flow threshold in order to replenish the pond if it is partially drained from frost protection. This would prevent RE from exercising its riparian right to divert water during the critical low flow months for irrigation. Allowing for a low level of pumping at 3 ft$^3$/s would mean that water could be diverted 31 days in 92% of years. Diversion of 0.1 ft$^3$/s (45 gallons per minute), on 31 days would provide 6.2 acre-feet.

**Example year: 2008 (which was characterized by many frost events and low stream flows):**

- Days exceeding 10 ft$^3$/s: zero
- Days exceeding 3 ft$^3$/s: 31

Total volume obtained under May 2008 conditions: 6.2 acre feet or approximately 5 frost events.

**Extremely dry year: 1977**

- Days exceeding 10 ft$^3$/s: 0
- Days exceeding 3 ft$^3$/s: 0

Total volume obtained under May 1977 conditions: 0 acre feet or approximately 0 frost events.
Conclusion: Flexible diversion schedule and flow thresholds ensures some beneficial use potential under very dry conditions

Very dry conditions:

- November 1 to December 14: 0 acre-ft (bypass flows are not exceeded in dry-type years.)
- December 15 to March 31: 27.7 acre-ft (2014)
- April 1 to April 30: 3 acre-ft (1990)
- May 1 to May 31: 6.2 acre-ft (Eight percent of years were drier, but 2008 had many frost events)
Together, this adds up to 36.9 acre-ft of water that could be diverted into storage.

If there were 15 frost events, resulting in 18 acre-ft of water used, then the total volume of water in the reservoir at the end of May would be 18.9 acre-ft in this composite very dry year scenario.

In an extremely dry year like 1977, the total volume of water that could be obtained under the scenarios described above is 11.9 acre-ft (11.9 acre-ft in the policy diversion season, 0 acre-ft in April, and 0 acre-ft in May).
Mr. Les Grober  
Deputy Director, Division of Water Rights  
State Water Resources Control Board  
PO Box 2000  
Sacramento, CA 95812-2000  

October 27, 2017  

Re: Request for review of a new permit application under the Policy for Maintaining Instream Flows in Northern California Coastal Streams for the Roederer Estate Indian Creek Streamflow Enhancement Project, Navarro River watershed  

Dear Mr. Grober:  

Pursuant to section 2.2 of the State Water Resources Control Board’s ("SWRCB") Policy for Maintaining Instream Flows in Northern California Streams ("Instream Flow Policy"), I am writing to request consideration of the site-specific standards proposed in the pending application for the Anderson Vineyards Inc. / DA Ranch (a subsidiary of Roederer Estate (RE)) for an appropriative license on Indian Creek in the Navarro River watershed. That application is made in connection with the Roederer Estate Indian Creek Streamflow Enhancement Project ("Project"), a streamflow enhancement project we’re doing in collaboration with The Nature Conservancy ("TNC"). The Project is designed to increase instream flows on Indian Creek during the dry season for the benefit of coho salmon and steelhead trout.  

I. Project Description  
Roederer Estate (“Roederer”) has been working closely with TNC in an effort to enhance summer streamflow for rearing coho salmon and steelhead trout in Indian Creek in the Navarro River watershed. This project is conducted pursuant to the guidelines provided in the Instream Flow Policy, which is designed to assist landowners who wish to apply for expedited water use permits to store water during the winter and early spring, and thereby reduce diversions during seasonal recession and the summer low flow period.  

Currently, Roederer has an appropriative right to divert approximately 71 acre feet of water from Indian Creek during May through October under License #A021256B for use on the Domaine Anderson vineyard on Highway 128 near Philo, California. Based on summer streamflow data gathered by TNC and the site specific instream flow study, Roederer, in conjunction with TNC and its consultants, believes that forbearing on this diversion during the summer could have significant benefits to streamflow and summer habitat conditions for salmonid juvenile rearing in Indian Creek.  

The four elements of the proposed Project are:  

1. A forbearance agreement between TNC and RE for the existing summer diversion right: Roederer has agreed to enter into a forbearance agreement with TNC to refrain from exercising its right to divert water during the summer under license #A021256B for a period of at least 10 years with automatic renewals. RE is not requesting the right to divert more water than it is currently legally allowed to under License #A021256B. In fact, the new permit application is for 20 acre feet less than License #A021256B. It is our understanding that the SWRCB will condition the new permit on the requirement that if
Roederer ever allows the forbearance agreement with TNC to expire, and re-activates License #A021256B, then Roederer will not be allowed to divert any water under this new permit.

2. **Application for a new water permit for RE to secure a winter diversion and storage right per the Instream Flow Policy:** Roederer, with the assistance of TNC, McBain Associates, Trout Unlimited (TU) and the Center for Ecosystem Management and Restoration (“CEMAR”), has prepared a Site Specific Instream Flow Study, Water Availability Analysis, and Cumulative Diversion Analysis according to requirements established in the Instream Flow Policy. We are submitting a new water permit application based on these analyses and pursuant to section 2.2 of the Instream Flow Policy.

3. **A §1707 designation for RE’s existing summer diversion right:** RE will dedicate its existing summer diversion right to instream beneficial use through a §1707 designation.

4. **Continued participation in the current streamflow gauging effort on Indian Creek:** TNC has been engaged in the Navarro River watershed since 2013, gathering data on streamflow dynamics, conducting human water needs analyses, and examining local water use patterns. TNC currently operates a network of 14 streamflow and temperature gauges in the watershed. Using this data, TNC has identified Indian Creek as key salmonid spawning and rearing habitat with reasonable water temperatures and high streamflow restoration potential. Roederer will continue to partner in the streamflow gauging effort on Indian Creek.

II. **Site-Specific Study of Flows Needed for Anadromous Fish**

As required by Section 2.3 of the Instream Flow Policy, the Anderson Vineyards Inc. / DA Ranch water right application includes a Cumulative Diversion Analysis demonstrating the proposed license terms will comply with the criteria in Appendix A.1.8.4. This analysis is based on proposed site-specific criteria derived from flow thresholds in the technical memorandum prepared by McBain Associates: *Site-Specific Instream Flow Study on Indian Creek in The Navarro River Basin* ("Indian Creek IFS").

TNC worked with McBain Associates to complete the site specific study according to guidelines established in Appendix C of the Instream Flow Policy, and has shared the study methodologies with Wes Stokes, Jane Arnold, William Cowan, and Paige Uttley of the California Department of Fish and Wildlife ("CDFW"); Paige Uttley and Jane Arnold provided feedback on the study plan, and their suggestions were incorporated into the final execution of the study. The objective of this study is to identify instream flow thresholds that protect key steelhead and coho life history needs during their freshwater residence at points of interest (POIs) in Indian Creek. This study has identified site-specific flow thresholds that protect four primary life history needs for coho salmon and steelhead including: (1) adult and juvenile passage and migration, (2) adult spawning habitat, (3) juvenile rearing and foraging habitat, and (4) food, using productive benthic macroinvertebrate (BMI) habitat as an indicator of salmonid food production.

Similarly, TNC has worked with TU to produce the Cumulative Diversion and Water Availability analyses and used the results to create the proposed diversion rates and periods in the Water Diversion Management Schedule below in Section III. TU has extensive familiarity with producing these analyses for other successful water permit applications under the terms of the Instream Flow Policy.
CDFW has reviewed the site specific study and has provided a letter of support for the water right application. The Water Branch has also completed its technical review. We have also received the attached letters of support for the project and site specific study from Matt St. John of the North Coast Regional Water Quality Control Board, and National Marine Fisheries Service.

III. Proposed Site-Specific Criteria
The Indian Creek IFS recommends the following bypass flows:

<table>
<thead>
<tr>
<th>Applicable Diversion Period</th>
<th>Flow Threshold (At Indian Creek Gauge)</th>
<th>Associated Life History Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov 1 – March 31</td>
<td>&gt;33 ft³/s</td>
<td>Adult steelhead and adult coho migration</td>
</tr>
<tr>
<td>April 1 – April 30</td>
<td>26 ft³/s</td>
<td>Adult steelhead spawning</td>
</tr>
<tr>
<td>May 1 – May 31</td>
<td>10 ft³/s</td>
<td>Benthic macroinvertebrate production</td>
</tr>
</tbody>
</table>

Given the overall goals of the instream flow policy to facilitate water users who wish to voluntarily enhance fishery resources, we propose the below protective variable diversion rate schedule. The variable diversion rate schedule takes into account the most protective thresholds for adult migration and spawning as well as protective thresholds for juvenile passage, rearing, and food production, as established in the McBain Associates Site Specific Study. As opposed to a diversion schedule that utilizes a single flow threshold that is most protective of adult migration (e.g. 33 ft³/s), the proposed schedule is adapted to the natural variability of a coastal stream such as Indian Creek, and the different ways salmonids are using the stream at different life stages and times of year. Based on the results of the Site Specific Study and Cumulative Diversion and Water Availability Analyses, we have selected five different seasonally appropriate bypass thresholds (and four different diversion rates) that are both protective of salmonid needs and supportive of agricultural beneficial uses. The variable diversion rates are based on the full suite of flow thresholds (and associated life history needs) calculated by McBain Associates in Attachment 4 to the water permit application.

Under the proposed diversion schedule below, Roederer can forgo diverting during the critical low flow months of July – October, while protecting salmonid life stages along the continuum of the natural flow variability of a coastal stream during the diversion period. TNC, TU, and McBain believe that the requested change is fully consistent with the Board’s 2010 Policy for Maintaining Instream Flows in Northern California Coastal Streams, as demonstrated in the attached Water Availability Analysis and Water Supply Report. In order to protect fisheries resources, the proposed diversion schedule below proposes diversion rates that represent no more than 1.5% to 3.3% of instream flow, depending on the targeted flow threshold. We believe this proposed diversion schedule enhances protection of fishery resources over current conditions for 3 reasons:

1. The winter diversion schedule will allow Roederer to refrain from diverting during the critical low flow summer season, which is the current diversion period for its existing right (#A021256B). In Recovery Plans for coho and steelhead, NMFS has specifically identified summer water diversion as a key factor limiting recovery of salmonids in the watershed. This project will help meet Federal Recovery Planning goals by switching a significant water diverter from summer water diversion to winter water diversion in a key salmonid sub-watershed in the Navarro basin.
2. Based on the results of the Cumulative Effects Analysis, under the proposed winter/spring diversion schedule, the new permit would not reduce the number of days when flow exceeds bypass thresholds by more than 10% in Indian Creek during any month it would operate; and as described above, bypass conditions ensure that it would reduce streamflow by no more than 3.3% at any time. In the mainstem Navarro River, the proposed diversion would not change the number of days when flow would fall below the bypass threshold at the mainstem Navarro Points of Analysis (POAs) by more than 0.66% (final column, Tables 3B and 3C of Attachment 3).

3. The diversion rates represent just 1.5% - 3.3% of instantaneous streamflow. Diverting ≤ 3.3% of instantaneous flow is arguably de minimis, given that the United States Geological Survey (USGS) cites 5% as the range of uncertainty for calculating flows.

4. Based on an analysis of the impacts of the proposed water diversion schedule on salmonid adult and smolt passage during each diversion period, the proposed diversion schedule doesn't significantly alter ambient flow conditions and adult or juvenile passage. The analysis determined that the decreases in riffle crest thalweg depth -- an indicator of passage suitability -- due to the proposed diversion schedule for all diversion period thresholds were less than 0.006 ft or 2.213 mm and account for very negligible changes in depths over ambient conditions (see Attachment 7a and 7b).

Based on the site-specific flow criteria detailed in Attachment 4, the application proposes the following draft diversion criteria for the water right:

* gpm = gallons per minute

<table>
<thead>
<tr>
<th>Diversion Period</th>
<th>Flow Threshold / USGS Navarro Gauge</th>
<th>Diversion Rate</th>
<th>% of Flow</th>
<th>Difference in RCT90 Depth (ft)</th>
<th>Difference in RCT90 Depth (mm)</th>
<th>Difference in RCT90 % Change in Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov. 1 – March 31</td>
<td>≥33 ft³/s ≥ 254 ft³/s</td>
<td>0.5 ft³/s (224 gpm)</td>
<td>≤1.5%</td>
<td>≤0.004 ft</td>
<td>≤1.308 mm</td>
<td>≤0.6%</td>
</tr>
<tr>
<td></td>
<td>10 – 32.99 ft³/s 77 – 253 ft³/s</td>
<td>0.25 ft³/s (112 gpm)</td>
<td>≤2.5%</td>
<td>0.005 ft to 0.002 ft</td>
<td>1.390 mm to 0.522 mm</td>
<td>1.0% to 0.4%</td>
</tr>
<tr>
<td>April 1 – April 30</td>
<td>≥26 ft³/s ≥ 200 ft³/s</td>
<td>0.5 ft³/s (224 gpm)</td>
<td>≤1.9%</td>
<td>≤0.005 ft</td>
<td>≤1.513 mm</td>
<td>≤0.8%</td>
</tr>
<tr>
<td></td>
<td>10 – 25.99 ft³/s 77 – 199 ft³/s</td>
<td>0.25 ft³/s (112 gpm)</td>
<td>≤2.5%</td>
<td>0.005 ft to 0.002 ft</td>
<td>1.390 mm to 0.603 mm</td>
<td>1.0% to 0.4%</td>
</tr>
<tr>
<td>May 1 – May 31</td>
<td>≥10 ft³/s ≥77</td>
<td>0.25 ft³/s (112 gpm)</td>
<td>≤2.5%</td>
<td>≤0.005 ft</td>
<td>≤1.390 mm</td>
<td>≤1.0%</td>
</tr>
<tr>
<td></td>
<td>3 – 9.99 ft³/s 23 – 76 ft³/s</td>
<td>0.10 ft³/s (45 gpm)</td>
<td>≤3.3%</td>
<td>0.006 ft to 0.004 ft</td>
<td>2.213 mm to 0.460 mm</td>
<td>2.5% to 0.5%</td>
</tr>
</tbody>
</table>
IV. Alternative Approval Under § 3.3.2.5
Separate from the provisions governing site-specific studies, Roederer's proposed season of diversion and bypass flow are also approvable under §3.3.2.5 of the Instream Flow Policy. That section governs "voluntary modifications to authorized diversions for the enhancement of fish and wildlife resources." It allows the Deputy Director to approve alternative diversion criteria for water rights made in connection with such projects if:

1. the applicant's existing diversions under another valid basis of right will be reduced as a result of the applicant's ability to divert to storage, and

2. The benefit to fishery resources of the reduction in diversions outweighs the potential impacts to fishery resources of the storage project.

In this case, the first criterion is met because the new right will enable Roederer to rely exclusively on stored water to meet its needs during the dry season, and thus to cease diverting water from Indian Creek whenever flows drop below 3 cfs. The second criterion is met because our diversion will be eliminated during the times when flows are most critical to fish (June-October). Conversely, any potential impacts of this increased rate of diversion will occur during periods of greater streamflow when the proportional impact is much smaller, and still remains a very small proportion of streamflow, even at those times. Therefore, the benefits to fish outweigh the impacts.

V. Expedited processing
As outlined in Section 3.3.2.5 of the Instream Flow Policy, the State Water Board will expedite, where feasible, water rights applications and 1707 petitions where the following conditions are met:

1. Documentation that the proposed change will enhance conditions for fish;
2. Written support for the project from other agencies such as CDFW, NMFS, and the Regional Water Quality Control Board;
3. The proposed change is consistent with the principles of the Instream Flow Policy; and
4. A water availability analysis is submitted and the applicant agrees to conditions that will ensure the water subject to the 1707 petition will remain instream.

Pursuant to this, once CDFW has submitted a written letter of support, we request expedited processing for The Anderson Vineyards Inc. / DA Ranch application for an appropriative license on Indian Creek in the Navarro River watershed, as submitted by Roederer:

VI. Conclusion
For the above reasons, I request that, based on the favorable final review from CDFW, you approve the Site-Specific Instream Flow Study on Indian Creek in The Navarro River Basin as a site-specific study meeting the requirements of Appendix C of the Instream Flow Policy, as well as the proposed site-specific criteria for season of diversion and bypass flow set forth in the Anderson Vineyard Inc. / DA Ranch pending water right application. Thank you for your attention to this request, and please do not hesitate to contact me if you have any questions regarding this matter.

Best Regards,

Arnaud Weyrich, VP Production, Roederer Estate, Inc.
March 11, 2016

State Water Resources Control Board  
Division of Water Rights  
ATTN: Angela Nguyen-Tan  
1001 I Street, 14th Floor  
Sacramento, CA 95812-2000

Dear Ms. Nguyen-Tan:

Subject: Support for Anderson Vineyards, Inc. / DA Ranch Water Rights Project

The North Coast Regional Water Quality Control Board (Regional Water Board) is sending you this letter of support for the water rights project proposed by Anderson Vineyards, Inc. (AVI), in cooperation with The Nature Conservancy. The Regional Water Board believes that this innovative collaboration provides an important opportunity for securing instream flows to protect beneficial uses of waters of the State, including those associated with threatened and endangered salmonids.

The project proposes the establishment of a new water right to divert 50 acre-feet of surface water from Indian Creek, tributary to the Navarro River, during the November 1 – March 31 time period, in exchange for an agreement to forego use of AVI’s existing water right (license #A021256B). The existing right allows for the diversion of approximately 71 acre-feet of water from Indian Creek during May through October. Under this proposal, the existing right will be dedicated to instream uses through a §1707 dedication, made durable through a forbearance agreement between AVI and The Nature Conservancy. The Regional Water Board’s support is contingent on the ongoing dedication of streamflow license #A021256B.

One particular feature of the proposed water right supported by the Regional Water Board is the identification and incorporation of flow thresholds for support of various salmonid life stages supported by Indian Creek flows. Additionally, the Regional Water Board supports the diversion schedule that limits withdrawals to a percentage of the available

John W. Connor, Chair  |  Matthias St. John, Executive Officer  
5500 Skyline Blvd., Suite A, Santa Rosa, CA 95403  |  www.waterboards.ca.gov/northcoast
flow, and recognizes that the approach has utility for balancing the needs of beneficial uses and users of water.

Efforts to address low summer flows in this watershed are a key priority for the Regional Water Board. The Navarro River watershed is identified on the 303(d) list of impaired water bodies due to high water temperatures and excessive sediment loads. In March 2015, the State Water Resources Control Board approved an amendment to the North Coast Water Quality Control Plan establishing the Action Plan to Address Temperature Impairment in the Navarro River Watershed (Navarro Temperature Action Plan). The Action Plan identifies the need for projects to address low summer stream flows, and directs the following Regional Water Board actions relevant to this project:

"Work with other agencies and non-governmental organizations to support off-stream storage projects for water divercers currently diverting directly from streams during summer. Work with other agencies and non-governmental organizations to streamline the permitting process for conversion of on-stream to off-stream storage." (Navarro Temperature Action Plan, pg. 4-8.00)

The Navarro Temperature Action Plan also explicitly states its support for this type of project in the following action:

"The Regional Water Board encourages all water users to implement water conservation practices and develop off-stream storage facilities to minimize water diversions during low flow periods." (Navarro Temperature Action Plan, pg. 4-8.00)

The entire Navarro Temperature Action Plan can be found at:

In summary, the Regional Water Board supports the implementation of this project, and finds that it is consistent with the Region’s goals for the Navarro River watershed, as expressed in the Navarro Temperature Action Plan. We encourage the State Water Resource Control Board to expedite the approval of this project.

Sincerely,

Matthias St.John
2016.03.10
17:19:35 -08'00'

Water Boards
Matthias St. John
Executive Officer
North Coast Regional Water Quality Control Board

160211_BCM_dp_AVI-TNC_SupportLtr
State of California  
Department of Fish and Wildlife

Memorandum

Date: August 29, 2017

To: Amanda Montgomery  
Program Manager  
State Water Resources Control Board  
Division of Water Rights

From: Curt Babcock  
Habitat Conservation Program Manager  
California Department of Fish and Wildlife  
Northern Region

Subject: Indian Creek Site-Specific Study for Roederer Estates Vineyard

The California Department of Fish and Wildlife (Department) received the technical memorandum “Site-Specific Instream Flow Study on Indian Creek in the Navarro River Basin” (Report) prepared by McBain Associates for The Nature Conservancy. Indian Creek supports Coho Salmon (*Oncorhynchus kisutch*), steelhead trout (*O. mykiss*), and other native aquatic organisms.

The purpose of the Report is to provide elements of a site-specific study outlined in the State Water Resources Control Board’s “Policy for Maintaining Instream Flows in Northern California Coastal Streams” (Policy). The Report provides site-specific spawning and rearing flows for salmonids for a site-specific reach of Indian Creek as described in the Policy’s Appendix C, Guidelines for Site-Specific Studies.

The Department understands The Nature Conservancy will submit the Report to support, in part, a petition for change to modify an existing summer diversion to add storage and dedicate instream flows under Water Code section 1707. Under the Policy section 3.3.2.5, the State Water Resources Control Board will "expedite, where feasible" processing of Water Code section 1707 instream flow petitions if certain conditions are met. One of these conditions is support for the petition for change from the Department or other agencies with jurisdictional authority. The Department is supportive of Roederer Estates Petition for Change for Indian Creek.

The Department looks forward to continuing our partnership with McBain Associates and The Nature Conservancy on flow studies that benefit fish and wildlife resources. If you have any questions or comments regarding this matter, please contact Staff Environmental Scientist Jane Arnold of my staff at (707) 441-5671 or jane.arnold@wildlife.ca.gov.
ec:  Amanda Montgomery  
State Water Resources Control Board  
amanda.montgomery@waterboards.ca.gov

The Nature Conservancy  
Monty Scmitt, Jennifer Carah  
monty.schmitt@tnc.org, jennifer.carah@tnc.org

California Department of Fish and Wildlife  
Jane Arnold, Paige Uttley, James Rosauer, Gordon Leppig  
jane.arnold@wildlife.ca.gov, paige.uttley@wildlife.ca.gov,  
james.rosauer@wildlife.ca.gov, gordon.leppig@wildlife.ca.gov
Barbara Evoy  
Deputy Director, Division of Water Rights  
State Water Resources Control Board  
P.O. Box 2000  
Sacramento, California 95812-2000

Dear Ms. Evoy:

This letter is in regard to NOAA’s National Marine Fisheries Service’s (NMFS) support for The Nature Conservancy’s (TNC) site-specific study and associated efforts to enhance stream flows on Indian Creek in the Navarro River watershed. Our staff have met with TNC staff and have discussed details of the site-specific study and benefits of the proposed water right changes.

The project supports our agency’s efforts to recover coho salmon and steelhead populations in the Navarro River watershed. In our recovery plans for Central California Coast coho salmon and Northern California steelhead, we identified summer rearing habitat for juvenile fish as a limiting factor in this watershed. Water users in the Navarro River watershed are currently diverting water from streams during the summer, which reduces the availability and quality of salmonid habitat. To address this issue, switching diverters from summer water diversion to winter water diversion and storage for later use has great potential to improve stream flow and summer habitat availability in key sub-watersheds such as Indian Creek.

Accordingly, we would like to express our support for the water permit application that Roederer Estate and TNC have submitted which dedicates Roederer Estate’s summer water diversion to instream uses and securing a permit that allows Roederer Estate to divert and store water during the winter for use during the summer. Specifically, these changes enhance fish and wildlife habitat by: 1) retiring Roederer Estate’s existing summer diversion on Indian Creek; 2) dedicating the existing water right to instream uses through a §1707 designation; and 3) securing a new winter diversion and storage permit under the guidelines of the Policy for Maintaining Instream Flows in Northern California Coastal Streams (Instream Flow Policy).

Finally, it is our hope this letter will help expedite the processing of this important water right application that will enhance habitat conditions for salmonids. NMFS believes this project
warrants expedited treatment by SWRCB because it is aligned with the principles and goals of both the Instream Flow Policy and NMFS recovery plans for coho salmon and steelhead in the Navarro River Watershed.

Please contact us if you have any questions please contact David Hines at (707) 575-6098 or via email at david.hines@noaa.gov, or Tom Daugherty at (707) 468-4057 or via email at tom.daugherty@noaa.gov.

Sincerely,

Bob Coey
North Coast Branch Chief
North-Central Coast Office

cc: Wes Stokes, Environmental Scientist, Northern Region, CDFW
Amanda Montgomery, Manager, Permitting and Licensing Section, Division of Water Rights, SWRCB
Nancy Smith, North Coast Project Director, The Nature Conservancy