Appendix 3.1

Accessibility Statement

For accessibility assistance with this document, please contact Sonoma Water, Environmental Resources at (707) 526-5370, fax to (707) 544-6123 or through California Relay Service by dialing 711.

SONOMA COUNTY WATER AGENCY

CF/42-0.19-9 SWRCB Order Approving Temporary Urgency Change in Permits 12947A, 12949, 12950 & 16596 for 2015 (ID 5315)

April 21, 2015

Barbara Evoy, Deputy Director of Water Rights
State Water Resources Control Board
Division of Water Rights
P.O. Box 2000
Sacramento, CA 95812-2000

RE: Petition for Temporary Urgency Change—Permits 12947A, 12949, 12950, and 16596

Dear Ms. Evoy:

Enclosed is a Petition for Temporary Urgency Change to modify the minimum instream flow requirements for the Russian River as established by Decision 1610 for Permits 12947A, 12949, 12950 and 16596. Accompanying the petition are the following:

1) Attachment 1, *Description of April 2015 Temporary Urgency Change Petition Request*
2) Attachment 2, *Supplement to the April 2015 Temporary Urgency Change Petition*
3) *Environmental Information for Petitions*
4) Notice of Exemption
5) State Water Resources Control Board Petition Fee Payment

Unfortunately, the payment for the California Department of Fish and Wildlife review fee is not ready at this time and, therefore, we will be sending under separate cover in approximately two days.

We are submitting this petition to preserve the drought-limited water supply that is in Lake Mendocino and to avoid the excessively high releases from Lake Sonoma into Dry Creek that would result from maintaining the Decision 1610 minimum instream flow requirements. The Sonoma County Water Agency requests that the Division of Water Rights act expeditiously to approve the requested changes.

404 Aviation Boulevard - Santa Rosa, CA 95403-9019 • (707) 526-5370 - Fax (707) 544-6123 - www.sonomacountywater.org/

I look forward to working with the State Water Resources Control Board and Division of Water Rights staff on this important conservation effort.

Sincerely,

Pamela Jeane for
Grant Davis
General Manager

c: Katy Lee – State Water Resources Control Board
R. Coey, J. Fuller – National Marine Fisheries Service
E. Larson - California Department of Fish & Wildlife
P. Jeane, D. Seymour, T. Schram, J. Martini Lamb, J. Jasperse – Sonoma County Water Agency
S. Shupe, C. O'Donnell – Sonoma County Counsel
A. Lilly – Bartkiewicz, Kronick & Shanahan

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Please indicate County where your project is located here:

Sonoma / Mendo.

MAIL FORM AND ATTACHMENTS TO:
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DIVISION OF WATER RIGHTS
P.O. Box 2000, Sacramento, CA 95812-2000
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PETITION FOR CHANGE

Separate petitions are required for each water right. Mark all areas that apply to your proposed change(s). Incomplete forms may not be accepted. Location and area information must be provided on maps in accordance with established requirements. (Cal. Code Regs., tit. 23, § 715 et seq.) Provide attachments if necessary.

☐ **Point of Diversion** Wat. Code, § 1701
☐ **Point of Rediversion** Cal. Code Regs., tit. 23, § 791(e)
☐ **Place of Use** Wat. Code, § 1701
☐ **Purpose of Use** Wat. Code, § 1701

☐ **Distribution of Storage** Cal. Code Regs., tit. 23, § 791(e)
☒ **Temporary Urgency** Wat. Code, § 1435
☐ **Instream Flow Dedication** Wat. Code, § 1707
☐ **Waste Water** Wat. Code, § 1211

☐ **Split** Cal. Code Regs., tit. 23, § 836
☐ **Terms or Conditions** Cal. Code Regs., tit. 23, § 791(e)
☐ **Other**

Application 12919A Permit 12947A License Statement

I (we) hereby petition for change(s) noted above and described as follows:

Point of Diversion or Rediversion – Provide source name and identify points using both Public Land Survey System descriptions to ¼-¼ level and California Coordinate System (NAD 83).

Present:

Proposed:

Place of Use – Identify area using Public Land Survey System descriptions to ¼-¼ level; for irrigation, list number of acres irrigated.

Present:

Proposed:

Purpose of Use

Present:

Proposed:

Split

Provide the names, addresses, and phone numbers for all proposed water right holders.

In addition, provide a separate sheet with a table describing how the water right will be split between the water right holders: for each party list amount by direct diversion and/or storage, season of diversion, maximum annual amount, maximum diversion to offstream storage, point(s) of diversion, place(s) of use, and purpose(s) of use. Maps showing the point(s) of diversion and place of use for each party should be provided.

Distribution of Storage

Present:

Proposed:

Temporary Urgency
This temporary urgency change will be effective from May 1, 2015 to October 27, 2015.

Include an attachment that describes the urgent need that is the basis of the temporary urgency change and whether the change will result in injury to any lawful user of water or have unreasonable effects on fish, wildlife or instream uses.

Instream Flow Dedication – Provide source name and identify points using both Public Land Survey System descriptions to ¼-¼ level and California Coordinate System (NAD 83).

Upstream Location:

Downstream Location:

List the quantities dedicated to instream flow in either: ☐ cubic feet per second or ☐ gallons per day:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Will the dedicated flow be diverted for consumptive use at a downstream location? ◯ Yes ◯ No
If yes, provide the source name, location coordinates, and the quantities of flow that will be diverted from the stream.

Waste Water
If applicable, provide the reduction in amount of treated waste water discharged in cubic feet per second.

Will this change involve water provided by a water service contract which prohibits your exclusive right to this treated waste water? ◯ Yes ◯ No

Will any legal user of the treated waste water discharged be affected? ◯ Yes ◯ No

General Information – For all Petitions, provide the following information, if applicable to your proposed change(s).

Will any current Point of Diversion, Point of Storage, or Place of Use be abandoned? ◯ Yes ◉ No

I (we) have access to the proposed point of diversion or control the proposed place of use by virtue of:
☐ ownership ☐ lease ☐ verbal agreement ☐ written agreement

If by lease or agreement, state name and address of person(s) from whom access has been obtained.

Give name and address of any person(s) taking water from the stream between the present point of diversion or rediversion and the proposed point of diversion or rediversion, as well as any other person(s) known to you who may be affected by the proposed change.

All Right Holders Must Sign This Form: I (we) declare under penalty of perjury that this change does not involve an increase in the amount of the appropriation or the season of diversion, and that the above is true and correct to the best of my (our) knowledge and belief. Dated 4/21/15 at Santa Rosa, CA.

Right Holder or Authorized Agent Signature

Right Holder or Authorized Agent Signature

NOTE: All petitions must be accompanied by:
(1) the form Environmental Information for Petitions, including required attachments, available at:
http://www.waterboards.ca.gov/waterrights/publications_forms/forms/docs/pet_info.pdf
(2) Division of Water Rights fee, per the Water Rights Fee Schedule, available at:
http://www.waterboards.ca.gov/waterrights/water_issues/programs/fees/
(3) Department of Fish and Wildlife fee of $850 (Pub. Resources Code, § 10005)

Please indicate County where your project is located here:

Sonoma / Mendo.

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☐ **Purpose of Use** Wat. Code, § 1701

☐ **Distribution of Storage** Cal. Code Regs., tit. 23, § 791(e)
☒ **Temporary Urgency** Wat. Code, § 1435
☐ **Instream Flow Dedication** Wat. Code, § 1707
☐ **Waste Water** Wat. Code, § 1211

☐ **Split** Cal. Code Regs., tit. 23, § 836
☐ **Terms or Conditions** Cal. Code Regs., tit. 23, § 791(e)
☐ **Other**

Application 15736 Permit 12949 License Statement

I (we) hereby petition for change(s) noted above and described as follows:

Point of Diversion or Rediversion – Provide source name and identify points using both Public Land Survey System descriptions to ¼-¼ level and California Coordinate System (NAD 83).

Present:

Proposed:

Place of Use – Identify area using Public Land Survey System descriptions to ¼-¼ level; for irrigation, list number of acres irrigated.

Present:

Proposed:

Purpose of Use

Present:

Proposed:

Split

Provide the names, addresses, and phone numbers for all proposed water right holders.

In addition, provide a separate sheet with a table describing how the water right will be split between the water right holders: for each party list amount by direct diversion and/or storage, season of diversion, maximum annual amount, maximum diversion to offstream storage, point(s) of diversion, place(s) of use, and purpose(s) of use. Maps showing the point(s) of diversion and place of use for each party should be provided.

Distribution of Storage

Present:

Proposed:

Temporary Urgency
This temporary urgency change will be effective from May 1, 2015 to October 27, 2015 .

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Instream Flow Dedication – Provide source name and identify points using both Public Land Survey System descriptions to ¼-¼ level and California Coordinate System (NAD 83).

Upstream Location:

Downstream Location:

List the quantities dedicated to instream flow in either: ☐ cubic feet per second or ☐ gallons per day:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Will the dedicated flow be diverted for consumptive use at a downstream location? ◯ Yes ◯ No
If yes, provide the source name, location coordinates, and the quantities of flow that will be diverted from the stream.

Waste Water
If applicable, provide the reduction in amount of treated waste water discharged in cubic feet per second.

Will this change involve water provided by a water service contract which prohibits your exclusive right to this treated waste water? ◯ Yes ◯ No

Will any legal user of the treated waste water discharged be affected? ◯ Yes ◯ No

General Information – For all Petitions, provide the following information, if applicable to your proposed change(s).

Will any current Point of Diversion, Point of Storage, or Place of Use be abandoned? ◯ Yes ◉ No

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If by lease or agreement, state name and address of person(s) from whom access has been obtained.

Give name and address of any person(s) taking water from the stream between the present point of diversion or rediversion and the proposed point of diversion or rediversion, as well as any other person(s) known to you who may be affected by the proposed change.

All Water Right Holders Must Sign This Form: I (we) declare under penalty of perjury that this change does not involve an increase in the amount of the appropriation or the season of diversion, and that the above is true and correct to the best of my (our) knowledge and belief. Dated 4/21/15 at Santa Rosa, CA .

Pamela Jane
Water Right Holder or Authorized Agent Signature

Water Right Holder or Authorized Agent Signature

NOTE: All petitions must be accompanied by:
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Please indicate County where your project is located here:

Sonoma / Mendo.

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☐ **Purpose of Use** Wat. Code, § 1701

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☐ **Instream Flow Dedication** Wat. Code, § 1707
☐ **Waste Water** Wat. Code, § 1211

☐ **Split** Cal. Code Regs., tit. 23, § 836
☐ **Terms or Conditions** Cal. Code Regs., tit. 23, § 791(e)
☐ **Other**

Application 15737 Permit 12950 License Statement

I (we) hereby petition for change(s) noted above and described as follows:

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Present:

Proposed:

Place of Use – Identify area using Public Land Survey System descriptions to ¼-¼ level; for irrigation, list number of acres irrigated.

Present:

Proposed:

Purpose of Use

Present:

Proposed:

Split

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Present:

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Water Right Holder or Authorized Agent Signature

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☐ **Split** Cal. Code Regs., tit. 23, § 836 ☐ **Terms or Conditions** Cal. Code Regs., tit. 23, § 791(e) ☐ **Other**

Application 19351 Permit 16596 License Statement

I (we) hereby petition for change(s) noted above and described as follows:

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Present:

Proposed:

Place of Use – Identify area using Public Land Survey System descriptions to ¼-¼ level; for irrigation, list number of acres irrigated.

Present:

Proposed:

Purpose of Use

Present:

Proposed:

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Pamela Jeane
Water Right Holder or Authorized Agent Signature

Water Right Holder or Authorized Agent Signature

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ATTACHMENT 1

DESCRIPTION OF APRIL 2015 TEMPORARY URGENCY CHANGE PETITION REQUEST

The Sonoma County Water Agency requests that the State Water Resources Control Board make the following temporary changes to the Decision 1610 (D-1610) instream flow requirements for the period of 180 days from May 1, 2015 through October 27, 2015: (a) reduce the required D-1610 minimum instream flow in the Russian River from the confluence of the East and West Forks to the river's confluence with Dry Creek (Upper Russian River) from 185 cfs to 75 cfs; and (b) reduce required D-1610 minimum instream flow in the Russian River from its confluence with Dry Creek to the Pacific Ocean (Lower Russian River) from 125 cfs to 85 cfs.

To improve its efforts in optimally managing flows in the Russian River, the Water Agency requests that the minimum instream flow requirements be implemented on a 5-day running average of average daily stream flow measurements with instantaneous flows on the Upper Russian River being no less than 65 cfs and on the Lower Russian River being no less than 75 cfs.

April 2015

Sonoma County Water Agency

Supplement to the April 2015 Temporary Urgency Change Petition

1.0 BACKGROUND

The Sonoma County Water Agency (Water Agency) controls and coordinates water supply releases from Lake Mendocino and Lake Sonoma to implement the minimum instream flow requirements in water rights Decision 1610, which the State Water Resources Control Board (State Water Board) adopted on April 17, 1986. Decision 1610 specifies minimum flow requirements for the Upper Russian River, Dry Creek and the Lower Russian River. These minimum flow requirements vary based on water supply conditions, which are also specified in Decision 1610. The Decision 1610 requirements for the Upper Russian River and Lower Russian River are contained in term 20 of the Water Agency's water-right Permit 12947A (Application 12919A). The Decision 1610 requirements for the Lower Russian River are contained in term 17 of the Water Agency's water-right Permit 12949 (Application 15736) and term 17 of the Water Agency's water-right Permit 12950 (Application 15737). The Decision 1610 requirements for Dry Creek and the Lower Russian River are contained in term 13 of the Water Agency's water-right Permit 16596 (Application 19351).

The Water Agency's operations are also subject to the Russian River Biological Opinion issued by the National Marine Fisheries Service on September 24, 2008.

1.1 Minimum Flow Requirements

Decision 1610 requires a minimum flow of 25 cubic feet per second (cfs) in the East Fork of the Russian River from Coyote Valley Dam to the confluence with the West Fork of the Russian River under all water supply conditions. From this point to Dry Creek, the Decision 1610 required minimum Russian River flows are 185 cfs from April through August and 150 cfs from September through March during *Normal* water supply conditions, 75 cfs during *Dry* conditions and 25 cfs during *Critical* conditions. Decision 1610 further specifies two variations of the *Normal* water supply condition, commonly known as *Dry Spring 1* and *Dry Spring 2*. These conditions provide for lower required minimum flows in the Upper Russian River during times when the combined storage in Lake Pillsbury (owned and operated by the Pacific Gas and Electric Company) and Lake

Mendocino on May 31 is unusually low. *Dry Spring 1* conditions exist if the combined storage in Lake Pillsbury and Lake Mendocino is less than 150,000 acre-feet on May 31. Under *Dry Spring 1* conditions, the required minimum flow in the Upper Russian River between the confluence of the East Fork and West Fork and Healdsburg is 150 cfs from June through March, with a reduction to 75 cfs during October through December if Lake Mendocino storage is less than 30,000 acre-feet during those months. *Dry Spring 2* conditions exist if the combined storage in Lake Pillsbury and Lake Mendocino is less than 130,000 acre-feet on May 31. Under *Dry Spring 2* conditions, the required minimum flows in the Upper Russian River are 75 cfs from June through December and 150 cfs from January through March.

From Dry Creek to the Pacific Ocean, the required minimum flows in the Lower Russian River are 125 cfs during *Normal* water supply conditions, 85 cfs during *Dry* conditions and 35 cfs during *Critical* conditions.

In Dry Creek below Warm Springs Dam, the required minimum flows are 75 cfs from January through April, 80 cfs from May through October and 105 cfs in November and December during *Normal* water supply conditions. During *Dry* and *Critical* conditions, these required minimum flows are 25 cfs from April through October and 75 cfs from November through March.

Figure 1 shows all of the required minimum instream flows specified in Decision 1610 by river reach, gaging stations used to monitor compliance, and criteria for the various water supply conditions.

1.2 Water Supply Conditions

There are three main water supply conditions that are defined in Decision 1610, which set the minimum instream flow requirements based on the hydrologic conditions for the Russian River system. These water supply conditions are determined based on criteria for the calculated cumulative inflow into Lake Pillsbury from October 1 to the first day of each month from January to June. Decision 1610 defines cumulative inflow for Lake Pillsbury as the algebraic sum of releases from Lake Pillsbury, change in storage and lake evaporation.

Dry water supply conditions exist when cumulative inflow to Lake Pillsbury from October 1 to the date specified below is less than:

- 8,000 acre-feet as of January 1;
- 39,200 acre-feet as of February 1;
- 65,700 acre-feet as of March 1;

- 114,500 acre-feet as of April 1;
- 145,600 acre-feet as of May 1; and
- 160,000 acre-feet as of June 1.

Critical water supply conditions exist when cumulative inflow to Lake Pillsbury from October 1 to the date specified below is less than:

- 4,000 acre-feet as of January 1:
- 20,000 acre-feet as of February 1;
- 45,000 acre-feet as of March 1;
- 50,000 acre-feet as of April 1;
- 70,000 acre-feet as of May 1; and
- 75,000 acre-feet as of June 1.

Normal water supply conditions exist whenever a *Dry* or *Critical* water supply condition is not present. As indicated above, Decision 1610 further specifies three variations of the *Normal* water supply condition based on the combined storage in Lake Pillsbury and Lake Mendocino on May 31. These three variations of the *Normal* water supply condition determine the required minimum instream flows for the Upper Russian River from the confluence of the East Fork and the West Fork to the Russian River's confluence with Dry Creek. This provision of Decision 1610 does not provide for any changes in the required minimum instream flows in Dry Creek or the Lower Russian River (the Russian River between its confluence with Dry Creek and the Pacific Ocean). A summary of the required minimum flows in the Russian River for *Normal*, *Normal — Dry Spring 1* and *Normal — Dry Spring 2* water supply conditions is provided here:

1. *Normal*: When the combined water in storage in Lake Pillsbury and Lake Mendocino on May 31 of any year exceeds 150,000 acre-feet or 90 percent of the estimated water supply storage capacity of the reservoirs, whichever is less:

From June 1 through August 31	185 cfs
From September 1 through March 31	150 cfs
From April 1 through May 31	185 cfs

2. *Normal-Dry Spring 1*: When the combined water in storage in Lake Pillsbury and Lake Mendocino on May 31 of any year is between 150,000 acre-feet or 90 percent of the estimated water supply storage capacity of the reservoirs, which ever is less,

and 130,000 acre-feet or 80 percent or the estimated water supply storage capacity of the reservoirs, whichever is less:

From June 1 through March 31	150 cfs
From April 1 through May 31	185 cfs
If from October 1 through December 31, storage in Lake Mendocino is less than 30,000 acre-feet	75 cfs

3. *Normal-Dry Spring 2*: When the combined water in storage in Lake Pillsbury and Lake Mendocino on May 31 of any year is less than 130,000 acre-feet or 80 percent of the estimated water supply storage capacity of the reservoirs, which ever is less:

From June 1 through December 31	75 cfs
From January 1 through March 31	150 cfs
From April 1 through May 31	185 cfs

2.0 CURRENT WATER SUPPLY CONDITION

From October 1, 2014 to April 19, 2015, the cumulative inflow into Lake Pillsbury was 170,019 acre-feet (AF). Consequently, the Decision 1610 water supply condition is categorized as *Normal* for the remainder of the year. Based on these criteria, the Decision 1610 required minimum instream flows in the Upper Russian River (will be 185 cfs between April 1 and May 31. The required minimum in-stream flows starting June 1 will be determined based on the combined storage of Lake Pillsbury and Lake Mendocino on May 31. At this time, the projected combined storage amount is difficult to predict because it is heavily dependent on late spring precipitation. However, based on the current hydrologic trends, the Water Agency anticipates *Normal-Dry Spring 2* water supply conditions starting June 1. Consequently, the Decision 1610 required minimum instream flows in the Upper Russian River will likely be 75 cfs and on the Lower Russian River 125 cfs.

2.1 Lake Mendocino

As of April 21, 2015 the water supply storage level in Lake Mendocino was 60,273 AF. This storage level is 62 percent of the available water conservation pool. The below normal storage level is a result of the unusually low rainfall in the region since January of

this year. Precipitation records for Ukiah indicate 7.15 inches of rainfall in the area since January 1st, which is just 35 percent of the average for this period based on records going back to 1952. In addition, Eel River transfers through the Potter Valley Project (PVP) were significantly reduced between November 15, 2014 and February 28, 2015 due to an emergency project by Pacific Gas & Electric (PG&E) to replace the penstock shutoff valves. During the term of this emergency project, PG&E operated under a variance of their Federal Energy Regulatory Commission (FERC) license which reduced minimum instream flow requirements in the East Fork of the Russian River from 35 cfs to 20 cfs. There were many periods during which PG&E could have operated the Potter Valley Project at up to 300 cfs to generate power, if the emergency repair project had not been occurring. Based on an analysis provided by PG&E, an additional 13,100 AF would have been transferred through PVP into the East Fork of the Russian River if the emergency repair project had not been occurring. Figure 2 shows the average annual cumulative diversion through PVP from 2006 to 2014 and cumulative diversion that has occurred during 2015. As shown in the figure, diversions through PVP in 2015 have been significantly below the annual average of 2006 to 2014.

A water supply analysis recently prepared by Water Agency engineering staff indicates that without significant storm events between now and early fall, the storage levels in Lake Mendocino will decline to below 30,000 AF by October 1 due to releases to meet downstream water demands and the anticipated minimum instream flow requirements on the Russian River. The analysis assumes a water supply condition of *Normal- Dry Spring 2*, which Decision 1610 specifies requirements for minimum in-stream flows in the Upper Russian River of 185 cfs from April 1 through May 31 and 75 cfs from June 1 through December 31. Furthermore, the analysis used to calculate the projected Lake Mendocino storage was completed using the Water Agency's Russian River simulation model with the following assumptions: (1) Decision 1610 minimum instream flow requirements; (2) 2013 hydrology; (3) current Russian River system losses; and (4) PVP operations based on the 2004 amended license issued by the FERC. Figure 3 shows the Lake Mendocino storage levels that have occurred so far during 2015 and the storage levels that are projected to occur during the remainder of 2015 if the Decision 1610 minimum instream flow requirements are not changed.

The low projected storage level in Lake Mendocino could: (a) severely impact Russian River fish species that are listed as threatened species under the Federal Endangered Species Act (ESA), (b) create more serious water-supply impacts in Mendocino County and the Alexander Valley in Sonoma County, and (c) further harm Lake Mendocino and Russian River recreation.

2.2 Lake Sonoma

As of April 21, 2015 the water supply storage level in Lake Sonoma was 214,014 AF. This storage level is 87 percent of the available water conservation pool. This storage level is

slightly below normal for this time of year. However, the much larger water supply pool of Lake Sonoma provides multiple years of carryover storage. Consequently, no changes to the minimum instream flow requirements in Dry Creek are being requested in this petition.

2.3 River System Operational Constraints

As discussed in Section 3.0 below, along with requesting changes to minimum instream flow requirements for the Upper Russian River, the Water Agency is also requesting changes to the minimum instream flow requirements for the Lower Russian River. These changes are necessary because implementation of the lower minimum instream flow requirements that are being requested for the Upper Russian River, which are necessary to preserve Lake Mendocino storage, will result in the Upper Russian River providing significantly lower contributions of flows to meet minimum instream flow requirements for the Lower Russian River. Consequently, increased releases from Lake Sonoma into Dry Creek would be necessary to maintain present Decision 1610 minimum instream flow requirement (125 cfs) for the lower river. However, such increased releases into Dry Creek would likely result in the Water Agency's violating the Incidental Take Statement in the Russian River Biological Opinion issued by the National Marine Fisheries Service (NMFS)[1]. The Incidental Take Statement restricts releases from Lake Sonoma into Dry Creek during June through October of each year because high flows in Dry Creek during these months result in sub-optimal habitat conditions for juvenile salmonids.

Furthermore, NMFS concluded in the Biological Opinion that flows lower than those required by Decision 1610 for the Lower Russian River may improve opportunities in the Russian River estuary to maintain a freshwater lagoon, which is beneficial for the ESA-listed salmonids and their critical habitats. Consequently, lowering minimum instream flows on the Lower Russian River is consistent with the objectives of the Biological Opinion.

3.0 REQUESTED TEMPORARY URGENCY CHANGE TO PERMITS 12947A, 12949, 12950 AND 16596

To preserve the drought-limited water supply in Lake Mendocino and to avoid excessively high releases from Lake Sonoma down Dry Creek that could result in

[1] See *Biological Opinion for Water Supply, Flood Control Operations and Channel Maintenance conducted by U.S. Army Corps of Engineers, the Sonoma County Water Agency and the Mendocino County Russian River Flood Control and Water Conservation Improvement District in the Russian River Watershed*, pp. 297-299 (NMFS, Sept. 24, 2008) for details on the incidental take statement and criteria.

violations to the Incidental Take Statement in the Biological Opinion, the Water Agency is filing this Temporary Urgency Change Petition (TUCP), which requests that the State Water Board make the following changes to the Water Agency's permits for a period of 180 days from May 1, 2015 until October 27, 2015: (1) reduce the required minimum instream flow in the Russian River from the confluence of the East and West Forks to the river's confluence with Dry Creek from 185 cfs to 75 cfs for May 1 to October 27; and (2) reduce required minimum instream flow in the Russian River from its confluence with Dry Creek to the Pacific Ocean from 125 cfs to 85 cfs for May 1 to October 27.

To allow the Water Agency to optimally manage flows in the Upper Russian River and Lower Russian River, the Water Agency is requesting that the TUCP minimum instream flow requirements be specified as 5-day running averages of average daily stream flow measurements, with the conditions that instantaneous flows in the Upper Russian River are not less than 65 cfs and instantaneous flows in the Lower Russian River are not less than 75 cfs. These 5-day running average provisions will allow the Water Agency to reduce the operational buffers needed to manage these stream flows, thereby allowing the Water Agency to conserve more water in Lake Mendocino. Higher Lake Mendocino storage levels in the fall will benefit migrating Chinook salmon and improve carryover storage volumes to meet Upper Russian River demands into 2016 if dry conditions persist.

Figure 3 shows the Lake Mendocino storage levels that are projected to occur during the remainder of 2015 with the instream flow requirements required by D-1610 and the requested changes. As shown in Figure 3, the requested changes will preserve approximately 6,300 AF of water storage in Lake Mendocino. This will be a significant benefit if the drought continues through the 2016 water year. Furthermore, PG&E has indicated that it is planning to file another request for variance with FERC to reduce the Potter Valley Project's minimum instream flow requirements for the Russian River watershed from November 2015 to March 2016 to perform additional repairs to the PVP penstocks. Consequently, water transfers from the Eel River to the East Fork of the Russian River through PVP will be significantly reduced again this year, making Lake Mendocino more reliant on carryover storage and inflow from storm events from its own watershed to fill during the 2016 water year.

4.0 CRITERIA FOR APPROVING TEMPORARY UNGENCY CHANGE TO PERMITS 12947A, 12949, 12950, 16596

As required by Water Code section 1435, subdivision (b), the Board must make the following findings before issuing a temporary change order:

1. The permittee or licensee has an urgent need to make the proposed change;

2. The proposed change may be made without injury to any other lawful user of water;
3. The proposed change may be made without unreasonable effect upon fish, wildlife, or other instream beneficial uses; and
4. The proposed change is in the public interest.

4.1 Urgency of the Proposed Change

Under Water Code section 1435, subdivision (c), an urgent need to make a proposed change exists when the State Water Board concludes that the proposed temporary change is necessary to further the constitutional policy that the water resources of the State be put to beneficial use to the fullest extent of which they are capable and that waste of water be prevented.

In this case, an urgent need for the requested flow changes exists because Lake Mendocino storage levels are very low for this time of year. The Water Agency projects that water storage in Lake Mendocino could decline to below 30,000 AF by October 1, 2015 unless the requested temporary urgency changes are approved. Water supplies sufficient to support survival of listed Russian River salmonid fisheries, agricultural and municipal use, and recreation are at risk. Without the proposed changes, the Water Agency would need to release additional stored water from Lake Mendocino, which would significantly deplete storage and result in very limited water supplies for water users in Mendocino County and northern Sonoma County (above the confluence with Dry Creek) during the fall, which would cause serious impacts to human health and welfare, and reduce water supplies needed for fishery protection and stable flows in the Upper Russian River during the fall when spawning state- and federally-listed fish species are most sensitive to flow and water temperatures. Furthermore, if the upcoming Water Year 2016 is a dry year, carryover storage in Lake Mendocino from 2015 will be crucial for the continued recovery of the Russian River salmonid fishery and the water supply reliability through 2016.

An urgent need exists for the proposed changes on the Lower Russian River because the Water Agency will violate the Incidental Take Statement contained in the Biological Opinion unless the requested temporary urgency change is approved. Furthermore, NMFS concluded in the Biological Opinion that minimum instream flows lower than those required by Decision 1610 may result in flows into the estuary that improve opportunities to maintain a freshwater lagoon while preventing flooding of adjacent properties.

The Water Agency predicts that, without the proposed change, Lake Mendocino would be drawn down to storage levels that would jeopardize the Water Agency's ability to release water to the Russian River. In this event, water supplies for domestic and municipal uses of Russian River water would be severely impaired. The purpose of this order is, in part, to prevent Lake Mendocino storage from dropping below 30,000 AF . The Water Agency's

forecasts indicate that Lake Mendocino storage will drop below 30,000 AF by October 1 unless the Temporary Urgency Change Petition is approved. For the reasons stated above, an urgent need for the proposed changes exists.

4.2 No Injury to Any Other Lawful User of Water

If this petition is granted, the Water Agency still will be required to maintain specific minimum flows in the Russian River. Because these minimum flows will be present, all other legal users of water still will be able to divert and use the amounts of water that they may legally divert and use. Moreover, approval to implement the reduced instream flow will result improved water supply storage in Lake Mendocino, which in turn could result in water supply benefits to entitled users of water downstream of Lake Mendocino later in the year. Accordingly, granting this petition will not result in any injury to any other lawful user of water.

4.3 No Unreasonable Effect upon Fish, Wildlife, or Other Instream Beneficial Uses

Although flows in the main stem Russian River will be reduced if this petition is approved, conservation of water in Lake Mendocino will allow enhanced management of flows in early fall for the benefit of salmon migration and spawning. It is possible that reduced flows in the Russian River may impair some instream beneficial uses, principally recreation uses. Although some recreation uses may be affected by these reduced flows, such effects will not be unreasonable, considering the potential impacts to fisheries, water supply and recreation in Lake Mendocino and the loss of juvenile salmonid habitat in Dry Creek that could occur if the petition were not approved.

4.4 The Proposed Change is in the Public Interest

Approval of this petition will help conserve stored water in Lake Mendocino so that it can be released for listed Russian River salmonid fisheries present in the Russian River during the fall Chinook salmon migration season. In addition, approval of this petition will help preserve storage in Lake Mendocino as a precaution in case 2016 also is a dry water year. Furthermore, the preserved storage will help mitigate the significantly reduced transfers of Eel River water into the East Fork of the Russian River due to scheduled repair activities of the PVP penstocks between November 2015 and March 2016. It is in the public interest to preserve water supplies for these beneficial uses when hydrologic circumstances cause severe reductions to water supplies.

5.0 WATER CONSERVATION ACTIVITIES

The Water Agency's water contractors are committed to eliminating unnecessary use of potable water for landscape irrigation and other waste. The Water Agency and its water

contractors continue to implement water use efficiency programs that align with the California Urban Water Conservation Council's Best Management Practices (BMPs) and comply with SB 7x-7. While these BMPs remain the baseline for the region, the establishment of the Sonoma-Marin Water Saving Partnership (Partnership) in December 2010 memorialized the region's commitment to long-term, year-round water use efficiencies. The Partnership removes one of the most significant barriers to implementing conservation programs, funding. Each Partner has committed to a sustained level of funding that is allocated specifically to implementing conservation programs.

The Partnership represents ten water utilities in the North Bay in Sonoma and Marin counties that have joined together to provide regional solutions for water use efficiency. The utilities (Partners) include: the Cities of Santa Rosa, Rohnert Park, Petaluma, Sonoma, Cotati, North Marin, Valley of the Moon and Marin Municipal Water Districts, the Town of Windsor and the Sonoma County Water Agency. The Partnership was formed to identify and recommend water use efficiency projects and to maximize the cost-effectiveness of water use efficiency programs in our region.

Each Partner is continuously implementing water conservation programs to reduce overall regional water use. Over the last few years, in response to the drought, the Partnership has increased outreach, revised education programs and expanded the available conservation incentives.

At the onset of the drought in 2013, the Partnership doubled its annual public education campaign to encourage residents to voluntarily reduce water consumption. The Partnership launched the "20-Gallon Challenge" campaign to increase awareness of the water supply situation and as a call to action. The campaign featured a pledge to save 20 gallons per person per day. As an incentive to pledge, entries for monthly prize drawings for high-efficiency toilets and clothes washers, rainwater catchment and gray water systems, and custom water-wise landscape designs were provided. Pledges and contest entries were accepted from participants throughout the Russian River Watershed to encourage water users in both Upper Russian River and Lower Russian River areas to participate in the challenge.

In January 2014, in response to Governor Brown's emergency drought proclamation, the Partnership launched a regional multi-media effort throughout the North Bay region with a simple message: 'There's a drought on. Turn the water off.' The campaign has included: (1) outdoor water conservation tips that have been rotated in local and regional publications; and (2) advertisements on local radio stations and online media. Each advertisement spotlights a creative or humorous method for saving water. The Water Agency sponsored four drought town hall meetings in Sonoma County in April 2014 to educate the public about the drought and the need to conserve water. The meetings were held in Santa Rosa, Rohnert Park, Windsor and Petaluma. Water managers, officials from the County's Permit and Resources Management Department and Office of Emergency

Services attended each meeting to provide drought information relevant to rural residents and fire prevention.

On April 23, 2014 the Water Agency sponsored ten "Drought Drive-Up" locations in coordination with the Partnership. Over 5,100 free drought tool kits were distributed, which included: (1) water efficient faucet aerators; (2) toilet dye tab tests; (3) shower timers; (4) shower buckets; (5) low-flow showerheads; and (6) conservation tip cards. All participants in the "Drought Drive-Up" were also entered in a drawing to win a free high-efficiency toilet or high-efficiency washing machine.

The Partnership's outreach efforts have improved water-use efficiencies in the region and the Water Agency remains committed to ensuring that our water supply is reliable. The Partners remain members in good standing with the California Urban Water Conservation Council (CUWCC) and implement the CUWCC's Best Management Practices (BMPs) for water conservation.

On July 15, 2014, the State Water Board adopted Resolution No. 2014-0038 that implemented an emergency regulation for statewide urban water conservation. All of the Water Agency's primary water customers implemented their water shortage contingency plans to the level of mandatory restrictions on outdoor irrigation and submitted monthly monitoring reports. Figure 4 highlights the reduction in regional water demands achieved in 2014 on a per capita basis by the Partnership compared to previous years back to 2000.

In response to the March 17, 2015 State Water Board Resolution 2015-0013, the Partners have initiated a plan to adopt a regional watering limitation across the Water Agency's service area. In addition, discussions with the Sonoma County Tourism Bureau have been scheduled. The Water Agency plans to work with the Tourism Bureau to ensure all hospitality venues are aware of the hotel linen/towel requirement included in the State Water Board's emergency regulations.

An initiative that was started last year to only serve water upon request in restaurants has been continued in our local service area. The Partnership has an online form available for restaurants to request table tents, static cling stickers and standard stickers promoting "Water available upon request." The Partnership distributed over 500 table tents in the last year.

The Partnership's new campaign will build on the prior year's slogan of "There's a Drought on. Turn the Water off." To recognize the significant water reductions in our region, the new campaign will be "There's never enough to waste. Turn the Water off." Our initial campaign launch will focus on limiting irrigation to appropriate hours, locally appropriate/sustainable landscapes, eliminating runoff, and limiting shower times. These ads will be part of our multi-media campaign which includes print, web, banners, and event outreach.

In light of the Governor's Executive Order B-29-15 issued on April 1, 2015, the Partnership is expediting the campaign launch and awaiting further direction from the State Water Board on implementing the mandate. The Partners and the Water Agency will comply with all the mandates required to get the state through this drought year, including extensive reporting.

To promote water savings that extend beyond the Water Agency's service area, the Water Agency has spearheaded the Sonoma-Mendocino Immediate Drought Relief Project (Project), a demand reduction program that includes many entities in the Upper Russian River, in areas that have lacked aggressive water conservation programs in the past. The Project has been awarded over $1 million of Prop 84 Drought funding to ensure long-term water savings to the following participating agencies: 12th District Agricultural Agency (Redwood Empire Fairgrounds), Airport-Larkfield-Wikiup Sanitation Zone, Belmont Terrace Mutual Water Company, City of Cloverdale, City of Healdsburg, City of Ukiah, County of Sonoma - Department of Transportation and Public Works, City of Fort Bragg, Geyserville Sanitation Zone, Mendocino County Russian River Flood Control and Water Conservation Improvement District, Occidental County Sanitation District, Redwood Valley County Water District, Russian River County Sanitation District, Sea Ranch Sanitation Zone, Sonoma County Water Agency, and Sweetwater Springs Water District.

On June 2, 2014, the CA Department of Water Resources (DWR) released an expedited 2014 Integrated Regional Water Management Drought Grant Solicitation seeking projects that would provide immediate, measurable water savings. The Water Agency submitted a grant proposal for the Sonoma-Mendocino Immediate Drought Relief Project, which was recommended for $1.05 million in grant funds. The participating agencies and Water Agency have committed to provide $630,000 in local matching funds, raising the possible total funding to $1.68 million. DWR anticipates approving grant awards for this drought program in June 2015.

Since November 2014, approximately 200 toilets have been installed through the Project, despite the lag in State funding. The Project has the potential to increase regional water use efficiency and drought resilience in the region for years to come. The Project will reduce demands for water from Lake Mendocino and local groundwater supplies. The participating agencies have the option of offering one or both of the following water-saving programs to their customers:

1) High-Efficiency Fixture Direct-Install Program, which will retrofit up to two inefficient toilets per customer with new high-efficiency toilets. During the installation appointment, the Water Agency-hired plumber will also replace inefficient showerheads and aerators with free, water-efficient models and perform a leak check at the water meter. For commercial properties, in addition to toilets, inefficient urinals will be retrofitted with 0.125 gallon per flush high-efficiency urinals; and

2) Cash for Grass Turf Rebate Program, which will offer a $0.50/sq. ft. rebate for converting high-water-use turf to low-water-use plant material (up to max of 500 sq. ft or $250 per customer).

The Water Agency has managed a Direct Install program in its service area for five years. The Water Agency has already established the needed program elements (agreements with local plumbers, billings procedures, etc.) that will be utilized for this new program.

Through the Project, participating agencies will be set up to transition into self-managed ongoing conservation programs. The High-Efficiency Fixture Direct-Install Program reduces base demands addressing approximately 75% of the total indoor residential water use (showers: 20%, faucets: 18%, toilets: 20%, leaks: 18%) by improving fixture efficiency and identifying leaks. The Cash for Grass program addresses 50% of the total water use by homes and directly reduces peak water demands.

6.0 SPECIAL TERMS

6.1 Diversion Forecast Reporting

Last summer, the contractors of the Mendocino County Russian River Flood Control & Water Conservation Improvement District (District) provided diversion forecasts to the Water Agency to improve coordination of changes in Lake Mendocino storage releases with changes in diversions from the Upper Russian River. The diversion forecast reporting was a requirement of the August 25, 2014 State Water Board Order approving a Temporary Urgency Change Petition filed by the District on August 8, 2014. These diversion forecast reports provided the Water Agency with a 72-hour forecast of diversions, which improved information for the river operations decision-making process. The Water Agency used the information submitted to issue daily diversion forecast reports each morning for the various reaches of the Upper Russian River. An improved understanding of the river flow variations allowed the Water Agency operators to assess the situational conditions and respond appropriately. The Water Agency requests that the State Water Board direct the Water Agency to ask the District to provide the Water Agency with similar diversion forecasts for all of its contractors' water uses during the upcoming irrigation season.

6.2 Water Conservation

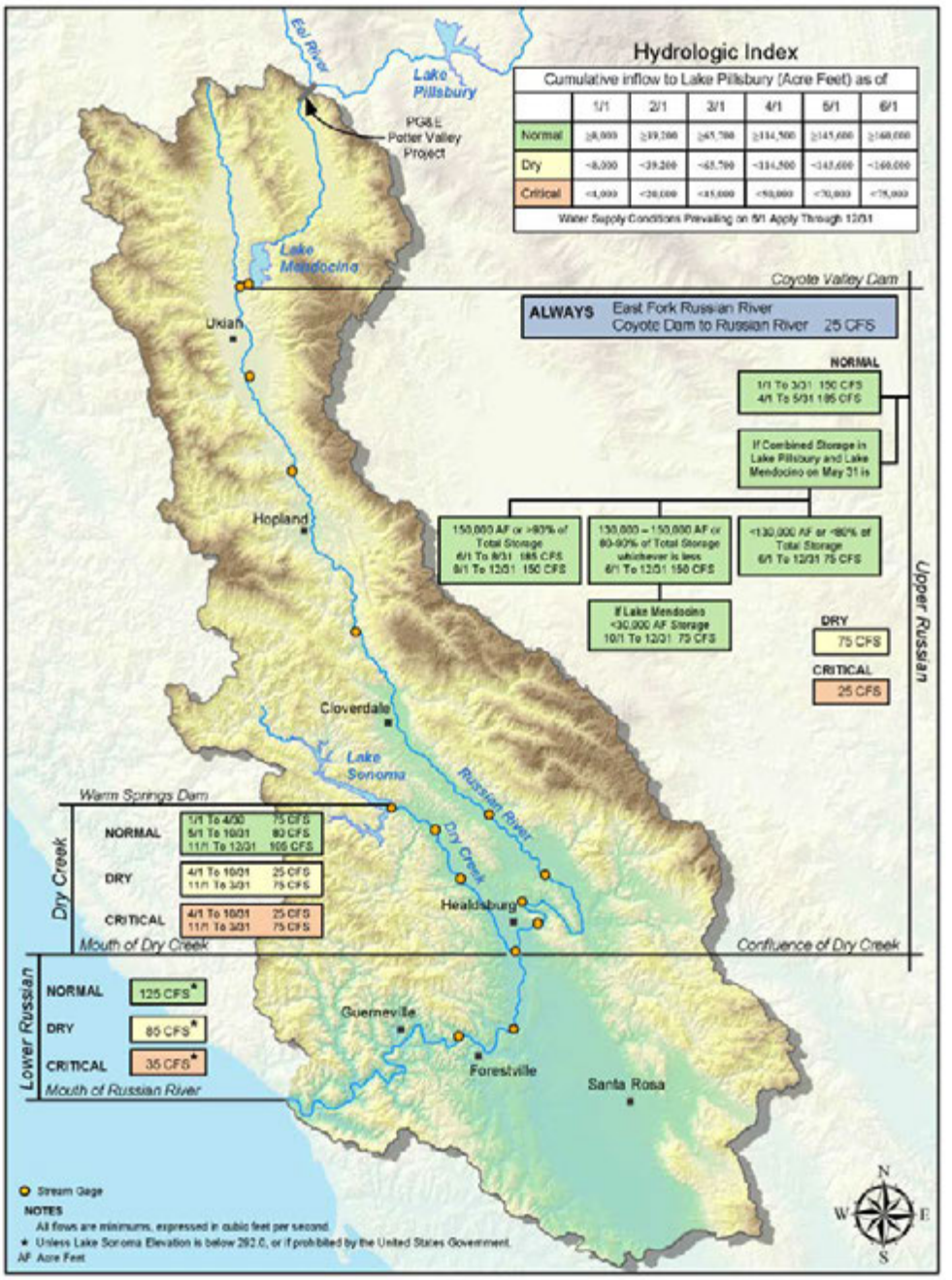
The State Water Board has proposed a regulatory framework for implementation of the required 25 percent potable urban water savings called for in the Governor's April 1, 2015 Executive Order. The Water Agency and its customers will comply with the State Water

Board regulations that will implement the Executive Order. Consequently, the Water Agency requests that no additional conservation or conservation reporting requirements be included in the terms in the order on this Petition.

7.0 CONCLUSION

The Water Agency is submitting this Temporary Urgency Change Petition to address the dry conditions that have persisted since January 2013. Under these conditions, and given the uncertainty of regional precipitation over the next several months, the Water Agency requests that the State Water Board issue an order reducing the applicable minimum instream flow requirements for the Upper Russian River and Lower Russian River to preserve storage in Lake Mendocino and to prevent the development of more severe storage conditions.

Figures



Russian River Basin

Figure 1 – State Water Resources Control Board Decision 1610 Minimum In-Stream Flow Requirements by Reach

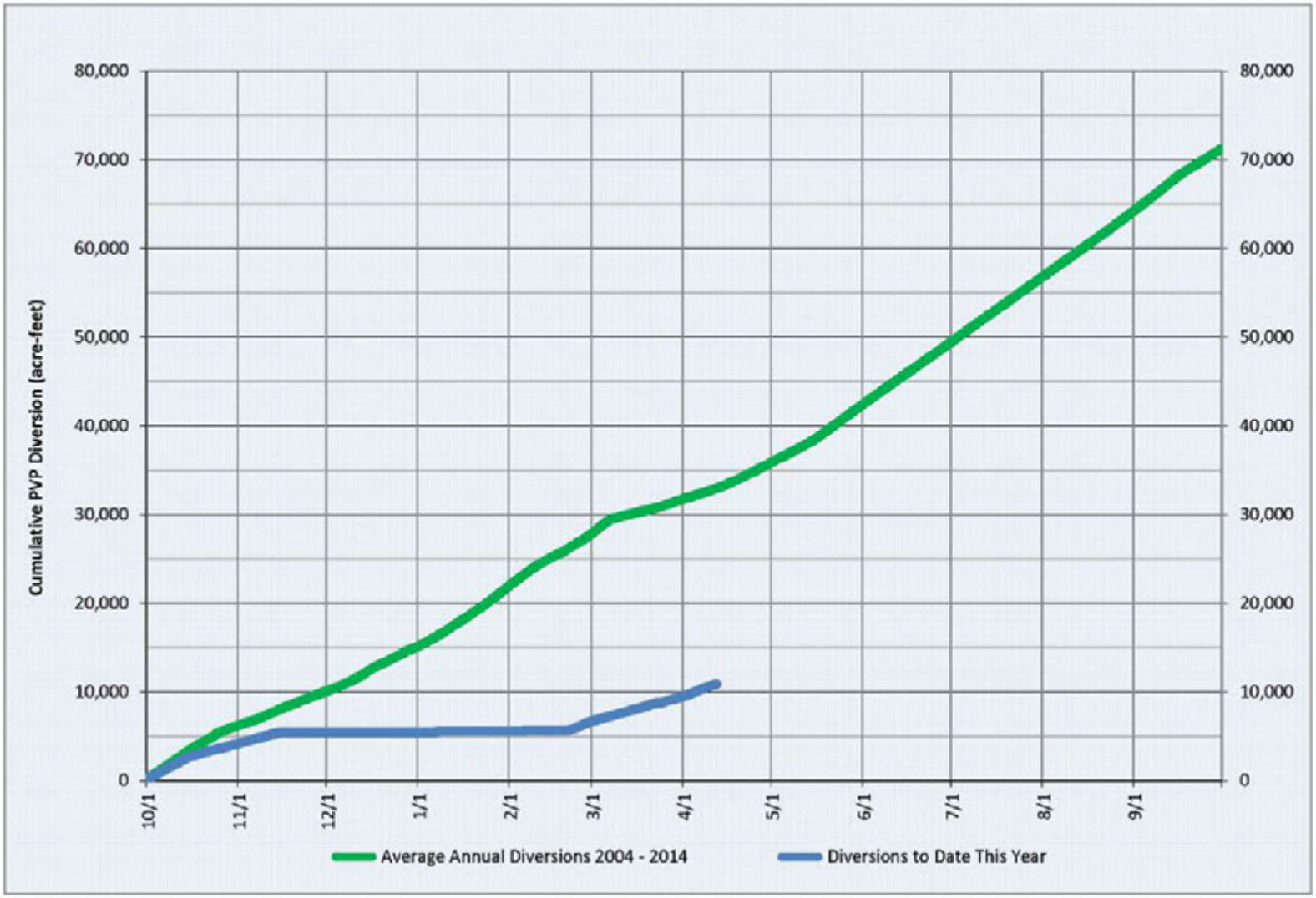


Figure 2 – Cumulative Annual Diversions through the Potter Valley Project

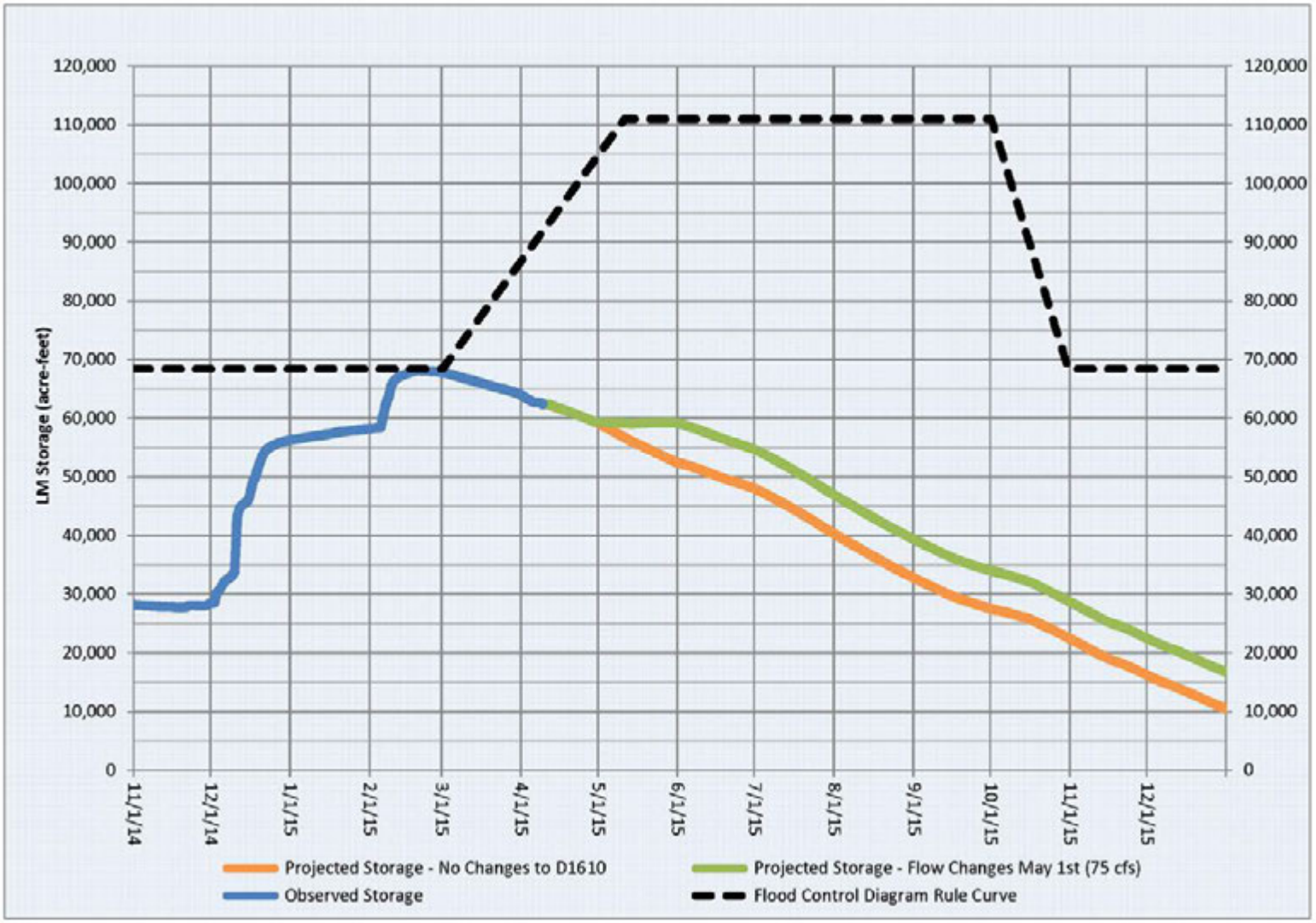


Figure 3 – Observed and Projected 2015 Lake Mendocino Storage Levels

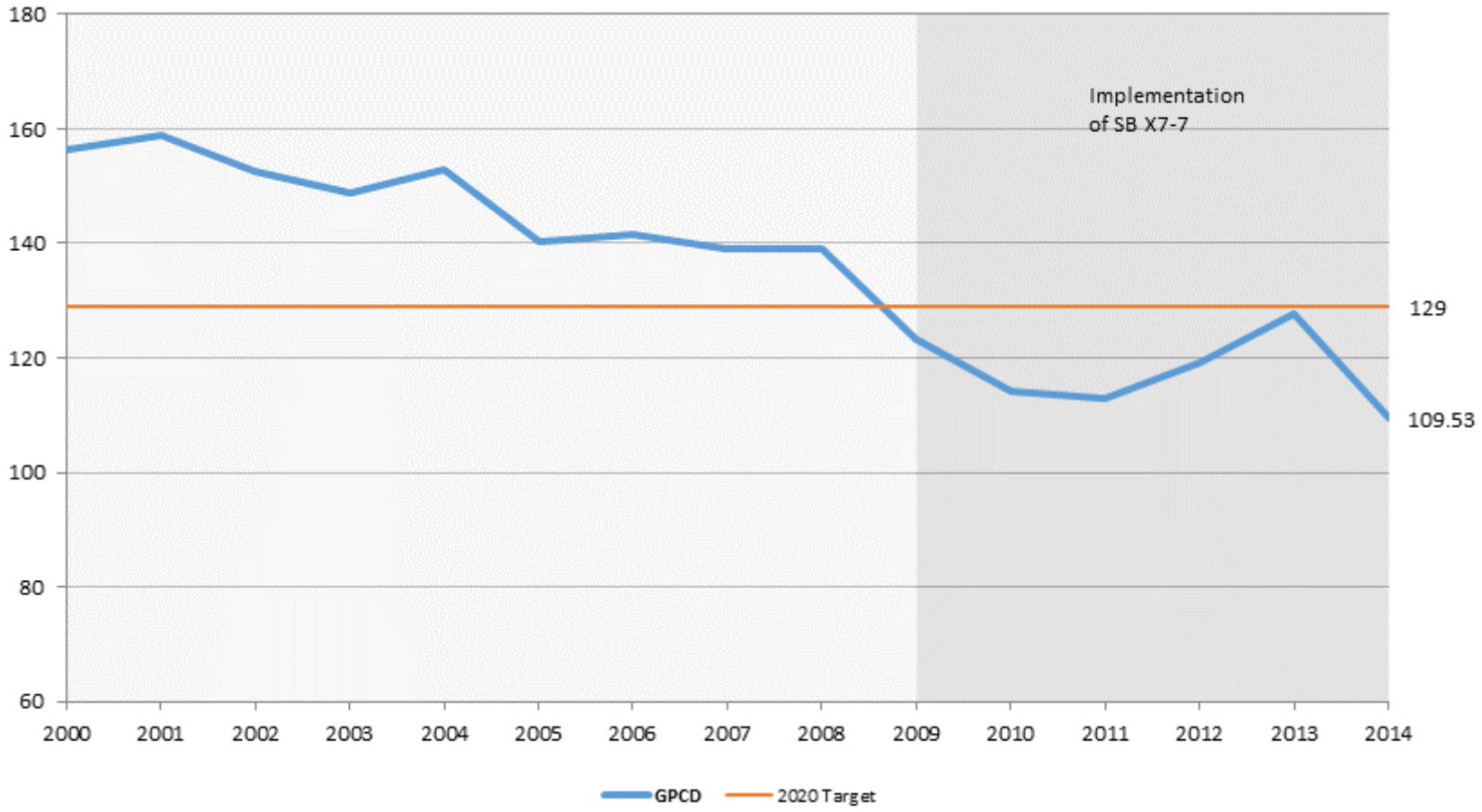


Figure 4 – Regional Per Capita Water Demands from 2000 - 2014

State of California
State Water Resources Control Board
DIVISION OF WATER RIGHTS
P.O. Box 2000, Sacramento, CA 95812-2000
Tel: (916) 341-5300 Fax: (916) 341-5400
http://www.waterboards.ca.gov/waterrights

ENVIRONMENTAL INFORMATION FOR PETITIONS

This form is required for all petitions.

Before the State Water Resources Control Board (State Water Board) can approve a petition, the State Water Board must consider the information contained in an environmental document prepared in compliance with the California Environmental Quality Act (CEQA). This form is not a CEQA document. If a CEQA document has not yet been prepared, a determination must be made of who is responsible for its preparation. As the petitioner, you are responsible for all costs associated with the environmental evaluation and preparation of the required CEQA documents. Please answer the following questions to the best of your ability and submit any studies that have been conducted regarding the environmental evaluation of your project. If you need more space to completely answer the questions, please number and attach additional sheets.

DESCRIPTION OF PROPOSED CHANGES OR WORK REMAINING TO BE COMPLETED

For a petition for change, provide a description of the proposed changes to your project including, but not limited to, type of construction activity, structures existing or to be built, area to be graded or excavated, increase in water diversion and use (up to the amount authorized by the permit), changes in land use, and project operational changes, including changes in how the water will be used. For a petition for extension of time, provide a description of what work has been completed and what remains to be done. Include in your description any of the above elements that will occur during the requested extension period.

See Attachment 1 'Description of April 2015 Temporary Urgency Change Petition Request' for a summary of the requested changes.

Insert the attachment number here, if applicable: 1

Coordination with Regional Water Quality Control Board

For change petitions only, you must request consultation with the Regional Water Quality Control Board regarding the potential effects of your proposed change on water quality and other instream beneficial uses. (Cal. Code Regs., tit. 23, § 794.) In order to determine the appropriate office for consultation, see: http://www.waterboards.ca.gov/waterboards_map.shtml. Provide the date you submitted your request for consultation here, then provide the following information.

Date of Request: 4/20/2015

Will your project, during construction or operation, (1) generate waste or wastewater containing such things as sewage, industrial chemicals, metals, or agricultural chemicals, or (2) cause erosion, turbidity or sedimentation? ○ Yes ◉ No

Will a waste discharge permit be required for the project? ○ Yes ◉ No

If necessary, provide additional information below:

Request for consultation with Matt St. John, the Executive Director of the North Coast Regional Water Quality Control Board, was made on Monday, April 20, 2015 regarding the filing of this petition. The correspondence requested a meeting with Regional Board staff during the week of April 20-24, 2015.

Insert the attachment number here, if applicable:

Local Permits

For temporary transfers only, you must contact the board of supervisors for the county(ies) both for where you currently store or use water and where you propose to transfer the water. (Wat. Code § 1726.) Provide the date you submitted your request for consultation here.

Date of Contact:

For change petitions only, you should contact your local planning or public works department and provide the information below.

Person Contacted: Date of Contact:

Department: Phone Number:

County Zoning Designation:

Are any county permits required for your project? If yes, indicate type below. ○ Yes ◉ No

☐ Grading Permit ☐ Use Permit ☐ Watercourse ☐ Obstruction Permit

☐ Change of Zoning ☐ General Plan Change ☐ Other (explain below)

If applicable, have you obtained any of the permits listed above? If yes, provide copies. ○ Yes ○ No

If necessary, provide additional information below:

Insert the attachment number here, if applicable:

Federal and State Permits

Check any additional agencies that may require permits or other approvals for your project:

- ☐ Regional Water Quality Control Board
- ☐ Department of Fish and Game
- ☐ Dept of Water Resources, Division of Safety of Dams
- ☐ California Coastal Commission
- ☐ State Reclamation Board
- ☐ U.S. Army Corps of Engineers
- ☐ U.S. Forest Service
- ☐ Bureau of Land Management
- ☐ Federal Energy Regulatory Commission
- ☐ Natural Resources Conservation Service

Have you obtained any of the permits listed above? If yes, provide copies. ○ Yes ◉ No

For each agency from which a permit is required, provide the following information:

Agency	Permit Type	Person(s) Contacted	Contact Date	Phone Number

If necessary, provide additional information below:

Consultations with NOAA National Marine Fisheries Service (Robert Cooey, Lisa Van Atta, and Joseph Dillon) and CA Department of Fish & Wildlife (Eric Larson and Scott Wilson) on filing of this petition occurred in a joint meeting held on Friday April 17, 2015 at the Water Agency's Administration Building in Santa Rosa.

Insert the attachment number here, if applicable: ☐

Construction or Grading Activity

Does the project involve any construction or grading-related activity that has significantly altered or would significantly alter the bed, bank or riparian habitat of any stream or lake? ○ Yes ◉ No

If necessary, provide additional information below:

Insert the attachment number here, if applicable: ☐

Archeology

Has an archeological report been prepared for this project? If yes, provide a copy. ○ Yes ◉ No

Will another public agency be preparing an archeological report? ○ Yes ◉ No

Do you know of any archeological or historic sites in the area? If yes, explain below. ○ Yes ◉ No

If necessary, provide additional information below:

Insert the attachment number here, if applicable: ☐

Photographs

For all petitions other than time extensions, attach complete sets of color photographs, clearly dated and labeled, showing the vegetation that exists at the following three locations:

☒ Along the stream channel immediately downstream from each point of diversion

☒ Along the stream channel immediately upstream from each point of diversion

☐ At the place where water subject to this water right will be used

Maps

For all petitions other than time extensions, attach maps labeled in accordance with the regulations showing all applicable features, both present and proposed, including but not limited to: point of diversion, point of rediversion, distribution of storage reservoirs, point of discharge of treated wastewater, place of use, and location of instream flow dedication reach. (Cal. Code Regs., tit. 23, §§ 715 et seq., 794.)

Pursuant to California Code of Regulations, title 23, section 794, petitions for change submitted without maps may not be accepted.

All Water Right Holders Must Sign This Form:

I (we) hereby certify that the statements I (we) have furnished above and in the attachments are complete to the best of my (our) ability and that the facts, statements, and information presented are true and correct to the best of my (our) knowledge. Dated 4/21/15 at Santa Rosa, CA .

Pamela Deane

Water Right Holder or Authorized Agent Signature

Water Right Holder or Authorized Agent Signature

NOTE:

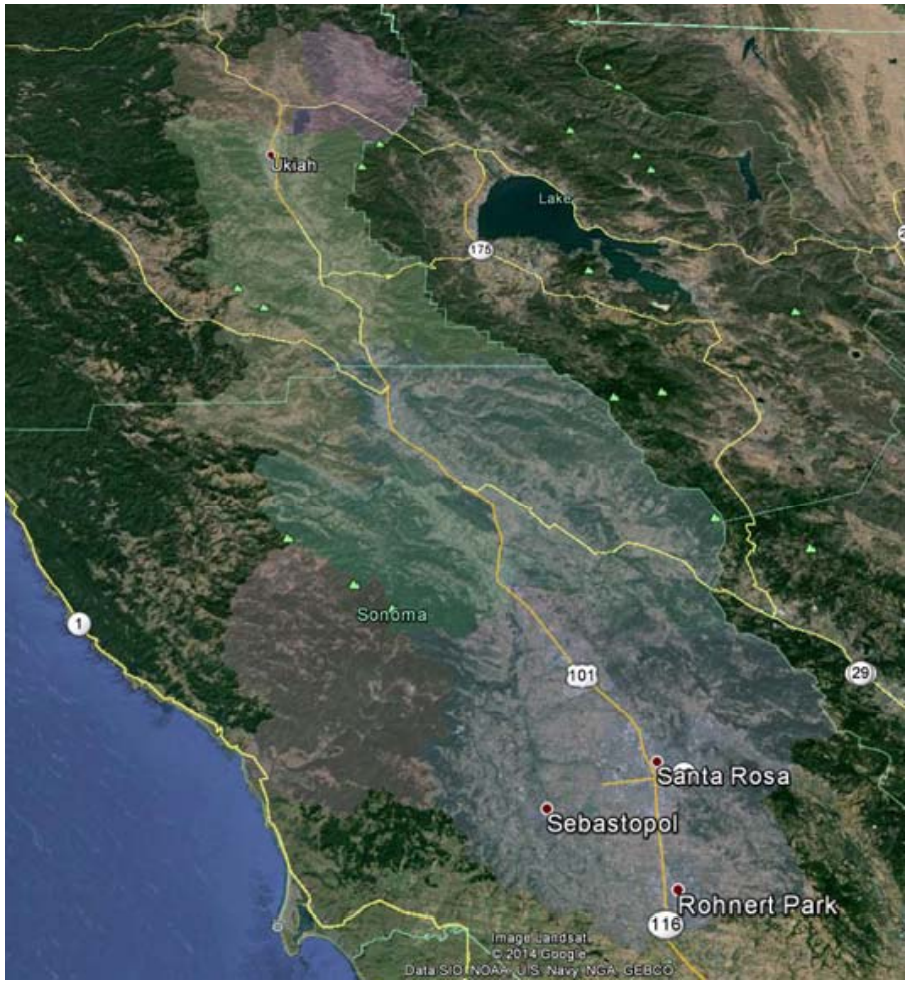
- **Petitions for Change may not be accepted unless you include proof that a copy of the petition was served on the Department of Fish and Game. (Cal. Code Regs., tit. 23, § 794.)**
- **Petitions for Temporary Transfer may not be accepted unless you include proof that a copy of the petition was served on the Department of Fish and Game and the board of supervisors for the county(ies) where you currently store or use water and the county(ies) where you propose to transfer the water. (Wat. Code § 1726.)**

Sonoma County Water Agency

Photographs in Vicinity of Main Diversion Facilities at Wohler and Mirabel Park

Russian River Between at Mirabel Park on July 25, 2014

Russian River Watershed



NOTICE OF EXEMPTION

To: X Office of Planning & Research
1400 Tenth Street
Sacramento, CA 95814

X County Clerk
County of Sonoma
Santa Rosa, CA 95401

X County Clerk
County of Mendocino
Ukiah, CA 95482

From: Sonoma County Water Agency
404 Aviation Boulevard
Santa Rosa, CA 95403

Project Title: Petition Requesting Approval of a Temporary Urgency Change in Water Right Permits 12947A, 12949, 12950 and 16596 in Mendocino and Sonoma counties

Project Location-Specific: The proposed action would occur in Mendocino and Sonoma counties at Lake Mendocino, in the Upper Russian River from Coyote Valley Dam/Lake Mendocino to the confluence with Dry Creek, and in the Lower Russian River from its confluence with Dry Creek to the Pacific Ocean. Figure 1 shows the streamflow requirements for the Russian River system. Communities and cities along the Russian River include Ukiah, Hopland, Cloverdale, Geyserville, Healdsburg, Forestville, Mirabel Park, Rio Nido, Guerneville, Monte Rio, Duncans Mills, and Jenner.

Project Location – City: N/A **Project Location – County:** Mendocino and Sonoma

Description of Nature, Purpose and Beneficiaries of Project: Sonoma County Water Agency (Water Agency) is filing a temporary urgency change petition requesting that the State Water Resources Control Board (SWRCB) make the following changes in the minimum instream flow requirements for the Russian River mainstem that are specified in SWRCB Decision 1610 and the Water Agency's water right permits for a period of 180 days from May 1, 2015 until October 27, 2015: (1) reduce the required minimum instream flow in the Russian River from the confluence of the East and West Forks to the river's confluence with Dry Creek from 185 cubic-feet per second (cfs) to 75 cfs from May 1 to October 27; and (2) reduce required minimum instream flow in the Russian River from its confluence with Dry Creek to the Pacific Ocean from 125 cfs to 85 cfs from May 1 to October 27.

To improve its efforts in optimally managing flows in the Russian River, the Water Agency is also requesting that the minimum instream flow requirements be specified as 5-day running averages of average daily stream flow measurements, with the conditions that instantaneous flows on the Upper Russian River are not less than 65 cfs and on the Lower Russian River are not less than 75 cfs. This implementation of minimum instream flow requirements will allow the Water Agency to reduce the operational buffers needed to manage stream flows, thereby conserving more water in Lake Mendocino. Higher Lake Mendocino storage levels in the fall will benefit migrating Chinook salmon and improve carryover storage volumes to meet Upper Russian River demands into 2016 if dry conditions persist.

An urgent need for the requested flow changes exist because Lake Mendocino storage levels are very low for this time of year. The Water Agency projects that water storage in Lake Mendocino could decline to below 30,000 acre-feet (AF) by October 1, 2015, unless the requested temporary urgency changes are approved. Water supplies sufficient to support survival of listed Russian River salmonid fisheries, agricultural and municipal use, and recreation are at risk. Without the proposed changes, the Water Agency would need to release additional stored water from Lake Mendocino, which would significantly deplete storage and result in very limited water supplies for water users in Mendocino County and northern Sonoma County (above the confluence with Dry Creek) during the fall, which would cause serious impacts to human health and welfare, and reduce water supplies needed for fishery protection

and stable flows in the upper Russian River during the fall, when spawning state and federally listed fish species are most sensitive to flow and water temperatures. Furthermore, if Water Year 2016 is a dry year, carryover storage in Lake Mendocino from 2015 will be crucial for the continued recovery of the Russian River salmonid fishery and water supply reliability through 2016.

An urgent need exists for the proposed changes for the Lower Russian River because the Water Agency would violate the Incidental Take Statement in the Russian River Biological Opinion issued by NMFS on September 24, 2008, unless the requested temporary urgency change is approved. Furthermore, NMFS concluded in the Biological Opinion that minimum instream flows lower than those required by Decision 1610 may result in flows into the estuary that improve opportunities to maintain a freshwater lagoon while preventing flooding of adjacent properties.

The Water Agency predicts that, without the proposed change, Lake Mendocino would be drawn down to storage levels that would jeopardize the Water Agency's ability to release water to the Russian River. Under this condition, water supplies for domestic and municipal uses of Russian River water would be severely impaired. The purpose of this order is, in part, to prevent Lake Mendocino storage from dropping below 30,000 AF. The Water Agency's forecasts indicate that Lake Mendocino storage will drop below 30,000 AF by October 1 unless the Temporary Urgency Change Petition is approved.

Name of Public Agency Approving Project: State Water Resources Control Board - Division of Water Rights

Name of Person or Agency Carrying Out Project: Sonoma County Water Agency

Exempt Status: (check one)

	Ministerial (Sec. 21080(b)(1); 15268)	
	Declared Emergency (Sec. 21080(b)(3); 15269(a))	
X	Emergency Project (Sec.21080 (b)(4); 15269(b)(c)):	Section 21080(b)(4): Specific actions necessary to prevent or mitigate an emergency
X	Categorical Exemption. State type and section number:	State CEQA Guidelines 15307: Actions by Regulatory Agencies for Protection of Natural Resources State CEQA Guidelines 15308: Actions by Regulatory Agencies for Protection of the Environment State CEQA Guidelines 15301(i): Existing Facilities
	Statutory Exemptions. State code number:	

Reasons why project is exempt: The proposed action is statutorily exempt under CEQA Statute 21080(b)(4) and categorically exempt from the California Environmental Quality Act (CEQA) under the State CEQA Guidelines Sections 15307, 15308, and 15301(i).

A. Actions to Prevent or Mitigate an Emergency

California Public Resources Code, Division 13, Section 21080(b)(4) provides that specific actions necessary to prevent or mitigate an emergency are exempt from CEQA. The Water Agency's forecasts indicate that Lake Mendocino storage will drop below 30,000 AF by October 1, 2015, unless the Temporary Urgency Change Petition is approved. Water supplies sufficient to support survival of listed Russian River salmonid fisheries, agricultural and municipal use, and recreation are threatened. Without the proposed change, the Water Agency would need to release additional stored water from Lake Mendocino to meet Decision 1610 minimum instream flow requirements, which would result in the significant depletion and potential elimination of water supplies for water users in Mendocino County and northern Sonoma County (above the confluence with Dry Creek), which would cause serious impacts to

human health and welfare, and which would reduce water supplies needed for fishery protection and stable flows in the Upper Russian River for the fall migration and spawning of listed salmon species. Water supplies for domestic and municipal uses of Russian River water would be severely impaired. The purpose of this proposed action is, in part, to prevent Lake Mendocino storage from dropping below 30,000 AF, which would otherwise occur in the absence of the SWRCB approving the requested changes. Furthermore, if the upcoming Water Year 2016 is a dry year, carryover storage in Lake Mendocino will be crucial for the continued recovery of the Russian River salmonid fishery and for water supply reliability through 2016.

B. Actions by Regulatory Agencies for Protection of Natural Resources and the Environment

CEQA Guidelines Sections 15307 and 15308 provide that actions taken by regulatory agencies to assure the maintenance, restoration or enhancement of a natural resource and the environment are categorically exempt. The proposed change in Russian River instream flow requirements would conserve water in Lake Mendocino to benefit the migration and spawning of adult Chinook salmon in the fall.

C. Existing Facilities

CEQA Guidelines Section 15301(i) provides, generally, that the operation of existing facilities involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination is categorically exempt from CEQA. The examples in subdivision (i) of Section 15301(i) specifically provide that the maintenance of streamflows to protect fish and wildlife resources is exempt. The Water Agency's request to change minimum instream flow requirements and make releases from Lake Mendocino from May to October 2015 under the same minimum instream flow requirements that normally apply during Dry or Critical hydrologic conditions for the purpose of conserving water storage in Lake Mendocino would not expand the Water Agency's use or increase the water diversions available to the Water Agency for consumptive purposes. The proposed change in Russian River minimum instream flow requirements would still be within the existing operational parameters for Lake Mendocino established by SWRCB Decision 1610. In addition, the proposal would maintain streamflows specifically to protect listed salmonid species.

Lead Agency Contact Person: Jessica Martini-Lamb Area Code/Telephone: 707-547-1903

Signature: [redacted] Date: 04/21/2015 Title: General Manager

_X_ Lead Agency ___ Applicant Date Received for filing at OPR: _____

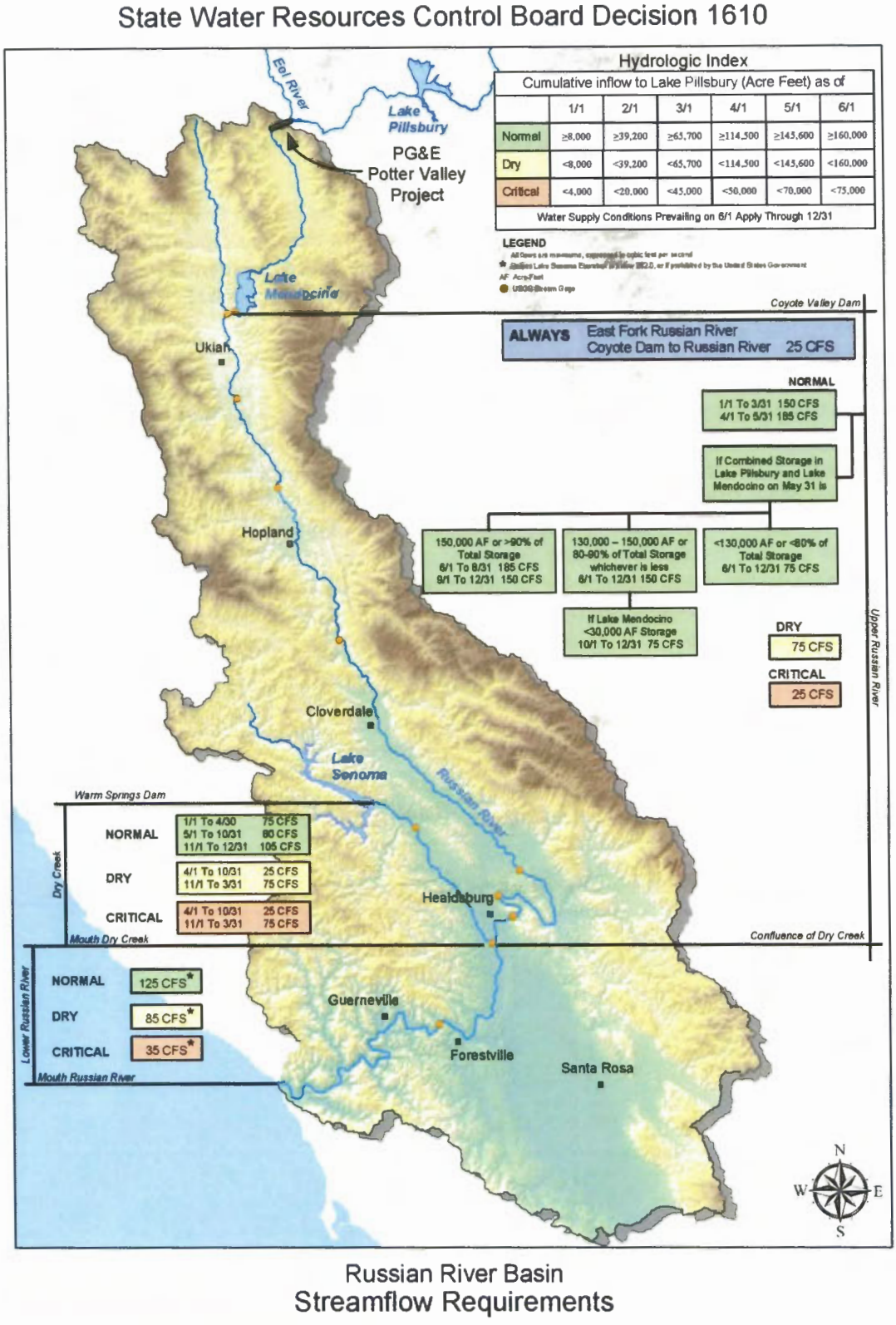


Figure 1. Project location for Petition Requesting Approval of a Temporary Urgency Change in Water Right Permits 12947A, 12949, 12950, and 16596 in Mendocino and Sonoma counties.

THIS CHECK IS VOID WITHOUT A GREEN & BLUE BORDER AND BACKGROUND PLUS A DIAMOND & FINGERPRINT WATERMARK ON THE BACK - HOLD AT ANGLE TO VIEW

TO THE TREASURER OF THE
COUNTY OF SONOMA
SANTA ROSA, CALIFORNIA

VOID

CLAIMS CHECK

CHECK NO.
1480360

11-35
1210

DATE 04/17/2015

VOID AFTER SIX MONTHS

PAY THIS AMOUNT
******$23,799.80

BANK OF AMERICA

PAY *Twenty three thousand seven hundred ninety nine and 80/100 Dollars*

To The Order Of

ST OF CA WATER RESOURCES CONTROL BOARD
SAFE DRINKING WATER CONTROL BOARD
P O BOX 1888
SACRAMENTO CA 95812-1888

[redacted]

DAVID SUNDSTROM
AUDITOR-CONTROLLER

⑈01480360⑈ ⑆121000358⑆ 00439⑈80050⑈

Appendix 3.2

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

DIVISION OF WATER RIGHTS

In the Matter of Permits 12947A, 12949, 12950, and 16596
(Applications 12919A, 15736, 15737, 19351)

Sonoma County Water Agency

ORDER APPROVING TEMPORARY URGENCY CHANGE

SOURCE: Dry Creek and Russian River

COUNTIES: Sonoma and Mendocino Counties

BY THE DEPUTY DIRECTOR FOR WATER RIGHTS:

1.0 SUBSTANCE OF TEMPORARY URGENCY CHANGE PETITION

On April 22, 2015, Sonoma County Water Agency (SCWA) filed a Temporary Urgency Change Petition (TUCP) with the State Water Resources Control Board (State Water Board), Division of Water Rights (Division) requesting approval of a change to the subject permits pursuant to California Water Code section 1435. The TUCP requests the following temporary reductions to the Russian River instream flow requirements to address low storage conditions in Lake Mendocino:

(1) From May 1, 2015 through October 27, 2015, reduce instream flow requirements for the upper Russian River (from its confluence with the East Fork of the Russian River to its confluence with Dry Creek) from 185 cubic feet per second (cfs) to 75 cfs.

(2) From May 1, 2015 through October 27, 2015, reduce instream flow requirements for the lower Russian River (downstream of its confluence with Dry Creek) from 125 cfs to 85 cfs.

The TUCP requests that compliance with these minimum instream flow requirements be measured based on a 5-day running average of average daily stream flow measurements, provided that instantaneous flows on the upper Russian River shall be no less than 65 cfs and on the lower Russian River shall be no less than 75 cfs. These 5-day running average provisions will allow SCWA to reduce the operational buffers needed to manage these stream flows, thereby allowing SCWA to conserve more water in Lake Mendocino.

No changes to the instream flow requirements for Dry Creek are requested.

The TUCP, in effect, requests that minimum flows for the Russian River be established based on State Water Board Decision 1610 (Decision 1610) *Dry* water supply criteria for the period from May 1 to October 27, 2015.

The request for the upper Russian River is intended to prevent significant depletion of storage in Lake Mendocino and potential elimination of water supplies for 2015. Such depletion in storage and reduction to or elimination of water supplies would cause serious impacts to human health and welfare and reduce water supplies needed for fishery protection and stable flows in the upper Russian River. The request for the lower Russian River is intended to protect fishery resources in Dry Creek.

2.0 BACKGROUND

2.1 Water Right Permits

SCWA's TUCP involves the following permits:

- Permit 12947A for direct diversion of 92 cubic feet per second (cfs) from the East Fork Russian River and storage of 122,500 acre-feet per annum (afa) in Lake Mendocino from January 1 through December 31 of each year.

- Permit 12949 for year-round direct diversion of 20 cfs from the Russian River at the Wohler and Mirabel Park Intakes near Forestville.

- Permit 12950 for direct diversion of 60 cfs from the Russian River at the Wohler and Mirabel Park Intakes from April 1 through September 30 of each year.

- Permit 16596 for year-round direct diversion of 180 cfs from the Russian River and storage of 245,000 afa in Lake Sonoma from October 1 of each year to May 1 of the succeeding year.

Term 20 of SCWA's Permit 12947A requires SCWA to pass through or release from storage at Lake Mendocino sufficient water to maintain specified instream flows for the protection of fish and wildlife, and for the maintenance of recreation in the Russian River. The flows vary depending on river reach and water supply conditions. The current minimum instream flow requirements are for normal water supply conditions. The requirements are 185 cfs for the upper Russian River (between the confluence of the East and West Forks of the Russian River and the confluence of the Russian River and Dry Creek) and 125 cfs for the lower Russian River (between its confluence with Dry Creek and the Pacific Ocean).

Term 17 of both Permit 12949 and Permit 12950 requires SCWA to allow sufficient water to bypass the points of diversion at the Wohler and Mirabel Park Intakes on the Russian River to maintain 125 cfs to the Pacific Ocean during normal water supply conditions.

Similarly, Term 13 of Permit 16596 requires SCWA to maintain 125 cfs in the lower Russian River during normal water supply conditions, unless the water level in Lake Sonoma is below elevation 292.0 feet with reference to the National Geodetic Vertical Datum of 1929, or unless prohibited by the United States Government. Permits 12947A, 12949, 12950, and 16596 use the same water-year classification definitions. The water year classifications (Normal, Dry or Critically Dry) were established in Decision 1610 and are based on cumulative inflow into Lake Pillsbury beginning October 1. Although Lake Mendocino storage is much lower than average, cumulative inflow into Lake Pillsbury during this water year has been of a sufficient volume such that, under Decision 1610, 2014 is currently classified as a Normal year.

2.2 2015 Drought Conditions and Response

The State of California is in the midst of an unprecedented drought.

By proclamations dated January 17, 2014 and April 25, 2014 and Executive Orders B-26-14, B-28-14, and B-29-15, Governor Edmund G. Brown, Jr. declared a state of emergency in California due to the ongoing extraordinary drought and provided various provisions to help manage these drought conditions.

A Supplement to the TUCP indicates that on April 21, 2015, the water supply storage level in Lake Mendocino was 60,273 acre-feet. This storage level was 62 percent of the available water conservation pool. The low storage level is the result of the severe drought that began in the region in January 2013. In addition, Eel River transfers through the Potter Valley Project (PVP) were significantly reduced between November 15, 2014 and February 28, 2015 due to an emergency project by PG&E to replace the penstock shutoff valves. Accordingly, diversions through the PVP in 2015 have been significantly below the annual average of 2006 to 2014, thus further impacting the storage condition in Lake Mendocino.

According to the Supplement, Lake Mendocino storage is expected to decline to below 30,000 acre-feet by October 1, 2015, due to releases required to meet downstream water demands and anticipated minimum instream flow requirements on the Russian River. If dry conditions continue, storage levels could be as low as 10,000 acre-feet on January 1, 2016. The projected storage analysis was completed using SCWA's Russian River Water System Model with the following assumptions: (1) Decision 1610 minimum instream flow requirements; (2) 2013 hydrology; (3) current Russian River system losses; and (4) PVP operations based on the 2004 amended license issued by the Federal Energy Regulatory Commission. These extremely low projected storage levels and possible elimination of water supply in Lake Mendocino could cause serious impacts to human health and welfare, threatened and endangered Russian River fish species, and water-supply in Mendocino County and the Alexander Valley in Sonoma County, as well as harm Lake Mendocino and Russian River recreation. Therefore, SCWA proposes to reduce the instream flow requirements on the upper Russian River, which are maintained by reservoir releases, to preserve water in Lake Mendocino.

As of April 21, 2015, the water supply storage level in Lake Sonoma was 214,014 acre-feet. This storage level is 87 percent of the available water conservation pool. This storage level is slightly below normal for this time of year. However, the much larger water supply pool of Lake Sonoma provides multiple years of carryover storage. Consequently, SCWA has not requested any changes to the current minimum instream flow requirements for Dry Creek at this time.

SCWA is requesting changes to the minimum instream flow requirements on the lower Russian River, downstream of its confluence with Dry Creek to the Pacific Ocean. These changes are requested because the reduced minimum instream flows being requested on the upper Russian River will provide significantly less contribution to meet minimum instream flow requirements in the lower Russian River. Consequently, increased releases from Lake Sonoma into Dry Creek could be necessary to maintain Decision 1610 minimum instream flow requirements on the lower Russian River. However, increased releases into Dry Creek are limited by the Incidental Take Statement contained in the September 24, 2008, National Marine Fisheries Service (NMFS) Biological Opinion for Water Supply, Flood Control Operations, and Channel Maintenance conducted by the U.S. Army Corps of Engineers, SCWA, and the Mendocino County Russian River Flood Control and Water Conservation Improvement District in the Russian River watershed (Biological Opinion). The Incidental Take Statement restricts releases from Lake Sonoma into Dry Creek because they can result in flows that are too high for optimal habitat for juvenile salmonids. Therefore, SCWA proposes to reduce the minimum instream flow requirements for the lower Russian River to protect fishery resources in Dry Creek.

3.0 COMPLIANCE WITH CALIFORNIA ENVIRONMENTAL QUALITY ACT

Ordinarily, the State Water Board must comply with any applicable requirements of the California Environmental Quality Act (CEQA) prior to issuance of any order approving a TUCP pursuant to Water Code section 1435. (See Cal. Code Regs., tit. 23, § 805.) However, Governor Edmund G. Brown, Jr.'s January 17, 2014 Proclamation concluded that strict compliance with CEQA would "prevent, hinder, or delay the mitigation of the effects of the emergency." Accordingly, as authorized by Government Code section 8571, item 9 of the Governor's Proclamation suspends CEQA, and the regulations adopted pursuant to it, to the extent that CEQA would otherwise apply to specified actions necessary to mitigate the effects of the drought, including the actions described in item 8 of the Governor's Proclamation. Item 8 requires the State Water Board to consider modifying requirements for reservoir releases or diversion limitations that were established to implement a water quality control plan. The subject instream flow requirements implement the Water Quality Control Plan for the North Coast Region because they protect instream beneficial uses that are designated in the plan, including recreation, cold and warm freshwater habitat, and wildlife habitat.

On April 1, 2015, Governor Edmund G. Brown, Jr issued an executive order continuing the State of Emergency and concluded that the suspension of CEQA under the January 17, 2014 proclamation is to remain in effect until May 31, 2016. Accordingly, CEQA is suspended to the extent that it would otherwise apply to the TUCP and subsequent modifications thereto.

In addition, the changes requested in the TUCP are consistent with the following Statutory and Categorical CEQA exemptions for the following reasons:

1) As of April 21, 2015, the water supply storage level in Lake Mendocino was 62 percent of the available water conservation pool. Information provided by SCWA demonstrates that continued releases of water pursuant to permit term requirements could cause storage levels in Lake Mendocino to decline to unsafe levels. If storage in Lake Mendocino is depleted there will be serious impacts to human health and welfare and water will not be available to protect aquatic life, including threatened and endangered species in the Russian River. Approval of the TUCP is therefore necessary to prevent and mitigate loss of, or damage to, the environment, fishery resources, property, public health, and essential public services. Accordingly, the project is statutorily exempt from CEQA because it is necessary to prevent or mitigate an emergency. (Pub. Resources Code, § 21080, subd. (b)(4); Cal. Code Regs., tit. 14, § 15269, subd. (c).)

2) The proposed action consists of the operation of existing facilities involving negligible or no expansion of use beyond that existing, and accordingly is categorically exempt from CEQA under a Class 1 exemption. (Cal. Code Regs., tit. 14, § 15301.) The proposed action will be within the range of minimum instream flows established by Decision 1610.

3) A Class 7 exemption "consists of actions taken by regulatory agencies as authorized by state law or local ordinance to assure the maintenance, restoration, or enhancement of a natural resource where the regulatory process involves procedures for protection of the environment." (Cal. Code Regs, tit. 14, § 15307.) The proposed action on the upper Russian River will assure the maintenance of a natural resource, i.e., the instream resources of the Russian River, by reserving water in Lake Mendocino to prevent harm to, and protect habitat for listed Russian River salmonid fisheries. The proposed action on the lower Russian River will also assure the maintenance of a natural resource, i.e, the instream resources of Dry Creek, by avoiding impacts to salmonids consistent with the Incidental Take Statement. Accordingly, these changes are categorically exempt from CEQA pursuant to a Class 7 exemption.

4) A Class 8 exemption "consists of actions taken by regulatory agencies, as authorized by state or local ordinance, to assure the maintenance, restoration, enhancement, or protection of the environment where the regulatory process involves procedures for protection of the environment." (Cal. Code Regs., tit. 14, § 15308.) The proposed action will assure the maintenance of the environment, i.e., the instream environment of the Russian River, in the same way as stated for the Class 7 exemption.

4.0 PROCEDURAL REQUIREMENTS CONCERNING THE TEMPORARY URGENCY CHANGE PETITION

Pursuant to Water Code section 1438, the State Water Board may issue a temporary urgency change order in advance of the required notice. The State Water Board will issue and deliver to SCWA as soon as practicable, a notice of the temporary urgency change order pursuant to Water Code section 1438, subdivision (a). Pursuant to Water Code section 1438, subdivision (b)(1), SCWA is required to publish the notice in a newspaper having a general circulation, and that is published within the counties where the points of diversion lie. In addition, the State Water Board will post the notice of the temporary urgency change order on its website, along with the TUCP (and accompanying materials). The State Water Board also will distribute the notice through an electronic notification system.

Any interested person may file an objection to a temporary urgency change. (*Id*., subd. (d).) The State Water Board must promptly consider and may hold a hearing on any objection. (*Id*., subd. (e).) State Water Board Resolution 2012-0029 delegates to the Deputy Director for Water Rights the authority to act on a temporary urgency change petition if there are no objections to the petition. (Resolution 2012-0029, ¶ 4.4.1.)

The State Water Board exercises continuing supervision over temporary urgency change orders and may modify or revoke temporary urgency change orders at any time. (Wat. Code, §§ 1439, 1440.) Temporary urgency change orders expire automatically 180 days after issuance, unless they are revoked or an earlier expiration date is specified. (*Id*., § 1440.)

5.0 CRITERIA FOR APPROVING THE PROPOSED TEMPORARY URGENCY CHANGE

Water Code section 1435 provides that a permittee or licensee who has an urgent need to change the point of diversion, place of use, or purpose of use from that specified in the permit or license may petition for a conditional temporary change order. The State Water Board's regulations set forth the filing and other procedural requirements applicable to TUCP's. (Cal. Code Regs., tit. 23, §§ 805, 806.) The State Water Board's regulations also clarify that requests for changes to permits or licenses other than changes in point of diversion, place of use, or purpose of use may be filed, subject to the same filing and procedural requirements that apply to changes in point of diversion, place of use, or purpose of use. (*Id*., § 791, subd. (e).)

Before approving a temporary urgency change, the State Water Board must make the following findings:

1. the permittee or licensee has an urgent need to make the proposed change;
2. the proposed change may be made without injury to any other lawful user of water;
3. the proposed change may be made without unreasonable effect upon fish, wildlife, or other instream beneficial uses; and
4. the proposed change is in the public interest.

(Wat. Code, § 1435, subd. (b)(1-4).)

5.1 Urgency of the Proposed Change

Under Water Code section 1435, subdivision (c), an "urgent need" means "the existence of circumstances from which the board may in its judgment conclude that the proposed temporary change is necessary to further the constitutional policy that the water resources of the state be put to beneficial use to the fullest extent of which they are capable and that waste of water be prevented . . . ."

In this case, an urgent need exists for the proposed change in minimum instream flow requirements on the upper Russian River because, as described in the Supplement to the TUCP, Lake Mendocino reservoir levels are projected to reach extremely low conditions that may prevent SCWA from continuing to make the reservoir releases that are necessary to support the various beneficial uses that rely on these releases in the Russian River. If upcoming dry conditions persist and significant storm events are delayed or do not occur in the upcoming Water Year 2016, then carryover storage in Lake Mendocino from 2015 will be crucial for the continued protection of the Russian River salmonid fishery and water supply reliability. Additionally, the preserved storage will help mitigate the significantly reduced transfers of Eel River water to the East Fork of the Russian River due to scheduled repair activities to the Potter Valley Penstocks between November 2015 and March 2016. Specifically, at low storage conditions, there would be greater risk of insufficient water supplies to support: (a) survival of ESA-listed Russian River salmonid species, (b) agricultural and municipal uses that depend on the Russian River, and (c) river-based recreation. Without the proposed changes, the current minimum instream flow requirements would require releases of water from Lake Mendocino at levels that would risk significant depletion of storage and potential elimination of water supplies for water uses in Mendocino County and northern Sonoma County (above the confluence with Dry Creek). Such depletion in

storage and reduction in or elimination of water supplies would cause serious impacts to human health and welfare, and reduce water supplies needed for fishery protection and stable flows in the upper Russian River.

An urgent need also exists for the proposed change in minimum instream flow requirements on the lower Russian River because reductions in the upper Russian River flows could require an increase in Lake Sonoma releases into Dry Creek to meet lower Russian River flow requirements. The 2008 NMFS Biological Opinion found that high Dry Creek flows from June through October result in sub-optimal habitat conditions for juvenile salmonids and issued an Incidental Take Statement restricting releases from Lake Sonoma to Dry Creek from June through October each year. Therefore, higher Dry Creek flows could be detrimental to the fisheries in Dry Creek and result in violations of the Incidental Take Statement. In addition, reductions in the lower Russian River minimum instream flow requirements will conserve storage in Lake Sonoma during drought conditions. Considering the severe drought conditions and the Governor's Emergency Drought Proclamation, conservation of water in Lake Sonoma is prudent.

5.2 No Injury to Any Other Lawful User of Water

Under this Order, SCWA will be required to maintain specific flows in the Russian River from its most upstream point of diversion to the river's confluence with the ocean. Therefore, because these minimum flows will be present, it is anticipated that all other lawful users of water will still be able to divert and use any water to which they may be legally entitled during the period specified in this Order. Accordingly, granting this TUCP will not result in any injury to any other lawful user of water. Pursuant to Water Code section 1439, the State Water Board will supervise diversion and use of water under this temporary change order for the protection of all other lawful users of water and instream beneficial uses.

5.3 No Unreasonable Effect upon Fish, Wildlife, or Other Instream Beneficial Uses

Although flows in the mainstem Russian River will be reduced upon approval of this TUCP, prevention of the depletion of storage in Lake Mendocino is crucial for instream beneficial uses, including threatened and endangered fish species. Reductions in the minimum instream flow requirements will improve carryover storage in Lake Mendocino, which will provide significant benefit to all instream beneficial uses if dry conditions persist into Water Year 2016. Specifically, conserved storage will allow enhanced management of Russian River flows in the fall, winter and next spring for the benefit of salmon migration, spawning, and rearing. It is possible that the reduced flows may impair some instream beneficial uses, principally recreation, in the Russian River. However, any effects associated with such flow reductions would not be unreasonable, considering the potential catastrophic impacts to fish, wildlife and other instream beneficial uses that could occur with the current release levels, if the current release levels result in the draining of Lake Mendocino and the dewatering of the upper Russian River

SCWA has consulted with the California Department of Fish and Wildlife (CDFW), NMFS, and the Regional Water Quality Control Board (Regional Board) regarding filing the TUCP and the effects of the proposed changes. NMFS and the Regional Board have shown support for changes requested in the TUCP. The Regional Board has requested continuous water quality monitoring on the mainstem Russian River and at the Russian River Estuary and associated reporting, which will be required. NMFS is supportive of a plan to conserve storage in Lake Mendocino to protect aquatic resources, such as juvenile salmonid rearing throughout the summer, as well as this fall's adult salmonid migration and spawning; and recognizes that flow reductions will support conservation of Lake Mendocino's water supply and avoid dewatering of the upper Russian River. NMFS also supports reduced flows in the lower Russian river, to allow SCWA to avoid violation of their Incidental Take Statement. Division Staff have also consulted with NMFS and CDFW regarding terms necessary to protect fishery resources during the change. In light of the potential for the effective period of this Order to continue into migration seasons for threatened and endangered anadromous fish species, CDFW and NMFS have requested fisheries monitoring and reporting efforts in the upper and lower Russian River to understand adult salmon and steelhead population and movement during the period of reduced flows and consultations with SCWA to determine appropriate flows for fish passage. This order includes requirements for: 1) monitoring and reporting numbers of adult salmon and steelhead and 2) consultation with CDFW and NMFS regarding flow increases to support successful migration of salmon

and steelhead. This Order also includes a term limiting ramping rates below Lake Mendocino to avoid fish stranding.

To inform the review and approval of the TUCP and the State Water Board's continuing supervision of the diversion and use of water under this temporary change order pursuant to Water Code section 1439, this Order requires SCWA to report on consultations with CDFW, NMFS, and the Regional Board. In addition, to ensure beneficial use of water resources to the fullest extent possible and to prevent waste of water, SCWA is required to provide weekly updates to the Deputy Director, CDFW, NMFS, and the Regional Board regarding the current hydrologic and environmental (water quality and fishery) conditions of the Russian River (Term 15). This information will assist the State Water Board in determining whether additional actions are necessary.

5.4 The Proposed Change is in the Public Interest

The proposed changes in the upper Russian River minimum instream flow requirements will help conserve stored water in Lake Mendocino so that, in the event drought conditions persist into water year 2016, water can be released to maintain instream flows for the benefit and protection of all uses of Russian River water, including the salmonid fisheries in the Russian River. It is in the public interest to preserve these water supplies for these beneficial uses under present severe drought hydrologic conditions. Furthermore, according to SCWA, the preserved storage will help mitigate reduced transfers of Eel River water to the East Fork of the Russian River due to repair activities to the Potter Valley Project penstocks, which are scheduled for between November 2015 and March 2016.

To facilitate SCWA storage release operations to meet minimum instream flow requirements with minimal operational buffers, last summer, the contractors of the Mendocino County Russian River Flood Control and Water Conservation Improvement District (District) provided diversion forecasts to SCWA. The diversion forecast reporting was required per an August 25, 2014 State Water Board Order approving a Temporary Urgency Change Petition filed by the District on August 8, 2014. According to SCWA, the forecasts allowed SCWA operators to better understand river flow variations and respond appropriately. Accordingly, SCWA has requested the State Water Board require coordination with the District for similar diversion forecasts during the upcoming diversion season. As a means of further preserving Lake Mendocino water supplies, this requirement is included as Term 19.

The proposed changes in the lower Russian River minimum instream flow requirements will support ecological values in Dry Creek by preventing higher Dry Creek flows that could be necessary if the State Water Board were to approve only the requested changes in the upper Russian River requirements. As discussed above, such higher Dry Creek flows would impair habitat conditions for juvenile salmonids and deplete storage in Lake Sonoma. It is in the public interest to minimize impacts to salmonids and conserve water supplies in Lake Sonoma during drought conditions. Reductions in diversions at SCWA's facilities can also serve to increase flows in the lower Russian River and prevent the need for higher Dry Creek flows. Accordingly, inclusion of a term requiring SCWA and its contractors to conserve water is in the public interest. In addition, SCWA will continue to implement water use efficiency programs that align with the California Urban Water Conservation Council's Best Management Practices (BMPs) and comply with SBx7-7.

6.0 CONCLUSIONS

The State Water Board has adequate information in its files to make the evaluation required by Water Code section 1435.

I conclude that, based on the available evidence:

1. The permittee has an urgent need to make the proposed change;

2. The petitioned change will not operate to the injury of any other lawful user of water;

3. The petitioned change will not have an unreasonable effect upon fish, wildlife, or other instream beneficial uses; and,

4. The petitioned change, with the modifications described above, is in the public interest.

ORDER

NOW, THEREFORE, IT IS ORDERED THAT: the Petition filed by Sonoma County Water Agency (SCWA) for a temporary urgency change in Permits 12947A, 12949, 12950 and 16596 is approved and effective until 180 days from the date of this Order.

All existing terms and conditions of the subject permit remain in effect, except as temporarily amended by the following provision:

1. The minimum instream flow requirements in the Russian River, as specified in Term 20 of Permit 12947A, Term 17 of Permits 12949 and 12950, and Term 13 of Permit 16596, shall be modified as follows:

    a. Minimum instream flow in the upper Russian River (from its confluence with the East Fork of the Russian River to its confluence with Dry Creek) shall remain at or above 75 cubic feet per second (cfs).
    b. Minimum instream flow in the lower Russian River (from its confluence with Dry Creek to the Pacific Ocean) shall remain at or above 85 cubic feet per second (cfs).
    c. For purposes of compliance with this term, the minimum instream flow requirements shall be measured based on a 5-day running average of average daily stream flow measurements, provided that instantaneous flows on the upper Russian River shall be no less than 65 cfs and on the lower Russian River shall be no less than 75 cfs.

2. SCWA shall monitor and record daily numbers of adult salmon and steelhead moving upstream past the life cycle monitoring station in Dry Creek (when operable) beginning no later than September 1, 2015, and continuing through the term of this Order. SCWA shall include these numbers in weekly reports required in Term 15.

3. SCWA shall monitor numbers of adult salmon and steelhead at known spawning sites and in representative deep pools in the Upper Russian River (Lake Mendocino to Healdsburg) on a weekly basis after the number of adult salmon and steelhead counted at Dry Creek exceeds 100 fish. Weekly surveys shall continue until expiration of the Order, or when sustained flow at Healdsburg is above 150 cfs, whichever is earlier.

4. Beginning October 1, 2015, if adult salmon and steelhead can enter the Russian River estuary and suitable water clarity allows snorkel surveys, SCWA shall monitor numbers of adult salmon and steelhead in representative deep pools in the Lower Russian River downstream of the Mirabel inflatable dam on a weekly basis continuing through the term of this Order.

5. After a cumulative seasonal total of 100 adult salmon and steelhead move upstream past the life cycle monitoring station in Dry Creek, or on November 1st, whichever is earlier, SCWA shall consult with the National Marine Fisheries Service (NMFS) and the California Department of Fish and Wildlife (CDFW) regarding the possibility of increasing instream flow at the USGS gages at both Hopland (No.11462500) and Healdsburg (No. 11464000) to a level not exceeding 100 cfs, and at the USGS gage at Hacienda (No.11467000) to a level not to exceed 135 cfs. Consultations shall occur every two weeks and SCWA

shall submit a summary report of consultation details and any increases to the minimum flows to the Deputy Director within one week of each consultation meeting.

6. SCWA shall consult with NMFS and CDFW regarding any necessary revisions to Terms 2 through 5. SCWA shall submit a summary report of consultation details to the Deputy Director within one week of any consultation meeting. Upon consultation with NMFS and CDFW, any necessary revisions to the terms and conditions shall be made upon approval by the Deputy Director.

7. Reporting of fisheries monitoring tasks described in Terms 2 through 6 shall be submitted to the Deputy Director by April 1, 2016 in accordance with NMFS and CDFW annual reporting requirements as more fully described in the Biological Opinion.

8. To protect against stranding of fish when releases from Lake Mendocino are reduced under this Order, flow in the East Fork Russian River immediately below Coyote Dam shall not be reduced by more than 25 cfs per hour. Ramping rates specified in this term may be revised upon consultation with NMFS and CDFW. SCWA shall submit a summary report of consultation details to the Deputy Director within one week of each consultation meeting.

9. This Order does not authorize any act that results in the taking of a candidate, threatened or endangered species, or any act that 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 permittee shall obtain authorization for an incidental take permit prior to construction or operation of the project. Permittee shall be responsible for meeting all requirements of the applicable Endangered Species Act for the temporary urgency change authorized under this Order.

10. Monitoring shall be conducted to determine the water quality effects and the effects to availability of aquatic habitat for salmonids resulting from the approved temporary urgency change. Mainstem Russian River and estuary monitoring shall include continuous monitoring of temperature, dissolved oxygen (DO), pH, and specific conductance at multiple stations from Ukiah to Jenner.

    a. For the duration of this Order, monitoring on the mainstem Russian River shall occur at three, multi-parameter "permanent" water quality sondes on the Russian River at USGS stream gages located at Hopland, Diggers Bend near Healdsburg, and Hacienda Bridge. These three sondes are referred to as "permanent" as they are maintained as part of SCWA's early warning detection system in coordination with the United States Geological Survey (USGS) on its "Real-time Data for California" website. As of March 2014, the sonde at SCWA's river diversion facility (RDS) at Mirabel was removed due to several construction projects; therefore it will not be included in the 2015 monitoring effort. SCWA, in cooperation with the USGS, shall also operate three seasonal sondes with real-time telemetry at USGS gages at Cloverdale station (north of Cloverdale at Commisky Station Road), Jimtown (at the Alexander Valley Road bridge), and at Johnson's Beach (Guerneville). The sonde at the Cloverdale gage collects DO and temperature, the sonde at the Jimtown gage collects pH, temperature, DO, specific conductance and turbidity, and the sonde at Johnson's Beach collects pH, temperature, DO, specific conductance and turbidity. Data from these locations is available on the USGS "Real-time Data for California" website.

    b. Monitoring in the mainstem Russian River Estuary shall be conducted in accordance with the current "Water Quality Monitoring Plan for the Russian River Estuary Management Project."

    c. Monitoring on the East Fork Russian River, shall occur at a seasonal sonde approximately 1/3 mile (0.33 mi) downstream from Lake Mendocino, and shall record hourly measurements of water temperature, DO, specific conductance, pH, and turbidity. The monitoring site will be accessed by foot.

11. SCWA shall monitor five surface-water sites in the Russian River Estuary in accordance with the current "Water Quality Monitoring Plan for the Russian River Estuary Management Project".

12. Before June15, 2015, SCWA shall consult with the North Coast Regional Board to discuss possible water quality impacts of the reduced flows and water quality monitoring activities. SCWA shall submit a summary report of consultation details and a description of any modifications to the monitoring activities to the Deputy Director within one week of the consultation meeting. Upon consultation with the Regional Board, any necessary revisions to Terms 10 and 11 shall be made upon approval by the Deputy Director.

13. SCWA shall provide the summary data from the permanent water quality sondes required in Term 10a and nutrient/bacterial/algal sampling in Term 11 (as data becomes available) to the Deputy Director for the State Water Board and the Executive Director for the Regional Board in the weekly hydrologic status report required in Term 15. If any water quality issues of concern are observed from the continuous monitoring after June 15, 2015, SCWA or the North Coast Regional Board can initiate additional consultation. SCWA shall submit a summary report of consultation details to the Deputy Director within one week of each consultation meeting. If no additional consultation is necessary; SCWA shall submit an explanation to the Deputy Director within one week after the conclusion of the effective period of this Order. Upon consultation with the Regional Board, any necessary revisions to Terms 10 and 11 shall be made upon approval by the Deputy Director.

14. SCWA shall summarize all water quality data collected pursuant to Terms 10 and 11 during the term of this Order. The summary report shall include an evaluation of whether, and to what extent, the reduced flows authorized by the Order caused any impacts to water quality, including any water quality impacts affecting recreation or the availability of aquatic habitat for salmonids. The report shall be submitted to the Deputy Director by April 1, 2016.

15. SCWA shall report to the Deputy Director of Water Rights and the Executive Director of the North Coast Regional Board on a weekly basis regarding the current hydrologic condition of the Russian River system, including current Lake Mendocino reservoir level, the rate of decline for Lake Mendocino, a 16-day cumulative rainfall forecast, current inflow from Potter Valley, fish counts, and a summary of the available water quality data, including bacteria indicators.

16. The State Water Board reserves jurisdiction to supervise the temporary urgency change under this Order, and to coordinate or modify terms and conditions, for the protection of vested rights, fish, wildlife, instream beneficial uses and the public interest as future conditions may warrant.

17. SCWA shall immediately notify the State Water Board if any significant change in storage conditions in Lake Mendocino occurs that warrants reconsideration of this Order.

18. SCWA shall provide a written update to the Deputy Director by April 1, 2016, regarding activities and programs being implemented by SCWA and its water contractors to assess and reduce water loss, promote increased water use efficiency and conservation, and improve regional water supply reliability.

19. To facilitate releases of Lake Mendocino stored water with minimal operational buffers, SCWA shall coordinate with the Mendocino County Russian River Flood Control and Water Conservation Improvement District (District) regarding implementation of protocols for real time 1 and 3 day advance forecasts of total diversions by all of the District's customers under all bases of right. SCWA shall provide an update to the Deputy Director regarding the outcome of consultation and the effectiveness of reporting by April 1, 2016.

20. SCWA shall submit evidence of compliance with any future regulatory framework implementing the conservation requirements of the Governor's April 1, 2015 executive Order (future regulatory framework) or a water demand reduction plan (Plan) for all customers that beneficially use water diverted and /or

stored under these rights or customers otherwise subject to the temporary changes authorized by this order (excluding customers found on the De Minimus list provided by SCWA on April 29, 2015, whose diversions amount to less than one percent of SCWA's total water distributed), as follows:

a. For SCWA customers that are subject to the future regulatory framework, SCWA shall submit written confirmation to the Deputy Director to demonstrate whether and how said customer is A) subject to the future regulatory framework and B) in compliance with all applicable conservation and reporting requirements therein. The written confirmation for part A shall be submitted within 2 weeks after the effective date of the future regulatory framework and updated within 2 weeks of any new such customer being added. The written confirmation for part B shall be submitted within 180 days of the date of order issuance.
b. For SCWA customers that are not subject to the future regulatory framework, SCWA shall prepare a Plan to ensure these customers meet a water demand reduction of a minimum of 20% of baseline water demand. The Plan shall define baseline water demand as appropriate for SCWA's situation based on considerations such as weather, economy, wholesale supplier allocations or other relevant information. For the purpose of compliance with this term, if the Plan does not define baseline water demand, it is assumed to be the average water demand for the previous year (excluding drought years). The Plan shall be submitted within 2 weeks after the date of issuance of this order and updated within 2 weeks of any such new customer being added.

Upon receipt of demand reduction data, SCWA shall immediately inform the Deputy Director in the event that SCWA or any SCWA customer is not meeting the requirements of this term.

This term shall not be construed to suggest SCWA or SCWA customers are able to disregard or otherwise not comply with any applicable requirements under the future regulatory framework.

STATE WATER RESOURCES CONTROL BOARD

ORIGINAL SIGNED BY:
JOHN O'HAGAN FOR

Barbara Evoy, Deputy Director
Division of Water Rights

Dated: May 01, 2015

Appendix 3.3

SONOMA COUNTY WATER AGENCY

CF/42-0.19-9 SWRCB Order Approving Temporary Urgency Change in Permits 12947A, 12949, 12950 & 16596 for 2015 (ID 5315)

May 27, 2016

Ms. Barbara Evoy
Deputy Director of Water Rights
State Water Resources Control Board
Division of Water Rights
P.O. Box 2000
Sacramento, CA 9S812-2000

RE: Request to Amend May 1, 2015 Temporary Urgency Change Order Water Right Permits 12947A, 12949, 12950, and 16596 (Applications 12919A, 15736, 15737, and 19351)

Dear Ms. Evoy:

On April 21, 2015, the Sonoma County Water Agency (Water Agency) filed a Temporary Urgency Change Petition (2015 TUCP) for Water Right Permits 12947A, 12949, 12950, and 16596 (Applications 12919A, 15736, 15737, and 19351) with the State Water Resources Control Board (State Board). The 2015 TUCP requested that the State Board make the following changes to the Water Agency's permits for the period of 180 days from May 1, 2015 until October 27, 2015: (1) reduce the required minimum instream flow in the Russian River from the confluence of the East and West Forks to the river's confluence with Dry Creek from 185 cfs to 75 cfs; and (2) reduce the required minimum instream flow in the Russian River from its confluence with Dry Creek to the Pacific Ocean from 125 cfs to 85 cfs. The orange curve in Figure 1 shows the Lake Mendocino storage levels that were projected to occur during the remainder of 2015 with the instream flow requirements required by D-1610 and the green curve shows the projected storage level with the requested changes in the 2015 TUCP. As shown in Figure 1, the requested changes were projected to preserve approximately 6,300 AF of water storage in Lake Mendocino, resulting in almost 35,000 AF of storage on October 1. The State Board issued an order approving the 2015 TUCP on May 1, 2015 (TUCP Order).

On May 13, 2015, Pacific Gas and Electric Company (PG&E) filed a request with the Federal Energy Regulatory Commission (FERC) for a temporary variance of the minimum flow requirements of its license for the Potter Valley Project (PVP). PG&E filed the variance request because Lake Pillsbury was

approximately 50 percent full as a result of the ongoing drought and flood control constraints in the late winter. Despite the extremely low storage level, the water year classification, as defined in PVP's FERC license, is normal. PG&E projected that under a normal water year classification, the required and contractual water release and delivery obligations for the remainder of Water Year 2015 would result in Lake Pillsbury storage declining below 10,000 AF sometime in August. PG&E has indicated that a minimum storage pool of 10,000 AF is needed to prevent reservoir bank sloughing, which can result in turbidity impacts downstream in the Eel River and negatively affect rearing salmon and steelhead. Additionally, bank sloughing poses a significant risk of sediment partially or completely clogging the low level outlet of Scott Dam.

To preserve storage in Lake Pillsbury, PG&E has requested that FERC approve changing the water year classification from normal to dry. Under a dry water year classification, minimum flow requirements in the East Fork Russian River will be reduced from 75 cfs to 25 cfs until May 31 and from 40 cfs to 25 cfs beginning June 1. To ensure that Lake Pillsbury does not drop below 10,000 AF before December 1, 2015, PG&E has also established storage thresholds that will be evaluated monthly beginning July 1. If storage is below the monthly target threshold, the minimum flow requirement could be reduced to as low as 5 cfs, to reach the following month's target threshold.

On May 18, 2015 FERC issued an order that temporarily approves PG&E's request to change the Water Year classification for PVP from normal to dry until June 17, 2015. This requested change was not anticipated when the Water Agency filed its 2015 TUCP in April. The resulting substantial reduction in releases into the East Fork Russian River will have a significant impact on storage in Lake Mendocino during the term of the TUCP Order. A water supply analysis recently prepared by Water Agency engineering staff indicates that without significant storm events between now and early fall, the storage levels in Lake Mendocino are projected to decline to about 25,000 AF by October 1 due to the reduced PVP inflows and the releases necessary to meet downstream water demands and the minimum instream flow requirements on the Russian River. This storage level is approximately 10,000 AF less than what was projected in the 2015 TUCP. The analysis used to calculate the projected Lake Mendocino storage was completed using the Water Agency's Russian River simulation model with the following assumptions: (1) a minimum instream flow in the Upper Russian River of 75 cfs from May 1 through December 31; (2) 2013 hydrology; (3) current Russian River system losses; and (4) PVP operations based on the May 18, 2015 FERC Order approving PG&E's request to operate PVP under a dry water year classification. The blue curve in Figure 2 shows the Lake Mendocino storage levels that have occurred so far during 2015 and the orange curve shows the storage levels that are projected to occur during the remainder of 2015 if the minimum instream flow requirements approved by the TUCP Order are not amended.

Requested Amendments to Order

To preserve the drought-limited water supply in Lake Mendocino and to avoid excessively high releases from Lake Sonoma down Dry Creek that could result in violations to the Incidental Take Statement in the Biological Opinion[1], the Water Agency requests that Provision 1 of the TUCP Order be amended with the following changes (additions marked as underlined text):

1. The minimum instream flow requirements in the Russian River, as specified in Term 20 of Permit 12947A, Term 17 of Permits 12949 and 12950, and Term 13 of Permit 16596, shall be modified as follows:

a. Minimum instream flow in the upper Russian River (from its confluence with the East Fork of the Russian River to its confluence with Dry Creek) shall remain at or above 75 cubic feet per second (cfs) through June 15 and remain at or above 25 cfs starting June 16.

b. Minimum instream flow in the lower Russian River (from its confluence with Dry Creek to the Pacific Ocean) shall remain at or above 85 cubic feet per second (cfs) through June 15 and remain at or above 50 cfs starting June 16.

c. For purposes of compliance with this term, the minimum instream flow requirements shall be measured based on a 24-hour mean instream flow criterion. ~~on a 5-day running average of average daily stream flow measurements, provided that instantaneous flows on the upper Russian River shall be no less than 65 cfs and on the lower Russian River shall be no less than 75 cfs.~~

The green curve in Figure 2 shows the Lake Mendocino storage levels that are projected to occur during the remainder of 2015 with the requested amendments described above. As shown by the green curve in Figure 2, it is projected that the requested changes would preserve approximately 7,000 AF of water storage in Lake Mendocino, resulting in almost 32,000 AF of storage on October 1. This will be a significant benefit if the drought continues into the 2016 water year. Furthermore, PG&E has indicated that it is planning to file another request for a variance with FERC to reduce the PVP's minimum instream flow requirements for the Russian River watershed from November 2015 to March 2016 so that PG&E may perform additional repairs to the PVP penstocks.

[1]See *Biological Opinion for Water Supply, Flood Control Operations and Channel Maintenance conducted by U.S. Army Corps of Engineers, the Sonoma County Water Agency and the Mendocino County Russian River Flood Control and Water Conservation Improvement District in the Russian River Watershed*, pp. 297-299 (NMFS, Sept. 24, 2008) for details on the incidental take statement and criteria.

Consequently, water transfers from the Eel River to the East Branch Russian River through PVP will be significantly reduced again this winter, making Lake Mendocino more reliant on carryover storage and inflow from storm events from its own watershed to fill during the 2016 water year.

Agency Consultation

On May 11, 2015 Water Agency staff met with representatives of the National Marine Fisheries Service (NMFS) and the California Department of Fish and Wildlife (CDFW) to discuss the impacts to Lake Mendocino storage that will result from PG&E's variance to minimum instream flow requirements to the East Fork Russian River. NMFS and CDFW indicated that they do not oppose the Water Agency's proposed amendments to the TUCP Order, but they requested that minimum instream flows not be reduced until after June 15, to provide adequate flows for out-migrating salmon.

On May 18, 2015 Water Agency staff met with representatives of the North Coast Regional Water Quality Control Board (Regional Board), including its Executive Officer, to discuss the impacts to Lake Mendocino storage that will result from PG&E's variance to minimum instream flow requirements to the East Fork Russian River. The Regional Board representatives indicated that they do not oppose the Water Agency's proposed amendments to the TUCP Order. The Regional Board, NMFS and CDFW have all indicated that they will submit correspondence to the State Board to provide input regarding the Water Agency's requested amendments to the TUCP Order.

Conclusion

The Water Agency is submitting this request for amendments to the TUCP Order to address the significant reductions in inflow from the PVP resulting from FERC's order approving PG&E's variance request. Under these changed hydrologic conditions, the Water Agency requests that the State Board approve the requested amendments to the TUCP Order, which will reduce the applicable minimum instream flow requirements for the Upper Russian River and Lower Russian River starting June 16 to preserve storage in Lake Mendocino and to prevent the development of more severe storage conditions. Please contact Don Seymour or myself if you have any questions or require additional information.

Sincerely,

[redacted]

Grant Davis
General Manager

cc: Katherine Lee - State Water Resources Control Board, Division of Water Rights
Pamela Jeane, Jay Jasperse, Don Seymour, Todd Schram, David Manning - Water Agency
Alan Lilly - Bartkiewicz, Kronick & Shanahan, P.C.

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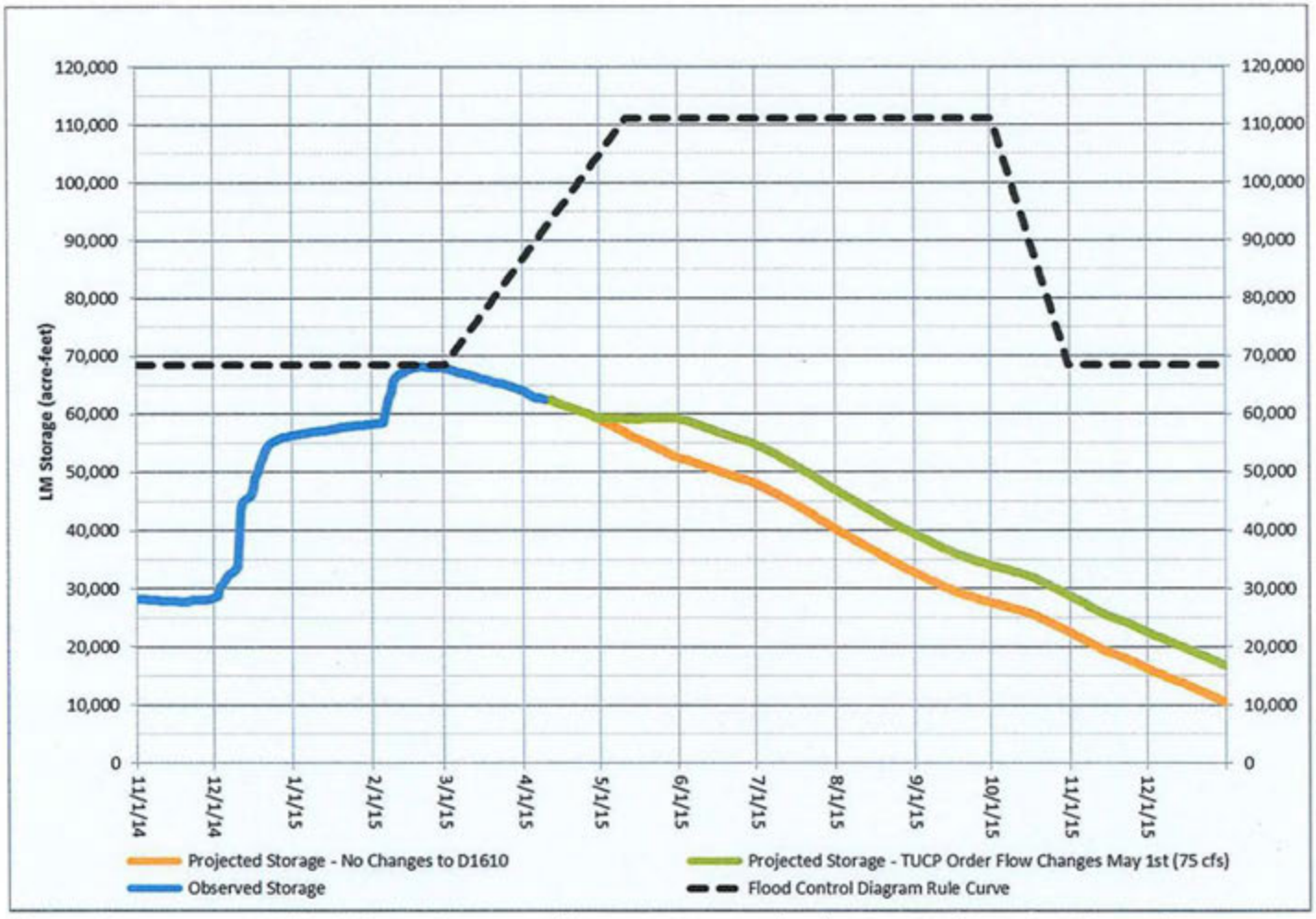
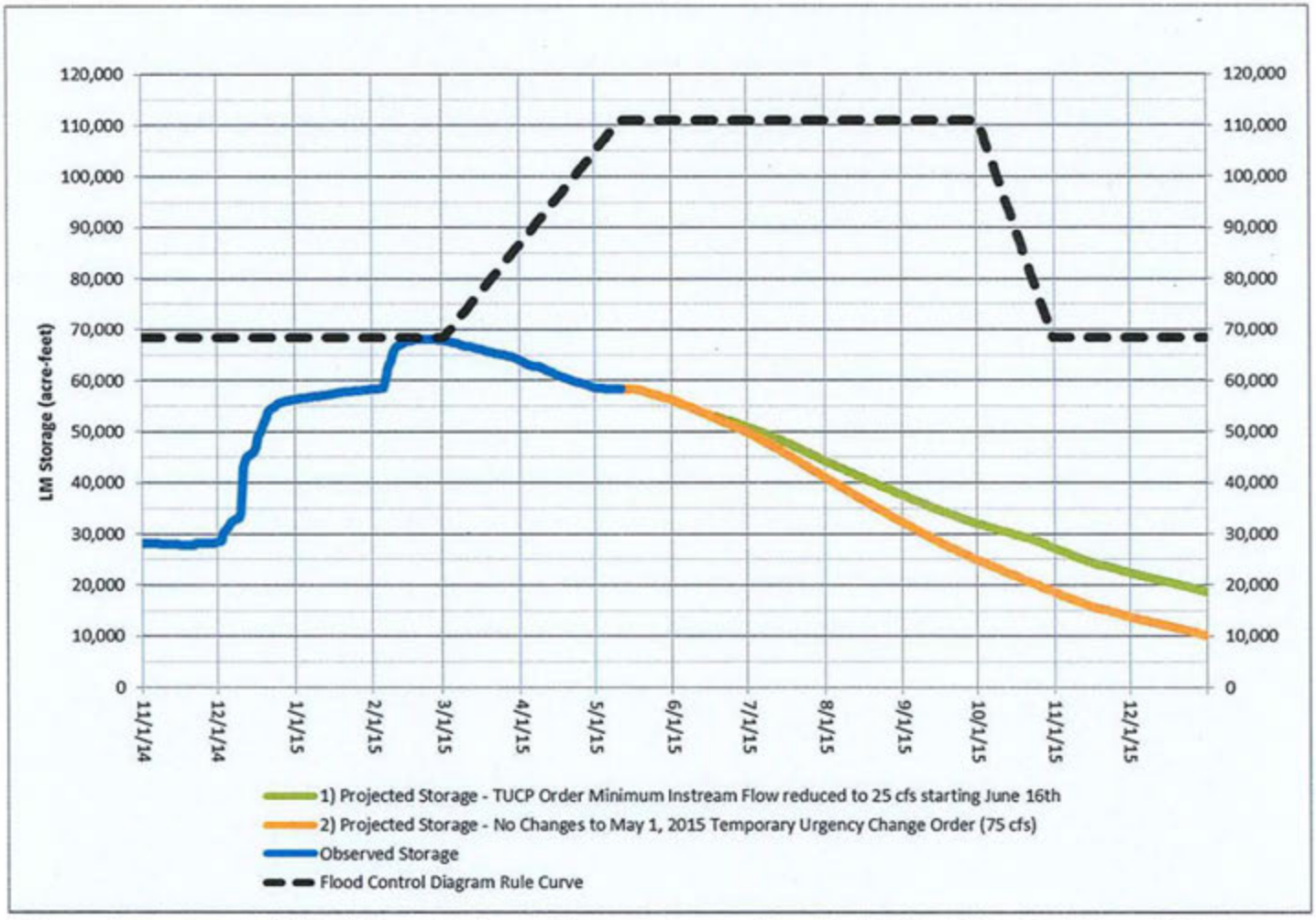
Figure 1 – Observed and Projected 2015 Lake Mendocino Storage Levels with 2015 TUCP Order



*Scenarios assume a PVP minimum instream flow requirement for the East Fork Russian River of 75 cfs through May 31 and 40 cfs starting June 1, per 2004 Amended FERC License

Figure 2 - Observed and Projected 2015 Lake Mendocino Storage Levels, May 21, 2015



*Scenarios assume a PVP minimum instream flow requirement for the East Fork Russian River of 25 cfs, per May 18 FERC Order approving Temporary Variance of PVP minimum flow requirements

Appendix 3.4

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

DIVISION OF WATER RIGHTS

In the Matter of Permits 12947A, 12949, 12950, and 16596
(Applications 12919A, 15736, 15737, 19351)

Sonoma County Water Agency

ORDER MODIFYING THE MAY 1, 2015 ORDER THAT APPROVED PETITIONS FOR TEMPORARY URGENCY CHANGES TO PERMIT TERMS AND CONDITIONS IN RESPONSE TO DROUGHT CONDITIONS

SOURCE: (1) East Fork Russian River tributary to Russian River
(2) Dry Creek tributary to Russian River
(3) Russian River thence the Pacific Ocean
COUNTIES: Sonoma and Mendocino Counties

BY THE DEPUTY DIRECTOR FOR WATER RIGHTS:

1.0 INTRODUCTION

This order modifies the State Water Resources Control Board's (State Water Board) May 1, 2015 Order (May 1 Order) that took action on a temporary urgency change petition (TUCP) filed by Sonoma County Water Agency (SCWA) on April 22, 2015 (April 22 Petition). The April 22 Petition requested approval of a change to the subject permits to temporarily reduce the Russian River instream flow requirements to address low storage conditions in Lake Mendocino. The May 1 Order conditionally approved the following changes requested by SCWA:

(1) From May 1, 2015 to October 27, 2015, reduce instream flow requirements for the upper Russian River (from the confluence with the East Fork Russian River to the confluence with Dry Creek) from 185 cubic feet per second (cfs) to 75 cfs.

(2) From May 1, 2015 to October 27, 2015, reduce instream flow requirements for the lower Russian River (downstream of the confluence with Dry Creek) from 125 cfs to 85 cfs.

The May 1 Order required the minimum instream flow requirements be measured based on a 5-day running average of average daily flow measurements, provided that instantaneous flows on the upper Russian River shall be no less than 65 cfs and on the lower Russian River shall be no less than 75 cfs.

On May 27, 2015, SCWA provided new information regarding the anticipated inflow to Lake Mendocino and requested additional changes to instream flow requirements (May 27 Request). This Order considers the new information and following requested changes:

(1) From June 16, 2015 to October 27, 2015, reduce instream flow requirements for the upper Russian River (from the confluence with the East Fork Russian River to the confluence with Dry Creek) to a minimum of 25 cfs.

(2) From June 16, 2015 to October 27, 2015, reduce instream flow requirements for the lower Russian River (downstream of the confluence with Dry Creek) to a minimum of 50 cfs.

The May 27 Request proposes that compliance with these reduced minimum instream flow requirements be measured based on a 24-hour mean instream flow criterion. The 24-hour instream flow criterion is intended to ensure a conservative operational buffer with respect to flow management, thereby allowing SCWA to conserve more water in Lake Mendocino.

The May 27 Request is intended to address the significant reductions in inflow from the Potter Valley Project (PVP) resulting from a Federal Energy Regulatory Commission (FERC) order approving Pacific Gas and Electric's (PG&E's) temporary variance request. The additional flow reduction in the upper Russian River is intended to prevent significant depletion of storage in Lake Mendocino and potential elimination of water supplies for 2015. Such depletion in storage and reduction to or elimination of water supplies would cause serious impacts to human health and welfare and reduce water supplies needed for fishery protection and stable flows in the upper Russian River. The request for the lower Russian River is intended to protect fishery resources in Dry Creek.

2.0 BACKGROUND

2.1 Water Right Permits

SCWA's May 27 Request involves the following permits:

- Permit 12947A (Application 12919A) for direct diversion of 92 cfs from the East Fork Russian River and storage of 122,500 acre-feet per annum (afa) in Lake Mendocino from January 1 through December 31 of each year;
- Permit 12949 (Application 15736) for direct diversion of 20 cfs from the Russian River at the Wohler and Mirabel Park Intakes near Forestville from January 1 through December 31 of each year;
- Permit 12950 (Application 15737) for direct diversion of 60 cfs from the Russian River at the Wohler and Mirabel Park Intakes from April 1 through September 30 of each year; and
- Permit 16596 (Application 19351) for direct diversion of 180 cfs from the Russian River from January 1 to December 31 of each year and storage of 245,000 afa in Lake Sonoma from October 1 of each year to May 1 of the succeeding year.

Permits 12947A, 12949, 12950, and 16596 contain the same water-year classification definitions. The water year classifications (Normal, Dry or Critical) were established in State Water Board Water Right Decision 1610 and are based on cumulative inflow into Lake Pillsbury beginning October 1 of each year. Although Lake Mendocino storage is much lower than average, cumulative inflow into Lake Pillsbury during this water year has been of a sufficient volume such that, under Decision 1610, 2015 is currently classified as a Normal year.

Term 20 of SCWA's Permit 12947A requires SCWA to pass through or release from storage at Lake Mendocino sufficient water to maintain specified instream flows for the protection of fish and wildlife, and for the maintenance of recreation in the Russian River. For normal water supply conditions, the minimum flow requirements are 185 cfs for the upper Russian River and 125 cfs for the lower Russian River.

Term 17 of both Permit 12949 and Permit 12950 requires SCWA to allow sufficient water to bypass the points of diversion at the Wohler and Mirabel Park Intakes on the Russian River to maintain 125 cfs to the Pacific Ocean during normal water supply conditions.

Similarly, Term 13 of Permit 16596 requires SCWA to maintain 125 cfs in the lower Russian River during normal water supply conditions, unless the water level in Lake Sonoma is below elevation 292.0 feet with reference to the National Geodetic Vertical Datum of 1929, or unless prohibited by the United States Government.

As noted in section 1.0, the May 1 Order reduced the minimum flow requirements for the upper and lower Russian River. The reduced flow values were based on a projected storage analysis provided by SCWA. The projected storage analysis prepared for the April 22 Petition was completed using SCWA's Russian

River Water System Model with the following assumptions: (1) Decision 1610 minimum instream flow requirements; (2) 2013 hydrology; (3) current Russian River system losses; and (4) PVP operations based on the 2004 amended license issued by FERC.

2.2 2015 Drought Conditions and Water Supply Effects

The State of California is in the midst of an unprecedented drought.

By proclamations dated January 17, 2014 and April 25, 2014 and Executive Orders B-26-14, B-28-14, and B-29-15, Governor Edmund G. Brown, Jr. (Governor) declared a state of emergency in California due to the ongoing extraordinary drought and directed state agencies to take various actions to help manage these drought conditions.

Since issuance of the May 1 Order, additional changes to the PVP operations have occurred that have exacerbated the current drought conditions. On May 18, 2018, FERC approved a flow variance request to operate the PVP under dry year summer flow requirements (May 18 FERC Order). The May 18 FERC Order authorizes a reduction in East Fork Russian River flows from 40 cfs to 25 cfs and identifies Lake Pillsbury storage threshold conditions under which flows could be reduced to as low as 5 cfs. In addition, the May 18 FERC Order requires PVP coordination of contract deliveries to the Potter Valley Irrigation District (PVID) to more closely match demands. This change and the reduction of the minimum instream flow requirements in the East Fork Russian River have resulted in much lower Lake Mendocino inflows than were anticipated when the State Water Board issued the May 1 Order. The May 18 FERC Order approves the reduction to instream flows through June 18, 2015. Based on comments received during the public notice period and the available data, FERC will take action, as warranted, to extend the variance approval beyond June 18, 2015.

Figure 1 below shows the flows of the East Fork Russian River at the United States Geological Survey (USGS) gage at Calpella (which is downstream of PVID's diversions and upstream of Lake Mendocino) between May 18 and June 8 for 2013 and 2015. Since approval of the May 18 FERC Order, flows at the Calpella gauge have been significantly lower than what was observed in previous years. Between May 19 and June 8, 2015 storage in Lake Mendocino has decreased by 1,700 acre-feet (af) (Lake Mendocino saw a reduction of just 64 af during the same time period in 2013). As shown below, PG&E has begun the process of decaying the flows in the East Fork Russian River, and will continue to do so until flows reach the minimum flow as authorized in the May 18 FERC Order.

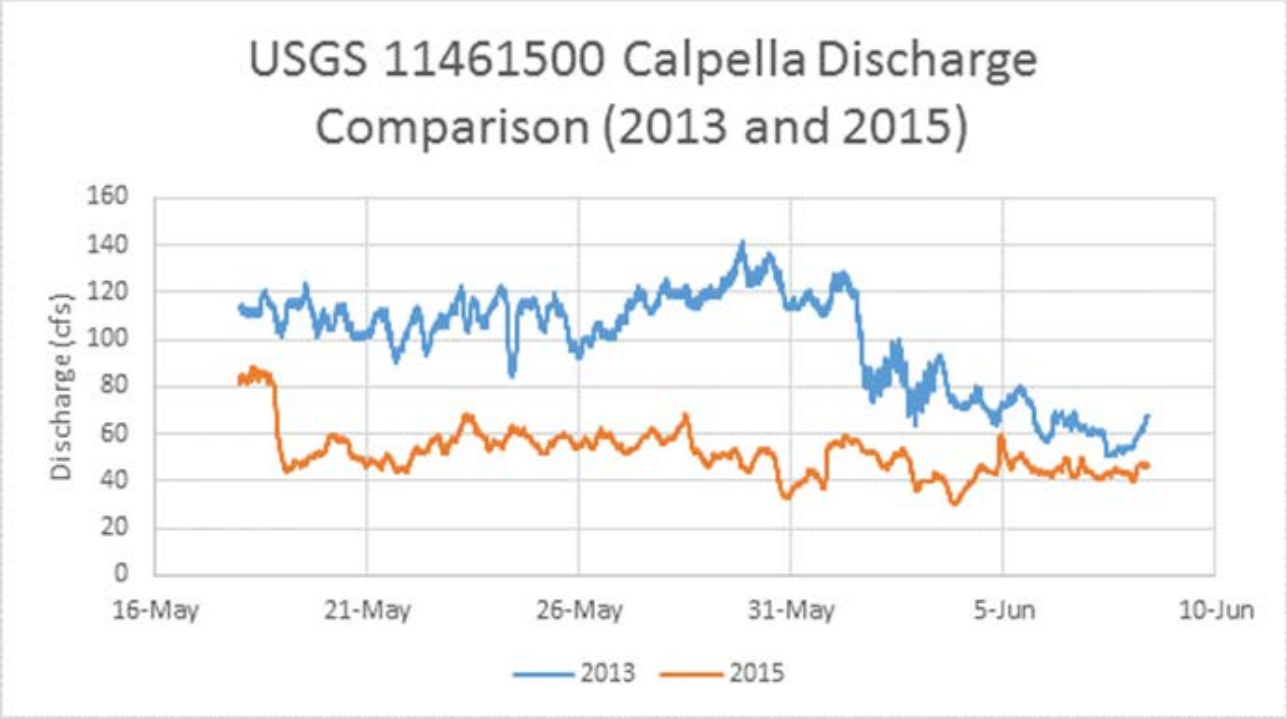


Figure 1: Comparison of Discharge at USGS Calpella Gage

The projected storage analysis prepared by SCWA for the April 22 Petition assumed hydrologic conditions similar to those that occurred during 2013 for projecting Lake Mendocino storage levels through the summer and late fall of 2015. 2013 was selected because it had similar hydrology as 2015 and PVP and the Russian River had the same water supply condition designation and minimum instream flow requirements in both years. In light of the changes described above, SCWA prepared and submitted a subsequent projected storage analysis as part of the May 27 Request (May 27 Projected Storage Analysis). The May 27 Projected Storage Analysis was completed using SCWA's Russian River Water System Model with the following assumptions: (1) minimum instream flows in the upper Russian River of 75 cfs from May 1 to December 31; (2) 2013 hydrology; (3) current Russian River system losses; and (4) PVP operations based on the May 18 FERC Order approving PG&E's request to operate under dry water year conditions. The May 27 Projected Storage Analysis shows Lake Mendocino storage is expected to decline to below 25,000 af by October 1, 2015, due to reduced PVP inflows, releases required to meet downstream water demands, and anticipated minimum instream flow requirements on the Russian River and, if dry conditions continue, storage levels could be as low as 10,000 af on January 1, 2016.

These extremely low projected storage levels and possible elimination of water supply in Lake Mendocino could cause serious impacts to human health and welfare, threatened and endangered Russian River fish species, and water-supply in Mendocino County and the Alexander Valley in Sonoma County, as well as harm Lake Mendocino and Russian River recreation. Therefore, SCWA proposes to further reduce the instream flow requirements on the upper Russian River, which are maintained by reservoir releases, to preserve water in Lake Mendocino. SCWA estimates the requested change would preserve approximately 7,000 af of water storage in Lake Mendocino, resulting in almost 32,000 af of storage on October 1.

SCWA is also requesting changes to the minimum instream flow requirements on the lower Russian River, downstream of its confluence with Dry Creek to the Pacific Ocean. These changes are requested because the reduced minimum instream flows being requested on the upper Russian River will provide significantly less contribution to meet minimum instream flow requirements in the lower Russian River. Consequently, increased releases from Lake Sonoma into Dry Creek could be necessary to maintain 85 cfs on the lower Russian River. However, increased releases into Dry Creek are limited by the Incidental Take Statement

contained in the September 24, 2008, National Marine Fisheries Service (NMFS) Biological Opinion for Water Supply, Flood Control Operations, and Channel Maintenance conducted by the U.S. Army Corps of Engineers, SCWA, and the Mendocino County Russian River Flood Control and Water Conservation Improvement District in the Russian River watershed (Biological Opinion). The Incidental Take Statement restricts releases from Lake Sonoma into Dry Creek because they can result in flows that are too high for optimal habitat for juvenile salmonids. Therefore, SCWA proposes to reduce the minimum instream flow requirements for the lower Russian River to protect fishery resources in Dry Creek.

3.0 COMPLIANCE WITH CALIFORNIA ENVIRONMENTAL QUALITY ACT

Ordinarily, the State Water Board must comply with any applicable requirements of the California Environmental Quality Act (CEQA) prior to issuance of any order approving a TUCP, or modifications thereto, pursuant to Water Code section 1435. (Cal. Code Regs., tit. 23, § 805.) However, the Governor's January 17, 2014 Proclamation concluded that strict compliance with CEQA would "prevent, hinder, or delay the mitigation of the effects of the emergency." Accordingly, as authorized by Government Code section 8571, item 9 of the Governor's Proclamation suspends CEQA, and the regulations adopted pursuant to it, to the extent that CEQA would otherwise apply to specified actions necessary to mitigate the effects of the drought, including the actions described in item 8 of the Governor's Proclamation. Item 8 requires the State Water Board to consider modifying requirements for reservoir releases or diversion limitations that were established to implement a water quality control plan. The subject instream flow requirements implement the Water Quality Control Plan for the North Coast Region because they protect instream beneficial uses that are designated in the plan, including recreation, cold and warm freshwater habitat, and wildlife habitat.

The Governor's Executive Order B-29-15, dated April 1, 2015, continued the state of emergency and concluded that the suspension of CEQA under the January 17, 2014 Proclamation is to remain in effect until May 31, 2016. Accordingly, CEQA is suspended to the extent that it would otherwise apply to the TUCP and subsequent modifications thereto.

In addition, the changes sought by the May 27 Request are consistent with the following Statutory and Categorical CEQA exemptions for the following reasons:

1) Information provided by SCWA demonstrates that continued releases of water pursuant to requirements in the May 1 Order could cause storage levels in Lake Mendocino to decline to unsafe levels. If storage in Lake Mendocino is depleted there will be serious impacts to human health and welfare and water will not be available to protect aquatic life, including threatened and endangered species in the Russian River. Approval of the May 27 Request is therefore necessary to prevent and mitigate loss of, or damage to, the environment, fishery resources, property, public health, and essential public services. Accordingly, the project is statutorily exempt from CEQA because it is necessary to prevent or mitigate an emergency. (Pub. Resources Code, § 21080, subd. (b)(4); Cal. Code Regs., tit. 14, § 15269, subd. (c).)
2) The proposed action consists of the operation of existing facilities involving negligible or no expansion of use beyond that existing, and accordingly is categorically exempt from CEQA under a Class 1 exemption. (Cal. Code Regs., tit. 14, § 15301.) The proposed action will be within the range of minimum instream flows established by Decision 1610.
3) A Class 7 exemption "consists of actions taken by regulatory agencies as authorized by state law or local ordinance to assure the maintenance, restoration, or enhancement of a natural resource where the regulatory process involves procedures for protection of the environment." (Cal. Code Regs, tit. 14, § 15307.) The proposed action on the upper Russian River will ensure the maintenance of a natural resource, i.e., the instream resources of the Russian River, by reserving water in Lake Mendocino to prevent harm to, and protect habitat for listed Russian River salmonid fisheries. The proposed action on the lower Russian River will also ensure the maintenance of a natural resource, i.e, the instream resources of Dry Creek, by avoiding impacts to salmonids consistent with the

Incidental Take Statement. Accordingly, these changes are categorically exempt from CEQA pursuant to a Class 7 exemption.

4) A Class 8 exemption "consists of actions taken by regulatory agencies, as authorized by state or local ordinance, to assure the maintenance, restoration, enhancement, or protection of the environment where the regulatory process involves procedures for protection of the environment." (Cal. Code Regs., tit. 14, § 15308.) The proposed action will ensure the maintenance of the environment, i.e., the instream environment of the Russian River, in the same way as stated for the Class 7 exemption.

4.0 PROCEDURAL REQUIREMENTS CONCERNING THE TUCP

Pursuant to Water Code section 1438, the State Water Board may issue a temporary urgency change order in advance of the required notice. The State Water Board issued and delivered to SCWA, a notice of the temporary urgency change order pursuant to Water Code section 1438, subdivision (a) on May 15, 2015. Pursuant to Water Code section 1438, subdivision (b)(1), SCWA was required to publish the notice in a newspaper having a general circulation, and that is published within the counties where the points of diversion lie. SCWA published the notice on June 3, 2015, in the Ukiah Daily Journal and on June 4, 2015, in the Press Democrat. The State Water Board posted the notice of the temporary urgency change, the April 22 Petition, and the May 27 Request on its website. The State Water Board also distributed public notices of the April 22 Petition and the May 27 Request through an electronic notification system.

To date State Water Board has received four comments or objections. This Order does not provide written responses to comments and objections due to the urgent nature of the request and the limited time to respond to the comments and objections received. Although written responses are not being provided at this time, the comments, objections, and issues raised were reviewed prior to reaching this decision.

5.0 CRITERIA FOR APPROVING THE PROPOSED TEMPORARY URGENCY CHANGE

Water Code section 1435 provides that a permittee or licensee who has an urgent need to change the point of diversion, place of use, or purpose of use from that specified in the permit or license may petition for a conditional temporary change order. The State Water Board's regulations set forth the filing and other procedural requirements applicable to TUCPs, or any modification thereto. (Cal. Code Regs., tit. 23, §§ 805, 806.) The State Water Board's regulations also clarify that requests for changes to permits or licenses other than changes in point of diversion, place of use, or purpose of use may be filed, subject to the same filing and procedural requirements that apply to changes in point of diversion, place of use, or purpose of use. (*Id*., § 791, subd. (e).)

Before approving a temporary urgency change, or modifications thereto, the State Water Board must make the following findings (Wat. Code, § 1435, subd. (b)(1-4).):

1. the permittee or licensee has an urgent need to make the proposed change;
2. the proposed change may be made without injury to any other lawful user of water;
3. the proposed change may be made without unreasonable effect upon fish, wildlife, or other instream beneficial uses; and
4. the proposed change is in the public interest.

The State Water Board exercises continuing supervision over temporary urgency change orders and may modify or revoke temporary urgency change orders at any time. (Wat. Code §§ 1439, 1440). Temporary urgency change orders expire 180 days after issuance, unless they are revoked or an earlier expiration date is specified. (*Id*., § 1440). The State Water Board may renew temporary urgency change orders for a period not to exceed 180 days. (*Id*., § 1441.)

5.1 Urgency of the Proposed Change

Under Water Code section 1435, subdivision (c), an "urgent need" means "the existence of circumstances from which the board may in its judgment conclude that the proposed temporary change is necessary to further the constitutional policy that the water resources of the state be put to beneficial use to the fullest extent of which they are capable and that waste of water be prevented . . . ."

The May 18 FERC order has and will result in changes to Lake Mendocino inflows that were not anticipated when SCWA filed and the State Water Board approved the April 22 Petition. Specifically, the reduction of the minimum instream flow requirements in the East Fork Russian River has resulted in much lower Lake Mendocino inflows and Lake Mendocino inflows will continue to decline as the PVP implements operational changes to more closely coordinate PVID contract deliveries with demands. As described in the May 27 Request and section 2.2 of this order, Lake Mendocino reservoir levels are projected to reach extremely low conditions that may prevent SCWA from continuing to make the reservoir releases that are necessary to support the various beneficial uses that rely on these releases in the Russian River. If upcoming dry conditions persist and significant storm events are delayed or do not occur in the upcoming Water Year 2016, then carryover storage in Lake Mendocino from 2015 will be crucial for the continued protection of the Russian River salmonid fishery and water supply reliability. Specifically, at low storage conditions, there would be greater risk of insufficient water supplies to support: (a) survival of Russian River salmonid species that are listed under the Endangered Species Act, (b) agricultural and municipal uses that depend on the Russian River, and (c) river-based recreation. Without the proposed May 27 requested changes, the current minimum instream flow requirements would require releases of water from Lake Mendocino at levels that would risk significant depletion of storage and potential elimination of water supplies for water uses in Mendocino County and northern Sonoma County (above the confluence with Dry Creek). Such depletion in storage and reduction in or elimination of water supplies would cause serious impacts to human health and welfare, and reduce water supplies needed for fishery protection and stable flows in the upper Russian River. Accordingly, provided the May 18 FERC order is approved beyond June 18, an urgent need exists for the proposed change in minimum instream flow requirements on the upper Russian River.

An urgent need also exists for the proposed change in minimum instream flow requirements on the lower Russian River because, without that change, reductions in the upper Russian River flows would require an increase in Lake Sonoma releases into Dry Creek to meet lower Russian River flow requirements. The Biological Opinion found that high Dry Creek flows from June through October result in sub-optimal habitat conditions for juvenile salmonids and issued an Incidental Take Statement restricting releases from Lake Sonoma to Dry Creek from June through October each year. Therefore, higher Dry Creek flows could be detrimental to the fisheries in Dry Creek and result in violations of the Incidental Take Statement. In addition, reductions in the lower Russian River minimum instream flow requirements will conserve storage in Lake Sonoma during drought conditions. Considering the severe drought conditions and the Governor's Emergency Drought Proclamation, conservation of water in Lake Sonoma is prudent.

5.2 No Injury to Any Other Lawful User of Water

Under this Order, SCWA will be required to maintain specific flows in the Russian River from its most upstream point of diversion to the river's confluence with the ocean. Therefore, because these minimum flows will be present, it is anticipated that all other lawful users of water will still be able to divert and use any water to which they may be legally entitled during the period specified in this Order. As a general rule, appropriative water right holders with rights to divert water below Lake Mendocino and Lake Sonoma only are entitled to divert natural and abandoned flows, and riparian water right holders only are entitled to divert natural flows; appropriative and riparian right holders are not entitled to divert water previously stored by

SCWA that is released for use downstream, including stored water that is released for purposes of meeting instream flow requirements. (*State Water Resources Control Board Cases* (2006) 136 Cal.App.4th 674, 738-743.) Accordingly, SCWA is not obligated to supply water stored in Lake Mendocino to other users of water, except to the extent the users hold permits issued under the Sonoma County reservation established in Decision 1030 and Order WR 74-30. The reservation only applies, however, to the use of water within the Russian River Valley, as that area is defined by a map prepared by the U.S. Army Corps of Engineers (Decision 1030, pp. 9, 46-47), and SCWA is not obligated to release stored water to satisfy demand under the reservation to the extent that retention of stored water is necessary to ensure satisfaction of the minimum instream flows required under Permit 12947A (Order WR 74-30, p. 13). In addition, no appropriators have alleged that their entitlement to water under the Sonoma County reservation will be impaired by the proposed changes. For these reasons, other legal users of water will not be injured to the extent that SCWA releases less previously stored water as a result of the changes. Nevertheless, SCWA conducted an evaluation of potential impacts to shallow alluvial wells adjacent to the Russian River that may occur as a result of reducing minimum instream flow requirements in the upper Russian River from 75 cfs to 25 cfs. The evaluation was based on a review of the USGS stream gage at Healdsburg and concluded that river stage at 25 cfs is approximately three inches lower than river stage at 75 cfs. For purposes of the evaluation, SCWA assumed the flow at Healdsburg would be approximately 45 cfs when the minimum flow requirement is 25 cfs and 90 cfs when the minimum flow requirement is 75 cfs due to operational buffers. There is no information in the record that indicates that alluvial wells adjacent to the Russian River would be impacted by lowering the river stage by three inches. Notwithstanding the foregoing, SCWA and the State Water Board Division of Drinking Water are currently and will continue to coordinate on public outreach to water systems in Sonoma County that divert from the upper Russian River as a means of monitoring and responding to unanticipated water supply concerns. Based on the information available, granting the May 27 Request will not result in any injury to any other lawful user of water. Pursuant to Water Code section 1439, the State Water Board will supervise diversion and use of water under this temporary change order for the protection of all other lawful users of water and instream beneficial uses.

5.3 No Unreasonable Effect upon Fish, Wildlife, or Other Instream Beneficial Uses

Although flows in the Russian River will be reduced upon approval of the May 27 Request, which could adversely affect fish, wildlife, or other instream beneficial uses, prevention of the depletion of storage in Lake Mendocino is crucial to avoid greater harm to instream beneficial uses, including threatened and endangered fish species. Reductions in the minimum instream flow requirements will improve carryover storage in Lake Mendocino, which will provide significant benefit to all instream beneficial uses if dry conditions persist into Water Year 2016. Specifically, conserved storage will allow enhanced management of Russian River flows in the fall, winter and next spring for the benefit of salmon migration, spawning, and rearing. It is possible that the reduced flows may impair some instream beneficial uses, principally recreation, in the Russian River. However, any effects associated with such flow reductions would not be unreasonable, considering the potential catastrophic impacts to fish, wildlife and other instream beneficial uses that could occur with the current release levels, if the current release levels result in the draining of Lake Mendocino and the dewatering of the upper Russian River.

SCWA has consulted with the California Department of Fish and Wildlife (CDFW), NMFS, and the North Coast Regional Water Quality Control Board (Regional Water Board) regarding the May 27 Request. The Regional Water Board did not object to the proposed May 27 Request and believes the terms and conditions requiring continuous water quality monitoring included in the May 1 Order are appropriate. CDFW stated that while further reductions are not optimal, they do not object to implementation of the proposed changes. CDFW further stated that the timing of the initiation of the proposed reduction (June 16) will allow the majority of the out-migrating salmonids to exit the system and should not cause significant impacts to the warm water fish, reptiles, or amphibians remaining in the Russian River. NMFS indicated support of a plan to conserve water storage in Lake Mendocino and does not oppose the requested changes. Like CDFW, NMFS recommends the flows not be reduced until after June 15, to provide adequate flows for out-migrating salmon and steelhead. This Order will retain the requirements from the May 1 Order for: (1) monitoring and

reporting numbers of adult salmon and steelhead; (2) consulting with CDFW and NMFS regarding flow increases to support successful migration of salmon and steelhead; and (3) limiting ramping rates below Lake Mendocino to avoid fish stranding.

To inform the review and approval of the May 27 Request, and the State Water Board's continuing supervision of the diversion and use of water under this temporary change order pursuant to Water Code section 1439, SCWA will continue to be required to report on consultations with CDFW, NMFS, and the Regional Water Board. In addition, to ensure beneficial use of water resources to the fullest extent possible and to prevent waste of water, SCWA will continue to be required to provide weekly updates to the State Water Board, CDFW, NMFS, and the Regional Water Board regarding the current hydrologic and environmental (water quality and fishery) conditions of the Russian River (Term 15). This information will assist the State Water Board in determining whether additional actions are necessary.

5.4 The Proposed Change is in the Public Interest

Provided the May 18 FERC Order is extended beyond June 18, the proposed changes in the upper Russian River minimum instream flow requirements will help conserve stored water in Lake Mendocino so that water can be released to maintain instream flows for the benefit and protection of all uses of Russian River water, including the salmonid fisheries in the Russian River. It is in the public interest to preserve these water supplies for these beneficial uses under present severe drought hydrologic conditions. Furthermore, according to SCWA, the preserved storage will help mitigate reduced transfers of Eel River water to the East Fork Russian River due to repair activities to the PVP penstocks that are scheduled to occur between November 2015 and March 2016. As a means of further preserving Lake Mendocino water supplies, this order retains Term 19 to facilitate SCWA storage release operations to meet minimum instream flow requirements with minimal operational buffers.

The proposed changes in the lower Russian River minimum instream flow requirements will support ecological values in Dry Creek by preventing higher Dry Creek flows that could be necessary if the State Water Board were to approve only the requested changes in the upper Russian River requirements. As discussed above, higher Dry Creek flows would impair habitat conditions for juvenile salmonids and deplete storage in Lake Sonoma. It is in the public interest to minimize impacts to salmonids and conserve water supplies in Lake Sonoma during the current drought. Reductions in diversions at SCWA's facilities can also serve to increase flows in the lower Russian River and prevent the need for higher Dry Creek flows. Accordingly, the order retains Term 20 requiring SCWA and its contractors to conserve water. In addition, SCWA will continue to implement water use efficiency programs that align with the California Urban Water Conservation Council's Best Management Practices and comply with the requirements of SBx7-7.

6.0 CONCLUSIONS

The State Water Board has adequate information in its files to make the findings required by Water Code section 1435, subdivision(b).

I conclude that, based on the available evidence:

1. The permittee has an urgent need to make the changes proposed by the May 27 Request;
2. The proposed changes will not operate to the injury of any other lawful user of water;
3. The proposed changes will not have an unreasonable effect upon fish, wildlife, or other instream beneficial uses; and,
4. The proposed changes are in the public interest.

ORDER

NOW, THEREFORE, IT IS ORDERED THAT: the May 1 Order is affirmed, subject to the modifications and additional changes set forth below. Changes to the May 1 Order are provided in **bold underline** and ~~**bold strikethrough**~~.

IT IS ORDERED THAT: the Petition filed by Sonoma County Water Agency (SCWA) for a temporary urgency change in Permits 12947A, 12949, 12950 and 16596 is approved and effective until **October 27, 2015** ~~**180 days from the date of this Order**~~.

All existing terms and conditions of the subject permit**s** remain in effect, except as temporarily amended by the following provisions:

1. The minimum instream flow requirements in the Russian River, as specified in Term 20 of Permit 12947A, Term 17 of Permits 12949 and 12950, and Term 13 of Permit 16596, shall be modified as follows:

    a. Minimum instream flow in the upper Russian River (from its confluence with the East Fork of the Russian River to its confluence with Dry Creek) shall remain at or above 75 cfs **through June 15, 2015 and remain at or above 25 cfs starting June 16, 2015**.

    b. Minimum instream flow in the lower Russian River (from its confluence with Dry Creek to the Pacific Ocean) shall remain at or above 85 cfs **through June 15, 2015 and remain at or above 50 cfs starting June 16, 2015**.

    c. For purposes of compliance with this term, the minimum instream flow requirements shall be measured based on a **24-hour mean instream flow criterion**.~~**5-day running average of average daily stream flow measurements, provided that instantaneous flows on the upper Russian River shall be no less than 65 cfs and on the lower Russian River shall be no less than 75 cfs.**~~

    In the event the East Fork Russian River minimum flow requirements or Potter Valley Project operational stipulations required pursuant to the May 18 FERC Order are not extended through October 27, 2015, SCWA shall immediately initiate consultations with the Deputy Director of Water Rights.

2. SCWA shall monitor and record daily numbers of adult salmon and steelhead moving upstream past the life cycle monitoring station in Dry Creek (when operable) beginning no later than September 1, 2015, and continuing through the term of this Order. SCWA shall include these numbers in weekly reports required in Term 15.

3. SCWA shall monitor numbers of adult salmon and steelhead at known spawning sites and in representative deep pools in the Upper Russian River (Lake Mendocino to Healdsburg) on a weekly basis after the number of adult salmon and steelhead counted at Dry Creek exceeds 100 fish. Weekly surveys shall continue until expiration of the Order, or when sustained flow at Healdsburg is above 150 cfs, whichever is earlier.

4. Beginning October 1, 2015, if adult salmon and steelhead can enter the Russian River estuary and suitable water clarity allows snorkel surveys, SCWA shall monitor numbers of adult salmon and steelhead in representative deep pools in the Lower Russian River downstream of the Mirabel inflatable dam on a weekly basis continuing through the term of this Order.

5. After a cumulative seasonal total of 100 adult salmon and steelhead move upstream past the life cycle monitoring station in Dry Creek, or on November 1st, whichever is earlier, SCWA shall consult with the National Marine Fisheries Service (NMFS) and the California Department of Fish and Wildlife (CDFW) regarding the possibility of increasing instream flow at the USGS gages at both Hopland (No.11462500) and Healdsburg (No. 11464000) to a level not exceeding 100 cfs, and at the USGS gage at Hacienda (No.11467000) to a level not to exceed 135 cfs. Consultations shall occur every two weeks and SCWA

shall submit a summary report of consultation details and any increases to the minimum flows to the Deputy Director within one week of each consultation meeting.

6. SCWA shall consult with NMFS and CDFW regarding any necessary revisions to Terms 2 through 5. SCWA shall submit a summary report of consultation details to the Deputy Director within one week of any consultation meeting. Upon consultation with NMFS and CDFW, any necessary revisions to the terms and conditions shall be made upon approval by the Deputy Director.

7. Reporting of fisheries monitoring tasks described in Terms 2 through 6 shall be submitted to the Deputy Director by April 1, 2016 in accordance with NMFS and CDFW annual reporting requirements as more fully described in the Biological Opinion.

8. To protect against stranding of fish when releases from Lake Mendocino are reduced under this Order, flow in the East Fork Russian River immediately below Coyote Dam shall not be reduced by more than 25 cfs per hour. Ramping rates specified in this term may be revised upon consultation with NMFS and CDFW. SCWA shall submit a summary report of consultation details to the Deputy Director within one week of each consultation meeting.

9. This Order does not authorize any act that results in the taking of a candidate, threatened or endangered species, or any act that 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 permittee shall obtain authorization for an incidental take permit prior to construction or operation of the project. Permittee shall be responsible for meeting all requirements of the applicable Endangered Species Act for the temporary urgency change authorized under this Order.

10. Monitoring shall be conducted to determine the water quality effects and the effects to availability of aquatic habitat for salmonids resulting from the approved temporary urgency change. Mainstem Russian River and estuary monitoring shall include continuous monitoring of temperature, dissolved oxygen (DO), pH, and specific conductance at multiple stations from Ukiah to Jenner.

    a. For the duration of this Order, monitoring on the mainstem Russian River shall occur at three, multi-parameter "permanent" water quality sondes on the Russian River at USGS stream gages located at Hopland, Diggers Bend near Healdsburg, and Hacienda Bridge. These three sondes are referred to as "permanent" as they are maintained as part of SCWA's early warning detection system in coordination with the United States Geological Survey (USGS) on its "Real-time Data for California" website. As of March 2014, the sonde at SCWA's river diversion facility (RDS) at Mirabel was removed due to several construction projects; therefore it will not be included in the 2015 monitoring effort. SCWA, in cooperation with the USGS, shall also operate three seasonal sondes with real-time telemetry at USGS gages at Cloverdale station (north of Cloverdale at Commisky Station Road), Jimtown (at the Alexander Valley Road bridge), and at Johnson's Beach (Guerneville). The sonde at the Cloverdale gage collects DO and temperature, the sonde at the Jimtown gage collects pH, temperature, DO, specific conductance and turbidity, and the sonde at Johnson's Beach collects pH, temperature, DO, specific conductance and turbidity. Data from these locations is available on the USGS "Real-time Data for California" website.

    b. Monitoring in the mainstem Russian River Estuary shall be conducted in accordance with the current "Water Quality Monitoring Plan for the Russian River Estuary Management Project."

    c. Monitoring on the East Fork Russian River, shall occur at a seasonal sonde approximately 1/3 mile (0.33 mi) downstream from Lake Mendocino, and shall record hourly measurements of water temperature, DO, specific conductance, pH, and turbidity. The monitoring site will be accessed by foot.

11. SCWA shall monitor five surface-water sites in the Russian River Estuary in accordance with the current "Water Quality Monitoring Plan for the Russian River Estuary Management Project".

12. Before June 15, 2015, SCWA shall consult with the North Coast Regional Board to discuss possible water quality impacts of the reduced flows and water quality monitoring activities. SCWA shall submit a summary report of consultation details and a description of any modifications to the monitoring activities to the Deputy Director within one week of the consultation meeting. Upon consultation with the Regional Board, any necessary revisions to Terms 10 and 11 shall be made upon approval by the Deputy Director.

13. SCWA shall provide the summary data from the permanent water quality sondes required in Term 10a and nutrient/bacterial/algal sampling in Term 11 (as data becomes available) to the Deputy Director for the State Water Board and the Executive Director for the Regional Board in the weekly hydrologic status report required in Term 15. If any water quality issues of concern are observed from the continuous monitoring after June 15, 2015, SCWA or the North Coast Regional Board can initiate additional consultation. SCWA shall submit a summary report of consultation details to the Deputy Director within one week of each consultation meeting. If no additional consultation is necessary; SCWA shall submit an explanation to the Deputy Director within one week after the conclusion of the effective period of this Order. Upon consultation with the Regional Board, any necessary revisions to Terms 10 and 11 shall be made upon approval by the Deputy Director.

14. SCWA shall summarize all water quality data collected pursuant to Terms 10 and 11 during the term of this Order. The summary report shall include an evaluation of whether, and to what extent, the reduced flows authorized by the Order caused any impacts to water quality, including any water quality impacts affecting recreation or the availability of aquatic habitat for salmonids. The report shall be submitted to the Deputy Director by April 1, 2016.

15. SCWA shall report to the Deputy Director of Water Rights and the Executive Director of the North Coast Regional Board on a weekly basis regarding the current hydrologic condition of the Russian River system, including current Lake Mendocino reservoir level, the rate of decline for Lake Mendocino, a 16-day cumulative rainfall forecast, current inflow from Potter Valley, fish counts, and a summary of the available water quality data, including bacteria indicators.

16. The State Water Board reserves jurisdiction to supervise the temporary urgency change under this Order, and to coordinate or modify terms and conditions, for the protection of vested rights, fish, wildlife, instream beneficial uses and the public interest as future conditions may warrant.

17. SCWA shall immediately notify the State Water Board if any significant change in storage conditions in Lake Mendocino occurs that warrants reconsideration of this Order.

18. SCWA shall provide a written update to the Deputy Director by April 1, 2016, regarding activities and programs being implemented by SCWA and its water contractors to assess and reduce water loss, promote increased water use efficiency and conservation, and improve regional water supply reliability.

19. To facilitate releases of Lake Mendocino stored water with minimal operational buffers, SCWA shall coordinate with the Mendocino County Russian River Flood Control and Water Conservation Improvement District (District) regarding implementation of protocols for real time 1 and 3 day advance forecasts of total diversions by all of the District's customers under all bases of right. SCWA shall provide an update to the Deputy Director regarding the outcome of consultation and the effectiveness of reporting by April 1, 2016.

20. SCWA shall submit evidence of compliance with any future regulatory framework implementing the conservation requirements of the Governor's April 1, 2015 executive Order (future regulatory framework) or a water demand reduction plan (Plan) for all customers that beneficially use water diverted and /or stored under these rights or customers otherwise subject to the temporary changes authorized by this order (excluding customers found on the De Minimus list provided by SCWA on April 29, 2015, whose diversions amount to less than one percent of SCWA's total water distributed), as follows:

    a. For SCWA customers that are subject to the future regulatory framework, SCWA shall submit written confirmation to the Deputy Director to demonstrate whether and how said customer is A) subject to the future regulatory framework and B) in compliance with all applicable conservation and reporting requirements therein. The written confirmation for

part A shall be submitted within 2 weeks after the effective date of the future regulatory framework and updated within 2 weeks of any new such customer being added. The written confirmation for part B shall be submitted within 180 days of the date of order issuance.

b. For SCWA customers that are not subject to the future regulatory framework, SCWA shall prepare a Plan to ensure these customers meet a water demand reduction of a minimum of 20% of baseline water demand. The plan shall define baseline water demand as appropriate for SCWA's situation based on considerations such as weather, economy, wholesale supplier allocations or other relevant information. For the purpose of compliance with this term, if the Plan does not define baseline water demand, it is assumed to be the average water demand for the previous year (excluding drought years). The Plan shall be submitted within 2 weeks after the date of issuance of this order and updated within 2 weeks of any such new customer being added.

Upon receipt of demand reduction data, SCWA shall immediately inform the Deputy Director in the event that SCWA or any SCWA customer is not meeting the requirements of this term.

This term shall not be construed to suggest SCWA or SCWA customers are able to disregard or otherwise not comply with any applicable requirements under the future regulatory framework.

STATE WATER RESOURCES CONTROL BOARD

ORIGINAL SIGNED BY:

Barbara Evoy, Deputy Director
Division of Water Rights

Dated: June 17, 2015

Appendix 3.5

Russian River Water Quality Summary for the 2015 Temporary Urgency Change

SONOMA COUNTY WATER AGENCY

March 2016

Contents

1.0 Introduction

On April 22, 2015, the Sonoma County Water Agency (Water Agency) filed a Temporary Urgency Change Petition (TUCP) with the State Water Resources Control Board (SWRCB) to temporarily reduce minimum instream flows in the upper Russian River to prevent significant depletion of storage in Lake Mendocino and the potential elimination of water supplies for 2015, and in the lower Russian River to protect fishery resources in Dry Creek.

In summary, the Water Agency requested that the SWRCB make the following temporary changes to the Decision 1610 (D1610) instream flow requirements:

(1) From May 1, 2015, through October 27, 2015, reduce instream flow requirements for the upper Russian River (from its confluence with the East Fork of the Russian River to its confluence with Dry Creek) from 185 cubic feet per second (cfs) to 75 cfs.

(2) From May 1, 2015, through October 27, 2015, reduce instream flow requirements for the lower Russian River (downstream of its confluence with Dry Creek) from 125 cfs to 85 cfs.

The TUCP also requested that compliance with these minimum instream flow requirements be measured based on a 5-day running average of average daily stream flow measurements, provided that instantaneous flows on the upper Russian River shall be no less than 65 cfs and on the lower Russian River shall be no less than 75 cfs. These 5-day running average provisions allowed the Water Agency to reduce the operational buffers needed to manage these stream flows, thereby allowing the Water Agency to conserve more water in Lake Mendocino. The SWRCB issued an Order (Order) approving the Water Agency's TUCP on May 1, 2015.

On May 27, 2015, the Water Agency provided new information to the SWRCB regarding anticipated inflow into Lake Mendocino and requested additional changes to instream flow requirements (May 27 Request):

(1) From June 16, 2015, through October 27, 2015, reduce instream flow requirements for the upper Russian River (from its confluence with the East Fork of the Russian River to its confluence with Dry Creek) to a minimum of 25 cfs.

(2) From June 16, 2015, through October 27, 2015, reduce instream flow requirements for the lower Russian River (downstream of its confluence with Dry Creek) to a minimum of 50 cfs.

The May 27 Request also requested that compliance with these reduced minimum instream flow requirements be measured based on a 24-hour mean instream flow criterion. The 24-hour instream flow criterion is intended to ensure a conservative operational buffer with respect to flow management, thereby allowing the Water Agency to conserve more water in Lake Mendocino.

The May 27 Request was intended to address the significant reductions in inflow from the Potter Valley Project (PVP) resulting from a Federal Energy Regulatory Commission (FERC) order approving Pacific Gas and Electric's (PG&E's) temporary variance request. The additional flow reduction in the upper Russian River intended to prevent significant depletion of storage in Lake Mendocino and potential elimination

of water supplies for 2015. Such depletion in storage and reduction to or elimination of water supplies could cause serious impacts to human health and welfare and reduce water supplies needed for fishery protection and stable flows in the upper Russian River. The request for the lower Russian River was intended to protect fishery resources in Dry Creek.

The SWRCB issued an Order (Order) on June 17, 2015, approving the May 27 Request and modifying the May 1, 2015 Order. The Order included several terms and conditions, including requirements for monitoring water quality to assess possible effects from the TUCP on the availability of aquatic habitat for salmonids or recreation (Terms 10 and 11). Data collected under Terms 10a and 11 were provided in weekly Hydrologic Status Reports as they became available. This report provides and summarizes all data collected during the 2015 water quality monitoring program as required by Term 14 of the Order.

2.0 2015 Russian River Flow Summary

In 2015, water storage in Lake Mendocino was below conditions experienced in 2013 and dropped below conditions observed in 2009 by early June. However, 2015 Lake Mendocino water storage conditions remained above conditions experienced in 2014 until late November. In December 2014, storms increased storage to over 56,000 acre-feet by 31 December (Figure 2-1). Whereas, milder storms in December 2015 only increased storage to just under 40,000 acre-feet by 31 December (Figure 2-1).

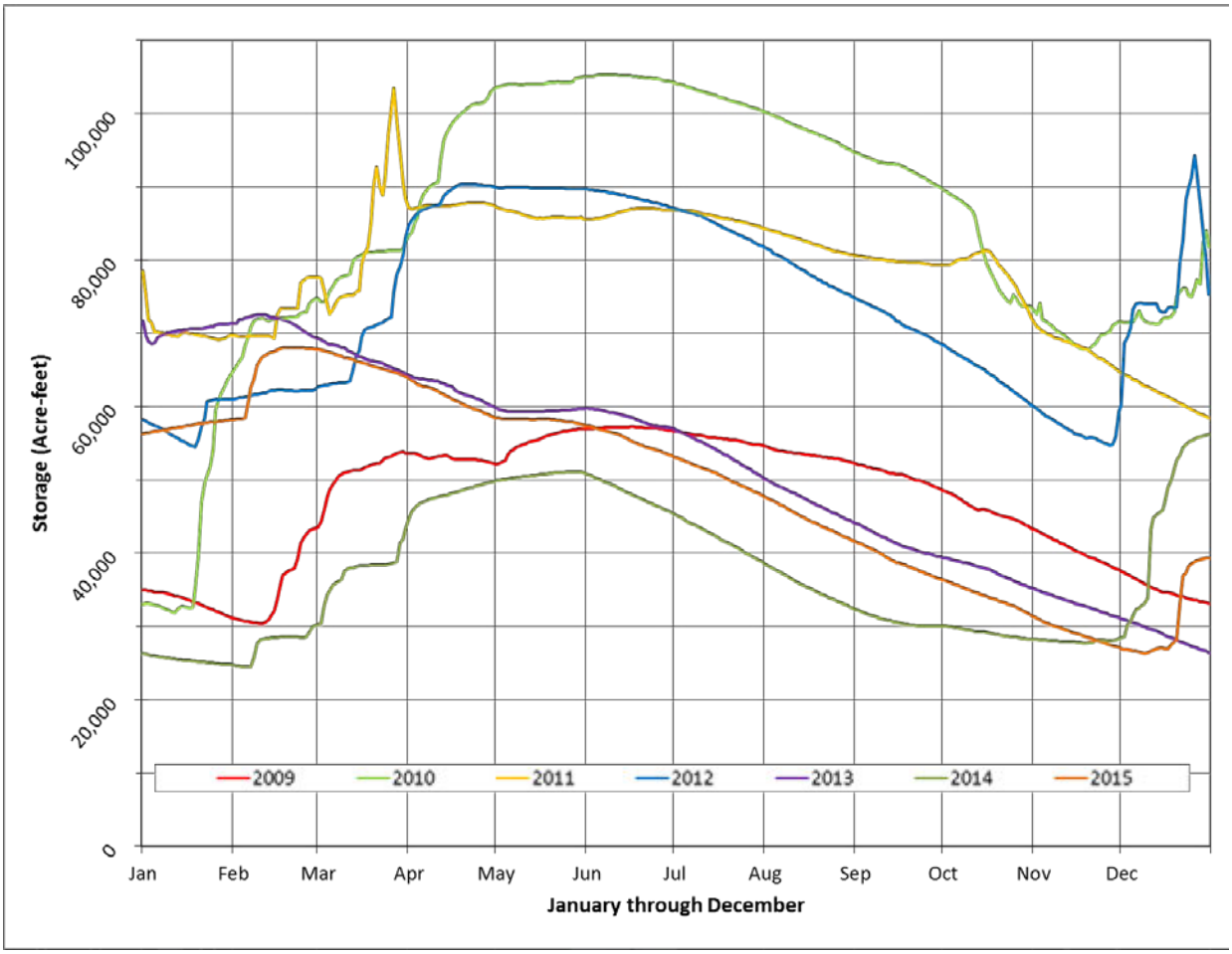


Figure 2-1. Lake Mendocino water storage levels, in acre-feet, from 2009 through 2015.

The reduced Coyote Valley Dam releases authorized by the Order allowed flows to drop below D1610 dry water supply condition minimum flows in most sections of the Russian River. However, a moderate demand season allowed stable releases from Lake Mendocino. Figure 2-2 shows 2015 average daily flows.

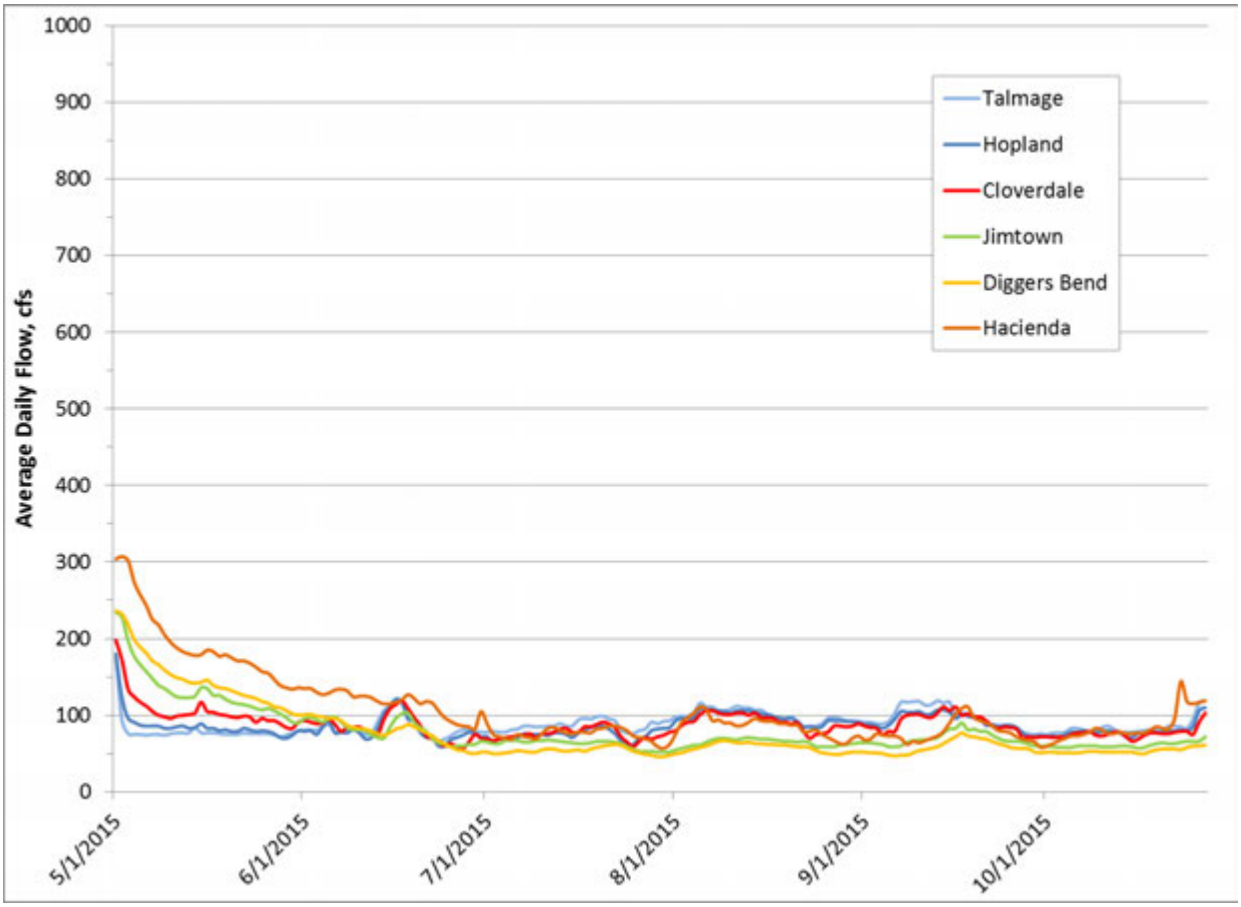


Figure 2-2. 2015 average daily flows in the Russian River as measured at U.S. Geological Survey (USGS) gages in cubic feet per second (cfs).

While the original Order was in effect through June 15, upper Russian River flows did drop below the 75 cfs five-day running average TUC flow twice at Talmage in early and late May, and once at Hopland in late May. Five-day running average flows during those periods were approximately 74 cfs, just under the 75 cfs minimum. However, upper Russian River flows did not drop below the instantaneous flow of 65 cfs authorized by the Order. While the modified Order was in effect from June 16 through October 27, upper Russian River flows did not drop below the 24-hour mean instream flow criterion of 25 cfs (Figure 2-3).

While the original Order was in effect through June 15, lower Russian River flows at Hacienda (downstream of the confluence with Dry Creek) did not drop below the five-day running average of 85 cfs or the instantaneous minimum flow of 75 cfs. While the modified Order was in effect from June 16 through October 27, lower Russian River flows at Hacienda did not drop below the 24-hour mean instream flow criterion of 50 cfs (Figure 2-4).

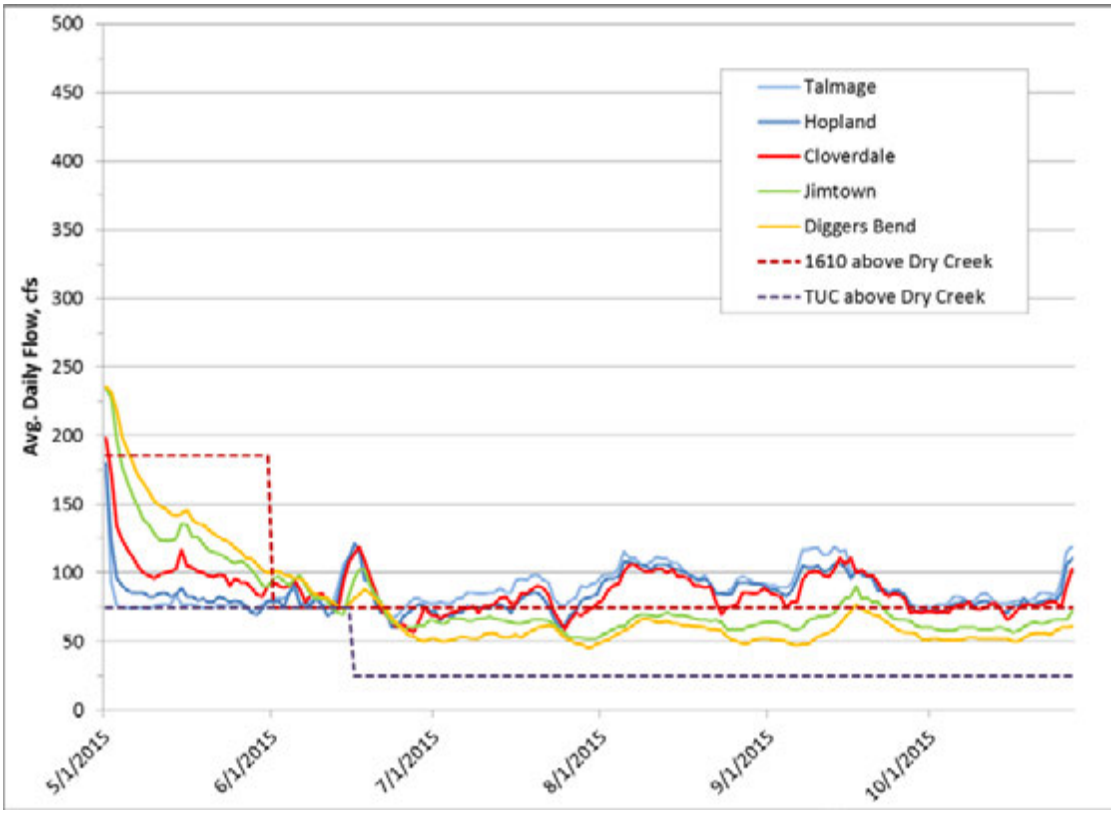


Figure 2-3. 2015 average daily flows in the Russian River as measured at USGS gages above the Dry Creek confluence in cubic feet per second.

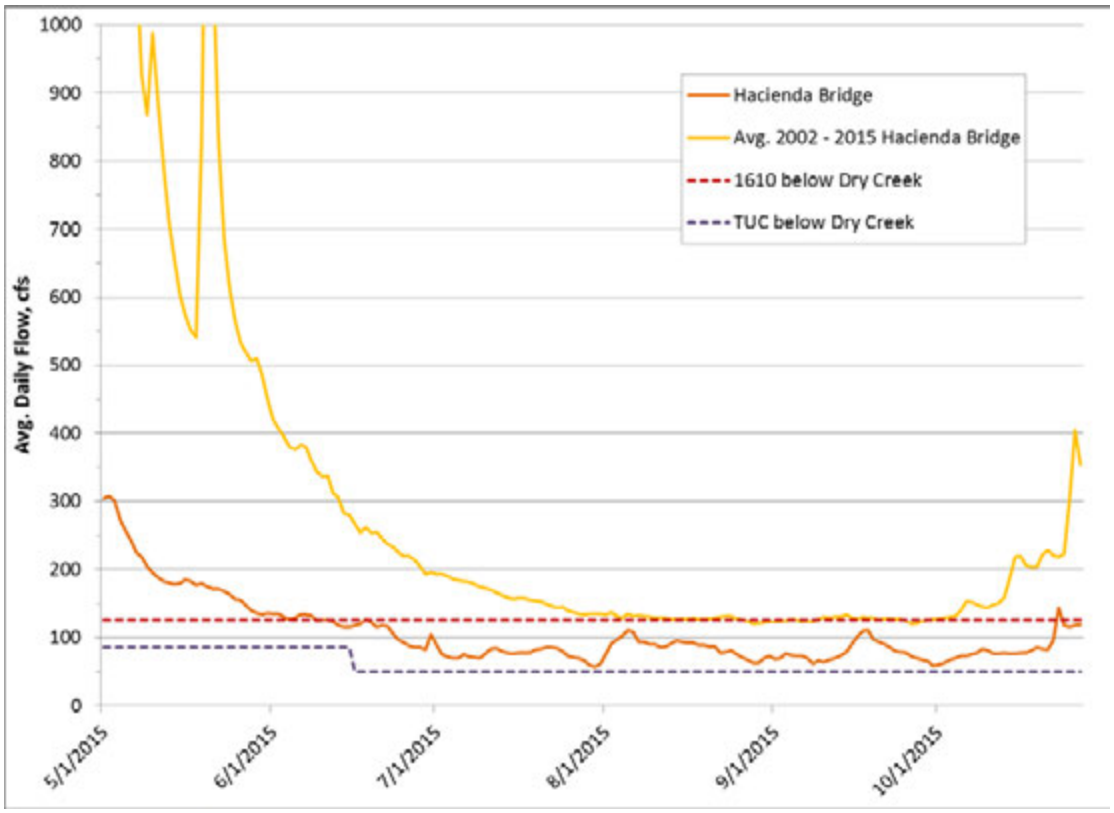


Figure 2-4. 2015 average daily flows in the Russian River as measured at USGS gages below the Dry Creek confluence in cubic feet per second.

3.0 Water Quality Monitoring

Water quality data was collected to monitor TUC flows for potential effects to recreation and available aquatic habitat for salmonids. The data was used to supplement existing data to provide a more complete basis for analyzing spatial and temporal water quality trends due to Biological Opinion-stipulated changes in river flow and estuary management. The resulting data provided information to evaluate potential changes to water quality and availability of habitat for aquatic resources resulting from the proposed permanent changes to D1610 minimum instream flows that are mandated by the Biological Opinion. A complete evaluation of the water quality data is being conducted as part of the California Environmental Quality Act (CEQA) analysis associated with proposed permanent changes to D1610.

3.1 Seasonal Mainstem Bacterial Sampling (Beach Sampling)

The Sonoma County Department of Health Services (DHS) conducts seasonal bacteriological sampling to monitor levels of pathogens at ten (10) Russian River beaches with recreational activities involving the greatest body contact. Results are used by the Sonoma County DHS to determine whether or not bacteria levels fall within State guidelines. The 2015 Sonoma County DHS seasonal beach sampling locations consisted of: Cloverdale River Park; Del Rio Woods Beach; Camp Rose Beach; Healdsburg Veterans Memorial Beach; Steelhead Beach; Forestville Access Beach; Sunset Beach; Johnson's Beach; Monte Rio Beach; and Patterson Point. Bacteriological samples were collected weekly beginning May 26 and continued until October 5. The samples were analyzed using the Colilert quantitray MPN method for total coliform and *E. coli*. Results from the sampling program were reported by the Sonoma County DHS at their website and on the Sonoma County DHS Beach Sampling Hotline. The 2015 seasonal results are shown in Table 3-1 and in Figures 3-1 and 3-2.

The California Department of Public Health (CDPH) developed the "Draft Guidance for Fresh Water Beaches," which describes bacteria levels that, if exceeded, may require posted warning signs in order to protect public health (CDPH 2011). The CDPH draft guideline for single sample maximum concentrations is: 10,000 most probable numbers (MPN) per 100 milliliters (ml) for total coliform, 235 MPN per 100 ml for *E. coli*, and 61 MPN per 100 ml for Enterococcus. In 2012, the United States Environmental Protection Agency (EPA) issued Clean Water Act (CWA) §304(a) Recreational Water Quality Criteria (RWQC) for States (EPA 2012). The RWQC recommends using two criteria for assessing water quality relating to fecal indicator bacteria: the geometric mean (GM) of the dataset, and changing the single sample maximum (SSM) to a Statistical Threshold Value (STV) representing the 75th percentile of an acceptable water-quality distribution. However, the EPA recommends using STV values as SSM values for potential recreational beach posting and those values are provided in this report for comparative purposes. Exceedances of the STV values are highlighted in Table 3-1. It must be emphasized that these are draft guidelines and criteria, not adopted standards, and are therefore both subject to change (if it is determined that the guidelines and/or criteria are not accurate indicators) and are not currently enforceable. In addition, these draft guidelines and criteria were established for and are only applicable to fresh water beaches. Currently, there are no numeric guidelines or criteria that have been developed for estuarine areas.

Table 3-1. Russian River Seasonal Recreational Beach Bacteria Sampling Results collected by the Sonoma County Department of Health Services in 2015. Highlighted values indicate those values exceeding the Total Coliform (TC) and E. coli (EC) California Department of Public Health Draft Guidance for Fresh Water Beaches (CDPH 2011).

Date Sampled	Cloverdale River Park		Del Rio Woods Beach		Camp Rose Beach		Healdsburg Veterans		Steelhead Beach		Forestville Access Beach		Sunset Beach		Johnson's Beach		Monte Rio Beach		Monte Rio Beach (upstream)		Monte Rio Beach (downstream)		Patterson Point	
	TC	EC	TC	EC	TC	EC	TC	EC	TC	EC	TC	EC	TC	EC	TC	EC	TC	EC	TC	EC	TC	EC	TC	EC
26-May-15	7,701	31	733	<10	1,162	<10	833	41	697	30	1,162	52	794	20	1,789	41	857	41					624	3
2-Jun-15	6,488	10	2,247	31	1,935	31	1,119	41	1,017	20	727	31	650	20	1,541	30	2,247	41					1,086	<10
9-Jun-15	**12,003**	20	1,086	10	1,658	10	3,076	10	1,145	31	1,298	31	1,162	10	2,142	<10	1,333	109					1,553	62
10-Jun-15	4,106	41																						
16-Jun-15	**10,462**	10	2,481	10	2,909	20	2,143	97	1,050	41	1,153	41	2,382	31	3,076	201	3,873	20					3,255	20
18-Jun-15	**17,329**	31																						
23-Jun-15	8,164	20	1,956	<10	2,909	10	2,282	84	1,224	<10	1,658	30	1,904	30	**15,531**	63	3,076	63					1,607	10
24-Jun-15															3,654	107								
30-Jun-15	**12,033**	<10	3,255	10	4,352	<10	2,143	135	6,488	86	2,098	31	2,046	31	3,654	63	2,382	<10					2,310	31
1-Jul-15	7,701	31																						
7-Jul-15	**24,196**	10	1,333	<10	2,909	<10	2,098	161	1,191	20	1,650	31	1,296	10	3,448	20	1,314	10					1,935	10
8-Jul-15	5,794	10																						
14-Jul-15	7,270	20	2,755	31	3,255	20	1,850	74	1,935	20	1,396	<10	1,497	41	2,728	31	1,658	<10					1,850	20
21-Jul-15	5,172	<10	1,789	<10	2,909	<10	2,187	199	1,439	10	1,607	10	1,664	31	3,255	<10	1,130	10					1,918	20
28-Jul-15	8,664	20	1,722	41	4,611	10	2,224	223	1,050	20	1,376	20	*	*	2,481	10	933	20					1,450	10
29-Jul-15													1,553	31										
4-Aug-15	7,720	20	3,448	41	3,255	10	2,247	175	1,112	<10	1,314	<10	1,334	<10	3,873	63	839	31					1,067	<10
11-Aug-15	**>24,196**	10	4,106	30	3,654	10	2,143	10	880	10	1,017	<10	987	<10	2,046	41	1,046	10					1,515	<10
13-Aug-15	6,488	20																						
18-Aug-15	8,164	31	3,076	10	3,654	20	2,613	41	1,106	31	2,481	31	1,607	31	1,396	20	1,726	20					1,296	10
25-Aug-15	9,208	20	2,755	20	2,046	20	2,098	75	1,236	31	1,112	10	1,720	>10	987	10	1,187	>10					932	63
31-Aug-15	5,172	52	1,333	20	1,145	31	1,529	41	464	<10	813	<10	771	<10	**	**	**	**					**	**
1-Sep-15															1,439	10	1,119	41					1,119	31
8-Sep-15	2,755	10	1,086	<10	1,860	<10	1,467	52	602	<10	1,043	<10	1,935	20	1,597	10	1,137	20					1,211	<10
14-Sep-15	2,613	31	2,359	31	1,664	10	2,755	10	1,565	<10	1,500	<10	1,274	63	1,291	75	933	<10					1,515	144
21-Sep-15	4,106	41	2,359	20	1,421	20	1,515	41	631	20	906	20	712	20	1,250	161	3,654	213					1,274	63
28-Sep-15	2,359	20	1,935	20	1,162	41	738	98	450	41	384	<10	1,274	63	813	63	**>24,196**	**9,804**					1,935	41
30-Sep-15																	2,382	**336**	3,078	233	2,755	**259**		
5-Oct-15	4,611	31	1,722	41	862	<10	959	86	816	10	798	20	763	<10	771	41	776	63					546	20

*Sunset Beach was not sampled until July 29, 2015, due to inaccessibility during the Sheriff's Office investigation on July 28, 2015.

** Due to time constraints Johnson's Beach, Monte Rio Beach and Patterson Point were not able to be sampled on 8/31/15, but were sampled the next day on 9/1/15.

Recommended EPA Recreational Water Quality Criteria - Statistical Threshold Values (STV):

(Beach posting is recommended when indicator organisms exceed the STV) - Indicated by red text

Total Coliforms (STV): 10,000 per 100ml

E. coli (STV): 235 per 100 ml

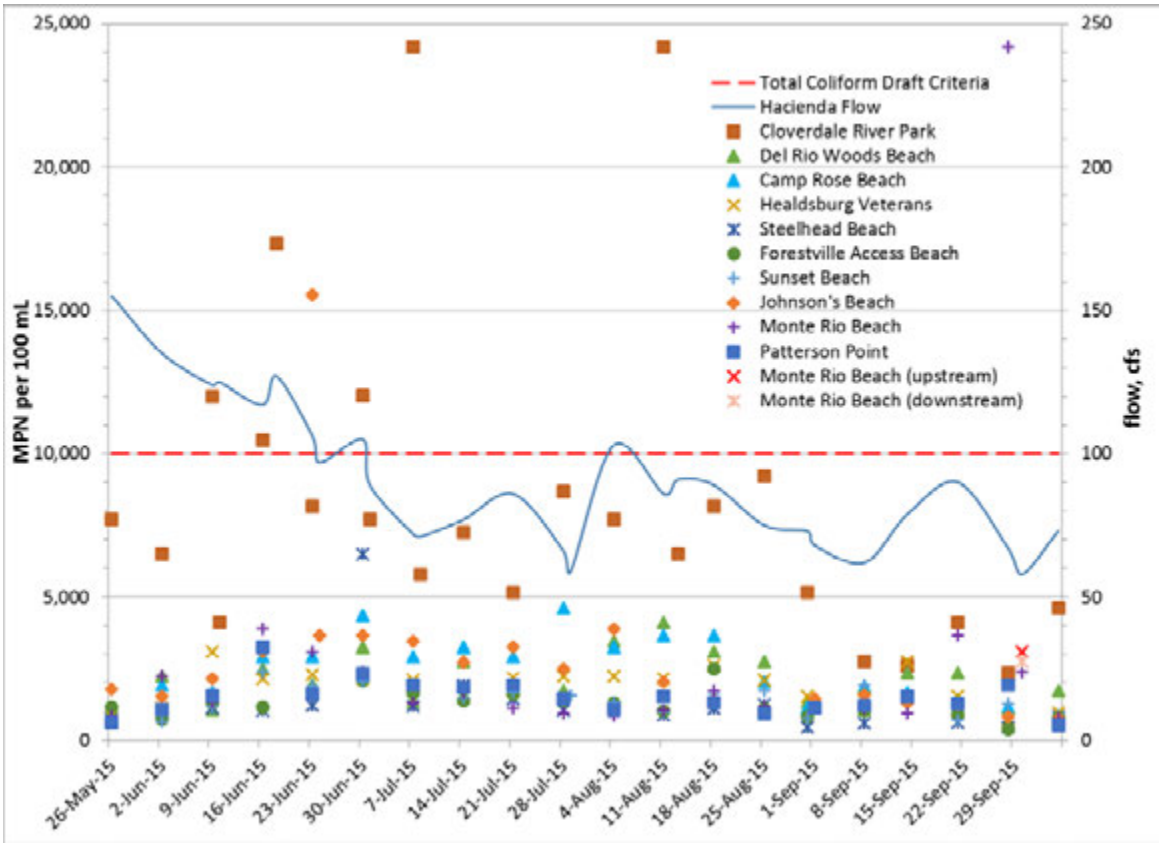


Figure 3-1. Russian River Beach Recreational Beach Bacteria Sample Results for Total Coliform in 2015.

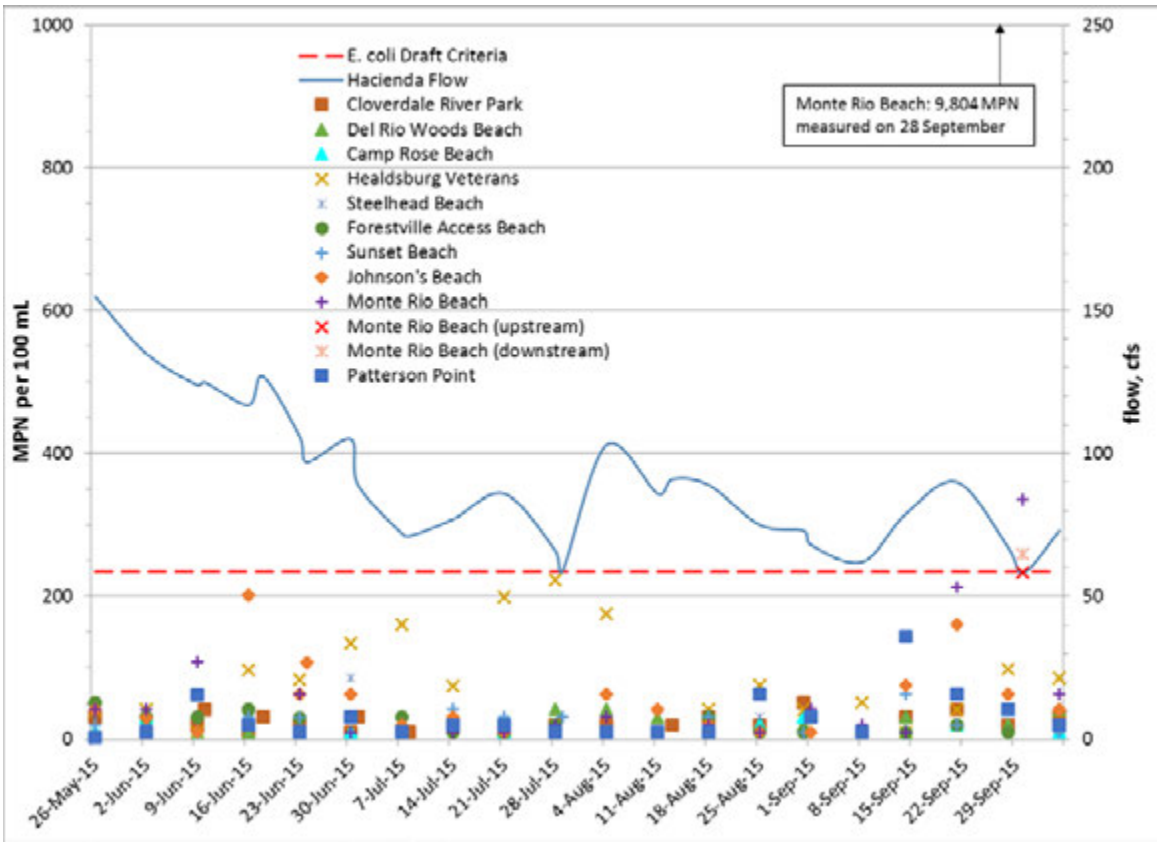


Figure 3-2. Russian River Recreational Beach Bacteria Sample Results for E. coli in 2015.

3.2 Water Agency Estuary Water Quality Sampling and Monitoring

Flows in the lower Russian River at Hacienda (downstream of the confluence with Dry Creek) continued to be affected by drought conditions during the term of the Order in 2015, but did not drop below the five-day running average of 85 cfs or the instantaneous minimum flow of 75 cfs while the original Order was in effect from May 1 through June 15. While the modified Order was in effect from June 16 through October 27, lower Russian River flows at Hacienda did not drop below the 24-hour mean instream flow criterion of 50 cfs. Long-term water quality monitoring and grab sampling was conducted in the lower, middle, and upper reaches of the Russian River Estuary and the upper extent of inundation and backwatering during lagoon formation, between the mouth of the river at Jenner and Vacation Beach, including in two tributaries.

Water Agency staff conducted weekly grab sampling from May 12 to October 13 at five stations in the mainstem of the lower river including: Jenner; Casini Ranch; Patterson Point, Monte Rio, and Vacation Beach (Figure 3-3). All samples were analyzed for nutrients, *chlorophyll a*, standard bacterial indicators (Total coliforms, *E. coli*, and *Enterococcus*), total and dissolved organic carbon, total dissolved solids, and turbidity. Samples were collected during the monitoring season for diluted and undiluted analysis of *E. coli* and total coliforms for comparative purposes and the results are included in Tables 3-2 through 3-6 and Figures 3-4 and 3-5. Samples collected for *Enterococcus* were undiluted only and results are included in Tables 3-2 through 3-6 and Figure 3-6. The Water Agency submitted samples to the Sonoma County DHS Public Health Division Lab in Santa Rosa for bacteria analysis. *E. coli* and total coliform were analyzed using the Colilert method and Enterococcus was analyzed using the Enterolert method. Samples for all other constituents were submitted to Alpha Labs in Ukiah for analysis.

Following the 2015 monitoring season, Water Agency staff discovered issues with the reliability of bacteria data that has been collected in the presence of brackish water in the Estuary. In 2014, the Jenner station had a couple of anomalous results for undiluted samples of *E. coli* compared to diluted samples collected at the same time. In 2015 it was more significant and frequent, with undiluted *E. coli* results often being >2419.6 MPN, compared to a value of less than 100 MPN in the diluted sample.

Water Agency staff contacted Sonoma County Department of Health Services (DHS) to see if the high *E. coli* results for the undiluted samples at Jenner were errors. DHS staff responded and explained that marine waters can create false positives when relying on the Colilert analysis if the samples are not diluted (Ferris, 2015). DHS staff also stated that any samples collected in marine waters should be diluted at a one to ten ratio (1:10). Water Agency staff conducted additional literature research and discovered that other non-coliform bacteria commonly found in marine waters (as well as plant and algal material) can produce false positives for total coliforms and *E. coli* if not diluted when using the IDEXX Colilert analytical methodology (Pisciotta, 2002). In addition, the IDEXX Colilert SOP states to dilute samples 1:10 if specific conductance is between 3,000 and 10,000 microsiemens (µs) and to not use the IDEXX Colilert at all if the samples are greater than 10,000 microsiemens (IDEXX, 2015).

In the last three years, Water Agency staff have only collected two (2) samples at Jenner when the water was less than 3,000 µs, out of 81 samples. The majority were over 10,000 µs. In 2015, 15 of 26 sample events at Jenner were in water with specific conductance values over 10,000 µs. In 2013 it was 15 of 29, and 2014 was 19 of 26.

DHS staff also stated that the Enterolert analysis could produce false positives in marine waters and Water Agency staff found a study conducted in Georgia that observed saltwater interference with the Enterolert system and recommended that samples collected in marine waters should be diluted 1:10 to reduce the number of false positive results (McDonald, 2003). Water Agency staff have been relying on Colilert and Enterolert since 2012, but only started having samples diluted for *E. coli* and total coliform in 2014 for part of the season, and in 2015 for all of the season. *Enterococcus* samples have not been diluted.

Essentially, the bacteria data collected at the Jenner station is predominantly unreliable due to the saline conditions at the site, although the diluted results for *E. coli* and total coliform did include some results that were collected in water with specific conductance values below 10,000 µs and should be considered reliable. For this reason, specific conductance values measured during the time of grab sample collection are included in the Jenner table. However, only the diluted *E. coli* and total coliform data collected in water with specific conductance values below 10,000 µs are included in Figures 3-4 and 3-5. Because the *Enterococcus* samples at Jenner were undiluted, results will not be included in Figure 3-6, but are included in Table 3-6. Finally, *E. coli* and total coliform data presented in Figures 3-4 and 3-5 utilize undiluted sample results unless the reporting limit has been exceeded, at which point the diluted results are utilized.

In 2014, staff at the NCRWQCB indicated that *Enterococcus* was not being utilized as a fecal indicator bacteria due to uncertainty in the validity of the lab analysis to produce accurate results, as well as evidence that *Enterococcus* colonies can be persistent in the water column and therefore its presence at a given site may not always be associated with a fecal source. However, Water Agency staff will continue to collect *Enterococcus* samples and record and report the data. NCRWQCB staff also indicated during the 2014 monitoring season that they were uncertain of the validity of the laboratory analysis for *Bacteroides* and would not be conducting lab analysis of the samples until the question of validity had been resolved. As a result, Water Agency staff did not collect surface-water samples to test for *Bacteroides* during the 2015 monitoring season.

Water Agency staff continued to collect long-term monitoring data to: establish baseline information on water quality in the Estuary and assess the availability of aquatic habitat in the Estuary; gain a better understanding of the longitudinal and vertical water quality profile during the ebb and flow of the tide; and track changes to the water quality profile that may occur during periods of low flow conditions, barrier beach closure, lagoon outlet channel implementation, and reopening. Long-term monitoring datasondes were deployed at nine stations in the Russian River estuary, including two tributary stations during the 2015 monitoring season (Figure 3-3).

Saline water is denser than freshwater and a salinity “wedge” forms as freshwater outflow passes over the denser tidal inflow. During the lagoon management period (May 15 to October 15), the lower and middle reaches of the Estuary up to Sheephouse Creek are predominantly saline environments with a thin freshwater layer that flows over the denser saltwater. The upper reach of the Estuary transitions to a predominantly freshwater environment, which is periodically underlain by a denser, saltwater layer that migrates upstream to Duncans Mills during low flow conditions and barrier beach closure. Additionally, river flows, tides, topography, and wind action affect the amount of mixing of the water column at various longitudinal and vertical positions within the Estuary.

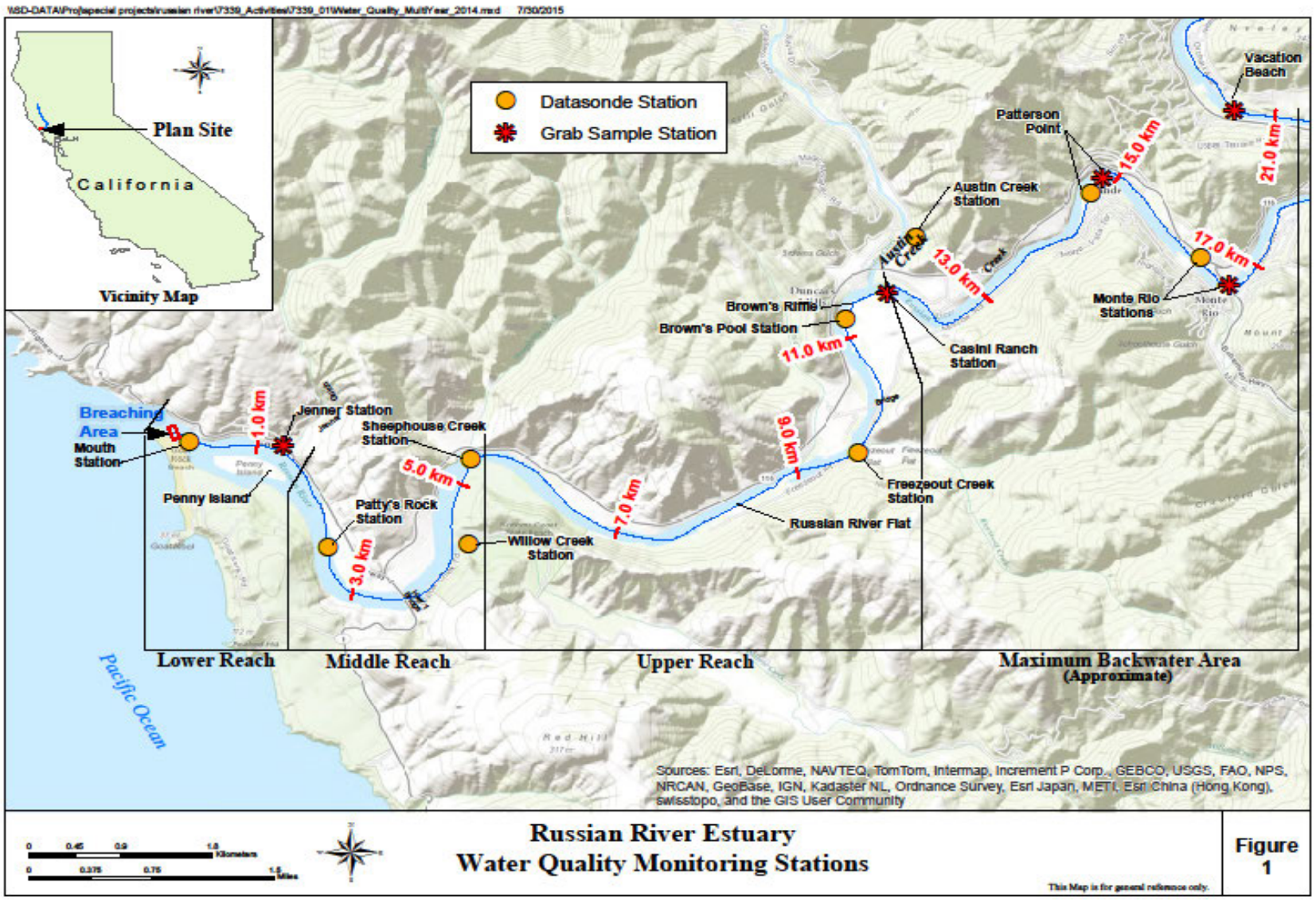


Figure 3-3. 2015 Russian River Estuary water quality monitoring stations sampled by the Sonoma County Water Agency.

The Water Agency submits an annual report to the National Marine Fisheries Service and California Department of Fish and Wildlife documenting the status updates of the Water Agency's efforts in implementing the Biological Opinion. The water quality monitoring data for 2015 is currently being compiled and will be discussed in the "Russian River Biological Opinion Status and Data Report Year 2015-16" due to be released in June 2016. The annual report will be available on the Water Agency's website: http://www.scwa.ca.gov/bo-annual-report/.

The grab sample sites are shown in Figure 3-3, and the results are summarized in Tables 3-2 through 3-11 and Figures 3-4 through 3-10. Highlighted values indicate those values exceeding California Department of Public Health Draft Guidance for Fresh Water Beaches for Indicator Bacteria (CDPH 2011), EPA Recreational Water Quality Criteria (EPA 2012), and EPA recommended criteria for Nutrients, Chlorophyll a, and Turbidity in Rivers and Streams in Aggregate Ecoregion III (EPA 2000). However, it must be emphasized that the draft CDPH guidelines and EPA criteria are not adopted standards, and are therefore both subject to change (if it is determined that the guidelines or criteria are not accurate indicators) and are not currently enforceable. In addition, these draft guidelines and criteria were established for and are only applicable to fresh water beaches and freshwater portions of the estuary. Currently, there are no numeric guidelines or criteria that have been established specifically for estuaries. However, Jenner will be included in the discussion for comparative purposes.

Based upon the recommended RWQC for fresh water beaches, several exceedances of the *Enterococcus* RWQC were observed in the latter half of the season at the freshwater stations, with flows varying from 62 cfs to 86 cfs. External factors likely had an effect on increasing *Enterococcus* concentrations including the removal of two summer dams in Guerneville at the end of September during a period of extended estuary closures that occurred between early September and early November (Figure 3-6). The Monte Rio and Vacation Beach stations were also observed to have one exceedance each of the RWQC for *E. coli* following summer dam removal (Figure 3-5). Jenner had one exceedance of the RWQC for *E. coli* during the term of the Order on May 12 during open conditions with a flow of 183 cfs (Table 3-6). There were also a few exceedances of the RWQC for total coliform including three exceedances at Vacation Beach, two exceedances at Jenner and one exceedance at Casini Ranch (Figure 3-4). Total coliform exceedances at these stations occurred during open and closed estuary conditions with flows that ranged from 59 cfs to 106 cfs.

All five stations predominantly exceeded the EPA criteria for Total Phosphorous during the term of the Order and under flows that ranged from 65 cfs to 183 cfs, continuing a trend of consistent exceedances observed in previous years (Figure 3-7). Interestingly, none of the stations exceeded the criteria for Total Phosphorus on September 8 when flows were only 62 cfs and the estuary had just closed the day before. See Tables 3-7 through 3-11. The EPA criteria for Total Nitrogen was not exceeded at the Monte Rio and Casini Ranch stations and was only exceeded once at Vacation Beach and Patterson Point (Figure 3-8). The Jenner station was observed to have several exceedances of the Total Nitrogen criteria throughout the season, under open and closed conditions and a variety of flows. Similarly, there were no exceedances of the Turbidity EPA criteria at the Monte Rio and Casini Ranch stations and there were only two exceedances each at the Vacation Beach and Patterson Point stations (Figure 3-9). There were also several exceedances of the Turbidity criteria at Jenner under open and closed conditions in flows that ranged from 68 cfs to 183 cfs. Most exceedances were slightly higher than the EPA criteria of 2.34

NTU. Algal (chlorophyll *a*) results exceeded the criteria at all of the stations periodically throughout the season, under open and closed conditions and flows that ranged from 62 cfs to 179 cfs (Figure 3-10). Algal concentrations were more pronounced at the Jenner station, but again, this is an estuarine station and the EPA criteria only apply to freshwater conditions.

Table 3-2. 2015 Vacation Beach bacteria concentrations for samples collected by the Sonoma County Water Agency. This site experiences freshwater conditions.

Vacation Beach	Time	Temperature	pH	Total Coliforms (Colilert)	Total Coliforms Diluted 1:10 (Colilert)	E. coli (Colilert)	E. coli Diluted 1:10 (Colilert)	Enterococcus (Enterolert)	USGS 11467000 RR near Guerneville (Hacienda)***
MDL*				20		20		2	Flow Rate****
Date		°C		MPN/100mL	MPN/100mL	MPN/100mL	MPN/100mL	MPN/100mL	(cfs)
5/12/2015	9:50:00	19.5	8.2	722	789	12.1	10	<1.0	183
5/19/2015	10:30:00	20.2	8.2	727.0	697	7.5	10	13.0	179
5/26/2015	11:00:00	21.1	8.1	613.1	1019	10.9	10	8.6	155
6/2/2015	9:50:00	20.8	8.2	920.8	1314	21.8	10	16.1	135
6/4/2015	10:00:00	21.2	8.2	866.4	1935	27.2	10	21.3	127
6/9/2015	12:20:00	23.7	8.1	1208.3	1565	10.9	10	30.8	124
6/16/2015	10:30:00	22.9	8.9	2419.6	5475	45.0	41	**73.3**	117
6/23/2015	11:50:00	23.1	7.9	>2419.6	**19863**	41.4	<10	54.6	106
6/30/2015	11:40:00	24.6	7.9	>2419.6	**11199**	21.8	41	22.6	105
7/7/2015	9:20:00	24.0	8.0	>2419.6	5475	14.6	30	52.1	72
7/14/2015	10:10:00	23.7	7.8	2419.6	2481	24.6	10	14.6	77
7/21/2015	9:30:00	25.2	7.8	>2419.6	3448	63.7	98	47.1	86
7/28/2015	9:10:00	24.5	8.0	>2419.6	2481	17.3	20	**204.6**	66
8/4/2015	9:40:00	24.1	7.9	>2419.6	4106	9.6	10	38.9	103
8/11/2015	9:30:00	23.7	7.9	2419.6	1860	2.0	<10	16.0	86
8/18/2015	9:20:00	23.9	7.9	1732.9	2755	23.1	<10	45	89
8/25/2015	9:15:00	22.3	7.9	1413.6	1624	8.3	<10	9.5	75
9/1/2015	11:00:00	23.9	7.9	1986.3	1872	4.1	10	6.3	68
9/8/2015	10:40:00	21.9	7.9	1986.3	1723	1.0	10	**63.0**	62
9/10/2015	10:40:00	22.0	7.9	1732.9	2755	10.9	10	8.6	64
9/15/2015	10:40:00	20.8	7.7	2419.6	1785	48.7	41	20.1	90
9/22/2015	11:10:00	21.0	7.6	1203.3	1081	30.5	52	16.0	86
9/24/2015	8:50:00	20.1	7.5	960.6	1187	51.2	73	**76.7**	79
9/29/2015	11:00:00	19.9	7.6	1299.7	1670	114.5	146	**228.2**	65
10/1/2015	10:50:00	----	----	>2419.6	**>24196**	**>2419.6**	**7270**	**>2419.6**	59
10/6/2015	9:30:00	19.5	7.6	980.4	1198	44.1	108	42.2	73
10/13/2015	10:20:00	19.6	7.8	980.4	1211	45.9	109	**85.5**	78

* Method Detection Limit - limits can vary for individual samples depending on matrix interference and dilution factors, all results are preliminary and subject to final revision.

** United States Geological Survey (USGS) Continuous-Record Gaging Station

*** Flow rates are preliminary and subject to final revision by USGS.

Recommended EPA Recreational Water Quality Criteria - Statistical Threshold Value (STV) and Geomteric Mean (GM)

(Beach posting is recommended when indicator organisms exceed the STV) - Indicated by red text

E. coli (STV): 235 per 100 ml — Enterococcus (STV): 61 per 100 ml

E. coli (GM): 126 per 100mL — Enterococcus (GM): 33 per 100 mL

Table 3-3. 2015 Monte Rio bacteria concentrations for samples collected by the Sonoma County Water Agency. This site experiences freshwater conditions.

Monte Ro	Time	Temperature	pH	Total Coliforms (Colilert)	Total Coliforms Diluted 1:10 (Colilert)	E. coli (Colilert)	E. coli Diluted 1:10 (Colilert)	Enterococcus (Enterolert)	USGS 11467000 RR near Guerneville (Hacienda)***
MDL*				20		20		2	Flow Rate****
Date		°C		MPN/100mL	MPN/100mL	MPN/100mL	MPN/100mL	MPN/100mL	(cfs)
5/12/2015	9:50:00	19.5	8.1	727	880	8.5	20	5.2	183
5/19/2015	10:30:00	20.1	8.2	920.8	697	14.6	<10	1.0	179
5/26/2015	11:00:00	20.8	8.0	686.7	1145	13.4	10	3.0	155
6/2/2015	9:50:00	20.4	8.1	866.4	1274	22.8	10	6.3	135
6/4/2015	10:00:00	21.3	8.2	913.9	2181	67.6	110	45.7	127
6/9/2015	12:20:00	23.7	8.1	>2419.6	2613	76.7	121	48.7	124
6/16/2015	10:30:00	22.4	7.8	>2419.6	5172	43.5	20	37.3	117
6/23/2015	11:50:00	23.2	7.9	1732.9	3448	31.3	20	13.1	106
6/30/2015	11:40:00	24.5	7.9	1046.2	1607	20.1	10	4.1	105
7/7/2015	9:20:00	23.6	8.0	1553.1	2909	18.1	98	17.4	72
7/14/2015	10:10:00	23.6	7.7	1732.9	2909	13.1	<10	36.8	77
7/21/2015	9:30:00	25.0	7.8	1413.6	2187	6.3	41	3.0	86
7/28/2015	9:10:00	23.7	7.8	1553.1	1597	12.0	20	22.8	66
8/4/2015	9:40:00	23.9	7.8	1986.3	1670	9.8	10	20.6	103
8/11/2015	9:30:00	23.5	7.9	1299.7	1223	2.1	<10	6.2	86
8/18/2015	9:20:00	23.8	7.9	1986.3	1421	14.6	20	5.2	89
8/25/2015	9:15:00	22.0	7.8	1119.9	1119	5.2	<10	5.2	75
9/1/2015	11:00:00	23.5	7.7	980.4	882	3.1	<10	2.0	68
9/8/2015	10:40:00	21.8	7.8	920.8	959	7.3	20	41.0	62
9/10/2015	10:40:00	21.6	7.8	727.0	1198	7.5	<10	3.0	64
9/15/2015	10:40:00	20.2	7.5	1046.2	1450	6.2	<10	7.4	90
9/22/2015	11:10:00	21.4	7.8	1986.3	1374	58.3	62	**98.7**	86
9/24/2015	8:50:00	20.3	7.6	1986.3	1515	70.6	63	**93.3**	79
9/29/2015	11:00:00	20.4	7.9	2419.6	1439	**307.6**	110	**98.8**	65
10/1/2015	12:40:00	----	----	913.9	1932	97.7	41	**80.5**	59
10/6/2015	9:30:00	19.6	7.6	1203.3	1376	15.8	<10	27.5	73
10/13/2015	10:20:00	19.4	7.8	980.4	624	12.1	<10	11.0	78

* Method Detection Limit - limits can vary for individual samples depending on matrix interference and dilution factors, all results are preliminary and subject to final revision.

** United States Geological Survey (USGS) Continuous-Record Gaging Station

*** Flow rates are preliminary and subject to final revision by USGS.

Recommended EPA Recreational Water Quality Criteria - Statistical Threshold Value (STV) and Geomteric Mean (GM)

(Beach posting is recommended when indicator organisms exceed the STV) - Indicated by red text

E. coli (STV): 235 per 100 ml — Enterococcus (STV): 61 per 100 ml

E. coli (GM): 126 per 100mL — Enterococcus (GM): 33 per 100 mL

Table 3-4. 2015 Patterson Point bacteria concentrations for samples collected by the Sonoma County Water Agency. This site experiences freshwater conditions.

Patterson Point	Time	Temperature	pH	Total Coliforms (Colilert)	Total Coliforms Diluted 1:10 (Colilert)	E. coli (Colilert)	E. coli Diluted 1:10 (Colilert)	Enterococcus (Enterolert)	USGS 11467000 RR near Guerneville (Hacienda)***
MDL*				20		20		2	Flow Rate****
Date		°C		MPN/100mL	MPN/100mL	MPN/100mL	MPN/100mL	MPN/100mL	(cfs)
5/12/2015	9:50:00	19.5	8.2	770.1	521	4.1	10	3.1	183
5/19/2015	10:30:00	20.0	8.2	547.5	512	14.8	20	6.3	179
5/26/2015	11:00:00	20.6	8.0	770.1	1050	14.6	10	7.3	155
6/2/2015	9:50:00	20.3	8.0	1046.2	906	26.2	10	32.7	135
6/4/2015	10:00:00	21.0	8.2	1299.7	1674	32.7	10	49.6	127
6/9/2015	12:20:00	23.6	8.2	1732.9	2481	36.9	41	22.8	124
6/16/2015	10:30:00	22.5	7.9	>2419.6	4352	20.1	30	20.0	117
6/23/2015	11:50:00	22.7	7.9	2419.6	1722	5.2	<10	18.7	106
6/30/2015	11:40:00	23.5	7.8	1553.1	2603	39.9	20	16.9	105
7/7/2015	9:20:00	23.7	8.1	>2419.6	2909	12.2	41	14.1	72
7/14/2015	10:10:00	23.8	7.7	1986.3	1904	37.3	31	42.5	77
7/21/2015	9:30:00	24.8	7.9	1986.3	2143	6.3	10	4.1	86
7/28/2015	9:10:00	24.1	7.8	1046.2	1872	52.0	52	6.3	66
8/4/2015	9:40:00	23.5	7.9	1553.1	2187	5.2	10	12.8	103
8/11/2015	9:30:00	23.2	7.8	1553.1	2143	6.3	<10	3.1	86
8/18/2015	9:20:00	23.2	7.8	1553.1	2046	4.1	10	7.4	89
8/25/2015	9:15:00	22.1	7.9	920.8	1145	17.5	<10	19.9	75
9/1/2015	11:00:00	23.5	7.9	472.1	1081	8.6	20		68
9/8/2015	10:40:00	21.9	8.0	770.1	749	5.2	31	10.0	62
9/10/2015	10:40:00	22.1	8.0	866.4	1198	9.0	<10	8.4	64
9/15/2015	10:40:00	20.8	7.8	2419.6	2046	69.1	74	26.5	90
9/22/2015	11:10:00	21.0	7.8	1299.7	1333	96.0	98	**95.9**	86
9/24/2015	8:50:00	20.4	7.9	1553.1	1860	63.7	85	**93.3**	79
9/29/2015	11:00:00	19.8	7.7	613.1	1236	42.0	20	**62.0**	65
10/6/2015	9:30:00	20.0	7.7	816.4	813	14.5	20	27.5	73
10/13/2015	10:20:00	19.3	7.8	1203.3	1291	68.3	**331**	59.4	78

* Method Detection Limit - limits can vary for individual samples depending on matrix interference and dilution factors, all results are preliminary and subject to final revision.

** United States Geological Survey (USGS) Continuous-Record Gaging Station

*** Flow rates are preliminary and subject to final revision by USGS.

Recommended EPA Recreational Water Quality Criteria - Statistical Threshold Value (STV) and Geomteric Mean (GM)

(Beach posting is recommended when indicator organisms exceed the STV) - Indicated by red text

E. coli (STV): 235 per 100 ml — Enterococcus (STV): 61 per 100 ml

E. coli (GM): 126 per 100mL — Enterococcus (GM): 33 per 100 mL

Table 3-5. 2015 Casini Ranch bacteria concentrations for samples collected by the Sonoma County Water Agency. This site may experience estuarine conditions.

Casini Ranch	Time	Temperature	pH	Total Coliforms (Colilert)	Total Coliforms Diluted 1:10 (Colilert)	E. coli (Colilert)	E. coli Diluted 1:10 (Colilert)	Enterococcus (Enterolert)	USGS 11467000 RR near Guerneville (Hacienda)**
MDL*				2	20	2	20	2	Flow Rate***
Date		°C		MPN/100mL	MPN/100mL	MPN/100mL	MPN/100mL	MPN/100mL	(cfs)
5/12/2015	9:50:00	20.1	8.25	547.5	677	5.2	<10	2.0	183
5/19/2015	10:30:00	20.4	8.3	816.4	749	22.8	10	5.2	179
5/26/2015	11:00:00	20.6	8.1	686.7	932	6.3	<10	8.5	155
6/2/2015	9:50:00	21.51	8.07	1299.7	1607	27.9	75	47.4	135
6/4/2015	10:00:00	21.16	8.37	1553.1	1720	47.1	98	35.5	127
6/9/2015	12:20:00	22.8	8.29	1732.9	1354	43.5	31	25.6	124
6/16/2015	10:30:00	22.3	7.9	>2419.6	2489	8.4	<10	2.0	117
6/23/2015	11:50:00	22.23	7.94	2419.6	2014	6.3	10	7.3	106
6/30/2015	11:40:00	23.6	8.0	>2419.6	7270	15.8	31	7.4	105
7/7/2015	9:20:00	23.07	8.53	>2419.6	**11199**	7.4	10	2.0	72
7/14/2015	10:10:00	24.0	7.93	2419.6	1860	8.4	<10	16.0	77
7/21/2015	9:30:00	24.8	8.21	2419.6	1421	4.1	20	3.1	86
7/28/2015	9:10:00	23.4	8.2	1119.9	960	5.1	20	9.6	66
8/4/2015	9:40:00	22.71	7.74	770.1	809	4.1	10	1.0	103
8/11/2015	9:30:00	23.1	7.93	1299.7	1100	6.2	<10	4.1	86
8/18/2015	9:20:00	22.3	8.0	1119.9	767	5.2	<10	2.0	89
8/25/2015	9:15:00	21.3	8.1	816.4	851	14.6	10	3.1	75
9/1/2015	11:00:00	23.5	7.9	816.4	689	8.6	<10	2.0	68
9/8/2015	10:40:00	21.5	8.1	920.8	884	7.4	10	41.0	62
9/10/2015	10:40:00	21.7	8.1	980.4	620	13.4	20	3.1	64
9/15/2015	10:40:00	21.2	8.0	1413.6	1664	38.4	75	60.2	90
9/22/2015	11:10:00	21.7	8.0	1413.6	1354	42.2	63	45.0	86
9/24/2015	8:50:00	20.0	8.0	1986.3	1956	60.2	63	**79.4**	79
9/29/2015	11:00:00	20.1	8.1	1119.9	1314	42.0	75	**82.0**	65
10/6/2015	9:30:00	19.4	7.8	547.5	512	14.5	20	6.3	73
10/13/2015	10:20:00	20.0	7.9	1986.3	2143	28.1	74	58.1	78

* Method Detection Limit - limits can vary for individual samples depending on matrix interference and dilution factors, all results are preliminary and subject to final revision.

** United States Geological Survey (USGS) Continuous-Record Gaging Station

*** Flow rates are preliminary and subject to final revision by USGS.

Recommended EPA Recreational Water Quality Criteria - Statistical Threshold Value (STV) and Geomteric Mean (GM)

(Beach posting is recommended when indicator organisms exceed the STV) - Indicated by red text

E. coli (STV): 235 per 100 ml

Enterococcus (STV): 61 per 100 ml

E. coli (GM): 126 per 100mL

Enterococcus (GM): 33 per 100 mL

Table 3-6. 2015 Jenner bacteria concentrations for samples collected by the Sonoma County Water Agency. Estuarine conditions exist at this site. EPA criteria do not apply but exceedances are highlighted for comparison.

Jenner Boat Ramp	Time	Temperature	pH	Specific Conductance	Total Coliforms (Colilert)	Total Coliforms Diluted 1:10 (Colilert)	E. coli (Colilert)	E. coli Diluted 1:10 (Colilert)	Enterococcus (Enterolert)	USGS 11467000 RR near Guerneville (Hacienda)**
MDL*					2	20	2	20	2	Flow Rate***
Unit of Measure		°C		µs	MPN/100mL	MPN/100mL	MPN/100mL	MPN/100mL	MPN/100mL	(cfs)
5/12/2015	9:50:00	16.7	8.4	7735	>2419.6	2481.0	**1732.9**	**1956**	**435.2**	183
5/19/2015	10:30:00	17.7	8.0	8433	>2419.6	583.0	12.1	31	6.3	179
5/26/2015	11:00:00	17.1	8.0	9919	>2419.6	2142.0	9.7	10	3.0	155
6/2/2015	9:50:00	18.0	8.3	3658	>2419.6	3876.0	24.3	50	58.3	135
6/4/2015	10:00:00	18.1	8.3	4259	>2419.6	1789	**290.9**	183	**98.5**	127
6/9/2015	12:20:00	20.0	8.2	3001	1299.7	1539	93.3	121	24.3	124
6/16/2015	10:30:00	20.2	7.7	11382	>2419.6	**>24196**	2.0	10	**816.4**	117
6/23/2015	11:50:00	17.7	7.7	20054	>2419.6	3076	3.0	<10	35.5	106
6/30/2015	11:40:00	19.2	8.1	25570	>2419.6	**>24196**	45.9	122	**290.9**	105
7/7/2015	9:20:00	19.4	7.9	33913	>2419.6	**>24196**	98.3	<10	31.3	72
7/14/2015	10:10:00	20.0	8.1	24413	>2419.6	**12033**	31.8	<10	**261.3**	77
7/21/2015	9:30:00	20.3	8.0	26643	>2419.6	**17329**	32.7	10	33.7	86
7/28/2015	9:10:00	18.9	8.0	25570	>2419.6	**>24196**	**>2419.6**	20	**1046.2**	66
8/4/2015	9:40:00	19.5	7.9	28952	>2419.6	**24196**	**1203.3**	109	**1299.7**	103
8/11/2015	9:30:00	19.8	8.0	25559	>2419.6	**12033**	85.1	62	**1413.6**	86
8/18/2015	9:20:00	18.8	8.0	25693	>2419.6	**19863**	**>2419.6**	86	**2419.6**	89
8/25/2015	9:15:00	18.2	7.8	26237	>2419.6	**11199**	**>2419.6**	86	**920.8**	75
9/1/2015	11:00:00	19.3	8.0	31760	>2419.6	6488.0	**866.4**	86	**410.6**	68
9/8/2015	10:40:00	17.4	8.2	25683	>2419.6	2723.0	**387.3**	121	**1725.0**	62
9/10/2015	10:40:00	17.8	8.3	16108	1732.9	402.0	**290.9**	10	**88.6**	64
9/15/2015	10:40:00	16.6	8.1	4160	>2419.6	**12033.0**	**281.2**	20	**178.5**	90
9/22/2015	11:10:00	19.1	8.2	6443	>2419.6	583.0	26.6	41	28.8	86
9/24/2015	8:50:00	18.0	8.1	6178	>2419.6	1597.0	65.7	63	**150.0**	79
9/29/2015	11:00:00	18.5	8.2	5353	648.8	285.0	6.3	<10	8.5	65
10/6/2015	9:30:00	19.4	7.8	7984	>2419.6	**19863.0**	11.0	<10	48.5	73
10/13/2015	10:20:00	17.6	8.5	19044	>2419.6	**>24196**	**325.5**	**256**	**>2419.6**	78

* Method Detection Limit - limits can vary for individual samples depending on matrix interference and dilution factors, all results are preliminary and subject to final revision.

** United States Geological Survey (USGS) Continuous-Record Gaging Station

*** Flow rates are preliminary and subject to final revision by USGS.

Recommended EPA Recreational Water Quality Criteria - Statistical Threshold Value (STV) and Geomteric Mean (GM)

(Beach posting is recommended when indicator organisms exceed the STV) - Indicated by red text

E. coli (STV): 235 per 100 ml — Enterococcus (STV): 61 per 100 ml

E. coli (GM): 126 per 100mL — Enterococcus (GM): 33 per 100 mL

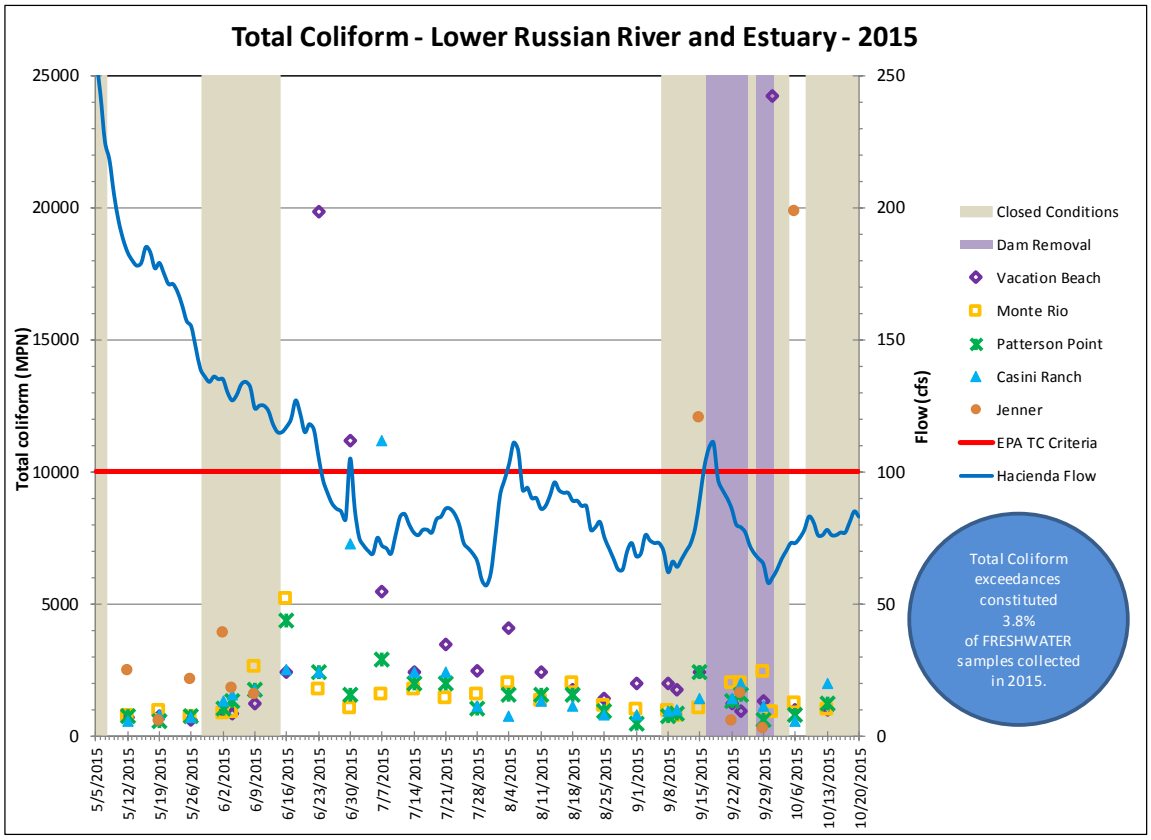


Figure 3-4. Total coliform results for the Russian River from Vacation Beach to Jenner in 2015.

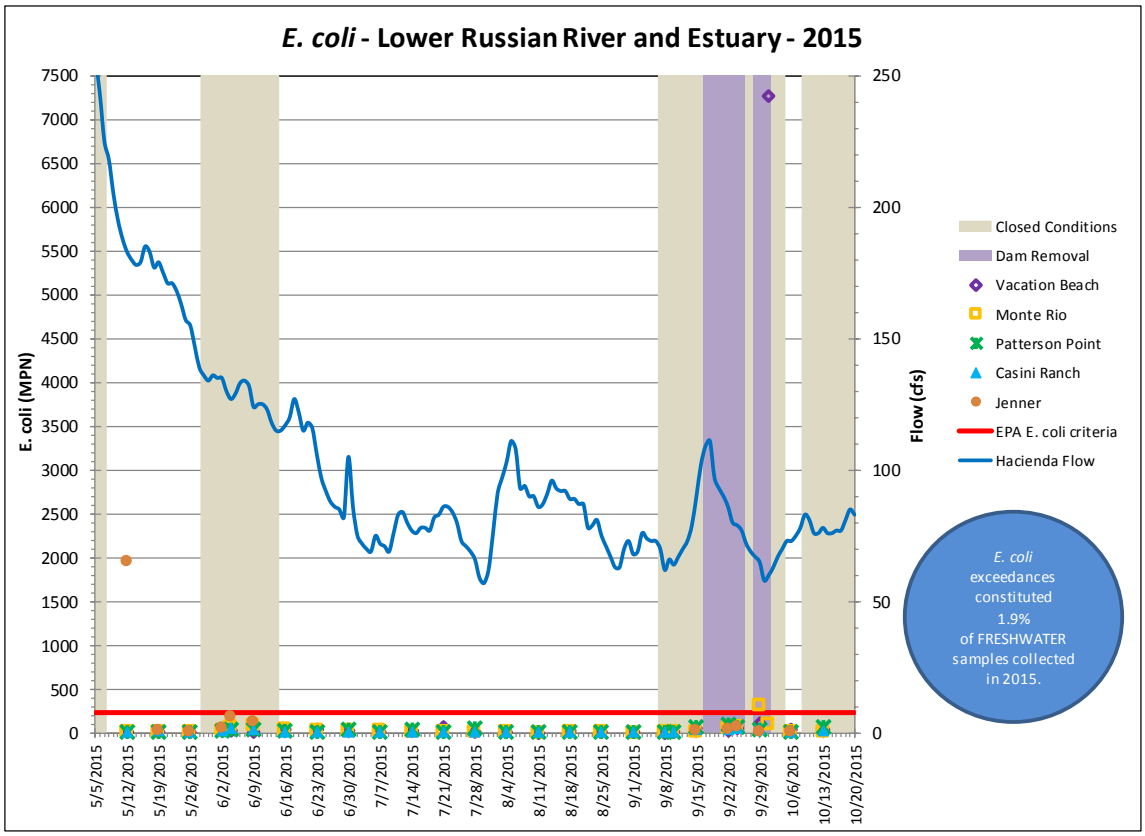


Figure 3-5. E. coli results for the Russian River from Vacation Beach to Jenner in 2015.

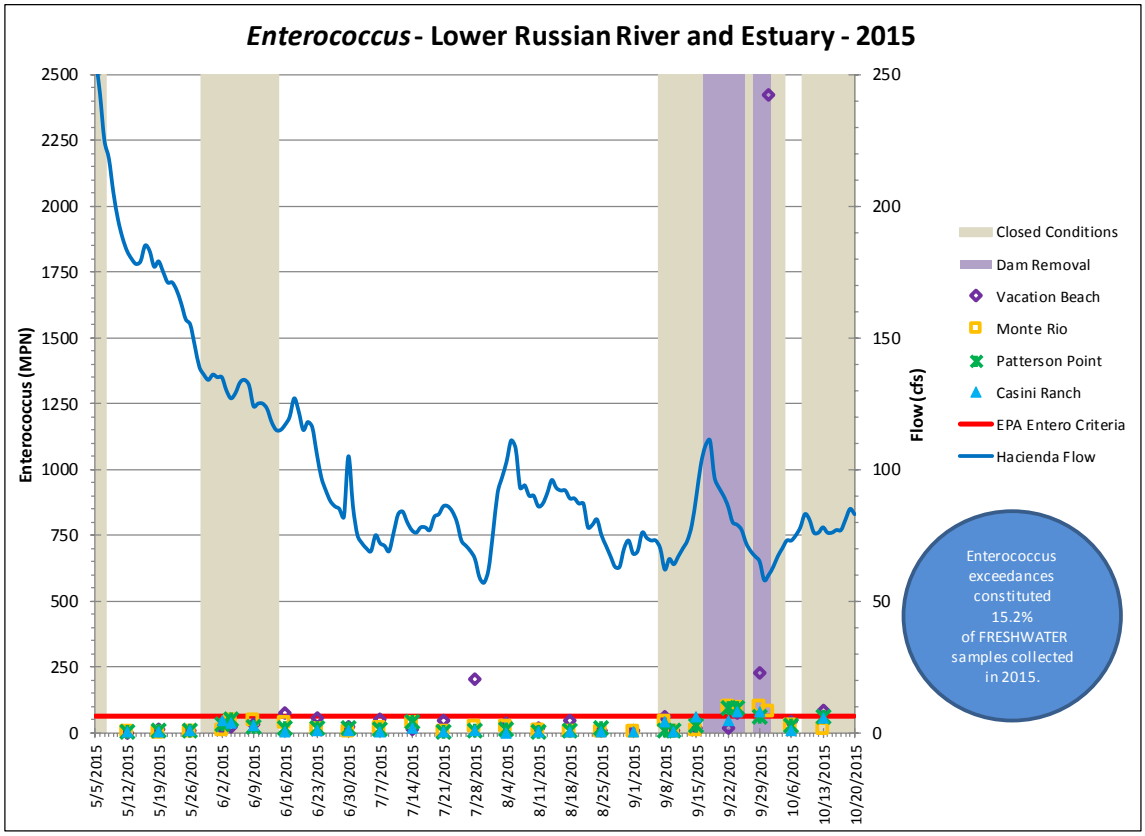


Figure 3-6. Enterococcus results for the Russian River from Vacation Beach to Casini Ranch in 2015.

Table 3-7. 2015 Vacation Beach nutrient grab sample results. This site experiences freshwater conditions.

Vacation Beach	Time	Temperature	pH	Total Organic Nitrogen	Ammonia as N	Ammonia as N Unionized	Nitrate as N	Nitrite as N	Total Kjeldahl Nitrogen	Total Nitrogen**	Phosphorus, Total	Total Orthophosphate	Dissolved Organic Carbon	Total Organic Carbon	Total Dissolved Solids	Turbidity	Chlorophyll-a	USGS 11467000 RR near Guerneville (Hacienda)***
MDL*				0.200	0.10	0.00010	0.030	0.030	0.10		0.020	0.020	0.0400	0.0400	4.2	0.020	0.000050	Flow Rate****
Date		°C		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	mg/L	(cfs)
5/12/2015	11:20	19.5	8.2	0.21	ND	ND	0.076	ND	0.21	0.29	**0.033**	0.062	1.84	2.23	220	1.8	0.0015	183
5/19/2015	12:00	20.2	8.2	ND	ND	ND	0.053	ND	ND	0.23	**0.028**	0.062	1.65	1.91	170	0.96	**0.0018**	179
5/26/2015	12:50	21.1	8.1	0.21	ND	ND	0.052	ND	0.21	0.26	**0.032**	0.078	1.65	2.01	160	1.0	0.0017	155
6/2/2015	11:20	20.8	8.2	0.24	ND	ND	ND	ND	0.24	0.24	**0.029**	0.080	1.63	2.10	170	1.3	0.0010	135
6/4/2015	11:30	21.2	8.2	0.24	ND	ND	0.051	ND	0.24	0.30	**0.036**	0.084	1.61	2.18	170	2.0	0.0013	127
6/9/2015	12:20	23.7	8.1	ND	ND	ND	0.14	0.047	ND	0.36	**0.036**	0.087	1.53	2.07	160	1.2	0.00082	124
6/16/2015	10:30	22.9	8.9	0.42	ND	ND	0.052	ND	0.42	**0.47**	**0.041**	0.11	1.81	2.43	170	1.8	0.0015	117
6/23/2015	11:50	23.1	7.9	0.21	ND	ND	0.040	ND	0.21	0.25	**0.034**	0.075	1.80	2.28	160	1.7	**0.0031**	106
6/30/2015	11:40	24.6	7.9	ND	ND	ND	0.043	ND	ND	0.22	**0.032**	0.064	1.70	2.18	160	1.2	**0.0019**	105
7/7/2015	10:40	24.0	8.0	0.21	ND	ND	ND	ND	0.21	0.21	**0.042**	0.050	1.86	2.43	140	1.7	**0.0034**	72
7/14/2015	11:40	23.7	7.8	0.24	ND	ND	ND	ND	0.24	0.24	**0.037**	ND	1.45	1.91	160	1.9	**0.0024**	77
7/21/2015	11:00	25.2	7.8	ND	ND	ND	ND	ND	ND	0.14	**0.037**	0.060	1.47	1.88	140	1.3	**0.0028**	86
7/28/2015	10:30	24.5	8.0	0.24	ND	ND	0.049	ND	0.24	0.29	**0.029**	0.040	1.49	1.88	140	1.7	0.0016	66
8/4/2015	11:00	24.1	7.9	0.21	ND	ND	ND	ND	0.21	0.21	**0.023**	0.053	1.58	2.01	140	1.7	0.0016	103
8/11/2015	11:10	23.7	7.9	0.28	ND	ND	ND	ND	0.28	0.28	0.020	0.024	1.59	2.06	120	1.1	0.0010	86
8/18/2015	10:50	23.9	7.9	ND	ND	ND	0.074	ND	ND	0.25	**0.026**	0.033	1.60	2.02	130	1.0	**0.0020**	89
8/25/2015	10:40	22.3	7.9	0.21	ND	ND	ND	ND	0.21	0.25	**0.023**	0.039	1.55	2.11	140	1.1	**0.0023**	75
9/1/2015	12:40	23.9	7.9	0.21	ND	ND	ND	ND	0.21	0.21	ND	0.040	1.61	2.16	140	1.0	**0.0020**	68
9/8/2015	12:10	21.9	7.9	0.28	ND	ND	ND	ND	0.28	0.28	ND	0.031	1.60	2.23	110	1.1	0.0015	62
9/10/2015	12:10	22.0	7.9	ND	ND	ND	ND	ND	ND	ND	0.021	0.029	1.54	1.77	140	1.1	**0.0019**	64
9/15/2015	12:00	20.8	7.7	ND	ND	ND	ND	ND	ND	0.18	**0.024**	0.027	1.67	2.25	150	0.99	0.0015	90
9/22/2015	12:40	21.0	7.6	ND	ND	ND	ND	ND	ND	0.18	**0.024**	0.049	1.47	2.03	140	**2.4**	0.00080	86
9/24/2015	10:20	20.1	7.5	ND	ND	ND	ND	ND	ND	0.14	**0.028**	0.050	1.35	1.82	140	1.4	0.00080	79
9/29/2015	12:10	19.9	7.6	ND	ND	ND	ND	ND	ND	0.10	**0.024**	0.052	1.42	2.04	150	2.3	0.0016	65
10/6/2015	11:00	19.5	7.6	ND	ND	ND	0.041	ND	ND	0.15	0.021	0.031	1.43	2.07	140	**2.4**	0.0016	73
10/13/2015	11:40	19.6	7.8	ND	ND	ND	ND	ND	ND	0.10	**0.023**	0.035	1.29	1.84	140	1.7	0.0013	78

* Method Detection Limit - limits can vary for individual samples depending on matrix interference and dilution factors, all results are preliminary and subject to final revision.

** Total nitrogen is calculated through the summation of the different components of total nitrogen: organic and ammoniacal nitrogen (together referred to as Total Kjeldahl Nitrogen or TKN) and nitrate/nitrite nitrogen.

*** United States Geological Survey (USGS) Continuous-Record Gaging Station

**** Flow rates are preliminary and subject to final revision by USGS.

Recommended EPA Criteria based on Aggregate Ecoregion III

Total Phosporus: 0.02188 mg/L (21.88 ug/L) ≈ 0.022 mg/L

Chlorophyll *a*: 0.00178 mg/L (1.78 ug/L) ≈ 0.0018 mg/L

Total Nitrogen: 0.38 mg/L

Turbidity: 2.34 FTU/NTU

Table 3-8. 2015 Monte Rio nutrient grab sample results. This site experiences freshwater conditions.

Monte Rio	Time	Temperature	pH	Total Organic Nitrogen	Ammonia as N	Ammonia as N Unionized	Nitrate as N	Nitrite as N	Total Kjeldahl Nitrogen	Total Nitrogen**	Phosphorus, Total	Total Orthophosphate	Dissolved Organic Carbon	Total Organic Carbon	Total Dissolved Solids	Turbidity	Chlorophyll-a	USGS 11467000 RR near Guerneville (Hacienda)***
MDL*				0.200	0.10	0.00010	0.030	0.030	0.10		0.020	0.020	0.0400	0.0400	4.2	0.020	0.000050	Flow Rate****
Date		°C		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	mg/L	(cfs)
5/12/2015	11:10	19.5	8.1	0.21	ND	ND	0.071	ND	0.21	0.28	**0.040**	0.089	1.82	2.35	170	1.8	0.0014	183
5/19/2015	11:40	20.1	8.2	ND	ND	ND	0.053	ND	ND	0.23	**0.028**	0.062	1.59	1.93	180	1.0	0.0012	179
5/26/2015	12:30	20.8	8.0	0.24	ND	ND	0.051	ND	0.24	0.30	**0.035**	0.086	1.64	2.00	160	1.2	**0.0019**	155
6/2/2015	11:00	20.4	8.1	0.24	ND	ND	ND	ND	0.24	0.24	**0.035**	0.080	1.60	2.07	180	1.6	0.0010	135
6/4/2015	11:10	21.3	8.2	ND	ND	ND	0.050	ND	ND	0.19	**0.041**	0.080	1.62	2.18	170	1.9	0.00028	127
6/9/2015	11:50	23.7	8.1	ND	ND	ND	0.14	0.048	ND	0.36	**0.038**	0.091	1.55	2.08	160	0.77	0.0011	124
6/16/2015	10:20	22.4	7.8	0.32	ND	ND	0.054	ND	0.32	0.37	**0.050**	0.150	1.73	2.41	180	1.5	0.00070	117
6/23/2015	11:30	23.2	7.9	0.28	ND	ND	0.040	ND	0.28	0.32	**0.036**	0.110	1.75	2.28	160	2.2	**0.0023**	106
6/30/2015	11:20	24.5	7.9	ND	ND	ND	0.043	ND	ND	0.22	**0.032**	0.064	1.68	2.20	160	1.2	0.0012	105
7/7/2015	10:30	23.6	8.0	0.21	ND	ND	ND	ND	0.21	0.21	**0.038**	0.080	1.87	2.32	150	1.3	**0.0025**	72
7/14/2015	11:30	23.6	7.7	0.28	ND	ND	ND	ND	0.28	0.28	**0.034**	ND	1.41	1.91	140	2.2	0.0015	77
7/21/2015	10:50	25.0	7.8	0.21	ND	ND	ND	ND	0.21	0.21	**0.040**	0.064	1.42	1.89	130	1.3	**0.0019**	86
7/28/2015	10:10	23.7	7.8	0.24	ND	ND	ND	ND	0.24	0.24	**0.032**	0.048	1.44	1.89	140	2.2	0.0014	66
8/4/2015	10:50	23.9	7.8	ND	ND	ND	ND	ND	ND	0.18	**0.030**	0.083	1.49	2.01	150	1.9	0.0011	103
8/11/2015	10:50	23.5	7.9	ND	ND	ND	ND	ND	ND	0.18	**0.026**	0.036	1.54	2.00	120	0.88	0.0010	86
8/18/2015	10:30	23.8	7.9	ND	ND	ND	0.072	ND	ND	0.25	**0.028**	0.049	1.58	1.97	150	1.6	0.00074	89
8/25/2015	10:25	22.0	7.8	ND	ND	ND	ND	ND	ND	0.17	**0.024**	0.047	1.49	1.97	140	1.1	**0.0020**	75
9/1/2015	12:20	23.5	7.7	ND	ND	ND	ND	ND	ND	0.18	**0.022**	0.048	1.54	2.13	130	0.70	0.0011	68
9/8/2015	11:50	21.8	7.8	0.21	ND	ND	ND	ND	0.21	0.21	ND	0.031	1.59	2.18	120	1.7	0.0014	62
9/10/2015	12:00	21.6	7.8	ND	ND	ND	ND	ND	ND	0.18	**0.025**	0.045	1.53	1.93	150	0.77	0.0011	64
9/15/2015	11:50	20.2	7.5	ND	ND	ND	ND	ND	ND	0.18	**0.022**	0.043	1.64	2.26	140	1.4	0.0014	90
9/22/2015	12:30	21.4	7.8	ND	ND	ND	ND	ND	ND	0.18	ND	0.049	1.84	2.02	140	0.79	0.00080	86
9/24/2015	10:10	20.3	7.6	ND	ND	ND	ND	ND	ND	0.14	0.020	0.037	1.46	1.99	140	0.73	0.00053	79
9/29/2015	12:00	20.4	7.9	ND	ND	ND	ND	ND	ND	0.10	0.020	0.040	1.43	1.99	140	1.3	0.0011	65
10/6/2015	10:40	19.6	7.6	ND	ND	ND	0.050	ND	ND	0.12	**0.037**	0.089	1.45	1.98	140	1.2	0.00087	73
10/13/2015	11:20	19.4	7.8	ND	ND	ND	ND	ND	ND	0.14	**0.042**	0.090	1.40	1.94	130	1.9	0.0014	78

* Method Detection Limit - limits can vary for individual samples depending on matrix interference and dilution factors, all results are preliminary and subject to final revision.

** Total nitrogen is calculated through the summation of the different components of total nitrogen: organic and ammoniacal nitrogen (together referred to as Total Kjeldahl Nitrogen or TKN) and nitrate/nitrite nitrogen.

*** United States Geological Survey (USGS) Continuous-Record Gaging Station

**** Flow rates are preliminary and subject to final revision by USGS.

Recommended EPA Criteria based on Aggregate Ecoregion III

Total Phosporus: 0.02188 mg/L (21.88 ug/L) ≈ 0.022 mg/L

Chlorophyll *a*: 0.00178 mg/L (1.78 ug/L) ≈ 0.0018 mg/L

Total Nitrogen: 0.38 mg/L

Turbidity: 2.34 FTU/NTU

Table 3-9. 2015 Patterson Point nutrient grab sample results. This site experiences freshwater conditions.

Patterson Point	Time	Temperature	pH	Total Organic Nitrogen	Ammonia as N	Ammonia as N Unionized	Nitrate as N	Nitrite as N	Total Kjeldahl Nitrogen	Total Nitrogen**	Phosphorus, Total	Total Orthophosphate	Dissolved Organic Carbon	Total Organic Carbon	Total Dissolved Solids	Turbidity	Chlorophyll-a	USGS 11467000 RR near Guerneville (Hacienda)***
MDL*				0.200	0.10	0.00010	0.030	0.030	0.10		0.020	0.020	0.0400	0.0400	4.2	0.020	0.000050	Flow Rate****
Date		°C		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	mg/L	(cfs)
5/12/2015	10:40	19.5	8.2	0.28	ND	ND	0.075	ND	0.28	0.36	**0.040**	0.085	1.82	2.50	170	2.3	0.0011	183
5/19/2015	11:20	20.0	8.2	0.21	ND	ND	0.054	ND	0.21	0.26	**0.031**	0.066	1.71	1.82	170	0.82	0.00083	179
5/26/2015	12:00	20.6	8.0	0.21	ND	ND	0.051	ND	0.21	0.26	**0.034**	0.078	1.67	2.04	160	1.5	**0.0019**	155
6/2/2015	10:40	20.3	8.0	ND	ND	ND	ND	ND	ND	0.18	**0.035**	0.084	1.68	2.13	170	1.5	0.0016	135
6/4/2015	10:50	21.0	8.2	ND	ND	ND	0.051	ND	ND	0.23	**0.043**	0.11	1.63	2.19	170	1.6	0.0010	127
6/9/2015	11:30	23.6	8.2	0.21	ND	ND	0.14	0.048	0.21	**0.40**	**0.036**	0.091	1.60	2.08	160	1.3	0.00082	124
6/16/2015	10:00	22.5	7.9	0.24	ND	ND	0.058	ND	0.24	0.30	**0.064**	0.15	1.78	2.49	160	1.2	0.00082	117
6/23/2015	11:10	22.7	7.9	0.35	ND	ND	ND	ND	0.35	0.35	**0.038**	0.099	1.75	2.25	160	1.6	**0.0021**	106
6/30/2015	10:50	23.5	7.8	ND	ND	ND	0.045	ND	ND	0.22	**0.041**	0.081	1.66	2.20	160	1.2	**0.0018**	105
7/7/2015	10:10	23.7	8.1	0.24	ND	ND	ND	ND	0.24	0.24	**0.045**	0.085	1.73	2.31	160	1.2	**0.0022**	72
7/14/2015	11:00	23.8	7.7	0.21	ND	ND	0.049	ND	0.21	0.26	**0.039**	0.031	1.39	1.92	150	**3.6**	0.0014	77
7/21/2015	10:30	24.8	7.9	0.28	ND	ND	ND	ND	0.28	0.28	**0.041**	0.092	1.40	1.94	140	1.6	0.00094	86
7/28/2015	9:50	24.1	7.8	0.21	ND	ND	ND	ND	0.21	0.21	**0.036**	0.053	1.49	1.91	140	1.8	0.0016	66
8/4/2015	10:30	23.5	7.9	ND	ND	ND	ND	ND	ND	0.18	**0.031**	0.088	1.42	1.99	150	**2.9**	0.00091	103
8/11/2015	10:30	23.2	7.8	ND	ND	ND	ND	ND	ND	0.14	**0.023**	0.048	1.52	1.98	130	0.88	0.0013	86
8/18/2015	10:10	23.2	7.8	ND	ND	ND	0.071	ND	ND	0.25	**0.030**	0.057	1.55	1.98	140	1.5	0.00050	89
8/25/2015	10:05	22.1	7.9	0.24	ND	ND	ND	ND	0.24	0.24	**0.029**	0.047	1.51	2.01	150	1.3	0.00094	75
9/1/2015	12:00	23.5	7.9	ND	ND	ND	ND	ND	ND	0.070	**0.025**	0.060	1.56	2.14	150	1.5	0.0011	68
9/8/2015	11:30	21.9	8.0	0.21	ND	ND	ND	ND	0.21	0.21	ND	0.039	1.62	2.13	120	1.4	0.00068	62
9/10/2015	11:30	22.1	8.0	ND	ND	ND	ND	ND	ND	0.18	**0.029**	0.037	1.54	2.12	130	1.2	0.0016	64
9/15/2015	11:30	20.8	7.8	ND	ND	ND	ND	ND	ND	0.14	**0.028**	0.055	1.74	2.29	150	1.3	**0.0019**	90
9/22/2015	12:05	21.0	7.8	ND	ND	ND	ND	ND	ND	0.18	**0.023**	0.06	1.74	2.00	140	1.2	0.0013	86
9/24/2015	9:50	20.4	7.9	0.21	ND	ND	ND	ND	0.21	0.21	**0.022**	0.037	1.53	2.07	150	0.58	0.00093	79
9/29/2015	11:40	19.8	7.7	ND	ND	ND	ND	ND	ND	0.14	**0.022**	0.048	1.49	2.03	140	0.99	0.0015	65
10/6/2015	10:20	20.0	7.7	ND	ND	ND	0.046	ND	ND	0.15	**0.036**	0.082	1.46	2.00	150	1.0	0.00087	73
10/13/2015	11:00	19.3	7.8	ND	ND	ND	ND	ND	ND	0.10	**0.036**	0.082	1.38	2.01	130	1.4	0.0011	78

* Method Detection Limit - limits can vary for individual samples depending on matrix interference and dilution factors, all results are preliminary and subject to final revision.

** Total nitrogen is calculated through the summation of the different components of total nitrogen: organic and ammoniacal nitrogen (together referred to as Total Kjeldahl Nitrogen or TKN) and nitrate/nitrite nitrogen.

*** United States Geological Survey (USGS) Continuous-Record Gaging Station

**** Flow rates are preliminary and subject to final revision by USGS.

Recommended EPA Criteria based on Aggregate Ecoregion III

Total Phosporus: 0.02188 mg/L (21.88 ug/L) ≈ 0.022 mg/L

Chlorophyll *a*: 0.00178 mg/L (1.78 ug/L) ≈ 0.0018 mg/L

Total Nitrogen: 0.38 mg/L

Turbidity: 2.34 FTU/NTU

Table 3-10. 2015 Casini Ranch nutrient grab sample results. This site may experience estuarine conditions.

Casini Ranch	Time	Temperature	pH	Total Organic Nitrogen	Ammonia as N	Ammonia as N Unionized	Nitrate as N	Nitrite as N	Total Kjeldahl Nitrogen	Total Nitrogen**	Phosphorus, Total	Total Orthophosphate	Dissolved Organic Carbon	Total Organic Carbon	Total Dissolved Solids	Turbidity	Chlorophyll-a	USGS 11467000 RR near Guerneville (Hacienda)***
MDL*				0.200	0.10	0.00010	0.030	0.030	0.10		0.020	0.020	0.0400	0.0400	4.2	0.020	0.000050	Flow Rate****
Date		°C		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	mg/L	(cfs)
5/12/2015	10:20	20.1	8.3	ND	ND	ND	0.066	ND	ND	0.24	**0.044**	0.18	1.87	2.57	180	1.6	0.0015	183
5/19/2015	10:50	20.4	8.3	0.24	ND	ND	0.21	ND	0.24	0.30	**0.035**	0.074	1.67	1.98	170	2.1	0.0013	179
5/26/2015	11:30	20.6	8.1	ND	ND	ND	0.051	ND	ND	0.23	**0.036**	0.082	1.64	1.97	160	2.2	**0.0027**	155
6/2/2015	10:10	21.5	8.1	ND	ND	ND	0.14	ND	ND	0.32	**0.040**	0.099	1.67	2.18	170	2.0	**0.0028**	135
6/4/2015	10:30	21.2	8.4	0.21	ND	ND	0.053	ND	0.21	0.26	**0.044**	0.095	1.42	1.93	170	2.1	**0.0024**	127
6/9/2015	11:10	22.8	8.3	ND	ND	ND	ND	0.051	ND	0.19	**0.036**	0.091	1.57	2.04	160	1.1	0.0016	124
6/16/2015	9:30	22.3	7.9	0.28	ND	ND	0.053	ND	0.28	0.33	**0.047**	0.14	1.76	2.28	170	1.3	0.00082	117
6/23/2015	10:50	22.2	7.9	0.21	ND	ND	0.040	ND	0.21	0.25	**0.042**	0.10	1.78	2.30	160	0.85	**0.0021**	106
6/30/2015	10:20	23.6	8.0	0.28	ND	ND	0.044	ND	0.28	0.32	**0.038**	0.085	1.72	2.20	160	1.4	0.0012	105
7/7/2015	9:50	23.1	8.5	ND	ND	ND	ND	ND	ND	0.18	**0.040**	0.093	1.77	2.28	150	0.66	0.0014	72
7/14/2015	10:30	24.0	7.9	ND	ND	ND	ND	ND	ND	0.18	**0.035**	ND	1.50	2.00	140	0.65	0.0013	77
7/21/2015	10:10	24.8	8.2	0.28	ND	ND	ND	ND	0.28	0.28	**0.046**	0.10	1.48	2.06	140	0.66	0.0012	86
7/28/2015	9:30	23.4	8.2	ND	ND	ND	0.049	ND	ND	0.19	**0.038**	0.070	1.53	2.07	120	1.0	0.0009	66
8/4/2015	10:00	22.7	7.7	0.24	ND	ND	ND	ND	0.24	0.24	**0.029**	0.083	1.58	2.06	140	1.0	0.0014	103
8/11/2015	10:00	23.1	7.9	ND	ND	ND	ND	ND	ND	0.18	**0.028**	0.052	1.59	2.08	92	0.75	0.00064	86
8/18/2015	9:50	22.3	8.0	0.21	ND	ND	0.076	ND	0.21	0.29	**0.031**	0.049	1.62	2.06	140	1.4	0.00074	89
8/25/2015	9:45	21.3	8.1	0.21	ND	ND	ND	ND	0.21	0.25	**0.036**	0.051	1.58	2.33	140	0.67	0.00094	75
9/1/2015	11:30	23.5	7.9	ND	ND	ND	ND	ND	ND	0.21	**0.027**	0.078	1.67	2.27	140	0.78	0.0012	68
9/8/2015	11:00	21.5	8.1	ND	ND	ND	ND	ND	ND	0.18	ND	0.043	1.65	2.23	79	0.98	0.00096	62
9/10/2015	11:00	21.7	8.1	0.21	ND	ND	ND	ND	0.21	0.21	0.021	0.049	1.69	1.68	130	0.92	0.0011	64
9/15/2015	11:00	21.2	8.0	ND	ND	ND	ND	ND	ND	0.18	**0.028**	0.047	2.11	2.30	150	1.0	**0.0019**	90
9/22/2015	11:40	21.7	8.0	ND	ND	ND	ND	ND	ND	0.18	0.021	0.049	1.51	2.07	140	1.0	**0.0019**	86
9/24/2015	9:20	20.0	8.0	ND	ND	ND	ND	ND	ND	0.14	**0.024**	0.046	1.74	2.02	140	1.1	0.0015	79
9/29/2015	11:20	20.1	8.1	ND	ND	ND	ND	ND	ND	0.18	ND	0.048	1.86	2.23	140	1.2	**0.0021**	65
10/6/2015	10:00	19.4	7.8	ND	ND	ND	0.041	ND	ND	0.15	**0.032**	0.070	1.84	2.13	150	0.84	0.0013	73
10/13/2015	10:40	20.0	7.9	ND	ND	ND	ND	ND	ND	ND	**0.031**	0.090	1.73	1.99	140	1.5	0.00071	78

* Method Detection Limit - limits can vary for individual samples depending on matrix interference and dilution factors, all results are preliminary and subject to final revision.

** Total nitrogen is calculated through the summation of the different components of total nitrogen: organic and ammoniacal nitrogen (together referred to as Total Kjeldahl Nitrogen or TKN) and nitrate/nitrite nitrogen.

*** United States Geological Survey (USGS) Continuous-Record Gaging Station

**** Flow rates are preliminary and subject to final revision by USGS.

Recommended EPA Criteria based on Aggregate Ecoregion III

Total Phosporus: 0.02188 mg/L (21.88 ug/L) ≈ 0.022 mg/L

Chlorophyll *a*: 0.00178 mg/L (1.78 ug/L) ≈ 0.0018 mg/L

Total Nitrogen: 0.38 mg/L

Turbidity: 2.34 FTU/NTU

Table 3-11. 2015 Jenner nutrient grab sample results. Estuarine conditions exist at this site. EPA criteria do not apply but exceedances are highlighted for comparison.

Jenner Boat Ramp	Time	Temperature	pH	Total Organic Nitrogen	Ammonia as N	Ammonia as N Unionized	Nitrate as N	Nitrite as N	Total Kjeldahl Nitrogen	Total Nitrogen**	Phosphorus, Total	Total Orthophosphate	Dissolved Organic Carbon	Total Organic Carbon	Total Dissolved Solids	Turbidity	Chlorophyll-a	USGS 11467000 RR near Guerneville (Hacienda)***
MDL*				0.200	0.10	0.00010	0.030	0.030	0.10		0.020	0.020	0.0400	0.0400	4.2	0.020	0.000050	Flow Rate****
Date		°C		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	mg/L	(cfs)
5/12/2015	9:50	16.7	8.4	0.32	ND	ND	0.063	ND	0.32	**0.38**	**0.065**	0.13	1.74	2.24	4200	**12**	0.0015	183
5/19/2015	10:30	17.7	8.0	0.35	ND	ND	0.26	ND	0.35	**0.62**	**0.044**	0.086	1.09	1.23	7400	**2.6**	**0.0059**	179
5/26/2015	11:00	17.1	8.0	0.24	ND	ND	0.27	ND	0.24	**0.52**	**0.050**	0.086	1.32	1.20	6600	**2.8**	**0.0074**	155
6/2/2015	9:50	18.0	8.3	0.21	ND	ND	0.28	ND	0.21	**0.49**	**0.033**	0.072	2.07	2.05	2100	1.8	**0.0027**	135
6/4/2015	10:00	18.1	8.3	ND	ND	ND	0.053	ND	ND	0.23	**0.039**	0.072	2.00	1.94	2400	1.5	**0.0023**	127
6/9/2015	10:40	20.0	8.2	0.28	ND	ND	ND	ND	0.28	0.28	**0.035**	0.052	2.09	2.24	1600	1.3	**0.011**	124
6/16/2015	9:10	20.2	7.7	0.32	ND	ND	0.029	ND	0.32	**0.60**	**0.052**	0.15	1.45	1.59	7000	1.8	0.00047	117
6/23/2015	10:30	17.7	7.7	0.21	ND	ND	0.59	ND	0.21	**0.80**	**0.042**	0.11	0.931	0.950	14000	1.3	0.0014	106
6/30/2015	9:50	19.2	8.1	ND	ND	ND	0.80	ND	ND	**0.94**	**0.032**	0.056	0.849	0.852	15000	1.6	**0.0022**	105
7/7/2015	9:20	19.4	7.9	0.32	ND	ND	ND	ND	0.32	0.32	**0.036**	0.059	0.623	0.731	22000	1.8	**0.0044**	72
7/14/2015	10:10	20.0	8.1	0.32	ND	ND	1.1	ND	0.32	**1.4**	**0.045**	0.023	0.748	0.807	19000	**3.5**	**0.0031**	77
7/21/2015	9:30	20.3	8.0	0.35	ND	ND	ND	ND	0.35	0.35	**0.043**	0.048	0.702	0.718	17000	1.8	**0.0024**	86
7/28/2015	9:10	18.9	8.0	0.21	ND	ND	ND	ND	0.21	0.21	**0.033**	ND	0.785	0.742	17000	1.3	**0.0058**	66
8/4/2015	9:40	19.5	7.9	0.24	ND	ND	ND	ND	0.24	0.24	**0.025**	0.048	0.684	0.600	18000	1.8	**0.0029**	103
8/11/2015	9:30	19.8	8.0	0.28	ND	ND	1.1	ND	0.28	**1.4**	**0.027**	0.044	0.851	0.901	17000	1.9	**0.0033**	86
8/18/2015	9:20	18.8	8.0	ND	ND	ND	1.1	ND	ND	**1.2**	**0.027**	0.033	0.746	0.670	19000	1.8	**0.0021**	89
8/25/2015	9:15	18.2	7.8	0.28	ND	ND	0.92	ND	0.38	**1.3**	**0.032**	0.047	0.88	0.970	19000	1.6	**0.0039**	75
9/1/2015	11:00	19.3	8.0	0.28	ND	ND	ND	ND	0.28	**1.0**	**0.038**	0.06	0.820	0.899	21000	**3.3**	**0.0024**	68
9/8/2015	10:40	17.4	8.2	0.24	ND	ND	ND	ND	0.24	0.24	ND	0.020	0.833	0.851	17000	1.4	**0.0060**	62
9/10/2015	10:40	17.8	8.3	0.28	ND	ND	ND	ND	0.28	0.28	**0.030**	0.021	1.17	2.13	13000	1.4	**0.0082**	64
9/15/2015	10:40	16.6	8.1	0.32	ND	ND	ND	ND	0.32	0.32	**0.037**	0.035	2.15	2.20	3000	**4.4**	**0.0049**	90
9/22/2015	11:10	19.1	8.2	0.21	ND	ND	0.21	ND	0.21	**0.42**	**0.027**	0.033	2.00	1.97	3400	1.2	**0.0042**	86
9/24/2015	8:50	18.0	8.1	ND	ND	ND	0.22	ND	ND	**0.40**	**0.024**	ND	1.75	1.85	3500	1.4	**0.0031**	79
9/29/2015	11:00	18.5	8.2	0.24	ND	ND	ND	ND	0.24	0.24	**0.026**	0.060	1.75	2.13	3000	1.5	**0.0051**	65
10/6/2015	9:30	19.4	7.8	0.21	ND	ND	0.24	ND	0.21	**0.45**	**0.045**	0.089	1.73	1.78	4300	1.5	0.0015	73
10/13/2015	10:20	17.6	8.5	ND	ND	ND	ND	ND	ND	0.18	**0.026**	0.027	0.983	1.07	11000	1.4	**0.0023**	78

* Method Detection Limit - limits can vary for individual samples depending on matrix interference and dilution factors, all results are preliminary and subject to final revision.

** Total nitrogen is calculated through the summation of the different components of total nitrogen: organic and ammoniacal nitrogen (together referred to as Total Kjeldahl Nitrogen or TKN) and nitrate/nitrite nitrogen.

*** United States Geological Survey (USGS) Continuous-Record Gaging Station

**** Flow rates are preliminary and subject to final revision by USGS.

Recommended EPA Criteria based on Aggregate Ecoregion III

Total Phosporus: 0.02188 mg/L (21.88 ug/L) ≈ 0.022 mg/L

Chlorophyll *a*: 0.00178 mg/L (1.78 ug/L) ≈ 0.0018 mg/L

Total Nitrogen: 0.38 mg/L

Turbidity: 2.34 FTU/NTU

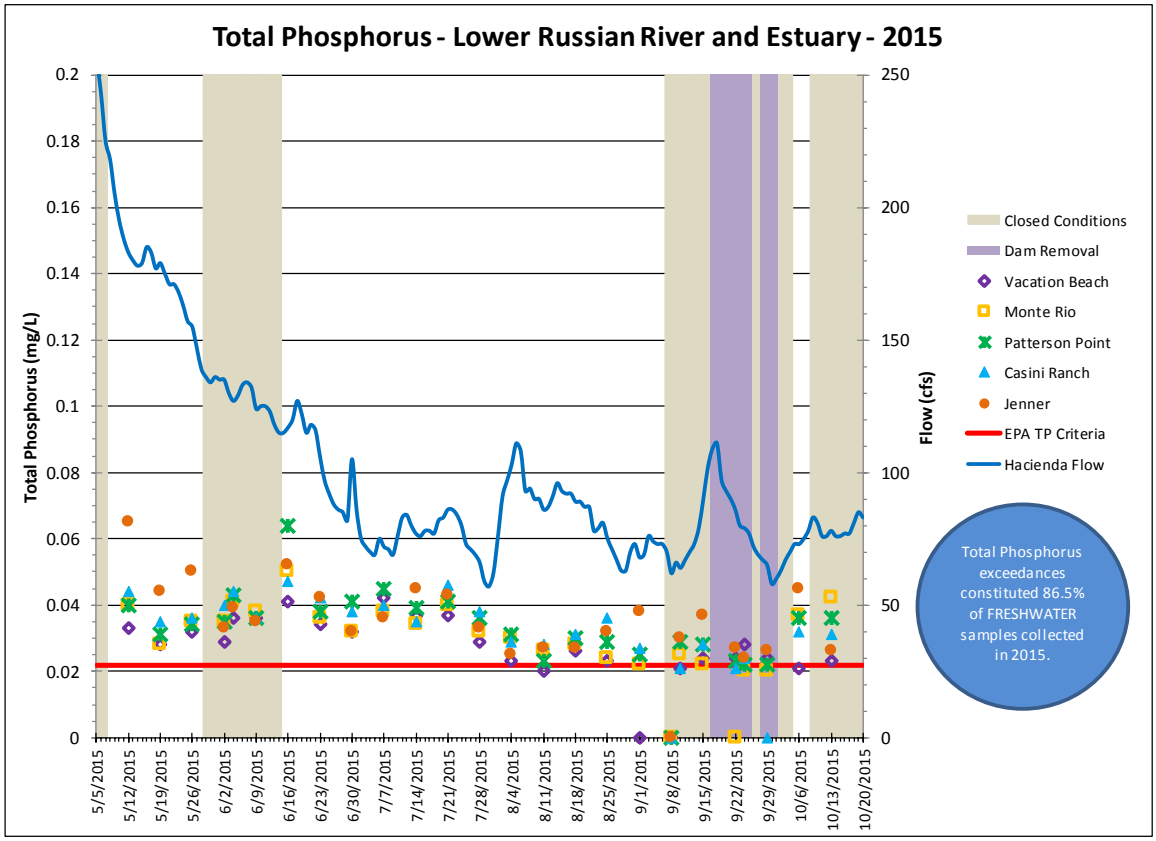


Figure 3-7. Total Phosphorus results for the Russian River from Vacation Beach to Jenner in 2015.

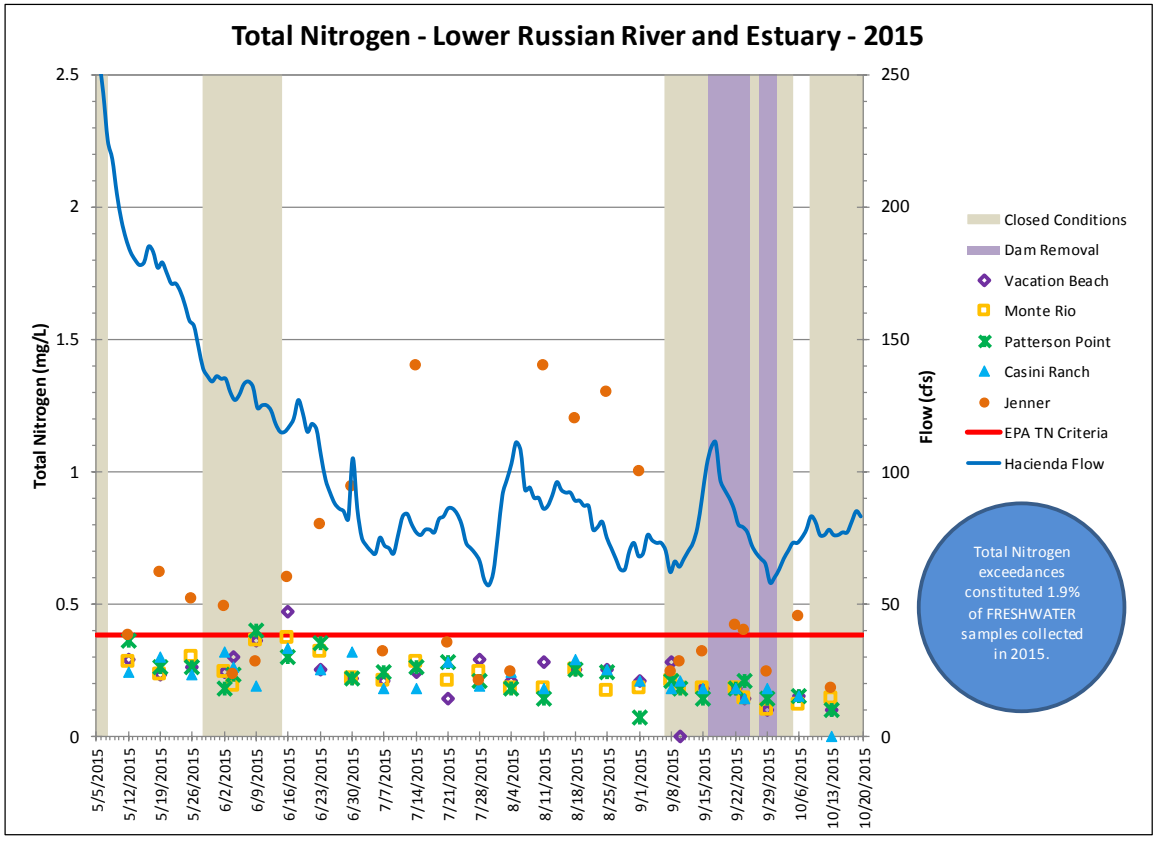


Figure 3-8. Total Nitrogen results for the Russian River from Vacation Beach to Jenner in 2015.

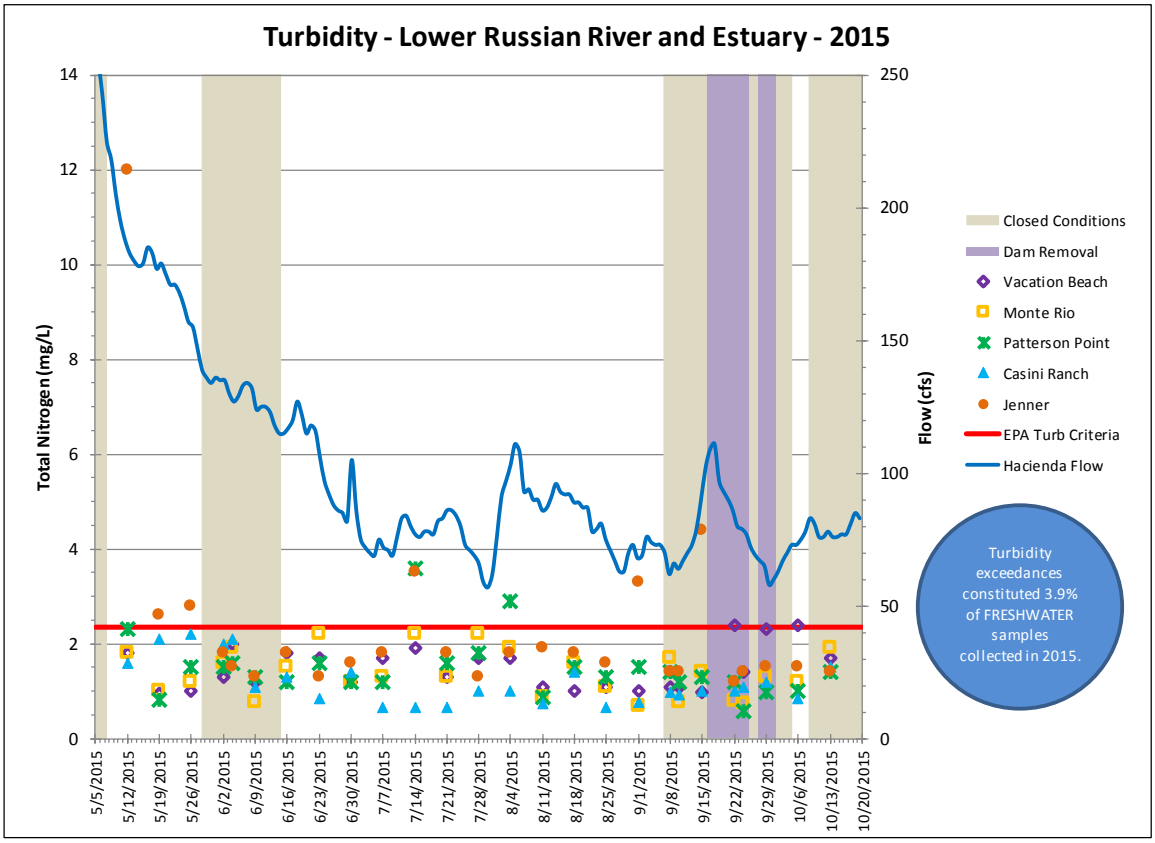


Figure 3-9. Turbidity results for the Russian River from Vacation Beach to Jenner in 2015.

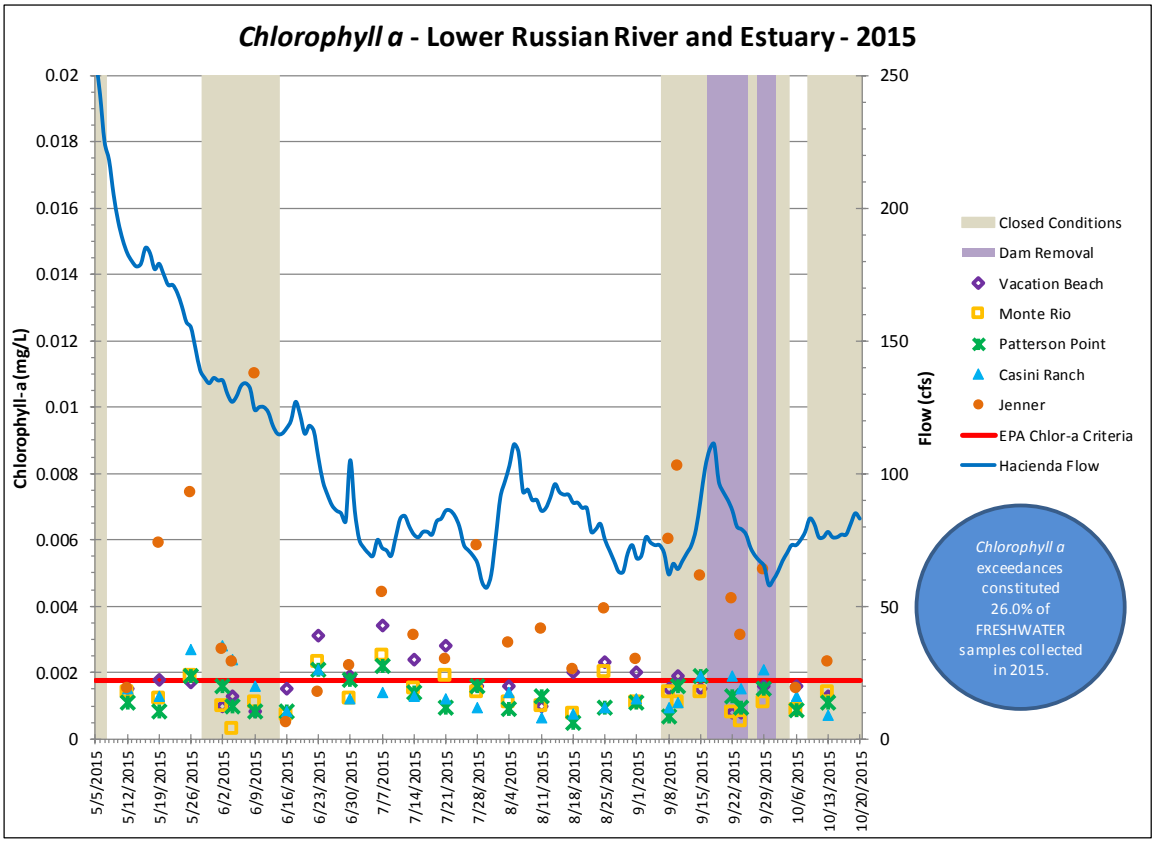


Figure 3-10. Chlorophyll a results for the Russian River from Vacation Beach to Jenner in 2015.

4.0 Additional Monitoring

4.1 Permanent Datasondes

In coordination with the USGS the Water Agency maintains three, multi-parameter water quality sondes on the Russian River located at Russian River near Hopland, Russian River at Diggers Bend near Healdsburg, and Russian River near Guerneville (aka Hacienda Bridge). These three sondes are referred to as "permanent" because the Water Agency maintains them as part of its early warning detection system for use year-round (Figure 4.1). The sondes take real time readings of water pH, temperature, dissolved oxygen content (DO), specific conductivity, turbidity, and depth, every 15 minutes.

In addition to the permanent sondes, the Water Agency, in cooperation with the USGS, installed three seasonal sondes with real-time telemetry at the USGS river gage station at Russian River near Cloverdale (north of Cloverdale at Comminsky Station Road), at the gage station at Russian River at Jimtown (Alexander Valley Road Bridge), and at Johnson's Beach in Guerneville (Figure 4.1). The two seasonal sondes at Cloverdale and Jimtown are included by the USGS on its "Real-time Data for California" website.

The data collected by the sondes described above are evaluated in Section 4.2 in response to the SWRCB request to evaluate whether and to what extent the reduced flows authorized by the Order caused any impacts to water quality or availability of aquatic habitat for salmonids. In addition, the 2015 data will help provide information to evaluate potential changes to water quality and availability of habitat for aquatic resources resulting from the proposed permanent changes to D1610 minimum instream flows that are mandated by the Biological Opinion.

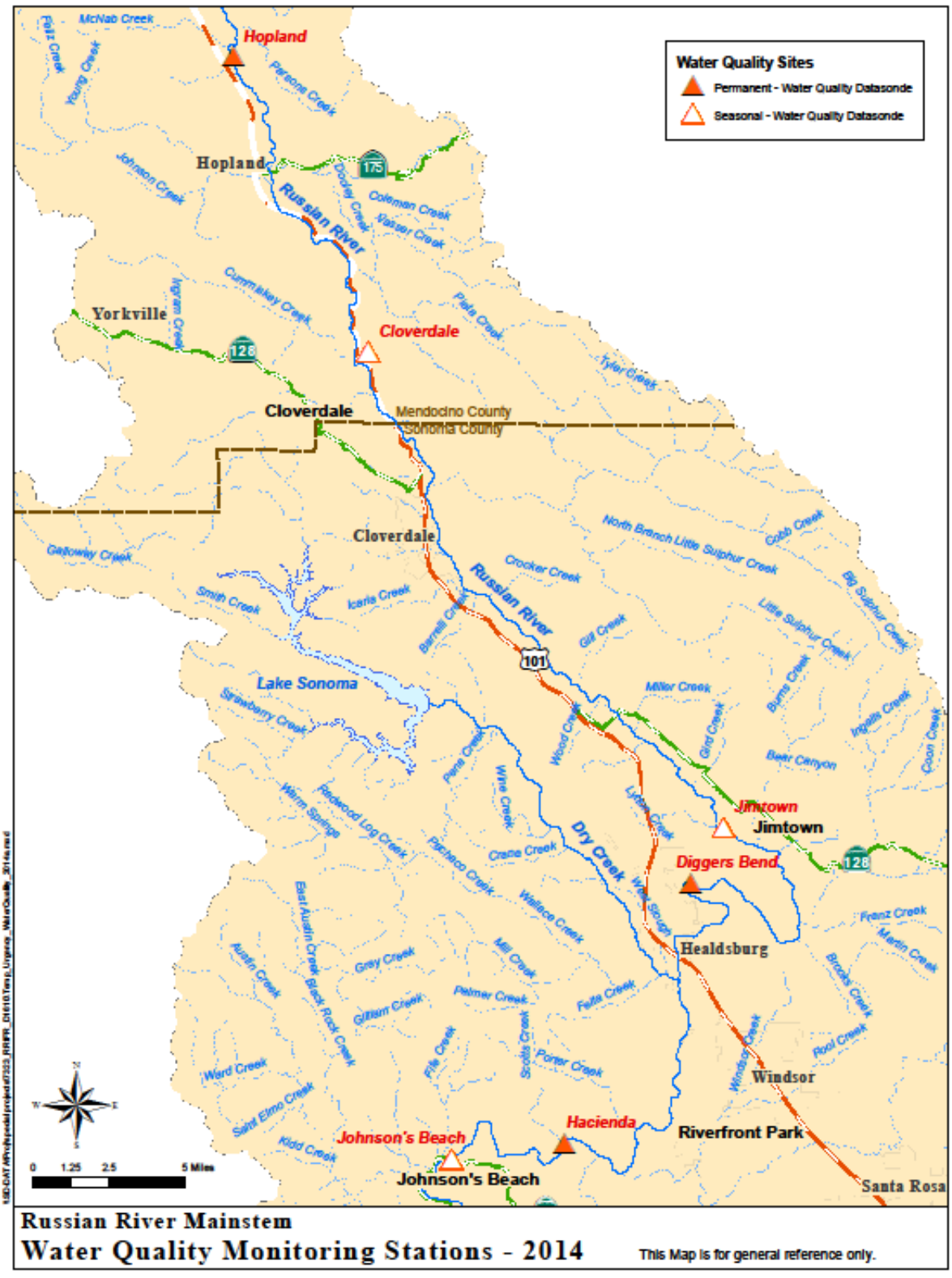


Figure 4-6. 2015 Russian River mainstem water quality monitoring stations sampled by the Sonoma County Water Agency.

4.2 Aquatic Habitat for Salmonids

4.2.1 Introduction

In Term 14 of the Temporary Urgency Change Order (Order) the State Water Resource Control Board (SWRCB) tasked the Water Agency with evaluating impacts associated with reductions in minimum instream flows authorized by the Order to water quality and the availability of aquatic habitat for Russian River salmonids. This section of the report summarizes temperature and dissolved oxygen conditions in the Russian River during the order and relates these conditions to fisheries monitoring data collected by the Water Agency.

4.2.2 Russian River Salmonid Life Stages

Salmonids in the Russian River can be affected by flow, temperature, and dissolved oxygen (DO) changes at multiple life stages. The Russian River supports three species of salmonids, coho salmon, steelhead, and Chinook salmon. These species follow a similar life history patterns. Adults migrate from the ocean to the river and move upstream to spawn in the fall and winter. Females dig nests called redds in the stream substrate and deposit eggs which remain in the redd for 8-10 weeks before hatching. After hatching, the larval fish remain in the gravel for another 4-10 weeks before emerging. After emerging from the gravel these young salmonids are identified first as fry and then later as parr once they have undergone some freshwater growth. Parr rear for a few months (Chinook) to 2 years (steelhead) in freshwater before undergoing a physiological change identified as smoltification. At this stage, fish are identified as smolts, are physiologically able to adapt to living in saltwater, and are ready for ocean entry (Quinn 2005). In the Russian River smolts move downstream to the ocean in the spring (Chase et al. 2005 and 2007, Obedzinski et al. 2006). Salmonids spend 1 to 4 years at sea before returning to the river to spawn as adults (Moyle 2002). Because all three species of Russian River salmonids spend a period of time in the Russian River, they must cope with the freshwater conditions they encounter including flow, temperature, and DO. While all three species follow a similar life history, each species tends to spawn and rear in different locations and are present in the Russian River watershed at slightly different times. These subtle but important differences may expose each species to a different set of freshwater conditions.

Coho Timing and Distribution

Wild coho have become scarce in the Russian River and monitoring data relies mainly on fish released from the hatchery as part of the Russian River Coho Salmon Captive Broodstock Program (RRCSCBP). Data collected on the Water Agency's Mirabel inflatable dam video camera system in 2011 through 2013 indicate that the adult coho salmon run may start in late October and continue through at least January. In 2013 97% of coho were observed after November 20 (Martini-Lamb and Manning 2014). Spawning and rearing occurs in the tributaries to the Russian River (NMFS 2008). Downstream migrant trapping in tributaries of the Russian River indicate that the coho smolt out-migration starts before April and continues through mid-June (Obedzinski et al. 2006). Coho salmon have been detected as late as mid-July in the mainstem Russian River downstream migrant traps operated by the Water Agency (Martini-Lamb and Manning 2011). For coho, the temperature and DO data relating to the adult life and smolt stages will be analyzed for this report as these are the life stages likely to be present in the Russian River during the time period governed by the Order (May 1, 2015 through October 28, 2015).

Steelhead Timing and Distribution

Based on video monitoring at the Water Agency's Mirabel inflatable dam and returns to the Warm Springs Hatchery, adult steelhead return to the Russian River later than Chinook. Deflation of the inflatable dam and removal of the underwater video camera system preclude a precise measure of adult return timing or numbers. However, continuous video monitoring at the inflatable dam during late fall through spring in 2006-2007, timing of returns to the hatchery, and data gathered from steelhead angler report cards (SCWA unpublished data, Jackson 2007) suggests that the vast majority of returns occur between January and April. Additionally, during coho spawner surveys conducted by the University of California Cooperative Extension (UCCE), steelhead have been observed spawning in tributaries of the Russian River in January, but more often in February and March (Obedzinski 2012).

Many steelhead spawn and rear in the tributaries of the Russian River while some steelhead rear in the upper mainstem Russian River (NMFS 2008, Cook 2003). Cook (2003) found that summer rearing steelhead in the mainstem of the Russian River were distributed in the highest concentrations between Hopland and Cloverdale (Canyon Reach). Steelhead were also found in relatively high numbers (when compared to habitats downstream of Cloverdale) in the section of river between the Coyote Valley Dam and Hopland. The Canyon Reach is the highest gradient section of the mainstem Russian River and contains fast water habitats that include riffles and cascades (Cook 2003). Both the Canyon and Ukiah reaches generally have cooler water temperatures when compared to other mainstem reaches due to releases made from Lake Mendocino.

The steelhead smolt migration in the Russian River begins at least as early as March and continues through June, peaking between mid-March and mid-May (Martini-Lamb and Manning 2011). For Russian River steelhead, parr (rearing) and smolt life stages are present in the mainstem during the time period covered by the Order. Therefore only the temperature and DO data relating to the juvenile rearing and smolt life stages will be analyzed for this report.

Chinook Timing and Distribution

Based on video monitoring at the Water Agency's Mirabel inflatable dam, adult Chinook are typically observed in the Russian River before coho and steelhead. Chinook enter the Russian River as early as September, but are typically not present in high numbers until mid-October. Generally the Chinook run peaks between mid-October and mid-November and is over in late December (Chase et al. 2005 and 2007, Martini-Lamb and Manning 2011). Chinook are mainstem spawners and deposit their eggs into the stream bed of the mainstem Russian River and in Dry Creek during the fall (Chase et al. 2005 and 2007, Cook 2003, Martini-Lamb and Manning 2011). Chinook offspring rear for approximately two to four months before out-migrating to sea in the spring. Based on downstream migrant trapping data Chinook smolts are present as early as March and the majority of the Chinook smolt out-migration appears to be complete by mid to late June (Chase et al. 2005 and 2007, Martini-Lamb and Manning 2011). The adult and smolt life stages are present in the mainstem of the Russian River during the time period covered by the Order. Therefore, temperature and DO data relating to the adult and smolt life stage will be analyzed for this report.

4.2.3 Methods

The Water Agency uses underwater video, dual frequency identification sonar (DIDSON), downstream migrant traps, and water quality data collected in the Russian River and Dry Creek to summarize Russian

River water quality conditions when salmonids where present. The Water Agency operates underwater video cameras and DIDSON to enumerate adult salmonids, and downstream migrant traps to enumerate salmonid smolts. USGS stream gages were used to provide water quality data in the mainstem Russian River.

Typically the Water Agency operates an underwater video camera system at Mirabel to estimate the number of adult Chinook that return to the Russian River. However, a large construction project to improve fish passage at Mirabel Dam in 2015 precluded us from operating an underwater camera system at this site. Instead the Water Agency relied on adult counts from a DIDSON paired with an underwater video camera at Dry Creek (a tributary to the Russian River near Healdsburg). The DIDSON collects sonar images of fish as they pass the sample site. This allows us to count fish across a larger area of the stream channel than can be captured by video images and collect images of fish during periods of high turbidity when an underwater camera would be ineffective. The resolution of DIDSON often precludes the accurate identification of species. When conditions permitted we operated an underwater video camera at this site in combination with the DIDSON in order to determine the species composition of fish passing the Dry Creek site. This allowed us to prorate DIDSON counts at Dry Creek. In addition to operating a DIDSON at Dry Creek the Water Agency experimented with an underwater video camera in a fish ladder at Memorial Beach near Healdsburg. This site is located on the mainstem Russian River upstream of Dry Creek. Data from these monitoring sites were used to determine when adult salmonids were present in the Russian River during 2015.

Physical habitat conditions (flow, water temperature, and DO) were collected at multiple sites in the Russian River. USGS stream gages located on the Russian River at Hacienda and Hopland provided flow, water temperature, and DO data. These water quality conditions were compared to findings in the literature and were used to construct temperature and DO criteria for Russian River salmonids (Table 4-1 through Table 4-3).

Adult salmonid counts are used to relate water quality conditions to the timing and magnitude of the adult salmonid run. We compared adult counts from counting stations with water quality information only where fish would either pass through a water quality station before being detected at a particular counting station. For instance since Hacienda is downstream of both Dry Creek and Healdsburg all adult salmonids observed at these sites must first pass through the Hacienda water quality station. Therefore displaying Dry Creek and Healdsburg adult salmonid counts with Hacienda water quality conditions allows us to relate the timing and magnitude of the adult salmonid run to water quality conditions they likely experienced at Hacienda. Because the majority of steelhead rearing habitat in the mainstem Russian River occurs upstream of Hopland this report presents the water quality data from the USGS Hopland gaging station when discussing juvenile steelhead. Smolts moving downstream out of Dry Creek first pass our Dry Creek downstream migrant trap then pass the Hacienda USGS stream gage before entering the ocean. Therefore we have paired Dry Creek salmonid smolt data with Hacienda water quality data to describe the conditions these fish likely experienced in the mainstem Russian River.

Table 4-1. Adult salmonid temperature (°C) thresholds used for describing water quality conditions during the term of the May 2015 temporary urgency change order.

Description	Chinook	Coho	Steelhead
Optimal upper limit	15.6	11.1	11.1
suitable upper limit	17.8	15.0	15.0
stressful upper limit	19.4	21.1	21.1
acute stress upper limit	23.3	23.8	23.8
lethal	23.9	23.9	23.9

Table 4-2. Juvenile salmonid (parr and smolt) temperature (°C) thresholds used for describing water quality conditions during the term of the May 2015 temporary urgency change order.

Description	Chinook	Coho	Steelhead
Optimal upper limit	16.9	13.9	16.9
suitable upper limit	17.8	16.9	18.9
stressful upper limit	20.0	18.9	21.9
acute stress upper limit	23.8	23.8	23.8
lethal	23.9	23.9	23.9

Table 4-3. Dissolved oxygen (mg/L) thresholds used for describing water quality conditions during the term of the May 2015 temporary urgency change order.

Description	Dissolved Oxygen (mg/l)
Optimal	>12
suitable	8.0-11.9
stressful	5.0-7.9
acute stress	3.1-4.9
lethal	<3.0

4.2.4 Results

Flow

From May 1, 2015 to October 28, 2015 flow in the Russian River at Hacienda ranged from approximately 305 cfs in May to 60 cfs in July. During the period of the Order, the Russian River was influenced by tributary in-flow until June, and was generally controlled by reservoir releases from July through the end of the Order.

During the period of the Order, 109 adult salmonids were observed at Dry Creek and Healdsburg. Based on video images from 2015 and run timing information from Mirabel in past years it is likely that these fish were mainly Chinook salmon. The first of these salmonids, a steelhead, was observed at the counting stations on September 22, 2015 (Figure 4-2). Flow at Hacienda during the time these fish were observed ranged from 58 cfs to 144 cfs. Although adult salmonids were observed migrating past the

adult counting stations at Dry Creek and the mainstem Russian River, a barrier beach at the river mouth limited fish entry for a portion of the season. The barrier beach formed at the mouth of the Russian River, precluding fish entry, three times between early September and mid-October. On October 28, 2015, 14 days after the River mouth breached 29 Chinook were observed at the counting station (Figure 4-2). The flow at Hacienda ranged from 70 to 83 cfs for the period of time from when the river mouth breached to when these 29 fish were observed at the counting stations.

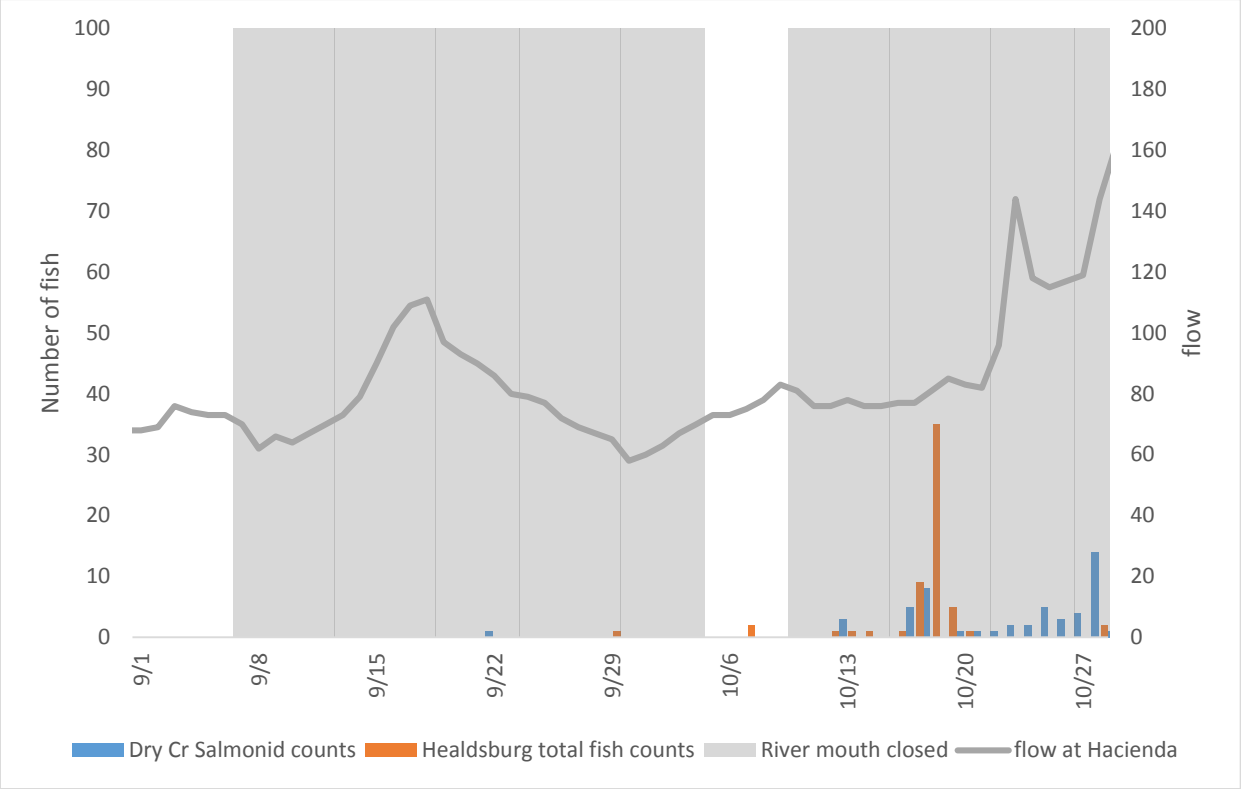


Figure 4-2. Flow in the Russian River at the USGS Hacienda stream gage for the period of that the Order overlapped with the adult salmonid migration period (September 1 to October 28, 2015). Times when the mouth of the Russian River was closed due to the formation of a sand bar are shown as shaded areas. Also shown are the total salmonid counts from video collected at Healdsburg and DIDSON collected on Dry Creek.

Temperature

Adult Salmonid Migration

At Hacienda gage, average daily water temperature ranged from 15.3 °C to 24.4 °C during the period of the Order. This temperature range is considered optimal to acutely stressful for adult salmonids based on our criteria (Table 4-1). However, on days when adult salmonids were observed at the counting station the maximum and minimum daily water temperature were declining and generally fell within the optimal to suitable range (Figure 4-3). During the Order we observed 61 salmonids that we were unable to identify to species, 45 Chinook, 0 coho, and 3 steelhead. It is important to note that the river mouth was closed for much of September and October and that the bulk of the adult salmonid run occurred after the end of the Order when water temperatures were suitable to optimal. Most of the unidentified adult salmonids observed on the Dry Creek DIDSON during the Order were likely Chinook based on run timing information from previous years of monitoring at Mirabel. After the Order expired many more adult salmonids were observed on the Dry Creek DIDSON. From October 29, 2015, to the end of January

2016, a total of 8,706 adult salmonids had been observed on the Dry Creek DIDSON alone. Using the weekly species ratios from Mirabel our preliminary estimate is that 3,253 of the 8,706 unidentified salmonids are Chinook and the reminder a mostly steelhead (Table 4-4). In addition to the 3,253 Chinook we estimate to have returned to Dry Creek 384 Chinook were observed on the Healdsburg fish ladder during this time. Additional adult salmonids have returned to the Russian River since January 31, 2016 and are not included in these preliminary counts.

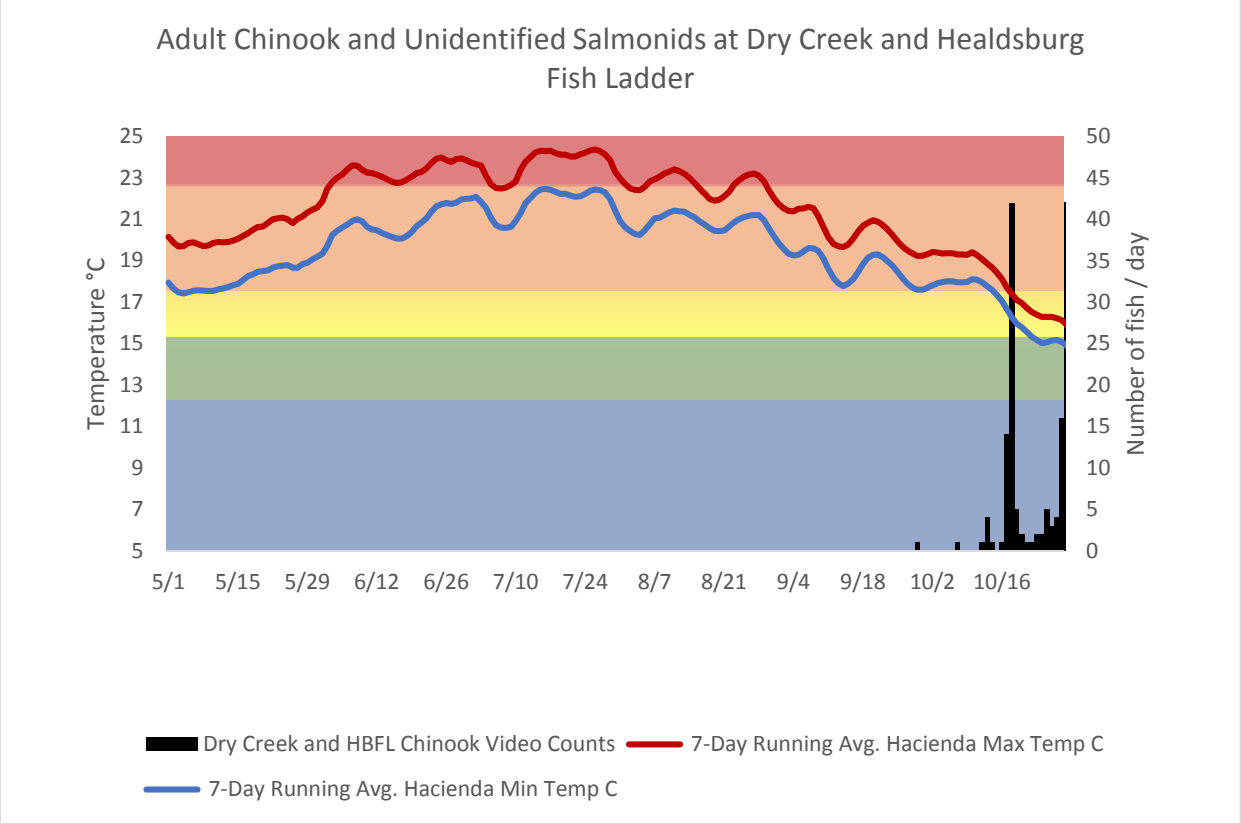


Figure 4-3. The 7-day running average of the minimum and maximum water temperatures collected at Hacienda shown with the Chinook counts from the mainstem Russian River and Dry Creek. Also show are optimal, suitable, stressful, acutely stressful, and lethal water temperature thresholds for adult Chinook based on Table 4-1.

Table 4-4. The number of days of the adult salmonid run that occurred in each time period, the percentage of those days the river mouth was closed and blocked adult salmonids from entering the Russian River, the number of adult salmonids that could not be identified to species, the estimated number of unidentified salmonids that are adult Chinook, and the number of Chinook observed on the underwater video cameras. The time periods are separated into the period of the Order that overlaps with the adult salmonid run (September 1, 2015 through October 28, 2015) and the period of time from when the order expired (October 29, 2015) to January 31, 2016. Additional adult salmonids were observed after January 31, 2016, and are not included in this table.

Time period	# of days	% of time river mouth closed	Unidentified salmonids	Estimated Chinook	Observed Chinook
During order	58	81 %	61	47	45
After order expired	95	33 %	8,706	3,253	384

Salmonid Smolt Outmigration and Rearing

As salmonid smolts immigrate to the ocean they experience river temperatures that are often warmer than their natal tributary or mainstem river habitat. We operated a downstream migrant trap at Dry Creek from March 18, 2015, until July 30, 2015. During the Order we captured 2,834 Chinook salmon smolts, 109 coho salmon smolts and 2,033 wild and hatchery steelhead smolts at this trapping site. We relate these catch data to temperature collected at Hacienda. Hacienda is located approximately 20 km downstream of the trap site and represents temperatures experienced by smolts as they emigrate through the lower river. It is worth noting that temperatures at the trap site are significantly cooler than temperatures at Hacienda.

Chinook

The average daily water temperature at Hacienda ranged from 17.1 °C to 25.0 °C during the time we captured Chinook smolts. The maximum and minimum daily water temperature were generally stressful or acutely stressful for fish emigrating through the lower river in June and July (Figure 4-4).

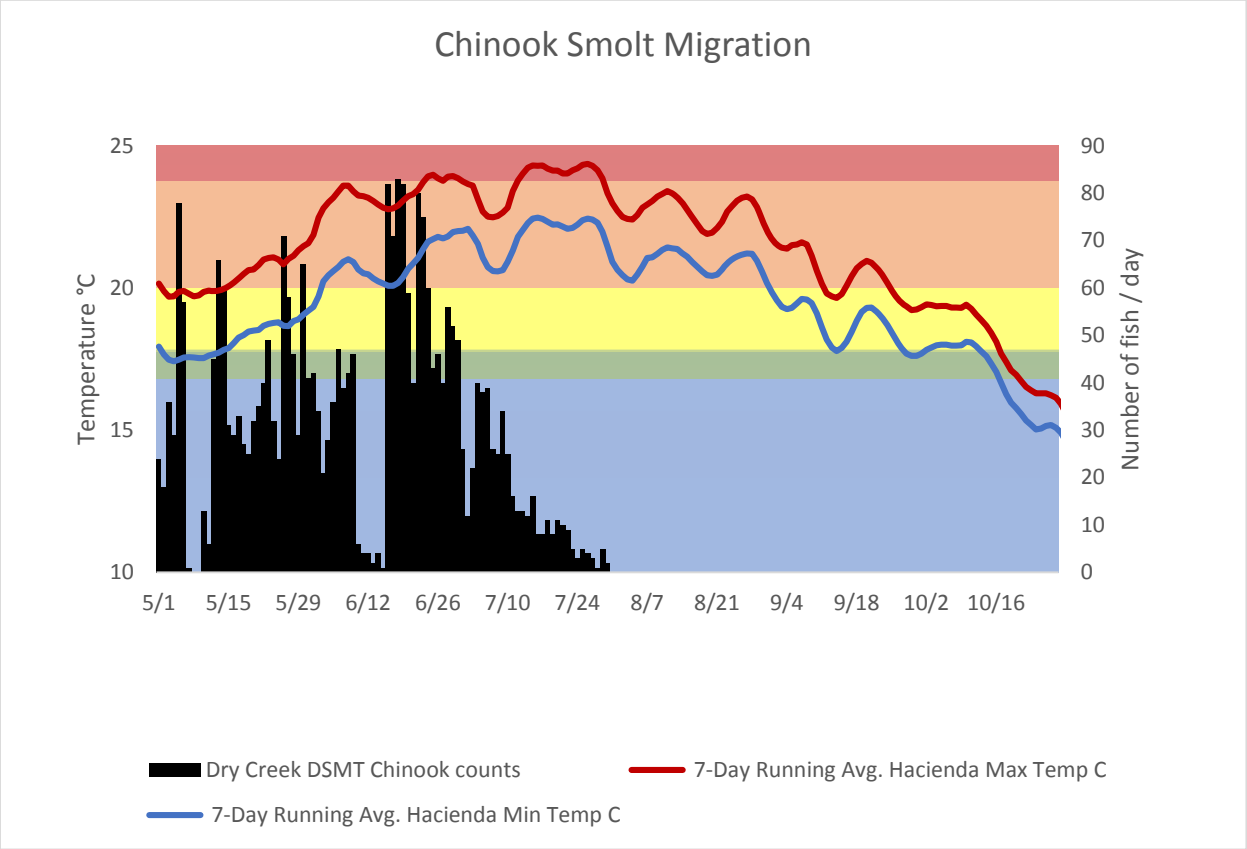


Figure 4-4. The 7-day running average of the minimum and maximum water temperatures collected at Hacienda shown with the Chinook smolt catch from Dry Creek. Also show are the optimal, suitable, stressful, acutely stressful and lethal water temperature thresholds for Chinook rearing based on Table 4-2.

Coho

Coho were captured at the downstream migrant trap from the day the trap was installed until July 28, however only two individuals were captured after June 8, 2015. The water temperature at Hacienda ranged from 17.1 °C to 24.3 °C during the time we captured coho smolts. For coho smolts the observed water temperatures were in the suitable through lethal range. For the days that we captured coho smolts the maximum and minimum daily water temperature were generally in the stressful to acutely stressful range (Figure 4-5).

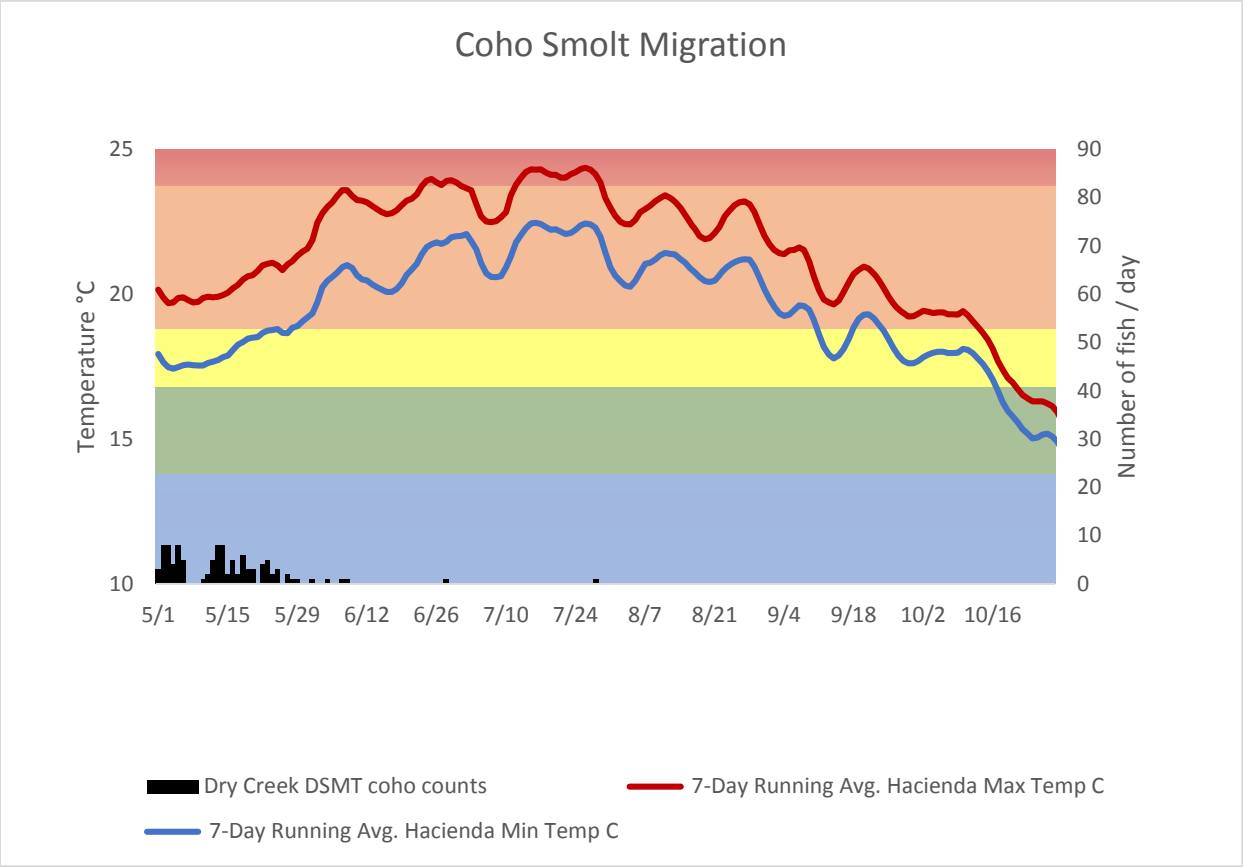


Figure 4-5. The 7-day running average of the minimum and maximum water temperatures collected at Hacienda shown with the coho smolt catch from Dry Creek. Also show are the optimal, suitable, stressful, acutely stressful and lethal water temperature thresholds for coho smolts based on Table 4-2.

Steelhead

Steelhead were captured at the downstream migrant trap from the day the trap was installed on March 18, 2015, until July 29, 2015. The water temperature at Hacienda ranged from 17.1 °C to 25 °C during the time we captured steelhead smolts. For steelhead smolts the observed water temperatures were in the optimal to lethal range. For days that fish were captured the minimum and maximum daily water temperature was generally suitable to acutely stressful (Figure 4-6).

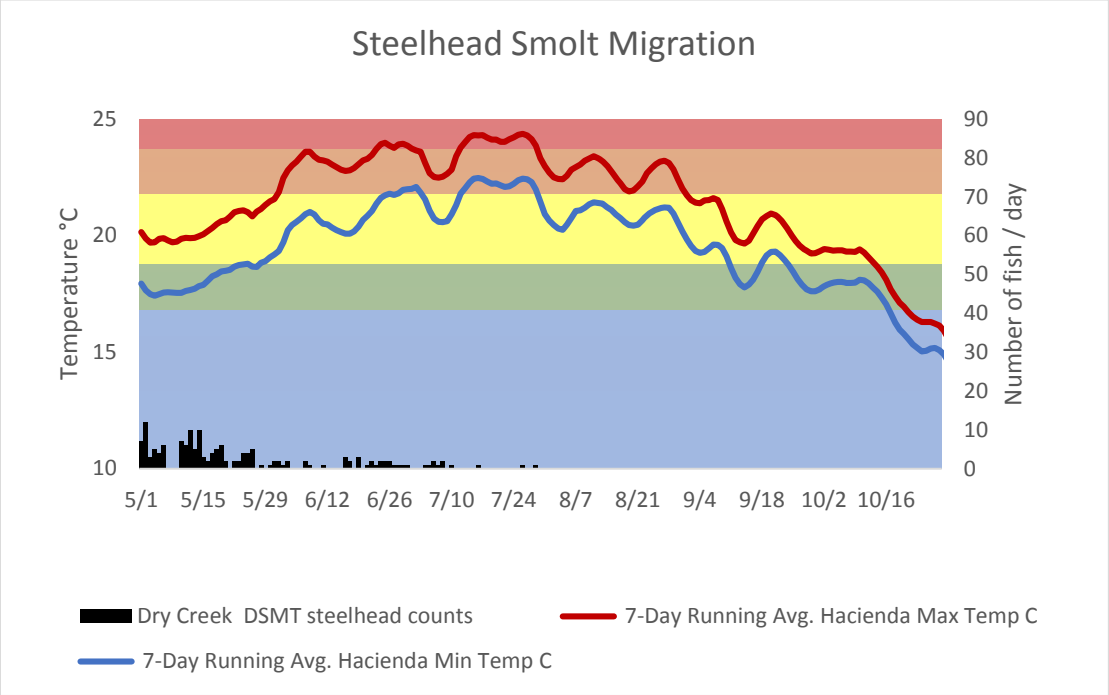


Figure 4-6. The 7-day running average of the minimum and maximum water temperatures collected at Hacienda shown with the steelhead smolt catch from Dry Creek. Also show are the optimal, suitable, stressful, acutely stressful and lethal water temperature thresholds for steelhead smolts based on Table 4-2.

Steelhead parr rear year round in the upper Russian River. During the Order water temperature at the USGS stream gage at Hopland ranged from a low of 13.7 °C to a high of 22 °C. For steelhead parr the water temperatures fell in the optimal to stressful range (Figure 4-7).

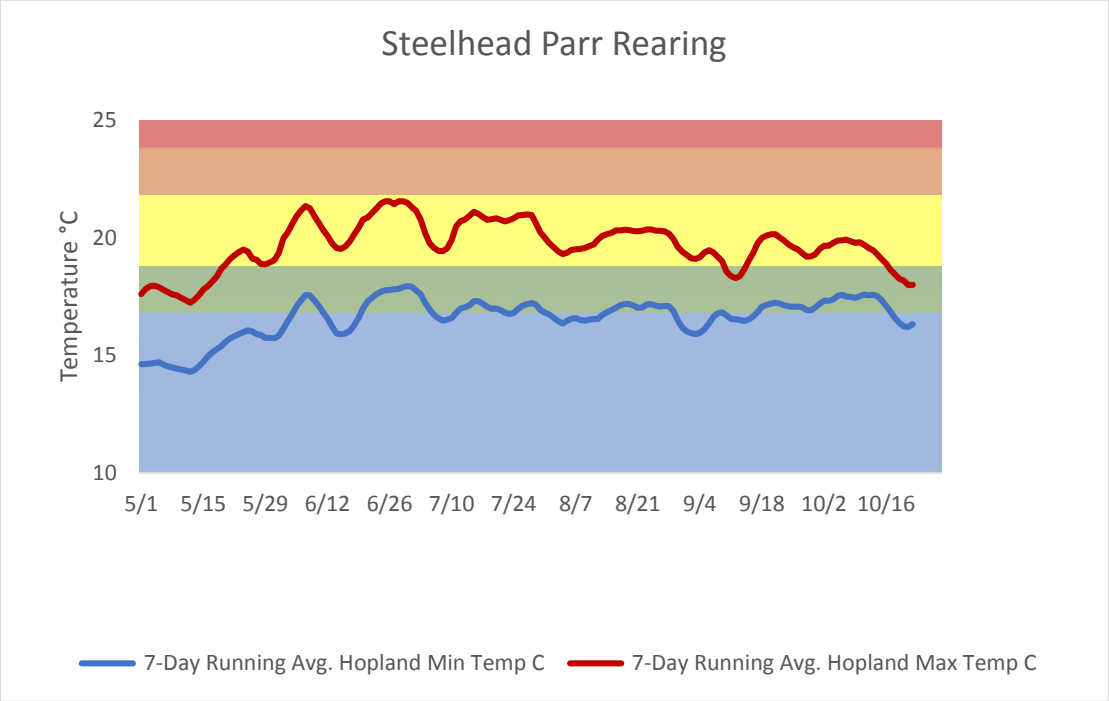


Figure 4-7. The 7-day running average of the minimum and maximum water temperatures collected at Hopland. The optimal, suitable, stressful, acutely stressful and lethal water temperature thresholds for steelhead parr based on Table 4-2 are also shown.

Dissolved Oxygen

Dissolved oxygen was generally favorable for salmonids in the Russian River throughout the Order at both Hacienda and Hopland. At Hacienda, the average daily dissolved oxygen ranged from 7.1 mg/L to 11.2 mg/L. At Hopland dissolved oxygen ranged from 7.5 mg/L to 11 mg/L. According to our criteria dissolved oxygen levels in this range would generally be considered suitable for salmonids (Figure 4-8 and Figure 4-9).

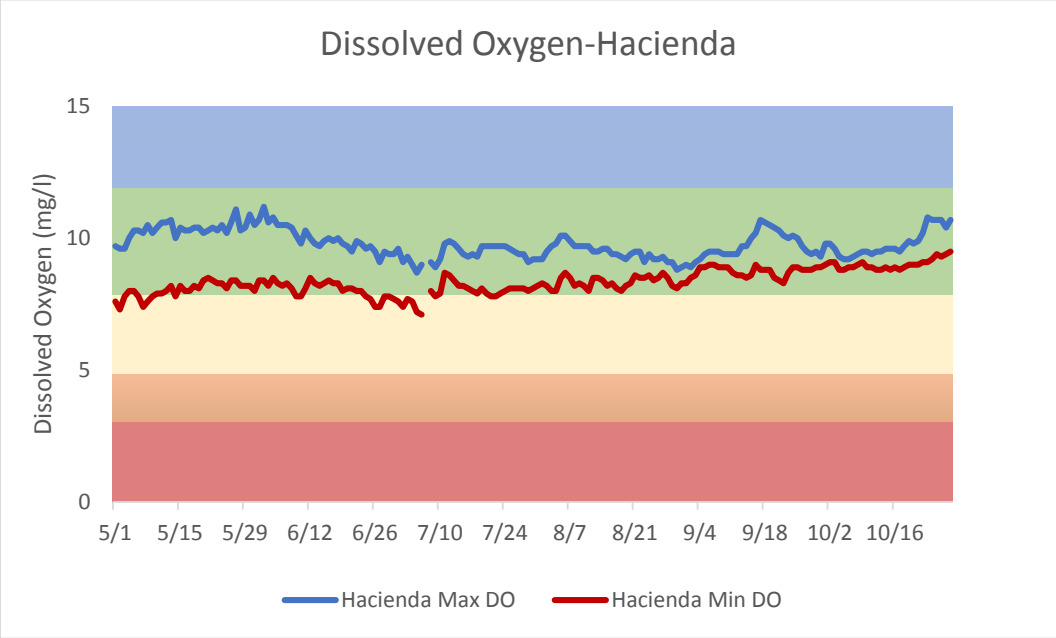


Figure 4-8. The 7-day running average of the minimum and maximum dissolved oxygen collected at Hacienda. Also shown are the optimal, suitable, stressful, acutely stressful, lethal dissolved oxygen zones based on our criteria. See Table 4-3 for a description of water quality zones.

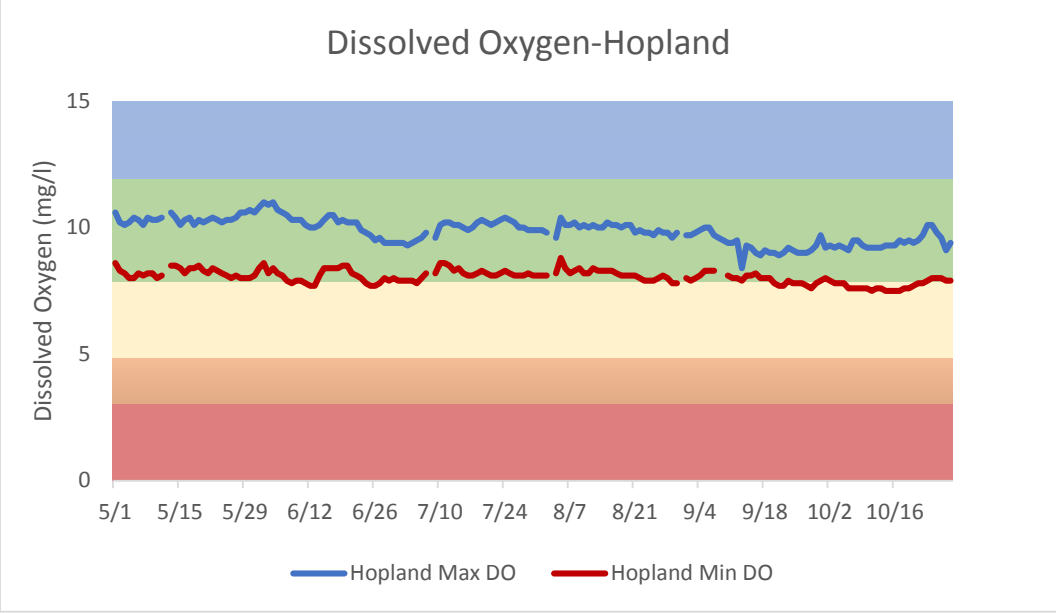


Figure 4-9. The 7-day running average of the minimum and maximum dissolved oxygen collected at Hopland. Also shown are the optimal, suitable, stressful, acutely stressful, lethal dissolved oxygen zones based on our criteria. See Table 4-3 for a description of water quality zones.

4.2.5 Summary

Due to a multi-year drought and the need to conserve an unusually low amount of water in Lake Mendocino, instream flow was lower in the Russian River than in normal water years. Despite low flows and a barrier beach that formed at the mouth of the Russian River in the fall, adult salmonids were observed at our counting stations during the Order, but in low numbers. After the Order expired, reservoir releases were increased to comply with flows prescribed by Decision 1610 and the Water Agency's water rights permits. However an increase in the number of salmonids was not immediately seen. This is likely due to the fact that the river mouth remained closed for much of the time between the end of the Order on October 28, 2015, and when the river mouth breached on December 12, 2015. From September 1 through December 12, 2015, the river mouth was closed for 76% of the days. During this time only 563 adult salmonids were observed at the counting stations. It was not until after December 12, 2015, when the river mouth remained opened for a long period of time that adult salmonids were seen in large numbers. From December 12, 2015, to the end of January 2016, a total of 8,232 adult salmonids were observed at Dry Creek. Using the species ratio from Mirabel our preliminary estimate is that 2,855 of these fish are Chinook and the remainder are mainly steelhead. Additional adult salmonids have returned to the Russian River since January 31, 2016 and are not included in this count. While temperature at Hacienda was at times stressful for adult salmonids during the Order most of the adult salmonid run occurred after the Order expired when water temperatures were more favorable. It is important to note that water temperatures in the lower Russian River are strongly influenced by atmospheric temperatures and less so by reservoir releases.

Water temperature in the upper river near Hopland was favorable for steelhead rearing through the entire order. This is because the cold water pool (the lower, colder section of the thermally stratified lake) in Lake Mendocino was preserved throughout the summer. During this multi-year drought the preservation of the cold water pool in Lake Mendocino was accomplished by lowering release rates from Coyote Valley Dam. Dissolved oxygen was generally suitable for salmonids at Hacienda and at the Hopland USGS stream gages.

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State Water Resources Control Board
Order 5/01/2015

Term 20 – Implementation of Conservation Regulatory Framework

June 4, 2015

Prepared by

Sonoma County Water Agency
404 Aviation Blvd
Santa Rosa, CA 95403

1 Introduction

This report has been prepared by the Sonoma County Water Agency (Water Agency) to fulfill the requirements of Term 20 (a) of the State Water Resources Control Board (State Board) Order dated May 1, 2015 (Order).

Term 20 of the Order directs the Water Agency to take the following actions:

> SCWA shall submit evidence of compliance with any future regulatory framework implementing the conservation requirements of the Governor's April 1, 2015 executive Order (future regulatory framework) or a water demand reduction plan (Plan) for all customers that beneficially use water diverted and /or stored under these rights or customers otherwise subject to the temporary changes authorized by this order (excluding customers found on the De Minimus list provided by SCWA on April 29, 2015, whose diversions amount to less than one percent of SCWA's total water distributed), as follows:
>
> a. For SCWA customers that are subject to the future regulatory framework, SCWA shall submit written confirmation to the Deputy Director to demonstrate whether and how said customer is A) subject to the future regulatory framework and B) in compliance with all applicable conservation and reporting requirements therein. The written confirmation for part A shall be submitted within 2 weeks after the effective date of the future regulatory framework and updated within 2 weeks of any new such customer being added. The written confirmation for part B shall be submitted within 180 days of the date of order issuance.
> b. For SCWA customers that are not subject to the future regulatory framework, SCWA shall prepare a Plan to ensure these customers meet a water demand reduction of a minimum of 20% of baseline water demand. The Plan shall define baseline water demand as appropriate for SCWA's situation based on considerations such as weather, economy, wholesale supplier allocations or other relevant information. For the purpose of compliance with this term, if the Plan does not define baseline water demand, it is assumed to be the average water demand for the previous year (excluding drought years). The Plan shall be submitted within 2 weeks after the date of issuance of this order and updated within 2 weeks of any such new customer being added.

2 Customers Subject to Regulatory Framework

The future regulatory framework referred to in the Order was issued by the State Water Resources Control Board in Resolution No. 2015-0032 (Resolution) on May 5 and went into effect on May 15, 2015. The Resolution set conservation standards for categories of urban water suppliers (defined as having over 3,000 connections) based on the average residential per capita water use from July through September 2014. Table 1 shows the Water Agency customers that are subject to the Resolution's conservation standards and the respective conservation goal for each customer. According to the Resolution, these conservation standards are effective beginning June 1. The Water Agency, continues

to work closely with the local water retailers to implement a regional program and support the Sonoma-Marin Saving Water Partnership.

Table 1: Water Customers with Assigned Conservation Standard

Water Retailer	Conservation Standard
City of Rohnert Park	16%
City of Santa Rosa	16%
City of Petaluma	16%
Town of Windsor	16%
Valley of the Moon Water District	20%
Marin Municipal Water District	20%
North Marin Water District	24%
City of Healdsburg	28%
City of Sonoma	28%
Sonoma-Marin Saving Water Partnership Total	**19%**

Furthermore, the Resolution requires each water public water system that is not classified as an 'urban water supplier' (has less than 3,000 connections) to either reduce water use by 25% compared to 2013 production or limit irrigation to 2 days per week. Table 2 contains the Water Agency customers that have less than 3,000 connections and the actions they have taken to comply with the regulatory framework.

Table 2: Water Customers without an Assigned Conservation Standard

Water Retailer	Conservation Action
CalAm - Larkfield	Irrigation Limitation
Penngrove Water Company	25% Reduction
City of Cotati	Irrigation Limitation
Forestville Water District	Irrigation Limitation

3 Customers Not Subject to Regulatory Framework

The Water Agency does not have any customers, excluding customers found on the De Minimus list, that are not subject to the regulatory framework.

State Water Resources Control Board
Order 6/17/2015

Term 20 – Implementation of Conservation Regulatory Framework

October 27, 2015

Prepared by

Sonoma County Water Agency
404 Aviation Blvd
Santa Rosa, CA 95403

1 Introduction

This report has been prepared by the Sonoma County Water Agency (Water Agency) to fulfill the requirements of Term 20 (a) Part B of the State Water Resources Control Board (State Board) Order dated June 17, 2015 (Order).

Term 20 of the Order directs the Water Agency to take the following actions:

> SCWA shall submit evidence of compliance with any future regulatory framework implementing the conservation requirements of the Governor's April 1, 2015 executive Order (future regulatory framework) or a water demand reduction plan (Plan) for all customers that beneficially use water diverted and /or stored under these rights or customers otherwise subject to the temporary changes authorized by this order (excluding customers found on the De Minimus list provided by SCWA on April 29, 2015, whose diversions amount to less than one percent of SCWA's total water distributed), as follows:
>
> a. For SCWA customers that are subject to the future regulatory framework, SCWA shall submit written confirmation to the Deputy Director to demonstrate whether and how said customer is A) subject to the future regulatory framework and B) in compliance with all applicable conservation and reporting requirements therein. The written confirmation for part A shall be submitted within 2 weeks after the effective date of the future regulatory framework and updated within 2 weeks of any new such customer being added. The written confirmation for part B shall be submitted within 180 days of the date of order issuance.
> b. For SCWA customers that are not subject to the future regulatory framework, SCWA shall prepare a Plan to ensure these customers meet a water demand reduction of a minimum of 20% of baseline water demand. The Plan shall define baseline water demand as appropriate for SCWA's situation based on considerations such as weather, economy, wholesale supplier allocations or other relevant information. For the purpose of compliance with this term, if the Plan does not define baseline water demand, it is assumed to be the average water demand for the previous year (excluding drought years). The Plan shall be submitted within 2 weeks after the date of issuance of this order and updated within 2 weeks of any such new customer being added.

2 Water Agency Customers Subject to Regulatory Framework

The future regulatory framework referred to in the Order was issued by the State Water Resources Control Board in Resolution No. 2015-0032 (Resolution) on May 5, 2015 and went into effect on May 15, 2015. The Resolution set conservation standards for urban water suppliers (defined as having over 3,000 connections) based on the average residential per capita water use from July through September 2014. Table 1 shows the Water Agency Customers that are subject to the Resolution's conservation standards and the respective conservation goal for each Water Agency customer. According to the Resolution, these conservation standards are effective beginning June 1. The Water Agency and its customers

created the Sonoma-Marin Saving Water Partnership (Partnership), a regional program to identify and recommend implementation of water conservation projects and to maximize the cost-effective projects for the region. The Water Agency continues to work closely with the Water Agency Customers to implement a regional program and support the Partnership.

Table 1: Water Agency Customers with Assigned Conservation Standard

Water Retailer	Conservation Standard
City of Healdsburg	24%
Marin Municipal Water District	20%
North Marin Water District	24%
City of Petaluma	16%
City of Rohnert Park	16%
City of Santa Rosa	16%
City of Sonoma	28%
Valley of the Moon Water District	20%
Town of Windsor	16%

Furthermore, the Resolution requires each public water system that is not classified as an 'urban water supplier' (less than 3,000 connections) to either reduce water use by 25% compared to 2013 production or limit irrigation to 2 days per week. Table 2 contains the Water Agency Customers that have less than 3,000 connections and the actions they have taken to comply with the regulatory framework.

Table 2: Water Agency Customers without an Assigned Conservation Standard

Water Retailer	Conservation Action
California American - Larkfield	Irrigation Limitation
City of Cotati	Irrigation Limitation
Forestville Water District	Irrigation Limitation
Penngrove Water Company	25% Reduction

3 Compliance of Regulatory Framework

The Resolution requires monthly reporting from June 2015 through February 2016 to verify compliance with the conservation standard. Per the Emergency Conservation Regulation Fact Sheet dated July 7, 2015, the State Water Board will track compliance on a cumulative basis from June 2015 to February 2016. Table 3 demonstrates the cumulative saving achieved June 2015 through September 2015 for each Water Agency Customer and as a region, through the Partnership. As demonstrated below, each of the Water Agency Customers that has been assigned conservation goal is exceeding its savings requirement. The Partnership will continue collecting monthly data for the Water Agency Customers to ensure compliance with the regulatory framework.

Table 3: Water Savings by Water Agency Customers with Assigned Conservation Standard

Water Retailer	June to September 2015 (gallons)	June to September 2013 (gallons)	Water Savings	Assigned Conservation Standard
City of Healdsburg	217,998,859	305,906,676	29%	24%
Marin Municipal Water District	2,933,323,736	3,752,182,440	22%	20%
North Marin Water District	913,379,676	1,434,000,000	36%	24%
City of Petaluma	975,809,697	1,327,847,564	27%	16%
City of Rohnert Park	536,885,142	665,000,000	19%	16%
City of Santa Rosa	2,136,891,948	2,916,253,690	27%	16%
City of Sonoma	226,306,941	325,665,692	31%	28%
Valley of the Moon Water District	309,104,540	439,430,200	30%	20%
Town of Windsor	415,015,238	557,466,947	26%	16%
Total	**8,664,715,777**	**11,723,753,209**	**27%**	**19%**

In addition, the Water Agency Customers without an assigned conservation standard listed in Table 4 have reduced water use. Three of these Water Agency Customers opted to limit watering days to reduce demand and one selected a reduction target. Table 4 provides details on their 2013 water use as compared to 2015. As shown below the water savings achieved by Water Agency Customers without an assigned conservation standard align with those Water Agency Customers that have assigned conservation standards.

Table 4: Water Savings by Water Agency Customers without an Assigned Conservation Standard

Water Retailer	June to September 2015 Production (gallons)	June to September 2013 Production (gallons)	Savings Relative to 2013
California American Water- Larkfield	93,763,672	130,043,000	28%
City of Cotati	97,038,026	131,937,070	26%
Forestville Water District	53,679,684	60,791,349	12%
Penngrove Water Company	22,065,652	27,295,626	19%
Total	**266,547,033**	**350,067,045**	**21%**

State Water Resources Control Board
Order 5/1/2015

Provision 7 – Fisheries Monitoring Tasks

April 1, 2016

Prepared by

Sonoma County Water Agency
404 Aviation Blvd
Santa Rosa, CA 95403

Introduction

On April 22, 2015, the Sonoma County Water Agency (Water Agency) filed a Temporary Urgency Change Petition (TUCP) with the State Water Resources Control Board (SWRCB) to temporarily reduce minimum instream flows in the upper Russian River to prevent significant depletion of storage in Lake Mendocino and the potential elimination of water supplies for 2015, and in the lower Russian River to protect fishery resources in Dry Creek.

In summary, the Water Agency requested that the SWRCB make the following temporary changes to the Decision 1610 (D1610) instream flow requirements:

(1) From May 1, 2015, through October 27, 2015, reduce instream flow requirements for the upper Russian River (from its confluence with the East Fork of the Russian River to its confluence with Dry Creek) from 185 cubic feet per second (cfs) to 75 cfs.

(2) From May 1, 2015, through October 27, 2015, reduce instream flow requirements for the lower Russian River (downstream of its confluence with Dry Creek) from 125 cfs to 85 cfs.

The TUCP also requested that compliance with these minimum instream flow requirements be measured based on a 5-day running average of average daily stream flow measurements, provided that instantaneous flows on the upper Russian River shall be no less than 65 cfs and on the lower Russian River shall be no less than 75 cfs. These 5-day running average provisions allowed the Water Agency to reduce the operational buffers needed to manage these stream flows, thereby allowing the Water Agency to conserve more water in Lake Mendocino. The SWRCB issued an Order (Order) approving the Water Agency's TUCP on May 1, 2015.

On May 27, 2015, the Water Agency provided new information to the SWRCB regarding anticipated inflow into Lake Mendocino and requested additional changes to instream flow requirements (May 27 Request):

(1) From June 16, 2015, through October 27, 2015, reduce instream flow requirements for the upper Russian River (from its confluence with the East Fork of the Russian River to its confluence with Dry Creek) to a minimum of 25 cfs.

(2) From June 16, 2015, through October 27, 2015, reduce instream flow requirements for the lower Russian River (downstream of its confluence with Dry Creek) to a minimum of 50 cfs.

The May 27 Request also requested that compliance with these reduced minimum instream flow requirements be measured based on a 24-hour mean instream flow criterion. The 24-hour instream flow criterion is intended to ensure a conservative operational buffer with respect to flow management, thereby allowing the Water Agency to conserve more water in Lake Mendocino.

The May 27 Request was intended to address the significant reductions in inflow from the Potter Valley Project (PVP) resulting from a Federal Energy Regulatory Commission (FERC) order approving Pacific Gas and Electric's (PG&E's) temporary variance request. The additional flow reduction in the upper Russian

River intended to prevent significant depletion of storage in Lake Mendocino and potential elimination of water supplies for 2015. Such depletion in storage and reduction to or elimination of water supplies could cause serious impacts to human health and welfare and reduce water supplies needed for fishery protection and stable flows in the upper Russian River. The request for the lower Russian River was intended to protect fishery resources in Dry Creek.

The SWRCB issued an Order (Order) on June 17, 2015, approving the May 27 Request and modifying the May 1, 2015 Order. The State Water Board's temporary urgency order (Order) included a number of provisions, 5 of which required fisheries monitoring and reporting. Provision 2 required that the Water Agency monitor and record the daily number of adult salmonids moving upstream through the Russian River past the Dry Creek life cycle monitoring station. Provision 3 required the Water Agency to monitor the number of adult salmon and steelhead at known spawning sites and in relatively deep pools in the upper Russian River (Lake Mendocino to Healdsburg) on a weekly basis after the number of adult salmon and steelhead counted at Dry Creek exceeds 100 fish. Weekly upper river surveys were to continue until the expiration of the order or when sustained flow at Healdsburg was above 150 cfs. Provision 4 required that the Water Agency conducted snorkel surveys in the lower river to monitor adult salmonids beginning October 1 and continuing through the end of the Order. Provision 5 required that once 100 adult salmonids moved past Dry Creek or on November first, whichever is earliest, the Water Agency must consult with NMFS about the possibility of increasing stream flow for adult passage. Provision 6 required that the Water Agency consult with NMFS and CDFW if there were any necessary revisions to terms 2 through 5. Provision 7 required the Water Agency to submit an annual report on the fisheries data collected for Terms 2 and 6. This report is intended to fulfill the reporting requirement in Provision 7.

Methods

Adult fish counts

The Water Agency used a dual-frequency identification sonar (DIDSON) and underwater video to count adult salmonids at 2 different sites. At Dry Creek, DIDSON was used to monitor adult salmonids which allowed us to count adult salmonids as they returned to Dry Creek. The Water Agency also installed an underwater video camera at the Healdsburg fish ladder in order to count adult salmon migrating up the mainstem Russian River. Since this site is located on the main stem Russian River, upstream of Dry Creek we assume that fish counted at this station are different individuals for those counted at the Dry Creek station.

Spawner surveys

In previous years the water agency has conducted walk-in and boat based salmon redd surveys on the mainstem Russian River and in Dry Creek. When salmonid redds are encountered on these surveys their location is recorded with a hand held GPS unit, and the number of redds and fish located at that point are recorded.

Snorkel surveys

NMFS requested that the Water Agency conduct snorkel surveys on a weekly basis in the lower Russian River to detect adult salmonids. In 2014 NMFS provided the Water Agency with 6 snorkel survey sites located at Duncans Mills, Vacation Beach, and Guerneville (Figure 1). However, it was noted, and agreed

upon that it may not be possible to visit all 6 sites each week. The Water Agency continued to visit these sites in 2015.

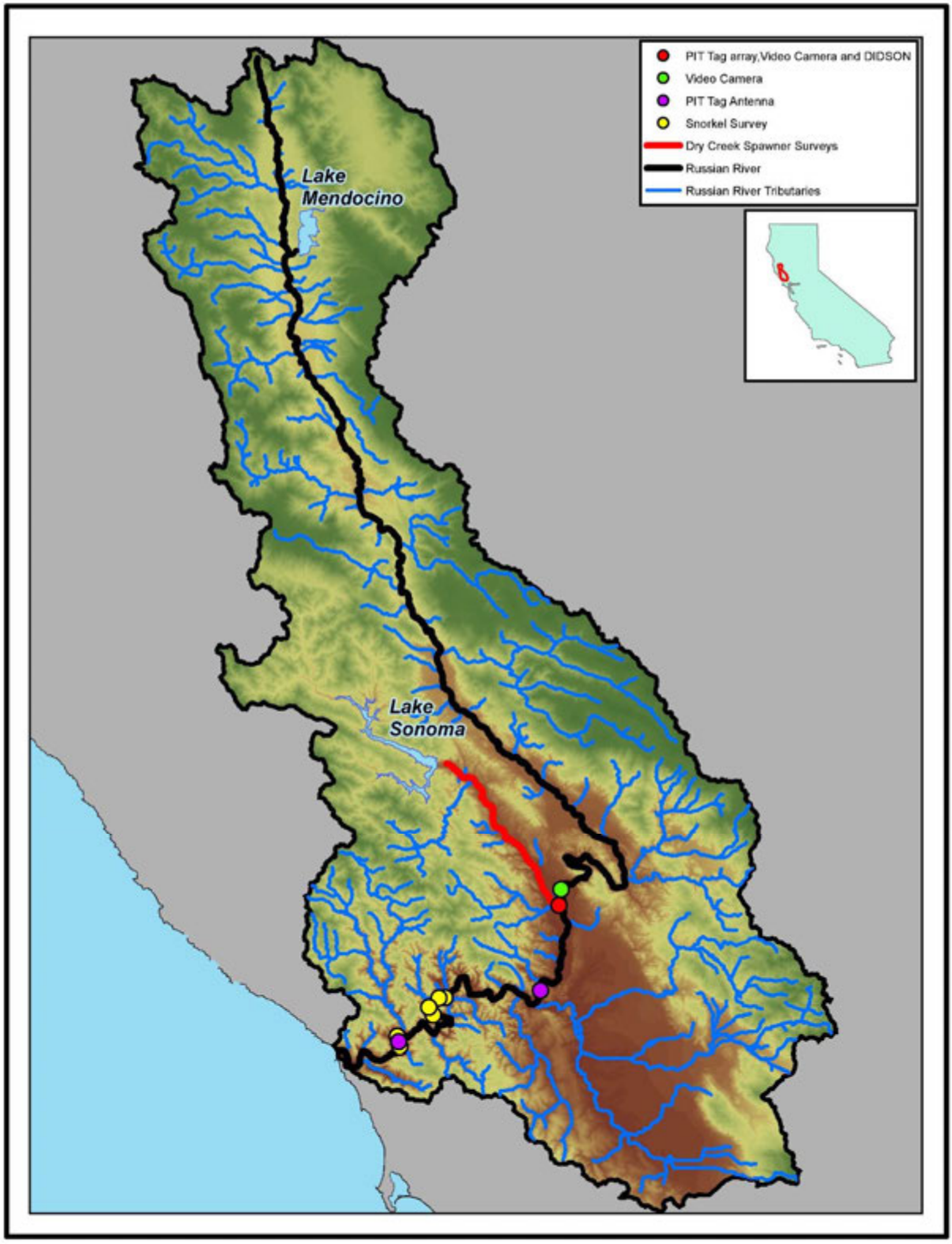

Figure 1. Russian River fisheries monitoring sites for the August, 2015 Temporary Urgency Change Order.

Results

Flow

Flow in the Russian River in early May was slightly elevated due to tributary inflow, but was generally controlled by reservoir releases from early summer until the end of the Order on October 28, 2015. From May 1, 2015 to October 28, 2015 flow in the Russian River at Hacienda ranged from a low of approximately 60 cfs in July to approximately 305 cfs in May (Figure 2).

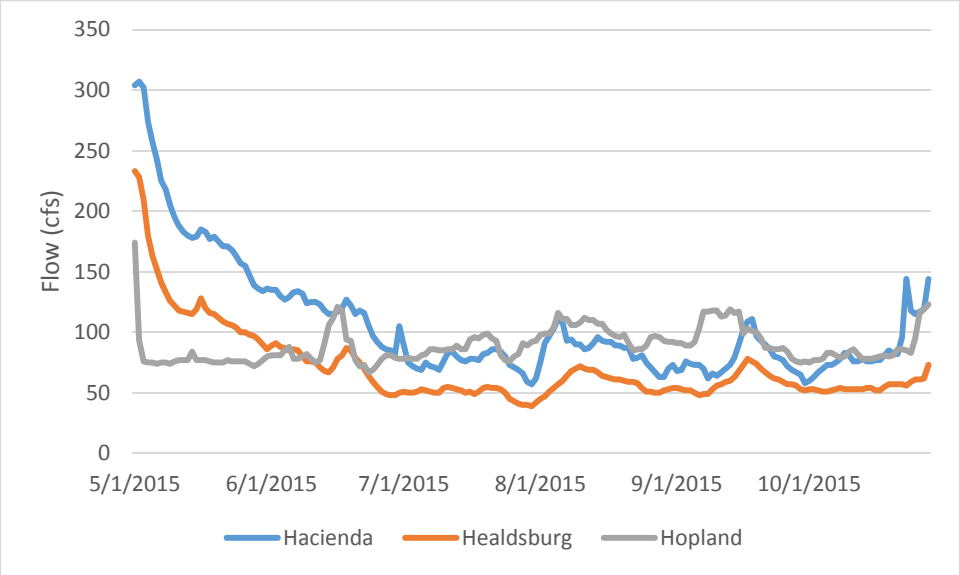

Figure 2. Flow at the USGS stream gages at Hacienda, Healdsburg, and Hopland during the period of the Order.

Adult counts

Video and DIDSON counts

The Water Agency installed a DIDSON and underwater video camera near the mouth of Dry Creek on September 1, 2015. During the Order there were three periods when DIDSON was not collecting images due to technical problems (September 4, through September 7; September 12 through September 13; and October 9 through October 11, 2015 Figure 3). In addition to the DIDSON at Dry Creek, the Water Agency operated an underwater video camera in the Healdsburg Fish ladder from September 15 to December 9, 2015 (Figure 4).

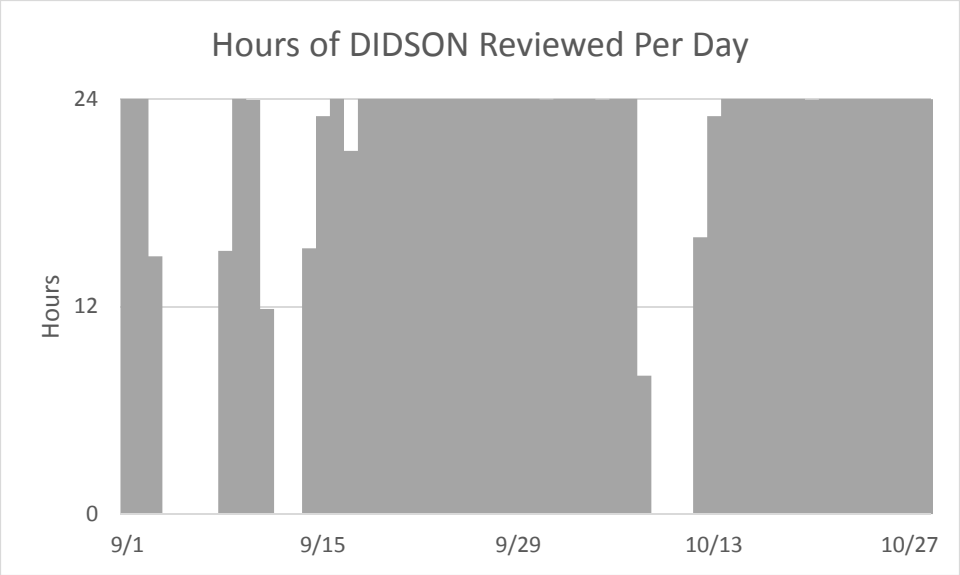

Figure 3. The number of hours of DIDSON that has been reviewed at the Dry Creek sampling site. Missing hours are due to technical difficulties.

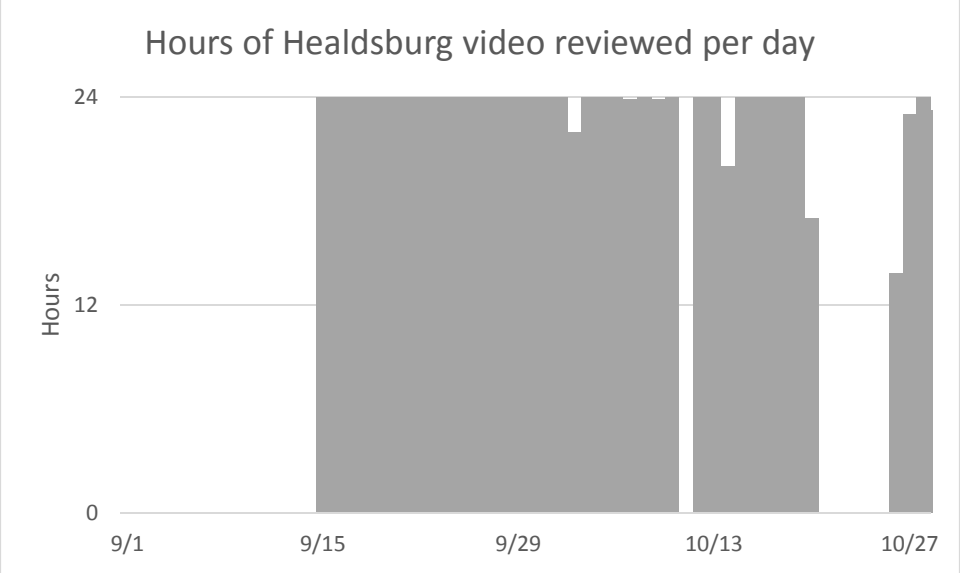

Figure 4. The number of hours of underwater video that has been reviewed per day at the Healdsburg Fish ladder on the mainstem Russian River. Missing hours are due to corrupt data and technical difficulties.

A total of 47 adult salmonids were observed on the DIDSON from September 1, 2015 through the end of the order on October 28, 2015. The video camera at Dry Creek did not allow us to prorate DIDSON counts based on the species ratio. Instead we relied on the historic species ratio from video recorded at Mirabel from 2009-2014. Using species ratios from the same dates in the historic data set, we determined that all of the observed 47 fish were likely Chinook salmon. A barrier beach that formed at the river mouth prevented adult salmonids from entering the Russian River for 81 % of the days where

the Order overlapped with the adult salmon migration period (September 1 through October 28, 2015). After the Order expired many more salmonids were observed on the Dry Creek DIDSON. The preliminary adult salmonid count for fish that have been observed on the Dry Creek DIDSON from when the Order expired to January 1, 2016 is 8,706 fish. Of these 8,706 adult salmonids we estimate that based on run timing 3,253 are likely Chinook salmon and the remainder are mainly steelhead. From when the Order expired to January 1, 2016 the river mouth was closed for 33% of the days (Table 2). The state of the river mouth which is largely controlled by ocean swell, has a strong influence on adult salmonid counts in the Russian River. For detailed salmonid counts for the entire 2015 salmonid return year see the Russian River Biological Opinion Status and Data Report Year 2015-2016.

Table 1. Weekly prorated counts for Dry Creek Chinook for the period of the 2015-16 return year that occurred during the Order (September 1, 2015 through October 28, 2015). Estimates are based on the weekly ratio of Chinook, coho, and steelhead counts at Mirabel from 2009-2013 video counts. The number of steelhead trapped at Warm Springs hatchery are also shown. We have higher certainty for standard weeks containing 4 or more years of data. *These numbers are estimates.

Week start	Number of years in week Mirabel video (2009-2013)	Proportion of Chinook from Mirabel video (2009-2013)	Fish observed on Dry Creek DIDSON (2015)	*Estimated Chinook (2015)	Steelhead trapped at WSD (2015)
8/29	5	0.50	0	0	0
9/5	5	0.67	0	0	0
9/12	5	0.57	0	0	0
9/19	5	0.71	0	0	0
9/26	5	0.98	0	0	0
10/3	5	0.99	0	0	0
10/10	5	0.98	2	2	0
10/17	5	0.98	17	17	0
10/24	5	0.98	28	28	0

Table 2. The number of days of the adult salmonid run that occurred in each time period, the percentage of those days the river mouth was closed and blocked adult salmonids from entering the Russian River, the number of adult salmonids that could not be identified to species, the estimated number of unidentified salmonids that are adult Chinook, and the number of Chinook observed on the underwater video cameras. The time periods are separated into the period of the Order that overlaps with the adult salmonid run (September 1, 2015 through October 28, 2015) and the period of time from when the order expired (October 29, 2015) to January 31, 2016. Additional adult salmonids were observed after January 31, 2016, and are not included in this table.

Time period	# of days	% of time river mouth closed	Unidentified salmonids	Estimated Chinook	Observed Chinook
During order	58	81 %	61	47	45
After order expired	95	33 %	8,706	3,253	384

At Healdsburg, an underwater video camera allowed us to capture images of adult salmonids and they migrated upstream through the Russian River. In total, 44 Chinook, 1 steelhead, no coho, and 14 unidentified salmonids were observed on the underwater video camera at the Healdsburg fish ladder during the Order. The preliminary adult salmonid counts for the Healdsburg fish ladder which includes fish up to December 9, 2015 are 428 Chinook, 3 steelhead, 20 fish with coho characteristics, and 88

unidentified salmonids. For the final count of salmon and steelhead observed on the Healdsburg video camera for the entire 2015 adult salmonid return year see the Russian River Biological Opinion Status and Data Report year 2015-2016.

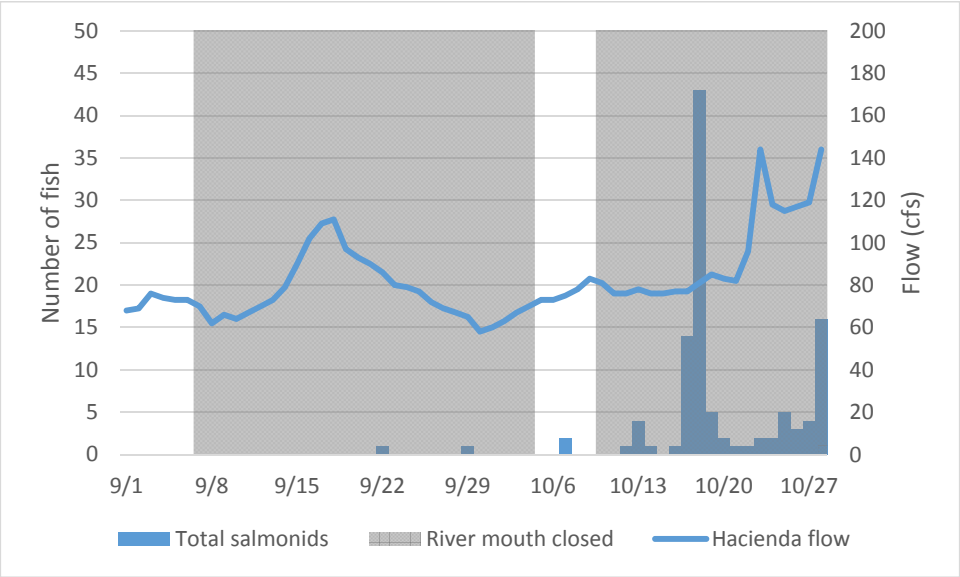

Figure 5. The period of time that the mouth of the Russian River was closed, the flow in the Russian River from the USGS Hacienda gage, and the number of adult salmonids observed at the Dry Creek DIDSON and Healdsburg underwater video during the period of the Order.

Spawner Surveys

The Order required spawner surveys to be conducted in the upper river once 100 adult salmonids were observed on the Dry Creek DIDSON. This threshold was not met during the period of the Order, therefore, spawner surveys were not conducted. For the total number of salmonid redds observed in Dry Creek during the 2015 adult salmonid return year see the California Costal Salmonids Population Monitoring in the Russian River Watershed Progress Report January 1, 2016 Through March 31, 2016.

Snorkel Surveys

As in previous years few adult salmonids were observed during snorkel surveys conducted by the Water Agency. The mouth of the Russian River remained closed for much of the fall and limited salmonids from entering the river from the ocean. The river mouth closed on September 7, 2015 and opened on October 4, 2015. The river mouth closed again on October 10, 2015 and remained closed for the duration of the Order. The Water Agency conducted the first snorkel survey on October 7, 2015 following a breach of the Russian River on October 4, 2015. Snorkel surveys were conducted on a weekly basis until October 28, 2015 when the Order expired. Snorkel survey sites were located at: Moscow Road Bridge and Browns Pool near Duncans Mills; upstream and downstream of Vacation Beach near Monte Rio; the Hacienda Hole near Forestville; the pool immediately downstream of the Healdsburg fish ladder; and the PG&E Hole near Healdsburg. Visibility ranged from over 3 meters in Healdsburg to less than 1 meter in Duncans Mills. The total counts when combining all surveys and survey sites was 4 Chinook, 0 coho, and 2 small (less than 300 mm) steelhead (Table 3). The steelhead observed were likely half-pounders or small adults.

Table 3. Dates when Snorkel surveys were conducted by the Water Agency, locations of survey sites, and the number of salmonids observed.

Date	Site	Chinook	steelhead	coho	unidentified salmonids
7-Oct	Healdsburg fish ladder				
	Steelhead Beach				
	Vacation Beach U.S.				
	Casini Ranch				
	Duncans Mills				
15-Oct	Vacation Beach U.S.				
	Casini Ranch				
	Duncans Mills				
22-Oct	Vacation Beach U.S.				
	Casini Ranch				
	Duncans Mills				
	Hacienda	1			
28-Oct	Vacation Beach D.S.		1		
	Vacation Beach U.S.		1		
	Hacienda	3			
	PG&E hole (Healdsburg)				

Discussion

Flow

Flow in the Russian River was influenced by natural run off and tributary inflow during the beginning of the Order and mainly by reservoir releases for the remainder of the Order. Storm events in December of 2014, and February of 2015 likely influenced stream flow into June. A sand bar formed at the mouth of the Russian River in early September. The river mouth breached the sand bar on October 4, 2015 and closed again on October 10, 2015. These closure events limited adult salmonids from entering the Russian River from the ocean.

Adult Counts

Video and DIDSON counts

The bulk of the adult Chinook migration occurred after the end of the Order. The mouth of the Russian River was closed for much of the period of the Order that overlaps with the adult migration period. During these closures, salmon were not able to enter the Russian River from the Ocean. During brief periods when the river mouth was open adult salmon entered the Russian River and were later observed at our counting stations. Many adult salmonids were observed at the counting stations after the Order expired. The number of salmonids observed after the Order expired was similar to previous years. From when the Order expired to January 31, 2016 a total of 8,706 unidentified salmonids were observed on the Dry Creek DIDSON alone. Using the species ratio from 2009-2013 Mirabel video counts

our preliminary estimate is that 3,253 of these unidentified salmonids were Chinook and the remainder are mainly steelhead.

The Healdsburg Memorial Dam and fish ladder used as a monitoring site in 2015 allowed us to count salmonids returning to the upper Russian River.

Spawner Surveys

Spawner surveys were not conducted in 2015. The Order required spawner surveys to be conducted in the upper river once 100 adult salmonids were observed on the Dry Creek DIDSON. This threshold was not met during the period of the Order, therefore, spawner surveys were not conducted.

Snorkel Surveys

Due to generally poor water visibility in the lower river during the term of the Order, snorkel surveys failed to account for many fish likely present during the surveys. Water visibility was typically less than 2 meters at the lower river sample sites and only adequate at sites near Healdsburg. The sample sites were often at least 3-5 meters deep and over 30 meters wide. These conditions allow for adult salmonids to easily avoid divers. When combining all sites and surveys only 6 salmonids were observed during snorkel surveys. During the same time period (October 7, 2015 through October 28, 2015) a total of 94 salmonids were observed on the DIDSON at Dry Creek and underwater video at Healdsburg. Snorkel surveys in the mainstem Russian River may detect the presence of fish but limited visibility restricts the use of these data.

Consultations with NMFS and CDFW

Adjustments of flow

The Order required that the Water Agency consult with the NMFS and CDFW about possibility of increasing flow for adult passage once 100 adult salmonids were observed on the Dry Creek DIDSON or on November 1, 2015 whichever is earliest. This threshold was not met during the period of the Order therefore this consultation did not take place.

Revisions to terms 2 through 5

In the event that there were necessary revisions to terms 2 through 5 the Order required the Water Agency to meet with NMFS and CDFW to revise these terms. A report of this meeting was to be sent to the Deputy Director of the Water Board. No revisions were necessary therefore this consultation did not take place.

References

State Water Board, Order approving Sonoma County Water Agency's petition for temporary urgency change permits 12947A, 12949, 12950, and 16596 (applications 12919A, 15736, 15737, 19351). August 25, 2014. State Water Resources Control Board. Sacramento CA.

Appendix 3.6

.

Jenner Boat Ramp	Time	Temperature	pH	Total Organic Nitrogen	Ammonia as N	Ammonia as N Unionized	Nitrate as N	Nitrite as N	Total Kjeldahl Nitrogen	Total Nitrogen**	Phosphorus, Total	Total Orthophosphate	Dissolved Organic Carbon	Total Organic Carbon	Total Dissolved Solids	Turbidity	Chlorophyll-a	Total Coliforms (Colilert)	Total Coliforms Diluted 1:10 (Colilert)	E. coli (Colilert)	E. coli Diluted 1:10 (Colilert)	Enterococcus (Enterolert)	USGS 11467000 RR near Guerneville (Hacienda)***		
MDL*				0.200	0.10	0.00010	0.030	0.030	0.10		0.020	0.020	0.0400	0.0400	4.2	0.020	0.000050	20		20		2	Flow Rate****	Estuary Status	Jenner Gauge (ft)
Date		°C		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	mg/L	MPN/100m	MPN/100m	MPN/100m	MPN/100m	MPN/100m	(cfs)		
5/12/2015	9:50:00	16.7	8.4	0.32	ND	ND	0.063	ND	0.32	**0.38**	**0.065**	0.13	1.74	2.24	4200	**12**	0.0015	>2419.6	2481	**1732.9**	**1956**	**435.2**	183	Open	1.77
5/19/2015	10:30:00	17.7	8.0	0.35	ND	ND	0.26	ND	0.35	**0.62**	**0.044**	0.086	1.09	1.23	7400	**2.6**	**0.0059**	>2419.6	583	12.1	31	6.3	179	Open	0.59
5/26/2015	11:00:00	17.1	8.0	0.24	ND	ND	0.27	ND	0.24	**0.52**	**0.050**	0.086	1.32	1.20	6600	**2.8**	**0.0074**	>2419.6	2142	9.7	10	3.0	155	Open	0.97
6/2/2015	9:50:00	18.0	8.3	0.21	ND	ND	0.28	ND	0.21	**0.49**	**0.033**	0.072	2.07	2.05	2100	1.8	**0.0027**	>2419.6	3876	24.3	50	58.3	135	Closed	4.42
6/4/2015	10:00:00	18.1	8.3	ND	ND	ND	0.053	ND	ND	0.23	**0.039**	0.072	2.00	1.94	2400	1.5	**0.0023**	>2419.6	1789	**290.9**	183	**98.5**	127	Closed	5.14
6/9/2015	10:40:00	20.0	8.2	0.28	ND	ND	ND	ND	0.28	0.28	**0.035**	0.052	2.09	2.24	1600	1.3	**0.011**	1299.7	1539	93.3	121	24.3	124	Closed	6.45
6/16/2015	9:10:00	20.2	7.7	0.32	ND	ND	0.029	ND	0.32	**0.60**	**0.052**	0.15	1.45	1.59	7000	1.8	0.00047	>2419.6	**>24196**	2.0	10	**816.4**	117	Open	0.84
6/23/2015	10:30:00	17.7	7.7	0.21	ND	ND	0.59	ND	0.21	**0.80**	**0.042**	0.11	0.931	0.950	14000	1.3	0.0014	>2419.6	3076	3.0	<10	35.5	106	Open	0.76
6/30/2015	9:50:00	19.2	8.1	ND	ND	ND	0.80	ND	ND	**0.94**	**0.032**	0.056	0.849	0.852	15000	1.6	**0.0022**	>2419.6	**>24196**	45.9	122	**290.9**	105	Open	0.84
7/7/2015	9:20:00	19.4	7.9	0.32	ND	ND	ND	ND	0.32	0.32	**0.036**	0.059	0.623	0.731	22000	1.8	**0.0044**	>2419.6	**>24196**	98.3	<10	31.3	72	Open	0.76
7/14/2015	10:10:00	20.0	8.1	0.32	ND	ND	1.1	ND	0.32	**1.4**	**0.045**	0.023	0.748	0.807	19000	**3.5**	**0.0031**	>2419.6	**12033**	31.8	<10	**261.3**	77	Open	1.01
7/21/2015	9:30:00	20.3	8.0	0.35	ND	ND	ND	ND	0.35	0.35	**0.043**	0.048	0.702	0.718	17000	1.8	**0.0024**	>2419.6	**17329**	32.7	10	33.7	86	Open	0.80
7/28/2015	9:10:00	18.9	8.0	0.21	ND	ND	ND	ND	0.21	0.21	**0.033**	ND	0.785	0.742	17000	1.3	**0.0058**	>2419.6	**>24196**	**>2419.6**	20	**1046.2**	66	Open	1.18
8/4/2015	9:40:00	19.5	7.9	0.24	ND	ND	ND	ND	0.24	0.24	**0.025**	0.048	0.684	0.600	18000	1.8	**0.0029**	>2419.6	**24196**	**1203.3**	109	**1299.7**	103	Open	0.67
8/11/2015	9:30:00	19.8	8.0	0.28	ND	ND	1.1	ND	0.28	**1.4**	**0.027**	0.044	0.851	0.901	17000	1.9	**0.0033**	>2419.6	**12033**	85.1	62	**1413.6**	86	Open	1.18
8/18/2015	9:20:00	18.8	8.0	ND	ND	ND	1.1	ND	ND	**1.2**	**0.027**	0.033	0.746	0.670	19000	1.8	**0.0021**	>2419.6	**19863**	**>2419.6**	86	**2419.6**	89	Open	0.63
8/25/2015	9:15:00	18.2	7.8	0.28	ND	ND	0.92	ND	0.38	**1.3**	**0.032**	0.047	0.88	0.970	19000	1.6	**0.0039**	>2419.6	**11199**	**>2419.6**	86	**920.8**	75	Open	1.56
9/1/2015	11:00:00	19.3	8.0	0.28	ND	ND	ND	ND	0.28	**1.0**	**0.038**	0.06	0.820	0.899	21000	**3.3**	**0.0024**	>2419.6	6488	**866.4**	86	**410.6**	68	Open	1.05
9/8/2015	10:40:00	17.4	8.2	0.24	ND	ND	ND	ND	0.24	0.24	ND	0.020	0.833	0.851	17000	1.4	**0.0060**	>2419.6	2723	**387.3**	121	**1725.0**	62	Closed	2.61
9/10/2015	10:40:00	17.8	8.3	0.28	ND	ND	ND	ND	0.28	0.28	**0.030**	0.021	1.17	2.13	13000	1.4	**0.0082**	1732.9	402	**290.9**	10	**88.6**	64	Closed	3.16
9/15/2015	10:40:00	16.6	8.1	0.32	ND	ND	ND	ND	0.32	0.32	**0.037**	0.035	2.15	2.20	3000	**4.4**	**0.0049**	>2419.6	**12033**	**281.2**	20	**178.5**	90	Closed	4.09
9/22/2015	11:10:00	19.1	8.2	0.21	ND	ND	0.21	ND	0.21	**0.42**	**0.027**	0.033	2.00	1.97	3400	1.2	**0.0042**	>2419.6	583	26.6	41	28.8	86	Closed	5.69
9/24/2015	8:50:00	18.0	8.1	ND	ND	ND	0.22	ND	ND	**0.40**	**0.024**	ND	1.75	1.85	3500	1.4	**0.0031**	>2419.6	1597	65.7	63	**150.0**	79	Closed	5.94
9/29/2015	11:00:00	18.5	8.2	0.24	ND	ND	ND	ND	0.24	0.24	**0.026**	0.060	1.75	2.13	3000	1.5	**0.0051**	648.8	285	6.3	<10	8.5	65	Closed	6.41
10/6/2015	9:30:00	19.4	7.8	0.21	ND	ND	0.24	ND	0.21	**0.45**	**0.045**	0.089	1.73	1.78	4300	1.5	0.0015	>2419.6	**19863**	11.0	<10	48.5	73	Open	2.27
10/13/2015	10:20:00	17.6	8.5	ND	ND	ND	ND	ND	ND	0.18	**0.026**	0.027	0.983	1.07	11000	1.4	**0.0023**	>2419.6	**>24196**	**325.5**	**256**	**>2419.6**	78	Closed	4.30

* Method Detection Limit - limits can vary for individual samples depending on matrix interference and dilution factors, all results are preliminary and subject to final revision.
** Total nitrogen is calculated through the summation of the different components of total nitrogen: organic and ammoniacal nitrogen (together referred to as Total Kjeldahl Nitrogen or TKN) and nitrate/nitrite nitrogen.
*** United States Geological Survey (USGS) Continuous-Record Gaging Station
**** Flow rates are preliminary and subject to final revision by USGS.

Recommended EPA Criteria based on Aggregate Ecoregion III
Total Phosporus: 0.02188 mg/L (21.88 ug/L) ≈ 0.022 mg/L
Total Nitrogen: 0.38 mg/L
Chlorophyll *a* : 0.00178 mg/L (1.78 ug/L) ≈ 0.0018 mg/L
Turbidity: 2.34 FTU/NTU

CDPH Draft Guidance for Fresh Water Beaches - Single Sample Values:
Beach posting is recommended when indicator organisms exceed any of the following levels:
Total coliforms: 10,000 per 100 ml
E. coli: 235 per 100 ml
Enterococcus: 61 per 100 ml

Casini Ranch	Time	Temperature	pH	Total Organic Nitrogen	Ammonia as N	Ammonia as N Unionized	Nitrate as N	Nitrite as N	Total Kjeldahl Nitrogen	Total Nitrogen**	Phosphorus, Total	Total Orthophosphate	Dissolved Organic Carbon	Total Organic Carbon	Total Dissolved Solids	Turbidity	Chlorophyll-a	Total Coliforms (Colilert)	Total Coliforms Diluted 1:10 (Colilert)	E. coli (Colilert)	E. coli Diluted 1:10 (Colilert)	Enterococcus (Enterolert)	USGS 11467000 RR near Guerneville (Hacienda)***		
MDL*				0.200	0.10	0.00010	0.030	0.030	0.10		0.020	0.020	0.0400	0.0400	4.2	0.020	0.000050	20		20		2	Flow Rate****	Estuary Status	Jenner
Date		°C		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	mg/L	MPN/100m	MPN/100m	MPN/100m	MPN/100m	MPN/100m	(cfs)		Gauge (ft)
5/12/2015	10:20:00	20.1	8.3	ND	ND	ND	0.066	ND	ND	0.24	**0.044**	0.18	1.87	2.57	180	1.6	0.0015	547.5	677	5.2	<10	2.0	183	Open	1.77
5/19/2015	10:50:00	20.4	8.3	0.24	ND	ND	0.21	ND	0.24	0.30	**0.035**	0.074	1.67	1.98	170	2.1	0.0013	816.4	749	22.8	10	5.2	179	Open	0.59
5/26/2015	11:30:00	20.6	8.1	ND	ND	ND	0.051	ND	ND	0.23	**0.036**	0.082	1.64	1.97	160	2.2	**0.0027**	686.7	932	6.3	<10	8.5	155	Open	0.97
6/2/2015	10:10:00	21.5	8.1	ND	ND	ND	0.14	ND	ND	0.32	**0.040**	0.099	1.67	2.18	170	2.0	**0.0028**	1299.7	1607	27.9	75	47.4	135	Closed	4.42
6/4/2015	10:30:00	21.2	8.4	0.21	ND	ND	0.053	ND	0.21	0.26	**0.044**	0.095	1.42	1.93	170	2.1	**0.0024**	1553.1	1720	47.1	98	35.5	127	Closed	5.14
6/9/2015	11:10:00	22.8	8.3	ND	ND	ND	ND	0.051	ND	0.19	**0.036**	0.091	1.57	2.04	160	1.1	0.0016	1732.9	1354	43.5	31	25.6	124	Closed	6.45
6/16/2015	9:30:00	22.3	7.9	0.28	ND	ND	0.053	ND	0.28	0.33	**0.047**	0.14	1.76	2.28	170	1.3	0.00082	>2419.6	2489	8.4	<10	2.0	117	Open	0.84
6/23/2015	10:50:00	22.2	7.9	0.21	ND	ND	0.040	ND	0.21	0.25	**0.042**	0.10	1.78	2.30	160	0.85	**0.0021**	2419.6	2014	6.3	10	7.3	106	Open	0.76
6/30/2015	10:20:00	23.6	8.0	0.28	ND	ND	0.044	ND	0.28	0.32	**0.038**	0.085	1.72	2.20	160	1.4	0.0012	>2419.6	7270	15.8	31	7.4	105	Open	0.84
7/7/2015	9:50:00	23.1	8.5	ND	ND	ND	ND	ND	ND	0.18	**0.040**	0.093	1.77	2.28	150	0.66	0.0014	>2419.6	**11199**	7.4	10	2.0	72	Open	0.76
7/14/2015	10:30:00	24.0	7.9	ND	ND	ND	ND	ND	ND	0.18	**0.035**	ND	1.50	2.00	140	0.65	0.0013	2419.6	1860	8.4	<10	16.0	77	Open	1.01
7/21/2015	10:10:00	24.8	8.2	0.28	ND	ND	ND	ND	0.28	0.28	**0.046**	0.10	1.48	2.06	140	0.66	0.0012	2419.6	1421	4.1	20	3.1	86	Open	0.80
7/28/2015	9:30:00	23.4	8.2	ND	ND	ND	0.049	ND	ND	0.19	**0.038**	0.070	1.53	2.07	120	1.0	0.0009	1119.9	960	5.1	20	9.6	66	Open	1.18
8/4/2015	10:00:00	22.7	7.7	0.24	ND	ND	ND	ND	0.24	0.24	**0.029**	0.083	1.58	2.06	140	1.0	0.0014	770.1	809	4.1	10	1.0	103	Open	0.67
8/11/2015	10:00:00	23.1	7.9	ND	ND	ND	ND	ND	ND	0.18	**0.028**	0.052	1.59	2.08	92	0.75	0.00064	1299.7	1100	6.2	<10	4.1	86	Open	1.18
8/18/2015	9:50:00	22.3	8.0	0.21	ND	ND	0.076	ND	0.21	0.29	**0.031**	0.049	1.62	2.06	140	1.4	0.00074	1119.9	767	5.2	<10	2.0	89	Open	0.63
8/25/2015	9:45:00	21.3	8.1	0.21	ND	ND	ND	ND	0.21	0.25	**0.036**	0.051	1.58	2.33	140	0.67	0.00094	816.4	851	14.6	10	3.1	75	Open	1.56
9/1/2015	11:30:00	23.5	7.9	ND	ND	ND	ND	ND	ND	0.21	**0.027**	0.078	1.67	2.27	140	0.78	0.0012	816.4	689	8.6	<10	2.0	68	Open	1.05
9/8/2015	11:00:00	21.5	8.1	ND	ND	ND	ND	ND	ND	0.18	ND	0.043	1.65	2.23	79	0.98	0.00096	920.8	884	7.4	10	41.0	62	Closed	2.61
9/10/2015	11:00:00	21.7	8.1	0.21	ND	ND	ND	ND	0.21	0.21	0.021	0.049	1.69	1.68	130	0.92	0.0011	980.4	620	13.4	20	3.1	64	Closed	3.16
9/15/2015	11:00:00	21.2	8.0	ND	ND	ND	ND	ND	ND	0.18	**0.028**	0.047	2.11	2.30	150	1.0	**0.0019**	1413.6	1664	38.4	75	60.2	90	Closed	4.09
9/22/2015	11:40:00	21.7	8.0	ND	ND	ND	ND	ND	ND	0.18	0.021	0.049	1.51	2.07	140	1.0	**0.0019**	1413.6	1354	42.2	63	45.0	86	Closed	5.69
9/24/2015	9:20:00	20.0	8.0	ND	ND	ND	ND	ND	ND	0.14	**0.024**	0.046	1.74	2.02	140	1.1	0.0015	1986.3	1956	60.2	63	**79.4**	79	Closed	5.94
9/29/2015	11:20:00	20.1	8.1	ND	ND	ND	ND	ND	ND	0.18	ND	0.048	1.86	2.23	140	1.2	**0.0021**	1119.9	1314	42.0	75	**82.0**	65	Closed	6.41
10/6/2015	10:00:00	19.4	7.8	ND	ND	ND	0.041	ND	ND	0.15	**0.032**	0.070	1.84	2.13	150	0.84	0.0013	547.5	512	14.5	20	6.3	73	Open	2.27
10/13/2015	10:40:00	20.0	7.9	ND	ND	ND	ND	ND	ND	ND	**0.031**	0.090	1.73	1.99	140	1.5	0.00071	1986.3	2143	28.1	74	58.1	78	Closed	4.30

* Method Detection Limit - limits can vary for individual samples depending on matrix interference and dilution factors, all results are preliminary and subject to final revision.
** Total nitrogen is calculated through the summation of the different components of total nitrogen: organic and ammoniacal nitrogen (together referred to as Total Kjeldahl Nitrogen or TKN) and nitrate/nitrite nitrogen.
*** United States Geological Survey (USGS) Continuous-Record Gaging Station
**** Flow rates are preliminary and subject to final revision by USGS.

Recommended EPA Criteria based on Aggregate Ecoregion III
Total Phosporus: 0.02188 mg/L (21.88 ug/L) ≈ 0.022 mg/L
Total Nitrogen: 0.38 mg/L
Chlorophyll *a* : 0.00178 mg/L (1.78 ug/L) ≈ 0.0018 mg/L
Turbidity: 2.34 FTU/NTU

CDPH Draft Guidance for Fresh Water Beaches - Single Sample Values:
Beach posting is recommended when indicator organisms exceed any of the following levels:
Total coliforms: 10,000 per 100 ml
E. coli: 235 per 100 ml
Enterococcus: 61 per 100 ml

Patterson Point	Time	Temperature	pH	Total Organic Nitrogen	Ammonia as N	Ammonia as N Unionized	Nitrate as N	Nitrite as N	Total Kjeldahl Nitrogen	Total Nitrogen**	Phosphorus, Total	Total Orthophosphate	Dissolved Organic Carbon	Total Organic Carbon	Total Dissolved Solids	Turbidity	Chlorophyll-a	Total Coliforms (Colilert)	Total Coliforms Diluted 1:10 (Colilert)	E. coli (Colilert)	E. coli Diluted 1:10 (Colilert)	Enterococcus (Enterolert)	USGS 11467000 RR near Guerneville (Hacienda)***		
MDL*				0.200	0.10	0.00010	0.030	0.030	0.10		0.020	0.020	0.0400	0.0400	4.2	0.020	0.000050	20		20		2	Flow Rate****	Estuary Status	Jenner Gauge (ft)
Date		°C		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	mg/L	MPN/100m	MPN/100m	MPN/100m	MPN/100m	MPN/100m	(cfs)		
5/12/2015	10:40:00	19.5	8.2	0.28	ND	ND	0.075	ND	0.28	0.36	**0.040**	0.085	1.82	2.50	170	2.3	0.0011	770.1	521	4.1	10	3.1	183	Open	1.77
5/19/2015	11:20:00	20.0	8.2	0.21	ND	ND	0.054	ND	0.21	0.26	**0.031**	0.066	1.71	1.82	170	0.82	0.00083	547.5	512	14.8	20	6.3	179	Open	0.59
5/26/2015	12:00:00	20.6	8.0	0.21	ND	ND	0.051	ND	0.21	0.26	**0.034**	0.078	1.67	2.04	160	1.5	**0.0019**	770.1	1050	14.6	10	7.3	155	Open	0.97
6/2/2015	10:40:00	20.3	8.0	ND	ND	ND	ND	ND	ND	0.18	**0.035**	0.084	1.68	2.13	170	1.5	0.0016	1046.2	906	26.2	10	32.7	135	Closed	4.42
6/4/2015	10:50:00	21.0	8.2	ND	ND	ND	0.051	ND	ND	0.23	**0.043**	0.11	1.63	2.19	170	1.6	0.0010	1299.7	1674	32.7	10	49.6	127	Closed	5.14
6/9/2015	11:30:00	23.6	8.2	0.21	ND	ND	0.14	0.048	0.21	**0.40**	**0.036**	0.091	1.60	2.08	160	1.3	0.00082	1732.9	2481	36.9	41	22.8	124	Closed	6.45
6/16/2015	10:00:00	22.5	7.9	0.24	ND	ND	0.058	ND	0.24	0.30	**0.064**	0.15	1.78	2.49	160	1.2	0.00082	>2419.6	4352	20.1	30	20.0	117	Open	0.84
6/23/2015	11:10:00	22.7	7.9	0.35	ND	ND	ND	ND	0.35	0.35	**0.038**	0.099	1.75	2.25	160	1.6	**0.0021**	2419.6	1722	5.2	<10	18.7	106	Open	0.76
6/30/2015	10:50:00	23.5	7.8	ND	ND	ND	0.045	ND	ND	0.22	**0.041**	0.081	1.66	2.20	160	1.2	**0.0018**	1553.1	2603	39.9	20	16.9	105	Open	0.84
7/7/2015	10:10:00	23.7	8.1	0.24	ND	ND	ND	ND	0.24	0.24	**0.045**	0.085	1.73	2.31	160	1.2	**0.0022**	>2419.6	2909	12.2	41	14.1	72	Open	0.76
7/14/2015	11:00:00	23.8	7.7	0.21	ND	ND	0.049	ND	0.21	0.26	**0.039**	0.031	1.39	1.92	150	**3.6**	0.0014	1986.3	1904	37.3	31	42.5	77	Open	1.01
7/21/2015	10:30:00	24.8	7.9	0.28	ND	ND	ND	ND	0.28	0.28	**0.041**	0.092	1.40	1.94	140	1.6	0.00094	1986.3	2143	6.3	10	4.1	86	Open	0.80
7/28/2015	9:50:00	24.1	7.8	0.21	ND	ND	ND	ND	0.21	0.21	**0.036**	0.053	1.49	1.91	140	1.8	0.0016	1046.2	1872	52.0	52	6.3	66	Open	1.18
8/4/2015	10:30:00	23.5	7.9	ND	ND	ND	ND	ND	ND	0.18	**0.031**	0.088	1.42	1.99	150	**2.9**	0.00091	1553.1	2187	5.2	10	12.8	103	Open	0.67
8/11/2015	10:30:00	23.2	7.8	ND	ND	ND	ND	ND	ND	0.14	**0.023**	0.048	1.52	1.98	130	0.88	0.0013	1553.1	2143	6.3	<10	3.1	86	Open	1.18
8/18/2015	10:10:00	23.2	7.8	ND	ND	ND	0.071	ND	ND	0.25	**0.030**	0.057	1.55	1.98	140	1.5	0.00050	1553.1	2046	4.1	10	7.4	89	Open	0.63
8/25/2015	10:05:00	22.1	7.9	0.24	ND	ND	ND	ND	0.24	0.24	**0.029**	0.047	1.51	2.01	150	1.3	0.00094	920.8	1145	17.5	<10	19.9	75	Open	1.56
9/1/2015	12:00:00	23.5	7.9	ND	ND	ND	ND	ND	ND	0.070	**0.025**	0.060	1.56	2.14	150	1.5	0.0011	472.1	1081	8.6	20	----	68	Open	1.05
9/8/2015	11:30:00	21.9	8.0	0.21	ND	ND	ND	ND	0.21	0.21	ND	0.039	1.62	2.13	120	1.4	0.00068	770.1	749	5.2	31	10.0	62	Closed	2.61
9/10/2015	11:30:00	22.1	8.0	ND	ND	ND	ND	ND	ND	0.18	**0.029**	0.037	1.54	2.12	130	1.2	0.0016	866.4	1198	9.0	<10	8.4	64	Closed	3.16
9/15/2015	11:30:00	20.8	7.8	ND	ND	ND	ND	ND	ND	0.14	**0.028**	0.055	1.74	2.29	150	1.3	**0.0019**	2419.6	2046	69.1	74	26.5	90	Closed	4.09
9/22/2015	12:05:00	21.0	7.8	ND	ND	ND	ND	ND	ND	0.18	**0.023**	0.06	1.74	2.00	140	1.2	0.0013	1299.7	1333	96.0	98	**95.9**	86	Closed	5.69
9/24/2015	9:50:00	20.4	7.9	0.21	ND	ND	ND	ND	0.21	0.21	**0.022**	0.037	1.53	2.07	150	0.58	0.00093	1553.1	1860	63.7	85	**93.3**	79	Closed	5.94
9/29/2015	11:40:00	19.8	7.7	ND	ND	ND	ND	ND	ND	0.14	**0.022**	0.048	1.49	2.03	140	0.99	0.0015	613.1	1236	42.0	20	**62.0**	65	Closed	6.41
10/6/2015	10:20:00	20.0	7.7	ND	ND	ND	0.046	ND	ND	0.15	**0.036**	0.082	1.46	2.00	150	1.0	0.00087	816.4	813	14.5	20	27.5	73	Open	2.27
10/13/2015	11:00:00	19.3	7.8	ND	ND	ND	ND	ND	ND	0.10	**0.036**	0.082	1.38	2.01	130	1.4	0.0011	1203.3	1291	68.3	**331**	59.4	78	Closed	4.30

* Method Detection Limit - limits can vary for individual samples depending on matrix interference and dilution factors, all results are preliminary and subject to final revision.
** Total nitrogen is calculated through the summation of the different components of total nitrogen: organic and ammoniacal nitrogen (together referred to as Total Kjeldahl Nitrogen or TKN) and nitrate/nitrite nitrogen.
*** United States Geological Survey (USGS) Continuous-Record Gaging Station
**** Flow rates are preliminary and subject to final revision by USGS.

Recommended EPA Criteria based on Aggregate Ecoregion III
Total Phosporus: 0.02188 mg/L (21.88 ug/L) ≈ 0.022 mg/L
Total Nitrogen: 0.38 mg/L
Chlorophyll *a* : 0.00178 mg/L (1.78 ug/L) ≈ 0.0018 mg/L
Turbidity: 2.34 FTU/NTU

CDPH Draft Guidance for Fresh Water Beaches - Single Sample Values:
Beach posting is recommended when indicator organisms exceed any of the following levels:
Total coliforms: 10,000 per 100 ml
E. coli: 235 per 100 ml
Enterococcus: 61 per 100 ml

Monte Rio	Time	Temperature	pH	Total Organic Nitrogen	Ammonia as N	Ammonia as N Unionized	Nitrate as N	Nitrite as N	Total Kjeldahl Nitrogen	Total Nitrogen**	Phosphorus, Total	Total Orthophosphate	Dissolved Organic Carbon	Total Organic Carbon	Total Dissolved Solids	Turbidity	Chlorophyll-a	Total Coliforms (Colilert)	Total Coliforms Diluted 1:10 (Colilert)	E. coli (Colilert)	E. coli Diluted 1:10 (Colilert)	Enterococcus (Enterolert)	USGS 11467000 RR near Guerneville (Hacienda)***		
MDL*				0.200	0.10	0.00010	0.030	0.030	0.10		0.020	0.020	0.0400	0.0400	4.2	0.020	0.000050	20		20		2	Flow Rate****	Estuary Status	Jenner
Date		°C		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	mg/L	MPN/100m	MPN/100m	MPN/100m	MPN/100m	MPN/100m	(cfs)		Gauge (ft)
5/12/2015	11:10:00	19.5	8.1	0.21	ND	ND	0.071	ND	0.21	0.28	**0.040**	0.089	1.82	2.35	170	1.8	0.0014	727	880	8.5	20	5.2	183	Open	1.77
5/19/2015	11:40:00	20.1	8.2	ND	ND	ND	0.053	ND	ND	0.23	**0.028**	0.062	1.59	1.93	180	1.0	0.0012	920.8	697	14.6	<10	1.0	179	Open	0.59
5/26/2015	12:30:00	20.8	8.0	0.24	ND	ND	0.051	ND	0.24	0.30	**0.035**	0.086	1.64	2.00	160	1.2	**0.0019**	686.7	1145	13.4	10	3.0	155	Open	0.97
6/2/2015	11:00:00	20.4	8.1	0.24	ND	ND	ND	ND	0.24	0.24	**0.035**	0.080	1.60	2.07	180	1.6	0.0010	866.4	1274	22.8	10	6.3	135	Closed	4.42
6/4/2015	11:10:00	21.3	8.2	ND	ND	ND	0.050	ND	ND	0.19	**0.041**	0.080	1.62	2.18	170	1.9	0.00028	913.9	2181	67.6	110	45.7	127	Closed	5.14
6/9/2015	11:50:00	23.7	8.1	ND	ND	ND	0.14	0.048	ND	0.36	**0.038**	0.091	1.55	2.08	160	0.77	0.0011	>2419.6	2613	76.7	121	48.7	124	Closed	6.45
6/16/2015	10:20:00	22.4	7.8	0.32	ND	ND	0.054	ND	0.32	0.37	**0.050**	0.150	1.73	2.41	180	1.5	0.00070	>2419.6	5172	43.5	20	37.3	117	Open	0.84
6/23/2015	11:30:00	23.2	7.9	0.28	ND	ND	0.040	ND	0.28	0.32	**0.036**	0.110	1.75	2.28	160	2.2	**0.0023**	1732.9	3448	31.3	20	13.1	106	Open	0.76
6/30/2015	11:20:00	24.5	7.9	ND	ND	ND	0.043	ND	ND	0.22	**0.032**	0.064	1.68	2.20	160	1.2	0.0012	1046.2	1607	20.1	10	4.1	105	Open	0.84
7/7/2015	10:30:00	23.6	8.0	0.21	ND	ND	ND	ND	0.21	0.21	**0.038**	0.080	1.87	2.32	150	1.3	**0.0025**	1553.1	2909	18.1	98	17.4	72	Open	0.76
7/14/2015	11:30:00	23.6	7.7	0.28	ND	ND	ND	ND	0.28	0.28	**0.034**	ND	1.41	1.91	140	2.2	0.0015	1732.9	2909	13.1	<10	36.8	77	Open	1.01
7/21/2015	10:50:00	25.0	7.8	0.21	ND	ND	ND	ND	0.21	0.21	**0.040**	0.064	1.42	1.89	130	1.3	**0.0019**	1413.6	2187	6.3	41	3.0	86	Open	0.80
7/28/2015	10:10:00	23.7	7.8	0.24	ND	ND	ND	ND	0.24	0.24	**0.032**	0.048	1.44	1.89	140	2.2	0.0014	1553.1	1597	12.0	20	22.8	66	Open	1.18
8/4/2015	10:50:00	23.9	7.8	ND	ND	ND	ND	ND	ND	0.18	**0.030**	0.083	1.49	2.01	150	1.9	0.0011	1986.3	1670	9.8	10	20.6	103	Open	0.67
8/11/2015	10:50:00	23.5	7.9	ND	ND	ND	ND	ND	ND	0.18	**0.026**	0.036	1.54	2.00	120	0.88	0.0010	1299.7	1223	2.1	<10	6.2	86	Open	1.18
8/18/2015	10:30:00	23.8	7.9	ND	ND	ND	0.072	ND	ND	0.25	**0.028**	0.049	1.58	1.97	150	1.6	0.00074	1986.3	1421	14.6	20	5.2	89	Open	0.63
8/25/2015	10:25:00	22.0	7.8	ND	ND	ND	ND	ND	ND	0.17	**0.024**	0.047	1.49	1.97	140	1.1	**0.0020**	1119.9	1119	5.2	<10	5.2	75	Open	1.56
9/1/2015	12:20:00	23.5	7.7	ND	ND	ND	ND	ND	ND	0.18	**0.022**	0.048	1.54	2.13	130	0.70	0.0011	980.4	882	3.1	<10	2.0	68	Open	1.05
9/8/2015	11:50:00	21.8	7.8	0.21	ND	ND	ND	ND	0.21	0.21	ND	0.031	1.59	2.18	120	1.7	0.0014	920.8	959	7.3	20	41.0	62	Closed	2.61
9/10/2015	12:00:00	21.6	7.8	ND	ND	ND	ND	ND	ND	0.18	**0.025**	0.045	1.53	1.93	150	0.77	0.0011	727.0	1198	7.5	<10	3.0	64	Closed	3.16
9/15/2015	11:50:00	20.2	7.5	ND	ND	ND	ND	ND	ND	0.18	**0.022**	0.043	1.64	2.26	140	1.4	0.0014	1046.2	1450	6.2	<10	7.4	90	Closed	4.09
9/22/2015	12:30:00	21.4	7.8	ND	ND	ND	ND	ND	ND	0.18	ND	0.049	1.84	2.02	140	0.79	0.00080	1986.3	1374	58.3	62	**98.7**	86	Closed	5.69
9/24/2015	10:10:00	20.3	7.6	ND	ND	ND	ND	ND	ND	0.14	0.020	0.037	1.46	1.99	140	0.73	0.00053	1986.3	1515	70.6	63	**93.3**	79	Closed	5.94
9/29/2015	12:00:00	20.4	7.9	ND	ND	ND	ND	ND	ND	0.10	0.020	0.040	1.43	1.99	140	1.3	0.0011	2419.6	1439	**307.6**	110	**98.8**	65	Closed	6.41
10/1/2015	12:40:00	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	913.9	1932	97.7	41	**80.5**	59	Closed	6.53
10/6/2015	10:40:00	19.6	7.6	ND	ND	ND	0.050	ND	ND	0.12	**0.037**	0.089	1.45	1.98	140	1.2	0.00087	1203.3	1376	15.8	<10	27.5	73	Open	2.27
10/13/2015	11:20:00	19.4	7.8	ND	ND	ND	ND	ND	ND	0.14	**0.042**	0.090	1.40	1.94	130	1.9	0.0014	980.4	624	12.1	<10	11.0	78	Closed	4.30

* Method Detection Limit - limits can vary for individual samples depending on matrix interference and dilution factors, all results are preliminary and subject to final revision.
** Total nitrogen is calculated through the summation of the different components of total nitrogen: organic and ammoniacal nitrogen (together referred to as Total Kjeldahl Nitrogen or TKN) and nitrate/nitrite nitrogen.
*** United States Geological Survey (USGS) Continuous-Record Gaging Station
**** Flow rates are preliminary and subject to final revision by USGS.

Recommended EPA Criteria based on Aggregate Ecoregion III
Total Phosporus: 0.02188 mg/L (21.88 ug/L) ≈ 0.022 mg/L
Total Nitrogen: 0.38 mg/L
Chlorophyll *a* : 0.00178 mg/L (1.78 ug/L) ≈ 0.0018 mg/L
Turbidity: 2.34 FTU/NTU

CDPH Draft Guidance for Fresh Water Beaches - Single Sample Values:
Beach posting is recommended when indicator organisms exceed any of the following levels:
Total coliforms: 10,000 per 100 ml
E. coli: 235 per 100 ml
Enterococcus: 61 per 100 ml

Vacation Beach	Time	Temperature	pH	Total Organic Nitrogen	Ammonia as N	Ammonia as N Unionized	Nitrate as N	Nitrite as N	Total Kjeldahl Nitrogen	Total Nitrogen**	Phosphorus, Total	Total Orthophosphate	Dissolved Organic Carbon	Total Organic Carbon	Total Dissolved Solids	Turbidity	Chlorophyll-a	Total Coliforms (Colilert)	Total Coliforms Diluted 1:10 (Colilert)	E. coli (Colilert)	E. coli Diluted 1:10 (Colilert)	Enterococcus (Enterolert)	USGS 11467000 RR near Guerneville (Hacienda)***		
MDL*				0.200	0.10	0.00010	0.030	0.030	0.10		0.020	0.020	0.0400	0.0400	4.2	0.020	0.000050	20		20		2	Flow Rate****	Estuary Status	Jenner Gauge (ft)
Date		°C		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	mg/L	MPN/100m	MPN/100m	MPN/100m	MPN/100m	MPN/100m	(cfs)		
5/12/2015	11:20:00	19.5	8.2	0.21	ND	ND	0.076	ND	0.21	0.29	**0.033**	0.062	1.84	2.23	220	1.8	0.0015	722	789	12.1	10	<1.0	183	Open	1.77
5/19/2015	12:00:00	20.2	8.2	ND	ND	ND	0.053	ND	ND	0.23	**0.028**	0.062	1.65	1.91	170	0.96	**0.0018**	727.0	697	7.5	10	13.0	179	Open	0.59
5/26/2015	12:50:00	21.1	8.1	0.21	ND	ND	0.052	ND	0.21	0.26	**0.032**	0.078	1.65	2.01	160	1.0	0.0017	613.1	1019	10.9	10	8.6	155	Open	0.97
6/2/2015	11:20:00	20.8	8.2	0.24	ND	ND	ND	ND	0.24	0.24	**0.029**	0.080	1.63	2.10	170	1.3	0.0010	920.8	1314	21.8	10	16.1	135	Closed	4.42
6/4/2015	11:30:00	21.2	8.2	0.24	ND	ND	0.051	ND	0.24	0.30	**0.036**	0.084	1.61	2.18	170	2.0	0.0013	866.4	1935	27.2	10	21.3	127	Closed	5.14
6/9/2015	12:20:00	23.7	8.1	ND	ND	ND	0.14	0.047	ND	0.36	**0.036**	0.087	1.53	2.07	160	1.2	0.00082	1208.3	1565	10.9	10	30.8	124	Closed	6.45
6/16/2015	10:30:00	22.9	8.9	0.42	ND	ND	0.052	ND	0.42	**0.47**	**0.041**	0.11	1.81	2.43	170	1.8	0.0015	2419.6	5475	45.0	41	**73.3**	117	Open	0.84
6/23/2015	11:50:00	23.1	7.9	0.21	ND	ND	0.040	ND	0.21	0.25	**0.034**	0.075	1.80	2.28	160	1.7	**0.0031**	>2419.6	**19863**	41.4	<10	54.6	106	Open	0.76
6/30/2015	11:40:00	24.6	7.9	ND	ND	ND	0.043	ND	ND	0.22	**0.032**	0.064	1.70	2.18	160	1.2	**0.0019**	>2419.6	**11199**	21.8	41	22.6	105	Open	0.84
7/7/2015	10:40:00	24.0	8.0	0.21	ND	ND	ND	ND	0.21	0.21	**0.042**	0.050	1.86	2.43	140	1.7	**0.0034**	>2419.6	5475	14.6	30	52.1	72	Open	0.76
7/14/2015	11:40:00	23.7	7.8	0.24	ND	ND	ND	ND	0.24	0.24	**0.037**	ND	1.45	1.91	160	1.9	**0.0024**	2419.6	2481	24.6	10	14.6	77	Open	1.01
7/21/2015	11:00:00	25.2	7.8	ND	ND	ND	ND	ND	ND	0.14	**0.037**	0.060	1.47	1.88	140	1.3	**0.0028**	>2419.6	3448	63.7	98	47.1	86	Open	0.80
7/28/2015	10:30:00	24.5	8.0	0.24	ND	ND	0.049	ND	0.24	0.29	**0.029**	0.040	1.49	1.88	140	1.7	0.0016	>2419.6	2481	17.3	20	**204.6**	66	Open	1.18
8/4/2015	11:00:00	24.1	7.9	0.21	ND	ND	ND	ND	0.21	0.21	**0.023**	0.053	1.58	2.01	140	1.7	0.0016	>2419.6	4106	9.6	10	38.9	103	Open	0.67
8/11/2015	11:10:00	23.7	7.9	0.28	ND	ND	ND	ND	0.28	0.28	0.020	0.024	1.59	2.06	120	1.1	0.0010	2419.6	1860	2.0	<10	16.0	86	Open	1.18
8/18/2015	10:50:00	23.9	7.9	ND	ND	ND	0.074	ND	ND	0.25	**0.026**	0.033	1.60	2.02	130	1.0	**0.0020**	1732.9	2755	23.1	<10	45	89	Open	0.63
8/25/2015	10:40:00	22.3	7.9	0.21	ND	ND	ND	ND	0.21	0.25	**0.023**	0.039	1.55	2.11	140	1.1	**0.0023**	1413.6	1624	8.3	<10	9.5	75	Open	1.56
9/1/2015	12:40:00	23.9	7.9	0.21	ND	ND	ND	ND	0.21	0.21	ND	0.040	1.61	2.16	140	1.0	**0.0020**	1986.3	1872	4.1	10	6.3	68	Open	1.05
9/8/2015	12:10:00	21.9	7.9	0.28	ND	ND	ND	ND	0.28	0.28	ND	0.031	1.60	2.23	110	1.1	0.0015	1986.3	1723	1.0	10	**63.0**	62	Closed	2.61
9/10/2015	12:10:00	22.0	7.9	ND	ND	ND	ND	ND	ND	ND	0.021	0.029	1.54	1.77	140	1.1	**0.0019**	1732.9	2755	10.9	10	8.6	64	Closed	3.16
9/15/2015	12:00:00	20.8	7.7	ND	ND	ND	ND	ND	ND	0.18	**0.024**	0.027	1.67	2.25	150	0.99	0.0015	2419.6	1785	48.7	41	20.1	90	Closed	4.09
9/22/2015	12:40:00	21.0	7.6	ND	ND	ND	ND	ND	ND	0.18	**0.024**	0.049	1.47	2.03	140	**2.4**	0.00080	1203.3	1081	30.5	52	16.0	86	Closed	5.69
9/24/2015	10:20:00	20.1	7.5	ND	ND	ND	ND	ND	ND	0.14	**0.028**	0.050	1.35	1.82	140	1.4	0.00080	960.6	1187	51.2	73	**76.7**	79	Closed	5.94
9/29/2015	12:10:00	19.9	7.6	ND	ND	ND	ND	ND	ND	0.10	**0.024**	0.052	1.42	2.04	150	2.3	0.0016	1299.7	1670	114.5	146	**228.2**	65	Closed	6.41
10/1/2015	10:50:00	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	>2419.6	**>24196**	**>2419.6**	**7270**	**>2419.6**	59	Closed	6.53
10/6/2015	11:00:00	19.5	7.6	ND	ND	ND	0.041	ND	ND	0.15	0.021	0.031	1.43	2.07	140	**2.4**	0.0016	980.4	1198	44.1	108	42.2	73	Open	2.27
10/13/2015	11:40:00	19.6	7.8	ND	ND	ND	ND	ND	ND	0.10	**0.023**	0.035	1.29	1.84	140	1.7	0.0013	980.4	1211	45.9	109	**85.5**	78	Closed	4.30

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