

**Water Quality Monitoring Plan
Russian River
August - October 2004**

Background

This Water Quality Monitoring Plan (Plan) is submitted in accordance with State Water Resources Control Board (State Board) Water Rights Order 2004-0035-EXEC, approving a Temporary Urgency Change in Permits 12947A, 12949, 12950, and 16596 of Sonoma County Water Agency (SCWA). Provision 8 of this Order requires SCWA to prepare a Water Quality Monitoring Plan for the Russian River and submit it to the Chief of the Water Rights Division by August 9, 2004. In compliance with the Order, SCWA has consulted the Regional Water Quality Control Board, North Coast Region (Regional Board), and the Division of Water Rights in preparing this plan. Additionally, SCWA has incorporated recommendations from the Sonoma County Department of Health Services, Division of Environmental Health (DEH) into the Plan.

Although temperature monitoring is briefly discussed in this Plan, it will be addressed specifically in the Temperature Monitoring Plan required by Provision 7 of Order 2004-0035-EXEC.

Summary

There are four main components to the Plan, which are summarized in the following table:

Name of component	Number of sample locations	Reach monitored	Constituents monitored	Monitoring frequency
SCWA permanent data loggers	4	Hopland to Hacienda	pH, temp, DO, Spec Cond, turb, depth	Every 15 minutes
Beach pathogen sampling	7	Healdsburg to Monte Rio	Total coliform, <i>E. coli</i>	Twice per week
SCWA temporary data loggers	6	Guerneville to the estuary	pH, temp, DO, Spec Cond, salinity, depth	Once per hour
USGS grab samples	11	Hacienda to the Estuary	Several WQ parameters	Once per year

The locations of the data loggers and locations of grab samples are shown in Attachment A, Water Quality Monitoring, Russian River. A more detailed summary of the sampling program is provided in Attachment B, Summary Table of Water Quality Monitoring. The individual components are explained below.

SCWA Permanent Data Loggers

The SCWA Operations department has maintained four YSI data loggers on the Russian River for several years. They are located at Hopland, Diggers Bend in Healdsburg, SCWA's river diversion facility at Mirabel, and Hacienda. An additional data logger is anticipated to be put online by mid-August 2004 at Johnson's Beach. These data loggers take readings of water pH, temperature, dissolved oxygen content (DO), specific conductivity, turbidity, and depth, every 15 minutes, and transmit it to the SCWA operations center. This allows the information to be reviewed on a regular basis throughout the day. These data loggers are referred to as "permanent," as SCWA intends to maintain them indefinitely into the future, and at least until October 2005.

Weekly summaries of this data will be compiled and submitted electronically to the Regional Board and State Board. Average daily values for pH, DO, temperature, specific conductance, and turbidity will be calculated for each sample station and compared to historical average daily values. Historical values had not been compiled at the time that this Plan was written, but will be assembled as part of the implementation of this plan, and submitted to the Regional Board and State Board within two weeks of approval of this Plan. Average weekly trends will be noted. In the event that an average daily or average monthly value exceeds the historical value for a monitored parameter, the Regional Board will be consulted to determine if increased monitoring or surveillance is warranted. In this event, data summary transmittals will be increased to a daily basis.

Beach Pathogen Sampling

During previous summers, the Regional Board had conducted pathogen sampling in conjunction with DEH at the most Russian River beaches which experience the greatest body contact recreation. Due to reduced staffing levels, this weekly sampling program was not implemented during the summer of 2004.

SCWA has begun collecting data for total Coliform organisms and *E. coli* so that bacteriological information will be available for this year. Samples will be collected at (from upstream to downstream): Camp Rose above Healdsburg, Veterans' Memorial Beach in Healdsburg, Steelhead Beach near Forestville, Odd Fellows Beach, Johnson's Beach in Guerneville, Vacation Beach in Guerneville and in Monte Rio. Samples will be collected by SCWA operations personnel trained in bacteriological sampling techniques.

Samples will be collected twice per week, on Mondays and Thursdays. Sampling began on July 30, and will continue through at least mid-October.

Sample results will be forwarded to DEH, and will be posted on the DEH website. DEH will compare sample results with the California Department of Health Services Draft Guidance on the Freshwater Beaches. If a sample exceeds the single sample maximum criteria recommended by the Draft Guidance of 10,000 MPN/100ml total coliform

organisms or 235 MPN/100 ml of *E. coli*, SCWA will consult with DEH and the Regional Board to determine if additional sampling is warranted. SCWA will implement additional sampling as required by the Executive Officer.

SCWA Temporary Data Loggers

SCWA deployed eleven data loggers in the lower river on May 19, 2004. Data loggers are installed at Johnson's Beach in Guerneville, Vacation Beach, Monte Rio, and at three locations within the estuary. These data loggers take a reading on water pH, temperature, dissolved oxygen content (DO), specific conductivity, turbidity, and depth, every hour. Data are stored in the unit until it can be downloaded by field personnel. SCWA personnel download the data in the field every two to three weeks. This data will be transmitted to the State and Regional Board once per month. The frequency of data transmission will be increased if the Regional Board Executive Officer indicates that water quality conditions warrant more frequent information retrieval.

SCWA/USGS Grab Samples

SCWA has contracted the United States Geological Survey (USGS) to perform water quality monitoring on the lower Russian River. As part of the contract with SCWA, USGS will collect grab samples of the Russian River for various water quality parameters and constituents. Samples will be collected at (from upstream to downstream): 1 mile south of Healdsburg, Riverfront Park, Mirabel, Steelhead Beach, Hacienda, the Odd Fellows summer crossing, Johnson's Beach in Guerneville, Vacation Beach, Monte Rio, the confluence with Austin Creek, and at the confluence with Willow Creek. One set of samples was collected during the summer of 2003, and another set will be collected in September 2004. Parameters to be evaluated include flow, temperature, DO, pH, turbidity, total organic carbon, bacteria, algae and sediment. Due to USGS quality assurance/quality control (QA/QC) requirements, the data will not be available until January 2005.

Data Analysis and Reporting

As stated above, a summary of the information retrieved from the SCWA permanent data loggers will be transmitted electronically to the Regional Board and State Board on a weekly basis. This data summary will include daily averages for the five monitored constituents at the four (five when Johnson's Beach is brought online) monitoring locations. Data submittals will be on Tuesdays, covering a one-week period from the previous Monday through Sunday. Similar summaries for data from the permanent loggers will be included in the second submittal of each month, covering the previous month's monitoring. Data will be submitted through the month of October 2004. Data submittals can be continued past this date upon request of the Regional Board Executive Officer.

Within two weeks of the approval of this Plan, SCWA will compile a historical data summary, so that current data can be compared to historical averages, highs, and lows. Current data and data trends will be compared to historical data in the weekly summaries once this information has been compiled.

Because the data from the in-stream data collection units is "raw" and has not undergone extensive QA/QC, SCWA does not plan to make this data available to the public.

Bacteriological data will be submitted to DEH, who has agreed to make the data publicly available by posting it on their website, as has been done in past years. Both SCWA and the Regional Board have indicated that they may include a link to the data on their websites. Because of the variability inherent in bacteria monitoring, no weekly comparisons to past years' data will be undertaken.

A final report will be prepared in January 2005, summarizing data trends recorded by the data loggers from August through October, and comparing these to trends in past years. The total Coliform and *E. coli* data will be compared to data from past years' sampling monitoring results in the final report. If the USGS grab sample data is available, it will be included in this report, and compared to the previous year's sample results.

Attachment B
Summary of Water Quality Monitoring for Temporary Urgency Change Order

Location	depth	temperature	DO	pH	turbidity	specific conductance	salinity	Frequency	telemetry?	duration
SCWA Permanent Data Loggers										
Hopland	x	x	x	x	x	x		15 min	y	indefinite
Digger's Bend	x	x	x	x	x	x		15 min	y	indefinite
Mirabel	x	x	x	x	x	x		15 min	y	indefinite
Hacienda	x	x	x	x	x	x		15 min	y	indefinite
Johnson's Beach	x	x	x	x	x	x		should be operational in early August		

SCWA Temporary Data Loggers										
Johnson's Beach	x	x	x	x		x	x	1 hour	n	May 19-Oct
Vacation Beach	x	x	x	x		x	x	1 hour	n	May 19-Oct
Monte Rio	x	x	x	x		x	x	1 hour	n	May 19-Oct
Estuary 1a	x	x	x	x		x	x	1 hour	n	May 19-Oct
Estuary 1b	x	x	x	x		x	x	1 hour	n	May 19-Oct
Estuary 1c	x	x	x	x		x	x	1 hour	n	May 19-Oct
Estuary 2a	x	x	x	x		x	x	1 hour	n	May 19-Oct
Estuary 2b	x	x	x	x		x	x	1 hour	n	May 19-Oct
Estuary 2c	x	x	x	x		x	x	1 hour	n	May 19-Oct
Estuary 3a	x	x	x	x		x	x	1 hour	n	May 19-Oct
Estuary 3b	x	x	x	x		x	x	1 hour	n	May 19-Oct

Attachment B
Summary of Water Quality Monitoring for Temporary Urgency Change Order

Grab samples

Location	total coliform	fecal coliform	frequency	flow	temperatuer	DO	pH	turbidity	TOC	DOC	bacteria (?)	algae	sediment	Duration
SCWA Bacteria Sampling														
Camp Rose	x	x	2/week											Aug 9-Oct
Memorial Beach	x	x	2/week											July 30-Oct
Steelhead Beach	x	x	2/week											Aug 9-Oct
Odd Fellows Beach	x	x	2/week											Aug 9-Oct
Johnson's Beach	x	x	2/week											July 30-Oct
Vacation Beach	x	x	2/week											July 30-Oct
Monte Rio	x	x	2/week											July 30-Oct

USGS Grab Sampling														
1 mile S.of Healdsburg			1/yr	x	x	x	x	x	x	x	x	x	x	One sample in late summer
Riverfront Park			1/yr	x	x	x	x	x	x	x	x	x	x	One sample in late summer
Mirabel			1/yr	x	x	x	x	x	x	x	x	x	x	One sample in late summer
Steelhead Beach			1/yr	x	x	x	x	x	x	x	x	x	x	One sample in late summer
Hacienda			1/yr	x	x	x	x	x	x	x	x	x	x	One sample in late summer
Odd Fellows			1/yr	x	x	x	x	x	x	x	x	x	x	One sample in late summer
Johnson's Beach			1/yr	x	x	x	x	x	x	x	x	x	x	One sample in late summer
Vacation Beach			1/yr	x	x	x	x	x	x	x	x	x	x	One sample in late summer
Monte Rio			1/yr	x	x	x	x	x	x	x	x	x	x	One sample in late summer
Austin Creek			1/yr	x	x	x	x	x	x	x	x	x	x	One sample in late summer
Willow Creek			1/yr	x	x	x	x	x	x	x	x	x	x	One sample in late summer