

PROTOCOL FOR CONDUCTING RUSSIAN RIVER BACTERIOLOGICAL SAMPLING AT SUMMER RECREATIONAL BEACHES

(Prepared by Cathy Goodwin, NCRWQCB - July 21, 1999, July 29, 1999, May 2005, and May 22, 2007)

Each summer, bacterial water quality monitoring is conducted at summer recreational areas along the Russian River as a joint effort between the North Coast Regional Water Quality Control Board (Regional Board) and the Sonoma County Department of Health Services, Division of Environmental Health (SCDHS). The purpose of this document is to describe the sampling plan and protocol to be used for the bacteriological sampling. Staff from the Regional Board and SCDHS coordinate prior to the beginning of each summer season to determine sampling dates and to review sampling procedures.

The *Water Quality Control Plan for the North Coast Region* (Basin Plan) describes beneficial uses and water quality objectives for waters of the North Coast Region. Beneficial uses of the Russian River include, municipal and domestic water supply, agricultural and industrial water supply, recreation, commercial and sport fishing, warm and cold freshwater habitat, wildlife habitat, and fish migration and spawning. Bacteriological sampling is conducted to protect the recreational beneficial use.

The Basin Plan includes water quality objectives for bacteria as follows:

“The bacteriological quality of waters of the North Coast Region shall not be degraded beyond natural background levels. In no case shall coliform concentrations be degraded beyond natural background levels. In no case shall coliform concentrations in waters of the North Coast Region exceed the following:

In waters designated for contact recreation (REC-1), the median fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed 50/100 ml, nor shall more than ten percent of total samples during any 30-day period exceed 400/100 ml.”

METHODS

Sampling Sites

The following sites are sampled each summer:

1. Camp Rose (Healdsburg) - This beach is located along Fitch Mountain in Healdsburg. To get there take Healdsburg Ave. to Matheson Ave. at the south side of Healdsburg Square. Matheson turns into Fitch Mountain Road. Turn right onto Camp Rose Road and park. Follow the trail down to the river and sample near the well head on the gravel bar at the edge of the river. Wade out into the center of the flow to collect the sample.

2. Healdsburg Memorial Beach - Pull into the County Park parking lot. Sample in front of lifeguard stand 3 at the downstream end of the swim area. Wade into the water as far as possible.
3. Sunset Beach. This beach is located immediately downstream of Hacienda Bridge. From Healdsburg follow Westside Road approximately 12 miles to Forestville. Turn left onto Sunset Avenue.
4. Johnson's Beach (Guerneville) - The sampling site is located downstream of the children's swim area and upstream of the bridge. The sampling site coincides with the upstream end of the snack bar. Wade into the water as far as possible.
5. Monte Rio - The sampling site is downstream of the children's swim area. Some summers there is a dock at the sampling location and other times the gravel bar extends out into the water. Wade into the water as far as possible.
6. Steelhead Beach – Take River Road
7. Oddfellows Bridge (Guerneville) - Take River Road to Oddfellows Park Road. Park in the space before you cross the bridge. Sample at the small sandy beach upstream of the bridge. Wade out into the center of the flow to collect the sample. [NOTE: WE WILL NOT BE SAMPLING THIS BEACH IN 2007]

Sampling Frequency

Samples are collected one time each week, preferably on the same day and at the same time each week. Weekly samples are necessary in order to compare the sample results to existing Basin Plan standards for fecal coliform (five samples must be collected each 30-day period on a continuous basis throughout the summer) and/or State Department of Health Services Guidelines for total coliform, E. coli, and Enterococcus.

Sample Collection

Samples must be collected in aseptic containers prepared by the analytical laboratory. Samples should be collected in the afternoon since this is the time of day the beaches are in highest use. Samples should be collected at approximately the same time each week. Samples should be collected midstream when flow conditions allow. When this is impossible due to water depth, samples should be collected as far from shore as the sampler can wade (in hipwaders or shorts) in an area with well-mixed water.

The sample container must be opened and closed carefully so as not to introduce bacteria into the container (e.g., keep fingers away from opening). The container is dipped down and up in a smooth sweeping motion through the water column against the direction of the flow. When this is done correctly, the container is submerged approximately 9 inches

below the water column before it comes back up. Store the container on ice for transport to the laboratory.

All sampling activities must be recorded in a field notebook or on the attached sampling sheet. Entries must include the sampling location, sampling date and time, personnel on the sampling team, calibration of field instruments, weather conditions, records of field measurements (air and water temperature, pH, conductivity and dissolved oxygen), and field observations (e.g., activities, sources, or conditions that may influence the bacteria results, including numbers of people, animals and birds in and near the river; physical observations about the river, etc.).

Sample Delivery

Samples must be delivered to the analytical laboratory within six hours of the time that the first sample is collected.

Normally, samples are delivered to the Sonoma County Health Department Laboratory at 3313 Chanate Road, Santa Rosa. They are located in the white building on the left hand side as you pull into the Sutter Hospital Parking lot. The contact at the SCHD lab is Carol Dubay, 565-4711.

Occasionally, samples are taken to the Brelje and Race Analytical Laboratory located at 425 South E Street, Santa Rosa. The contact person there is Ann Hill, 544-8807.

Sample Analysis

The SCHD lab analyzes the samples for total coliform and E. coli, using the Colilert method, and Enterococcus, using the Enterolert method. Sample results should be received by telefax on the day following sample delivery.

Samples may occasionally be analyzed at Brelje and Race Lab for total and fecal coliform using the multiple-tube fermentation methods 9221B and 9221E. Sample results should be obtained by telephone or telefax a week following sample delivery. Written reports take two or more weeks.

Quality Assurance/Quality Control

The Sonoma County Health Department laboratory requires us to fill out a laboratory submittal slip for each sample.

Chain-of-custody forms must be completed on all sampling dates, if samples are submitted to the Regional Water Board's contract laboratory.

Data Storage and Analysis

Regional Water Board staff enter all physical and bacterial data in an Excel spreadsheet program and prepare graphs of the data (primarily showing median fecal coliform concentrations plotted against sampling date). Data is carefully reviewed to identify

compliance with the Basin Plan and/or DHS standards and to determine if exceedances indicate any trend of water quality degradation.

The sampling results must be posted to the Regional Water Board website as soon as possible after the results are received so that the public has timely access to the data.

SCDHS staff also maintain copies of the data.