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To: State Water Resources Control Board
From: Crystal Robinson, Environmental Director Quartz Valley Indian Reservation
Date: February 19, 2015
Re: Review and comments on *Public Scoping Meeting for Proposed Statewide Water Contact Recreation Bacteria Objectives Amendments To Water Quality Control Plans For Inland Surface Waters, Enclosed Bays And Estuaries And The Ocean Waters Of California*

The California State Water Resources Control Board (State Board) has solicited comments regarding its "*Public Scoping Meeting for Proposed Statewide Water Contact Recreation Bacteria Objectives Amendments To Water Quality Control Plans For Inland Surface Waters, Enclosed Bays And Estuaries And The Ocean Waters Of California*" (Scoping Document). The comments herein are organized by the elements listed in the Scoping Document.

Element 1: Bacteria Indicators

We support the Scoping Document's recommendation to using *E. coli* as an indicator organism for freshwater.

Element 2: Level of Public Health Protection for Illness Rate

U.S. EPA's 2012 Recreational Water Quality Criteria evaluates epidemiological studies of the correlation between indicator bacteria (e.g., *E coli* and *Enterococci*) and rates of human illness. We have no reason to doubt the rigor of these epidemiological studies. However, in that same document, U.S. EPA estimates that the *E coli* concentrations they recommend states adopt as a standard (geometric mean of 100 cfu/100mL, the same as proposed by State Board staff in the Scoping Document) would result in an Estimated Illness Rate of 32 per 1,000 primary contact recreators, equivalent to 3%. In our opinion, 3% is an unacceptably high estimate illness rate and therefore we recommend that the State Board adopt a lower *E coli* concentration as the statewide standard.

Other issues

Since the bacterial indicator proposed in the Scoping Document is *E. coli* whereas the existing water quality standards in most regions of California (including the North Coast [Region 1] that is our primary concern) are for fecal coliform, we were originally unclear whether the proposed standards are more or less protective than current standards. In the process of preparing these comments, we discussed this issue with staff from the Lahontan Regional Water Quality Control Board (Region 6). Based on an analysis of sites where both fecal coliform and *E. coli* data have been collected, staff from Region 6 have preliminarily determined that fecal coliform concentrations are approximately equivalent to *E.coli* concentrations. Specifically, their preliminary finding is that a fecal concentration of 20 cfu/100mL is equivalent to approximately 17 cfu/100mL *E. coli*.

The Quartz Valley Environmental Program collected both *E.coli* and fecal coliform last summer from a grazing allotment that is annually monitored in the Trinity Alps Wilderness area. Results indicated that there was not a clear, consistent relationship between the two; however it appears that in general, fecal coliform concentration was at times much higher than *E.coli* when levels were high; and conversely, concentrations were more similar when levels were low, see Table 1.

Table 1: Grazing Allotment 2014 Data, Fecal coliform and *E.coli* results reported in MPN/100ml

Site:	MC08		MC07		MC06		MC04		MC09		MC05	
Date	Fecal	E.coli	Fecal	E.coli	Fecal	E.coli	Fecal	E.coli	Fecal	E.coli	Fecal	E.coli
8/26/2014	69.7	7.4	248.1	<1	275.5	122.3	866.4	613.1	275.5	46	78.9	74.9
9/2/2014	435.2	57.6	1299.7	214.2	165.8	29.5	866.4	461.1	30.9	30.9	648.8	49.2
9/9/2014	21	16.5	139.1	17.3	40.8	27.5	39.9	31.3	14.2	14.2	64.4	15.1
9/16/2014	18.9	17.5	15.2	10.8	62	57.3	42	20.3	6.3	6.3	9.5	1
9/23/2014	3	2	1413.6	1299.7	22.8	19.9	37.9	32.3	11	11	22.4	9.8

The differences in values between *E.coli* and fecal coliform should be examined more closely. Perhaps the fecal coliform polluting species is a key factor in how similar the concentrations would be between the two parameters. These are questions we have and are unable to answer.

The current standard for Region 1 is 50 cfu/100mL for fecal coliform, the standard of 100 cfu *E. coli*/100mL proposed in the Scoping Document we feel represents a substantial weakening of the current standard, which is a great concern to us. This does not appear to be the most protective approach to protecting the public's health.

We are concerned that the approach proposed in the Scoping Document would result in a single statewide standard. This may result in an unrealistic/unachievable standard in areas with intensive land use (e.g., heavily urbanized areas) but an under-protective standard for high quality waters in relatively pristine areas with relatively light land use. For example, should it really be considered acceptable for 3% of the swimmers in high-elevation wilderness lakes to become ill after swimming? Or that tribal members participating in cultural ceremonies which require immersion in creeks and rivers to have a 3% chance of becoming ill? Therefore, we recommend that a provision be added to the statewide objectives that allows and encourages regional boards to adopt more stringent bacteria standards for specific waterbodies to protect the high-quality waters.

We hope you will find this information useful in your process and would like to be involved any way we can. Please feel free to contact me if there are any questions, comments or concerns.

Sincerely,

Crystal Robinson

Crystal Robinson
Environmental Director
Quartz Valley Indian Reservation