



CENTRAL VALLEY REGIONAL
WATER QUALITY CONTROL BOARD

CLEAN WATER ACT
SECTION 305(b) AND 303(d)
INTEGRATED REPORT
FOR THE CENTRAL VALLEY REGION

MAY 2009 DRAFT FINAL REPORT

APPENDIX J
RESPONSES TO PUBLIC COMMENTS



CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

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This appendix presents responses to the comments received by 16 March 2009 on the January 2009 draft Integrated Report. In some cases comments are paraphrased for brevity. Comments are arranged alphabetically by the commenting organization. Comments are numbered and shown in indented italics. Comment numbers in this document are not necessarily the same as the comment numbers provided by the commenters in their comment letters. Staff responses follow each comment in regular text. A number of assessment fact sheets and draft recommendations for changes to the 303(d) list have been revised based on the comments received, as described in the responses below.

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1. Butte Environmental Council – Carol Perkins

Comment 1 - Some water bodies in Butte County will not be on the 303d list because a TMDL has been adopted. This will hinder a significant paper trail

Impaired water bodies, including those with adopted Total Maximum Daily Loads (TMDLs), will remain on the state's list of water quality limited segments until they have met water quality standards. Information about those waterbody impairments should be available in future Integrated Reports.

Comment 2 - In August of 2007, neighbors along Dry Creek noted the water was turbid and called the RWB resulting in a Cleanup and Abatement Order. The WDR has still not been approved and multiple pollutant issues have been noted.

Central Valley Water Board staff inspected the New Era Mine on 21 August 2007 in response to citizens' concerns over mining activity. At that time the operation was of modest size with limited ground disturbance. Staff requested the owner/operator obtain Waste Discharge Requirements for Discharges of Storm Water Associated With Industrial Activities (General Industrial Storm Water Permit) and develop a Storm Water Pollution Prevention Plan (SWPPP). The New Era Mine did obtain the General Industrial Storm Water Permit and developed the SWPPP. Regional Water Board staff then inspected the site on 5 December 2007. Operations and ground disturbance had expanded and the site posed a threat of the discharge of sediment to Dry Creek. The Central Valley Water Board issued a Cleanup and Abatement Order in December, and conducted five site inspections between January 2008 and June 2008 when the C&A Order was rescinded. In all, Central Valley Water Board staff conducted 12 inspections between August 2007 and present. In this time, only one possible discharge of sediment from the site was noted. It is unlikely this discharge was directly related to mining operations. The mine has complied with the General Industrial Storm Water Permit and implemented Best Management Practices as discussed in their SWPPP, resulting in no documented discharges of sediment or other pollutants from the site. While Central Valley Water Board staff continues to receive complaints of turbid water downstream of the mine, sampling by staff indicates sources other than the New Era Mine may be responsible. Staff has developed draft Waste Discharge Requirements (WDRs) for the site regarding operation of the process water ponds. While these WDRs have not yet been adopted pending the outcome of various issues regarding water quality and permitting, the General Industrial Storm water Permit adequately regulates the site and the discharge of mine process water (as differentiated from storm water) to Dry Creek is prohibited. If turbidity levels in Dry Creek are shown to be

resulting in non-attainment of water quality standards, this waterbody may be listed in future 303(d) listing cycles.

Comment 3 - *Data submitted to Water Boards under all permits should become part of the data solicitation process for the 303(d) list.*

Staff agrees that data from permits should ideally be included in the Integrated Report. Available resources were insufficient to assess all permit data in the current listing cycle. Improvements in data format consistency, data management and/or available resources may make it possible to assess more of the permit data in future Integrated Reports.

Comment 4 - *Dry Creek and Little Chico Creek should be listed for mercury. Butte Environmental Council submitted a letter dated June 2004 – Solicitation comments regarding Butte Creek, Little Chico Creek, Mud Creek, Dry Creek. Chico, CA (as found in the 2002/2006 California 303(d) Administrative Record, Regional Board 5 reference number 150) – stating: “Monitoring of Dry Creek above Cherokee Canal in the 2001-2003 year indicates that there is significant mercury toxicity (Sacramento River Watershed Program 2002-2003 Monitoring Report, p.22). This segment fails the Maximum Contaminant Level (MCL) of 50 ng/l in the Central Valley Basin Plan in 13.7% of the data. It also fails the USEPA national criterion of 12 ng/l for the protection of human health in 42.3% of the data collected and the 3.1 ng/l standard used in the Great Lakes Initiative (adopted based on bioaccumulation factors for the protection of human health) 74.4% of the time. Additional monitoring of Dry Creek and Cherokee Canal must occur.”*

Staff has assessed the Sacramento River Watershed Program mercury data for water samples collected from Dry Creek above Cherokee Canal and Little Chico Creek below Chico. Fact sheets documenting the details of these assessments have been added to the Integrated Report. As is documented in the fact sheets, staff used the CTR criteria of 50 ng/l and exceedance frequency in the Water Quality Control Policy for Developing California’s Clean Water Act Section 303(d) List (“Listing Policy”). These waterbody segments are not recommended to be listed because the readily available data did not show a frequency of water quality objective exceedances which warrants listing.

Comment 5 - *Additional monitoring of Dry Creek and Cherokee Canal must occur.*

Comments related to monitoring priorities and/or requirements are acknowledged and will be forwarded to the appropriate Central Valley Water Board staff. Determination of regional monitoring priorities and/or discharger monitoring requirements is outside of the scope of the current proposed Integrated Report.

Comment 6 - *Sediment generation at New Era Mine is impacting Dry Creek and Cherokee Canal, costing millions of dollars of taxpayer money for sediment removal from Cherokee canal.*

No data are presented documenting exceedances of water quality standards in Dry Creek or Cherokee Canal. If data become available indicating a sediment impairment for Dry Creek or Cherokee Canal, those data will be assessed and appropriate listings can be made in future 303(d) listing cycles. Regarding sediment from New Era Mine, Regional Water Board staff has

conducted 12 inspections over the past two years and, with one possible exception, has not documented any evidence the New Era Mine is the source of turbidity or sediment in Dry Creek. Inspections of the mine and sampling of water turbidity upstream and downstream of the mine indicate the mine is not a significant source of sediment or turbidity in Dry Creek.

Comment 7 - Exceedances of standards have been found at Pine Creek for E. Coli, pH, and chlorpyrifos, but Pine Creek is not proposed to be listed on the 303(d) list.

E. coli and chlorpyrifos are assessed in fact sheets in the draft Integrated Report. There were individual exceedances but these exceedances were not frequent enough to warrant recommending listing. No pH exceedances were observed in the available data for Pine Creek, so pH in Pine Creek was not assessed in a detailed fact sheet.

Comment 8 - There are issues with pH in Butte Creek but these have never driven the development of a management plan through the Irrigated Lands Program.

Butte Creek was assessed for pH in preparation of the Integrated Report. Staff are recommending listing Butte Creek for pH in the draft Integrated Report. In the future, a management plan for pH in Butte Creek may be required under the Irrigated Lands Regulatory Program. Your comment has been forwarded to Irrigated Lands Regulatory Program staff.

Comment 9 - Protection of waters are critical to the State. Development of TMDLS, WDRs with more stringent monitoring and reporting requirements, and upholding the antidegradation policy are requirements of federal and state law which cannot be ignored.

Staff will continue to implement state and federal laws within the Central Valley Water Board's responsibilities and jurisdiction.

2. California Sportfishing Protection Alliance – Bill Jennings, Executive Director

Comment 1 - Commenter supports the inclusion of temperature impairment for the San Joaquin River, Tuolumne River, Merced River Pit River, Yuba River and Feather River. Commenter states that excessive temperatures are clearly major limiting factors to renewable fisheries in these waterways.

Comments are noted and staff recommends no changes to the proposed temperature listings.

Comment 2 - The proposed delisting of Salt Slough and the San Joaquin River (Merced River to Delta) for selenium may not be appropriate. The fact sheets that document the delisting of these waterways appear to be limited to selenium concentrations in the water column but not fish tissue. While the percentage of water column samples exceeding the basin plan numerical limit may justify delisting, we urge staff to reexamine relevant fish tissue data to see if the Basin Plan narrative standard is exceeded. Commenter includes a powerpoint presentation that was shown by US Fish and Wildlife Ser-

vice at a CALFED Science Conference in October 2008 that clearly shows that the current 5-ug/l standard is not protective of fish.

The proposed delisting was based on water column concentrations meeting applicable water quality objectives. Currently there is not an established standard or other accepted criteria for selenium in fish tissue applicable to the San Joaquin River, but the water quality objective for selenium in water was adopted in consideration of protection of fish. Confirming the appropriateness of the existing water quality objectives is outside of the scope of the Integrated Report. The information presented in the powerpoint presentation referenced by the commenter has not yet been published. Staff cannot use this information until it is peer reviewed and published with available QA/QC information on the study. If staff receives more complete information in the future showing standards are not being obtained staff can look at that during future cycles.

Comment 3 - *The proposed delisting of electrical conductivity (EC) on the San Joaquin River below the Stanislaus is problematic. Compliance at Vernalis is only achieved by dilution flows from the Stanislaus River. The temporary reduction in EC at Vernalis does not ensure compliance further downstream where significant agricultural and municipal dischargers contribute additional salt loading. A quick check of monitoring data on the San Joaquin River reveals extended periods where EC levels at Vernalis, Mossdale and Brandt Bridge are above the 700 or 1,000 umhos/L standard.*

The segment proposed for delisting is only that from the Stanislaus River to Vernalis. Staff believe that the salinity at measured at Vernalis is representative of the salinity in this segment.

Comment 4 - *Compliance with the diazinon objective on the Feather River near the confluence with the Sacramento River, where maximum dilution occurs, does not provide assurance that the standard is being met along the entire length of the Feather River below Oroville. This is especially true considering the recent reduction in river monitoring and the levels of diazinon found in tributaries. According to the fact sheets in Appendix F, that provide the basis for the proposed delisting, it appears that no data has been collected since February 2005. Hopefully, this is not the case and we encourage staff to examine more recent data.*

Staff agrees that the diazinon objectives apply to the entire Feather River. The available recent data were mostly collected near the confluence with the Sacramento River and show concentrations well below Water Quality Objectives. These concentrations are low enough to indicate compliance within the entire segment, even if upstream concentrations were several times higher than those measured near the confluence with the Sacramento River. Monitoring data continues to be collected in this segment. Additional, more recent data has been added to the assessment. These data provide further support to the recommendation to de-list.

3. Central Valley Clean Water Association (CVCWA) – Debbie Webster

Comment 1 - *Arcade and Morrison creek should not be listed for Bis(2-ethylhexyl)phthalate (Bis-2) based on 2 exceedances out of 4 samples. Due to widely acknowledged issues with sampling and laboratory contamination in Bis-2 samples, Bis-*

2 should not be 303(d) listed unless exceedances are supported by a large body of evidence from which it is clear that the detected values are not the result of sampling and laboratory contamination.

Staff agrees with this comment. Based upon further review of the data, including supplemental information provided by the commenter, it appears that the listing of Arcade Creek and Morrison Creek for bis(2-ethylhexyl)phthalate is not warranted at this time. The original listing proposals were based on four samples, collected during first flush storm events over a period of four years (one sample per year). In both Arcade Creek and Morrison Creek, reported results for two of the four samples exceeded the California Toxics Rule (CTR) water quality limits for human health, consumption of water and aquatic organisms (1.8 µg/L). Upon further review, it was noted that detected concentrations of bis(2-ethylhexyl)phthalate were documented in both the method and field blanks during the analyses of all samples collected at these two sites. A detected concentration or "hit" reported in a field blank indicates that contamination has occurred at some point during the field sampling or analytical procedures. A hit reported in the method blank is an indication of contamination in the analytical process. According to the commenter, such hits have frequently occurred in this project in the USEPA 625 analyses for phthalates. Given the persistent occurrence of contamination across the four samples analyzed for each site, the reported concentration values are likely in part made up of contamination.

Comment 2 - *Commenter recommends that all of the other trace metal listings be re-evaluated to determine whether these were correctly developed with appropriate hardness data, and do not "double-count" dissolved and total exceedances.*

Staff has reviewed all trace metal assessments that used the hardness based CTR criteria. All proposed listing decisions pertaining to attainment of CTR aquatic life metals criteria in the draft final are based on dissolved metals data with corresponding hardness values. This revision should eliminate any "double counting" of total and dissolved exceedances.

Comment 3 - *Listings for aldicarb, dichlorvos, and oxyfluorfen are not based on appropriately developed Evaluation Guidelines. The Listing Policy allows Evaluation Guidelines to evaluate narrative water quality objectives for developing 303(d) listings. However, the Listing Policy also requires that the Evaluation Guidelines are demonstrated to be scientifically based and peer reviewed, and must identify a range above which impacts occur. For non-threshold chemicals, risk levels must also be consistent with comparable water quality objectives or water quality criteria. The Evaluation Guidelines used for aldicarb, dichlorvis, and oxyfluorfen do not meet these Listing Policy Guidelines: they are based on applying an arbitrary factor of 10 to published LC50 values for sensitive species. This is not a scientifically valid or peer reviewed method for establishing concentrations above which impacts are expected. It does not represent accepted or consensus scientific practice for developing water quality criteria for the protection of aquatic life or other beneficial uses. This method is not consistent with established scientific methods of developing water quality criteria (e.g., USEPA's process) and results in risk levels that are much lower than criteria developed for comparable purposes by USEPA.*

CVCWA recommends removing any evaluation listing based on Evaluation Criteria that does not meet the Listing Policy's guidelines.

Staff agrees that proposed listings should be based on Evaluation Criteria Guidelines in the Listing Policy. Staff believes that the evaluation criteria used was appropriate and does represent application of good science. The 1/10 the LC 50 evaluation criteria is a criteria that was originally established in the Basin Plan in 1990. The criteria was established in recognition of the fact that, for many pesticides being detected in our waters, there was no USEPA, Fish and Game, or other appropriate criteria to use to evaluate potential impacts. The Basin Plan process included an extensive public review process that included receiving input from scientific peer reviewers. Entities involved in the review included the Department of Fish and Game, USEPA, Department of Health Services and others that are qualified to evaluate the science behind the criteria. Fish and Game specifically endorsed the use of the 1/10 the LC 50 criteria. The staff report discussed pesticides from agricultural and residential sources and included implementation provisions for each. It is clear from the record that the Central Valley Water Board intended the criteria to apply to agricultural and urban dominated waterways. Both State Board and USEPA approved the Basin Plan amendment that included the 1/10 the LC50 criteria.

The 1/10 the LC 50 criteria is not arbitrary. It is a reasonable application factor to use based on information about acute to chronic ratios. This criteria was developed in a manner that is consistent with good scientific practice and that use of the criteria is consistent with the Evaluation Criteria Guidelines in the Listing Policy.

See response to comment 1 from Westside San Joaquin River Watershed for more discussion on interpretation of Basin Plan narrative water quality objectives.

4. City of Brentwood – David Mullaney

Comment 1 - Please respond in writing regarding the potential impact for the City of Brentwood's Wastewater Treatment plant if the proposed new listings for Marsh Creek are added to the 303(d) list.

Mercury is on the existing 303(d) list. A TMDL is under development for mercury in the Delta, including Marsh Creek. When the Delta mercury TMDL is adopted, provisions will need to be added to the permit to implement the TMDL. The proposed listings for salinity and boron are being withdrawn. A TMDL has already been adopted that addresses diazinon in Delta waters, including Marsh Creek. The TMDL sets diazinon waste load allocations for NPDES dischargers. The allocations will need to be incorporated into the Brentwood permit. Listings are proposed for toxicity and E.Coli., with TMDLs scheduled for completion in 2021. In the next permit update, staff will need to discuss with dischargers what permit revisions may need to be considered as a result of new 303(d) listings.

Comment 2 - The correct beneficial uses for Marsh Creek do not include municipal (MUN) or agricultural (AG) uses, therefore the salinity and boron listings are not appropriate

Staff agrees and Marsh Creek is no longer proposed to be listed for either salinity or boron.

Comment 3- *The correct beneficial uses for Marsh Creek do not include coldwater habitat (COLD). The fact sheets for toxicity should not cite the cold freshwater habitat beneficial use.*

Staff agrees with the commenter about the correct beneficial uses for marsh creek. The toxicity fact sheets for Marsh Creek have been revised to now list the impacted beneficial use as warm freshwater habitat (WARM).

5. City of Roseville – Art O’Brien

Comment 1 - *Do not list Pleasant Grove Creek nor Dry Creek for dissolved oxygen. In proposing to list Pleasant Grove Creek and Dry Creek for dissolved oxygen, the Regional Water Board did not evaluate and include the City’s effluent discharge monitoring reports. The City has measured dissolved oxygen at two points on Pleasant Grove Creek and four points on Dry Creek on a weekly basis since 2000. When this additional data is included, a conclusion to not list in accordance with the Listing Policy is achieved.*

For the lower reach of Pleasant Grove Creek (below the Pleasant Grove Wastewater Treatment Plant), the majority of samples were found to comply with the 7 mg/l water quality objective. So, if the Regional Water Board must list Pleasant Grove Creek, then only list the reach upstream of the Pleasant Grove Wastewater Treatment Plant.

Staff has included the data provided by the City of Roseville and revised the fact sheet to recommend that the section of Pleasant Grove upstream from the wastewater treatment plant be listed as impaired for dissolved oxygen. Staff is recommending that the segment downstream from the treatment plant should not be listed. Regarding Dry Creek (Placer and Sacramento Counties), staff is not proposing that this waterbody should be listed for low dissolved oxygen.

Comment 2 - *The Regional Water Board staff should reconsider the appropriateness of listing the upper Pleasant Grove Creek for dissolved oxygen. The current dissolved oxygen standard applicable to Pleasant Grove Creek was assigned, in part, based on the Basin Plan’s “tributary statement,” which designated the COLD beneficial use year-round. Based on the fact that upper Pleasant Grove Creek is a valley floor waterbody that is seasonally low-flow and ephemeral in nature, and supports abundant plant and animal communities, it is highly unlikely that a substantial change in the frequency with which this reach experiences dissolved oxygen levels below 7 mg/l could be affected by reasonable, implementable load restrictions placed on nutrients or other constituents/parameters affecting reach dissolved oxygen levels. If natural factors are the primary reason why the dissolved oxygen levels in the upper reach of Pleasant Grove Creek fall below 7 mg/l for a portion of the day during the late spring through fall period, annually, then 303(d) listing the waterbody reach and conducting a TMDL will not meaningfully change the situation.*

Determining the appropriateness of currently designated beneficial uses is not part of this listing effort. Assuming the Regional Water Board has inappropriately designated one or more uses for a listed waterbody, the appropriate process is to include any impaired segments on the §303(d) list. Then, in accordance with State Water Board, *Water Quality Control Policy for Addressing Impaired Waters, Regulatory Structure and Options* (“TMDL Policy”), § I.B during the development of a TMDL or its implementation plan, staff may determine that the standards are inappropriate or imprecise, thus rendering water quality attainment impossible unless standards are modified. In such cases, staff will undertake a limited review of the standards. If staff determines that the policies underlying the existing standards should be revisited, in lieu of crafting an implementation plan under this policy, the impaired water is referred to the Water Quality Standards staff for consideration of an appropriate standards action, through the appropriate processes. Listing such water bodies should therefore not lead to “inappropriate TMDLs.” In addition, the listing may expedite the Regional and State Water Boards’ consideration of removing designated uses.

Your comments will be forwarded for prioritization during the upcoming Triennial Review of the Basin Plan, scheduled for the Regional Water Board’s consideration this summer.

Comment 3 - Do not list Kaseberg Creek for dissolved oxygen. The proposed listing of Kaseberg Creek is based on seven discrete measurements over two consecutive days. In fact, six of the seven measurements were gathered on the same day. The primary line of evidence for a proposed listing should not rely on samples collected over a single day, and in fact, the Listing Policy (Section 6.1.5.3) recommends that data in support of a proposed listing be available from two or more seasons.

Staff agrees that the samples used in the line of evidence cannot be used as the primary justification for listing this waterbody as impaired, per the Listing Policy. The proposed listing of Kaseberg Creek for low dissolved oxygen has been withdrawn.

Comment 4 - Do not list the entire length of Pleasant Grove Creek for pyrethroid related sediment toxicity. Instead only list Pleasant Grove Creek upstream of Fiddymment Road. Data used in the listing proposal and data subsequently collected in 2006 and 2007 do not support the proposed action. Sources of pyrethroids entering Pleasant Grove Creek are believed to be related to residential land uses. At a point near Fiddymment Road on Pleasant Grove Creek, land use transitions from suburban residential to rural county agricultural. Samples collected downstream of this transition in the agricultural zone show an absence of toxicity. Based on data collected by Weston et al. (2005) and based on allowance for defining independent reaches under Section 303(d), it is not appropriate to propose Pleasant Grove Creek for listing in its entirety.

See response to comments provided by the Pyrethroid Working Group for the rationale supporting the pyrethroid listing for Pleasant Grove Creek. Staff agrees with the comments on the extent of the impairment. The proposed listing is now for Pleasant Grove Creek upstream of Fiddymment Road.

Comment 5 - Do not list South Branch Pleasant Grove Creek for dissolved oxygen. Although the data driven line of evidence apparently supports the proposed listing of South Branch Pleasant Grove Creek for dissolved oxygen, in reality the proposed listing

is based on as few as 21 samples, fifteen of which were collected on a monthly basis over the 2001 calendar year. The remaining 6 were collected on the same day in October of 2004. Although the proposal to list is strictly based on an implementation of the binomial distribution methodology of Section 3.2 of the Listing Policy, the robustness of such a small and temporally biased dataset call into question the validity of the proposed listing. Dissolved oxygen, particularly in such shallow and heavily urbanized drainages, naturally fluctuates throughout the day and season, and it is not reasonable to expect that monthly grab sampling will adequately describe the overall dissolved oxygen condition. Where dissolved oxygen TMDLs have been prepared on rivers such as the San Joaquin, continuous oxygen measurements are the standard.

Staff reviewed the line of evidence for the dissolved oxygen decision for South Branch Pleasant Grove Creek. The decision has been revised to include all available SWAMP data (December 2000 through October 2004). The data included in this decision meets the temporal requirements specified in the Listing Policy and the listing decision will not be changed.

Comment 6 - *Data for the South Branch Pleasant Grove Creek at Pleasant Grove Boulevard was assigned to Pleasant Grove Creek.*

Staff removed the South Branch Pleasant Grove Creek dissolved oxygen data from the Pleasant Grove Creek decision. This data will now be included on the South Branch Pleasant Grove Creek decision (Decision ID 16340).

6. Coarsegold Resource Conservation District – Tom Wheeler, President

Comment 1 - *The Fresno River should not be listed due to low dissolved oxygen. The standard applied to this segment was 8 mg/L, but the standard applied should be 5 mg/L. The sample size used for the proposed listing is small. Additional data from more recent studies (attached as a graph) do not support the listing.*

The Basin Plan currently designates the Fresno River above Hensley Reservoir as COLD for freshwater habitat, therefore the objective for dissolved oxygen is a minimum of 7 mg/L. The assessment has been revised to compare the available data to 7 mg/L, instead of 8 mg/L. Using 7 mg/L instead of 8 mg/L did not change the recommendation, which is still to list this segment as impaired by low dissolved oxygen.

Comment 2 - *CRCD objects to the finding that cause of the impairment is a pollutant. There is a direct correlation between low DO and flow, and a number of other factors control dissolved oxygen concentrations. The primary factors controlling dissolved oxygen do not involve discharge of a pollutant. It is difficult to imagine how an appropriate TMDL could be developed of attained for this impairment.*

Low dissolved oxygen is an impairment and the Central Valley Water Board is required under the Listing Policy to place on the list of water quality limited segments when standards are not obtained. TMDLs have been developed and adopted to address low dissolved oxygen, including one for the San Joaquin River.

Comment 3 - *The Board may essentially be placing the Fresno River on the 303(d) list and leaving the County without any reasonable way to get it off.*

If data available indicates attainment of standards, this segment would be de-listed according to section 4 of the Listing Policy. If standards are deemed inappropriate, other responses such as revision of standards, could also result in waterbody segments being removed from the 303(d) list, as described in the State's Policy for Addressing Impaired Waters (SWRCB, 2005).

Comment 4 - *AB 885 regulations have potentially expensive requirements for existing septic systems within 600 feet of an impaired waterbody. There are numerous property owners on the Fresno River that would meet this criteria, many of them low income.*

Regional Board staff is required to assess water quality data and propose listing determinations using the State Water Board's Listing Policy. Comments on the draft septic tank regulations should be directed towards the State Water Board.

Comment 5 - *Since the evidence does not support that intermediary pollutants such as ammonia are present, it is unlikely that septic tanks are contributing to the low levels of DO. The most likely cause is low flow.*

Staff did not propose to include septic tanks in the list of potential sources. The proposed list would show that the potential sources are unknown.

Comment 6 - *Given the above, it would be irresponsible and unpardonable to take the proposed action of listing the Fresno River on the 303(d) List.*

Staff is required to follow the State's Listing Policy and recommend listing when available data indicate non-attainment of Water Quality Standards.

7. Contra Costa Clean Water Program – Donald P. Freitas

Comment 1 - *Which water bodies are the waterways from Eastern Contra Costa (Marsh Creek, Kellogg Creek and Sand Creek) part of or tributary to? Is there a map of these waterways?*

Parts of Marsh Creek and Kellogg are both inside and outside the legal Delta. The parts of Marsh Creek and Kellogg Creek that are in the Delta are in the "Delta Waterways (western portion)". So, in general, the 303(d) listings for the Western Delta apply to the parts of Marsh Creek and Kellogg Creek that are in the legal Delta. If there are specific 303(d) listing decisions for the segments of Marsh Creek or Kellogg Creek in the legal Delta, those specific listing decisions would apply instead of the more general listing decisions for the Delta Waterways. Sand Creek is outside of the legal Delta, so listings for the Western Delta do not apply to Sand Creek. The draft final Integrated Report contains an appendix with maps showing the Delta Waterways as they are divided into different portions in the 303(d) list.

Comment 2 - *What is the boundary between the San Francisco Bay and the Central Valley Water Boards and what is the Delta Boundary?*

The boundary between the San Francisco Bay and the Central Valley Water Board is described in statute, but falls between Antioch and Pittsburg. The Regional Water Board boundaries are described in section 13200 of the California Water Code. The legal Delta Boundary is described in section 12220 of the California Water Code. If there are any discrepancies between recent maps and statute, then the statute language takes precedence.

Comment 3 - *Listing Policy 6.1.5 contained in the State Water Resources Control Board's Water Quality Policy for Developing California's Clean Water Act Section 303(d) List adopted September 2004 (State Listing Policy) states: "Before determining if water quality standards are exceeded, RWQCBs have wide discretion establishing how data and information are to be evaluated, including the flexibility to establish water segmentation..." Listing Policy 6.1.5.4 states: "In the absence of a Basin Plan segmentation system, the RWQCBs should define distinct reaches based on hydrology and relatively homogeneous land use." The Listing Policy recognizes that an impact to one or several reaches of the stream does not necessarily constitute a problem in the entire stream; and, listing should be confined to those segments or reaches where the evidence supports a listing decision. By limiting listings to the impacted creek segments, local governments will be better able to focus their efforts and resources on actual impairments resulting in faster attainment of water quality standards.*

Staff evaluated monitoring data and needed to make a determination on the size of the segment that the monitoring data represented. When staff made these determinations, staff took into account many factors including: location of tributary streams that would provide dilution, presence of diversions and weirs, changes in waterbody characteristics (velocity, depth, width, etc.), land use characteristics and any other relevant information. Staff evaluated readily available information to make determinations on segmentation of water bodies. Staff did not visit all sites included in the Integrated Report to try to gather information that would assist in segmentation decisions. Site specific information provided by commenters has been used by staff to adjust the proposed waterbody segments included in the Integrated Report.

Comment 4 - *The Marsh Creek, from Marsh Creek Reservoir to San Joaquin River partly in Delta Waterways, western portion, listing for unknown toxicity and sediment toxicity seems to be based on the beneficial use designation of Cold Freshwater Habitat. The Cold Freshwater Habitat beneficial use is not appropriate and the Warm Freshwater Habitat is more appropriate given the downstream, lower elevation nature of this segment of the creek.*

The draft list incorrectly identified COLD as a beneficial use of Marsh Creek. Marsh Creek is assigned the WARM and not the COLD beneficial use. The fact sheets have been revised and now reference the Warm Freshwater Habitat beneficial use.

Comment 5 - *The Sand Creek (tributary to Marsh Creek, Contra Costa County; partly in Delta Waterways, western portion) listing for unknown toxicity appears to be based on the beneficial use designation of Cold Freshwater Habitat. The Cold Freshwater Habitat beneficial use is not appropriate and the Warm Freshwater Habitat is more appropriate given the downstream, lower elevation nature of this segment of the creek.*

The draft list incorrectly identified COLD as a beneficial use of Sand Creek. Sand Creek is assigned the WARM and not the COLD beneficial use. The fact sheets have been revised and now reference the Warm Freshwater Habitat beneficial use. The proposed unknown toxicity listing would be appropriate whether this waterbody segment was designated as warm or cold freshwater habitat.

Comment 6 - *It seems inappropriate to list the entire length of Sand Creek (tributary to Marsh Creek, Contra Costa County; partly in Delta Waterways, western portion) for pollutants based on samples taken only at the far downstream end. The Regional Water Board should consider breaking this creek into segments so only those portions that have actually been sampled and found to contain pollutants above allowable levels be listed.*

Regional Water Board staff is unaware of any hydrology or land use characteristics of Sand Creek that would justify segmenting this Creek. See response to Comment #3, above.

Comment 7 - *The Kellogg Creek (tributary to Clifton Court Forebay, Contra Costa County; partly in Delta Waterways, central and western portion) listing for unknown toxicity and sediment toxicity appears to be based on the beneficial use designation of Cold Freshwater Habitat. The Cold Freshwater Habitat beneficial use is not appropriate and the Warm Freshwater Habitat is more appropriate for the downstream portions of the creek where the samples were taken (Kellogg Creek at Highway 4 and along Hoffman Lane).*

Kellogg Creek is partly in the Sacramento-San Joaquin Delta, as defined in section 12220 of the California Water Code. The remainder is tributary to the Delta. The beneficial uses of the Delta include Cold Freshwater Habitat. In accordance with the Water Quality Control Plan for the Sacramento River and San Joaquin River (Basin Plan), the beneficial uses of any specifically identified waterbody generally apply to its tributary streams. Therefore, the Cold Freshwater Habitat beneficial use must be protected in Kellogg Creek. Determining the appropriateness of currently designated beneficial uses is not part of this listing effort. Assuming the Regional Water board has inappropriately designated one or more uses for a listed waterbody, the appropriate process is to include any impaired segments on the §303(d) list, and then correct the standards and de-list the waterbody rather than adopting a TMDL. (State Water Board, *Water Quality Control Policy for Addressing Impaired Waters, Regulatory Structure and Options* ("TMDL Policy"), § I.B.)

Your comment will be forwarded for prioritization during the upcoming Triennial Review of the Basin Plan, scheduled to begin this summer. See response to comment 2 for City of Roseville.

Comment 8 - *It seems inappropriate to list the entire length of Kellogg Creek (tributary to Clifton Court Forebay, Contra Costa County; partly in Delta Waterways, central and western portion) for pollutants based on samples taken only at the far downstream end. The Regional Water Board should consider breaking this creek into segments so only those portions that have actually been sampled and found to contain pollutants above allowable levels be listed.*

The Kellogg Creek listings have been revised to list Kellogg Creek from the Los Vaqueros Reservoir to Discovery Bay.

Comment 9 - *Kellogg Creek is not a tributary to Clifton Court Forebay. Upper Kellogg Creek flows into Los Vaqueros Reservoir which in turn discharges to Kellogg Creek which in turn flows into Discovery Bay, downstream of Clifton Court Forebay. So, the description of Kellogg Creek needs to be changed.*

The Kellogg Creek assessments have been revised to correctly describe Kellogg Creek as a tributary to Discovery Bay.

8. Department of Fish and Game – Dean Marsten

Comment 1 - *Department of Fish and Game supports the proposed listings for temperature in the San Joaquin, Tuolumne, Stanislaus and Merced Rivers.*

Comment acknowledged.

9. East San Joaquin Water Quality Coalition – Parry Klassen

Comment 1 - *The total recoverable metal data for copper and lead from Ash Slough, Berenda Creek, Cottonwood Creek, Dry Creek, Duck Slough, Highline Canal and Jones Drain were not collected under an NPDES permit nor are inputs to these water bodies similar to inputs from a point source discharge. Therefore the listings of the water bodies due to metals are incorrect as they improperly use total recoverable metal results with dissolved metal criteria.*

Staff has reviewed all trace metal assessments that used the hardness-based CTR criteria. All proposed listing decisions pertaining to attainment of CTR aquatic life metals criteria in the revised draft are based on dissolved metals data with corresponding hardness values. Therefore, staff is recommending that the water bodies mentioned above should not be listed as impaired based on total metals data.

Comment 2 - *Jones Drain should not be listed because the drain has been misidentified and, in addition, the waterbody is retained on private property.*

Upon review of the information presented, staff has concluded that the waterbody proposed for listing as Jones Drain is not within the scope of the proposed 303(d) list update. The proposed listings are withdrawn.

Comment 3 - *Based on the [Sacramento River/San Joaquin River Basin Plan], the tributary rule applies beneficial uses of the San Joaquin River to upstream water bodies that do not have listed beneficial uses. This has resulted in many water bodies within the ESJWQC region being listed on the proposed 2008 303(d) list. If these water bodies are listed based on beneficial uses applied due to the tributary rule, the result will be the implementation of a costly TMDL aimed to protect unattainable and sometimes conflict-*

ing beneficial uses. Resolution 2005-0050, Water Quality Control Policy for Addressing Impaired Waters: Regulatory Structure and Options, states that a waterbody may be delisted if “incompatible uses exist” which is clearly the case for many of the agricultural drains which have been assigned municipal drinking water beneficial uses. It is the opinion of the ESJWQC that the State and Regional Boards should prioritize the evaluation of beneficial uses during the next tri-annual San Joaquin Basin Plan amendment (2009) review.

The ESJWQC is aware of similar situations where beneficial uses have been contested by entities within the Tulare [Lake] Basin Plan area during the associated Basin Plan amendment process. The entities that supplied documentation regarding inappropriate beneficial use designations were told that there are insufficient funds to review those documents. The ESJWQC would like to take this opportunity to remind the State and Regional Boards of the importance of reviewing and updating beneficial uses. Due to the influx of obtainable water quality information through programs such as the ILRP, data are now available for water bodies that previously had little or no water quality information. As such, many of the water bodies within agricultural areas have not been assigned appropriate beneficial uses and it is apparent that the current listings of recreation and drinking water are unrealistic and incompatible with the current hydrology and land use of those areas. This problem is more widespread than the ESJWQC region and the Coalition hopes that the State and Regional Boards realize the importance of committing resources to thoroughly review and update currently assigned beneficial uses.

Determining the appropriateness of currently designated beneficial uses is not part of this listing effort. Assuming the Regional Water Board has inappropriately designated one or more uses for a listed waterbody, the appropriate process is to include any impaired segments on the §303(d) list. Then, in accordance with State Water Board, *Water Quality Control Policy for Addressing Impaired Waters, Regulatory Structure and Options* (“TMDL Policy”), § I.B during the development of a TMDL or its implementation plan, staff may determine that the standards are inappropriate or imprecise, thus rendering water quality attainment impossible unless standards are modified. In such cases, staff will undertake a limited review of the standards. If staff determines that the policies underlying the existing standards should be revisited, in lieu of crafting an implementation plan under this policy, the impaired water is referred to the Water Quality Standards staff for consideration of an appropriate standards action, through the appropriate processes. Listing such water bodies should therefore not lead to “inappropriate TMDLs.” In addition, the listing may expedite the Regional and State Water Boards’ consideration of removing designated uses.

Your comments will be forwarded for prioritization during the upcoming Triennial Review of the Basin Plan, scheduled for the Regional Water Board’s consideration this summer.

10. Grassland Basin Drainers – Joe McGahan (Summers Engineering)

Comment 1 - *Commenter supports the proposed delisting for selenium and salt.*

Comment acknowledged.

11. Hume Lake Christian Camps – Jon Nelson

Comment 1 - *Hume Lake should not be listed for low dissolved oxygen levels based on the standard for the cold freshwater habitat beneficial use. The very small and narrow depth of dissolved oxygen data is insufficient to make any extrapolated determination on a body of water. Eight (8) days of sampling taking over 3 years is not even enough to form a baseline, let alone a determination. Furthermore, to look at a single string of data without any supporting matrix underlines the insufficient evidence for the determination of an impaired body of water using your current breadth of data.*

The Tulare Lake Basin Plan designates the cold freshwater habitat beneficial use for Hume Lake. The Listing Policy was followed in evaluating the monitoring data that resulted in the recommendation to list Hume Lake for dissolved oxygen. A limited review of the appropriateness of designated uses is completed when work on a TMDL is initiated. The Hume Lake TMDL is not scheduled to start for several years. However, as is discussed in the response to the next comment, the information submitted by the commenter about beneficial uses in Hume Lake will be available for the Regional Water Board to consider in the Triennial Basin Plan Review process.

Comment 2 - *The “Beneficial Use” determination of a cold water fishery does not fit the intent of this body of water. Hume Lake was made for use as a mill pond for the lumbering of Giant Sequoias. Hume Lake was never intended for the purposed use as a cold water fishery. This is evidenced by the lack of fish supporting elements of the dam, no fish ladder or bypass for upstream spawning. Also evidenced by the stumps (organics left in the lake) and the shallowness at Long Meadow Creek inlet. I know trying to change the beneficial use of Hume Lake exceeds the scope of this determining board. But to acknowledge the questionability of the current “Beneficial Use” determination further underlines the insufficient evidence to support a determination for the Hume Lake 303(d) listing.*

The current listing effort is focused on reviewing readily available monitoring information and evaluating whether designated beneficial uses are impaired. This effort does not include evaluating the appropriateness of designated uses. Rather, beneficial use assessments are a basin planning issue that should be prioritized as part of the Triennial Review for the Basin Plan.

The information you provided on the aquatic life characteristics of Hume Lake will be forwarded for consideration during the current Triennial Review of the Tulare Lake Basin Plan.

12. Kings River Conservation District – David Orth

Comment 1 - *The proposed listing of the Lower Kings River for unknown toxicity is not appropriate. The data used to support the staff recommendation was data collected by the Coalition and the listing recommendation was based on “significantly reduced algae growth” or “toxicity”. That the algal “toxicity” results were not reflective of water quality*

but related to laboratory methods and the physical properties of Kings River water. No cause of the toxicity could be determined. Samples upstream of agricultural discharges had similar results showing reduced algal growth. The effects on reduced algal growth when compared to a control may have been caused by physical characteristics of Kings River water, which had much lower salinity, pH and hardness than that of the control sample.

The USEPA algal toxicity test used is an accepted method for fresh waters with a wide range of physical properties, including waters of low salinity such as the Kings River. The fact that several of the samples from this waterbody did not exhibit toxicity indicates that algal toxicity was not due to an inherent physical property of Kings River Water. No evidence has been provided clearly showing that the laboratory results were invalid due to incorrect lab procedures and/or the properties of Kings River water. Laboratory manipulations could have determined the relevance of the physical properties on test results. The literature cited in regards to delayed algal growth is not directly relevant as these studies were performed on *Anabaena flos-aquae*, a cyanobacteria, *Navicula pelliculosa*, a diatom, and *Lemna gibba*, a vascular plant, and the growth of these species are different from green algae. Since there is no convincing evidence justifying not assessing the existing toxicity data for this segment, and there was a high frequency of toxicity observed, staff is required to recommend listing this waterbody segment for unknown toxicity under Listing Policy section 3.6. Since the cause of toxicity is unknown, and there were indications of toxicity upstream of agricultural discharges, the proposed listing now cites the potential source as unknown. Staff would like to work with the coalition to help ensure that the laboratory data generated is useful in determining potential causes of toxicity. If additional data or information shows that this segment is not exhibiting toxicity, it can be de-listed in future listing cycles.

13. Lassen National Forest - Kathleen Morse

Comment 1 - *The Forest Service manages 750,708 acres (27 percent) within these watersheds as part of the Lassen National Forest. A primary objective of the Forest Service in managing these lands is to improve and protect watershed conditions (USDA Forest Service Strategic Plan, 2007). Forest Service recognizes its responsibilities to protect water quality and supports the efforts of the Regional Board to enforce the Clean Water Act and the California Water Code through revision of its 303(d) list of impaired water bodies.*

Water quality in the national forests in California has been protected since 1981 through a Management Agency Agreement (MAA) between the State Water Resources Control Board (State Board) and the USFS. This MAA provides for a USFS Water Quality Management Program (WQMP) that is based on Best Management Practices (BMPs) developed for a wide variety of USFS resource-management activities. These BMPs were certified by the State Board and approved by the U.S. Environmental Protection Agency (USEPA).

The State's Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program (2004) supports the use of BMPs and MAAs as the primary mechanisms for meeting water quality standards on public lands. As described in this

policy, successful MAAs are more efficient than direct regulation by the Regional Boards, limit unnecessary duplication of effort, and leverage limited staffing and financial resources. BMP implementation and effectiveness are monitored annually by the USFS and reported to the Regional Board. Between 2002 and 2008, BMPs monitored on the Lassen National Forest were found to be effective in 89 percent of 502 randomly selected site evaluations. I therefore feel confident that resource management activities on the Lassen National Forest have provided a high level of protection for beneficial uses of water.

Some water bodies that are proposed for addition to the State's 303(d) list of impaired water bodies are within or downstream of the Lassen National Forest. The proposed listings have potential to significantly affect our use of federally appropriated funds and our management of NFS lands. Therefore, I encourage the Board to carefully weigh the available evidence and base its decisions on the proposed listings on adequate scientific information.

The result of the staff analysis of readily available data is that some waterbody segments on Forest Service land are not meeting water quality standards. Staff recommends placing these waterbody segments on the 303(d) list as "Category 5" listings (evidence shows at least one use not supported and a TMDL is needed).

USEPA guidance (USEPA 2006) recognizes that alternative pollution control requirements may obviate the need for a TMDL. Specifically, segments are not required to be included on the Section 303(d) list (what is referred to as Category 5) if "[o]ther pollution control requirements (e.g., best management practices) required by local, State, or Federal authority" are stringent enough to implement applicable water quality standards (WQS) (see 40 CFR 130.7(b)(1)) within a reasonable period of time. These alternatives to TMDLs are commonly referred to as "Category 4b" listings. USEPA has provided guidance on what information would need to be provided. Based on USEPA guidance, the rationale for placement of a segment/pollutant combination into Category 4b instead of Category 5 should address the following six elements:

1. Identification of segment and statement of problem causing the impairment;
2. Description of pollution controls and how they will achieve water quality standards;
3. An estimate or projection of the time when WQS will be met;
4. Schedule for implementing pollution controls;
5. Monitoring plan to track effectiveness of pollution controls; and
6. Commitment to revise pollution controls, as necessary. (USEPA, 2006)

Since this information is not currently readily available for any of the specific proposed listings in the Region, including those on Forest Service land, staff is not recommending any "4b" listings within the current listing cycle. When information addressing the six elements described above becomes available, staff can propose placing those pollutant/segment combinations in category 4b as an alternative to TMDL development. Even if a TMDL is eventually developed for these waters, the MAA could be the mechanism selected to achieve water quality improvements.

Staff recognizes that the Forest Service has a program to implement BMPs and monitor their effectiveness. Staff acknowledges the efforts of the Forest Service, as authorized steward under the 1981 MAA with the State Water Resources Control Board (SWRCB), for maintaining water quality in the Forest to Basin Plan standards using Best Management Practices (BMPs). Staff is encouraged that BMPs in Lassen National Forest were found to be effective in 89 percent of 502 randomly selected site evaluations. The presence of a BMP implementation and evaluation program does not necessarily guarantee that there will be no impairments. Staff wants to continue to work with the Forest Service on the development of your program so that, in future list updates, there is adequate information and justification for the Regional Water Board to consider placement of some water listings on Forest Service land in Category 4b as an alternative to TMDL development.

Comment 2 - *The Lassen National Forest is actively protecting water quality in Lake Britton and its tributaries. Within the Hat Creek watershed, a tributary to Lake Britton, the Forest Service plans to implement the N49 and Old Station projects. These projects will reduce the risk of catastrophic wildfire and consequent water quality impairment. The Forest Service implemented \$27,000 in emergency watershed protection treatments on an unnamed tributary to Lake Britton following the Venture fire, which was part of the 2008 SHU-Lightning complex.*

Lake Britton is recommended for listing as impaired because of mercury. The data clearly supports the recommended listing. No information is available that indicates that the wildfires caused or played a significant role in the impairment. Therefore, staff does not believe a revision to the recommendation is warranted. Staff is interested in working with the Forest Service to develop a program that will address this impairment in the long run.

Comment 3 - *Samples sites used for collecting water quality data for listing Butte Creek for pH and mercury are 35 miles downstream of the Forest boundary. Tissue samples were taken from Black Crappie, Bluegill, Carp, Channel Catfish, Largemouth Bass, and Redear Sunfish. None of these fish can be found on National Forest System (NFS) lands. Rainbow Trout, Brook Trout, and Brown Trout can be found in Butte Creek within NFS lands. Unless evidence for impairment of this waterbody on NFS lands is available, the listing should not include those upper reaches of Butte Creek within Lassen National Forest. Within the Butte Creek watershed, the Forest is working with the NRCS, Butte County Resource Conservation District, and Butte County Department of Public Works in implementing \$800,000 of watershed restoration on NFS and Bureau of Land Management (BLM) lands.*

Gold mining has occurred along the entire length of upper Butte Creek (USGS, 2005). Although fish samples were only collected near the confluence with the Sacramento River, sources of mercury exist throughout the entire watershed. Therefore, staff continues to recommend listing the entire reach of Butte Creek on the 303d list as impaired by mercury.

Comment 4 - *The Lassen National Forest manages 5,206 acres of the 33,608 acre Fall River watershed. The NFS lands in this watershed include less than one mile of ephemeral streams tributary to the Fall River. The Lassen NF implements BMPs to control non-point source pollution from lands it manages within the Fall River watershed.*

Comment acknowledged.

Comment 5 - *Both the Lassen National Forest and Plumas National Forest are planning restoration activities within the North Fork Feather River watershed downstream of Lake Almanor as part of the \$83 million settlement from the 2000 Storrie fire.*

Comment acknowledged.

Comment 6 - *Central Valley Regional Water Quality Control Board identifies agriculture/agriculture grazing as source of low dissolved oxygen, organic enrichment, and temperature, water in the Pit River. However, no data are presented to support these listings at this time. I recommend that you review the FEIS for re-licensing FERC Project No. 233 for water quality data and defer a decision on listing until adequate information is available.*

The Pit River listing, including the named potential sources, is already on the 303(d) list from previous listing cycles. This listing was not re-visited during this list update. A thorough source analysis would be conducted prior to initiation of any program to address these impairments.

14. Madera County – Jerald James, Planning Director

Comment 1 - *Fresno River data used for this assessment is older data and was collected in the late summer. This data should not be used for the decision.*

Samples representing critical time periods, such as the data used in this assessment, are appropriate to assess attainment of standards.

Comment 2 - *The assessment should have used the 5 mg/L criteria for WARM designated waterbodies instead of the 8 mg/L criteria that was used.*

The Basin Plan currently designates the Fresno River above Hensley Reservoir as COLD for freshwater habitat- therefore, the water quality objective is 7 mg/L. Revision of water quality standards is not within the scope of the Integrated Report. The assessment has been revised to use 7 mg/l, instead of 8 mg/L. Using 7 mg/L instead of 8 mg/L did not change the recommendation, which is still to list this segment as impaired by low dissolved oxygen. See response to comment 2 from City of Roseville for discussion of Triennial Basin Plan Review regarding beneficial use evaluation.

15. Madera County – Tom Wheeler, Supervisor, District 5

Comment 1 - *Fresno River data used for this assessment is older data and was collected in the late summer. This data should not be used for the decision.*

See response to Madera County Planning Department comment #1.

Comment 2 - *The assessment should have used the 5 mg/L criteria for WARM designated waterbodies instead of the 8 mg/L criteria that was used.*

See response to Madera County Planning Department comment #2.

Comment 3 - *The commenter is concerned that new draft regulations for septic systems may require expensive retrofits to existing septic systems if located near an impaired waterbody.*

Regional Board staff is required to assess water quality data and propose listing determinations using the State Water Board's Listing Policy. Comments on the draft septic tank regulations should be directed towards the State Water Board.

Comment 4 - *The commenter requests that the Regional Board offer more outreach regarding potential listings.*

The original data solicitation notice for the Integrated Report was sent out in December 2006. Staff released a draft update of the 303(d) list in January 2009 for a 45-day comment period. Staff held a public meeting in March 2009 to discuss the draft Integrated Report with stakeholders. Staff has been available to discuss the draft Integrated Report with any interested parties and have had discussions with several. States are required to provide frequent updates to the 303(d) list to USEPA, therefore the staff cannot delay completing the draft integrated report in order to provide for more outreach at this time. Staff will continue to work with stakeholders in updating the 303(d) List.

16. Modesto and Turlock Irrigation Districts – Tim Ford

Comment 1 - *The Tuolumne River should not be listed for either diazinon or chlorpyrifos because the number of exceedances are less than the number that would require listing in Table 3.1 of the Listing Policy.*

As discussed in the Staff Report, in addition comparing the number of observed exceedances with tables 3.1, 3.2, 4.1 and 4.2 of the Listing Policy, when a Basin Plan objective, CTR criterion, or other water quality criteria contains an explicit maximum exceedance frequency, this exceedance frequency is also used to assess attainment of standards under sections 3.11 and 4.11 of the Listing Policy. In other words, if either method indicated an impairment, staff recommended listing the waterbody. In the case of the Tuolumne River, exceedances of the diazinon and chlorpyrifos criteria concentrations occurred more frequently than the once in three year allowable exceedance frequency specified in the criteria. Therefore diazinon and chlorpyrifos listings for the Tuolumne River are proposed under section 3.11 of the Listing Policy. These fact sheets have been revised to more clearly cite section 3.11 of the Listing Policy.

17. Pacific Gas and Electric – Susan Bragagnolo

Comment 1 - The water segments that are currently assessed as one contiguous segment should be split into appropriate river reaches based on altitude, physical, biological or chemical conditions, and then river segments which have no evidence of impairment would not be listed.

PG&E submitted a substantial amount of new information (after the filing date) to support the recommendation to break the Feather River into segments. Due to the extensive nature of the data and information that were submitted after the solicitation period had closed and the complexity of the North Fork Feather River, staff did not re-evaluate the segmentation of the North Fork Feather River in this listing cycle. The information on segmentation received from the commenter, who proposed different segmentation in the two different submittals, was not conclusive in terms of the most appropriate segmentation. Therefore, no changes to the current segmentation are proposed.

Comment 2 - The use of the Sullivan guideline with the binomial distribution implies that the report is being used as an objective rather than a guideline.

Staff did not re-evaluate the two State Water Board temperature listings (Feather River, North Fork, and Willow Creek in Madera County) added by the State Water Board in 2006 using the Sullivan Report as an evaluation guideline. Nevertheless the application of an evaluation guideline to interpret narrative objectives for the purpose of 303(d) listing decisions is appropriate under the Listing Policy.

Comment 3 - The North Fork Feather River (NFFR) mercury listing should only be for the NFFR in Big Bend Reach (Big Bend Reservoir specifically).

Staff agrees that the North Fork Feather River below Lake Almanor mercury data should be assessed separately for the five different reaches defined by five impoundments which act as barriers to fish. Staff has revised this assessment using these five segments. Based on the result of the revised assessment, staff is proposing the North Fork Feather River should be listed for mercury from Poe Reservoir Dam to Lake Oroville, which includes Big Bend Reservoir.

Comment 4 – The entire North Fork Feather River is proposed for listing for PCBs. The exceedances only occurred in samples from the Belden Reach, Poe Reach (Poe Reservoir Only), and Big Bend Reach (Big Bend Reservoir Only). Therefore only these segments should be listed.

The data indicate elevated PCBs throughout the North Fork Feather River. Sampling locations with elevated PCBs included locations near the upstream and downstream ends of this segment. Data or information showing attainment of standards in the other reaches of this segment are not available. Therefore, staff is not recommending further subdividing this listing.

Comment 5 – The proposed listing of the Feather River, North Fork for unknown toxicity should only apply to the Big Bend Reach.

Staff agrees with this comment. The proposed listing is now from Poe Reservoir Dam to Lake Oroville.

Comment 6 - There is insufficient information to list the North Fork of the Feather River for temperature.

The North Fork of the Feather River is currently on the 303(d) list for water temperature. Due to the extensive nature of the data and information that were submitted after the solicitation period had closed and the complexity of this assessment, staff did not re-evaluate the temperature listing for the Feather River, North Fork. Staff would have needed to solicit input from other stakeholders on the information submitted and evaluate whether additional information needed to be requested from PG&E and others to make a determination on this request. There was insufficient time and resources to complete this complex evaluation on the time schedule for bringing this item to our Board. The information submitted that was submitted on this listing will be evaluated, along with other readily available data in subsequent listing cycles. The "original" fact sheet contained in this report documents the State Water Board's assessment of temperature in the North Fork Feather River, which has not been changed in the current listing cycle. In addition, commenters have the opportunity to present information to State Water Board when they consider approval of the Integrated Report.

Comment 7 - On-going assessments of the North Fork Feather River are being conducted. These studies will provide information which should be used in making any temperature determination for this River.

Staff used data and information that was readily available during the data solicitation period to make listing recommendations. Data and information collected in the future will be used to adjust future 303(d) lists, as appropriate, and to assist in developing a control strategy to address the impairment.

Comment 8 - There is insufficient information to list Willow Creek (Madera County) for temperature.

Willow Creek in Madera County is currently on the 303(d) list for water temperature. Due to the extensive nature of the data and information that were submitted after the solicitation period had closed, and the complexity of this assessment, staff was not able to re-evaluate the temperature listing for Willow Creek in Madera County. The information submitted on this listing will be evaluated, along with other readily available data in subsequent listing cycles. The "original" fact sheet contained in this report documents the State Water Board's assessment of temperature in Willow Creek which has not been changed in the current listing cycle. See also response to previous comment.

Comment 9 – The South Fork Yuba River should not be listed for high temperature. The USEPA region 10 criteria used are not appropriate for California streams and fish populations.

The criteria applied were for the protection of species native to, and present in, the South Yuba. Also, see responses to SJRGA comments on these criteria.

Comment 10 – Current Basin Plan beneficial use designations are inappropriate for the South Fork Yuba River.

Determining the appropriateness of currently designated beneficial uses is not part of this listing effort.

Comment 11 – *The South Yuba River temperatures would “naturally” exceed the USEPA Region 10 Criteria between Lake Spaulding and Englebright Reservoir. Therefore there is no justification for listing any reach of the South Yuba River for temperature.*

Staff was required to follow the State’s Listing Policy, which lead to the proposed listing. Also, see responses to SJRGA on proposed temperature listings.

Comment 12 - *The South Yuba River should not be listed for mercury. If the South Yuba River is segmented into multiple segments there are not enough exceedances in any single segment to warrant listing.*

In response to a comment from the Tahoe National Forest, staff has revised the proposed listing to apply from Rucker Creek to Lake Englebright. Staff believes that the fish samples collected at three locations along this reach (Bridgeport, Edwards Crossing and Washington) are representative of the mercury concentrations in fish tissue of the entire reach. Historic gold mining occurred throughout the watershed of this reach of the South Yuba, particularly downstream of the confluence with Rucker Creek (USGS, 2005).

Comment 13 - *Some data collected by PG&E between 2000 and January 2003 were below the analytical methods reliability reportable limits. Therefore, 50% of the data that the CVRWQCB used for their proposed 2008 listing decision does not meet the SWRCB's Listing Policy requirements.*

Staff revised the assessment to exclude the PG&E data from between 2000 and January 2003 because of the QC issues identified by the commenter.

Comment 14 - *The new FERC required flow releases had not been fully implemented until early 2005. Therefore, the only data the CVRWQCB should use to make a listing determination are data from 2005 to present.*

Staff acknowledges that the increased flows appear to have reduced some copper concentrations through dilution. The new FERC flow requirements implemented in 2005 were not a management practice for controlling copper discharges, and the information provided did not show that the new flow requirements would provide dilution at times of year when metals criteria are exceeded. Therefore staff did not find that information provided was adequate to support recommending that data collected prior to 2005 should not be considered in the listing decision.

18. Plumas County – Sharon Thrall

Comment 1 - *The Middle Fork Feather River should not be listed for low dissolved oxygen. The samples taken at the A-23 bridge are not representative of dissolved oxygen*

in the river due to local ponded conditions. Other data sources indicate dissolved oxygen levels meet standards.

The assessment for dissolved oxygen in the Middle Fork Feather River has been revised based on the data and information provided by commenters. Based on the revised assessment, staff has withdrawn this proposed listing.

Comment 2 - The upstream reaches of the Middle Fork Feather River in Sierra Valley should not be listed for toxicity.

Upon review of this assessment, based on the information presented, the segment proposed for listing for unknown toxicity has been shortened. Staff is now recommending the Middle Fork of the Feather River be listed for unknown toxicity in the reach from Long Valley Creek to Lake Oroville.

Comment 3 - Lake Almanor should not be listed for mercury. The proposed listing is based upon five samples out 36 exceeding the standard, which supports listing as provided in Table 3.1 in the Listing Policy. However, four of the exceedances were attributable to samples from Sacramento sucker. For the popular sport fish, including bass, trout, and steelhead, there was a single exceedance in a sample of small-mouth bass. Aside from the samples of Sacramento sucker, there is that one exceedance in 32 samples, which would not warrant listing under Table 3.1 of the Listing Policy. For that sample size, at least three exceedances would be required for listing.

For the guideline that is being applied here, the Regional Board relies upon the U.S. USEPA's Water Quality Criterion for the Protection of Human Health: Methylmercury (USEPA-823-R-01-001; January, 2001). However, that document itself concludes by stating that "USEPA strongly encourages States and authorized Tribes to develop a water quality criterion for methylmercury using local or regional data rather than default values if they believe that such a water quality criterion would be more appropriate for their target population." In the case of Lake Almanor, where fish consumption is the basis for the applicable standard, reliance upon data from the Sacramento sucker is not an appropriate basis upon which to list the lake.

The comment refers to USEPA's fish tissue criterion. Staff used California Office of Health Hazard Assessment criteria as evaluation guidelines for contaminants fish tissue. For mercury in fish, the criteria is essentially the same. Staff agree that if only the popular sport fish species (smallmouth bass, trout and steelhead) were included in the assessment, one out of 22 samples would exceed the OEHHA fish contaminant goal for human health, and this would not require listing under Table 3.1 of the Listing Policy. It is important to note that although only a single smallmouth bass sample exceeded the OEHHA fish contaminant goal, this was a composite sample from multiple fish. The Listing Policy does not indicate that only commonly eaten sport fish should be used in the analysis, so use of the Sacramento Sucker data is appropriate. There is no reason to think that the bass data collected was an anomaly (especially since it was a composite sample). Therefore, staff took the conservative approach and recommended listing Lake Almanor for mercury impairment. If additional fish tissue monitoring is done on Lake Almanor, staff can reevaluate the information in the next listing cycle.

Comment 4 - *The Regional Board is recommending that Lake Almanor not be listed as being impaired for water temperature, although three out of the five samples considered had water temperatures that exceeded standards for cold water species. The supporting documentation notes that there is no evidence that human activities are modifying the temperature regime in a way that adversely impacts those species. This situation could change as a result of potential requirements that could result from FERC re-licensing that would result in cold water being withdrawn from the lake. With these concerns in mind, the Regional Water Board should continue to monitor temperature data from Lake Almanor to ensure that beneficial uses are protected.*

Staff supports the original proposed decision not to list Lake Almanor for temperature. Staff presumes that the FERC re-licensing process will include evaluation of temperature impacts to Lake Almanor.

Comment 5 - *An increase in lake temperature related to potential requirements that could result from the FERC re-licensing could exacerbate mercury problems in Lake Almanor.*

Comment acknowledged.

19. Pyrethroid Working Group – James Wells, President, Environmental Solutions Group

Comment 1 - *In general, there is concern that the listing process as applied by the Central Valley Regional Water Board staff relies primarily on a single line of evidence approach to determine impairment, and to identify pollutants as the cause of impairment. Reliance on a single line of evidence leads to incorrect conclusions with respect to impairments caused by pyrethroid pesticides. Bioassessments provide a better tool than single species toxicity tests for predicting ecological effects.*

Staff does not believe that relying on water column and sediment bioassay data related to pyrethroid toxicity has led to incorrect conclusions. Clear toxicity was found in samples and appropriate toxicity evaluations identified pyrethroid pesticides as causing the toxicity. Staff followed the State's Listing Policy in evaluating the toxicity data. USEPA supports staff recommendations to list various water segments based on bioassays indicating the presence of toxicity. In their letter, USEPA explains that a waterbody is determined to be impaired, as measured by any one of three approaches (chemical-specific, toxicity testing, and biological criteria/bioassessment) for protection of aquatic life. Since each method has unique, as well as overlapping attributes, sensitivities, and program applications, no single approach for detecting impact should be considered superior to any other approach. The most protective results from each assessment conducted should be used in water quality assessments.

The Listing Policy appropriately provides that "waters may also be placed on the section 303(d) list for toxicity alone." This is consistent with federal listing guidelines and USEPA's position that the concept of "independent application" be applied to water quality-based situations (USEPA 1991). Regional Board staff agrees with USEPA's analysis.

Regional Water Board staff supports conducting bioassessments. In addition, staff believes that there is tremendous value in collecting single species bioassay information and water column toxicity data. Staff does not agree that bioassessments provide a better or more direct measure of impairments than toxicity water column toxicity data. The Listing Policy clearly includes both bioassessments and water column bioassays as tools to use in evaluating impairments.

The proposed listing is based on bioassay results. As has previously been stated, bioassessment studies, bioassays and water chemistry data all provide useful information for making determinations about impairments. No one line of evidence takes priority over the others. The use of bioassay data will not lead to incorrect conclusions about impairments. The proposed listings for Pleasant Grove Creek are appropriate.

20. Sacramento Regional County Sanitation District – Stan Dean

Comment 1 - *Sacramento Regional County Sanitation District questions the threshold for determining the proposed listings for dieldrin, PCBs, chlordane and DDT. All of the newly listed chemicals for the American River, Sacramento River and northern portion of the Delta are based on levels measured in fish tissue exceeding the Office of Environmental Health Hazard Assessment (OEHHA) fish contaminant goals (FCGs). FCGs are the level at which there is no significant health risk and are a starting point for agencies other than OEHHA to establish fish tissue based criteria. FCGs are based solely on public health considerations without regard to economic considerations, technical feasibility, or the counterbalancing benefits of fish consumption. OEHHA also develops advisory tissue levels (ATLs) as a criterion for fish consumption guidelines and advisories. The ATLs also confer no significant health risk to individuals, but are developed with the understanding that there is unique health benefits associated with fish consumption. The ATLs also understand that the advisory process should go beyond a simple risk assessment to protect the overall health of the fish consumer. The September 2004 State Water Resources Control Board Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (Listing Policy), section 3.4, Health Advisories, states a water segment shall be placed on the section 303(d) list if a health advisory against the consumption of edible resident organisms has been issued by OEHHA, or Department of health Service, and there is a designated or existing fish consumption beneficial use for the segment. The Board chose to apply Section 3.5 of the Listing Policy, Bioaccumulation of Pollutants in Aquatic Life Tissue, using OEHHAs FCGs, instead of using health advisory levels developed by OEHHA. SRCSD advocates that the ATLs be used as the threshold for fish consumption advisories. This basis would be consistent with the Listing Policy.*

In assessing whether beneficial uses of water bodies are impaired, it makes sense to look strictly at the impairment without consideration about how difficult or costly it might be to correct the impairment. The use of the FCGs is consistent with the Listing Policy, as FCGs are levels of contaminants generally believed to be protective of human consumers of fish, and meet all the requirements for evaluation guidelines under Listing Policy section 6.1.3.

Advisory Tissue Levels balance positive effects of fish consumption with increased risk due to contaminants in fish. ATLS are used by OEHHA for the purposes of determining if a fish advisory should be posted on the waterbody. In determining beneficial use protection, it would not be appropriate to use the calculated health benefits of the beneficial use, such as consuming fish (or drinking water), to justify a higher level of allowable contamination. In addition, ATLS are not issued for pollution mitigation or elimination, neither are they regulatory standards. They are instead used as part of the process to develop health advisories to inform fish consumers about fish whose consumption should be restricted or avoided altogether.

Comment 2 - *Dieldrin listing in the Lower American River is based on 2 of 5 composite fish samples exceeding OEHHA's FCG. The SRCSD advocates that listing be removed due to the migratory nature of salmon, and the more appropriate use of OEHHA's ATLS.*

Staff agrees that the migratory nature of salmon make them non-representative in some cases, such as this one. The adult salmon tissue data is no longer used in the exceedance frequency calculation in the assessment. As a result, the proposed listing has been withdrawn. See response to SRCSD comment 1 on the use of FCGs vs ATLS as evaluation guidelines.

Comment 3 – *Coordinated Monitoring Program monitoring has never measured dieldrin, PCBs, chlordane and DDT in the water column at detectable levels.*

Staff recognizes the efforts taken by CMP to monitor OC pesticides in the water column. Though CMP has never measured detectable levels of these chemicals in the water column at any of the sampling stations, this does not necessarily indicate a lack of impairment. Concentrations of toxic substances in water are often too low or transitory to be reliably detected through the more traditional methods of water sample analysis. Also, many toxic substances, including organochlorines are not water soluble, but can be found associated with sediment or organic matter.

Comment 4 - *One aim of the statewide fish contaminant monitoring program is to compare contamination levels throughout the state. One message from this program is that "in general, PCB and DDT levels in fish and mussels across California have declined greatly since the 1970s, and many species have bounced back in response to the decline in DDT levels". This message implies that while continued monitoring is warranted, contamination is declining without specific efforts aimed at affecting those declines. Section 303(d)(1) of the federal Clean Water Act provides for prioritization as well. SRCSD recommends that each of the proposed listings be placed in Category 5C (i.e., being addressed by action other than a TMDL), rather than requiring development of a TMDL.*

Staff acknowledges that OC pesticides are a banned, human-source chemical. However, numerous monitoring efforts and studies have indicated the presence of point, nonpoint, and background sources of legacy OC pesticides in the Central Valley. There are various potential pathways by which these contaminants can enter receiving waters and as a result become a secondary source of contamination despite having been historic applications. Present day activities can reduce loads of the legacy pesticides reaching waterways and also lead to increases. There really is no existing program or action (other than waiting for concentrations to go down naturally) that is focused on addressing the problem or determining whether actions

can be implemented that would increase the pace at which impairments were addressed. Staff believes that a TMDL is still the appropriate framework for addressing the problem. See response to comment 1 from Lassen National Forest for discussion of criteria for Category 4b.

21. Sacramento Stormwater Partnership – Sherill Hunn, Kerry Schmitz

Comment 1 - *In general we agree with the administrative and technical decisions to list pyrethroids, however, certain listings should consider documented data quality issues, minimum data requirements, and the possibility of re-categorizing certain listings as “requiring further study” rather than impairment listings with a TMDL schedule.*

General support for the pyrethroid listings has been noted. Staff evaluated data and information as the guidance in the Listing Policy directed. If there is inadequate data to support an impairment listing, then the waterbody is not proposed for listing. Also see responses to commenters comment # 2 and 3 below.

Comment 2 – *Arcade and Morrison creek should not be listed for Bis(2-ethylhexyl)phthalate (Bis-2) based on 2 exceedances out of 4 samples. Due to widely issues with sampling and laboratory contamination in Bis-2 samples, Bis-2 should not be 303(d) listed unless exceedances are supported by a large body of evidence from which it is clear that the detected values are not the result of sampling and laboratory contamination.*

Staff agrees with comment. See response to comment 1 for Central Valley Clean Water Association.

Comment 3 - *Arcade creek should not be listed for total petroleum hydrocarbons (TPH) as diesel. The exceedances were not accurately quantified to match the oral reference dose that was used as an evaluation guideline.*

Given the uncertainty in the laboratory results and the limited amount of data currently available, insufficient information is available at this time to support a recommendation to list Arcade Creek for total petroleum hydrocarbons as diesel. Regional Board staff is no longer recommending that Arcade Creek should be listed for total petroleum hydrocarbons.

Comment 4 - *The Partnership requests that Arcade Creek be de-listed for dissolved copper impairment based on the USEPA BLM-based water quality objective. If copper remains on the 303(d) list it should be the lowest priority for TMDL development so that a more thorough evaluation process that considers site-specific conditions can continue.*

All copper decisions were evaluated using the hardness based-California Toxics Rule criteria, which is an adopted water quality standard. Staff is proposing no changes to this existing listing. The expected TMDL completion date is currently 2021 for this waterbody, which is the latest date that can be considered for this listing effort.

Comment 5 – *Based on observed declines in diazinon and chlorpyrifos concentrations in the Sacramento area urban creeks covered in the TMDL, and within our jurisdiction,*

the Partnership believes that the TMDL goals have been met (i.e., compliance with applicable water quality objectives for diazinon and chlorpyrifos) and the urban tributaries should be de-listed for these constituents.

Adequate data for specific waterbody segments being de-listed is required before a segment can be de-listed. Staff has proposed de-listing some of these waterbodies, and the rest can be de-listed when data and information supporting their de-listing become available. The number of sampling sites in the urban creeks is not extensive. There still are some urban sources of these pesticides, for example nurseries and golf courses. Therefore staff is not recommending any additional de-listings of these pesticides in Sacramento area urban creeks at this time.

Comment 6 - *All of the newly listed chemicals for the American River, Sacramento River and northern portion of the Delta are based appropriately on levels measured in fish tissue exceeding determined thresholds. However, the fish tissue concentration bases for the listings are the Office of Environmental Health Hazard Assessment (OEHHA) fish contaminant goals. The advisory tissue levels (ATLs) are the basis for OEHHA's fish consumption guidelines and advisories; the fish contaminant goals (FCGs) are based solely on public health considerations without regard to economic considerations, technical feasibility, or the counterbalancing benefits of fish consumption. . Following section 3.4 of the Listing Policy, the ATLs should be the basis for listings, not the FCGs.*

See response to comment 1 from Sacramento Regional County Sanitation District.

Comment 7- *The proposed dieldrin listing in the American River is based on 2 of 5 composite fish samples exceeding OEHHA's FCG. One of two exceedances was for Chinook captured from the American River at Nimbus Fish Hatchery. Chinook are anadromous salmon, which means they could not have accumulated their dieldrin from the American River. The Partnership requests that the dieldrin listing be removed.*

See response to comment 2 from Sacramento Regional County Sanitation District.

Comment 8 – *New listings for the lower Sacramento and American Rivers have TMDL requirement status of Category 5A, which sets deadlines for required TMDLs. A TMDL would allocate load reductions among the various sources. However, there are no sources to which reductions could be allocated because: each of the new listing is for a banned, human-sources chemical; and, CMP monitoring has never measured detectable levels of these chemicals in the water column at any of the sampling stations. The Partnership requests that each of these listings be placed in Category 5C rather than requiring TMDLs.*

See response to comment 3 from Sacramento Regional County Sanitation District.

Comment 9 - *One aim of the statewide fish contaminant monitoring program is to compare contamination levels throughout the state. One message from this program is that "in general, PCB and DDT levels in fish and mussels across California have declined greatly since the 1970s, and many species have bounced back in response to the decline in DDT levels". This message implies that while continued monitoring is warranted, contamination is declining without specific efforts aimed at affecting those*

declines. Section 303(d)(1) of the federal Clean Water Act provides for prioritization as well. If these chemicals remain on the 303(d) list and are not changed to category 5C, the Partnership requests that they receive the lowest priority for TMDL development so that the evaluation process can begin.

See response to comment 4 from Sacramento Regional County Sanitation District.

22. Sacramento Valley Water Quality Coalition – Bruce Houdesheldt – NCWA, Claus Suverkropp – Larry Walker and Associates

Comment 1 - *There are many cases where proposed new listings are based on incorrect implementation of the State's Listing Policy. The following examples list several of these, but this list should not be considered comprehensive. Based only on the number of incorrect assessments discussed below, it appears that that Water Board staff should review all of the proposed new listings for consistency with the Listing Policy.*

All specific potential errors or inconsistencies with the Listing Policy in the public review draft Integrated Report that were brought to staffs attention have been addressed. The proposed 303(d) list changes in the draft final Integrated Report are appropriate and consistent with the Listing Policy.

Comment 2 - *The copper listing for Wadsworth Canal (Decision ID 11525) is based on a total of two "exceedances", one for dissolved copper and one for total copper, collected on the same day and time. The hardness basis for the criterion calculation is not cited, but no hardness data were collected or reported for the days of the reported exceedance. Based on the available data, an actual exceedance of the CTR criterion for dissolved copper can't be determined. Additionally, the total copper data was inappropriately compared to CTR criteria and was double-counted with the dissolved copper result for the same sample date. Water Board staff should review all of the evaluations for trace metals to determine whether similar incorrect and inappropriate use of the metals data occurs with other listings.*

This proposed listing has been withdrawn. Also see the response to the East San Joaquin Water Quality Coalition comment #1.

Comment 3 - *The listings for copper and lead for Spring Creek in Colusa County (Decision IDs 12038, 12041) are incorrectly based only on comparisons of total metals concentrations to CTR criteria. Exceedances of these trace metals should be evaluated based only on dissolved metals concentrations, as is recommended in the CTR. Comparisons of total copper and lead to the CTR criteria is not a valid use of the criteria and does not provide a meaningful assessment of potential impairments of aquatic life beneficial uses. If the total trace metals data indicate a concern, new samples should be collected allow proper evaluation of potential impairments using appropriate dissolved metals data.*

This proposed listing has been withdrawn. Also see the response to the East San Joaquin Water Quality Coalition comment #1.

Comment 4 - *The data for diazinon in Ulatis Creek (Decision ID 11547) is not correctly evaluated. The evaluation for this listing does not follow the Listing Policy guidelines. The fact sheet cites that the basis for the listing is four exceedances of the 0.1 ug/l criterion observed for 51 samples representing 4-day averages collected from 2002 – 2006. The minimum number of exceedances required to qualify a waterbody for the 303d list for this sample size is five (5) exceedances. In fact, the data set cited for the listing supports delisting of the water segment (4 or fewer exceedances out of 51 samples).*

As discussed in the Staff Report, when a Basin Plan objective, CTR criterion, or other water quality criteria contained an explicit maximum exceedance frequency, in addition to using the default binomial methodology in the Listing Policy, the exceedance frequency in the objective or criteria was used to assess potential impairments under the weight of evidence listing factors in sections 3.11 and 4.11 of the Listing Policy. Ulatis Creek has measured exceedances of the diazinon criteria concentrations which occurred more frequently than the once in three year allowable exceedance frequency specified in the criteria. Therefore, the diazinon listing for Ulatis Creek is proposed under section 3.11 of the Listing Policy. These fact sheets have been revised to more clearly cite section 3.11 of the Listing Policy.

Comment 5 - *The data for simazine in Ulatis Creek (Decision ID 11550) is not correctly evaluated. The evaluation for this listing does not follow the Listing Policy guidelines. The fact sheet cites that the basis for the listing is two exceedances observed for 73 individual samples collected from 2003 – 2005. The minimum number of exceedances required to qualify a waterbody for the 303d list for this sample size is seven (7) exceedances. In fact, the data set cited for the listing supports delisting of the water segment (6 or fewer exceedances out of 73 samples).*

Staff agrees with this comment. The MCL for simazine does not contain an explicit allowable exceedance frequency so the exceedance frequency in the Listing Policy Table 3.1 is now used in the assessment. This change resulted in the withdrawal of the proposed listing for simazine.

Comment 6 - *The data for chlorpyrifos in Sacramento Slough (Decision ID 4682) is not correctly evaluated. The evaluation for this listing does not follow the Listing Policy guidelines. The fact sheet cites that the basis for the listing is two exceedances observed for samples representing 64 4-day averages collected from 2003 – 2005. The minimum number of exceedances required to qualify a waterbody for the 303d list for this sample size is six (6) exceedances. Based on the Listing Policy, Sacramento Slough should not be placed on the 303d list for chlorpyrifos.*

As discussed in the Staff Report, when a Basin Plan objective, CTR criterion, or other water quality criteria contained an explicit maximum exceedance frequency, in addition to using the default binomial methodology in the Listing Policy, the exceedance frequency in the objective or criteria was used to assess potential impairments under the weight of evidence listing factors in sections 3.11 and 4.11 of the Listing Policy. Sacramento Slough has measured exceedances of the chlorpyrifos criteria concentrations which occurred more frequently than the

once in three years allowable exceedance frequency specified in the criteria. Therefore the chlorpyrifos listing for Sacramento Slough is proposed under section 3.11 of the Listing Policy. These fact sheets have been revised to more clearly cite section 3.11 of the Listing Policy.

Comment 7 - *The data for malathion in Arcade Creek (Decision ID 11312) is not correctly evaluated. The evaluation for this listing does not follow the Listing Policy guidelines. The fact sheet cites that the basis for the listing is five (5) exceedances observed for samples representing 76 4-day averages collected from 2000 – 2005. The minimum number of exceedances required to qualify a waterbody for the 303d list for this sample size is seven (7) exceedances. Based on the Listing Policy, Arcade Creek should not be placed on the 303d list for malathion.*

Arcade Creek has measured exceedances of the malathion criterion concentration more frequently than the once in three years allowable exceedance frequency specified in the criteria. Therefore, the malathion listing for Sacramento Slough is proposed under section 3.11 of the Listing Policy. The fact sheets for this assessment have been revised to more clearly cite section 3.11 of the Listing Policy. Also see the response to Sacramento Valley Coalition Comment number 6, above.

Comment 8 - *Listings for aldicarb, dichlorvos, and oxyfluorfen are not based on appropriately developed Evaluation Guidelines. The Listing Policy allows Evaluation Guidelines to evaluate narrative water quality objectives for developing 303d listings. However, the Listing Policy also requires that the Evaluation Guidelines are demonstrated to be scientifically based and peer reviewed, and must identify a range above which impacts occur. For non-threshold chemicals, risk levels must also be consistent with comparable water quality objectives or water quality criteria. The Evaluation Guidelines used for aldicarb, dichlorvos, and oxyfluorfen do not meet these Listing Policy guidelines: they are based on applying an arbitrary factor of 10 to published LC50 values for sensitive species. This is not a scientifically valid or peer reviewed methods for establishing concentrations above which impacts are expected. It does not represent accepted or consensus scientific practice for developing water quality criteria for the protection of aquatic life or other beneficial uses. This method is not consistent with established scientific methods of developing water quality criteria (e.g., USEPA's process) and results in a risk levels that are much lower than criteria developed for comparable purposes by USEPA.*

Staff believes that the evaluation criteria used were appropriate, consistent with the Listing Policy, and represent application of good science. The 1/10 the LC-50 evaluation criteria is a criteria that was originally established in the Basin Plan in 1990. The criteria was established in recognition of the fact that, for many pesticides being detected in our waters, there was no USEPA, Fish and Game or other appropriate criteria to use to evaluate potential impacts. The Basin Plan process included an extensive public review process that included receiving input from scientific peer reviewers. Entities involved in the review included the Department of Fish and Game, USEPA, Department of Health Services and others that are qualified to evaluate the science behind the criteria. Fish and Game specifically endorsed the use of the 1/10 the LC 50 criteria. The staff report discussed pesticides from agricultural and residential sources and included implementation provisions for each. So, it is clear from the record that the Regional Board intended the criteria to apply to agricultural and urban dominated waterways.

Both State Board and USEPA approved the Basin Plan amendment that included the 1/10 the LC50 criteria.

The 1/10 the LC 50 benchmark used as an evaluation guideline is not arbitrary. It is a reasonable application factor to use based on information about acute to chronic ratios. Staff believes that the criteria was developed in a manner that is consistent with good scientific practice and that use of the criteria is consistent with the Evaluation Criteria Guidelines in the Listing Policy.

Comment 9 - *Similarly, the evaluation guideline for diuron is based on a single published LC50 value for a sensitive alga species. No additional explanation, rationale, or support for selecting this value is provided. It can't be determined from the fact sheet whether the Evaluation Guideline meets the criteria of the Listing Policy.*

See previous response. The evaluation guideline used for diuron were reasonable, consistent with good scientific practice and consistent with the requirements for evaluation guidelines in the Listing Policy.

Comment 10 - *For three Sacramento Valley listings (Willow Slough and Tule Canal), agriculture is the only source cited for E. coli or fecal coliform listings when this is not supported by the monitoring data. Although agriculture is a potential source, it has not been demonstrated to be the sole or primary source of pathogen indicator organisms in these water bodies, and is not likely to be the primary source of the observed exceedances. There are known to be substantial wildlife and human sources (septic and "recreational" use) in these water bodies. Both of these listings should be attributed to "unknown sources". This is probably true for a number of other E. coli listings attributed to specific sources.*

Staff agrees that other there are many potential sources. Staff has added unknown and other appropriate potential sources to the list.

Comment 11 - *For two Sacramento Valley listings (Yankee Slough, Decision ID 11452, and Little Tule River, Decision ID 11621), agriculture is cited as the sole source of toxicity of unknown cause. (Note also that Little Tule River cited in this decision is not in Shasta County.) There is no information cited as to how this was determined other than the monitoring was done by a program regulating agricultural sources. It is not reasonable to attribute an unknown cause of toxicity to a specific source such as agriculture. Numerous other listings for toxicity of unknown cause are more appropriately attributed to unknown sources.*

Staff has added unknown sources to the list of potential sources. Staff did not remove agriculture as a potential source since this site is being monitored to characterize agricultural discharges. The incorrect listing for the Little Tule River has been corrected and the Integrated Report revised appropriately.

Comment 12 - *The listings for boron in Willow Slough and Willow Slough Bypass (Decision IDs 11488, 11457), and boron and salinity in Tule Canal (Decision ID 11625) are incorrectly attributed to agriculture. The primary source of elevated boron and salinity is*

the natural background source waters for these water bodies. The geology of the contributing watersheds and the local groundwater sources are naturally high in boron and other dissolved minerals. This also applies to the boron listings for Putah Creek, Knight's Landing, and Lower Cache Creek, which are attributed to "unknown sources". There are plentiful data and analysis available regarding sources of boron and salinity in the Yolo County area and the Cache Creek watershed, and these data have in fact been provided to the Water Board previously. Water Board staff need to consider these data in making the assessments for the 303d list.

Staff agrees that boron and other dissolved minerals occur naturally in the watershed. However, agricultural activities may redistribute the boron and other dissolved minerals by discharging irrigation water supplied by wells that tap aquifers with elevated levels of these constituents. This can impact concentrations that could exist naturally. Staff has added natural sources to the list of potential sources.

Comment 13 - *The dichlorvos listing for Butte Slough should also not be attributed to agriculture. Dichlorvos is not registered for application to irrigated crops. The most likely source of the dichlorvos detections is the use of naled for vector control (e.g., mosquito abatement). Dichlorvos is a breakdown product of naled, which has relatively little agricultural use. Applications for public health vector control accounted for more than 95% of the reported use of naled in 2005 and 2006 in Butte and Colusa counties. Naled used for mosquito abatement is typically applied by aerial spraying with a high probability of drift and potential contamination of surface water.*

Staff agrees that vector control spraying is a potential source. This potential source has been added to the list of potential sources. As there are agricultural uses of naled, and this waterbody is in an agricultural area, agriculture also remains listed as a potential source.

Comment 14 - *There are many incomplete assessments included in the proposed new 303d listings. In many cases, proposed listings would be modified or eliminated by additional data that the Water Board already has in hand (e.g., ILRP data collected through 2007), or that are readily available (e.g., ILRP data collected in 2008). While it is understood that there must be a cutoff for acquiring, compiling, and evaluating new data for 303d list development, there should be more effort made to use the available data. This is especially true in cases when limited data trigger new listings or when the only data available do not reflect current conditions (e.g., when management practices have changed or the only data evaluated are more than 10 years old). In these cases, additional effort should be made to acquire more current data reflective of actual ambient conditions. In fact, this is required by the Listing Policy. Specific instances of this are discussed below.*

Staff had a large amount of data to review for the Integrated Report. New data are always being generated from various sources. At a certain point data solicitation and collection of data has to stop so that the data can be assessed. Data that becomes readily available after the solicitation of data has ended can be assessed in future 303(d) list updates. One of the purposes of releasing the draft document for comment was to give stakeholders the opportunity to provide additional data or information that would potentially change the proposed decision. In specific cases where data or information provided by commenters clearly showed that a

propped listing recommendation should be changed, staff made reasonable efforts to incorporate that data or information in the current Integrated Report. The Listing Policy does not require the evaluation of data that are not readily available during the data solicitation period.

Comment 15 - *There are five new listings for diazinon in the Sacramento Valley watershed. The Listing Policy specifies that "If the implementation of a management practice(s) has resulted in a change in the waterbody segment, only recently collected data [since the implementation of the management measure(s)] should be considered. The water quality fact sheet should describe the significance of the sample timing." The findings failed to consider the decrease in the use of diazinon that has resulted from label changes and restrictions on diazinon use. For example, agricultural diazinon use in Yolo County has decreased by approximately 50% (from 3179 lbs in 2005 to 1802 lbs in 2007, the most recently available data from CDPR). Similar decreases in diazinon use have occurred throughout the watershed. Based on the Listing Policy, recent data should be considered before listing these water bodies as impaired.*

If the implementation of management plans combined with label changes restricting diazinon use result in attainment of standards, then a TMDL will not be required for these listings. Additionally, if it can be demonstrated to USEPA that management plans contain reasonable assurances that standards will be attained, they could be listed as "being addressed by an existing regulatory program" (Integrated Report Category 4b listings), and therefore a TMDL would not be required. More monitoring will be needed to confirm whether this would be appropriate. This could be addressed in the next listing cycle, if sufficient data and information are available confirming that impairments are being addressed. See response to comment 1 from Lassen National Forest on Category 4b listing requirements.

Comment 16 - *Additional data for chlorpyrifos in Wadsworth Canal (Decision ID 11524) should be considered. The fact sheet indicates that the basis for the listing is five exceedances of the 1-hour criterion observed for 68 individual samples collected from 2005 – 2006, and two exceedances of the 4-day average criterion. Fifteen (15) additional samples were collected for the ILRP from 2005 – 2006 in this waterbody, with no exceedances of the 4-day or 1-hour criteria for chlorpyrifos. The minimum number of exceedances required to qualify a waterbody for the 303d list for a total sample size of 83 individual samples is eight (8) exceedances, and the minimum number for a total sample size of 29 4-day average samples is three (3) exceedances. Based on the Listing Policy, Coon Creek should not be placed on the 303d list for chlorpyrifos.*

As discussed in the Staff Report, when a Basin Plan objective, CTR criterion, or other water quality criteria contained an explicit maximum exceedance frequency, in addition to using the default binomial methodology in the Listing Policy, the exceedance frequency in the objective or criteria was used to assess potential impairments under the weight of evidence listing factors in sections 3.11 and 4.11 of the Listing Policy. Wadsworth Canal and Coon Creek had measured exceedances of the chlorpyrifos criteria concentrations which occurred more frequently than the once in three year allowable exceedance frequency specified in the criteria. Therefore the chlorpyrifos listings for Wadsworth Canal and Coon Creek are proposed under section 3.11 of the Listing Policy. These fact sheets have been revised to more clearly cite section 3.11 of the Listing Policy.

Comment 17 - *Additional data for dacthal in Colusa Basin Drain (Decision ID 13065) should be considered. The fact sheet indicates that the basis for the listing is two exceedances observed for 21 individual samples collected from 1996 – 1998. There are eight (8) additional samples collected for the ILRP in 2008 in this waterbody, with no exceedances of the 0.008 ug/L one-in-a-million incremental cancer risk used as the Evaluation Guideline. The minimum number of exceedances required to qualify a waterbody for the 303d list for this sample size (29) is three (3) exceedances. Based on the Listing Policy, Colusa Basin Drain should not be placed on the 303d list for dacthal. Additionally, the labels of dacthal products of concern were amended in 1998 to mitigate off-site movement of residues. Based on the Listing Policy, only data collected since the implementation of this management measure should be considered, and consequently there is no evidence of exceedances to support adding this to the 303d list.*

The proposed listing of Colusa Basin Drain for dacthal has been withdrawn. This proposed listing was an error since municipal and domestic drinking water (MUN) is not a designated beneficial use for Colusa Basin Drain. Additionally review of this proposed listing, the proposed evaluation guideline for dacthal has been updated as a more current criterion was available to use as an evaluation guideline. As a result of the change in evaluation guidelines, all recommendations related to potential dacthal listings are now “do not list” in the draft final Integrated Report.

Comment 18 - *Listings based on interpretation of narrative objectives for pesticides (e.g., diuron, dichlorvos, oxyfluorfen) fail to consider synoptic toxicity data for sensitive species along with the chemical concentration data. In at least some cases, the toxicity data indicate that the Evaluation Guidelines used for these pesticides are not appropriate or valid indicators of impairment.*

The Listing Policy indicates that narrative water quality objectives shall be evaluated using evaluation guidelines. To select the appropriate guideline the Regional Water Board needs to identify the narrative that is being implemented and identify the evaluation guideline that represents water quality objective attainment or protection of beneficial uses. The listings in question are based on application of the Basin Plan narrative toxicity objective. The narrative toxicity objective states “all waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal or aquatic life. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. The Regional Water Board will also consider all material and relevant information submitted by the discharger and other interested parties and numerical criteria and guidelines for toxic substances developed by the California Department of Health Services, the U.S. Food and Drug Administration, the National Academy of Sciences, the U.S. Environmental Protection Agency, and other appropriate organizations to evaluate compliance with this objective”.

In addition to the above, the Basin Plan indicates that 1/10 the LC50 will be used to evaluate pesticide monitoring data. This evaluation guideline was established in recognition of the fact that, for many pesticides being detected in our waters, there are no USEPA, Fish and Game, or other appropriate criteria to use to evaluate potential impacts.

The Listing Policy specifies that evaluation guidelines be used in the absence of numerical objectives that are applicable. Staff believes that the evaluation guidelines used were appropriate and that they were implemented according to Listing Policy Guidelines. See response to comment 3 from Central Valley Clean Water Association for a discussion on the applicability and appropriateness of the 1/10 the LC50 evaluation criteria. Also see response to comment 8 from Sacramento Valley Water Quality Coalition for discussion on application of the Basin Plan narrative toxicity objective.

Comment 19 - *Additional data should be considered for dissolved oxygen for the Middle Fork Feather River (Decision ID 12954). The fact sheet indicates that the basis for the listing is nine (9) exceedances observed for 36 individual samples collected from 2002 – 2006. The data set and assessment is incomplete on many levels. It does not contain the complete set of data available for the stated period in 2005-2006, and it does not include new data available since 2006. Additionally, all of the cited exceedances occur at an upstream location that was determined not to be an appropriately representative monitoring site for the ILRP. The cause of low dissolved oxygen at this site was determined to be low flows, so the “unknown source” category does not apply. Additional data available for a new downstream site indicate no problems for dissolved oxygen. At a minimum, these results clearly demonstrate that the potential problem does not extend to the new site. Low dissolved oxygen condition clearly does not extend to the site at Merrimac, which is many miles downstream and is not in the same reach.*

The assessment for dissolved oxygen in the Middle Fork Feather River has been revised based on the data and information provided by commenters. Based on the revised assessment, staff has withdrawn this proposed listing.

Comment 20 - *There are many minor editorial and factual errors in the integrated report and fact sheets. E.g., three listings for Little Tule River (Decision ID 11620, 11621, 11619) incorrectly indicate the site is in Shasta County, and the fact sheet for Decision ID 11621 states “...0 of 35 samples tested with Ceriodaphnia exceed the narrative toxicity objective and this exceeds the allowable frequency listed in Table 3.1 of the Listing Policy”. Errors of this type are too numerous to list individually, but indicate a need for a thorough review by Water board staff of all of the materials that comprise the proposed listing.*

Staff agrees that the data in question were from Tule River in Tulare County, not the Little Tule River in Shasta County. The data resulting in the proposed listings that were for the Little Tule River in Shasta County are now associated with the Tule River in Tulare County. These data will be assessed in the next listing cycle. No listings are now proposed for the Little Tule River in Shasta County.

23. San Joaquin County Delta & Water Quality Coalition – Mike Wackman

Comment 1 - *Metals listings are incorrect for French Camp Slough, Lone Tree Creek, and Pixley Slough are incorrect since they are improperly using total recoverable metal*

results with dissolved metal criteria. The SJCDWQC recommends that the Regional Board delay any decision about listing due to metals until information on the concentrations of dissolved metals is available.

See response to Central Valley Clean Water Association comment #2.

Comment 2 - *Potential source for all pollutants in Marsh creek should be source unknown. Extensive urban development has occurred in this watershed*

Both unknown sources and urban runoff have been added to the list of potential sources for all the Marsh Creek listings.

Comment 3 - *Beneficial uses have been inappropriately applied to water bodies upstream of the San Joaquin River using the tributary rule, which resulted in many of the proposed listings. The State And Regional Boards should prioritize the evaluation of beneficial uses during the next tri-annual San Joaquin Basin Plan amendment (2009) review.*

See response to East Side San Joaquin Water Quality Coalition comment 3.

24. San Joaquin River Group Authority - Kenneth Petruzzelli - O’Laughlin & Paris

Comment 1 - *States can only base water quality limited segment identification on noncompliance with applicable water quality objectives for existing beneficial uses.*

Challenges to beneficial use designations are beyond the scope of this proceeding. The Clean Water Act requires states to identify waters within its boundaries that do not meet applicable water quality standards. Water quality standards consist of the designated uses and the water quality criteria to protect the designated uses. (40 CFR § 131.3(i).) “Designated uses” are those specified in the Basin Plan, whether or not they are being attained. (40 CFR § 131.3(f).) USEPA encourages states to designate uses that can be attained. (USEPA, *Water Quality Standards Handbook, Second Ed.*, § 2.4.) “Existing uses” include waters that have met standards since 1975, where the use has actually occurred, or where reasonable controls can result in attainment of the use. (*Id.*, § 4.4.) In addition, uses are “attainable” and may be designated if they can be achieved by the imposition of effluent limitations on point-source discharges and reasonable non-point source controls. (40 CFR § 131.10(a), (d).)

Designated uses are described in Table II-1 of the Sacramento River/San Joaquin River Basin Plan. These designated uses are also assigned to the streams that are tributary to the water bodies listed in Table II-1. “Streams” include modified natural channels but not constructed agricultural drains. In addition, in implementing the State’s Sources of Drinking Water Policy, the Regional Board assigned MUN to all water bodies (including constructed agricultural drains) that were not listed in Table II-1. The assigned uses and the water quality criteria to protect the uses make up the Central Valley’s water quality standards. Designated uses may be de-designated if they are not existing uses as defined in 40 CFR 131.3 and the State can demonstrate that attaining the designated use is not feasible because of one or more of the

factors described in 40 CFR 131.10(g). See also response to comment 1 from East San Joaquin Water Quality Coalition regarding beneficial uses and the Triennial Review of the Sacramento River/San Joaquin River Basin Plan.

Comment 2 - The San Joaquin River must be removed from the §303(d) list for electrical conductivity because it was based on faulty data or the absence of data. It was inexplicably added to the 1996 §303(d) list after the Regional Water Board adopted the list in January 1996 without this water-body pollutant combination.

The commenter is correct that in 1996 the Regional Water Board did not include the lower San Joaquin River on the §303(d) list for salinity and boron and that Regional Water Board staff sent a memo afterwards to State Water Board staff indicating that salinity and boron should be added to the list. The staff memo to State Water Board indicated that these two pollutants were well documented to be impairing the San Joaquin River and should have been included on the list adopted by the Regional Water Board. As indicated in the staff memo, USEPA agreed to publicly notice these changes when they considered adoption of the §303(d) list. USEPA's adopted 303(d) list included salinity and boron for the lower San Joaquin River. Also, salinity problems in the San Joaquin River had been recognized well before the 1996 listing cycle. Previous water quality assessments identified salinity problems in the San Joaquin River.

The inclusion of the San Joaquin River in the §303(d) for salinity is supported by the ruling on *San Joaquin River Exchange Contractors Water Authority v. State Water Resources Control Board, et al* (Sacramento Sup. Ct. Case Nos. 06CS01243, 06CS01244, 06CS01310), which stated, "Given that the Salt/Boron Amendment clearly provides for the use of the existing Vernalis water quality objectives as the water quality standard for TMDL load allocations and was adopted in compliance with Porter Cologne and APA procedures, the water quality objectives are properly considered to be applicable to the [lower San Joaquin River]. The WQO provides an adequate basis for confirming the listing of the [lower San Joaquin River] as a water quality impaired segment under section 303(d) of the CWA, for establishing a salt and boron TMDL for the [lower San Joaquin River], for enforcing the load allocations of the TMDL, and for, finding that the control program alternatives analyzed in the CEQA documentation are legally feasible."

Comment 3 - The San Joaquin River must be removed from the §303(d) list for electrical conductivity because there are no applicable salinity objectives, because MUN is not an existing use and secondary MCLs cannot be used since they apply to water at the tap and not at the source. Also, the Vernalis salinity objective, which is a compliance point for the southern Delta water quality objectives for agricultural beneficial uses, is not an applicable salinity/electrical conductivity objective for the San Joaquin River upstream from the Delta Boundary.

The Clean Water Act directs states to identify waters where water quality standards are not met and water quality standards are made up of the designated uses and the criteria to protect the use. "Potential" uses identified in the Basin Plan are designated uses. USEPA requires the designation and protection of uses that are "attainable." "At a minimum, uses are deemed attainable if they can be achieved by the imposition of effluent limits required under Sections 301(b) and 306 of the Act and cost-effective and reasonable best management practices for

nonpoint source control. (40 CFR § 131.10(d); see also, 40 CFR § 130.3 and USEPA, Water Quality Standards Handbook, 2d Ed. (2007) § 2.4.) MUN is a designated beneficial use. Challenges to designated uses are beyond the scope of this proceeding. Water quality criteria to protect MUN are appropriate to identify water quality limited segments as discussed in the responses above. Secondary maximum contaminant levels (MCLs) are derived for consumer acceptance in drinking water. The Basin Plan does not include subcategories of use that distinguish municipal source water from private drinking water supplies. The adopted water quality objectives apply to all waters with a MUN designation. The Regional Board adopted regulations (Basin Plan page III-3) to use MCLs as water quality objectives to protect waters designated MUN. See response to comment 1 from East San Joaquin Water Quality Coalition regarding beneficial uses and the Triennial Review of the Sacramento River/San Joaquin River Basin Plan.

Vernalis is at the Delta boundary. The salinity objective for Vernalis applies at the Delta boundary. The objective at Vernalis will not be met if the objective is exceeded in the San Joaquin River anywhere downstream of the input of the Stanislaus River. In addition, the Bay-Delta Plan states that water quality objectives apply throughout the general area, such as the southern Delta, and not just at the compliance points. (Water Quality Control Plan for the San Francisco Bay/Sacrament-San Joaquin Delta Estuary, p. 10.) Therefore, it is reasonable to apply the Vernalis objective to the entire segment from the Stanislaus River to Vernalis. The superior court upheld this use of the Vernalis objective in *San Joaquin River Exchange Contractors Water Authority v. State Water Resources Control Board*, *supra*.

Monitoring data collected at Vernalis (which is representative of the entire segment upstream to the confluence with the Stanislaus River) indicates that this segment does not exceed the Vernalis objective. Therefore staff is proposing that the segment be de-listed.

Comment 4 - *If the Board insists on using the MCLs, then the Board should use the upper limit of the MCL (1600 uS/cm) rather than the recommended level (900 uS/cm) because the MCL is a range rather than a single value and it's justifiable due to the lack of actual or anticipated drinking water use.*

The secondary MCLs for electrical conductivity provide a range of values including a recommended level (900 uS/cm), upper level (1600 uS/cm) and a short-term level (2200 uS/cm). The “recommended” concentration was used as it is intended to be protective of all drinking water uses. While the Board may choose to use other levels, such as the 1600 “upper” level, the determination must be based on site-specific considerations that are beyond the scope of the 303(d) listing process. For example, the “upper” level is appropriate under the Department of Public Health regulations only when it is neither reasonable nor feasible to provide more suitable drinking water quality. Modification or interpretation of objectives may be appropriate during TMDL development. Use of the recommended MCL level is consistent with the Board's other regulatory programs.

Comment 5 - *The San Joaquin River and Major Eastside Tributaries should not be identified as water quality limited segments for temperature because COLD is not an existing beneficial use.*

The draft list incorrectly identified COLD as the relevant beneficial use for the temperature impairments. The relevant beneficial uses for the San Joaquin River are MIGR (cold) and for the tributaries MIGR (cold) and SPWN (cold). MIGR and SPWN are designated uses and must be maintained and protected unless they are de-designated. Challenges to designated uses are beyond the scope of this proceeding. At any rate, the data cited on page 13 of these comments support the MIGR and SPWN listings; while impairments or other factors have greatly reduced cold-water spawning, the use clearly still exists. See response to comment 1, above, and response to comment 2 from East San Joaquin Water Quality Coalition for discussion of the Triennial Review process for addressing beneficial use designations.

Comment 6 - The San Joaquin River and Major Eastside Tributaries should not be identified as water quality limited segments for temperature because the incorrect water quality objectives were used. The Basin Plan temperature objective is based on natural receiving water temperature and staff did not establish that the natural receiving water temperature was unavailable before using the alternative approach as required by the Listing Policy.

Staff used the part of the temperature objective that states that there shall be no alteration of natural receiving water temperature “unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses.” Actually, the objective requires an elevation of 5°F above the natural receiving water temperature. At a minimum, the objective requires an alteration of the natural receiving water temperature. A San Joaquin River Basin-Wide Water Temperature Model was developed that staff could have used to establish the “natural receiving water temperature.”

Controllable factors cannot achieve the USEPA Region 10 Water Temperature Guidance; therefore, the use of the Guidance for listing decisions is not appropriate.

Staff cannot use the USEPA Region 10 Temperature Guidance because it is not a water quality objective that supersedes the Basin Plan temperature objective of 5°F above the natural receiving water temperature.

The process staff used to support new temperature listings can be summarized as follows. The Basin Plan narrative temperature objective has two parts. The first part is a narrative objective that says “The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Board that such alteration in temperature does not adversely affect beneficial uses.” The second part is a numeric objective that says “at no time or place shall the temperature of cold or warm intrastate waters be increased more than 5 degrees F above natural receiving water temperature.” The narrative objective is similar to the chemical constituents objective and is not, as the commenter suggests, merely a limitation of the numeric objectives. Staff applied the narrative temperature objective to make determinations about temperature impairments. Notwithstanding the interpretation of the language in the temperature objectives, however, listing is required if the COLD or other use is impaired due to temperature. Listing is required if *standards* are impaired. (CWA § 303(d); Listing Policy, § 7 (“water quality limited segment”).) Standards include designated uses. (40 CFR § 131.3(i).) Listing is thus required for an impaired use whether or not the Basin Plan includes water quality objectives to protect the use.

Of the 11 bases for listing an impaired segment, only three of them are based on exceeding numeric objectives. (Listing Policy, § 3.)

It is not a simple task, using information that was readily available, to determine the natural receiving water temperature for the San Joaquin River and major tributaries to the San Joaquin River downstream from the dams. The Listing Policy provides an approach when this is the case. When “historic” or “natural” temperature data are not available, the Listing Policy requires the board to compare recent monitoring data to the temperature requirements of aquatic life in the water segment. (Listing Policy, § 6.1.5.9.) While the Listing Policy does not revise or adopt new water quality objectives, the alternative approach specifically states that the temperature monitoring data shall be compared to the temperature requirements of aquatic life in the water segment. The Thermal Plan has been used as a reference to help define the natural receiving water temperature of the Basin Plan’s temperature objectives, even though the Thermal Plan is not directly controlling. The Listing Policy, on the other hand, specifically governs this proceeding. The temperature methodology set forth in the Listing Policy is directly applicable and the Central Valley Water Board is required to use it. The Listing Policy specifically mentions that salmonids (salmon and steelhead) frequently represent the beneficial use most sensitive to temperature. Staff compared recent monitoring data to USEPA Region 10 Water Temperature Guidance that was developed to protect salmon and steelhead. The process that staff followed was nearly identical to the process followed by the State Water Board for temperature listings in the 2006 listing cycle. The 2006 listing cycle was the first to be developed using the Listing Policy Guidance adopted by State Water Board. Although Regional Board staff used the USEPA Region 10 Water Temperature Guidance and State Water Board used different guidance, the Region 10 Guidance was not available for the 2006 listing cycle.

Staff believes that use of the Region 10 Water Temperature Guidance is appropriate for this purpose. At this time, it is clear that the fisheries are suffering declines. The Department of Fish and Game, the state agency charged with protecting the state’s fishery resources, has provided information that the fisheries are adversely impacted by the temperature in these rivers. The Department used the USEPA Region 10 Water Temperature Guidance, which has undergone scientific peer review, for the life stage temperature requirements of sensitive aquatic life species. Therefore, it is appropriate for the Regional Board to use the same criteria to make listing decisions.

The current listing effort is focused on reviewing available monitoring information and evaluating whether designated beneficial uses are impaired. This effort does not include evaluating the controllable factors. The TMDL process will develop a program to identify controllable factors and limit their loads.

Comment 7 - The Delta should not be listed for temperature. The State Water Board replaced the temperature objectives at Vernalis in the 1991 Salinity Plan with flow objectives in the 1995 Bay-Delta Plan. Therefore, compliance with the flow objectives should be the measure of compliance and not temperature.

Staff agrees that the Delta Plan no longer contains a temperature objective that applies in the Delta. The segment of the San Joaquin River from the confluence of the Stanislaus River to Vernalis (the Delta boundary) is subject to the temperature standards in the Basin Plan. The

proposed temperature listing for this segment is based on the same rationale that supports other proposed temperature listings throughout the San Joaquin Valley.

Comment 8 - The Delta Waterways (Stockton Ship Channel) must be removed from the §303(d) list for organic enrichment/low dissolved oxygen. The listing of the Stockton Ship Channel as a water quality limited segment for organic enrichment/low dissolved oxygen does not include data for the listing. New management practices have been implemented since 2005. Dissolved oxygen monitoring data from Rough & Ready Island shows that there was sufficient compliance with the DO objective during the period from 2005 through 2008 to de-list based on section 4.2 of the Listing Policy.

Central Valley Water Board staff concur that the time period from 2005 to present day is a period of time when significant changes within the San Joaquin River (SJR) were occurring. One change that occurred within the SJR that was directly related to the TMDL is the upgrade made to the Stockton Regional Wastewater Control Facility in 2006 to reduce the ammonia loading into the SJR and comply with their new NPDES permit.

The aerator located at Rough & Ready Island (RRI) is a Demonstration Aeration Facility. This is a two-year demonstration. The first year of the demonstration was 2008, so the demonstration has not been completed. Currently, there is no agreement in place over who will be operating the aerator after the demonstration phase is complete, assuming the demonstration is successful. If the demonstration aeration facility is successful and an operating agency is formed, the aerator must be operated under numerous water year types (e.g., wet, normal, dry) to determine the full beneficial effects of the aerator on dissolved oxygen concentrations in the impaired reach of the ship channel. At this point, there is insufficient, representative data to evaluate the delisting of the Stockton Ship Channel from the 303(d) during this listing cycle.

The data from the time period 2005 through 2008 is not fully representative of the entire impaired reach of the Stockton Ship Channel. The data at Rough & Ready Island (RRI) represents only one point within the impaired reach. The impaired reach of the ship channel extends for approximately 14 miles (Disappointment Slough to Stockton). There are other data sources for the impaired reach which should be evaluated in combination with the data from the RRI monitor. These data sources include the DWR boat cruises (1983 – present) and the DWR monitoring points located upstream and downstream of the Demonstration Aeration Facility at RRI (2008 only).

In reviewing the submitted DO data, only two years (2006 and 2008) met the delisting factor in section 4.2 of the Listing Policy. Two years out of eight is not representative and not sufficient evidence indicating attainment of the water quality objective. The submitted DO data had 36 exceedances during the pooled years 2005-2008. The binomial distribution for a sample size of 212 would have a maximum exceedances number of 35 (Table 4.2 in the Listing Policy). The pooled years (2005-2008) do not meet the delisting factor (section 4.2). In addition, the methodology on how the data was manipulated was not described and errors were noted between the hardcopy data provided in the letter and the electronic data and data calculations.

Although there have been changes occurring in the TMDL source area since 2005, the data as presented, do not meet the delisting factor specified in section 4.2. In addition, as noted

above, the information provided as a line of evidence to de-list is not fully representative of the impaired reach of the Stockton Ship Channel. The evidence presented above requires the Central Valley Water Board to not de-list the Stockton Ship Channel from the §303(d) list for organic enrichment/low dissolved oxygen. The data provided by the SJRGA will be taken into consideration, in combination with other data sources, to evaluate the Stockton Ship Channel §303(d) listing for organic enrichment/low dissolved oxygen during the next §303(d) listing cycle.

Comment 9 - The Regional Water Board must remove all exotic species listings from the §303(d) list. The Functional Equivalent Document for the Listing Policy determined that TMDLs for exotic species are inappropriate. Therefore, all exotic species listings must be eliminated.

The previous 303(d) list developed by State Water Board included listings for exotic species. In the solicitation process, no information was submitted relevant to the specific listings. Therefore, staff is recommending no change to these previous listings established by State Water Board and they are included in the impaired waterbody category (category 5). This is appropriate since the current proposed list and the list adopted in the last listing cycle were both developed using the Listing Policy established prior to the last listing cycle.

Comment 10 - The “Delta Waterways” should be identified with greater particularity. The Central Valley §303(d) List includes listings for the “Delta Waterways,” which are further divided into different subareas. There is, however, no definition of what the Delta Waterways are or of their various subareas.

Appendix 42 of the Basin Plan for the Sacramento River and San Joaquin River Basins includes a list of Delta Waterways. The list includes readily identifiable water bodies within the boundaries of the “legal” Delta that are hydrologically connected by surface water flows (not including pumping) to the Sacramento and/or San Joaquin Rivers. An appendix containing maps of the Delta Waterways portions and identifying which waterbodies are in each portion is now included with the draft final Integrated Report. A listing for the “Delta Waterways, Western Portion” would include the Delta water bodies in Appendix 42 that are within the area identified as the Western Portion. If there are specific 303(d) listing decisions for waterbody segments wholly or partly within the legal Delta, those specific listing decisions would apply instead of the more general listing decisions for the Delta Waterways. Listings for specific waterbody segments that are partly in the “legal” Delta and partly outside the “legal” Delta apply to the entirety of these segments.

Comment 11 - The San Joaquin River Group Authority (SJRGA) submitted comments for the proposed temperature listings for the San Joaquin River, Stanislaus River, Tuolumne River, and Merced River in response to your invitation at the September 25, 2007 workshop. The comments were submitted, via electronic mail, on November 19, 2007. A compact disc and paper copies followed by US mail. However, the comments were not included in any lines of evidence.

Staff reviewed the comments from the SJRGA, dated 19 November 2007; the response to those comments that were prepared by the Department of Fish and Game; and all the information that was submitted previously by all parties as part of the original solicitation of

information for development of this Integrated Report. The draft staff report and proposed recommendations for temperature listings in the San Joaquin River watershed were developed after considering all the information mentioned above. As you know, there is significant disagreement among commenters regarding these proposed temperature listings. In developing the recommendations, staff followed the guidance in the Listing Policy and followed the process that State Water Board used during the last listing cycle for making determinations on temperature listings.

25. Sequoia and Kings Canyon National Parks – Craig C. Axtell, Superintendent

Comment 1 - *Data used for the proposed pH listing are only for the lower end of the North Fork Kern River. The upper section of the North Fork Kern River is an area with minimal human impact. Available USGS data for the upper North Fork Kern River show pH values of 7.08 – 7.52.*

The USGS data has been included in a revised assessment. As a result of the inclusion of the new data, the proposed listing of the North Fork Kern River for pH has been withdrawn.

Comment 2 - *High pH values may be due to natural causes such as marble or mineral springs.*

Comment acknowledged.

Comment 3 - *Waters should not be declared impaired without evidence of an anthropogenic cause.*

Proving anthropogenic cause is not a requirement for determining non-attainment of standards. If it can be shown that non-attainment of standards is not due to anthropogenic causes, this can be addressed in future listing cycles and/or through standards revisions.

26. Sequoia National Forest – Terry Kaplan-Henry

Comment 1 - *The Sequoia National Forest respectfully challenges the listing of the following rivers on National Forest Lands as they are and remain unaffected by actions that could potentially affect the pH, DO, or toxicity: 1. Kern River, North Fork from the Forest boundary to its headwaters in the Sequoia National Park [pH, sources unknown]; 2. Lake Isabella, from Isabella Dam upstream to elevation 2605 feet above sea level [pH, DO, sources unknown]; 3. Kern River, Lower, from Isabella Dam downstream to the Sequoia National Forest Boundary [pH, sources unknown]; 4. Deer Creek from the Forest boundary to its headwaters [pH, unknown toxicity, sources unknown]; and 5. Hume Lake, from Hume Dam to the beginning of the lake approximately 5200 feet above sea level [DO, sources unknown]. The Sequoia National Forest challenges the listing of the above water bodies on National Forest Lands based on the following (noting that “Information specific to each of the [below] items and the affected water bodies is provided in a following section of [their] letter”:*

Staff agrees that the North Fork of the Kern River should not be listed as impaired for pH. This determination was based on reviewing the detailed monitoring data that was provided by Sequoia National Forest and the SWAMP data used to make the draft proposed 303(d) listing decision.

Staff has reviewed the comments and additional information submitted and believes that the proposed listings for Lake Isabella, Lower Kern River, Deer Creek and Hume Lake are appropriate. As is indicated in the more detailed responses below, the appropriateness of existing beneficial uses is not part of the process for development of this Integrated Report, including the impaired waterbody list.

More detailed responses are provided on the detailed comments relevant to each waterbody.

Comment 2 - The Forest has implemented, monitored, and been effective in the protection of water quality through its BMP program. As the State Water Board (Board) is aware; the primary implementation mechanism for TMDL implementation is the state section 319 nonpoint source management program (BMP's). The Forest Service in Region 5 is authorized as a Designated Management Agency (DMA) under a 1981 Management Agency Agreement (MAA) with the State Water Quality Control Board and implements State approved BMP's designed to maintain water quality standards and control nonpoint source pollution. As the Forest's BMP's have been approved by the State in the aforementioned MAA, they become the primary mechanism for meeting water quality standards. Based on Forest monitoring BMP's are implemented and effective in mitigation of non point source pollution and are therefore in compliance with applicable water quality standards.

The process for development of the Integrated Report and the 303(d) impaired waterbody list involves evaluating water quality data and information and comparing that data to existing water quality objectives or evaluation criteria that are appropriate to protect current designated beneficial uses. Staff recognizes that the Forest Service has a program to implement BMPs and monitor their effectiveness. Staff looks forward to continuing to work with the Forest Service to ensure that BMP implementation is effective in addressing existing impairments and preventing future impairments. Development of the Integrated Report and impaired waterbody list is a Board-required activity that is essentially independent of the USFS management practices program and the MAA. The task was to assess the waters using readily available information to determine if there were impairments, regardless of other activities or programs are being implemented at the same time. Staff will want to coordinate with USFS to address water quality issues that are identified.

See response to comment 1 from Lassen National Forest for a discussion of the requirements associated with determining that an impaired waterbody should be in Category 4b (evidence shows at least one use not supported but TMDL is not needed because an existing regulatory program is reasonably expected to result in attainment of water quality standards) rather than Category 5 (evidence shows at least one use not supported and a TMDL is needed).

Comment 3 - BMP implementation and effectiveness are monitored annually by the USFS and reported to the Regional Board. Between 1992 and 2008, BMP's monitored

on the Sequoia National Forest were found to be effective in 84 % of the instances monitored. During the years monitored by the Water Board for this proposed listing (2002-2004) BMP's were found to be effective in 93 % of the instances monitored. Most recent monitoring 2004-2008, found BMP's to be effective in 96% of the instances monitored. The Sequoia National Forest provides copies of annual monitoring results to the Central Valley Water Quality Control Board on an annual basis. This board has never responded negatively or suggested our management to be inadequate. Reports to the Water Board provide evidence of compliance with water quality standards and protection of beneficial uses. Therefore, the forest is confident that resource management activities provide a high level of protection for beneficial uses of water.

Staff evaluated readily available monitoring information and followed the Guidelines in the Listing Policy for making impairment determinations. A few listings are recommended in the Sequoia National Forest as a result of the evaluations. Data from all over the Central Valley Region was evaluated in the same consistent manner. Further evaluation may determine that management practices being implemented are protecting water quality and some of the proposed listings (for example pH) are due to natural sources. However, at this time, staff do not have the information to make this determination. Making this determination will be one of the first tasks staff will undertake in developing plans for addressing the listings on Sequoia Forest Lands. Staff wants to work with Forest Service to determine how to address listings on Forest Service lands.

Staff acknowledges the efforts of the Forest Service, as authorized steward under the 1981 MAA with the State Water Resources Control Board (SWRCB), for maintaining water quality in the Forest to Basin Plan standards using Best Management Practices (BMPs). Staff is encouraged that BMP effectiveness (and, presumably as a result, water quality), as determined by annual monitoring, is apparently increasing and has been up to 96% effective for the period 2004 to 2008. Nevertheless, after reviewing the monitoring information, staff concluded that impairment listings were appropriate. The presence of a BMP implementation and evaluation program does not necessarily guarantee that there will be no impairments.

Comment 4 - The water quality sampling performed by the Water Quality Control Board from 2/2002 to 5/2004 represents conditions for the lowest water years within a 15 year period and as such is not representative of normal conditions. Sampling for pH and DO would be considered indicative of a temporal trend.

There is no clear definition in the Listing Policy on how to deal with temporal trends. Section 3.10 of the Listing Policy mentions seasonal effects and interannual effects, but Section 3.10 is really focused on providing guidance on evaluating trends, especially as they might be related to antidegradation considerations. The Central Valley Water Board acknowledges that the approximately 2-year period for which SWAMP pH and DO data was collected occurred during one of the "lowest water years within a 15 year period." It is not evident, based on the information provided by the commenter, that the 15-year period mentioned is not representative of longer-term "normal conditions." In the absence of information to the contrary, staff is required to use the available monitoring information to make impairment determinations. An assessment of trends in water years or water quality would be one of the initial steps that would need to be undertaken when work on addressing these impairments is initiated. Hopefully, at

that time, more monitoring data will be available and it will be easier to make this determination.

Comment 5 - The water quality sampling performed by the Water Quality Control Board from 2/2002 to 5/2004 represents conditions following one of the worst fire years on record for the Kern River Watershed as impacts of these fires were documented to have affected water quality for up to three years following the events. This sampling would be considered indicative of a temporal trend.

There is no specific definition on what constitutes a temporal trend. Data was not provided that clearly demonstrated that the exceedances were short term and clearly related to fires or other short term natural occurrences.

Comment 6 - The potential listing of Deer Creek and North Fork Kern River extrapolates data upstream for 17 and 71 miles, respectively.

The extents of waterbody segments associated with the draft proposed 303(d) list were based on available data. Since then, additional pH data for the North Fork Kern River (for the approximate period 1960 to 1993) and for Deer Creek (2006 and 2007) has been provided by the commenter and by the Sequoia National Park. All of the available pH data was used to reassess the proposed pH 303(d) listings for the North Fork Kern River and Deer Creek. The review concluded that the proposed listing for Deer Creek was appropriate. Staff is recommending that the listing for the North Fork Kern River be withdrawn (fact sheets have been adjusted to support this determination).

Comment 7 - The potential listings on the North Fork Kern River, Lower Fork Kern River and Lake Isabella fail to identify the geochemical relationships between the Kern River Fault, hot springs with naturally high pH values, carbon dioxide and chemical weathering of basic and ultrabasic rocks. This is especially critical in low water years where these effects are magnified. This sampling would be considered indicative of a temporal trend.

The Central Valley Water Board acknowledges the remarkable geology of the Kern River Canyon area and recognizes that the literature addresses some of the geochemical relationships mentioned by the commenter, though no specific data or information was presented to document the contention that the pH exceedances were from natural sources. Staff cannot assume that the pH exceedances were all from natural sources. Studies would need to be completed to make this determination. Staff wants to work with the Forest Service to figure out the reasons for the impairments and to try to address them, if they are not totally from natural sources.

Comment 8 - Beneficial uses of water are not properly matched to habitat conditions relative to Cold/Warm water habitat designations.

Evaluation of whether designated beneficial uses (in the Tulare Basin Plan) are appropriate is beyond the scope of preparing biennial updates to the 303(d) list (the process under which the Sequoia National Forest provided their comments). The commenter is encouraged to address

this issue more appropriately during the Central Valley Water Board's Triennial Review process.

Comments Specific to Kern River, North Fork

Comment 10 - *All the comments that follow in this subsection are in support of not listing the North Fork Kern River for pH.*

Staff agrees that the North Fork Kern River should not be listed for pH. Staff evaluated monitoring data submitted by Sequoia National Forest, along with the SWAMP data used to make the draft proposed 303(d) listing recommendation. In addition, staff considered the timing of the wildfires in 2002 to 2004 and the hydrology of the North Fork Kern River watershed. Based on available data (particularly the bulk of USGS pH data from 1960 to 1993), the North Fork Kern River is now proposed for "Do Not List" on the 303(d) list for pH. The fact sheets (Lines of Evidence and Decision) have been updated accordingly. Sequoia National Forest submitted a significant number of comments that provided different rationale for not listing the North Fork Kern River for pH. Following are responses to each of these.

Comment 11 - *North Fork Kern River, as identified by the Board, starts above Lake Isabella and proceeds roughly 80.5 miles upstream to its headwaters; 78.5 miles are on Federal Lands. This segment flows roughly 25 miles downstream from the headwaters of the North Fork Kern in Sequoia National Park to the Golden Trout Wilderness, Sequoia National Forest. The segment continues downstream roughly 22.5 miles through the Golden Trout Wilderness. Therefore, the upper 47.5 miles of the proposed river segment flows through Sequoia National Park and the Golden Trout Wilderness. The proposed segment continues downstream about 30 miles to the forest boundary. The remainder of the reach is roughly 2.5 miles downstream through lands administered by Kern County, U.S. Bureau of Land Management (BLM), and private landowners. The nearest sampling site to the headwaters of this proposed reach is 71 miles away and constitutes quite an extrapolation of data in order to assume conditions 71 miles upstream are similar to the section of the reach actually sampled.*

Staff evaluated monitoring data that was readily available and needed to make a determination on the size of the segment that the monitoring data represented. When staff made these determinations, many factors were taken into account, including location of tributary streams that would provide dilution, presence of diversions and weirs, changes in waterbody characteristics (velocity, depth, width, etc.), land use characteristics and any other relevant information. Staff did not visit all the sites included in the Integrated Report to try to gather information that would assist in segmentation decisions. Regardless, staff is recommending that the North Fork of the Kern River not be listed for pH, so this segmentation question should not be as much of a concern.

Comment 12 - *Sampling that placed North Fork Kern River for consideration on the 303(d) lists are at seven sample sites, four of which are below Lake Isabella Dam and not in the segment under consideration. The sites above Lake Isabella Dam are located at Springhill, River Kern Beach, and Riverside Park. Sampling occurred for roughly 2½ years between 2/27/2002 and 5/26/2004, with each site sampled nine times. Sampling results indicate pH values range from 7.78 to 8.7. Acceptable pH ranges are 6.5 to 8.3.*

The source of the pH is stated as unknown. Beneficial use for North Fork Kern River is stated as Warm Freshwater Habitat in Appendix F, Supporting Information, Draft 2008 California 303(d)/305(b) Integrated Report, Kern River, North Fork, Decision ID 15950, pH section. Enclosure 1 provides maps and details obtained from the Central Valley Water Quality Control Board on sampling stations and sampling results.

Staff agrees that each of the two segments of the Kern River were assessed with data that was not representative of each segment. Staff have re-assessed the data accordingly. Staff is recommending that the North Fork of the Kern River not be listed for pH. Staff appreciates being provided with the corrected data tables assembled by the commenter.

Comment 13 - *The U.S. Department of Agriculture Forest Service (USFS) and the U.S. Department of Interior (USDI) together manage approximately 1,020 square miles within the North Fork Kern Watershed as portions of the Sequoia National Forest and Sequoia National Park. A primary objective of the USFS in managing our portion of these lands is to improve and protect watershed conditions (USDA Forest Service Strategic Plan, 2007). The USFS recognizes its responsibilities to protect water quality and supports the efforts of the Regional Board to enforce the Clean Water Act and the California Water Code through revision of its 303(d) list of impaired water bodies.*

Comment acknowledged. The existence of a program to manage lands to improve and protect water quality does not remove or substitute for the requirement for the Regional Water Board to assess water quality information and determine whether beneficial uses are being protected.

Comment 14 - *The majority of the North Fork Kern River is inaccessible from Johnsondale Bridge to the headwaters of the Kern, roughly 60 miles. This area has no road crossings above this point and is in fact so rugged and wild there is only foot access.*

Comment acknowledged.

Comment 15 - *The North Fork Kern River was designated as a Wild and Scenic River by Congress on November 24, 1987 through the Wild and Scenic Rivers Act (WSRA). The extent of the Wild and Scenic designation on the North Fork Kern River is from the Tulare-Kern County line to its headwaters in Sequoia National Park. The upper 47.5 miles of the river flows through Sequoia National Park and the Golden Trout Wilderness. This is a remarkably scenic area with a wide variety of recreational opportunities, as well as cultural and historical features and is managed as such. The section 5,600 feet above Johnsondale Bridge, to Tulare Kern-County line is designated as Recreation and upstream to the headwaters as Wild, under the Wild and Scenic Rivers Act of 1987.*

Staff appreciates that the Wild and Scenic designation undoubtedly provides more protection from water quality degradation than rivers that are not so designated. Nevertheless, the watershed area is not isolated from potential impacts of various types of human supported activities (for example, grazing, fecal contamination associated with recreational activities, aerial drift of contaminants from outside the Forest boundaries).

Comment 16 - *The Wild and Scenic River designation requires that the river-administering agencies are to protect the river's identified values, free-flowing condition,*

and associated water quality. Specifically, each component is to be “administered in such manner as to protect and enhance the values which caused it to be included in said system. . . .” The WSRA also directs other federal agencies to protect river values. It explicitly recognizes the Federal Energy Regulatory Commission, Environmental Protection Agency, and any other federal department or agency with lands on or adjacent to designated rivers or that permit or assist in the construction of water resources projects. The mandate to protect river values through coordinated federal actions is found in several sections of the WSRA.

See previous response.

Comment 17 - *Additionally 47.5 miles of this river section identified for listing runs through the Sequoia National Park and Golden Trout Wilderness. The Forest Service is responsible for administration of the Golden Trout Wilderness as directed by the Wilderness Act. The Golden Trout area became a wilderness in 1978 when 306,000 acres were designated by Public Law 95-237.*

Comment acknowledged.

Comment 18 - *Based on the above guidance under the Wild and Scenic River Act, Wilderness Act, as well as our MAA with the State Water Quality Control Board, and the Clean Water Act and responsibilities under these authorities the Sequoia National Forest would not implement any type of management that would cause impairment on the North Fork Kern River.*

Staff is recommending that the North Fork Kern River not be listed for pH. The support for the nonlisting decision is based on a review of the monitoring data. The presence of the MAA, the Wild and Scenic River designation and Golden Trout Wilderness designation undoubtedly help provide protection for the North Fork Kern River. Nevertheless, the Regional Water Board is still required to evaluate the condition of waters and make determinations about impairments.

Comment 19 - *Furthermore it seems unreasonable that a water body of this designation would be listed as a 303(d) stream by the Water Board without identification of the source of pollution and through extrapolation of sampling data collected approximately 71 miles downstream [emphasis in original].*

See previous responses. The 303(d) list includes staff’s best estimates of what are the likely sources. Source identification studies will take place when a project is initiated to address the impairments.

Comment 20 - *The Forest has been monitoring water quality on National Forest Lands for years. The Forest has fisheries inventories and channel stability data that go back to the early 1970’s. Policy directs the Forest to investigate macroinvertebrate and stream condition inventories prior to any ground disturbing activity. The Forest has extensive information along streams tributary to the North Fork Kern which includes physical, chemical and biological data. Approximately 152 miles of streams tributary to the North Fork Kern River have been surveyed for Fisheries Habitat and Stream Channel Stability since 1976. Enclosure 2 provides a summary of streams surveyed in the Kern River drainage following Stream Condition Inventory Protocol. Stream Condition Inventory*

surveys provide chemical, physical and biological data. Evaluation of pH values from these surveys show a pH range of 6 to 8 on streams surveyed from 2001 to 2008. Three of the sites listed as having low pH have been or are in the process of restoration. Type of restoration is provided in the enclosure under site name.

Staff appreciates the ongoing efforts of the USFS to monitor stream conditions associated with their management of multiple use practices in the Forest (including Wilderness Areas and in watersheds associated with Wild and Scenic Rivers). Staff also appreciates receiving 'new' data pertaining to these practices in tributary streams. None of these tributary streams have been proposed for 303(d)-listing and the North Fork Kern River is no longer proposed for listing for pH.

Comment 21 - *Based on fish population (Table 1) and water temperature monitoring completed by Southern California Edison (SCE) over the past two decades, this segment of river represents both a coldwater and transitional zone fisheries. The coldwater fishery is characterized by the presence of salmonid species, primarily rainbow trout. There are no water temperature criteria defining coldwater for this segment of the North Fork Kern River in Water Quality Control Plan for the Tulare Lake Basin. However, the California Department of Fish and Game (CDFG) generally ceases stocking of trout when temperatures exceed 68° F (20° C). Water temperature data collected for this river segment during the summers of 1998, 2001, and 2002 indicate that temperatures are influenced by water year type, with the coldwater zone (daily mean temperatures of 20° C or less) varying between Fairview and roughly 4 miles downstream of Fairview (near Gold Ledge).*

The transitional zone is characterized by daily mean water temperatures exceeding 20° C, along with a decreasing number of salmonids as a percentage of the fish community. The fish community downstream of Goldledge to Lake Isabella would be included under the "Pikeminnow-hardhead-sucker assemblage" described by Moyle (2002. Inland Fishes of California). [Table 1 Fish monitoring Data Collected by SCE" is included in original Comment letter.]

Thank your for the information. In our draft staff report staff was not proposing any listings for the North Fork Kern River that were dependent on what kind of aquatic life use is present (COLD or WARM). Nevertheless, in developing the Integrated Report and impaired waters list, staff used currently designated beneficial uses. This is not the forum for determining whether the designated beneficial uses are inappropriate for a waterbody.

Assuming the Regional Water Board has inappropriately designated one or more uses for a listed waterbody, the appropriate process is to include any impaired segments on the §303(d) list. Then, in accordance with State Water Board, *Water Quality Control Policy for Addressing Impaired Waters, Regulatory Structure and Options* ("TMDL Policy"), § I.B during the development of a TMDL or its implementation plan, staff may determine that the standards are inappropriate or imprecise, thus rendering water quality attainment impossible unless standards are modified. In such cases, staff will undertake a limited review of the standards. If staff determines that the policies underlying the existing standards should be revisited, in lieu of crafting an implementation plan under this policy, the impaired water is referred to the Water

Quality Standards staff for consideration of an appropriate standards action, through the appropriate processes.

Comment 22 - *The water quality sampling period of 2/2002 to 5/2004 includes numerous wildfires that affected the water quality of the Kern River Basin. During this period the largest wildfire to burn on the Sequoia National Forest was the McNally fire. This fire burnt roughly 150,000 acres during July and August of 2002 in the North Fork Kern River basin, and the effects of the fine sediment and ash was noticed for the next three years as documented at the Kernville Fish Hatchery. Three years after the fire the fish hatchery still had problems with their ponds filling up with ash and sediment. The impacts associated with wildfires could be responsible for changes in pH as values from water board monitoring efforts do not seem consistent with those taken before and after this time frame. It is expected that ash could increase pH values. A study of fire history on water quality could provide interesting relationships. Currently listing the North Fork Kern and downstream waters based on pH values collected from the time period of 2/2002 to 5/2004 could be considered indicative of a temporal trend.*

Staff appreciates the information provided regarding dates and burned areas (acres) for wildfires that occurred in the Forest generally within the period for which there is water quality (specifically pH) monitoring data. Staff has also evaluated the locations and extents (indicating proximities) of these fires relative to the North Fork Kern River (and to Lake Isabella and to the Lower Kern River). Based on a comparison of all of this information, no consistent trend between fire conditions and elevated pH measurements is evident. (See, also, response to Comment 4 regarding temporal trends.) Staff understands that wildfires can have devastating impacts, primarily from ash and sedimentation, upon fisheries and fish management practices. Without documentation, staff believes that the proposed listing recommendations are warranted.

Comment 23 - *Water chemistry data collected by the USGS on the Sequoia National Park and Sequoia National Forest indicate the following pH values range from 6.5 to 8.3 from 1960-1975 and 1975-1993. Six samples exceed standards set by the Water Board in this time frame. BMP implementation and effectiveness and soil and water considerations have increased since this time. Enclosure 3 provides pH values from USGS sites in the North Fork Kern River from the Park and stations 11187000 KERN RIVER ABOVE KERNVILLE CA and 11186000 KERN R NR KERNVILLE (RIVER ONLY) CA.*

The Central Valley Water Board used the USGS pH data provided, along with the SWAMP data used to make the draft proposed 303(d) listing recommendation, to re-assess the proposed pH listing decision for the North Fork Kern River. The timing of wildfires in 2002 to 2004 and the hydrology of the North Fork Kern River watershed were also considered. Based on available data (particularly the bulk of USGS pH data from 1960 to 1993), the North Fork Kern River is now proposed for "Do Not List" on the 303(d) list for pH. The Fact sheets (Lines of Evidence and Decision) have been updated accordingly.

Comments Specific to Lake Isabella

Comment 24 - *All the comments that follow in this subsection are in support of not listing the Lake Isabella as impaired for dissolved oxygen and pH.*

Staff has reviewed the comments and information submitted and concludes that the proposed listing recommendations are appropriate. No data was provided to indicate that the proposed 303(d) listing of Lake Isabella for dissolved oxygen is inappropriate. However, extensive information was provided to support the contention that the designated beneficial use of Lake Isabella for cold aquatic life was inappropriate. In developing the Integrated Report and impaired waters list, staff used currently designated beneficial uses. This is not the forum for debating whether the designated beneficial uses are inappropriate for a waterbody.

Evaluation of whether designated beneficial uses (in the Tulare Basin Plan) are appropriate is beyond the scope of preparing biennial updates to the 303(d) list (the process under which the Sequoia National Forest provided their comments. The Commenter is encouraged to address this issue more appropriately during the Central Valley Water Board's Triennial Review process.

Assuming the Central Valley Water Board has inappropriately designated one or more uses for a listed water body, the appropriate process is to include any impaired segments on the §303(d) list. Then, in accordance with State Water Board, *Water Quality Control Policy for Addressing Impaired Waters, Regulatory Structure and Options* ("TMDL Policy"), § I.B during the development of a TMDL or its implementation plan, staff may determine that the standards are inappropriate or imprecise, thus rendering water quality attainment impossible unless standards are modified. In such cases, staff will undertake a limited review of the standards. If staff determines that the policies underlying the existing standards should be revisited, in lieu of crafting an implementation plan under this policy, the impaired water is referred to the Water Quality Standards staff for consideration of an appropriate standards action, through the appropriate processes.

Staff is recommending that the proposed impairment listings for Lake Isabella remain.

Comment 25 - *The USFS and USDI manage approximately 1,410 square miles of the 2,074 square mile watershed that drains into Lake Isabella. A primary objective of the USFS in managing our portion of these lands is to improve and protect watershed conditions (USDA Forest Service Strategic Plan, 2007). The USFS recognizes its responsibilities to protect water quality and supports the efforts of the Regional Board to enforce the Clean Water Act and the California Water Code through revision of its 303(d) list of impaired water bodies.*

The Forest has been monitoring water quality on National Forest Lands for years. The Forest has fisheries inventories and channel stability data that go back to the early 1970s. New policy directs the Forest to investigate macroinvertebrate and stream condition inventories prior to any ground disturbing activity. The Forest has extensive information along streams that flow into Lake Isabella which includes physical, chemical and biological data. Roughly 166 miles of stream that flow in to Lake Isabella have been surveyed for Fisheries Habitat and Stream Stability since 1976. Enclosure 2 provides a summary of all streams surveyed in the Kern River drainage following Stream Condition Inventory Protocol. These surveys provide chemical, physical, and biological data. Evaluation of pH values from these surveys show a pH range of 6 to 8 on streams surveyed from 2001 to 2008. As mentioned above three of the sites with pH values of 6 are in the process of or have recently been restored. All three of these sites are located

in areas tributary to the North Fork Kern. Type of restoration is provided in the enclosure under site name.

The Central Valley Water Board appreciates the ongoing efforts of the USFS to monitor stream conditions associated with their management of multiple use practices in the Forest (including Wilderness Areas and in watersheds associated with Wild and Scenic Rivers). The Central Valley Water Board also appreciates receiving 'new' data pertaining to these practices in tributary streams. However, none of these tributary streams have been proposed for 303(d)-listing and there is no additional data on Lake Isabella that indicates that listing the lake as impaired for dissolved oxygen and pH are in appropriate.

Comment 26 - *The water quality sampling period of 2/2002 to 5/2004 includes numerous wildfires that affected the water quality of the Kern River Basin. During this period the largest wildfire to burn on the Sequoia National Forest was the McNally fire. This fire burnt roughly 150,000 acres during July and August of 2002 in the North Fork Kern River basin, and the effects of the fine sediment that included ash was noticed for the next three years as documented at the Kernville Fish Hatchery. Three years after the fire the fish hatchery still had problems with their ponds filling up with ash and sediment. The Borel fire burned 3,430 acres in the summer of 2002 from below Isabella Dam at Borel Power House to the Lake Office. A total of 168,014 acres burned from 2002 to 2004 adjacent or upstream of Lake Isabella and Kern River. A table of fire events and size are displayed in enclosure 1. Ash from these fires was deposited into Lake Isabella. Impacts associated with wildfires could be responsible for changes in pH, as values from water board monitoring efforts do not seem consistent with those taken before and after this time frame. It is expected that ash could increase pH values. The proposal of listing the North Fork Kern and downstream waters based on pH values collected from the time period of 2/2002 to 5/2004 could be considered indicative of a temporal trend.*

Staff acknowledges that wildfires can have devastating impacts, primarily from ash and sedimentation, upon fisheries and fish management practices. Staff appreciates the information provided regarding dates and burned areas (acres) for wildfires that occurred in the Forest generally within the period for which there is water quality (specifically pH) monitoring data. Staff has also evaluated the locations and extents (indicating proximities) of these fires relative to the North Fork Kern River (and to Lake Isabella and to the Lower Kern River). Based on a comparison of all of this information, no consistent trend between fire conditions and elevated pH measurements is evident. (See, also, response to Comment 4 regarding temporal trends.).

Comment 27 - *Fish kills followed the McNally fire. The National Weather Service in their report following the first major storm to affect the area after the McNally fire documented the presence of fish kills as a result of flooding and debris slides in the Kern Canyon. They state,*
"...Erosion problems associated with the McNally Fire in Southeast Tulare and Northeast Kern Counties, debris was spread across many mountain roads in the area as well as contributing to a fish kill in the Kern River. Additional flooding and mudslide problems were noted along Highway 178 in Kern County. Peak flow into Lake Isabella from the Kern River was 26,500 CFS on Friday night, the 8th (2002). The lake storage increased from 82,000 acre-feet to 109,000 acre-feet and increased in elevation 5 feet in a 2-day

period from the 8th to 9th." The dead fish ended up along the banks of Lake Isabella. It is expected that DO levels would be decreased as a result of the decaying fish. It is most interesting to note that the majority and the lowest DO values presented by the Water Quality Control Board as not meeting standards were taken on 12/11/2002 (4.2 – 5.91) roughly one month after the report of fish kills. These values constitute seven of a total of ten samples that do not meet standards. The three remaining DO values not meeting standards were collected on 6/19/2002 (6.03, 6.91) and 9/17/2002 (6.53). The proposal of listing Lake Isabella based on DO values collected from the time period of 2/2002 to 5/2004 could be considered indicative of a temporal trend. Furthermore DO samples were taken during the lowest water years within a 15 year period.

Staff acknowledges that flooding and debris slides following wildfires can have an impact on down slope water quality and resident aquatic species. The available data does not conclusively identify wildfires as the source of low DO values measured in Lake Isabella. Although the Listing Policy directs the Central Valley Water Board to consider environmental conditions, determination of pollutant sources is beyond the scope of preparing the 303(d) list; determination of pollutant sources would be part of a constructing a TMDL. Pollutant source analysis is beyond the scope of preparing the 303(d) list; determination of pollutant sources would be part of a constructing a TMDL.

Comment 28 - *The water quality sampling period of 2/2002 to 5/2004 was taken during the lowest water years within a 15 year period. As mentioned above in the section on the North Fork Kern River, geology has a part to play relative to pH values. Documented pH for hot springs has pH levels of 9.61 and 9.25, both values taken in 1975 at Democrat Hot Springs and Miracle Hot Springs, respectively. During low water years the pH from these springs would be less diluted in affected water bodies. Furthermore as discussed later in this section DO values are a function of water depth, temperature in addition to the presence of decaying organic material. The Graph 1 provides a reference of water storage in Lake Isabella during the 2/2002 to 5/2004 sampling period relative to water storage in previous and subsequent years over a 15 year period. Based on this information listing Lake Isabella based on DO and pH values collected from the time period of 2/2002 to 5/2004 could be considered indicative of a temporal trend. [Graph 1 follows in the Comment letter.]*

Staff acknowledges that the approximately 2-year period for which SWAMP pH and DO data was collected occurred during one of the "lowest water years within a 15 year period." It is not evident, based on the information provided by the Commenter, that the 15-year period mentioned does not represent longer-term "normal conditions." The Central Valley Water Board has not performed a detailed assessment in trends in water years or water quality (see Section 3.10 of the Listing Policy) which would be appropriate during construction of a TMDL.

Comment 29 - *Geologically Kern Canyon fault runs right down the center of Lake Isabella. The peninsula between the two Isabella dams is one of the best places to see the fault zone. Evidence of hydrothermal alteration is present at this location and has converted virtually all the original mafic minerals to muscovite, chlorite, and calcite. Map units at the dam show small bodies of gabbroic, amphibolitic rocks, or olivine gabbro (Ross, 1986). This area has the same geochemical characteristics as described in the North Fork Kern River section relative to high pH values.*

The Central Valley Water Board acknowledges the remarkable geology of the Kern River Canyon area and recognizes that the literature addresses some of the geochemical relationships mentioned by the commenter, though no specific data or information was presented to document the contention that the pH exceedances were from natural sources. Staff cannot assume that the pH exceedances were all from natural sources. Studies would need to be completed to make this determination. Staff wants to work with the Forest Service to figure out the reasons for the impairments and to try to address them in a reasonable manner.

Comment 30 - *SCE completed field surveys related to water quality in the Kern River and Lake Isabella to supplement the historic water quality data with more current information. These surveys included water quality sampling in the river and reservoir, a reservoir limnology survey, a water temperature monitoring study in the river, and benthic macroinvertebrate sampling in the river using California Stream Bioassessment (CSB) protocols. In addition, SCE conducted a study of non-point sources of pollution. There were seven sampling stations for the water quality survey. Station 1 was located at the Main dam in Lake Isabella. Evaluation of the data indicates that pH meets state water quality standards for Lake Isabella. Results of the study are as follows in Table 2 and 3:*

Water Temperature - During most of the year, there was little stratification by depth of water temperatures in the reservoir. Stratification was greatest during May and June, when the temperature difference between the near surface water and the bottom water was about 10° F. The results of the water quality survey that was conducted in Lake Isabella and the Kern River are given below in Table 2 along with the mean daily flows corresponding to the sampling dates for each of the seven stations [Table 2 follows in the Comment letter].

Water Quality Parameters - The results of the water quality study in Lake Isabella, conducted from May through September, 2001, are given below in Table 3 [Table 3 follows in the Comment letter]. The reservoir limnology survey was conducted from August to November, 2001. Three sampling stations were used in this survey, one near the Main dam (Station 1) (same as the reservoir station for the water quality sampling survey), one near the Auxiliary dam (Station 2), and the other in the North Fork arm of the reservoir (Station 3). Water samples were collected monthly from three depths at each station: 3 feet below the surface (a), mid-depth (b), and 3 feet above the bottom (c). The results of the reservoir limnology survey are given in Table 4 [Table 4 follows in the Comment letter].

Thank you for the detailed information. The information presented does not change staff's recommendation for Lake Isabella. The monitoring data still supports listing Lake Isabella as impaired for pH and dissolved oxygen. As has been previously mentioned, staff wants to work with the Forest Service to figure out the best ways to work on these issues.

Comment 31 - *Based on Forest fisheries sampling data (Table 5) Lake Isabella supports primarily a centrachid sportfishery. Trout are stocked annually, but are not considered self-sustaining. The water temperature data and the fish species composition are consistent with the beneficial use of warm water fishery. The Forest would like to see a designation of warm fresh water habitat placed on this waterbody [Table 5 follows in the Comment letter].*

Lake Isabella is a manmade lake constructed to provide flood control and irrigation. Safety issues have resulted in lowering of water surface in the lake. Lake Isabella has limited shade, hot summer air temperatures, and high winds which results in water temperatures in excess of 71° F. in August. DO is a function of temperature. As seen in the above data high DO values are within water quality standards at every station monitored. It is assumed that this is a function of lake temperatures which is a function of water depth and time of year. If a designation of warm fresh water were recognized for Lake Isabella, a beneficial use much more appropriate for existing habitat conditions DO would not be an issue.

Lake Isabella is currently designated as cold fresh water habitat (COLD). This is not the forum to debate the appropriateness of existing beneficial use designations.

Assuming the Regional Water Board has inappropriately designated one or more uses for a listed waterbody, the appropriate process is to include any impaired segments on the §303(d) list. Then, in accordance with State Water Board, *Water Quality Control Policy for Addressing Impaired Waters, Regulatory Structure and Options* ("TMDL Policy"), § I.B during the development of a TMDL or its implementation plan, staff may determine that the standards are inappropriate or imprecise, thus rendering water quality attainment impossible unless standards are modified. In such cases, staff will undertake a limited review of the standards. If staff determines that the policies underlying the existing standards should be revisited, in lieu of crafting an implementation plan under this policy, the impaired water is referred to the Water Quality Standards staff for consideration of an appropriate standards action, through the appropriate processes.

These comments will be forwarded for consideration during the current Triennial Review of the Tulare Lake Basin Plan.

Comment 32 - *Riparian grazing allotment transects monitoring data collected at North Fork Kern River and South Fork Kern sites that flow into Lake Isabella collected between 2000 and 2007. The purpose of the US Forest Service Region 5 Range Monitoring Project is to establish permanent plots on key range sites across National Forest lands in Region 5 in order to provide long-term monitoring of range condition. Each site will be reread after five years. In addition, the project is designed to provide an ecological classification (vegetative, soils, and hydrologic) and quantitative condition score-cards for meadows. These products are intended for use by range conservationists, wildlife biologists, hydrologists, soil scientists, and fisheries biologists in inventorying and assessing meadow conditions. Enclosure 5 provides data collected for the Range Monitoring Program in watersheds that have the potential to affect Lake Isabella.*

It is not evident from the information provided how USFS's management of riparian grazing allotments on the Forest affect water quality in the water bodies proposed for 303(d) listing.

Comments Specific to Kern River, Lower

Comment 33 - *All the comments that follow in this subsection are in support of not listing the Lower Kern River for pH.*

Staff has reviewed the comments and information submitted and concluded that the proposed listing recommendations are appropriate. More detailed responses to specific comments are provided below.

Comment 34 - *The USFS manages approximately 151 square miles of the Lower Kern Watershed as part of the Sequoia National Forest. A primary objective of the USFS in managing our portion of these lands is to improve and protect watershed conditions (USDA Forest Service Strategic Plan, 2007). The USFS recognizes its responsibilities to protect water quality and supports the efforts of the Regional Board to enforce the Clean Water Act and the California Water Code through revision of its 303(d) list of impaired water bodies.*

Comment acknowledged.

Comment 35 - *The Forest has been monitoring water quality on National Forest Lands for years. The Forest has fisheries inventories and channel stability data that go back to the early 1970s. Policy directs the Forest to investigate macroinvertebrate and stream condition inventories prior to any ground disturbing activity. The Forest has extensive information along streams tributary to the Lower Kern which includes physical, chemical, and biological data. Roughly 30 miles of stream that flow in to Lower Kern have been surveyed for Fisheries Habitat and Stream Channel Stability since 1976. Enclosure 2 provides a summary of all streams surveyed in the Kern River drainage following Stream Condition Inventory Protocol. These surveys provide chemical, physical, and biological data. Evaluation of pH values from these surveys show a pH range of 6 to 8 on streams surveyed from 2001 to 2008. None of the watersheds that flow into the Lower Kern River exceed water quality standards for pH.*

Additional monitoring data for pH submitted by the Forest Service was evaluated and incorporated into the fact sheets. The data staff evaluated still supported a recommendation for listing the Lower Kern River for pH.

Comment 36 - *Fish sampling from this segment of the Kern River conducted by SCE indicates the Pikeminnow-hardhead-sucker assemblage, along with a non-native centrarchid fishery. Some hardhead minnow are present and the primary sportfishery is for smallmouth bass. Water temperatures and species composition are consistent with a warmwater fishery, although rainbow trout are stocked in some segments when water temperatures are less than 68° F.*

This is not the forum to debate the appropriateness of existing beneficial use designations. Assuming the Regional Water Board has inappropriately designated one or more uses for a listed waterbody, the appropriate process is to include any impaired segments on the §303(d) list. Then, in accordance with State Water Board, *Water Quality Control Policy for Addressing Impaired Waters, Regulatory Structure and Options* ("TMDL Policy"), § I.B during the development of a TMDL or its implementation plan, staff may determine that the standards are inappropriate or imprecise, thus rendering water quality attainment impossible unless standards are modified. In such cases, staff will undertake a limited review of the standards. If staff determines that the policies underlying the existing standards should be revisited, in lieu of crafting an implementation plan under this policy, the impaired water is referred to the Water

Quality Standards staff for consideration of an appropriate standards action, through the appropriate processes.

Comment 37 - *Geologically the Lower Kern Canyon located along the Kern Canyon Lineament has the same geochemical characteristics as the North Fork Kern River relative to high pH values. Ultrabasic rocks are present below the dam to about the vicinity of Borel Powerhouse. This area has the same geochemical characteristics as described in the North Fork Kern River section relative to high pH values. Chemical and isotope data image search of USGS database provides data in support of the geochemical reactions suggested in this section. Two hot springs in the Kern Canyon associated with mafic and ultramafic rocks have pH levels of 9.61 and 9.25, both values taken in 1975 at Democrat Hot Springs and Miracle Hot Springs, respectively. As expected calcium and magnesium values for the site were low at 1.6 and <0.1 for Democrat and 1.5 and <0.1 for Miracle Hot Springs, available calcium and magnesium would have precipitated out in the formation of travertine (Ca, Mg SiO₂).*

Staff appreciates the remarkable geology of in the Lower Kern River Canyon. No specific data or information was presented to document the contention that the pH exceedances were from natural sources. Staff cannot assume that the pH exceedances were from natural sources. Studies would need to be completed to make this determination.

Comment 38 - *The water quality sampling performed by the Water Quality Control Board from 2/2002 to 5/2004 was performed during low water conditions. The average flow above Isabella during this time was 697 cfs. Average flow conditions above Lake Isabella from 1994 to 2004 are 1040 cfs. It is reasonable to expect pH value to be higher as inflow from hot springs with naturally high pH waters would be less diluted during low flow conditions.*

Staff acknowledges that the approximately 2-year period for which SWAMP pH data was collected occurred during one of the "lowest water years within a 15 year period." It is not evident, based on the information provided by the commenter, that the 15-year period mentioned does not represent longer-term "normal conditions." Staff has not performed a detailed assessment in trends in water years or water quality (see Section 3.10 of the Listing Policy) which would be appropriate during construction of a TMDL.

Comment 39 - *Water chemistry data collected by the USGS in on the Sequoia National Forest indicate the following pH values range from 6.5 to 8.3 from 1960-1966. One sample exceeds standards set by the Water Board in this time frame. BMP implementation and effectiveness and soil and water considerations have increased since this time. Enclosure 3 provides pH values from USGS sites in the USGS 11191000 KERN RIVER BELOW ISABELLA DAM CA.*

Additional monitoring data for pH submitted by the Forest Service was evaluated and incorporated into the fact sheets. The data staff evaluated still supported a recommendation for listing the Lower Kern River for pH.

Comment 40 - *SCE completed field surveys related to water quality in the Kern River and Lake Isabella to supplement the historic water quality data with more current infor-*

ation. These surveys include water quality sampling in the river and reservoir, a reservoir limnology survey, a water temperature monitoring study in the river, and benthic macroinvertebrate sampling in the river using California Stream Bioassessment (CSB) protocols. In addition, SCE conducted a study of non-point sources of pollution. There were seven sampling stations for the water quality survey. Station 1 was located at the Main dam in Lake Isabella; Stations 2, 3, 4, and 5 were located in the bypassed reach of the Kern River; Station 6 was located at the Borel powerhouse tailrace; and Station 7 was located in the Kern River downstream of the powerhouse. Evaluation of the data indicates that pH meets state water quality standards for Lower Kern River sampling. Results of the study are as follows:

Water Quality Parameters - The results of the water quality study in Lake Isabella and the Kern River, conducted from May through September, 2001, are given below in Table 6 [Table 6 follows in the Comment letter].

Water chemistry taken as part of the Kern Canyon Project, FERC No. 178, in 2002 by Pacific Gas and Electric Company sampled roughly a quarter mile upstream of the Forest boundary along the Lower Kern River. Samples were taken at the diversion dam forebay, end of project bypass reach, and 200 yards downstream of the powerhouse tailrace; summer and winter, 2001 and 2002. All pH measurements meet water quality objectives and fall within state standards. Table 8 provides results of the sampling for Kern Canyon Project, FERC No. 178 (Source: PG&E license application, as modified by staff) [Table 8 follows in the Comment letter.]

Comment (and summarized data in Table 8) acknowledged. The data reported in Table 8 was collected by Pacific Gas and Electric; QAPP information was not provided by the commenter. The limited dataset presented (pH measured at three locations, on two dates, immediately around a hydroelectric facility) indicates that pH values in two samples were at the upper pH water quality objective (8.3). The new data was incorporated, as appropriate, into our analysis and did not result in staff changing their recommendation for listing.

Comment 41 - *Fire History in the Lower Kern River basin would have affected water quality parameters during the time of water quality sampling. The water quality sampling period of February 2002 to May 2004 includes numerous wildfires that affected water quality within the Kern River Basin. During this period the largest wildfire that affected the area was the McNally fire. This fire burnt roughly 150,000 acres during July and August of 2002 in the North Fork Kern River basin, and the effects of the fine sediment that included ash was noticed for the next three years as documented at the Kernville Fish Hatchery. Three years after the fire the fish hatchery still had problems with their ponds filling up with ash and sediment.*

The Borel fire, 3,430 acres burned in the summer of 2002 and burned from below Isabella Dam at Borel Power House to the Lake Office. A total of 168,014 acres burned from 2002 to 2004 adjacent or upstream of Lake Isabella and Kern River. A table of fire events and size are displayed in enclosure 1. Ash from the fire would have been directly deposited into Lake Isabella and Lower Kern River. Impacts associated with these wildfires could be responsible for changes in pH as values from water board monitoring efforts do not seem consistent with those taken before and after this time frame. It is expected that ash could increase pH values. Additionally sediment releases from Lake

Isabella could also affect pH values in the Lower Kern River. Currently listing the North Fork Kern River, Lake Isabella and Lower Kern River waters based on pH values collected from the time period of 2/2002 to 5/2004 could be considered indicative of a temporal trend.

Staff appreciates the information regarding dates and burned areas (acres) for wildfires that occurred in the Forest generally within the period for which there is water quality (specifically pH) monitoring data. Staff has also evaluated the locations and extents (indicating proximities) of these fires relative to the North Fork Kern River (and to Lake Isabella and to the Lower Kern River). Based on a comparison of all of this information, no consistent trend between fire conditions and elevated pH measurements is evident. (See, also, response to Comment 4 regarding temporal trends.) The Central Valley Water Board understands that wildfires can have devastating impacts, primarily from ash and sedimentation, upon fisheries and fish management practices.

Comment 42 - *Riparian grazing allotment transects monitoring data collected at North Fork Kern River, South Fork Kern, and Lower Kern River sites collected between 2000 and 2007. The purpose of the US Forest Service Region 5 Range Monitoring Project is to establish permanent plots on key range sites across National Forest lands in Region 5 in order to provide long-term monitoring of range condition. Each site will be reread after five years. In addition, the project is designed to provide an ecological classification (vegetative, soils, and hydrologic) and quantitative condition scorecards for meadows. These products are intended for use by range conservationists, wildlife biologists, hydrologists, soil scientists, and fisheries biologists in inventorying and assessing meadow conditions. Enclosure 5 provides data collected for the Range Monitoring Program in watersheds that have the potential to affect the Lower Kern River.*

It is not evident from the information provided how USFS's management of riparian grazing allotments on the Forest affect water quality in the water bodies proposed for 303(d) listing.

Comments Specific to Deer Creek, Tulare County

Comment 43 - *All the comments that follow in this subsection are in support of not listing the Deer Creek, Tulare County for Lower Kern River for pH and unknown toxicity.*

Staff has reviewed the all the comments and information submitted and concluded that the proposed listing recommendations are still appropriate. More detailed responses to specific comments are provided below.

Comment 44 - *The source of the pH is stated as unknown. Findings of the sampling indicate pH values range from 6.85 to 8.79. Toxicity data was not included in the documents provided for public review. The source of the unknown toxicity is stated as unknown. It is impossible for the Forest to comment on this data set other than to suggest it is so far from and downstream of the Sequoia National Forest Boundary and conditions are so different that the information is not applicable to the Forest. The location of the nearest site is 17 miles downstream from the Forest boundary and has pH values of 7.37-8.2 which are within the range set for water quality standards. Acceptable pH ranges are 6.5 to 8.3.*

See responses regarding the extent of Deer Creek proposed for 303(d) listing due to elevated pH. The fact sheet for the proposed 303(d) listing of Deer Creek (Tulare County) for unknown toxicity has been available to the public during the entire public comment period. This fact sheet describes and summarizes the data used for the proposed listing decision, and includes a link to download the (large) data file for the Irrigated Lands Regulatory Conditional Waiver Program that was assessed for the 2008 Integrated Report. The fact sheet also indicates the sampling locations (in the Spatial Representation sections). The Central Valley Water Board has not been provided any data or information to suggest that the extent of Deer Creek proposed for 303(d) listing due to Unknown Toxicity should be limited to the Forest Boundary or any other location.

Comment 45 - *None of the sites sampled for pH and unknown toxicity are on National Forest Lands and the nearest site is 17 miles downstream of the Forest boundary. Upstream of this sampling site Deer Creek is crossed by Highway 65, Highway 99, and Highway 43 and flows through agricultural lands, range lands, and communities once it leaves the Forest. The Forest feels the listing of Deer Creek 17 upstream of a sampling station that shows no violation of the state pH standard (7.37-8.2) as arbitrary. Furthermore pH values taken on Sequoia National Forest provide values that meet state water quality standards. See items 4 and 5 below.*

Staff has not been provided any data or information to suggest some other more appropriate segmentation of Deer Creek. The extents of waterbody segments associated with the draft proposed 303(d) list were based on available data. Staff evaluates monitoring data and needs to make a determination on the size of the segment that the monitoring data represents. When these determinations are made, staff takes into account many factors including, location of tributary streams that would provide dilution, presence of diversions and weirs, changes in waterbody characteristics (velocity, depth, width, etc.), land use characteristics and any other relevant information. Staff evaluated readily available information to make determinations on segmentation of water bodies. Staff did not visit all the sites included in the Integrated Report to try to gather information that would assist in segmentation decisions.

Comment 46 - *The Forest has been monitoring water quality on National Forest Lands for years. The Forest has fisheries inventories and channel stability data that go back to the early 1970s. Policy directs the Forest to investigate macroinvertebrate and stream condition inventories prior to any ground disturbing activity. The Forest has extensive surveys in the Deer Creek watershed which includes physical, chemical, and biological data. Roughly 33 miles of stream tributary to and including Deer Creek have been surveyed for Fisheries Habitat and Stream Stability since 1971. Streams surveys for Deer Creek drainage follow Stream Condition Inventory Protocol. These surveys provide chemical, physical, and biological data. Evaluation of pH provides a value of 7.5 in 2006 and 7.3 in 2007. Aquatic insect data collected in 2006 indicate that there is no apparent organic pollution. Table 9 provides a summary of data collected at Levis Flat Campground located on Deer Creek. [Table 9 follows in the Comment letter.]*

Staff appreciates the additional two pH measurements for Deer Creek, from Levis Flat Campground. The Sequoia National Forest did not provide a QAPP to support the quality of the pH measurements, so staff cannot rely on the values reported in Table 9 as a primary source of information. In addition, the timing of the limited pH measurements (7/19/2006 and 12/3/2007)

does not indicate that elevated pH conditions did not occur at the time elevated pH was measured at downstream locations (generally February through April 2006). Also, the source and validity (including QA) for pH data for three additional Deer Creek sites (558DER011, 558DER020, and 558DER030) listed in the Deer Creek Sampling Data table in Enclosure 1 cannot be confirmed or used as a primary data source. For these reasons, insufficient data is currently available to support limiting the extent of the proposed 303(d) listing for Deer Creek.

Comment 47 - *Most recent investigation of Deer Creek was on November 6-7, 2007 for renewal of recreation residence contracts. During field investigations the following water chemistry measurements were taken in Deer Creek, SFMF Tule River, and White River. All the sampled rivers are within state water quality standards. Table 10 displays results of water quality sampling for re-licensing of recreation residences in 2007. [Table 10 follows in the Comment letter.]*

Staff appreciates the additional pH data for Deer Creek. However, the data, as provided in Table 10, is unusable for assessing pH conditions in Deer Creek because the sampling site is not indicated and QA documentation is not provided. The number of exceedances of the pH objective in Deer Creek still warrants listing Deer Creek on the 303(d) list for pH, according to Table 3.2 of the Listing Policy. See also response to comment 43.

Comments Specific to Hume Lake

Comment 48 - *Comments are provided to support the recommendation not to list Hume Lake as impaired for dissolved oxygen.*

No data was provided to indicate that the proposed 303(d) listing of Hume Lake for dissolved oxygen is inappropriate. Information was provided to support the contention that the designated beneficial use of Hume Lake for cold freshwater habitat (COLD) was inappropriate. In developing the Integrated Report and impaired waters list, staff used currently designated beneficial uses. This is not the forum for determining whether the designated beneficial uses are inappropriate for a waterbody. See also response to comments from Hume Lake Christian Camps.

Staff has reviewed the information and concluded that the monitoring data still supports the listing recommendation.

Comment 49 - *Hume Lake is an artificial reservoir that contains rainbow trout, brown trout, smallmouth bass, and green sunfish. The lake is stocked with rainbow trout periodically by the California Department of Fish and Game during the summer. At over 5,000 feet in elevation the lake is within in Moyle's "rainbow trout zone," despite the presence of warmer water centrarchids (bass and sunfish). However, due to limited depth it is subject to increased summer temperatures which provide habitat for both cold and warm water fishes. The Forest would like to see a designation of warm fresh water habitat placed on this waterbody.*

Hume is a manmade lake; this lake is a known sediment trap and sediment accumulation and water depth are known issues. DO is a function of temperature. It is assumed that DO levels are a function of lake temperatures which is a function of water depth

and time of year. If a designation of warm fresh water were recognized for Hume Lake, a beneficial use much more appropriate for existing habitat conditions, DO would not be an issue. More information needs to be gathered to determine relationships and solutions to maintain DO levels.

Hume Lake is currently designated for the cold freshwater habitat (COLD) beneficial use. Evaluation of whether this designated beneficial use (in the Tulare Basin Plan) is appropriate is beyond the scope of preparing biennial updates to the 303(d) list (the process under which the Sequoia National Forest provided their comments). The Commenter is encouraged to address this issue more appropriately during the Central Valley Water Board's Triennial Review process. Your comments have been forwarded for consideration during the current Triennial Review of the Tulare Lake Basin Plan.

Assuming the Regional Water Board has inappropriately designated one or more uses for a listed waterbody, the appropriate process is to include any impaired segments on the §303(d) list. Then, in accordance with State Water Board, *Water Quality Control Policy for Addressing Impaired Waters, Regulatory Structure and Options* ("TMDL Policy"), § I.B during the development of a TMDL or its implementation plan, staff may determine that the standards are inappropriate or imprecise, thus rendering water quality attainment impossible unless standards are modified. In such cases, staff will undertake a limited review of the standards. If staff determines that the policies underlying the existing standards should be revisited, in lieu of crafting an implementation plan under this policy, the impaired water is referred to the Water Quality Standards staff for consideration of an appropriate standards action, through the appropriate processes.

Comment 50 - *Riparian grazing allotment transects monitoring data collected at Horseshoe Meadow site collected between 1999 and 2004. The purpose of the US Forest Service Region 5 Range Monitoring Project is to establish permanent plots on key range sites across National Forest lands in Region 5 in order to provide long-term monitoring of range conditions. Each site will be reread after five years. In addition, the project is designed to provide an ecological classification (vegetative, soils, and hydrologic) and quantitative condition scorecards for meadows. These products are intended for use by range conservationists, wildlife biologists, hydrologists, soil scientists, and fisheries biologists in inventorying and assessing meadow conditions. Enclosure 5 provides data collected for the Range Monitoring Program in Horseshoe Meadow which has the potential to affect Hume Lake.*

It is not evident from the information provided how USFS's management of riparian grazing allotments on the Forest affect water quality in the water bodies proposed for 303(d) listing.

27. Sierra National Forest – Keith A. Stone

Comment 1 - *The Sierra National Forest respectfully challenges the dissolved oxygen listing for Fresno River above Hensley Reservoir and the ammonia listing for Lewis Fork. Listing of these rivers on or downstream of national forest lands is inappropriate as they are and remain unaffected by actions that could potentially affect the DO and ammonia on Forest Service lands.*

Monitoring data was reviewed in accordance with the Listing Policy guidance and impairment determinations were documented in fact sheets. No change is recommended in the proposed listing of the Fresno River above Hensley Reservoir for low dissolved oxygen. The proposed ammonia listing for the Lewis Fork was erroneous and has been withdrawn.

Comment 2 - *A primary objective of the U.S. Forest Service (USFS) in managing the Sierra National Forest is to improve and protect watershed conditions (USDA Forest Service Strategic Plan, 2007). The USFS recognizes its responsibilities to protect water quality and supports the efforts of the Regional Board to enforce the Clean Water Act and the California Water Code through revision of its 303(d) list of impaired water bodies. The USFS in Region 5 is authorized as a Designated Management Agency (DMA) under a 1981 Management Agency Agreement (MAA) with the State Water Quality Control Board and implements State approved BMP's designed to maintain water quality standards and control nonpoint source pollution.¹ As the Forest's BMP's have been approved by the State in the aforementioned MAA, they become the primary mechanism for meeting water quality standards. Monitoring of our BMP protocol has shown our BMP's to be effective in mitigation of nonpoint source pollution and are therefore in compliance with applicable water quality standards.²*

BMP implementation and effectiveness are monitored annually by the USFS and reported to the Regional Board. Between 1992 and 2008, BMP's monitored on the Sierra National Forest were found to be effective in 91% of the instances monitored. Most recent monitoring (2004-2008), found BMP's to be effective in 93% of the instances monitored. The Sierra National Forest provides copies of annual monitoring results to the Central Valley Water Quality Control Board on an annual basis. This board has never responded negatively or suggested our management to be inadequate. Reports to the Water Board provide evidence of compliance with water quality standards and protection of beneficial uses. Therefore the forest is confident that resource management activities provide a high level of protection for beneficial uses of water.

The process for development of the Integrated Report and the 303(d) impaired waterbody list involved evaluating water quality data and information and comparing that data to existing water quality objectives or evaluation criteria that are appropriate to protect current designated beneficial uses. Staff recognizes that the Forest Service has a program to implement BMPs and monitor their effectiveness. Staff looks forward to continuing to work with the Forest Service to ensure that BMP implementation is effective in addressing existing impairments and preventing future impairments. Development of the Integrated Report and impaired waterbody list is a Board required activity that is essentially independent of your management practices program and the MAA. The task was to assess the waters using readily available information to determine if there were impairments, regardless of other activities or programs are being

¹ Management Agency Agreement Between the State Water Resources Control Board, State of California And the Forest Service, United States Department of Agriculture., 1981.

² <http://www.epa.gov/waterscience/standards/library/npscontrols.pdf>, USEPA, Water Quality Standards Handbook, Chapter 2, General Program Guidance, Page 2-25, NONPOINT SOURCE CONTROLS AND WATER QUALITY STANDARDS, August 19, 1987

implemented at the same time. Naturally, staff will want to coordinate with you to address water quality issues that are identified.

See response to comment 1 from Lassen National Forest for a discussion of the requirements associated with determining that an impaired waterbody should be in Category 4b (evidence shows at least one use not supported but TMDL is not needed because an existing regulatory program is reasonably expected to result in attainment of water quality standards) rather than Category 5 (evidence shows at least one use not supported and a TMDL is needed).

Comment 3 - *The sampling locations for Lewis Fork occurred at stations 539FRR020 and 539FRR010 along the Lewis Fork drainage. Each of the sampling sites is on Forest Service land, but occurs downstream from a developed private community (Figures 1 and 2). Sample station 539FRR020 is downstream of the community of Cedar Valley, a development of approximately 180 single family residences. Sample station 539FRR010 is downstream of the community of Sugar Pine, a development of approximately 85 single family residences. According to the Madera County Special Districts Department, the homes in both developments are not on a county sewage system; rather, each home utilizes an underground septic tank and drain field.*

Studies of septic tank effluent have shown ammonia to be a possible contaminate. A study by the U.S. Geological survey showed that when oxygen is abundant in the ground water, ammonia changes to nitrate over short distances through nitrification. In the absence of oxygen in the ground water, denitrification can occur, and nitrate is changed to nitrogen gas. The presence of ammonia may indicate that the distances from a septic tank to a domestic well (or in this case the Lewis Fork drainage) were short enough that ammonia did not have the opportunity to be transformed to nitrate or nitrogen gas. Ammonia concentrations seem to be related to the distance of the septic system. The shorter the distance a water source is from a septic system drain field, the higher the concentrations of ammonia (Verstraeten, et al., 2004). Figures 1 and 2 show that many residences in both communities are less than a 100' from Lewis Fork.

Although ammonia was detected, only 2 of the 4 samples collected on Lewis Fork were reported as exceeding evaluation guidelines for ammonia. We respectfully question the statistical validity of only 4 samples and how representative these are of actual conditions. Stream Condition Inventory (SCI) data collected by the USFS suggest ammonia is not negatively impacting water quality. SCI surveys taken by the USFS on Lewis Fork near the communities of Sugar Pine and Cedar Valley (Figures 1 and 2) in the summer of 2007 did not directly sample for ammonia, but did sample for benthic macroinvertebrates, a proxy for water quality. Benthic Macroinvertebrates (BMI) have been demonstrated to be very useful as indicators of water quality and aquatic habitat condition (Resh and Price 1984; Hughes and Larsen 1987; Resh and Rosenberg 1989). They are sensitive to changes in water chemistry, temperature, and physical habitat. The samples processed by the National Aquatic Monitoring Center at Utah State University were evaluated using biotic indices from Hilsenhoff (1987) and Winget et al. (1979). Table 1 displays information for the samples, including metric results from the Hilsenhoff (HB Index); Community Tolerance Quotient (CTQ: predicted and determined); and Biotic Community (BCI) indices for aquatic macroinvertebrates. BCI data indicates water quality at these sites range from "good" to "excellent" (Vinson, 2008). The location sampled upstream of the community of Sugar Pine was evaluated as being as being in

“good” condition (Sierra-03), while the sites sampled downstream of Sugar Pine and Cedar Valley were evaluated as “excellent” based on benthic communities (Sierra-01,02).

Ammonia detection likely relates to septic effluent from the private communities of Cedar Valley and Sugar Pine; our data, however, suggest that what ammonia may be present, is not negatively affecting water quality. The USFS does not have jurisdiction on private land and can thus not mandate standards and guides or implement best management practices in such areas. Based on our MAA with the State Water Quality Control Board, and the Clean Water Act and responsibilities under these authorities, the Sierra National Forest would not implement any type of management that would cause the introduction of ammonia or any other impairment to Lewis Fork drainage.

The process for development of the Integrated Report and the 303(d) impaired waterbody list involved evaluating water quality data and information and comparing that data to existing water quality objectives or evaluation criteria that are appropriate to protect current designated beneficial uses. Staff evaluated readily available monitoring information and followed the Guidelines in the Listing Policy for making listing recommendations. The proposed ammonia listing for the Lewis Fork, however, was erroneous and has been withdrawn. Any impairments exist regardless of whether or not the Forest Service has direct control of potential sources that contribute to the impairment. When staff initiates work on a TMDL, one of the initial tasks is to evaluate potential sources. Staff does not expect Forest Service to address sources that are not under Forest Service jurisdiction. The macroinvertebrate study results do not necessarily provide any direct information about the impacts of ammonia on the Lewis Fork. Typically, fish are much more sensitive to ammonia than are invertebrates.

Comment 4 - *The segment of the Fresno River above Hensley Reservoir to the confluence with Nadler Creek and Lewis Fork is proposed for listing for low dissolved oxygen, sources unknown. The sample locations (stations 539FRR050, 060, 080, 090) are not on the Sierra National Forest, but do occur downstream. Dissolved oxygen (DO) is related to water temperature, and generally, cooler water has higher DO. Turbulence increases DO as oxygen from the air gets mixed into the water. Other factors that exert a control on DO include photosynthesis, respiration, and decomposition of plant material. Photosynthesis only occurs during the day, and it increases DO. Respiration and plant decomposition occur around the clock, and deplete DO. It is clear that there are many influences that control DO and that time of day or temperature can affect the degree of oxygen saturation. As such, the 15 samples taken in this segment of the Fresno River are, in our opinion, far too few to accurately define the true range of DO variability. Thus, basing a proposed listing on such limited information is not warranted until additional data are gathered. The USFS urges the State Board to better define the potential range of natural variability of dissolved oxygen along this segment of the Fresno River before including it on the State’s 303(d) listing.*

Staff evaluated readily available monitoring information and followed the Guidelines in the Listing Policy for making impairment determinations. The result of the analysis was the listing recommendations referenced in your comment. See previous response.

Comment 5 - *If the Water Board determines any of the proposed water bodies on or near National Forest Lands are to be listed, the Sierra National Forest respectfully re-*

quests that an alternative to TMDL be proposed. It would be improbable if not impossible to achieve TMDL load allocations for nonpoint source pollution as the Forest has reason to believe impairments identified have not been affected by management activity nor could they be address through management actions.

For water bodies that are added to the State's 303(d) list, the State's Water Quality Control Policy for Addressing Impaired Waters: Regulatory Structures and Options (2005), allows Regional Boards to certify non-regulatory programs of other entities as appropriate TMDL implementation. As such, other agencies with programs affected by a 303(d) listing (e.g., government agencies, universities) within the proposed watershed could support the effort.

The 2007 Memorandum of Agreement between the USFS and the U.S. Environmental Protection Agency encourages the use of Category 4b in place of TMDL implementation plans for 303(d) listed water bodies on or downstream of national forest lands if proper implementation of preventative and restorative BMP's can reasonably be expected to achieve Basin Plan water-quality objectives. For Category 4b to be employed, the following conditions must be met:

Sources of pollution must be identified and the general treatments determined. The treatments must be designed to achieve State and Basin Plan water quality objectives.

A watershed-specific monitoring plan must be provided that identifies the current condition and the target conditions that will indicate compliance with Basin Plan objectives.

A realistic, aggressive schedule for implementing restoration BMP's based on currently available or reasonably foreseeable funding must be provided.

If monitoring indicates that recovery is slower than expected, an iterative cycle of more effective treatments will be applied until recovery goals are met.

The Regional Board retains the authority to revert to Category 5 if for any reason achievement of state or basin water-quality objectives appears to be unlikely.

Category 4b is likely to be a more cost-effective and efficient approach in meeting Basin Plan objectives than traditional TMDL development. As such, the Sierra National Forest welcomes an opportunity to work with the Central Valley Water Quality Control Board to develop a precedent for this approach to improving water quality on national forest system lands.

Staff acknowledges the efforts of the Forest Service, as authorized steward under the 1981 MAA with the State Water Board, for maintaining water quality in the Forest to Basin Plan standards using Best Management Practices (BMPs). Sufficient information was not available for each of the specific water bodies in question to determine whether all the criteria for supporting a 4b determination are being met. Staff wants to continue to work with USFS to build a program that will meet all the requirements for placement in Category 4b. See response to comment 1 from Lassen National Forest for discussion of the criteria for placement in Category 4b.

28. Southern San Joaquin Valley Water Quality Coalition (SSJWQC) – William Thomas

Comment 1 – *The Lower Kings River (Island weir to Stinson and Empire Weirs) should not be listed as impaired for ammonia. The data used for the proposed listing are old and have only limited evidence of ammonia. The standard is elusive and is represented in the Draft Integrated Report as a formula. The fact sheet in the draft integrated report stated in part of the text that there was not sufficient justification for listing. The SSJWQC will continue to monitor nutrient loads in this waterbody segment.*

The proposed ammonia listing for the Lower Kings River (Island weir to Stinson and Empire Weirs) was erroneous and been withdrawn. All ammonia concentrations were below the evaluation guideline used. Regarding the use of old data, staff is required to use all readily available data in preparing the Integrated Report, and no information was provided indicating the data were not representative. The evaluation guideline used is a USEPA National Recommended Ambient Water Quality Criteria, which is expressed as a formula. The reference for the evaluation guideline has been clarified in the fact sheet.

Comment 2 - *The impairment listing for the Lower Kings River for unknown toxicity based on the results of algal bioassays is inappropriate because the data were the result of erroneous lab practices, and these were not toxic readings.*

Sufficient was not information provided to conclude that these results were due to erroneous lab practices. Additional detail is provided in the response to Kings River Conservation District comments from David Orth.

Comment 3 - *The impairment listings for the Lower Kern River and North Fork Kern River for pH are not necessary since the Regional Water Board compels the Kern sub coalition of the SSJWQC to monitor and develop management plans if persistent problems are evidenced.*

If the data indicate non-attainment of standards, Staff are required to recommend listing under the Listing Policy. See response to Lassen National Forest comment #1 in regards demonstrating that an impairment is being addressed by an existing regulatory program.

Comment 4 - *The proposed listing for the Kaweah River for unknown toxicity is from three-year old data and only represents two or three exceedances from 15 samples. Even though this minimally qualifies per the listing criteria it should be recognized that no recent data has demonstrated the toxicity problem. Because the ILP now requires continual monitoring, it seems prudent to wait one further listing period to see if the problem has been eliminated or not. As soon as several more samples taken evidencing no problem, these old exceedance data will be below the listing threshold.*

The Listing Policy states that all available data will be used. However, staff does not anticipate initiating a TMDL for this impairment in the near future, so if additional data indicates that there is no impairment, it can be removed from the impaired list in a future list update.

Comment 5 – *The listing for the Kings River for toxaphene should be removed from the impaired waterbody list because toxaphene was not detected in any water samples collected (100 samples).*

The listing for toxaphene was based on fish tissue data that showed exceedances of applicable OEHHHA criteria.

29. Stockton East Water District – Karna E. Herrigfeld

Comment 1 – *The Calaveras River, Lower segment includes the entire reach of the Calaveras River from the confluence with the San Joaquin River to New Hogan Dam, approximately 44 miles. There is no fact sheet that explains why the Calaveras River, Lower is extended from 5.8 miles to 44 miles. There was no sampling done in the reach above Bellota Weir to justify or even suggest the Calaveras River above Bellota Weir is impaired for any pollutant. This could have dramatic affect on Stockton East Water District operations on the Calaveras River. This change must be stricken and the Calaveras River, Lower should be defined as the 5.6 mile stretch from the confluence of the San Joaquin River up to just below the Stockton Diverting Canal.*

Staff agrees that the Lower Calaveras River should be segmented differently than in the January draft Integrated Report fact sheets. Staff has revised the segmentation of the lower Calaveras River based on the information submitted. The Lower Calaveras River is now divided into three segments, divided at Stockton Diverting Canal and Bellota Weir. Water quality data are now assessed separately for these three segments. All the existing listings from previous 303(d) lists now only apply to the downstream segment, from Stockton Diverting Canal to the San Joaquin River. No listings are proposed for the segment of the Lower Calaveras River from New Hogan Dam to Bellota Weir.

Comment 2 - *The Calaveras River is a highly managed basin. During the 1950s, the City of Stockton was flooded and many lives were lost and millions of dollars of damage was suffered. As a result of the floods, the Army Corps of Engineers constructed levees that could hold 12,500 cfs of flood water, re-routed Mormon Slough around the City with the construction of the Stockton Diverting Canal, and all winter time flows in the Old Calaveras River Channel were eliminated. The only time the Old Calaveras River Channel has water in it is during the irrigation season, when the District opens the Old Calaveras Headworks Facility. There are no fish present in the Old Calaveras River channel, and therefore, the designation of it as a "cold water" fishery is inappropriate.*

Determining the appropriateness of currently designated beneficial uses is not part of this listing effort. Assuming the Regional Water Board has inappropriately designated one or more uses for a listed waterbody, the appropriate process is to include any impaired segments on the §303(d) list. Then, in accordance with State Water Board, *Water Quality Control Policy for Addressing Impaired Waters, Regulatory Structure and Options* ("TMDL Policy"), § I.B during the development of a TMDL or its implementation plan, staff may determine that the standards are inappropriate or imprecise, thus rendering water quality attainment impossible unless standards are modified. In such cases, staff will undertake a limited review of the standards. If staff determines that the policies underlying the existing standards should be revisited, in lieu

of crafting an implementation plan under this policy, the impaired water is referred to the Water Quality Standards staff for consideration of an appropriate standards action, through the appropriate processes. Listing such water bodies should therefore not lead to “inappropriate TMDLs.” In addition, the listing may expedite the Regional and State Water Boards’ consideration of removing designated uses.

Your comments will be forwarded for prioritization during the upcoming Triennial Review of the Basin Plan, scheduled for the Regional Water Board’s consideration this summer.

Comment 3 – The Calaveras River, Lower should be de-listed for diazinon because the listing is not consistent with Listing Policy Guidelines, in particular the requirements for temporal and spatial representation. If the lower Calaveras River is to remain listed for diazinon, the listed segment should only be the 5 miles immediately upstream of the San Joaquin River.

See response to Comment 1 in regards to segmentation of the Lower Calaveras River. This recommended decision has been revised to only apply to the Lower Calaveras River between the Stockton Diverting Canal and the San Joaquin River. As such, the recommended decision not to de-list the Lower Calaveras River is consistent with the Listing Policy. There were an adequate number of samples collected that showed exceedances of applicable criteria. A significant portion of the data was collected during storm events because this is a critical time period when diazinon is often found in runoff.

Comment 4 – The Calaveras River, Lower should be de-listed for organic enrichment/dissolved oxygen because the listing is not consistent with Listing Policy Guidelines, in particular the requirements for temporal and spatial representation. If the lower Calaveras River is to remain listed, the listed segment should only be the 5 miles immediately upstream of the San Joaquin River.

See response to Comment 1 in regards to segmentation of the Lower Calaveras River. Staff has revised the dissolved oxygen assessments for the Lower Calaveras River based on the revised segmentation. Based on this revised assessment, no changes to the current 303(d) list are recommended. Staff is not recommending de-listing the Lower Calaveras River from the Stockton Diverting Canal to the San Joaquin River. Staff is also not recommending that either of the other two segments of the Lower Calaveras River should be listed for low dissolved oxygen.

Comment 5 - The current draft establishes a 2008 completion date for the TMDL. This date is not supported in the record. There has been very limited sampling and no analysis which warrants a change in the original (2002) priority status of TMDL implementation for the Calaveras River, Lower from "low" to "High". We request the TMDL completion date be moved to 2021 if it is not de-listed.

The TMDL completion date is now proposed for 2012. This will allow the TMDL to be developed in conjunction with the renewal of the stormwater permit for Stockton, which is also scheduled for 2012.

Comment 6 - *The weight of evidence does not support listing mercury for the 44 mile reach of the Calaveras River from the confluence of the San Joaquin River to New Hogan. Data used to make the listing recommendation focused on two locations on the lower Calaveras River between interstate 5 and Highway 99 (approximately 4-5 miles). There were no sampling events beyond this one event. There is simply no support for this listing. Based on the readily available data, the weight of evidence does not satisfy the temporal and spatial requirements spelled out in the Listing Policy Guidelines.*

The available data satisfies the data quantity requirements of the Listing Policy. The 15 water samples from the Calaveras River analyzed for mercury represent twelve 30-day average samples. Nine of the twelve 30-day average samples exceed the USEPA California Toxics Rule (CTR) mercury-based numeric criterion for human health of 50 ng/l. Since the number of exceedances exceeds the allowable frequency using Table 3.1 of the Listing Policy, staff continues to recommend that the waterbody-pollutant combination should be placed on the section 303(d) list.

See response to Comment 1 in regards to segmentation of the Lower Calaveras River. The farthest downstream segment (from the Stockton Diverting Canal to the San Joaquin River) is now the only segment proposed for listing for mercury.

Comment 7 - *The weight of evidence does not support listing toxicity for the 44 mile reach of the Calaveras River from the confluence of the San Joaquin River to New Hogan. Data used to make the listing recommendation focused on various locations along the Old Calaveras River Channel and a location noted as Calaveras River at Monte Vista trailhead (unclear of this location). Only one of these samples noted toxicity and it unclear where this particular sample was taken. No samples were taken above Bellota. Line of evidence 21742 notes 3 of 10 samples showed plant toxicity, however, it is unclear where these samples are located. The Old Calaveras River Channel is no longer either a migration route or habitat for cold freshwater fishery; therefore, there is no impact to fishery if this one line of evidence is sufficient for justifying listing Unknown Toxicity for that portion of the Old Calaveras Channel. Based on the readily available data, the weight of evidence does not satisfy the temporal and spatial requirements spelled out in the Listing Policy Guidelines*

See response to Comment 1 in regard to segmentation of the Lower Calaveras River. The recommendation for an unknown toxicity listing is now only for the segment of the lower Calaveras River between Bellota Weir and the Stockton Diverting Canal. The frequency of observed toxicity in this segment requires a listing under the State's Listing Policy. Details about the specific samples that exhibited toxicity are available via the references for the data used to assess water quality. Each type of bioassay (fish, invertebrate, algae) focuses on protecting different parts of the aquatic community. The aquatic life beneficial uses, which the Central Valley Water Board are required to protect, include the entire aquatic community, including fish, invertebrates and plants.

Comment 8 - *The weight of evidence does not support listing chlorpyrifos for the 11 mile reach of the Mormon Slough from the SDC to Bellota Weir. There was only one line of evidence presented; indicating samples were collected on Mormon Slough at Jack Tone Road. Based on the readily available data, the weight of evidence does not*

satisfy the temporal and spatial requirements spelled out in the Listing Policy Guidelines.

The decision to list the Lower Calaveras River for chlorpyrifos is consistent with the Listing Policy. There were an adequate number of samples that exceeded applicable criteria.

Comment 9 - *Stockton East Water District concurs with the comments submitted by the San Joaquin River Group regarding the lack of factual or legal justification for listing the Stanislaus River for temperature.*

See response to comments submitted by the San Joaquin River Group Authority.

Comment 10 - *Comments submitted by the San Joaquin River Group Authority in November 2007 were ignored by the Regional Board. These comments must be used to evaluate impairment.*

See response to San Joaquin River Group Authority comments from Petruzzelli.

30. South Yuba River Citizens League – Gary Reedy

Comment 1 - *Large amounts of data from the continuously recording thermographs in the South Yuba River are available and support the proposed listing for temperature but are not reflected in the fact sheet.*

Comment acknowledged. During this listing cycle, staff did not have resources to include the thermograph data provided by the commenter. Staff acknowledges that these data would provide further weight of evidence to support the recommendation to list the South Yuba as impaired by temperature.

Comment 2 - *The available data supports a determination of the South Yuba as temperature impaired in reference to a variety of temperature criteria, not just the Basin Plan and USEPA Region 9.*

Comment acknowledged. During this listing cycle, staff did not have resources to compare the temperature data to all the thresholds recently provided by the commenter. Staff acknowledges that the measured exceedances of these thresholds would provide further weight of evidence to support the recommendation to list the South Yuba River as impaired by temperature.

Comment 3 – *Two causes of temperature impairments are known. The temperature impairments are legacy effects of mining era disturbance and the massive diversion at Spaulding Dam.*

Comment acknowledged.

31. Tahoe National Forest – Judie L. Tartaglia

Comment 1 - USFS staff provided some information that indicates that overall water quality conditions in the Tahoe National Forest are good.

Comment acknowledged.

Comment 2 - *The proposed mercury listing for the North Fork of the American River should be for a shorter segment, since the available data is from below North Fork Dam.*

Staff agrees that the geographic extent of this proposed listing should be revised. The proposed listing for mercury in the North Fork American River is now from the North Fork Dam to Folsom Lake.

Comment 3 – *Identification of resource extraction as the source of the mercury impairment for Oxbow Reservoir may not be appropriate. The elemental mercury in the watershed was largely imported to specific gold mining sites; therefore the mercury in the watersheds above Oxbow Reservoir should not be viewed as a watershed-wide issue, but rather a localized potential threat to water quality.*

The USGS Mineral Resources Data System indicates that historic gold mining occurred in the Rubicon River watershed above Oxbow Reservoir (USGS, 2005). Therefore, identifying "resource extraction" as a potential source of mercury is reasonable. Staff revised the potential source categories in all of the mercury listings to "resource extraction" and "unknown source", since mining activity isn't the only potential source of methylmercury in biota. The source category for the Hell Hole Reservoir mercury decision was changed to just "unknown source" since the USGS Mineral Resources Data System does not show any gold mines within its watershed.

Comment 4 – *The South Yuba River from Spaulding Reservoir to Englebright Reservoir is proposed for listing for mercury. The mercury listing for the South Yuba River should be for a shorter segment.*

The USGS Mineral Resources Data System indicates that a majority of the historic gold mining in the South Yuba River watershed occurred downstream of the confluence with Rucker Creek (USGS, 2005). Staff is now proposing the extent of the mercury listing be from Rucker Creek to Lake Englebright. The updated assessment continues to support listing this reach of the South Yuba River as impaired since two out of sixteen fish samples exceeded the fish tissue criterion.

Comment 5 - *The South Yuba River from Spaulding Reservoir to Englebright Reservoir is proposed for listing for temperature. The temperature listing for the South Yuba River should be for a shorter segment.*

Staff did not have adequate data to define the impaired reaches of this segment during the current listing cycle. The impaired reaches can be revised during future listing cycles as more data become available.

Comment 6 - *The scheduled TMDL completion date for temperature in the South Yuba is after the FERC re-licensing for is due to be completed. It does not seem appropriate to separate these two connected actions.*

Staff have not yet proposed a plan for addressing temperature impairments. Staff will explore addressing this impairment in coordination with the FERC re-licensing process. If the FERC process can resolve the temperature issues associated with reservoir operations, then a TMDL could deal with remaining causes, if necessary.

Comment 7 - *The elemental mercury in the Middle Yuba River watershed was largely imported to specific gold mining sites; therefore the mercury in this watershed should not be viewed as a watershed-wide issue, but rather a localized potential threat to water quality.*

Slotton et. al. found low mercury concentrations in the Middle Yuba River upstream of the major mining activity (Slotton, 1997). I suggest that further study is needed before a listing can be made (at least for the headwaters reaches). If the Central Valley Water Quality Control Board chooses to continue to consider listing the Middle Yuba River, then I suggest that the Board look at listing a shorter segment of the Middle Yuba River that is more closely associated with the imported mercury sources. My staff recommends listing below Buckeye Ravine or Bear Creek.

The USGS Mineral Resources Data System indicates that a majority of the historic gold mining in the Middle Yuba River watershed occurred downstream of the confluence with Bear Creek (USGS, 2005). Staff is now proposing that the extent of the mercury listing be from Bear Creek to the confluence with the North Yuba River. The mercury was used in the watershed for mining activities, so “resource extraction” is an appropriate potential source.

Comment 8 - *The fish tissue data collected does not appear to support listing the entire North Yuba River above Englebright and New Bullards Bar Reservoirs. The elemental mercury in the North Fork American River watershed was imported to specific gold mining sites; therefore the mercury in this watershed should not be viewed as a watershed-wide issue, but rather a localized potential threat to water quality.*

We recommend that the Central Valley Regional Water Quality Control Board should look at listing a shorter segment of the North Yuba River that is more closely associated with the imported mercury sources. Based on your data, my staff recommends listing the North Yuba River from New Bullards Bar Reservoir to Englebright Reservoir.

Staff agrees that the geographic extent of this proposed listing should be revised. Since the five fish samples were collected between New Bullards Bar Reservoir and Lake Englebright, the extent of the proposed impairment is now defined from New Bullards Bar Reservoir to Lake Englebright.

Comment 9 - *The elemental mercury in the New Bullards Bar Reservoir watershed was largely imported to specific gold mining sites, and therefore the mercury in this watershed should not be viewed as a watershed-wide issue, but rather a localized potential threat to water quality.*

The proposed 303d listings only apply to the water bodies listed. The sources of the pollutant(s) will be determined during TMDL development or other actions taken to address the listing.

Comment 10 - *The limited sample size and the location of the samples do not support listing the Feather River to the Sierra Valley. Listing the entire Middle Fork Feather River as impaired from the Sierra Valley to Lake Oroville mercury based on the current lines of evidence taken from the bottom of the watershed many river miles below the Sierra Valley is not warranted. I suggest that the Central Valley Water Quality Control Board look at listing a shorter segment of the Middle Fork Feather River closer to Lake Oroville and the sites that were sampled.*

The assessment for dissolved oxygen in the Middle Fork Feather River has been revised based on the data and information provided by commenters. Based on the revised assessment, staff has withdrawn this proposed listing.

Comment 11 - *The Management Agency Agreement between the US Forest Service and the State Water Resources Control Board and the implementation of best management practices under the USFS Water Quality Management Program should be used as the primary mechanism for meeting water quality standards on public lands.*

Comment acknowledged. Central Valley Water Board staff will discuss the possibility of alternatives to TMDL development with Tahoe National Forest.

Comment 12 - *Resource management activities on the Tahoe National Forest provide a high level of protection for the beneficial uses of water.*

Comment acknowledged.

Comment 13 - *Listing impaired waters as category 4b [being addressed by an existing regulatory program] is likely to be more cost effective than TMDL development. I would like to work with Central Valley Water Board staff to apply this approach on national forest system lands.*

Comment acknowledged. Central Valley Water Board staff will discuss the possibility of alternatives to TMDL development with Tahoe National Forest. See response to comment 1 from Lassen National Forest for a discussion of the requirements associated with determining that an impaired waterbody should be in Category 4b (evidence shows at least one use not supported but TMDL is not needed because an existing regulatory program is reasonably expected to result in attainment of water quality standards) rather than Category 5 (evidence shows at least one use not supported and a TMDL is needed).

32. Turlock Irrigation District – Debbie Liebersbach

Comment 1 - *Revise the extent of Harding Drain*

The extent was not changed. Currently the extent includes the Harding Drain overflow that drains into Gomes Lake.

Comment 2 - The extent of the impairments for Highline Canal should only be the reach downstream of Mustang Creek

The waterbody segment name has been changed to “Highline Canal (from Mustang Creek to Lateral No 8, Merced and Stanislaus Counties).”

Comment 3 - Highline Canal and Harding drain cannot be listed for exceedances of criteria based on MUN beneficial uses, as documented in TID legal comments.

See response to Turlock Irrigation District comments submitted by Peter McGaw.

Comment 4 - Don't list, wrong standard.

These assessments have been revised to cite the California Toxics Rule (CTR) criteria. Using the CTR criteria did not change the overall recommendation, since the CTR criteria are lower than the recommended criteria previously used.

Comment 5 - Turlock Irrigation District collected new data from May 2006 through August 2008. The decisions for Chlorpyrifos and Unknown Toxicity should be reassessed to include this data.

Staff has included the data provided by Turlock Irrigation District in the assessments.

Comment 6 - The Harding Drain should be de-listed based on new data collected by Turlock Irrigation District.

While there appears to have been considerable reductions in chlorpyrifos concentrations, the recommended decision did not change since the Harding Drain dataset had exceedances of the chlorpyrifos criteria at a greater frequency than the allowable frequency described in the criteria, which is no more than one exceedance in three years.

Comment 7 - The Harding Drain should be de-listed for unknown toxicity (Ceriodaphnia dubia) based on new data collected by Turlock Irrigation District.

Staff included the *Ceriodaphnia dubia* data provided by Turlock Irrigation District and revised the assessment. Staff is recommending that the unknown toxicity listing for Harding Drain should no longer include invertebrate toxicity. Since algal toxicity data supporting de-listing are not currently available, staff is recommending that Harding drain should remain listed for "unknown toxicity". Since Harding Drain is no longer exhibiting invertebrate toxicity or fish toxicity, staff is recommending that the 303(d) list should show that the "unknown toxicity" listing for Harding drain is for algal toxicity only.

Comment 8 - The Harding Drain should be de-listed for unknown toxicity (Pimephales promelas) based on new data collected by Turlock Irrigation District.

Staff included the fathead minnow (*Pimephales promelas*) toxicity data provided by Turlock Irrigation District and revised the assessment. Staff is recommending that the unknown toxicity listing for Harding drain should no longer include fish toxicity. Since algal toxicity data supporting de-listing are not currently available, staff are recommending that Harding drain remain listed for "unknown toxicity". Since Harding drain is no longer exhibiting invertebrate toxicity or fish toxicity, staff is recommending that the 303(d) list should show that the "unknown toxicity" listing for Harding Drain is for algal toxicity only.

Comment 9 - *Turlock Irrigation District questions the reliability of toxicity tests using *Selenastrum capricornutum*. While reductions in algal growth were observed, a number of issues arose during the sampling program that drew into question the reliability of algae toxicity testing results, the repeatability of the tests, and the effect of the test conditions and/or variables on the test results.*

Staff reviewed the supporting information provided by Turlock Irrigation District. Currently, toxicity testing with *Selenastrum capricornutum* using the USEPA method is an acceptable test for identifying toxicity to algae. Since algal toxicity data supporting de-listing are not currently available, staff is recommending that Harding Drain remain listed for "unknown toxicity".

33. Turlock Irrigation District – Peter W. McGaw

Comment 1 - *The Central Valley Water Board cannot list the Highline Canal nor the Harding Drain for exceedances based on MUN beneficial uses. Highline Canal and Harding Drain are constructed agricultural waterways and do not have beneficial uses designated in the Basin Plan. The Central Valley Water Board must conduct a full Use Attainability Analysis before MUN can be assigned to Highline Canal or Harding Drain.*

Challenges to designated uses are beyond the scope of this proceeding. Even if the MUN use should be removed, the appropriate procedure is to include any impaired segments on the 303(d) list, and then de-list the waterbody rather than adopting a TMDL. (State Water Board, *Water Quality Control Policy for Addressing Impaired Waters, Regulatory Structure and Options* ("TMDL Policy"), § I.B.) These comments will be addressed through the Triennial Review process.

Beneficial uses for waterways not specifically listed in the Basin Plan Table II-1 are designated within the text of Basin Plan. These include domestic supply for both Harding Drain and Highline Canal. Additionally, Regional Water Board Order No. R5-2001-0122 prescribing waste discharge requirements for the discharge of treated effluent from the City of Turlock Water Quality Control Facility to the Harding Drain found that the following beneficial uses are applicable to Harding Drain: Domestic Supply (MUN), Agricultural Supply (AGR), Water Contact (REC-1) and Noncontact Recreation and Esthetic Enjoyment (REC-2), Freshwater Replenishment (FRSH), and Preservation and Enhancement of Fish, Wildlife and Other Aquatic Resources (WARM, COLD and WILD).

A use attainability analysis is only required when establishing beneficial uses for a waterbody without including the uses described in section 101(a) (2) of the Clean Water Act ("fishable/swimmable" uses such as REC-1, REC-2, WARM, COLD, etc.), or to remove a

fishable/swimmable designated use that is not an existing use, as described in section 131.3 of Title 40 of the Code of Federal Regulations.

The commenter is reading Title 40, section 131.10(j) out of context. USEPA regulations do not require a UAA for either the designation or de-designation of uses such as MUN that are not specified in Clean Water Act section 101(a)(2) ("fishable/swimmable uses"). Rather, the regulation requires a UAA only when the designated uses for a waterbody fail to include fishable/swimmable uses, or when a fishable/swimmable use is removed. (40 CFR § 131.10(j)(1), (2).) USEPA defines a use attainability analysis as, "... a structured scientific assessment of the factors affecting the attainment of uses specified in Section 101(a)(2) of the Clean Water Act (the so called 'fishable/swimmable' uses)." (Updated Information for *Water Quality Standards Handbook, Second Edition* (Web version) § 2.9, at http://www.epa.gov/waterscience/standards/uses/uaa/about_uuas.htm.)

The current listing effort is focused on reviewing available monitoring information and evaluating whether designated beneficial uses are impaired. This effort does not include evaluating the appropriateness of designated uses. Beneficial use assessments are basin plan issues that will be prioritized as part of the Triennial Review of the Basin Plan.

Comment 2 - The Central Valley Water Board must analyze the factors described in Water Code section 13241 and adopt an implementation program as required by Water Code section 13242 before MUN can be assigned to Highline Canal and Harding Drain.

De-designation of beneficial uses is beyond the scope of this proceeding. Removal of any use must comply with Clean Water Act basin planning regulations. Until such action is complete, constructed agricultural drains that are tributary to waters of the United States must be regulated as waters of the United States. (*Headwaters v. Talent Irrigation Dist.* (9th Cir. 1991) 243 F.3d 526.)

In addition, section 13241 does not apply to use designations, but only to establishing water quality objectives. Water quality objectives do not include use designations. (Wat. Code § 13050, subd. (f), (h), (j).) In designating uses, the Boards consider economics and other factors consistent with federal law (see, e.g., 40 CFR § 131.10(a), (g)) and the general reasonableness standard in the Porter-Cologne Water Quality Control Act.

Comment 3 - The Basin Plan's incorporation of State Board Resolution 88-63 is not a basis for designating a MUN beneficial use for the Highline Canal or the Harding Drain, because .Resolution 88-63 was invalidated by the Office of Administrative Law, was not "grandfathered" by amendments to the Administrative Procedure Act, and was unintended.

The commenter questions the basis for the MUN designations in Highline Canal and Harding Drain.

Challenges to designated uses are beyond the scope of this proceeding. Assuming the Central Valley Water Board has inappropriately designated a MUN use, the appropriate process is to include any impaired segments on the 303(d) list, and then de-list the waterbody rather than adopting a TMDL. (State Water Board, *Water Quality Control Policy for Addressing*

Impaired Waters, Regulatory Structure and Options (“TMDL Policy”), § I.B.) These comments will be addressed through the Triennial Review process.

As the commenter notes, the State Water Board concluded that the Office of Administrative Law’s opinion (that Resolution 88-63 was regulatory) was advisory only. (State Water Board Order WQO 2005-0015 (*City of Vacaville*), pp. 26-27.) Government Code section 11353 includes a grandfather provision, providing that State Water Board plans and policies adopted before June 1, 1992 are valid even if not adopted in accordance with the Administrative Procedure Act rulemaking requirements. Nothing in this statute removes Resolution 88-63 from the grandfather clause merely because OAL had opined that it included regulatory requirements. Whether or not the OAL opinion was advisory, it was invalidated with the enactment of section 11153.

In addition, the Central Valley Water Board incorporated Resolution 88-63 into the Basin Plan, and adopted the policy for interpreting Resolution 88-63 (implementation plan). The Central Valley Water Board’s separate action to incorporate Resolution 88-63 was a basin planning action that was exempt from the Administrative Procedure Act pursuant to section 11153. (See, e.g., Basin Plan pp. II-2.00-2.01; IV-9.00.)

According to the Basin Plan, the Harding Drain is tributary to the Lower San Joaquin River. (*Id.*, p. I-3.00.) The Highline Canal is hydrologically connected (tributary) to the Merced River and drains a 13-square-mile “island” of land located between the East Valley Floor and the Tuolumne River Subareas. (*Id.*, p. I-4.00.) These canals are “waters of the United States.” (*Headwaters v. Talent Irrigation District* (9th Cir. 2001) 243 F.3d 526.) Although a UAA is not required, removing these uses requires a basin planning action that considers the factors in 40 CFR § 131.10(g). (WQO 2002-0015, *supra*; State Water Board Order WQO 2002-0016 (*City of Turlock*); see also, State Water Board Order WQO 2002-0002 (*Chevron Pipe Line Company*) and State Water Board Order WQ 2006-0010 (*Quinones et al.*) [reaching same conclusion for blanket designation for groundwater]). This is the case notwithstanding the opinion of the Central Valley Water Board Chair in 2000 that the Board could assign or remove beneficial uses in permit proceedings.

Staff disagrees with the comment that this is a new interpretation. The supporting information for the 1994 303(d) list shows that the Colusa Basin Drain, Natomas East Main Drain (renamed to Steelhead Creek) and TID Lateral #5 (now called Harding Drain) were listed for the following pollutants: Colusa Basin Drain: pesticides, toxicity, sedimentation; Natomas East Main Drain: PCB, toxicity, diazinon; TID Lateral #5: ammonia, pesticides and toxicity. All of these pollutants were impacting aquatic life. While these listings do not directly address the application of the MUN designation, they demonstrate that the Central Valley Water Board has long considered these waterbodies to be waters of the United States. In addition, Central Valley Water Board Order No. R5-2001-0122, prescribing waste discharge requirements for the discharge of treated effluent from the City of Turlock Water Quality Control Facility to the Harding Drain, listed MUN as one of the beneficial uses applicable to Harding Drain. The State Water Board concluded that had the tributary rule been inapplicable to Harding Drain, its only designated use (via the incorporation of Resolution 88-63) would be MUN. (Order WQO 2002-0016, *supra*, at 7.)

Staff also disagrees that the blanket designation of MUN violates either state or federal law. In designating fishable/swimmable uses, USEPA is not required to affirmatively gather data, but merely evaluate what data do exist. Fishable/swimmable uses are presumed, even without supporting data. (*Idaho Mining Assn v. Browner* (D. Idaho 2000) 90 F.Supp.2d 1078, 1107.) Consistent with this principle, the blanket designation of MUN creates a valid rebuttable presumption that the MUN use exists.

Comment 4 - *The use of the prospective incorporation by reference of the MCLs in the chemical constituents water quality objectives is not valid since the factors required by section 13241 of the Water Code were not analyzed for agricultural canals and drains. The use of the incorporation by reference of present and future "analytical methods approved by the Environmental Protection Agency or the Executive Officer" for the pesticides water quality objectives is not valid since the factors required by section 13241 of the Water Code were not analyzed for agricultural canals and drains.*

Revision of water quality standards is beyond the scope of this proceeding. See response to this Commenter's Comments 1-3.

The regulatory decision to rely on the expertise of the Department of Public Health, which is charged with determining safe levels of pollutants for human consumption, is not a delegation and is not inconsistent with Porter-Cologne.

Comment 5 - *Neither the Highline Canal nor the Harding Drain is safe for swimming or other contact recreation, and both are posted. Neither has either of these two constructed agricultural waterways ever been evaluated to determine whether WARM Beneficial Use is appropriate.*

De-designation of beneficial uses is beyond the scope of this proceeding.

See response to this commenter's comments 1-3. As stated in the response to comment 3, the Clean Water Act presumes that fishable/swimmable uses are existing uses. Removal of these uses requires evidence that the uses have not occurred (legally or illegally) since 1975, the water quality was not adequate to support these uses since 1975, and that water quality control measures could not achieve water quality necessary to sustain the uses.

34. US Environmental Protection Agency – Peter Kozelka

Comment 1 – *USEPA supports the listing recommendations for temperature in the San Joaquin River, its eastern tributaries, and the South Fork of the Yuba River.*

Comment acknowledged.

Comment 2 - *USEPA supports staff recommendations to list various water segments due to toxicity results. A waterbody is determined to be impaired, as measured by any one of three approaches (chemical-specific, toxicity testing, and biological criteria/bioassessment) for protection of aquatic life. Since each method has unique, as well as overlapping attributes, sensitivities, and program applications, no single approach for detecting impact should be considered superior to any other approach. The most pro-*

fective results from each assessment conducted should be used in water quality assessments. The State's Listing Policy appropriately provides that "waters may also be placed on the section 303(d) list for toxicity alone." This is consistent with federal listing guidelines and USEPA's position that the concept of "independent application" be applied to water quality-based situations (USEPA 1991).

Comment acknowledged.

Comment 3 - *Some waterbodies appear to have enough exceedances of the single sample bacteria guidelines to list yet the recommendation is "Do Not List." Please provide a more complete explanation for the decision. Since USEPA's preliminary review indicates that these water bodies are indeed impaired, USEPA may add them if the State decides not to include them in the 2008 list.*

Assessments of bacteria data were reviewed for waterbodies with some exceedances of the single sample bacteria guidelines and recommendations of "do not list". Based on the frequency of exceedances observed in the bacteria data for these waterbodies, the San Joaquin River, Bear Creek to Mud Slough, is now proposed for listing. The number of exceedances of bacteria guidelines for the remainder of these waterbodies would not require listing under Table 3.2 of the Listing Policy, and these data did not appear to present a weight of evidence which would require listing under section 3.11 of the Listing Policy. Therefore, no other additional bacteria listings, beyond those proposed in the January draft Integrated Report, are proposed.

35. Westside San Joaquin River Watershed – Joe McGahan, Summers Engineering

Comment 1 - *Many of the parameters that are being added to the impaired waterbody list are being added based on exceedances of basin plan numerical objectives. The Technical Committee of the ILRP is engaged in reviewing determinations of these non-basin plan objectives. It appears inappropriate to list constituents that are not adopted objectives in the Basin Plan, especially in light of the fact that ongoing review of these numbers is taking place. We would request that these constituents be removed from the proposed 303(d) listing until further review and/or adoption into the Basin Plan has taken place.*

The Listing Policy indicates that narrative water quality objectives shall be evaluated using evaluation guidelines. To select the appropriate guideline the Regional Water Board needs to identify the narrative that is being implemented and identify the evaluation guideline that represents water quality objective attainment or protection of beneficial uses. The listings in question are based on application of the Basin Plan narrative toxicity objective. The narrative toxicity objective states "all waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal or aquatic life. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. The Regional Water Board will also consider all material and relevant information submitted by the discharger and other interested

parties and numerical criteria and guidelines for toxic substances developed by the California Department of Health Services, the U.S. Food and Drug Administration, the National Academy of Sciences, the U.S. Environmental Protection Agency, and other appropriate organizations to evaluate compliance with this objective.”

In addition to the above, the Basin Plan indicates that 1/10 the LC50 will be used to evaluate pesticide monitoring data. This evaluation guideline was established in recognition of the fact that, for many pesticides being detected in our waters, there are no USEPA, Fish and Game or other appropriate criteria to use to evaluate potential impacts.

The Listing Policy specifies that evaluation guidelines be used in the absence of numerical objectives that are applicable. Staff believes that the evaluation criteria used were appropriate and that they were implemented according to Listing Policy Guidelines. See response to comment 3 from Central Valley Clean Water Association for a discussion on the applicability of the 1/10 the LC50 evaluation criteria.

Comment 2 - The potential source of sedimentation/siltation and selenium in Panoche Creek is natural erosion processes and not agriculture or grazing.

Natural and unknown have been added as potential sources of sedimentation/siltation and selenium listings for Panoche Creek. Agriculture may also be contributing to accelerated erosion in the Panoche Creek watershed, so agriculture remains on the list of potential sources.

Comment 3 - Urban and storm sewers should be added as the potential source of E-coli and salinity in Salado Creek.

Urban runoff and storm sewers have been added to the potential sources for the E coli and salinity listings for Salado Creek.

Comment 4 - An approved management plan has been developed for these sites and is under implementation through the Irrigated Lands Regulatory Program.

Comment acknowledged. If the implementation of these management plans result in attainment of standards, then a TMDL will not be required for these listings. Additionally, if it can be demonstrated to USEPA that these management plans contain reasonable assurances that standards will be attained, they could be listed as "being addressed by an existing regulatory program" (Category 4b listings), and therefore a TMDL would not be required.

36. Whiskeytown National Recreation Area – Brian Rasmussen

Comment 1 - The listing for Willow Creek in Shasta County for E. Coli appears to be in error. The data appear to be from Willow Creek in Lassen County.

Staff agrees the proposed listing was incorrect. Staff is no longer proposing to list Willow Creek, in Shasta County for E. coli.

37. Yolo County Flood Control & Water Conservation District – Tim O'Halloran

Comment 1 - *Lower Cache Creek, Willow Slough and Willow Slough Bypass all contain Cache Creek water in the summer and should be considered together. Knights Landing Ridge Cut and Tule Canal are the same waterbody and should be considered together.*

While these water bodies may have the same source of water at certain times of year, they are distinct segments, therefore warranting separate listing decisions. Similar water sources can be considered in TMDL planning and development and in other responses to any listings for these waterbody segments.

Comment 2 - *Do not list Lower Cache Creek, Willow Slough, and Willow Slough Bypass as impaired for boron since the source of the boron is naturally occurring and not agriculture or unknown as noted in the proposed 303(d) listing. Instead, since agriculture does not appear to be impacted by the boron levels, the Board should develop site specific boron water quality objectives.*

Staff agrees that boron and other dissolved minerals occur naturally in the watershed. However, agricultural activities may redistribute the boron and other dissolved minerals by discharging irrigation water supplied by wells that tap aquifers with elevated levels of these constituents. This can impact concentrations that could exist naturally. Revision of water quality standards is beyond the scope of the Integrated Report. Comments recommending site specific objectives for boron will be forwarded for prioritization during the upcoming Triennial Review of the Basin Plan, scheduled for the Regional Water Board's consideration this summer.

Comment 3 - *The mercury listing for Sulphur Creek is a mistake since the waterbody already has a completed TMDL and Basin Plan Amendment.*

Follow-up with the commenter indicated this comment was supposed to be about the North Fork of Cache Creek. The North Fork Cache Creek is now proposed to be listed as impaired but being addressed by an existing TMDL (Category 4a).

Comment 4 - *The diazinon exceedances detected in Winters Canal are being addressed. Diazinon use in Yolo County is phasing out (PUR database indicates winter-time diazinon use is declining) and the Irrigated Lands Program addresses these types of water quality problems.*

If the implementation of these management plans results in attainment of standards, then a TMDL will not be required for these listings. Additionally, if it can be demonstrated that these management plans contain reasonable assurances that standards will be attained, they could be listed as "being addressed by an existing regulatory program" (Category 4b listings) and, therefore, a TMDL would not be required. See response to comment 1 from Lassen National Forest for a discussion of the requirements associated with determining that an impaired waterbody should be in Category 4b (evidence shows at least one use not supported but TMDL is not needed because an existing regulatory program is reasonably expected to result in attain-

ment of water quality standards) rather than Category 5 (evidence shows at least one use not supported and a TMDL is needed).

38. References

- Slotton, D. G., S. M. Ayers, J. E. Reuter and C. R. Goldman. 1997. Gold mining impacts on food chain mercury in northwestern Sierra Nevada streams (1997 revision). In Sacramento River Mercury Control Planning Project. Larry Walker and Associates (editors). Final project report prepared for Sacramento Regional County Sanitation District. Davis, CA. March 1997.
- State Water Resources Control Board (SWRCB). 2004. Water Quality Control Policy For Developing California's Clean Water Act Section 303(d) List. SWRCB. Sacramento, CA.
- State Water Resources Control Board (SWRCB). 2005. Water Quality Control Policy of Addressing Impaired Waters. State Water Resources Control Board Resolution No. 2005-0050. SWRCB. Sacramento, CA.
- United States Environmental Protection Agency (USEPA), 1994. Water Quality Standards Handbook, Second Edition. USEPA. Washington, D.C.
- United States Geologic Survey (USGS), 2005. Mineral Resources Data System. Available at: <http://tin.er.usgs.gov/mrds/select.php>. Accessed: September 20, 2007.