CALIFORNIA URBAN WATER AGENCIES

February 21, 2017

Pamela Creedon
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114

Submitted via email to Glenn.Meeks@waterboards.ca.gov

Dear Ms. Creedon:

California Urban Water Agencies (CUWA) appreciates the opportunity to review the final Salt and Nitrate Management Plan (SNMP), various policies associated with the SNMP, and the Substitute Environmental Document (SED). CUWA has actively participated in the CV-SALTS Executive Committee meetings for several years and has provided comments on various drafts of these documents. While some of our previous comments were considered and incorporated, many of our substantive comments remain unaddressed. CUWA acknowledges and appreciates the challenges of salinity and nitrate management as well as efforts by wastewater dischargers to reduce salinity and nitrate in their effluents. At the same time, we are quite concerned about the direction of the SNMP and unaddressed potential for impacts.

CUWA is concerned with the potential direct impacts on surface water quality as a result of suggested policy changes, as well as indirect effects on surface water quality due to the degradation of groundwater. Specifically, CUWA has concerns with the following issues:

1. Increased salt loading impacts on downstream drinking water intakes.
2. Increased groundwater concentrations of salt and nitrate.
3. Increased metals concentrations.
4. Point of compliance.
5. Monitoring program.
6. Consistency with existing agreements.

We have elaborated on each of these six points below, including policy by policy implications, to encourage discussion on how to better protect and maintain water quality while meeting salinity management goals. We have also included specific recommendations to further inform the discussions of these concerns. Detailed comments on the individual documents are contained in Attachment 1. Attachment 2 presents information on potential impacts on salinity levels at Delta drinking water intakes from modeling conducted by the Department of Water Resources (DWR) and Attachment 3 presents manganese data in source waters and agricultural drains.

1. **Increased salt loading impacts on downstream drinking water intakes.** Implementation of some proposed policies in the SNMP will result in increased loads of salt discharged to the Sacramento-San Joaquin Delta (Delta) and will potentially impact the MUN beneficial use at Delta drinking water intakes. The Salinity Variance Program, the Drought and Water Conservation Program, and the Secondary Maximum Contaminant Level (MCL) Policy will allow the Central Valley Regional Water Quality Control Board (Regional Board) to issue Waste Discharge Requirements (WDRs) with higher allowable levels of salinity. This could result in higher concentrations of salt at Delta drinking water intakes. Specific proposed programs and policies that could impact this include:

    a. ***Attachment A-3 Salinity Variance Program*** – This policy proposes to extend the existing Salinity Variance Program for AGR beneficial use designations beyond June 30, 2019 when it currently sunsets and to expand application of the program to the MUN beneficial use. The sunset of the variance program was intended to require dischargers to determine how to meet water quality objectives and eventually reduce salt loads discharged to the San Joaquin and Sacramento rivers, rather than continually obtaining a variance. Therefore, the SED should have evaluated the impact of the proposed change in the Salinity Variance Program compared to the loads that would be discharged if the program were not extended and expanded to include the MUN beneficial use. The study conducted by Larry Walker Associates (2012) only evaluated discharges from three wastewater treatment plants in the Delta. A more comprehensive analysis is needed.

    b. ***Attachment A-8 Drought and Water Conservation Policy*** – This proposed policy will allow dischargers to surface waters to discharge higher salinity water during droughts. The proposed policy suggests that at times those discharges could have electrical conductivity (EC) levels as high as 2,200 µmhos/cm. This will occur when flows in surface waters are low and salinity levels are high at drinking water intakes. Implementation of the proposed policy will further exacerbate the degradation in water quality at those intakes. The SED acknowledges that water quality will be degraded but *"given the temporary nature in which these exceptions/variances would be applied, this degradation would not contribute to long-term or wide-spread adverse effects to MUN or AGR beneficial uses."* Drinking water consumers respond to the taste and odor of the water they are drinking and judge its healthfulness based on taste and odor. Therefore, short-term impacts are a concern. CUWA recognizes that dischargers have little to no control over the quality of their discharges during periods of drought but we request that the short-term impacts of this policy be disclosed in the SED.

    c. ***Attachment A-9 Secondary MCL Policy*** – This policy proposes to provide guidance to the Regional Board allowing it to use the EC Upper level of 1,600 µS/cm in the Secondary MCL range, rather than the Recommended level of 900 µS/cm in setting requirements in WDRs. This could result in agricultural operations switching from surface water sources

to more saline groundwater sources, which would result in higher salinity discharges to surface waters. According to the SED, *"while the proposed SMCL Policy would allow for WDRs with higher effluent or receiving water limitations for EC, TDS, chloride and sulfate, this is not expected to result in an appreciable change in discharge quality for these parameters. Thus, there would be no substantial degradation of water quality for these constituents upon adoption and implementation of the Secondary MCL Guidance."* The SED does not acknowledge that higher effluent or receiving water limitations could result in an increased load of salinity discharged to surface waters.

CUWA recommends that the SED be revised to discuss the potential for salt and nitrate concentrations to increase in surface waters as a result of implementation of the SNMP.

2. **Increased groundwater concentrations of salt and nitrate.** Implementation of the proposed policies in the SNMP will increase salt and nitrate concentrations in some groundwater basins over the next 20+ years and will likely increase salt and nitrate concentrations in surface waters. The SED acknowledges that groundwater degradation will occur as a result of many of the proposed policies but does not discuss the impact of degraded groundwater pumping and discharge to surface waters, and the likelihood that surface water quality will also degrade.

   There are a number of proposed policies and strategies that allow degradation of groundwater basins. When this degraded groundwater is pumped, applied to agricultural fields, and then discharged to surface waters, salt and nitrate concentrations in the surface waters will increase and could potentially impact the MUN beneficial use in those surface waters. Additionally, if the degraded groundwater is a community drinking water source, the degradation will translate to higher EC levels in the community's wastewater discharge, which could impact the MUN beneficial use in surface waters receiving the wastewater discharge. Groundwater will likely become a more significant source of water in the Sacramento and San Joaquin valleys in the future due to droughts and climate change. In addition, the State Water Resources Control Board's (State Board's) proposal to dedicate 30% to 50% of unimpaired flow on the Stanislaus, Tuolumne, and Merced rivers to the environment will result in many San Joaquin Valley communities and agricultural operators relying more heavily on groundwater.

   The following proposed strategies allow degradation of groundwater and could result in impacts to the MUN beneficial use in surface waters and to increasing the salt load discharged to the Delta:

   a. ***Attachment A-2 Nitrate Permitting Strategy*** – This strategy proposes to classify groundwater into five categories and allows individual dischargers in categories 3, 4, and 5 to degrade nitrate concentrations in groundwater basins. The SED states*, "Permitting discharges that fall into Category 5 could contribute to <u>substantial</u> (emphasis added) degradation of groundwater quality for nitrate…."* While the Nitrate Permitting Strategy requires Alternative Compliance Projects for groundwater, there is no similar

requirement for impacts to surface waters. Under Path B for Management Zones, this strategy proposes to grant assimilative capacity based on the production zone rather than on first encountered groundwater. This will allow for higher concentrations of nitrate in groundwater basins. The SED states, *"During the period in which the management zone is formed and the required proposals and plans are prepared and submitted, and the plans are implemented, there could be degradation of nitrate relative to existing conditions."*

b. ***Attachment A-3 Salinity Management Strategy*** – This strategy proposes an interim permitting approach which *"would allow the Central Valley Water Board to manage degradation (emphasis added) while the long-term salinity efforts are being developed, funded, and implemented."* The SED states, *"Over the approximate twenty-year period that would comprise Phases I and II of the Salinity Management Strategy, plus the additional time in Phase III for construction, this degradation could be substantial (emphasis added) in some areas of the Central Valley…" "This is considered a **potentially significant** impact with regard to water quality degradation in groundwater."*

c. ***Attachment A-4 Exceptions Policy*** – This policy proposes to extend the existing Salinity Exceptions Program after June 30, 2019 when it sunsets and to include nitrate in the policy. This policy allows discharges to groundwater basins that have no assimilative capacity and it allows discharges that exceed the groundwater concentration. The SED states, *"the Exceptions Policy could result in **potentially significant** impacts to water quality degradation in regard to salts and nitrate in the coming years and potentially decades…"*

d. ***Attachment A-5 AGR Policy*** – This policy proposes to classify groundwater basins in four classes based on the volume-weighted EC and total dissolved solids (TDS) levels in the basins with Class 4 being basins with EC > 7,500 µS/cm (TDS > 5,000 mg/L). Dischargers would then be able to discharge water to the basins up to the maximum allowed EC/TDS level for each of the four classes. Currently, an EC of 750 µS/cm is used to translate the chemical constituents' narrative objective for protection of AGR. According to the SED, *"With the proposed management of salinity according to AGR classification, there is potential for groundwater quality degradation."*

e. ***Attachment A-7 Offsets Policy*** – This policy proposes to allow dischargers to use offset projects within the same groundwater basin, sub-basin, or management zone in lieu of meeting WDR requirements for salinity constituents or nitrate. The SED states, *"it is concluded that the Offsets Policy could result in localized potentially significant impacts with regard to water quality degradation."*

f. ***Attachment A-8 Drought and Water Conservation Policy*** – This policy proposes to allow dischargers to groundwater to comply with salinity objectives based on a long term (10+

year) average rather than on a shorter averaging period. This will allow higher salt concentrations in the discharge during periods of drought, potentially up to 2,200 µmhos/cm.

g. ***Attachment A9 Secondary MCL Policy*** – This policy proposes to provide guidance to the Regional Board allowing it to use the EC upper level of 1,600 µS/cm in the Secondary MCL range, rather than the recommended level of 900 µS/cm in setting requirements in WDRs. This increases the allowable assimilative capacity in groundwater basins and will allow continued discharge of salt to these basins that would have been prohibited if assimilative capacity was based on the recommended level of 500 µS/cm.

The SED does not identify any direct connection between groundwater degradation, subsequent use of that groundwater, and resultant degradation of surface water quality. CUWA previously requested that CV-SALTS conduct modeling studies to evaluate the potential impacts of implementation of the SNMP on the salt concentrations at Delta drinking water intakes. CV-SALTS has provided assurances that the San Joaquin River at Vernalis EC water quality objectives of 700 µS/cm (30-day average April to August) and 1,000 µS/cm (30-day average September to March) and the EC objectives for the Sacramento River would protect Delta water quality; however, we are not aware of CV-SALTS having conducted any modeling to date to verify these statements. The San Joaquin River at Vernalis EC is much lower than the objectives during many times of the year and implementation of the SNMP could potentially increase salinity levels in the San Joaquin River so that the water quality objectives are just met providing little flexibility for adjustments in water quality.

DWR conducted a preliminary modeling study to determine if there could potentially be impacts at the Delta drinking water intakes as a result of increasing salinity levels in the San Joaquin River. This study compared EC levels that existed during several time periods between 1995 and 2015 to conditions that would have existed if the Vernalis water quality objectives of 700 µS/cm and 1,000 µS/cm were just met. The results of this preliminary study were presented to the DWR Municipal Water Quality Investigations Program Technical Advisory Committee. The preliminary modeling results showed there would be substantial increases in EC at the Central Valley Project's Jones intake, the State Water Project's Banks intake and at Contra Costa Water District's Rock Slough intake at times and are presented in Attachment 2. It should be noted that the State Board is proposing to change the Vernalis objective to 1,000 µS/cm year-round. This would effectively increase the allowable assimilative capacity in the San Joaquin River and could increase the impacts at Delta drinking water intakes beyond what is shown in the DWR modeling results.

CUWA recommends that thorough modeling studies be conducted to quantify the impacts on salinity at Delta drinking water intakes as a result of implementation of the SNMP.

3. **Increased metals concentrations.** Implementation of the proposed Secondary MCL Policy could potentially increase metals concentrations at Delta drinking water intakes. CUWA is particularly concerned with manganese because some of our member agencies have experienced water treatment and distribution system difficulties as a result of already high manganese concentrations in State Water Project supplies. For example, Alameda County Water District (ACWD) has found that customers can experience aesthetic issues at manganese concentrations above 15 µg/L, which is well below the Secondary MCL of 50 µg/L. Manganese accumulation in the distribution system can also lead to a higher potential for discolored water complaints from customers when major flow changes or reversals occur within the distribution system, and can require additional resources for flushing mains and cleaning water storage facilities. Significant efforts are being made to optimize ACWD's biofiltration process for improved manganese control, in particular during cold water seasons, to benefit water quality in the distribution system and consumer acceptance.

   Additionally, manganese is included on the U.S. Environmental Protection Agency's Contaminant Candidate List 4 and in the upcoming Unregulated Contaminant Monitoring Rule 4 to gather additional information for potential future health-based regulatory consideration. Health Canada has recently proposed a health-based maximum acceptable concentration of 0.1 mg/L (100 µg/L) in drinking water.

   Manganese concentrations exceed the Secondary MCL in the Sacramento River at times and the Secondary MCL is consistently exceeded in the San Joaquin River and agricultural drainage. Attachment 3 contains plots of manganese concentrations taken from the DWR Water Data Library database. The SED concludes that, "*sediment control is a typical component of storm water and agricultural management plans and BMPs, and implementation of these BMPs is expected to be unchanged as a result of the Secondary MCL Policy, because regulatory requirements related to control of particulates (e.g. turbidity objectives, suspended sediment objectives) would be unchanged. Thus, concentrations of aluminum, iron, and manganese, which are associated with particulates, in agricultural and storm water discharges is not expected to substantially change relative to existing conditions due to implementation of the Secondary MCL Policy."* Sediment levels in agricultural drainage and runoff from agricultural fields can be quite high at times. As pointed out in the SED, *"In the summer months San Joaquin River turbidity increases as flow decreases, possibly due to the greater influence of agricultural return flows."* If compliance is based on dissolved manganese, rather than total manganese, excessive concentrations of manganese could be discharged with the sediment, while agricultural dischargers are in compliance based on dissolved manganese concentrations.

   CUWA recommends continued compliance with the Secondary MCLs for total metals, rather than determining compliance based on dissolved metals.

4. **Point of compliance.** Compliance with the Secondary MCLs measured at the nearest downstream drinking water intake rather than at the end of an appropriate mixing zone does not protect the MUN beneficial use throughout a MUN designated waterbody or protect the MUN use for future water treatment plant intakes.

   The proposed Secondary MCL Policy proposes that the Regional Board consider a number of factors when developing WDRs, including, *"The potential impact on downstream beneficial uses (MUN-designated surface water and groundwater), including potential to impact water quality at the nearest downstream intakes for a community water system;"* This implies that compliance with the Secondary MCLs will be measured at the nearest existing downstream drinking water intake rather than in the discharge or at the edge of an appropriate mixing zone. This interpretation would be inconsistent with the Mixing Zone Policy, sections of which are excerpted below:

   > *"A mixing zone shall be as small as practicable. The following conditions must be met in allowing a mixing zone:*
   > *A. A mixing zone shall not:*
   > *1. compromise the integrity of the entire water body;*
   > *10. dominate the receiving water body or overlap a mixing zone from different outfalls; or*
   > *11. be allowed at or near any drinking water intake. A mixing zone is not a source of drinking water."*

   CUWA recommends clarifying the Secondary MCL Policy to ensure that compliance with Secondary MCLs be measured in a discharge or at the edge of an appropriate mixing zone.

5. **Monitoring program.** The SNMP does not include a monitoring program for surface waters. The development of a monitoring program and/or the assessment of existing monitoring programs is needed for adequacy in evaluating the effects of implementation of the SNMP and its associated policies on surface waters. The CV-SALTS Executive Committee has stated that existing surface water monitoring programs are adequate, however we are not aware of any assessment of the existing monitoring programs that could be used to draw such a conclusion. As previously stated, there is the potential for surface water quality to be degraded as a result of many of the proposed policies.

   CUWA recommends developing a monitoring and assessment program to evaluate existing conditions and changes in both surface and ground water quality as a result of implementation of the SNMP.

6. **Consistency with existing agreements**. The SNMP should be consistent with existing agreements on the management of drainage from salinity and nutrient-impaired agricultural lands. The Third Grassland Bypass Project Use Agreement (Use Agreement), signed in 2009, created a path to zero agricultural discharge from the Grassland Drainage Area by December

2019. While a Stormwater Use Agreement for the Grassland Bypass is envisioned to handle stormwater runoff in excess of what the Grassland drainage solutions can handle, the agricultural, urban, and environmental stakeholders involved in negotiating the existing Use Agreement all understand that no agricultural drainage discharges will be allowed after 2019. The September 2015 Settlement Agreement between Westlands Water District (WWD) and the United States to resolve San Luis Drainage issues commits WWD to managing its drainage within its boundaries. We understand that a similar agreement is under negotiation between the Northerly Districts of the San Luis Unit of the Central Valley Project and the United States. These agreements also allow for compliance with current and future state laws and regulations.

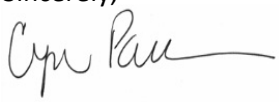
CUWA recommends that the SNMP prevent regulatory loopholes that would allow export of agricultural drainage under these agreements to be relieved of the mandated in-area controls.

In summary, CUWA recommends the following actions to address concerns raised above, with the overall aim of protecting and maintaining water quality while meeting overall salinity and nitrate management challenges.

- Revise the SED to discuss the potential for salt and nitrate concentrations to increase in surface waters as a result of implementation of the SNMP.
- Conduct thorough modeling studies to quantify the impacts on salinity at Delta drinking water intakes as a result of implementation of the SNMP.
- Continue compliance with Secondary MCLs for total metals, rather than determining compliance based on dissolved metals.
- Clarify the Secondary MCL Policy to ensure that compliance with Secondary MCLs be measured in a discharge or at the edge of an appropriate mixing zone.
- Develop a monitoring and assessment program to evaluate existing conditions and changes in water quality as a result of implementation of the SNMP.
- Prevent regulatory loopholes in the SNMP that would allow export of agricultural drainage under these agreements to be relieved of the mandated in-area controls.

We appreciate this opportunity to provide comments on the SNMP and associated policies. Please contact Elaine Archibald at 916-736-3713 or Katie Porter at 213-271-2239 if you have any questions or would like to further discuss our comments.

Sincerely,



Cindy Paulson, Ph.D.
CUWA Executive Director

Attachment 1
Specific Comments on Individual Documents

SNMP Executive Summary
Page ES-19 – Provide the EC concentrations found in the San Joaquin River.

SNMP Section 3
Page 3-53 – Delta Region – While the primary source of salinity in the western Delta is seawater intrusion, the primary source of salinity at the Delta drinking water intakes varies throughout the year and with hydrologic conditions. There are times when the primary sources of salinity at the Delta drinking water intakes are the San Joaquin and Sacramento rivers.

SNMP Section 4
Page 4-15 – There is no discussion about assessing compliance with the Secondary MCLs at the nearest downstream drinking water intake. This should be included since it is a large deviation from how compliance is currently determined.

Page 4-55 – There is no discussion about why the Interim Salinity Permitting Approach should apply to surface water dischargers. This should be included.

SNMP Section 5
This section is limited to a surveillance and monitoring program for groundwater. A similar program should be developed for surface waters.

SNMP Section 6
Page 6-3 – The drinking water regulations in Title 22, specifically the Secondary MCL regulations, should be included in this section.

Page 6-10 – This section should acknowledge that the future cumulative condition is at least 20 years in the future.

Page 6-11 – The study conducted by Larry Walker Associates (2012) only evaluated the impacts of the Salinity Variance on three Delta wastewater dischargers. A more comprehensive analysis is needed to draw the conclusion that *"the effects on ambient salinity levels both near the point of discharge and at downstream locations would be imperceptible."* LWA conducted a calculation of the impacts of installing reverse osmosis to treat part of the discharges, but modeling was not conducted by LWA.

Page 6-11 – This section should address the potential for the other policies to lead to increased concentrations of salt and nitrate in surface waters.

Page 6-15 – There is the potential to adversely impact human beings through higher nitrate concentrations at individual wells. Provide clarification as to whether CV-SALTS will provide bottled water or well-head treatment to people served by individual wells with nitrate levels above the MCL.

Attachment A-3 Salinity Management Strategy

Page A3-15 – Dischargers opting out of the Prioritization and Optimization Study should be required to comply with the recommended level of salinity constituents and with total metals since this would be the conservative approach and would then be consistent with the other conservative requirements for these dischargers.

Attachment A-9 Guidance to Implement Secondary Maximum Contaminant Levels

Page A9-1 – Secondary MCLs were established to protect public welfare. Customers can experience aesthetic issues with drinking water at levels well below the Secondary MCLs. Metals accumulation in the distribution system can also lead to a higher potential for discolored water complaints from customers when major flow changes or reversals occur within the distribution system, and can require additional resources for flushing mains and cleaning water storage facilities. This should be discussed in the document.

Page A9-2 – This entire paragraph should focus more on the need to protect source water quality. Comparing filtration in a water treatment plant to filtration through a 0.45-micron filter is not an appropriate comparison and should be revised.

Page A9-7 – The *Challenges with Application of Existing Basin Plan* language does not contain specific information on the number of dischargers that would require the proposed changes in order to comply with water quality objectives. This information should be provided here and/or in the SED and Antidegradation Analyses.

Page A9-9 – The assessment of surface water quality is not comparable to the level of analysis performed on groundwater quality. There is no analysis of trends over time at specific locations or trends from upstream to downstream. Instead, data for all locations were combined to calculate a basin-wide average which understates the concentrations of constituents at the downstream locations where drinking water intakes are located.

Page A9-12 – The discussion of *Measuring Compliance with SMCLs* is still confusing. It currently reads as if only wastewater dischargers will measure compliance with a filtered sample. This should be edited to clarify that it is also intended to also apply to agricultural dischargers.

Page A9-13 – The next to the last sentence in the first paragraph is inaccurate. It should be corrected to read "22 CCR §64449 does not provide a compliance assessment time period for Table 64449-B constituents, but rather provides qualitative guidance under 22 CCR §64449 (d)."

Page A9-16 – The following language should be included in the areas requiring clarification:

- Adequate Buffer – Language should be added to the implementation section of the Basin Plans that states that a buffer of 80% of the SMCL will be used to guard against unknowns that could inadvertently allocate more than the assimilative capacity of a surface water body or groundwater basin. If the 80% of the SMCL is exceeded, it will trigger a study by the Regional Board and the dischargers discharging to the water body or groundwater basin to determine what actions can be taken to reduce the concentration of the constituent.

- Monitoring Program – Language should be added to the implementation section of the Basin Plans to state that a surface water monitoring program will be developed to adequately characterize natural background concentrations and existing conditions.

Page A9-17 – The following factors should be considered during development of WDRs:

- Potential for salt loads to the Bay-Delta to increase, which may affect the ability to meet existing Bay-Delta water quality objectives and thus may require some form of mitigation;

- Demonstration that direct users of a water supply within the area of influence of the WDR are adequately protected. This may in some cases include ensuring a safe temporary water supply is provided while long-term improvements to drinking water facilities are completed;

Page A9-22 – Include the following addition to the proposed Basin Plan Amendment language:

- For the chemical constituents identified in 22 CCR §64449 (Table B) the water quality objectives shall be set as described in Chapter III-3.0 of this water quality control plan. Lower concentrations of these chemical constituents are desirable for protecting public welfare and promoting greater consumer confidence and acceptance of water supplied by community water systems, and, where it is reasonable and feasible to do so, WDRs should consider the "Recommended" values in 22 CCR §64449 (Table B).

Page A9-23 – The following factors should be added to the list of factors to be considered in the proposed changes to the Basin Plan:

- Adequate Buffer – Language should be added to the implementation section of the Basin Plans that states that a buffer of 80% of the SMCL will be used to guard against unknowns that could inadvertently allocate more than the assimilative capacity of a surface water body or groundwater basin. If the 80% of the SMCL is exceeded, it will trigger a study by the Regional Board and the dischargers discharging to the water body or groundwater basin to determine what actions can be taken to reduce the concentration of the constituent.

- Monitoring Program – Language should be added to the implementation section of the Basin Plans to state that a surface water monitoring program will be developed to adequately characterize natural background concentrations and existing conditions.

Substitute Environmental Document (SED)

The SED acknowledges that groundwater degradation will occur as a result of many of the proposed policies but does not discuss the impact of degraded groundwater pumping and discharge to surface waters, and the likelihood that surface water quality will also degrade. The SED should be updated to discuss the potential for salt and nitrate concentrations to increase in surface waters as a result of implementation of the SNMP and modeling studies should be conducted to refine the impacts on Delta drinking water intakes.

Page 3 – The list of issues to be addressed in the SED does not contain many of the issues identified by CUWA in our comment letter dated December 30, 2013 (Attachment 4). We request that our former comments be reviewed and considered for inclusion.

Attachment D-3 Summary of Significant Stakeholder Alternative/Options to SNMP Recommended Policies

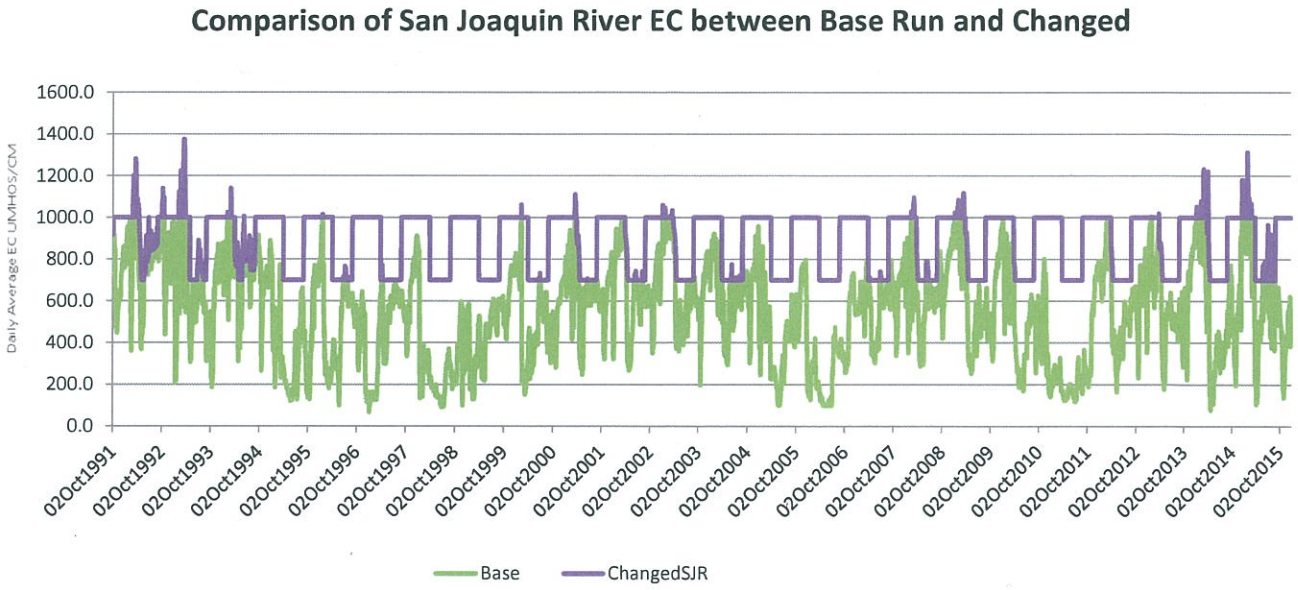
Page D3-6 –The Division of Drinking Water (DDW) confirmed in comments provided on August 1, 2016 that filtered metals results are not used for drinking water compliance monitoring. The text should be revised to clarify that Title 22 requires compliance with the Table 64449-A constituents based on an unfiltered sample.

Attachment 2
DWR Modeling Results

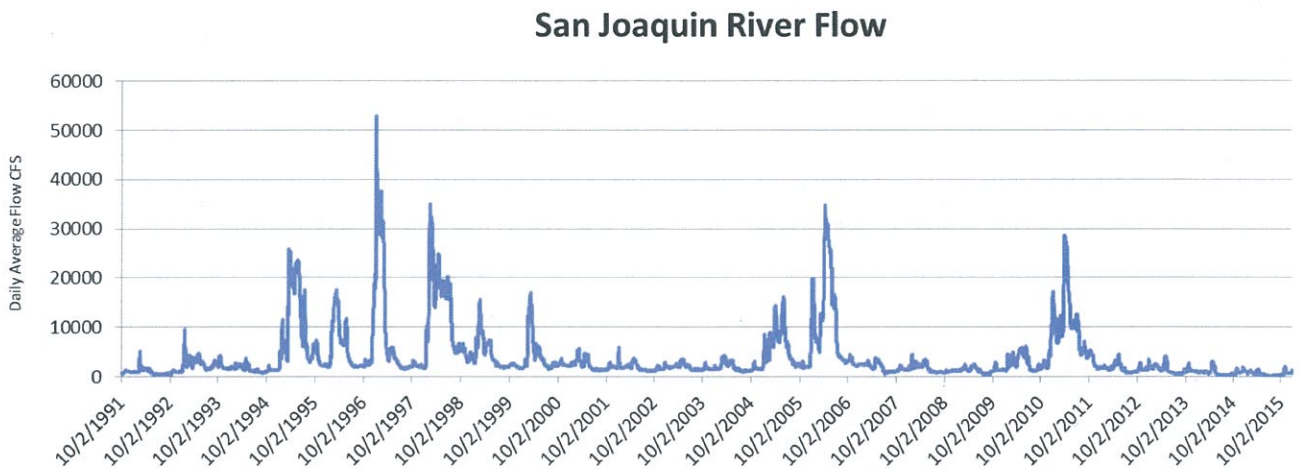
Background

The study for comparison is looking at the impacts of changing the water quality at the SJR boundary. The study consists of changing the San Joaquin boundary at Vernalis to a daily EC of 700 for summer months (Apr - Aug) and with an EC of 1000 during the remaining months (Sep -Mar) with the exception that if the historical value at the SJR boundary is higher than the 1000 or 700 umhos/cm then that value will be used. Simulation period is from 1991 to 2015. The Base case is a historical simulation.

SJR Boundary



SJR Flow


San Joaquin River Flow
Daily Average Flow CFS
60000
50000
40000
30000
20000
10000
0
10/2/1991
10/2/1992
10/2/1993
10/2/1994
10/2/1995
10/2/1996
10/2/1997
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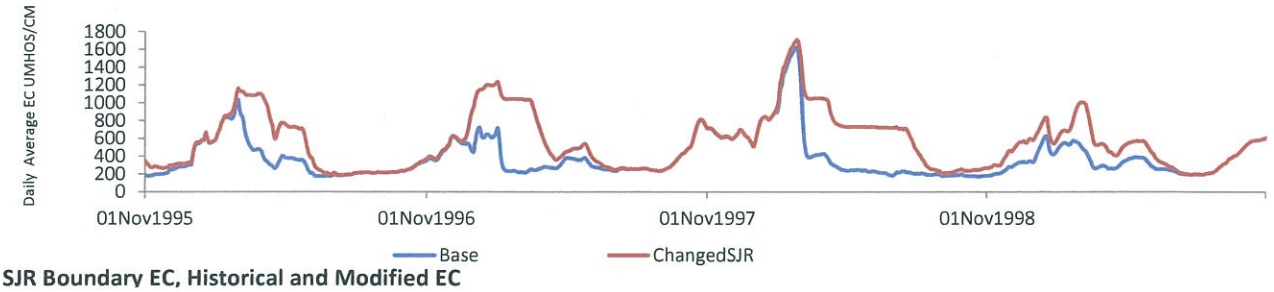
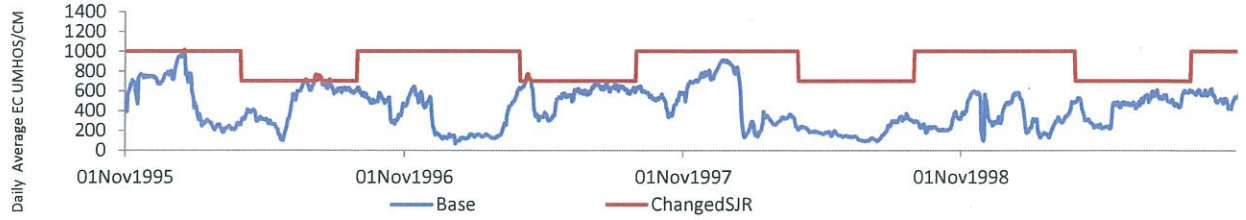
Rock Slough(1995-1999)

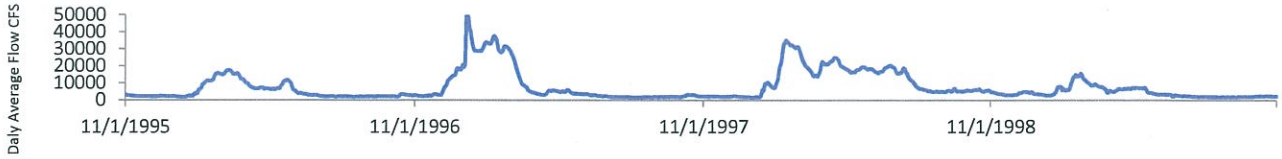
EC at Rock Slough, Historical and Modified SJR EC



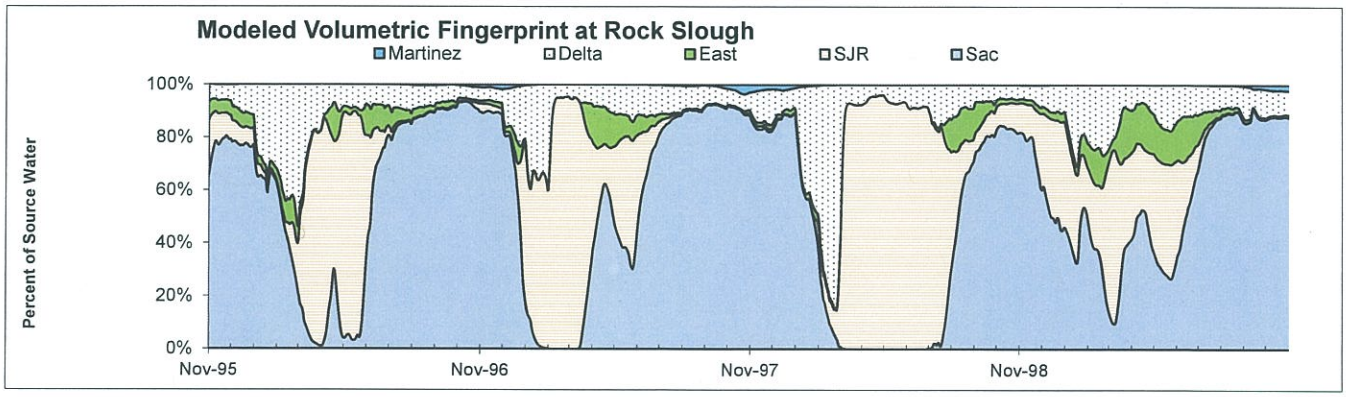
SJR Boundary EC, Historical and Modified EC

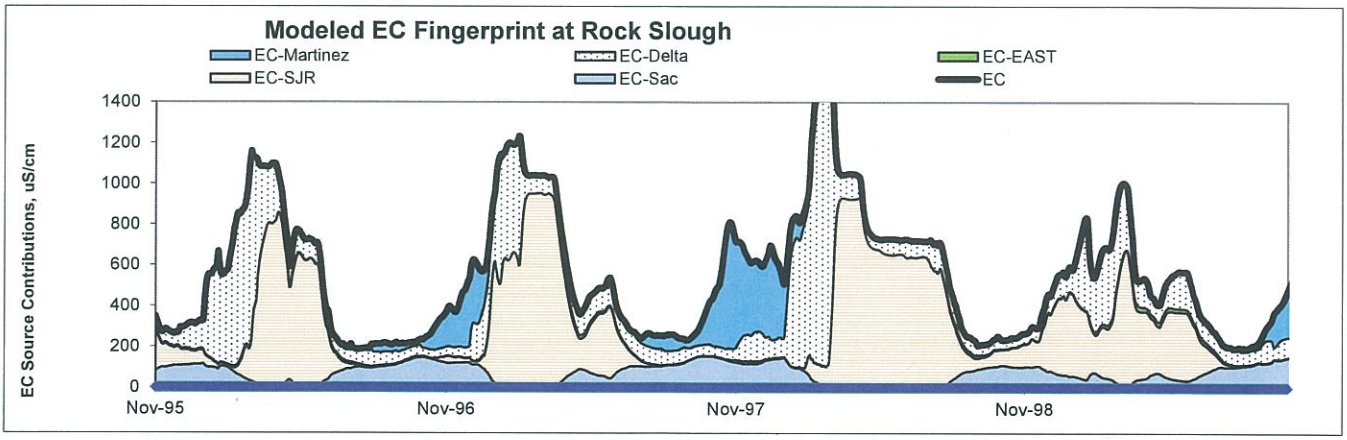


SJR Historical Flow



Rock Slough(1995-1999)



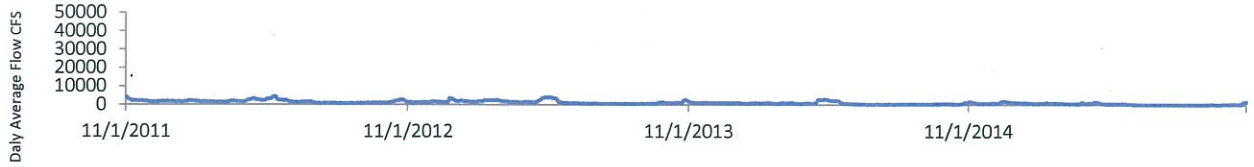


Rock Slough(2011-2015)

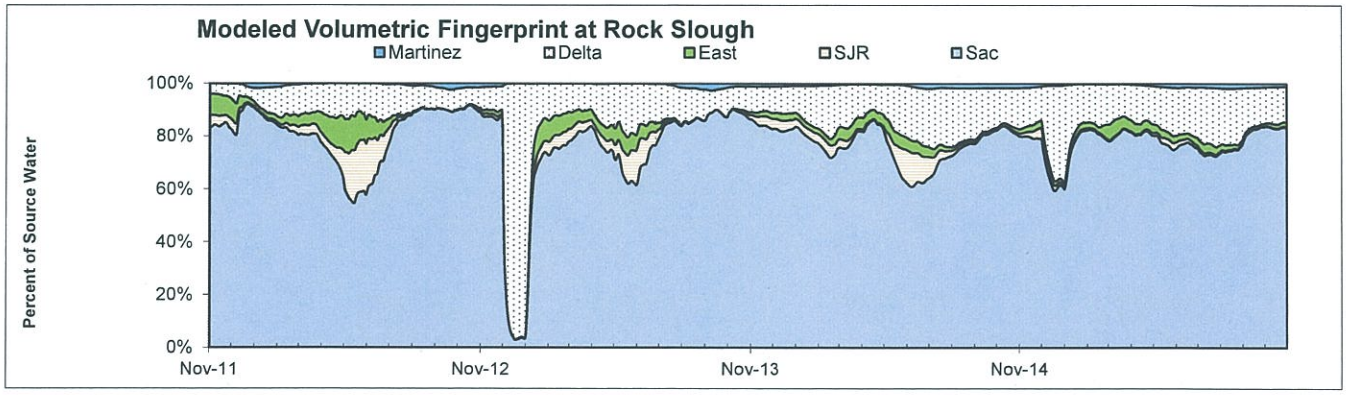
EC at Rock Slough, Historical and Modified SJR EC

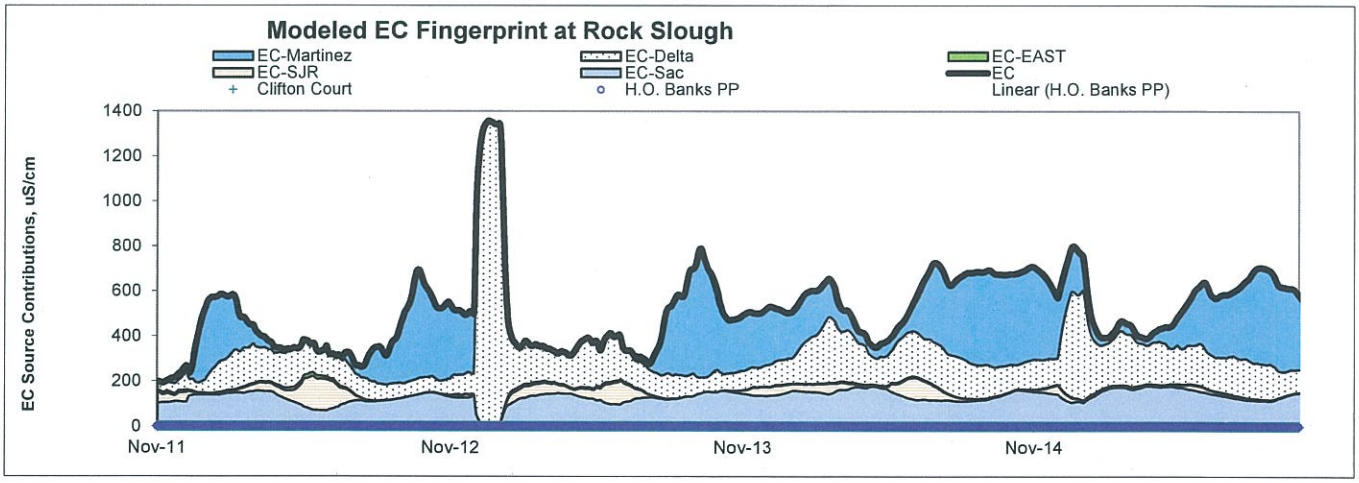
SJR Boundary EC, Historical and Modified EC

SJR Historical Flow



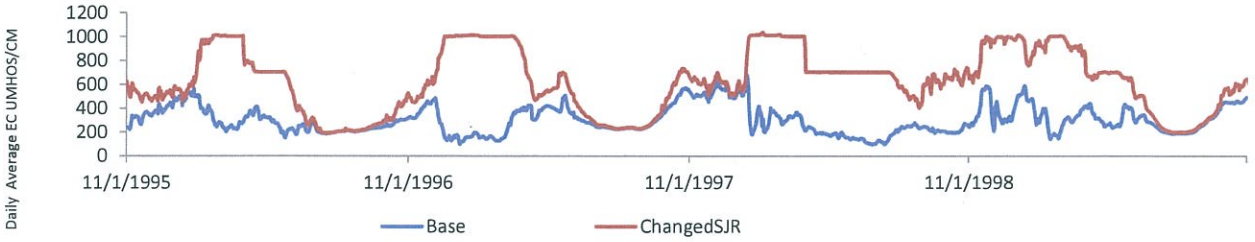
Rock Slough(2011-2015)



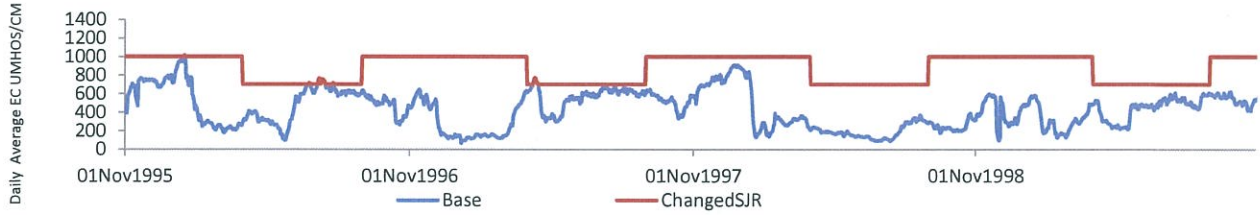


Banks (1995-1999)

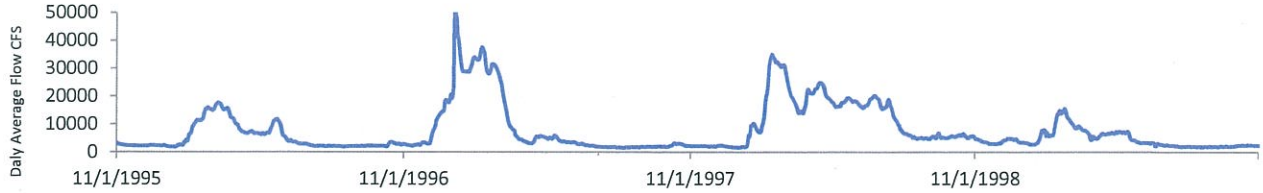
EC at Banks, Historical and Modified SJR EC



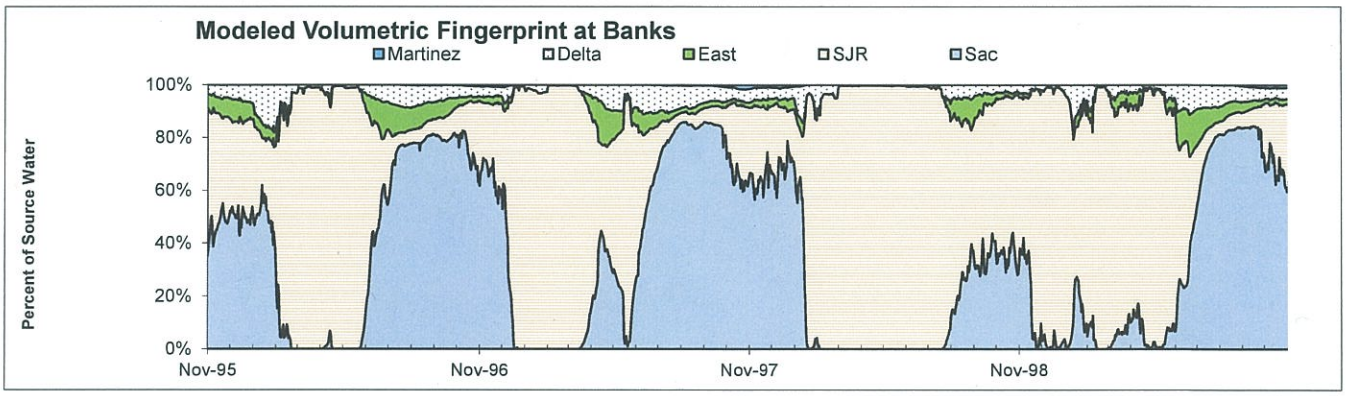
SJR Boundary EC, Historical and Modified EC

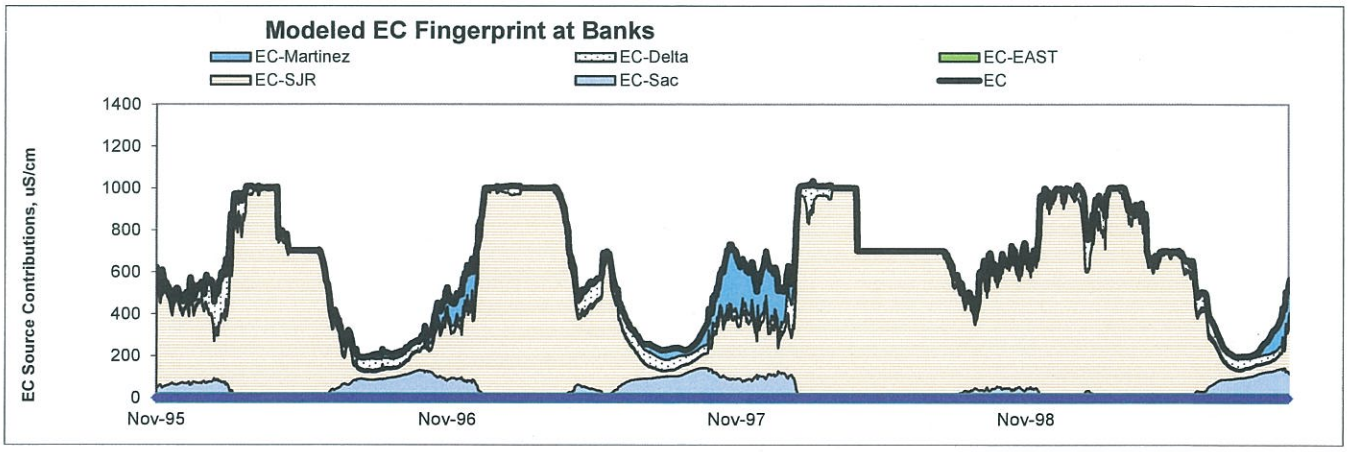


SJR Historical Flow



Banks (1995-1999)

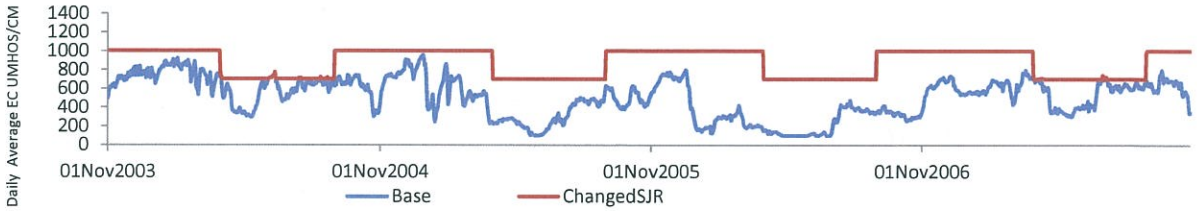




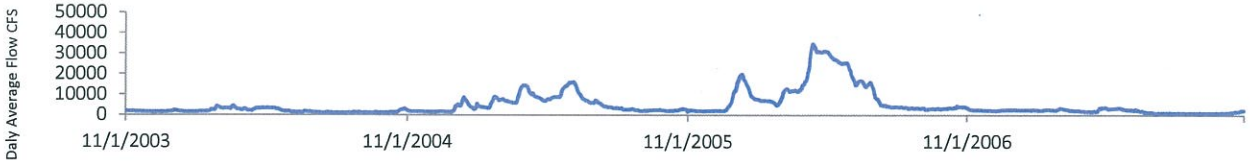
Banks (2003-2007)

EC at Banks, Historical and Modified SJR EC

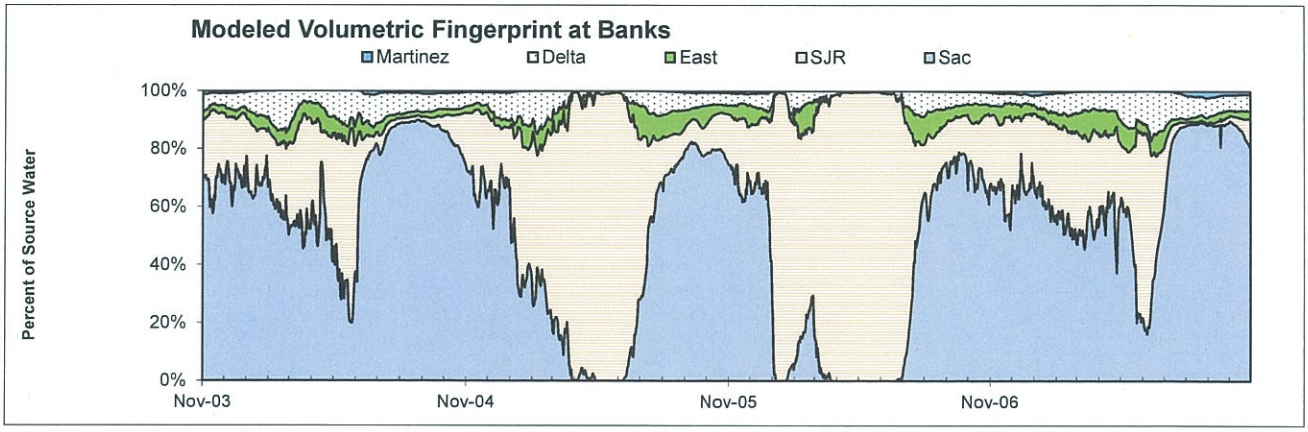
SJR Boundary EC. Historical and Modified EC

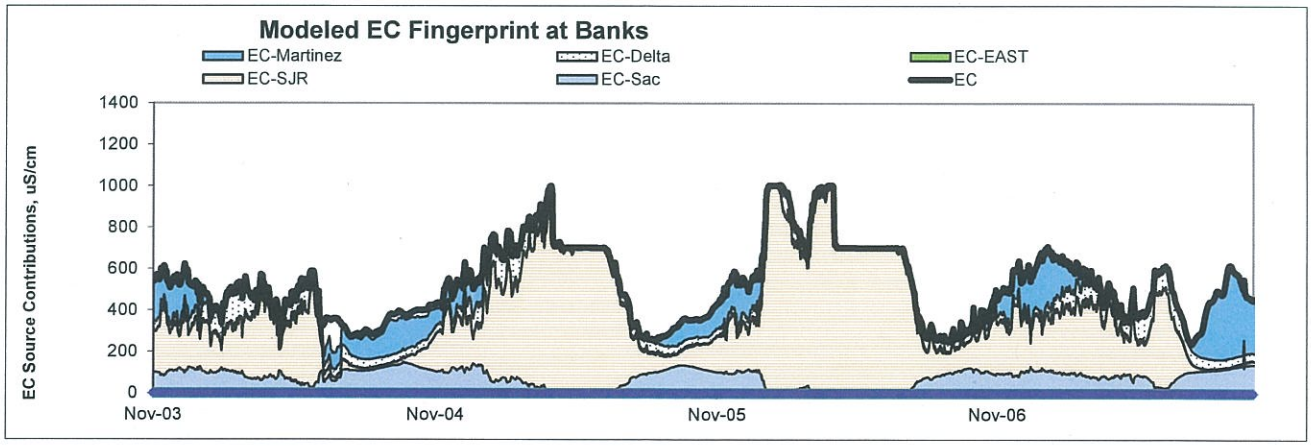


SJR Historical Flow



Banks (2003-2007)





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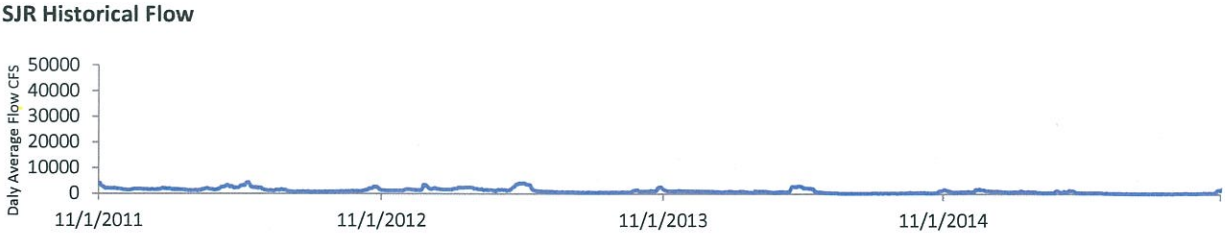
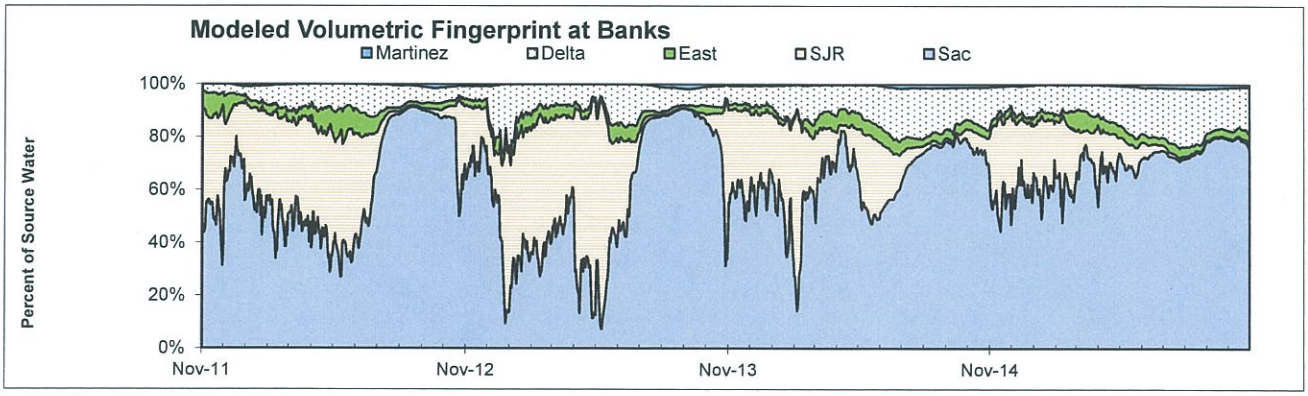
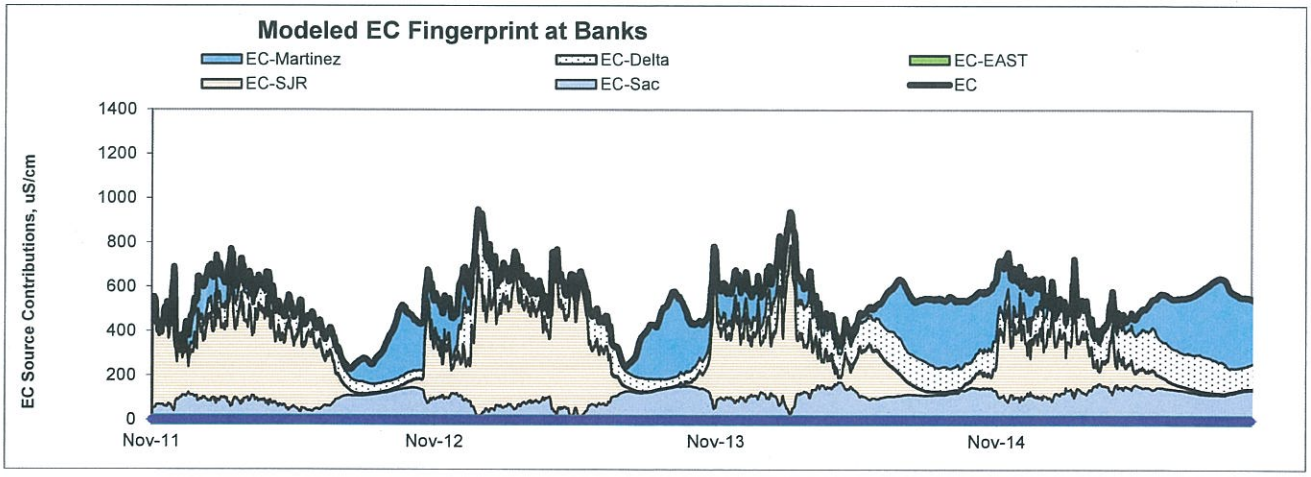
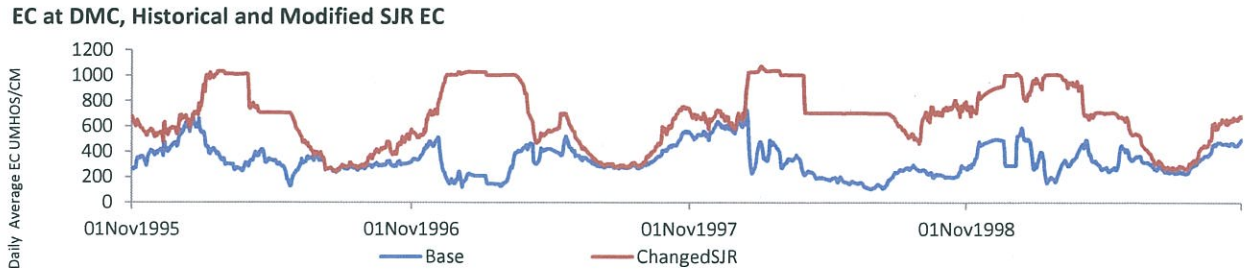


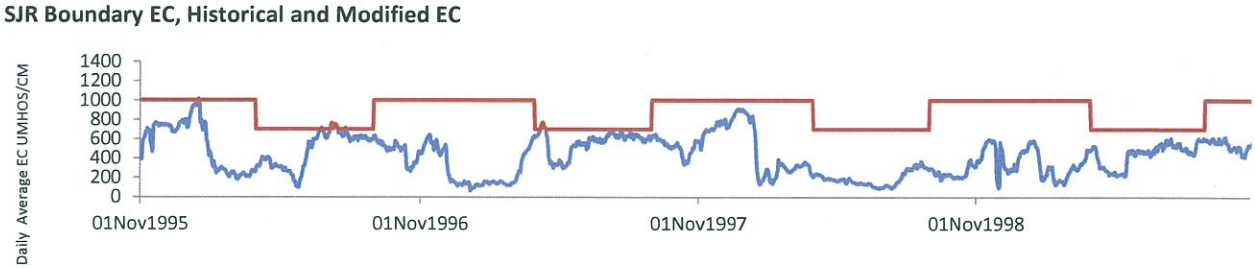
Banks (2011-2015)

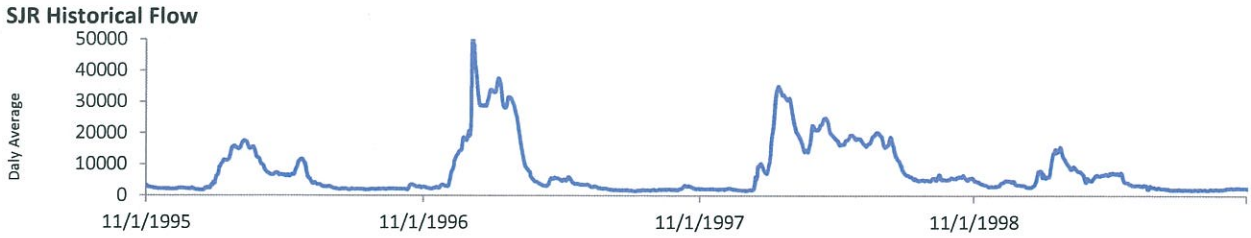




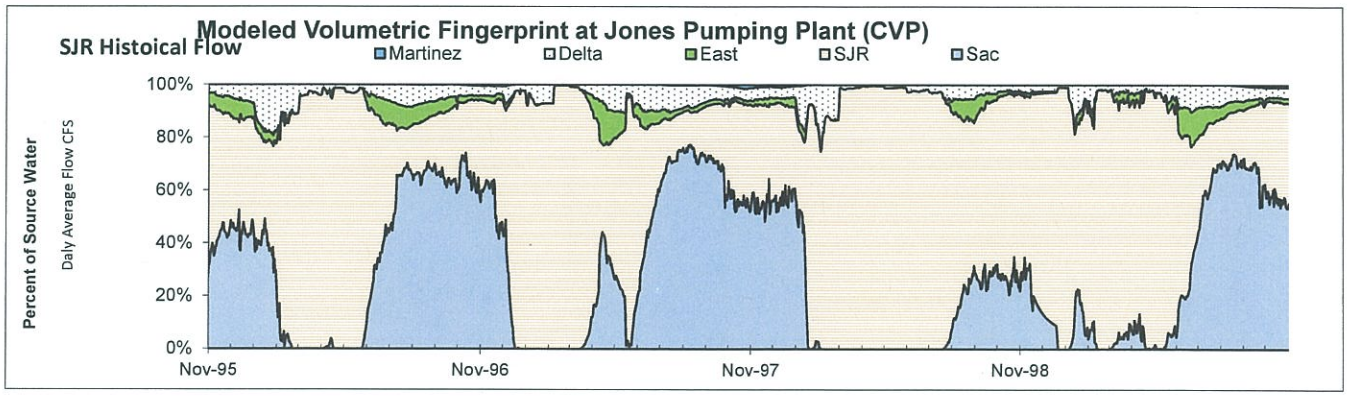
Tracy PP (1995-1999)

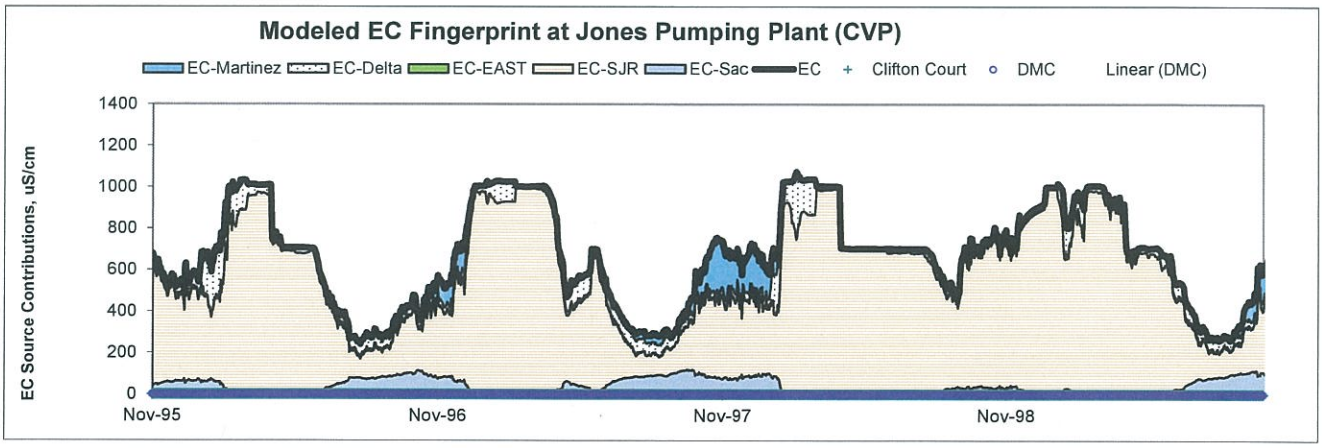






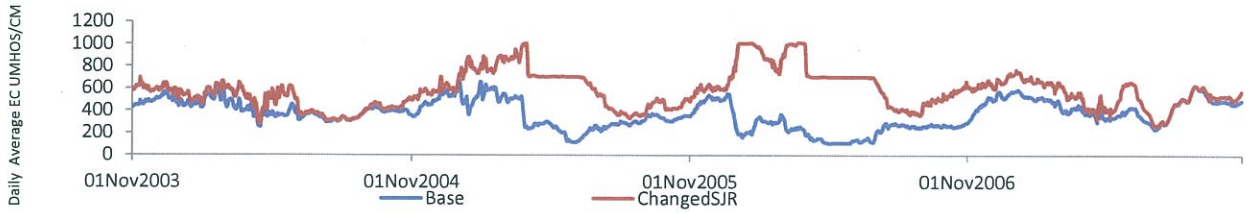
Tracy PP(1995-1999)



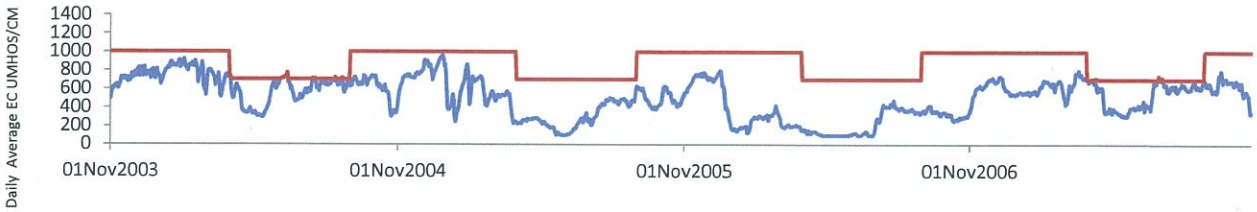


Tracy PP (2003-2007)

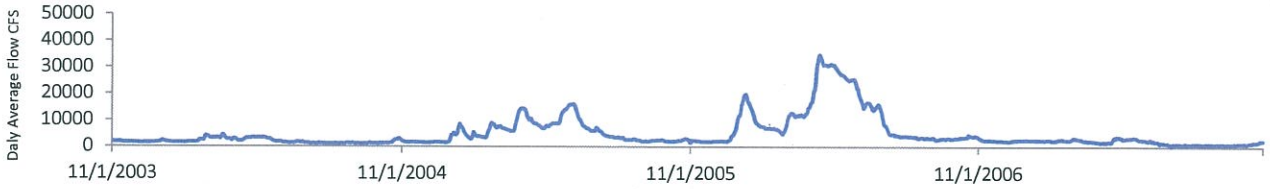
EC at DMC, Historical and Modified SJR EC



SJR Boundary EC, Historical and Modified EC



SJR Historical Flow



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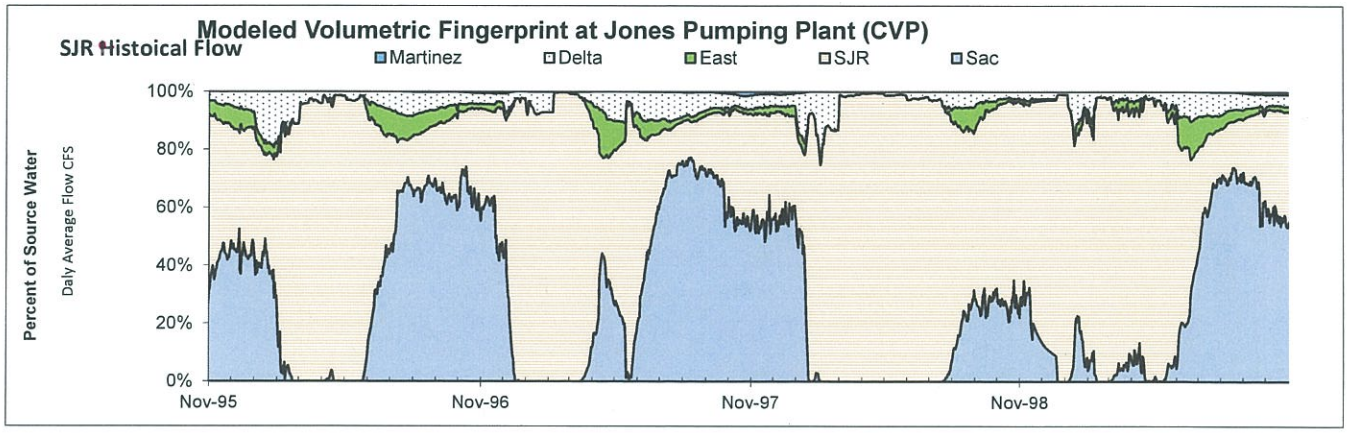
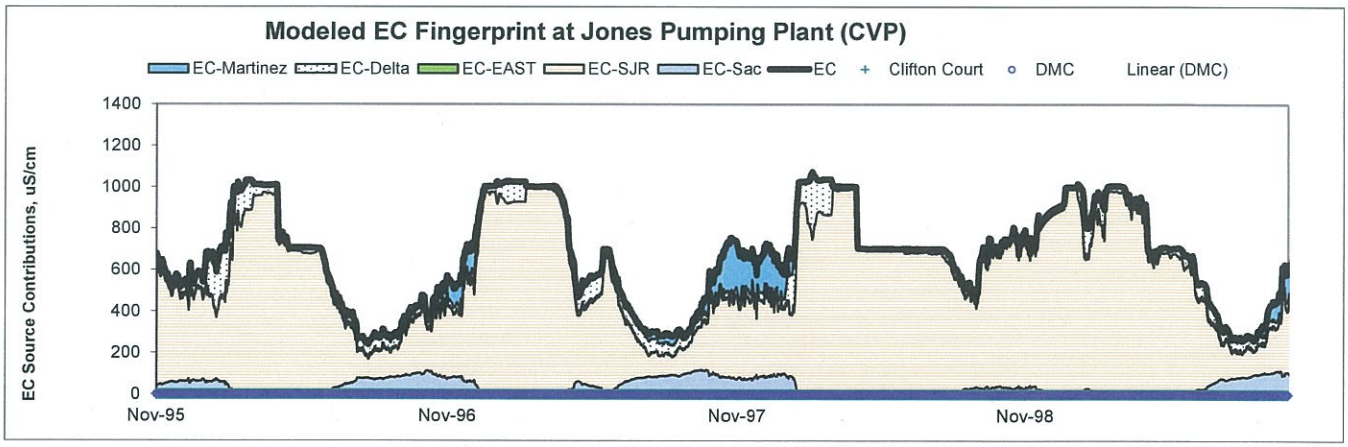
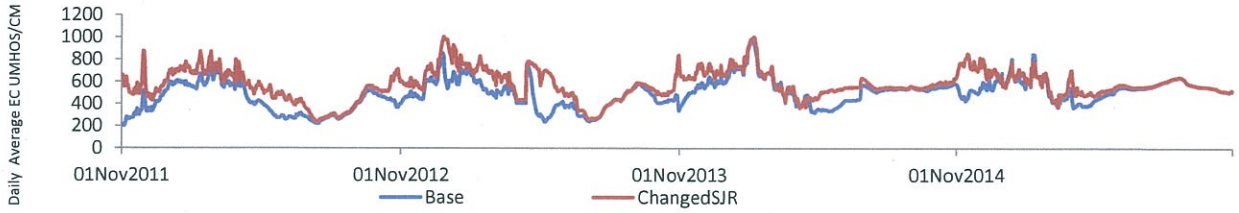




Tracy PP (2003-2007)

EC at DMC, Historical and Modified SJR EC



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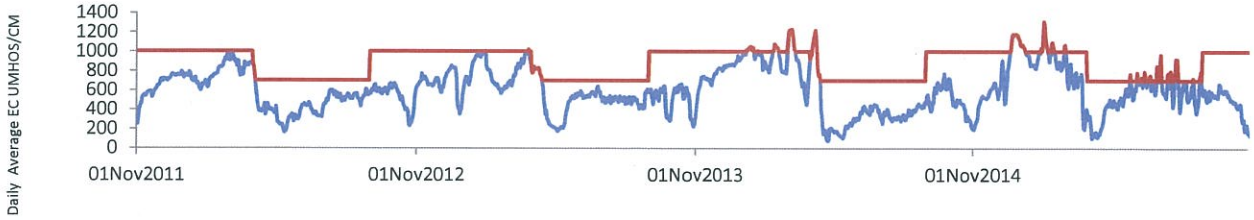
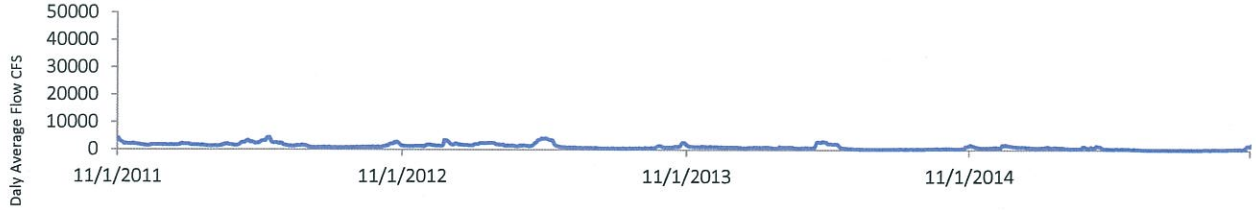


SJR Historical Flow



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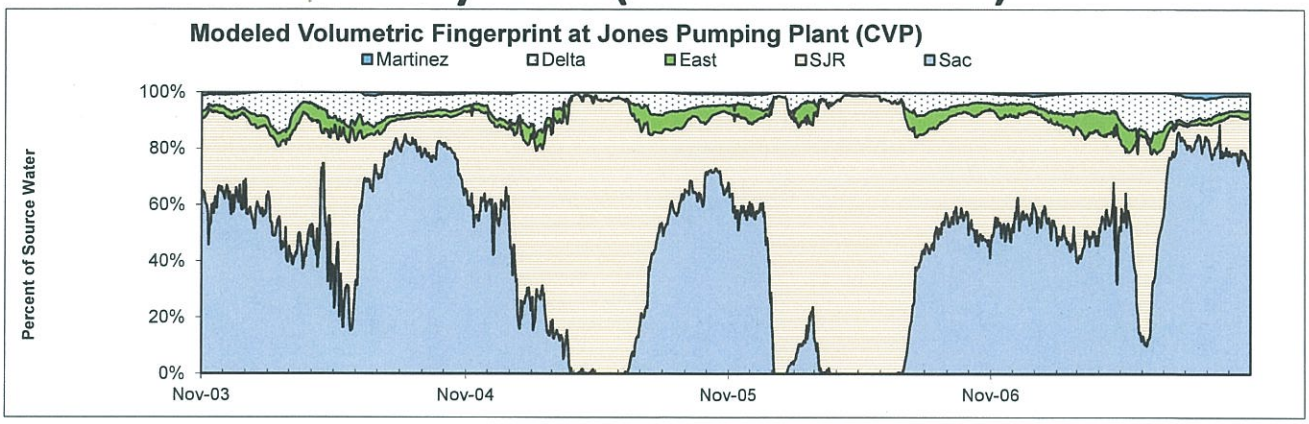
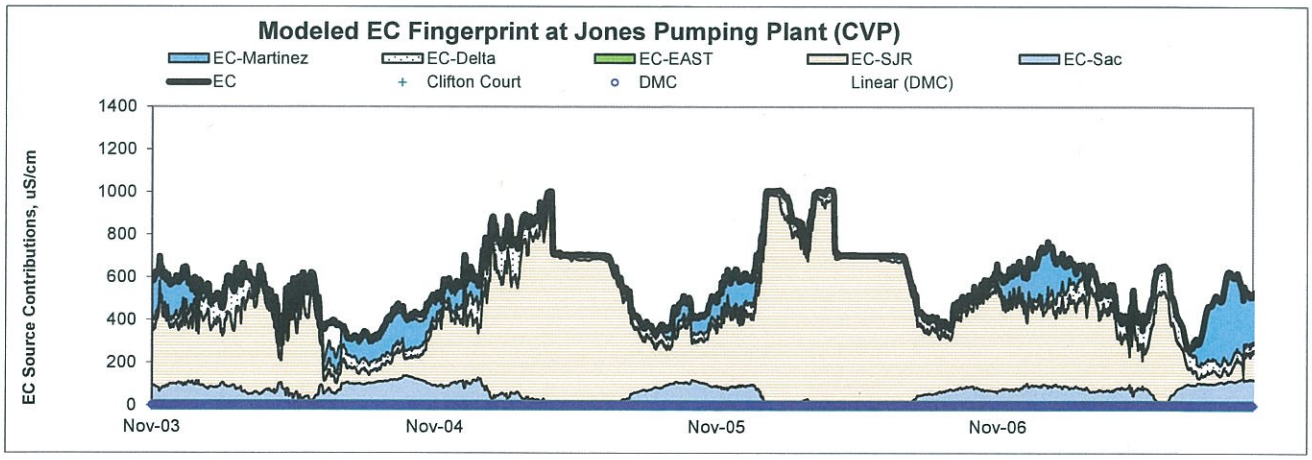
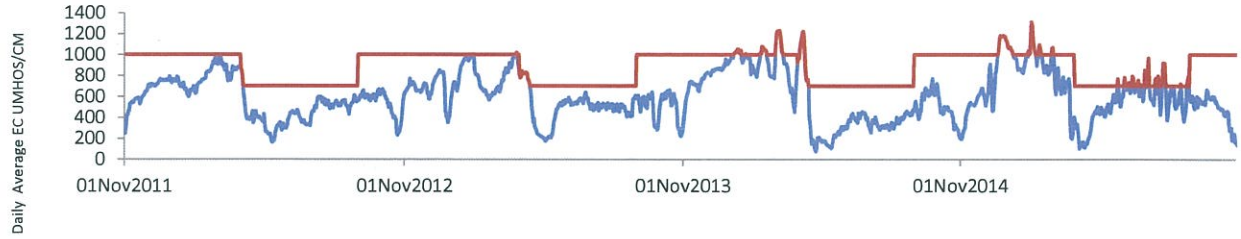




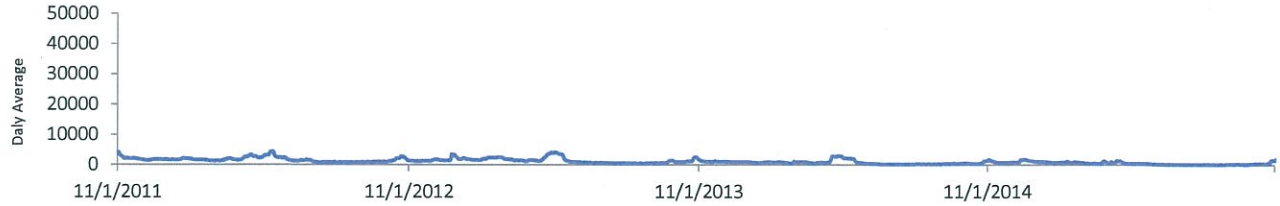
Tracy PP (2011-2015)

EC at DMC, Historical and Modified SJR EC

SJR Boundary EC, Historical and Modified EC



SJR Historical Flow



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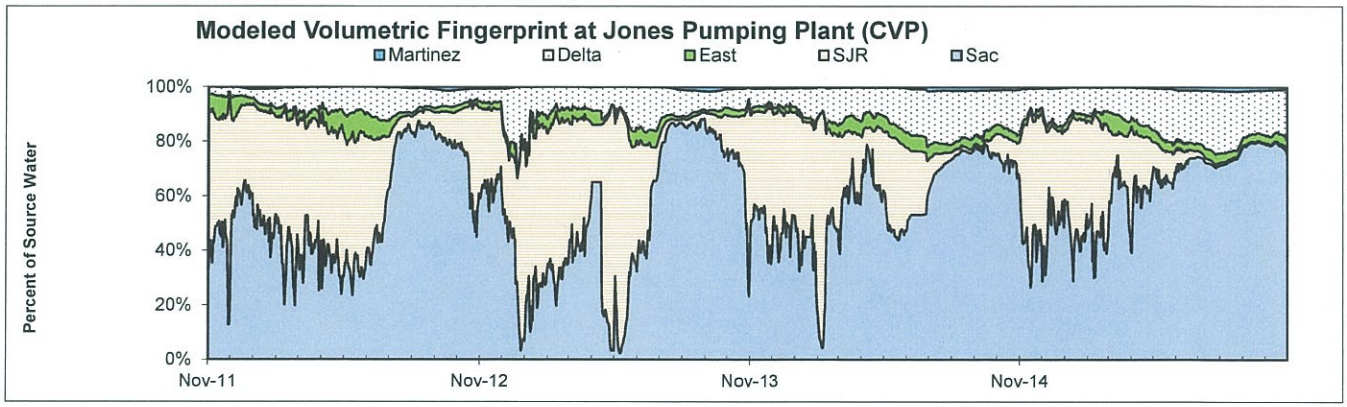
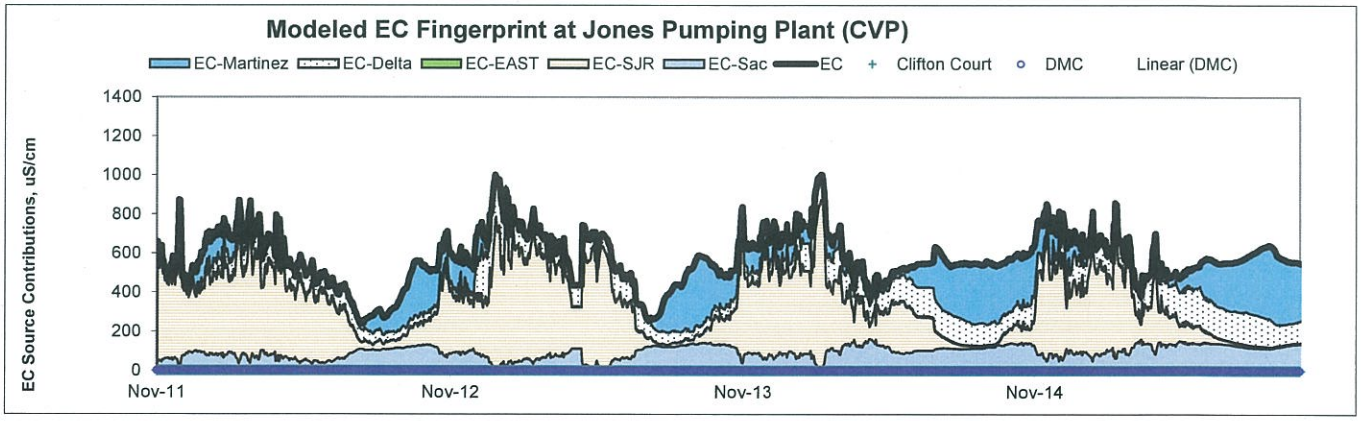
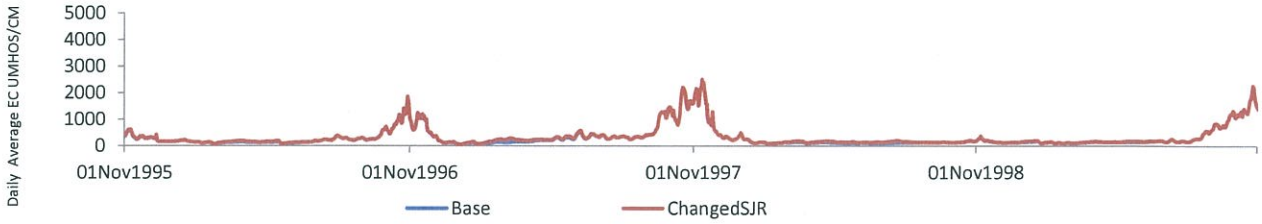




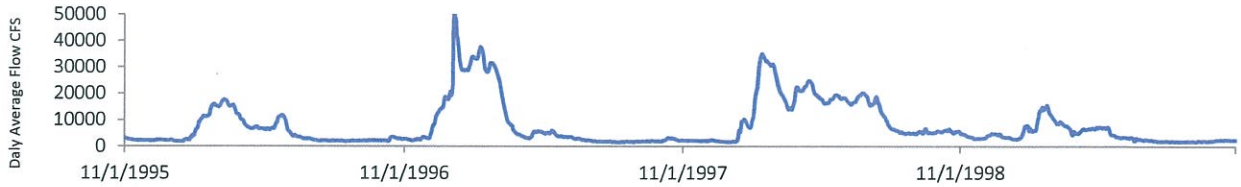
Emmaton (1995-1999)

EC at Emmaton, Historical and Modified SJR EC

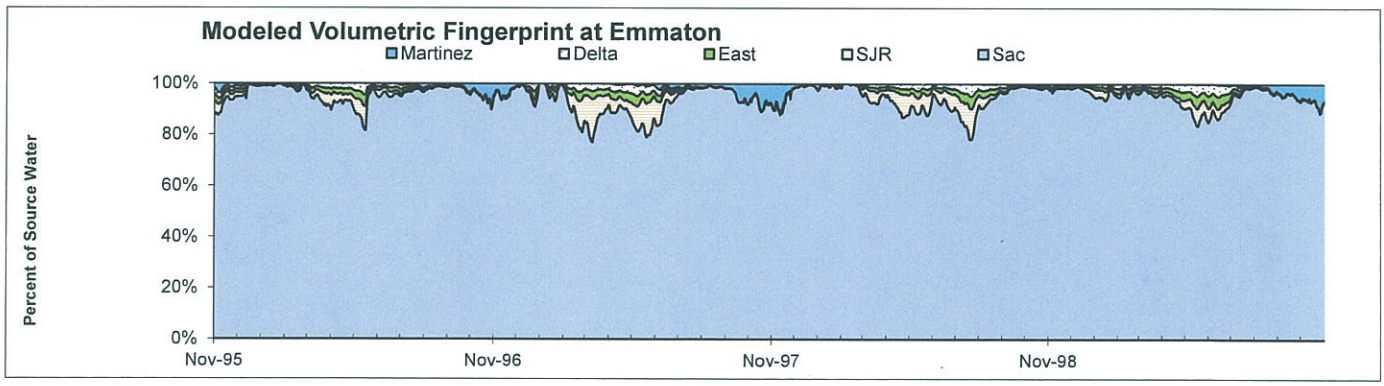


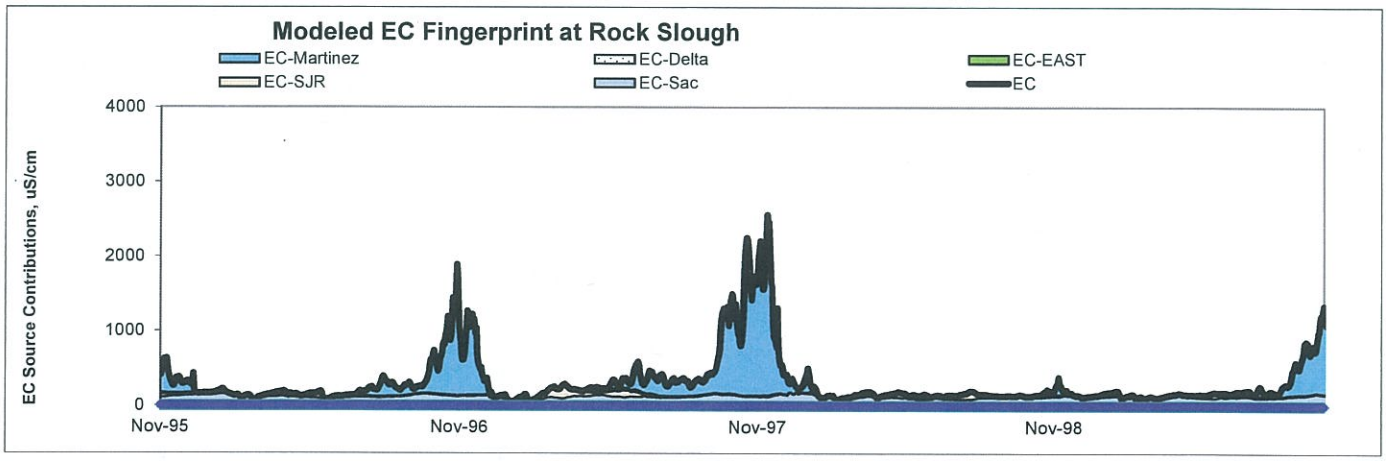
SJR Boundary EC, Historical and Modified EC

SJR Historical Flow



Emmaton (1995-1999)





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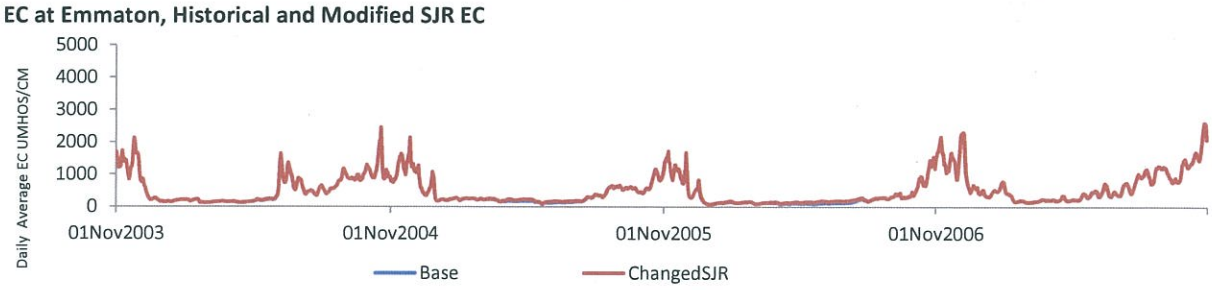

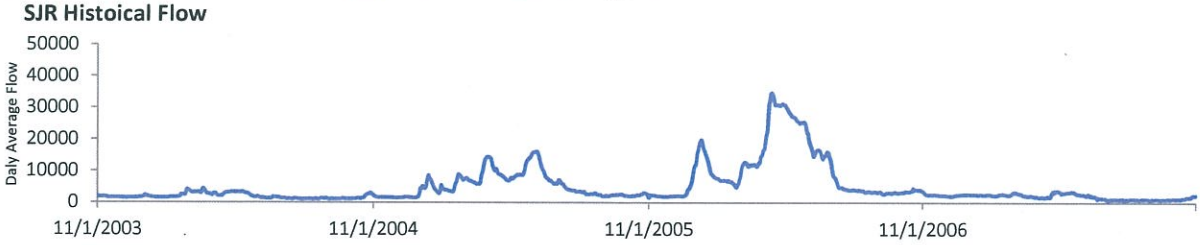

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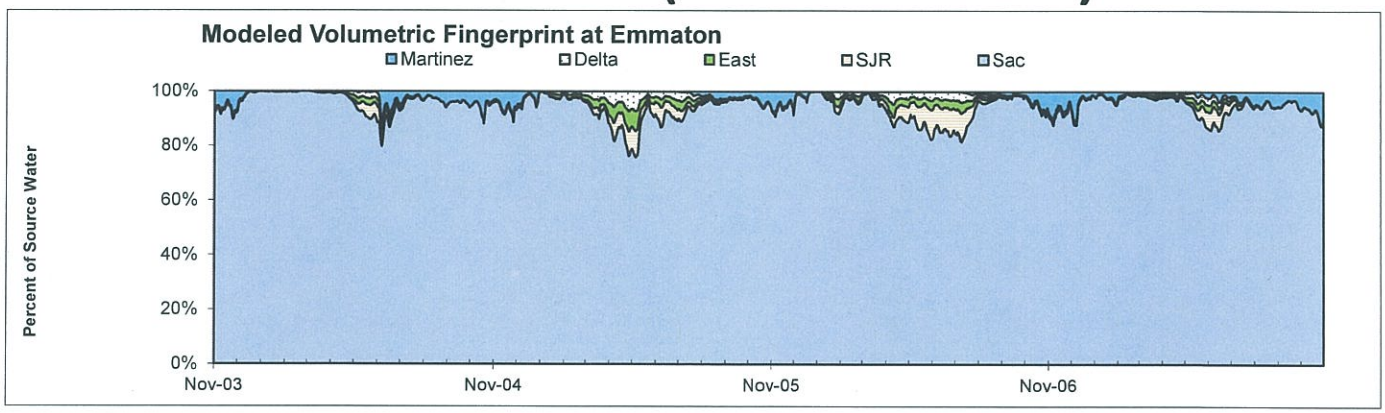
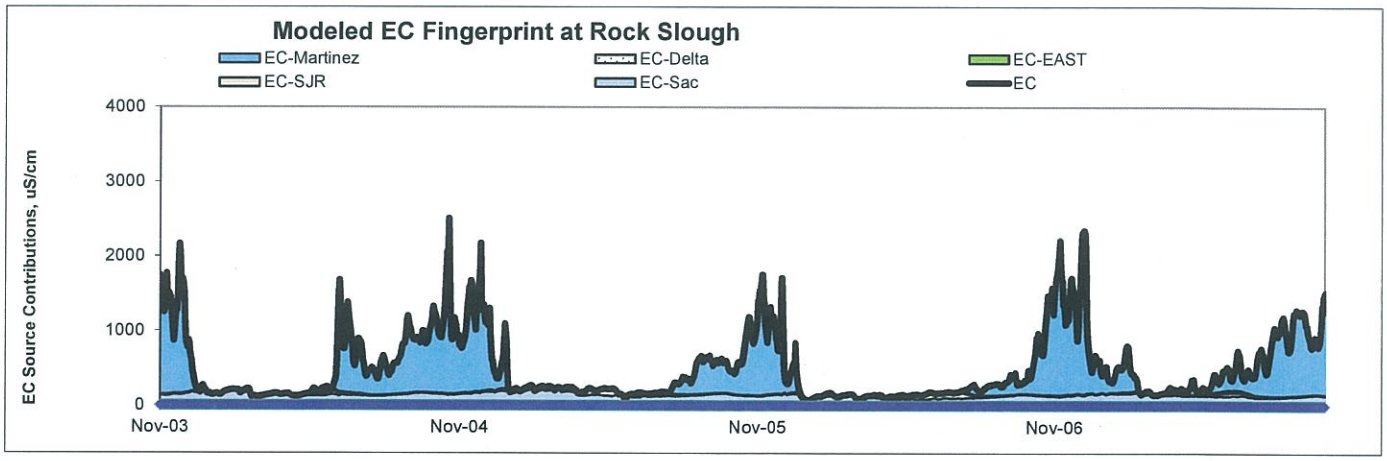
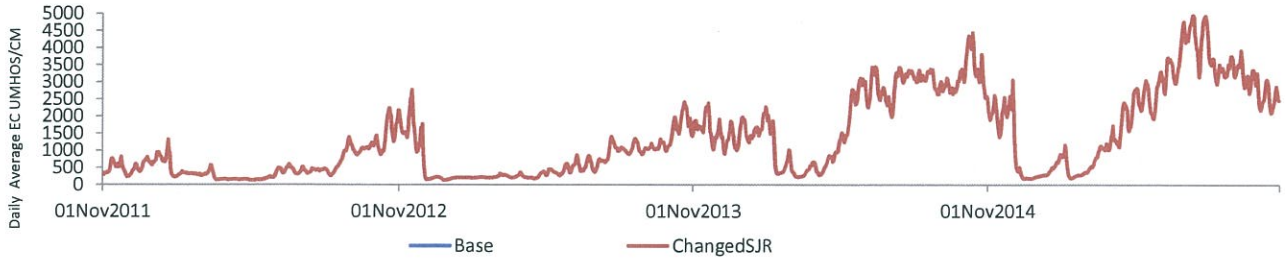




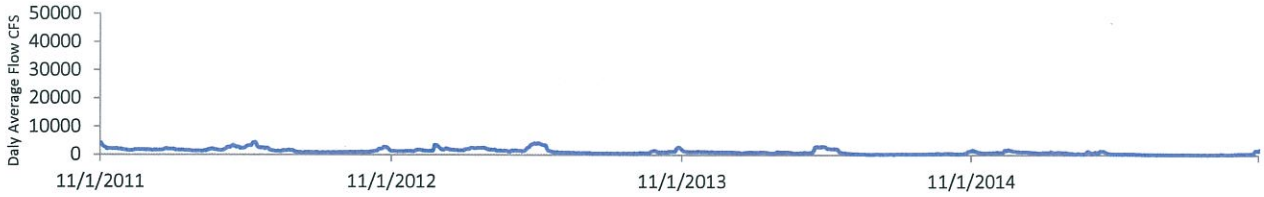
Emmaton (2011-2015)

EC at Emmaton, Historical and Modified SJR EC

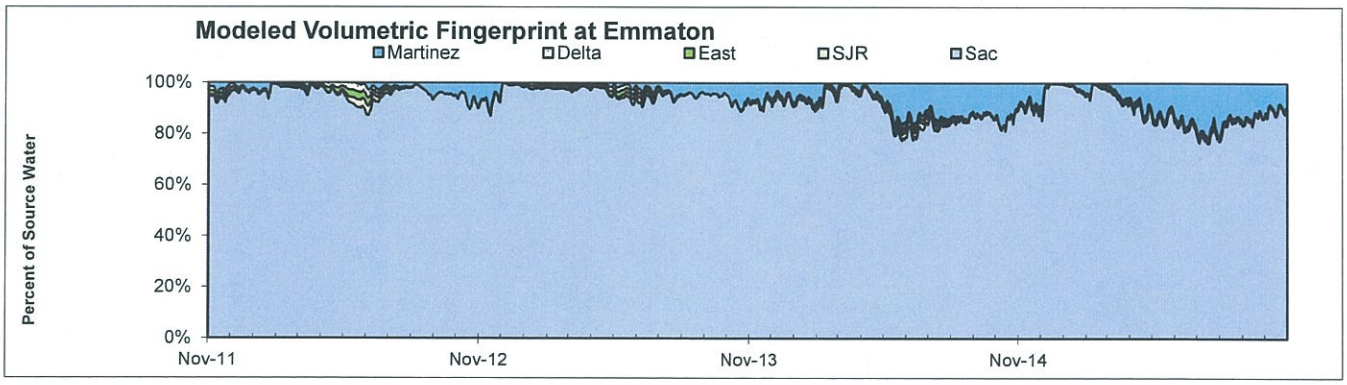


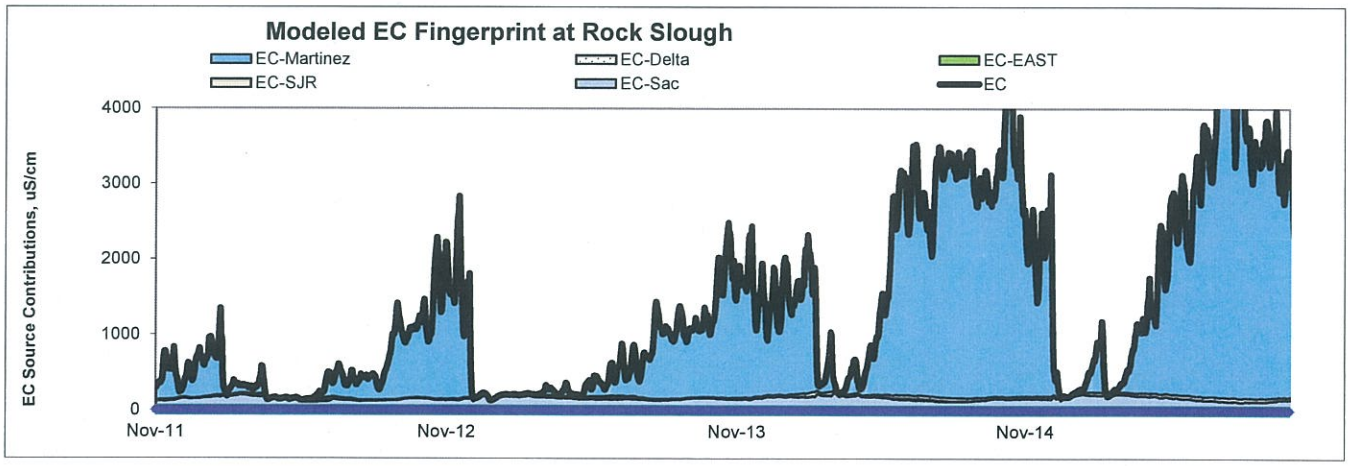
SJR Boundary EC, Historical and Modified EC

SJR Historical Flow



Emmaton (2011-2015)

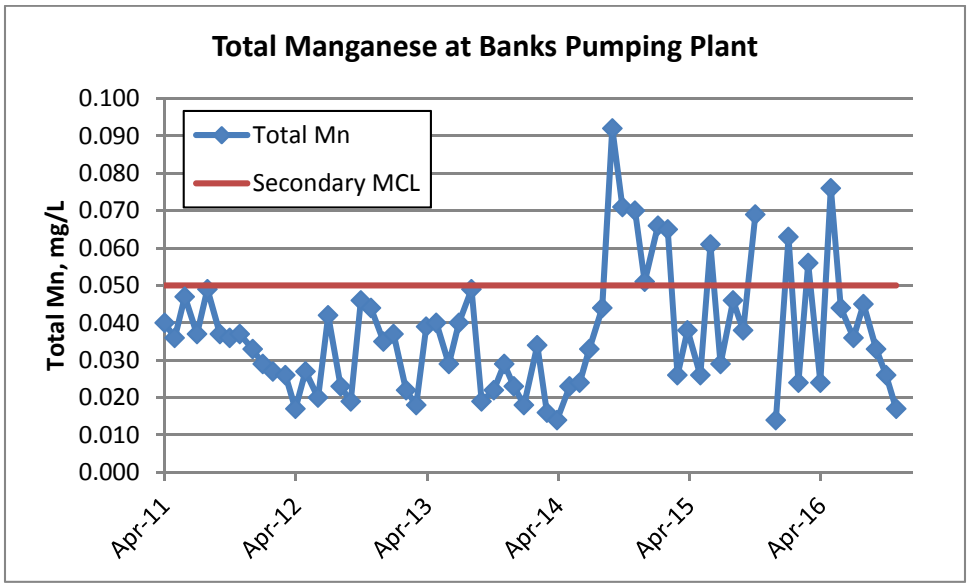


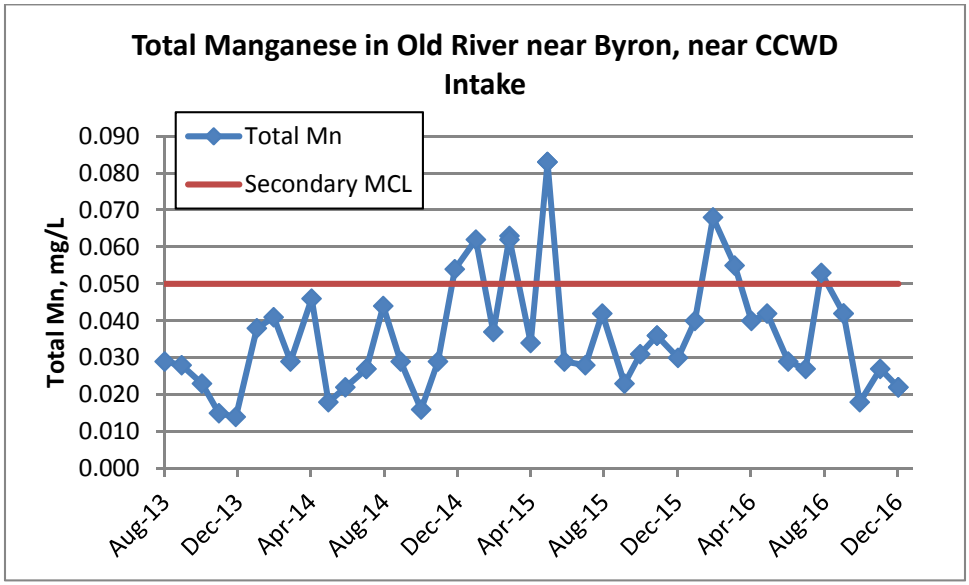


Attachment 3

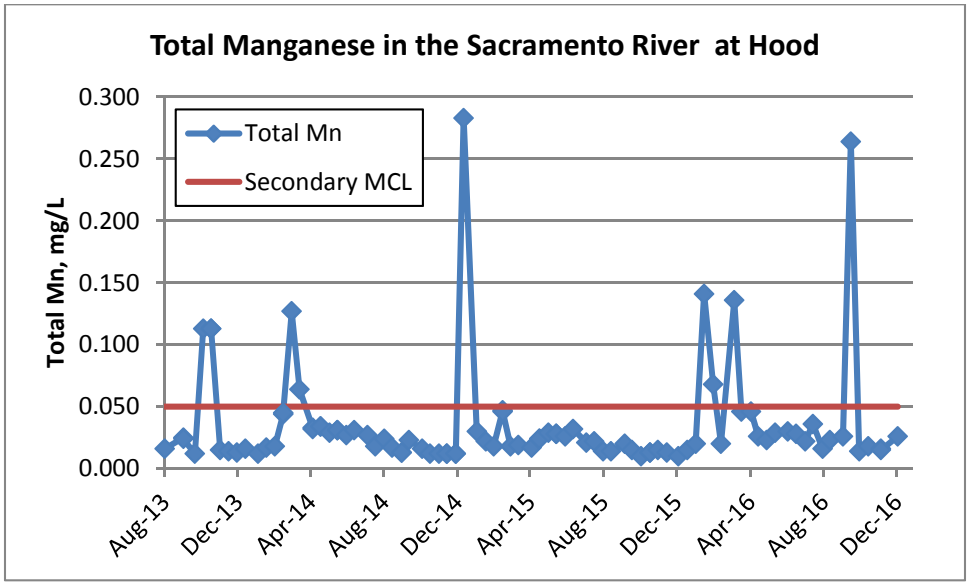
Manganese Concentrations in the Delta, Source Waters, and Agricultural Drains

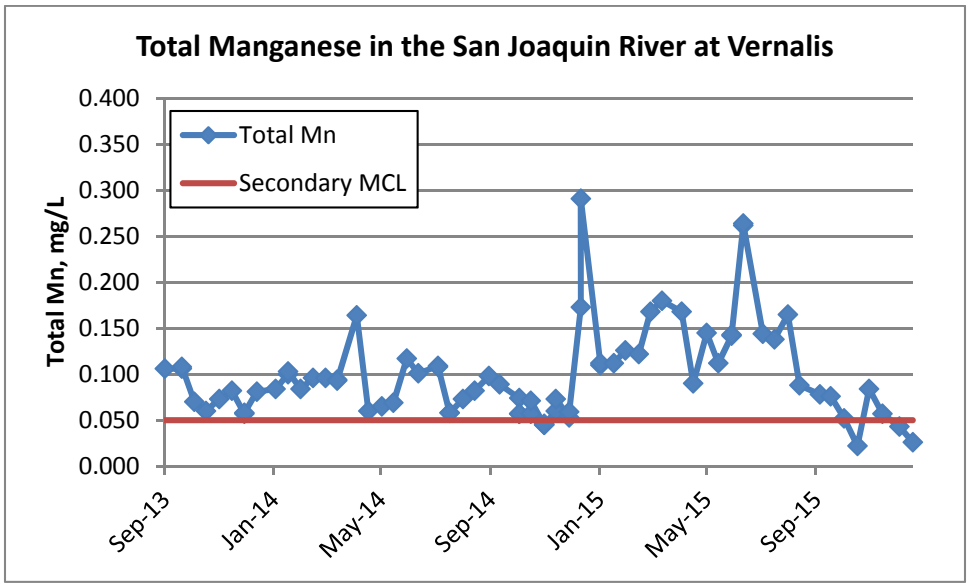
Manganese Concentrations at Delta Drinking Water Intakes



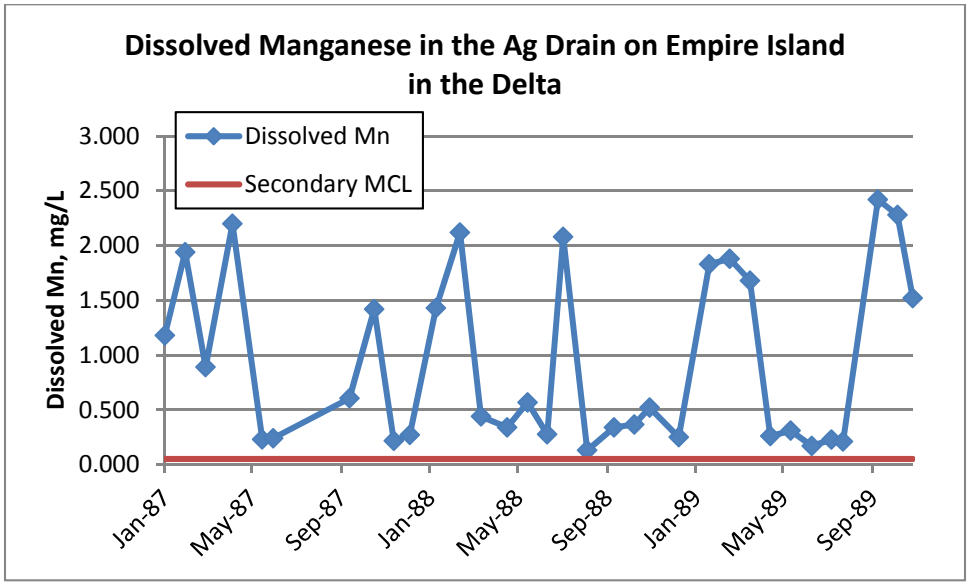


Manganese Concentrations in Delta Source Waters

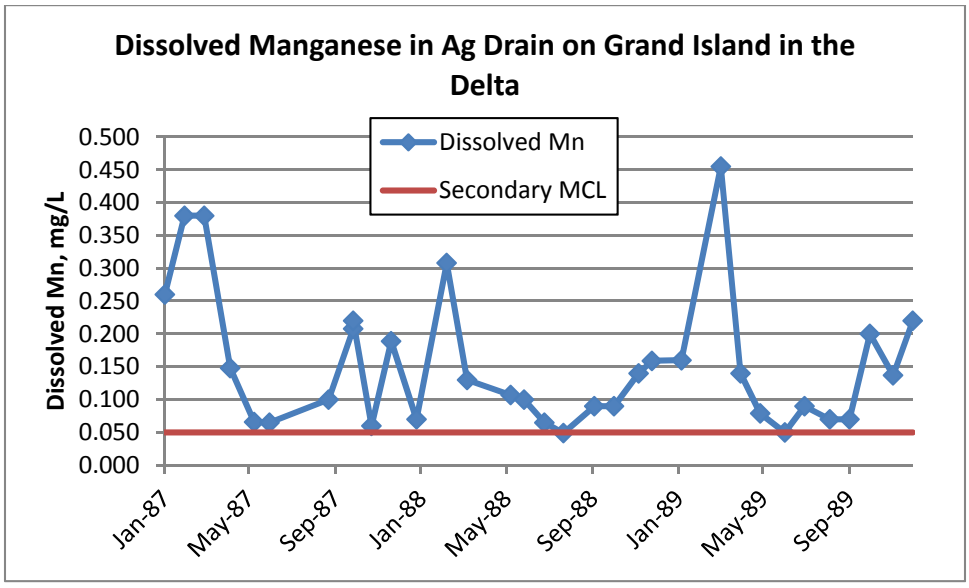




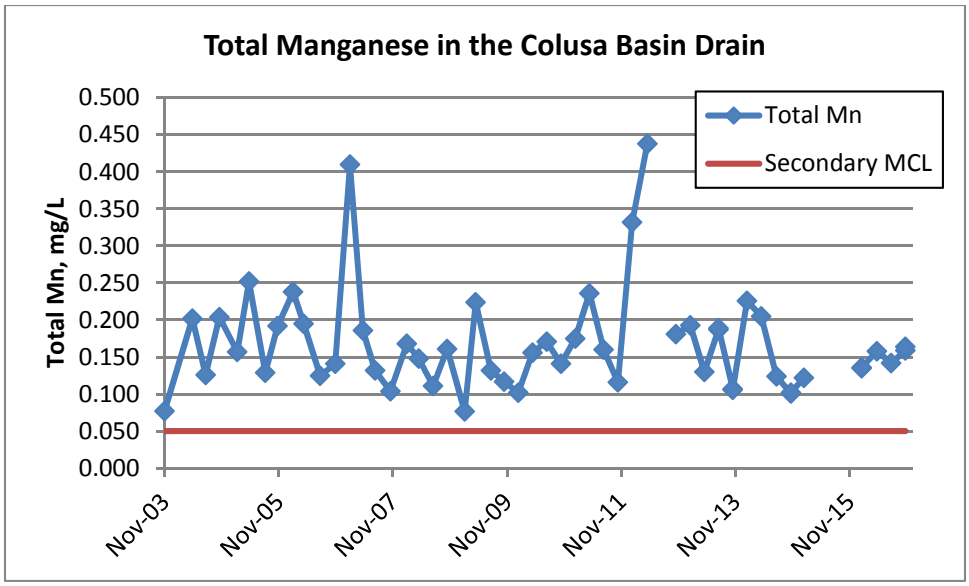
Manganese Concentrations in Agricultural Discharges



Note: Total manganese data not available.



Note: Total manganese data not available.


Total Manganese in the Colusa Basin Drain
Total Mn, mg/L
0.500
0.450
0.400
0.350
0.300
0.250
0.200
0.150
0.100
0.050
0.000
Nov-03
Nov-05
Nov-07
Nov-09
Nov-11
Nov-13
Nov-15
Total Mn
Secondary MCL

Attachment 4
CUWA Comments on CV-SALTS CEQA Scoping Documents

CALIFORNIA **URBAN WATER** AGENCIES

December 30, 2013

Jeanne Chilcott
Central Valley Regional Water Board
11020 Sun Center Drive, Ste. 200
Rancho Cordova, CA 95670

Subject: Comments on CV-SALTS CEQA Scoping Documents

Dear Ms. Chilcott:

California Urban Water Agencies (CUWA) is pleased to provide comments on the issues to be considered in the substitute environmental document (SED) for the Central Valley Salinity Alternatives for Long-term Sustainability (CV-SALTS) program. CUWA's primary interest in this process is in protecting the MUN beneficial use and preventing degradation of water quality in downstream water bodies. The SED should evaluate the potential impacts of the alternatives to the MUN beneficial uses on the downstream users throughout the State. This should include the potential costs of downstream treatment that could result from relaxing drinking water quality objectives or removing or limiting the MUN beneficial uses. Protection of source water quality is the first barrier to preventing contaminants from harming public health.

1. Linkage of the Strategic Salt Accumulation Land and Transport Study (SSALTS) Project to Regulatory Relief Proposals – The California Environmental Quality Act (CEQA) Scoping Meeting Information Document does not contain much detail on the specific projects that will be included in the Salt and Nitrate Management Plan that will actually reduce the salt loading in the Central Valley. Based on our review of the scoping documents and other documents on the Salinity Coalition website, it appears that the Salt and Nitrate Management Plan will contain a list of potential projects to reduce salt loading with some evaluation of the feasibility of these projects. It is unclear how these projects will be implemented to not only reduce the current salt and nitrate loads in the valley but also to address the potential increase in loads that could occur as a result of some of the regulatory relief actions that are proposed to be included in the Basin Plan Amendment. The SSALTS Project needs to be clearly described and the linkage of the proposed projects to the proposed modifications to the Basin Plan to provide regulatory relief to dischargers needs to be discussed in the SED.
2. Impacts of Climate Change –The impacts of climate change on surface water flows and assimilative capacity need to be evaluated when reviewing the alternative actions described in the scoping documents.
3. Fresh Water Required to Dilute Salt Loads – The problem statement needs to include a description of how the Delta and Vernalis water quality objectives for specific conductance (EC) and chloride are met. This needs to include a discussion of how salt loads are frequently diluted with water released from New Melones Reservoir to meet the Vernalis EC objective and how water is released from reservoirs in the Sacramento Basin to meet EC and chloride objectives at other locations in the Delta. Each of the proposed actions needs to be evaluated to determine if additional water would be required to dilute an increased salt load in the San Joaquin River, the

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Alameda County Water District
Santa Clara Valley Water District
Zone 7 Water Agency
San Diego County Water Authority
City of San Diego Public Utilities Department
Contra Costa Water District
San Francisco Public Utilities Commission
East Bay Municipal Utility District
Metropolitan Water District of Southern California
Los Angeles Department of Water & Power

Sacramento River, and the Delta resulting from those actions. This analysis needs to consider the water supply impacts, particularly during drought years, of each of the proposed actions.

4. Refined MUN Beneficial Use – The alternatives associated with refining the MUN beneficial uses are written in very broad terms. If a limited or restricted MUN subcategory is developed, it should be limited to the agricultural drains and agriculturally dominated water bodies that were included in the original scope of this effort. It should not be broadened to include other water bodies.

   It should be clearly stated that the no action alternative also includes the potential to remove or change beneficial use designations, using the established regulatory framework, which incorporates the Basin Planning amendment process. The environmental document should explain why a separate process is needed for changing the MUN beneficial use in agricultural water bodies and it should describe how the new uses for those water bodies will be incorporated into the Basin Plans. Evaluating the beneficial uses should not be rushed if there is the potential to adversely affect the drinking water uses.

   Issues to consider in evaluating the feasibility of developing a limited or restricted MUN use include:

   - The factors that should be used to determine if limited MUN or restricted MUN apply to a water body should be tied to the hydrologic considerations laid out in the flow chart developed by the MUN subgroup. It should not be tied to levels of water treatment.
   - The evaluation should include both existing and potential future water supplies. Water quality must be protected throughout MUN designated water bodies because future intakes may be located in areas that are currently not used as drinking water supplies due to population growth in the Central Valley. There are currently several proposed new intakes on the Sacramento River that may be constructed in the near future.
   - It should address the cumulative impacts on downstream water bodies of multiple water bodies being changed from MUN to limited or restricted MUN.
   - Consistency with the Antidegradation Policy should be addressed.
   - The impacts of changing the MUN use in multiple water bodies on the ability to meet downstream salinity objectives should be evaluated.
   - The monitoring program that will ensure that downstream water supplies will be protected needs to be described.
   - Corrective action that will be taken if downstream water supplies are impacted should be described.
   - Will changing the MUN use to limited or restricted MUN lead to dischargers changing their point of discharge so that effluent limitations will be relaxed? How will this potential outcome be precluded?
   - Developing a limited or restricted MUN beneficial use subcategory should be based on the uses of the water, not on the challenges to meeting water quality objectives.

5. MUN and Secondary MCLs – The importance of secondary maximum contaminant levels (MCLs) to the drinking water community is understated in several documents prepared for CV-SALTS. The SED needs to correctly describe the secondary MCLs, how they are applied by the California Department of Public Health (CDPH), and the implications for drinking water agencies if secondary MCLs are not met. While water suppliers are required to treat raw water to meet all drinking water standards, constituents in the raw water can have significant downstream costs and impacts on treatment processes. These costs should not be borne by the downstream water

supply agencies. We offer the following comments on the alternatives proposed for consideration:

- CUWA objects to the alternative that would remove the secondary MCLs from the Basin Plan and replace them with a narrative objective. We request that this alternative not be considered as a viable alternative that merits evaluation.
- The scoping document could consider an assessment of the impacts and costs associated with poor water quality in excess of the drinking water standards, including manganese, on the downstream agencies as a basis for establishing appropriate numeric water quality objectives.
- CUWA does not support the alternative that the upper and short term salinity secondary MCLs be considered reasonable for continuous use. This is contrary to the language in Title 22 of the California Code of Regulations. See Attachment 1
- The alternative that considers translators from raw water supplies to treated water supplies would need to address a number of factors such as the addition of salts in the water treatment process. This could result in more stringent water quality objectives for the salinity constituent secondary MCLs than currently exist. Other factors that must be considered include site specific differences and changes in water chemistry that cause particulate metals to enter the dissolved phase and the impacts of potentially higher metals concentrations on membrane treatment. The secondary MCLs for metals are important to urban water agencies. Many of these constituents may present significant challenges for downstream water users. Alameda County Water District has recently experienced a number of customer complaints due to discolored water caused by elevated manganese concentrations in treated drinking water. Many customers understandably believe that water is not safe to drink if it is discolored or it smells or tastes bad. The average customer does not distinguish between the exceedance of a secondary MCL and a primary MCL.

6. Other Impacts of Increased Salinity – If the application of the salinity secondary MCLs is changed in such a way that increased loads of salt will be discharged to Central Valley water bodies, several factors must be evaluated in the SED.
   - Impact on Meeting Downstream Water Quality Objectives – As discussed previously, water quality salinity objectives are often met by releasing high quality water from reservoirs. The additional amount of water required to meet water quality objectives must be evaluated.
   - Recycled Water – Need to address impact that higher salinity has on the ability to recycle wastewater.
   - Groundwater Recharge – Need to address impact that higher salinity has on reducing options for groundwater recharge (e.g. some source waters have salinity levels which prevent or hinder groundwater recharge.
   - Blending of Water Supplies – Water agencies often use lower salinity water to blend with higher salinity groundwater or surface water sources to meet salinity goals in treated water. If the TDS of the lower salinity source increases, it reduces the ability to blend down the higher sources.
7. MUN and Nitrate-related Water Quality Objectives – The existing nitrate water quality objective of 10 mg/L as N protects human health. It is equal to the primary MCL for nitrate. Any consideration of applying this objective at limited compliance points rather than throughout a water body designated with the MUN beneficial use must be carefully evaluated. Both existing and potential future use of the water body for drinking water must be considered.

While the primary issue for groundwater supplies is compliance with the nitrate MCL, for surface water supplies, the impacts of nutrients, including nitrogen and phosphorus, on the biological, physical and chemical quality of the water is extremely important. The salt and nitrate plan and scoping document focuses only on nitrate and fails to adequately address the impacts of all nutrients on beneficial uses. Factors that must be considered include:

- A comprehensive set of narrative and/or numeric objectives should be developed that address the full impact of nutrients on surface water quality and downstream beneficial uses.
- Nitrate is soluble and is therefore not removed by water treatment processes typically used in the Central Valley and throughout the service areas that are supplied with water from the Delta.
- Nitrate is a nutrient that stimulates algal growth. Increased levels of nitrate in surface waters can lead to problems with filter clogging algae, algae that produce taste and odor compounds, and algae that produce algal toxins.
- Nitrate loading to the ecosystem can also lead to increases in the ratio of nitrogen to phosphorus. There is strong support in the scientific literature that the N:P ratio in the Delta influences phytoplankton community composition, and increases in N:P can, for example, lead to shifts in phytoplankton community structure from diatoms to toxin producing algae that impact the food web.

8. Impacts of Groundwater on Surface Water – The alternatives that address changing compliance with salt and nitrate objectives in groundwater need to be evaluated to determine the potential impact on surface water supplies from saline groundwater inflows. The monitoring program that will be established to monitor the impacts on surface water supplies should be described and the corrective action plan that will address downstream impacts must be described.
9. Controlled Degradation – The SED should evaluate how the concept of controlled degradation is consistent with the Antidegradation Policy and with the State Water Resources Control Board's review of the Antidegradation Policy. Other factors to consider are:
   - The impacts on downstream water bodies must be evaluated and the monitoring and corrective action plan must be described.
   - Given the current state of the Delta, controlled degradation of the Delta should not be considered in the alternatives that will be evaluated.
10. Monitoring Requirements – One alternative that is being considered is to use existing monitoring programs and another alternative is to modify the existing monitoring programs. The existing monitoring programs do not cover all of the constituents that are regulated for drinking water supplies. These constituents should be evaluated to determine if there is any potential for an increase in these constituents at drinking water intakes.

Please contact me at (925) 210-2477 if you have any questions on our comments.

Sincerely,

Cindy Paulson, Ph.D.

Executive Director

Attachment 1

Table 64449-B
Secondary Maximum Contaminant Levels
"Consumer Acceptance Contaminant Level Ranges"

	Maximum Contaminant Level Ranges		
Constituent, Units	*Recommended*	*Upper*	*Short Term*
Total Dissolved Solids, mg/L	500	1,000	1,500
or			
Specific Conductance, µS/cm	900	1,600	2,200
Chloride, mg/L	250	500	600
Sulfate, mg/L	250	500	600

(d) For the constituents shown on Table 64449-B, no fixed consumer acceptance contaminant level has been established.

(1) Constituent concentrations lower than the Recommended contaminant level are desirable for a higher degree of consumer acceptance.

(2) Constituent concentrations ranging to the Upper contaminant level are acceptable if it is neither reasonable nor feasible to provide more suitable waters.

(3) Constituent concentrations ranging to the short term contaminant levelare acceptable only for existing community water systems on a temporary basis pending construction of treatment facilities or development of acceptable new water sources.

(e) New services from community water systems serving water which carries constituent concentrations between the Upper and Short Term contaminant levels shall be approved only:

(1) If adequate progress is being demonstrated toward providing water of improved mineral quality.

(2) For other compelling reasons approved by the Department.