Workshop Feedback for Related to Beneficial Uses for Question 1 and 2

DRAFT Workshop Issues Feedback
April 26, 2010 Woodland, April 27, 2010 Tulare

Question 1. While all water use adds salt, how do salts and nitrates impact your community or industry today? How could salts and nitrates impact you in the future?

1. Agriculture
    a. Limits what crops can be grown W-1, W-4, T-2 AGR
    b. Fertilizer an issue but Nitrate is a benefit to Ag W-2, T-4
    c. Special concern about boron in tree crops, sodium and chloride in other W-1, W-4 AGR
    d. Salt accumulation in perched water- impacts crop production. Pre-existing history Tulare Lake "A" clay. Today and in future T-3 AGR
    e. Regulatory burden Permit compliance issue W-1, W-2
    f. Growers discharging tailwater in canals and streams T-2 impacted use not specified
    g. Source Water Supply an issue W-2 MUN/AGR
    h. Dairy has issues with CAFO regulations that have nitrate and phosphorus standards T-4
        i. Existing conditions exceed standards T-4
        ii. Availability of nutrients an issue especially phosphorus T-4
        iii. Economic impact are issue T-4
        iv. Technical analysis is needed T-4
    i. Evaporation Basins should be recognized as BMPs T-4
    j. Digging deeper wells equals higher EC values and requires blending to use for ag supply T-1 AGR
    k. Difference between seasonal use vs 24 hour use T-1
2. Cities and communities
    a. Utilities rate increased to meet targets W-1, W-3
    b. Today elevated nitrate in wells GW: Foothills and various Areas T-3, T-2 MUN
    c. Nitrates limiting the use of wells, Wells out of production $1.5-$3.0 million per well W-1 W-2, W-4 MUN
    d. Nitrate- health problem and groundwater contamination in small communities T-2, W-3 MUN
    e. Search for cleaner water sources W-3 impacted use not specified
    f. Community water treatment need desalination and brine line W-4
    g. Source water treatment for industries raise costs to remove salts W-3, W-1 IND
    h. Different interests are impacted very differently W-2 impacted use not specified
    i. Conservation – higher TDS W-3
    j. Inhibits water reclamation and recharge W-1, W-4 MUN, AGR
    k. Political issues in the communities ability to pay W-2
    l. Community concern about landfills and local salt impacts when salts are disposed of in landfills W-4
    m. Automatic water softeners contribute to salt levels T-2 impacted use not specified
    n. Public misconception concerning treatment of nitrates in their water T-2
    o. Integration with IRWMP and Basin Management Plans T-1
3. Environment

a. Wildlife sites at the ends of watersheds collect salts T-2 (*unsure what AH-I is supposed to mean but the comment appears to refer to wildlife sites as contributing to salt problems, not necessarily as an impacted use.*
b. Wetlands, nitrate starved wetlands/grasslands T-2

4. Wastewater treatment plants
    a. Costly Capital improvements for small and questionable improvements in water W-1, W-2, W-4
    b. Large financial burden to community W-1, W-4
    c. Salt addition in water use creates issue, meeting current regulations Discharge limit problems T-3 W-4
    d. Consideration for flexibility T-1
    e. No one size fits all T-1
5. Industry
    a. Costs of treating supply water for processes W-1PRO
    b. Costs of treating for salt and disposal of salt and wastewater W-1 if the comment is about treating prior to use, then potentially AGR, MUN, PRO
    c. Discharge limits are a problem W-4
    d. Higher cost to remove salts W-3
    e. Industrial wastewater and lye peeling equals EC T-1
    f. Needs robust data set for BMP's T-1
6. Future impacts
    a. Ability to recycle water T-3 MUN/AGR
    b. Conflict between salt management and recycle T-3 presumed MUN
    c. If recycle then it can cause issues with STDS T-3
    d. Beneficial uses? T-3 impacted use not specified
    e. Impacts concerned with crop selection T-2 AGR
    f. Higher treatment cost with higher concentrations T-2 MUN, PRO, AGR
    g. Greater green house gases T-2
    h. Higher costs to comply T-1
    i. Population increases compounding salts issues and gains T-1
    j. Individual citizen costs (new WWTPs etc.) T-1
    k. Current surface salts (unusable land), becoming issue after water applied (future) T-1

Question 2. Are the current regulations a problem for your community or industry? If so, how?

1. YES W-1
2. Cities and Communities
    a. 500 above source virtually impossible to meet T-3
    b. Salt and nitrate objectives require more treatment W-3
    c. Drinking water exceeds the wastewater discharge standard in communities W-1 MUN
    d. Conservation strategies increase issues (i.e. reduced dilution) T-3 impacted use not specified
    e. Financial Challenge, cost to build and treat water exceeds communities ability to pay W-1, W-4
    f. RO plan cost $60M for small community population W-1
    g. Regulations impact the Economic Environment and therefore the rest of the environment W-4, T-3
    h. Existing regulations are not being enforced, how will new ones be enforced W-4
    i. Current regulation limits: some aren't even measured (i.e.) surface water discharge chlorine T-3 potential MUN
    j. Problem with anti-deg policy. One molecule rule. Doesn't look at big picture T-3
    k. Different interests are impacted very differently W-2

l. Current regulation treats all areas same, prevents effective treatment and reuse, in appropriate application of E.C. limits T-3
m. Using recycled waters is hard because you have to convince farmers of benefits even though it would include additional monitoring (monitoring wells) and nutrient managing T-2
n. Source waters already not meeting objectives downstream users being held to those objectives, bearing the monitoring cost T-2 MUN, AGR
o. Is there any way to look at standards that may be weight averaged for different time scales? Ages of water (moving average) T-1
p. Political issues in the communities ability to pay W-2

3. Ag and Industry
    a. Conflicts among water regulations and water and air regulations W-1
    b. Where should Salt Go, regulations say you have to take out, but it is not allowed anywhere W-1
    c. Ties the hands with regulatory conflicts W-1
    d. Dairy industry has issues T-4
        i. Lots of monitoring and resulting high costs T-4
        ii. Management plan is needed T-4
    e. Farmers getting a lot of pressure – Irrigated Lands program-salts etc. T-1
    f. Sampling/regulations are costly, don't want to see that happen to every farmer T-1
    g. Need flexibility on regulations meeting beneficial uses, for the discharge area (ie. salt sensitive crops) and also ephemeral streams. T-2 not directed at a use per se, but at how use protections are implemented
    h. Reduced water supply will lead to higher concentrations on tailwater T-2
    i. Ag can change salt loads it is different for communities T-1
    j. All practices add to water quality problems, issue with anti-deg T-1
4. All Users
    a. Lack of ocean discharge – a constraint W-3
        i. Problem for water softener industry
        ii. Ag chem. and food processors
        iii. POTW
        iv. Industry departing Ca
    b. Regulatory conflicts with requirements W-1, W-4
        i. State W-1, W-2
        ii. Federal W-1
        iii. Local W-1
        iv. Surface water sources and groundwater protection is a confusing scheme W-2
        v. Environmental impacts and solutions are competing W-4
        vi. Need Regulations that are Reasonable, practical and feasible W-4
        vii. No flexibility of standards-(ie. Local issues or economics feasibility) T-3
    c. Point sources heavily regulated but the are only a small part of the salt W-1
    d. Managing discharge from managed wetlands when source levels are exceeding T-2
    e. BMPs required by the Waterboards may not work W-1
    f. Considerations for amount of water (drought) T-1
    g. Difficult to get water data. Land owners sometimes don't agree with testing. T-1
    h. Companies pumping brine into groundwater. Water Board not regulating properly T-1 IND, MUN, AGR, GWR
    i. State of Flux, Study takes time so you have guess at direction W-1

Question 3. How do you think salt should be managed?

Beneficial Uses

The April workshops revealed that the public perceives that their use of water is impacted by salinity in many areas. Not surprisingly, agricultural irrigation use (AGR) was mentioned most frequently in both Woodland and Tulare, and drinking water (MUN) was mentioned almost as frequently. Industrial processing use (PRO) was mentioned, and there was one comment which might have been intended to express concern over wildlife use (WILD) although the comment could also be interpreted as a concern over the impact of salinity flushed from wildlife refuges on unspecified downstream uses. Other use designations--IND, NAV, POW, REC-1, REC-2, GWR, NAV, POW, REC-1/REC-2, COMM, AQUA, WARM, COLD, BIOL, RARE, MIGR, SPWN, and SHELL—were not mentioned.

FRSH, or "uses of water for natural or artificial maintenance of surface water quantity or quality" was not cited specifically, and this use designation is generally used less often than more precise designations such as MUN or AGR, but some comments could be inferred as also being applicable to impacts to FRSH use.

Municipal and Domestic Supply (MUN) - Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.

Agricultural Supply (AGR) - Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation (including leaching of salts), stock watering, or support of vegetation for range grazing.

Industrial Service Supply (IND) - Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization.

Industrial Process Supply (PRO) - Uses of water for industrial activities that depend primarily on water quality.

Ground Water Recharge (GWR) - Uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.

Freshwater Replenishment (FRSH) - Uses of water for natural or artificial maintenance of surface water quantity or quality.

Navigation (NAV) - Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.

Hydropower Generation (POW) - Uses of water for hydropower generation.

Water Contact Recreation (REC-1) - Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.

Non-contact Water Recreation (REC-2) - Uses of water for recreational activities involving proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing or aesthetic enjoyment in conjunction with the above activities.

Commercial and Sport Fishing (COMM) - Uses of water for commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.

Aquaculture (AQUA) - Uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.

Warm Freshwater Habitat (WARM) - Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

Cold Freshwater Habitat (COLD) - Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

Estuarine Habitat (EST) - Uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).

Wildlife Habitat (WILD) - Uses of water that support terrestrial or wetland ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

Preservation of Biological Habitats of Special

Significance (BIOL) - Uses of water that support designated areas or habitats, such as established refuges, parks, sanctuaries, ecological reserves, or Areas of Special Biological Significance (ASBS), where the preservation or enhancement of natural resources requires special protection.

Rare, Threatened, or Endangered Species

(RARE) - Uses of water that support aquatic habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened or endangered.

Migration of Aquatic Organisms (MIGR) – Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish.

Spawning, Reproduction, and/or Early

Development (SPWN) - Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.

Shellfish Harvesting (SHELL) - Uses of water that support habitats suitable for the collection of filterfeeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sports purposes.

Definitions from the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, 4th ed.

Area of Questions 1 and 2 with Economic Impacts

Question 1. While all water use adds salt, how do salts and nitrates impact your community or industry today? How could salts and nitrates impact you in the future?

1. Agriculture
    a. Limits what crops can be grown W-1, W-4, T-2 ECON
    b. Fertilizer an issue but Nitrate is a benefit to Ag W-2, T-4
    c. Special concern about boron in tree crops, sodium and chloride in other W-1, W-4
    d. Salt accumulation in perched water- impacts crop production. Pre-existing history Tulare Lake "A" clay. Today and in future T-3
    e. Regulatory burden Permit compliance issue W-1, W-2 ECON
    f. Growers discharging tailwater in canals and streams T-2 ECON
    g. Source Water Supply an issue W-2
    h. Dairy has issues with CAFO regulations that have nitrate and phosphorus standards T-4
        i. Existing conditions exceed standards T-4
        ii. Availability of nutrients an issue especially phosphorus T-4
        iii. Economic impact are issue T-4 ECON
        iv. Technical analysis is needed T-4
    i. Evaporation Basins should be recognized as BMPs T-4
    j. Digging deeper wells equals higher EC values and requires blending to use for ag supply T-1 ECON
    k. Difference between seasonal use vs 24 hour use T-1
2. Cities and communities
    a. Utilities rate increased to meet targets W-1, W-3 ECON
    b. Today elevated nitrate in wells GW: Foothills and various Areas T-3, T-2
    c. Nitrates limiting the use of wells, Wells out of production $1.5-$3.0 million per well W-1 W-2, W-4 ECON
    d. Nitrate- health problem and groundwater contamination in small communities T-2, W-3
    e. Search for cleaner water sources W-3 ECON
    f. Community water treatment need desalination and brine line W-4 ECON
    g. Source water treatment for industries raise costs to remove salts W-3, W-1 ECON
    h. Different interests are impacted very differently W-2
    i. Conservation – higher TDS W-3
    j. Inhibits water reclamation and recharge W-1, W-4
    k. Political issues in the communities ability to pay W-2 ECON
    l. Community concern about landfills and local salt impacts when salts are disposed of in landfills W-4
    m. Automatic water softeners contribute to salt levels T-2
    n. Public misconception concerning treatment of nitrates in their water T-2
    o. Integration with IRWMP and Basin Management Plans T-1
3. Environment
    a. Wildlife sites at the ends of watersheds collect salts T-2
    b. Wetlands, nitrate starved wetlands/grasslands T-2
4. Wastewater treatment plants
    a. Costly Capital improvements for small and questionable improvements in water W-1, W-2, W-4 ECON
    b. Large financial burden to community W-1, W-4 ECON

c. Salt addition in water use creates issue, meeting current regulations Discharge limit problems T-3 W-4 ECON
d. Consideration for flexibility T-1
e. No one size fits all T-1

5. Industry
    a. Costs of treating supply water for processes W-1 ECON
    b. Costs of treating for salt and disposal of salt and wastewater W-1 ECON
    c. Discharge limits are a problem W-4
    d. Higher cost to remove salts W-3 ECON
    e. Industrial wastewater and lye peeling equals EC T-1
    f. Needs robust data set for BMP's T-1
6. Future impacts
    a. Ability to recycle water T-3
    b. Conflict between salt management and recycle T-3
    c. If recycle then it can cause issues with STDS T-3
    d. Beneficial uses? T-3
    e. Impacts concerned with crop selection T-2 ECON
    f. Higher treatment cost with higher concentrations T-2 ECON
    g. Greater green house gases T-2
    h. Higher costs to comply T-1 ECON
    i. Population increases compounding salts issues and gains T-1
    j. Individual citizen costs (new WWTPs etc.) T-1 ECON
    k. Current surface salts (unusable land), becoming issue after water applied (future) T-1

Question 2. Are the current regulations a problem for your community or industry? If so, how?

1. YES W-1
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    b. Salt and nitrate objectives require more treatment W-3 ECON
    c. Drinking water exceeds the wastewater discharge standard in communities W-1
    d. Conservation strategies increase issues (i.e. reduced dilution) T-3
    e. Financial Challenge, cost to build and treat water exceeds communities ability to pay W-1, W-4 ECON
    f. RO plan cost $60M for small community population W-1 ECON
    g. Regulations impact the Economic Environment and therefore the rest of the environment W-4, T-3 ECON
    h. Existing regulations are not being enforced, how will new ones be enforced W-4
    i. Current regulation limits: some aren't even measured (i.e.) surface water discharge chlorine T-3
    j. Problem with anti-deg policy. One molecule rule. Doesn't look at big picture T-3
    k. Different interests are impacted very differently W-2
    l. Current regulation treats all areas same, prevents effective treatment and reuse, in appropriate application of E.C. limits T-3 ECON
    m. Using recycled waters is hard because you have to convince farmers of benefits even though it would include additional monitoring (monitoring wells) and nutrient managing T-2
    n. Source waters already not meeting objectives downstream users being held to those objectives, bearing the monitoring cost T-2 MUN

o. Is there any way to look at standards that may be weight averaged for different time scales? Ages of water (moving average) T-1
p. Political issues in the communities ability to pay W-2 ECON

3. Ag and Industry
    a. Conflicts among water regulations and water and air regulations W-1
    b. Where should Salt Go, regulations say you have to take out, but it is not allowed anywhere W-1 ECON
    c. Ties the hands with regulatory conflicts W-1
    d. Dairy industry has issues T-4
        i. Lots of monitoring and resulting high costs T-4 ECON
        ii. Management plan is needed T-4
    e. Farmers getting a lot of pressure – Irrigated Lands program-salts etc. T-1 ECON
    f. Sampling/regulations are costly, don't want to see that happen to every farmer T-1
    g. Need flexibility on regulations meeting beneficial uses, for the discharge area (ie. salt sensitive crops) and also ephemeral streams. T-2
    h. Reduced water supply will lead to higher concentrations on tailwater T-2
    i. Ag can change salt loads it is different for communities T-1
    j. All practices add to water quality problems, issue with anti-deg T-1
4. All Users
    a. Lack of ocean discharge – a constraint W-3 ECON
        i. Problem for water softener industry
        ii. Ag chem. and food processors
        iii. POTW
        iv. Industry departing Ca
    b. Regulatory conflicts with requirements W-1, W-4
        i. State W-1, W-2
        ii. Federal W-1
        iii. Local W-1
        iv. Surface water sources and groundwater protection is a confusing scheme W-2
        v. Environmental impacts and solutions are competing W-4
        vi. Need Regulations that are Reasonable, practical and feasible W-4
        vii. No flexibility of standards-(ie. Local issues or economics feasibility) T-3
    c. Point sources heavily regulated but the are only a small part of the salt W-1
    d. Managing discharge from managed wetlands when source levels are exceeding T-2
    e. BMPs required by the Waterboards may not work W-1
    f. Considerations for amount of water (drought) T-1
    g. Difficult to get water data. Land owners sometimes don't agree with testing. T-1
    h. Companies pumping brine into groundwater. Water Board not regulating properly T-1
    i. State of Flux, Study takes time so you have guess at direction W-1

Workshop Feedback on Question 3 from Co-Chair Melilli

I went through and somewhat determined what the key points in group from Tulare and Woodland for Question No. 3, How do you think salt should be managed, What factors should be considered?

Cities/Communities:

Basic issue for everyone to consider, how to determine the real impacts vs. modeling to set limits, and use pre-existing geology of local areas to do so. We should use resources where they provide the greatest benefit to offset salt impacts to make it more economic.

Public:

Consider the impacts for long and short effects on water supplies, to downstream users of the same water supply, does drought and other impacts cause on supplies of water in the Central Valley.

Industry:

Education and outreach is important to let the public know they are addressing the issue of salt, what bmp's they are using to offset salt production, and talk about local and regional implementation.

Conservation:

What to do about brine discharge and where to take it or use it, and drainage canals to transport it away to certain areas or the ocean.

Agriculture:

How to sustain to crop production, build more dams to lower salinity by using drains and evaporation basins to flush out salts.

Management Recommendation:

Identify the problem clearly and effectively to bring people together to address the issues, set what the water quality objectives should be first in local and regional watershed areas, work with Regional Board to help set the limits, be adaptive to change to new technology to help with salt removal and displacement, look at salt with other nutrients as trace minerals, and look at source of salt build up differently from businesses, industries, and the public.

CV-SALTS Public Workshop, Tulare, California, April 27, 2010

Stakeholder Contributed Notes from Group 4

Question 1:

- High nitrates as it impacts drinking water
    - Elevated levels above MCL w/ increasing trends
        - Isolated pockets with high levels – hard to predict where and why
- Salt accumulation in perched groundwater
    - Impact on crop production
        - Preexisting/naturally occurring in historic Tulare Lake region A- (clay) layer
- Even through meeting regulatory requirements for discharges with advance treatment technologies, it is difficult to meet downstream water quality objectives
    - All uses add salt; creates issues meeting current regulations
- Future: Impacts ability to recycle water
    - Conflict between objectives for use of recycled water (policy) and meeting water quality goal regulations.
        - E.g. water available for recycling but not permitted to use it based on regulations
        - Dilute it with other supplies then wouldn't be able to discharge because of water quality regulations

Question 2:

- Standards are difficult to make water recycling possible
- Water efficiency/conservation standards make it more difficult to meet concentration standards
- Any use of water makes it more difficult to meet standards because uses add salts
    - Efficiency practices make it more difficult
    - Advanced treatment is costly and would have economic impacts
- Current regulations based on beneficial uses where discharges may actually improve water quality conditions
    - Treat geographic regions the same
    - Prevents effective treatment and reuse
    - Inappropriate application of EC limit in some areas
    - Difficulty in measure for water quality criteria compliance (i.e. Cl^-)
    - Standards are not flexible to take into account local issues, economics, feasibility
    - Anti-degradation statute (6816) doesn't allow/provide metric for distinguishing very small versus bigger impacts
        - Doesn't look at big picture (one molecule rule)

Question 3:

- Should be managed by geographic region
    - By discharge point
    - By source
- Allow for local entities to manage local impacts (i.e. drainage districts, cities)
- Look at real beneficial uses

    - Refine beneficial use designations and applications
- Increase consideration of economic effects
    - Practical economics of compliance
    - Practical economics of designate beneficial uses
- Improve availability and management of data (quantity, quality, accessibility, studies)
- Better defined economic considerations to achieve beneficial uses and designations
- Identify specific areas of issues (i.e. impaired or perched water)
- Better define hydrogeologic and hydrologic conditions

Question 4:

- Yes – should be considered differently; discharge limits should take local conditions into consideration
- No – you have to address receiving waters (and mixing zones)
- Yes – management different at different sources
- Yes/No – flexibility is important

Question 5: Different

- Nitrate
    - Ability for uptake
    - Non-conservative, denitrification
    - Human health issue
- Salt
    - Conservative
    - Agriculture issue

Question 7:

Much smaller that currently being looked at bon on hydrologic and hydrogeologic conditions (i.e. drainage districts)

Question 9: Yes – most definitely

CV-SALTS - PEOC Spring 2010 Workshop Issues Feedback

Industry Perspective Summary

1. Utilities Rate Increases
2. Need for Managed Brine Disposal Sites
3. Some Industrial Users affected by source water quality: The lower the quality, the higher the cost
4. The more you conserve water, the higher TDS can be concentrated
5. Increasing Wastewater discharge regulations increase costs and discourage industrial development
6. BMP's can be a useful tool if done in a measured, reasonable and fair manner
7. Need to balance "Economic Environment" vs." Natural Environment"
8. Conflicting Regulation is problematic
9. Inflexible Standards and Enforcement is problematic
10. Point Sources are heavily regulated but are only a small part of the problem

Written Responses Submitted by Central Valley Clean Water Association

1. **While all water use adds salt, how do salts and nitrates impact your community or industry today? How could salts and nitrates impact you in the future?**

   • Salts and nitrates impact the way communities use water and what water sources communities will use. In communities with higher water hardness, many residents will use water softeners (which add salts) to mitigate taste, scaling, and other issues surrounding the water supply. Salts from the communities' source water plus whatever salts are added by the community become the influent for the WWTPs. POTWs are issued permits that may require limiting salinity through a permit limitation and/or through pollution prevention plans and source control of residential and commercial customers. Areas with high groundwater nitrates (i.e., >10mg/L as N) make local groundwater supplies useless for drinking water purposes.

   • Some permit limits are problematic for POTWs to meet:

      o Some POTWs in the Central Valley have limits that require huge expenditures for the development of new treatment processes and/or source reduction even though compliance with the desired effluent salinity levels permitted do not make a difference in salinity levels in the ambient environment.

      o The source water for some communities is above POTW discharge limits. In such a cases, POTWs cannot comply without obtaining an alternative source water supply and/or building microfiltration/reverse osmosis (MR/RO). Both options have their own issues such as the need to obtain a surface water right, and needing to dispose of concentrated brine from MF/RO.

      o Cost effective treatment technology does not exists to reliably treat to levels being required.

   • As a municipality, the cost to provide water and treat wastewater will increase due to the need to find new sources of water or to treat wastewater to meet regulatory limits. The cost of treatment will impact users in the form of rate increases, a salt tax, or any other means to collect money to support salinity measures.

   • Source reduction efforts will have significant impacts on industry and residents in costs, discharge restrictions, and adjustments that may be required with respect water use. Further, significant impacts on industry may increase local unemployment, which will further place a burden on residents.

   • Although the State strongly encourages agencies to increase recycled water supplies, regulations may: restrict available beneficial uses for recycling, make recycling more expensive, and/or make the use of recycled water less feasible.

   • Many permits for recycled water projects and land discharges require salt/nutrient management plans. Since the Recycled Water Policy envisioned regional plans, POTWs are not sure how these requirements may fit in with CV-SALTS.

- Wastewater treatment will remove nutrients to differing levels and/or forms. Nutrients in recycled water and biosolids can provide benefits for crops and can reduce the need to add petroleum-dependent soil amendments.

2. Are the current regulations a problem for your community or industry? If so, how?

- Yes, see question 1.

- CV-SALTS program objectives as well as water quality objectives for salinity need to be reasonable, balanced, and consider the economic costs to communities as a whole. This is not the case consistently now.

- Compliance with water quality based effluent limitations that are based on water quality objectives adopted without the consideration of feasibility or economics continues to be problematic. For example, one Central Valley POTW's discharge of salinity (measured as electrical conductivity) is at 735µmhos/cm, but this POTW has a current limit of 700 µmhos/cm. This WWTP is a tertiary plant that nitrifies/denitrifies, uses UV for disinfection, and has already obtained an alternative surface water supply. The economic and environmental costs to the community are high if required to install and use MF/RO. Conversely, the benefit to the environment in terms of reduced salt is negligible.

- There is an economic burden for industries to comply with salt limits. For POTWs, this becomes a local issue with broad implications because city leaders (council, board of supervisors, etc.) will typically not support the establishment of local salinity limits that will jeopardize industry and local employment opportunities.

- In the Central Valley, there are three different water quality control plans that contain various water quality objectives for salinity. For dischargers subject to the Bay-Delta Plan, there are numeric water quality objectives for different parts of the Delta. In particular, there are seasonal numeric objectives for the south Delta of 700 µmhos/cm (summer) and 1,000 µmhos/cm (winter) that are being applied at the end-of-pipe to POTWs that discharge into the south Delta. However, the primary means for meeting the objectives has always been related to the control of flow from state and federal water operations – not the level of salinity in POTW discharges. For dischargers subject to the Sacramento-San Joaquin Basin Plan, there are some numeric water quality objectives for specified waterways (e.g., Feather River); however, most dischargers are subject to the narrative chemical objective, which the Regional Board interprets with agricultural goals from a United Nations report. For dischargers subject to the Tulare Lake Basin, there is a numeric objective of 500 over source water. In many cases, the most conservative water quality objective is that necessary to protect the agricultural beneficial use. However, in others, it is secondary MCLs for electrical conductivity (which is a range of values) for the protection of the municipal and domestic beneficial use. Regardless of the basis for the water quality objective that applies (i.e., agricultural beneficial use v. municipal beneficial use), all were developed prior to and without considering the following: (1) reasonableness of the objective; (2) reasonableness of meeting the objective through the coordinated control of all factors which affect water quality; (3) economic considerations; (4) need to develop housing; and (5) other environmental characteristics. As a result, all of the objectives as applied to POTWs may or

may not be reasonable, and may or may not be achievable if all controllable factors are controlled.

3. How do you think salt should be managed? What factors should be considered?

- Reasonable protection of beneficial uses, feasibility, economic balance-cost effectiveness, environmentally beneficial, and overall sustainability for society as a whole.
- Comply with Water Code section 13241, which requires the adoption of reasonable water quality objectives as well as the consideration of various factors prior to adoption.
- Focus on net environmental benefit using reasonable management practices.
- Determine highest source contribution and develop management practices and/or treatment solutions.
- Solutions will have to look holistically at salts and water use.
- All users of water should be evaluated to determine impacts and to develop management practices.
- Management will vary, depending on the area. Source control will always be a factor. There also will likely be many appropriate levels of water quality based on many factors (e.g., actual use of the water).
- Focus efforts on solutions and funding that deal with desalting and using the salt byproduct for other uses.

4. Should salt or nitrate management consider groundwater differently from surface waters? If so, how?

- Yes, there are different beneficial uses associated with each and different levels of management depending on the beneficial use.
- Soil provides treatment for nitrates more so than salts.
- With groundwater, CV-SALTS should explore where it is appropriate to apply the objectives (e.g. first encountered groundwater v. first point of actual or probable use, etc.)
- There are different assimilation and treatment capabilities between groundwater and surface water. In these mixing areas, properties and control may vary.
- It is important to acknowledge that surface and groundwater are tied together as part of the hydrologic cycle, and therefore cannot be looked at completely independently. Rather they should be viewed on a watershed basis.

5. **Should management efforts address nitrates and nutrients differently from salts? If so in what ways?**

- The management efforts for salts and nutrients may very well be two different things.
- Management efforts need to recognize that nutrients are vital to our ecosystem and require balance: not enough or too much will reduce the viability of life.
- Speciation is important for both salts and nutrients.

Optional Questions for the Workshops
Workshop participants may respond to these questions or submit written responses to these questions

6. Should salt be managed in conjunction with water use? Should it be coordinated with surface water rights or groundwater adjudication? Why or why not?

- Early indications from the Sources of Salinity Pilot Study indicate that water supply and/or source water can be a major source of salts. Although CVCWA recognizes that the Regional Board does not have jurisdiction or authority over ground and/or surface water supplies, it will be almost impossible to address salinity water quality issues without also considering water use and engaging those stakeholders associated with water use.
- CV-SALTS, the Regional Water Board, and the State Water Board should look to work with and encourage early participation in this effort from water purveyors throughout California.
- If salinity management practices are developed that involve water use, tools to implement these practices may be needed.

7. What geographic scale should be addressed in the Salinity Management Plans?

- The Recycle Water Policy encourages regional approaches to salt and nutrient management. Individuals should not be developing Salt and Nutrient Management Plans, but should be implementing BMPs on a scale appropriate to their area of control and contribution. Where overall objectives will not be reached through individual BMPs, regional solutions must be developed.
- Need to identify how local implementation will tie with Regional Plans. For example, a local plan may or may not meet objectives needed from that area from an adjacent or downstream area. How will conflicts be resolved?
- Salinity objectives should be specific to the geographic basin as it is appropriate, and based on what can be supported with local supplies.

8. What categories, if any, should be considered for grouping salt sources?

- We do not understand where this question is going or what type of information it is intending to solicit. Is it source groups like wetlands, farmers, irrigators, water diverters, POTWs, etc, or is it groupings based on salt contributions such as de-minimus, moderate, controllable, major sources, etc.?

- How will these groupings be used in the development of a BPA or TMDL?

9. Do you think economics and social/community cost should be considered in CV-SALTS management alternatives? Are there specific costs that should be considered?

- Yes. This is required by water code.

- Current impacts that POTWs have experienced and are concerned about include, but are not limited to:

  o Source water changes

  o Water Right requirements or replacement water when water is used for recycling and is no longer discharged, thereby potentially impacting aquatic habitat protection or downstream water rights.

  o Cost and feasibility to comply with existing and proposed regulations

  o Indirect, negative environmental impacts with activities associated with implementation, such as R.O.

  o BMP implementation costs.

- The Central Valley has become dependent on pristine Sierra Nevada water quality to support uses that would not be able to exist absent significant diversions or imports. However, requiring that beneficial uses throughout the valley be protected at Sierra diversion level is probably not sustainable. CV-SALTS will need to wrestle with levels of protection and points of application needed to protect uses.

10. How do you recommend the planning and implementation costs be fairly distributed?

- Ideally, all stakeholders would now be paying proportionally to their salt impacts to do the planning. However, this is not the case currently. It is important to continue efforts to get all stakeholders involved and contributing to the effort.

- As we near the end of the planning phase, it may be beneficial to implement a “back pay” strategy for those that have not contributed their fair share in proportion to their impact. This provides some motivation to be involved now.

- CV-SALTS should also be looking at regional solutions, options for trading or offsets. Regional projects may provide cost-effective incentives for more stakeholders to participate.

11. Should there be a level of salt or nitrate that is de minimis and should not need regulation, if so how should that level be determined?

- Yes. At this point, we are not sure how that level should be determined. Additional details are probably needed including lists of possible management practices, feasibility of implementation, implementation costs and controllability. There may be a minimum level of management practices (dependent on feasibly and implementation costs) that are required at this base or minimum level.

12. The California Water Code decrees recycled water and water conservation as a benefit to the people of the State, should recycled water projects be given special consideration? If so why and how?

- Yes, first with respect to priority. The State's Recycled Water Policy contains a deadline for Salt/Nutrient Management Plan that CV-SALTS should meet. The Policy contemplates Regional Plans, rather than individual approaches.

- CV-SALTS and the state regulatory agencies need to recognize that reuse of water will add or concentrate salts in the environment. In order to promote recycled water, it must remain a resource that is competitive from both a regulatory and cost perspective.

- May want to consider a higher salt multiplier for these types of beneficial projects.

13. Are there any additional factors that should be considered in developing and implementing CV-SALTS projects further regulatory programs?

- Not sure what the questions means. If the question stops at projects, we understand the question but are confused by the phrase "further regulatory programs."

- It is important that we get the beneficial uses right and set forth a plan that is sustainable, rather than be boxed in by what is status quo, or difficult or time consuming now. Otherwise our plan will not work in the long run.

- We should also be considering when it is appropriate to use our waterways as a means of salt disposal.

- Salts need to be looked at holistically from all salts sources with the potential for impacts: both salts directly added due to a water body (surface and ground) due to water uses and water used, both in how it can add or remove salts

Questions for Evaluation Survey and written comments

14. Is there any information that was not provided that you would like to have about the CV-SALTS?

15. Should CV-SALTS hold meetings in other areas outside Sacramento more frequently? If so, where?

- CV-SALTS would probably benefit from having meetings a couple times a year to cover both the Northern and Southern parts of the valley. Locations need to have good teleconference and Internet capabilities to make sure all are participating.

16. Do you get information on CV-SALTS efforts at the right frequency? If not, more or less frequent?

- At this point, it is the right level. Earlier notice on items may be helpful, although we realize that this is challenging and not always possible.

17. Other Comments or Recommendations

- Our members expressed that this outreach meeting was effective and recommends that CV-SALTS conduct this type of outreach at least once a year with a smaller, more targeted set of questions.

- Possibly have this outreach be a CV-SALTS meeting instead of the typical CV-SALTS committee meetings or combine with the leadership group meeting.

- Facilitator training might improve the process.

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