Appendix F

SALT AND NUTRIENT MANAGEMENT PLAN (SNMP)

FOR THE ANTELOPE VALLEY

Draft, June 2013

R. Large Comments

21 Aug 13

Before providing specific comments, I would like to complement the preparation team on the huge amount of specific and relevant information provided by this document. Since my comments tend to address multiple document sentences, I think it will be more efficient for me to use the paragraph/page approach rather than the track change approach.

As I have indicated in our discussions, I am very much in favor of the SNMP being an integral part of the overall AV Integrated Regional Water Management Plan (IRWMP). As such, redundant information that has been developed in the two plans as they were separately drafted needs to be removed. I am referring to information such as the basin and climate descriptions, historical and projected water flows, and project descriptions. I know this is challenging, and that there are times when the SNMP is being presented as a stand-alone document, but the reduction in errors as basic IRWMP-specific information is updated, a potentially sizeable reduction in duplicated efforts, and especially a concern for the ultimate user/reader of the integrated document, make it very worthwhile. My recommendation is care in creating modules (linkable by references), and establishing an active coordination effort between the two teams. My remaining comments pertain to the SNMP document, as drafted.

Pg. 1, Section 1.1: Since the Stakeholders are defined in some detail in Section 1.3 (Pg. 2), the sentence in the second paragraph beginning "Stakeholders include ..." should read, "Stakeholder participation is described in Section 1.3".

Pg. 3, Section 1.3 (cont.): "Lakes Town Council", vice "Lake Town Council" [the Lakes Town council represents the communities of Lake Hughes and Elizabeth Lake].

Pg. 3, Section 1.5: To say that the SNMP stakeholder group "established" the definitions implies that we sat down any made up our own definitions. Don't we really mean to say that we accepted and are using common definitions (as used in this technical field) for the following terms? There is still room in the list to note where we had to uniquely define a term (e.g., possibly the Future Planning Period, which would be an opportunity to note that it was selected to be concurrent with the overall IRWMP planning period—hopefully, that's true.)

Pg. 6, Section 2: This is a section that needs to be common and consistent between the IRWMP and SNMP drafts. I have a problem with both the Sub-Basin Boundary Map (SNMP Pg.8) and the IRWMP Groundwater Basin Subunit map (IRWMP Draft of July '07, Pg. 2-19) [Note: inconsistent terminology]: The sub-basin containing Edwards AFB Main Base and the sub-basin that includes Boron (a significant portion of the whole basin, in terms of surface area) are not named or described. While I recognize that this is probably consistent with the USGS 1987 definitions, it makes the map essentially incomplete. In Section 2.4 (Pg. 21) we discuss regulatory groundwater cleanup sites, several of which are in these

unnamed sub-basins. It is inconsistent to have a concern about a listed site (i.e., that it might be polluting groundwater), yet not have a sub-basin name/description of the area presumably being polluted.

Pg. 11, Section 2.1: "Peerless" vice "Pearless"—it's confusing enough to have both "Peerless" and "Pearland" in the same map.

Pg. 14, Section 2.1.2: The Water Supply description, which needs to be a common element of the IRWMP and the SNMP, is incomplete in that it leaves out the interests of individual/small pumpers and landowners who would likely become small pumpers (in order to develop their land) in the future in areas where it is uneconomical to extend water lines from the M&I purveyors.

Pg. 21, Section 2.3: The first sentence in the last paragraph appears to have a typo: should be "objectives" vice "objects".

Pg. 24, Section 3.1.5: In the reference to the chromium-6 study by EPA, the statement implies that the study was not complete as of this report. Is it true that, after five years, there is still no assessment, or is this a case of not checking with EPA for an update?

Pg. 25, Section 3.1.7: The second paragraph, discounting the impact of boron, seems out of place here, since it is addressed on Pg. 27. If the EPA reference is needed, it should be added to the discussion on page 27.

Pg. 26, Section 3.2.1: The second paragraph appears to again erroneously refer to "Pearless".

Pp. 29, 30, 31, 32, 33, 34, and 35: The legends and map symbols for the constituent levels are almost unreadable, particularly with the changing background from map to map. I am not sure what the answer to this dilemma is, but one possibility would be to use slightly larger and distinctly different symbols: e.g.: "o, *, $, +".

Pg. 36, Section 3.2.2.: Several of the North Muroc constituents are so out of line with the other basins, that it seems appropriate to have some discussion in this section regarding them.

Pp. 50-52, Section 3.5.1: There appear to be a number of inconsistencies between the descriptions on these pages, the presumed corresponding numbers on the map (Figure 3-17), and the map legend on page 55. For example, the EAFB Main Base WTP is discussed as item 7, but item 7 in the legend is the e-Solar tower, which appears to be correctly shown in Lancaster on the map. The EAFB/AFRL WTP is discussed and listed in the legend as item 4, but there does not appear to be an item 4 on the map, but that could be the duplicate point labeled "5" in the eastern (unlabeled) sub-basin. The Lancaster WRP Eastern Agricultural site is discussed as item 10, but the legend and map appear to show this as item 9. Item 15, discussed as the Palmdale WRP Ag site, appears in the legend and on the map as Piute Ponds. Similar problems exist with items 17, 18, 19 and 20.

Pg. 52-53, Section 3.5.2: I am uncomfortable reviewing this item and the associated table on page 56, because it introduces yet other plan(s)—the LACWD Integrated Regional Urban Water Management Plan for the AV and the PWD Urban Water Management Plan—which I have not seen and which could have assumptions inconsistent with the IRWMP. Water volume projections are an intense item of debate and it would be far better, in my opinion, if the IRWMP addressed this issue directly and the SNMP referenced the IRWMP discussion as its primary source.

Pg. 58, Section 4.3: I found this one of the most difficult sections to review in the plan. For example, in the first paragraph, it seems like the antidegradation policy should have a time component to it, not just a single figure for assimilative capacity. [By the way, in the last sentence of the first paragraph, it appears that it should be "utilize" vice "utilizes"].

Pg. 59, Section 4.4: The discussion of Fluoride is confusing. How did we get from negative assimilative capacity for the Lancaster sub-basin to plus 20%? It appears that what is being done is using a multiple project argument to allow averaging over multiple sub-basins. But the figure and chart on page 65 seems to indicate that imported water for agriculture is being phased out, and there is no flow connection on the diagram from recycled water projects to agriculture. As long as some of the agriculture water was from imported water, you could make the argument that some dilution of fluoride was occurring because the imported water had less fluoride concentration than the baseline water, but Table 4-5 shows a phasing out of the use of imported water for agriculture. In the absence of other water sources, agricultural water would be pumped from the aquifer, further degraded with chemicals, and a portion would go back into the water table. How is this not an antidegradation concern? What is the rationale for phasing out imported water for agriculture?—I didn't see the discussion.

Pg. 64, Section 4.6: This discussion closely relates to my previous comment. From other sources, I have seen figures of as much as 15 years for water to move from the surface to the water table. I have not seen the studies of how rapidly water moves horizontally or vertically in the aquifer, but how is it considered a "worst case" analysis to assume that salt and nutrient concentrations are "instantly" diluted with the total volume of the aquifer (i.e., 55 million AF). If, in fact, there is slow diffusion, then it would appear that concentrations of undesirable constituents in the upper layers of soil could be significantly more than projected by overall averaging. I think we also need to try to put at least some bounds on the other contributing sources (e.g., fertilizer, manure, etc.) to see if setting them aside impacts our conclusions.

Pg. 59 and 60, Section 4.5.1: Is the term "Fate" being used in a technical sense? If so, it would be helpful if it were defined. Is it the intent for this draft to define the trigger for TDS (last sentence on page 60)—if so, I don't recall the group having done this.

Pg. 63, Figure 4-1: It appears that the label definitions for the sub-basin boundaries and the study area got swapped.

This concludes my comments.

California Water Boards

Lahontan Regional Water Quality Control Board

September 6, 2013

File: Antelope Valley Basin Planning

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COMMENTS ON THE DRAFT SALT AND NUTRIENT MANAGEMENT PLAN FOR THE ANTELOPE VALLEY (JUNE 2013), ANTELOPE VALLEY INTEGRATED REGIONAL WATER MANAGEMENT GROUP, LOS ANGELES AND KERN COUNTIES

The California Regional Water Quality Control Board, Lahontan Region (Water Board) staff received a copy of the above-referenced draft Salt and Nutrient Management Plan (SNMP) on July 17, 2013. The draft SNMP was prepared primarily by staff from the Los Angeles County Waterworks Districts and the Sanitation Districts of Los Angeles County with cooperation from the stakeholders of the Antelope Valley Integrated Regional Water Management (IRWM) Group (collectively referred to herein as "the Group"). This draft SNMP was prepared in accordance with the State Water Resources Control Board Resolution Number 2009-0011 (Recycled Water Policy), as amended.

Water Board staff has reviewed the draft SNMP in light of the Scope of Work approved by the Water Board in October 2011, the requirements of the Recycled Water Policy, and with the requirements of the *Water Quality Control Plan for the Lahontan Region* (Basin Plan). We commend the Group in taking the initiative to develop a collaborative plan that evaluates reuses of multiple local water sources and the potential long term effects on water quality. The draft SNMP compliments the IRWM plan and, in conjunction, will benefit and support sustainability of the Antelope Valley. We have determined that the draft SNMP will need to be revised, per our comments below. Listed first are comments on specific components of the plan, followed by comments on plan content.

BACKGROUND WATER QUALITY DATA

A wealth of water quality data has been compiled from the United States Geological Survey (USGS) and the State Water Resources Control Board's Groundwater Ambient Monitoring Assessment Program (GAMA) data sources. For purposes of the SNMP, the Group selected the GAMA dataset for use as the background water quality dataset;

yet, the rationale for selecting only data from GAMA is unclear. For breadth, we recommend combining the USGS and GAMA water quality data into one comprehensive dataset to establish baseline water quality. Care should be taken to avoid duplicating water quality data during the integration.

The USGS data is a subset of GAMA, therefore GAMA should be more inclusive. However, there appears to be data in the USGS dataset (Table 3-1) that is not included in the GAMA dataset (Table 3-2). For example, Table 3-1 lists water quality data for wells located in the Gloster sub-basin, yet in Table 3-2 there is no water quality data available for the Gloster sub-basin from GAMA sources. Such discrepancies may arise from inaccurate or partial well location information as reported by the respective agencies, errors occurring during data downloads, or data entry errors. We recommend the differences between the USGS data and GAMA data be reconciled, to the extent possible, before these two datasets are combined.

For clarity, we request the draft SNMP include a discussion of the existing/background water quality as represented by the combined/comprehensive USGS/GAMA dataset described above. The detailed technical analyses and assumptions that went into developing this background dataset could then be presented in a technical memorandum and appended to the SNMP. The memorandum should include the following: separate discussions for each of the USGS and GAMA data sources; the criteria for selecting viable data from each source (i.e. assumptions, outliers, screened interval, etc.) and the number of wells selected from each data source; the process for siting or mapping well locations; the discrepancies between data obtained from the two sources; the process for combining the two data sets into one comprehensive background water quality dataset; a discussion of the background water quality as represented by the combined USGS/GAMA dataset; and a discussion regarding data gaps.

WATER QUALITY OBJECTIVES

Water quality data illustrate that background water quality in the Antelope Basin varies across the basin, with some sub-basins having higher quality groundwater than others. Water Board staff have determined that one set of water quality objectives (WQOs) applied unilaterally across the entire Antelope Basin (see Table 4-1) is not applicable in this case; rather, the SNMP must establish WQOs for each constituent on a **sub-basin level**. Proper identification of applicable WQOs is critical to calculating assimilative capacity, modeling loading over time, evaluating implementation strategies to manage salts and nutrients, and developing a monitoring program to evaluate the effectiveness of the SNMP. The discussion below provides examples for how the Water Board establishes WQOs.

The general methodology used in establishing WQOs involves, first, designating beneficial water uses, and second, selecting and quantifying the water quality parameters (thresholds) necessary to protect the most vulnerable (sensitive) beneficial uses. Our Basin Plan designates beneficial uses of groundwater in the Antelope Basin

as municipal and domestic supply (MUN), agricultural supply (AGR), industrial service supply (IND), and freshwater replenishment (FRSH). The Basin Plan does not identify specific numeric WQOs for groundwater in the Antelope Basin. However the following narrative WQOs are applicable to all groundwaters in the region, including the Antelope Basin: waters shall not contain concentrations of chemical constituents that adversely affect the water for beneficial uses; waters designated as MUN shall not contain concentrations of chemical constituents in excess of the maximum contaminant level (MCL) or secondary maximum contaminant level (SMCL) based upon drinking water standards; waters designated as AGR shall not contain concentrations of chemical constituents in amounts that adversely affect the water for agricultural uses; and waters shall not contain taste or odor producing substances in concentrations that cause nuisance or that adversely affect beneficial uses. Narrative WQOs do not have specific numeric thresholds; therefore, other sources must be referred to in order to determine appropriate thresholds to meet these objectives. Note that WQOs must be protective of the most vulnerable (sensitive) beneficial uses, which may or may not be numeric thresholds established for drinking water standards, as other protected beneficial uses, such as AGR, may be more sensitive.

A Compilation of Water Quality Goals is an online searchable database of water quality-based numeric thresholds for drinking water standards, public health goals, and agricultural water quality goals/thresholds, among others. The database is a compilation from various sources and is maintained by staff of the State Water Resources Control Board, Office of Information Management and Analysis. The database can be accessed online at http://www.waterboards.ca.gov/water_issues/programs/water_quality_goals/. We recommend using this database to aid in identifying the appropriate numeric thresholds for WQOs.

Variability in background water quality indicates that WQOs must be identified for each constituent on a sub-basin level. For example, total dissolved solids (TDS) is a constituent that primarily affects taste and odor and has a three part drinking water standard with a recommended SMCL of 500 milligrams per liter (mg/L), an upper limit of 1,000 mg/L, and a short-term level of 1,500 mg/L. Baseline concentrations of TDS in the Lancaster and Pearland sub-basins is 323 mg/L and 264 mg/L, respectively (see Table 3-2). These baseline concentrations are well below the upper level of 1,000 mg/L as well as the SMCL of 500 mg/L. Baseline TDS concentration in the Neenach sub-basin is 501 mg/L, which exceeds the SMCL of 500 mg/L, but is less than 1,000 mg/L. In this example, it would be appropriate to apply a TDS WQO of 500 mg/L for the Lancaster and Pearland sub-basins. The next higher standard of 1,000 mg/L may be an appropriate TDS WQO for the Neenach sub-basin. This rationale must be applied and justified when identifying WQOs for each constituent.

WQOs must also be protective of the most vulnerable (sensitive) beneficial uses, which may or may not be numeric thresholds established for drinking water standards. Depending on the chemical constituent, AGR beneficial uses may dictate lower WQOs than might otherwise be necessary to protect MUN beneficial uses. For example, chloride has a SMCL of 250 mg/L for drinking water, but has an agricultural water

quality threshold of 106 mg/L. Chloride concentrations above 106 mg/L impair the waters AGR beneficial uses. In this example, a WQO for chloride set at 106 mg/L would be the most restrictive and protective of both AGR and MUN beneficial uses.

Now consider baseline chloride concentrations for the Antelope Basin. The data in Table 3-2 show that background water quality for chloride is well below the SMCL of 250 mg/L and below the agricultural threshold of 106 mg/L in all sub-basins (where data is available), with the exception of the North Muroc sub-basin that has a baseline chloride concentration of 155 mg/L. Using the more restrictive agricultural threshold as a numerical objective to protect AGR beneficial uses, the WQO for chloride is 106 mg/L in all sub-basins. Background chloride concentrations in the North Muroc sub-basin presently exceed the 106 mg/L WQO. The SNMP should include a discussion for those sub-basins where background water quality exceeds WQOs.

We recommend amending Table 4-1 to include the numeric thresholds that were used to select the WQO for each constituent within individual sub-basins. The selected WQO must be protective of the most sensitive beneficial uses, which may or may not be numeric thresholds established for drinking water standards.

ASSIMILATIVE CAPACITY

Establishing WQOs is pivotal to calculating assimilative capacity. Because baseline water quality data varies between the sub-basins of the Antelope Basin, the SNMP should identify WQOs for each constituent on a sub-basin level. Consequently, assimilative capacity will also vary depending on the constituent and sub-basin location. Therefore, we recommend that baseline assimilative capacity be calculated for each constituent in each sub-basin where background water quality is available. A discussion should be included in the SNMP for those sub-basins where there is little to no assimilative capacity. Incorporating baseline assimilative capacities for all sub-basins, rather than limiting the focus to only those sub-basins where projects are currently being implemented, would further support the intent of the SNMP, which is to serve as a tool for planning and siting future projects that have the potential to contribute to salt and nutrient loading within the basin.

SOURCE IDENTIFICATION AND LOADING

Source identification and estimating their mass loading of salts and nutrients to the groundwater is fundamental to assessing changes in water quality over time. In addition to the current and future projects identified, various other salt and nutrient contributing sources should be considered in the salt balance calculations. In particular, salt and nutrient loading from agricultural sources (fertilizer, soil amendments, and applied water), residential inputs (septic systems, fertilizer, soil amendments, and applied water), and animal waste (manure land application) should be evaluated and included in Table 4-3. General loading factors and assumptions based on land use categories are available in the literature. The Group is encouraged to review other SNMPs prepared to date where some of this information is summarized and references

are cited. All assumptions and references used in the loading and salt/nutrient balance calculations must be identified in the plan, and data gaps should be identified and discussed.

GROUNDWATER MODELING

The simple mixing model should be supplemented with more refined models over time, as there will not be uniform mixing throughout the entire basin as a result of loading. We anticipate that impacts will initially be localized and of much higher magnitude than estimated by the mixing model. Areas of highest concern, particularly the urbanized areas of Palmdale and Lancaster, and in sub-basins where assimilative capacity is threatened, should be targeted for more discrete groundwater modeling in the future.

MONITORING AND REPORTING PROGRAM

We envision that progress toward salt and nutrient management will be assessed through regular evaluation and responses to three pivotal questions over the 25-year planning period: (1) Is water quality changing over time as models predicted? (2) Are salts and nutrients effectively being managed to maintain WQOs for beneficial uses? (3) Can technology and new information improve implementation strategies to reduce salt and nutrient loading? Over the implementation period, these questions will be answered through groundwater monitoring, data evaluation, and adaptive management, and will help the Group define the salt/nutrient management benefit derived from their investment of time and resources.

A groundwater monitoring program is vital to tracking changes in water quality over time, evaluate assimilative capacity, and assess effectiveness of implementation strategies. The Recycled Water Policy states that the monitoring network should "focus on basin water quality near water supply wells and areas proximate to large water recycling projects, particularly groundwater recharge projects. Also, monitoring locations shall, where appropriate, target groundwater and surface waters where groundwater has connectivity with the adjacent surface waters." The preferred approach is to "collect samples from existing wells if feasible as long as the existing wells are located appropriately to determine water quality throughout the most critical areas of the basin."

The monitoring network is the backbone of any monitoring program and requires a sufficient number of strategically located monitoring wells. The proposed SNMP monitoring well locations are shown on Figure 3-16. Please provide a discussion of well selection criteria, and for each well selected, please provide the following: state well number; other well identification numbers; location information (latitude/longitude and corresponding groundwater sub-basin); depth of well; screened interval(s); land surface elevation; frequency of sampling; and sampling program (i.e. USGS, GAMA, California Department of Public Health, etc.). A minimum of three monitoring wells per sub-basin is necessary to be considered statistically valid.

The proposed well locations appear to be located near current and future recycled water projects; however, we recognize that there are other critical areas within the basin with little to no monitoring coverage. We recommend incorporating additional wells in the following locations: the Neenach sub-basin near the Antelope Valley Water Bank Project; the Lancaster and Buttes sub-basins near the Palmdale Water Reclamation Plant Agricultural Site; north of the Lancaster sub-basin near the Edwards Air Force Base Golf Course Landscape Irrigation Project; and near the Amargosa Creek Recharge Project. Several of these projects have active groundwater water monitoring programs, and existing monitoring wells associated with these projects could be incorporated into the SNMP monitoring program.

In order to be a useful tool, the monitoring program must include data analysis and adaptive management components. Increasing and/or decreasing concentration trends need to be tracked and in some cases statistical analyses may need to be performed to evaluate the significance of the changes in water quality. Time versus concentration plots is one way to graphically display data. Adaptive management would provide the process and framework for updating the SNMP to reflect changes over time in land use, project status, source water quality, and groundwater quality, to add or modify implementation strategies, to incorporate new wells as the monitoring program evolves, and to provide a feedback system to the Group. Specific triggers that would lead to further analyses need to be clearly identified.

PLAN APPROVAL PROCESS

We do not envision that the SNMP, in its entirety, will be incorporated in the Basin Plan. Rather, elements of the SNMP, such as revised WQOs and implementation strategies and BMPs, may be incorporated. The final SNMP will be presented to the Water Board at a public hearing for their review and acceptance. We anticipate that at that hearing, further direction will be provided to the Group on how the SNMP or its components will be incorporated into the Basin Plan.

Water Board staff considers submittal of a complete draft SNMP by May 2014 as meeting the deadline requirements outlined in the Recycled Water Policy.

ADDITIONAL COMMENTS

Our comments on plan content are provided below.

1. The draft SNMP contains a wealth of information that is necessary to understanding the existing quality of the groundwater within the Antelope Valley. However, the presentation of the information is fragmented and hard to follow. We recommend that the Group consider adding an Executive Summary and structuring the document in a format where each section builds up the previous one.

2. The stakeholder roles and responsibilities for preparing and implementing the SNMP must be clearly defined, as required by the Recycled Water Policy.

3. Please include water recycling and stormwater recharge/use goals and objectives in the SNMP, as required by the Recycled Water Policy.

4. We suggest adding definitions for "pollution" and "degradation." Pollution, as defined in the California Water Code, section 13050(l), means beneficial uses of water are unreasonably affected. Degradation means natural water quality is adversely altered, but still satisfies water quality objectives to support beneficial uses.

5. Section 2.1.1 states that the SNMP analyses will focus on the Neenach, Lancaster, Buttes, and Pearland sub-basins. However, the Buttes sub-basin is not included in any of the analyses in subsequent sections of the plan.

6. Section 2.4 is a discussion regarding the groundwater cleanup sites included in GeoTracker, and Appendix D is a list of those sites provided by GeoTracker. Please note that Department of Defense sites, such as Air Force Plant 42 and Edwards Air Force Base, have ongoing groundwater cleanup actions, but are absent from the list and discussion.

7. Figures 3-8 through 3-15 are of a noticeable lesser quality than Figures 3-1 through 3-7. The mean concentration of constituent, as represented by Figures 3-8 through 3-15, is a more easily discernible presentation of the data. We request that the quality of Figures 3-8 through 3-15 equal or exceed the quality of Figures 3-1 to 3-7.

8. The water quality data presented distinct differences laterally between sub-basins, but there was little to no discussion regarding vertical partitioning of water quality. Is there sufficient information to discern vertical changes in water quality within some or all of the sub-basins? We request this discussion be included in the SNMP.

9. Not all areas of the Antelope Basin have been subdivided into sub-basins. For example, the western fringe of the basin is not included as a sub-basin, and the area in and around Edwards Air Force Base is also not included as a sub-basin. For those areas where a sub-basin has not been identified, how does the Group intend to assess background water quality? There are several recycled water projects currently implemented in these areas. How will the Group address salt and nutrient management in these areas? These issues need to be addressed in the SNMP.

10. Figure 3-16 and Figure 3-17 show current/future projects in the basin. There are several discrepancies between these figures: different scales; different number of projects shown/listed; and different project number schemes. We recommend using Figure 3-17 as a base for current and future projects. All symbols used on the map must be listed in the legend.

11. TDS, chloride, and nitrate are the chosen indicator parameters for salts and nutrients in the draft SNMP. A discussion as to why these constituents have the potential to degrade water quality and how they were selected as indicator parameters should

be included in the SNMP. The different contributing salt and nutrient sources, both anthropogenic and naturally occurring, should be identified for each.

12. Figure 4-1 is a groundwater contour map of the Antelope Valley based on static water levels in 1996. Groundwater levels have likely changed significantly from 1996 to the present. We recommend that the groundwater contour map be based on more recent water level data.

13. In Section 4.3, there are several references to the "policy." For clarity, we recommend that references to the "Antidegradation Policy" and the "Recycled Water Policy" be referenced as such, with no additional abbreviation.

14. Percolation, in addition to evaporation, is expected from some wastewater ponds in the Antelope Valley (Figure 4-2). We suggest modifying salt balance calculations to include the estimated mass loading from wastewater pond percolation and mass removal of from evaporation.

15. In addition to the "normal year" salt and nutrient mass balance calculations, we recommend that additional calculations be performed for worst-case scenario (no import water) and best-case scenario (full allocation of import water); the results of which should be factored into estimating future groundwater quality.

16. Figures 4-3 through 4-5 illustrate estimated increases in TDS, chloride, and nitrate based on source loading through the planning period. This evaluation seems too simplistic to be a meaningful analysis. From where is the 80% baseline assimilative capacity derived? Our understanding is that the Recycled Water Policy specifies that single recycled water projects should use less than 10% of the available assimilative capacity and, cumulatively, multiple projects are to use less than 20% of available assimilative capacity.

17. The draft SNMP should identify existing measures or practices that are already in place to manage groundwater quality in the basin. For example agricultural BMPs, strategies to manage the quality of municipal wastewater influent, local programs and policies that encourage low impact development, and stormwater recharge, etc., should be identified as appropriate, through the SNMP.

18. Please identify and discuss the triggers that will be used to determine when implementation strategies and BMPs are necessary and how their use will improve/protect water quality.

Thank you for the opportunity to comment. Please share our comments with the rest of the Group. If you have any questions regarding this letter, please contact me at (760) 241-7376 (jzimmerman@waterboards.ca.gov) or Patrice Copeland at (760) 241-7404 (pcopeland@waterboards.ca.gov).

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