June 4, 2015

Margaret E. Park, AICP
Director of Planning and Natural Resources
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, CA 92264

Dear Ms. Park:

Thank you for your letter and participation in the Coachella Valley Salt and Nutrient Management Planning process. This letter is in response to your comment letter, dated May 15, 2015, regarding the Coachella Valley Salt and Nutrient Management Plan (SNMP), Draft SNMP.

The Coachella Valley Water District (CVWD), Coachella Water Authority (CWA), Desert Water Authority (DWA), and Indio Water Authority (IWA) are finalizing the preparation of the SNMP for the Technical Group for the Whitewater (Indio), Mission Creek, Garnet Hill, and Desert Hot Springs Groundwater Subbasins. The SNMP is being prepared in response to the requirements of the California Recycled Water Policy. The Technical Group and their consultant, MWH, have reviewed and responded to your comments, as well as modified the SNMP to reflect your comments where appropriate. Listed below is a summary of each of your comments and the Technical Group's response.

Comment No.1: The Executive Summary states that during the next 30 years, the average concentrations of TDS and nitrate in the Coachella Valley are not anticipated to exceed Basin Plan water quality objectives. The nuance of this statement speaks to the limitations inherent in the spreadsheet instantaneous mixing 'model' used for the SNMP. The Basin Plan lists no specific numeric objective for total dissolved solids (TDS), and specifies 45 mg/L for nitrate. Though the basin wide average concentration of TDS and nitrate may not exceed the SNMP's WQO of 1,000 mg/L, the range of TDS within a management zone could have areas in exceedance of the WQO. A limitation of having complete instantaneous mixing model of all recharge components, within the volume of the aquifer, does not take into account the travel time for recharged water at the surface to reach the rest of the basin or the deep zone aquifer. Concentrations would be expected to rise much faster in the shallow recharge zones than the deeper aquifer.

Response to Comment No.1: *Additional text was prepared in the Executive summary and Section 4 that states the limitations of the methods and results. Additional text was also prepared that references the cell-by-cell water quality maps in TM-2. These maps allow readers to review water quality results within a management zone on a cell-by-cell basis. These maps indicate where water quality is above the AWQ and one can also decipher where concentrations are above water quality objectives.*

Comment No.2: This SNMP sets the WQO for TDS at 1,000 mg/L based on Title 22 "Consumer Acceptance" that allows municipal use of water with TDS concentrations up to 1,000 mg/L (page 3-2). The complete context for the Title 22 drinking water standards is missing from the paragraph near the top of page 3-2. CCR Title 22 recommends 500 mg/L as the secondary maximum contaminant level (SMCL) for TDS in drinking water based on taste; with 1,000 mg/L as the upper range of acceptable concentrations. Setting the WQO at the upper limit of 1,000 mg/L does not allow for any buffer in protecting the good quality water in the basin. The data and modeling results (Section 6) presented by MWH do not show that the upper limit for TDS concentrations is warranted for the WQO. A lower TDS concentration would be a more prudent WQO for managing and safeguarding the water quality within the basin. An important element of the SNMP is to estimate assimilative capacity in order to determine if the basin can incorporate more salts and/or nutrients into the groundwater aquifers, and still remain within the stated beneficial uses. As AWQ increases (e.g. more TDS), there is less assimilative capacity that can be used by projects within the basin.

Response to Comment No.2: *The Recycled Water Policy requires the determination of whether current and projected salt and nutrient concentrations are consistent with applicable WQOs, and consequently a numeric WQO to determine the assimilative capacity of a management zone. The RWQCB Water Quality Control Plan for the Colorado River Basin – Region 7 (Basin Plan) uses narrative and numeric WQOs for groundwater beneficial uses.*

In Section 3 of the Basin Plan, Section 64431 of Title 22 specifies 45 mg/L (nitrate as NO3), as the numeric WQO for nitrate (as NO3). This value is the primary maximum contaminant level (MCL) for drinking water.

Text in Section 3.1 was revised to explain the selection of the water quality criterion used to evaluate assimilative capacity with regard to TDS.

Comment No.3: The truncated quote on page 5-2 (Section 5.3) from the Recycled Water Policy, Section 9c(1) Antidegradation, misses the importance of using the most recent five years of data available in determining current AWQ. This highlights the importance of using the most current data in the analysis for ambient conditions. The full quoted sentence is as follows:
For compliance with this subparagraph, the available assimilative capacity shall be calculated by comparing the mineral water quality objective with the average concentration of the basin/sub-basin, either over the most recent five years of data available or using a data set approved by the Regional Water Board Executive Officer.

Response to Comment No.3: *This reference is from a section that addresses recharge with recycled water, which is not applicable in the Coachella Valley. There reference was used as it is the only location in the Recycled Water Policy that addresses assimilative capacity and average water quality. The reference in its entirety will be placed in the SNMP.*

The most recent data is the most desirable to describe water quality, hence it was used. If no data was availbe in the last 5 years, using only the most recent 5 years worth of data is not feasible, as shown in Appendix A of TM-2. This evaluation in Appendix A of TM-2 reviewed whether there was enough data to contour and represent the physical system of each

management zone (vertically and horizontally) and what is the earliest baseline period that can be used to ensure the most recent data is represented in the AWQ calculation. the result determined that using the 5-Year baseline period alone is not feasible in any management zone or aquifer layer for a volume weighted AWQ calculation. Data is typically scarce with poor spatial distribution in the 5-Year baseline period.

On-going discussions have been maintained with the RWQCB to address this issue. These meetings included data sharing workshops, sharing of raw data and walking through the results for RWQCB staff to provide feedback in technical sessions, review of methods with staff and the Executive Officer.

Comment No.4: There is a discrepancy between the February 2015 Technical Memo #2 and the April 2015 SNMP in assigning concentration values spatially within the 1,000 foot by 1,000 foot grid.

- The mean of baseline well concentrations for each cell are used to obtain the final filtered dataset. (Appendix B; February 2015 TM-2, bottom of Page 7)
- Create a map of gridded data points using the mode recent water quality measurement within each cell (April 2015 Draft SNMP, top of Page 5-7)

The mean (average) is a volume based statistic; and mode is related to frequency of an occurrence. The USEPA guidance document states that mode is the least commonly used statistic but is useful for qualitative discussion. The mode is often quite different from the mean values displayed in the Descriptive Statistic Tables for each of the management zones. This new application of the mode would introduce a bias into the 'volume-weighted method' analysis based on the data's temporal and spatial distribution. Please explain why this method was used.

Response to Comment No.4: *Text revised to address comment, "mode" was mistakenly used in place of "most". The text was revised "… using the most recent water quality…"*

Comment No.5: The water balance in Section 6.1 shows the 1993 to 2013 average streambed and mountain front (natural) recharge to the groundwater aquifer (Table 6-1). This 15-year period is typically considered an above normal hydrological period (relatively wet) in Southern California. Documentation is missing regarding why the constant 2014-2045 future average annual natural recharge was increased by 11.7% for West Whitewater River; and decreased by 9.8% for East Whitewater River and 0.2% for Mission Creek (Table 6- 1) from 1993 to 2013 average recharge. A model sensitive to changes in natural recharge would show that as natural recharge decreases, the concentration of salts and nutrients would increase.

Response to Comment No.5: *Table 6-1 required additional labeling and explanation, it was not intended to represent a single year. The table was revised to reflect that future natural recharge is calculated as the average beginning in 1936.*

The water budgets have also been revised to show representative values for 10 year periods and ranges of potential values. The water budgets were labeled 2013 in error and were not intended

to represent a single year. Table 6-4 has been updated along with the water and salt/nutrient budgets in Section 6.

Comment No.6: It does not appear that any adjustments were made to account for a balanced future hydrologic period to include the effects from longer consecutive dry years (i.e. 1950's and early 1960's dry hydrology). The 2013 natural recharge accounts for 22.5% of the all of the inflows into the West Whitewater River management zone (Table 6-4). This annual water budget shows a negative change of groundwater in storage (-39,387 af/y) almost equal to the total natural recharge (40,823 af/y) to the basin. Over-accounting of good quality natural recharge water will underestimate the mass loading and available assimilative capacity calculations.

Response to Comment No.6: *As noted in our Response to Comment No. 3 and No. 4 above, the water balance was intended to be representative and not for a specific year.*

Comment No.7: For clarity and accuracy, the word 'average' should be added to the summary paragraphs of Sections 6.3.1, 6.3.2, and 6.3.3, i.e. 'estimated average future water quality'. A qualifying statement (i.e. 'the initial AWQ was developed from a range of concentrations from _ mg/L to _ mg/L ') should be provided that could give a context to the reader of the non-homogeneous nature of the salt and nutrient distribution within each subbasin. Plotting the SMCL of 500 mg/L on the TDS graphs in Figures 6-3, 6-5, and 6-7 would provide a more complete picture of the potential average impacts to the basins.

Response to Comment No.7: *Comment noted, "average" has been to the text in applicable paragraphs. Please refer to Response to Comment No. 6 for how we have addressed the WQO for TDS.*

Comment No.8: The West Whitewater River management zone had a range of volume-weighted AWQ due to the limited data for the Layer 1 Aquifer Zone. The graphs included as Figure 6-3 (TDS) and Figure 6-4 (nitrate) use the median of the water quality data. However, Technical Memo #2 discusses the importance of the range because of the limited data. Please provide the low and high range of AWQ on these graphs for comparison. The high and low range for Assimilative Capacity should also be provided in Table 6-13 for a better understanding of average impacts to the basin.

Response to Comment No.8: *Assimilative capacity in West Whitewater River MZ was calculated based on the AWQ water quality in three layers. For layer 1, it was completed using the median instead of a range for water quality, this was different than outlined in TM-2. This change understandably has caused some confusion.*

Upon further review of the range and spatial distribution of the data in layer 1, it was determined that the range would not provide increased certainty in the process. There are 14 data points that are summarized in Table 5-4 of the Draft SNMP that represent the data in layer 1. There are two areas of increased concentrations, near Palm Desert and near Rancho Mirage. A significant portion of the management zone area with no data is located where the management zone is undeveloped. Using the extreme values illustrates the sensitivity of he results, but may not be good representations of the actual range in the AWQ for layer 1. Using

the median provided the best approximation of AWQ.

Additional text was provided is the SNMP to address this issue.

Comment No.9: The SNMP generally describes the current monitoring efforts and provides a list of current and potential monitoring wells within the basin. There is not a cohesive monitoring plan presented, but rather a general description of current activities as being sufficient for regulatory compliance. This section provides suggested guidance on what constituents to monitor for and what wells could go into the plan. It is difficult to evaluate the monitoring 'plan' without a map showing the spatial distribution of wells within the monitoring network, keyed to the constituents and monitoring frequency. It is unfortunate that the water districts only conduct groundwater monitoring sufficient to meet bare minimum requirements instead of committing to a comprehensive monitoring plan that will ensure responsible long-term water management.

Response to Comment No.9: *The monitoring discussion was further developed to include data collection frequency and constituents. A map of the recommended monitoring wells was also added to the section.*

Again, the SNMP Technical Group would like to thank you and your organization for your letter and participation in the Coachella Valley Salt and Nutrient Management Planning process. Stakeholder participation is integral to the success of the SNMP. If you have any other comments please feel free to call or email Ms. Patti Reyes, PE, the Technical Group's point of contact at (760) 398-2661, ext. 2270 or PReyes@cvwd.org.

Sincerely,

The Salt and Nutrient Management Plan Technical Group