



MEMORANDUM

Date: May 18, 2015

To: Thomas D. McCarthy, Principal Engineer, MWH
Adnan Anabtawi, Associate Engineer, MWH

From: Arden Wallum, Mission Springs Water District
Michael Thornton, TKE Engineering

Subject: Salt and Nutrient Management Plan (SNMP)
Draft Plan Comments

MSWD comments are presented in the following paragraphs:

A. General

If it is the intent of Coachella Valley Water District (CVWD), Desert Water Agency (DWA), and Indio Water Authority (IWA) to utilize this SNMP to facilitate serving recycled water, Mission Springs Water District (MSWD) does not object. If however, it is the intent of CVWD, DWA, and IWA to incorporate these SNMP recommendations into the Colorado River Basin, Basin Plan, MSWD objects.

The approach used to determine Ambient Water Quality (AWQ) that was presented in Technical Memorandum No.1 (TM 1), Technical Memorandum No. 2 (TM 2) and in the Draft SNMP Report is, and as also advised by the Regional Water Quality Control Board (RWQCB) in its November 5, 2014 letter to CVWD, "scientifically flawed". The Mission Creek Management Zone (MCMZ) is too complex and heterogeneous to be treated as a single entity. The MCMZ should be further characterized and divided into subzones and managed on a smaller scale with AWQ concentrations and assimilative capacities assigned to each subzone.¹

The study fails to discuss effects of the ongoing drought and climate change. Does the drought have an impact on this analysis? Climate change has the potential to affect the reliability of both local and imported water supplies.² These impacts should be addressed at length in the plan.

In general, the draft SNMP sets up a system to authorize, even encourage, impairment of the waters of the State using a method of analysis that virtually lumps the waters of the Coachella Valley into one basin from a targets and projects

¹Regional Water Quality Control Board letter dated November 5, 2014.

²Mission Creek/Garnet Hill Water Management Plan, Final Report, January 2013, Section 5 – Issues, Strategies, and Plan Evaluation, Climate Change.

perspective; it in fact represents a Degradation Policy rather than an Anti-Degradation Policy.³

B. Section 3.1, Regional Water Quality Objectives

The draft plan indicates that the Colorado River Basin, Basin Plan (BP) establishes Water Quality Objective (WQO) for nitrate is 45 mg/l and that the WQO for TDS should be 1,000 mg/l. The BP does **not** specify numeric groundwater objectives. It indicates that establishment of numerical objectives for groundwater involves complex considerations since the quality of groundwater varies significantly with depth and of well perforations, existing water levels, geology, hydrology and several other factors. Unavailability of adequate historical data compounds the problem. The RWQCB requires that a detailed investigation of groundwater basin be conducted before establishing specific groundwater quality objectives.⁴

The selection of the secondary maximum contaminant level (MCL) for TDS is further challenged by the draft report itself; the draft report indicates that a protective TDS concentration of 797 mg/l has been established for Lake Havasu. The draft report does not explain why a greater WQO is recommended. MSWD objects to use of the MCL as the WQO for the MCMZ and recommends that WQOs be established based on a comprehensive analysis as recommended in the BP.

C. Section 4.2.2, Groundwater Level

The draft report is misleading at best. Groundwater pumping in the MCMZ is about 4,000 AFY greater than estimated natural recharge and current artificial recharge activities.⁵ In addition, greater quantities of imported water supplies will be needed to accommodate growth. Additional supplies may be acquired by purchase of additional Table A allocations or by transfers and exchanges.⁶ To maintain current groundwater levels, acquisition and recharge of greater quantities of imported water will be necessary. The imported water will convey greater volumes of salts and nutrients than the amounts indicated in the draft report to the MCMZ.

D. Section 5.3, Water Quality Analysis Methods

The draft plan appears to indicate that a single AWQ for MCMZ is inappropriate; however, it justifies its use by referencing a number of other jurisdictions that used a single average value for AWQ. The fact that others have used single AWQ does not justify its use in the Coachella Valley. Again, MCMZ is too complex and

³EnviroLogic Resources, Inc. letter of May 14, 2015.

⁴Water Quality Control Board, Colorado River Basin – Region 7, Chapter 3 – Water Quality Objectives, Subsection IV, Groundwater Objectives.

⁵Mission Creek/Garnet Hill Water Management Plan, Final Report, January 2013, Section 5 – Issues, Strategies, and Plan Evaluation, Groundwater Overdraft.

⁶Mission Creek/Garnet Hill Water Management Plan, Final Report, January 2013, Section 5 – Issues, Strategies, and Plan Evaluation, Transfers and Exchanges.

heterogeneous to be treated as a single entity. In addition, to produce a single AWQ applied throughout the entire vertical and horizontal expanse is far too simplistic to be considered a realistic representation of AWQ conditions.⁷

By conducting the AWQ analysis with data collected from throughout a MZ, from the water table over 1,000 feet in depth, the resulting AWQ is averaged and a larger assimilative capacity is erroneously determined.⁸

E. Section 5.3.1, Groundwater Models

Groundwater modeling, as presented in the draft report, was not used as suggested by MSWD in its comments to TM 1 and TM 2. Again, modeling is vital to develop an effective SNMP. It will assist in determining the effects of the imported water recharge at the Mission Creek Recharge Facility on the MCMZ and other MZs. The Coachella Valley is comprised of a number of complicated subbasins connected with fault systems. Modeling is a key component to determine water quality impacts of various sources and use of a model would help prevent oversight of impacts in critical areas throughout the Coachella Valley.

By using models for “quantifying the vertical and horizontal extent of the groundwater systems and to provide a vertical and horizontal grid system” leaves SNMP without the benefits of real modeling. Not only is the instantaneous mixing concept inaccurate but the error is compounded with each iteration of the future degradation models. A leaching model that treats each source in a manner appropriate to the source and that calculates an input salt and nutrient concentration for use in a calibrated numerical groundwater flow model would provide better management tools for managing groundwater resources.⁹

F. Section 5.3.4, Ambient Water Quality Methods for Each Management Zone

The draft plan indicates that attempts were made to review MCMZ in layers and horizontal extents of AWQ but due to insufficient data, efforts were abandoned. MSWD reiterates that the data gaps encountered by MWH are so significant that water quality management conclusions cannot be reached.

G. Section 5.4.3, Mission Creek Management Zone

As advised in previous comments, AWQ for TDS and nitrate are incorrect. MSWD is already encountering greater levels of constituents than those suggested in Table 5-9. For Well 34, near the Mission Creek Recharge Facilities, has TDS concentrations have increased from 450 mg/l in March of '08 to 540 mg/l in June of

⁷ Regional Water Quality Control Board letter dated November 5, 2014.

⁸ EnviroLogic Resources, Inc. letter of May 14, 2015

⁹ EnviroLogic Resources, Inc. letter of May 14, 2015

'11 to 650 mg/l in July of '14. This concentration increase rate is alarming to MSWD.

As you are well aware, the primary contributors of TDS to groundwater are septage from waste disposal, saline subsurface flow from Desert Hot Springs subbasin, imported water recharged at the Mission Creek Spreading Facility, and percolation of treated wastewater.¹⁰ MSWD has and/or will successfully complete \$39 million of sewer conversion improvements. MSWD continues to pursue funding opportunities to fully mitigate all onsite disposal systems in its service area effectively managing septage.

Wastewater effluent is currently being treated in compliance with MSWD's Waste Discharge Permit (WDR) requirements.

Regarding saline subsurface flow from the Desert Hot Springs subbasin and imported Colorado River water, SNMP has identified these sources of potential groundwater quality degradation; however, it does not specify measures required to effectively manage them to prevent long term degradation. Degradation due to saline increases will be detrimental to the water supply and the region's economic foundation-water.

Therefore, imported water and its TDS concentrations are the greatest issues related to water quality degradation in the MCMZ. Imported water is the principal source of supplemental water supply and the need for additional imported water is expected to increase in the future.¹¹

Regarding nitrate concentrations, the draft plan indicates that onsite disposal system remediation is not needed. Since nitrate contamination is a critical impact to long term water quality, MSWD has invested millions into its program. The draft report is suggesting that this program is not needed. Please reevaluate nitrate concentration presented.

H. Section 5.6.2, Vertical Water Quality

The analysis fails to mention the monitoring well located near the Mission Creek Recharge Facilities and its water quality testing results. Discussion should be added to the draft report.

¹⁰Mission Creek/Garnet Hill Water Management Plan, Final Report, January 2013, Section 5, Issues, Strategies and Plan Evaluation, Total Dissolved Solids.

¹¹Mission Creek/Garnet Hill Water Management Plan, Final Report, January 2013, Section 5, Issues, Strategies and Plan Evaluation, Amount of Imported Water Supplies.

I. Section 6.1.1, Inflows, Artificial Recharge

Apparently, “CVWD is participating in the East Branch Enlargement to provide the capacity to obtain additional water from the SWP when it is available.” Please provide greater detail on these efforts and how these efforts are consistent with the Direct State Water Project Delivery section presented on page 7-4. Define quantities and quality of water currently available for use together with the expected increases, if any, by 2045.

J. Section 6.1.3, Water Budget by Management Zone

Table 6-6, Mission Creek Management Zone – 2013 Water Budget indicates that a surplus of water occurred in 2013. However, it does not indicate that the surplus is an anomaly having been achieved due to advanced deliveries. Groundwater pumping in the MCMZ is about 4,000 AFY greater than estimated natural recharge and current artificial recharge activities.¹² The water budget presented should be revised to reflect typical water budget conditions.

K. Section 7, Management Strategies

The draft report indicates that significant annual increase in TDS and nitrates are and will continue to occur, yet findings support that the basin water quality is remaining within the WQOs for the constituents of concern and therefore “corrective measures are not needed”. This causes great concern to MSWD. First, WQOs are ***not*** defined in the BP; the analysis has elected to use MCLs as WQOs. Secondly, the analysis clearly indicates that current operations will continue to degrade water quality in the basin failing to comply with the State’s Anti-Degradation Policy. MSWD, in its previous comments, requested that the SNMP include an evaluation of a no degradation option and associated costs to confirm that the recommended program will maintain the highest water quality which is reasonable while considering all demands being made. A strict non-degradation option may be the appropriate option for the Coachella Valley.

L. Section 7.2.2, Source Water Quality Management, Desalination of Colorado River Water

Apparently, CVWD has completed a pilot study for treating Colorado River Water. MSWD requests a copy of the study to review its conclusion and recommendations.

¹²Mission Creek/Garnet Hill Water Management Plan, Final Report, January 2013, Section 5 – Issues, Strategies, and Plan Evaluation, Groundwater Overdraft.

M. Section 8.4, Data Gaps

As indicated, data gaps limit the ability to adequately characterize groundwater quality. Therefore, conclusions presented in the draft plan are not sufficiently supported by historic data. These data gaps must be addressed prior to any consideration of report recommendations being included in a Basin Plan Amendment.

N. Closing

MSWD's comments to TM 1 and 2 have largely been ignored. Our role as a Stakeholder, rather than a project managing partner, has proven to be ineffective. If MSWD's comments continue to be ignored, MSWD may elect to prepare its own more detailed SNMP to properly manage recycled and imported water in the MCMZ rather than be subject to the generic SNMP proposed for the entire valley.

If you need any clarification, please advise.

Attachment: EnviroLogic Resources, Inc. letter dated May 14, 2015