

**Central Valley Regional Water Quality Control Board
Board Meeting – 18/19 February 2016**

**Response to Written Comments for
The City of Modesto and the City of Turlock
North Valley Regional Recycled Water Program
Tentative NPDES Permit Adoption (CA0085316)**

The following are Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff responses to comments submitted by interested parties regarding the Tentative NPDES Permit adoption (NPDES Permit No. CA0085316) for the Cities of Modesto and Turlock (Dischargers), North Valley Regional Recycled Water Program (Program), Stanislaus County.

The Tentative Order was issued for a 30-day public comment period on 25 November 2015 with comments due by 28 December 2015. The Central Valley Water Board received public comments regarding the Tentative Order by the due date from the Dischargers, the United States Bureau of Reclamation (USBR), the State Water Contractors (SWC), and the Central Valley Clean Water Association (CVCWA). As discussed below, some changes were made to the proposed order based on public comments received.

The submitted comments were accepted into the record, and are summarized below, followed by Central Valley Water Board staff responses.

Cities of Modesto and Turlock (Dischargers)

Discharger Comments Nos. 3 and 23. Request for Alternate Due Date for Bis (2-ethylhexyl) phthalate Pollutant Evaluation and Minimization Plan. Section VI.C.3.b
Section VI.C.3.b of the Limitations and Discharge Requirements of the Tentative Order require the City of Turlock to prepare and submit a Bis (2-ethylhexyl) phthalate Pollutant Evaluation and Minimization Plan. The Dischargers have requested that the deadline for submittal of the Bis (2-ethylhexyl) phthalate Pollutant Evaluation and Minimization Plan be changed from 1 November 2016 to “1 November 2016 or sixty days before initiation of discharge by the City of Turlock to the Delta-Mendota Canal.”

Response. Central Valley Water Board staff concurs that the due date for submittal of the Bis (2-ethylhexyl) phthalate Pollutant Evaluation and Minimization Plan can be delayed because the discharge is not expected until December 2017. Central Valley Board staff has changed the deadline to submit the Bis (2-ethylhexyl) phthalate Pollutant Evaluation and Minimization Plan to 1 November 2017 to align with the anticipated initiation of discharge to the Delta-Mendota Canal.

Discharger Comment No. 16. Request for Alternate Due Date for Salinity Source Control Program. Attachment E Section X.D.1

Section VI.C.3.a of the Limitations and Discharge Requirements of the Tentative Order require the City of Modesto and the City of Turlock to continue to implement Salinity Source Control Programs to ensure adequate measures are developed and implemented by the Cities to reduce the discharge of salinity to the Delta-Mendota Canal. The Dischargers are required to separately prepare annual reports demonstrating reasonable progress in the reduction of salinity. Tables E-11 and E-12, Section X.D.1 of the Monitoring and Reporting Program (MRP) located in Attachment E of the Tentative Order, specify that these annual reports be submitted to the Central Valley Water Board annually on or before 1 June. The Dischargers have

requested that Table E-11 and E-12 be modified to delay the due date for the progress reports until 1 June following the initiation of discharge to the DMC, which is expected in about two years.

Response. Central Valley Water Board staff concur that submittal of the progress reports should not be required until after discharge is initiated to the Delta-Mendota Canal, which is expected in December 2017. Tables E-11 and E-12 have been modified as shown below in underline/strikeout format.

Table E-11 Reporting Requirements for Special Provisions Reports for the City of Turlock RWQCF

Special Provision	Reporting Requirements
Mixing Zone Validation Study, Work Plan and Schedule (Special Provision VI.C.2.b)	Within 120 days after the initiation of the discharge to the Delta-Mendota Canal
Mixing Zone Validation Study, Final Study Report (Special Provision VI.C.2.b)	Within 1 year of submission of the work plan and schedule
Salinity Source Control Program, Annual Reports (Special Provision VI.C.3.a)	1 June , annually (<u>beginning 1 June 2018</u>) ¹

^{1.} Submittal of the annual reports are only required if the discharge to the DMC has been initiated. Otherwise, the Discharger can submit a letter by the due date indicating discharge to the DMC has not initiated.

Table E-12 Reporting Requirements for Special Provisions Reports for the City of Modesto WQCF

Special Provision	Reporting Requirements
Salinity Source Control Program, Annual Reports (Special Provision VI.C.3.a)	1 June , annually (<u>beginning 1 June 2018</u>) ¹

^{1.} Submittal of the annual reports are only required if the discharge to the DMC has been initiated. Otherwise, the Discharger can submit a letter by the due date indicating discharge to the DMC has not initiated.

Discharger Comment No. 17. Request for Alternate Due Date for Analytical Methods Report Attachment E Section X.S.3.

Section X.D.3 of the MRP found in Attachment E of the Tentative Order requires, within 60 days of permit adoption, the Dischargers to submit a report outlining reporting levels (RL's), method detection limits (MDL's), and analytical methods for the constituents listed in tables E-2, E-3, E-4, E-6, E-7, and E-8 (Analytical Methods Report). The Dischargers have requested that the Central Valley Water Board include language that requires these reports to be submitted 60 days prior to the initiation of discharge.

Response. Central Valley Water Board staff concurs that the due date for submittal of the Analytical Methods Report can be delayed because the discharge is not expected until December 2017. Therefore, Section X.d.3 of the MRP has been updated to require the Dischargers to submit the Analytical Methods Report by 1 November 2017.

Discharger Comment No. 18. Electronic Self-Monitoring Report (eSMR) Submittal (Attachment E, Section X.B.2).

The Dischargers have requested the addition of the following clarifying language in this section:

The Discharger shall report in the SMR the results for all monitoring specified in this MRP under sections III through IX. The City of Turlock and the City of Modesto are only required to report for monitoring related to their facilities. While receiving water monitoring may be a shared activity, both cities shall report the results of the shared monitoring. The Discharger shall submit monthly, quarterly, semiannual, and annual SMR's including the results of all required monitoring using U.S. EPA-approved test methods or other test methods specified in this Order. These reports may be combined to include results from a more frequent sample collection (e.g., a quarterly report can be used to report monthly results), if the reports clearly identify the reporting frequency type.

Response. Central Valley Water Board staff does not concur with the requested changes. eSMR's are submitted through the California Water Quality Integrated System (CIWQS). At this time CIWQS is only able to handle one eSMR per monitoring period for each regulatory measure. Therefore, the Dischargers are jointly responsible for submitting each required eSMR and will not be able to individually report the shared monitoring data as requested. In addition, each monitoring report included in the proposed Order must be loaded into CIWQS and cannot be combined. For example, monthly monitoring requirements must be submitted in the monthly eSMR and quarterly monitoring requirements must be submitted in the quarterly eSMR.

Discharger Comments on Minor Clarifications and Edits.

The Discharger requested other minor clarifications and editorial changes to the Tentative Order. Central Valley Water Board staff concurs with the Discharger’s suggested changes and has modified the proposed Order accordingly. Editorial and clarifying edits made to the proposed Order can be seen in the following table.

Discharger’s Factual Comments on the Tentative Permit	
Location	Comment
Limitations and Discharge Requirements Section V.A.	Correct missing space after (Discharge Point No. 002)
Limitations and Discharge Requirements Section V.A.15	Update receiving water locations to distinguish the Delta-Mendota Canal locations from existing San Joaquin River locations as follows: Temperature. <i>The natural temperature to be increased by more than 5°F. Compliance to be determined based on the difference in temperature at Monitoring Locations RSWDMC-001 and RSWDMC-002.</i>
Maps (Attachment B)	
Attachment B	Correct the footer justification, page numbering (i.e., page “B-1” repeats), and Modesto WQCF label. Also, “Discharge point 001C” on Figure B-1 does not correspond to permit naming convention “Discharge No. 002”. Figure B-1 shows the City of Modesto’s primary facility while the secondary/tertiary facility is shown on Figures B-2 and B-3. The maps should be modified for clarity.
Monitoring and Reporting Requirements (Attachment E, Sections I through IX)	
Attachment E, Section II, Table E-1	Revise “RSW-001” and “RSW-002” site location names to “DMC-001” and “DMC-002,” respectively, to avoid confusion with existing site location names.
Attachment E, Section II, Table E-1	Last row of table, insert space between “2” and “treatment”.
Attachment E, Section II, Table E-1	Last two rows of table. The City of Modesto requests that the UV treatment effluent be referred to as “UVS-001A” for the Phase 1 system and “UVS-002A” for the Phase 2 system. The City of Modesto uses these values in their data tracking systems. “UVS-001” and “UVS-002” currently refer to their respective UV system influents.
Attachment E, Section IV.B.1, Table E-4	Correct table cell size for last two rows.
Attachment E, Section IV.B.1, Table E-4	Footnote 11 should be revised as follows: “ <i>with a <u>maximum</u> reporting limit of 0.05 ng/L for methyl mercury and 0.5 ng/L for total mercury.</i> ”
Attachment E, Section IV.C.1, Table E-5	Footnote 8 should be revised as follows: “ <i>with a <u>maximum</u> reporting limit of 0.05 ng/L for methyl mercury and 0.5 ng/L for total mercury.</i> ”
Attachment E, Section V.B.2.c, Table E-6	Table E-6 allows the use of laboratory water or receiving water as the control, however, the text in this section only refers to receiving water. The Dischargers have requested the section be amended for clarity as follows: <i>The receiving water control shall be a grab sample obtained from Monitoring Location RSWDMC-001. <u>Laboratory water may also be used as the control water as determined by the Discharger.</u></i>

Discharger's Factual Comments on the Tentative Permit	
Location	Comment
Attachment E, Section IX.A.1.a, Table E-8	The City of Modesto requests that the site names be updated to UVS-001A and UVS-002A, to avoid confusion with existing naming conventions.
Attachment E, Section IX.B.1	The Dischargers have requested the following change to account for possible, but not expected intermittent discharge. <i>Monthly monitoring shall be conducted during 2019 (12 consecutive samples, evenly distributed throughout the year), <u>in months that discharge is occurring</u>, and the results of such monitoring shall be submitted to the Central Valley Water Board with the monthly self-monitoring reports.</i>
Attachment E, Section IX.B.2	The Dischargers have requested the following change to clarify "concurrent" sample collection as such: Concurrent Sampling. <i>Effluent and receiving water sampling shall be performed at approximately the same time <u>of day</u>, on the same date (i.e., both sites collected in the morning or afternoon or within a reasonable period on the same day). Reasonable variances from this timing are permitted if safety concerns prohibit sample collection and are adequately documented.</i>
Attachment F, Section IV.C.2.c.vi.j	The last sentence on the page is missing letters, revise to read "...bis (2-ethylhexyl) phthalate and chlorodibromomethane ...".
Attachment F, Section IV.C.3.b.iii.b	The City of Turlock requests additional clarification that the cause of bis (2-ethylhexyl) phthalate at the influent has not been determined with the following suggested revision: <i>However, the laboratory data sheets for the detected results do not indicate that the detections are the result of laboratory contamination and there is a known industrial discharger (plastic recycler) that <u>could reasonably</u> discharges bis (2-ethylhexyl) phthalate to the collection system.</i>
Attachment F, Section IV.C.4, Tables F-11 and F-12	Table F-11 and Table F-12 include effluent limitations for the City of Turlock and the City of Modesto, respectively. However, the tables do not indicate the compliance points for these effluent limitations (EFF-001A and EFF-001B, respectively). Additionally, neither table is specifically referenced in the text. For clarity, the Dischargers have requested that the applicable point of compliance be noted in the related text or in a table footnotes.
Attachment F, Section IV.D.5, Tables F-14 and F-15	Table F-14 and Table F-15 include effluent limitations for the City of Turlock and the City of Modesto, respectively. However, the tables do not indicate the compliance points for these effluent limitations (EFF-001A and EFF-001B, respectively). Additionally, neither table is specifically referenced in the text. For clarity, the Dischargers have requested that the applicable point of compliance be noted in the related text or in a table footnotes.

United States Bureau of Reclamation (USBR)

USBR Comments No. 1 & 2. Calendar Year Annual Average Electrical Conductivity Effluent Limitations. Section IV.A.1.i and Section IV.A.2.h.

Sections IV.A.1.i and IV.A.2.h of the Limitations and Discharge Requirements prescribe annual average effluent limitations for electrical conductivity for the effluent for the City of Turlock and the City of Modesto, respectively, prior to being combined for discharge to the DMC. The USBR commented that the calendar year annual average electrical conductivity effluent limitation does not state a sampling interval to create the annual average and requested clarification regarding how frequently sampling must be performed to create the annual average. Furthermore, the USBR recommends a monthly, or more frequent, sampling interval.

Response. Central Valley Water Board staff concurs. The Tentative Order contains a weekly effluent monitoring requirement for electrical conductivity for both facilities. Instructions for determining compliance with the annual average effluent electrical conductivity limitations can be found in Section VII.I of the Limitations and Discharge Requirements, which states, "Compliance with the calendar year annual average effluent limitations for electrical conductivity shall be determined by calculating the sum of all daily discharges measured during a calendar year divided by the number of daily discharges measured during that year."

USBR Comment No. 3. Compliance with Receiving Water Limitations. Section V.A.

Section V.A of the Limitations and Discharge Requirements prescribe receiving water limitations that ensure that the beneficial uses of the DMC will not be impacted by the discharge from the NVRRWP. USBR requested clarification as to why downstream receiving water monitoring at RSW-002 is not required in order to establish compliance with all receiving water limitations prescribed in Section V.A of the Limitations and Discharge Requirements.

Response. The receiving water limitations in the proposed Order are based on water quality objectives included in the Water Quality Control Plan for the Sacramento and San Joaquin River Basins (Basin Plan). Effluent and receiving water monitoring requirements are included in the proposed Order to evaluate compliance with the receiving water limits. Receiving water monitoring is included for constituents of concern that may be associated with discharges from publicly-owned treatment works. For example, the proposed Order contains upstream and downstream receiving water monitoring requirements for turbidity, dissolved oxygen, pH, and temperature to evaluate compliance with the numeric receiving water limitations for these constituents. In addition to these receiving water monitoring requirements a requirement for the reporting of visual observations made in the DMC has been added to the proposed Order, which will allow Central Valley Water Board staff to evaluate compliance with most of the narrative receiving water limitations in Section V.A. (e.g., biostimulatory substances, color, floating material, oil and grease, suspended sediments, settleable substances, and suspended material). The proposed Order also contains water quality-based effluent limitations where the discharge has reasonable potential to cause or contribute to an exceedance with a water quality objective in the receiving water. Effluent monitoring is required in these situations and compliance with effluent limitations ensures compliance with the receiving water limitations (e.g., acute toxicity, chronic toxicity, and total coliform organisms). Finally, effluent and receiving water

characterization monitoring is required so a reasonable potential analysis can be conducted for the next permit renewal to evaluate if the discharge has reasonable potential to cause or contribute to an exceedance with a water quality objective in the receiving water (e.g., violate a receiving water limit). This monitoring is used to evaluate compliance with the objectives for chemical constituents and pesticides that are included as receiving water limits in the proposed Order.

The following language shown below in underline format has been added to Attachment E, Section VIII.A of the proposed Order:

2. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by DMC-001 and DMC-002 when discharging to the Delta Mendota Canal. Attention shall be given to the presence of:

- a. Floating or suspended matter;
- b. Discoloration;
- c. Bottom deposits;
- d. Aquatic life;
- e. Visible films, sheens, or coatings;
- f. Fungi, slimes, or objectionable growths; and
- g. Potential nuisance conditions.

Notes on receiving water conditions shall be summarized in the monitoring report.

USBR Comment No. 5. Constituents of Emerging Concern. Attachment E Section I.

Attachment E of the Tentative Order contains a MRP which defines specific monitoring requirements that the Dischargers must adhere to. USBR commented that the Tentative Order does not include Water Quality standards or a section to address constituents of emerging concern (CECs). USBR also requested clarification on how the Dischargers will monitor and report CECs in accordance with recycled water regulatory requirements.

Response. The discharge is a surface water discharge to the Delta Mendota Canal, and is not a direct re-use of recycled water to cropland or a groundwater aquifer. Therefore, the federal NPDES regulations for surface water discharges apply. The commenter has requested monitoring for CECs per the State Water Board's recycled water general permit. These monitoring requirements have been developed for aquifer recharge projects and have not been derived in consideration of a surface water discharge. The majority of the water discharged to the DMC will be reused downstream of the discharge by the Del Puerto Water District, therefore the proposed discharge is expected to make up only a small percentage of the downstream drinking water systems (i.e., San Luis Reservoir and the California Aqueduct). Modeling provided by the Dischargers estimates that the percentage of effluent in San Luis Reservoir ranges from 0.57%-1.00% (this is a worst case scenario with the permitted discharge and no

accounting for diversion to agricultural re-use, the actual average amount of effluent that may reach the reservoir is expected to be less than this percentage).¹ The factors for developing the CEC monitoring for the recycled water permit would not be the same for this situation. There will be significant dilution and environment factors may degrade these constituents. Central Valley Water Board staff are working with State Water Board staff to develop CEC studies and monitoring in a representative manner for POTWs and stormwater discharges to surface water. At this time there is as yet no standardized protocol for CEC monitoring or interpretation of results for surface water discharges.

USBR Comments No. 6, and 15 - 17. Availability of Monitoring Reports and Studies. Attachment E Section I.E.

Attachment E of the Tentative Order contains a MRP that requires the Dischargers to submit monitoring reports and study results to the Central Valley Water Board. USBR requested that all monitoring reports and studies for the Waste Discharge Requirements be shared with USBR and San Luis and Delta-Mendota Water Authority.

Response. All Self-Monitoring Reports (SMRs) submitted to the Central Valley Water Board are publicly available through the California Integrated Water Quality System Project (CIWQS). Furthermore, the results of all studies submitted to the Central Valley Water Board are public record and are available upon request. No changes are needed for the proposed Order to ensure the reports are available to USBR.

USBR Comment No. 7. Monitoring Station Locations. Attachment E Table E-1

Table E-1 of the MRP found in Attachment E of the Tentative Order establishes monitoring locations in order to demonstrate compliance with effluent limitations, discharge specifications, and other requirements within the Order. USBR commented on the receiving water monitoring locations in the Tentative Order, which did not provide an exact location for receiving water monitoring to be conducted. USBR recommended that the upstream receiving water monitoring location (RSW-001) be established at the farm bridge located at DMC Milepost 36.81 and that the downstream receiving water monitoring location (RSW-002) be established at either of the farm bridges at DMC Mileposts 38.14 or 41.49.

Response. Central Valley Water Board staff concurs. Since the issuance of the tentative Order the Discharger has provided Central Valley Water Board staff with coordinates for their preferred monitoring sites. The upstream receiving water monitoring location (DMC-001) has been established at the farm bridge located at 37°30'00.32" N, 121°11'45.91" W, and the downstream receiving water location (DMC—002) has been established at the farm bridge located at 37°28'56.83" N, 121°11'17.81" W. The proposed Order has been updated to reflect these changes.

¹ The modeling assumes a discharge at current permitted capacity of 29.1 million gallons per day and no NVRWP water is diverted out of the system by Del Puerto Water District for irrigation. North Valley Regional Recycled Water Program, Addendum No. 2 to Antidegradation Analysis for Proposed Recycled Water Discharge to the Delta-Mendota Canal: Updated Estimate of Far-Field Nitrate Plus Nitrite Water Quality Impacts, Technical Memorandum by Larry Walker Associates, 12 November 2015

USBR Comment No. 8. Electrical Conductivity Monitoring. Attachment E Section IV.A.1 Table E-3.

Table E-3 found in Section IV.A.1 of the MRP found in Attachment E prescribes monitoring requirements for monitoring location EFF-002, which is the final outfall into the DMC. USBR commented that additional EC monitoring is justified due to the EC impairment and TMDL for the San Joaquin River, which requires USBR to keep track of EC in the DMC.

Response. Central Valley Water Board staff agrees that this monitoring is needed. Monitoring for electrical conductivity and discharge flow is included in the Tentative Order for the individual Dischargers at monitoring locations EFF-001A and EFF-001B prior to combining in the NVRRWP outfall. This monitoring will provide sufficient salinity data to evaluate the combined salinity of the discharge at EFF-002 to the DMC for purpose of the proposed Order. Therefore, the existing monitoring provides the information requested by the commenter.

USBR Comments No. 9 & 10. Toxicity Testing. Attachment E Sections V.A. and V.B

Section V.A and V.B of the MRP found in Attachment E of the Tentative Order requires the Dischargers to individually conduct acute and chronic toxicity testing with their respective effluent prior to the combination of effluent streams to determine whether the effluent of either facility is contributing to acute toxicity to the receiving water. USBR requested clarification as to why the Tentative Order does not require acute and chronic toxicity testing of the receiving water.

Response. The proposed Order does not allow toxicity in 100% concentration of the effluent, therefore, acute and chronic bioassays are required only with the effluent prior to discharge to the DMC. This is a more stringent requirement than if the testing was allowed to be conducted downstream of the discharge after dilution. If toxicity testing is found to demonstrate that the effluent is not toxic, the discharge would not be causing toxicity in the receiving water. Therefore, the additional toxicity testing is not warranted for purposes of the proposed Order.

USBR Comment No. 11. Effluent and Receiving Water Characterization Study. Attachment E Section IX.B.1

Section IX.B.1 of the MRP found in Attachment E of the Tentative Order requires the Dischargers to sample their respective effluent and the upstream receiving water (RSW-001) for constituents found in Table E-9 in order to conduct an Effluent and Receiving Water Characterization Study. USBR requested clarification as to why the Tentative Order does not require that the Effluent and Receiving Water Characterization Study be conducted using combined effluent (EFF-002) that is being discharged to the DMC, nor the receiving water downstream of the discharge point (RSW-002).

Response. The data that is collected during the Effluent and Receiving Water Characterization Study is used to conduct a Reasonable Potential Analysis (RPA), which will be used to determine the potential of the discharge to cause or contribute to an instream excursion above the applicable water quality objectives in the DMC. The RPA is used to determine the need for water quality-based effluent limitations in future NPDES permit renewals. Conducting the RPA's separately for each discharger simplifies

the analysis. Furthermore, it is more protective because it prevents one discharge from diluting the other when a pollutant is contained in one facility discharge and not the other. Regarding the need for downstream monitoring, only upstream data is used for the RPA, because the ambient background concentrations outside the influence of the discharge are needed for the RPA.

USBR Comment No. 12. Effluent and Receiving Water Characterization Study Monitoring Frequency. Attachment E Section IX.B.1.

Section IX.B.1 of the MRP found in Attachment E of the Tentative Order requires that the Dischargers conduct monitoring of the constituents found in Table E-9 as part of the required Effluent and Receiving Water Characterization Study, and allows the Dischargers to cease monitoring for total cyanide, asbestos, dioxin, and EPA Method 608 polychlorinated biphenyls (PCB's) and chlorinated pesticides if they are not detected in the first 3 monthly samples. USBR has requested that Central Valley Water Board staff modify the proposed Order to require the Dischargers to sample the complete list of constituents in Table E-9 monthly during the irrigation season (April – August), then reduce the list to select constituents (metals, any detected pesticides, etc.)

Response. Turlock and Modesto have monitored these constituents for years and have demonstrated they are not constituents of concern in the discharges. Therefore, staff does not recommend increasing the monitoring in the proposed Order. To maximize the sampling during the irrigation season, however, the proposed Order has been modified to require the 1-year monitoring requirement to begin in June 2019, rather than in January 2019. This will ensure the first 3 monthly samples are during the irrigation season.

USBR Comment No. 13. Effluent and Receiving Water Characterization Study. Attachment E Section IX.B.1.

Section IX.B.1 of the MRP found in Attachment E of the Tentative Order requires that the Dischargers conduct monitoring of the constituents found in Table E-9 as part of the required Effluent and Receiving Water Characterization Study. USBR commented that they have previously measured many of the constituents in the DMC and would share this data with the Dischargers upon request.

Response. Central Valley Water Board staff appreciates the cooperation of the USBR and will utilize any available information provided by the USBR.

USBR Comment No. 14. Effluent and Receiving Water Characterization Study. Attachment E Section IX.B.1 Table E-9.

Section IX.B.1 of the MRP found in Attachment E of the Tentative Order requires that the Dischargers conduct monitoring of the constituents found in Table E-9 as part of the required Effluent and Receiving Water Characterization Study. Table E-9 also specifies the "Maximum Reporting Level" for these constituents. USBR has requested that Central Valley Water Board staff define this term and explain why there are no Maximum Concentration Levels (MCL) or water quality objectives for these constituents.

Response. Table E-9 includes the monitoring requirements for all priority pollutants and other constituents of concern. The column titled “Maximum Reporting Level” includes the maximum analytical laboratory reporting levels that must be used when analyzing for the constituents. The reporting levels in the table are listed for all priority pollutant constituents established based on Section 2.4.2 and Appendix 4 of the State Water Resource Control Board’s Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP). Table E-9 only provides the monitoring requirements and is not intended to describe water quality objectives or criteria; therefore, the applicable water quality objectives (e.g., maximum contaminant levels) have not been included in the table.

USBR Comment No. 18 and 19. RPA Data. Attachment F Section IV.C.2.b

Section IV.C.2.b of the Fact Sheet found in Attachment F of the Tentative Order states “The ambient background data used for both RPA’s was based on two samples for priority pollutants collected in the Delta-Mendota Canal on 30 September 2014 and 14 October 2014”. USBR commented that they have extensive flow and water quality data for the DMC headworks that will be available to the discharger. Real-time EC data for DMC Headworks is available from CDEC (Station = DMC). Section IV.C.2.c.i of the Fact Sheet found in Attachment F of the Tentative Order states “Based on flow data at Jones Pumping Plant from years 1994 through 2013, the harmonic mean flow of the Delta-Mendota Canal was 2,153 cfs”. USBR commented that they can provide the Dischargers with historical and current flow data. The volume of the pool above Check 7 is 590 acre-feet.

Response. Central Valley Water Board staff appreciates the cooperation of the USBR and will utilize any available information provided by the USBR.

USBR Comment No. 20. RPA Data. Attachment F Section IV.C.2.e Figure F-1

Figure F-1 in Section IV.C.2.e of the Fact Sheet found in Attachment F of the Tentative Order presents the “Observed Downstream Receiving Water Hardness Concentrations for January 2005 – June 2015”. USBR has requested that Central Valley Water Board staff provide citation for the data presented in Figure F-1.

Response. The ambient hardness data described in Figure F-1 is based on data collected by USBR in the DMC at McCabe Rd. Central Valley Water Board staff has updated the proposed Order to properly cite the referenced data in Figure F-1.

USBR Comment No. 21. RPA Data. Attachment F Section IV.C.3.a.i.(b)

Section IV.C.3.a.i.(b) of the Fact Sheet found in Attachment F of the Tentative Order presents the RPA results for selenium and states “The maximum ambient background concentration for selenium in the Delta-Mendota Canal was an estimated concentration of 0.72 µg/L, based on 2 samples collected by the Discharger in October 2014”. USBR commented that the concentration of selenium in this portion of the DMC is typically less than 0.4 ppb, based on daily composite measurements of selenium by Reclamation at the DMC Headworks and Check 13.

Response. This section of the Fact Sheet discusses the RPA for selenium and refers to the data that was available at the time. Considering the new information provided by

USBR there is no change to the RPA finding in the tentative Order. The proposed discharge does not have reasonable potential to cause or contribute to an exceedance of the applicable water quality objective for selenium in the Delta-Mendota Canal. However, due to the total maximum daily load (TMDL) for selenium in the Grasslands Watershed, which the Delta-Mendota Canal is tributary, monthly effluent monitoring for selenium has been proposed in the Order.

USBR Comment No. 22. Delta Regional Monitoring Program Option. Attachment F Section VII.D.1.a

Section VII.D.1.a of the Fact Sheet found in Attachment F of the Tentative Order allows the Dischargers to participate in the Delta Regional Monitoring Program (RMP) in lieu of all or part of the individual receiving water monitoring required in the MRP. USBR commented that receiving water monitoring should be required.

Response. Central Valley Water Board staff concurs and have modified the proposed Order to remove the Delta RMP participation language.

Central Valley Clean Water Association (CVCWA)

CVCWA Comment No. 1. Reasonable Potential Analysis for Nitrate Plus Nitrite.

The following is a comment submitted by CVCWA regarding the proposed nitrate plus nitrite effluent limitations for both Dischargers:

The Tentative Order includes proposed average monthly water quality-based effluent limitations for nitrate plus nitrite (as N) of 10 micrograms per liter (mg/L). The Regional Board proposes the average monthly limits because “nitrate in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the” Primary Maximum Contaminant Level (MCL), which is used to implement the narrative chemical constituents objective, and because the discharge also “has reasonable potential to cause or contribute to an exceedance of the Basin Plan’s narrative water quality objectives for biostimulatory substances and taste and odors.” CVCWA has serious concerns regarding the implementation of these narrative objectives in the Tentative Order.

To interpret the chemical constituent objective for the protection of the municipal supply (MUN) beneficial use, the Tentative Order correctly refers to the primary MCL of 10 mg/L for nitrate plus nitrite. Based on the maximum effluent concentration observed during the prior permit term, the Tentative Order finds that nitrate in the discharge has reasonable potential to exceed the primary MCL. This analysis is consistent with federal regulations. Specifically, where the permitting agency finds there is reasonable potential to exceed a narrative objective, the permitting agency must establish effluent limits using a calculated and demonstrably protective water quality criterion; Clean Water Act section 304(a) recommended criteria; an indicator parameter; or a state policy interpreting a narrative water quality criterion supplemented with other information.² The *Water Quality Control Plan for the Sacramento and*

² 40 C.F.R. § 122.44(d)(1)(vi); see also Tentative Order at p. F-13.

San Joaquin River Basins (Basin Plan) contains such a policy: the *Policy for Application of Water Quality Objectives* (Policy). The Policy in general provides that where compliance with a narrative objective is required, the Regional Board will adopt numerical limitations, on a case-by-case basis, which will implement the narrative objective.³

However, after correctly identifying a numeric criterion to interpret the chemical constituent objective for protection of MUN, i.e., the Primary MCL, the Tentative Order fails to identify any numeric criterion to implement the narrative biostimulatory substances objective and the narrative taste and odor objective. Rather, the Tentative Order includes generalized and unsubstantiated comments with regard to nutrients, and then adopts an effluent limit of 10 mg/L based on the technical capability of POTWs. This analysis conflates the numeric criterion and the narrative objectives that the Regional Board purports to be implementing. The Regional Board must identify a relevant numeric criterion and other information, which must be substantiated by evidence in the record.⁴

Accordingly, CVCWA respectfully requests that the Regional Board carefully consider its interpretation of narrative water quality objectives for establishing nitrate effluent limitations in all future permits. CVCWA understands that the Cities of Modesto and Turlock are not contesting these limitations, and thus CVCWA is not contesting them as applied in this permit as well. However, CVCWA remains concerned with the Regional Board's approach and limited justification for providing nitrate effluent limitations as done so in this permit.

Response. Based on modeling by the Discharger, the proposed discharge is estimated to increase nitrate concentrations at water export locations (i.e., San Luis Reservoir). Although the nitrate impacts from the Facility in San Luis Reservoir are minimal (i.e., estimated incremental increase of 0.05 mg/L nitrate, as N as a long-term average) there is evidence in the record that harmful algal blooms and eutrophication is occurring in the water export facilities (Archibald Consulting et al. 2012) (Heidel et al. 2006); therefore, there is no assimilative capacity for nutrients, such as nitrate, and the discharges have reasonable potential cause or contribute to exceedances of the narrative water quality objectives for biostimulatory substances and taste and odor. USEPA has established CWA section 304(a) criteria for total nitrogen that may be used to implement these narrative objectives. USEPA's December 2001, Ambient Water Quality Criteria Recommendations, Rivers and Streams in Nutrient Ecoregion 1, recommends a criterion of 0.31 mg/L for total nitrogen to address cultural eutrophication, which are the adverse effects of excess human-caused nutrient inputs. The criterion was derived for streams and rivers in Ecoregion 1, to represent surface waters that are minimally impacted by human activities and protective of aquatic life and recreational uses.

³ Basin Plan at p. IV-17.00. The Basin Plan states in full: "To evaluate compliance with the narrative water quality objectives, the Regional Water Board considers, on a case-by-case basis, direct evidence of beneficial use impacts, all material and relevant information submitted by the discharger and other interested parties, and **relevant numerical criteria** and guidelines developed and/or published by other agencies and organizations . . . In considering such criteria, the Board evaluates whether the **specific numerical criteria**, which are available through these sources and through other information supplied to the Board, are relevant and appropriate to the situation at hand and, therefore, should be used in determining compliance with the narrative objective. (*Ibid.*, emphasis added.)

⁴ See Code Civ. Proc., § 1094.5; *Asociacion de Gente Unide Por el Agua v. Central Valley Regional Water Quality Control Bd.* (2012) 210 Cal.App.4th 1255, 1268.

Although USEPA's Aggregate Ecoregion I Criteria for total nitrogen could be used to implement the narrative objectives, nutrient cycling in waterways is complex. USEPA's Ecoregion I Criteria have not been developed considering the unique nutrient needs and characteristics of the receiving water in the vicinity of the discharge; and therefore, may not be directly applicable. As part of its 2014 Delta Strategic Work Plan, the Central Valley Water Board is implementing the Delta Nutrient Research Plan to evaluate the need for nutrient objectives to protect the beneficial uses of the Delta. If applicable nutrient objectives are adopted by the Central Valley Water Board, the proposed Order includes a reopener provision so the permit may be reopened to implement the objectives.

The proposed Permit includes final average monthly and average weekly effluent limits for nitrate plus nitrite based on the primary MCL. The limits are based on the technical capability of publicly-owned treatment works. The State Water Board addressed this rationale for establishing water quality-based effluent limits for the Sacramento Regional Wastewater Treatment Plant in Order WQ 2012-0013, which states, "*Various appellate courts have held that where a complex statute requires an agency to set a numerical standard or effluent limitation, it will not overturn the agency's choice of a precise figure where it falls within the 'zone of reasonableness.'*"⁵ Average monthly and average weekly limits for nitrate plus nitrite as nitrogen are appropriate and are within the zone of reasonableness. The limits are readily achievable using standard denitrification technologies. The total nitrogen loading allowed in the proposed Permit is protective of the MUN beneficial use, and is a technologically achievable limit that will minimize the Facility's contribution to algal blooms in the Delta export system.

CVCWA Comment No. 2. Performance Based Salinity Limitations.

The following is a comment submitted by CVCWA regarding the proposed effluent limitations for electrical conductivity that would apply to both Dischargers:

CVCWA also finds it necessary to express its concerns with the inclusion of performance-based effluent limitations of 1,250 umhos/cm for electrical conductivity that is applicable to both facilities. Specifically, CVCWA is concerned that the cities will not be able to meet the effluent limitations consistently, especially in drought years when the cities rely on groundwater almost exclusively for water supply. For example, the City of Modesto's maximum observed annual average effluent for electrical conductivity was 1,152 umhos/cm. Use of groundwater for water supply purposes when surface water is limited and the act of recycling water, will undoubtedly raise the maximum observed annual average to above the performance-based limit. Thus, the City of Modesto is in serious jeopardy of violating a limitation that is supposed to be based on performance. Such jeopardy is not appropriate when establishing such a limit, and may further discourage POTWs from recycling water for beneficial uses. To avoid this problem, CVCWA recommends that the Regional Board consider a drought exception with respect to the application of this performance-based limitation. A drought exception would recognize that the

⁵ *Upper Blackstone Water Pollution Abatement Dist. v. U.S. Environmental Protection Agency*, *supra*, 690 F.3d at p. 28; *National Maritime Safety Assn. v. Occupational Safety & Health Admin.* (D.C. Cir. 2011) 649 F.3d 743, 752; *Reynolds Metals Co. v. U.S. Environmental Protection Agency* (4th Cir. 1985) 760 F.2d 549, 559.

limit is not applicable when the cities have little surface water available for supply purposes, and when they are forced to rely almost exclusively on local groundwater supplies.

Response. Central Valley Water Board staff agrees that it is important to encourage the beneficial re-use of this water and understands CVCWA's concerns regarding the proposed performance based effluent limitations for electrical conductivity. In deriving the proposed limitations, staff has taken water conservation and the drought into consideration in development of the limits (i.e., used data from the most recent unprecedented drought period). Salinity is an issue in the DMC and controls are necessary to minimize the discharge of salinity considering the need to re-use the water on crop land. Staff agrees with the concept of providing relief during drought periods but data and information is lacking to determine what the appropriate drought relief limits should be and how to implement them to ensure the DMC's beneficial uses will be reasonably protected. In order to facilitate the beneficial re-use of this water during drought periods, the Order has been revised to include a re-opener provision indicating Board staff's intent to work with the Discharger in determining and gathering the information needed to revise the EC limits to further consider drought relief (should the Discharger pursue this option).

State Water Contractors (SWC)

SWC Comment No. 1. Surface Water Augmentation with Recycled Water.

SWC requests that the Regional Water Board determine, in consultation with State Water Resources Control Board Division of Drinking Water (DDW), appropriate Tentative Permit requirements and conditions applicable for a surface water augmentation project in order to be fully protective of public health and downstream drinking water uses.

Response. Central Valley Water Board staff consulted with DDW regarding the classification of the NVRRWP as a drinking water Surface Water Augmentation project and requested a recommendation for the level of treatment to protect public health and downstream drinking water uses. DDW staff concluded that they would not classify the NVRRWP as a drinking water Surface Water Augmentation project, for which DDW is currently developing regulations. Furthermore, to protect public health DDW staff recommended the proposed Order require the discharge meet the requirements of California Code of Regulations, Title 22, sections 60301.230 and 320, and section 60321 for tertiary recycled water. The proposed Order implements DDW's recommendations.

SWC Comment No. 2. Nutrient Discharge Limits.

SWC requests that the Regional Water Board include language in the Tentative Permit to further support nutrient controls for effluent discharge to the DMC to prevent adverse impacts on downstream drinking water uses. The State Water Project and Central Valley Project are experiencing algae and aquatic macrophyte growth in the aqueducts and reservoirs. Nuisance and public health concerns associated with excess nutrients include taste and odor producing algae, algal toxins, filter clogging algae, aquatic macrophytes that clog conveyance structures, and organic carbon production. These issues may become more prevalent under drought

conditions, with warmer temperatures and low flow conditions favoring algal activity in nutrient-rich waters. The Tentative Permit lacks protection of SWP drinking water supplies through the current provisions. In addition to the proposed nitrate plus nitrite effluent limitation of 10 mg/L, the permit should require phosphorus removal and optimization of denitrification treatment processes to maintain levels below permit requirements as deemed feasible.

Response. The proposed Order recognizes the issues discussed in SWC's comments. Accordingly, the proposed Order includes effluent limitations for ammonia and nitrate plus nitrite that require the facilities implement advanced nutrient removal to ensure wastewater is nitrified and denitrified to remove nitrogen. Based on modeling conducted by the Dischargers, the estimated incremental increase in nitrate plus nitrite in the DMC and San Luis Reservoir that may be caused by the proposed discharge is minimal (i.e., an average increase of 0.09 mg/L and 0.05 mg/L nitrate plus nitrite as N, respectively).⁶ [This is a worst case scenario with the permitted discharge and no accounting for diversion to agricultural re-use, the actual average amount of increase is expected to be less than this.]

There are currently no numeric water quality objectives for nutrients (e.g., nitrogen and phosphorus) applicable to the receiving water for the specific impacts discussed in SWC's comments. The effect of nutrients is complex and there are many factors that impact algal growth, such as water temperature, residence time (e.g., flow rate of the DMC; more water flow can reduce residence time), and light limitation. There are also a number of other factors influencing the nutrient levels in the DMC, e.g., Delta influences and nutrient levels in other DMC water sources. Therefore, a regional approach to evaluate nutrients is needed, rather than individual monitoring or studies. As part of its 2014 Delta Strategic Work Plan, the Central Valley Water Board is implementing the Delta Nutrient Research Plan to evaluate the need for nutrient objectives to protect beneficial uses of the Delta. As part of this effort, the Central Valley Water Board is developing a science research plan to evaluate and support decisions on policies for nutrient management. For example, based on initial white paper findings regarding cyanobacteria⁷, nitrogen and phosphorus concentrations are not the only driver for initiating algal blooms; however, it is stipulated that the longevity and persistence of the blooms is influenced by available nutrients.

The proposed Order includes a reopener provision so the Order can be reopened to add additional monitoring requirements or effluent limitations if data gaps are identified through the Delta Nutrient Research Plan or nutrient objectives are adopted by the Central Valley Water Board.

⁶ North Valley Regional Recycled Water Program, Addendum No. 2 to Antidegradation Analysis for Proposed Recycled Water Discharge to the Delta-Mendota Canal: Updated Estimate of Far-Field Nitrate Plus Nitrite Water Quality Impacts, Technical Memorandum by Larry Walker Associates, 12 November 2015

⁷ Berg M and Sutula M. 2015. Factors affecting the growth of cyanobacteria with special emphasis on the Sacramento-San Joaquin Delta. Southern California Coastal Water Research Project Technical Report 869 August 2015.

SWC Comment No. 3. Antidegradation Policy.

SWC commented that the increased nitrate and phosphorus concentrations and loadings are inconsistent with the state and federal anti-degradation policies. The draft surface water augmentation regulations being developed by DDW prescribe treatment requirements that would result in best practicable treatment or control (BPTC) and assure consistency with the antidegradation policy. Whether lesser treatment requirements might also result in BPTC is beyond the scope of these comments. However, by virtue of the fact that existing treatment facilities at the City of Modesto Water Quality Control Facility already reduce nitrate to a maximum level of 6.87 mg/l (Tentative Permit, p. F-52), an average monthly nitrate plus nitrite limit of 10 mg/l and an average weekly nitrate plus nitrite limit of 12 mg/l (City of Turlock) and 19 mg/l (City of Modesto) clearly do not correspond to BPTC.

Response. NVRRWP developed a June 2015 *Antidegradation Analysis for Proposed Recycled Water Discharge to the Delta-Mendota Canal*, that provides an antidegradation analysis following the guidance provided by State Water Board APU 90-004. NVRRWP submitted an October 2015 *Addendum No. 1 to Antidegradation Analysis for Proposed Recycled Water Discharge to the Delta-Mendota Canal: Socioeconomic Impact Assessment of UV Disinfection Implementation at City of Turlock Regional Water Quality Control Facility* (Larry Walker Associates) and a November 2015 *Addendum No. 2 to Antidegradation Analysis for Proposed Recycled Water Discharge to the Delta-Mendota Canal: Updated Estimate of Far-Field Nitrate Plus Nitrite Water Quality Impacts*. Pursuant to the guidelines, the Antidegradation Analysis evaluated whether changes in water quality resulting from the proposed new discharge to the Delta-Mendota Canal of up to 52.7 MGD of tertiary treated wastewater are consistent with the maximum benefit to the people of the State, will not unreasonably affect beneficial uses, will not cause water quality to be less than water quality objectives, and that the discharge provides protection for existing in-stream uses and water quality necessary to protect those uses. The proposed Order includes effluent limitations for ammonia and nitrate plus nitrite that require implementation of advanced biological nutrient removal treatment to ensure wastewater is nitrified and denitrified to remove nitrogen. These technologies are considered best practicable treatment or control (BPTC) for nitrogen removal. Based on modeling conducted by the Dischargers, the estimated incremental increase in nitrate plus nitrite in the DMC and San Luis Reservoir that may be caused by the proposed discharge is minimal (i.e., an average increase of 0.09 mg/L and 0.05 mg/L nitrate plus nitrite as N, respectively).⁸ [This is a worst case scenario with the permitted discharge and no accounting for diversion to agricultural re-use, the actual average amount of nitrate/nitrite increase in the drinking water conveyances is expected to be less than this.] Thus, the state and federal anti-degradation policies have been satisfied. Additional discussion of the Discharger's Antidegradation Analysis can be found in Section IV.D.4 of the Fact Sheet located in Attachment F of the proposed Order.

⁸ North Valley Regional Recycled Water Program, Addendum No. 2 to Antidegradation Analysis for Proposed Recycled Water Discharge to the Delta-Mendota Canal: Updated Estimate of Far-Field Nitrate Plus Nitrite Water Quality Impacts, Technical Memorandum by Larry Walker Associates, 12 November 2015

SWC Comment No. 4. Mixing Zone.

SWC requests that the Regional Water Board not allow for a mixing zone and dilution credits for the City of Turlock. The State Implementation Policy (SIP) provides that “a mixing zone shall not ... 5) produce undesirable or nuisance aquatic life, ... 7) produce objectionable color, order, taste, or turbidity, ... 11) be allowed at or near any drinking water intake. A mixing zone is not a source of drinking water.” As discussed above, excess nutrients are already causing nuisance conditions, including taste and odor problems. In addition, the DMC itself serves as a drinking water intake. SWC disagrees with the Tentative Permit that “the receiving water is not at or near a drinking water intake”.

Response. Central Valley Water Board staff does not concur. As discussed in the Fact Sheet (Attachment F, Section IV.C.2.c), the proposed human carcinogen mixing zone complies with the SIP. The mixing zone is for human carcinogens that do not cause nuisance to aquatic life, or produce objectionable color, order, taste, or turbidity. The mixing zone extends 1.59 miles downstream of the discharge, while the nearest drinking water intake is the San Luis Joint-Use Complex, approximately 32.7 miles downstream of the discharge. Therefore, there are no drinking water intakes within the mixing zones and the DMC is a conveyance system; it is not a drinking water intake. Staff also considered modeling results for this project indicating under worst case conditions, the percent effluent in the reservoir (far field) would be less than 1 percent. Considering dilution and that much of the water will be diverted for agricultural re-use, the actual percent would be less. Based on these factors, staff recommends that dilution be approved for these constituents.

SWC Comment No. 5. Additional Water Quality Monitoring Requirements.

SWC requests that the monitoring requirements in the Tentative Permit be revised to include additional effluent and receiving water monitoring for drinking water constituents of concern. Specifically, SWC feels that the Tentative Permit should require additional effluent and receiving water monitoring for nutrients (nitrate, ammonia, total Kjeldahl nitrogen, and total phosphorus) and pathogens (*Cryptosporidium* and *Giardia*), as well as monitoring for nitrosamines and other constituents of emerging concern (CECs) that are not currently regulated but may have potential impacts on public health. SWC also comments that participation in the Delta RMP in lieu of conducting receiving water monitoring is not appropriate and should be removed.

Response. Central Valley Water Board staff responses are provided below.

- **Nutrients.** The proposed Order includes effluent and receiving water characterization monitoring which requires monthly monitoring of the effluent and upstream receiving water for one-year. Ammonia, nitrate, nitrite, and total phosphorous monitoring are already required. The proposed Order has been modified to add total Kjeldahl nitrogen to the effluent and receiving water characterization monitoring requirements. Effluent and upstream monitoring will allow for an evaluation of the impact of the discharge to the DMC. The Central Valley Water Board is implementing the Delta Nutrient Research Plan that will provide the information needed to develop a nutrient monitoring plan. A reopener provision is provided to allow the permit to be reopened to add monitoring if data gaps are identified through the Delta Nutrient Research Plan.

- **Microcystin.** Additional information is needed to determine specifics for microcystin monitoring, such as the particular constituents, monitoring frequencies, and monitoring locations. Microcystin monitoring at the discharge location would not provide information on the effects of the discharge for these constituents. This monitoring would need to be done as part of a coordinated regional effort that would establish baseline conditions in the DMC and consider shifts in microcystin with other available information (e.g., nutrients, flow, light, nutrient ratios, etc.). The Central Valley Water Board is implementing the Delta Nutrient Research Plan that will provide the information needed to develop a nutrient monitoring plan. A reopener provision is provided to allow the permit to be reopened to add monitoring if data gaps are identified through the Delta Nutrient Research Plan.
- **Cryptosporidium and Giardia.** Central Valley Water Board staff concur that pathogen monitoring should be required. Quarterly monitoring for Cryptosporidium and Giardia has been added to the effluent and receiving water characterization monitoring that is to be conducted during 2019.
- **CECs.** With regard to monitoring for CECs, the Central Valley Water Board staff does not concur. See response to USBR Comment No. 5.
- **Delta RMP Participate.** Central Valley Water Board staff concurs and have modified the proposed Order accordingly.