

Endangered Species Act of 1973, as amended (16 USC 1531 et seq.; Act). The biological opinion was issued to the U.S. Environmental Protection Agency, Region 9, with regard to the "Final Rule for the Promulgation of Water Quality Standards: Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California" (CTR)". The document represented the Services' final biological opinion on the effects of the final promulgation of the CTR on listed species and critical habitats in California in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 USC 1531 et seq.; Act). The biological opinion contained the following discussion with regard to water effects ratios (WERs).

"Formulas for all the hardness dependant metals also include a Water Effects Ratio (WER), a number that acts as a multiplication factor. If no site-specific WER is determined, then the WER is presumed to be 1 and would not modify a formula result. A WER purportedly accounts for the difference in toxicity of a metal in a site water relative to the toxicity of the same metal in reconstituted laboratory water. The contention is that natural waters commonly contain constituents which "synthetic" or "reconstituted" laboratory waters lack, such as dissolved organic compounds, that may act to bind metals and reduce their bioavailability. Where such constituents act to modify the toxicity of a metal in a site water compared to the toxicity of the same metal in laboratory water, a "water effect" is observed.

Example WER calculation:

Suppose the LC50 of Cu in site water is 30 µg/L.

Suppose the LC50 of Cu in laboratory water is 20 µg/L.

Assume a site hardness of 40 mg/L.

The freshwater conversion factor (CF) for Cu = 0.96.

$$\text{WER} = \frac{\text{Site LC50}}{\text{Lab LC50}} = \frac{30 \mu\text{g/L}}{20 \mu\text{g/L}} = 1.5$$

$$\begin{aligned} \text{Cu Site-Specific CCC} &= \text{WER} \times \text{CF} \times e^{(m[\ln(40)]+b)} \\ &= 1.5 \times 0.96 \times 4.3 \\ &= 6.2 \mu\text{g/L} \end{aligned}$$

What follows are discussions of the Services' concerns regarding the applications of WER, CF and the attendant translators, and deficiencies of the hardness-dependent factors in formula-based determinations of criteria for As, Cd, Cr (III), Cr (VI), Cu, Pb, Hg, Ni, Se (in saltwater), Ag, and Zn.

Water Effect Ratios

Except in waters that are extremely effluent-dominated, WERs are > 1 and result in higher numeric criteria. Note that, in the examples above, use of a site-specific WER for copper raised the criterion concentration allowed at the site from $4.1 \mu\text{g/L}$ to $6.2 \mu\text{g/L}$, an increase of 50 percent. A WER may be more important than site water hardness or metal-specific conversion factors and translators in determining a criterion and hence the metal loading allowed (see hardness and ading discussions below).

EPA has published guidelines for determining a site-specific WER, which outline procedures for water sampling, toxicity testing, acclimating test organisms, etc. (USEPA 1994). When site water toxicity is lower than laboratory water toxicity, criteria may be raised because: 1) differences in calcium to magnesium ratios in hardness between laboratory water and site water can significantly alter the WER; 2) toxicity testing for WER development is not required across the same range of test organisms used in criteria development; and 3) the inherent variabilities associated with living organisms used in toxicity testing can be magnified when used in a ratio. EPA guidelines for WER determinations (USEPA 1994) instruct users to reconstitute laboratory waters according to protocols that result in a calcium-to-magnesium ratio of ~ 0.7 across the range of hardness values (USEPA 1989, 1991). This proportion (~ 0.7) of calcium to magnesium is far less than the ratio found in most natural waters (Welsh *et al.* 1997). The Services agree with Welsh *et al.* (1997) that imbalances in Ca-to-Mg ratios between site waters and dilution waters may result in WERs which are overestimated because calcium ions are more protective of metals toxicity than are magnesium ions. The EPA has noted this problem with determining WERs but limits the suggested correction of matching the laboratory Ca-to-Mg ratio and the site ratio to a single sentence at the end of the proposed rule. Thus, the significance and correction of this problem is not adequately addressed.

EPA metal criteria are based on over 900 records of laboratory toxicity tests (USEPA 1992) using hundreds of thousands of individual test organisms, including dozens of species across many genera, trophic levels, and sensitivities to provide protection to an estimated 95 percent of the genera most of the time (USEPA 1985f). The use of a ratio based WER determined with 2 or 3 test species limits the reliability of the resultant site-specific criteria and calls into question the level of protection provided for families or genera not represented in the WER testing. The inherent variability of toxicity testing can also have a significant effect on the final WER determination, especially because it is used in a ratio. As discussed above, the EPA has developed its criteria based on a relatively large database. However, even with such a large database variability in test results can still cause difficulty in determining a criteria value. For example, Cd data were so variable that EPA abandoned the acute to chronic ratio method of determining the chronic criterion (USEPA 1985b). Instead, EPA applied the acute method to derive a chronic value. The EPA criteria document for Cd (USEPA 1985b) notes a chronic value for Chinook salmon of $1.563 \mu\text{g/L}$ with a range of 1.3 to $1.88 \mu\text{g/L}$. This is a variability of 17 percent in either direction, which is rather good (inter and intra laboratory variability higher than

17 percent is not unusual). Therefore, if this data is used in a ratio such as a WER, the variability alone could result in a 34 percent difference in the values used. A potential WER using such data could range from 0.7 to 1.4. Thus, a site-specific criteria could increase by 40 percent due to natural variability in the toxicity testing alone. In development of a site-specific WER, fewer tests are conducted and with fewer species, increasing the likelihood that natural variation in toxicity test results could affect the outcome. Care should also be taken to make sure that test results between lab and site water are significantly different. If 95 percent confidence intervals for the tests overlap then they are likely not significantly different and should not be used to determine a WER. Thus, toxicity tests should be conducted and carefully evaluated to minimize experimental variance when collecting data to calculate WERs.

Zooplanktons such as cladocerans (*Daphnia* sp.) are commonly used in bioassays to determine national and site-specific criteria or develop WERs and translation factors. As sensitive as cladocerans seem to be it is possible that the life stage of cladocerans being used in most bioassays are not the most sensitive. Shurin and Dodson (1997) found that sexual reproduction in cladocerans is more sensitive to toxicants than the asexual reproductive stage and that most bioassays utilize daphnia during the asexual phase because they are well fed and cultured under low stress situations. Under stress (low temperature, drought, low food supply) cladocerans and other zooplankton use sexual reproduction to produce resting eggs that can remain dormant for months to years until more favorable conditions return. The loss or a decrease in the production of resting eggs can have a significant long-term effect on the populations of these species. Snell and Carmona (1995) found that for a rotifer zooplankton, sexual reproduction was more strongly affected by several toxicants, including cadmium, than asexual reproduction. The authors concluded that the "level of toxicants presently allowable in surface waters . . . may expose zooplankton populations to greater ecological risks than is currently believed." Other metals may also be more toxic to the sexual stage of zooplankton adding additional doubt to the protectiveness of some criteria and WERs.

Procedures for acclimation of test organisms prior to toxicity testing may also be inadequate to assure meaningful comparisons between site and laboratory waters. For the reasons stated above, the Services believe that the EPA procedures for determining WERs for metals may result in criteria that are not protective of threatened or endangered aquatic species. Thus, WERs of three (3) or less are unacceptable because they are likely within the variance of the toxicity tests. WERs over three must be carefully developed and evaluated to ensure that listed species will be protected." The agencies agreed that: "EPA, in cooperation with the Services, will issue a clarification to the *Interim Guidance on the Determination and Use of Water-Effect Ratios for Metals* (EPA 1994) concerning the use of calcium-to-magnesium ratios in laboratory water, which can result in inaccurate and under-protective criteria values for federally listed species considered in the Services' opinion. EPA, in cooperation with the Services, will also

issue a clarification to the *Interim Guidance* addressing the proper acclimation of test organisms prior to testing in applying water-effect ratios (WERs)."

K. The Permit contains an inadequate antidegradation analysis that does not comply with the requirements of Section 101(a) of the Clean Water Act, Federal Regulations 40 CFR § 131.12, the State Board's Antidegradation Policy (Resolution 68-16) and California Water Code (CWC) Sections 13146 and 13247.

The Permit allows for a substantial increase in flow and therefore in the mass of all pollutants discharged to surface waters. The Permit summarizes without any detail an Antidegradation analysis performed by the Dischargers consultants. The Permit states how the analysis was conducted but fails to present the results of the analysis which is the basis for the permit. Federal Regulation, 40 CFR 124.6 (e) (*Applicable to State Programs*), requires that all draft permits shall be accompanied by a statement of basis, shall be based on the administrative record, shall be publically noticed and made available for public comment. It is obviously difficult to present reasonable comments on a document for which only the methodology is presented and the facts and basis for conclusions are absent.

The Antidegradation Analysis analyzed pollutants that were based on one or more of the following conditions: 1) the Facility received an effluent limitation for a particular constituent, 2) the constituent was identified as a pollutant/stressor on the 303(d) list for selected Delta waterways, 3) an adopted TMDL exists downstream of the discharge, or 4) the constituent is a historic pollutant of concern in the Delta. The Antidegradation Analysis evaluated each selected pollutant detected in the effluent and receiving water to determine if the proposed discharge increase of 7.63 mgd authorized by this Order potentially allows significant increase of the amount of pollutants present in the upstream and downstream receiving water influenced by the proposed discharge. The Antidegradation analysis should have analyzed all detected constituents and their potential to impact water quality and the beneficial uses of receiving waters. There are thousands of unregulated chemicals discharged into the environment daily. It has been clearly shown that "constituents of emerging concern": i.e. endocrine disruptors, caffeine, antibiotics are having a great detrimental impact to surface waters but are not even discussed in the City's analysis. These subjects are relevant since chlorine usage, which once oxidized many of these constituents has ceased being used at the wastewater treatment plant. In other instances, such as bis(2-ethylhexyl)phthalate the Regional Board has failed to add Effluent Limitations because they question the accuracy of the data although the chemical has been shown to be ubiquitous. There is no discussion of temperature, which the Fact Sheet indicates the wastewater treatment facility will be unable to meet objectives without construction of cooling towers. There is no discussion of EC for which the receiving stream is impaired and the discharge cannot meet limitations. Permit, Attachment G, shows that antimony, arsenic, cadmium, chromium, lead, mercury, nickel, selenium, silver, zinc, asbestos, carbon tetrachloride, dichlorobromomethane, methyl chloride, toluene, benzadine, bis(2ethylhexyl)phthalate, butylbenzyl phthalate, 1-4

dichlorobenzene, di-n-butyl phthalate, naphthalene, endrin aldehyde, iron, manganese and molybdenum were all detected in the wastewater effluent. There is no indication in the Antidegradation analysis discussion in the Permit that any of these constituents were analyzed although they will all increase in the mass discharged to surface waters with the proposed expansion of the wastewater treatment plant. There is no indication that bioaccumulative substances were evaluated. There is no indication that additive toxicity was evaluated.

CWC Sections 13146 and 13247 require that the Board in carrying out activities which affect water quality shall comply with state policy for water quality control unless otherwise directed by statute, in which case they shall indicate to the State Board in writing their authority for not complying with such policy. The State Board has adopted the Antidegradation Policy (Resolution 68-16), which the Regional Board has incorporated into its Basin Plan. The Regional Board is required by the CWC to comply with the Antidegradation Policy.

Section 101(a) of the Clean Water Act (CWA), the basis for the antidegradation policy, states that the objective of the Act is to "restore and maintain the chemical, biological and physical integrity of the nation's waters." Section 303(d)(4) of the CWA carries this further, referring explicitly to the need for states to satisfy the antidegradation regulations at 40 CFR § 131.12 before taking action to lower water quality. These regulations (40 CFR § 131.12(a)) describe the federal antidegradation policy and dictate that states must adopt both a policy at least as stringent as the federal policy as well as implementing procedures.

California's antidegradation policy is composed of both the federal antidegradation policy and the State Board's Resolution 68-16 (State Water Resources Control Board, Water Quality Order 86-17, p. 20 (1986) ("Order 86-17"); Memorandum from Chief Counsel William Attwater, SWRCB to Regional Board Executive Officers, "federal Antidegradation Policy," pp. 2, 18 (Oct. 7, 1987) ("State Antidegradation Guidance")). As a state policy, with inclusion in the Water Quality Control Plan (Basin Plan), the antidegradation policy is binding on all of the Regional Boards (Water Quality Order 86-17, pp. 17-18).

Implementation of the state's antidegradation policy is guided by the State Antidegradation Guidance, SWRCB Administrative Procedures Update 90-004, 2 July 1990 ("APU 90-004") and USEPA Region IX, "Guidance on Implementing the Antidegradation Provisions of 40 CFR 131.12" (3 June 1987) ("Region IX Guidance"), as well as Water Quality Order 86-17.

The Regional Board must apply the antidegradation policy whenever it takes an action that will lower water quality (State Antidegradation Guidance, pp. 3, 5, 18, and Region IX Guidance, p. 1). Application of the policy does not depend on whether the action will actually impair beneficial uses (State Antidegradation Guidance, p. 6). Actions that trigger use of the antidegradation policy include issuance, re-issuance, and modification of NPDES and Section

404 permits and waste discharge requirements, waiver of waste discharge requirements, issuance of variances, relocation of discharges, issuance of cleanup and abatement orders, increases in discharges due to industrial production and/or municipal growth and/or other sources, exceptions from otherwise applicable water quality objectives, etc. (State Antidegradation Guidance, pp. 7-10, Region IX Guidance, pp. 2-3). Both the state and federal policies apply to point and nonpoint source pollution (State Antidegradation Guidance p. 6, Region IX Guidance, p. 4).

The federal antidegradation regulations delineate three tiers of protection for waterbodies. Tier 1, described in 40 CFR § 131.12(a)(1), is the floor for protection of all waters of the United States (48 Fed. Reg. 51400, 51403 (8 Nov. 1983); Region IX Guidance, pp. 1-2; APU 90-004, pp. 11-12). It states that “[e]xisting instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.” Uses are “existing” if they were actually attained in the water body on or after November 28, 1975, or if the water quality is suitable to allow the use to occur, regardless of whether the use was actually designated (40 CFR § 131.3(e)). Tier 1 protections apply even to those waters already impacted by pollution and identified as impaired. In other words, already impaired waters cannot be further impaired.

Tier 2 waters are provided additional protections against unnecessary degradation in places where the levels of water quality are better than necessary to support existing uses. Tier 2 protections strictly prohibit degradation unless the state finds that a degrading activity is: 1) necessary to accommodate important economic or social development in the area, 2) water quality is adequate to protect and maintain existing beneficial uses and 3) the highest statutory and regulatory requirements and best management practices for pollution control are achieved (40 CFR § 131.12(a) (2)). Cost savings to a discharger alone, absent a demonstration by the project proponent as to how these savings are “necessary to accommodate important economic or social development in the area,” are not adequate justification for allowing reductions in water quality (Water Quality Order 86-17, p. 22; State Antidegradation Guidance, p. 13). If the waterbody passes this test and the degradation is allowed, degradation must not impair existing uses of the waterbody (48 Fed. Reg. 51403). Virtually all waterbodies in California may be Tier 2 waters since the state, like most states, applies the antidegradation policy on a parameter-by-parameter basis, rather than on a waterbody basis (APU.90-004, p. 4). Consequently, a request to discharge a particular chemical to a river, whose level of that chemical was better than the state standards, would trigger a Tier 2 antidegradation review even if the river was already impaired by other chemicals.

Tier 3 of the federal antidegradation policy states “[w]here high quality waters constitute an outstanding national resource, such as waters of national and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water shall be maintained and protected (40 CFR § 131.12(a)(3)). These Outstanding National Resource Waters (ONRW) are designated either because of their high quality or because they are important for another reason

(48 Fed. Reg. 51403; State Antidegradation Guidance, p. 15). No degradation of water quality is allowed in these waters other than short-term, temporary changes (Id.). Accordingly, no new or increased discharges are allowed in either ONRW or tributaries to ONRW that would result in lower water quality in the ONRW (EPA Handbook, p. 4-10; State Antidegradation Guidance, p. 15). Existing antidegradation policy already dictates that if a waterbody "should be" an ONRW, or "if it can be argued that the waterbody in question deserves the same treatment [as a formally designated ONRW]," then it must be treated as such, regardless of formal designation (State Antidegradation Guidance, pp. 15-16; APU 90-004, p. 4). Thus the Regional Board is required in each antidegradation analysis to consider whether the waterbody at issue should be treated as an ONRW. It should be reiterated that waters cannot be excluded from consideration as an ONRW simply because they are already "impaired" by some constituents. By definition, waters may be "outstanding" not only because of pristine quality, but also because of recreational significance, ecological significance or other reasons (40 CFR §131.12(a)(3)). Waters need not be "high quality" for every parameter to be an ONRW (APU 90-004, p. 4). For example, Lake Tahoe is on the 303(d) list due to sediments/siltation and nutrients, and Mono Lake is listed for salinity/TDC/chlorides but both are listed as ONRW.

The State Board's APU 90-004 specifies guidance to the Regional Boards for implementing the state and federal antidegradation policies and guidance. The guidance establishes a two-tiered process for addressing these policies and sets forth two levels of analysis: a simple analysis and a complete analysis. A simple analysis may be employed where a Regional Board determines that: 1) a reduction in water quality will be spatially localized or limited with respect to the waterbody, e.g. confined to the mixing zone; 2) a reduction in water quality is temporally limited; 3) a proposed action will produce minor effects which will not result in a significant reduction of water quality; and 4) a proposed activity has been approved in a General Plan and has been adequately subjected to the environmental and economic analysis required in an EIR. A complete antidegradation analysis is required if discharges would result in: 1) a substantial increase in mass emissions of a constituent; or 2) significant mortality, growth impairment, or reproductive impairment of resident species. Regional Boards are advised to apply stricter scrutiny to non-threshold constituents, i.e., carcinogens and other constituents that are deemed to present a risk of source magnitude at all non-zero concentrations. If a Regional Board cannot find that the above determinations can be reached, a complete analysis is required.

Even a minimal antidegradation analysis would require an examination of: 1) existing applicable water quality standards; 2) ambient conditions in receiving waters compared to standards; 3) incremental changes in constituent loading, both concentration and mass; 4) treatability; 5) best practicable treatment and control (BPTC); 6) comparison of the proposed increased loadings relative to other sources; 7) an assessment of the significance of changes in ambient water quality and 8) whether the waterbody was a ONRW. A minimal antidegradation analysis must also analyze whether: 1) such degradation is consistent with the maximum benefit to the people

of the state; 2) the activity is necessary to accommodate important economic or social development in the area; 3) the highest statutory and regulatory requirements and best management practices for pollution control are achieved; and 4) resulting water quality is adequate to protect and maintain existing beneficial uses. A BPTC technology analysis must be done on an individual constituent basis; while tertiary treatment may provide BPTC for pathogens, dissolved metals may simply pass through.

Any antidegradation analysis must comport with implementation requirements in State Board Water Quality Order 86-17, State Antidegradation Guidance, APU 90-004 and Region IX Guidance. The conclusory, unsupported, undocumented statements regarding preparation of the analysis without any of the supporting documentation in the Permit are no substitute for a defensible antidegradation analysis.

The antidegradation review process is especially important in the context of waters protected by Tier 2. See EPA, Office of Water Quality Regulations and Standards, *Water Quality Standards Handbook*, 2nd ed. Chapter 4 (2nd ed. Aug. 1994). Whenever a person proposes an activity that may degrade a water protected by Tier 2, the antidegradation regulation requires a state to: (1) determine whether the degradation is "necessary to accommodate important economic or social development in the area in which the waters are located"; (2) consider less-degrading alternatives; (3) ensure that the best available pollution control measures are used to limit degradation; and (4) guarantee that, if water quality is lowered, existing uses will be fully protected. 40 CFR § 131.12(a)(2); EPA, Office of Water Quality Regulations and Standards, *Water Quality Standards Handbook*, 2nd ed. 4-1, 4-7 (2nd ed. Aug. 1994). These activity-specific determinations necessarily require that each activity be considered individually.

For example, the APU 90-004 states:

"Factors that should be considered when determining whether the discharge is necessary to accommodate social or economic development and is consistent with maximum public benefit include: a) past, present, and probably beneficial uses of the water, b) economic and social costs, tangible and intangible, of the proposed discharge compared to benefits. The economic impacts to be considered are those incurred in order to maintain existing water quality. The financial impact analysis should focus on the ability of the facility to pay for the necessary treatment. The ability to pay depends on the facility's source of funds. In addition to demonstrating a financial impact on the publicly – or privately – owned facility, the analysis must show a significant adverse impact on the community. The long-term and short-term socioeconomic impacts of maintaining existing water quality must be considered. Examples of social and economic parameters that could be affected are employment, housing, community services, income, tax revenues and land value. To accurately assess the impact of the proposed project, the projected baseline socioeconomic profile of the affected community without the project should be compared

to the projected profile with the project...EPA's Water Quality Standards Handbook (Chapter 5) provides additional guidance in assessing financial and socioeconomic impacts"

The evaluation contains no comparative costs. As a rule-of-thumb, USEPA recommends that the cost of compliance should not be considered excessive until it consumes more than 2% of disposable household income in the region. This threshold is meant to suggest more of a floor than a ceiling when evaluating economic impact. In the Water Quality Standards Handbook, USEPA interprets the phrase "necessary to accommodate important economic or social development" with the phrase "substantial and widespread economic and social impact."

The antidegradation analysis must discuss the relative economic burden as an aggregate impact across the entire region using macroeconomics. Considering the intrinsic value of the Delta to the entire state and the potential effects upon those who rely and use Delta waters, it must also evaluate the economic and social impacts to water supply, recreation, fisheries, etc. from the Discharger's degradation of water quality in the Delta. Nor has the case been made that there is no alternative for necessary housing other than placing it where its wastewater must discharge directly into sensitive but seriously degraded waters. It is unfortunate that the agency charged with implementing the Clean Water Act has apparently decided it is more important to protect the polluter than the environment.

There is nothing in the Permit resembling an alternatives analysis evaluating less damaging and degrading alternatives. Unfortunately, the Permit fails to evaluate and discuss why there is no alternative other than discharging to surface waters. Other communities have successfully disposed of wastes without discharging additional pollutants to degraded rivers. A proper alternatives analysis would cost out various alternatives and compare each of the alternatives' impacts on beneficial uses.

There is nothing resembling an analysis buttressing the unsupported claim that BPTC is being provided. An increasing number of wastewater treatment plants around the country and state are employing reverse-osmosis (RO), or even RO-plus. Clearly, micro or nano filtration can be considered BPTC for wastewater discharges of impairing pollutants into critically sensitive ecological areas containing listed species that are already suffering serious degradation.

There is nothing in the Permit resembling an analysis that ensures that existing beneficial uses are protected. While the Permit identifies the constituents that are included on the 303(d) list as impairing receiving waters, it fails to discuss how and to what degree the identified beneficial uses will be additionally impacted by the discharge. Nor does the Permit analyze the incremental and cumulative impact of increased loading of non-impairing pollutants on beneficial uses. In fact, there is almost no information or discussion on the composition and health of the identified beneficial uses. Any reasonably adequate antidegradation analysis must discuss the affected

beneficial uses (i.e., numbers and health of the aquatic ecosystem; extent, composition and viability of agricultural production; people depending upon these waters for water supply; extent of recreational activity; etc.) and the probable effect the discharge will have on these uses.

Alternatively, Tier 1 requires that existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected. By definition, any increase in the discharge of impairing pollutants to impaired waterways unreasonably degrades beneficial uses and exceeds applicable water quality standards. Prohibition of additional mass loading of impairing pollutants is a necessary stabilization precursor to any successful effort in bringing an impaired waterbody into compliance.

The State Board has clearly articulated its position on increased mass loading of impairing pollutants. In Order WQ 90-05, the Board directed the San Francisco Regional Board on the appropriate method for establishing mass-based limits that comply with state and federal antidegradation policies. That 1990 order stated “[I]n order to comply with the federal antidegradation policy, the mass loading limits should also be revised, based on mean loading, concurrently with the adoption of revised effluent limits. The [mass] limits should be calculated by multiplying the [previous year’s] annual mean effluent concentration by the [four previous year’s] annual average flow (Order WQ 90-05, p. 78). USEPA points out, in its 12 November 1999 objection letter to the San Francisco Regional Board concerning Tosco’s Avon refinery, that ‘[a]ny increase in loading of a pollutant to a water body that is impaired because of that pollutant would presumably degrade water quality in violation of the applicable antidegradation policy.’”

Any project that allows a single new community to artificially minimize waste management costs by externalizing the disposal of wastes to already degraded waterways that are part of the common property right of all 36 million Californians has not met the test of “maximum benefit of the people of the State” and cannot be consistent with state and federal antidegradation policies. The proposed increase in pollutant mass loading will inescapably and detrimentally affect aquatic life, contribute to violations of water quality standards and increase the risks and costs to the millions of people who depend upon the Delta for their drinking/irrigation/recreation water. Any increase housing and/or economic expansion facilitated by the Permit will be at the expense of other communities that will incur the consequences of larger load reductions when TMDL load allocations are instituted.

NPDES permits must include any more stringent effluent limitation necessary to implement the Regional Board Basin Plan (Water Code 13377). The Tentative Permit fails to properly implement the Basin Plan’s Antidegradation Policy. The discharge must be capable of achieving 100% compliance with Effluent and Receiving Water Limitations prior to allowing the new discharge.

5. THE MANNER IN WHICH THE PETITIONERS ARE AGGRIEVED.

CSPA is a non-profit, environmental organization that has a direct interest in reducing pollution to the waters of the Central Valley. CSPA's members benefit directly from the waters in the form of recreational hiking, photography, fishing, swimming, hunting, bird watching, boating, consumption of drinking water and scientific investigation. Additionally, these waters are an important resource for recreational and commercial fisheries. Central Valley waterways also provide significant wildlife values important to the mission and purpose of the Petitioners. This wildlife value includes critical nesting and feeding grounds for resident water birds, essential habitat for endangered species and other plants and animals, nursery areas for fish and shellfish and their aquatic food organisms, and numerous city and county parks and open space areas. CSPA's members reside in communities whose economic prosperity depends, in part, upon the quality of water. CSPA has actively promoted the protection of fisheries and water quality throughout California before state and federal agencies, the State Legislature and Congress and regularly participates in administrative and judicial proceedings on behalf of its members to protect, enhance, and restore declining aquatic resources. CSPA member's health, interests and pocketbooks are directly harmed by the failure of the Regional Board to develop an effective and legally defensible program addressing discharges to waters of the state and nation.

6. THE SPECIFIC ACTION BY THE STATE OR REGIONAL BOARD WHICH PETITIONER REQUESTS.

Petitioners seek an Order by the State Board to:

- A. Vacate Order No. R5-2009-0095 (NPDES No. CA0081558) and remand to the Regional Board with instructions prepare and circulate a new tentative order that comports with regulatory requirements.
- B. Alternatively; prepare, circulate and issue a new order that is protective of identified beneficial uses and comports with regulatory requirements.

7. A STATEMENT OF POINTS AND AUTHORITIES IN SUPPORT OF LEGAL ISSUES RAISED IN THE PETITION.

CSPA's arguments and points of authority are adequately detailed in the above comments and our 9 September 2009 comment letter. Should the State Board have additional questions regarding the issues raised in this petition, CSPA will provide additional briefing on any such questions. The petitioners believe that an evidentiary hearing before the State Board will not be necessary to resolve the issues raised in this petition. However, CSPA welcomes the opportunity

to present oral argument and respond to any questions the State Board may have regarding this petition.

8. A STATEMENT THAT THE PETITION HAS BEEN SENT TO THE APPROPRIATE REGIONAL BOARD AND TO THE DISCHARGERS, IF NOT THE PETITIONER.

A true and correct copy of this petition, without attachment, was sent electronically and by First Class Mail to Ms. Pamela Creedon, Executive Officer, Regional Water Quality Control Board, Central Valley Region, 11020 Sun Center Drive #200, Rancho Cordova, CA 95670-6114. A true and correct copy of this petition, without attachment, was sent to the Discharger in care of: Mr. Phil Govea, P.E., Director of Public Works, City of Manteca, 1001 West Center Street, Manteca CA 95337.

9. A STATEMENT THAT THE ISSUES RAISED IN THE PETITION WERE PRESENTED TO THE REGIONAL BOARD BEFORE THE REGIONAL BOARD ACTED, OR AN EXPLANATION OF WHY THE PETITIONER COULD NOT RAISE THOSE OBJECTIONS BEFORE THE REGIONAL BOARD.

CSPA presented the issues addressed in this petition to the Regional Board in a 9 September 2009 comment letter that was accepted into the record.

If you have any questions regarding this petition, please contact Bill Jennings at (209) 464-5067 or Michael Jackson at (530) 283-1007.

Dated: 4 November 2009

Respectfully submitted,



Bill Jennings, Executive Director
California Sportfishing Protection Alliance

Attachment No. 1: Order No. R5-2009-0095

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

CENTRAL VALLEY REGION

11020 Sun Center Drive, #200 Rancho Cordova, California 95670-6114
Phone (916) 464-3291 • Fax (916) 464-4645
<http://www.waterboards.ca.gov/centralvalley>

ORDER NO. R5-2009-0095

NPDES NO. CA0081558

**WASTE DISCHARGE REQUIREMENTS FOR
CITY OF MANTECA and DUTRA FARMS, INC.
CITY OF MANTECA WASTEWATER QUALITY CONTROL FACILITY
SAN JOAQUIN COUNTY**

The following Dischargers are subject to waste discharge requirements as set forth in this Order:

Table 1. Discharger Information

Discharger	City of Manteca, and Dutra Farm Inc. for land parcel APN 241-320-47
Name of Facility	City of Manteca Wastewater Quality Control Facility
Facility Address	2450 West Yosemite Avenue
	Manteca, CA 95337
	San Joaquin County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a major discharge.	

The discharge by the City of Manteca from the discharge points identified below is subject to waste discharge requirements as set forth in this Order:

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Tertiary treated municipal effluent	37 ° 46' 45" N	121 ° 18' 0" W	San Joaquin River

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	8 October 2009
This Order shall become effective on:	27 November 2009
This Order shall expire on:	1 October 2014
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	<u>180 days prior to the Order expiration date</u>

I, **PAMELA C. CREEDON**, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **8 October 2009**.

Signed by Kenneth D. Landau for
PAMELA C. CREEDON, Executive Officer

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I. FACILITY INFORMATION

The following Dischargers are subject to waste discharge requirements as set forth in this Order:

Table 4. Facility Information

Discharger	City of Manteca, and Dutra Farms Inc. for land parcel APN 241-320-47
Name of Facility	City of Manteca Wastewater Quality Control Facility
Facility Address	2450 West Yosemite Avenue
	Manteca, CA 95337
	San Joaquin County
Facility Contact, Title, and Phone	Tom C. Foley, Wastewater Superintendent, (209) 456-8472
Mailing Address	1001 West Center Street Manteca CA 95337
Type of Facility	Publicly Owned Treatment Works
Facility Design Flow	9.87 million gallons per day (mgd) (with expansion to 17.5 mgd)

II. FINDINGS

The California Regional Water Quality Control Board, Central Valley Region (hereinafter Regional Water Board), finds:

A. Background. The City of Manteca (hereinafter Discharger) is currently discharging pursuant to Order No. R5-2004-0028 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0081558. The Discharger submitted a Report of Waste Discharge, dated August 2008, and applied for a NPDES permit renewal to increase the discharge from 9.87 million gallons per day (mgd) to 17.5 mgd of tertiary-level treated wastewater from City of Manteca Wastewater Quality Control Facility, hereinafter Facility. The application was deemed complete on 11 December 2008.

For the purposes of this Order, references to the “discharger” or “permittee” in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

B. Facility Description. The Discharger owns and operates a Publicly-Owned Domestic Wastewater Treatment Works. The Discharger provides sewerage service for the City of Manteca and a portion of the City of Lathrop, serving a population of approximately 80,500. The Facility is divided into two parallel treatment systems, the north and south treatment systems. Primary treatment, which is identical in both systems, consists of mechanical screening, aerated grit removal, and primary sedimentation. At the north plant, the primary effluent undergoes additional treatment through two biotowers with high-rate plastic media. The secondary treatment systems for both treatment systems are the same, which consists of conventional activated sludge, including nitrification-denitrification, followed by secondary sedimentation.

Grit and screenings are hauled offsite to a landfill for disposal. Sludge removed from primary and secondary sedimentation is thickened by dissolved air floatation, and then

pumped to anaerobic digesters. After digestion, the treated sludge is dewatered by centrifuge, and then removed offsite for disposal in a privately-owned solid waste landfill.

Undisinfected secondary effluent is mixed with food processing waste and applied to approximately 190 acres of the Discharger-owned agricultural fields and 70 acres of Dutra Farms Inc. owned agricultural fields. Dutra Farms Inc. is named as a discharger in this Order and is responsible for the proper application and management of the wastewater on its land, APN 241-320-47. All the agricultural fields grow fodder and feed crops for dairy feed. Both Dischargers are jointly responsible for maintaining the pipeline from the Facility to the Dutra Farms property.

Excess secondary effluent undergoes tertiary treatment through coagulation and flocculation, cloth media filtration, and ultraviolet light pathogen deactivation (UV Disinfection). Disinfected tertiary level treated effluent is discharged from Discharge Point No. 001 (see table on cover page) to the San Joaquin River. The San Joaquin River is a water of the United States, within the Sacramento-San Joaquin Delta. The Discharger also provides disinfected tertiary-level treated effluent for reuse for construction purposes (e.g. dust control).

Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility and a map of the Discharger and Dutra Farms Inc.'s agricultural fields.

- C. Legal Authorities.** This Order is issued pursuant to section 402 of the Clean Water Act (CWA) and implementing regulations adopted by USEPA and chapter 5.5, division 7 of the California Water Code (CWC; commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the CWC (commencing with section 13260).
- D. Background and Rationale for Requirements.** The Regional Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for Order requirements, is hereby incorporated into this Order and constitutes part of the Findings for this Order. Attachments A through E and G through I are also incorporated into this Order.
- E. California Environmental Quality Act (CEQA).** Under CWC section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100-21177.
- F. Technology-based Effluent Limitations.** Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations (40 CFR 122.44), require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based

G. Water Quality-Based Effluent Limitations (WQBELs). Section 301(b) of the CWA and 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains requirements, expressed as a technology equivalence requirement, that are necessary to achieve water quality standards. The Regional Water Board has considered the factors listed in CWC section 13241 in establishing these requirements. The rationale for these requirements, which consist of tertiary treatment or equivalent requirements, is discussed in the Fact Sheet.

40 CFR 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in 40 CFR 122.44(d)(1)(vi).

H. Water Quality Control Plans. The Regional Water Board adopted a Water Quality Control Plan, Fourth Edition (Revised October 2007), for the Sacramento and San Joaquin River Basins (hereinafter Basin Plan) on 1 September 1998 that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to the San Joaquin River within the Sacramento-San Joaquin Delta are as follows:

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	San Joaquin River within the Sacramento-San Joaquin Delta	Existing: Municipal and domestic supply (MUN); agricultural supply, including irrigation and stock watering (AGR); industrial process supply (PROC); industrial service supply (IND); water contact recreation (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); migration of aquatic organisms, warm and cold (MIGR); spawning, reproduction, and/or early development, warm (SPWN); wildlife habitat (WILD); and navigation (NAV).
	Underlying Ground waters	Municipal and domestic supply (MUN), agricultural supply and stock watering (AGR), industrial process water supply (PROC), and industrial service supply (IND).

The Basin Plan includes a list of Water Quality Limited Segments (WQLSs), which are defined as "...those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 CFR 130, et seq.)." The Basin Plan also states, "Additional treatment beyond minimum federal standards will be imposed on dischargers to WQLSs. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment." The southern portion of the Sacramento-San Joaquin Delta Waterways is listed as a WQLS for chlorpyrifos, DDT, diazinon, electrical conductivity, exotic species, group A pesticides, mercury, and unknown toxicity in the 303(d) list of impaired water bodies. Effluent limitations for mercury, electrical conductivity, and acute and chronic whole effluent toxicity are included in this Order.

The State Water Board adopted the *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California* (Thermal Plan) on 18 May 1972, and amended this plan on 18 September 1975. This plan contains temperature objectives for surface waters. This Order contains effluent and receiving water limitations, which are necessary to implement the Thermal Plan.

The *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary* (Bay-Delta Plan) was adopted in May 1995 by the State Water Board superseding the 1991 Bay-Delta Plan. The Bay-Delta Plan identifies the beneficial uses of the estuary and includes objectives for flow, salinity, and endangered species protection.

The Bay-Delta Plan attempts to create a management plan that is acceptable to the stakeholders while at the same time is protective of beneficial uses of the Sacramento – San Joaquin Delta. The State Water Board adopted Decision 1641 (D-1641) on 29 December 1999. D-1641 implements flow objectives for the Bay-Delta Estuary, approves a petition to change points of diversion of the Central Valley Project and the

State Water Project in the Southern Delta, and approves a petition to change places of use and purposes of use of the Central Valley Project. The water quality objectives of the Bay-Delta Plan are implemented as part of this Order.

Requirements of this Order specifically implement the applicable Water Quality Control Plans.

- I. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on 22 December 1992, and later amended it on 4 May 1995 and 9 November 1999. About 40 criteria in the NTR applied in California. On 18 May 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on 13 February 2001. These rules contain water quality criteria for priority pollutants.
- J. **State Implementation Policy.** On 2 March 2000, the State Water Board adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP). The SIP became effective on 28 April 2000 with respect to the priority pollutant criteria promulgated for California by USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on 18 May 2000 with respect to the priority pollutant criteria promulgated by USEPA through the CTR. The State Water Board adopted amendments to the SIP on 24 February 2005 that became effective on 13 July 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.
- K. **Compliance Schedules and Interim Requirements.** In general, an NPDES permit must include final effluent limitations that are consistent with CWA section 301 and with 40 CFR 122.44(d). There are exceptions to this general rule. The State Water Board has concluded that where the Regional Water Board's Basin Plan allows for schedules of compliance and the Regional Water Board is newly interpreting a narrative standard, it may include schedules of compliance in the permit to meet effluent limits that implement a narrative standard. See *In the Matter of Waste Discharge Requirements for Avon Refinery* (State Water Board Order WQ 2001-06 at pp. 53-55). See also *Communities for a Better Environment (CBE) et al. v. State Water Resources Control Board*, 34 Cal.Rptr.3d 396, 410 (2005). The Basin Plan for the Sacramento and San Joaquin Rivers includes a provision that authorizes the use of compliance schedules in NPDES permits for water quality objectives that are adopted after the date of adoption of the Basin Plan, which was 25 September 1995 (see Basin Plan at page IV-16). Consistent with the State Water Board's Order in the CBE matter, the Regional Water Board has the discretion to include compliance schedules in NPDES permits when it is including an effluent limitation that is a "new interpretation" of a narrative water quality objective. This conclusion is also consistent with USEPA policies and administrative decisions. See, e.g., *Whole Effluent Toxicity (WET) Control Policy*. The Regional Water Board, however, is not required to include a schedule of compliance, but may issue a Time Schedule Order pursuant to CWC section 13300 or a Cease and Desist Order pursuant to CWC section 13301 where it finds that the discharger is violating or threatening to violate the permit. The Regional Water Board will consider the merits of

each case in determining whether it is appropriate to include a compliance schedule in a permit, and, consistent with the Basin Plan, should consider feasibility of achieving compliance, and must impose a schedule that is as short as practicable to achieve compliance with the objectives, criteria, or effluent limit based on the objective or criteria.

Section 2.1 of the SIP provides that, based on a Discharger's request and demonstration that it is infeasible for an existing Discharger to achieve immediate compliance with an effluent limitation derived from a CTR criterion, compliance schedules may be allowed in an NPDES permit. Unless an exception has been granted under section 5.3 of the SIP, a compliance schedule may not exceed 5 years from the date that the permit is issued or reissued, nor may it extend beyond 10 years from the effective date of the SIP (or 18 May 2010) to establish and comply with CTR criterion-based effluent limitations. Where a compliance schedule for a final effluent limitation exceeds 1 year, the Order must include interim numeric limitations for that constituent or parameter. Where allowed by the Basin Plan, compliance schedules and interim effluent limitations or discharge specifications may also be granted to allow time to implement a new or revised water quality objective. This Order does not include compliance schedules and interim effluent limitations or discharge specifications.

L. Alaska Rule. On 30 March 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards become effective for CWA purposes. (40 CFR 131.21 and 65 FR 24641 (27 April 2000).) Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after 30 May 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by 30 May 2000 may be used for CWA purposes, whether or not approved by USEPA.

M. Stringency of Requirements for Individual Pollutants. This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on BOD, TSS, and pH. The WQBELs consist of restrictions on aluminum, ammonia, total coliform organisms, copper, electrical conductivity, methylene blue active substances, and nitrate plus nitrite. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order includes effluent limitations for pathogens to meet numeric objectives or protect beneficial uses.

WQBELs have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR 131.38. The scientific procedures for calculating the individual WQBELs for priority pollutants are based on the CTR-SIP, which was approved by USEPA on 18 May 2000. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to 30 May 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to 30 May 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the

[Clean Water] Act” pursuant to 40 CFR 131.21(c)(1). Collectively, this Order’s restrictions on individual pollutants are no more stringent than required to implement the technology-based requirements of the CWA and the applicable water quality standards for purposes of the CWA.

- N. Antidegradation Policy.** 40 CFR 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California’s antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board’s Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. As discussed in detail in the Fact Sheet, the permitted discharge is consistent with the antidegradation provision of 40 CFR 131.12 and Resolution No. 68-16.
- O. Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. Some effluent limitations in this Order are less stringent than those in Order No. R5-2004-0028. As discussed in detail in the Fact Sheet, this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.
- P. Endangered Species Act.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The discharger is responsible for meeting all requirements of the applicable Endangered Species Act.
- Q. Monitoring and Reporting.** 40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. CWC sections 13267 and 13383 authorize the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. The Monitoring and Reporting Program is provided in Attachment E.
- R. Standard and Special Provisions.** Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR 122.42. The Regional Water Board has also included in this Order special provisions applicable to the Discharger. A rationale for the special provisions contained in this Order is provided in the Fact Sheet.

- S. Provisions and Requirements Implementing State Law.** The provisions/requirements in sections IV.B, IV.C, V.B, and VI.C.4.a of this Order are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.
- T. Notification of Interested Parties.** The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet of this Order.
- U. Consideration of Public Comment.** The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet.

THEREFORE, IT IS HEREBY ORDERED, that Waste Discharge Requirements Order No. R5-2004-0028 and Cease and Desist Order No. R5-2004-0029 are rescinded, and also coverage under Resolution No. R5-2008-0182 is terminated, upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the CWC (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

III. DISCHARGE PROHIBITIONS

1. Discharge of wastewater at a location or in a manner different from that described in the Findings is prohibited.
2. The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Federal Standard Provisions I.G. and I.H. (Attachment D).
3. Neither the discharge nor its treatment shall create a nuisance as defined in section 13050 of the CWC.
4. The Discharger shall not allow pollutant-free wastewater to be discharged into the collection, treatment, and disposal system in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.
5. Discharge or application of waste classified as 'hazardous', as defined in CCR, Title 23, Section 2521(a), or 'designated', as defined in CWC Section 13173, is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point No. 001

1. Final Effluent Limitations (9.87 mgd) – Discharge Point No. 001

- a. **Effective immediately**, the Discharger shall maintain compliance with the following effluent limitations at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001 as described in the Monitoring and Reporting Program:

Table 6. Effluent Limitations (9.87 mgd)

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand 5-day @ 20°C (BOD ₅)	mg/L	10	15	20		
	lbs/day ¹	820	1235	1647		
Total Suspended Solids	mg/L	10	15	20		
	lbs/day ¹	820	1235	1647		
pH	standard units				6.5	8.0
Total Coliform Organisms	MPN/100ml					240
Aluminum, Total Recoverable	µg/L	407		750		
Copper, Total Recoverable	µg/L	10		13		
Nitrate plus Nitrite (as N)	mg/L	10				
Methylene blue active substances (MBAS)	µg/L	500				
Ammonia, Total (as N)	mg/L	1.4		3.4		
	lbs/day	115		280		
Electrical Conductivity (1 April to 31 August)	µmhos/cm	700				
Electrical Conductivity (1 Sept to 31 March)	µmhos/cm	1000				

¹ Based on an average dry weather flow of 9.87 mgd

- b. **Percent Removal.** The average monthly percent removal of 5-day biochemical oxygen demand (BOD₅) and total suspended solids (TSS) shall not be less than 85 percent.
- c. **Acute Whole Effluent Toxicity.** Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
- i. 70%, minimum for any one bioassay; and
 - ii. 90%, median for any three consecutive bioassays.

- d. **Temperature.** The maximum temperature of the discharge shall not exceed the natural receiving water temperature by more than 20°F.
- e. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed:
 - i. 2.2 most probable number (MPN) per 100 mL, as a 7-day median; and
 - ii. 23 MPN/100 mL, more than once in any 30-day period.
- f. **Average Dry Weather Flow.** The average dry weather discharge flow shall not exceed 9.87 mgd.
- g. **Chronic Whole Effluent Toxicity.** There shall be no chronic toxicity in the effluent discharge.
- h. **Aluminum.** The discharge of total recoverable aluminum shall not exceed a concentration of 200 µg/L as a calendar annual average

2. Final Effluent Limitations (17.5 mgd) – Discharge Point No. 001

- a. **Effective upon compliance with Special Provision VI.C.6.c,** the Discharger shall maintain compliance with the following effluent limitations at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001 as described in the Monitoring and Reporting Program:

Table 7. Effluent Limitations (17.5 mgd)

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand 5-day @ 20°C (BOD ₅)	mg/L	10	15	20		
	lbs/day ¹	1460	2190	2920		
Total Suspended Solids	mg/L	10	15	20		
	lbs/day ¹	1460	2190	2920		
pH	standard units				6.5	8.0
Total Coliform Organisms	MPN/100ml					240
Aluminum, Total Recoverable	µg/L	407		750		
Copper, Total Recoverable	µg/L	10.2		13.0		
Nitrate plus Nitrite (as N)	mg/L	10				
Methylene blue active substances (MBAS)	µg/L	500				
Ammonia, Total (as N)	mg/L	1.4		3.4		
	lbs/day	204		497		
Electrical Conductivity (1 April to 31 August)	µmhos/cm	700				
Electrical Conductivity (1 Sept to 31 March)	µmhos/cm	1000				

¹ Based on an average dry weather flow of 17.5 mgd

- b. Percent Removal.** The average monthly percent removal of 5-day biochemical oxygen demand (BOD₅) and total suspended solids (TSS) shall not be less than 85 percent.
- c. Acute Whole Effluent Toxicity.** Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
 - i. 70%, minimum for any one bioassay; and
 - ii. 90%, median for any three consecutive bioassays.
- d. Temperature.** The maximum temperature of the discharge shall not exceed the natural receiving water temperature by more than 20°F.
- e. Total Coliform Organisms.** Effluent total coliform organisms shall not exceed:
 - i. 2.2 most probable number (MPN) per 100 mL, as a 7-day median; and
 - ii. 23 MPN/100 mL, more than once in any 30-day period.
- f. Average Dry Weather Flow.** The average dry weather discharge flow shall not exceed 17.5 mgd.
- g. Chronic Whole Effluent Toxicity.** There shall be no chronic toxicity in the effluent discharge.
- h. Aluminum.** The discharge of total recoverable aluminum shall not exceed a concentration of 200 µg/L as a calendar annual average

3. Interim Effluent Limitations

- a. Mercury.** The total annual mass discharge of total mercury shall not exceed 0.69 pounds per calendar year. This interim performance-based limitation shall be in effect until the Regional Water Board establishes final effluent limitations after adoption of the Sacramento-San Joaquin Delta Methylmercury TMDL.

B. Land Discharge Specifications

The Discharger, and Dutra Farms Inc. at land parcel APN 241-320-47, shall maintain compliance with the following land discharge specifications. Loading calculations shall be performed as specified in the attached MRP (Attachment E), Section X.B.3.

- 1. Hydraulic Loading.** The hydraulic loading to any individual agricultural field (As shown in Attachment C-2) shall be at agronomic rates considering the crop, soil, climate, and irrigation management system, and designed to minimize percolation of wastewater constituents below the evaporative and root zone (i.e., deep percolation).
- 2. Total Nitrogen.** The total nitrogen loading to any individual agricultural field (As shown in Attachment C-2) shall not exceed the agronomic rate for plant available nitrogen (PAN) for the type of crop to be grown, as specified in the most recent edition of the Western Fertilizer Handbook.

3. **BOD₅** The BOD₅ loading rate to any individual agricultural field (As shown in Attachment C-2) shall ensure compliance with Discharge Prohibition III.C and Groundwater Limitations V.B. and shall not exceed 300 lbs/acre/day as a daily maximum.
4. The discharge of waste classified as "hazardous" as defined in section 2521(a) of Title 23, California Code of Regulations (CCR), or "designated", as defined in section 13173 of the CWC, is prohibited.
5. Wastewater may not be used for irrigation purposes during periods of significant precipitation, and for at least 24 hours after cessation of significant precipitation, or when soils are saturated. Significant rainfall is defined as 0.25 inches during a 24-hr period.
6. Stormwater runoff from the agricultural fields shall not be discharged to any surface waters or surface water drainage courses within thirty days of the last application of irrigation waters.
7. All tailwater shall be managed as described in the Fact Sheet (Attachment F, page F-5).
8. Areas irrigated with effluent shall be managed to prevent breeding of mosquitoes. More specifically:
 - a. All applied irrigation water must infiltrate completely within 24 hours.
 - b. Ditches not serving as wildlife habitat should be maintained free of emergent, marginal, and floating vegetation.
 - c. Low-pressure and un-pressurized pipelines and ditches, which are accessible to mosquitoes, shall not be used to store reclaimed water.
9. Land discharge of effluent shall comply with the following setback requirements:

Setback Definition ¹	Minimum Irrigation Setback (feet)
Edge of land application area to property boundary	50
Edge of land application area to a public road	50
Edge of land application area to an irrigation well	100
Edge of land application area to a domestic well	100
Edge of land application area to a manmade or natural surface water drainage course ² or spring	50

¹ As defined by the wetted area produced during irrigation.

² Excluding ditches used exclusively for tailwater return

C. Reclamation Specifications

1. All uses of reclaimed water shall be in compliance with *Title 22, Division 4, Chapter 3. Water Recycling Criteria, et.seq.*
2. All reclaimed water equipment, pumps, piping, valves, and outlets shall be appropriately marked to differentiate them from potable facilities, and these shall be of a type, or secured in a manner, that permits operation by authorized personnel only.
3. **For Undisinfected Secondary Treated Effluent either discharged to land or to the ponds, effective immediately,** its use shall be limited to surface irrigation of fodder, fiber, or seed crops. Additionally, the Discharger shall maintain compliance with the following limitations, with compliance measured at Monitoring Location LND-002 as described in the Monitoring and Reporting Program.

Table 8. Undisinfected Secondary Reclamation Discharge Specifications

Parameter	Units	Discharge Specifications		
		Average Monthly	Average Weekly	Maximum Daily
BOD ₅	mg/L	30		45
Settleable Solids	ml/L	0.2		0.5

4. **For Disinfected Title 22 Tertiary-level Treated Effluent, effective immediately,** its use shall be limited for construction purposes and dust control. Additionally, the Discharger shall meet conditions specified in California Department of Public Health's (DPH) approval letter dated 2 September 2008 and maintain compliance with the following limitations, with compliance measured at Monitoring Location REC-001 as described in the Monitoring and Reporting Program.

Table 9. Disinfected Title 22 Tertiary-level Reclamation Discharge Specifications

Parameter	Units	Discharge Specifications		
		Average Monthly	Average Weekly	Maximum Daily
BOD ₅	mg/L	10	15	20
Total Coliform Organisms	MPN/ 100 ml		2.2 ¹	23/240 ²

1. Weekly Median
2. Does not exceed 23 in more than one sample in any 30-day period. No sample shall exceed 240

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. The discharge shall not cause the following in the San Joaquin River:

1. **Bacteria.** The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 mL, nor more than 10 percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL.]
2. **Biostimulatory Substances.** Water to contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.
3. **Chemical Constituents.** Chemical constituents to be present in concentrations that adversely affect beneficial uses.
4. **Color.** Discoloration that causes nuisance or adversely affects beneficial uses.
5. **Dissolved Oxygen.** The dissolved oxygen concentration to be reduced below 5.0 mg/L at any time.
6. **Electrical Conductivity.** The running 30-day average-electrical conductivity to exceed 700 μ mhos/cm (1 April through 31 August) or 1000 μ mhos/cm (1 September through 31 March).
7. **Floating Material.** Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.
8. **Oil and Grease.** Oils, greases, waxes, or other materials to be present in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.
9. **pH.** The pH to be depressed below 6.5, raised above 8.5.
10. **Pesticides:**
 - a. Pesticides to be present, individually or in combination, in concentrations that adversely affect beneficial uses;
 - b. Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses;
 - c. Total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by USEPA or the Executive Officer;

- d. Pesticide concentrations to exceed those allowable by applicable antidegradation policies (see State Water Board Resolution No. 68-16 and 40 CFR 131.12.);
- e. Pesticide concentrations to exceed the lowest levels technically and economically achievable;
- f. Pesticides to be present in concentration in excess of the maximum contaminant levels set forth in CCR, Title 22, division 4, chapter 15; nor
- g. Thiobencarb to be present in excess of 1.0 µg/L.

11. Radioactivity:

- a. Radionuclides to be present in concentrations that are harmful to human, plant, animal, or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
- b. Radionuclides to be present in excess of the maximum contaminant levels specified in Table 4 (MCL Radioactivity) of Section 64443 of Title 22 of the California Code of Regulations.

12. Suspended Sediments. The suspended sediment load and suspended sediment discharge rate of surface waters to be altered in such a manner as to cause nuisance or adversely affect beneficial uses.

13. Settleable Substances. Substances to be present in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.

14. Suspended Material. Suspended material to be present in concentrations that cause nuisance or adversely affect beneficial uses.

15. Taste and Odors. Taste- or odor-producing substances to be present in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.

16. Temperature. The Thermal Plan is applicable to this discharge. The Thermal Plan requires that the discharge shall not cause the following in the San Joaquin River:

- a. The creation of a zone, defined by water temperatures of more than 1°F above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of the river channel at any point; and
- b. A surface water temperature rise greater than 4°F above the natural temperature of the receiving water at any time or place;

17. Toxicity. Toxic substances to be present, individually or in combination, in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.

18. Turbidity. The turbidity to increase as follows:

- a. More than 1 Nephelometric Turbidity Unit (NTU) where natural turbidity is between 0 and 5 NTUs;
- b. More than 20 percent where natural turbidity is between 5 and 50 NTUs;
- c. More than 10 NTU where natural turbidity is between 50 and 100 NTUs; nor
- d. More than 10 percent where natural turbidity is greater than 100 NTUs.

B. Groundwater Limitations

1. Release of waste constituents from any portion of the Facility shall not cause groundwater to:

- a. Contain any of the following constituents in concentrations greater than Water Quality Objectives or natural background quality, whichever is greater in Table 10 below, **effective 1 October 2014.**

Table 10. Groundwater Limitations

Constituent	Units	Limitation	
		Water Quality Objectives	Natural Background Quality ³
Total Coliform Organisms	MPN/100 mL	<2.2	<2
Electrical Conductivity @ 25°C ¹	µmhos/cm	TBD ²	420
Total Dissolved Solids ¹	mg/L	TBD ²	352
Nitrite Nitrogen, Total (as N)	mg/L	1	
Nitrate Nitrogen, Total (as N)	mg/L	10	15.3
Ammonia, Total (as N)	mg/L	1.5	0.13

¹ A cumulative impact limit that accounts for several dissolved constituents in addition to those listed here separately [e.g., alkalinity (carbonate and bicarbonate), calcium, hardness, phosphate, and potassium].

² The water quality objectives for electrical conductivity and total dissolved solids are to be determined based on the site-specific study performed by the Discharger, as required in Section VI.C.2.c.

³ Background threshold values based on statistical calculation of representative upgradient monitoring well(s).

- b. Exhibit a pH of less than 6.5 or greater than 8.4 pH units.
- c. Impart taste, odor, chemical constituents, toxicity, or color that creates nuisance or impairs any beneficial use.

2. **Interim reclamation discharge specifications. Effective immediately until 30 September 2014,** the Discharger shall maintain compliance with the following limitations, with compliance measured at Monitoring Location LND-001 as described in the Monitoring and Reporting Program.

Table 11. Interim reclamation discharge specifications

Parameter	Units	Seasonal Average ¹
Electrical Conductivity	µmhos/cm	1000
Total Dissolved Solids	mg/L	500

¹ Seasonal average calculated based on data from 1 May through 30 November

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.
2. The Discharger shall comply with the following provisions:
 - a. If the Discharger's wastewater treatment plant is publicly owned or subject to regulation by California Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to Title 23, CCR, division 3, chapter 26.
 - b. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:
 - i. violation of any term or condition contained in this Order;
 - ii. obtaining this Order by misrepresentation or by failing to disclose fully all relevant facts;
 - iii. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and
 - iv. a material change in the character, location, or volume of discharge.

The causes for modification include:

- *New regulations.* New regulations have been promulgated under section 405(d) of the CWA, or the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued.
- *Land application plans.* When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.
- *Change in sludge use or disposal practice.* Under 40 CFR 122.62(a)(1), a change in the Discharger's sludge use or disposal practice is a cause for

modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

The Regional Water Board may review and revise this Order at any time upon application of any affected person or the Regional Water Board's own motion.

- c. If a toxic effluent standard or prohibition (including any scheduled compliance specified in such effluent standard or prohibition) is established under section 307(a) of the CWA, or amendments thereto, for a toxic pollutant that is present in the discharge authorized herein, and such standard or prohibition is more stringent than any limitation upon such pollutant in this Order, the Regional Water Board will revise or modify this Order in accordance with such toxic effluent standard or prohibition.

The Discharger shall comply with effluent standards and prohibitions within the time provided in the regulations that establish those standards or prohibitions, even if this Order has not yet been modified.

- d. This Order shall be modified, or alternately revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:
 - i. contains different conditions or is otherwise more stringent than any effluent limitation in the Order; or
 - ii. controls any pollutant limited in the Order.

The Order, as modified or reissued under this paragraph, shall also contain any other requirements of the CWA then applicable.

- e. The provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order shall not be affected.
- f. The Discharger shall take all reasonable steps to minimize any adverse effects to waters of the State or users of those waters resulting from any discharge or sludge use or disposal in violation of this Order. Reasonable steps shall include such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge or sludge use or disposal.
- g. The Discharger shall ensure compliance with any existing or future pretreatment standard promulgated by USEPA under section 307 of the CWA, or amendment thereto, for any discharge to the municipal system.
- h. A copy of this Order shall be maintained at the discharge facility and be available at all times to operating personnel. Key operating personnel shall be familiar with its content.
- i. Safeguard to electric power failure:

- i. The Discharger shall provide safeguards to assure that, should there be reduction, loss, or failure of electric power, the discharge shall comply with the terms and conditions of this Order.
 - ii. Upon written request by the Regional Water Board the Discharger shall submit a written description of safeguards. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means. A description of the safeguards provided shall include an analysis of the frequency, duration, and impact of power failures experienced over the past 5 years on effluent quality and on the capability of the Discharger to comply with the terms and conditions of the Order. The adequacy of the safeguards is subject to the approval of the Regional Water Board.
 - iii. Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or should the Regional Water Board not approve the existing safeguards, the Discharger shall, within 90 days of having been advised in writing by the Regional Water Board that the existing safeguards are inadequate, provide to the Regional Water Board and USEPA a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the Discharger shall comply with the terms and conditions of this Order. The schedule of compliance shall, upon approval of the Regional Water Board, become a condition of this Order.
- j. The Discharger, upon written request of the Regional Water Board, shall file with the Board a technical report on its preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. This report may be combined with that required under Regional Water Board Standard Provision contained in section VI.A.2.i. of this Order.

The technical report shall:

- i. Identify the possible sources of spills, leaks, untreated waste by-pass, and contaminated drainage. Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.
- ii. Evaluate the effectiveness of present facilities and procedures and state when they became operational.
- iii. Predict the effectiveness of the proposed facilities and procedures and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

The Regional Water Board, after review of the technical report, may establish conditions which it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions shall be incorporated as part of this Order, upon notice to the Discharger.

- k. A publicly owned treatment works whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment and disposal facilities. The projections shall be made in January, based on the last 3 years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in 4 years, the Discharger shall notify the Regional Water Board by 31 January. A copy of the notification shall be sent to appropriate local elected officials, local permitting agencies and the press. Within 120 days of the notification, the Discharger shall submit a technical report showing how it will prevent flow volumes from exceeding capacity or how it will increase capacity to handle the larger flows. The Regional Water Board may extend the time for submitting the report.
- l. The Discharger shall submit technical reports as directed by the Executive Officer. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code, sections 6735, 7835, and 7835.1. To demonstrate compliance with Title 16, CCR, sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.
- m. The Regional Water Board is authorized to enforce the terms of this permit under several provisions of the CWC, including, but not limited to, sections 13385, 13386, and 13387.
- n. For publicly owned treatment works, prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. (CWC section 1211).
- o. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, maximum daily effluent limitation, 1-hour average effluent limitation, or receiving water limitation contained in this Order, the Discharger shall notify the Regional Water Board by telephone (916) 464-3291 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within 5 days, unless the Regional Water Board waives confirmation. The written notification shall include the information required by the Standard Provision contained in Attachment D section V.E.1.
[40 CFR 122.41(l)(6)(i)].
- p. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this facility, may subject the Discharger to administrative or civil liabilities, criminal penalties,

and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Discharger to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.

- q. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Regional Water Board.

To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Regional Water Board and a statement. The statement shall comply with the signatory and certification requirements in the federal Standard Provisions (Attachment D, section V.B) and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the CWC. Transfer shall be approved or disapproved in writing by the Executive Officer.

B. Monitoring and Reporting Program Requirements

The Discharger shall comply with the Monitoring and Reporting Program, and future revisions thereto, in Attachment E of this Order.

C. Special Provisions

1. Reopener Provisions

- a. Conditions that necessitate a major modification of a permit are described in 40 CFR 122.62, including:
 - i. If new or amended applicable water quality standards are promulgated or approved pursuant to section 303 of the CWA, or amendments thereto, this permit may be reopened and modified in accordance with the new or amended standards.
 - ii. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.
- b. **Mercury.** If a TMDL program is adopted for mercury, this Order shall be reopened and the interim mass effluent limitation modified (higher or lower) or an effluent concentration limitation imposed. If the Regional Water Board determines that a mercury offset program is feasible for Dischargers subject to a NPDES permit, then this Order may be reopened to reevaluate the interim mercury mass loading limitation(s) and the need for a mercury offset program for the Discharger.

- c. Pollution Prevention.** This Order requires the Discharger to update its pollution prevention plan for mercury in accordance with CWC section 13263.3(d)(3). Based on a review of the pollution prevention plan, this Order may be reopened for addition and/or modification of effluent limitations and requirements for these constituents.
- d. Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if the State Water Board revises the SIP's toxicity control provisions that would require the establishment of numeric chronic toxicity effluent limitations, this Order may be reopened to include a numeric chronic toxicity effluent limitation based on the new provisions.
- e. Water Effects Ratios (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant inorganic constituents. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.
- f. Thermal Plan Exception.** Should the National Marine Fisheries Service concur with the Discharger's thermal impact study, *City of Manteca Wastewater Quality Control Facility Thermal Plan Exception Analysis Final Report* (February 2006), this Order may be reopened to modify Effluent Limitation IV.A.1.d. and IV.A.2.d. and Receiving Water Limitation V.A.16.
- g. Site-specific Salinity Study.** This Order requires the Discharger to conduct a site-specific study to determine the appropriate electrical conductivity (EC) and total dissolved solids (TDS) levels to protect the beneficial use of agricultural supply for the most salt sensitive crops in areas irrigated with groundwater in the vicinity of the Facility. Based on the results of this study, this Order may be reopened to modify or add requirements or limitations in Discharge Specifications IV.B and Receiving Water Limitation V.B.
- h. The Bay-Delta Plan.** The South Delta salinity standards are currently under review by the State Water Board in accordance with implementation provisions contained in the Bay-Delta Water Quality Control Plan. This review in process includes an updated independent scientific investigation of irrigation salinity needs in the southern Delta. If applicable water quality objectives of the Bay-Delta Plan are revised, this Order may be reopened for addition and/or modification of effluent limitations and requirements, as appropriate.
- i. Regional Monitoring Program.** The State and Regional Water Boards are committed to creation of a coordinated Regional Monitoring Program to address receiving water monitoring in the Delta for all Water Board regulatory and research programs. When a Regional Monitoring Program becomes functional, this permit may be reopened to make appropriate adjustments in permit-specific monitoring to coordinate with the Regional Monitoring Program."

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. **Chronic Whole Effluent Toxicity.** For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct chronic whole effluent toxicity (WET) testing, as specified in the Monitoring and Reporting Program (Attachment E, section V). Furthermore, this Provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity. If the discharge exhibits a pattern of toxicity exceeding the numeric toxicity monitoring trigger during accelerated monitoring established in this Provision, the Discharger is required to initiate a TRE in accordance with an approved TRE Workplan, and take actions to mitigate the impact of the discharge and prevent recurrence of toxicity. A TRE is a site-specific study conducted in a stepwise process to identify the source(s) of toxicity and the effective control measures for effluent toxicity. TREs are designed to identify the causative agents and sources of effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity. The Discharger submitted the final TRE Workplan to the Regional Water Board on 29 September 2005, which was approved by Regional Water Board staff. This Provision includes procedures for accelerated chronic toxicity monitoring and TRE initiation.

i. **Accelerated Monitoring and TRE Initiation.** When the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity monitoring, and the testing meets all test acceptability criteria, the Discharger shall initiate accelerated monitoring as required in the Accelerated Monitoring Specifications. The Discharger shall initiate a TRE to address effluent toxicity if any WET testing results exceed the numeric toxicity monitoring trigger during accelerated monitoring.

ii. **Numeric Toxicity Monitoring Trigger.** The numeric toxicity monitoring trigger to initiate a TRE is $> 1 TU_C$ (where $TU_C = 100/NOEC$). The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring and initiate a TRE when the effluent exhibits a pattern of toxicity.

iii. **Accelerated Monitoring Specifications.** If the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity testing, the Discharger shall initiate accelerated monitoring within 14 days of notification by the laboratory of the exceedance. Accelerated monitoring shall consist of four (4) chronic toxicity tests conducted once every 2 weeks using the species that exhibited toxicity. The following protocol shall be used for accelerated monitoring and TRE initiation:

(a) If the results of four (4) consecutive accelerated monitoring tests do not exceed the monitoring trigger, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring. However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern of effluent toxicity, the Executive Officer may require that the Discharger initiate a TRE.

(b) If the source(s) of the toxicity is easily identified (e.g., temporary plant upset), the Discharger shall make necessary corrections to the facility and shall continue accelerated monitoring until four (4) consecutive accelerated tests do not exceed the monitoring trigger. Upon confirmation that the effluent toxicity has been removed, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring.

(c) If the result of any accelerated toxicity test exceeds the monitoring trigger, the Discharger shall cease accelerated monitoring and begin a TRE to investigate the cause(s) of, and identify corrective actions to reduce or eliminate effluent toxicity. Within thirty (30) days of notification by the laboratory of any test result exceeding the monitoring trigger during accelerated monitoring, the Discharger shall submit a TRE Action Plan to the Regional Water Board including, at minimum:

(1) Specific actions the Discharger will take to investigate and identify the cause(s) of toxicity, including a TRE WET monitoring schedule;

(2) Specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and

(3) A schedule for these actions.

b. Best Practical Treatment or Control (BPTC). Based on studies provided by the Discharger, groundwater monitoring results have shown that the discharge of waste to land is threatening to cause or has caused groundwater to contain waste constituents in concentrations statistically greater than background water quality. Therefore, the Discharger shall submit, **within 12 months following adoption of this Order**, a BPTC Evaluation Work Plan that sets forth a scope and schedule for a systematic and comprehensive technical evaluation of each component of the facilities' waste management system to determine best practicable treatment or control for each the waste constituents of concern. The work plan shall include a preliminary evaluation of each component of the waste management system and propose a time schedule for completing the comprehensive technical evaluation. The schedule to complete the evaluation shall be as short as practicable, and shall not exceed 2 years.

c. Site-Specific Salinity Study. The Discharger shall complete and submit to the Regional Water Board a report on the results of a site-specific investigation of appropriate electrical conductivity (EC) and total dissolved solids (TDS) levels to protect the beneficial use of agricultural supply for the most salt sensitive crops in areas irrigated with groundwater in the vicinity of the Facility under reasonable worst-case conditions. The study shall determine the sodium adsorption ratio of soils in the affected area, the alkalinity of soils to whether site specific conditions would reduce fluoride impacts, and the effects of rainfall and flood-induced leaching. The study shall evaluate how climate, soil chemistry, background groundwater quality, rainfall, and flooding affect salinity requirements. Based on these factors, as well as economic and environmental impacts (such as increased irrigation water usage, groundwater hydraulics and degraded water

<u>Task</u>	<u>Compliance Date</u>
Submit Work Plan	9 Months from Adoption of this Order
Submit Completed Study Report	3 Years from Adoption of this Order

3. Best Management Practices and Pollution Prevention

- a. **Pollution Prevention Plan for Mercury.** The Discharger shall update and implement its pollution prevention plan (PPP) for mercury (*City of Manteca Pollution Prevention Plan*, 30 June 2005), in accordance with CWC section 13263.3(d)(1)(D). The minimum requirements for the pollution prevention plan are outlined in the Fact Sheet (Attachment F section VII.B.3.a). The Discharger shall submit the revised pollution prevention plan to the Regional Water Board **within 9 months following adoption of this Order**, and progress reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E section X.D.1.).

4. Construction, Operation and Maintenance Specifications

a. Treatment Pond Operating Requirements.

- i. Public contact with wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives.
- ii. Ponds shall be managed to prevent breeding of mosquitoes. In particular,
 - (a) An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface.
 - (b) Weeds shall be minimized.
 - (c) Dead algae, vegetation, and debris shall not accumulate on the water surface.
- iii. Freeboard shall never be less than 2 feet (measured vertically to the lowest point of overflow) as a monthly average and never less than 1 foot at any time.

iv. As a means of discerning compliance with Discharge Prohibition III.C, the dissolved oxygen content in the upper zone (1 foot) of wastewater in ponds shall not be less than 1.0 mg/L.

v. Ponds shall not have a pH less than 6.5 or greater than 9.0.

b. Ultraviolet (UV) Disinfection System Operating Requirements. The Discharger shall operate the UV disinfection system to provide a minimum UV dose of 100 millijoules per square centimeter (mJ/cm^2) at peak daily flow, unless otherwise approved by the California Department of Public Health.

i. The Discharger shall provide continuous, reliable monitoring of flow, UV transmittance, UV power, and turbidity.

ii. The Discharger shall operate the treatment system to insure that turbidity prior to disinfection shall not exceed specifications in Provision VI.C.5.e. of this Order

iii. The UV transmittance (at 254 nanometers) in the wastewater exiting the UV disinfection system shall not fall below 55 percent of maximum at any time.

iv. The quartz sleeve and cleaning system components must be visually inspected per the manufacturer's operations manual for physical wear (scoring, solarization, seal leaks, cleaning fluid levels, etc.) and to check the efficacy of the cleaning system.

v. The sleeves must be cleaned periodically as necessary to meet the requirements.

vi. Lamps must be replaced per the manufacturer's operations manual, or sooner, if there are indications the lamps are failing to provide adequate disinfection. Lamp age and lamp replacement records must be maintained.

vii. The facility must be operated in accordance with an operations and maintenance program that assures adequate disinfection.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Pretreatment Requirements.

i. The Discharger shall implement its approved pretreatment program and the program shall be an enforceable condition of this Order. If the Discharger fails to perform the pretreatment functions, the Regional Water Board, the State Water Board or USEPA may take enforcement actions against the Discharger as authorized by the CWA.

ii. The Discharger shall enforce the Pretreatment Standards promulgated under sections 307(b), 307(c), and 307(d) of the CWA. The Discharger shall perform the pretreatment functions required by 40 CFR Part 403 including, but not limited to:

- (a) Adopting the legal authority required by 40 CFR 403.8(f)(1);
 - (b) Enforcing the Pretreatment Standards of 40 CFR 403.5 and 403.6;
 - (c) Implementing procedures to ensure compliance as required by 40 CFR 403.8(f)(2); and
 - (d) Providing funding and personnel for implementation and enforcement of the pretreatment program as required by 40 CFR 403.8(f)(3).
- iii. The Discharger shall implement, as more completely set forth in 40 CFR 403.5, the necessary legal authorities, programs, and controls to ensure that the following incompatible wastes are not introduced to the treatment system, where incompatible wastes are:
- (a) Wastes which create a fire or explosion hazard in the treatment works;
 - (b) Wastes which will cause corrosive structural damage to treatment works, but in no case wastes with a pH lower than 5.0, unless the works is specially designed to accommodate such wastes;
 - (c) Solid or viscous wastes in amounts which cause obstruction to flow in sewers, or which cause other interference with proper operation or treatment works;
 - (d) Any waste, including oxygen demanding pollutants (BOD, etc.), released in such volume or strength as to cause inhibition or disruption in the treatment works, and subsequent treatment process upset and loss of treatment efficiency;
 - (e) Heat in amounts that inhibit or disrupt biological activity in the treatment works, or that raise influent temperatures above 40°C (104°F), unless the Regional Water Board approves alternate temperature limits;
 - (f) Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;
 - (g) Pollutants which result in the presence of toxic gases, vapors, or fumes within the treatment works in a quantity that may cause acute worker health and safety problems; and:
 - (h) Any trucked or hauled pollutants, except at points predesignated by the Discharger.
- iv. The Discharger shall implement, as more completely set forth in 40 CFR 403.5, the legal authorities, programs, and controls necessary to ensure that indirect discharges do not introduce pollutants into the sewerage system that, either alone or in conjunction with a discharge or discharges from other sources:

- (a) Flow through the system to the receiving water in quantities or concentrations that cause a violation of this Order, or:
- (b) Inhibit or disrupt treatment processes, treatment system operations, or sludge processes, use, or disposal and either cause a violation of this Order or prevent sludge use or disposal in accordance with this Order.

b. Sludge/Biosolids Discharge Specifications

- i. Collected screenings, residual sludge, biosolids, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer, and consistent with Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste, as set forth in Title 27, CCR, division 2, subdivision 1, section 20005, et seq. Removal for further treatment, disposal, or reuse at sites (e.g., landfill, composting sites, soil amendment sites) that are operated in accordance with valid waste discharge requirements issued by a Regional Water Board will satisfy these specifications.
- ii. Sludge and solid waste shall be removed from screens, sumps, ponds, clarifiers, etc. as needed to ensure optimal plant performance.
- iii. The treatment of sludge generated at the Facility shall be confined to the Facility property and conducted in a manner that precludes infiltration of waste constituents into soils in a mass or concentration that will violate groundwater limitations in section V.B. of this Order. In addition, the storage of residual sludge, solid waste, and biosolids on Facility property shall be temporary and controlled, and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate groundwater limitations included in section V.B. of this Order.
- iv. The use and disposal of biosolids shall comply with existing federal and state laws and regulations, including permitting requirements and technical standards included in 40 CFR Part 503. If the State Water Board and the Regional Water Board are given the authority to implement regulations contained in 40 CFR Part 503, this Order may be reopened to incorporate appropriate time schedules and technical standards. The Discharger must comply with the standards and time schedules contained in 40 CFR Part 503 whether or not they have been incorporated into this Order.

c. Biosolids Disposal Requirements

- i. The Discharger shall comply with the Monitoring and Reporting Program for biosolids disposal contained in Attachment E.
- ii. Any proposed change in biosolids use or disposal practice from a previously approved practice shall be reported to the Executive Officer and USEPA Regional Administrator at least 90 days in advance of the change.

- iii. The Discharger is encouraged to comply with the "Manual of Good Practice for Agricultural Land Application of Biosolids" developed by the California Water Environment Association.

d. Biosolids Storage Requirements

- i. Facilities for the storage of Class B biosolids shall be located, designed and maintained to restrict public access to biosolids.
- ii. Biosolids storage facilities shall be designed and maintained to prevent washout or inundation from a storm or flood with a return frequency of 100 years.
- iii. Biosolids storage facilities, which contain biosolids, shall be designed and maintained to contain all storm water falling on the biosolids storage area during a rainfall year with a return frequency of 100 years.
- iv. Biosolids storage facilities shall be designed, maintained and operated to minimize the generation of leachate.

e. Turbidity Operational Requirements. The Discharger shall operate the treatment system to ensure that the turbidity measured at EFF-001, as described in the MRP (Attachment E), shall not exceed:

- i. 2 NTU, as a daily average;
- ii. 5 NTU, more than 5% of the time within a 24-hour period; and
- iii. 10 NTU, at any time.

f. Collection System. On 2 May 2006, the State Water Board adopted State Water Board Order No. 2006-0003, a Statewide General WDR for Sanitary Sewer Systems. The Discharger shall be subject to the requirements of Order No. 2006-0003 and any future revisions thereto. Order No. 2006-0003 requires that all public agencies that currently own or operate sanitary sewer systems apply for coverage under the General WDR. The Discharger has applied for and has been approved for coverage under State Water Board Order No. 2006-0003 for operation of their wastewater collection system.

Regardless of the coverage obtained under Order No. 2006-0003, the Discharger's collection system is part of the treatment system that is subject to this Order. As such, pursuant to federal regulations, the Discharger must properly operate and maintain its collection system [40 CFR 122.41(e)], report any non-compliance [40 CFR 122.41(l)(6) and (7)], and mitigate any discharge from the collection system in violation of this Order [40 CFR 122.41(d)].

6. Other Special Provisions

- a. Wastewater shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to the Department of Public Health (DPH; formerly the Department of Health Services) reclamation criteria, CCR, Title 22, division 4, chapter 3, (Title 22), or equivalent.

- b. The treatment facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
- c. **Phase IV Upgrade and Expansion Project.** The Discharger has requested an expansion of allowable flows to be discharged to San Joaquin River. The permitted average daily discharge flow may increase to 17.5 mgd upon compliance with the following conditions:
 - i. **Effluent and Receiving Water Limitation Compliance.** The discharge shall demonstrate compliance with Effluent Limitations IV.A. and Receiving Surface Water Limitations V.A.
 - ii. **Facility Expansions.** The Discharger shall have completed construction of Phase IV Upgrade and Expansion Project, as described in the Discharger's Report of Waste Discharge, August 2008.
 - iii. **Request for Increase.** The Discharger shall submit to the Regional Water Board a request for an increase in the permitted discharge flow rate, which demonstrates compliance with items i. through ii. of this provision. The increase in the permitted discharge flow rate shall not be effective until the Executive Officer verifies compliance with Special Provisions VI.C.6.c. and approves the Discharger's request.

7. Compliance Schedules

- a. **Compliance Schedules for Final Groundwater Limitations and Exemption from Title 27 for storage of secondary effluent in Secondary Effluent Storage Pond (SESP).** This Order requires compliance with the final groundwater limitations by **1 October 2014**. Compliance with the groundwater limitations will result in the storage of secondary effluent in the SESP meeting the preconditions for an exemption from Title 27. Therefore, this compliance schedule temporarily exempts the Discharger from compliance with Title 27 to allow time for the Discharger to meet all preconditions for an exemption from Title 27. The Discharger shall comply with the following time schedule to ensure compliance with the final groundwater limitations and to demonstrate the storage of secondary effluent in the SESP is in compliance with the Basin Plan:

<u>Task</u>	<u>Date Due</u>
i. Submit Method of Compliance Workplan/Schedule	Within 6 months after adoption of this Order
ii. Progress Reports ¹	1 October, annually, after approval of work plan until final compliance
iii. Full Compliance	1 October 2014

¹ The progress reports shall detail what steps have been implemented towards achieving compliance with waste discharge requirements, including studies, construction progress, evaluation of measures implemented, and recommendations for additional measures as necessary to achieve full compliance by the final compliance date.

VII. COMPLIANCE DETERMINATION

- A. BOD₅ and TSS Effluent Limitations (Sections IV.A.1.a and 2.a).** Compliance with the final effluent limitations for BOD₅ and TSS required in Limitations and Discharge Requirements section IV.A shall be ascertained by 24-hour composite samples. Compliance with effluent limitations required in Limitations and Discharge Requirements section IV.A for percent removal shall be calculated using the arithmetic mean of BOD₅ and TSS in effluent samples collected over a monthly period as a percentage of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period.
- B. Aluminum Effluent Limitations (Sections IV.A.1. a. & h. and 2.a. & h.).** Compliance with the final effluent limitations for aluminum can be demonstrated using either total or acid-soluble (inductively coupled plasma/atomic emission spectrometry or inductively coupled plasma/mass spectrometry) analysis methods, as supported by USEPA's Ambient Water Quality Criteria for Aluminum document (EPA 440/5-86-008), or other standard methods that exclude aluminum silicate particles as approved by the Executive Officer.
- C. Temperature Effluent Limitations (Sections IV.A.1.d. and 2.d.)** Compliance with the final effluent limitations for temperature shall be ascertained by averaging the monitoring results metered continuously at monitoring location EFF-001 during the 24 hour period starting at 12 am on the same day of the receiving water monitoring results.
- D. Total Mercury Mass Loading Effluent Limitations (Section IV.A.3.a.).** The procedures for calculating mass loadings are as follows:
1. The total pollutant mass load for each individual calendar month shall be determined using an average of all concentration data collected that month and the corresponding total monthly flow. All effluent monitoring data collected under the monitoring and reporting program, pretreatment program and any special studies shall be used for these calculations.
 2. In calculating compliance, the Discharger shall count all non-detect measures at one-half of the detection level. If compliance with the effluent limitation is not attained due to the non-detect contribution, the Discharger shall improve and implement available analytical capabilities and compliance shall be evaluated with consideration of the detection limits.
- E. Average Dry Weather Flow Effluent Limitations (Section IV.A.1.f. and 2.f.).** The average dry weather discharge flow represents the daily average flow when groundwater is at or near normal and runoff is not occurring. Compliance with the average dry weather flow effluent limitations will be determined annually based on the average daily flow over three consecutive dry weather months (e.g., July, August, and September).

- F. Total Coliform Organisms Effluent Limitations (Section IV.A.1.a. & e. and 2.a. & e.).** For each day that an effluent sample is collected and analyzed for total coliform organisms, the 7-day median shall be determined by calculating the median concentration of total coliform bacteria in the effluent utilizing the bacteriological results of the last 7 days for which analyses have been completed. If the 7-day median of total coliform organisms exceeds a most probable number (MPN) of 2.2 per 100 milliliters, the Discharger will be considered out of compliance for that parameter for that 1 day only within the reporting period.
- G. Land Discharge Loading Limits (Section IV.B.).** The Discharger shall perform the following calculations during all months when land application occurs.
- 1. Total Nitrogen (Section IV.B.2).** The Total Nitrogen loading rate shall be calculated for each irrigation field (As shown in Attachment C-2) on a monthly basis using the daily applied volume of wastewater, the most recent effluent monitoring results, and the daily application area. Loading rates for supplemental nitrogen (e.g. fertilizers), when applicable, shall be calculated and included in the total nitrogen loading rate for each irrigation field on a monthly basis using the actual daily applied load and the estimated daily application area. The cumulative nitrogen loading rate for each irrigation field for the calendar year to date shall be calculated as a running total of monthly loadings to date from all sources.
 - 2. 20°C Biological Oxygen Demand, 5-day (BOD₅) (Section IV.B.3).** BOD₅ loading rates shall be calculated for each irrigation field. For compliance determination, the cycle average BOD₅ loading rates shall be calculated using the total volume applied on the day of application, the number of days between applications, the total application period, application area, and a running average of the three most recent results of BOD₅ for the applicable source wastewater. When reporting, include the daily BOD₅ loading rates, which shall be calculated using the total volume applied on the day of application, estimated application area, and a running average of the three most recent results of BOD₅ for the applicable source water.
- H. Mass Effluent Limitations.** The mass effluent limitations contained in Final Effluent Limitations IV.A.1.a and 2.a are based on the permitted average dry weather flow and calculated as follows:
- $$\text{Mass (lbs/day)} = \text{Flow (mgd)} \times \text{Concentration (mg/L)} \times 8.34 \text{ (conversion factor)}$$
- If the effluent flow exceeds the permitted average dry weather flow during wet-weather seasons, the effluent mass limitations contained in Final Effluent Limitations IV.A.1.a and 2.a shall not apply.
- I. Chronic Whole Effluent Toxicity Effluent Limitation.** Compliance with the accelerated monitoring and TRE/TIE provisions of Provision VI.C.2.a shall constitute compliance with effluent limitations IV.A.1.g and IV.A.2.g for chronic whole effluent toxicity.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ)

Also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

Arithmetic mean = $\mu = \Sigma x / n$ where: Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

Average Monthly Effluent Limitation (AMEL)

The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL)

The highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Best Practicable Treatment or Control (BPTC): BPTC is a requirement of State Water Resources Control Board Resolution 68-16 – “Statement of Policy with Respect to Maintaining High Quality of Waters in California” (referred to as the “Antidegradation Policy”). BPTC is the treatment or control of a discharge necessary to assure that, “(a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.” Pollution is defined in CWC Section 13050(I). In general, an exceedance of a water quality objective in the Basin Plan constitutes “pollution.”

Bioaccumulative

Those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Carcinogenic

Pollutants are substances that are known to cause cancer in living organisms.

Coefficient of Variation (CV)

CV is a measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

Daily Discharge

Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of 1 day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ)

DNQ are those sample results less than the RL, but greater than or equal to the laboratory's MDL.

Dilution Credit

Dilution Credit is the amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and receiving water.

Effluent Concentration Allowance (ECA)

ECA is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in USEPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

Enclosed Bays

Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration

The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

Estuaries

Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters included, but are not limited to, the Sacramento-San Joaquin Delta, as defined in CWC section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate

areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Inland Surface Waters

All surface waters of the State that do not include the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation

The highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation

The lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Maximum Daily Effluent Limitation (MDEL)

The highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Median

The middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the $n/2$ and $n/2+1$).

Method Detection Limit (MDL)

MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 CFR Part 136, Attachment B, revised as of 3 July 1999.

Minimum Level (ML)

ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Mixing Zone

Mixing Zone is a limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

Not Detected (ND)

Sample results which are less than the laboratory's MDL.