

maintenance operations and divert wastewater containing chlorine to the emergency storage pond.

- h. **Copper.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for copper. The criteria for copper are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The USEPA default conversion factors for copper in freshwater are 0.96 for both the acute and the chronic criteria. Using the worst-case measured hardness from the effluent (55 mg/L as CaCO<sub>3</sub>) and the USEPA recommended dissolved-to-total translator, the applicable chronic criterion (maximum 4-day average concentration) is 5.60 µg/L and the applicable acute criterion (maximum 1-hour average concentration) is 7.97 µg/L, as total recoverable.

The MEC for total copper was 9.4 µg/L, based on six samples collected between 20 May 2003 and 21 June 2005 during operation of the old treatment system. There is no receiving water concentration available. After the new treatment facility came on line, the MEC for copper was 2.9 µg/L based on seven samples collected from June 2008 to October 2008. Therefore, based on the new data the discharge no longer has reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for copper. Based on the new monitoring data, no effluent limits are included in this Order. Quarterly monitoring has been established for copper for the first 3 years after permit adoption to gather additional information to determine if copper exceeds the criterion. Should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, this Order may be reopened and modified by adding an appropriate effluent limitation.

- i. **Cyanide.** The CTR includes maximum 1-hour average and 4-day average cyanide concentrations of 22 µg/L and 5.2 µg/L, respectively, for the protection of freshwater aquatic life. The MEC for cyanide was 12 µg/L, based on five samples collected between 20 May 2003 and 21 June 2005. There is no receiving water concentration available. After the new treatment facility came on line, cyanide is no longer detected in the effluent at a detection limit of 2 µg/L, based on seven samples collected from June 2008 to October 2008. Therefore, based on the new data it appears the discharge no longer has reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for cyanide. No effluent limits are included in this Order. Quarterly monitoring has been established for cyanide for the first 3 years after permit adoption to gather additional information to determine if cyanide is present in the effluent. Should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, this Order may be reopened and modified by adding an appropriate effluent limitation.

- j. **Dichlorobromomethane.** The CTR includes a dichlorobromomethane criterion of 0.56 µg/L for the protection of human health and is based on a one-in-a-million cancer risk for waters from which both water and organisms are consumed. The MEC for dichlorobromomethane was 0.8 µg/L, based on six samples collected between 20 May 2003 and 21 June 2005 during operation of the treatment system with chlorine disinfection. The Discharger has replaced the chlorine disinfection system with an ultraviolet light disinfection system and dichlorobromomethane is no longer detected in the effluent discharge based on seven samples collected from June 2008 to October 2008 at a detection limit of 0.1 µg/L. Therefore, based on the new data it appears the discharge no longer has reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for dichlorobromomethane. No effluent limits are included in this Order and this Order no longer requires monitoring for dichlorobromomethane.
- k. **Electrical Conductivity. (see Subsection r. Salinity)**
- l. **Iron.** The Secondary MCL - Consumer Acceptance Limit for iron is 300 µg/L. The MEC for iron was 585 µg/L, based on six samples collected between 20 May 2003 and 21 June 2005. There is no receiving water concentration available. After the new treatment facility came on line, the MEC for iron was 29 mg/L based on seven samples collected from June 2008 to October 2008. Therefore, based on the new data the discharge no longer has reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL for iron. No effluent limits are included in this Order. Quarterly monitoring has been established for iron for the first 3 years after permit adoption to gather additional information to determine if iron is present in the effluent at concentrations exceeding the criterion. Should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, this Order may be reopened and modified by adding an appropriate effluent limitation.
- m. **Manganese.** The Secondary MCL - Consumer Acceptance Limit for manganese is 50 µg/L. The MEC for manganese was 160 µg/L, based on six samples collected between 20 May 2003 and 21 June 2005. There is no receiving water concentration available. After the new treatment facility came on line, the MEC for manganese was 16.8 mg/L based on seven samples collected from June 2008 to October 2008. Therefore, based on the new data the discharge no longer has reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL for manganese. No effluent limits are included in this Order. Quarterly monitoring has been established for manganese for the first 3 years after permit adoption to gather additional information to determine if manganese is present in the effluent at concentrations exceeding the criterion. Should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, this Order may be reopened and modified by adding an appropriate effluent limitation.

- n. **Nitrite and Nitrate.** Untreated domestic wastewater contains ammonia. Nitrification is a biological process that converts ammonia to nitrite and nitrite to nitrate. Denitrification is a process that converts nitrate to nitrite or nitric oxide and then to nitrous oxide or nitrogen gas, which is then released to the atmosphere. Nitrate and nitrite are known to cause adverse health effects in humans. The California Department of Public Health (DPH; formerly the Department of Health Services) has adopted Primary MCLs for the protection of human health for nitrite and nitrate that are equal to 1 mg/L and 10 mg/L (measured as nitrogen), respectively. DPH has also adopted a primary MCL of 10,000 µg/L for the sum of nitrate and nitrite, measured as nitrogen.

USEPA has developed a primary MCL and an MCL goal of 1,000 µg/L for nitrite (as nitrogen). For nitrate, USEPA has developed Drinking Water Standards (10,000 µg/L as Primary MCL) and National Ambient Water Quality Criteria for protection of human health (10,000 µg/L for non-cancer health effects). Recent toxicity studies have indicated a possibility that nitrate is toxic to aquatic organisms.

Inadequate or incomplete denitrification may result in the discharge of nitrate and/or nitrite to the receiving stream. The conversion of ammonia to nitrites and the conversion of nitrites to nitrates present a reasonable potential for the discharge to cause or contribute to an in-stream excursion above the Primary MCLs for nitrite and nitrate. AMELs for nitrite and nitrite plus nitrate of 1 mg/L and 10 mg/L, respectively, are included in this Order based on the MCLs. These effluent limitations are included in this Order to assure the treatment process adequately nitrifies and denitrifies the waste stream to protect the beneficial use of municipal and domestic supply.

The highest monthly average for nitrate was 2.31 mg/L and the highest monthly average for nitrite was 0.79 mg/L, based on 29 samples collected between June 2008 and December 2008 after the new treatment system went into operation. Based on the sample results after the new treatment system became operational, it appears that the Discharger will be in compliance with effluent limitations upon issuance of the permit.

- o. **Persistent Chlorinated Hydrocarbon Pesticides.** The Basin Plan requires that no individual pesticides shall be present in concentrations that adversely affect beneficial uses; discharges shall not result in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses; persistent chlorinated hydrocarbon pesticides shall not be present in the water column at detectable concentrations; and pesticide concentrations shall not exceed those allowable by applicable antidegradation policies. Persistent chlorinated hydrocarbon pesticides include aldrin; alpha-BHC; beta-BHC; gamma-BHC; delta-BHC; chlordane; 4,4-DDT; 4,4-DDE; 4,4-DDD; dieldrin; alpha-endosulfan; beta-endosulfan; endosulfan sulfate; endrin; endrin aldehyde; heptachlor; heptachlor epoxide; and toxaphene.

Alpha-BHC (alpha-hexachlorocyclohexane), aldrin, and dieldrin were detected in the effluent at a concentration of 0.014 µg/L, 0.009 µg/L, and 0.006 µg/L, respectively, in samples collected prior to 2008. However in seven samples collected from June 2008 to October 2008, after the new treatment facility became operational, alpha-BHC and aldrin were not detected at the minimum acceptable reporting level as indicated in Appendix 4 of the SIP. Dieldrin was also detected but not quantified at a detection limit of 0.007 µg/L in one of the seven samples collected since the new treatment facility became operational. Dieldrin is not expected to be present in the wastewater from a residential service. Effluent limits are not included in this Order for alpha-BHC, aldrin, and dieldrin. Annual monitoring is included in this Order for alpha-BHC, aldrin, and dieldrin for the first 3 years after permit adoption. Should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, this Order may be reopened and modified by adding an appropriate effluent limitation.

- p. **Pathogens.** The Regional Water Board, when developing NPDES permits, implements recommendations by DPH for the appropriate disinfection requirements for the protection of MUN, REC-1 and AGR. The disinfection requirements in the proposed Order implement the DPH recommendations and are fully protective of the beneficial uses of the receiving water.

DPH has developed reclamation criteria, CCR, Division 4, Chapter 3 (Title 22), for the reuse of wastewater. Title 22 requires that for spray irrigation of food crops, parks, playgrounds, schoolyards, and other areas of similar public access, wastewater be adequately disinfected, oxidized, coagulated, clarified, and filtered, and that the effluent total coliform levels not exceed 2.2 MPN/100 mL as a 7-day median. As coliform organisms are living and mobile, it is impracticable to quantify an exact number of coliform organisms and to establish weekly average limitations. Instead, coliform organisms are measured as a most probable number and regulated based on a 7-day median limitation. The measure of coliform organisms is utilized as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing other pathogens.

Title 22 also requires that recycled water used as a source of water supply for non-restricted recreational impoundments be disinfected tertiary recycled water that has been subjected to conventional treatment. A non-restricted recreational impoundment is defined as "*...an impoundment of recycled water, in which no limitations are imposed on body-contact water recreational activities.*" Title 22 is not directly applicable to surface waters; however, the Regional Water Board finds that it is appropriate to apply an equivalent level of treatment to that required by DPH's for reclamation criteria because the receiving water is used for irrigation of agricultural land and for contact recreation purposes. The stringent disinfection criteria of Title 22 are appropriate since the undiluted effluent may be used for the irrigation of food crops and/or for body-contact water recreation.

In site-specific situations where a discharge is occurring to a stream with a downstream water intake used as a domestic water supply without treatment, the

DPH has recommended the same Title 22 tertiary treatment requirements for the protection of MUN, as well as protecting REC-1 and AGR. DPH also recommended a 20:1 dilution ratio in addition to the Title 22 tertiary treatment requirement where there are existing domestic water users of raw water near the treatment plant outfall. In this case, there are no such known uses that could be affected by the discharge, so tertiary treatment plus 20:1 dilution is not necessary to protect the MUN, REC-1, or AGR uses.

The chemical constituents narrative objective states, "*Waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses.*" The narrative toxicity objective states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" When necessary, the Regional Water Board adopts numeric effluent limitations to implement these objectives on a case-by-case basis implementing relevant numerical criteria and guidelines, developed and/or published by other agencies and organizations (e.g., State Water Board, DPH, California Office of Environmental Health Hazard Assessment, California Department of Toxic Substances Control, University of California Cooperative Extension, California Department of Fish and Game, USEPA, U.S. Food and Drug Administration, National Academy of Sciences, U.S. Fish and Wildlife Service, Food and Agricultural Organization of the United Nations). In considering such criteria, the Board evaluates whether the specific numerical criteria, which are available through these sources and through other information supplied to the Regional Water Board, are relevant and appropriate to the situation at hand and, therefore, should be used in determining compliance with the narrative objective.

For public water supplies, state and federal law require residual chlorine and/or ultraviolet disinfection of surface water. (See, e.g., Surface Water Treatment Rule, 40 C.F.R. Part 141, Subpart H; Cal. Code of Regulations, Title 22, section 64447.) Treating pathogens to a level more stringent than tertiary treatment requires a chlorine residual in the effluent that is toxic to aquatic life in the receiving water. Pathogens are not bio-accumulative, so discharges at the permitted levels in this Order do not threaten potential uses of the receiving water for untreated domestic use. Therefore, the requirement to implement tertiary treatment only when 20:1 dilution is not available adequately protects beneficial uses and is appropriate for this discharge under the case-by-case approach.

The beneficial uses of the Magnolia Creek include MUN, REC-1, and AGR, and there is, at times, less than 20:1 dilution. To protect these beneficial uses, the Regional Water Board finds that the wastewater must be disinfected and adequately treated to prevent disease. The method of treatment is not prescribed by this Order; however, wastewater must be treated to a level equivalent to that recommended by DPH. In accordance with the requirements of Title 22, this Order includes effluent limitations for total coliform organisms of 2.2 MPN/100 mL as a 7-day median; 23 MPN/100 mL, not to be exceeded more than once in a 30-day period; and 240 MPN/100 mL as an instantaneous

maximum. The Regional Water Board has previously considered the factors in CWC section 13241 in establishing these requirements.

In addition to coliform testing, an operational specification for turbidity has been included as a second indicator of the effectiveness of the treatment process and to assure compliance with the required level of treatment. These operational specifications replace the effluent limitations for turbidity contained in Order No. R5-2002-0095. The tertiary treatment process, or equivalent, is capable of reliably meeting a turbidity limitation of 2 nephelometric turbidity units (NTU) as a daily average. Failure of the filtration system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. Coliform testing, by comparison, is not conducted continuously and requires several hours, to days, to identify high coliform concentrations. The limitations in the previous Order were solely an operational check to ensure the treatment system was functioning properly and could meet the limits for total coliform organism. The effluent limitations were not intended to regulate turbidity in the receiving water. Therefore, to ensure consistent compliance with the total coliform organism disinfection limitations included in this Order, a turbidity specification is included in this Order as an operational specification prior to disinfection. The operational specification requires that turbidity prior to UV disinfection shall not exceed 2 NTU as a daily average; 5 NTU, more than 5% of the time within a 24-hour period; and an instantaneous maximum of 10 NTU.

- q. **pH.** The Basin Plan includes a water quality objective for surface waters (except for Goose Lake) that the "...pH shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses." The Discharger requested the maximum pH in the effluent be restricted to 8.0. Effluent limitations for pH are included in this Order based on the Discharger's request which is more restrictive than the Basin Plan objectives for pH.
- r. **Salinity.** There are no USEPA water quality criteria for the protection of aquatic organisms for electrical conductivity, total dissolved solids, sulfate, and chloride. The Basin Plan contains a chemical constituent objective that incorporates State MCLs, contains a narrative objective, and contains numeric water quality objectives for EC, TDS, Sulfate, and Chloride.

**Table F-5. Salinity Water Quality Criteria/Objectives**

Parameter	Agricultural WQ Goal <sup>1</sup>	Secondary MCL <sup>3</sup>	Effluent	
			Average	Maximum
EC (µmhos/cm)	Varies <sup>2</sup>	900, 1600, 2200	391	554
TDS (mg/L)	Varies	500, 1000, 1500	226	365
Sulfate (mg/L)	Varies	250, 500, 600	36	52
Chloride (mg/L)	Varies	250, 500, 600	36	53

- 1 Agricultural water quality goals based on *Water Quality for Agriculture*, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985)
- 2 The EC level in irrigation water that harms crop production depends on the crop type, soil type, irrigation methods, rainfall, and other factors. An EC level of 700  $\mu\text{mhos/cm}$  is generally considered to present no risk of salinity impacts to crops. However, many crops are grown successfully with higher salinities.
- 3 The secondary MCLs are stated as a recommended level, upper level, and a short-term maximum level.

- i. **Chloride.** The secondary MCL for chloride is 250 mg/L, as recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum. The recommended agricultural water quality goal for chloride, that would apply the narrative chemical constituent objective, is 106 mg/L as a long-term average based on *Water Quality for Agriculture*, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The 106 mg/L water quality goal is intended to protect against adverse effects on sensitive crops when irrigated via sprinklers.

Chloride concentrations in the effluent ranged from 28 mg/L to 53 mg/L, with an average of 36 mg/L, for five samples collected by the Discharger from 20 May 2003 and 21 June 2005. The effluent concentrations do not exceed the secondary MCL recommended level of 250 mg/L.

- ii. **Electrical Conductivity (EC).** The secondary MCL for EC is 900  $\mu\text{mhos/cm}$  as a recommended level, 1,600  $\mu\text{mhos/cm}$  as an upper level, and 2,200  $\mu\text{mhos/cm}$  as a short-term maximum. A screening value for the agricultural water quality goal, that would apply the narrative chemical constituents objective, is 700  $\mu\text{mhos/cm}$  as a long-term average based on *Water Quality for Agriculture*, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The 700  $\mu\text{mhos/cm}$  agricultural water quality screening value would prevent reduction in crop yield, i.e., a restriction on use of water, for salt-sensitive crops, such as beans, carrots, turnips, and strawberries. Most other crops can tolerate higher EC concentrations without harm, however, as the salinity of the irrigation water increases, more crops are potentially harmed by the EC; or extra measures must be taken by the farmer to minimize or eliminate any harmful impacts.

A review of the Discharger's monitoring reports from 1 June 2002 through 31 August 2007 shows an average effluent EC of 391  $\mu\text{mhos/cm}$ , with a range from 81  $\mu\text{mhos/cm}$  to 554  $\mu\text{mhos/cm}$  for 67 samples. The background receiving water EC averaged 419  $\mu\text{mhos/cm}$  in 71 sampling events collected by the Discharger from 1 June 2002 through 31 August 2007.

- iii. **Sulfate.** The secondary MCL for sulfate is 250 mg/L as recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum. Sulfate concentrations in the effluent ranged from 24 mg/L to 52 mg/L, with an average of 36 mg/L, for five samples collected by the Discharger from 20 May 2003 and 21 June 2005. The effluent does not exceed the secondary MCL recommended level of 250 mg/L.

- iv. **Total Dissolved Solids (TDS)**. The secondary MCL for TDS is 500 mg/L as a recommended level, 1,000 mg/L as an upper level, and 1,500 mg/L as a short-term maximum. A screening value for the agricultural water quality goal for TDS, that would apply the narrative chemical constituent objective, is 450 mg/L as a long-term average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). Water Quality for Agriculture evaluates the impacts of salinity levels on crop tolerance and yield reduction, and establishes water quality goals that are protective of the agricultural uses. The 450 mg/L water quality screening value would prevent reduction in crop yield, i.e. a restriction on use of water, for salt-sensitive crops. Only the most salt sensitive crops require irrigation water of 450 mg/L or less to prevent loss of yield. Most other crops can tolerate higher TDS concentrations without harm, however, as the salinity of the irrigation water increases, more crops are potentially harmed by the TDS, or extra measures must be taken by the farmer to minimize or eliminate any harmful impacts.

The average TDS effluent concentration was 226 mg/L with a range from 159 mg/L to 365 mg/L for 19 samples collected by the Discharger from 1 June 2002 through 31 August 2007.

- v. **Salinity Effluent Limitations**. Based on the low reported salinity in the effluent, the discharge does not have reasonable potential to cause or contribute to an instream excursion of the conservative screening value for water quality objectives for salinity. However, of additional concern is the salt contribution to Magnolia Creek and the Bear River. No effluent limitations are being established, however, a salinity minimization plan is included in this Order. Also, water supply monitoring is required to evaluate the relative contribution of salinity from the source water to the effluent.
- s. **Settleable Solids**. For inland surface waters, the Basin Plan states that “[w]ater shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.” The previous Order contained effluent limitations of 0.1 ml/L as a monthly average and 0.2 ml/L as a daily maximum. Tertiary treatment processes result in solids removal reflective of the design capabilities of the treatment system. Settleable solids for 182 samples after the new treatment system went on line were less than 0.5 ml/L. The TSS limitations of 10 mg/L (monthly average), 15 mg/L (weekly average), and 30 mg/L (daily maximum) include suspended and settleable matter in the analysis and an analysis for settleable matter is no longer necessary. With the TSS limitations in place, the settleable solids limits can be removed as an effluent limitation.
- t. **Toxicity**. See Section IV.C.5. of the Fact Sheet regarding whole effluent toxicity.



#### 4. WQBEL Calculations

- a. Effluent limitations for ammonia were calculated in accordance with section 1.4 of the SIP. The following paragraphs describe the methodology used for calculating effluent limitations.
- b. **Effluent Limitation Calculations.** In calculating maximum effluent limitations, the effluent the ECA is calculated as follows:

$$ECA_{acute} = CMC + D(CMC - B), \text{ and}$$
$$ECA_{chronic} = CCC + D(CCC - B)$$

For the human health, agriculture, or other long-term criterion/objective, the ECA is calculated as follows:

$$ECA_{HH} = HH + D(HH - B)$$

where:

$ECA_{acute}$  = effluent concentration allowance for acute (one-hour average) toxicity criterion

$ECA_{chronic}$  = effluent concentration allowance for chronic (four-day average) toxicity criterion

$ECA_{HH}$  = effluent concentration allowance for human health, agriculture, or other long-term criterion/objective

CMC = criteria maximum concentration (one-hour average)

CCC = criteria continuous concentration (four-day average, unless otherwise noted)

HH = human health, agriculture, or other long-term criterion/objective

D = dilution credit

B = maximum receiving water concentration

Acute and chronic toxicity ECAs were then converted to equivalent long-term averages (LTA) using statistical multipliers and the lowest is used. Additional statistical multipliers were then used to calculate the maximum daily effluent limitation (MDEL) and the average monthly effluent limitation (AMEL).

AMELs based on human health criteria are set equal to the human health ECAs and a statistical multiplier is used to calculate the MDEL.

$$\begin{aligned}
 & \overbrace{\min(M_A ECA_{acute}, M_C ECA_{chronic})}^{LTA_{acute}} \\
 AMEL &= mult_{AMEL} [\min(M_A ECA_{acute}, M_C ECA_{chronic})] \\
 MDEL &= mult_{MDEL} [\min(M_A ECA_{acute}, M_C ECA_{chronic})] \\
 & \underbrace{\hspace{15em}}_{LTA_{chronic}} \\
 MDEL_{HH} &= \left( \frac{mult_{MDEL}}{mult_{AMEL}} \right) AMEL_{HH}
 \end{aligned}$$

where:  $mult_{AMEL}$  = statistical multiplier converting minimum LTA to AMEL  
 $mult_{MDEL}$  = statistical multiplier converting minimum LTA to MDEL  
 $M_A$  = statistical multiplier converting CMC to LTA  
 $M_C$  = statistical multiplier converting CCC to LTA

WQBELs were calculated ammonia as follows in Tables F-6.

**Table F-6. WQBEL Calculations for Ammonia**

	Acute	Chronic (4-day)	Chronic (30-day)
Criteria (mg/L) <sup>(1)</sup>	5.62	10.26	4.10
Dilution Credit	No Dilution	No Dilution	No Dilution
ECA	5.62	10.26	4.10
ECA Multiplier	0.26	0.46	0.73
LTA	1.49	4.72	3.02
AMEL Multiplier (95 <sup>th</sup> %)	1.70	(2)	(3)
<b>AMEL (mg/L)</b>	<b>2.5</b>	(2)	(3)
MDEL Multiplier (99 <sup>th</sup> %)	3.78	(2)	(3)
<b>MDEL (mg/L)</b>	<b>5.6</b>	(2)	(3)

<sup>(1)</sup> USEPA Ambient Water Quality Criteria

<sup>(2)</sup> Limitations based on acute LTA [Acute LTA < Chronic (4-day) LTA]

<sup>(3)</sup> Limitations based on acute LTA [Acute LTA < Chronic (30-day) LTA]

**Summary of Water Quality-based Effluent Limitations  
Discharge Point No. 001**

**Table F-7. Summary of Water Quality-based Effluent Limitations**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Ammonia Nitrogen, Total (as N)	mg/L	2.5	--	5.6	--	--
	lbs/day <sup>1</sup>	15	--	34	--	--
Nitrite + Nitrate Nitrogen, Total (as N)	mg/L	10	--	--	--	--
	lbs/day <sup>1</sup>	60	--	--	--	--
Nitrite Nitrogen, Total (as N)	mg/L	1	--	--	--	--
	lbs/day <sup>1</sup>	6	--	--	--	--
pH	standard units	--	--	--	6.5	8.0

<sup>1</sup>Based on the treatment design flow of 0.72 MGD.

**5. Whole Effluent Toxicity (WET)**

For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct whole effluent toxicity testing for acute and chronic toxicity, as specified in the Monitoring and Reporting Program (Attachment E, Section V.). This Order also contains effluent limitations for acute toxicity and requires the Discharger to implement best management practices to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity.

- a. **Acute Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at III-8.00) The Basin Plan also states that, "...effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate...". USEPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance", dated February 1994. In section B.2. "Toxicity Requirements" (pgs. 14-15) it states that, "In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc." Accordingly, effluent limitations for acute toxicity have been included in this Order as follows:

**Acute Toxicity.** Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

Minimum for any one bioassays ----- 70%  
Median for any three or more consecutive bioassays ----- 90%

- b. **Chronic Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at III-8.00). Adequate WET data is not available to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective. Attachment E of this Order requires semi-annual chronic WET monitoring for demonstration of compliance with the narrative toxicity objective.

In addition to WET monitoring, Special Provisions VI.C.2.a. requires the Discharger to submit to the Regional Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The provision also includes a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as, requirements for TRE initiation if a pattern of toxicity is demonstrated.

#### D. Final Effluent Limitations

##### 1. Mass-based Effluent Limitations.

Title 40 CFR 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 CFR 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. This Order includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass limitations provided in 40 CFR 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration (e.g. CTR criteria and MCLs) and mass limitations are not necessary to protect the beneficial uses of the receiving water. Mass-based effluent limitations were calculated based upon the permitted flow of 0.72 MGD.

##### 2. Averaging Periods for Effluent Limitations.

Title 40 CFR 122.45 (d) requires average weekly and average monthly discharge limitations for publicly owned treatment works (POTWs) unless impracticable. However, for toxic pollutants and pollutant parameters in water quality permitting, the US EPA recommends the use of a maximum daily effluent limitation in lieu of average weekly effluent limitations for two reasons. "First, the basis for the 7-day average for POTWs derives from the secondary treatment requirements. This basis

*is not related to the need for assuring achievement of water quality standards. Second, a 7-day average, which could comprise up to seven or more daily samples, could average out peak toxic concentrations and therefore the discharge's potential for causing acute toxic effects would be missed.*" (TSD, pg. 96) This Order utilizes MDELs in lieu of average weekly effluent limitations for ammonia as recommended by the TSD for the achievement of water quality standards and for the protection of the beneficial uses of the receiving stream. DPH recommends that an AMEL is more appropriate for pollutants, such as nitrite and nitrite plus nitrate for which the MCL is designed to be protective of acute health effects. Therefore, an AMEL has been applied for nitrite and nitrite plus nitrate. Furthermore, for BOD<sub>5</sub>, TSS, pH, and total coliform organisms, weekly average effluent limitations have been replaced or supplemented with effluent limitations utilizing shorter averaging periods. The rationale for using shorter averaging periods for these constituents is discussed in Attachment F, Section IV.C.3., above.

### **3. Satisfaction of Anti-Backsliding Requirements.**

The Clean Water Act specifies that a revised permit may not include effluent limitations that are less stringent than the previous permit unless a less stringent limitation is justified based on exceptions to the anti-backsliding provisions contained in Clean Water Act sections 402(o) or 303(d)(4), or, where applicable, 40 CFR 122.44(f).

The previous Order No. R5-2002-0095 contained effluent limitations for turbidity. The prior limitations for turbidity were solely an operational check to ensure the treatment system was functioning properly and could meet the limits for solids and coliform. The prior effluent limitations were not intended to regulate turbidity in the receiving water. Rather, turbidity is an operational parameter to determine proper system functioning and not a WQBEL.

This Order contains performance based operational turbidity specifications to be met prior to disinfection in lieu of effluent limitations. The revised Order does not include effluent limitations for turbidity. However, the performance-based specification in this Order is an equivalent limit that is not less stringent, and therefore does not constitute backsliding.

The revised operational specifications for turbidity are the same as the effluent limitations in Order No. R5-2002-0095, with the inclusion of a more stringent requirement for an instantaneous maximum limit at any time (see Special Provisions VI.C.4.d. Ultraviolet Disinfection (UV) System Operating Specifications). This Order moves the point of compliance from the final effluent after disinfection to an internal compliance point prior to disinfection. These revisions are consistent with state regulations implementing recycled water requirements.

The previous Order No. R5-2002-0095 contained effluent limitations for chlorine residual. The Discharger has eliminated the use of chlorine for disinfection and sulfur dioxide for dechlorination. The new treatment system uses UV for disinfection. Therefore, based on operation of a new treatment system that no

longer uses chlorine for disinfection, this Order does not contain an effluent limitation for chlorine.

The previous Order No. R5-2002-0095 contained settleable solids effluent limitations of 0.1 ml/L as a monthly average and 0.2 ml/L as a daily maximum. Tertiary treatment processes result in solids removal reflective of the design capabilities of the treatment system. The TSS limitations in this Order are more stringent than the limitations in the previous Order and compliance with TSS limitations will result in settleable solids less than the 0.1 ml/L limitation in the previous Order. Settleable solids monitoring data for the discharge has consistently been reported as less than 0.05 ml/L. The Standard Methods analysis for settleable matter cannot reliably measure below 0.1 ml/L. The TSS limitations of 10 mg/L (monthly average), 15 mg/L (weekly average), and 30 mg/L (daily maximum) include suspended and settleable matter in the analysis and an analysis for settleable matter is no longer necessary. These TSS limitations effectively limit settleable solids concentrations to less than the previous settleable solids limitations. With the stringent TSS limitations in place the settleable solids limits can be removed as an effluent limitation.

The revision in the turbidity limitation and the removal of settleable solids is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16 because this Order imposes equivalent or more stringent requirements than the prior permit and therefore does not allow degradation.

The previous Order No. R5-2002-0095 contained effluent limitations for aluminum of 87 µg/L as a 4-day average and 750 µg/L as a 1-hour average. The Discharger has installed a membrane system and has ceased the use of alum, which was the source of the aluminum (see section IV.C.3.e. of this Order). Based on the new method of treatment and new monitoring information the effluent limitations for aluminum have been removed from this Order.

#### **4. Satisfaction of Antidegradation Policy**

This Order does not allow for an increase in flow or mass of pollutants to the receiving water. Therefore, a complete antidegradation analysis is not necessary. The Order requires compliance with applicable federal technology-based standards and with WQBELs where the discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

**Summary of Final Effluent Limitations  
Discharge Point No. 001**

**Table F-8. Summary of Final Effluent Limitations**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	30	--	--
	lbs/day <sup>1</sup>	60	90	180	--	--
Total Suspended Solids	mg/L	10	15	30	--	--
	lbs/day <sup>1</sup>	60	90	180	--	--
Ammonia Nitrogen, Total (as N)	mg/L	2.5	--	5.6	--	--
	lbs/day <sup>1</sup>	15	--	34	--	--
Nitrite + Nitrate Nitrogen, Total (as N)	mg/L	10	--	--	--	--
	lbs/day <sup>1</sup>	60	--	--	--	--
Nitrite Nitrogen, Total (as N)	mg/L	1	--	--	--	--
	lbs/day <sup>1</sup>	6	--	--	--	--
pH	standard units	--	--	--	6.5	8.0

Based on the treatment design flow of 0.72 MGD.

- a. **Percent Removal:** The average monthly percent removal of BOD<sub>5</sub> and TSS shall not be less than 85 percent.
- b. **Acute Whole Effluent Toxicity.** Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
  - 70%, minimum for any one bioassay; and
  - 90%, median for any three consecutive bioassays.
- c. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed:
  - 2.2 most probable number (MPN) per 100 mL, as a 7-day median; and
  - 23 MPN/100 mL, as a daily maximum.
- d. **Average Dry Weather Flow.** The average dry weather flow shall not exceed 0.72 MGD.

**E. Interim Effluent Limitations – Not Applicable**

**F. Landscape Discharge Specifications - Not applicable**

**G. Reclamation Specifications**

With the new treatment facilities in place and operational, the previous irrigation pond (PND-001, previously Pond A) and the two previous storage ponds (PND-002 and PND-003, previously Ponds B and C) are no longer an integral part of the treatment process. The Discharger proposes to maintain wildlife habitat and plant site esthetics

by utilizing treated reclaimed wastewater to maintain water levels in Ponds A, B, and C as identified in the Report of Waste Discharge and Environmental Documents. The Discharger plans to add a recycled water supply system to reduce use of potable water for plant use. The Discharger also intends to maintain the irrigation system previously utilized for land disposal to provide for the option of on-site landscape irrigation utilizing reclaimed wastewater.

This Order specifies that wastewater discharged to the reclamation ponds must meet final effluent limitations for discharge to Magnolia Creek that are consistent with DPH reclamation criteria.

## V. RATIONALE FOR RECEIVING WATER LIMITATIONS

Basin Plan water quality objectives to protect the beneficial uses of surface water and groundwater include numeric objectives and narrative objectives, including objectives for chemical constituents, toxicity, and tastes and odors. The toxicity objective requires that surface water and groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective requires that surface water and groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use or that exceed the maximum contaminant levels (MCLs) in Title 22, CCR. The tastes and odors objective states that surface water and groundwater shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances in concentrations that adversely affect domestic drinking water supply, agricultural supply, or any other beneficial use.

### A. Surface Water

1. CWA section 303(a-c), requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Regional Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that "*[t]he numerical and narrative water quality objectives define the least stringent standards that the Regional Board will apply to regional waters in order to protect the beneficial uses.*" The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains Receiving Surface Water Limitations based on the Basin Plan numeric and narrative water quality objectives for bacteria, biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, salinity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity.

Numeric Basin Plan objectives for bacteria, dissolved oxygen, pH, temperature, and turbidity are applicable to this discharge and have been incorporated as Receiving Surface Water Limitations.



## **B. Groundwater**

The beneficial uses of the underlying ground water are municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply. Basin Plan water quality objectives include narrative objectives for chemical constituents, tastes and odors, and toxicity of groundwater. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use. The tastes and odors objective prohibits taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan also establishes numerical water quality objectives for chemical constituents and radioactivity in groundwaters designated as municipal supply. These include, at a minimum, compliance with MCLs in Title 22 of the CCR. The bacteria objective prohibits coliform organisms at or above 2.2 MPN/100 ml. The Basin Plan requires the application of the most stringent objective necessary to ensure that waters do not contain chemical constituents, toxic substances, radionuclides, taste- or odor-producing substances, or bacteria in concentrations that adversely affect municipal or domestic supply, agricultural supply, industrial supply or some other beneficial use.

The new treatment facilities are contained in concrete basins and the treatment ponds are no longer utilized for treatment of wastewater. There is no potential from the treatment processes for pollutants to migrate to groundwater in amounts that could degrade groundwater or cause groundwater to exceed applicable water quality objectives. The existing aeration pond will be only be used temporary as an emergency storage pond. The existing irrigation and storage ponds will contain reclaimed wastewater that is consistent with DPH reclamation criteria. This Order contains a limitation prohibiting degradation of groundwater.

## **VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS**

40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorizes the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (MRP), Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program for this Facility.

### **A. Influent Monitoring**

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., BOD<sub>5</sub> and TSS reduction requirements).

## **B. Effluent Monitoring**

1. Pursuant to the requirements of 40 CFR §122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream and groundwater.
2. The SIP states that if “...all reported detection limits of the pollutant in the effluent are greater than or equal to the C [water quality criterion or objective] value, the RWQCB [Regional Water Board] shall establish interim requirements...that require additional monitoring for the pollutant....”

## **C. Whole Effluent Toxicity Testing Requirements**

1. **Acute Toxicity.** Semi-annual 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.
2. **Chronic Toxicity.** Semi-annual chronic whole effluent toxicity testing is required in order to demonstrate compliance with the Basin Plan’s narrative toxicity objective.

## **D. Receiving Water Monitoring**

### **1. Surface Water**

- a. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream.

### **2. Groundwater**

The previous Order No. R5-2002-0095 required the Discharger to conduct a hydrogeologic assessment and a provision requiring installation and sampling of monitoring wells to determine if the discharge from the treatment and storage ponds, and the spray disposal area, impacted groundwater. Based on the data collected from four monitoring wells over a 2-year period, it could not be concluded that groundwater was or was not impacted from the treatment and storage ponds and spray disposal area. Without conclusive data documenting impacts or lack thereof, the Discharger opted to abandon the pond system in favor of mechanical treatment.

The Discharger has continued quarterly groundwater monitoring of the four wells in accordance with Order No. R5-2002-0095 but has requested a relaxation since the ponds are no longer used for treatment of wastewater.

With the completion of the new treatment facility all treatment processes are contained in concrete basins. The spray disposal area is no longer be used for disposal of wastewater. The existing storage ponds contain reclaimed wastewater, which meets effluent limitations for discharge to surface waters with an effluent quality consistent with DPH reclamation criteria. The existing storage ponds are

constructed on bedrock and are immediately adjacent to Magnolia Creek. Ground water monitoring is no longer necessary and has been removed from this Order. However, the Discharger intends to keep the four onsite groundwater monitoring wells to provide the option for future sampling of groundwater.

## **E. Other Monitoring Requirements**

### **1. Biosolids Monitoring**

Biosolids monitoring is required to ensure compliance with the biosolids disposal requirements (Special Provisions VI.C.6.a.). Biosolids disposal requirements are imposed pursuant to 40 CFR Part 503 to protect public health and prevent groundwater degradation.

### **2. Ultraviolet Disinfection System Monitoring**

UV System specifications and monitoring and reporting are required to ensure that adequate UV dosage is applied to the wastewater to inactivate pathogens (e.g. viruses) in the wastewater. UV Disinfection system monitoring requirements are imposed pursuant to requirements established by the California Department of Public Health, (DPH) and the National Water Research Institute (NWRI) and American Water Works Association Research Foundation NWRI/AWWARF's *"Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse."*

### **3. Water Supply Monitoring**

Water supply monitoring is required to evaluate the source of constituents in the wastewater.

## **VII. RATIONALE FOR PROVISIONS**

### **A. Standard 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.

40 CFR 122.41(a)(1) and (b) through (n) establish conditions that apply to all State-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. 40 CFR 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 CFR 123.25, this Order omits federal conditions that address enforcement authority specified in 40 CFR 122.41(j)(5) and (k)(2) because the enforcement authority under the

CWC is more stringent. In lieu of these conditions, this Order incorporates by reference CWC section 13387(e).

## B. Special Provisions

### 1. Reopener Provisions

- a. This Order may be reopened for modification, or revocation and reissuance, as a result of the detection of a reportable priority pollutant generated by special conditions included in this Order. These special conditions may be, but are not limited to, fish tissue sampling, whole effluent toxicity, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in this Order as a result of the special condition monitoring data.
- b. Conditions that necessitate a major modification of a permit are described in 40 CFR 122.62, including:
  - 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.
  - When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.
- c. **Whole Effluent Toxicity.** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a Toxicity Reduction Evaluation (TRE). This Order may be reopened to include a numeric chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if a numeric chronic toxicity water quality objective is adopted by the State Water Board, this Order may be reopened to include a numeric chronic toxicity limitation based on that objective.

### 2. Special Studies and Additional Monitoring Requirements

- a. **Chronic Whole Effluent Toxicity Requirements.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at III-8.00.) Adequate WET data is not available to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective. Attachment E of this Order requires semi-annual chronic WET monitoring for demonstration of compliance with the narrative toxicity objective.

The Monitoring and Reporting Program of this Order requires chronic WET monitoring for demonstration of compliance with the narrative toxicity objective. In addition to WET monitoring, this provision requires the Discharger to submit to the Regional Water Board an Initial Investigative TRE Workplan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The provision also includes a numeric toxicity monitoring trigger, requirements for accelerated monitoring, and requirements for TRE initiation if a pattern of toxicity is demonstrated.

**Monitoring Trigger.** A numeric toxicity monitoring trigger of  $> 1$  TUC (where TUC =  $100/\text{NOEC}$ ) is applied in the provision, because this Order does not allow any dilution for the chronic condition. Therefore, a TRE is triggered when the effluent exhibits a pattern of toxicity at 100% effluent.

**Accelerated Monitoring.** The provision requires accelerated WET testing when a regular WET test result exceeds the monitoring trigger. The purpose of accelerated monitoring is to determine, in an expedient manner, whether there is a pattern of toxicity before requiring the implementation of a TRE. Due to possible seasonality of the toxicity, the accelerated monitoring should be performed in a timely manner, preferably taking no more than 2 to 3 months to complete.

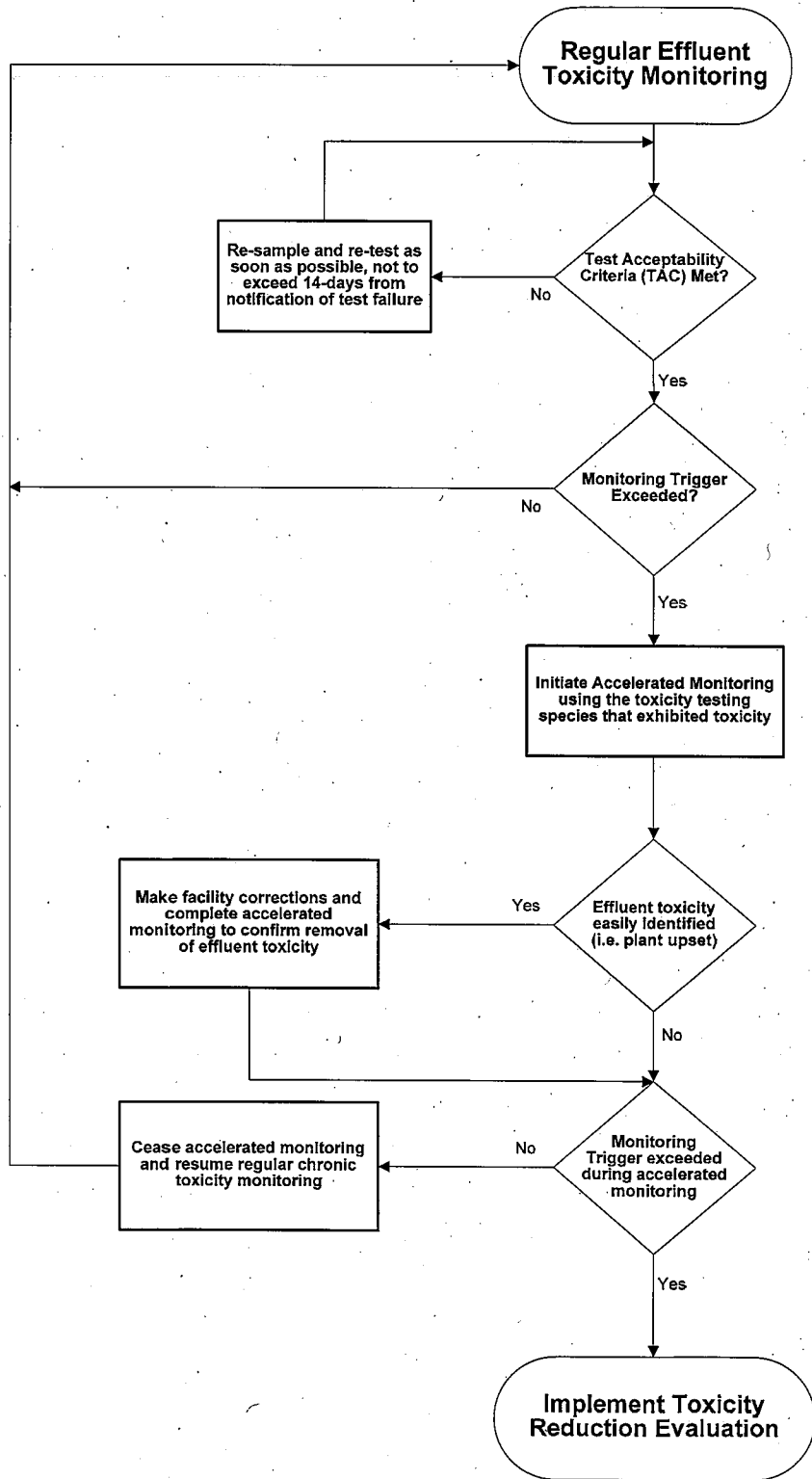
The provision requires accelerated monitoring consisting of four chronic toxicity tests every 2 weeks using the species that exhibited toxicity. Guidance regarding accelerated monitoring and TRE initiation is provided in the *Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991* (TSD). The TSD at page 118 states, "EPA recommends if toxicity is repeatedly or periodically present at levels above effluent limits more than 20 percent of the time, a TRE should be required." Therefore, four accelerated monitoring tests are required in this provision. If no toxicity is demonstrated in the four accelerated tests, then it demonstrates that toxicity is not present at levels above the monitoring trigger more than 20 percent of the time (only 1 of 5 tests are toxic, including the initial test). However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern of effluent toxicity (i.e. toxicity present exceeding the monitoring trigger more than 20 percent of the time), the Executive Officer may require that the Discharger initiate a TRE.

See the WET Accelerated Monitoring Flow Chart (Figure F-1), below, for further clarification of the accelerated monitoring requirements and for the decision points for determining the need for TRE initiation.

**TRE Guidance.** The Discharger is required to prepare a TRE Work Plan in accordance with USEPA guidance. Numerous guidance documents are available, as identified below:

- *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants*, (EPA/833B-99/002), August 1999.
- *Generalized Methodology for Conducting Industrial TRES*, (EPA/600/2-88/070), April 1989.
- *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures*, Second Edition, EPA 600/6-91/005F, February 1991.
- *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I*, EPA 600/6-91/005F, May 1992.
- *Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting acute and Chronic Toxicity*, Second Edition, EPA 600/R-92/080, September 1993.
- *Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity*, Second Edition, EPA 600/R-92/081, September 1993.
- *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, Fifth Edition, EPA-821-R-02-012, October 2002.
- *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, EPA-821-R-02-013, October 2002.
- *Technical Support Document for Water Quality-based Toxics Control*, EPA/505/2-90-001, March 1991

**Figure F-1  
WET Accelerated Monitoring Flow Chart**



### 3. Best Management Practices and Pollution Prevention

- a. **Salinity Evaluation and Minimization Plan.** In accordance with 40 CFR §122.44(k), the Discharger is required to implement best management practices to reduce the discharge of salinity to the Magnolia Creek. Particularly an Evaluation and Minimization Plan for salinity is required in this Order to ensure adequate measures are developed and implemented by the Discharger.

### 4. Construction, Operation, and Maintenance Specifications

- a. **Ultraviolet Disinfection (UV) System Operating Specifications.** UV System specifications and monitoring and reporting is required when the system becomes operational to ensure that adequate UV dosage is applied to the wastewater to inactivate pathogens e.g. viruses in the wastewater. UV dosage is dependent on several factors such as UV transmittance, UV power setting, wastewater turbidity, and wastewater flow through the UV System. Monitoring and reporting of these parameters is necessary to determine compliance with minimum dosage requirements established by the California Department of Public Health, (DPH) and the National Water Research Institute (NWRI) and American Water Works Association Research Foundation NWRI/AWWARF's "*Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse*" first published in December 2000 revised as a Second Edition dated May 2003. In addition, a Memorandum dated 1 November 2004 issued by DPH to Regional Water Board executive officers recommended that provisions be included in permits to water recycling treatment plants employing UV disinfection requiring dischargers to establish fixed cleaning frequency of quartz sleeves as well as include provisions that specify minimum delivered UV dose that must be maintained (as recommended by the NWRI/AWWARF UV Disinfection Guidelines).

Turbidity is included as an operational specification as an indicator of the effectiveness of the treatment process and to assure compliance effluent coliform limitations. The tertiary treatment MBR process, utilized at this facility, is capable of reliably meeting a turbidity limitation of 2 NTU as a daily average. Failure of the treatment system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity and could impact UV dosage. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. The operational specification requires that turbidity prior to disinfection shall not exceed 2 NTU as a daily average; 5 NTU, more than 5% of the time within a 24-hour period; and an instantaneous maximum of 10 NTU.

Minimum UV dosage and turbidity specifications are included as operating criteria in Special Provisions, Section VI.C.4.d and Monitoring and Reporting requirements, Attachment E, Section X.C.1, to ensure that adequate disinfection of wastewater is achieved.



- b. **Reclamation Pond Operating Requirements.** The operation and maintenance specifications for the on site reclamation ponds are necessary to protect the beneficial uses of surface and groundwater. In addition, reporting requirements related to use of the reclamation ponds are required to monitor their use.

## 5. Special Provisions for Municipal Facilities (POTWs Only)

### a. Pretreatment Requirements.

- i. The federal CWA, section 307(b), and federal regulations, 40 CFR Part 403, require publicly owned treatment works to develop an acceptable industrial pretreatment program. There are no industrial discharges to the treatment facility. This Order continues the provisions from the previous order requiring the Discharger to implement the necessary legal authorities, programs, and controls to insure that incompatible wastes are not introduced to the treatment system. The Discharger is not required to develop a pretreatment program.

### b. Sludge/Biosolids Discharge Specifications.

The sludge/biosolids provisions are required to ensure compliance with State disposal requirements (Title 27, CCR, Division 2, Subdivision 1, section 20005, et seq) and USEPA sludge/biosolids use and disposal requirements at 40 CFR Part 503.

### c. Collection System.

The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ (General Order) on 2 May 2006. The General Order requires public agencies that own or operate sanitary sewer systems with greater than one mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs), among other requirements and prohibitions.

Furthermore, the General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. Inasmuch that the Discharger's collection system is part of the system that is subject to this Order, certain standard provisions are applicable as specified in Provisions, section VI.C.5. For instance, the 24-hour reporting requirements in this Order are not included in the General Order. The Discharger must comply with both the General Order and this Order. The Discharger and public agencies that are discharging wastewater into the facility were required to obtain enrollment for regulation under the General Order by 1 December 2006.

## 6. Other Special Provisions

**Ownership Change.** To maintain the accountability of the operation of the Facility, the Discharger is required to notify the succeeding owner or operator of the existence of this Order by letter if, and when, there is any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger.

## 7. Compliance Schedules – Not Applicable

## VIII. PUBLIC PARTICIPATION

The Regional Water Board is considering the issuance of WDRs that will serve as a NPDES permit for Lake of the Pines WWTP. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

### A. Notification of Interested Parties

The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through Internet posting.

### B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail to the Executive Office at the Regional Water Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Regional Water Board, written comments should be received at the Regional Water Board offices by 5:00 p.m. on 3 April 2009.

### C. Public Hearing

The Regional Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: 24 April 2009  
Time: 8:30 am  
Location: Regional Water Quality Control Board, Central Valley Region  
11020 Sun Center Dr., Suite #200  
Rancho Cordova, CA 95670

Interested persons are invited to attend. At the public hearing, the Regional Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our Web address is <http://www.waterboards.ca.gov/rwqcb5/> where you can access the current agenda for changes in dates and locations.

#### **D. Waste Discharge Requirements Petitions**

Any aggrieved person may petition the State Water Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

State Water Resources Control Board  
Office of Chief Counsel  
P.O. Box 100, 1001 I Street  
Sacramento, CA 95812-0100

#### **E. Information and Copying**

The Report of Waste Discharge (RWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling (916)-464-4620.

#### **F. Register of Interested Persons**

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference this facility, and provide a name, address, and phone number.

#### **G. Additional Information**

Requests for additional information or questions regarding this order should be directed to James C. Pedri at (530) 224-4845.