CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2004-0001

NPDES NO. CA0081434

WASTE DISCHARGE REQUIREMENTS FOR CITY OF GALT AND ROMAN CATHOLIC BISHOP OF SACRAMENTO WASTEWATER TREATMENT PLANT AND RECLAMATION FACILITY SACRAMENTO COUNTY

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

BACKGROUND

1. The City of Galt (City) submitted a Report of Waste Discharge, dated 30 November 2001, and applied for a permit renewal to discharge waste under the National Pollutant Discharge Elimination System (NPDES) from the City of Galt Wastewater Treatment Plant.

2. The City owns and operates a wastewater collection, treatment, and disposal system, and provides sewerage service to the Galt community. Treated municipal wastewater is seasonally discharged to Laguna Creek, a tributary to the Cosumnes River, a water of the United States, at the point latitude 38° 18' 28" and longitude 121° 20' 22", and into ponds which are used for irrigation of land surrounding the facility. Effective 20 March 2003, the City entered into a lease agreement with the Roman Catholic Bishop of Sacramento (RCB) for the use of approximately 180 acres (160 acres of which are irrigable) of RCB land south of the treatment plant for additional reclamation usage. The wastewater treatment plant and land disposal areas are located in Section 9, T5N, R6E, MDB&M, as shown in Attachment A, a part of this Order.

3. The wastewater treatment system currently consists of screens, extended aeration oxidation ditches, secondary clarification, chlorine disinfection, dechlorination (when discharging to Laguna Creek), and then storage in a reservoir prior to discharge. Additional treatment processes or units being planned or constructed include a trucked waste receiving station, grit removal facilities, and the possible use of an auxiliary storage basin. Based on information provided in the Report of Waste Discharge, priority pollutant monitoring, and in monthly monitoring reports, the discharge is described as follows:

Plant Design Flow:	3.00 million gallons per day (mgd)
Maximum Daily Flow:	
Summer	3.00 mgd
Winter	2.71 mgd

Average Daily Flow:

Summer	2.04 mgd
Winter	1.83 mgd
Maximum Temperature:	
Summer	80 °F
Winter	74 °F
Average Temperature:	
Summer	73 °F
Winter	61 °F
pH:	
Summer	7.0-8.6
Winter	6.7-8.5

Constituent	Maximum Concentration
BOD[1]	4.7 mg/l
Total Suspended Solids	57 mg/l
Total Dissolved Solids	516 mg/l
Ammonia	2.3 mg/l
Copper	11 µg/l
Arsenic	16 µg/l
Cyanide	63 µg/l
Chloroform	24.4 µg/l
Dibromochloromethane	1.1 µg/l
Bromodichloromethane	8.4 µg/l
Hardness[2] (as $CaCO_3$)	42 mg/l

[1] 5-day, 20°C biochemical oxygen demand

[2] Minimum (worst-case) effluent concentration

4. Between 1 May and 31 October, effluent is reclaimed for irrigation of approximately 174 acres of City-owned land surrounding the facility and another 160 acres of land south of the treatment plant leased from the RCB. Tailwater is returned to the storage reservoir. The City is required to operate and maintain the land application areas in order to maintain adequate capacity to handle effluent volumes discharged from the wastewater treatment plant. The City will operate and maintain the reclamation areas (Assessor's Parcel Numbers 148-0010-020-0000 and 148-0010-021-0000) owned by the RCB. The City of Galt and the RCB shall hereafter be referred to individually or jointly as "Discharger". The City is responsible for maintaining compliance with this Order. The RCB is not responsible for the wastewater treatment plant operations, the discharge to surface waters, or the discharge to City-owned lands. The RCB is also not responsible for the reclamation operations on the parcels it owns; however, is ultimately

responsible if enforcement actions against the City are ineffective or would be futile, or if enforcement is necessary to protect public health or the environment.

5. Waste activated sludge removed from the secondary clarifiers is directed to onsite sludge lagoons. From these lagoons, biosolids are pumped into a vehicle and injected 8 to 18 inches below ground surface onto City-owned land. The City's 2002 Sludge Injection Annual Report indicated that 5.7 million gallons of biosolids, at 1.86% solids content, were applied to a dedicated 20-acre disposal area of Field 19. The report identified the following metal concentrations in the biosolids:

Constituent	Concentration[1] (mg/kg)
Arsenic	13.5
Cadmium	17.9
Copper	237
Lead	29.7
Mercury	2.8
Nickel	42.3
Selenium	5.2
Zinc	530

[1] Dry weights

6. The U.S. Environmental Protection Agency (USEPA) and the Regional Board have classified this discharge as a major discharge.

7. The Regional Board adopted a *Water Quality Control Plan*, *Fourth Edition, for the Sacramento and San Joaquin River Basins* (hereafter Basin Plan). The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve water quality objectives for all waters of the Basin. These requirements implement the Basin Plan.

8. Basin Plan water quality objectives were established to protect the beneficial uses of surface water and groundwater, and include both numeric and narrative objectives for chemical constituents, toxicity, and taste and odor. The chemical constituent objective requires that surface water and groundwater shall not contain chemical constituents in concentrations that adversely affect beneficial uses or exceed the maximum contaminant levels (MCLs) specified in Title 22, California Code of Regulations (CCR). 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, or animals. The taste and odor 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.

RECEIVING WATER BENEFICIAL USES

9. The Basin Plan on page II-2.00 states: "Existing and potential beneficial uses which currently apply to surface waters of the basins are presented in Figure II-1 and Table II-1. The beneficial uses of any specifically identified water body generally apply to its tributary streams." The Basin Plan does not specifically identify beneficial uses for Laguna Creek, but the Basin Plan does identify present and potential uses for the Cosumnes River, to which Laguna Creek is tributary.

   The Basin Plan identifies the following beneficial uses for the Cosumnes River: municipal and domestic supply, agricultural irrigation, agricultural stock watering, water contact recreation, other non-contact water recreation, warm freshwater aquatic habitat, cold freshwater aquatic habitat, warm fish migration habitat, cold fish migration habitat, warm spawning habitat, and wildlife habitat. In addition, State Water Resources Control Board (State Board) Resolution No. 88-63, incorporated into the Basin Plan pursuant to Regional Board Resolution 89-056, requires the Regional Board to assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in Table II-1.

   The Basin Plan on page II-1.00 states: "Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning…" and with respect to disposal of wastewaters states that "… disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses."

   In reviewing whether the existing and/or potential uses of the Cosumnes River apply to Laguna Creek**,** the Regional Board has considered the following facts:

   a. *Domestic Supply and Agricultural Supply*

      The Regional Board is required to apply the beneficial uses of municipal and domestic supply to Laguna Creek based on State Board Resolution No. 88-63, which was incorporated in the Basin Plan pursuant to Regional Board Resolution 89-056. Also, since Laguna Creek is an ephemeral stream, it likely provides groundwater recharge during periods of low flow. The groundwater is a source of drinking water.

      Laguna Creek drains into the Cosumnes River Preserve approximately 4 miles downstream from the discharge point. However, prior to reaching the Cosumnes River Preserve, a local grower diverts water directly from Laguna Creek for irrigation of food crops, primarily fresh vegetables for sale to the general public. In addition, Bureau of Land Management staff has indicated that most of the area within the Cosumnes River Preserve is "prime

agricultural land", meaning that each parcel, at any time, has the capability to produce fresh food crops if the farmer so desires. Currently, organic rice, corn, and fruits and vegetables are grown within the Cosumnes River Preserve. These crops are irrigated with water diverted from the Cosumnes River downstream of the discharge.

In addition to the existing water uses, growth in the area downstream of the discharge is expected to continue, which presents a potential for future domestic and agricultural uses of the water in Laguna Creek downstream of the discharge. If the Discharger provides adequate information to fully evaluate and determine that the receiving water beneficial use of MUN does not exist and is not likely to be attained in the future, and the Basin Plan is amended to change the beneficial use, then this Order may be reopened to modify appropriate findings and limitations.

b. *Water Contact and Noncontact Recreation and Esthetic Enjoyment*

The Regional Board finds that there is ready public access to Laguna Creek and waters downstream of the discharge, exclusion of the public is unrealistic, and contact recreational activities currently exist. These uses are likely to increase as the population in the area grows. Prior to flowing into the Cosumnes River Preserve, Laguna Creek flows through areas of general public access.

The Cosumnes River offers many recreational opportunities. Wading, swimming, boating, and canoeing are common activities occurring within the Cosumnes River Preserve. In addition, researchers and school groups frequently conduct field studies throughout the year. These studies, including evaluating salmon runs and collecting data on invertebrates and animals, may involve contact with undiluted effluent in downstream receiving waters.

c. *Groundwater Recharge*

The Discharger submitted a *Discharge Impacts on Receiving Waters Study*, dated January 2002, which evaluated the performance of the wastewater treatment plant and the impacts of the wet season treated effluent discharge to Laguna Creek. The report states, in part, "Laguna Creek is an ephemeral stream, which may be without flow during the dry months. The creek is typically wet for approximately 4 months out of the year, …"

In areas where groundwater elevations are below the stream bottom, water from the stream will percolate to groundwater. Since Laguna Creek is at times dry, and regional groundwater levels are below the stream bottom, it is reasonable to assume that the stream water is lost by evaporation, flow downstream, and percolation to groundwater providing a source of municipal and irrigation water supply.

d. *Freshwater Replenishment*

When water is present in Laguna Creek, there is hydraulic continuity between Laguna Creek and the Cosumnes River. During periods of hydraulic continuity, Laguna Creek adds to the water quantity and may impact the quality of water flowing downstream in the Cosumnes River.

e. *Preservation and Enhancement of Fish, Wildlife, and Other Aquatic Resources*

Laguna Creek flows to the Cosumnes River. The California Department of Fish and Game (DFG) has verified that the fish species present in the Cosumnes River are consistent with both cold and warm water fisheries and that there is a potential for anadromous fish migration necessitating cold water. The Basin Plan (Table II-1) designates the Cosumnes River as being both a cold and warm freshwater habitat. Therefore, pursuant to the Basin Plan (Table II-1, Footnote (2)), the cold designation applies to Laguna Creek.

Upon review of the flow conditions, habitat values, and beneficial uses of Laguna Creek, and the facts described above, the Regional Board finds that the beneficial uses identified in the Basin Plan for the Cosumnes River are applicable to Laguna Creek.

The Regional Board also finds that based on the available information and on the Discharger's application, that Laguna Creek, absent this and other NPDES discharges, is an ephemeral stream. The ephemeral nature of Laguna Creek means that the designated beneficial uses must be protected, but that no credit for receiving water dilution is available. Although the discharge, at times, maintains the aquatic habitat, constituents may not be discharged that may cause harm to aquatic life. At other times, natural flows within Laguna Creek help support the aquatic life. Both conditions may exist within a short time span, where Laguna Creek would be dry without the discharge or other NPDES discharges, and periods when sufficient background flows provide hydraulic continuity with the Cosumnes River. Dry conditions occur primarily in the summer months, but dry conditions may also occur throughout the year, particularly in low rainfall years. The lack of dilution results in more stringent effluent limitations to protect contact recreational uses, drinking water standards, agricultural water quality goals, and aquatic life. Significant dilution may occur during and immediately following high rainfall events.

10. The beneficial uses of the underlying ground water are municipal and domestic, industrial service, industrial process, and agricultural supply.

ANTIDEGRADATION

11. State Board Resolution No. 68-16 (hereafter Resolution 68-16) requires the Regional Board, in regulating the discharge of waste, to maintain high quality waters of the State until it is demonstrated that any change in quality will be consistent with the maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Regional Board's policies (e.g., quality that exceeds water quality objectives). Resolution 68-16 requires that the discharge be regulated to meet best practicable treatment or control to assure that pollution or nuisance will not occur, and that the

highest water quality consistent with the maximum benefit to the people of the State be maintained.

12. With regards to surface water, the receiving water may temporarily exceed applicable water quality objectives for certain constituents as described in this Order. However, this Order requires the Discharger, in accordance with specified compliance schedules, to meet requirements that will result in the use of best practicable treatment or control of the discharge and will result in compliance with water quality objectives. This Order also establishes interim effluent limitations and compliance schedules for pollutants that cannot immediately be controlled to prevent any additional degradation of surface water by these pollutants. The total allowable discharge of 3.0 mgd has not been increased from the previous Order, and therefore, does not cause additional degradation beyond that allowed in the previous Order. The surface water discharge is consistent with Resolution 68-16 and Title 40, Code of Federal Regulations, Section 131.12 (40 CFR 131.12) as this Order requires the Discharger to meet requirements that will result in best practicable treatment or control to assure that pollution or nuisance will not occur. Some degradation is consistent with maximum benefit to the people of the State because the discharge allows for economic or social development in the area.

13. With regards to groundwater, domestic wastewater contains constituents such as total dissolved solids (TDS), specific conductivity, pathogens, nitrates, ammonia, organics, metals, and oxygen demanding substances (BOD). The discharge to land, with disposal by percolation, may result in an increase in the concentration of these constituents in groundwater. The increase in the concentration of these constituents in groundwater must be consistent with Resolution 68-16. Any increase in pollutant concentrations in groundwater must be shown to be necessary to allow wastewater utility service necessary to accommodate housing and economic expansion in the area and must be consistent with maximum benefit to the people of the State of California. Some degradation of groundwater by the Discharger is consistent with Resolution 68-16 provided that:

    a. The degradation is limited in extent;

    b. The degradation after effective source control, treatment, and control is limited to waste constituents typically encountered in municipal wastewater as specified in the Groundwater Limitations in this Order;

    c. The Discharger minimizes the degradation by fully implementing, regularly maintaining, and optimally operating best practicable treatment and control (BPTC) measures; and

    d. The degradation does not result in water quality less than that prescribed in the Basin Plan.

GROUNDWATER

14. Monitoring of the groundwater must be conducted to determine if the discharge has caused an increase in constituent concentrations, when compared to background. The monitoring must, at a minimum, require a complete assessment of groundwater impacts including the vertical and lateral extent of degradation, an assessment of all wastewater-related constituents which may have migrated to groundwater, and an analysis of whether additional or different methods of treatment or control of the discharge are necessary to provide best practicable treatment or control to comply with Resolution 68-16. Economic analysis is only one of many factors considered in determining best practicable treatment. If monitoring indicates that the discharge has incrementally increased constituent concentrations in groundwater above background, this permit may be reopened and modified. Until groundwater monitoring is sufficient, this Order contains Groundwater Limitations that allow groundwater quality to be degraded for certain constituents when compared to background groundwater quality, but not to exceed water quality objectives. If groundwater quality has been degraded by the discharge, the incremental change in waste concentration (when compared with background) may not be increased. If groundwater quality has been or may be degraded by the discharge, this Order may be reopened and specific numeric limitations established consistent with Resolution 68-16 and the Basin Plan.

15. The discharge authorized herein and the treatment and storage facilities associated with the discharge of treated municipal wastewater, except for discharges of residual sludge and solid waste, are exempt from the requirements of Title 27, CCR, Section 20005 et seq. (hereafter Title 27). The exemption, pursuant to Title 27, CCR, Section 20090(a), is based on the following:

    a. The waste consists primarily of domestic sewage and treated effluent;

    b. The waste discharge requirements are consistent with water quality objectives; and

    c. The treatment and storage facilities described herein are associated with a municipal wastewater treatment plant.

16. This Order requires the Discharger to prepare technical and monitoring reports as authorized by California Water Code (CWC) Section 13267. This Order also requires that the Discharger conduct groundwater monitoring and includes a regular schedule of groundwater monitoring in the attached Monitoring and Reporting Program. The groundwater monitoring reports are necessary to evaluate impacts to waters of the State to assure protection of beneficial uses and compliance with Regional Board plans and policies, including Resolution 68-16, and to assure compliance with this Order. Evidence in the record includes effluent monitoring data that indicates the presence of constituents that may degrade groundwater and surface water.

BIOSOLIDS

17. The reclaimed water is used for surface irrigation of fodder, fiber, or seed crops, which are not used (directly or indirectly) for human consumption. Biosolids are applied on the City's properties as a soil amendment.

18. USEPA has promulgated biosolids reuse regulations in 40 CFR 503, *Standard for the Use or Disposal of Sewage Sludge*, which establishes management criteria for protection of groundwater and surface waters, sets application rates for heavy metals, and establishes stabilization and disinfection criteria. The Regional Board is using the standards in 40 CFR 503 as guidelines in establishing this Order, but the Regional Board is not the implementing agency for 40 CFR 503 regulations. The Discharger may have separate and/or additional compliance, reporting, and permitting responsibilities to USEPA, which are not covered by this Order.

WATER RECLAMATION

19. State Board Resolution No. 77-1, *Policy with Respect to Water Reclamation in California*, encourages reclamation projects that replace or supplement the use of fresh water, and *The Water Recycling Law* (CWC Sections 13500-13529.4) declares that utilization of reclaimed water is of primary interest to the people of the State in meeting future water needs.

20. The California Department of Health Services (DHS) has established statewide water reclamation criteria in Title 22, CCR, Section 60301 et. seq. (hereafter Title 22). DHS revised the water reclamation criteria contained in Title 22 on 2 December 2000. The Discharger will treat to secondary standards and disinfect the secondary effluent per Title 22 requirements. Currently, the Discharger has not completed a Title 22 Engineer's Report that reflects the operation of the reclamation system as it presently exists. The Discharger is required to complete a comprehensive Title 22 Engineer's Report, in accordance with DHS guidelines.

21. A 1988 Memorandum of Understanding (MOU) between DHS and the State Board on the use of reclaimed water establishes basic principles relative to the two agencies and the regional boards. The MOU allocates primary areas of responsibility and authority between the agencies and provides for methods and mechanisms necessary to assure ongoing, continuous future coordination of activities relative to use of reclaimed water.

COLLECTION SYSTEM

22. The Discharger's sanitary sewer system collects wastewater using sewers, pipes, pumps, and/or other conveyance systems and directs this raw sewage to the wastewater treatment plant. A "sanitary sewer overflow" is defined as a discharge to ground or surface water from the sanitary sewer system at any point upstream of the wastewater treatment plant. Storage and conveyance facilities (such as wet wells, regulated impoundments, tanks, highlines, etc.) for temporary wastewater storage may be part of a sanitary sewer system and discharges to these facilities are not considered sanitary sewer overflows, provided that the waste is fully contained within these storage/conveyance facilities.

23. Sanitary sewer overflows consist of varying mixtures of domestic sewage, industrial wastewater, and commercial wastewater. This mixture depends on the pattern of land use in the sewage collection system tributary to the overflow. The chief causes of sanitary sewer overflows include grease blockages, root blockages, debris blockages, sewer line flood damage, manhole structure failures, vandalism, pump station mechanical failures, power outages, storm or groundwater inflow/infiltration, lack of capacity, and contractor caused blockages.

24. Sanitary sewer overflows often contain high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oxygen demanding organic compounds, oil and grease, and other pollutants. Sanitary sewer overflows can cause temporary exceedances of applicable water quality objectives, pose a threat to public health, adversely affect aquatic life, and impair the public recreational use and aesthetic enjoyment of surface waters in the area.

25. The Discharger is expected to take all necessary steps to adequately maintain and operate its sanitary sewer collection system. This Order requires the Discharger to prepare and implement a Sanitary Sewer System Operation, Maintenance, Overflow Prevention, and Response Plan.

DILUTION

26. The Discharger has requested that the Regional Board consider dilution credit from natural flows in Laguna Creek upstream of the discharge. The Discharger submitted a *Receiving Waters Assessment* report on 17 March 2003, which identifies the flow sources to Laguna Creek upstream of the discharge as effluent discharged from the Sacramento Municipal Utility District (SMUD) Rancho Seco Plant (RSP) and irrigation/stormwater runoff. On 28 February 2003, the Discharger submitted a *Streamflow Estimates for Laguna Creek at City of Galt Wastewater Treatment Plant Discharge Point* report, dated 19 March 2002, which estimated flows in Laguna Creek upstream of the point of discharge. Based on the results of this report, Laguna Creek failed to consistently achieve 20:1 dilution based upon the design treatment flow of 3.0 mgd. Additionally, SMUD is in the process of decommissioning the RSP and, according to the *Receiving Waters Assessment* report, "SMUD currently has no plans to continue discharging to the Laguna Creek drainage beyond the period required by the NRC." SMUD has already begun reducing effluent flows. On 26 February 2003, RSP briefly ceased its discharge to repair a water main, resulting in the termination of all dilution flows for the duration of the repair. An inspection of the wastewater treatment plant and receiving waters by Regional Board staff on 12 March 2003 revealed little to no flow in Laguna Creek upstream of the discharge. Due to these factors, the Regional Board finds that upstream flows are not sufficient, nor reliable, to allow dilution credit. In addition, a local farmer diverts water directly from Laguna Creek downstream of the discharge for irrigation of food crops for sale to the general public. This diversion may occur during the discharge period. The Regional Board is required to protect this use. Therefore, no dilution credit has been granted in the calculation of effluent limitations.

The Discharger also requested dilution credit for Cosumnes River water that combines with the effluent approximately 4 miles downstream of the discharge. The Cosumnes River is an ephemeral waterbody in the vicinity of its confluence with Laguna Creek, and at times has little

or no flow. No dilution credit will be granted for Cosumnes River water, as flows are not sufficient, nor reliable enough, to allow dilution credit.

REASONABLE POTENTIAL

27. CWC Section 13263.6(a) requires that "the regional board shall prescribe effluent limitations as part of the waste discharge requirements of a POTW for all substances that the most recent toxic chemical release data reported to the state emergency response commission pursuant to Section 313 of the Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. Section 11023) (EPCRKA) indicate as discharged into the POTW, for which the state board or the regional board has established numeric water quality objectives, and has determined that the discharge is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective."

    The most recent toxic chemical release data report contains no data for this facility. Therefore, a reasonable potential analysis based on information from EPCRKA cannot be conducted. Based on EPCRKA, there is no reasonable potential to cause or contribute to an excursion above any numeric water quality objectives included within the Basin Plan or in any State Board plan, so no effluent limitations are included in this permit pursuant to CWC Section 13263.6(a).

    However, as detailed elsewhere in this permit, available effluent data indicate that there are constituents present in the effluent that have a reasonable potential to cause or contribute to water quality impacts.

28. USEPA adopted the *National Toxics Rule* (NTR) on 5 February 1993 and the *California Toxics Rule* (CTR) on 18 May 2000. These Rules contain water quality standards applicable to this discharge. The State Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Plan, or SIP), which contains guidance on implementation of the NTR and the CTR.

29. The SIP, Section 2.2.1, requires that if a compliance schedule is granted for a CTR or NTR constituent, the Regional Board shall establish interim requirements and dates for their achievement in the NPDES permit. The interim limitations must be based on current treatment plant performance or existing permit limitations, whichever is more stringent, include interim compliance dates separated by no more than one year, and be included in the Provisions.

    The interim effluent limitations in this Order are based on the current treatment plant performance. In developing the interim limitations, where there are ten sampling data points or more, sampling and laboratory variability is accounted for by establishing interim limitations that are based on normally distributed data where 99.9% of the data points will lie within 3.3 standard deviations of the mean (*Basic Statistical Methods for Engineers and Scientists, Kennedy and Neville, Harper and Row*). Therefore, when there are ten data points or more, the interim effluent limitations in this Order are established as the mean plus 3.3 standard deviations

of the available data. Where actual sampling shows an exceedance of the proposed 3.3-standard deviation interim limitation, the maximum detected concentration has been established as the interim effluent limitation. When there are less than ten sampling data points available, the *Technical Support Document for Water Quality Based Toxics Control* ((EPA/505/2-90-001) (TSD) recommends a coefficient of variation of 0.6 be utilized as representative of wastewater effluent sampling. The TSD recognizes that a minimum of ten data points is necessary to conduct a valid statistical analysis. The multipliers contained in Table 5-2 of the TSD are used to determine a maximum daily effluent limitation based on a long-term average objective. In this case, the long-term average objective is to maintain, at a minimum, the current plant performance level. Therefore, when there are less than ten sampling points for a constituent, interim effluent limitations are based on 3.11 times the maximum observed sampling point to obtain the daily maximum interim effluent limitation (TSD, Table 5-2).

The Regional Board finds that the Discharger can undertake source control and treatment plant measures to maintain compliance with the interim effluent limitations included in this Order. Interim effluent limitations are established when compliance with NTR- and CTR-based effluent limitations cannot be achieved by the existing discharge. Discharge of constituents in concentrations in excess of the final effluent limitations, but in compliance with the interim effluent limitations, can significantly degrade water quality and adversely affect the beneficial uses of the receiving stream on a long-term basis. For example, USEPA states in the Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life for copper, that it will take an unstressed system approximately three years to recover from a pollutant in which exposure to copper exceeds the recommended criterion. The interim effluent limitations, however, establish an enforceable ceiling concentration until compliance with the final effluent limitation can be achieved.

30. Federal regulations, at 40 CFR Section 122.44 require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. Water quality standards include the National Toxics Rule, the California Toxics Rule, and Basin Plan water quality objectives. 40 CFR Section 122.44(d) sets forth requirements that apply to the state to implement narrative water quality standards. 40 CFR Section 122.44(d)(vi)(A)-(C) requires the effluent limit to be based on one or more of three options, including using EPA's water quality criteria, a proposed state criterion (i.e., water quality objective), or an explicit state policy interpreting its narrative water quality criteria (i.e., the Regional Board's "Policy for Application of Water Quality Objectives").

On 10 September 2001, the Executive Officer issued a letter, in conformance with CWC Section 13267, requiring that the Discharger prepare a technical report assessing effluent and receiving water quality to determine if the discharge has a reasonable potential to cause or contribute to water quality impacts in the receiving waters. On 27 December 2001, the Executive Officer issued a letter revising Attachment II of the original 10 September 2001 letter, which relaxed certain constituents Criterion Quantitation Limits. The Discharger, on 28 February 2003,

submitted monitoring results for the priority pollutants and additional constituents of concern required by the 10 September 2001 CWC Section 13267 letter and 27 December 2001 revision letter. The submittal of dioxin monitoring results is due no later than **1 November 2004**.

Based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs, the Regional Board finds that the discharge does have a reasonable potential to cause or contribute to an in-stream excursion above water quality standards for aluminum; arsenic; hexavalent chromium; copper; cyanide; iron; lead; silver; carbon tetrachloride; bromodichloromethane; dibromochloromethane; bis (2-ethylhexyl) phthalate; ammonia; nitrate; and chlorine. Effluent limitations for these constituents are included in this Order.

INORGANICS

31. Based on information submitted by the Discharger, **aluminum** in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan narrative toxicity objective. USEPA developed National Recommended Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life for aluminum; 87 µg/l as a four-day average (chronic) and 750 µg/l as a one-hour average (acute). The secondary maximum contaminant level (MCL) for aluminum is 200 µg/l, as total recoverable. The maximum observed effluent aluminum concentration was 638 µg/l, exceeding the chronic criteria and the secondary MCL. Effluent limitations for aluminum are included in this Order that are based on the Basin Plan narrative toxicity objective and USEPA's Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life. The Discharger is unable to immediately comply with the final effluent limitations for aluminum.

32. Based on information submitted by the Discharger, **arsenic** in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan narrative chemical constituent objective. The Basin Plan requires the Regional Board to consider information submitted by the Discharger and others, and numerical criteria and guidelines developed by other agencies, in determining what numeric effluent limitation will properly implement the narrative objective for chemical constituents. In accordance with the Basin Plan, the application of State Board Resolution 88-63, as stated above, designates domestic or municipal uses to the receiving stream. The new USEPA primary MCL for arsenic is 10 µg/l. Available data in the Report of Waste Discharge, and additional priority pollutant monitoring, indicates a maximum effluent arsenic concentration of 16 µg/l.

    The federal regulations at 40 CFR Section 122.44(d)(1)(vi)(A), allows the state to establish the effluent limitation using an explicit state policy interpreting its narrative criterion. Therefore, use of the USEPA primary MCL is appropriate to implement the narrative chemical constituent objective. The compliance date for water purveyors to meet the new MCL is 23 January 2006. This Order contains a time schedule requiring the Discharger to take steps to comply with the new primary MCL by **1 November 2008**. The Discharger is required to routinely monitor

effluent concentrations of arsenic in order to evaluate progress towards compliance with the new primary MCL.

33. The Report of Waste Discharge and additional priority pollutant monitoring submitted by the Discharger indicates the presence of **hexavalent chromium** at levels that exceed CTR water quality criteria. The CTR water quality criteria for hexavalent chromium are expressed in dissolved form. To convert the criteria to total recoverable hexavalent chromium, Regional Board staff utilized the default USEPA translator.

Based on eleven effluent samples, the maximum reported hexavalent chromium value is 38 µg/l, which is within a range that may cause the receiving stream to exceed the CTR water quality criteria for the protection of freshwater aquatic life. Effluent limitations for hexavalent chromium are included in this Order based on the CTR criteria and calculations outlined in Section 1.4 of the SIP. The SIP calculated effluent limitations for hexavalent chromium are 8.0 µg/l as a monthly average and 16 µg/l as a daily maximum.

Section 2.1 of the SIP provides that: "*Based on an existing discharger's request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit*." Section 2.1 further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: …*"(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable."* This Order requires the Discharger to provide this information. The new water quality based effluent limitations for hexavalent chromium become effective on **1 April 2004** if a compliance schedule justification is not completed and submitted by the Discharger to the Regional Board within **sixty (60) days** of permit adoption. Otherwise, final water quality based effluent limitations for hexavalent chromium become effective **1 November 2008**.

Based on SIP Section 2.2.2, interim effluent limitations are required when compliance schedules are granted to allow the Discharger an opportunity to provide additional information or construct facilities to meet the specified CTR criteria. Since there are more than ten effluent samples reported for hexavalent chromium, the interim effluent limitation is calculated as the sample mean plus 3.3 times the standard deviation. Therefore, the interim effluent limitation for hexavalent chromium is 41 µg/l as a daily maximum, which will be the enforceable limitation until the final effluent limitations become effective on **1 November 2008**, or **1 April 2004** if a compliance schedule justification is not submitted.

34. The Report of Waste Discharge and additional priority pollutant monitoring submitted by the Discharger indicates the presence of **copper** at levels that exceed CTR water quality criteria. The CTR water quality criteria for copper are expressed in dissolved form. To convert the criteria to total recoverable copper, Regional Board staff utilized the default USEPA translator.

    Based on sixteen effluent samples, the maximum reported copper value is 11 µg/l, which is within a range that may cause the receiving stream to exceed water quality objectives for copper. Copper toxicity is hardness-dependent and data submitted by the Discharger indicates a worst-case effluent hardness concentration of 42 mg/l as $CaCO_3$. Based on a hardness of 42 mg/l, the SIP calculated effluent limitations would be 3.1 µg/l as a monthly average and 6.2 µg/l as a daily maximum. Effluent limitations for copper are included in this Order for the protection of freshwater species, and are based on the CTR criteria and calculations outlined in Section 1.4 of the SIP. The final effluent limitations, which are hardness-dependent, are summarized in Attachment B.

    Section 2.1 of the SIP provides that: "*Based on an existing discharger's request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit.*" Section 2.1 further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: …*"(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable."* This Order requires the Discharger to provide this information. The new water quality based effluent limitations for copper become effective on **1 April 2004** if a compliance schedule justification is not completed and submitted by the Discharger to the Regional Board within **sixty (60) days** of permit adoption. Otherwise, final water quality based effluent limitations for copper become effective **1 November 2008**.

    Based on SIP Section 2.2.2, interim effluent limitations are required when compliance schedules are granted to allow the Discharger an opportunity to provide additional information or construct facilities to meet the specified CTR criteria. Since there are more than ten effluent samples reported for copper, the interim effluent limitation is calculated as the sample mean plus 3.3 times the standard deviation. Therefore, the interim effluent limitation for copper is 14 µg/l as a daily maximum, which will be the enforceable limitation until the final effluent limitations become effective on **1 November 2008**, or **1 April 2004** if a compliance schedule justification is not submitted.

35. The Report of Waste Discharge and additional priority pollutant monitoring submitted by the Discharger indicates the presence of **cyanide** at levels that exceed CTR water quality criteria.

Based on sixteen effluent samples, the maximum reported cyanide value is 16 µg/l, which is within a range that may cause the receiving stream to exceed the CTR water quality criteria for the protection of freshwater aquatic life. Effluent limitations for cyanide are included in this Order based on the CTR criteria and calculations outlined in Section 1.4 of the SIP. The SIP calculated effluent limitations for cyanide are 4.0 µg/l as a monthly average and 9.3 µg/l as a daily maximum.

Section 2.1 of the SIP provides that: "*Based on an existing discharger's request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit*." Section 2.1 further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: …*"(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable."* This Order requires the Discharger to provide this information. The new water quality based effluent limitations for cyanide become effective on **1 April 2004** if a compliance schedule justification is not completed and submitted by the Discharger to the Regional Board within **sixty (60) days** of permit adoption. Otherwise, final water quality based effluent limitations for cyanide become effective **1 November 2008**.

Based on SIP Section 2.2.2, interim effluent limitations are required when compliance schedules are granted to allow the Discharger an opportunity to provide additional information or construct facilities to meet the specified CTR criteria. Since there are more than ten effluent samples reported for cyanide, the daily maximum interim effluent limitation is calculated as the sample mean plus 3.3 times the standard deviation, or 18 µg/l, which will be the enforceable limitation until the final effluent limitations become effective on **1 November 2008**, or **1 April 2004** if a compliance schedule justification is not submitted.

36. Based on information submitted by the Discharger, **iron** in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan narrative chemical constituent objective. The California Department of Health Services adopted a secondary MCL for iron of 300 µg/l. The maximum observed effluent iron concentration is 527 µg/l. An effluent limitation for iron is included in this Order based on the narrative Basin Plan water quality objective for chemical constituents and the DHS secondary MCL. The Discharger is unable to immediately comply with the effluent limitation for iron.

37. The Report of Waste Discharge and additional priority pollutant monitoring submitted by the Discharger indicates the presence of **lead** at levels that exceed CTR water quality criteria. The

CTR water quality criteria for lead are expressed in dissolved form. To convert the criteria to total recoverable lead, Regional Board staff utilized the default USEPA translator.

Based on fourteen effluent samples, the maximum reported lead value is 2.2 µg/l, which is within a range that may cause the receiving stream to exceed the CTR water quality criteria for the protection of freshwater aquatic life. Lead toxicity is hardness-dependent and data submitted by the Discharger indicates a worst-case effluent hardness concentration of 42 mg/l as $CaCO_3$. Based on a hardness of 42 mg/l, the SIP calculated effluent limitations would be 0.75 µg/l as a monthly average and 1.9 µg/l as a daily maximum. Effluent limitations for lead are included in this Order based on CTR standards for the protection of aquatic life. The final limitations, which are hardness-dependent, are summarized in Attachment C and are based on the CTR criteria and calculations outlined in Section 1.4 of the SIP.

Section 2.1 of the SIP provides that: "*Based on an existing discharger's request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit*." Section 2.1 further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: …*"(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable."* This Order requires the Discharger to provide this information. The new water quality based effluent limitations for lead become effective on **1 April 2004** if a compliance schedule justification is not completed and submitted by the Discharger to the Regional Board within **sixty (60) days** of permit adoption. Otherwise, final water quality based effluent limitations for lead become effective **1 November 2008**.

Based on SIP Section 2.2.2, interim effluent limitations are required when compliance schedules are granted to allow the Discharger an opportunity to provide additional information or construct facilities to meet the specified CTR criteria. Since there are more than ten effluent samples reported for lead, the interim effluent limitation is calculated as the sample mean plus 3.3 times the standard deviation. Therefore, the interim effluent limitation for lead is 2.3 µg/l as a daily maximum, which will be the enforceable limitation until the final effluent limitations become effective on **1 November 2008**, or **1 April 2004** if a compliance schedule justification is not submitted.

38. The Report of Waste Discharge and additional priority pollutant monitoring submitted by the Discharger indicates the presence of **silver** at levels that exceed CTR water quality criteria. The CTR water quality criterion for silver is expressed in dissolved form. To convert the criterion to total recoverable silver, Regional Board staff utilized the default USEPA translator.

Based on twelve effluent samples, the maximum reported silver value is 0.94 µg/l, which is within a range that may cause the receiving stream to exceed the CTR water quality criteria for the protection of freshwater aquatic life. Silver toxicity is hardness-dependent. Based on a worst-case effluent hardness of 42 mg/l, the SIP calculated effluent limitations for silver would be 0.45 µg/l as a monthly average and 0.91 µg/l as a daily maximum. Effluent limitations for silver are included in this Order based on CTR standards for the protection of aquatic life. The final limitations, which are hardness-dependent, are summarized in Attachment D and are based on the CTR criteria and calculations outlined in Section 1.4 of the SIP.

Section 2.1 of the SIP provides that: "*Based on an existing discharger's request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit*." Section 2.1 further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: …*"(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable."* This Order requires the Discharger to provide this information. The new water quality based effluent limitations for silver become effective on **1 April 2004** if a compliance schedule justification is not completed and submitted by the Discharger to the Regional Board within **sixty (60) days** of permit adoption. Otherwise, final water quality based effluent limitations for silver become effective **1 November 2008**.

Based on SIP Section 2.2.2, interim effluent limitations are required when compliance schedules are granted to allow the Discharger an opportunity to provide additional information or construct facilities to meet the specified CTR criteria. Since there are more than ten effluent samples reported for silver, the interim effluent limitation is calculated as the sample mean plus 3.3 times the standard deviation. Therefore, the interim effluent limitation for silver is 1.0 µg/l as a daily maximum, which will be the enforceable limitation until the final effluent limitations become effective on **1 November 2008**, or **1 April 2004** if a compliance schedule justification is not submitted.

VOLATILE ORGANICS

39. Based on information submitted by the Discharger, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for **carbon tetrachloride**. The CTR includes criteria for the protection of human health based on a one-in-a-million cancer

risk for carbon tetrachloride of 0.25 µg/l for sources of drinking water. Based on sixteen effluent samples, the maximum observed effluent carbon tetrachloride concentration was 1.3 µg/l. Effluent limitations for carbon tetrachloride are included in this Order based on the CTR criteria and calculations outlined in Section 1.4 of the SIP. The SIP calculated effluent limitations for carbon tetrachloride are 0.25 µg/l as a monthly average and 0.50 µg/l as a daily maximum.

Section 2.1 of the SIP provides that: "*Based on an existing discharger's request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit*." Section 2.1 further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: …*"(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable."* This Order requires the Discharger to provide this information. The new water quality based effluent limitations for carbon tetrachloride become effective on **1 April 2004** if a compliance schedule justification is not completed and submitted by the Discharger to the Regional Board within **sixty (60) days** of permit adoption. Otherwise, final water quality based effluent limitations for carbon tetrachloride become effective **1 November 2008**.

Based on SIP Section 2.2.2, interim effluent limitations are required when compliance schedules are granted to allow the Discharger an opportunity to provide additional information or construct facilities to meet the specified CTR criteria. Since there are more than ten effluent samples reported for carbon tetrachloride, the interim effluent limitation is calculated as the sample mean plus 3.3 times the standard deviation. This calculation resulted in an interim effluent limitation less than the maximum reported effluent concentration. As a result, based on the TSD approach, the maximum reported effluent concentration becomes the interim limitation, which will be the enforceable limitation until the final effluent limitations become effective on **1 November 2008**, or **1 April 2004** if a compliance schedule justification is not submitted.

40. The four constituents **bromoform**, **bromodichloromethane**, **dibromochloromethane**, and **chloroform**, are commonly known as the Total Trihalomethanes (TTHMs). TTHMs are byproducts of chlorinated water containing natural organics, and are carcinogens. As treated effluent is stored in a retention reservoir prior to discharge into Laguna Creek, the formation of trihalomethanes at this location is likely.

Municipal and domestic supply is a beneficial use of the receiving stream. The narrative toxicity objective and this beneficial use designation comprise a water quality standard applicable to pollutants in the receiving stream. The Basin Plan also contains the *Policy for Application of*

Water Quality Objectives, which provides that narrative objectives may be translated using numerical limits published by other agencies and organizations.

Four TTHM effluent samples were taken between November 2000 and April 2001, while monthly effluent monitoring was conducted during the recently completed priority pollutant study. Therefore, a total of sixteen samples (only fourteen samples for chloroform) were collected for these constituents. Data from these sampling events found a maximum effluent TTHM concentration of 34 µg/l. Bromoform was detected at 2 µg/l in one sample, but was not detected in the other fifteen samples. Bromodichloromethane was detected at effluent concentrations ranging from <0.1 µg/l to 8.4 µg/l, while dibromochloromethane was detected at effluent concentrations ranging from <0.1 µg/l to 1.1 µg/l. Chloroform results ranged between 3.4 µg/l and 24.4 µg/l.

The Basin Plan contains a chemical constituent objective that requires, at a minimum, that waters with a designated municipal use not exceed California MCLs. The California primary MCL for TTHMs is 100 µg/l. The federal Drinking Water Standard primary MCL for TTHMs is 80 µg/l. The Safe Drinking Water Act requires California to revise its primary MCL to be at least as stringent as the federal MCL. Therefore, to protect the municipal use of the receiving waters, the Regional Board has determined that the application of the federal MCL for TTHMs would be appropriate. However, upon review of the available data, there is no reasonable potential for the discharge to cause or contribute to an in-stream excursion above the MCL for TTHMs. Therefore, a TTHM limitation is not included in this Order.

NTR and CTR Constituents:

Three TTHM constituents (bromoform bromodichloromethane, and dibromochloromethane) are NTR and CTR regulated constituents, and as such must be regulated in all discharges that exceed the CTR criteria for human health protection for consumption of water and aquatic organisms. **Bromoform** was not detected in the effluent at concentrations exceeding the CTR criteria for human health protection for the consumption of water and aquatic organisms. Therefore, an effluent limitation for bromoform is not included in this Order. **Bromodichloromethane** and **dibromochloromethane** were detected in the effluent at concentrations exceeding the CTR criteria for human health protection for consumption of water and aquatic organisms of 0.56 µg/l and 0.41 µg/l, respectively. Since there are specific CTR criteria established, and the effluent has the reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria, this Order includes final effluent limitations for bromodichloromethane and dibromochloromethane of 0.56 µg/l and 0.41 µg/l, respectively, as the monthly averages, and 1.3 µg/l and 1.1 µg/l as the daily maximums, based on the CTR criteria and calculations outlined in Section 1.4 of the SIP.

Section 2.1 of the SIP provides that: "*Based on an existing discharger's request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may*

establish a compliance schedule in an NPDES permit." Section 2.1 further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: …*"(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable."* This Order requires the Discharger to provide this information. The new water quality based effluent limitations for bromodichloromethane and dibromochloromethane become effective on **1 April 2004** if a compliance schedule justification is not completed and submitted by the Discharger to the Regional Board within **sixty (60) days** of permit adoption. Otherwise, final water quality based effluent limitations for bromodichloromethane and dibromochloromethane become effective **1 November 2008**.

Based on SIP Section 2.2.2, interim effluent limitations are required when compliance schedules are granted to allow the Discharger an opportunity to provide additional information or construct facilities to meet the specified CTR criteria. The Discharger reported more than ten effluent samples for both bromodichloromethane and dibromochloromethane. As a result, the interim effluent limitations were calculated using the sample mean plus 3.3 standard deviations. Therefore, the interim effluent limitations for bromodichloromethane and dibromochloromethane are 9.9 µg/l and 1.4 µg/l, respectively, as daily maximums, which will be the enforceable limitations until the final effluent limitations become effective on **1 November 2008**, or
1 April 2004 if a compliance schedule justification is not submitted.

Non-NTR and CTR Constituent:

Individual components of the TTHM family also have other individual numerical water quality objectives that must be considered in evaluating whether the beneficial uses of domestic and municipal supplies are being protected from potential impact from the discharge in accordance with the narrative objectives in the Basin Plan. The Cal/EPA Office of Environmental Health Hazard Assessment (OEHHA) has published the Toxicity Criteria Database, which contains cancer potency factors for **chloroform**, a chemical within the TTHM family, which has been used as a basis for regulatory actions by boards, departments, and offices within Cal/EPA. The OEHHA cancer potency value for oral exposure to chloroform is 0.031 milligrams per kilogram body weight per day (mg/kg-day). By applying standard toxicologic assumptions used by OEHHA and USEPA in evaluating health risks via drinking water exposure of 70-kg body weight and 2 liters per day water consumption, this cancer potency factor is equivalent to a concentration in drinking water of 1.1 µg/L (ppb) at the one-in-a-million cancer risk level. These risk levels are consistent with that used by the DHS to set *de minimus* risks from involuntary exposure to carcinogens in drinking water in developing MCLs and Action Levels, and by OEHHA to set negligible cancer risks in developing Public Health Goals for drinking

water. However, there are no known drinking water intakes on Laguna Creek or the Cosumnes River within several miles of the discharge, and chloroform is a non-conservative pollutant. Therefore, the Regional Board finds that, in this specific circumstance, application of the USEPA MCL for total THMs for the effluent is appropriate, as long as the receiving water does not exceed the OEHHA cancer potency factor's equivalent receiving water concentration at a reasonable distance from the outfall. Therefore, an effluent limitation for chloroform is not included in this Order, but monitoring of the effluent and receiving water is included.

SEMI-VOLATILE ORGANICS

41. Based on information submitted by the Discharger, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for **bis (2-ethylhexyl) phthalate**. The CTR includes criteria for the protection of human health based on a one-in-a-million cancer risk for bis (2-ethylhexyl) phthalate of 1.8 µg/l. Based on eight effluent samples, the maximum observed effluent bis (2-ethylhexyl) phthalate concentration is 2 µg/l, which is within a range that may cause the receiving stream to exceed the CTR water quality criteria for the protection of human health. Effluent limitations for bis (2-ethylhexyl) phthalate are included in this Order and are based on CTR standards for the protection of human health. The monthly average and daily maximum effluent limitations for bis (2-ethylhexyl) phthalate are 1.8 mg/l and 3.6 µg/l, respectively.

Section 2.1 of the SIP provides that: "*Based on an existing discharger's request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit*." Section 2.1 further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: …*"(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable."* This Order requires the Discharger to provide this information. The new water quality based effluent limitations for bis (2-ethylhexyl) phthalate become effective on **1 April 2004** if a compliance schedule justification is not completed and submitted by the Discharger to the Regional Board within **sixty (60) days** of permit adoption. Otherwise, final water quality based effluent limitations for bis (2-ethylhexyl) phthalate become effective **1 November 2008**.

Based on SIP Section 2.2.2, interim effluent limitations are required when compliance schedules are granted to allow the Discharger an opportunity to provide additional information or construct facilities to meet the specified CTR criteria. The calculated interim effluent limitation for bis (2-ethylhexyl) phthalate based on the TSD approach is 6.2 µg/l as a daily maximum, which

will be the enforceable limitation until the final effluent limitations become effective on **1 November 2008**, or **1 April 2004** if a compliance schedule justification is not submitted.

OTHER CONSTITUENTS

42. Treated and untreated domestic wastewater contains **ammonia**. Nitrification is a biological process that converts ammonia to nitrate, and denitrification is a process that converts nitrate to nitrogen gas, which is then released to the atmosphere. Wastewater treatment plants commonly use nitrification and denitrification processes to remove ammonia and nitrate from the waste stream. Inadequate or incomplete nitrification or denitrification may result in the discharge of ammonia and/or nitrate to the receiving stream.

    Ammonia is known to cause toxicity to aquatic organisms in surface waters. USEPA has developed Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life, recommending acute criteria for ammonia that are pH-dependent and chronic criteria that are pH- and temperature-dependent. Based on information submitted by the Discharger, ammonia concentrations in the effluent ranges from <0.5 to 2.3 mg/l. Upon review of available effluent data, the worst-case scenarios would occur when the pH is 8.5 and the temperature is 24 °C. Under these conditions, USEPA's Ambient Water Quality Criteria for ammonia are 2.14 mg/l when salmonids are present and 3.20 mg/l when salmonids are absent as 1-hour averages (acute), and 0.591 mg/l as a 30-day average (chronic). The highest ammonia concentration reported, 2.3 mg/l in the wet season, exceeds both the acute (when salmonids are present) and chronic criterion under worst-case pH and temperature conditions. Based on this information, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan narrative toxicity objective, which prohibits the discharge of toxic constituents in toxic concentrations. Effluent limitations for ammonia, based on the narrative toxicity objective and USEPA's Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life, are included in this Order. The final effluent limitations are pH- and temperature-dependent, as summarized in Attachments E and F.

    It is unknown whether the Discharger can consistently comply with the effluent limitations for ammonia at the current wastewater flow rate. Based upon the level of treatment currently provided and anticipated growth in the area resulting in increased flows to the plant, the Regional Board finds that ammonia concentrations in the discharge are likely to increase throughout the life of this permit.

43. **Nitrate** causes adverse health effects in humans by interfering with the transport of oxygen in the bloodstream, particularly with fetuses and newborn children, a condition known as methemoglobenemia, or blue-baby syndrome. In extreme cases, the condition can retard physical and mental development, and cause death. Recent toxicity studies have indicated a possibility that nitrate is toxic to aquatic organisms.

The Basin Plan requires the Regional Board to consider information submitted by the Discharger and others, and numerical criteria and guidelines developed by other agencies, in determining what numeric effluent limitation will properly implement the narrative objective for chemical constituents. The Basin Plan's narrative objective for chemical constituents states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. Water quality standards for nitrate include State Drinking Water Standards, including the primary MCL of 10 mg/l, and USEPA Ambient Water Quality Criteria for the Protection of Human Health, also 10 mg/l, for non-cancer health effects. The Report of Waste Discharge, and additional information received by the Discharger, indicates a maximum effluent nitrate (as nitrogen) concentration of 27 mg/l. The conversion of ammonia to nitrates, and the potential for inadequate denitrification, presents a reasonable potential for the discharge to exceed both the primary MCL and the Water Quality Criteria for the Protection of Human Health for nitrate. This Order includes an effluent limitation for nitrate to protect the municipal beneficial use of Laguna Creek and downstream waters. The Discharger is unable to comply with this limitation.

44. The Regional Board finds that there is a reasonable potential for the discharge to cause or contribute to an excursion above a water quality standard for **chlorine**, specifically the "narrative toxicity objective" in the Basin Plan. Chlorine is used as a disinfectant at the wastewater treatment plant and is known to cause toxicity to aquatic organisms when discharged to surface waters. Therefore, the use of chlorine presents a reasonable potential that it could be discharged in toxic concentrations. The Basin Plan prohibits the discharge of toxic materials in toxic concentrations.

    USEPA recommends, in its Ambient Water Quality Criteria for the Protection of Fresh Water Aquatic Life, that chlorine concentrations not exceed 0.02 mg/l as a 1-hour average or 0.01 mg/l as a 4-day average. The federal regulations at 40 CFR Section 122.44(d)(1)(vi)(B) allows the state to establish the effluent limitation based on the narrative toxicity objective, and using USEPA's water quality criteria.

45. **Total Dissolved Solids** (TDS) comprise inorganic salts and small amounts of organic matter that are dissolved in water. There are no USEPA water quality criteria for the protection of aquatic organisms for TDS. However, its presence in water can be growth limiting to certain agricultural crops and affects the taste of water for human consumption. The secondary California 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. To protect irrigated agriculture from salt crop damage, the recommended agricultural water quality goal for TDS is 450 mg/l as a long-term average.

    According to information received as part of the regular monitoring conducted at the wastewater treatment plant from September 2001 through September 2002, the effluent exceeded 450 mg/l 21% of the time, and exceeded 500 mg/l 4% of the time. Pollution prevention is necessary to assure the receiving water achieves the water quality objectives for TDS. Therefore, pursuant to Water Code Section 13263.3, Provision H.8 of this Order requires the Discharger to develop

pollution prevention plans to limit or reduce the amount of several constituents, including TDS, in the effluent.

46. The Discharger has indicated that wastewater lift station wet wells in the collection system are prone to build up **oil and grease**. The use of mechanical and chemical means to remove the grease from the lift stations has been used in the past. Therefore, this permit includes effluent limitations for oil & grease of 10 mg/l as a monthly average and 15 mg/l as a daily maximum. These limitations have been set in an effort to prevent the discharge from causing a visible film or coating on the water surface or on the stream bottom that may adversely affect beneficial uses. Upon review of limited monitoring results, the Discharger is able to meet these limitations.

TERTIARY TREATMENT

47. The beneficial uses of Laguna Creek include contact recreation and irrigation supply. To protect these beneficial uses, the Regional Board finds that the wastewater must be disinfected and adequately treated to prevent disease. The principal infectious agents (pathogens) that may be present in raw sewage may be classified into three broad groups: bacteria, parasites, and viruses. Tertiary treatment, consisting of chemical coagulation, sedimentation, and filtration, has been found to remove approximately 99.5% of viruses. Filtration is an effective means of reducing viruses and parasites from the waste stream.

    The Regional Board has consulted with several interested parties downstream of the discharge regarding current recreational and agricultural uses of the receiving waters. Information obtained from these consultations was compiled and submitted to the California Department of Health Services (DHS) for their recommendation for level of treatment necessary to protect the downstream beneficial uses. The DHS, in a letter dated 1 July 2003, stated, "… it is the view of the Department of Health Services that the effluent should be filtered to protect public health." Therefore, the wastewater must be treated to tertiary standards (filtered or equivalent) to protect contact recreation and food crop irrigation uses.

    The DHS has developed reclamation criteria, CCR, Title 22, 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. Coliform organisms are intended as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing other pathogens. Title 22 is not directly applicable to surface waters; however, the Regional Board finds that it is appropriate to apply DHS' reclamation criteria because Laguna Creek is used for irrigation of food crops and for contact recreational purposes. The stringent disinfection criteria of Title 22 are appropriate since the undiluted effluent may be used for the irrigation of food crops. The method of treatment is not prescribed by this Order; however, wastewater must be treated to a level equivalent to that recommended by DHS.

In addition to coliform testing, a **turbidity** effluent limitation has been included as a second indicator of the effectiveness of the treatment process and to assure compliance with the required level of treatment. 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 would 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 establishment of tertiary limitations has not been previously required for this discharge; therefore, a schedule for compliance with the tertiary treatment requirements is included as a Provision in this Order. This Order provides interim effluent limitations for BOD, TSS, and total coliform, which the Discharger is currently capable of meeting. Full compliance with the final effluent limitations for BOD, TSS, total coliform, and turbidity are not required by this Order until completion of tertiary treatment facilities, or **1 November 2008**, whichever is first.

Adequate time is provided for the Discharger to propose alternatives that are still protective of public health and irrigation uses, but at a reduced cost. The permit may be reopened at such time as the Discharger proposes an alternative that is protective of public health and irrigation uses. Alternatives to tertiary treatment, such as land disposal or discharge to a different water body with assimilative capacity, would require modification of the permit.

48. This Order contains effluent limitations and requires a tertiary level of treatment, or equivalent, necessary to protect the beneficial uses of the receiving water. In accordance with CWC Section 13241, the Regional Board has considered the following:

    a. As stated in the above Findings, the past, present, and probable future beneficial uses of the receiving stream include municipal and domestic supply, agricultural irrigation, agricultural stock watering, body contact water recreation, other non-body contact water recreation, warm freshwater aquatic habitat, cold freshwater aquatic habitat, warm fish migration habitat, cold fish migration habitat, warm spawning habitat, and wildlife habitat.

    b. The environmental characteristics of the hydrographic unit, including the quality of the available water, will be improved by the requirement to provide tertiary treatment for this wastewater discharge. Tertiary treatment will allow for the reuse of the undiluted wastewater for food crop irrigation and contact recreation, activities that would otherwise be unsafe according to recommendations from DHS.

    c. Fishable and swimmable water quality conditions can be reasonably achieved through the coordinated control of all factors which affect water quality in the area.

d. The economic impact of requiring an increased level of treatment has been considered. Regional Board staff estimate that the total cost associated with installing tertiary treatment and complying with the proposed effluent limitations for BOD, TSS, total coliform, and turbidity may approach $9,933,757, which includes capital costs, chemical costs, and operation and maintenance costs over a 20-year period (assuming a fixed interest rate of 8%). This figure does not include the costs of any additional facilities that may be necessary to comply with the other limitations included in this permit. According to the *Fiscal Year 2001-02 Wastewater User Charge Survey Report* compiled by the State Board in May 2002, monthly sewer fees for the City of Galt amount to $11.50 per household, the lowest rate in Sacramento County. According to the Discharger, effective May 2003, sewer fees were raised to $16.10 per month. U.S. Census Bureau information from the year 2000 indicates that Galt has a population of 19,472, or about 7,788 households. Using this information, the average increase in sewer bills per household would amount to approximately $10.83 per month.

   The loss of beneficial uses within downstream waters, without the tertiary treatment requirement, include prohibiting the irrigation of food crops and prohibiting public access for contact recreational purposes, would have a detrimental economic impact. In addition to pathogen removal to protect irrigation and recreation, tertiary treatment may also aid in meeting discharge limitations for other pollutants, such as heavy metals, reducing the need for advanced treatment.

e. The requirement to provide tertiary treatment for this discharge will not adversely impact the need for housing in the area. The potential for developing housing in the area will be facilitated by improved water quality, which protects the contact recreation and irrigation uses of the receiving water. DHS recommends that, in order to protect the public health, undiluted wastewater effluent must be treated to a tertiary level, for contact recreational and food crop irrigation uses. Without tertiary treatment, the downstream waters could not be safely utilized for contact recreation or the irrigation of food crops.

f. It is the Regional Board's policy, (Basin Plan, page IV-15.00, Policy 2) to encourage the reuse of wastewater. The Regional Board requires Dischargers to evaluate how reuse or land disposal of wastewater can be optimized. The need to develop and use reclaimed water is facilitated by providing a tertiary level of wastewater treatment which will allow for a greater variety of uses in accordance with Title 22.

The Regional Board has considered the factors specified in CWC Section 13263, including considering the provisions in CWC Section 13241, in adopting the disinfection and filtration requirements under Title 22 criteria. The Regional Board finds, on balance, that these requirements are necessary to protect the beneficial uses of Laguna Creek and the Cosumnes River, including water contact recreation and irrigation uses.

STORMWATER

49. Federal Regulations for stormwater discharges were promulgated by the USEPA on 16 November 1990 (40 CFR Parts 122, 123, and 124). The regulations require specific categories of facilities that discharge stormwater associated with industrial activity (stormwater) to obtain NPDES permits and implement Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to reduce or eliminate industrial stormwater pollution.

50. Regulated stormwater discharges include those from facilities used in storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1 mgd or more, or required to have an approved pretreatment program under 40 CFR Part 403. Not included are farmlands, domestic gardens, or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with Section 405 of the Clean Water Act (CWA).

51. The State Board adopted Order 97-03-DWQ (General NPDES Permit No. CAS000001) specifying waste discharge requirements for discharges of stormwater associated with industrial activities, excluding construction activities, and requiring submittal of a Notice of Intent by industries to be covered under the Order. This Order further specified that if an individual Order is adopted for stormwater runoff from a facility, then the General Permit would no longer apply. Since all stormwater that falls on the treatment plant site and reclamation areas is collected and directed to the storage reservoir, and since effluent limitations must be met upon discharge from the reservoir (either to Laguna Creek or the reclamation areas), a Stormwater Pollution Prevention Plan has not been made a requirement of this Order.

OTHER

52. The Discharger is required to protect the environment to the greatest degree possible (Public Resources Code, Section 21000, et seq.). A Pretreatment Program is needed to protect the receiving water, groundwater underlying the ponds and disposal areas, the sludge from being hazardous or otherwise interfering with the Discharger's reuse or disposal plans, and the treatment plant from upsets.

53. Effluent limitations and toxic and pretreatment effluent standards established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the CWA and amendments thereto are applicable to the discharge.

54. The Regional Board has consulted with the Department of Health Services and other interested parties, and has considered their recommendations regarding public health aspects for use of reclaimed water.

55. The discharge to surface water and to property owned by the City of Galt is presently governed by Waste Discharge Requirements Order No. 97-111, adopted by the Regional Board on 20 June

1997. The discharge of reclaimed water to property owned by the RCB and leased to the City of Galt is presently governed by Waste Discharge Requirements Order No. R5-2003-0053, adopted by the Regional Board on 24 April 2003.

56. The action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code, Section 21000, et seq.), requiring preparation of an environmental impact report or negative declaration in accordance with Section 13389 of the CWC.

57. The Regional Board has considered the information in the Information Sheet and Attachments A through H in developing the Findings of this Order. The attached Information Sheet is part of this Order.

58. The Regional Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

59. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.

60. This Order shall serve as an NPDES permit pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect 50 days following permit adoption (effective **19 March 2004**), provided the Regional Administrator of USEPA has no objections.

IT IS HEREBY ORDERED that Order No. 97-111 and Order No. R5-2003-0053 are rescinded and the City of Galt and Roman Catholic Bishop of Sacramento, its agents, successors and assigns, in order to meet the provisions contained in Division 7 of the CWC and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, shall comply with the following:

A. Discharge Prohibitions:

1. The discharge of wastewater or biosolids at a location or in a manner different from that described in the Findings is prohibited.

2. The discharge of wastewater to surface waters or surface water drainage courses is prohibited from 1 May through 31 October.

3. The discharge of biosolids to land owned by the RCB is prohibited.

4. The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Standard Provision A.13. [See attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)"].

B. Effluent Limitations for discharges to Laguna Creek:

1. Effluent shall not exceed the following limits:

Constituent	Units	Monthly Average	Weekly Average	7-Day Median	Daily Average	Daily Maximum
BOD[1,2,3]	mg/l	10	15	---	---	20
	lb/day[4]	250	375	---	---	500
Total Suspended Solids[2,3]	mg/l	10	15	---	---	20
	lb/day[4]	250	375	---	---	500
Total Coliform[2]	MPN/100ml	---	---	2.2	---	23
Turbidity[2,5]	NTU	---	---	---	2	10
Settleable Solids	ml/l	0.1	---	---	---	0.2
Oil & Grease	mg/l	10	---	---	---	15
	lb/day[4]	250	---	---	---	375
Nitrate (as N)	mg/l	10	---	---	---	---
	lb/day[4]	250	---	---	---	---
Arsenic[6]	µg/l	10	---	---	---	---
	lb/day[4]	0.25	---	---	---	---
Hexavalent Chromium	µg/l	8.0	---	---	---	16
	lb/day[4]	0.20	---	---	---	0.40
Copper	µg/l	Attach B	---	---	---	Attach B
	lb/day[4]	Calculated	---	---	---	Calculated
Cyanide	µg/l	4.0	---	---	---	9.3
	lb/day[4]	0.10	---	---	---	0.23
Iron	µg/l	300	---	---	---	---
	lb/day[4]	7.5	---	---	---	---
Lead	µg/l	Attach C	---	---	---	Attach C
	lb/day[4]	Calculated	---	---	---	Calculated
Silver	µg/l	Attach D	---	---	---	Attach D
	lb/day[4]	Calculated	---	---	---	Calculated
Carbon Tetrachloride	µg/l	0.25	---	---	---	0.50
	lb/day[4]	0.01	---	---	---	0.01
Bromodichloromethane	µg/l	0.56	---	---	---	1.3
	lb/day[4]	0.01	---	---	---	0.03
Dibromochloromethane	µg/l	0.41	---	---	---	1.1
	lb/day[4]	0.01	---	---	---	0.03
Bis (2-ethylhexyl) phthalate	µg/l	1.8	---	---	---	3.6
	lb/day[4]	0.05	---	---	---	0.09

[1] 5-day, 20°C biochemical oxygen demand (BOD)

[2] Full compliance with this limit is not required by this Order until completion of tertiary treatment

facilities, or no later than **1 November 2008,** whichever is first.

[3] To be ascertained by a 24-hour composite.

[4] Based upon a design treatment capacity of 3.0 mgd. For reporting purposes, compliance with these limitations shall be determined as follows: measured concentration (in mg/l) * 8.345 (conversion factor) * monthly average flow rate.

[5] Turbidity, when monitored continuously, shall not exceed 5 NTU 5% of the time or 10 NTU at any given time.

[6] Full compliance with this limit is not required by this Order until **1 November 2008**.

Constituent	Units	4-Day Average	1-Hour Average	30-day Average
Aluminum[1]	µg/l	87	750	---
	lb/day[2]	2.2	19	---
Ammonia (as N)	mg/l	---	Attach E	Attach F
	lb/day[2]	---	Calculated	Calculated
Chlorine Residual	mg/l	0.01	0.02	---
	lb/day[2]	0.25	0.50	---

[1] The Discharger may conduct a water effects ratio study to develop a site-specific objective, and upon adoption and approval of a Basin Plan amendment, the permit may be reopened and the aluminum limit reconsidered.

[2] Based upon a design treatment capacity of 3.0 mgd. For reporting purposes, compliance with these limitations shall be determined as follows: measured concentration (in mg/l) * 8.345 (conversion factor) * monthly average flow rate.

2. Effective **immediately**, the following BOD, TSS, and total coliform interim effluent limitations shall be in effect until completion of tertiary facilities, or **1 November 2008**, whichever is first:

Constituent	Units	Monthly Average	Weekly Average	Monthly Median	Daily Maximum
BOD[1,2]	mg/l	30	45	---	60
	lb/day[3]	750	1125	---	1500
Total Suspended Solids[2]	mg/l	30	45	---	60
	lb/day[3]	750	1125	---	1500
Total Coliform	MPN/100ml	---	---	23	230

[1] 5-day, 20°C biochemical oxygen demand (BOD).

[2] To be ascertained by a 24-hour composite.

[3] Based upon a design treatment capacity of 3.0 mgd. For reporting purposes, compliance with these limitations shall be determined as follows: measured concentration (in mg/l) * 8.345 (conversion factor) * monthly average flow rate.

3. The following interim effluent limitations are effective until **1 November 2008**, if the Discharger submits compliance schedule justifications within **sixty (60) days** of permit adoption. Otherwise, the final effluent limitations specified in Effluent Limitation B.1 above become effective on **1 April 2004**:

Constituent	Units	Daily Maximum
Hexavalent Chromium	µg/l	41
	lb/day[1]	1.0
Copper	µg/l	14
	lb/day[1]	0.35
Cyanide	µg/l	18
	lb/day[1]	0.45
Lead	µg/l	2.3
	lb/day[1]	0.06
Silver	µg/l	1.0
	lb/day[1]	0.03
Carbon Tetrachloride	µg/l	1.3
	lb/day[1]	0.03
Bromodichloromethane	µg/l	9.9
	lb/day[1]	0.25
Dibromochloromethane	µg/l	1.4
	lb/day[1]	0.04
Bis (2-ethylhexyl) phthalate	µg/l	6.2
	lb/day[1]	0.16

[1] Based upon a design treatment capacity of 3.0 mgd. For reporting purposes, compliance with these limitations shall be determined as follows: measured concentration (in mg/l) * 8.345 (conversion factor) * monthly average flow rate.

4. The arithmetic mean of 20 °C BOD (5-day) and total suspended solids in effluent samples collected over a monthly period shall not exceed 15 percent of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period (85 percent removal).

5. The discharge shall not have a pH less than 6.5 nor greater than 8.5.

6. The monthly average discharge flow shall not exceed 3.0 million gallons per day.

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

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

C. Reclamation Specifications:

1. Discharge of reclaimed water (chlorinated domestic effluent) to surface waters or surface water drainage courses is prohibited.

2. The discharge shall remain in the designated reclamation area at all times.

3. Use of reclaimed water shall be limited to surface irrigation of fodder, fiber, or seed crops. Irrigated crops shall not be used for human consumption (either direct or indirect). Additional reclamation uses may be approved by the Executive Officer.

4. Reclaimed water use shall meet the criteria contained in Title 22, Division 4, CCR (Section 60301 et. seq.).

5. Public contact with the reclaimed water shall be precluded through such means as fences, signs, and other acceptable alternatives.

6. Reclaimed water for irrigation shall be managed to minimize erosion, runoff, and movement of aerosols from the disposal area.

7. Direct or windblown spray shall be confined to the designated disposal area and prevented from contacting drinking water facilities.

8. The discharge of reclaimed water (chlorinated domestic effluent) in excess of the following limits to ponds for irrigation usage is prohibited:

Constituent	Units	Monthly Average	Daily Maximum
BOD_5[1]	mg/l	30	45
Total Suspended Matter	mg/l	30	45
Settleable Matter	ml/l	0.2	0.5

[1] 5-Day, 20ºC biochemical oxygen demand (BOD)

9. Areas irrigated with reclaimed water shall be managed to prevent breeding of mosquitoes. More specifically,

   a. Tail water must be returned and all applied reclaimed water and any additional supplemental irrigation water must infiltrate completely within a 48-hour period.

   b. Ditches not serving as wildlife habitat should be maintained free of emergent, marginal, and floating vegetation.

c. Low pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store reclaimed water.

10. There shall be no irrigation or impoundment of reclaimed water within 150 feet of any domestic water well.

11. 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.

12. Public contact with reclaimed wastewater shall be controlled through such means as fences and cautionary signs, and/or other appropriate means. Perimeter warning signs indicating that reclaimed water is in use shall be posted at least every 500 feet along the property boundary and at each access road entrance to the properties. The contents of these signs shall be as described in Section 60310 of Title 22. Each sign shall be in English and Spanish languages.

13. Supplementing reclaimed water by connection with a domestic drinking water source or irrigation or industrial wells requires an air gap separation device.

14. Application of reclaimed water shall be at agronomic rates considering the crop, soil, climate, and irrigation management system. The nutrient loading of the disposal area, including the nutritive value of organic and chemical fertilizers, applied biosolids, and of the reclaimed water, shall not exceed the crop demand.

15. Neither the treatment nor the use of reclaimed water shall cause a pollution or nuisance as defined by Section 13050 of the CWC.

D. Sludge/Biosolids Discharge Specifications:

Sludge in this document means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screening material generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the wastewater treatment plant (WWTP). Biosolids refers to sludge that has been treated and tested and shown to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agriculture, silviculture, horticulture, and land reclamation activities.

1. 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 (i.e., landfill, composting sites,

soil amendment sites) operated in accordance with valid waste discharge requirements issued by a regional water quality control board will satisfy this specification.

2. Sludge and solid waste shall be removed from screens, sumps, ponds, clarifiers, etc. as needed to ensure optimal plant performance.

3. The treatment of sludge generated at the WWTP shall be confined to the WWTP 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 addition, the storage of residual sludge, solid waste, and biosolids on WWTP 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.

4. 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 503.

   If the State Water Resources Control Board and the Regional Water Quality Control Boards are given the authority to implement regulations contained in 40 CFR 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 503 whether or not they have been incorporated into this Order.

5. 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.

6. Each year, by **19 February**, the Discharger shall submit a biosolids disposal report describing the annual volume of biosolids generated by the plant and specifying the disposal practices.

7. The discharger shall comply with the attached Monitoring and Reporting Program No. R5-2004-0001 for biosolids disposal.

8. 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.

On-site Biosolids Disposal Limitations:

9. The discharge of waste classified as 'hazardous' under Section 2521, Chapter 15 of Title 23 or 'designated', as defined in Section 13173 of the California Water Code, is prohibited.

10. The direct or indirect discharge of biosolids to surface waters or surface water drainage course is prohibited.

11. If biosolids are incorporated into the ground, tillage practices shall minimize the erosion of soils from the application site by wind, storm, or irrigation water.

12. The onsite application of biosolids at rates in excess of the nitrogen requirements of the vegetation or at rates that would cause the excess nitrogen or metals to leach to ground water, is prohibited. All sources (wastewater, fertilizers, biosolids) of nitrogen and metals to the application area must be included in the analysis of the total loading rate.

13. The onsite discharge of biosolids with pollutant concentrations greater than those shown below is prohibited:

Constituent	Ceiling Concentration[1] (mg/kg)
Arsenic	75
Cadmiun	85
Chromium	3000
Copper	4300
Lead	840
Mercury	57
Nickel	420
Selenium	100
Zinc	7500

[1] Dry weights

14. Biosolids shall not be applied to land in amounts which cause the following lifetime cumulative loading rates to be exceeded (cumulative loading shall also include the contribution from applied reclaimed water):

Constituent	kg/hectare	lbs/acre
Arsenic	41	37
Cadmium	39	35
Chromium	3000	2672
Copper	1500	1336
Lead	300	267
Mercury	17	15
Molybdenum	18	16

Nickel	420	374
Selenium	100	89
Zinc	2800	2494

15. Biosolids shall not be applied to land subject to erosion during a flood, or having a surface slope in excess of fifteen percent.

16. The discharge of tailwater or field runoff within 30 days after application of biosolids is prohibited for application areas where biosolids has not been incorporated into the soil and there is not sufficient vegetation in the application area and along the path of runoff to prevent movement of biosolids particles from the application site.

17. Biosolids shall comply with either Class A or Class B Pathogen Reduction standards as listed in 40 CFR 503. Pathogen reduction monitoring is required in the attached Monitoring and Reporting Program.

18. Biosolids shall comply with one of the Vector Attraction Reduction standards as listed in 40 CFR 503.33.

19. Staging areas and biosolids application shall be at least 100 feet from surface waters.

20. Biosolids shall not be deposited to flooded, frozen, or water-saturated ground, or during periods of heavy rainfall.

21. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the property owned or controlled by the Discharger.

22. Staging areas and biosolids application shall be at least:

    a. 10 feet from property lines.

    b. 500 feet from domestic water supply wells.

    c. 50 feet from non-domestic water supply wells.

    d. 20 feet from public roads.

    e. 100 feet from surface waters.

    f. 100 feet from residential buildings.

23. After the last application of biosolids in each field, the Discharger shall ensure the following:

a. For at least 30 days:

(1) Public access to the application area is restricted;

(2) Feed and fiber crops are not harvested; and

(3) Animals do not graze on the land.

b. For at least 12 months:

(1) Turf is not harvested if turf is placed on land with a high degree of public exposure: and

(2) If the field is used as pasture, grazing by milking animals is prevented.

c. For at least 14 months:

(1) Food crops with harvested parts that touch the biosolids/soil mixture and are totally above the land surface are not harvested.

d. For at least 38 months:

(1) Food crops with harvested parts below the land surface are not harvested; and

(2) If the field is used as pasture, grazing of milking animals used for producing unpasteurized milk for human consumption is prevented.

Biosolids Storage Specifications

24. Facilities for the storage of Class B biosolids shall be located, designed, and maintained to restrict public access to biosolids.

25. 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.

26. 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.

27. Biosolids storage facilities shall be designed, maintained and operated to minimize the generation of leachate.

28. Freeboard in biosolids storage lagoons shall never be less than two feet (measured vertically to the lowest point of overflow).

E. Pond Limitations:

1. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the wastewater treatment and disposal areas or property owned by the Discharger.

2. As a means of discerning compliance with Pond Limitation No. 1, the dissolved oxygen content in the upper zone (1 foot) of wastewater in ponds shall not be less than 1.0 mg/l.

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

4. Ponds shall be managed to prevent the breeding of mosquitos. 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, through control of water depth, harvesting, or herbicides.

   c. Dead algae, vegetation, and debris shall not accumulate on the water surface.

5. Ponds shall have sufficient capacity to accommodate allowable wastewater flow and design seasonal precipitation and ancillary inflow and infiltration during the non-irrigation season. Design seasonal precipitation shall be based on total annual precipitation using a return period of 25 years, distributed monthly in accordance with historical rainfall patterns.

6. Freeboard shall never be less than two feet (measured vertically to the lowest point of overflow).

F. Groundwater Limitations:

Discharge of waste constituents from any storage, treatment, or disposal component associated with the WWTP shall not, in combination with other sources:

1. Adversely impact beneficial uses of the groundwater or exceed water quality objectives.

2. Cause any waste constituent concentration, when compared with background, to be incrementally increased, based on a statistical analysis, above the current concentration in the downgradient wells.

3. Any increase in total coliform organisms shall not exceed a most probable number of 2.2/100 ml over any seven-day period.

G. Receiving Water Limitations:

Receiving Water Limitations are based upon water quality objectives contained in the Basin Plan. As such, they are a required part of this permit. The discharge shall not cause the following in the receiving water:

1. Concentrations of dissolved oxygen to fall below 7.0 mg/l. The monthly median of the mean daily dissolved oxygen concentration shall not fall below 85 percent of saturation in the main water mass, and the 95th percentile concentration shall not fall below 75 percent of saturation.

2. Oils, greases, waxes, or other materials to form a visible film or coating on the water surface or on the stream bottom.

3. Oils, greases, waxes, floating material (liquids, solids, foams, and scums) or suspended material to create a nuisance or adversely affect beneficial uses.

4. Chlorine to be detected in the receiving water.

5. Esthetically undesirable discoloration.

6. Fungi, slimes, or other objectionable growths.

7. The turbidity to increase as follows:

    a. More than 1 Nephelometric Turbidity Units (NTUs) 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 NTUs where natural turbidity is between 50 and 100 NTUs.

    d. More than 10 percent where natural turbidity is greater than 100 NTUs.

8. The ambient pH to fall below 6.5, exceed 8.5, or change by more than 0.5 units.

9. The ambient temperature to increase more than 5 °F.

10. Deposition of material that causes nuisance or adversely affects beneficial uses.

11. Radionuclides to be present in concentrations that exceed maximum contaminant levels specified in the CCR, Title 22; that harm human, plant, animal or aquatic life; or 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.

12. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.

13. Toxic pollutants to be present in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human health.

14. Violation of any applicable water quality standard for receiving waters adopted by the Regional Board or the State Board pursuant to the CWA and regulations adopted thereunder.

15. Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to cause nuisance or adversely affect beneficial uses.

H. Provisions:

1. All treatment, storage, and disposal areas shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

2. 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.

3. In accordance with the California Business and Professions Code, Sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for investigations and studies, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall contain the professional's signature and/or stamp of the seal.

4. Pursuant to Title 22, Section 60323, the Discharger shall prepare a Title 22 Engineer's Report that reflects the proposed reclamation uses and operation. The report shall be

prepared in accordance with DHS guidelines, as listed in Attachment G. The report shall be submitted to DHS and the Regional Board for review and approval. The report shall be completed in conformance with the following schedule:

Task	Compliance Date
Submit Draft Report	**1 June 2004**
Submit Final Report	**1 November 2004**

5. By **1 November 2008**, wastewater discharged to Laguna Creek shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to the DHS reclamation criteria, CCR, Title 22, Division 4, Chapter 3 (Title 22), or equivalent. The Discharger shall comply with the following time schedule:

Task	Compliance Date	Report of Compliance Due
Begin Design	**1 June 2004**	**1 July 2004**
Complete CEQA Process	**1 January 2005**	**1 February 2005**
Final Plans and Specifications	**1 January 2006**	**1 February 2006**
Begin Construction	**1 January 2007**	**1 February 2007**
Full Compliance	**1 November 2008**	

The Discharger shall submit to the Regional Board on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Board by letter when it returns to compliance with the time schedule.

6. Within **sixty (60) days** of permit adoption**,** the Discharger shall complete and submit compliance schedule justifications for hexavalent chromium, copper, cyanide, lead, silver, carbon tetrachloride, bromodichloromethane, dibromochloromethane, and bis (2-ethylhexyl) phthalate. The compliance schedule justifications shall include all items specified by SIP Section 2.1, Paragraph 3 (items (a) through (d)). The new water quality-based final effluent limitations for these constituents become effective on **1 April 2004** if a compliance schedule justification meeting the requirements of Section 2.1 of the SIP is not completed and submitted by the Discharger. Otherwise, the new final water quality based effluent limitations required by this Order shall become effective on **1 November 2008**. As this schedule is greater than one year, the Discharger shall submit semi-annual progress reports on **1 January** and **1 July** each year until the Discharger achieves compliance with the final water quality-based effluent limitations.

7. Effluent Limitation B.1 includes final effluent limitations for arsenic, hexavalent chromium, copper, cyanide, lead, silver, carbon tetrachloride, bromodichloromethane, dibromochloromethane, and bis (2-ethylhexyl) phthalate. It is unknown if the Discharger can comply with these limitations. The Discharger shall comply with the following time schedule in order to study, design, and implement measures ensuring compliance with effluent limitations:

Task	Compliance Date
Submit Work Plan	**1 April 2004**
Annual Update Report	**1 July of each year**
Achieve Full Compliance	**1 November 2008**

The Discharger shall submit to the Regional Board on or before each compliance report due date, the specified document or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, plus an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Board by letter when it returns to compliance with the time schedule.

8. The Discharger shall prepare pollution prevention plans following CWC Section 13263.3(d)(3) for aluminum, arsenic, hexavalent chromium, copper, cyanide, iron, lead, silver, carbon tetrachloride, bromodichloromethane, dibromochloromethane, bis (2-ethylhexyl) phthalate, TDS, and oil & grease. A workplan and time schedule for preparation of these pollution prevention plans shall be completed and submitted to the Executive Officer for approval by **1 April 2004**. The Pollution Prevention Plans shall be completed and submitted to the Regional Board by **1 June 2005**. A progress report shall be submitted every **six (6) months** after submittal of the work plan. Based on a review of the submitted information, this Order may be reopened for addition and/or modification of limitations and requirements for these constituents.

9. The discharge may contain constituents that have a reasonable potential to cause or contribute to an exceedance of NTR or CTR water quality objectives, or supplemental constituents that could exceed Basin Plan numeric or narrative water quality objectives. The Discharger must comply with the following time schedule in conducting a study of these constituents potential effect in surface waters:

Task	Compliance Date
Submit Study Report for Dioxins	**1 November 2004**

This Provision is intended to duplicate the requirements of the 10 September 2001 and 27 December 2001 technical report requests. The Discharger shall submit to the Regional Board on or before the compliance due date, a written report detailing compliance or noncompliance with the specific task. If noncompliance is reported, the Discharger shall

state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Board by letter when it returns to compliance with the time schedule.

If after review of the study results it is determined that the discharge has a reasonable potential to cause or contribute to an exceedance of a water quality objective, this Order will be reopened and effluent limitations added for the subject constituents.

10. To determine compliance with the Groundwater Limitations, a groundwater monitoring network shall include one or more background monitoring wells and a sufficient number of designated monitoring wells to evaluate performance of best practicable control technology (BPTC) measures, and to determine if the discharge has degraded groundwater. These include monitoring wells downgradient of every treatment, storage, and disposal unit that does or may release waste constituents to groundwater. The groundwater monitoring well installation report shall be prepared by, or under the direction of, and signed by, a registered Geologist, Certified Engineering Geologist, or a Civil Engineer registered by the State of California, and shall contain the information as listed in Attachment H, "*Items to be Included in a Monitoring Well Installation Workplan and a Monitoring Well Installation Report of Results."* All monitoring wells shall comply with the appropriate standards as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981), and any more stringent standards adopted by the Discharger or County pursuant to CWC Section 13801.

    The Discharger shall characterize natural background quality of monitored constituents in a technical report, to be submitted by **1 June 2005**. For each groundwater monitoring parameter/constituent identified in the Monitoring and Reporting Program, the report shall present a summary of monitoring data, calculation of the concentration in background monitoring wells, and a comparison of background groundwater quality to that in wells used to monitor the facility. Determination of background quality shall be made using the methods described in Title 27, Section 20415(e)(10), and shall be based on data from at least four consecutive quarterly (or more frequent) groundwater monitoring events. For each monitoring parameter/constituent, the report shall compare measured concentrations for compliance monitoring wells with the calculated background concentration.

    If the monitoring shows that any constituent concentrations are increased above background water quality, the Discharger shall submit a technical report describing the evaluation's results and critiquing each evaluated component with respect to BPCT and minimizing the discharge's impact on groundwater quality. In no case shall the discharge be allowed to exceed a water quality objective. This Order may be reopened and additional groundwater limitations added.

11. By **1 July 2004**, the Discharger shall submit an *Operation and Maintenance (O&M) Plan* for the wastewater treatment facility and land application areas. The O&M Plan shall

instruct field personnel on how to manage the day-to-day discharge operations to comply with the terms and conditions of this Order and how to make field adjustments, as necessary, to preclude nuisance conditions (e.g., standing water and objectionable odors from ponded wastewater). It shall also include a nuisance condition troubleshooting flowchart and a description of notification requirements. A copy of the O&M Plan shall be kept at the facility for reference by operating personnel. Key personnel shall be familiar with its contents. The O&M Plan shall include the following documents as report appendices:

a. A Cropping Plan which identifies the land application areas, wastewater application method, tailwater control method, berms/checks/furrows, crops to be grown, nitrogen removal calculations, and crop cutting/harvesting/disposal procedures.

b. A Grading Plan which describes grading activities which will allow application of wastewater in accordance with the WDRs, particularly Section C, Reclamation Specifications.

12. By **1 July 2005**, the Discharger shall submit a *Sanitary Sewer System Operation, Maintenance, Overflow Prevention, and Response Plan* (SSS Plan) that describes the actions designed to prevent, or minimize the potential for sanitary sewer overflows. The Discharger shall maintain the SSS Plan in an up-to-date condition and shall amend the SSS Plan whenever there is a change (e.g. in the design, construction, operation, or maintenance of the sanitary sewer system or sewer facilities) that materially affects the potential for sanitary sewer overflows, or whenever there is a sanitary sewer overflow. The Discharger shall ensure that the up-to-date SSS Plan is readily available to sewer system personnel at all times and that sewer system personnel are familiar with it. A general order to regulate collection systems may be developed by the Regional Board. If a general order for collection systems is adopted by the Regional Board, the Discharger will be required to seek coverage under the general order. Once the Discharger has obtained a general order for the collection system, this permit may be reopened and these requirements may be removed from this permit.

a. At a minimum, the Operation and Maintenance portion of the plan shall contain or describe the following:

(1) Detailed maps of the sanitary sewer system, identifying sewer mains, manholes, and lift stations;

(2) A detailed listing of elements to be inspected, a description of inspection procedures and inspection frequency, and sample inspection forms;

(3) A schedule for routine inspection and testing of all pipelines, lift stations, valves, and other key system components. The inspection/testing program shall

be designed to reveal problems that might lead to accidental spills and ensure that preventive maintenance is completed;

(4) Provisions for repair or replacement of old, worn out, or defective equipment;

(5) Provisions to minimize the need for manual operation of critical systems and provide spill alarms or other "fail safe" mechanisms;

(6) The ability to properly manage, operate and maintain, at all times, all parts of the collection system that the Discharger owns or over which the Discharger has operational control;

(7) The ability to provide adequate capacity to convey base flows and peak flows for all parts of the collection system the Discharger owns or over which the Discharger has operational control; and

(8) How the Discharger will take all feasible steps to stop and mitigate the impact of sanitary sewer overflows in portions of the collection system the Discharger owns or over which the Discharger has operational control.

b. At a minimum, the Overflow Prevention and Response Plan shall contain or describe the following:

(1) Identification of areas of the collection system that historically have overflowed and an evaluation of the cause of the overflow;

(2) Maintenance activities that can be implemented to address the cause of the overflow and means to prevent future overflows. Maintenance activities may include pretreatment of wastewater from industrial dischargers who discharge high concentrations of oil and grease in their wastewater;

(3) Procedures for responding to sanitary sewer overflows designed to minimize the volume of sewer overflow that enters surface waters, and minimize the adverse effects of sewer overflows on water quality and beneficial uses;

(4) Steps to be taken when an overflow or spill occurs, and procedures that will be implemented to ensure that all overflows and spills are properly identified, responded to and reported; and

(5) A public notification plan, in which any posting of areas contaminated with sewage is performed at the direction of the Sacramento County Health Department. All parties with a reasonable potential for exposure to an overflow event shall be notified.

13. The Discharger shall conduct the chronic toxicity testing specified in the Monitoring and Reporting Program. If the testing indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective for toxicity, the Discharger shall initiate a Toxicity Identification Evaluation (TIE) to identify the causes of toxicity. Upon completion of the TIE, the Discharger shall submit a workplan to conduct a Toxicity Reduction Evaluation (TRE) and, after Regional Board evaluation, conduct the TRE. This Order will be reopened and a chronic toxicity limitation included and/or a limitation for the specific toxicant identified in the TRE included. Additionally, if a chronic toxicity water quality objective is adopted by the State Board, this Order may be reopened and a limitation based on that objective included.

14. The Discharger shall enforce the requirements promulgated under Sections 307(b), (c), and (d), and Section 402(b) of the CWA. The Discharger shall cause industrial users subject to federal categorical standards to achieve compliance no later than the date specified in those requirements or, in the case of a new industrial user, upon commencement of the discharge.

15. The Discharger shall implement 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 that 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 Board approves alternate temperature limits;

    f. Petroleum oil, nonbiodegradable 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.

16. The Discharger shall implement 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.

17. The Discharger shall report to the Regional Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission, pursuant to Section 313 of the "Emergency Planning and Community Right to Know Act" of 1986.

18. The Discharger shall comply with all the items of the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)", dated 1 March 1991, which are part of this Order. This attachment and its individual paragraphs are referred to as "Standard Provisions."

19. As described in the Standard Provisions, the Discharger shall report promptly to the Regional Board any material change or proposed change in the character, location, or volume of the discharge.

20. The Discharger shall comply with Monitoring and Reporting Program No. R5-2004-0001, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.

    When requested by USEPA, the Discharger shall complete and submit Discharge Monitoring Reports. The submittal date shall be no later than the submittal date specified in the Monitoring and Reporting Program for Discharger Self Monitoring Reports.

21. At least **90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal or reclamation areas or off-site reuse of effluent used to justify the capacity authorized herein and assure compliance with this Order, the Discharger shall notify the Regional Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.

22. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board or court orders requiring corrective

action or imposing civil monetary liability, or in revision or recession of this Order.

23. A copy of this Order shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.

24. The Regional Board will review this Order periodically and will revise requirements when necessary.

25. This Order expires on **1 January 2009** and the Discharger must file a Report of Waste Discharge in accordance with Title 23, CCR, not later than 180 days in advance of such date in application for renewal of waste discharge requirements if it wishes to continue the discharge.

26. Prior to making any change in the discharge point, place of use, or purpose of use of the wastewater, the Discharger shall obtain approval of, or clearance from the State Board Division of Water Rights.

27. 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 this office.

    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 Board and a statement. The statement shall comply with the signatory paragraph of Standard Provision D.6 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.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 29 January 2004.

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THOMAS R. PINKOS, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2004-0001

NPDES NO. CA0081434

FOR

CITY OF GALT AND
ROMAN CATHOLIC BISHOP OF SACRAMENTO
WASTEWATER TREATMENT PLANT AND RECLAMATION FACILITY
SACRAMENTO COUNTY

This Monitoring and Reporting Program is issued pursuant to California Water Code Section 13383 and 13267. The Discharger shall not implement any changes to this Program unless and until the Regional Board or Executive Officer issues a revised Monitoring and Reporting Program. Specific sample station locations shall be established under direction of the Board's staff, and a description of the stations shall be attached to this Order. A calibration and maintenance log for each meter used for monitoring required in this Monitoring and Reporting Program shall be maintained at the treatment plant.

INFLUENT MONITORING

Influent samples shall be collected at approximately the same time as effluent samples and shall be representative of the influent for the period sampled. Influent monitoring shall include at least the following:

Constituent	Units	Type of Sample	Sampling Frequency
Flow[1]	mgd	Meter	Continuous
20°C BOD_5[2]	mg/l, lbs/day	24 hr. Composite	Weekly
Total Suspended Solids[2]	mg/l, lbs/day	24 hr. Composite	Weekly

[1] The Discharger shall install an influent flow meter and begin reporting influent flows by **1 January 2005**. In the interim, daily influent flows shall be estimated.

[2] The BOD and Total Suspended Solids (TSS) samples shall be flow-proportional composite samples collected on the same day as the effluent BOD and TSS samples.

EFFLUENT MONITORING

Effluent samples shall be collected downstream from the last connection through which wastes can be admitted into the outfall. Therefore, at times when there is a discharge to Laguna Creek, effluent samples must be collected at the cascade aerator. During the reclamation season, 1 May through 31 October, effluent samples are to be collected in the storage reservoir just prior to the intake of irrigation pumps. Effluent samples shall be representative of the volume and quality of the discharge. Samples collected from the outlet structure of ponds will be considered adequately composited. Time of collection of samples shall be recorded. Effluent monitoring shall include at least the following:

Constituent	Units	Type of Sample	Sampling Frequency
Flow[1]	mgd	Meter	Continuous
20°C BOD_5[2]	mg/l, lbs/day	24 hr. Composite	Weekly
Total Suspended Solids[2]	mg/l, lbs/day	24 hr. Composite	Weekly
Settleable Solids	ml/l	Grab	Weekly
Total Dissolved Solids	mg/l	Grab	Weekly
Electrical Conductivity[3] @ 25°C	µmhos/cm	Grab	Weekly
pH[3,4]	Number	Grab	Weekly
Temperature[3,4,15]	°F	Grab	Weekly
Turbidity[5,15]	NTU	Meter	Continuous
Total Coliform Organisms[6]	MPN/l00 ml	Grab	Twice Weekly
Chlorine Residual[7,15]	mg/l, lbs/day	Meter	Continuous
Dissolved Oxygen[3,15]	mg/l	Grab	Weekly
Hardness (as $CaCO_3$)[8,15]	mg/l	Grab	Monthly
Ammonia[9]	mg/l, lbs/day	Grab	Weekly
Nitrate (as N)	mg/l, lbs/day	Grab	Weekly
Oil & Grease[15]	mg/l, lbs/day	Grab	Monthly
Acute Toxicity[4,10,15]	% Survival	Grab	Quarterly
Aluminum[11]	µg/l, lbs/day	Grab	Monthly
Arsenic	µg/l, lbs/day	Grab	Monthly
Hexavalent Chromium	µg/l, lbs/day	Grab	Monthly
Copper	µg/l, lbs/day	Grab	Monthly
Cyanide[15]	µg/l, lbs/day	Grab	Monthly
Iron	µg/l, lbs/day	Grab	Monthly
Lead	µg/l, lbs/day	Grab	Monthly
Silver	µg/l, lbs/day	Grab	Monthly

Constituent	Units	Type of Sample	Sampling Frequency
Carbon Tetrachloride[15]	µg/l, lbs/day	Grab	Monthly
Trihalomethanes[12,15]	µg/l, lbs/day	Grab	Monthly
Bis (2-Ethylhexyl) Phthalate[15]	µg/l, lbs/day	Grab	Monthly
Standard Minerals[13]	mg/l	Grab	Monthly
Priority Pollutants[14,15]	µg/l	Grab	Annual

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1 Compliance with the effluent flow limit shall be determined at the cascade aerator. The Discharger shall install an effluent flow meter and begin reporting effluent flows by **1 January 2005**. Prior to 1 January 2005, at times when there is a discharge to Laguna Creek, cumulative daily effluent flows shall be estimated utilizing the current flow meter at the chlorine contact chamber.

2 Effluent BOD and TSS samples must be collected on the same day as influent BOD and TSS samples. Monthly average percent removals must also be reported in the monthly monitoring reports.

3 A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions.

4 Concurrent with ammonia sampling.

5 Effective upon completion of tertiary treatment facilities, or **1 November 2008**, whichever is first.

6 Sample may be collected at any point following disinfection, provided that samples are dechlorinated at the time of collection. The Discharger shall report the sampling location in the monthly monitoring report.

7 Samples shall be daily grab samples until 1 November 2004. Effective **1 November 2004**, continuous monitoring shall be implemented.

8 Concurrent with metals sampling.

9 Concurrent with biotoxicity monitoring. Report as both total and un-ionized ammonia.

10 The acute bioassay samples shall be analyzed using EPA/821-R-02-012, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, Fifth Edition, October 2002, or later amendment with Regional Board staff approval. Temperature and pH shall be recorded at the time of bioassay sample collection and each day of the test. Test species shall be fathead minnows (pimephales promelas), with no pH adjustment unless approved by the Executive Officer.

11 Four consecutive daily samples shall be collected. If the result of the initial sample exceeds the 4-day average effluent limitation, the additional samples shall be analyzed for compliance with the limitations.

12 Trihalomethanes shall include bromoform, bromodichloromethane, dibromochloromethane, and chloroform.

13 Standard minerals shall include all major cations and anions, including calcium, magnesium, hardness, sodium, potassium, alkalinity, sulfate, chloride, boron, and nitrate, and verification that the analysis is complete (i.e., cation/anion balance).

[14] Discharger must submit a report outlining sample collection, EPA test methods, and detection limits **within 60 days of permit adoption** for approval. All peaks are to be reported, along with any explanation provided by the laboratory. Priority Pollutants are defined as USEPA priority toxic pollutants and consists of the constituents listed in the most recent National Toxics Rule and California Toxics Rule. Hardness, pH, and temperature data shall be collected at the same time and on the same date as the Priority Pollutant samples.

[15] Monitoring not required during reclamation season.

If the discharge to Laguna Creek is intermittent rather than continuous, then on the first day of each such intermittent discharge, the Discharger shall monitor and record data for all of the constituents listed above, after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge. In no event shall the Discharger be required to monitor and record data more often than twice the frequencies listed in the schedule.

LAND APPLICATION AREA MONITORING

Monitoring of the land application areas shall be conducted and logged daily, and the results shall be included in the monthly monitoring report. Evidence of erosion, field saturation, runoff, or the presence of nuisance conditions shall be noted in the report. Effluent monitoring results shall be used in calculations to ascertain loading rates at the application areas. Monitoring of the land application areas shall include the following:

Constituent	Units	Type of Sample	Frequency	Reporting Frequency
Flow[1,2]	Gallons	Calculated	Daily	Monthly
Rainfall	Inches	Measurement	Daily	Monthly
Acreage Applied[1,2]	Acres	Calculated	Daily	Monthly
Application Rate[1,2]	gal/acre•day	Calculated	Daily	Monthly
BOD Loading Rate[1,2]	lbs/acre•day	Calculated	Daily	Monthly
Total Nitrogen Loading Rate[1,2]	lbs/ac/month	Calculated	Monthly	Monthly
Total Dissolved Solids Loading Rate[1,2]	lbs/ac/month	Calculated	Monthly	Monthly
Total Sodium Loading Rate[1,2]	lbs/ac/month	Calculated	Monthly	Monthly

[1] For each land application area. Flows shall be reported as cumulative daily flows and calculated based on pump curves and run times, unless an alternative method is proposed and approved by the Executive Officer.

[2] Land application areas shall be identified.

GROUNDWATER MONITORING

Prior to construction, plans and specifications for ground water monitoring wells shall be submitted to Regional Board staff for review and approval. Wells shall comply with requirements of the Department of Water Resources. Prior to sampling, the groundwater elevations shall be measured and the wells shall be purged at least three well volumes until pH and electrical conductivity have stabilized. Samples shall be collected using standard EPA methods. Groundwater monitoring shall include, at a minimum:

Constituent	Units	Type of Sample	Sample Frequency
Depth to Groundwater[1]	Feet	Measurement	Quarterly
Groundwater Elevation[1]	Feet	Measurement	Quarterly
Total Dissolved Solids	mg/l	Grab	Quarterly
Ammonia, as Nitrogen	mg/l	Grab	Quarterly
Nitrate, as Nitrogen	mg/l	Grab	Quarterly
pH[2]	pH Units	Grab	Quarterly
Electrical Conductivity[2] @ 25°C	µmhos/cm	Grab	Quarterly
Total Coliform Organisms	MPN/100 ml	Grab	Quarterly
Title 22 Metals	mg/l	Grab	Quarterly

[1] Groundwater elevation shall be used to calculate the direction and gradient of groundwater flow. Elevations shall be measured to the nearest one-hundredth of a foot from mean sea level. The groundwater elevation shall be measured prior to purging the wells.

[2] A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions.

RECEIVING WATER MONITORING

All receiving water samples shall be grab samples. Receiving water monitoring shall be conducted only when the plant is discharging to Laguna Creek. Receiving water monitoring shall include at least the following:

Station	Description
R-1	300 feet upstream from the point of discharge
R-2	100 feet downstream from the point of discharge

Constituent	Units	Station	Sampling Frequency
Dissolved Oxygen[1]	mg/l	R-1, R-2	Weekly
pH[1]	Number	R-1, R-2	Weekly
Turbidity	NTU	R-1, R-2	Weekly
Temperature[1]	°F (°C)	R-1, R-2	Weekly
Electrical Conductivity @25°C[1]	µmhos/cm	R-1, R-2	Weekly
Ammonia, as N[2]	mg/l	R-1, R-2	Weekly
Trihalomethanes[3]	µg/l	R-1, R-2	Quarterly

[1] A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions.

[2] Temperature and pH shall be determined at the time of sample collection.

[3] Trihalomethanes shall include bromoform, bromodichloromethane, dibromochloromethane, and chloroform.

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Stations R-l and R-2. Attention shall be given to the presence or absence of:

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

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

THREE SPECIES CHRONIC TOXICITY MONITORING

Chronic toxicity monitoring shall be conducted to determine whether the effluent is contributing toxicity to Laguna Creek. The testing shall be conducted as specified in EPA/821-R-02-013, *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, October 2002, or later amendment with Regional Board staff approval. Chronic toxicity samples shall be collected at the discharge of the storage reservoir prior to its entering Laguna Creek. Twenty-four hour composite samples shall be representative of the volume and quality of the discharge. Time of collection samples shall be recorded. Dilution and control waters shall be obtained immediately upstream of the discharge from an area unaffected by the discharge in the receiving waters. Standard dilution water can be used if the receiving water source exhibits toxicity and is approved by the Executive Officer. The sensitivity of the test organisms to a reference toxicant shall be determined concurrently with each bioassay and reported with the test results. Both the reference toxicant and effluent test must meet all test acceptability criteria as specified in the chronic manual. If the test acceptability criteria are not achieved, then the Discharger must re-sample and re-test within 14 days.

Chronic toxicity monitoring shall include the following:

Species: *Pimephales promelas* (larval stage)*, Ceriodaphnia dubia,* and *Selenastrum capricornutum*

Frequency: Quarterly, when discharging to Laguna Creek

Dilution Series:

	Dilutions (%)					Controls	
	100	50	25	12.5	6.25	Creek Water	Lab Water
% WWTP Effluent	100	50	25	12.5	6.25	0	0
% Dilution Water[1]	0	50	75	87.5	93.75	100	0
% Lab Water	0	0	0	0	0	0	100

[1] Dilution water shall be receiving water from Laguna Creek taken upstream from the discharge point. If no upstream water is available, laboratory dilution water may be used.

WATER SUPPLY MONITORING

A sampling station shall be established where a representative sample of the municipal water supply can be obtained. Water supply monitoring shall include at least the following:

Constituent	Units	Sampling Frequency
Standard Minerals[1]	mg/l	Annually
Electrical Conductivity[2] @25ºC	µmhos/cm	Annually
Total Dissolved Solids	mg/l	Annually

[1] Standard minerals shall include all major cations and anions, including calcium, magnesium, hardness, sodium, potassium, alkalinity, sulfate, chloride, boron, and nitrate, and verification that the analysis is complete (i.e., cation/anion balance).

[2] If the water supply is from more than one source, the EC shall be reported as a weighted average and include copies of supporting calculations. A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions.

POND MONITORING

The following shall constitute the monitoring requirements for the storage ponds:

Constituent	Units	Sampling Frequency
Freeboard[1]	feet	Monthly
pH[2]	pH units	Monthly
Electrical Conductivity[2]	µmhos/cm	Monthly
Dissolved Oxygen[2]	mg/l	Monthly
Odors	Observation	Monthly
Levee Condition	Observation	Monthly

[1] Measured vertically to the lowest point of overflow. Include estimation of volume of wastewater in each pond.

[2] A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions.

BIOSOLIDS MONITORING

A composite sample of biosolids shall be collected hourly during the hours of biosolids wasting over a 24-hour period and in accordance with U.S. EPA's POTW Biosolids Sampling and Analysis Guidance Document, August 1989, (or most recent edition) and tested for the following constituents:

Constituent	Units	Sample Type	Frequency
Quantity	Dry Tons	---	Weekly
Solids Content	% (percentage)	---	Weekly
Disposal Location	---	---	Daily
Arsenic	mg/kg	Composite	Quarterly
Cadmium	mg/kg	Composite	Quarterly
Chromium	mg/kg	Composite	Quarterly
Copper	mg/kg	Composite	Quarterly
Lead	mg/kg	Composite	Quarterly
Mercury	mg/kg	Composite	Quarterly
Molybdenum	mg/kg	Composite	Quarterly
Nickel	mg/kg	Composite	Quarterly
Selenium	mg/kg	Composite	Quarterly
Zinc	mg/kg	Composite	Quarterly
Oil and Grease	mg/kg	Composite	Quarterly
Nitrogen	mg/kg (dry)	Composite	Quarterly
Ammonia	mg/kg (dry)	Composite	Quarterly
Nitrate	mg/kg (dry)	Composite	Quarterly
Total Kjeldahl Nitrogen	mg/kg (dry)	Composite	Quarterly
Fecal Coliform	MPN/gram total solids	Composite	[1]
Priority Pollutants	---	Composite	[2]

[1] The Discharger shall collect seven composite samples over a two week period each quarter, and analyze the samples for fecal coliform (report as MPN/gm total solids). Results for each sample shall be reported along with the geometric mean of the results. If the Discharger adequately demonstrates that biosolids are treated in a process equivalent to one of the Processes to Significantly Reduce Pathogens, and receives approval from the Executive Officer, then monitoring for fecal coliform in biosolids will no longer be required.

[2] **Within 90 days of the effective date of this Order, and annually thereafter**, the Discharger shall submit results of chemical analysis for the priority pollutants listed in 40 CFR 122 Appendix D, Tables II and III (excluding total phenols). Suggested methods for analysis of biosolids are provided in U.S. EPA publications titled "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods" and "Test Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater". Other guidance is available in EPA's POTW Biosolids Sampling and Analysis Guidance Document, August 1989 (or most recent edition).

Results of monitoring shall be reported in compliance with the Reporting Section. The biosolids monitoring report shall include a statement concerning compliance with biosolids disposal restrictions. The report shall include, but is not limited to, an assessment of cumulative metals and nitrogen loadings from all sources, type of crop grown, nitrogen demand, and setback and runoff compliance.

REPORTING

Monitoring results shall be submitted to the Regional Board by the **first day** of the second month following sample collection. Quarterly and annual monitoring results shall be submitted by the **first day of the second month following each calendar quarter, semi-annual period, and year**, respectively.

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the discharge complies with waste discharge requirements. The highest daily maximum for the month, monthly and weekly averages, and medians, and removal efficiencies (%) for BOD and Suspended Solids, should be determined and recorded.

If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.

By **30 January** of each year, the Discharger shall submit a written report to the Executive Officer containing the following:

a. The names, certificate grades, and general responsibilities of all persons employed at the WWTP (Standard Provision A.5).

b. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.

c. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration (Standard Provision C.6).

d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.

The Discharger may also be requested to submit an annual report to the Regional Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

All reports submitted in response to this Order shall comply with the signatory requirements of Standard Provision D.6.

The Discharger shall implement the above monitoring program on the first day of the month following effective date of this Order.

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

29 January 2004

INFORMATION SHEET

ORDER NO. R5-2004-0001
NPDES NO. CA0081434
CITY OF GALT AND ROMAN CATHOLIC BISHOP OF SACRAMENTO
WASTEWATER TREATMENT PLANT AND RECLAMATION FACILITY
SACRAMENTO COUNTY

FACILITY INFORMATION

The Discharger owns and operates a wastewater collection, treatment, and disposal system, and provides sewerage service to the City of Galt. Treated municipal wastewater is discharged to Laguna Creek, a water of the United States and a tributary to the Cosumnes River, and into ponds which are used for irrigation. The treatment system consists of screens, extended aeration oxidation ditches, secondary clarification, chlorine disinfection, and dechlorination (when discharging to Laguna Creek).

Between 1 May and 31 October, effluent is reclaimed for irrigation of approximately 174 acres of City-owned land and 160 acres of land leased from the Roman Catholic Bishop of Sacramento. The discharge of wastewater to surface waters or surface water drainage courses is prohibited between 1 May and 31 October. The Discharger is required to operate and maintain land application areas in order to maintain adequate capacity to handle effluent volumes discharged from the wastewater treatment plant.

BENEFICIAL USES

The Basin Plan on page II-2.00 states: "Existing and potential beneficial uses which currently apply to surface waters of the basins are presented in Figure II-1 and Table II-1. The beneficial uses of any specifically identified water body generally apply to its tributary streams." The Basin Plan does not specifically identify beneficial uses for Laguna Creek, but the Basin Plan does identify present and potential uses for the Cosumnes River, to which Laguna Creek is tributary.

The Basin Plan identifies the following beneficial uses for the Cosumnes River: municipal and domestic supply, agricultural irrigation, agricultural stock watering, water contact recreation, other non-contact water recreation, warm freshwater aquatic habitat, cold freshwater aquatic habitat, warm fish migration habitat, cold fish migration habitat, warm spawning habitat, and wildlife habitat. In addition, State Water Resources Control Board (State Board) Resolution No. 88-63, incorporated into the Basin Plan pursuant to Regional Board Resolution 89-056, requires the Regional Board to assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in Table II-1.

The Basin Plan on page II-1.00 states: "Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning…" and with respect to disposal of

wastewaters states that "… disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses."

In reviewing whether the existing and/or potential uses of the Cosumnes River apply to Laguna Creek**,** the Regional Board has considered the following facts:

a. *Domestic Supply and Agricultural Supply*

The Regional Board is required to apply the beneficial uses of municipal and domestic supply to Laguna Creek based on State Board Resolution No. 88-63, which was incorporated in the Basin Plan pursuant to Regional Board Resolution 89-056. Also, since Laguna Creek is an ephemeral stream, it likely provides groundwater recharge during periods of low flow. The groundwater is a source of drinking water.

Laguna Creek drains into the Cosumnes River Preserve approximately 4 miles downstream from the discharge point. However, prior to reaching the Cosumnes River Preserve, a local grower diverts water directly from Laguna Creek for irrigation of food crops, primarily fresh vegetables for sale to the general public. In addition, Bureau of Land Management staff has indicated that most of the area within the Cosumnes River Preserve is "prime agricultural land", meaning that each parcel, at any time, has the capability to produce fresh food crops if the farmer so desires. Currently, organic rice, corn, and fruits and vegetables are grown within the Cosumnes River Preserve. These crops are irrigated with water diverted from the Cosumnes River downstream of the discharge.

In addition to the existing water uses, growth in the area downstream of the discharge is expected to continue, which presents a potential for future domestic and agricultural uses of the water in Laguna Creek downstream of the discharge. If the Discharger provides adequate information to fully evaluate and determine that municipal use in the receiving water does not exist and is not likely to be attained in the future, and the Basin Plan is amended to change the beneficial use, then this Order may be reopened to modify appropriate findings and limitations.

b. *Water Contact and Noncontact Recreation and Esthetic Enjoyment*

The Regional Board finds that there is ready public access to Laguna Creek and waters downstream of the discharge, exclusion of the public is unrealistic, and contact recreational activities currently exist. These uses are likely to increase as the population in the area grows. Prior to flowing into the Cosumnes River Preserve, Laguna Creek flows through areas of general public access.

The Cosumnes River offers many recreational opportunities. Wading, swimming, boating, and canoeing are common activities occurring within the Cosumnes River Preserve. In addition, researchers and school groups frequently conduct field studies throughout the year. These studies, including evaluating salmon runs and collecting data on invertebrates and animals, may involve contact with undiluted effluent in downstream receiving waters.

c. *Groundwater Recharge*

The Discharger submitted a *Discharge Impacts on Receiving Waters Study*, dated January 2002, which evaluated the performance of the wastewater treatment plant and the impacts of the wet season treated effluent discharge to Laguna Creek. The report states, in part, "Laguna Creek is an ephemeral stream, which may be without flow during the dry months. The creek is typically wet for approximately 4 months out of the year, …"

In areas where groundwater elevations are below the stream bottom, water from the stream will percolate to groundwater. Since Laguna Creek is at times dry, and regional groundwater levels are below the stream bottom, it is reasonable to assume that the stream water is lost by evaporation, flow downstream, and percolation to groundwater providing a source of municipal and irrigation water supply.

d. *Freshwater Replenishment*

When water is present in Laguna Creek, there is hydraulic continuity between Laguna Creek and the Cosumnes River. During periods of hydraulic continuity, Laguna Creek adds to the water quantity and may impact the quality of water flowing downstream in the Cosumnes River.

e. *Preservation and Enhancement of Fish, Wildlife, and Other Aquatic Resources*

Laguna Creek flows to the Cosumnes River. The California Department of Fish and Game (DFG) has verified that the fish species present in the Cosumnes River are consistent with both cold and warm water fisheries and that there is a potential for anadromous fish migration necessitating cold water. The Basin Plan (Table II-1) designates the Cosumnes River as being both a cold and warm freshwater habitat. Therefore, pursuant to the Basin Plan (Table II-1, Footnote (2)), the cold designation applies to Laguna Creek.

Upon review of the flow conditions, habitat values, and beneficial uses of Laguna Creek, and the facts described above, the Regional Board finds that the beneficial uses identified in the Basin Plan for the Cosumnes River are applicable to Laguna Creek.

The Regional Board also finds that based on the available information and on the Discharger's application, that Laguna Creek, absent this and other NPDES discharges, is an ephemeral stream. The ephemeral nature of Laguna Creek means that the designated beneficial uses must be protected, but that no credit for receiving water dilution is available. Although the discharge, at times, maintains the aquatic habitat, constituents may not be discharged that may cause harm to aquatic life. At other times, natural flows within Laguna Creek help support the aquatic life. Both conditions may exist within a short time span, where Laguna Creek would be dry without the discharge or other NPDES discharges, and periods when sufficient background flows provide hydraulic continuity with the Cosumnes River. Dry conditions occur primarily in the summer months, but dry conditions may also occur throughout the year, particularly in low rainfall years. The lack of dilution results in more stringent effluent limitations to protect contact recreational uses, drinking water standards, agricultural water quality goals, and aquatic life. Significant dilution may occur during and immediately following high rainfall events.

DILUTION

The Discharger has requested that the Regional Board consider dilution credit from natural flows in Laguna Creek upstream of the discharge. The Discharger submitted a *Receiving Waters Assessment* report on 17 March 2003, which identifies the flow sources to Laguna Creek upstream of the discharge as effluent discharged from the Sacramento Municipal Utility District (SMUD) Rancho Seco Plant (RSP) and irrigation/stormwater runoff. On 28 February 2003, the Discharger submitted a *Streamflow Estimates for Laguna Creek at City of Galt Wastewater Treatment Plant Discharge Point* report, dated 19 March 2002, which estimated flows in Laguna Creek upstream of the point of discharge. Based on the results of this report, Laguna Creek failed to consistently achieve 20:1 dilution based upon the design treatment flow of 3.0 mgd. Additionally, SMUD is in the process of decommissioning the RSP and, according to the *Receiving Waters Assessment* report, "SMUD currently has no plans to continue discharging to the Laguna Creek drainage beyond the period required by the NRC." SMUD has already begun reducing effluent flows. On 26 February 2003, RSP briefly ceased its discharge to repair a water main, resulting in the termination of all dilution flows for the duration of the repair. An inspection of the wastewater treatment plant and receiving waters by Regional Board staff on 12 March 2003 revealed little to no flow in Laguna Creek upstream of the discharge. Due to these factors, the Regional Board finds that upstream flows are not sufficient, nor reliable, to allow dilution credit. In addition, a local farmer diverts water directly from Laguna Creek downstream of the discharge for irrigation of food crops for sale to the general public. This diversion may occur during the discharge period. The Regional Board is required to protect, in part, this use. Therefore, no dilution credit has been granted in the calculation of effluent limitations.

The Discharger also requested dilution credit for Cosumnes River water that combines with the effluent approximately 4 miles downstream of the discharge. The Cosumnes River is an

ephemeral waterbody in the vicinity of its confluence with Laguna Creek, and at times has little or no flow. No dilution credit will be granted for Cosumnes River water, as flows are not sufficient, nor reliable enough, to allow dilution credit.

TERTIARY TREATMENT

The beneficial uses of Laguna Creek include contact recreational uses and irrigation supply. To protect these beneficial uses, the Regional Board finds that the wastewater must be disinfected and adequately treated to prevent disease. The principal infectious agents (pathogens) that may be present in raw sewage may be classified into three broad groups: bacteria, parasites, and viruses. Tertiary treatment, consisting of chemical coagulation, sedimentation, and filtration, has been found to remove approximately 99.5% of viruses. Filtration is an effective means of reducing viruses and parasites from the waste stream. The wastewater must be treated to tertiary standards (filtered) to protect contact recreation and food crop irrigation uses.

The Regional Board consulted with several interested parties downstream of the discharge regarding current recreational and agricultural uses of the receiving waters. Information obtained from these consultations was compiled and submitted to the California Department of Health Services (DHS) for their recommendation for level of treatment necessary to protect the downstream beneficial uses. Upon review of this information, the California DHS, in a letter dated 1 July 2003, stated, "… it is the view of the Department of Health Services that the effluent should be filtered to protect public health." Therefore, the wastewater must be treated to tertiary standards (filtered or equivalent) to protect contact recreation and food crop irrigation uses.

The California Department of Health Services has developed reclamation criteria, California Code of Regulations, Title 22, 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 per 100 ml as a 7-day median. Title 22 is not directly applicable to surface waters; however, the Regional Board finds that it is appropriate to apply DHS' reclamation criteria because Laguna Creek is used for irrigation of agricultural land and for contact recreational purposes. The stringent disinfection criteria of Title 22 are appropriate since the undiluted effluent may be used for the irrigation of food crops. Coliform organisms are intended as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing other pathogens. The method of treatment is not prescribed by this Order; however, wastewater must be treated to a level equivalent to that recommended by DHS.

In addition to coliform testing, a turbidity effluent limitation has been included as a second indicator of the effectiveness of the treatment process and to assure compliance with the required

level of treatment. 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 would 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.

This Order contains effluent limitations and requires a tertiary level of treatment, or equivalent, necessary to protect the beneficial uses of the receiving water. In accordance with California Water Code (CWC), Section 13241, the Regional Board has considered the following:

a. As stated in the above Findings, the past, present and probable future beneficial uses of the receiving stream include municipal and domestic supply, agricultural irrigation, agricultural stock watering, water contact recreation, other non-contact water recreation, warm freshwater aquatic habitat, cold freshwater aquatic habitat, warm fish migration habitat, cold fish migration habitat, warm spawning habitat, and wildlife habitat.

b. The environmental characteristics of the hydrographic unit, including the quality of the available water, will be improved by the requirement to provide tertiary treatment for this wastewater discharge. Tertiary treatment will allow for the reuse of the undiluted wastewater for food crop irrigation and contact recreation, activities that would otherwise be unsafe according to recommendations from DHS.

c. Fishable and swimmable water quality conditions can be reasonably achieved through the coordinated control of all factors that affect water quality in the area.

d. The economic impact of requiring an increased level of treatment has been considered. Regional Board staff estimate that the total cost associated with installing tertiary treatment and complying with the proposed effluent limitations for BOD, TSS, total coliform, and turbidity is $9,933,757, which includes capital costs, chemical costs, and operation and maintenance costs over a 20-year period. This figure does not include the costs of any additional facilities that may be necessary to comply with the other limitations included in this permit.

An economic analysis for implementation of tertiary treatment was calculated as follows:

$9,933,757 cost / 7,788 households = $1,275.52 per household
Assuming an 8% interest rate over 20 years:
$A = P \times (A/P)^{i=8\%}_{n=20\ yrs} = \$1,275.52\ (0.1019) = \$129.98/yr = \$10.83/month$

This economic analysis concludes that for the 7,788 households in the City of Galt, the monthly rate would increase $10.83 per household if none of the costs were passed onto industrial, commercial, and institutional users. According to the Discharger, in May 2003, sewer fees were raised to $16.10 per month.

The Regional Board considers $9,933,757 a significant amount of money to the 7,788 residential and industrial users. However, given the location of the existing discharge and the existing beneficial uses of the receiving waters that must be protected, this increase in the monthly rate is not out of line with other communities in similar circumstances.

The loss of beneficial uses within downstream waters, without the tertiary treatment requirement, include prohibiting the irrigation of food crops and prohibiting public access for contact recreational purposes, would have a detrimental economic impact. In addition to pathogen removal to protect irrigation and recreation, tertiary treatment may also aid in meeting discharge limitations for other pollutants, such as heavy metals, reducing the need for advanced treatment.

e. The need to develop housing in the area will be facilitated by improved water quality, which protects the contact recreation and irrigation uses of the receiving water. DHS recommends that, in order to protect the public health, undiluted wastewater effluent must be treated to a tertiary level, for contact recreational and food crop irrigation uses. Without tertiary treatment, the downstream waters could not be safely utilized for contact recreation or the irrigation of food crops.

f. It is the Regional Board's policy (Basin Plan, page IV-15.00, Policy 2) to encourage the reuse of wastewater. The Regional Board requires Dischargers to evaluate how reuse or land disposal of wastewater can be optimized. The need to develop and use reclaimed water is facilitated by providing a tertiary level of wastewater treatment which will allow for a greater variety of uses in accordance with California Code of Regulations (CCR), Title 22.

The Regional Board has considered the factors specified in CWC Section 13263, including considering the provisions in CWC Section 13241, in adopting the disinfection and filtration requirements under Title 22 criteria. The Regional Board finds, on balance, that these requirements are necessary to protect the beneficial uses of Laguna Creek and the Cosumnes River, including body contact water recreation and irrigation uses.

The establishment of tertiary limitations has not been previously required for this discharge; therefore, a schedule for compliance with the tertiary treatment requirements is included as a Provision in this Order. This Order provides interim effluent limitations for BOD, TSS, and total coliform, which the Discharger is currently capable of meeting. Full compliance with the final

effluent limitations for BOD, TSS, total coliform, and turbidity are not required by this Order until completion of tertiary treatment facilities, or **1 November 2008**, whichever is first.

Adequate time is provided for the Discharger to propose alternatives that are still protective of public health and irrigation uses, but at a reduced cost. The permit may be reopened at such time as the Discharger proposes an alternative that is protective of public health and irrigation use. Alternatives to tertiary treatment, such as land disposal or discharge to a different water body with assimilative capacity, would require modification of the permit.

PRETREATMENT

Data submitted by the Discharger indicates the presence of a number of priority pollutants in the plant influent and effluent. Conventional treatment processes cannot easily remove many of the priority pollutants entering the plant. Therefore, source control of the constituents is the best method to prevent the discharge of priority pollutants to surface waters.

Within the service area for the City of Galt, some Categorical Industrial Users (CIUs) (as defined by 40 CFR Part 400, et sec.) may be located. This Order requires that the Discharger identify all CIUs that discharge into the wastewater collection and treatment system and establish local ordinances to enforce categorical pretreatment standards. The purpose of pretreatment requirements is to control and minimize the loading of pollutants to POTWs from non-domestic sources to protect against operational, water quality, biosolids quality, and worker health and safety problems. If CIUs discharge into the wastewater collection and treatment system, the Discharger is responsible to ensure that the CIUs meet categorical discharge limitations.

GROUNDWATER

Due to current treatment, storage, and disposal practices occurring at the wastewater treatment plant, it is likely that operations at the facility may be degrading the local groundwater. As a result, this Order requires the Discharger to install groundwater monitoring wells throughout the facility and conduct routine monitoring of these wells to determine whether current practices are degrading groundwater quality. The Monitoring and Reporting Program requires routine monitoring and the submittal of groundwater monitoring reports to evaluate impacts to waters of the state, to assure the protection of beneficial uses, and determining compliance with Regional Board plans and policies, including Resolution 68-16.

The groundwater monitoring network must include one or more background monitoring wells and a sufficient number of designated wells to evaluate performance of best practicable control technology (BPCT) measures and determine if the discharge has degraded groundwater. Determination of background quality shall be made using the methods described in Title 27, Section 20415(e)(10), and shall be based on data from at least four consecutive quarterly (or

more frequent) groundwater monitoring events. Once the monitoring wells have been installed and developed, the Discharger must submit a Groundwater Well Installation Report. The Discharger must characterize natural background quality of monitored constituents in a technical report to be submitted no later than 1 June 2005. For each groundwater monitoring parameter or constituent identified in the Monitoring and Reporting Program, the report shall present a summary of the monitoring data, calculations of the concentration in background monitoring wells, and a comparison of background groundwater quality to that in wells used to monitor the facility. If it is determined that groundwater is being degraded by operations at the wastewater treatment plant, the permit may be reopened and additional limitations included.

COLLECTION SYSTEM

The Discharger's sanitary sewer system collects wastewater using sewers, pipes, pumps, and/or other conveyance systems and directs this raw sewage to the wastewater treatment plant. A "sanitary sewer overflow" is defined as a discharge to ground or surface water from the sanitary sewer system at any point upstream of the wastewater treatment plant. Storage and conveyance facilities (such as wet wells, regulated impoundments, tanks, highlines, etc.) for temporary wastewater storage may be part of a sanitary sewer system and discharges to these facilities are not considered sanitary sewer overflows, provided that the waste is fully contained within these storage/conveyance facilities.

Sanitary sewer overflows consist of varying mixtures of domestic sewage, industrial wastewater, and commercial wastewater; and this mixture depends on the pattern of land use in the sewage collection system tributary to the overflow. The chief causes of sanitary sewer overflows include grease blockages, root blockages, debris blockages, sewer line flood damage, manhole structure failures, vandalism, pump station mechanical failures, power outages, storm or groundwater inflow/infiltration, lack of capacity, and contractor caused blockages.

Sanitary sewer overflows often contain high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oxygen demanding organic compounds, oil and grease, and other pollutants. Sanitary sewer overflows can cause temporary exceedences of applicable water quality objectives, pose a threat to public health, adversely affect aquatic life, and impair the public recreational use and aesthetic enjoyment of surface waters in the area. The Discharger is expected to take all necessary steps to adequately maintain and operate its sanitary sewer collection system. This Order requires the Discharger to prepare and implement a Sanitary Sewer System Operation, Maintenance, Overflow Prevention, and Response Plan.

REASONABLE POTENTIAL

Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream

excursion above a narrative or numerical water quality standard. On 10 September 2001, the Executive Officer issued a letter, in conformance with CWC Section 13267, requiring the Discharger to prepare a technical report assessing effluent and receiving water quality. On 27 December 2001, the Executive Officer issued a letter revising Attachment II of the original 10 September 2001 letter, which relaxed certain constituents Criterion Quantitation Limits.

The Discharger submitted monitoring results in accordance with the 10 September and 27 December 2001 letters to the Regional Board on 28 February 2003. These results, along with additional data submitted by the Discharger, were used to determine if the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality objective. Upon review of available data, the following constituents were found to have a reasonable potential to be discharged at concentrations exceeding water quality objectives in the receiving waters: aluminum; arsenic; hexavalent chromium; copper; cyanide; iron; lead; silver; carbon tetrachloride; bromodichloromethane; dibromochloromethane; bis (2-ethylhexyl) phthalate; ammonia; chlorine; and nitrate.

INORGANICS

ALUMINUM

The Basin Plan prohibits the discharge of toxic materials in toxic concentrations. Aquatic habitat is a beneficial use of the Laguna Creek. USEPA developed National Recommended Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life for aluminum; 87 µg/l as a four-day average (chronic) and 750 µg/l as a one-hour average (acute). The secondary MCL for aluminum is 200 µg/l, expressed as total recoverable. The maximum observed effluent aluminum concentration was 638 µg/l, exceeding the chronic criteria and secondary MCL. Based on information submitted by the Discharger, aluminum in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a level necessary to protect aquatic life. Effluent limitations for aluminum are included in this Order that are based on USEPA's Ambient Water Quality Criteria for the protection of the beneficial use of freshwater aquatic habitat. The Discharger is unable to immediately comply with the final effluent limitations for aluminum.

The Discharger may conduct a water effects ratio study to develop a site-specific objective, and upon adoption and approval of a Basin Plan amendment, the permit may be reopened and the aluminum limit reconsidered.

ARSENIC

Arsenic is an inorganic priority pollutant that produces human health effects and is considered a carcinogen. Municipal and domestic supply are beneficial uses of Laguna

Creek. The new USEPA primary MCL for arsenic is 10 µg/l. The federal regulations at 40 CFR Section 122.44(d)(1)(vi)(A), allows the state to establish the effluent limitation using an explicit state policy interpreting its narrative criterion. Therefore, use of the USEPA primary MCL is appropriate to implement the narrative chemical constituent objective. Available data in the Report of Waste Discharge and additional priority pollutant monitoring indicates a maximum effluent arsenic concentration of 16 µg/l. Therefore, the Regional Board finds that there is a reasonable potential for the discharge to cause or contribute to an excursion above a water quality standard for arsenic, specifically the "narrative chemical constituent objective" in the Basin Plan.

The compliance date for water purveyors to meet the new MCL is 23 January 2006. This Order contains a time schedule requiring the Discharger to take steps to comply with the new primary MCL by **1 November 2008**. The Discharger is required to routinely monitor effluent concentrations of arsenic in order to evaluate progress towards compliance with the new primary MCL.

HEXAVALENT CHROMIUM

The Report of Waste Discharge and additional priority pollutant monitoring submitted by the Discharger indicates the presence of hexavalent chromium at levels that exceed CTR water quality criteria. The CTR water quality criteria for hexavalent chromium are expressed in dissolved form. To convert the criteria to total recoverable hexavalent chromium, Regional Board staff utilized the default USEPA translator.

Section 1.4 of the SIP states that the CV must be set at 0.60 if there are less than ten data points, or if more than 80% of the data are non-detect. Based on eleven effluent samples, 91% of which were non-detect (CV=0.60), the maximum reported hexavalent chromium value is 38 µg/l, which is within a range that may cause the receiving stream to exceed the CTR water quality criteria for the protection of freshwater aquatic life. Effluent limitations for hexavalent chromium are included in this Order based on the CTR criteria and calculations outlined in Section 1.4 of the SIP. The SIP calculated effluent limitations for hexavalent chromium are 8.0 µg/l as a monthly average and 16 µg/l as a daily maximum. The following is a summary of those calculations:

Final Effluent Limit

The ECA_A (effluent concentration allowance acute) = C (criterion) = 16 µg/l
The ECA_C (effluent concentration allowance chronic) = C = 11 µg/l
The coefficient of variation (CV= σ/μ) is 0.60.
From Table 1 of the SIP, $ECA_{acute\ mult} = 0.321$, $LTA_{acute} = ECA_{acute} \times ECA_{acute\ mult} = 16 \times 0.321 = 5.136$ µg/l

From Table 1 of the SIP, $ECA_{chron\ mult} = 0.527$, $LTA_{chron} = ECA_{chron} \times ECA_{chron\ mult} = 11 \times 0.527 = 5.797$ µg/l
$AMEL_{aquatic}$ (Average Monthly Effluent Limitation) = LTA x $AMEL_{mult95}$
From Table 2 of the SIP, the AMEL Multiplier 95th percentile (n=4, CV = 0.60) is 1.55
$AMEL_{aquatic} = 5.136 \times 1.55 = 8.0$ µg/l
$MDEL_{aquatic}$ (Maximum Daily Effluent Limitation) = LTA x $MDEL_{mult99}$
From Table 2 of the SIP, the MDEL Multiplier 99th percentile (n=4, CV = 0.60) is 3.11
$MDEL_{aquatic} = 5.136 \times 3.11 = 16$ µg/l

Interim Effluent Limit

Based on SIP Section 2.2.2, interim effluent limitations are required when compliance schedules are granted to allow the Discharger an opportunity to provide additional information or construct facilities to meet the specified CTR criteria. These limitations must be based on current facility performance. Since there are more than ten effluent samples reported for hexavalent chromium, the interim effluent limitation is calculated as the sample mean plus 3.3 times the standard deviation. Therefore, based on the TSD approach, the interim effluent limitation for hexavalent chromium is 41 µg/l as a daily maximum.

However, if the Discharger fails to submit a compliance schedule justification within **sixty (60) days** of permit adoption, the final effluent limitations become effective on **1 April 2004**. If the Discharger submits all items specified by the SIP Section 2.1, Paragraph 3 (items (a) through (d), the final effluent limitations for hexavalent chromium will become effective on **1 November 2008**.

As required by Section 2.1 of the SIP, in no case shall the compliance schedule exceed five years from the date of the permit issuance, reissuance, or modification. If the Discharger presents additional information that indicates alternative limitations should be allowed, the permit may be reopened and alternative limitations and time schedule necessary to comply will be considered.

COPPER

The Report of Waste Discharge and additional priority pollutant monitoring submitted by the Discharger indicates the presence of copper at levels that exceed CTR water quality criteria. The CTR water quality criteria for copper are expressed in dissolved form. To convert the criteria to total recoverable copper, Regional Board staff utilized the default USEPA translator.

Based on sixteen effluent samples (CV=0.60), the maximum reported copper value of 11 µg/l is within a range that may cause the receiving stream to exceed CTR water quality criteria for the protection of freshwater aquatic life. Copper toxicity is hardness-dependent and data submitted by the Discharger indicates a worst-case effluent hardness concentration of 42 mg/l as $CaCO_3$. Based on a hardness of 42 mg/l, the SIP calculated effluent limitations would be 3.1 µg/l as a monthly average and 6.2 µg/l as a daily maximum (example of this calculation is shown below). Effluent limitations for copper are included in this Order for the protection of freshwater species, and are based on the CTR criteria and calculations outlined in Section 1.4 of the SIP. The final effluent limitations, which are hardness-dependent, are summarized in Attachment B. Example calculations for effluent copper limitations, assuming a worst-case hardness of 42 mg/l, are shown below:

Final Effluent Limit

The $ECA_A = C = 6.2$ µg/l
The $ECA_C = C = 4.4$ µg/l
The coefficient of variation ($CV = \sigma/\mu$) is 0.60.
From Table 1 of the SIP, $ECA_{acute\ mult} = 0.321$, $LTA_{acute} = ECA_{acute} \times ECA_{acute\ mult} = 6.2 \times 0.321 = 1.99$ µg/l
From Table 1 of the SIP, $ECA_{chron\ mult} = 0.527$, $LTA_{chron} = ECA_{chron} \times ECA_{chron\ mult} = 4.4 \times 0.527 = 2.3188$ µg/l
$AMEL_{aquatic} = LTA \times AMEL_{mult95}$
From Table 2 of the SIP, the AMEL Multiplier 95th percentile (n=4, CV = 0.60) is 1.55
$AMEL_{aquatic} = 1.99 \times 1.55 = 3.1$ µg/l
$MDEL_{aquatic} = LTA \times MDEL_{mult99}$
From Table 2 of the SIP, the MDEL Multiplier 99th percentile (n=4, CV = 0.60) is 3.11
$MDEL_{aquatic} = 1.99 \times 3.11 = 6.2$ µg/l

Interim Effluent Limit

Based on SIP Section 2.2.2, interim effluent limitations are required when compliance schedules are granted to allow the Discharger an opportunity to provide additional information or construct facilities to meet the specified CTR criteria. These limitations must be based on current facility performance. Since there are more than ten effluent samples reported for copper, the interim effluent limitation is calculated as the sample mean plus 3.3 times the standard deviation. Therefore, the interim effluent limitation for copper is 14 µg/l as a daily maximum.

However, if the Discharger fails to submit a compliance schedule justification within **sixty (60) days** of permit adoption, the final effluent limitations become effective on **1 April 2004**. If the Discharger submits all items specified by the SIP Section 2.1,

Paragraph 3 (items (a) through (d), the final effluent limitations for copper will become effective on **1 November 2008**.

As required by Section 2.1 of the SIP, in no case shall the compliance schedule exceed five years from the date of the permit issuance, reissuance, or modification. If the Discharger presents additional information that indicates alternative limitations should be allowed, the permit may be reopened and alternative limitations and time schedule necessary to comply will be considered.

CYANIDE

The Report of Waste Discharge and additional priority pollutant monitoring submitted by the Discharger indicates the presence of cyanide at levels that exceed CTR water quality criteria. Based on sixteen effluent samples (CV=0.84), the maximum reported cyanide value is 16 µg/l, which is within a range that may cause the receiving stream to exceed the CTR water quality criteria for the protection of freshwater aquatic life. Effluent limitations for cyanide are included in this Order based on the CTR criteria and calculations outlined in Section 1.4 of the SIP. The SIP calculated effluent limitations for cyanide are 4.0 µg/l as a monthly average and 9.3 µg/l as a daily maximum. The following is a summary of those calculations:

Final Effluent Limit

The $ECA_A = C = 22$ µg/l
The $ECA_C = C = 5.2$ µg/l
The coefficient of variation ($CV = \sigma/\mu$) is 0.84.
From Table 1 of the SIP, $ECA_{acute\ mult} = 0.239$, $LTA_{acute} = ECA_{acute} \times ECA_{acute\ mult} = 22 \times 0.239 = 5.258$ µg/l
From Table 1 of the SIP, $ECA_{chron\ mult} = 0.425$, $LTA_{chron} = ECA_{chron} \times ECA_{chron\ mult} = 5.2 \times 0.425 = 2.21$ µg/l
$AMEL_{aquatic} = LTA \times AMEL_{mult95}$
From Table 2 of the SIP, the AMEL Multiplier 95th percentile (n=4, CV = 0.84) is 1.79
$AMEL_{aquatic} = 2.21 \times 1.79 = 4.0$ µg/l
$MDEL_{aquatic} = LTA \times MDEL_{mult99}$
From Table 2 of the SIP, the MDEL Multiplier 99th percentile (n=4, CV = 0.84) is 4.19
$MDEL_{aquatic} = 2.21 \times 4.19 = 9.3$ µg/l

Interim Effluent Limit

Based on SIP Section 2.2.2, interim effluent limitations are required when compliance schedules are granted to allow the Discharger an opportunity to provide additional information or construct facilities to meet the specified CTR criteria. These limitations

must be based on current facility performance. Since there are more than ten effluent samples reported for cyanide, the interim effluent limitation is calculated as the sample mean plus 3.3 times the standard deviation. Based on the TSD approach, the interim effluent limitation for cyanide is 18 µg/l as a daily maximum.

However, if the Discharger fails to submit a compliance schedule justification within **sixty (60) days** of permit adoption, the final effluent limitations become effective on **1 April 2004**. If the Discharger submits all items specified by the SIP Section 2.1, Paragraph 3 (items (a) through (d), the final effluent limitations for cyanide will become effective on **1 November 2008**.

As required by Section 2.1 of the SIP, in no case shall the compliance schedule exceed five years from the date of the permit issuance, reissuance, or modification. If the Discharger presents additional information that indicates alternative limitations should be allowed, the permit may be reopened and alternative limitations and time schedule necessary to comply will be considered.

IRON

Based on information submitted by the Discharger, **iron** in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan narrative chemical constituent objective. The California Department of Health Services adopted a secondary MCL for iron of 300 µg/l. The maximum observed effluent iron concentration is 527 µg/l. An effluent limitation for iron is included in this Order based on the narrative Basin Plan water quality objective for chemical constituents and the DHS secondary MCL. The Discharger is unable to immediately comply with the final effluent limitation for iron.

LEAD

The Report of Waste Discharge and additional priority pollutant monitoring submitted by the Discharger indicates the presence of lead at levels that exceed CTR water quality criteria. The CTR standards for lead for the protection of freshwater aquatic life are hardness-dependent. Freshwater aquatic habitat is a beneficial use of the receiving stream. The CTR water quality criteria for lead are expressed in dissolved form. To convert the criteria to total recoverable lead, Regional Board staff utilized the default USEPA translator.

Based on fourteen effluent samples (CV=1.06), the maximum reported lead value is 2.2 µg/l, which is within a range that may cause the receiving stream to exceed the CTR water quality criteria for the protection of freshwater aquatic life. Effluent limitations for lead are included in this Order based on CTR standards for the protection of aquatic life. The final limitations, which are hardness-dependent, are summarized in Attachment C and are based on the CTR

criteria and calculations outlined in Section 1.4 of the SIP. Example calculations for effluent lead limitations, assuming a worst-case hardness of 42 mg/l, are shown below:

Final Effluent Limit

The $ECA_A = C = 27$ µg/l
The $ECA_C = C = 1.05$ µg/l
The coefficient of variation ($CV = \sigma/\mu$) is 1.06.
From Table 1 of the SIP, $ECA_{acute\ mult} = 0.194$, $LTA_{acute} = ECA_{acute} \times ECA_{acute\ mult} = 27 \times 0.194 = 5.238$ µg/l
From Table 1 of the SIP, $ECA_{chron\ mult} = 0.356$, $LTA_{chron} = ECA_{chron} \times ECA_{chron\ mult} = 1.05 \times 0.356 = 0.3738$ µg/l
$AMEL_{aquatic} = LTA \times AMEL_{mult95}$
From Table 2 of the SIP, the AMEL Multiplier 95th percentile (n=4, CV = 1.06) is 2.00
$AMEL_{aquatic} = 0.3738 \times 2.00 = 0.75$ µg/l
$MDEL_{aquatic} = LTA \times MDEL_{mult99}$
From Table 2 of the SIP, the MDEL Multiplier 99th percentile (n=4, CV = 1.06) is 5.17
$MDEL_{aquatic} = 0.3738 \times 5.17 = 1.9$ µg/l

Interim Effluent Limit

Based on SIP Section 2.2.2, interim effluent limitations are required when compliance schedules are granted to allow the Discharger an opportunity to provide additional information or construct facilities to meet the specified CTR criteria. These limitations must be based on current facility performance. Since there are more than ten effluent samples reported for lead, the interim effluent limitation is calculated as the sample mean plus 3.3 times the standard deviation. Therefore, the interim effluent limitation for lead is 2.3 µg/l as a daily maximum.

However, if the Discharger fails to submit a compliance schedule justification within **sixty (60) days** of permit adoption, the final effluent limitations become effective on **1 April 2004**. If the Discharger submits all items specified by the SIP Section 2.1, Paragraph 3 (items (a) through (d), the final effluent limitations for lead will become effective on **1 November 2008**.

As required by Section 2.1 of the SIP, in no case shall the compliance schedule exceed five years from the date of the permit issuance, reissuance, or modification. If the Discharger presents additional information that indicates alternative limitations should be allowed, the permit may be reopened and alternative limitations and time schedule necessary to comply will be considered.

SILVER

The Basin Plan prohibits the discharge of toxic materials in toxic concentrations. Based on information submitted by the Discharger, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR standards for silver. The CTR water quality criterion for silver is expressed in dissolved form. To convert the criterion to total recoverable silver, Regional Board staff utilized the default USEPA translator. The CTR standards for silver for the protection of freshwater aquatic life are hardness-dependent. Freshwater aquatic habitat is a beneficial use of the receiving stream.

Based on twelve effluent samples, 83% of which is non-detect (CV=0.60), the maximum observed effluent silver concentration of 0.94 µg/l is within a range that may cause the receiving stream to exceed the CTR water quality criteria for the protection of freshwater aquatic life. Effluent limitations for silver are included in this Order based on CTR standards for the protection of aquatic life. The final limitations, which are hardness-dependent, are summarized in Attachment D and are based on the CTR criteria and calculations outlined in Section 1.4 of the SIP. Example calculations for effluent silver limitations, assuming a worst-case hardness of 42 mg/l, are shown below:

Final Effluent Limit

The $ECA_A = C = 0.91$ µg/l
The coefficient of variation ($CV = \sigma/\mu$) is 0.60.
From Table 1 of the SIP, $ECA_{acute\ mult} = 0.321$, $LTA_{acute} = ECA_{acute} \times ECA_{acute\ mult} = 0.91 \times 0.321 = 0.29211$ µg/l
$AMEL_{aquatic} = LTA \times AMEL_{mult95}$
From Table 2 of the SIP, the AMEL Multiplier 95th percentile (n=4, CV = 0.60) is 1.55
$AMEL_{aquatic} = 0.29211 \times 1.55 = 0.45$ µg/l
$MDEL_{aquatic} = LTA \times MDEL_{mult99}$
From Table 2 of the SIP, the MDEL Multiplier 99th percentile (n=4, CV = 0.60) is 3.11
$MDEL_{aquatic} = 0.29211 \times 3.11 = 0.91$ µg/l

Interim Effluent Limit

Based on SIP Section 2.2.2, interim effluent limitations are required when compliance schedules are granted to allow the Discharger an opportunity to provide additional information or construct facilities to meet the specified CTR criteria. These limitations must be based on current facility performance. Since there are ten or more effluent samples reported for silver, the interim effluent limitation is calculated as the sample mean plus 3.3 times the standard deviation. Therefore, the interim effluent limitation for silver is 1.0 µg/l as a daily maximum.

However, if the Discharger fails to submit a compliance schedule justification within **sixty (60) days** of permit adoption, the final effluent limitations become effective on **1 April 2004**. If the Discharger submits all items specified by the SIP Section 2.1, Paragraph 3 (items (a) through (d), the final effluent limitations for silver will become effective on **1 November 2008**.

As required by Section 2.1 of the SIP, in no case shall the compliance schedule exceed five years from the date of the permit issuance, reissuance, or modification. If the Discharger presents additional information that indicates alternative limitations should be allowed, the permit may be reopened and alternative limitations and time schedule necessary to comply will be considered.

VOLATILE ORGANICS

CARBON TETRACHLORIDE

Based on information submitted by the Discharger, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for carbon tetrachloride. The CTR includes criteria for the protection of human health based on a one-in-a-million cancer risk for carbon tetrachloride of 0.25 µg/l for sources of drinking water. Municipal and domestic supply is a beneficial use of the receiving water. Based on sixteen effluent samples, 94% of which is non-detect (CV=0.60), the maximum observed effluent carbon tetrachloride concentration is 1.3 µg/l. Effluent limitations for carbon tetrachloride are included in this Order based on the CTR criteria and calculations outlined in Section 1.4 of the SIP. The SIP calculated effluent limitations for carbon tetrachloride are 0.25 µg/l as a monthly average and 0.50 µg/l as a daily maximum, as shown in the calculations below:

Final Effluent Limit

The ECA = C = 0.25 µg/l
The coefficient of variation (CV= σ/μ) is 0.60.
From Table 2 of the SIP, the $MDEL/AMEL_{multiplier}$ (n=4, CV = 0.60) is 2.01
The AMEL = ECA = 0.25 µg/l.
The MDEL =ECA x $MDEL/AMEL_{multiplier}$ = 0.25 x 2.01 = 0.50 µg/l

Interim Effluent Limit

Based on SIP Section 2.2.2, interim effluent limitations are required when compliance schedules are granted to allow the Discharger an opportunity to provide additional information or construct facilities to meet the specified CTR criteria. These limitations must be based on current facility performance. Since there are more than ten effluent

samples reported for carbon tetrachloride, the interim effluent limitation is calculated as the sample mean plus 3.3 times the standard deviation. Based on the TSD approach, the interim effluent limitation for carbon tetrachloride is 1.2 µg/l as a daily maximum. However, since the maximum reported effluent concentration for carbon tetrachloride, 1.3 µg/l, is greater than the interim limitation based on the TSD approach, 1.2 µg/l, the daily maximum interim effluent limitation is set as the maximum observed effluent limitation, or 1.3 µg/l.

However, if the Discharger fails to submit a compliance schedule justification within **sixty (60) days** of permit adoption, the final effluent limitations become effective on **1 April 2004**. If the Discharger submits all items specified by the SIP Section 2.1, Paragraph 3 (items (a) through (d), the final effluent limitations for carbon tetrachloride will become effective on **1 November 2008**.

As required by Section 2.1 of the SIP, in no case shall the compliance schedule exceed five years from the date of the permit issuance, reissuance, or modification. If the Discharger presents additional information that indicates alternative limitations should be allowed, the permit may be reopened and alternative limitations and time schedule necessary to comply will be considered.

TOTAL TRIHALOMETHANES

The four constituents bromoform, bromodichloromethane, dibromochloromethane, and chloroform, are commonly known as the Total Trihalomethanes (TTHMs). TTHMs are byproducts of chlorinated water containing natural organics, and are carcinogens. As dechlorination is currently achieved through natural degradation in the storage reservoir, the formation of trihalomethanes at this location is likely.

Municipal and domestic supply is a beneficial use of the receiving stream. The narrative toxicity objective and this beneficial use designation comprise a water quality standard applicable to pollutants in the receiving stream. The Basin Plan also contains the *Policy for Application of Water Quality Objectives*, which provides that narrative objectives may be translated using numerical limits published by other agencies and organizations.

Four TTHM effluent samples were taken between November 2000 and April 2001, while monthly effluent monitoring was conducted during the recently completed priority pollutant study. Therefore, a total of sixteen samples (fourteen samples for chloroform) were collected for these constituents. Data from these sampling events found a maximum effluent TTHM concentration of 34 µg/l. Bromoform was detected at 2 µg/l in one sample, but was not detected in the other fifteen samples. Bromodichloromethane, at effluent concentrations ranging from <0.1 µg/l to 8.4 µg/l, and dibromochloromethane, at effluent concentrations

ranging from <0.1 µg/l to 1.1 µg/l, were detected at concentrations exceeding the CTR's criteria for human health protection for the consumption of water and aquatic organisms of 0.56 µg/l and 0.41 µg/l, respectively. Chloroform results ranged between 3.4 µg/l and 24.4 µg/l.

The Basin Plan contains a chemical constituent objective that requires, at a minimum, that waters with a designated municipal use not exceed California MCLs. The California primary MCL for TTHMs is 100 µg/l. The federal Drinking Water Standard primary MCL for TTHMs is 80 µg/l. The Safe Drinking Water Act requires California to revise its primary MCL to be at least as stringent as the federal MCL. Therefore, to protect the municipal use of the receiving waters, the Regional Board has determined that the application of the federal MCL for TTHMs would be appropriate. However, upon review of the available data, there is no reasonable potential for the discharge to cause or contribute to an in-stream excursion above the MCL for TTHMs. Therefore, a TTHM limitation is not included in this Order.

NTR and CTR Constituents:

Three TTHMs (bromoform, bromodichloromethane, and dibromochloromethane) are NTR and CTR regulated constituents, and as such must be regulated in all discharges that exceed the CTR criteria for human health protection for consumption of water and aquatic organisms. Bromoform was not detected in the effluent at concentrations exceeding the CTR criteria for human health protection for the consumption of water and aquatic organisms. Therefore, an effluent limitation for bromoform is not included in this Order.

Bromodichloromethane and dibromochloromethane were detected in the effluent at concentrations exceeding the CTR criteria for human health protection for consumption of water and aquatic organisms of 0.56 µg/l and 0.41 µg/l, respectively. Since there are specific CTR criteria established, and the effluent has the reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria, this Order includes final effluent limitations for bromodichloromethane and dibromochloromethane of 0.56 µg/l and 0.41 µg/l, respectively, as the monthly averages, and 1.3 µg/l and 1.1 µg/l as the daily maximums, as shown in the following calculations:

Bromodichloromethane

Final Effluent Limit

The ECA = C = 0.56 µg/l
The coefficient of variation (CV= σ/μ) is 0.80.
From Table 2 of the SIP, the $MDEL/AMEL_{multiplier}$ (n=4, CV = 0.80) is 2.29
The AMEL = ECA = 0.56 µg/l.

The MDEL = ECA x MDEL/$AMEL_{multiplier}$ = 0.56 x 2.29 = 1.3 µg/l

Interim Effluent Limit

Based on SIP Section 2.2.2, interim effluent limitations are required when compliance schedules are granted to allow the Discharger an opportunity to provide additional information or construct facilities to meet the specified CTR criteria. These limitations must be based on current facility performance. Since there are more than ten effluent samples reported for bromodichloromethane, the interim effluent limitation is calculated as the sample mean plus 3.3 times the standard deviation. Therefore, the interim effluent limitation for bromodichloromethane is 9.9 µg/l as a daily maximum.

However, if the Discharger fails to submit a compliance schedule justification within **sixty (60) days** of permit adoption, the final effluent limitations become effective on **1 April 2004**. If the Discharger submits all items specified by the SIP Section 2.1, Paragraph 3 (items (a) through (d), the final effluent limitations for bromodichloromethane will become effective on **1 November 2008**.

As required by Section 2.1 of the SIP, in no case shall the compliance schedule exceed five years from the date of the permit issuance, reissuance, or modification. If the Discharger presents additional information that indicates alternative limitations should be allowed, the permit may be reopened and alternative limitations and time schedule necessary to comply will be considered.

Dibromochloromethane

Final Effluent Limit

The ECA = C = 0.41 µg/l.
The coefficient of variation (CV= σ/µ) is 1.13.
From Table 2 of the SIP, the MDEL/$AMEL_{multiplier}$ by (n=4, CV = 1.13) is 2. 64
The AMEL = ECA = 0.41 µg/l.
The MDEL = ECA x MDEL/$AMEL_{multiplier}$ = 0.41 x 2.64 = 1.1 µg/l

Interim Effluent Limit

Based on SIP Section 2.2.2, interim effluent limitations are required when compliance schedules are granted to allow the Discharger an opportunity to provide additional information or construct facilities to meet the specified CTR criteria. These limitations must be based on current facility performance. Since there are more than ten effluent samples reported for dibromochloromethane, the interim effluent limitation is calculated

as the sample mean plus 3.3 times the standard deviation. Therefore, the interim effluent limitation for dibromochloromethane is 1.4 µg/l as a daily maximum.

However, if the Discharger fails to submit a compliance schedule justification within **sixty (60) days** of permit adoption, the final effluent limitations become effective on **1 April 2004**. If the Discharger submits all items specified by the SIP Section 2.1, Paragraph 3 (items (a) through (d), the final effluent limitations for dibromochloromethane will become effective on **1 November 2008**.

As required by Section 2.1 of the SIP, in no case shall the compliance schedule exceed five years from the date of the permit issuance, reissuance, or modification. If the Discharger presents additional information that indicates alternative limitations should be allowed, the permit may be reopened and alternative limitations and time schedule necessary to comply will be considered.

Non-NTR and CTR Constituents:

Individual components of the TTHM family also have other individual numerical water quality objectives that must be considered in evaluating whether the beneficial uses of domestic and municipal supplies are being protected from potential impact from the discharge in accordance with the narrative objectives in the Basin Plan. The Cal/EPA Office of Environmental Health Hazard Assessment (OEHHA) has published the Toxicity Criteria Database, which contains cancer potency factors for chloroform, a chemical within the TTHM family, which has been used as a basis for regulatory actions by boards, departments, and offices within Cal/EPA. The OEHHA cancer potency value for oral exposure to chloroform is 0.031 milligrams per kilogram body weight per day (mg/kg-day). By applying standard toxicologic assumptions used by OEHHA and USEPA in evaluating health risks via drinking water exposure of 70-kg body weight and 2 liters per day water consumption, this cancer potency factor is equivalent to a concentration in drinking water of 1.1 µg/L (ppb) at the one-in-a-million cancer risk level. These risk levels are consistent with that used by the DHS to set *de minimus* risks from involuntary exposure to carcinogens in drinking water in developing MCLs and Action Levels, and by OEHHA to set negligible cancer risks in developing Public Health Goals for drinking water. However, there are no known drinking water intakes on Laguna Creek or the Cosumnes River within several miles of the discharge, and chloroform is a non-conservative pollutant. Therefore, the Regional Board has determined that the application of either the OEHHA cancer potency factor or the USEPA cancer risk estimate, in this site-specific circumstance, is not appropriate for this discharge. Therefore, an effluent limitation for chloroform is not included in this Order.

SEMI-VOLATILE ORGANICS

BIS (2-ETHYLHEXYL) PHTHALATE

Based on information submitted by the Discharger, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for bis (2-ethylhexyl) phthalate. The CTR includes criteria for the protection of human health based on a one-in-a-million cancer risk for bis (2-ethylhexyl) phthalate of 1.8 µg/l. Municipal and domestic supply is a beneficial use of the receiving water. Based on eight effluent samples, the maximum observed effluent bis (2-ethylhexyl) phthalate concentration of 2 µg/l is within a range that may cause the receiving stream to exceed the CTR water quality criteria for the protection of human health. Effluent limitations for bis (2-ethylhexyl) phthalate are included in this Order and are based on CTR standards for the protection of human health. The monthly average and daily maximum effluent limitations for bis (2-ethylhexyl) phthalate are 1.8 mg/l and 3.6 µg/l, respectively.

Final Effluent Limit

For human health criterion, set $AMEL_{human\ health}$ = ECA = 1.8 µg/l
$MDEL_{human\ health}$ = ECA * $MDEL/AMEL_{multiplier}$ = 1.8 µg/l * 2.01 (SIP states use CV=0.60 if less than ten data points are available) = 3.6 µg/l.

Interim Effluent Limit

Based on SIP Section 2.2.2, interim effluent limitations are required when compliance schedules are granted to allow the Discharger an opportunity to provide additional information or construct facilities to meet the specified CTR criteria. These limitations must be based on current facility performance. In developing the interim limitation where there are less than ten sampling data points available for a specific constituent, the TSD recommends a coefficient of variation of 0.60 be utilized as representative of wastewater effluent sampling, resulting in a daily maximum interim effluent limitation that is 3.11 times the maximum observed sampling point. Therefore, the interim effluent limitation for bis (2-ethylhexyl) phthalate is 6.2 µg/l as a daily maximum.

However, if the Discharger fails to submit a compliance schedule justification within **sixty (60) days** of permit adoption, the final effluent limitations become effective on **1 April 2004**. If the Discharger submits all items specified by the SIP Section 2.1, Paragraph 3 (items (a) through (d), the final effluent limitations for bis (2-ethylhexyl) phthalate will become effective on **1 November 2008**.

As required by Section 2.1 of the SIP, in no case shall the compliance schedule exceed five years from the date of the permit issuance, reissuance, or modification. If the Discharger presents additional information that indicates alternative limitations should be allowed, the permit may be reopened and alternative limitations and time schedule necessary to comply will be considered.

OTHER CONSTITUENTS

AMMONIA

Treated and untreated domestic wastewater contains ammonia. Nitrification is a biological process that converts ammonia to nitrate, and denitrification is a process that converts nitrate to nitrogen gas, which is then released to the atmosphere. Wastewater treatment plants commonly use nitrification and denitrification processes to remove ammonia and nitrate from the waste stream. Inadequate or incomplete nitrification or denitrification may result in the discharge of ammonia and/or nitrate to the receiving stream.

Ammonia is known to cause toxicity to aquatic organisms in surface waters. USEPA has developed Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life, recommending acute criteria for ammonia that are pH-dependent and chronic criteria that are pH- and temperature-dependent. Based on information submitted by the Discharger, ammonia concentrations in the effluent ranges from <0.5 to 2.3 mg/l. Upon review of available effluent data, the worst-case scenarios would occur when the pH is 8.5 and the temperature is 24 °C. Under these conditions, USEPA's Ambient Water Quality Criteria for ammonia are 2.14 mg/l when salmonids are present and 3.20 mg/l when salmonids are absent as 1-hour averages (acute), and 0.591 mg/l as a 30-day average (chronic). The highest ammonia concentration reported, 2.3 mg/l in the wet season, exceeds both the acute (when salmonids are present) and chronic criterion under worst-case pH and temperature conditions. Based on this information, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan narrative toxicity objective, which prohibits the discharge of toxic constituents in toxic concentrations. Effluent limitations for ammonia, based on the narrative toxicity objective and USEPA's Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life, are included in this Order. The final effluent limitations are pH- and temperature-dependent, as summarized in Attachments E (acute) and F (chronic).

It is unknown whether the Discharger can consistently comply with the effluent limitations for ammonia at the current wastewater flow rate. Based upon the level of treatment currently provided, anticipated growth in the area resulting in increased flows to the plant, and in studies, the Regional Board finds that ammonia concentrations in the discharge are likely to increase throughout the life of this permit.

NITRATE

Nitrate causes adverse health effects in humans by interfering with the transport of oxygen in the bloodstream, particularly with fetuses and newborn children, a condition known as methemoglobenemia, or blue-baby syndrome. In extreme cases, the condition can retard physical and mental development, and cause death. Recent toxicity studies have indicated a possibility that nitrate is toxic to aquatic organisms.

Water quality standards for nitrate include State Drinking Water Standards, including the primary MCL of 10 mg/l, and USEPA Ambient Water Quality Criteria for the Protection of Human Health, also 10 mg/l, for non-cancer health effects. The Report of Waste Discharge, and additional information received by the Discharger, indicates a maximum effluent nitrate (as nitrogen) concentration of 13.5 mg/l. The conversion of ammonia to nitrates, and the potential for inadequate denitrification, presents a reasonable potential for the discharge to exceed both the primary MCL and the Water Quality Criteria for the Protection of Human Health for nitrate. This Order includes an effluent limitation for nitrate to protect the municipal beneficial use of Laguna Creek and downstream waters. The Discharger is unable to comply with this limitation.

CHLORINE RESIDUAL

Chlorine is used as a disinfectant at the wastewater treatment plant and is known to cause toxicity to aquatic organisms when discharged to surface waters. Therefore, the use of chlorine presents a reasonable potential that it could be discharged in toxic concentrations. The Basin Plan prohibits the discharge of toxic materials in toxic concentrations.

USEPA recommends, in its Ambient Water Quality Criteria for the Protection of Fresh Water Aquatic Life, that chlorine concentrations not exceed 0.02 mg/l as a 1-hour average or 0.01 mg/l as a 4-day average. The federal regulations at 40 CFR Section 122.44(d)(1)(vi)(B), allows the state to establish the effluent limitation based on the narrative toxicity objective, and using USEPA's water quality criteria. This Order requires the Discharger to install continuous monitoring instrumentation.

TOTAL DISSOLVED SOLIDS

Total Dissolved Solids (TDS) comprise inorganic salts and small amounts of organic matter that are dissolved in water. There are no USEPA water quality criteria for the protection of aquatic organisms for TDS. However, its presence in water can be growth limiting to certain agricultural crops and affects the taste of water for human consumption. The secondary California 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. To protect irrigated agriculture from salt crop

damage, the recommended agricultural water quality goal for TDS is 450 mg/l as a long-term average.

According to information received as part of the regular monitoring conducted at the wastewater treatment plant from September 2001 through September 2002, effluent exceeded 450 mg/l 21% of the time, and exceeded 500 mg/l 4% of the time. Pollution prevention is necessary to assure the receiving water achieves the water quality objectives for TDS. Therefore, pursuant to CWC Section 13263.3, Provision H.8 of this Order requires the Discharger to develop pollution prevention plans to limit or reduce the amount of various contaminants, including TDS, in the effluent.

OIL & GREASE

The Discharger has indicated that wastewater lift station wet wells in the collection system are prone to build up oil & grease. The use of mechanical and chemical means to remove the grease from the lift stations has been used in the past and therefore included in this Order are effluent limitations for oil & grease of 10 mg/l monthly average and 15 mg/l daily maximum. The limitations have been set in an effort to prevent the discharge from causing a visible film or coating on the water surface or on the stream bottom that may adversely affect beneficial uses. Based on available information, the Discharger is able to comply with these limitations.

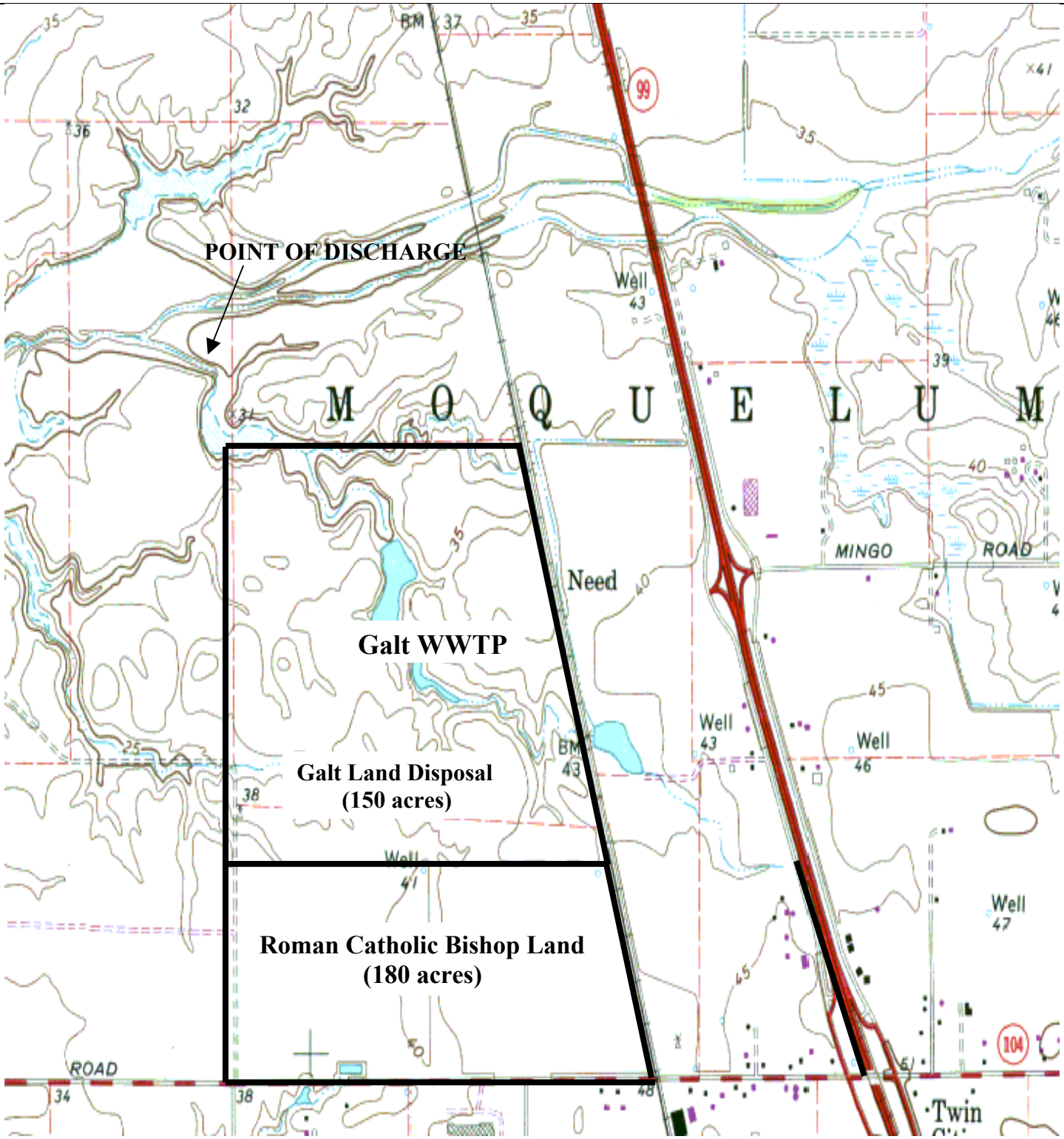
MONITORING

Additional monitoring requirements have been included in this permit that were not in the previous permit. This Order requires the reporting of both influent and effluent flows. The Discharger is currently unable to measure influent flows. The Discharger currently reports effluent flows from a flow meter at the end of the chlorine contact chamber. However, this flow does not accurately depict the effluent flows to Laguna Creek or the reclamation areas. Therefore, this permit requires the installation of flow meters to measure flows coming into the treatment plant and effluent flows discharged over the cascade aerator into Laguna Creek. Effluent flows to the reclamation areas are to be calculated from pump rating curves and run times. As flows into the treatment plant are steadily increasing, accurate flows are necessary to adequately plan for future growth and to avoid another serious occurrence of inadequate disposal (or treatment) capacity.

The list of constituents for effluent monitoring has increased significantly, with the addition of turbidity, dissolved oxygen, hardness, aluminum, arsenic, hexavalent chromium, copper, cyanide, iron, lead, silver, carbon tetrachloride, bromodichloromethane, dibromochloromethane, bis (2-ethylhexyl) phthalate, nitrate, oil & grease, and priority pollutants.

The previous permit also did not require groundwater monitoring, land application (reclamation) monitoring, or pond monitoring. This permit requires the Discharger to routinely monitor and report wastewater and biosolids loading of certain constituents on land application areas to ensure agronomic application. Groundwater monitoring in the vicinity of the storage and land application areas are required in order to evaluate the facility's impact on groundwater in the area. Groundwater monitoring requires sample analysis for specific constituents of concern.

ATTACHMENT A



Drawing Reference: U.S.G.S. 7.5 Minute Quad Galt Rastor Map Selector 1:24,000	**SITE PLAN** CITY OF GALT WASTEWATER TREATMENT PLANT 10059 TWIN CITIES ROAD SACRAMENTO COUNTY	Not to Scale N W E S

ATTACHMENT B

AMBIENT WATER QUALITY CRITERIA RECOMMENDED TO PROTECT FRESHWATER AQUATIC LIFE

Total Recoverable Copper

Hardness-Dependent Values of the CCC (Chronic Criterion) and CMC (Acute Criterion)

Copper expressed as total recoverable, µg/l						
Hardness (mg/l as $CaCO_3$)	**CCC[1] 4-day avg (µg/l)**	**CMC[2] 1-hr avg (µg/l)**	**LTA[3] (chronic) (µg/l)**	**LTA[4] (acute) (µg/l)**	**AMEL (µg/l)[5]**	**MDEL (µg/l)[6]**
<25	Must calculate	Must calculate	Must calculate	Must calculate	Must calculate	
25	2.85	3.79	1.50	1.22	1.9	3.8
42	4.45	6.18	2.34	1.98	3.1	6.2
50	5.16	7.29	2.72	2.34	3.6	7.3
75	7.30	10.7	3.84	3.43	5.3	11
100	9.33	14.0	4.92	4.49	7.0	14
110	10.1	15.3	5.33	4.92	7.6	15
120	10.9	16.6	5.75	5.34	8.3	17
130	11.7	17.9	6.15	5.75	8.9	18
140	12.4	19.2	6.55	6.17	9.6	19
150	13.2	20.5	6.95	6.58	10	20
160	13.9	21.8	7.35	7.00	11	22
170	14.7	23.1	7.74	7.41	11	23
180	15.4	24.4	8.12	7.82	12	24
190	16.1	25.6	8.51	8.23	13	26
200	16.9	26.9	8.89	8.63	13	27
210	17.6	28.2	9.27	9.04	14	28
220	18.3	29.4	9.64	9.45	15	29
230	19.0	30.7	10.0	9.85	15	31
240	19.7	31.9	10.4	10.3	16	32
250	20.4	33.2	10.8	10.7	17	33
260	21.1	34.4	11.1	11.1	17	34
270	21.8	35.7	11.5	11.5	18	36
280	22.5	36.9	11.9	11.9	18	37
290	23.2	38.2	12.2	12.3	19	38
300	23.9	39.4	12.6	12.7	20	39
>300	Must calculate	Must calculate	Must calculate	Must calculate	Must calculate	

The effluent limit has been calculated per established procedures described in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP):

[1]CCC (4-day average) = exp{0.8545[ln(hardness)] – 1.702}
[2]CMC (1-hr average) = exp{0.9422[ln(hardness)] – 1.700}
[3]LTA_c (Long-Term Average chronic) = CCC x 0.527
[4]LTA_a (Long-Term Average acute) = CMC x 0.321
[5]AMEL (Average monthly effluent limitation) = LTA (lowest) x 1.55
[6]MDEL (Maximum Daily effluent limitation) = LTA (lowest) x 3.11

ATTACHMENT C

AMBIENT WATER QUALITY CRITERIA RECOMMENDED TO PROTECT FRESHWATER AQUATIC LIFE

Total Recoverable Lead

Hardness-Dependent Values of the CCC (Chronic Criterion) and CMC (Acute Criterion)

Lead expressed as total recoverable, µg/l						
Hardness (mg/l as $CaCO_3$)	**CCC[1] 4-day avg (µg/l)**	**CMC[2] 1-hr avg (µg/l)**	**LTA[3] (chronic) (µg/l)**	**LTA[4] (acute) (µg/l)**	**AMEL (µg/l)[5]**	**MDEL (µg/l)[6]**
<25	Must calculate	Must calculate	Must calculate	Must calculate	Must calculate	
25	0.54	14.0	0.19	2.71	0.39	1.0
42	1.05	27.1	0.38	5.25	0.75	1.9
50	1.32	33.8	0.47	6.55	0.94	2.4
75	2.21	56.6	0.79	11.0	1.6	4.1
100	3.18	81.7	1.13	15.8	2.3	5.9
110	3.59	92.2	1.28	17.9	2.6	6.6
120	4.01	103	1.43	20.0	2.9	7.4
130	4.44	114	1.58	22.1	3.2	8.2
140	4.88	125	1.74	24.3	3.5	9.0
150	5.33	137	1.90	26.5	3.8	9.8
160	5.79	149	2.06	28.8	4.1	11
170	6.25	160	2.23	31.1	4.5	12
180	6.72	173	2.39	33.5	4.8	12
190	7.20	185	2.56	35.9	5.1	13
200	7.69	197	2.74	38.3	5.5	14
210	8.18	210	2.91	40.7	5.8	15
220	8.68	223	3.09	43.2	6.2	16
230	9.19	236	3.27	45.7	6.5	17
240	9.70	249	3.45	48.3	6.9	18
250	10.2	262	3.64	50.9	7.3	19
260	10.7	276	3.82	53.5	7.7	20
270	11.3	289	4.01	56.1	8.0	21
280	11.8	303	4.20	58.7	8.4	22
290	12.3	317	4.39	61.4	8.8	23
300	12.9	331	4.59	64.1	9.2	24
>300	Must calculate	Must calculate	Must calculate	Must calculate	Must calculate	

The effluent limit has been calculated per established procedures described in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP):

[1]CCC (4-day average) = exp{1.273[ln(hardness)] – 4.705}
[2]CMC (1-hr average) = exp{1.273[ln(hardness)] – 1.460}
[3]LTA_c (Long-Term Average chronic) = CCC x 0.356
[4]LTA_a (Long-Term Average acute) = CMC x 0.194
[5]AMEL (Average monthly effluent limitation) = LTA (lowest) x 2.00
[6]MDEL (Maximum Daily effluent limitation) = LTA (lowest) x 5.17

ATTACHMENT D

AMBIENT WATER QUALITY CRITERIA RECOMMENDED TO PROTECT FRESHWATER AQUATIC LIFE

Total Recoverable Silver

Hardness-Dependent Values of the CMC (Acute Criterion)

Hardness (mg/l as $CaCO_3$)	CMC[1] 1-hr avg (µg/l)	LTA[2] (acute) (µg/l)	AMEL (µg/l)[3]	MDEL (µg/l)[4]
<25	Must calculate	Must calculate	Must calculate	Must calculate
25	0.37	0.12	0.19	0.37
42	0.91	0.29	0.45	0.91
50	1.23	0.40	0.61	1.2
75	2.47	0.79	1.2	2.5
100	4.06	1.30	2.0	4.1
110	4.78	1.53	2.4	4.8
120	5.55	1.78	2.8	5.5
130	6.37	2.05	3.2	6.4
140	7.24	2.32	3.6	7.2
150	8.15	2.62	4.1	8.1
160	9.11	2.92	4.5	9.1
170	10.1	3.25	5.0	10
180	11.2	3.58	5.6	11
190	12.2	3.93	6.1	12
200	13.4	4.29	6.7	13
210	14.5	4.67	7.2	15
220	15.8	5.06	7.8	16
230	17.0	5.46	8.5	17
240	18.3	5.87	9.1	18
250	19.6	6.30	9.8	20
260	21.0	6.74	10	21
270	22.4	7.19	11	22
280	23.9	7.66	12	24
290	25.3	8.13	13	25
300	26.9	8.62	13	27
>300	Must calculate	Must calculate	Must calculate	Must calculate

The effluent limit has been calculated per established procedures described in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP):

[1]$CMC_{1\text{-hr avg}}$ (Continuous Maximum Criteria) = exp{1.72[ln(hardness)] – 6.52}
[2]LTA_a (Long-Term Average acute) = CMC x 0.321
[3]AMEL (Average Monthly Effluent Limitation) = LTA_a x 1.55
[4]MDEL (Maximum Daily Effluent Limitation) = LTA_a x 3.11

ATTACHMENT E

AMBIENT WATER QUALITY CRITERIA RECOMMENDED TO PROTECT FRESHWATER AQUATIC LIFE

Total Ammonia, as Nitrogen

pH-Dependent Values of the CMC (Acute Criterion)

Maximum Concentration Criteria 1-hr avg (mg N/l)*		
pH	**Salmonids Present**	**Salmonids Absent**
6.5	32.6	48.8
6.6	31.3	46.8
6.7	29.8	44.6
6.8	28.0	42.0
6.9	26.2	39.2
7.0	24.1	36.1
7.1	21.9	32.9
7.2	19.7	29.5
7.3	17.5	26.2
7.4	15.3	23.0
7.5	13.3	19.9
7.6	11.4	17.0
7.7	9.64	14.4
7.8	8.11	12.1
7.9	6.77	10.1
8.0	5.62	8.41
8.1	4.64	6.95
8.2	3.83	5.73
8.3	3.15	4.71
8.4	2.59	3.88
8.5	2.14	3.20
8.6	1.77	2.65
8.7	1.47	2.20
8.8	1.23	1.84
8.9	1.04	1.56
9.0	0.885	1.32

* Criteria Maximum Concentration (CMC) with Salmonids Present

$$CMC = \frac{0.275}{1 + 10^{(7.204 - pH)}} + \frac{39.0}{1 + 10^{(pH - 7.204)}}$$

* Criteria Maximum Concentration (CMC) with Salmonids Absent

$$CMC = \frac{0.411}{1 + 10^{(7.204 - pH)}} + \frac{58.4}{1 + 10^{(pH - 7.204)}}$$

AMBIENT WATER QUALITY CRITERIA RECOMMENDED TO PROTECT FRESHWATER AQUATIC LIFE

Total Ammonia, as Nitrogen

Temperature and pH-Dependent Values of the CCC (Chronic Criterion) For Fish Early Stages Present

Continuous Concentration Criteria for Fish Early Life Stages Present, 30-day avg (mg N/l)										
pH	**Temperature, °C**									
	0	**14**	**16**	**18**	**20**	**22**	**24**	**26**	**28**	**30**
6.5	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.8	2.46
6.6	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.7	6.44	6.44	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37
6.8	6.29	6.29	5.72	5.03	4.42	3.89	3.42	2.00	2.64	2.32
6.9	6.12	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7.0	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.1	5.67	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.2	5.39	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.3	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.4	4.73	4.73	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74
7.5	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.6	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47
7.7	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.8	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.9	2.80	2.80	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8.0	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897
8.1	2.10	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773
8.2	1.79	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661
8.3	1.52	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562
8.4	1.29	1.29	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475
8.5	1.09	1.09	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401
8.6	0.920	0.920	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339
8.7	0.778	0.778	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287
8.8	0.661	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244
8.9	0.565	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208
9.0	0.486	0.486	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179

$$CCC_{early\ life\ present} = \left(\frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.688}} \right) \cdot MIN\left(2.85, 1.45 \cdot 10^{0.028(25-T)}\right)$$

$$CCC_{early\ life\ absent\,(tablenotshown)} = \left(\frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.688}} \right) \cdot MIN\left(2.85, 1.45 \cdot 10^{0.028(25-T)}\right)$$

Note: T is temperature in °C

DEPARTMENT OF HEALTH SERVICES
DIVISION OF DRINKING WATER AND ENVIRONMENTAL MANAGEMENT
DRINKING WATER PROGRAM
RECYCLED WATER UNIT

GUIDELINES FOR THE PREPARATION OF AN ENGINEERING REPORT FOR THE PRODUCTION, DISTRIBUTION AND USE OF RECYCLED WATER

March 2001
(Replaces September 1997 Version)

1.0 INTRODUCTION

The current State of California Water Recycling Criteria (adopted in December 2000) require the submission of an engineering report to the California Regional Water Quality Control Board (RWQCB) and the Department of Health Services (DHS) before recycled water projects are implemented. These reports must also be amended prior to any modification to existing projects. The purpose of an engineering report is to describe the manner by which a project will comply with the Water Recycling Criteria. The Water Recycling Criteria are contained in Sections 60301 through 60355, inclusive, of the California Code of Regulations, Title 22. The Criteria prescribe:

* Recycled water quality and wastewater treatment requirements for the various types of allowed uses,

* Use area requirements pertaining to the actual location of use of the recycled water (including dual plumbed facilities), and

* Reliability features required in the treatment facilities to ensure safe performance.

Section 60323 of the Water Recycling Criteria specifies that the engineering report be prepared by a properly qualified engineer, registered in California and experienced in the field of wastewater treatment.

Recycled water projects vary in complexity. Therefore, reports will vary in content, and the detail presented will depend on the scope of the proposed project and the number and nature of the agencies involved in the production, distribution, and use of the recycled water. The report should contain sufficient information

to assure the regulatory agencies that the degree and reliability of treatment is commensurate with the requirements for the proposed use, and that the distribution and use of the recycled water will not create a health hazard or nuisance.

The intent of these guidelines is to provide a framework to assist in developing a comprehensive report which addresses all necessary elements of a proposed or modified project. Such a report is necessary to allow for the required regulatory review and approval of a recycled water project.

References which may assist in addressing various project elements include:

- State of California Water Recycling Criteria (December 2000)
- State of California Regulations Relating to Cross-Connections
- California Waterworks Standards
- California Water Code
- Guidelines for the Distribution of Non-potable Water, (California-Nevada Section-AWWA, 1992)
- Guidelines For The On-Site Retrofit of Facilities Using Disinfected Tertiary Recycled Water (California-Nevada Section-AWWA, 1997)
- Manual of Cross-Connection Control/Procedures and Practices (DOHS)
- Ultraviolet Disinfection – Guidelines for Drinking Water and Water Reuse (NWRI/AWWARF, December 2000)

2.0 RECYCLED WATER PROJECT

The following sections discuss the type of information that should be presented and described in the engineering report. Some sections may be applicable only to certain types of uses.

2.1 General

The report shall identify all agencies or entities that will be involved in the design, treatment, distribution, construction, operation and maintenance of the recycled facilities, including a description of any legal arrangements outlining authorities and responsibilities between the

agencies with respect to treatment, distribution and use of recycled water. In areas where more than one agency/entity is involved in the reuse project, a description of arrangements for coordinating all reuse-related activities (e.g. line construction/repairs) shall be provided. An organizational chart may be useful.

2.2 Rules and Regulations

The procedures, restrictions, and other requirements that will be imposed by the distributor and/or user should be described. In multiple projects covered under a Master Permit issued by the Regional Boards where the reuse oversight responsibility is delegated to the distributor and/or user, the requirements and restrictions should be codified into a set of enforceable rules and regulations. The rules and regulations should include a compliance program to be used to protect the public health and prevent cross connections. Describe in the report the adoption of enforceable rules and regulations that cover all of the design and construction, operation and maintenance of the distribution systems and use areas, as well as use area control measures. Provide a description of the organization of the agency or agencies who has the authority to implement and enforce the rules and regulations, and the responsibilities of pertinent personnel involved in the reuse program. Reference to any ordinances, rules of service, contractual arrangements, etc. should be provided.

2.3 Producer – Distributor - User

The producer is the public or private entity that will treat and/or distribute the recycled water used in the project. Where more than one entity is involved in the treatment or distribution of the recycled water, the roles and responsibilities of each entity (i.e. producer, distributor, user) should be described.

2.4 Raw Wastewater

Describe the chemical quality, including ranges with median and 95th percentile values;

Describe the source of the wastewater to be used and the proportion and types of industrial waste, and

Describe all source control programs.

2.5 Treatment Processes

Provide a schematic of the treatment train;

Describe the treatment processes including loading rates and contact times;

All filtration design criteria should be provided (filtration and backwash rates, filter depth and media specifications, etc.). The expected turbidities of the filter influent (prior to the addition of chemicals) and the filter effluent should be stated;

State the chemicals that will be used, the method of mixing, the degree of mixing, the point of application, and the dosages. Also describe the chemical storage and handling facilities, and

Describe the operation and maintenance manuals available.

2.6 Plant Reliability Features

The plant reliability features proposed to comply with Sections 60333 - 60355 of the Water Recycling Criteria should be described in detail. The discussion of each reliability feature should state under what conditions it will be actuated. When alarms are used to indicate system failure, the report should state where the alarm will be received, how the location is staffed, and who will be notified. The report should also state the hours that the plant will be staffed.

2.7 Supplemental Water Supply

The report should describe all supplemental water supplies. The description should include:

* Purpose

* Source

* Quality

* Quantity available

* Cross-connection control and backflow prevention measures

2.8 Monitoring and Reporting

The report should describe the planned monitoring and reporting program, including all monitoring required by the Water Recycling Criteria, and include the frequency and location of sampling. Where continuous analysis and recording equipment is used, the method and frequency of calibration

should be stated. All analyses shall be performed by a laboratory approved by the State Department of Health Services.

2.9 Contingency Plan

Section 60323 (c) of the Water Recycling Criteria requires that the engineering report contain a contingency plan designed to prevent inadequately treated wastewater from being delivered to the user. The contingency plan should include:

* A list of conditions which would require an immediate diversion to take place;

* A description of the diversion procedures;

* A description of the diversion area including capacity, holding time and return capabilities;

* A description of plans for activation of supplemental supplies (if applicable);

* A plan for the disposal or treatment of any inadequately treated effluent;

* A description of fail safe features in the event of a power failure, and

  A plan (including methods) for notifying the recycled water user(s), the regional board, the state and local health departments, and other agencies as appropriate, of any treatment failures that could result in the delivery of inadequately treated recycled water to the use area.

3.0 TRANSMISSION AND DISTRIBUTION SYSTEMS

Maps and/or plans showing the location of the transmission facilities and the distribution system layout should be provided. The plans should include the ownership and location of all potable water lines, recycled water lines and sewer lines within the recycled water service area and use area(s).

4.0 USE AREAS

The description of each use area should include:

* The type of land uses;

* The specific type of reuse proposed;

* The party(s) responsible for the distribution and use of the recycled water at the site;

* Identification of other governmental entities which may have regulatory jurisdiction over the re-use site such as the US Department of Agriculture, State Department of Health Services, Food and Drug Branch, the State Department of Health Services, Licensing and Certification Section, etc. These agencies should also be provided with a copy of the Title 22 Engineering Report for review and comment.

* Use area containment measures;

* A map showing:

  -Specific areas of use

  -Areas of public access

  -Surrounding land uses

  -The location and construction details of wells in or within 1000 feet of the use area

  -Location and type of signage

* The degree of potential access by employees or the public;

* For use areas where both potable and recycled water lines exist, a description of the cross-connection control procedures which will be used.

In addition to the general information described above, the following should be provided for the following specific proposed uses:

4.1 Irrigation

-Detailed plans showing all piping networks within the use area including recycled, potable, sewage and others as applicable.

-Description of what will be irrigated (e.g. landscape, specific food crop, etc.);

-Method of irrigation (e.g. spray, flood, or drip);

-The location of domestic water supply facilities in or adjacent to the use area;

-Site containment measures;

-Measures to be taken to minimize ponding;

-The direction of drainage and a description of the area to which the drainage will flow;

-A map and/or description of how the setback distances of Section 60310 will be maintained;

-Protection measures of drinking water fountains and designated outdoor eating areas, if applicable;

-Location and wording of public warning signs,

-The proposed irrigation schedule (if public access is included), and

-Measures to be taken to exclude or minimize public contact.

4.2 Impoundments

-The type of use or activity to be allowed on the impoundment;

-Description of the degree of public access;

-The conditions under which the impoundment can be expected to overflow and the expected frequency, and

-The direction of drainage and a description of the area to which the drainage will flow.

4.3 Cooling

-Type of cooling system (e.g. cooling tower, spray, condenser, etc.);

-Type of biocide to be used, if applicable;

-Type of drift eliminator to be used, if applicable, and

-Potential for employee or public exposure, and mitigative measures to be employed.

4.4 Groundwater Recharge

An assessment of potential impacts the proposal will have on underlying groundwater aquifers. The appropriate information

shall be determined through consultation with the Department on a case by case basis.

4.5 Dual Plumbed Use Areas

In accordance with Sections 60313 through 60316 of the Water Recycling Criteria.

4.6 Other Industrial Uses

The appropriate information shall be determined on a case by case basis.

4.7 Use Area Design

The report should discuss how domestic water distribution system shall be protected from the recycled water in accordance with the Regulations Relating to Cross-Connections and the California Waterworks Standards, and how the facilities will be designed to minimize the chance of recycled water leaving the designated use area. Any proposed deviation from the Water Recycling Criteria and necessity therefore, should be discussed in the report.

4.8 Use Area Inspections and Monitoring

The report should describe the use area inspection program. It should identify the locations at the use area where problems are most likely to occur (e.g. ponding, runoff, overspray, cross-connections, etc.) and the personnel in charge of the monitoring and reporting of use area problems.

4.9 Employee Training

The report should describe the training which use area employees will receive to ensure compliance with the Recycled Water Criteria, and identify the entity that will provide the training and its' frequency. The report should also identify any written manuals of practice to be made available to employees.

ATTACHMENT H

ITEMS TO BE INCLUDED IN A MONITORING WELL INSTALLATION WORKPLAN AND A MONITORING WELL INSTALLATION REPORT OF RESULTS

Prior to installation of groundwater monitoring wells, the Discharger shall submit a workplan containing the minimum listed information. Wells may be installed after staff approve the workplan. Upon installation of the monitoring wells, the Discharger shall submit a report of results, as described below. All workplans and reports must be signed by a registered geologist, certified engineering geologist, or civil engineer registered or certified by the State of California.

Monitoring Well Installation Workplan

A. General Information:
   - Monitoring well locations and rationale
   - Survey details
   - Equipment decontamination procedures
   - Health and safety plan
   - Topographic map showing any existing monitoring wells, proposed wells, waste handling facilities, utilities, and other major physical and man-made features.

B. Drilling Details: describe drilling and logging methods

C. Monitoring Well Design:
   - Casing diameter
   - Borehole diameter
   - Depth of surface seal
   - Well construction materials
   - Diagram of well construction
   - Type of well cap
   - Size of perforations and rationale
   - Grain size of sand pack and rationale
   - Thickness and position of bentonite seal and sand pack
   - Depth of well, length and position of perforated interval

D. Well Development:
   - Method of development to be used
   - Method of determining when development is complete
   - Method of development water disposal

E. Surveying Details: discuss how each well will be surveyed to a common reference point

F. Soil Sampling (if applicable):
- Cuttings disposal method
- Analyses to be run and methods
- Sample collection and preservation method
- Intervals at which soil samples are to be collected
- Number of soil samples to be analyzed and rationale
- Location of soil samples and rationale
- QA/QC procedures

G. Well Sampling:
- Minimum time after development before sampling (48 hours)
- Well purging method and amount of purge water
- Sample collection and preservation method
- QA/QC procedures

H. Water Level Measurement:
- The elevation reference point at each monitoring well shall be within 0.01 foot.
- Ground surface elevation at each monitoring well shall be within 0.1 foot.
- Method and time of water level measurement shall be specified.

I. Proposed time schedule for work.

Monitoring Well Installation Report of Results

A. Well Construction:
- Number and depth of wells drilled
- Date(s) wells drilled
- Description of drilling and construction
- Approximate locations relative to facility site(s)
- A well construction diagram for each well must be included in the report, and should contain the following details:
  - Total depth drilled
  - Depth of open hole (same as total depth drilled if no caving occurs)
  - Footage of hole collapsed
  - Length of slotted casing installed
  - Depth of bottom of casing
  - Depth to top of sand pack
  - Thickness of sand pack
  - Depth to top of bentonite seal
  - Thickness of bentonite seal
  - Thickness of concrete grout
  - Boring diameter

Casing diameter
Casing material
Size of perforations
Number of bags of sand
Well elevation at top of casing
Depth to ground water
Date of water level measurement
Monitoring well number
Date drilled
Location

B. Well Development:
Date(s) of development of each well
Method of development
Volume of water purged from well
How well development completion was determined
Method of effluent disposal
Field notes from well development should be included in report.

C. Well Surveying: provide reference elevations for each well and surveyor's notes

D. Water Sampling:
Date(s) of sampling
How well was purged
How many well volumes purged
Levels of temperature, EC, and pH at stabilization
Sample collection, handling, and preservation methods
Sample identification
Analytical methods used
Laboratory analytical data sheets
Water level elevation(s)
Groundwater contour map

E. Soil Sampling (if applicable):
Date(s) of sampling
Sample collection, handling, and preservation method
Sample identification
Analytical methods used
Laboratory analytical data sheets

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2004-0002

REQUIRING CITY OF GALT
WASTEWATER TREATMENT PLANT AND RECLAMATION FACILITY
SACRAMENTO COUNTY
TO CEASE AND DESIST
FROM DISCHARGING CONTRARY TO REQUIREMENTS

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

1. On 29 January 2004, the Regional Board adopted Waste Discharge Requirements Order No. R5-2004-0001, NPDES No. CA0081434, prescribing waste discharge requirements for the City of Galt and Roman Catholic Bishop of Sacramento Wastewater Treatment Plant and Reclamation Facility in Sacramento County. For the purposes of this Order, the City of Galt is hereafter referred to as "Discharger".

2. Wastewater at the Discharger's treatment plant currently receives secondary treatment through screens, extended aeration oxidation ditches, secondary clarification, chlorine disinfection, dechlorination (when discharging to Laguna Creek), and is then stored in a reservoir. Order No. R5-2004-0001 authorizes the Discharger to dispose of wastewater from the reservoir into Laguna Creek during the wet season, defined as 1 November through 30 April, and reclaim wastewater onto approximately 334 acres of land surrounding the facility during the dry season, defined as 1 May through 31 October. During the dry season, the discharge of effluent to surface waters or surface water drainage courses is prohibited.

3. Section 13301 of the California Water Code (CWC) states, in part:

   "When a regional board finds that a discharge of waste is taking place or threatening to take place in violation of requirements or discharge prohibitions prescribed by the regional board or the state board, the board may issue an order to cease and desist and direct that those persons not complying with the requirements or discharge prohibitions (a) comply forthwith, (b) comply in accordance with a time schedule set by the board, or (c) in the event of a threatened violation, take appropriate remedial or preventative action. In the event of an existing or threatened violation of waste discharge requirements in the operation of a community sewer system, cease and desist orders may restrict or prohibit the volume, type, or concentration of waste that might be added to such system by dischargers who did not discharge into the system prior to the issuance of the cease and desist order. Cease and desist orders may be issued directly by a board, after notice and hearing, or in accordance with the procedure set forth in Section 13302."

4. Waste Discharge Requirements Order No. R5-2004-0001 contains Effluent Limitation No. B.1, which reads, in part, the following:

   "B. Effluent Limitations for discharge to Laguna Creek:

1. Effluent shall not exceed the following limits:

Constituent	Units	Monthly Average	Weekly Average	7-Day Median	Daily Average	Daily Maximum
Nitrate (as N)	mg/l	10	---	---	---	---
	lb/day[4]	250	---	---	---	---
Iron	µg/l	300	---	---	---	---
	lb/day[4]	7.5	---	---	---	---

[4] Based upon a design treatment capacity of 3.0 mgd. For reporting purposes, compliance with these limitations shall be determined as follows: measured concentration (in mg/l) * 8.345 (conversion factor) * monthly average flow rate.

Constituent	Units	4-Day Average	1-Hour Average	30-Day Average
Aluminum	µg/l	87	750	---
	lb/day[1]	2.2	19	---
Ammonia (as N)	mg/l	---	Attach E	Attach F
	lb/day[1]	---	Calculated	Calculated

[1] Based upon a design treatment capacity of 3.0 mgd. For reporting purposes, compliance with these limitations shall be determined as follows: measured concentration (in mg/l) * 8.345 (conversion factor) * monthly average flow rate.

5. Based upon operational capabilities, the Discharger is not able to consistently comply with the nitrate, iron, aluminum, or ammonia effluent limitations. These limitations are new requirements that became applicable after the effective date of adoption of the waste discharge requirements, and after 1 July 2000, for which new or modified control measures are necessary in order to comply with the limitations, and the new or modified control measures cannot be designed, installed, and put into operation within 30 calendar days.

The Discharger is currently unable to nitrify or denitrify wastewater. Facilities can be built to correct the nitrate and ammonia violations that would otherwise be subject to mandatory penalties under CWC Section 13385(h) and (i). Aluminum and iron can be minimized by source control, but may require additional treatment to remove these constituents to acceptable levels. The Discharger can take reasonable measures to achieve compliance within five (5) years. Compliance with this Order exempts the Discharger from mandatory minimum penalties for violations of nitrate, iron, aluminum, and ammonia limitations only, in accordance with CWC Section 13385(j)(3).

Since the time schedule for completion of actions necessary to achieve full compliance exceeds one year, interim requirements and dates for their achievement are included in this Order. The

time schedule does not exceed five years.

CWC Section 13385(j)(3) requires the Discharger to prepare and implement a pollution prevention plan pursuant to CWC Section 13263.3. A pollution prevention plan addresses only those constituents that can be effectively reduced by source control measures. Ammonia and nitrate cannot be significantly reduced through source control measures in domestic wastewater. Therefore, a pollution prevention plan is required for iron and aluminum only.

6. CWC Section 13385(h) and (i) require the Regional Board to impose mandatory minimum penalties upon dischargers that violate certain effluent limitations. CWC Section 13385(j) exempts certain violations from the mandatory minimum penalties. CWC Section 13385(j)(3) exempts the discharge from mandatory minimum penalties "where the waste discharge is in compliance with either a cease and desist order issued pursuant to Section 13301 or a time schedule order issued pursuant to Section 13300, if all the [specified] requirements are met." This Cease and Desist Order is consistent with CWC Section 13385(j)(3).

7. As a result of the events and activities described in this Order, the Regional Board finds that a discharge of waste is taking place and threatening to take place in violation of Waste Discharge Requirements Order No. R5-2004-0001.

8. On 29 January 2004, in Rancho Cordova, California, after due notice to the Discharger and all other affected persons, the Regional Board conducted a public hearing at which evidence was received to consider a Cease and Desist Order to establish a time schedule to achieve compliance with waste discharge requirements.

9. Issuance of this Order is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000, et seq.), in accordance with Section 15321(a)(2), Title 14, California Code of Regulations.

10. Any person adversely affected by this action of the Regional Board may petition the State Water Resources Control Board (State Board) to review the action. The petition must be received by the State Board Office of the Chief Counsel, P.O. Box 100, Sacramento, CA 95812-0100, within 30 days of the date which the action was taken. Copies of the law and regulations applicable to filing petitions will be provided on request.

IT IS HEREBY ORDERED PURSUANT TO CALIFORNIA WATER CODE SECTION 13301, THAT:

1. The Discharger shall comply with the following time schedule to assure compliance with Effluent Limitation B.1 contained in Waste Discharge Requirements Order No. R5-2004-0001, as described in the above Findings for nitrate, iron, aluminum, and ammonia:

Task	Compliance Date
Progress Report/Implementation Schedule	**1 July 2004**
Progress Reports[1]	**1 January and 1 July of each year**
Achieve Full Compliance	**1 November 2008**

[1] The progress reports shall detail what steps have been implemented towards achieving compliance with waste discharge requirements, including construction progress, evaluate the effectiveness of the implemented measures, and assess whether additional measures are necessary to meet the time schedule.

2. If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may apply to the Attorney General for judicial enforcement or issue a complaint for Administrative Civil Liability.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 29 January 2004.

Original signed by

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THOMAS R. PINKOS, Executive Officer