

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2002-0208

NPDES NO. CA0079341

WASTE DISCHARGE REQUIREMENTS
FOR
PLACER COUNTY SERVICE AREA NO. 28, ZONE NO. 6
SHERIDAN
WASTEWATER TREATMENT PLANT
PLACER COUNTY

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

1. Placer County and Mary Louise Morrison, Trustee (hereafter Discharger) submitted a Report of Waste Discharge, dated 10 October 1998, and applied for a permit renewal to discharge waste under the National Pollutant Discharge Elimination System (NPDES) for the Service Area No. 28, Zone No. 6, Community of Sheridan, domestic Wastewater Treatment Plant (WWTP). Supplemental information to complete filing of the application was submitted in June 1999, December 1999, December 2001, 15 May 2002, and 19 August 2002.
2. The Discharger owns and operates a wastewater collection, treatment, and disposal system, and provides sewerage service to the community of Sheridan with approximately 220 residences. The treatment plant is in Section 13, T13N, R5E, MDB&M, as shown on Attachment A, a part of this Order. Treated municipal wastewater is discharged to spray fields during dry months and occasionally discharges to surface waters during wet weather, an unnamed drainage ditch which is tributary to Yankee Slough and to the Bear River, waters of the United States.

Placer County operates and maintains the wastewater treatment plant including the disposal irrigation fields. Ten acres of irrigation fields are owned and managed by the County. Approximately 20 acres of land adjacent to the treatment plant is owned by Mary Louise Morrison, Trustee. The irrigation land is leased by a rancher as pasture for cattle. The rancher manages the land and uses effluent to irrigate the pasture. The County is responsible for maintaining compliance with the permit. The property owner, Mary Louise Morrison, Trustee, is not responsible for the wastewater operations, however, is ultimately responsible if enforcement actions against the County are ineffective or would be futile, or that enforcement is necessary to protect public health or the environment.

3. The treatment system consists of an unlined aeration pond; two unlined settling ponds, and chlorination. The system does not currently have the facilities to dechlorinate. This Order requires that wastewater be dechlorinated before resuming a surface water discharge. Chlorinated secondary effluent is spray irrigated to 29 acres of pasture, 9 acres owned by Placer County and 20 acres owned by Mary Louise Morrison. The Discharger maximizes the use of

land disposal, but during wet winters discharges secondary disinfected effluent to a ditch that drains to Yankee Slough to protect the wastewater ponds from overtopping. The treatment facilities were originally designed to dispose of wastewater by evaporation and percolation. The wastewater flow rates, reportedly due to infiltration and inflow (I/I) exceed the design capacity of the system. Due to the hydraulic capacity problem, the community, in 1985, implemented a self-imposed connection ban that remains in effect. Rather than expanding the land disposal facility, the Discharger applied for an NPDES permit to discharge excess wastewater to surface water during wet weather periods. An NPDES permit was originally issued in 1988. This Order contains significant new limitations based on the California Toxics Rule (CTR) and on protecting the beneficial uses of the receiving stream. The Discharger is now proposing to provide additional land for disposal and to eliminate the discharge of wastewater to surface water. This Order contains compliance time schedules to eliminate the surface water discharge, as proposed by the discharger, and maintain all wastewater on land or achieve tertiary treatment and comply with the new surface water discharge limitations of this Order.

4. The Report of Waste Discharge and Discharger Self Monitoring Reports describe the wastewater discharge as follows:

For the discharge to the unnamed drainage ditch:

| | | |
|------------------------------------------------------------|-------|------|
| Maximum Daily Flow Rate | 0.057 | mgd |
| Average Daily Biochemical Oxygen Demand (BOD) ¹ | 20.0 | mg/l |
| Maximum Daily BOD | 49.4 | mg/l |
| Average Daily Total Suspended Solids (TSS) | 54.4 | mg/l |
| Maximum Daily TSS | 84.3 | mg/l |

For the discharge to irrigation fields:

| | | |
|------------------------------------------------------------|-------|------|
| Design Flow Rate (average dry weather flow) | 0.06 | mgd |
| Average Daily Flow Rate | 0.056 | mgd |
| Maximum Influent Daily Flow Rate | 0.132 | mgd |
| Average Daily Biochemical Oxygen Demand (BOD) ¹ | 23.3 | mg/l |
| Maximum Daily BOD | 68.5 | mg/l |
| Average Daily Total Suspended Solids (TSS) | 61.0 | mg/l |
| Maximum Daily TSS | 186.3 | mg/l |

¹ 5-day, 20°C biochemical oxygen demand

5. 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.
6. The United States Environmental Protection Agency (U.S. EPA) 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 Water Resources Control Board adopted the *Policy for Implementation of Toxic 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.

7. The Basin Plan at 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. The beneficial uses of any specifically identified water body generally apply to its tributary streams.” The unnamed drainage ditch and Yankee Slough are in the Bear River hydrologic area (515.1) in the Sacramento Hydrologic Basin. The Basin Plan does not specifically identify the beneficial uses of the unnamed drainage ditch and Yankee Slough. The unnamed drainage ditch is tributary to Yankee Slough, which is tributary to the Bear River. The Bear River is the first body of water downstream of the unnamed drainage ditch and Yankee Slough for which the Basin Plan has identified existing and potential beneficial uses. The beneficial uses of the Bear River, as identified in Table II-1 of the Basin Plan, are municipal and domestic supply; agricultural irrigation, agricultural stock watering, hydropower generation, body contact water recreation, canoeing and rafting, non-contact water recreation, warm freshwater aquatic habitat, cold freshwater aquatic habitat, potential warm fish migration habitat, potential cold fish migration habitat, potential warm spawning habitat, potential cold spawning habitat, and wildlife habitat. Other beneficial uses identified in the Basin Plan apply to the unnamed drainage ditch and Yankee Slough, including groundwater recharge and freshwater replenishment. The Basin Plan states, on page II-1.00, “Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning...” and with respect to disposal of wastewater 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.”

Upon review of the flow conditions, habitat values, and beneficial uses of the unnamed drainage ditch and Yankee Slough, and based upon hydraulic continuity, aquatic life migration and existing and potential water rights, the Regional Board finds that the beneficial uses identified in the Basin Plan for the Bear River, are applicable to the unnamed drainage ditch and Yankee Slough.

8. The Basin Plan states that “*Water Bodies within the basins that do not have beneficial uses designated in Table II-1 are assigned MUN designations in accordance with the provisions of State Water Board Resolution No. 88-63 which is, by reference, a part of this Basin Plan.*” State Water Resources Control Board Resolution No. 88-63 “Sources of Drinking Water” provides that “*All surface and ground waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Boards with...*” certain exceptions. In addition to application of domestic and municipal beneficial uses of the unnamed drainage ditch and Yankee Slough by the tributary rule, the MUN designation is applied in accordance with Resolution No. 88-63.

9. The Regional Board finds that the beneficial uses identified in the Basin Plan for the Bear River are applicable to the unnamed drainage ditch and Yankee Slough based upon the following:

a. *Municipal and Domestic Supply*

The State Water Resources Control Board (SWRCB) has recorded water rights for irrigation uses of Yankee Slough and the Bear River downstream of the discharge. Riparian domestic uses, for landowners along streams and rivers, may also exist and may not be recorded as water rights with the SWRCB.

The unnamed drainage ditch and Yankee Slough are low-flow streams and may provide groundwater recharge during periods of low flow. Groundwater is a designated source of drinking and irrigation water.

b. *Water Contact and Noncontact Recreation (including canoeing, rafting, and aesthetic enjoyment)*

The Regional Board finds that the discharge flows through areas where there is public access to the unnamed drainage ditch, Yankee Slough and the Bear River. Exclusion from the waterways of adjoining property owners and the public is unrealistic.

c. *Warm and Cold Freshwater Habitats (including preservation or enhancement of fish and invertebrates) and Wildlife Habitat*

The unnamed drainage ditch flows to Yankee Slough which flows to the Bear River. The Basin Plan (Table II-1) designates the Bear River as being both a cold and warm freshwater habitat. The warm and cold freshwater habitat designations applied to the Bear River are also appropriate for the unnamed drainage ditch and Yankee Slough since the California Department of Fish and Game has recorded the presence of trout, salmon and steelhead in the Bear River and there are no barriers which would restrict migration upstream. The cold freshwater habitat designation requires that the discharge not cause the in-stream dissolved oxygen concentration to drop below 7.0 mg/l. Additionally, Yankee Slough has a warm water habitat that includes catfish, largemouth bass and green sunfish.

d. *Groundwater Recharge*

In areas where groundwater elevations are below the stream bottom, water from the stream will percolate to groundwater. During dry weather in many places in California, flowing streams experience these conditions, thus providing groundwater recharge. Groundwater provides a source of municipal and irrigation water supply.

e. *Freshwater Replenishment*

When water is present in the unnamed drainage ditch and Yankee Slough, there is hydraulic continuity to the Bear River. The unnamed drainage ditch and Yankee Slough contribute to the quantity and may impact the quality of the water in the Bear River.

The Regional Board also finds that, based on the available information and on the Discharger's application, that the unnamed drainage ditch and Yankee Slough, absent the discharge from the wastewater treatment plant, are low-flow streams. The low-flow nature of the unnamed drainage ditch and Yankee Slough and the lack of receiving water quality data mean that the designated beneficial uses must be protected, and no credit for receiving water assimilative capacity is available for some constituents. Although the discharge, at times, maintains the aquatic habitat, constituents may not be discharged that may cause harm to aquatic life. Flows within the unnamed drainage ditch and Yankee Slough may help support cold-water aquatic life. The lack of significant dilution results in more stringent effluent limitations to protect contact recreational uses and aquatic life and to meet agricultural water quality goals.

10. The beneficial uses of the unnamed drainage ditch, Yankee Slough and the Bear River include contact recreation uses and irrigation. 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 recreational and food crop irrigation uses. The California Department of Health Services (DHS) 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/100 ml as a 7-day median. Title 22 is not directly applicable to surface water discharges; however, the Regional Board finds that it is appropriate to apply DHS's reclamation criteria because Yankee Slough and the Bear River are used for irrigation of agricultural land and for contact recreation purposes.

The DHS has recommended that providing a surface water dilution ratio, of at least twenty to one, for secondary effluent is equivalently protective of the beneficial uses and the public's health as providing tertiary treatment. Flows in the unnamed drainage ditch cannot provide a twenty to one dilution ratio. The Discharger had originally proposed to pipe the wastewater from the wastewater treatment system to Yankee Slough, but has withdrawn the proposal. The beneficial uses of both Yankee Slough and the unnamed ditch, which lies between the wastewater facility and Yankee Slough, are not protected until tertiary treatment is provided.

11. Until tertiary treatment can be provided to protect the site-specific beneficial uses of the receiving stream, the federal Clean Water Act, Section 301, requires that all municipal wastewater discharges to surface water be treated, at a minimum, to a “secondary” level. A measurement of achieving secondary treatment is that BOD and TSS levels are reduced to below 30 mg/l as a monthly average. Federal Regulations, 40 CFR 133, allow BOD and TSS effluent concentrations to be adjusted to 45 mg/l for waste stabilization pond systems to account for algae growth in the ponds, which is not of wastewater origins. Any adjustments to the BOD and TSS limitations, in accordance with 40 CFR 133, requires “proper operation and maintenance” for pond systems. An overflow, due to inadequate capacity, does not represent “proper operation and maintenance”. The Report of Waste Discharge and sampling results provided by the discharger show that past discharges to surface waters have exceeded 45 mg/l for TSS. The wastewater treatment facility is hydraulically overloaded. There is no sampling method to determine if the excess solids are of wastewater origin or due to algae. Federal Regulations, 40 CFR 133 requires that pond systems provide “significant biological treatment”. Under high flow conditions, the wastewater treatment may not have sufficient capacity to provide “significant biological treatment” and achieve a secondary level of treatment.

Untreated domestic wastewater contains solids. One measurement of solid material in sewage is total suspended solids (TSS). Excess solids contain waste materials including toxic constituents, oxygen demanding substances, causing oxygen depletion, and pathogens which interfere with disinfection. The Discharger has violated the total suspended solids limitations of the existing permit. Recent sampling results for March 2002 show the total suspended solids discharged from the ponds to surface waters were 71 mg/l, 69.5 mg./l and 70 mg/l. The effluent limitations for total suspended solids are 45 mg/l (monthly average), 60 mg/l (weekly average) and 90 mg/l (daily maximum). The BOD and TSS levels have been established at 30 mg/l and 45 mg/l respectively, as monthly averages, in the existing permit. The BOD and TSS limitations have been maintained in this Order as interim limits until tertiary treatment can be provided or the surface water discharge eliminated. The BOD and TSS limitations are modified from the traditional secondary limitations of 30 mg/l as a thirty day average in accordance with Federal Regulations, 40 CFR 133.105. The system is not capable of meeting the interim TSS limitations.

The Discharger currently maximizes the use of land disposal and discharges to Yankee Slough during the winter, as necessary due to high wet weather flows. The existing permit limits the discharge to Yankee Slough from November to March. This permit requires the Discharger maximize land disposal.

The discharge limitations in the current permit establish coliform limits at 23 MPN/100 ml as a 30-day median. The recommendation from DHS for the level of coliform produced by a disinfected secondary wastewater system is 23 MPN/100 ml as a 7-day median. The discharge may not be capable of meeting the 7-day median coliform limitations without physical or operational modifications.

12. 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 Clean Water Act (CWA) and amendments thereto are applicable to the discharge.

13. 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. This Order contains provisions that:
 - a. require the Discharger to provide information as to whether the levels of CTR, NTR, U.S. EPA priority toxic pollutants, and other constituents in the discharge cause or contribute to an in-stream excursion above a water quality objective;
 - b. if the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality objective, require the Discharger to submit information sufficient to calculate effluent limitations for those constituents; and
 - c. allow the Regional Board to reopen this Order and include effluent limitations for those constituents.

On 10 September 2001, the Executive Officer issued a letter, in conformance with State Water Code, Section 13267, requiring the Discharger to prepare a technical report assessing water quality. This Order is intended to be consistent with the requirements of the technical report in requiring sampling for NTR, CTR, and additional constituents to determine the full water quality impacts of the discharge. The technical report requirements are intended to be more detailed, listing specific constituents, detection levels, and acceptable time frames and shall take precedence in resolving any conflicts.

14. Section 13263.6(a), California Water Code, 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 United States Code Section 11023) (EPCRA) indicate as discharged into the POTW, for which the state board or the regional board has established numerical 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”. There is insufficient information to determine if pollutants in the effluent other than those limited by this Order have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective. The study described in the above Finding will determine if additional effluent limitations are necessary.
15. 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. 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 objectives for alpha hexachlorocyclohexane, aluminum, ammonia, beta hexachlorocyclohexane, chlorine, copper, cyanide, iron, manganese, nitrate plus nitrite, nitrite, total suspended solids, and zinc. Effluent limitations for these constituents are included in this Order.

16. The Basin Plan prohibits the discharge of toxic materials in toxic concentrations. The Discharger uses chlorine for disinfection of the effluent waste stream. Chlorine can cause toxicity to aquatic organisms when discharged to surface waters. The use of chlorine as a disinfectant presents a reasonable potential that it could be discharged to surface waters in toxic concentrations. U.S. EPA recommends, in its Ambient Water Quality Criteria for the Protection of Fresh Water Aquatic Life, maximum 1-hour average (0.02 $\mu\text{g}/\text{l}$) and 4-day average (0.02 $\mu\text{g}/\text{l}$) chlorine concentrations. Effluent Limitations for chlorine have been included in this Order to protect the receiving stream aquatic life beneficial uses. The effluent limitations have been established at the ambient water quality criteria, without benefit of dilution, for chlorine since the unnamed drainage ditch and Yankee Slough are low-flow streams. The Discharger has the ability, with the addition of a dechlorination facility and proper operation of the wastewater treatment system, to dechlorinate the discharge and comply with the chlorine limitations. The Discharger has the capability of installing a temporary dechlorination system to meet the discharge limitations for chlorine. A temporary system can quickly be installed to add a dechlorination chemical. This Order requires immediate compliance with the chlorine limitations and installation of continuous residual chlorine monitoring device for surface water discharges. The continuous chlorine residual monitoring device has been required since the wastewater treatment facility is only staffed part time and a continuous recording device, with an alarm system, can alert operators to a problem with the system and minimize or eliminate toxic discharges.
17. Untreated domestic wastewater contains ammonia. Nitrification is a biological process that converts ammonia to nitrite and nitrite to nitrate. Denitrification is a process that converts nitrate to nitrogen gas, which is then released to the atmosphere. Wastewater treatment plants commonly use nitrification to remove ammonia from the waste stream. Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving stream. Ammonia is known to cause toxicity to aquatic organisms in surface waters. The Basin Plan prohibits the discharge of toxic materials in toxic concentrations. Nitrite and nitrate are known to cause adverse health effects in humans. The Basin Plan prohibits the discharge of chemical constituents in concentrations that adversely affect beneficial uses. Domestic water supply is a beneficial use of the unnamed drainage ditch, Yankee Slough and the Bear River. U.S. EPA has developed Drinking Water Standards for the protection of human health for nitrite and nitrate and Ambient Water Quality Criteria for ammonia. There is no indication that assimilative capacity exists in the receiving stream for the ammonia, nitrates or nitrites. The discharge from the Sheridan Wastewater Treatment Plant has a reasonable potential to cause or contribute to an in-stream excursion above water quality standards or objectives for ammonia, nitrite, and nitrate. Effluent limitations for ammonia, nitrite, and nitrate are included in this Order to assure the treatment process adequately nitrifies and denitrifies the waste stream to protect the beneficial

uses of the receiving stream and to prevent aquatic toxicity. The system may not be capable of meeting the ammonia, nitrite and nitrate limitations without physical or operational modifications.

18. The Basin Plan prohibits the discharge of toxic materials in toxic concentrations. Based on information included in analytical laboratory reports 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. Aluminum was detected in an effluent sample collected 10 April 2001 at a concentration of 133 $\mu\text{g}/\text{l}$ and 17 February 1999 at a concentration of 160 $\mu\text{g}/\text{l}$. The wastewater discharge is to an unnamed ditch, which is tributary to Yankee Slough. The Discharger did not sample the unnamed ditch for aluminum. Yankee Slough showed a concentration of 314 $\mu\text{g}/\text{l}$ on 10 April 2001. Based on this sampling, there is no assimilative capacity for aluminum in Yankee Slough and there is no information regarding assimilative capacity in the unnamed ditch. U.S. EPA developed National Recommended Ambient Water Quality Criteria for protection of freshwater aquatic life for aluminum. The recommended continuous concentration (maximum four-day average concentration) is 87 $\mu\text{g}/\text{l}$ and the recommended maximum concentration (maximum one-hour average concentration) is 750 $\mu\text{g}/\text{l}$. Effluent limitations for aluminum are included in this Order, based on preventing toxicity.
19. Based on analytical results of effluent samples collected by the Discharger, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the *CTR* standards for copper. Copper was detected 17 February 1999 at a concentration of 230 $\mu\text{g}/\text{l}$. The *CTR* limitation for copper is hardness dependent. Sheridan's effluent hardness was shown to be 81 mg/l on 17 February 1999. At a hardness of 81 mg/l , the *CTR* acute criteria is 7.4 $\mu\text{g}/\text{l}$ and the chronic limit is 11 $\mu\text{g}/\text{l}$. The State Implementation Plan (*SIP*) for the *CTR* recommends conversion factors to translate dissolved concentrations to total concentrations. The conversion factors for copper in freshwater are 0.960 for both the acute and the chronic criteria. The effluent limitations for copper are presented in total recoverable concentrations, as required in the *CTR*. The wastewater discharge is to an unnamed ditch, which is tributary to Yankee Slough. The Discharger did not sample the unnamed ditch for copper. The *SIP*, Section 2.1, allows compliance schedules to be included in NPDES permits, provided that: diligent efforts have been made to quantify the pollutant; there is documentation that source control measures are underway; there is a proposed schedule for achieving compliance, and; the schedule is as short as practicable. The Discharger has not made diligent efforts to quantify copper and source control measures have not been evaluated, however, the Discharger has proposed to eliminate the surface water discharge, which will achieve compliance with the limitation in a reasonable time period. A compliance time schedule for copper is included in this Order.
20. Based on information included in analytical laboratory reports submitted by the Discharger, iron the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a level necessary to protect drinking water. Municipal and domestic water supply is a beneficial use of the receiving water as discussed in the above Findings. Iron was detected in an effluent sample collected 10 April 2001 at a concentration of 274 $\mu\text{g}/\text{l}$ and 17 February 1999 at a

concentration of 570 $\mu\text{g/l}$. The receiving stream, Yankee Slough showed a concentration of 983 $\mu\text{g/l}$ on 10 April 2001. The wastewater discharge is to an unnamed ditch, which is tributary to Yankee Slough. The Discharger did not sample the unnamed ditch for iron. U.S. EPA and California have developed a Drinking Water Secondary MCL for iron of 300 $\mu\text{g/l}$. The receiving stream has no assimilative capacity for iron. An Effluent limitation of 300 $\mu\text{g/l}$ for iron is included in this Order, based on protection of the municipal and domestic beneficial use of the receiving stream.

21. Based on analytical laboratory reports submitted by the Discharger, manganese was detected in effluent samples, collected 10 April 2001, at a concentration of 213 $\mu\text{g/l}$, and 17 February 1999, at a concentration of 460 $\mu\text{g/l}$. Yankee Slough had a manganese concentration of 119 $\mu\text{g/l}$ on 10 April 2001. The wastewater discharge is to an unnamed ditch, which is tributary to Yankee Slough. The Discharger did not sample the unnamed ditch for manganese. U.S. EPA and California have developed a Drinking Water Secondary MCL's for manganese of 50 $\mu\text{g/l}$. The Agricultural Water Quality Goal for Manganese is 200 $\mu\text{g/l}$. U.S. EPA's Ambient Water Quality Criteria the Protection of Freshwater Aquatic Life, for human health and welfare for aquatic organism consumption, is 100 $\mu\text{g/l}$. The receiving stream has no assimilative capacity for manganese. Based on information included in analytical laboratory reports submitted by the Discharger, manganese in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a level necessary to protect the beneficial uses of drinking water and agriculture. Effluent limitations for manganese are included in this Order, based on protection of the municipal, domestic and agricultural beneficial uses of the receiving stream.
22. Based on information submitted as part of the application, in studies, and in monitoring reports, alpha and beta hexachlorocyclohexane (alpha and beta BHC) were detected on 10 April 2001 at 0.017 $\mu\text{g/l}$ and 0.093 $\mu\text{g/l}$ respectively. The CTR objectives for alpha and beta hexachlorocyclohexane (alpha and beta BHC) are 0.013 and 0.046 $\mu\text{g/l}$, respectively. Alpha and beta hexachlorocyclohexane (organochlorine pesticides) in the discharge have a reasonable potential to cause or contribute to an in-stream excursion above CTR Standards for organochlorine pesticides. The Basin Plan requires that: no individual pesticides shall be present in concentrations that adversely affect beneficial uses; discharges shall not result in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses; total chlorinated hydrocarbon pesticides shall not be present in the water column at detectable concentrations; and pesticide concentrations shall not exceed those allowable by applicable antidegradation policies. The detection of alpha and beta BHC in the treatment plant effluent presents a reasonable potential to exceed the Basin Plan limitations for organochlorine pesticides. Effluent Limitations for alpha and beta BHC are included in this Order based on the more stringent Basin Plan Water Quality objective of non-detectable.
23. Based on information included in analytical laboratory reports submitted by the Discharger, cyanide was detected in an effluent sample collected 10 April 2001 at a concentration of 16 $\mu\text{g/l}$. The wastewater discharge is to an unnamed ditch, which is tributary to Yankee Slough. The Discharger did not sample the unnamed ditch for cyanide. The CTR includes a water quality standard for cyanide. The continuous concentration (maximum four-day average concentration)

is 5.2 $\mu\text{g}/\text{l}$ and the maximum concentration (maximum one-hour average concentration) is 22 $\mu\text{g}/\text{l}$. Effluent limitations for cyanide are included in this Order and are based on the CTR. The SIP, Section 2.1, allows compliance schedules to be included in NPDES permits, provided that: diligent efforts have been made to quantify the pollutant; there is documentation that source control measures are underway; there is a proposed schedule for achieving compliance, and; the schedule is as short as practicable. The Discharger has not made diligent efforts to quantify cyanide and source control measures have not been evaluated, however, the Discharger has proposed to eliminate the surface water discharge, which will achieve compliance with the limitation in a reasonable time period. A time schedule to allow the Discharger to come into compliance with the cyanide effluent limitation is included in this Order.

24. Based on analytical results of effluent samples collected by the Discharger, zinc was detected 17 February 1999 at a concentration of 430 $\mu\text{g}/\text{l}$. Zinc was detected in Yankee Slough at a concentration of 2.48 mg/l on April 2001. The wastewater discharge is to an unnamed ditch, which is tributary to Yankee Slough. The Discharger did not sample the unnamed ditch for zinc. The CTR limitation for zinc is hardness dependent. Sheridan's effluent hardness was shown to be 81 mg/l on 17 February 1999. At a hardness of 81 mg/l , the acute criteria would be 98 $\mu\text{g}/\text{l}$ and the chronic limit would be 97 $\mu\text{g}/\text{l}$. The discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR standards for zinc; therefore, effluent limitations for zinc are included in the Order. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. The conversion factors for zinc in freshwater are 0.98 for both the acute and the chronic criteria. The effluent limitations for zinc are presented in total recoverable concentrations, and are based on the CTR. The discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR standards for zinc; therefore, effluent limitations for zinc are included in the Order. The Discharger has not made diligent efforts to quantify zinc and source control measures have not been evaluated, however, the Discharger has proposed to eliminate the surface water discharge, which will achieve compliance with the limitation in a reasonable time period. A time schedule to allow the Discharger to come into compliance with the effluent limitation is also included in this Order.

GROUNDWATER

25. The beneficial uses of the underlying ground water, as identified in the Basin Plan, are municipal and domestic, industrial service, industrial process, and agricultural supply.
26. The Discharger utilizes unlined ponds for the treatment and disposal of wastewater. Percolation is an intentional method of disposing of wastewater at this facility. The Discharger also uses spray irrigation as the principal method for disposal of wastewater. The Basin Plan contains water quality objectives to protect the beneficial uses of groundwater including numeric, narrative, chemical toxicity and taste and odor objectives. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, or animals. The chemical constituent objective states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use or that exceed the maximum contaminant levels (MCLs) in Title 22, CCR. The

Basin Plan requires the application of the most stringent objective necessary as necessary to ensure that groundwaters 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.

27. State Water Resources Control Board (SWRCB) Resolution No. 68-16 (hereafter Resolution 68-16) requires the Regional Board, in regulating the discharge of wastes, to maintain high quality waters of the State until it is demonstrated that: any change in quality will be consistent with 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 the highest water quality consistent with the maximum benefit to the people of the State be maintained.
28. Domestic wastewater contains constituents such as total dissolved solids (TDS), specific conductivity, pathogens, nitrates, organics, metals and oxygen demanding substances (BOD). The unlined ponds and disposal fields may percolate, and 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 may be 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.
29. 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, 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 No. 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, a BPT assessment is required and 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 pollutant concentration (when compared with background) may not be increased beyond the currently quantified level. 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.

30. 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, California Code of Regulations (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.
31. Section 13267 of the California Water Code states, in part, “(a) A regional board, in establishing...waste discharge requirements... may investigate the quality of any waters of the state within its region” and “(b) (1) In conducting an investigation..., the regional board may require that any person who... discharges... waste...that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The attached Monitoring and Reporting Program is issued pursuant to California Water Code Section 13267. The monitoring and reporting program has been developed to monitor compliance with the groundwater limitations required by this Order. The attached Monitoring and Reporting Program is necessary to assure compliance with these waste discharge requirements. The Discharger operates the facility that discharges waste subject to this Order.

LAND DISCHARGE AND RECLAMATION SPECIFICATIONS

32. California Code of Regulations (CCR), Title 22, contains requirements for the use of reclaimed water; this Order implements the requirements of Title 22.
33. CCR Title 22, Section 60304(d) requires that for irrigation of pasture for animals not producing milk for human consumption, wastewater shall be at least “undisinfected secondary recycled water”. CCR Title 22, Section 60301.900, defines “undisinfected secondary recycled water” as “oxidized wastewater”. CCR Title 22, Section 60301.650, defines “oxidized wastewater” as “...wastewater in which the organic matter has been stabilized, is nonputrescible, and contains

dissolved oxygen”. Title 22 does not specify effluent concentrations for BOD or TSS in the definition of secondary wastewater. It is generally accepted civil engineering practice that “secondary wastewater” is wastewater that has been treated to achieve 30 mg/l, or less, for both BOD and TSS, as a monthly average. This is confirmed by federal regulations, 40 CFR Part 133, which define the minimum level of effluent quality attainable by secondary treatment as: the 30-day average BOD and TSS shall not exceed 30 mg/l. The federal regulations regarding secondary treatment are not directly applicable to land disposal and reclamation uses, but are used to define the accepted level of “secondary treatment”. As cited in an earlier Finding, 40 CFR Part 133, allows adjustment of the 30-day average BOD and TSS levels to 45 mg/l for waste stabilization ponds. The Discharger’s wastewater facility is hydraulically overloaded and, based on sampling submitted as part of the Report of Waste Discharge, is not capable of meeting 30-day average TSS concentrations of 45 mg/l. This Order includes a time schedule requiring compliance with 30-day average discharge limitations for BOD and TSS of 45 mg/l to the reclamation area.

34. The disposal of wastewater by spray irrigation to non-reclamation areas is not required to comply with title 22. This Order contains alternative land disposal limitations for spray irrigation of non-reclamation areas. The limitations are included to prevent nuisance and prevent runoff of wastewater to surface waters.
35. The Discharger utilizes spray irrigation as a disposal method. To protect public health, CCR Title 22, Section 60310, contains Use Area Requirements with respect to buffer zones from property lines, wells, irrigation runoff, and mist entering specific areas. This Order requires compliance with CCR Title 22 for reclamation areas.
36. The Discharger maximizes disposal of treated wastewater by spray irrigation. Title 22, Section 60310(e)1, requires any runoff shall be confined to the recycle uses area, unless the runoff does not pose a public health threat and is authorized by the regulatory agency. Any discharge from the spray irrigation fields constitutes a waste discharge and would need to meet effluent and receiving water limitations. This permit requires that tailwater be returned to the treatment or disposal area.
37. The Discharger may utilize the spray irrigation area as a disposal area by eliminating the beneficial reuse of the wastewater, specifically by eliminating cattle grazing and growing fodder crops. Wastewater disposal areas are not subject to Title 22 requirements. Limitations for land wastewater disposal areas are developed to protect water quality. This Order contains limitations for land disposal designed to protect ground and surface water quality.
38. The Discharger utilizes waste stabilization ponds for the treatment and storage of wastewater. Land Discharge Specifications have been included in this permit to assure that the pond does not overflow or cause a nuisance. Land Discharge Specifications have been included in this permit to assure that nuisance conditions do not occur. Nuisance conditions from ponds are typically found when strong odors occur when the dissolved oxygen concentration is allowed to drop below 1.0 mg/l. This permit requires the dissolved oxygen concentration be maintained above

1.0 mg/l in the upper one-foot of water in the pond to prevent odors and avoid nuisance conditions.

39. Pond levees can fail for a variety of reasons, typically, a lack of maintenance or overtopping due to wave action. This permit requires a minimum pond freeboard be maintained to prevent overtopping.

GENERAL

40. Monitoring is required by this Order for the purposes of assessing compliance with permit limitations and water quality objectives and gathering information to evaluate the need for additional limitations.
41. This Order contains Effluent Limitations and a tertiary level of treatment, or equivalent, necessary to protect the beneficial uses of the receiving water. The Discharger has submitted information that, as an alternative, they will modify the existing system and dispose of all wastewater on land. The land disposal alternative will require submittal of a new Report of Waste Discharge and this Order may be reopened and modified. In accordance with California Water Code, Section 13241, the Board has considered the following:

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, hydropower generation, body contact water recreation, canoeing and rafting, non-contact water recreation, warm freshwater aquatic habitat, cold freshwater aquatic habitat, potential warm fish migration habitat, potential cold fish migration habitat, potential warm spawning habitat, potential cold spawning habitat, and wildlife habitat.

The environmental characteristics of the hydrographic unit including the quality of water available 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 which would otherwise be unsafe according to recommendations from the California Department of Health Services (DHS)

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

The economic impact of requiring an increased level of treatment has been considered. The Discharger has estimated that the increased level of tertiary treatment would not be the cost effective alternative and will obtain additional land for wastewater disposal. Without tertiary treatment or complete land disposal, 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 would also aid in meeting discharge limitations for other pollutants, such as heavy metals, reducing the need for advanced treatment.

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. The addition of tertiary treatment or implementation of the land disposal alternative will allow the Discharger to eliminate a self imposed building moratorium.

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 recycled 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, Title 22. The land disposal alternative, proposed by the Discharger, will also meet the Regional Board's policy.

42. Section 13267 of the California Water Code states, in part, "*(a) A regional board, in establishing...waste discharge requirements...may investigate the quality of any waters of the state within its region*" and "*(b)(1) In conducting an investigation,.. the regional board may require that any person who...discharges...waste...that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires.*"

The attached Monitoring and Reporting Program No. R5-2002-0208 is issued pursuant to California Water Code Section 13267 and is necessary to assure compliance with these waste discharge requirements. The Discharger operates the facility that discharges the waste subject to this Order.

43. Monitoring and Reporting Program No. R5-2002-0208, Attachments A through E, and the Fact Sheet, are a part of this Order.
44. This discharge was previously regulated by Waste Discharge Requirements in Order No. 95-114, adopted by the Regional Board on 26 May 1995.
45. U.S. EPA and the Regional Board have classified this discharge as a minor discharge.
46. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16. Compliance with these requirements

will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

47. 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 California Water Code.
48. The Regional Board has considered the information in the attached Information Sheet in developing the Findings of this Order. The attached Fact Sheet is part of this Order.
49. 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.
50. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.
51. This Order shall serve as an NPDES permit pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect upon the date of hearing, provided U.S. EPA has no objections.

IT IS HEREBY ORDERED that Order No. 93-232 is rescinded and the Placer County and Mary Louise Morrison, Trustee, their agents, successors and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Discharge Prohibitions:

1. Discharge of wastewater at a location or in a manner different from that described in the Findings is prohibited.
2. The by-pass or overflow of wastes is prohibited, except as allowed by Standard Provision A.13. [See attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)"].
3. Neither the discharge nor its treatment shall create a nuisance as defined in Section 13050 of the California Water Code.

B. Effluent Limitations:

1. Effluent discharge to surface waters shall not exceed the following limitations:

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2002-0208
 PLACER COUNTY SERVICE AREA NO. 28, ZONE NO. 6
 SHERIDAN WASTEWATER TREATMENT PLANT
 PLACER COUNTY

| <u>Constituents</u> | <u>Units</u> | <u>Average Monthly</u> | <u>Median Monthl</u> y | <u>Average Weekly</u> | <u>Average Daily</u> | <u>Daily Maximum</u> |
|--------------------------|----------------------|------------------------|---------------------------|-----------------------|----------------------|----------------------|
| BOD ¹ | mg/l | 45 ² | -- | 60 ² | 90 ² | -- |
| | lbs/day ³ | 23 | | 30 | 46 | -- |
| Total Suspended Solids | mg/l | 45 ² | -- | 60 ² | 90 ² | -- |
| | lbs/day ³ | 23 | | 30 | 46 | -- |
| Settleable Solids | ml/l | 0.1 | -- | -- | 0.2 | -- |
| Total Coliform Organisms | MPN/100 ml | -- | 23 | -- | -- | 230 |

| <u>Constituents</u> | <u>Units</u> | <u>Average Monthly</u> | <u>Average 4-Day</u> | <u>Daily Maximum</u> |
|---------------------------|----------------------|-------------------------|----------------------|----------------------|
| Total Residual Chlorine | mg/l | -- | 0.01 | 0.02 |
| | lbs/day ⁴ | | 0.005 | 0.01 |
| Ammonia (as N) | mg/l | Attachment B | | Attachment C |
| | lbs/day ⁵ | -- | -- | -- |
| Nitrate + Nitrite (as N) | mg/l | 10 | -- | -- |
| | lbs/day ¹ | 0.005 | -- | -- |
| Nitrite (as N) | mg/l | 1 | -- | -- |
| | lbs/day ¹ | 0.0005 | -- | -- |
| Aluminum | µg/l | -- | 87 | 750 |
| | lbs/day | -- | 0.043 | 0.375 |
| Copper | µg/l | | Attachment D | Attachment D |
| | lbs/day | | | |
| Iron | µg/l | 300 | -- | -- |
| | lbs/day | 0.15 | -- | -- |
| Manganese | µg/l | 50 | -- | -- |
| | lbs/day | 0.03 | -- | -- |
| Zinc | µg/l | -- | Attachment E | Attachment E |
| | lbs/day | -- | -- | -- |
| Organochlorine Pesticides | µg/l | Non detect ⁶ | -- | -- |
| Cyanide | µg/l | -- | 5.2 | 22 |
| | lbs/day | -- | 0.003 | 0.01 |

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 0.06 mgd ($x \text{ mg/l} \times 8.345 \times 0.06 \text{ mgd} = y \text{ lbs/day}$)

⁴ Based upon a design treatment capacity of 0.06 mgd ($x \text{ mg/l} \times 8.345 \times 0.06 \text{ mgd} = y \text{ lbs/day}$).

⁵ The mass limit (lb/day) for ammonia shall be equal to the concentration limit (from Attachments) multiplied by the design flow of 0.06 mgd and the unit conversion factor of 8.345 (see footnote 1 for equation).

⁶ Not detectable within the accuracy of U.S. EPA Standard Methods utilizing the lowest possible detection levels..

2. The wastewater shall be settled, oxidized, coagulated and filtered, or equivalent treatment provided, and the effluent discharge to surface waters shall not exceed the following limitations (from **30 December 2006** forward):

| <u>Constituents</u> | <u>Units</u> | <u>7-Day Median</u> | <u>Average Daily</u> | <u>Instantaneous Maximum</u> |
|--------------------------|--------------|---------------------|----------------------|------------------------------|
| Total Coliform Organisms | MPN/100 m/ | 2.2 | -- | 23 ¹ |
| Turbidity | NTU | -- | 2 | 5 ² |

3. The arithmetic mean of 20°C BOD (5-day) and of total suspended solids in effluent samples collected over a calendar month 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).
4. The discharge shall not have a pH less than 6.5 nor greater than 8.5.
5. The average dry weather influent flow shall not exceed 0.06 million gallons per day.
6. 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 consecutive bioassays - - - - 90%

C. Sludge Disposal:

1. Collected screenings, sludges, 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 California Code of Regulations, Title 27, Division 2, Subdivision 1, Section 20005, *et seq.*
2. Any proposed change in sludge use or disposal practice from a previously approved practice shall be reported to the Executive Officer and U.S. EPA Regional Administrator at least **90 days** in advance of the change.
3. Use and disposal of sewage sludge shall comply with existing Federal and State laws and regulations, including permitting requirements and technical standards included in 40 CFR

¹ The total coliform organisms concentration shall not exceed 23 MPN/100 m/ more than once in any 30-day period. No sample shall exceed a concentration of 230 MPN/100 m/.

² The turbidity shall not exceed 5 NTU more than 5 percent of the time within a 24-hour period. At no time shall the turbidity exceed 10 NTU.

503.

4. 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.

D. 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 unnamed drainage ditch, Yankee Slough and downstream waters:

1. The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 ml or cause more than 10 percent of total samples taken during any 30-day period to exceed 400 MPN/100 ml.
2. Biostimulatory substances that promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.
3. Esthetically undesirable discoloration.
4. Concentrations of dissolved oxygen to fall below 7.0 mg/l. The monthly median of the mean daily dissolved oxygen concentration shall not be caused to fall below 85 percent of saturation in the main water mass, and the 95th percentile concentration shall not be caused to fall below 75 percent of saturation.
5. Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.
6. Oils, greases, waxes, or other materials to accumulate in concentrations that cause nuisance, result in a visible film or coating on the water surface or on objects in the water, or otherwise adversely affect beneficial uses.
7. The ambient pH to fall below 6.5, exceed 8.5, or change by more than 0.5 units. An one-month averaging period may be applied when calculating the pH change of 0.5 units.
8. Radionuclides to be present in concentrations 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.

9. Deposition of material that causes nuisance or adversely affects beneficial uses.
10. 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.
11. The ambient temperature to increase more than 5°F.
12. 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.
13. 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.
14. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.
15. Upon adoption of any applicable water quality standard for receiving waters by the Regional Board or the State Water Resources Control Board pursuant to the CWA and regulations adopted thereunder, this permit may be reopened and receiving water limitations added.

E. Groundwater Limitations:

Release of waste constituents from any transport, storage, treatment, or disposal component associated with the WWTP shall not, in combination with other sources cause the following in groundwater:

1. Adversely impact beneficial uses or exceed water quality objectives.
2. Any constituent concentration, when compared with background, shall not be incrementally increased beyond the current concentration.

F. Discharge Specifications (Ponds):

1. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the wastewater treatment and disposal areas.
2. As a means of discerning compliance with Discharge Specification 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 breeding of mosquitoes. In particular,
 - a. An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface.
 - b. Dead algae, vegetation, and debris shall not accumulate on the water surface.
5. Public contact with wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives.
6. Freeboard shall never be less than 18 inches for the primary pond and no less than two feet (measured vertically to the lowest point of overflow) for all other ponds.

G. Discharge Specifications (Spray Irrigation (non-Title 22 disposal)):

1. The discharge shall be distributed uniformly on adequate acreage in compliance with the Discharge Specifications.
2. All tail water must be returned to the spray fields or treatment facilities.
3. Hydraulic loading of wastewater shall be at reasonable agronomic rates designed to minimize the percolation of process wastewater below the root zone (i.e., deep percolation). Neither the treatment nor disposal of wastewater shall cause a pollution or nuisance as defined by Section 13050 of the CWC. There shall be no standing water in the disposal area within 24-hours following irrigation.
4. Public contact with effluent shall be precluded through such means as fences, signs, and other acceptable alternatives.
5. Areas irrigated with effluent shall be managed to prevent breeding of mosquitoes. More specifically:

- a. All applied irrigation water must infiltrate completely within 24 hours.
 - b. Ditches not serving as wildlife habitat should be maintained free of emergent, marginal, and floating vegetation.
 - c. Low-pressure and un-pressurized pipelines and ditches, which are accessible to mosquitoes, shall not be used to store reclaimed water.
6. Discharges to the spray irrigation fields shall be managed to minimize erosion. Runoff from the disposal area must be captured and returned to the treatment facilities or spray fields.
 7. The Discharger may not discharge effluent to the disposal fields 24 hours before predicted precipitation, during periods of precipitation, and for at least 24 hours after cessation of precipitation, or when soils are saturated.
 8. A 50-foot buffer zone shall be maintained between any watercourse and the wetted area produced during irrigation used for effluent disposal.
 9. A 150-foot buffer zone shall be maintained between any spring, domestic well or irrigation well and the wetted area produced during irrigation used for effluent disposal.
 10. A 200-foot buffer zone shall be maintained between effluent disposal areas and all residences.
 11. The resulting effect of the wastewater discharge on the soil pH shall not exceed the buffering capacity of the soil profile.

H. Discharge Specifications (Title 22 Reclamation Fodder Crop and Pasture Use):

1. Effluent to the irrigation area shall not exceed the following limitations:

| <u>Constituents</u> | <u>Units</u> | <u>Average Monthly</u> | <u>Maximum Daily</u> |
|------------------------|--------------|------------------------|----------------------|
| BOD ² | mg/l | 45 ³ | 90 |
| Total Suspended Solids | mg/l | 45 ² | 90 |

² 5-day, 20°C biochemical oxygen demand (BOD)

³ To be ascertained by a 24-hour composite

2. The BOD seasonal average loading rate to the reclamation area shall not exceed 100 lb/acre/day.

3. Neither the treatment nor the use of reclaimed water shall cause a pollution or nuisance as defined by Section 13050 of the CWC.
4. The use of reclaimed water shall not cause degradation of any water supply.
5. Reclaimed water shall be managed in conformance with the regulations contained in Title 22, Division 4, Chapter 3, CCR.
6. All reclamation equipment, pumps, piping, valves, and outlets shall be appropriately marked to differentiate them from potable facilities. All reclamation distribution system piping shall be purple or adequately wrapped with purple tape.
7. Perimeter warning signs indicating that reclaimed water is in use shall be posted as prescribed in the Users Reclamation Plan, which is subject to approval by the Board and the Department.
8. Reclaimed water shall not be allowed to escape from the authorized use areas by airborne spray or by surface flow except in minor amounts such as that associated with good irrigation practices.
9. A minimum freeboard of two (2) feet shall be maintained at all times in any reservoir or pond containing reclaimed water, except with prior written authorization by the Boards Executive Officer.
10. All reservoirs and ponds shall be adequately protected from erosion, washout and flooding from a rainfall event having a predicted frequency of once in 100 years.
11. There shall be at least a ten-foot horizontal and one foot vertical separation at crossings between all pipelines transporting reclaimed water and those transporting domestic supply, with the domestic supply above the reclaimed water pipeline, unless approved by the Department.
12. There shall be no cross-connection between a potable water supply and piping containing reclaimed water. Supplementing reclaimed water with potable water shall not be allowed except through an air-gap separation, or if approved by the Department, a reduced pressure principle backflow device.
13. Areas irrigated with reclaimed water shall be managed to prevent ponding and conditions conducive to the proliferation of mosquitoes and other disease vectors, and to avoid creation of a public nuisance or health hazard. The following practices shall be implemented, at a minimum:
 - a. Irrigation water must infiltrate completely within a 48-hour period.

- b. Ditches receiving irrigation runoff, not serving as wildlife habitat, shall 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 recycled water.
14. The reclaimed water piping system shall not include any hose bibs, except at the treatment plant, which must have appropriate signage.
 15. The Discharger shall establish and enforce rules and/or regulations for Users governing the design and construction of reclaimed water use facilities and the use of reclaimed water in accordance with the criteria established in Title 22 and this Order.
 16. The Discharger shall develop administrative procedures and User Agreements requiring compliance with Title 22 criteria and this Order.
 17. The Discharger shall be responsible for ensuring that reclaimed water meets the quality standards of this Order and for the operation and maintenance of transport facilities and associated appurtenances. The Discharger shall hold the Users responsible for the application and use of reclaimed water on their designated use areas and associated operations and maintenance in accordance with all applicable Title 22 requirements and this Order.
 18. The Discharger shall conduct periodic inspections of the Users facilities and operations to monitor and assure compliance with conditions of the Producers permit and this Order. The Discharger shall take whatever actions are necessary, including termination of delivery of reclaimed water to the User, to correct any User violations. The Discharger shall maintain a right-of-entry for all properties where reclaimed water is used and shall conduct regular inspections to assure cross connection are not made with potable water systems and air-gap devices are installed and operable. The Discharger shall produce, maintain and comply with Engineer's Reports, in accordance with Title 22, Sections 60323 and 60314, which must be approved by the California Department of Health Services.

I. Provisions:

1. The treatment facilities 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. The Discharger shall **within thirty-six months of adoption of this Order** produce, maintain and comply with an “Engineer’s Report”, in accordance with Title 22, Sections 60323 and 60314, which must be approved by the California Department of Health Services for all discharges to reclamation areas and comply with Discharge Specification, No. H.1, for BOD and TSS.
4. There are indications that the discharge may contain constituents that have a reasonable potential to cause or contribute to an exceedance of water quality objectives. The constituents are specifically listed in a technical report requirement issued by the Executive Officer on 10 September 2001 and include NTR, CTR, and additional constituents, which could exceed Basin Plan numeric or narrative water quality objectives. The Discharger shall comply with the following time schedule in conducting a study of the potential effect(s) of these constituents in surface waters:

| <u>Task</u> | <u>Compliance Date</u> |
|---------------------------------|------------------------|
| Submit Study Report | 1 March 2005 |
| Submit Study Report for dioxins | 1 August 2006 |

This Order is intended to be consistent with the requirements of the 10 September 2001 technical report. The technical report requirements shall take precedence in resolving any conflicts except the due dates. 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.

On or before each compliance date, the Discharger shall submit to the Regional Board 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.

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

5. 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 may 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 Water Resources Control Board, this Order may be reopened and a limitation based on that objective included.

6. The Discharger shall provide dechlorination of the effluent discharged to surface waters immediately upon adoption of this Order.
7. The Discharger shall comply with the following time schedule to assure compliance with the Effluent Limitations B.1 for copper, zinc and organochlorine pesticides and the treatment requirements in Effluent Limitation B.1 and the associated limits for total coliform organisms and turbidity:

| <u>Task</u> | <u>Compliance Date</u> | <u>Report Due Date</u> |
|-------------------------------|-------------------------|-------------------------|
| Submit Annual Status Report | | 1 June, annually |
| Submit Workplan/Time Schedule | | 15 March 2003 |
| Full Compliance | 30 December 2006 | 30 December 2006 |

The Discharger shall submit to the Regional Board on or before each compliance and 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; the report shall also 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.

8. **Hydrogeologic Evaluation and Groundwater Monitoring Tasks.** **Within 24 months of the adoption of this Order**, the Discharger shall install at least three groundwater monitoring wells. A complete hydrogeologic investigation within the area affected and potentially affected by the WWTF and its discharge(s) to land must be submitted **within 48 months of adoption of this permit**.

The technical report documenting the hydrogeologic investigation shall describe the underlying geology, existing wells (active and otherwise), local well construction practices and standards, well restrictions, hydrogeology and assess all impacts of the wastewater discharge on water quality. The groundwater quality must be monitored at least quarterly for a minimum of four quarters for aluminum, copper, iron, manganese, zinc, organochlorine pesticides, cyanide, nutrients, coliform organisms, pH, TDS and EC. The technical report must present, for each monitoring event, determinations for the direction and gradient of groundwater flow.

The groundwater monitoring network shall include one or more background monitoring wells and sufficient number of designated monitoring wells to evaluate performance of BPTC measures and determine if the discharge has degraded groundwater. These include monitoring wells immediately downgradient of every treatment, storage, and disposal unit that does or may release waste constituents to groundwater with the exception of wastewater reclamation areas to which the Discharger applies effluent. The need for monitoring wells at reclamation areas will be determined on a case-by-case basis by Regional Board staff but shall not be less than three. All wells shall comply with 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 existing well network will be evaluated, and the proposed network should include existing monitoring wells where they will serve to measure compliance or provide other relevant information (e.g., depth to groundwater). The Discharger shall install approved monitoring wells, properly destroy ineffective wells, and commence groundwater monitoring in accordance with this Order's Monitoring and Reporting Program. After the first sampling event, the Discharger shall report on its sampling protocol as specified in this Order's Monitoring and Reporting Program (MRP).

After one year of monitoring, the Discharger shall characterize natural background quality of monitored constituents in a technical report. 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 BPTC and minimizing the discharge's impact on groundwater quality. In no case shall the discharge be allowed to cause the groundwater to exceed a water quality objective. Where treatment system deficiencies are documented, the technical report shall provide recommendations for necessary modifications (e.g., new or revised salinity source control measures, WWTF component upgrade and retrofit) to achieve BPTC and identify the

source of funding and proposed schedule for modifications for achieving full compliance prior to expiration of this Order. This Order may be reopened and additional groundwater limitations added.

9. The Discharger shall use the best practicable treatment or control technique currently available to limit mineralization to no more than a reasonable increment.
10. 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".
11. 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".
12. The Discharger shall comply with Monitoring and Reporting Program No. 2002-0208, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.

When requested by U.S. EPA, 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.

13. Monitoring Reporting Program No. R5-2002-0208, which is part of this permit, requires that certain parameters be monitored on a continuous basis. The wastewater treatment plant is not staffed on a full time basis. Permit violations or system upsets can go undetected during periods when the plant is not staffed. The Discharger is required to establish an electronic system for operator notification for continuous recording device alarms. For treatment systems installed following permit adoption, the notification system shall be installed simultaneously.
14. In the event the Discharger does not comply with an effluent limitation or receiving water limitation of this Order, the Discharger shall resample for the specific constituent for which the limitation was exceeded. The Discharger shall continue sampling at an increased frequency sufficient to determine the duration and severity of the violation. The frequency for constituents sampled using 24-hour composites on a 7-day a week schedule are exempted. This information shall be compiled in a written notification, which shall state nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the noncompliance and, prevent recurrence. All permit violations must be reported to the Regional Board by telephone (916) 255-3000 within 24 hours of having knowledge of such noncompliance.

15. Minimum detection levels for monitoring required by this Order shall be adequate to demonstrate compliance with permit limitations.
16. This Order expires on **31 December 2007** and the Discharger must file a Report of Waste Discharge in accordance with California Code of Regulations, Title 23, 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.
17. 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.
18. 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, or cause a violation of this Order, or
 - c. Prevent sludge use or disposal in accordance with this Order.
19. 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 Water Resources Control Board (Division of Water Rights).
 20. 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 California Water Code. 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 **6 December 2002**.

THOMAS R. PINKOS, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2002-0208

NPDES NO. CA0079341
FOR
PLACER COUNTY SERVICE AREA NO. 28, ZONE NO. 6
SHERIDAN WASTEWATER TREATMENT PLANT
PLACER COUNTY

This Monitoring and Reporting Program is issued pursuant to Water Code Section 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 Regional Board's staff, and a description of the stations shall be attached to this Order.

INFLUENT MONITORING

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

| <u>Constituents</u> | <u>Units</u> | <u>Type of Sample</u> | <u>Sampling Frequency</u> |
|-----------------------------------|---------------|-----------------------|---------------------------|
| 20°C BOD ₅ | mg/l, lbs/day | Grab | Weekly |
| Total Suspended Solids | mg/l, lbs/day | Grab | Weekly |
| Flow | mgd | Totalizer | Continuous |
| Electrical Conductivity @ 25°C | µmhos/cm | Grab | Monthly |

EFFLUENT MONITORING

Effluent samples shall be collected downstream from the last connection through which wastes can be admitted into the outfall, following the last unit process. Effluent samples should be representative of the volume and quality of the discharge. Samples collected from the outlet structure of the dechlorination facilities following ponds will be considered adequately composited. Time of collection of samples shall be recorded. Effluent monitoring while discharging to surface waters shall include at least the following:

| <u>Constituents</u> | <u>Units</u> | <u>Type of Sample</u> | <u>Sampling Frequency</u> |
|-----------------------------------------|------------------------------|-----------------------|---------------------------|
| Flow | mgd | Meter | Continuous |
| Total Residual Chlorine | mg/l, lbs/day | Meter | Continuous ¹² |
| pH | pH Units | Grab | Daily |
| Temperature | °F (°C) | Grab | Daily |
| Total Coliform Organisms ¹ | MPN/100 ml | Grab | 3 Times Weekly |
| Ammonia ^{2,3,4,5,13} | mg/l, lbs/day (as N) | Grab | 3 Times Weekly |
| 20°C BOD ₅ | mg/l, lbs/day | Grab | 3 Times Weekly |
| Total Suspended Solids | mg/l, lbs/day | Grab | 3 Times Weekly |
| Settleable Solids | ml/l | Grab | Daily |
| Electrical Conductivity @ 25°C | µmhos/cm | Grab | Weekly |
| Nitrate + Nitrite ¹³ | mg/l, lbs/day (as N) | Grab | Weekly |
| Nitrite ¹³ | mg/l, lbs/day (as N) | Grab | Weekly |
| Aluminum ¹³ | µg/l | Grab | Monthly |
| Hardness | mg/l (as CaCO ₃) | Grab | Monthly |
| Copper ¹³ | µg/l | Grab | Monthly |
| Iron ¹³ | µg/l | Grab | Monthly |
| Manganese ¹³ | µg/l | Grab | Monthly |
| Zinc ¹³ | µg/l | Grab | Monthly |
| Organochlorine Pesticides ¹³ | µg/l | Grab | Monthly |
| Cyanide ¹³ | µg/l | Grab | Monthly |
| Total Dissolved Solids | mg/l | Grab | Quarterly |
| Acute Toxicity ^{6,7} | % Survival | Grab | Annually |

¹ Total coliform organisms samples 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(s) in the monthly self-monitoring reports.

² Report as total ammonia.

³ Concurrent with biotoxicity monitoring.

⁴ In reporting lbs/day, the Discharger shall report both the lbs/day discharged and the calculated lbs/day limitation.

⁵ Temperature and pH shall be recorded at the time of ammonia sample collection.

| <u>Constituents</u> | <u>Units</u> | <u>Type of Sample</u> | <u>Sampling Frequency</u> |
|------------------------------------|--------------|------------------------------|---------------------------|
| Priority Pollutants ^{8,9} | mg/l | As Appropriate ¹⁰ | Once ¹¹ |

⁶ The acute bioassay samples shall be analyzed using EPA/600/4-90/027F, Fourth Edition, or later amendment with Board staff approval. Temperature and pH shall be recorded at the time of bioassay sample collection. Test species shall be fathead minnows (*Pimephales promelas*), with no pH adjustment unless approved by the Executive Officer.

⁷ Concurrent with ammonia monitoring.

⁸ All peaks are to be reported, along with any explanation provided by the laboratory.

⁹ Priority Pollutants is defined as U.S. EPA priority toxic pollutants and consists of the constituents listed in the most recent National Toxics Rule and California Toxics Rule. If the Discharger elects land disposal, this monitoring requirement can be eliminated upon the approval of the Executive Director.

¹⁰ Volatile samples shall be grab samples; the remainder shall be flow proportional 24-hour composite samples.

¹¹ Hardness, pH, and temperature data shall be collected at the same time and on the same date as the Priority Pollutant samples, which shall be sampled once during the life of the permit.

¹² Continuous chlorine residual monitoring to begin 30 August 2006.

¹³ Monitoring frequency shall be monthly when discharging.

If the discharge 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.

RECLAMATION AND LAND DISPOSAL AREA MONITORING

Application of wastewater to the land application area shall be monitored to prevent overloading the area with wastewater constituents that can cause groundwater degradation. The following parameters shall be sampled and reported in the monthly monitoring reports.

| <u>Constituents</u> | <u>Units</u> | <u>Type of Sample</u> | <u>Frequency</u> |
|------------------------|-------------------|-----------------------|------------------|
| Flow | mgd | Meter | Daily |
| Application Area | acres | Measured | Daily |
| Hydraulic Loading Rate | inches/acre/month | Calculated | Daily |
| 20°C BOD | mg/l | Grab | Twice Weekly |
| Suspended Solids | mg/l | Grab | Twice Weekly |
| Settleable Solids | mg/l | Grab | Twice Weekly |
| pH | pH units | Grab | Twice Weekly |

In addition, the Discharger shall maintain a log of discharges to the land application area. Notations shall be made in a bound logbook record which checks the receiving wastewater, and observations of ponding water, soil clogging, odors, insects, or other potential nuisance conditions. The notations shall also document any corrective actions taken. A copy of the entries made in the log during each month shall be submitted along with monthly monitoring reports.

POND MONITORING

The following shall constitute the wastewater monitoring program:

| <u>Constituents</u> | <u>Units</u> | <u>Type of Sample</u> | <u>Frequency</u> |
|--------------------------------|--------------|-----------------------|------------------|
| Freeboard | Feet | -- | Monthly |
| Electrical Conductivity @ 25°C | µmhos/cm | Grab | Monthly |
| Dissolved Oxygen | mg/l | Grab | Monthly |
| Odor | -- | -- | Monthly |

RECEIVING WATER MONITORING

Receiving water monitoring is required only during periods of discharge. All receiving water samples shall be grab samples. Receiving water monitoring shall include at least the following:

| <u>Station</u> | <u>Description</u> |
|----------------|----------------------------------------------------------------------------|
| R-1 | Yankee Slough, 50 feet upstream from the point of discharge ¹ |
| R-2 | Yankee Slough, 50 feet downstream from the point of discharge ¹ |
| R-3 | Discharge ditch |

¹ Location may be changed upon Executive Officer's Approval

| <u>Constituents</u> | <u>Units</u> | <u>Station</u> | <u>Sampling Frequency</u> |
|-------------------------------|------------------------------------------------|----------------|---------------------------|
| Flow | cfs or mgd | R-1, R-3 | Continuous |
| Dissolved Oxygen | mg/l ¹ % saturation ² | R-1, R-2, R-3 | Weekly |
| pH | pH Units | R-1, R-2, R-3 | Weekly |
| Turbidity | NTU | R-1, R-2, R-3 | Weekly |
| Temperature | °F (°C) | R-1, R-2, R-3 | Weekly |
| Electrical Conductivity @25°C | µmhos/cm | R-1, R-2, R-3 | Weekly |
| Fecal Coliform Organisms | MPN/100 ml | R-1, R-2, R-3 | Quarterly |
| Radionuclides | pCi/l ³ | R-1, R-2, R-3 | Annually |

¹ Temperature shall be determined at the time of sample collection for use in determining saturation concentration. Any additional factors or parameters used in determining saturation concentration shall also be reported.

² Report both percent saturation and saturation concentration.

³ pCi/l = picocuries per liter

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Stations R-1 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 the receiving water. The testing shall be conducted as specified in EPA 600/4-91/002. Chronic toxicity samples shall be collected from the effluent of the wastewater treatment plant, after the last unit process, prior to its entering the receiving stream. Twenty-four hour composite samples shall be representative of the volume and quality of the discharge. Time of collection of samples shall be recorded. Control waters shall be obtained immediately upstream of the discharge from an area unaffected by the discharge in the receiving waters. The sensitivity of the test organisms to a reference toxicant shall be determined concurrently with each bioassay and reported with the test results. Monthly laboratory reference toxicant tests may be substituted. 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: Once per year

Dilution Series: None—tests shall be conducted using 100% effluent.

GROUNDWATER MONITORING

Groundwater monitoring shall consist of at least the following:

| <u>Constituents</u> | <u>Units</u> | <u>Type of Sample</u> | <u>Sampling Frequency</u> |
|--------------------------|--------------|-----------------------|---------------------------|
| pH | Number | Meter | Quarterly |
| Temperature | °F | Grab | Quarterly |
| Total Coliform Organisms | MPN/100 ml | Grab | Quarterly |

| <u>Constituents</u> | <u>Units</u> | <u>Type of Sample</u> | <u>Sampling Frequency</u> |
|--------------------------------|--------------|-----------------------|---------------------------|
| Electrical Conductivity @ 25°C | µmhos/cm | Grab | Quarterly |
| Nitrate | mg/l (as N) | Grab | Quarterly |

SLUDGE MONITORING

A composite sample of sludge shall be collected when sludge is removed from the ponds for disposal in accordance with U.S. EPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989, and tested for the metals listed in Title 22.

Sampling records shall be retained for a minimum of five years. A log shall be kept of sludge quantities generated and of handling and disposal activities. The frequency of entries is discretionary; however, the log should be complete enough to serve as a basis for part of the annual report.

Upon removal of sludge, the Discharger shall submit characterization of sludge quality, including sludge percent solids and quantitative results of chemical analysis for the priority pollutants listed in 40 CFR 122 Appendix D, Tables II and III (excluding total phenols). All sludge samples shall be a composite of a minimum of twelve (12) discrete samples taken at equal time intervals over 24 hours. Suggested methods for analysis of sludge 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". Recommended analytical holding times for sludge samples should reflect those specified in 40 CFR 136.6.3(e). Other guidance is available in U.S. EPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989.

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:

| <u>Constituents</u> | <u>Units</u> | <u>Sampling Frequency</u> |
|--------------------------------|--------------|---------------------------|
| Electrical Conductivity @ 25°C | µmhos/cm | Annually |
| Total Dissolved Solids | mg/l | Annually |

If the water supply is from more than one source, the monitoring report shall report the electrical conductivity and total dissolved solids results as a weighted average and include copies of supporting calculations.

REPORTING

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

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 clearly illustrate whether the discharge complies with waste discharge requirements. Monthly maximums, minimums, and averages shall be reported for each monitored constituent and parameter. Removal efficiencies (%) for biochemical oxygen demand and total suspended solids and all periodic averages and medians for which there are limitations shall also be calculated and reported.

The Discharger shall report minimum levels and method detection limits as defined in and required by the SIP.

With the exception of flow, all constituents monitored on a continuous basis (metered), shall be reported as daily maximums, daily minimums, and daily averages; flow shall be reported as the total volume discharged per day for each day of discharge. The duration of excursions outside of limitations shall be reported.

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 **1 February** 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

6 December 2002
(Date)

**Temperature- and pH-Dependent Effluent Limits for Ammonia
 Criterion Continuous Concentration, Maximum Average Monthly Concentration**

| Ammonia Concentration Limitation (mg N/l) | | | | | | | | | | |
|--------------------------------------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Temperature, °C (°F) | | | | | | | | | | |
| pH | 0 (32) | 14 (57) | 16 (61) | 18 (64) | 20 (68) | 22 (72) | 24 (75) | 26 (79) | 28 (82) | 30 (86) |
| 6.5 | 6.67 | 6.67 | 6.06 | 5.33 | 4.68 | 4.12 | 3.62 | 3.18 | 2.80 | 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 | 3.00 | 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 |

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

Where: CCC= criteria continuous concentration
 T= temperature in degrees Celsius (°C)

pH-Dependent Effluent Limits for Ammonia
Criterion Maximum Concentration, Maximum 1-hour Average

| pH | Ammonia Concentration Limit (mg N/l) |
|-----|--------------------------------------|
| 6.5 | 32.6 |
| 6.6 | 31.3 |
| 6.7 | 29.8 |
| 6.8 | 28.0 |
| 6.9 | 26.2 |
| 7.0 | 24.1 |
| 7.1 | 21.9 |
| 7.2 | 19.7 |
| 7.3 | 17.5 |
| 7.4 | 15.3 |
| 7.5 | 13.3 |
| 7.6 | 11.4 |
| 7.7 | 9.64 |
| 7.8 | 8.11 |
| 7.9 | 6.77 |
| 8.0 | 5.62 |
| 8.1 | 4.64 |
| 8.2 | 3.83 |
| 8.3 | 3.15 |
| 8.4 | 2.59 |
| 8.5 | 2.14 |
| 8.6 | 1.77 |
| 8.7 | 1.47 |
| 8.8 | 1.23 |
| 8.9 | 1.04 |
| 9.0 | 0.885 |

$$CMC_{salmonids\ present} = \left(\frac{0.275}{1 + 10^{7.204 - pH}} + \frac{39.0}{1 + 10^{pH - 7.204}} \right)$$

Where: CMC= criteria maximum concentration

CALIFORNIA TOXICS RULE AND USEPA NATIONAL RECOMMENDED WATER QUALITY CRITERIA TO PROTECT
 FRESHWATER AQUATIC LIFE

COPPER (Expressed as dissolved metal)

| Hardness (mg/l as CaCO ₃) | Continuous Conc. 4-Day Avg. (µg/l) ¹ | Maximum Conc. 1-hour Avg. (µg/l) ² |
|------------------------------------------|----------------------------------------------------|--------------------------------------------------|
| <25 | Must Calculate | Must Calculate |
| 25 | 2.7 | 3.6 |
| 30 | 3.2 | 4.3 |
| 35 | 3.7 | 5.0 |
| 40 | 4.1 | 5.7 |
| 45 | 4.5 | 6.3 |
| 50 | 5.0 | 7.0 |
| 55 | 5.4 | 7.7 |
| 60 | 5.8 | 8.3 |
| 65 | 6.2 | 9.0 |
| 70 | 6.6 | 9.6 |
| 75 | 7.0 | 10 |
| 80 | 7.4 | 11 |
| 85 | 7.8 | 12 |
| 90 | 8.2 | 12 |
| 95 | 8.6 | 13 |
| 100 | 9.0 | 13 |
| 110 | 9.7 | 15 |
| 120 | 11 | 16 |
| 130 | 11 | 17 |
| 140 | 12 | 19 |
| 150 | 13 | 20 |
| 160 | 13 | 21 |
| 170 | 14 | 22 |
| 180 | 15 | 23 |
| 190 | 16 | 25 |
| 200 | 16 | 26 |
| 210 | 17 | 27 |
| 220 | 18 | 28 |
| 230 | 18 | 30 |
| 240 | 19 | 31 |
| 250 | 20 | 32 |
| 260 | 20 | 33 |
| 270 | 21 | 34 |
| 280 | 22 | 36 |
| 290 | 22 | 37 |
| 300 | 23 | 38 |
| 310 | 24 | 39 |
| 320 | 24 | 40 |
| 330 | 25 | 41 |
| 340 | 26 | 43 |
| 350 | 26 | 44 |
| 360 | 27 | 45 |
| 370 | 27 | 46 |
| 380 | 28 | 47 |
| 390 | 29 | 48 |
| 400 | 29 | 50 |
| >400 | 29 | 50 |

¹ Criteria Continuous Concentration (4-day Average) =
 $(e^{0.8545[\ln(\text{hardness})] - 1.702}) \times (0.960)$

² Criteria Maximum Concentration (1-hour Average) =
 $(e^{0.9422[\ln(\text{hardness})] - 1.700}) \times (0.960)$

ZINC (Expressed as dissolved metal)

| Hardness (mg/l as CaCO ₃) | Continuous Conc. 4-Day Avg. (µg/l) ¹ | Maximum Conc. 1-hour Avg. (µg/l) ² |
|------------------------------------------|----------------------------------------------------|--------------------------------------------------|
| <25 | Must Calculate | Must Calculate |
| 25 | 36 | 36 |
| 30 | 43 | 43 |
| 35 | 49 | 48 |
| 40 | 54 | 54 |
| 45 | 60 | 60 |
| 50 | 66 | 65 |
| 55 | 71 | 71 |
| 60 | 77 | 76 |
| 65 | 82 | 81 |
| 70 | 87 | 87 |
| 75 | 93 | 92 |
| 80 | 98 | 97 |
| 85 | 100 | 100 |
| 90 | 110 | 110 |
| 95 | 110 | 110 |
| 100 | 120 | 120 |
| 110 | 130 | 130 |
| 120 | 140 | 140 |
| 130 | 150 | 150 |
| 140 | 160 | 160 |
| 150 | 170 | 170 |
| 160 | 180 | 180 |
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| 310 | 310 | 310 |
| 320 | 320 | 320 |
| 330 | 320 | 320 |
| 340 | 330 | 330 |
| 350 | 340 | 340 |
| 360 | 350 | 350 |
| 370 | 360 | 360 |
| 380 | 370 | 370 |
| 390 | 370 | 370 |
| 400 | 380 | 380 |
| >400 | 380 | 380 |

¹ Criteria Continuous Concentration (4-day Average) = $(e^{0.8473[\ln(\text{hardness})]} + 0.884) \times (0.986)$

² Criteria Maximum Concentration (1-hour Average) = $(e^{0.8473[\ln(\text{hardness})]} + 0.884) \times (0.978)$

FACT SHEET

ORDER NO. R5-2002-0208
PLACER COUNTY SERVICE AREA NO. 28, ZONE NO. 6
SHERIDAN WASTEWATER TREATMENT PLANT
PLACER COUNTY
NPDES NO. CA0079341

SCOPE OF PERMIT

This renewed Order regulates the discharge of up to 0.06 million gallons per day (mgd), design average dry weather flow (ADWF), of effluent from the Placer County Service Area No. 28, Zone No. 6 and Mary Louise Morrison, Trustee-Sheridan Wastewater Treatment Plant (WWTP). This Order includes effluent, sludge, groundwater and surface water limitations, monitoring and reporting requirements, additional study requirements, and reopener provisions for effluent constituents.

BACKGROUND INFORMATION

The Placer County Service Area No. 28, Zone No. 6 owns and operates a wastewater collection, treatment, and disposal system, and provides sewerage service to the community of Sheridan with approximately 220 residences. Treated municipal wastewater is discharged an unnamed drainage ditch which is tributary to Yankee Slough and the Bear River.

The treatment system consists of an unlined aeration pond; two unlined settling ponds, and chlorination. The system does not currently have the facilities to dechlorinate. This Order requires that wastewater be dechlorinated before resuming a surface water discharge. Chlorinated secondary effluent is spray irrigated to 29 acres of pasture, 9 acres owned by Placer County and 20 acres owned by Mary Louise Morrison. The Discharger maximizes the use of land disposal, but during wet winters discharges secondary disinfected effluent to a ditch that drains to Yankee Slough to protect the wastewater ponds from overtopping. The treatment facilities were originally designed to dispose of wastewater by evaporation and percolation. The wastewater flow rates, reportedly due to infiltration and inflow (I/I) exceed the design capacity of the system. Due to the hydraulic capacity problem, the community, in 1985, implemented a self-imposed connection ban that remains in effect. Rather than expanding the land disposal facility, the Discharger applied for an NPDES permit to discharge excess wastewater to surface water during wet weather periods. An NPDES permit was originally issued in 1988. This Order contains significant new limitations based on the California Toxics Rule (CTR) and on protecting the beneficial uses of the receiving stream. The Discharger is now proposing to provide additional land for disposal and to eliminate the discharge of wastewater to surface water. This Order contains compliance time schedules to eliminate the surface water discharge, as proposed by the discharger, and maintain all wastewater on land or achieve tertiary treatment and comply with the new surface water discharge limitations of this Order.

The Basin Plan at 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. The beneficial uses of any specifically identified water body generally apply to its tributary streams.” The unnamed drainage ditch and Yankee Slough are in the Bear River hydrologic area (515.1) in the Sacramento Hydrologic Basin. The Basin

Plan does not specifically identify the beneficial uses of the unnamed drainage ditch and Yankee Slough. The unnamed drainage ditch is tributary to Yankee Slough, which is tributary to the Bear River. The Bear River is the first body of water downstream of the unnamed drainage ditch and Yankee Slough for which the Basin Plan has identified existing and potential beneficial uses. The beneficial uses of the Bear River, as identified in Table II-1 of the Basin Plan, are municipal and domestic supply; agricultural irrigation, agricultural stock watering, hydropower generation, body contact water recreation, canoeing and rafting, non-contact water recreation, warm freshwater aquatic habitat, cold freshwater aquatic habitat, potential warm fish migration habitat, potential cold fish migration habitat, potential warm spawning habitat, potential cold spawning habitat, and wildlife habitat. Other beneficial uses identified in the Basin Plan apply to the unnamed drainage ditch and Yankee Slough, including groundwater recharge and freshwater replenishment. The Basin Plan states, on page II-1.00, "Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning..." and with respect to disposal of wastewater 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." Upon review of the flow conditions, habitat values, and beneficial uses of the unnamed drainage ditch and Yankee Slough, and based upon hydraulic continuity, aquatic life migration and existing and potential water rights, the Regional Board finds that the beneficial uses identified in the Basin Plan for the Bear River, are applicable to the unnamed drainage ditch and Yankee Slough.

In addition, the Basin Plan states that "*Water Bodies within the basins that do not have beneficial uses designated in Table II-1 are assigned MUN designations in accordance with the provisions of State Water Board Resolution No. 88-63 which is, by reference, a part of this Basin Plan.*" State Water Resources Control Board Resolution No. 88-63 "Sources of Drinking Water" provides that "*All surface and ground waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Boards with...*" certain exceptions. In addition to application of domestic and municipal beneficial uses of the unnamed drainage ditch and Yankee Slough by the tributary rule, the MUN designation is applied in accordance with Resolution No. 88-63.

The beneficial uses identified in the Basin Plan for the Bear River are applicable to the unnamed drainage ditch and Yankee Slough based upon the following:

a. *Municipal and Domestic Supply*

The State Water Resources Control Board (SWRCB) has recorded water rights for irrigation uses of Yankee Slough and the Bear River downstream of the discharge. Riparian domestic uses, for landowners along streams and rivers, may also exist and may not be recorded as water rights with the SWRCB.

The unnamed drainage ditch and Yankee Slough are low-flow streams and may provide groundwater recharge during periods of low flow. Groundwater is a designated source of drinking and irrigation water.

b. *Water Contact and Noncontact Recreation (including canoeing, rafting, and aesthetic enjoyment)*

The Regional Board finds that the discharge flows through areas where there is public access to the unnamed drainage ditch, Yankee Slough and the Bear River. Exclusion from the waterways of adjoining property owners and the public is unrealistic.

c. *Warm and Cold Freshwater Habitats (including preservation or enhancement of fish and invertebrates) and Wildlife Habitat*

The unnamed drainage ditch flows to Yankee Slough which flows to the Bear River. The Basin Plan (Table II-1) designates the Bear River as being both a cold and warm freshwater habitat. The warm and cold freshwater habitat designations applied to the Bear River are also appropriate for the unnamed drainage ditch and Yankee Slough since the California Department of Fish and Game has recorded the presence of trout, salmon and steelhead in the Bear River and there are no barriers which would restrict migration upstream. The cold freshwater habitat designation requires that the discharge not cause the in-stream dissolved oxygen concentration to drop below 7.0 mg/l. Additionally, Yankee Slough has a warm water habitat that includes catfish, largemouth bass and green sunfish.

d. *Groundwater Recharge*

In areas where groundwater elevations are below the stream bottom, water from the stream will percolate to groundwater. During dry weather in many places in California, flowing streams experience these conditions, thus providing groundwater recharge. Groundwater provides a source of municipal and irrigation water supply.

e. *Freshwater Replenishment*

When water is present in the unnamed drainage ditch and Yankee Slough, there is hydraulic continuity to the Bear River. The unnamed drainage ditch and Yankee Slough contribute to the quantity and may impact the quality of the water in the Bear River.

Based on the available information and on the Discharger's permit renewal application, that the unnamed drainage ditch and Yankee Slough, absent the discharge from the wastewater treatment plant, are low-flow streams. The low-flow nature of the unnamed drainage ditch and Yankee Slough and the lack of receiving water quality data mean that the designated beneficial uses must be protected, and no credit for receiving water assimilative capacity is available for some constituents. Although the discharge, at times, maintains the aquatic habitat, constituents may not be discharged that may cause harm to aquatic life. Flows within the unnamed drainage ditch and Yankee Slough may help support cold-water aquatic life. The lack of significant dilution results in more stringent effluent limitations to protect contact recreational uses and aquatic life and to meet agricultural water quality goals.

The beneficial uses of the unnamed drainage ditch, Yankee Slough and the Bear River include contact recreation uses and irrigation. To protect these beneficial uses, 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 recreational and food crop irrigation uses. The California Department of Health Services (DHS) 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/100 ml as a 7-day median. Title 22 is not directly applicable to surface water discharges; however, the Regional Board finds that it is appropriate to apply DHS's reclamation criteria because Yankee Slough and the Bear River are used for irrigation of agricultural land and for contact recreation purposes.

The DHS has recommended that providing a surface water dilution ratio, of at least twenty to one, for secondary effluent is equivalently protective of the beneficial uses and the public's health as providing tertiary treatment. Flows in the unnamed drainage ditch cannot provide a twenty to one dilution ratio. The Discharger had originally proposed to pipe the wastewater from the wastewater treatment system to Yankee Slough, but has withdrawn the proposal. The beneficial uses of both Yankee Slough and the unnamed ditch, which lies between the wastewater facility and Yankee Slough, are not protected until tertiary treatment is provided.

Until tertiary treatment can be provided to protect the site-specific beneficial uses of the receiving stream, the federal Clean Water Act, Section 301, requires that all municipal wastewater discharges to surface water be treated, at a minimum, to a "secondary" level. A measurement of achieving secondary treatment is that BOD and TSS levels are reduced to below 30 mg/l as a monthly average. Federal Regulations, 40 CFR 133, allow BOD and TSS effluent concentrations to be adjusted to 45 mg/l for waste stabilization pond systems to account for algae growth in the ponds, which is not of wastewater origins. Any adjustments to the BOD and TSS limitations, in accordance with 40 CFR 133, requires "proper operation and maintenance" for pond systems. An overflow, due to inadequate capacity, does not represent "proper operation and maintenance". The Report of Waste Discharge and sampling results provided by the discharger show that past discharges to surface waters have exceeded 45 mg/l for TSS. The wastewater treatment facility is hydraulically overloaded. There is no sampling method to determine if the excess solids are of wastewater origin or due to algae. Federal Regulations, 40 CFR 133 requires that pond systems provide "significant biological treatment". Under high flow conditions, the wastewater treatment may not have sufficient capacity to provide "significant biological treatment" and achieve a secondary level of treatment.

Untreated domestic wastewater contains solids. One measurement of solid material in sewage is total suspended solids (TSS). Excess solids contain waste materials including toxic constituents, oxygen

demanding substances, causing oxygen depletion, and pathogens which interfere with disinfection. The Discharger has violated the total suspended solids limitations of the existing permit. Recent sampling results for March 2002 show the total suspended solids discharged from the ponds to surface waters were 71 mg/l, 69.5 mg./l and 70 mg/l. The effluent limitations for total suspended solids are 45 mg/l (monthly average), 60 mg/l (weekly average) and 90 mg/l (daily maximum). The BOD and TSS levels have been established at 30 mg/l and 45 mg/l respectively, as monthly averages, in the existing permit. The BOD and TSS limitations have been maintained in this Order as interim limits until tertiary treatment can be provided or the surface water discharge eliminated. The BOD and TSS limitations are modified from the traditional secondary limitations of 30 mg/l as a thirty day average in accordance with Federal Regulations, 40 CFR 133.105. The system is not capable of meeting the interim TSS limitations.

The Discharger currently maximizes the use of land disposal and discharges to Yankee Slough during the winter, as necessary due to high wet weather flows. The existing permit limits the discharge to Yankee Slough from November to March. This permit requires the Discharger maximize land disposal.

The discharge limitations in the current permit establish coliform limits at 23 MPN/100 ml as a 30-day median. The recommendation from DHS for the level of coliform produced by a disinfected secondary wastewater system is 23 MPN/100 ml as a 7-day median. The discharge may not be capable of meeting the 7-day median coliform limitations without physical or operational modifications.

The Basin Plan prohibits the discharge of toxic materials in toxic concentrations. The Discharger uses chlorine for disinfection of the effluent waste stream. Chlorine can cause toxicity to aquatic organisms when discharged to surface waters. The use of chlorine as a disinfectant presents a reasonable potential that it could be discharged to surface waters in toxic concentrations. U.S. EPA recommends, in its Ambient Water Quality Criteria for the Protection of Fresh Water Aquatic Life, maximum 1-hour average (0.02 µg/l) and 4-day average (0.02 µg/l) chlorine concentrations. Effluent Limitations for chlorine have been included in this Order to protect the receiving stream aquatic life beneficial uses. The effluent limitations have been established at the ambient water quality criteria, without benefit of dilution, for chlorine since the unnamed drainage ditch and Yankee Slough are low-flow streams. The Discharger has the ability, with the addition of a dechlorination facility and proper operation of the wastewater treatment system, to dechlorinate the discharge and comply with the chlorine limitations. The Discharger has the capability of installing a temporary dechlorination system to meet the discharge limitations for chlorine. A temporary system can quickly be installed to add a dechlorination chemical. This Order requires immediate compliance with the chlorine limitations and installation of continuous residual chlorine monitoring device for surface water discharges. The continuous chlorine residual monitoring device has been required since the wastewater treatment facility is only staffed part time and a continuous recording device, with an alarm system, can alert operators to a problem with the system and minimize or eliminate toxic discharges.

Untreated domestic wastewater contains ammonia. Nitrification is a biological process that converts ammonia to nitrite and nitrite to nitrate. Denitrification is a process that converts nitrate to nitrogen gas, which is then released to the atmosphere. Wastewater treatment plants commonly use nitrification to

remove ammonia from the waste stream. Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving stream. Ammonia is known to cause toxicity to aquatic organisms in surface waters. The Basin Plan prohibits the discharge of toxic materials in toxic concentrations. Nitrite and nitrate are known to cause adverse health effects in humans. The Basin Plan prohibits the discharge of chemical constituents in concentrations that adversely affect beneficial uses. Domestic water supply is a beneficial use of the unnamed drainage ditch, Yankee Slough and the Bear River. U.S. EPA has developed Drinking Water Standards for the protection of human health for nitrite and nitrate and Ambient Water Quality Criteria for ammonia. There is no indication that assimilative capacity exists in the receiving stream for the ammonia, nitrates or nitrites. The discharge from the Sheridan Wastewater Treatment Plant has a reasonable potential to cause or contribute to an in-stream excursion above water quality standards or objectives for ammonia, nitrite, and nitrate. Effluent limitations for ammonia, nitrite, and nitrate are included in this Order to assure the treatment process adequately nitrifies and denitrifies the waste stream to protect the beneficial uses of the receiving stream and to prevent aquatic toxicity. The system may not be capable of meeting the ammonia, nitrite and nitrate limitations without physical or operational modifications.

The Basin Plan prohibits the discharge of toxic materials in toxic concentrations. Based on information included in analytical laboratory reports 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. Aluminum was detected in an effluent sample collected 10 April 2001 at a concentration of 133 $\mu\text{g/l}$ and 17 February 1999 at a concentration of 160 $\mu\text{g/l}$. The wastewater discharge is to an unnamed ditch, which is tributary to Yankee Slough. The Discharger did not sample the unnamed ditch for aluminum. Yankee Slough showed a concentration of 314 $\mu\text{g/l}$ on 10 April 2001. Based on this sampling, there is no assimilative capacity for aluminum in Yankee Slough and there is no information regarding assimilative capacity in the unnamed ditch. U.S. EPA developed National Recommended Ambient Water Quality Criteria for protection of freshwater aquatic life for aluminum. The recommended continuous concentration (maximum four-day average concentration) is 87 $\mu\text{g/l}$ and the recommended maximum concentration (maximum one-hour average concentration) is 750 $\mu\text{g/l}$. Effluent limitations for aluminum are included in the Order, based on preventing toxicity.

Based on analytical results of effluent samples collected by the Discharger, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the *CTR* standards for copper. Copper was detected 17 February 1999 at a concentration of 230 $\mu\text{g/l}$. The *CTR* limitation for copper is hardness dependent. Sheridan's effluent hardness was shown to be 81 mg/l on 17 February 1999. At a hardness of 81 mg/l , the *CTR* acute criteria is 7.4 $\mu\text{g/l}$ and the chronic limit is 11 $\mu\text{g/l}$. The State Implementation Plan (SIP) for the *CTR* recommends conversion factors to translate dissolved concentrations to total concentrations. The conversion factors for copper in freshwater are 0.960 for both the acute and the chronic criteria. The effluent limitations for copper are presented in total recoverable concentrations, as required in the *CTR*. The wastewater discharge is to an unnamed ditch, which is tributary to Yankee Slough. The Discharger did not sample the unnamed ditch for copper. The SIP, Section 2.1, allows compliance schedules to be included in NPDES permits, provided that: diligent efforts have been made to quantify the pollutant; there is documentation that source control measures are underway; there is a proposed schedule for achieving compliance, and; the schedule is as short as

practicable. The Discharger has not made diligent efforts to quantify copper and source control measures have not been evaluated, however, the Discharger has proposed to eliminate the surface water discharge, which will achieve compliance with the limitation in a reasonable time period. A compliance time schedule for copper is included in the Order.

Based on information included in analytical laboratory reports submitted by the Discharger, iron the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a level necessary to protect drinking water. Municipal and domestic water supply is a beneficial use of the receiving water as discussed in the above Findings. Iron was detected in an effluent sample collected 10 April 2001 at a concentration of 274 $\mu\text{g/l}$ and 17 February 1999 at a concentration of 570 $\mu\text{g/l}$. The receiving stream, Yankee Slough showed a concentration of 983 $\mu\text{g/l}$ on 10 April 2001. The wastewater discharge is to an unnamed ditch, which is tributary to Yankee Slough. The Discharger did not sample the unnamed ditch for iron. U.S. EPA and California have developed a Drinking Water Secondary MCL for iron of 300 $\mu\text{g/l}$. The receiving stream has no assimilative capacity for iron. An Effluent limitation of 300 $\mu\text{g/l}$ for iron is included in the Order, based on protection of the municipal and domestic beneficial use of the receiving stream.

Manganese was detected in effluent samples, collected 10 April 2001, at a concentration of 213 $\mu\text{g/l}$, and 17 February 1999, at a concentration of 460 $\mu\text{g/l}$. Yankee Slough had a manganese concentration of 119 $\mu\text{g/l}$ on 10 April 2001. The wastewater discharge is to an unnamed ditch, which is tributary to Yankee Slough. The Discharger did not sample the unnamed ditch for manganese. U.S. EPA and California have developed a Drinking Water Secondary MCL's for manganese of 50 $\mu\text{g/l}$. The Agricultural Water Quality Goal for Manganese is 200 $\mu\text{g/l}$. U.S. EPA's Ambient Water Quality Criteria the Protection of Freshwater Aquatic Life, for human health and welfare for aquatic organism consumption, is 100 $\mu\text{g/l}$. The receiving stream has no assimilative capacity for manganese. Based on information included in analytical laboratory reports submitted by the Discharger, manganese in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a level necessary to protect the beneficial uses of drinking water and agriculture. Effluent limitations for manganese are included in the Order, based on protection of the municipal, domestic and agricultural beneficial uses of the receiving stream.

Alpha and beta hexachlorocyclohexane (alpha and beta BHC) were detected on 10 April 2001 at 0.017 $\mu\text{g/l}$ and 0.093 $\mu\text{g/l}$ respectively. The CTR objectives for alpha and beta hexachlorocyclohexane (alpha and beta BHC) are 0.013 and 0.046 $\mu\text{g/l}$, respectively. Alpha and beta hexachlorocyclohexane (organochlorine pesticides) in the discharge have a reasonable potential to cause or contribute to an in-stream excursion above CTR Standards for organochlorine pesticides. The Basin Plan requires that: no individual pesticides shall be present in concentrations that adversely affect beneficial uses; discharges shall not result in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses; total chlorinated hydrocarbon pesticides shall not be present in the water column at detectable concentrations; and pesticide concentrations shall not exceed those allowable by applicable antidegradation policies. The detection of alpha and beta BHC in the treatment plant effluent presents a reasonable potential to exceed the Basin Plan limitations for organochlorine pesticides. Effluent

Limitations for alpha and beta BHC are included in the Order based on the more stringent Basin Plan Water Quality objective of non-detectable.

Cyanide was detected in an effluent sample collected 10 April 2001 at a concentration of 16 $\mu\text{g}/\text{l}$. The wastewater discharge is to an unnamed ditch, which is tributary to Yankee Slough. The Discharger did not sample the unnamed ditch for cyanide. The CTR includes a water quality standard for cyanide. The continuous concentration (maximum four-day average concentration) is 5.2 $\mu\text{g}/\text{l}$ and the maximum concentration (maximum one-hour average concentration) is 22 $\mu\text{g}/\text{l}$. Effluent limitations for cyanide are included in this Order and are based on the CTR. The SIP, Section 2.1, allows compliance schedules to be included in NPDES permits, provided that: diligent efforts have been made to quantify the pollutant; there is documentation that source control measures are underway; there is a proposed schedule for achieving compliance, and; the schedule is as short as practicable. The Discharger has not made diligent efforts to quantify cyanide and source control measures have not been evaluated, however, the Discharger has proposed to eliminate the surface water discharge, which will achieve compliance with the limitation in a reasonable time period.

Based on analytical results of effluent samples collected by the Discharger, zinc was detected 17 February 1999 at a concentration of 430 $\mu\text{g}/\text{l}$. Zinc was detected in Yankee Slough at a concentration of 2.48 mg/l on April 2001. The wastewater discharge is to an unnamed ditch, which is tributary to Yankee Slough. The Discharger did not sample the unnamed ditch for zinc. The CTR limitation for zinc is hardness dependent. Sheridan's effluent hardness was shown to be 81 mg/l on 17 February 1999. At a hardness of 81 mg/l , the acute criteria would be 98 $\mu\text{g}/\text{l}$ and the chronic limit would be 97 $\mu\text{g}/\text{l}$. The discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR standards for zinc; therefore, effluent limitations for zinc are included in the Order. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. The conversion factors for zinc in freshwater are 0.98 for both the acute and the chronic criteria. The effluent limitations for zinc are presented in total recoverable concentrations, and are based on the CTR. the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR standards for zinc; therefore, effluent limitations for zinc are included in the Order. The Discharger has not made diligent efforts to quantify zinc and source control measures have not been evaluated, however, the Discharger has proposed to eliminate the surface water discharge, which will achieve compliance with the limitation in a reasonable time period.

The beneficial uses of the underlying ground water, as identified in the Basin Plan, are municipal and domestic, industrial service, industrial process, and agricultural supply. The Discharger utilizes unlined ponds for the treatment and disposal of wastewater. Percolation is an intentional method of disposing of wastewater at this facility. The Discharger also uses spray irrigation as the principal method for disposal of wastewater. The Basin Plan contains water quality objectives to protect the beneficial uses of groundwater including numeric, narrative, chemical toxicity and taste and odor objectives. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, or animals. The chemical constituent objective states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use or that exceed the maximum contaminant levels (MCLs) in Title 22, CCR. The

Basin Plan requires the application of the most stringent objective necessary as necessary to ensure that groundwaters 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. State Water Resources Control Board (SWRCB) Resolution No. 68-16 (hereafter Resolution 68-16) requires the Regional Board, in regulating the discharge of wastes, to maintain high quality waters of the State until it is demonstrated that: any change in quality will be consistent with 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 the highest water quality consistent with the maximum benefit to the people of the State be maintained.

Domestic wastewater contains constituents such as total dissolved solids (TDS), specific conductivity, pathogens, nitrates, organics, metals and oxygen demanding substances (BOD). The unlined ponds and disposal fields may percolate, and 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 may be consistent with Resolution 68-16 provided that:

- the degradation is limited in extent;
- 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;
- the Discharger minimizes the degradation by fully implementing, regularly maintaining, and optimally operating best practicable treatment and control (BPTC) measures; and
- the degradation does not result in water quality less than that prescribed in the Basin Plan.

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, 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 No. 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, a BPT assessment is required and 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 pollutant concentration (when compared with background) may not be increased beyond the currently quantified level. If groundwater quality has been or may be degraded by the discharge, the Order may be reopened and specific numeric limitations established consistent with Resolution 68-16 and the Basin Plan.

California Code of Regulations (CCR), Title 22, contains requirements for the use of reclaimed water; this Order implements the requirements of Title 22. CCR Title 22, Section 60304(d) requires that for irrigation of pasture for animals not producing milk for human consumption, wastewater shall be at least "undisinfected secondary recycled water". CCR Title 22, Section 60301.900, defines "undisinfected secondary recycled water" as "oxidized wastewater". CCR Title 22, Section 60301.650, defines "oxidized wastewater" as "...wastewater in which the organic matter has been stabilized, is nonputrescible, and contains dissolved oxygen". Title 22 does not specify effluent concentrations for BOD or TSS in the definition of secondary wastewater. It is generally accepted civil engineering practice that "secondary wastewater" is wastewater that has been treated to achieve 30 mg/l, or less, for both BOD and TSS, as a monthly average. This is confirmed by federal regulations, 40 CFR Part 133, which defines the minimum level of effluent quality attainable by secondary treatment as: the 30-day average BOD and TSS shall not exceed 30 mg/l. The federal regulations regarding secondary treatment are not directly applicable to land disposal and reclamation uses, but are used to define the accepted level of "secondary treatment". As cited in an earlier Finding, 40 CFR Part 133, allows adjustment of the 30-day average BOD and TSS levels to 45 mg/l for waste stabilization ponds. The Discharger's wastewater facility is hydraulically overloaded and, based on sampling submitted as part of the Report of Waste Discharge, is not capable of meeting 30-day average TSS concentrations of 45 mg/l. This Order includes a time schedule requiring compliance with 30-day average discharge limitations for BOD and TSS of 45 mg/l to the reclamation area. The Discharger utilizes spray irrigation as a disposal method. To protect public health, CCR Title 22, Section 60310, contains Use Area Requirements with respect to buffer zones from property lines, wells, irrigation runoff, and mist entering specific areas. The Order requires compliance with CCR Title 22 for reclamation areas. The Discharger maximizes disposal of treated wastewater by spray irrigation. Title 22, Section 60310(e)1, requires any runoff shall be confined to the recycle uses area, unless the runoff does not pose a public health threat and is authorized by the regulatory agency. Any discharge from the spray irrigation fields constitutes a waste discharge and would need to meet effluent and receiving water limitations. This permit requires that tailwater be returned to the treatment or disposal area. The Discharger may utilize the spray irrigation area as a disposal area by eliminating the beneficial reuse of the wastewater, specifically by eliminating cattle grazing and growing fodder crops. Wastewater disposal areas are not subject to Title 22 requirements. Limitations for land wastewater disposal areas are developed to protect water quality. The Order contains limitations for land disposal designed to protect ground and surface water quality.

The disposal of wastewater by spray irrigation to non-reclamation areas is not required to comply with title 22. This Order contains alternative land disposal limitations for spray irrigation of non-reclamation areas. The limitations are included to prevent nuisance and prevent runoff of wastewater to surface waters.

The Discharger utilizes waste stabilization ponds for the treatment and storage of wastewater. Land Discharge Specifications have been included in the permit to assure that the pond does not overflow or cause a nuisance. Land Discharge Specifications have been included in this permit to assure that nuisance conditions do not occur. Nuisance conditions from ponds are typically found when strong odors occur when the dissolved oxygen concentration is allowed to drop below 1.0 mg/l. This permit requires the dissolved oxygen concentration be maintained above 1.0 mg/l in the upper one-foot of water in the pond to prevent odors and avoid nuisance conditions. Pond levees can fail for a variety of reasons, typically, a lack of maintenance or overtopping due to wave action. This permit requires a minimum pond freeboard be maintained to prevent overtopping.

pH—The Basin Plan includes a water quality objective for surface waters (except for Goose Lake) that the "...pH shall not be depressed below 6.5 nor raised above 8.5." No reliable dilution is available in the receiving stream, so the Order includes effluent limitations for pH at the Basin Plan objective values.

Toxicity—The Basin Plan states that "[a]ll waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances." The Basin Plan requires that "[a]s a minimum, compliance with this objective...shall be evaluated with a 96-hour bioassay." Order No. ___ requires both acute and chronic toxicity monitoring to evaluate compliance with this water quality objective.

The low-flow nature of Yankee Slough means that the designated beneficial uses must be protected, but that no credit for receiving water dilution is available. The use of a dilution series to evaluate compliance with the narrative toxicity objective contained in the Basin Plan is, therefore, inappropriate. The Basin Plan further states that "...effluent limits based upon acute biotoxicity tests of effluents will be prescribed...". Effluent limitations for acute toxicity have been included in the Order.

Selected 40 CFR §122.2 definitions:

Average monthly discharge limitation means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month.

Average weekly discharge limitation means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week.

Continuous discharge means a “discharge” which occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or other similar activities.

Daily discharge means the “discharge of a pollutant” measured during a calendar day or any 24-hour period that reasonable represents a calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the “daily discharge” is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the “daily discharge” is calculated as the average measurement of the pollutant over the day.

Maximum daily discharge limitation means the highest allowable “daily discharge”.

The SIP contains similar definitions. These definitions were used in the development of Order No. R5-2002-0208. Alternate limitation period terms were used in the permit for the sake of clarity. Alternates are shown in the following table:

| Term Used in Permit | SIP/40 CFR 122.2 Term |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Monthly average | Average monthly discharge limitation. 30-day averages may have been converted to monthly averages to conform with 40 CFR §122.45 (see below) |
| 1-Day average | Maximum daily discharge limitation. Since the daily discharge for limitations expressed in concentrations is defined as the average measurement of the pollutant over the day, the term ‘1-Day Average’ was used in the Order. |

40 CFR §122.45 states that:

- (1) “In the case of POTWs, permit effluent limitations...shall be calculated based on design flow.”
- (2) “For continuous discharges all permit effluent limitations...shall unless impracticable be stated as...[a]verage weekly and average monthly discharge limitations for POTWs.”
- (3) “All pollutants limited in permits shall have limitations...expressed in terms of mass except...[f]or pH, temperature, radiation, or other pollutants which cannot appropriately be expressed by mass...Pollutants limited in terms of mass additionally may be limited in terms of other units of measurement, and the permit shall require the permittee to comply with both limitations.”

U.S. EPA recommends a maximum daily limitation rather than an average weekly limitation for water quality based permitting.

RECEIVING WATER LIMITATIONS AND MONITORING

Fecal coliform—By the tributary rule, Yankee Slough has been designated as having the beneficial use of contact recreation (REC-1). For water bodies designated as having REC-1 as a beneficial use, the Basin Plan includes a water quality objective limiting the “...fecal coliform concentration based on a minimum of not less than five samples for any 30-day period...” to a maximum geometric mean of 200 MPN/100 ml. The objective also states that “...[no] more than ten percent of the total number of samples taken during any 30-day period [shall] exceed 400/100 ml.” This objective is included in the Order as a receiving water limitation.

Dissolved Oxygen—By the tributary rule, Yankee Slough has been designated as having the beneficial use of cold freshwater aquatic habitat (COLD). The California Department of Fish and Game has documented the presence of rainbow trout in the Bear River near Yankee Slough.

For water bodies designated as having COLD as a beneficial use, the Basin Plan includes a water quality objective of maintaining a minimum of 7.0 mg/l of dissolved oxygen. Since, by the tributary rule, the beneficial use of COLD does apply to Yankee Slough, a receiving water limitation of 7.0 mg/l for dissolved oxygen was included in the Order.

For surface water bodies outside of the Delta, the Basin Plan includes the water quality objective that “...the monthly median of the mean daily dissolved oxygen (DO) concentration shall not fall below 85 percent of saturation in the main water mass, and the 95 percentile concentration shall not fall below 75 percent of saturation.” This objective was included as a receiving water limitation in the Order.

pH—For all surface water bodies in the Sacramento River and San Joaquin River basins, the Basin Plan includes water quality objectives stating that “[t]he pH shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses.” By the tributary rule, Yankee Slough has the beneficial uses of both COLD and WARM (warm freshwater habitat); therefore, the Order includes receiving water limitations for both pH range and pH change.

The Basin Plan allows an appropriate averaging period for pH change in the receiving stream. Since there is no technical information available that indicates that aquatic organisms are adversely affected by shifts in pH within the 6.5 to 8.5 range, an averaging period is considered appropriate and a monthly averaging period for determining compliance with the 0.5 receiving water pH limitation is included in the Order.

Temperature—By the tributary rule, Yankee Slough has the beneficial uses of both COLD and WARM. The Basin Plan includes the objective that “[a]t no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5°F above natural receiving water temperature.” The Order includes a receiving water limitation based on this objective.

Ammonia and Chlorine—U.S. EPA has developed Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life for ammonia and for chlorine. The Order contains effluent limitations for ammonia and for chlorine equal to the Ambient Water Quality Criteria. Compliance with the effluent limitations for ammonia and for chlorine means that the discharge cannot cause an exceedance of the criteria in the receiving stream; in other words, the limitations are fully protective of water quality. Therefore, no receiving water ammonia or chlorine limitations are included in the Order.

Narrative Limitations—Receiving Water Limitations numbered 1 (biostimulatory substances), 2 (color), 4 (floating material), 5 (oil and grease), 7 (radioactivity), 8 (settleable material), 9 (tastes and odors), and 11 (toxicity) are based on narrative Basin Plan objectives. The objectives are located in Chapter III: Water Quality Objectives, under the Water Quality Objectives for Inland Surface Waters heading.