

**CALIFORNIA REGIONAL WATER QUALITY  
CONTROL BOARD  
SAN FRANCISCO BAY REGION**

**FINAL ORDER**

**ORDER NO. 00-059**

**NPDES PERMIT NO. CA0037575**

**NAPA SANITATION DISTRICT, NAPA COUNTY**

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**REISSUING WASTE DISCHARGE REQUIREMENTS FOR:**

**NAPA SANITATION DISTRICT, NAPA COUNTY**

The California Regional Water Quality Control Board, San Francisco Bay Region, hereinafter called the Board, finds that:

1. The Napa Sanitation District, hereinafter referred to as the discharger, applied to the California Regional Water Quality Control Board, San Francisco Bay Region, for reissuance of waste discharge requirements and a permit to discharge secondary-treated wastewater from its treatment facility located near Rattos Landing to the Napa River, a water of the State and the United States, under the National Pollutant Discharge Elimination System (NPDES).

**FACILITY DESCRIPTION**

2. The discharger owns and operates the municipal wastewater treatment facility located at the Soscol Water Recycling Facility south of the city of Napa, Napa County (Attachment A). The wastewater is a mixture of domestic and industrial wastewater that is treated and discharged in various manners, depending on the source of the wastewater and the time of year. The facility currently receives wastewater from the City of Napa, unincorporated areas of the county of Napa, and from the City of American Canyon. It is estimated that the American Canyon treatment facility will be completed by January 2002 and will treat and discharge its own wastewater under Board Order No. 00-003 adopted on January 19, 2000. In addition, the discharger is currently upgrading the facility and construction is expected to be completed in March 2001. The existing and future processes are further described in the Treatment Process Description.

The Imola facility, located south of the City of Napa and approximately 3.5 miles north of the Soscol Water Recycling Facility, was previously operated as a modified primary treatment facility. As of February 1998, the Imola facility was no longer used as a wastewater treatment facility and is now used for offices.

3. The U.S. Environmental Protection Agency (USEPA) and the Board have classified this discharger as a major discharger.

**PURPOSE OF ORDER**

4. This NPDES permit regulates the discharge of treated wastewater to Napa River, waters of the State and the United States. This discharge was previously governed by Waste Discharge Requirements in Order No. 94-037, adopted on March 16, 1994.

**TREATMENT PROCESS DESCRIPTION**

5. Wastewater from the City of Napa and adjacent unincorporated areas serving a current population of 70,000 people, and wastewater from the City of American Canyon serving a current population of 10,000 people, is conveyed to the Soscol Water Recycling Facility located south of the City of Napa.

6. The Soscol Water Recycling Facility is a secondary and tertiary biological physical-chemical treatment facility, operated by the discharger, and has a dry weather design capacity of 15.4 million gallons per day (mgd). In 1997, tertiary facilities were added to the existing system.

#### ***Existing System***

7. An existing treatment process schematic is included as Attachment B. There is a wet season (November 1 through April 30) and a dry season (May 1 through October 31) period where the process varies slightly. The wastewater is currently treated and discharged as follows:
  - a) ***Wet Season Discharge*** From November 1 through April 30, the wet season period, the effluent goes through a secondary treatment process and is discharged to the Napa River. Raw wastewater from the service area is discharged into four waste stabilization ponds. These four ponds are operated in series and provide biological stabilization with detention times between 60 to 120 days. Pond effluent is pumped to the physical-chemical facility which consists of polymer coagulation followed by clarification, chlorination, and dechlorination prior to discharge to the Napa River.
  - b) ***Dry Season Discharge –Emergency Discharge*** From May 1 through October 31, the dry season period, the wastewater goes through a tertiary treatment process, if necessary. Raw wastewater is treated the same way as in the wet season except after clarification, the effluent is filtered, if necessary, then chlorinated and dechlorinated.

#### ***Future System***

8. New construction, shown schematically in Attachment C, is expected to be completed in March 2001. Different processes will continue to be used during wet and dry season discharges. The wastewater will be treated in the following manner:
  - a) ***Wet Season Discharge*** During the wet season period, the effluent will go through a secondary treatment process and be discharged to the Napa River. Raw wastewater will enter the facility and will go through a bar screen and grit chamber. The wastewater will proceed to the primary clarifiers, aeration basins, secondary clarifiers, chlorination, and dechlorination before being discharged to the Napa River. Raw wastewater may also be sent to the ponds, for biological breakdown or to handle peak wet season flow, and will be followed by flocculating clarifiers, chlorination and dechlorination, before being discharged to the Napa River.
  - b) ***Dry Season Discharge –Emergency Discharge*** During the dry season period, raw wastewater will enter the facility and will go through a bar screen and grit chamber. The wastewater will proceed to the primary clarifiers, aeration basins, and secondary clarifiers. The effluent will be filtered, if needed, after clarification, then chlorinated and dechlorinated. Filtrate from the belt press and overflow from the DAFT (dissolved air flotation thickener) will be sent back to the primary clarifiers and will proceed through the aeration tank, final sedimentation, filtration, if necessary, chlorination and dechlorination.

### **DISCHARGE DESCRIPTION**

9. ***Wet Season Discharge*** During the six-month wet season period (typically November 1 through April 30), approximately 14.7 MGD of treated wastewater is discharged into the Napa River adjacent to the wastewater recycling facility located at the Soscol Ferry Road near Rattos Landing

(Latitude 38°, 14', 9" N; Longitude 122°, 17', 10" W). The discharge pipe is 160 feet from shore and 13.4 feet below the water surface and has a diffuser.

10. **Dry Season Discharge** During the dry season period (typically May 1 through October 31), discharge to the Napa River is prohibited, and wastewater is either stored in the stabilization ponds or treated and beneficially reused for landscape irrigation in industrial parks, golf courses, pasture lands, feed and fodder crops, and drip irrigation of vineyards. This is further discussed in Finding 12 and 13 (Reclamation Facility). With proper notification to the Board, emergency discharges to Napa River may occur during this period.
11. General quality of the effluent discharged from the facility during January 1997 through December 1999, based on information provided in self-monitoring reports is as follows:

<u>Constituents</u>	<u>Average</u>
Biochemical Oxygen Demand	10 mg/L
Suspended Solids	14 mg/L

When the new system comes on line in March 2001, the general quality of the effluent may change.

### **Reclamation Facility**

12. The discharger currently reclaims dry season effluent and plans to continue to do so. The effluent goes through its respective secondary treatment processes for the existing and future systems. During reclamation, for both systems, the effluent goes through filtration after secondary treatment. These discharges to land are presently governed by Water Reclamation Requirements in Order 96-011, adopted by the Board on January 17, 1996. Order No. 96-011 allows discharges of disinfected secondary-treated effluent or tertiary treated water from the Soscol Facility to industrial parks, golf courses, pasture lands, feed and fodder crops, and drip irrigation of vineyards. Sites where reclamation may take place include Somky Ranch, Jameson Canyon Reclamation site, the Napa Airport, and Chardonnay Golf Course and Vineyards, Kohnan Sake Factory, and Napa Corporate Park. These sites may be discontinued or new sites may be added during or after the term of this permit.
13. The Soscol Wastewater Recycling Facility is in the process of expanding its current reclamation project to include areas north of the facility. The \$9 million expansion project will construct a 24- to 36-inch main supply line from the Soscol facility to areas located at the north end of the facility. The discharger is currently designing the system and is expected to complete the design in early 2000. It is anticipated that construction will begin in mid-2000 and will be completed in 2001. New users of the reclaimed water may include Kennedy Golf Course, Napa Valley College Ballfield, and Napa State Hospital. Other future users may be included in the program.

### **Sludge Handling and Disposal**

14. **Existing System** Currently, sludge from the wastewater is allowed to settle in the stabilization ponds. Stabilized sludge (biosolids) is periodically removed from the ponds and is injected into the Somky Ranch, Fagundes Ranch, and Napa Airport soils.
15. **Future System** When the new system comes on line, sludge from the primary clarifiers will be pumped to an anaerobic digester. The sludge from the secondary clarifier, filter, and flocculation clarifiers will be thickened in a DAFT, conveyed to the anaerobic digester, then to the sludge holding tank and gas holder, where the gas is used for gas cogeneration, and finally to the sludge

belt press for dewatering. The biosolids (digested sludge) will either be land applied, stored, or disposed of at a landfill.

### **Wet Weather Flow Handling**

16. **Existing System** Currently, all flow passes through the four stabilization ponds. After the flow circulates through the four ponds, the flow is filtered, if necessary, chlorinated, dechlorinated and then discharged to Napa River. The facility is only permitted to routinely discharge to Napa River from November 1 through April 30.
17. **Future System** When the new facility is constructed, the peak wet weather flow will continue to be handled by the four stabilization ponds.

### **COLLECTION SYSTEM DESCRIPTION**

18. The discharger's sewerage collection system is approximately 245 miles long and contains five pump stations. The stations have adequate alarms, pump capacity and redundancy, and provision for emergency power. The discharger has a continuous program of maintaining and upgrading these pump stations to ensure reliability of the collection system.

### **APPLICABLE PLANS, POLICIES AND REGULATIONS**

19. **Basin Plan.** The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board (SWRCB) and the Office of Administrative Law on July 20, 1995 and November 13, 1995, respectively. A summary of the regulatory provisions is contained in Title 23 of the California Code of Regulations, Section 3912. The Basin Plan identifies beneficial uses and water quality objectives for waters of the state in the Region, including surface waters and groundwaters. The Basin Plan also identifies effluent limitations and discharge prohibitions intended to protect beneficial uses. This Order implements the plans, policies and provisions of the Board's Basin Plan.
20. **State Implementation Plan and California Toxics Rule** The SWRCB adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (also known as the State Implementation Plan or SIP) on March 2, 2000 and Office of Administrative Law approved the SIP on April 28, 2000. The SIP applies to discharges of toxic pollutants in the inland surface waters, enclosed bays and estuaries of California subject to regulation under the State's Porter-Cologne Water Quality Control Act (Division 7 of the Water Code) and the federal Clean Water Act. This policy also establishes the following: implementation provisions for priority pollutant criteria promulgated by the USEPA through the National Toxics Rule (NTR) and through the California Toxics Rule (CTR) and for priority pollutant objectives established by Regional Water Quality Control Boards (RWQCBs) in their water quality control plans (basin plans); monitoring requirements for 2, 3, 7, 8 -TCDD equivalents; and chronic toxicity control provisions. The CTR became effective on May 18, 2000.
21. **Regional Monitoring Plan** On April 15, 1992, the Board adopted Resolution No. 92-043 directing the Executive Officer to implement the Regional Monitoring Program (RMP) for San Francisco Bay. Subsequent to a public hearing and various meetings, Board staff requested major permit holders in this region, under authority of California Water Code Section 13267, to report on the water quality of the estuary. These permit holders, including the discharger, responded to this

request by participating in a collaborative effort, through the San Francisco Estuary Institute. This effort has come to be known as the San Francisco Bay RMP for Trace Substances. This Permit specifies that the discharger shall continue to participate in the RMP, which involves collection of data on pollutants and toxicity in water, sediment and biota of the estuary. Annual reports from the RMP have been referenced elsewhere in this Permit. The dischargers, through participation in new RMP special or pilot or equivalent studies, are required to investigate alternative analytical procedures that result in lower detection limits.

22. *303(d) Listed Pollutants* On May 12, 1999, USEPA approved the State's list of impaired waterbodies and added dioxins, furans, and dioxin-like polychlorinated biphenols (PCBs) to the State's list. The list (hereinafter referred to as the 303(d) list) was prepared in accordance with Section 303(d) of the federal Clean Water Act to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. The Napa River is tributary to San Pablo Bay and both are listed as impaired water bodies on the 303(d) list. The listed pollutants for impairing San Pablo Bay are identified as chlordane, copper, DDT, diazinon, dieldrin, dioxin and furan compounds, exotic species, mercury, nickel, PCBs total, dioxin-like PCBs, and selenium. The listed pollutants for impairing the Napa River are identified as sediment, pathogens and nutrients.
23. *Beneficial Uses* The Basin Plan contains water quality objectives and beneficial uses for the Napa River and contiguous waters. The beneficial uses of the Napa River downstream from the point of discharge are:
- Agricultural Supply
  - Cold Fresh Water Habitat
  - Navigation
  - Water Contact Recreation
  - Noncontact Water Recreation
  - Warm Fresh Water Habitat
  - Wildlife Habitat
  - Preservation of Rare and Endangered Species
  - Fish Migration
  - Fish Spawning

## REGULATORY BASIS FOR EFFLUENT LIMITS AND DISCHARGE REQUIREMENTS

24. *Water Quality Objectives and Effluent Limits.* Water Quality Objectives (WQOs) and effluent limitations in this permit are based on the State Water Resources Control Board's "Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California" (the State Implementation Plan or SIP); the plans, policies and water quality objectives and criteria of the 1995 Basin Plan, California Toxics Rule (Federal Register Volume 65, No. 97), *Quality Criteria for Water* (EPA 440/5-86-001, 1986 and subsequent amendments "Gold Book"), applicable Federal Regulations (40 CFR Parts 122 and 131), National Toxics Rule (57 FR 60848, 22 December 1992; 40 CFR Part 131.36(b), "NTR"), National Toxics Rule Amendment (Federal Register Vol. 60, No. 86, 4 May 1995 pg. 22229-22237), and best professional judgment as defined in the Basin Plan. Where numeric effluent limitations have not been established in the Basin Plan, 40CFR122.44(d) specifies that water quality based effluent limits may be set based on USEPA criteria and supplemented where necessary by other relevant information to attain and maintain narrative water quality criteria to fully protect designated beneficial uses.

25. U.S. EPA regulations, policy, and guidance documents upon which Best Professional Judgment (BPJ) was developed may include in part:
- Technical Support Document for Water Quality Based Toxics Control March 1991,
  - Region 9 Guidance For NPDES Permit Issuance February 1994,
  - Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria October 1, 1993,
  - Whole Effluent Toxicity (WET) Control Policy July 1994,
  - Draft National Guidance for the Permitting, Monitoring, and Enforcement of Water Quality-based Effluent Limitations set Below Analytical Detection/Quantitation Levels March 18, 1994,
  - National Policy Regarding Whole Effluent Toxicity Enforcement, August 14, 1995,
  - Clarifications Regarding Flexibility in 40 CFR Part 136 Whole Effluent Toxicity (WET) Test Methods, April 10, 1996,
  - Interim Guidance for Performance - Based Reductions of NPDES Permit Monitoring Frequencies April 19, 1996,
  - Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Programs Final May 31, 1996,
  - Draft Whole Effluent Toxicity (WET) Implementation Strategy February 19, 1997,
  - Letter dated November 12, 1999 from the USEPA, Region IX, which comments on this Regional Board's Tentative NPDES Permit for the Tosco Corporation Avon Refinery, Martinez, Contra Costa County.

#### **Bases for Effluent Limits**

26. *Federal Water Pollution Control Act.* Effluent limitations and toxic effluent standards are established pursuant to section 301 through 305, and 307 of the Federal Water Pollution Control Act and amendments thereto are applicable to the discharges herein.
27. *Applicable Water Quality Objectives.* The Basin Plan numeric includes WQOs as well as a narrative objective for toxicity in order to protect beneficial uses: "All waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental responses in aquatic organisms". The Basin Plan also directs that ambient conditions shall be maintained until site-specific objectives are developed. Effluent limitations and provisions contained in this Order are designed to implement these objectives, based on available information.

The CTR promulgates numeric aquatic life criteria for 23 toxic pollutants, numeric human health criteria for 57 toxic pollutants and a compliance schedule which authorizes the State to issue schedules of compliance for new or revised NPDES permit limits based on the federal criteria when certain conditions are met.

28. *Receiving Water Salinity.* The receiving waters for the subject discharges are tidally influenced salt waters, with significant fresh water inflows during the wet weather season. The CTR states that the salinity characteristics (i.e., fresh water vs. marine water) of the receiving water shall be considered in establishing WQOs. The SIP states that the CTR specifies the salinities to which the fresh water and salt water criteria apply. Freshwater effluent limitations shall apply to discharges to waters with salinities lower than 1 part per thousand (ppt) at least 95 percent of the time. Marine (saltwater) effluent limitations shall apply to discharges to waters with salinities greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to waters with salinities in between these two categories, or to tidally-influenced fresh waters that support estuarine beneficial uses, effluent limitations shall be the lower of the marine or freshwater effluent

limitation, based on ambient hardness, for each substance. Salinity data indicate that the receiving waters of subject discharge are estuarine by the CTR's definition. In addition, previous permit limits were also based on estuarine standards. Therefore, this Order's effluent limitations are based on the estuarine WQOs based on the receiving waters having salinities between 1 and 10 ppt and falling between the fresh and marine water criteria.

The discharger conducted a study on the salinity of Napa River at the discharger's outfall (sampling point CC-3) and the results show that 73% of the time the salinity is less than 1 ppt and 9% of the time the salinity is greater than 10 ppt which does not meet the CTR fresh water or marine water criteria, respectively, therefore estuarine water criteria applies to the facility. RMP data, from 1996 through 1998, supports the estuarine water salinity results from sampling point CC3 - 33% of the time, the salinity is less than 1 ppt and 11% of the time, the salinity is greater than 10 ppt.

29. *Technology Based Limits.* Effluent limits for conventional pollutants are technology based. These constituents include: Biochemical Oxygen Demand (BOD), total suspended solids (TSS), settleable matter, oil and grease, chlorine residual, pH, and coliforms. Technology-based effluent limitations are based on the federal secondary treatment definition.
30. *Deep Water Discharge.* The discharge to the Napa River is through a three-prong diffuser. The initial dilution received by the discharge in the Napa River has been modeled by the USEPA. During the wet season period (from November 1 through April 30), the discharge is a deep water discharge, therefore effluent limitations will be calculated assuming dilution (dilution ratio is 10:1).
31. *Shallow Water Discharge.* Due to limited upstream fresh water flows during the dry season period (from May 1 through October 31), the discharge is classified as a shallow water discharge. Therefore, effluent limitations applicable to the dry season period will be calculated assuming no dilution.
32. *Water Quality Based Effluent Limitations (WQBEL).* Toxic substances are regulated in this permit by water quality based effluent limitations derived from USEPA national water quality criteria listed in the 1986 Basin Plan Tables 3-3 and 3-4, the CTR, the NTR, or USEPA Gold Book, and/or best professional judgment (BPJ). Because background data is not available, final limits cannot be determined at this time. The discharger is required to gather the appropriate data and the Board shall determine if final effluent limits are needed. If final limits are needed, the permit will be reopened and included in the permit. If a discharge causes, has a reasonable potential to cause, or contributes to a receiving water excursion above a narrative or numeric criteria within a State water quality standard, federal law and regulations, as specified in 40 CFR 122.44 (d) (1) (i), require the establishment of water quality based effluent limits (WQBELs) that will protect water quality. Pollutants exhibiting reasonable potential in the discharge, authorized in this Order, are identified in the Reasonable Potential Analysis (RPA) section.
33. *Basis for Effluent Limits for 303(d) Listed Pollutants* For 303(d) listed pollutants, the Board plans to adopt total maximum daily loads (TMDLs) by 2010 that will include waste load allocations (WLAs), except dioxin has a TMDL adoption date of 2012. The Board defers development of the TMDL for dioxins and furans to the US EPA. The Regional Administrator indicated a timeframe up to 13 years in the May 1999 letter approving the 303(d) list. Due to the compliance schedules for these pollutants exceeding the life of the permit, final WQBELs are discussed below in Finding 35. When each TMDL is complete, the Board will adopt a WQBEL consistent with the

corresponding WLA. If authorized, a time schedule may be included in the revised permit to require compliance with the final WQBELs.

34. *Interim Limits for 303(d) Listed Pollutants* In the interim, until either final WQBELs or WLAs are adopted for 303(d)-listed constituents, or a listed constituent that is delisted, state and federal antibacksliding and antidegradation policies and the SIP requires that the Board include interim effluent concentration limits that are either based on current performance or from the previous Order's concentration limit – whichever is more stringent - to ensure that the waterbody will not be further degraded. The Board has established interim performance-based mass limits for 303(d)-listed bioaccumulative constituents with a reasonable potential. These interim mass limits are based on recent discharge data and are determined for constituents that have a reasonable potential and are bioaccumulative.
35. *Final Limits for 303(d) Listed Pollutants* In the event that a TMDL is not adopted by the Board by 2010 or a TMDL is not established by the US EPA for dioxins and furans by 2012, and an extension of the schedule has not been granted by the USEPA, the Board will impose one of the following alternative final limits:
  - a. For a 303(d)-listed bioaccumulative pollutant, the final alternative limit will be no net loading (no net loading means that the actual loading from the discharge must be offset by at least equivalent loading of the same pollutant achieved through mass offset). For dioxins and furans, this no net loading will apply to all 17 compounds using the latest Toxicity Equivalents approach that is approved by the US EPA at that time. In the absence of a TMDL, any loading to the impaired waterbody has the reasonable potential to cause or contribute to an excursion of the narrative toxicity criterion. Additionally, the existing numeric objective may not be adequate to ensure safe levels of the pollutant in sediment and/or fish. This is because in the case of fish tissue, the bioconcentration factor (BCF), on which the criterion was based, was measured in the laboratory and, therefore, reflects uptake from the water only. Bioaccumulative factors (BAFs) on the other hand, are measured in the field where the uptake in fish is through both food and water. Thus, the bioaccumulation rate in the system may be greater than the bioconcentration rate used to calculate the national water quality, which is based on a laboratory-derived BCF. Another reason that the existing WQOs may not be adequate is that the criteria they are based on do not always account for routes of exposure, for site-specific circumstances that may render the pollutant more bioavailable, for accumulation in sediment, or for concentrating effects resulting from evaporation.
  - b. For a 303(d)-listed non-bioaccumulative pollutant, the alternative final mass limit will be based on water quality objectives applied at the end of the discharge pipe.

#### **Discharge Prohibition Exception**

36. The Basin Plan prohibits the discharge of wastewater which has characteristics of concern to beneficial uses at any point at which the wastewater does not receive a minimum initial dilution of at least 10:1, or into any nontidal water, dead-end slough, similar confined waters, areas or any immediate tributaries thereof. Discharge of treated wastewater to Napa River which does not receive 10:1 dilution is subject to this prohibition.
37. The Basin Plan provides that exceptions to the above prohibition will be considered for discharges where: 1) an inordinate burden would be placed on the discharger relative to beneficial uses protected, and an equivalent level of environmental protection can be achieved by alternate means such as an alternative discharge site, a higher level of treatment, and/or improved treatment

reliability; or, 2) the discharge is approved as a part of a reclamation project; or, 3) it can be demonstrated that net environmental benefits will be derived as a result of the discharge.

38. In addition to the criteria stated above for exceptions, the Basin Plan requires that the Board consider the reliability of the discharger's system in preventing inadequately treated wastewater from being discharged to the receiving water, and the environmental consequences of such discharges.
39. The dry season, Napa River discharge prohibition period, is typically from May 1 through October 31 of each year. During this period, the discharger currently reclaims treated wastewater for irrigation of agricultural lands used to grow fodder, fiber or seed crops, and on lands used for pasture and golf course. From 1997 through 1999, the discharger reclaimed an average of approximately 25% of its annual average dry season flow. For 1999, the discharger reclaimed approximately 34% of the effluent.
40. The discharger's pond system, utilized for both treatment and storage of wastewater, affords the discharger a significant volume of storage capacity that can be used for containment of peak wet season flows, or for emergency storage in the event of facility upset. The existence and use of these ponds minimizes the possibility of discharge of untreated or partially treated wastewater to the Napa River.
41. The Board finds that the water reuse program implemented by the discharger complies with the exception provision of the Basin Plan. The Board hereby grants an exception to the discharge prohibition for wet season discharges to the Napa River for a six month period each year (November 1 through April 30). This exception is subject to the following conditions. The discharger shall:
  - a. Continue to operate all treatment facilities to assure high reliability and redundancy;
  - b. Continue to implement a source control program as required by the permit;
  - c. Continue to implement measures to maintain, repair, and upgrade the existing wastewater facilities so as to ensure continued operation and treatment capability in conformance with permit requirements;
  - d. Continue progress towards construction of new or upgraded treatment facilities. These facilities are to be designed to ensure adequate capacity for community wastewater needs, and an adequate and reliable treatment process developed with sufficient flexibility and redundancy to provide for compliance with permit requirements as necessary to protect beneficial uses of the Napa River.
  - e. Continue to promote and encourage beneficial reuse of treated wastewater.

#### **Reasonable Potential Analysis**

42. As specified in 40 CFR 122.44(d) (1) (i), permits are required to include limits for all pollutants "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard." Using the method described in the SIP, Regional Board staff have analyzed the effluent data to determine if the discharges had reasonable potential to cause or contribute to an exceedance

of a State water quality standard ("RPA"). The RPA compares the effluent data with the Basin Plan, CTR, USEPA's NTR, and USEPA's Quality Criteria for Water (Gold Book).

For some constituents, a complete RPA cannot be performed on the discharger's effluent because there is insufficient ambient, background data upstream from the facility to determine if an effluent limitation is needed or to calculate a final effluent limitation. In accordance with the SIP, the discharger shall obtain ambient, background water samples for metals and organic priority pollutants upstream from the facility. The discharger may choose to coordinate sampling activities with other dischargers (POTWs in the towns of Yountville, St. Helena, Calistoga, and American Canyon) discharging into Napa River. After the background information is gathered, the RPA will be performed and the permit reopened to include additional numerical limitations, if necessary.

For other constituents, the RPA cannot be performed because either the data for the effluent characteristics for the constituent are unavailable or both background and effluent characteristics data is unavailable. After the appropriate data is available, the RPA can be completed.

- a. *Reasonable Potential Determination* The RPA involves identifying the observed maximum pollutant concentration in the effluent (MEC) for each constituent based on the effluent concentration data. There are two triggers in determining reasonable potential. For the first trigger, the MEC is compared with the lowest applicable WQO, which has been adjusted for pH, hardness and translator data, if appropriate. If the MEC is greater than the (adjusted) WQO, then there is reasonable potential for the constituent to cause or contribute to an excursion above the WQO and a water quality-based effluent limitation (WQBEL) is required.

For the second trigger, if the MEC is less than the adjusted WQO, then the observed maximum ambient background concentration (B) for the pollutant is compared with the adjusted WQO. If B is greater than the adjusted WQO, then a WQBEL is required. If B is less than the WQO, then a limit is only required under certain circumstances to protect beneficial uses. If a constituent was not detected in any of the effluent samples and all of the detection limits are greater than or equal to the adjusted WQO, then the background is compared with the adjusted WQO. For all parameters that have reasonable potential to cause or contribute to an exceedance of a WQO, numeric WQBELs are required. WQBELs are based on USEPA water quality criteria and Basin Plan objectives.

The RPA compares the effluent data with numeric and narrative WQOs in the Basin Plan and numeric WQOs from the CTR, NTR and USEPA Gold Book.

- b. *Interim Limits*. In accordance with the SIP, numeric, interim limitations are based on current treatment plant performance or existing permit limitations, whichever is more stringent. These interim limits will be superseded upon completion of TMDL and WLA, if applicable. According to the antibacksliding rule of the Clean Water Act, Section 402(o), the permit may be modified to include a less stringent requirement following completion of a TMDL and WLA, or if one of the other bases for an exception to the rule is met. Pursuant to 40 CFR 122.44(1)(A) and (B)(1), another exception from the backsliding prohibition is if material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation; or information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit reissuance. Due to the planned facility changes from the pond system to activate sludge system in 2001, interim limits may be reevaluated and permit reopened based on new performance information on the changed system after it is optimized and stabilized.

For several constituents, the interim limits are below the minimum levels achievable by the laboratory technique. In these cases, a result below the minimum level demonstrates compliance with the Order.

Constituents that have background levels higher than their respective WQOs, require a WQBEL, according to RP analysis methodology set out in the SIP (Section 1.3). However, for certain constituents for which there is insufficient data, interim requirements are established to provide data to determine (1) whether effluent limitations are needed, and (2) what the effluent limitations should be. These interim requirements include: continued monitoring and participation in studies to improve sampling and analytical techniques which would result in lower detection limits.

For some constituents, the MEC is greater than the WQO and the data results are all non-detect but the detection limit is greater than the WQO. In this case, if there is no limit from the previous permit, then a limit is not required, however, monitoring is required. However, if the constituent falls in this category and has a limit in the previous permit, the constituent has an interim limit which is consistent with antibacksliding policy.

- c. *RPA Data.* The RPA was based on effluent monitoring data for January 1997 through December 1999. More information must be gathered on the upstream, ambient receiving waters in order to complete a RPA. Table 5 summarizes the RPA and lists the constituents, and where available, the lowest, adjusted WQO, the MEC, and the "Reasonable Potential" result. Table 5 summarizes the previous, performance-based and interim limits and lists the constituents, the limits from the previous permit, the range of the constituent concentrations detected in the effluent, the interim limits, the minimum levels and laboratory technique that can meet the specified minimum level, for the wet and dry seasons.

Historical effluent limitations were lower than current analytical techniques can measure and the discharger should work with the laboratory to lower limits to meet applicable and reliable detection limits. During the term of the permit, if and when the monitoring with lowered detection limits shows any of the above constituents at levels exceeding the applicable WQOs, the discharger will be required to initiate source identification and control for the particular constituent. Table 2 of Attachment E lists the minimum levels and laboratory techniques for each constituent.

A reopener provision is included in this Order that allows numeric limits after the background information is gathered and the RPA is completed. In addition, the permit will be reopened to allow the new numeric limitations to be added to the permit for any constituent that in the future exhibits reasonable potential to cause or contribute to exceedance of applicable water quality objectives. This determination, based on monitoring results, will be made by the Board.

#### 43. Total Maximum Daily Loads and Waste Load Allocations

TMDLs will establish WLAs and load allocations for point sources and non-point sources, respectively, that will result in achieving water quality standards for 303(d)-listed pollutants. Data collected to develop these TMDLs could result in changes to the 303(d) list or changes to the water-quality objectives for San Pablo Bay. The final effluent limitations for these pollutants for this discharge will be based on WLAs contained in the TMDLs. The following summarizes the Board's strategy to collect water quality data and to develop TMDLs:

- a) Data collection - The Regional Board will request dischargers to collectively assist in developing and implementing analytical techniques capable of detecting 303(d)-listed pollutants to at least

their respective levels of concern or WQOs. The Regional Board will require dischargers to characterize loadings from their facilities into the water quality-limited waterbodies. The results will be used in the development of TMDLs, but may also be used to update and revise the 303(d) list.

- b) Funding mechanism - The Board has received and anticipates a continuation of resources from federal and state agencies for development of TMDLs. To ensure timely development of TMDLs, the Board intends to supplement these resources with development costs allocated among dischargers who discharge 303(d)-listed pollutants, through the RMP or other appropriate funding mechanisms.

#### 44. Copper

- a. *EPA Guidance.* On October 1, 1993, in recognition that the dissolved fraction is a better representation of the biologically active portion of the metal than the total or total recoverable fraction, USEPA's Office of Water issued guidance stating that dissolved metal concentrations should be used for the application of metals aquatic life criteria and that state water quality standards for the protection of aquatic life (with the exception of chronic mercury criterion) be based on dissolved metals. USEPA amended the NTR in 1995 to include factors to convert total metals to dissolved metals for both fresh and salt water objectives. On May 18, 2000, USEPA adopted the CTR, where water quality criteria for metals are expressed as dissolved. Since effluent limits must be expressed as total recoverable metals, use of the NTR/CTR objectives would require translation from dissolved to total recoverable metals.
- b. *Water Effects Ratios.* In order to assure that the metals criteria are appropriate for the chemical conditions under which they are applied, USEPA promulgated the 1992 NTR criteria in terms of total recoverable metal and provided for adjustment of the criteria through application of the "water-effect ratio" (WER) procedure. A WER is a means to account for a difference between the toxicity of the metal in laboratory dilution water and its toxicity in the water at the site. The NTR was a formal rulemaking process with notice and comment by which EPA pre-authorized the use of a correctly applied water-effect ratio by States subject to the NTR. EPA published *Interim Guidance on Determination and Use of Water Effects Ratios for Metals* on WER February 22, 1994 that superseded all prior guidance. Both total and dissolved criteria can be modified by a site-specific adjustment.
- c. *CTR Water Quality Objectives.* The salt water objective for copper in the adopted CTR is 3.1 µg/L dissolved copper. Included in the CTR are translator values to convert the dissolved metal objectives to total. The discharger may perform a study or participate in a joint study with other dischargers to determine site-specific translator and/or WERs for segments of the Bay north of the Dumbarton Bridge. The TMDL process for copper will determine what the final WQBEL for copper will be. In the interim, the Board is required under the SIP to set an interim limit which is based on current performance or the existing limit whichever is lower. The Regional Board will consider establishing a site-specific water quality objective as long as the discharger can demonstrate that the site-specific objective will protect existing beneficial uses, is scientifically defensible, and is consistent with the state Antidegradation Policy.
- d. *Translator Study.* In 1996 and 2000, the USEPA promulgated a revised national and California, respectively, saltwater dissolved copper chronic criterion of 3.1 µg/L and acute criterion of 4.8 µg/L. This revised criterion incorporates new scientific data generated during site specific studies of both New York Harbor and the San Francisco Bay. In order for the Board to consider application of the dissolved criterion to the discharge, an appropriate translator must be developed.

The translator is the ratio of total to dissolved metal in the receiving water. State Board published guidance in the SIP on the use of metal translators, derived from site specific receiving water data, to calculate total recoverable effluent limits from dissolved receiving water criteria.

The discharger is participating in efforts with other North Bay dischargers to help develop the information needed to reevaluate whether beneficial uses in this portion of the North Bay are impaired by ambient concentrations of dissolved copper and to develop copper translators. In order to develop information that may be used to establish a WQBEL based on dissolved copper criteria, the discharger may choose to develop and implement a work plan individually, or jointly with other North Bay Dischargers, to utilize existing data and/ or collect new data for development of a dissolved to total copper translator. If the discharger chooses to proceed with the optional study, this work shall be performed in accordance with the tasks as specified in Provision F. 2. Optional Copper Translator Study and Schedule. The Board staff will consult the California Department of Fish and Game staff in approving a translator workplan. If site-specific translator data are not generated, the default CTR copper translator of 0.83 will be used to calculate total metals based copper effluent limits.

- e. *Effluent Limits.* As copper has been determined to be an impairing pollutant on the 303(d) list, and since a RPA has determined there is reasonable potential for the discharge to contribute to a water quality exceedance, a WQBEL is required in this permit. The final WQBEL will be consistent with the wasteload allocation derived from a TMDL. In the interim, this order establishes an interim performance-based concentration limit of 5 µg/L for discharges to the Napa River, during the wet and dry seasons. In the event that a TMDL is not adopted by 2010, and an extension of the schedule has not been granted by the USEPA, the Board will impose an alternative final limit at end of pipe.
- f. *Special Studies.* If a revised WQBEL for copper is based on the national dissolved criteria, it will be important to also consider protection of beneficial uses that could be impacted by particulate copper. There are uncertainties about the quantities of copper that could be a stress to the ecosystem, particularly in mediums other than the water column (such as sediments, and/or organisms that take up particulate matter). In the future, the discharger may be requested to participate in efforts to reduce effluent copper concentrations.

#### 45. Mercury

- a. *Mercury Water Quality Objectives.* For mercury, the existing Basin Plan objective and the national criterion are based on protection of human health. The objectives are intended to limit the bioaccumulation of methyl-mercury in fish and shellfish to levels which are safe for human consumption. As described in the Gold Book, the fresh water criterion is based on the Final Residual Value of 0.012 µg/L derived from the bioconcentration factor of 81,700 for methyl-mercury with the fathead minnow, which assumes that essentially all discharged mercury is methyl-mercury. The saltwater criterion of 0.025 µg/L was similarly derived using the bioconcentration factor of 40,000 obtained for methyl-mercury with the Eastern oyster. These criteria are below levels that have produced acute and chronic toxicity in both fresh and salt water aquatic species. Impairment due to mercury, however, is based on fish tissue concentration and not water column toxicity.

The CTR adopted a dissolved mercury water quality objective of 0.051 µg/L for protection of human health. However, according to Footnote b in CTR's Table of Criteria from Priority Toxic Pollutants, "Criteria apply to California waters except for those waters subject to objectives in

Table III-2A and III-2B of the San Francisco Regional Water Quality Control Board's (SFRWQCB) 1986 Basin Plan, that were adopted by the SFRWQCB and the State Water Resources Control Board, approved by EPA, and which continue to apply".

The Board intends to work toward the derivation of a TMDL that will lead towards overall reduction of mercury mass loadings in the watershed. Based on these studies, the Board may amend this permit to specify a different limit for mercury.

- b. *Mercury as a Persistent Bioaccumulative Pollutant.* Mercury is listed on the 303(d) list for impairing San Pablo Bay due to fish tissue level exceedances. In the event that a TMDL is not adopted by the Board by 2010, the final effluent limitation will be no net loading. This would mean, that if a TMDL is not adopted by the Board by the scheduled date or that date has not been extended, the discharger will have the option of proposing a mass offset program, that would offset their mercury loads with source reductions which are not already required elsewhere in the system.
- c. *Mercury Strategy.* Board staff are in the process of developing a plan to address control of mercury levels in San Francisco Bay including development of a TMDL. Presently, for constituents with a reasonable potential, the interim limit is based on the lower of the existing limit or its performance-based limit. The interim limit does not provide a 10:1 dilution. When final limits are determined, there is no dilution for mercury since it is a 303(d) listed pollutant.

At present, it appears that the most appropriate course of action is to apply interim mass loading limits to these discharges, and focus mercury reduction efforts on more significant and controllable sources. While site-specific objectives and TMDLs are being developed, the discharger will be held accountable for helping maintain ambient conditions in the receiving water by complying with performance-based mass emission limits for mercury. This permit includes effluent concentration and mass emission loading limits and a mass emission trigger for mercury, as described below. The discharger is required to maximize control over influent mercury sources, with consideration of relative costs and benefits. The discharger is encouraged to continue working with other municipal dischargers to optimize both source control and pollution prevention efforts and to assess alternatives for reducing mercury loading to, and protecting beneficial uses of, receiving waters.

- d. *Mercury Compliance.* Effluent mercury concentrations measured from January 1997 through December 1999, ranged from 0.01 to 0.018 µg/L. Improved (ultra-clean) sampling and analysis techniques have lowered the detection limit for mercury to below the 0.012 µg/L objective, and the discharger began using these techniques in 2000. The discharger will continue to use ultra-clean sampling and analysis techniques in order to gather more accurate data on concentrations and mass loadings and ascertain the discharger's future ability to comply with future limits.
- e. *Special Studies and Schedules.* Board staff is in the process of developing a TMDL/WLA to address mercury compliance for all point and non-point source dischargers, including the discharger. Review of recent data indicates that in the absence of dilution credit (as allowed for deep water dischargers) the discharge concentrations for these facilities are all generally higher than the objectives. Although the municipal dischargers are generally not considered to be significant contributors to the bulk mercury loading to the San Francisco Bay, there does remain the possibility of localized impacts related to their discharges. As such, the discharger is required to maximize their control over influent mercury sources, with consideration of relative costs and benefits. The discharger is encouraged to work with other shallow water dischargers to optimize both source control efforts and assessment of alternatives for protecting beneficial uses of receiving waters.

- f. *Source Control.* This Order requires the discharger to develop and implement a more aggressive source control program than has been performed in the past as necessary to comply with, or evaluate their ability to consistently comply with a 0.012 µg/L limit, and to reduce any significant, controllable sources that may be contributing to mercury accumulation in fish. The Regional Board intends to work toward the derivation of mercury effluent limitations for the North Bay dischargers, that will lead towards overall reduction of mercury mass loadings in the watershed. This permit will be revised after the TMDL and WLA have been completed. This permit contains a time schedule for the mercury source control program. The permit will also be amended if new data collection using ultra-clean sampling and analysis techniques do not indicate a reasonable potential to cause or contribute to violation of the mercury water quality objective of 0.012 µg/L.

#### 46. Dioxins and Furans

- a. *Current Limit* The current Permit, Order No. 94-037, includes a limit for dioxins of 0.13 picograms per liter (pg/l) TCDD equivalent or TEQ. TEQ is calculated from a weighted sum of seventeen congeners of 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (TCDD) and dibenzofuran (TCDF) using the 1989 U.S. EPA convention and toxicity equivalence factors, or "I-TEFs/89" (see Attachment D of the Fact Sheet). The basis for the limit was the objective specified in the State Board's 1992 Enclosed Bays and Estuaries Plan. Although this Plan was invalidated in 1994, the limit was legally adopted and is in effect until it is amended or rescinded by the Board.
- b. *Numerical Water Quality Objective* On May 18, 2000, the U.S. EPA published in the Federal Register the CTR establishing water quality standards for toxic pollutants for California waters (FR 31681). The CTR was effective on the date of publication. The following are pertinent to dioxins and furans:
- i. The CTR establishes a standard for 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD) of 0.014 picograms per liter (pg/l) for the protection of human health from consumption of aquatic organisms.
  - ii. Although the CTR establishes a numeric standard for just one of the dioxin-like compounds, the preamble of the CTR states that California should use toxicity equivalents or TEQs in NPDES Permits where there is a reasonable potential for dioxin-like compounds to cause or contribute to a violation of a narrative criterion. The preamble further states U.S. EPA's intent to use the 1998 World Health Organization Toxicity Equivalence Factor<sup>1</sup> scheme in the future and encourages California to use this scheme in State programs. These 1998 WHO TEFs for dioxins and furans compounds are shown in Provision 13 of the Order. Finally, the preamble states U.S. EPA's intent to adopt revised water quality criteria guidance subsequent to their health reassessment for dioxin-like compounds.
- c. *State Implementation Plan* The SIP establishes the implementation policy for all toxic pollutants including dioxins and furans. The SIP requires a limit for 2,3,7,8-TCDD if a limit is necessary, and requires monitoring for a minimum of 3 years by all major NPDES dischargers for the other sixteen dioxins and furans compounds.

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<sup>1</sup> The 1998 WHO scheme includes TEFs for dioxin-like PCBs. But since this Order addresses only dioxins and furans, these dioxin-like PCB TEFs are not addressed in this Order.

- d. *Interim Limit* A TEQ approach is used for the interim limit based on U.S. EPA's suggestion in the preamble to the CTR. Of the 17 dioxins and furans compounds, only 4 have been measured in the discharge. Specifically, these four are 1,2,3,4,6,7,8-hepta CDD, octa-CDD, 1,2,3,4,6,7,8-hepta CDF, and octa-CDF. The other 13 compounds are below detection in every sample for this time period. The interim limitation specified in this Order is a modified TEQ approach in consideration of the State Implementation Plan requirements, analytical quantification limits, and facility performance. Both the CTR and the State Implementation Plan require a numeric interim limit when the compliance schedule exceeds 1 year. The State Implementation Plan allows for the interim limit to be based on facility performance or existing permit limitations, whichever is more stringent. For bioaccumulative priority pollutants for which the receiving water has been included on the 303(d) list, SIP suggests that the Board should limit mass loading at representative, current levels pending TMDL development in order to implement the applicable water quality standard. The interim limits in this Order include performance-based mass limits with and without loadings from City of American Canyon. The limits are calculated based on the TEQs of the four congeners and actual discharge to the river using detection limits for any non-detects. The discharger is required to investigate the cost-effectiveness of improving solids removal from the discharge. The mass limits comply with antidegradation policies, antibacksliding requirements and are protective of beneficial uses pending TMDL development. Interim limits based on concentration are considered redundant and unnecessary in this case.

#### 47. Coliform

- a. *Total and Fecal Coliform*. The Basin Plan specifies water quality objectives for both total and fecal coliform and, to date, the effluent limitation has been based on total coliform. The Basin Plan (Table 4-2, footnote "d") allows the Regional Board to substitute fecal coliform limits for total coliform limits, provided that it can be conclusively demonstrated through a program approved by the Regional Board that such a substitution will not result in unacceptable adverse impacts on the receiving waters. This Order specifies a total coliform limit (as in the previous permit), but allows the discharger to conduct a study to evaluate the feasibility of utilizing an effluent limit based on the fecal coliform objective.

#### 48. Acute Toxicity

- a. The discharger currently conducts monthly acute toxicity tests in accordance with wastewater testing method specified in USEPA/600/4-90/027F, 4<sup>th</sup> edition and using fathead minnows. In addition, the discharger's lab is certified by the Department of Health Services.
- b. If fathead minnows are used, the certified wastewater testing method requires the use of juveniles. As long as juvenile fish are used, this species is acceptable for use in the acute toxicity tests when the 4<sup>th</sup> edition of the wastewater testing document is used.

#### 49. Chronic Toxicity

- a. *Program History*. The Basin Plan contains a narrative toxicity objective stating that "All waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental responses to aquatic organisms" and that "there shall be no chronic toxicity in ambient waters." The Board initiated the Effluent Toxicity Characterization Program (ETCP) in 1986 with the goal of developing and implementing toxicity limits for each discharger based on actual characteristics of both receiving waters and waste streams.

Attempts have been made to include numeric chronic toxicity limits in NPDES permits. The Board adopted Order No. 92-104 in August 1992 amending the permits of eight dischargers to include numeric chronic toxicity limits, based on an eleven sample median value of 1 or 10 TUc and 90th percentile value of 2 or 20 TUc, depending on dilution. However, due to the court decision which invalidated the California Enclosed Bays and Estuaries Plan and Inland Surface Waters Plan, on which Order No. 92-104 was based, the SWRCB stated, by letter dated November 8, 1993, that the Regional Board will have to reconsider the Order. This letter also committed to providing the Regional Boards with guidance on issuing permits in the absence of the State Plans (*Guidance for NPDES Permit Issuance*, February 1994).

- b. *SWRCB Toxicity Task Force Recommendations.* The Toxicity Task Force provided several consensus-based recommendations in their October 1995 report to the SWRCB for consideration in redrafting the State Plans. A key recommendation was that permits should include narrative rather than numeric limits. The numeric test values should then be used as toxicity "triggers" to first accelerate monitoring and then initiate Toxicity Reduction Evaluations (TREs).
- c. *Regional Board Program Update.* The Board intends to reconsider Order No. 92-104 as directed by the SWRCB, and to update, as appropriate, the Board's Whole Effluent Toxicity (chronic and acute) program guidance and requirements. This will be done based on analysis of discharger routine monitoring and ETCP results, and in accordance with current USEPA and SWRCB guidance. In the interim, decisions regarding the need for and scope of chronic toxicity requirements for individual dischargers will continue to be made based on best professional judgment as indicated in the Basin Plan.
- d. *Screening Phase for Chronic Toxicity* In 1992, the discharger conducted the screening phase of the Effluent Toxicity Characterization Program (ETCP) – the ETCP consists of two components, the screening phase and the variability phase. Results of the testing program were used to determine if a Toxicity Identification Evaluation (TIE) was warranted. The following six organisms were tested: green algae (*Selenastrum capricornutum*), the echinoderm (*Strongylocentrotus purpuratus*), silversides (*Menida beryllina*), mysids (*Mysidopsis bahia*), cladocerans (*Ceriodaphnia dubi*) and fathead minnows (*Pimepales promelas*). Results show that the effluent produced a response in two of the species, cladocerans (*Ceriodaphnia dubi*) and echinoderm (*Strongylocentrotus purpuratus*). The test results indicated that *C. dubi* and *S. purpuratus* were the most sensitive species with, respectively, 6.2 % and 33.5% no observable effect concentration. It was recommended that 2 species, cladocerans and echinoderm be included in the variability phase. In addition, it was recommended that fathead minnows be included in the variability phase since it appears to exhibit a dose-response to the effluent and would assure phylogenetic diversity in the species tested.
- e. *Variability Study* In 1993, the discharger conducted the variability phase of the ETCP using cladocerans, echinoderm and fathead minnows. Results indicated the following:
  - The effluent did not exhibit acute toxicity to fathead minnow and cladocerans.
  - Measurable effects on fertilization success were found with echinoderms in 8 of the 9 testing events.
  - Ambient toxicity, as measured by the echinoderm fertilization test, was evident in three of the 9 testing events.

- The chronic endpoints associated with fathead minnow and cladocerans tests indicated effluent toxicity in 4 of the 9 testing events, although both species responded concurrently in only one event.
- f. *Toxicity Reduction Evaluations.* In accordance with USEPA guidance, this Order includes the Basin Plan narrative toxicity objective as a chronic toxicity limit, implemented via monitoring. The discharger will be required to prepare and implement a Toxicity Reduction Evaluation (TRE) and TIE as described in the Provision 8. Once a Chronic Toxicity Monitoring Program, acceptable to the Executive Officer, is established, routine chronic toxicity testing will begin.
  - g. *Reopener* If significant non-artifactual toxicity is consistently detected and the discharger fails to aggressively implement all reasonable control measures included in the TRE workplan, the Board will consider amending the permit to include numeric toxicity limits.

### **OPTIONAL MASS OFFSETS**

50. This Order contains requirements to prevent potential degradation of 303(d)-listed waterbodies. Such requirements include the adoption of mass limits that are based on the treatment facility performance, provisions for aggressive source control and waste minimization, feasibility studies for wastewater reclamation, and treatment facility optimization. After implementing these efforts, the discharger may find that further net reductions of the total mass loadings of the 303(d) listed pollutants to the receiving water can be achieved through a mass offset program. This Order includes an optional provision for a mass offset program.

### **BASIN PLAN DISCHARGE PROHIBITION**

51. Discharge to the Napa River either prior to October 31 or later than May 1 may be authorized by the Executive Officer, based on written request from the discharger documenting that adequate dilution is available at the discharge point and/or normally planned disposal to land is not feasible due to wet season conditions. In these cases, the discharge shall comply with the effluent limitations prescribed in B(ii) and B(iii) of this Order. In the event of an unforeseen emergency discharge, the discharger shall initiate a phone call, fax or email to provide immediate notification of action. The Executive Officer will authorize a specific time frame for the discharge.

### **STORM WATER**

52. At the Soscol facility, the storm water flows from the wastewater treatment facility process areas are directed to the headworks and treated along with wastewater discharged to the facility. For the Imola facility, the discharger is required to contact the Board to initiate termination of storm requirements. Until the storm water requirements are terminated, the requirements shall remain in effect at Imola.

### **SPECIAL STUDY – BACKGROUND DATA OF RECEIVING WATER**

53. Ambient background data, upstream from the facility, is required according to the SIP, in order to complete the RPA and to determine final effluent limits, where applicable. Dischargers are required to investigate alternative analytical procedures that result in lower detection limits. This may occur either through participation in new RMP special studies or through equivalent studies conducted jointly with other dischargers. Background data is required for constituents with a yes (“Y”), incomplete (“I”) or incomplete with an interim limit (“I w/ I.L.”).

## **SPECIAL STUDY – DIOXIN STUDY OF THE EFFLUENT**

54. In accordance with the SIP, the major dischargers shall conduct effluent monitoring for the seventeen 2,3,7,8-TCDD congeners. The purpose of the monitoring is to assess the presence and amounts of the congeners being discharged to inland surface waters, enclosed bays, and estuaries for the development of a strategy to control these chemicals in a future multi-media approach.

## **POLLUTANT MINIMIZATION/POLLUTION PREVENTION PROGRAMS**

55. The following applies to the discharger's Pollutant Minimization/Pollution Prevention Programs:
- a. The discharger has an approved Pretreatment Program and has established a Pollution Prevention Program under the requirements specified by the Regional Board.
  - b. The discharger's Pretreatment and Pollution Prevention Programs have resulted in a significant reduction of pollutants of concern discharged to the treatment plant and to the receiving waters.
  - c. This reduction is reflected in its influent and effluent data.
  - d. Section 2.4.5 of the SIP specifies under what situations and on which priority pollutant(s) (i.e., reportable priority pollutant(s)) the discharger shall be required to conduct Pollution Minimization Program in accordance with Section 2.4.5.1.
  - e. There will be some redundancy between the Pollution Prevention Program and the Pollutant Minimization Program, if required.
  - f. To the extent where the requirements of the two Programs overlap, the discharger is allowed to continue/modify/expand its existing Pollution Prevention Programs to satisfy the Pollutant Minimization Program requirements.

## **SPECIAL STUDY – EFFLUENT CHARACTERIZATION**

56. The discharger shall continue to monitor and evaluate effluent discharged to the Napa River for the constituents listed in Table 2 of the Self-Monitoring Report (Attachment E). However, the discharger is required to investigate alternative analytical procedures that result in lower detection limits. This may occur either through participation in new RMP special studies or through equivalent studies conducted jointly with other dischargers. The purpose of this special study is to ensure sufficient data is available to perform the RPA for the next permit reissuance and to determine compliance with limits specified in this Order.

## **OPERATION AND MAINTENANCE**

57. An Operations and Maintenance Manual is maintained by the discharger for purposes of providing facility, collection system, including pump stations and sewer lines, and regulatory personnel with a source of information describing all equipment, recommended operation strategies, process control monitoring, and maintenance activities. In order to remain a useful and relevant document, the manual must be kept updated to reflect significant changes in treatment and collection facility equipment and operation practices. The discharger reviews the Manual annually.

## **CEQA AND PUBLIC NOTICE OF ACTION**

58. This Order serves as an NPDES Permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code [California Environmental Quality Act (CEQA)] pursuant to Section 13389 of the California Water Code.

59. The discharger and interested agencies and persons have been notified of the Board's intent to reissue requirements for the existing discharge and have been provided an opportunity to submit their written views and recommendations.
60. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

**IT IS HEREBY ORDERED**, pursuant to the provisions of Division 7 of the California Water Code and regulations adopted thereunder, and to the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, that the discharger shall comply with the following:

**A. DISCHARGE PROHIBITIONS**

1. Discharge of treated wastewater at a location or in a manner different from that described in Findings Nos. 7 and 8 is prohibited. Discharge of wastewater at any point where it does not receive a minimum initial dilution of 10:1, or into dead-end slough and similar confined waters is prohibited, except as defined below. An exception to this prohibition is granted for the discharge of treated effluent during the wet season, as described in Findings 7 or 8 of this Order.
2. The bypass or overflow of untreated or partially treated wastewater to waters of the State, either at the treatment facility or from the collection system or pump stations tributary to the treatment facility, is prohibited except as provided for bypasses under the conditions stated in 40 CFR 122.41 (m) (4) and (n).
3. The average dry season discharge shall not exceed 15.4 mgd. The average dry season flow shall be determined over three consecutive dry season months each year.
4. Discharges of water, materials, or wastes other than storm water, which are not otherwise authorized by this NPDES permit, to a storm drain system or waters of the State are prohibited.
5. Storm water discharge from the facility grounds shall not cause pollution, contamination, or nuisance.
6. From May 1 through October 31, discharge is prohibited. Discharge to the Napa River prior to October 31 or later than May 1 may be authorized by the Executive Officer, based on written, email or facsimile request from the discharger documenting that normally planned disposal to land is not feasible due to wet season conditions. In these cases, the discharge shall comply with the effluent limitations prescribed in B(ii), emergency discharge into shallow waters, of this Order. In the event of an emergency discharge, the discharger shall initiate a phone call, fax or email to provide immediate notification of the action. The Executive Officer will authorize a specific time frame for the discharge.

**B. EFFLUENT LIMITATIONS**

The term "effluent" *refers to* the treated wastewater effluent from the discharger's wastewater treatment facility, as discharged to the Napa River.

**B. (i) For discharges which receive a river dilution of equal to or greater than 10:1 (Wet Season Discharge From November 1 through April 30):**

The effluent discharged to the Napa River during the wet season period determined each year (November 1 through April 30) shall apply to the existing and future systems, unless specified otherwise, and shall not exceed the following limits:

1. **Conventional Pollutants Effluent Limitations**

**Table 1 - Conventional Pollutants Effluent Limitations for Wet Season Discharge**

<i>Constituent</i>	<i>Units</i>	<i>30-Day (Monthly) Average</i>	<i>7-Day (Weekly) Average</i>	<i>Daily Maximum</i>	<i>Instantaneous Maximum</i>
A. Biochemical Oxygen Demand (BOD <sub>5</sub> , 20°C) OR Carbonaceous BOD	mg/L	30 25	45 40		--
B. Total Suspended Solids	mg/L	30	45		--
C. Settleable Matter	ml/L- hr	0.1	--	0.2	
D. Oil & Grease	mg/L	10	--	20	--
E. Residual Chlorine <sup>a, b</sup>	mg/L	--	--	--	0.0

Notes:

- a) Requirement defined as below the limit of detection in standard test methods defined in the 18<sup>th</sup> edition of *Standard Methods for the Examination of Water and Wastewater*.
  - b) The discharger may elect to use a continuous on-line monitoring system(s) for measuring flow, chlorine, and sodium bisulfite dosage (including a safety factor) and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Board staff may conclude that these false positives of chlorine residual exceedances are not violations of the permit limit.
2. **pH:** The pH of the discharge shall not exceed 9.0 nor be less than 6.0. Pursuant to 40 CFR 401.17, effluent limitations under continuous monitoring, the discharger shall be in compliance with the pH limitation specified in B.1.(i) of this order, provided that both of the following conditions are satisfied: (1) The total time during which the pH values are outside the required range of 6.0-9.0 pH values shall not exceed 7 hours and 26 minutes in any calendar month; and (2) No individual excursion from the range of pH values shall exceed 60 minutes.
3. **Total Coliform Bacteria:** The treated wastewater, at some point in the treatment process prior to discharge, shall meet the following limits of bacteriological quality:
- a. The moving median value for the Most Probable Number (MPN) of total coliform bacteria in any five consecutive samples shall not exceed 240 MPN/100 mL; and
  - b. Any single sample shall not exceed 10,000 MPN/100 mL.

The discharger may use alternate fecal coliform limits of bacteriological quality instead of meeting 3.a and 3.b above (total coliform limits) provided that it can be conclusively demonstrated through a program approved by the Board that such substitution will not result in unacceptable adverse impacts on the beneficial uses of the receiving water.

The total coliform limit is exempted for up to 6 months during the study period as long as it can be demonstrated that the total coliform exceedence is due to the coliform study being performed.

4. **85 Percent Removal, BOD and TSS:** The arithmetic mean of the biochemical oxygen demand (5-day, 20°C) and total suspended solids values, by weight, for effluent samples collected in each calendar month shall not exceed 15 percent of the arithmetic mean of the respective values, by weight, for influent samples collected at approximately the same times during the same period.
5. **Acute Toxicity:** Representative samples of the effluent shall meet the following limits for acute toxicity: (see Provisions of this Order for more information)

The survival of organisms in undiluted effluent shall be an eleven (11) sample median value of not less than 90 percent survival, and an eleven (11) sample 90 percentile value of not less than 70 percent survival. The eleven sample median and 90th percentile effluent limitations are defined as follows:

**11 sample median:** Any bioassay test showing survival of 90 percent or greater is not a violation of this limit. A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit, if five or more of the past ten bioassay tests show less than 90 percent survival.

**90th percentile:** A bioassay test showing survival of less than 70 percent represents a violation of this effluent limit if one or more of the past ten bioassay tests show less than 70 percent survival.

6. **Chronic Toxicity:** Compliance with the Basin Plan narrative toxicity objective shall be demonstrated according to the following tiered requirements based on results from representative samples of the treated effluent meeting test acceptability criteria and Provision 7:
  - a. routine monitoring;
  - b. accelerate monitoring after exceeding a three sample median value of 10 TUC<sup>(1)</sup> or a single sample maximum of 20 TUC;
  - c. return to routine monitoring if accelerated monitoring does not exceed either "trigger" in "b";
  - d. initiate approved TRE workplan and continue accelerated monitoring if monitoring confirms consistent toxicity above either "trigger" in "b";
  - e. return to routine monitoring after appropriate elements of TRE workplan are implemented and toxicity drops below "trigger" levels in "b", or as directed by the Executive Officer.

<sup>(1)</sup> A TUC equals 100 divided by the no observable effect level (NOEL). The NOEL is determined from IC, EC, or NOEC values. These terms, their usage, and other chronic toxicity monitoring program requirements are defined in more detail in Attachment F of this Order. Monitoring and TRE requirements may be modified by the Executive Officer in response to the degree of toxicity detected in the effluent or in ambient waters related to the discharge.

7. **Interim Effluent Limitations:** Table 2 shows the interim limits for deep water discharges from November 1 through April 30, and shall apply immediately until an effluent limitations calculations can be performed.

**Table 2 - Interim Limits for Wet Season Discharge (November 1 through April 30) (a, c)**

CTR #	Constituent / CTR #	Monthly Average, µg/L (b)	Daily Maximum, µg/L (b)
6	Copper	-	5
8	Mercury	0.018	-
14	Cyanide (d)	-	3.4
88	Hexachlorobenzene	0.0066	-
102	Aldrin	0.0013	-
107	Chlordane	0.00081	0.043
108	4, 4' - DDT	0.0059	0.01
111	Dieldrin	0.0014	0.019
112	Endosulfan (alpha)	0.087	-
113	Endosulfan (beta)	0.087	-
115	Endrin		0.023
117	Heptachlor	0.0016	0.036
118	Heptachlor Epoxide	0.0007	-
119-125	PCBs (e)	0.0007	0.14
126	Toxaphene	0.0067	0.002

Notes:

- a. These limits are based on marine and fresh water quality objectives, and are intended to be achieved through secondary treatment and, as necessary, pretreatment and source control.
- b. Limits apply to the average concentration of all samples collected during the averaging period (Daily - 24-hour period; Monthly - Calendar month). Maximum daily effluent limitations based on EPA aquatic life criterion continuous concentration may be met as a 4-day average (an average of all samples taken over a 4-day average, then concentrations of each of the 24-hour composite samples shall be reported, as well as the average of the total number of composite samples taken over the 4-day period).
- c. All analyses shall be performed using current USEPA Methods, as specified in USEPA Water/Wastewater Methods (EPA-600 Series), except that mercury analyses may be performed using USEPA Method 1631. Metal limits are expressed as total recoverable metals.
- d. The discharger may demonstrate compliance with this limitation by measurement of weak dissociable cyanide.
- e. PCBs refers to PCB 1016, 1221, 1232, 1242, 1248, 1254, 1260.

**B. (ii) For emergency discharges between May 1 and October 31 which receive a river dilution of less than 10:1 (Dry Season Discharge):**

The discharger reclaims and reuses treated effluent in accordance with Order No. 96-011. The effluent limitations prescribed in this section are intended for emergency discharge cases in which extreme season conditions have disturbed the normal summertime water reuse irrigation schedule. These limits were determined assuming no dilution, receiving waters are estuarine water and the discharge is into shallow waters. These limits shall apply to the existing and future systems, unless specified otherwise, and shall not exceed the following limits.

## 1. Conventional Pollutants Effluent Limitations

**Table 3 - Conventional Pollutants Effluent Limitations for Shallow Water Discharge**

<i>Constituent</i>	<i>Units</i>	<i>30-Day (Monthly) Average</i>	<i>7-Day (Weekly) Average</i>	<i>Daily Maximum</i>	<i>Instantaneous Maximum</i>
A. Biochemical Oxygen Demand (BOD <sub>5</sub> , 20°C)	mg/L	10	20		--
B. Total Suspended Solids	mg/L	20	30	40	--
C. Settleable Matter	ml/L-hr	0.1	--	0.2	
D. Oil & Grease	mg/L	10	--	20	--
E. Residual Chlorine <sup>a,b</sup>	mg/L	--	--	--	0.0

Notes:

- a) Requirement defined as below the limit of detection in standard test methods defined in the 18<sup>th</sup> edition of *Standard Methods for the Examination of Water and Wastewater*.
  - b) The discharger may elect to use a continuous on-line monitoring system(s) for measuring flow, chlorine, and sodium bisulfite dosage (including a safety factor) and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Board staff may conclude that these false positives chlorine residual exceedances are not violations of the permit limit.
2. **pH:** The pH of the discharge shall not exceed 8.5 nor be less than 6.5. Pursuant to 40 CFR 401.17, pH effluent limitations under continuous monitoring, the discharger shall be in compliance with the pH limitation specified in B.1.(ii) of this order, provided that both of the following conditions are satisfied: (1) The total time during which the pH values are outside the required range of 6.5-8.5 pH values shall not exceed 7 hours and 26 minutes in any calendar month; and (2) No individual excursion from the range of pH values shall exceed 60 minutes.
3. **Total Coliform Bacteria:** The treated wastewater, at some point in the treatment process prior to discharge, shall meet the following limits of bacteriological quality:
- a. The moving median value for the MPN of total coliform bacteria in any seven consecutive samples shall not exceed 2.2 MPN/100 mL; and
  - b. Any single sample shall not exceed 240 MPN/100 mL.
- The discharger may use alternate fecal coliform limits of bacteriological quality instead of meeting 3.a and 3.b above (total coliform limits) provided that it can be conclusively demonstrated through a program approved by the Board that such substitution will not result in unacceptable adverse impacts on the beneficial uses of the receiving water.
4. **85 Percent Removal, BOD and TSS:** The arithmetic mean of the biochemical oxygen demand (5-day, 20°C) and total suspended solids values, by weight, for effluent samples collected in each calendar month shall not exceed 15 percent of the arithmetic mean of the respective values, by weight, for influent samples collected at approximately the same times during the same period.
5. **Acute Toxicity:** Representative samples of the effluent shall meet the following limits for acute toxicity: (see Provisions of this Order for more information)

The survival of organisms in undiluted effluent shall be an eleven (11) sample median value of not less than 90 percent survival, and an eleven (11) sample 90 percentile value of not less than 70 percent survival. The eleven sample median and 90th percentile effluent limitations are defined as follows:

**11 sample median:** Any bioassay test showing survival of 90 percent or greater is not a violation of this limit. A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit, if five or more of the past ten bioassay tests show less than 90 percent survival.

**90th percentile:** A bioassay test showing survival of less than 70 percent represents a violation of this effluent limit if one or more of the past ten bioassay tests show less than 70 percent survival.

6. **Chronic Toxicity:** Compliance with the Basin Plan narrative toxicity objective shall be demonstrated according to the following tiered requirements based on results from representative samples of the treated effluent meeting test acceptability criteria and Provision 7:
- a. routine monitoring;
  - b. accelerate monitoring after exceeding a three sample median value of 1 TUC<sup>(1)</sup> or a single sample maximum of 2 TUC;
  - c. return to routine monitoring if accelerated monitoring does not exceed either "trigger" in "b";
  - d. initiate approved TRE workplan and continue accelerated monitoring if monitoring confirms consistent toxicity above either "trigger" in "b";
  - e. return to routine monitoring after appropriate elements of TRE workplan are implemented and toxicity drops below "trigger" levels in "b", or as directed by the Executive Officer.

<sup>(1)</sup> A TUC equals 100 divided by the no observable effect level (NOEL). The NOEL is determined from IC, EC, or NOEC values. These terms, their usage, and other chronic toxicity monitoring program requirements are defined in more detail in Attachment F of this Order. Monitoring and TRE requirements may be modified by the Executive Officer in response to the degree of toxicity detected in the effluent or in ambient waters related to the discharge.

7. **Interim Effluent Limitations:** Table 4 shows the interim limits for shallow water discharges from May 1 through October 31, and shall apply until an effluent limitations calculations can be performed.

**Table 4 - Interim Limits for Dry Season Discharge (May 1 through October 31) (a, c)**

CTR #	Constituent / CTR #	Monthly Average, µg/L (b)	Daily Maximum, µg/L
6	Copper	-	5
8	Mercury	0.012	0.018
14	Cyanide (d)	-	3.4
88	Hexachlorobenzene	0.00066	-
102	Aldrin	0.00013	-
107	Chlordane	0.000081	0.0043
108	4, 4' - DDT	0.00059	0.001
111	Dieldrin	0.00014	0.0019

CTR #	Constituent / CTR #	Monthly Average, µg/L (b)	Daily Maximum, µg/L
112	Endosulfan (alpha)	0.0087	-
113	Endosulfan (beta)	0.0087	-
115	Endrin	-	0.0023
117	Heptachlor	0.00016	0.0036
118	Heptachlor Epoxide	0.00007	-
119-125	PCBs (e)	0.00007	0.014
126	Toxaphene	0.00067	0.0002

Notes:

- a. These limits are based on marine and fresh water quality objectives, and are intended to be achieved through secondary treatment and, as necessary, pretreatment and source control.
- b. Limits apply to the average concentration of all samples collected during the averaging period (Daily - 24-hour period; Monthly - Calendar month). Maximum daily effluent limitations based on EPA aquatic life criterion continuous concentration may be met as a 4-day average (an average of all samples taken over a 4-day average, then concentrations of each of the 24-hour composite samples shall be reported, as well as the average of the total number of composite samples taken over the 4-day period).
- c. All analyses shall be performed using current USEPA Methods, as specified in USEPA Water/Wastewater Methods (EPA-600 Series), except that mercury analyses shall be performed using USEPA Method 1631 (ultra-clean method). Metal limits are expressed as total recoverable metals.
- d. The discharger may demonstrate compliance with this limitation by measurement of weak dissociable cyanide.
- e. PCBs refers to PCB 1016, 1221, 1232, 1242, 1248, 1254, 1260.

**B. (iii) Limits and Criteria Applicable to Wet and Dry Season Discharge**

**Mass Trigger and Limit:** Until TMDL and WLA efforts for mercury provide enough information to establish a different WQBEL, the discharger shall demonstrate that the current mercury mass loading to the receiving water does not increase by complying with the following triggers and limits. The mass emissions, based on performance, are summarized in Table 5.

**Table 5 - Mass Emissions for Wet and Dry Season Discharge (1)**

Constituent	With American Canyon	Without American Canyon
<b>Mercury Mass Trigger</b>	0.015 kg/month	0.014 kg/month
<b>Mercury Mass Limit</b>	0.027 kg/month	0.025 kg/month
<b>Dioxin Mass Limit (2)</b>	0.74 mg/month	0.67 mg/month

Notes:

1. All analyses shall be performed using current USEPA Methods, as specified in USEPA Water/Wastewater Methods (EPA-600 Series), except that mercury analyses may be performed using USEPA Method 1631. Metal limits are expressed as total recoverable metals.
2. Compliance shall be determined as the sum of the concentrations of 1,2,3,4,6,7,8-hepta CDD, octa-CDD, 1,2,3,4,6,7,8-hepta CDF, and octa-CDF, and their respective TEFs as identified in Attachment D. For the calculation, the discharger shall use the laboratory reported concentrations and method detection limits as reported (that are determined by the procedure found in 40 CFR 136). Use Method 1613 for dioxin analysis.

- a. Mass limit-Mercury: The mass limit (kilograms per month) was calculated from the 99.87 percentile of the 12-month moving average loads based on the treated effluent that was discharged to the river and reclaimed and the concentration. The mass for each month was calculated by taking the average monthly flows (million gallons per day) times the corresponding average monthly concentration (micrograms per liter) over the past three years, times a conversion factor of 0.1151 (3.785 liters / gallon x 30.42 days / month x 1 kilograms / 1000 grams). The 12 month moving average was taken over the 36 month period and the 99.87 percentile of the 12 month moving average mass was used as the mass limit.
- b. Mass trigger-Mercury: The mass trigger (kilograms per month) was calculated from the 99.87 percentile of the 12-month moving average loads based on the treated effluent that was discharged to the river and the concentration. The mass for each month was calculated by taking the average monthly flows (million gallons per day) times the corresponding average monthly concentration (micrograms per liter) over the past three years, times a conversion factor of 0.1151 (3.785 liters / gallon x 30.42 days / month x 1 kilograms / 1000 grams). The 12 month moving average was taken over the 36 month period and the 99.87 percentile 12 month moving average mass, during the 36 months, was used as the mass trigger.
- c. Compliance-Mercury: Compliance shall also be determined based on moving average loads from flows and concentrations during the discharge period, including wet and dry season, if dry season discharge occurred. This calculated, actual mass is compared to the trigger and limit. If the calculated, actual mass exceeds either the trigger or limit, then either the provisions apply or the limit is violated.

The 99.87 percentile of the 12-month moving average mass emission rates shall be calculated as follows for compliance purposes:

Flow = Monthly average flow discharged, in million gallons per day (mgd).

Hg Conc. = Moving average mercury concentration measurements in micrograms per liter ( $\mu\text{g/L}$ ) corresponding to the above flow.

Monthly Average Mass Emission, in kg/month = Flow (mgd) x Hg Conc. ( $\mu\text{g/L}$ ) x (3.785 liters/gallon) x (1 kilograms/1000grams) x (30.42days/month)

- d. Mass limit-Dioxin: The mass limit (milligrams per month) was calculated from the 99.87 percentile of the treated effluent that was discharged to the river and the concentration. Only the congeners that were detected were used to calculate the toxicity equivalence (TEQ). The mass for each month was calculated by taking the average monthly flows (million gallons per day) times the corresponding average monthly concentration (picograms per liter), times a conversion factor of 115,139.7 (3.785 liters / gallon x 30.42 days / month x 1000 milligrams / 1 gram).
- e. Compliance-Dioxin: Compliance shall also be determined on average loads from flows and concentrations from the 4 detected congeners. For results that are not detected, the detection limit shall be used in calculating mass load. This calculated, actual mass is compared to the limit.

The 99.87 percentile of the mass emission rates shall be calculated as follows for compliance purposes:

Flow = Monthly average flow discharged, in million gallons per day (mgd)

Dioxin Conc. = Dioxin concentration measurements in picograms per liter (pg/L) corresponding to the above flow.

Mass Emission, in mg/month = Flow (mgd) x Dioxin Conc. (pg/L) x (3.785 liters/gallon) x (1000 milligrams/1 gram) x (30.42 days/month)

- f. These mass emission limit and trigger values will be superceded upon completion of a TMDL and WLA. According to the antibacksliding rule in the Clean Water Act, Section 402(o), the permit may be modified to include a less stringent requirement following completion of a TMDL and WLA, if the basis for an exception to the rule are met.

### C. POND SPECIFICATIONS

1. Wastewater grab samples within 1 foot of the surface of all ponds shall meet the following triggers at all times:

Dissolved oxygen	2.0 mg/l minimum
Dissolved sulfides	0.1 mg/l maximum

If the trigger is not met, the discharger shall investigate the cause and address the issue.

2. A minimum freeboard of two feet shall be maintained in all ponds at all times.
3. All ponds shall be protected from erosion, washout, and flooding from the maximum flood having a predicted frequency of once in 100 years.
4. The waste shall not cause a significant degradation of any ground water so as to impair beneficial uses.

### D. RECEIVING WATER LIMITATIONS

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at levels that cause nuisance or adversely affect beneficial uses:
- a. Floating, suspended, or deposited macroscopic particulate matter or foam;
  - b. Bottom deposits or aquatic growths;
  - c. Alteration of temperature, turbidity, salinity, or apparent color;
  - d. Visible, floating, suspended, or deposited oil or other products of petroleum origin and;
  - e. All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Detrimental responses include, but are not limited to, decreased growth rate and decreased reproductive success of resident indicator species, decreased fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State any one place within one foot of the water surface:

- a. Dissolved Oxygen: 5.0 mg/L, minimum

The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, then the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.

- b. Dissolved Sulfide: 0.1 mg/L, maximum

- c. pH: Variation from normal ambient pH by more than 0.5 pH units.

- d. Un-ionized Ammonia:       0.025 mg/L as N, annual median  
                                  0.16 mg/L as N, maximum

- e. Nutrients:                   Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

- 3. The discharge shall not cause a violation of any existing water quality standard for receiving waters adopted by the Board or the State Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, after the effective date of this Order, the Board may revise and modify this Order in accordance with such more stringent standards. The RWQCB should be copied on relevant correspondence and reports forwarded to EPA and regarding sludge management practices.
- 4. Storm water discharges from the discharger's site shall not cause or contribute to a violation of any applicable water quality objective for receiving waters contained in the Basin Plan.

**E. SLUDGE MANAGEMENT PRACTICES**

- 1. All sludge generated by the discharger must be disposed of in a municipal solid waste landfill, reused by land application, or disposed of in a sludge-only landfill in accordance with 40 CFR Part 503. If the discharger desires to dispose of sludge by a different method, a request for permit modification must be submitted to the USEPA 180 days before start-up of the alternative disposal practice. All the requirements in 40 CFR 503 are enforceable by USEPA whether or not they are stated in an NPDES permit or other permit issued to the discharger. The RWQCB should be copied on relevant correspondence and reports forwarded to the EPA regarding sludge management practices.
- 2. Sludge treatment, storage and disposal or reuse shall not create a nuisance, such as objectionable odors or flies, or results in groundwater contamination.
- 3. Due to mitigate: The discharger shall take all reasonable steps to prevent or minimize any sludge use or disposal which has a likelihood of adversely affecting human health or the environment.
- 4. The discharge of sewage sludge shall not cause waste material to be in a position where it is, or can be carried from the sludge treatment and storage site and deposited in the waters of the State.

5. The sludge treatment and storage site shall have facilities adequate to divert surface runoff from adjacent areas, to protect boundaries of the site from erosion, and to prevent any conditions that would cause drainage from the materials in the temporary storage site. Adequate protection is defined as protection from at least a 100-year storm and protection from the highest possible tidal stage that may occur.
6. For sludge that is applied to the land, placed on a surface disposal site, or fired in a sewage sludge incinerator as defined in 40 CFR 503, the discharger shall submit an annual report to the USEPA and the Board containing monitoring results and pathogen and vector attraction reduction requirements as specified by 40 CFR 503, postmarked February 15 of each year, for the period covering the previous calendar year.
7. Sludge that is disposed of in a municipal solid waste landfill must meet the requirements of 40 CFR 258. In the annual self-monitoring report, the discharger shall include the amount of sludge disposed of, and the landfill(s) to which it was sent.
8. Permanent on-site sludge storage or disposal activities are not authorized by this permit. A report of Waste Discharge shall be filed and the site brought into compliance with all applicable regulations prior to commencement of any such activity by the discharger.
9. Sludge Monitoring and Reporting Provisions of this Board's "Standard Provisions and Reporting Requirements", dated August 1993, apply to sludge handling, disposal and reporting practices.
10. The Board may amend this permit prior to expiration if changes occur in applicable state and federal sludge regulations.

## **F. PROVISIONS**

### **1. Permit Compliance**

The discharger shall comply with the limitations, prohibitions, and other provisions of this Order immediately upon adoption by the Board. The Board may reopen this permit to add numeric limits for any constituent that in the future exhibits reasonable potential to cause or contribute to exceedance of applicable WQOs. Requirements prescribed by this Order supersede the requirements prescribed by Order No. 94-037. Order No. 94-037 is hereby rescinded.

### **2. Optional Copper Translator Study and Schedule**

In order to develop information that may be used to establish a water quality based effluent limit based on dissolved copper criteria, the discharger may utilize RMP data from stations nearest the discharger's outfall and implement a sampling plan to collect data for development of a dissolved to total copper translator. If the discharger chooses to proceed with the study, this work shall be performed in accordance with the following tasks:

- a. The discharger shall submit a study plan, acceptable to the Executive Officer, for collection of data to be used for establishment of a dissolved to total copper translator, as discussed in the Findings. After Executive Officer approval, the discharger shall begin implementation of the study plan. The study plan shall provide for development of a translator and other copper site-specific information in accordance with EPA guidelines and relevant portions of the Basin Plan, as amended.

- b. The discharger shall conduct the translator study, acceptable to the Executive Officer, for collection or data that can be used for establishment of a dissolved to total copper translator, as discussed in the Findings. After Executive Officer approval or within 60 days of submission of the Study Plan, the discharger shall begin implementing the study plan. The study plan shall provide for development of translators in accordance with EPA guidelines and any relevant portions of the basin Plan, as amended.

If the discharger chooses to conduct the copper translator study, the study shall be completed 2 years from the adoption of the Order.

### 3. Mercury Reduction Study and Schedule

The discharger shall continue to use methods which are capable of achieving detection limits as low or lower than 0.01µg/L for total mercury. The discharger shall implement an aggressive source control program as well as assess the feasibility of attaining the US EPA national freshwater mercury criterion of 0.012 µg/L as described in the Findings. This evaluation shall consider reductions in mercury effluent concentrations achieved through source control and economically feasible optimization of treatment facility removal efficiency (for both the existing, and future facility). If necessary, alternative control strategies shall be investigated, through participation with the Board and other North Bay shallow water dischargers in identifying cross media watershed-wide sources of mercury impacting the receiving water, and potential control measures. The mercury reduction program shall be developed and implemented in accordance with the following time schedule.

If the mercury sampling results are below 0.012 µg/L consistently, over a 6 month period, the discharger is not required to do a study.

Tasks	Compliance Date
a. Submit a proposed program, acceptable to the Executive Officer, to investigate mercury sources, which may include 1) sampling for mercury in residential and commercial wastewater at representative locations in the collection system over a reasonable period of time, 2) investigating means of optimizing mercury removal by treatment facility processes, 3) evaluating industrial contributions to mercury loadings, 4) evaluating possible means by which any significant sources can be reduced, and 5) evaluating alternative analytical methods to provide improved data reporting limits. Discharge from any industries and/or commercial establishments that are likely to contain mercury shall be characterized.	9 months after permit adoption
b. Following approval by the Executive Officer, commence work in accordance with the study plan and time schedule submitted pursuant to Task 3.a. This submittal shall include a proposed plan and time schedule for evaluation of source reduction measures.	30 days after approval of study plan
c. Submit an interim report, acceptable to the Executive Officer, documenting the initial findings of source reduction options, and past and proposed efforts to encourage minimization of mercury discharges to the collection system.	12 months following commencement of data collection
d. Submit a final report, acceptable to the Executive Officer, documenting the findings of source reduction work and efforts made to minimize mercury in the collection system and treated effluent.	15 months following approval of interim report

e. Develop a pollution prevention plan and time schedule, acceptable to the Executive Officer, based on the results of the report submitted pursuant to Task 3.d.	12 months following approval of final report
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#### 4. Mercury Mass Loading Reduction

If mass loading for mercury exceeds the trigger level specified in B.(iii) of this Order, then the following actions shall be initiated and subsequent reports shall include but not be limited to the following:

Tasks	Compliance Date
a) Notification: Any exceedance of the trigger specified in Effluent Limitation B.(iii). shall be reported to the Regional Board in accordance with Section E.6.b. in the Standard Provisions and Reporting Requirements (August, 1993).	When required
b) Identification of the problem. Review sampling following the exceedance and resample to verify the increase in loading. If the review and/or resampling confirms that the mass loading trigger has been exceeded, determine whether the exceedance is flow or concentration-related. If the exceedance is flow related, identify whether it is related to changes in reclamation, increase in the number of sewer connections, increases in infiltration and inflow (I/I), wet season conditions or unknown sources. If the exceedance is concentration-related, identify whether it is related to industrial, commercial, residential or unknown sources.	4 months after notification
c) Investigation of corrective action: Investigate the feasibility of the following actions: <ul style="list-style-type: none"> <li>• Improving public education and outreach</li> <li>• Reducing inflow and infiltration (I/I)</li> <li>• Increasing reclamation</li> </ul> Develop a plan and time schedule, acceptable to the Executive Officer to implement all reasonable actions to maintain mercury mass loadings at or below the mass loading trigger contained in Effluent Limitation B.(iii).	9 months after identification
d) Investigation of additional prevention measures: In the event the exceedance is related to growth and the plan required under Provision E.3 is not expected to keep mercury loads below the mass load trigger, work with the local planning department to investigate the feasibility and potential benefits of requiring water conservation, and dual plumbing for new development.	6 months after investigation of corrective action

#### 5. Total/Fecal Coliform Study

The discharger may conduct a study, to demonstrate that substituting total coliform organisms limitations with fecal coliform organisms will not result in unacceptable adverse impacts on the beneficial uses of the receiving water. The workplan must be approved by the Executive Officer and the results of the study must conclusively demonstrate that such a substitution will not result in unacceptable adverse impacts on the beneficial uses of the receiving water and must be approved by the Board.

Compliance Date	Schedule
a. Submit a proposed program plan, acceptable to the Executive Officer, for data collection and analysis to determine whether the use of fecal coliform as a more specific indicator of human	24 months following permit adoption

pathogens (instead of total coliform) does not impair beneficial uses in the vicinity of the discharger's outfall in the Napa River.	
b. Following approval of the program plan by the executive officer, collect data in accordance with the study plan and time schedule. Specific data collection timing is expected to correspond to sequential reductions of chlorine use to determine the proper quantity of chlorine needed to meet fecal coliform criteria.	Commence data collection within 12 months after Executive Officer approval.
c. Following data collection, analyze data and submit a report to the executive officer, documenting the results found, including chlorine residual measurements and corresponding fecal and total coliform measurements in effluent and in the receiving water. Document whether use of the fecal coliform indicator is expected to impair beneficial uses.	3 months following end of data collection.

During the study, the discharger is exempt from the total coliform limit for a period not to exceed six months from the start of data collection. If there is a total coliform exceedence during the data collection period, the discharger shall demonstrate the exceedence is due to the study in order for the exemption to apply.

## 6. Compliance with Acute Toxicity Effluent Limitation

### *Existing System*

The discharger is currently and shall continue to perform the acute toxicity test using juvenile fathead minnows and in accordance with USEPA/600/4-90/027F, 4<sup>th</sup> edition.

### *Future System*

The discharger shall continue to perform the acute toxicity test using juvenile fathead minnows and in accordance with USEPA/600/4-90/027F, 4<sup>th</sup> edition, unless otherwise specified by the Board.

## 7. Compliance with Chronic Toxicity

The discharger shall monitor and evaluate effluent discharged to the Napa River for chronic toxicity in order to demonstrate compliance with the Basin Plan narrative toxicity objective. Compliance with this requirement shall be achieved in accordance with the following:

- a. The discharger shall conduct routine chronic toxicity monitoring in accordance with the SMP of this Order.
- b. If data from routine monitoring exceed either of the following evaluation parameters, then the discharger shall conduct accelerated chronic toxicity monitoring. Accelerated monitoring shall consist of monitoring at frequency intervals of one half the interval given for routine monitoring in the SMP of this Order.
- c. Chronic toxicity evaluation parameters:
  - (1) a three sample median value of 10 TU<sub>c</sub><sup>(3)</sup>; and
  - (2) a single sample maximum value of 20 TU<sub>c</sub><sup>(3)</sup>.
  - (3) These parameters are defined as follows:
    - (a) Three-sample median: A test sample showing chronic toxicity greater than 10 TU<sub>c</sub> represents an exceedence of this parameter, if one of the past two or fewer tests also show chronic toxicity greater than 10 TU<sub>c</sub>.

- (b)  $TU_c$  (chronic toxicity unit): A  $TU_c$  equals  $100/NOEL$  (e.g., If  $NOEL = 100$ , then toxicity = 1  $TU_c$ ).  $NOEL$  is the no observed effect level determined from IC, EC, or  $NOEC$  values <sup>(c)</sup>.
- (c) The terms IC, EC,  $NOEL$  and  $NOEC$  and their use are defined in Attachment C of this Order.
- d. If data from accelerated monitoring tests are found to be in compliance with the evaluation parameters, then routine monitoring shall be resumed.
- e. If accelerated monitoring tests continue to exceed either evaluation parameter, then the discharger shall initiate a chronic toxicity reduction evaluation (TRE).

## 8. Toxicity Reduction Evaluation (TRE) for Chronic Toxicity

Because there is a consistent exceedance of either of the chronic toxicity monitoring triggers in the screening and variability phases, the discharger shall implement a TRE in accordance with a TRE work plan acceptable to the Executive Officer. The TRE shall be conducted in accordance with the following:

- a. The discharger shall prepare and submit to the Board for Executive Officer approval a TRE work plan. An initial generic workplan shall be submitted within 60 days of the date of adoption of this Order. The workplan shall be reviewed and updated as necessary in order to remain current and applicable to the discharge and discharge facilities.
- b. The TRE shall be initiated within 30 days of the date of completion of the accelerated monitoring test observed to exceed either evaluation parameter.
- c. The TRE shall be conducted in accordance with an approved work plan.
- d. The TRE needs to be specific to the discharge and discharger facility, and be in accordance with current technical guidance and reference materials including US EPA guidance materials. TRE shall be conducted as a tiered evaluation process, such as summarized below:
  - (1) Tier 1 consists of basic data collection (routine and accelerated monitoring).
  - (2) Tier 2 consists of evaluation of optimization of the treatment process including operation practices, and in-plant process chemicals.
  - (3) Tier 3 consists of a toxicity identification evaluation (TIE).
  - (4) Tier 4 consists of evaluation of options for additional effluent treatment processes.
  - (5) Tier 5 consists of evaluation of options for modifications of in-plant treatment processes.
  - (6) Tier 6 consists of implementation of selected toxicity control measures, and follow-up monitoring and confirmation of implementation success.
- e. The TRE may be ended at any stage if monitoring finds there is no longer consistent toxicity.
- f. The objective of the TIE shall be to identify the substance or combination of substances causing the observed toxicity. All reasonable efforts using currently available TIE methodologies shall be employed.
- g. As toxic substances are identified or characterized, the discharger shall continue the TRE by determining the source(s) and evaluating alternative strategies for reducing or eliminating the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with chronic toxicity evaluation parameters.
- h. Many recommended TRE elements parallel required or recommended efforts of source control, pollution prevention and storm water control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements or recommended efforts of such programs may be acceptable to comply with TRE requirements.
- i. The Board recognizes that chronic toxicity may be episodic and identification of causes of and reduction of sources of chronic toxicity may not be successful in all cases. Consideration of

enforcement action by the Board will be based in part on the discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.

Chronic Toxicity Monitoring Screening Phase Requirements, Critical Life Stage Toxicity Tests and definitions of terms used in the chronic toxicity monitoring are identified in Attachment F of this Order. The discharger shall comply with these requirements as applicable to the discharge.

#### **9. Status Reports on Facility Upgrades**

The discharger shall submit annual status reports on October 31 of each year beginning in 2000. These reports shall be submitted at least annually until the upgraded facility is fully operational, and this permit amended to incorporate new information relevant to the facility. These status reports shall provide detailed discussion of progress made towards finalization of design, construction, and permitting of the upgraded facility, along with projected time schedules for future actions.

#### **10. Storm Water Pollution Prevention Plan**

The discharger shall continue to implement their Storm Water Pollution Prevention Plan (SWPP) in accordance with the attached "Standard Storm Water Provisions". The SWPP plan shall be reviewed and updated as appropriate by October 1, every year. Full compliance with the "Standard Storm Water Provisions" shall be an enforceable requirement of this permit. The SWPP shall include a stormwater monitoring program, designed to meet the following objectives:

- a. To monitor the quality of storm water discharges relative to Discharge Prohibitions, Effluent Limitations, and Receiving Water Limitations.
- b. To aid in the implementation of the Storm Water Pollution Prevention Plan.
- c. To measure the effectiveness of control measures and management practices in removing pollutants in storm water discharge.

If the facility's storm water system is connected to the sanitary sewer system, the discharger may contact the Board to have an inspection conducted on the facility to evaluate the storm water situation. If storm water closure is acceptable to the Board, the discharger will not be required to have a SWPPP.

#### **11. Background Ambient Receiving Water Samples**

The discharger shall take background ambient receiving water samples upstream from the facility. This information is required to perform the RPA and to determine the effluent limitations.

A sampling plan shall be submitted to the Executive Officer for approval, prior to sampling. The discharger may choose to coordinate with other POTWs in the area in order to effectively acquire and the same information required of them.

Tasks	Compliance Date
a. Submit a proposed sampling plan, acceptable to the Executive Officer, to sample background, ambient receiving waters upstream from the facility. This submittal shall include a proposed plan and time schedule for performing the work.	1 year after permit adoption
b. Commence work in a timely fashion in accordance with the sampling plan.	Schedule according to the sampling plan
c. Submit a report, to the Board, documenting the work performed in the sampling plan. Information included, but not limited to, in report are as follows: constituent sampled for, sampling results, location of the samples, time the samples were taken, sample methodology used in the lab analysis, QA/QC data, and map showing the location of the sampling site(s) in relation to the location of the discharger.	Annually until completion and not to exceed April 28, 2003

Background ambient samples are required for constituents that have a reasonable potential, have an incomplete RPA for the constituent, or have an incomplete RPA with an interim limit. The constituents that fall in these categories are labeled yes ("Y"), incomplete ("I"), or incomplete with an interim limit ("I w/ I.L.") in the RP column in Table 5 of the Fact Sheet. No background ambient water samples are required from constituents that do not have a reasonable potential.

## 12. Special Study – Dioxin Study of the Effluent

In accordance with the SIP, major dischargers shall conduct effluent monitoring for the seventeen 2, 3, 7, 8-TCDD congeners listed below. The purpose of the monitoring is to assess the presence and amounts of the congeners being discharged to inland surface waters, enclosed bays, and estuaries for the development of a strategy to control these chemicals in a future multi-media approach. Major dischargers are required to monitor the effluent once during the dry season and once during the wet season for a period of three consecutive years. The following Toxicity Equivalence Factor (TEF) shall be used by the discharger to determine Toxic Equivalence (TEQ).

<u>Isomer Group</u>	<u>Toxicity Equivalence Factor</u>
2,3,7,8-tetra CDD	1.0
1, 2,3,7,8-penta CDD	1.0
1, 2, 3, 4, 7, 8-HexaCDD	0.1
1, 2, 3, 6, 7, 8-HexaCDD	0.1
1, 2, 3, 7, 8,9-HexaCDD	0.1
1, 2, 3, 4, 6, 7, 8-HeptaCDD	0.01
octa CDD	0.0001
2,3,7,8-Tetra CDF	0.1
1,2,3,7,8-Penta CDF	0.05
2,3,4,7,8-Penta CDF	0.5
1, 2, 3, 4, 7, 8-HexaCDF	0.1
1, 2, 3, 6, 7, 8-HexaCDF	0.1
1, 2, 3, 7, 8, 9-HexaCDF	0.1
2, 3, 4, 6, 7, 8-HexaCDF	0.1
1, 2, 3, 4, 6, 7, 8-HeptaCDF	0.01
1, 2, 3, 4, 7, 8,9-HeptaCDF	0.01
octa CDF	0.0001

The discharger is also required to investigate the cost-effectiveness of improving solids removal from its discharge. The investigation shall include, but not be limited to the cost-effectiveness of operating the filter during wet season, optimizing the coagulation and clarification, and other alternatives that will enhance solids removal from the discharge.

Tasks	Compliance Schedule
a. Submit a proposed sampling plan, acceptable to the Executive Officer, to sample the effluent for seventeen congeners. This submittal shall include a proposed plan and time schedule for performing the work.	1 year after permit adoption
b. Following approval by the Executive Officer, commence work in a timely fashion in accordance with the sampling plan.	30 days after approval of study plan
c. Submit a report, to the Board, documenting the work performed in the sampling plan for the seventeen congeners.	Annually for 3 consecutive years
d. Submit a study plan, acceptable to the Executive Officer, to identify alternatives that will be evaluated to enhance solids removal.	6 months after permit adoption
e. Submit an evaluation report, acceptable to the Executive Officer, to recommend and propose time schedule to implement the cost-effective alternative(s) to enhance solids removal.	6 months after approval of the study plan
f. Submit a completion report, acceptable to the Executive Officer, to document completion of the recommended alternative(s) for enhancing the solids removal.	1 year after approval of the evaluation report

### 13. Special Study – Effluent Characterization

The discharger shall continue to monitor and to evaluate effluent discharged to the Napa River for the 123 constituents listed in Table 2 of the Self-Monitoring Plan (see Attachment E of this Order), including tributyltin, chlorpyrifos, and diazinon. The purpose of this study is to monitor the effluent for constituents that have not been sampled for previously. The results of these data will be used to perform a RP analysis. The discharger shall take a total of 6 rounds of samples of the effluent – one during the wet season and one during the dry season.

The discharger shall participate in a regional study or a joint study with other dischargers to determine if alternative analytical methods with lower detection levels for organic compounds are currently available through commercial laboratories. To the extent that non-EPA approved (40CFR136) methods are used, the results will not be used for compliance purposes.

Attachment E, Table 2 of this Order lists the constituent and the minimum level and laboratory technique that achieves this level (from the SIP). The discharger shall consistently meet these limits of detection.

Tasks	Compliance Schedule
a. Submit a proposed work plan, acceptable to the Executive Officer. This submittal shall include a proposed plan and time schedule for performing the work.	1 year after permit adoption
b. Following approval by the Executive Officer, commence work in a timely fashion in accordance with the sampling plan.	30 days after approval of study plan

c. Submit a report, to the Board, documenting the work performed in the work plan.	Annually for 3 consecutive years
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#### 14. Pretreatment Program

The discharger shall implement and enforce its approved pretreatment program in accordance with Federal pretreatment regulations (40 CFR Part 403), pretreatment standards promulgated under Sections 307(b), 307(c) and 307(d) of the Clean Water Act, and this Board Order No. 95-015 with all amendments and revisions thereafter. The discharger's responsibilities includes but are not limited to the following:

- a. Enforcement of National Pretreatment Standards of 40 CFR 403.5 and 403.6;
- b. Implementation of its pretreatment program in accordance with legal authorities, policies, procedures, and financial provisions described in the General Pretreatment regulations (40 CFR 403) and its approved pretreatment program;
- c. Submission of annual and semi-annual reports to USEPA and the State as described in Board Order No. 95-015 and its amendments, revisions, or extensions thereafter.

The discharger shall implement its approved pretreatment program and the program shall be an enforceable condition of this permit. If the discharger fails to perform the pretreatment functions, the Regional Water Quality Control Board (RWQCB), the State Water Resources Control Board (SWRCB) or U.S. Environmental Protection Agency (UPEPA) may take enforcement actions against the discharger as authorized by the Clean Water Act.

#### 15. Pollutant Minimization/Pollution Prevention Programs

- a. The discharger shall continue to implement and improve its existing Pollution Prevention Program in order to reduce pollutant loadings to the treatment plant and therefore to the receiving waters.
- b. The discharger shall submit an annual report, acceptable to the Executive Officer, no later than August 30<sup>th</sup> of each calendar year. Annual reports shall cover July of the preceding year through June of the current year.

Annual report shall include at least the following information:

- (i) *A brief description of its treatment plant, treatment plant processes and service area.*
- (ii) *A discussion of the current pollutants of concern.* Periodically, the discharger shall analyze its own situation to determine which pollutants are currently a problem and/or which pollutants may be potential future problems. This discussion shall include the reasons why the pollutants were chosen.
- (iii) *Identification of sources for the pollutants of concern.* This discussion shall include how the discharger intends to estimate and identify sources of the pollutants. The discharger should also identify sources or potential sources not directly within the ability or authority of the discharger to control, such as pollutants in the potable water supply and air deposition.

- (iv) *Identification of tasks to reduce the sources of the pollutants of concern.* This discussion shall identify and prioritize tasks to address the discharger's pollutants of concern. Tasks can target its industrial, commercial, or residential sectors. The discharger may implement tasks themselves or participate in group, regional, or national tasks that will address its pollutants of concern. The discharger is strongly encouraged to participate in group, regional, or national tasks that will address its pollutants of concern whenever it is efficient and appropriate to do so. A time line shall be included for the implementation of each task.
- (v) *Implementation and continuation of outreach tasks for City and/or District employees.* The discharger shall implement outreach tasks for City and/or District employees. The overall goal of these tasks is to inform employees about the pollutants of concerns, potential sources, and how they might be able to help reduce the discharge of pollutants of concerns into the treatment plant. The discharger may provide a forum for employees to provide input to the Program.
- (vi) *Implementation and continuation of a public outreach program.* The discharger shall implement a public outreach program to communicate pollution prevention to its service area. Outreach may include participation in existing community events such as county fairs, initiating new community events such as displays and contests during Pollution Prevention Week, implementation of a school outreach program, conducting plant tours, and providing public information in newspaper articles or advertisements, radio, television stories or spots, newsletters, utility bill inserts, and web site. Information shall be specific to the target audiences. The discharger should coordinate with other agencies as appropriate.
- (vii) *Discussion of criteria used to measure Program's and tasks' effectiveness.* The discharger shall establish criteria to evaluate the effectiveness of its Pollution Prevention Program. This shall also include a discussion of the specific criteria used to measure the effectiveness of each of the tasks in item b. (iv), b. (v), and b. (vi).
- (viii) *Documentation of efforts and progress.* This discussion shall detail all of the discharger's activities in the Pollution Prevention Program during the reporting year.
- (ix) *Evaluation of Program's and tasks' effectiveness.* This discharger shall utilize the criteria established in b. (vii) to evaluate the Program's and tasks' effectiveness.
- (x) *Identification of specific tasks and time schedules for future efforts.* Based on the evaluation, the discharger shall detail how it intends to continue or change its tasks in order to more effectively reduce the amount of pollutants to the treatment plant, and subsequently in its effluent.

c. According to Section 2.4.5.1 of the SIP when there is evidence that a priority pollutant is present in the effluent above an effluent limitation and either:

- (i) A sample result is reported as detected, but not quantified (i.e., < Minimum Level) and the effluent limitation is less than the reported ML; or
- (ii) A sample result is reported as not detected (i.e., < Method Detection Limit) and the effluent limitation is less than the MDL,

- the discharger shall be required to expand its Pretreatment and Pollution Prevention Programs that meet the Pollutant Minimization Program by including the "reportable priority pollutant(s) in addition to the pollutants of concern.
- d. If triggered by the reasons in Provision 16.c, and notified by the Executive Officer, within six months, the discharger's Pollution Prevention Program shall also include:
- (i) an annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling; or alternative measures approved by the Executive Officer when it is demonstrated that source monitoring is unlikely to produce useful analytical data;
  - (ii) quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system, or alternative measures approved by the Executive Officer when it is demonstrated that influent monitoring is unlikely to produce useful analytical data;
  - (iii) Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation;
  - (iv) Implementation of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and
  - (v) An annual status report that shall be sent to the RWQCB including:
    - 1. All monitoring results for the previous years;
    - 2. A list of potential sources of the reportable priority pollutant(s);
    - 3. A summary of all actions undertaken pursuant to the control strategy; and
    - 4. A description of actions to be taken in the following year.
- e. To the extent where the requirements of the two Programs overlap, the discharger is allowed to continue/modify/expand its existing Pollution Prevention Program to satisfy the Pollutant Minimization Program requirements.
- f. These Program requirements are not intended to fulfill the requirements in The Clean Water Enforcement and Pollution Prevention Act of 1999 (Senate Bill 709).

## **16. Operations and Maintenance Procedures**

The discharger shall review, and update as necessary, its Operations and Maintenance Procedures, annually, or within a reasonable time period after completion of any significant facility or process changes. The report describing the results of the review process including an estimated time schedule for completion of any revisions determined necessary, and a description or copy of any completed revisions, shall be submitted to the Board as part of the Annual Report, as described in Section F.5, Part A, of the attached Self-Monitoring Program (See Attachment D).

## **17. Contingency Plan**

Annually, the discharger shall review and update as necessary, its Contingency Plan as required by Board Resolution 74-10. The discharge of pollutants in violation of this Order where the discharger has failed to develop and/or adequately implement a contingency plan will be the basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code. Plan revisions, or a letter stating that no changes are needed, shall be submitted to the Board as a part of the Annual Report, as described in Section F.5, Part A, of the attached Self-Monitoring Program (See Attachment D).

## **18. Self-Monitoring Program**

The discharger shall comply with the Self-Monitoring Program for this Order, as adopted by the Board and as may be amended by the Executive Officer.

## **19. Optional Mass Offset**

If the discharger wishes to pursue a mass offset program, a mass offset plan for reducing 303(d) listed pollutants to the same receiving water body needs to be submitted for Board approval. This Order may be modified by the Board to allow an acceptable mass offset program.

## **20. Standard Provisions**

The discharger shall comply with all applicable items of the attached "Standard Provisions and Reporting Requirements" dated August 1993. If there are any conflicts between the permit and the Standard Provisions, the permit supercedes the Standard Provisions.

## **21. Change in Control or Ownership**

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 of this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. (Refer to Standard Provisions, referenced above). The request must contain the requesting entity's full legal name, the address and telephone number of the persons responsible for contact with the Board and a statement. The statement shall comply with the signatory paragraph described in Standard Provisions 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.

## **22. Reopener**

The Board may modify, or revoke and reissue, this Order and Permit if present or future investigations demonstrate that the discharge(s) governed by this Order will cause, have the potential to cause, or will contribute to adverse impacts on water quality and/or beneficial uses of the receiving waters.

## **23. Order Expiration**

This Order expires on July 19, 2005. The discharger must file a Report of Waste Discharge in accordance with Title 23 of the California Administrative Code not later than 180 days before this expiration date as application for reissuance of waste discharge requirements.

## **24. Effective Date of Permit**

This Order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective on the date of adoption provided the Regional Administrator, United States Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Lawrence P. Kolb, Acting Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on July 19, 2000.

  
LAWRENCE P. KOLB  
Acting Executive Officer

**Attachments:**

- A. Location Map
- B. Wastewater Process Schematic – Existing System
- C. Wastewater Process Schematic – Future System
- D. Self-Monitoring Program, Part A – August 1993
- E. Self-Monitoring Program - Part B
- F. Chronic Toxicity – Definition of Terms and Screening Phase Requirements
- G. Standard Provisions and Reporting Requirements – August 1993

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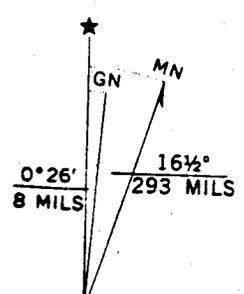
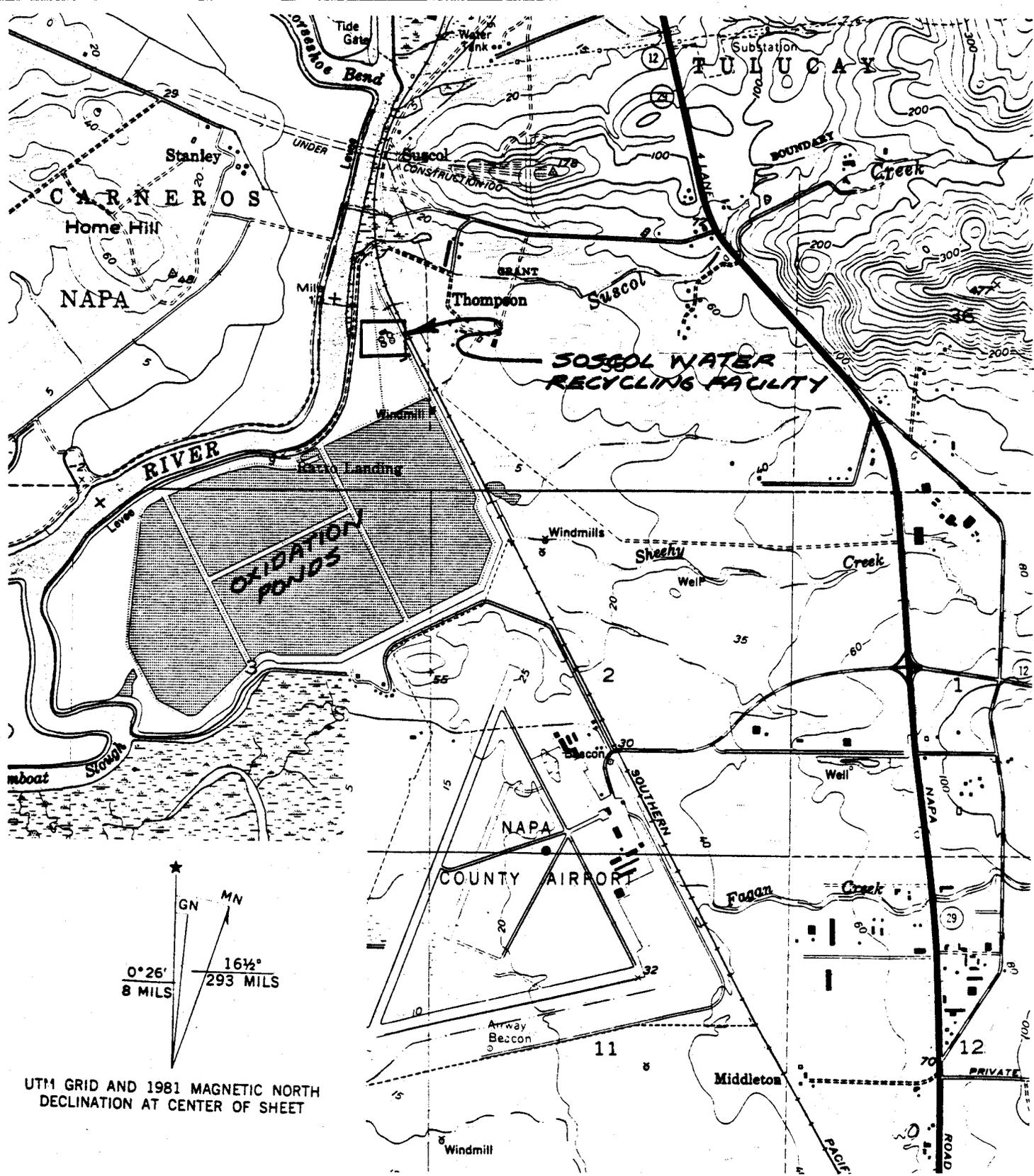
# **ATTACHMENT A**

## **LOCATION MAP**

**ATTACHMENT B**

**WASTEWATER PROCESS SCHEMATIC**

**EXISTING PROCESS**



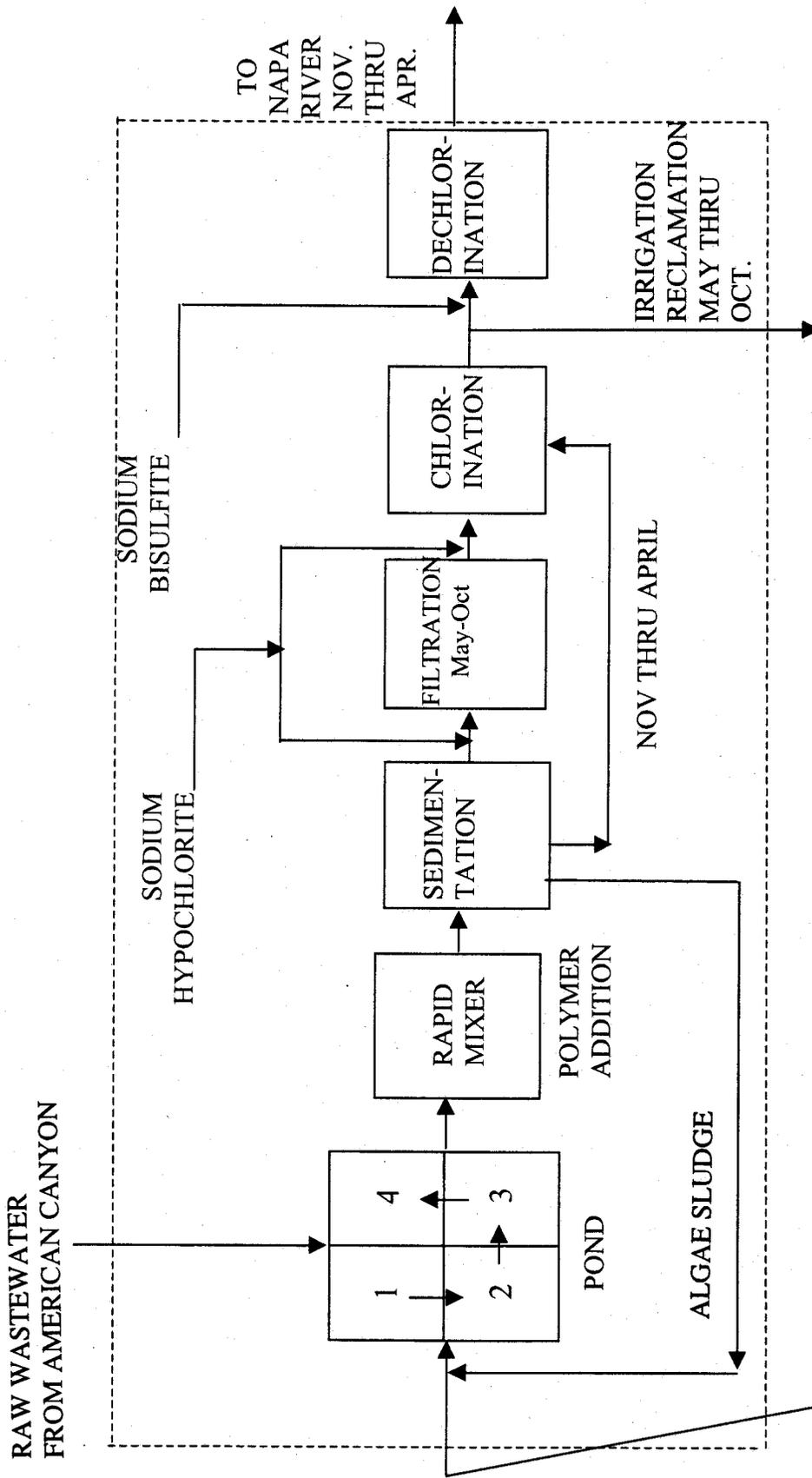
UTM GRID AND 1981 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

**LOCATION MAP**  
**FROM U.S. GEOLOGICAL SURVEY MAP,**  
**PHOTOREVISED 1981**  
**SOLSOL WATER RECYCLING FACILITY**  
**NAPA, CALIFORNIA**  
**SEPTEMBER, 1998** SHT 1 of 1

# NAPA SANITATION DISTRICT

CURRENT OPERATION

MARCH, 2000



NAPA SANITATION DISTRICT  
RAW WASTEWATER TO THE PONDS

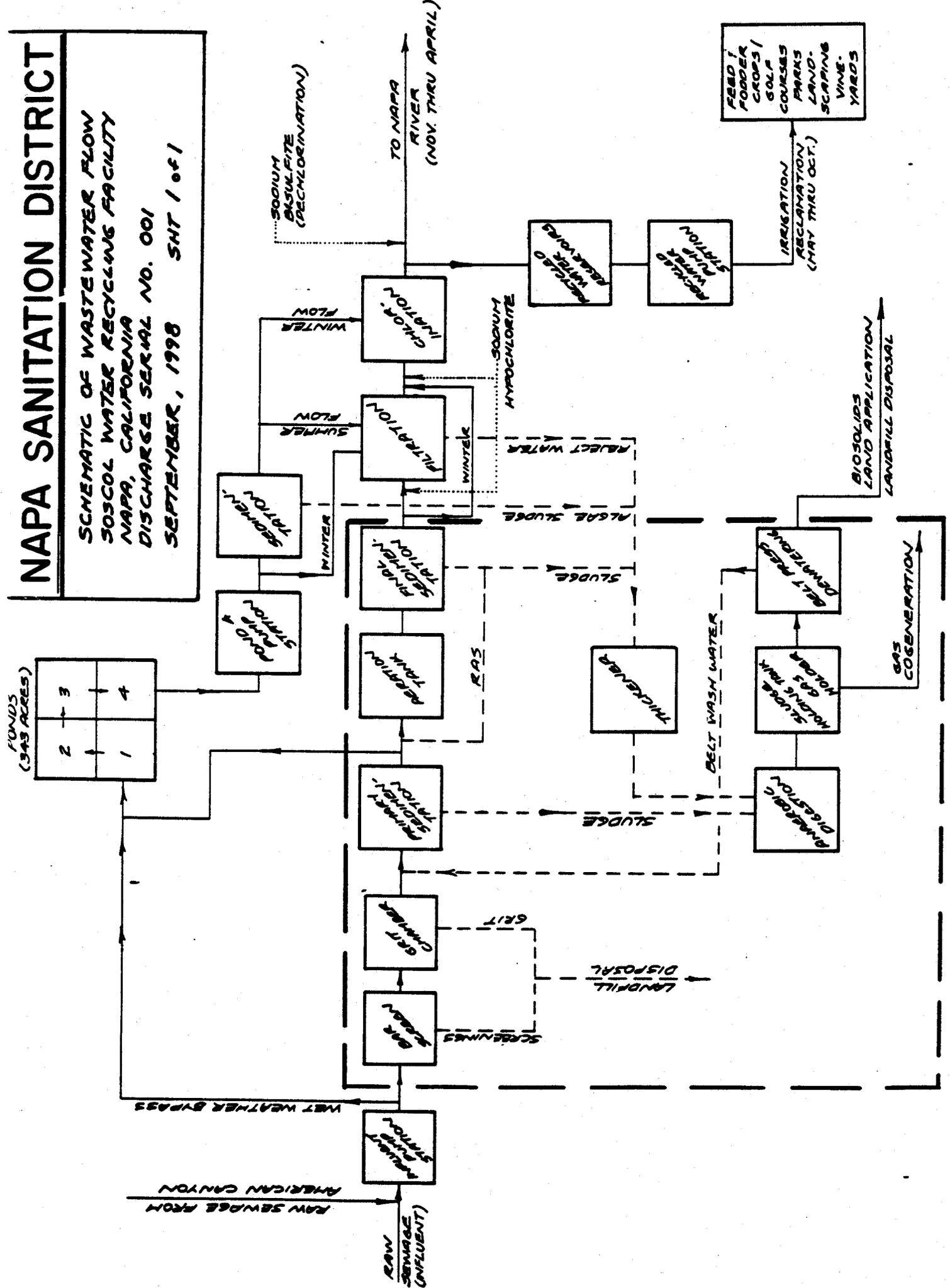
**ATTACHMENT C**

**WASTEWATER PROCESS SCHEMATIC**

**FUTURE SYSTEM**

# NAPA SANITATION DISTRICT

SCHEMATIC OF WASTEWATER FLOW  
 305COL WATER RECYCLING FACILITY  
 NAPA, CALIFORNIA  
 DISCHARGE SERIAL NO. 001  
 SEPTEMBER, 1998 SHT 1 of 1



**ATTACHMENT D**

**SELF-MONITORING REPORT - PART A**

**AUGUST 1993**

**ATTACHMENT E**

**SELF-MONITORING**

**PROGRAM - PART B**

**ATTACHMENT E**  
**SELF MONITORING PROGRAM – PART B**

**I. DESCRIPTION OF SAMPLING STATIONS**

**A. INFLUENT**

<u>Station</u>	<u>Description</u>
A-002	At any point in the Napa Sanitation District treatment facilities' headworks at which all waste tributary to the system is present and preceding any phase of treatment.

(A-001 station has been eliminated.)

**B. EFFLUENT**

<u>Station</u>	<u>Description</u>
E-001	At any point in the outfall from the treatment facilities between the point of discharge and the point at which all waste tributary to that outfall is present (may be the same as E-001D).
E-001D	At any point in the disinfection facilities for Station E-001. at which point adequate contact with the disinfectant is assured.

**C. RECEIVING WATERS**

<u>Station</u>	<u>Description</u>
CC-1	At any point in the Napa River, located by the Southern Crossing Bridge approximately 2000 feet upstream from the point of discharge from outfall E-001.
CC-2	In the Napa River, the area located within a 100-foot radius from the point of discharge from the bypass facilities for the discharger pump station near Soscol Creek.
CC-3	In the Napa River, the area immediately above the diffuser system for outfall E-001.
CC-4	At any point in the Napa River, located approximately 1000-foot downstream from the point of discharge outfall E-001.
CC-5	At any point in the Napa River, located approximately 2000-feet downstream from the point of discharge outfall E-001.

**D. GROUND WATERS**

<u>Station</u>	<u>Description</u>
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G-2                    A well located at northeast corner of pond 1, on District property easterly of the Napa River.

(G-1 station has been eliminated.)

E. LAND OBSERVATIONS

<u>Station</u>	<u>Description</u>
L-1 through L-n	Located at corners and midpoints of the perimeter around the treatment facilities of Napa Sanitation District. A sketch showing the locations of these stations should accompany the first report complying with this Order.

F. STABILIZATION PONDS

<u>Station</u>	<u>Description</u>
P-1 through P-n	Located at corners and midpoints of each stabilization ponds.

G. OVERFLOWS AND BYPASSES

<u>Station</u>	<u>Description</u>
O-1 through O-n	Bypass or overflows from manholes, pump stations, or collection system.

Note: Initial self-monitoring report to include map and descriptions of each known bypass or overflow location.

II. SCHEDULE OF SAMPLING, ANALSES, AND OBSERVATIONS

This Schedule of sampling, analyses, and observations shall be that given in Table 1 of this self-monitoring program.

III. MODIFICATION OF PART A (August 1993)

- A. This monitoring program includes the following modifications of Part A:
- B. Section F.5., Annual Reporting: The first sentence is revised to read:

‘The discharger shall submit to the Board an Annual Report for each calendar year, to be received no later than February 15 of the following year.’

IV. REPORTING REQUIREMENTS

- A. General Reporting Requirements are described in Section E of the Board’s “Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits”, dated August 1993.
- B. A Self-Monitoring Report (SMR) shall be submitted for each calendar month. The report shall be submitted to the Board 45 days after the monitored month. For example, for the monitored month of March, the SMR shall be submitted to the Board by May 15. The required contents of these reports

are described in SMP Part A, Section F.4 (See Attachment D). During the periods when wastewater is being reclaimed, self-monitoring reports should be submitted according to the Water Reuse Requirements.

- C. An Annual Report shall be submitted for each calendar year. The report shall be submitted to the Board by February 15 of the following year. The required contents of these reports are described in SMP Part A, Section F.5.
- D. The discharger shall work with Board staff to implement electronic reporting for the SMP.

**V. ACUTE TOXICITY MONITORING REQUIREMENTS**

The discharger shall test fathead minnows in accordance with wastewater testing method specified in USEPA 600/4-90/027F, 4<sup>th</sup> edition.

The following parameters shall be monitored on the sample stream used for the acute toxicity bioassays, at the start of the bioassay test and daily for the duration of the bioassay test, and the results reported: pH, Temperature, Dissolved Oxygen, and Ammonia Nitrogen.

The following parameters shall be monitored on the sample stream used for the acute toxicity bioassays, at the start of the bioassay test and daily for the duration of the bioassay test, and the results reported: pH, Temperature, Dissolved Oxygen, and Ammonia Nitrogen.

**VI. CHRONIC TOXICITY MONITORING REQUIREMENTS**

See also, Provision E.8. and Attachment F of this Order.

*Future System*

1. Chronic Toxicity Monitoring Requirements

- a. Sampling. The discharger shall collect 24-hour composite samples of treatment plant effluent at Sampling Station E-001, for critical life stage toxicity testing as indicated below. For toxicity tests requiring renewals, 24-hour composite samples collected on consecutive days are required.
- b. Test Species: Chronic toxicity shall be monitored by using critical life stage test(s) and the most sensitive test specie(s) identified by screening phase testing or previous testing conducted under the ETCP. Test specie(s) shall be approved by the Executive Officer. Two test species may be required if test data indicate that there is alternating sensitivity between the two species.
- c. Frequency:
  - (1) Routine Monitoring: Twice per year
  - (2) Accelerated Monitoring: Quarterly, or as otherwise specified by the Executive Officer.
- d. Conditions for Accelerated Monitoring: The discharger shall conduct accelerated monitoring when either of the following conditions are exceeded:

- (1) three sample median value of 10 TUC for deep water discharge and 1 TUC for shallow water discharge, or
  - (2) single sample maximum value of 20 TUC for deep water discharge and 2 TUC for shallow water discharge.
- e. Methodology: Sample collection, handling and preservation shall be in accordance with USEPA protocols. The test methodology used shall be in accordance with the references cited in this Permit, or as approved by the Executive Officer. A concurrent reference toxicant test shall be performed for each test.
- f. Dilution Series: The discharger shall conduct tests at 100%, 85%, 70%, 50%, and 25%. The “%” represents percent effluent as discharged.

## 2. Chronic Toxicity Reporting Requirements

- A. Routine Reporting: Toxicity test results for the current reporting period shall include, at a minimum, for each test:
1. sample date(s)
  2. test initiation date
  3. test species
  4. end point values for each dilution (e.g. number of young, growth rate, percent survival)
  5. NOEC value(s) in percent effluent
  6. IC<sub>15</sub>, IC<sub>25</sub>, IC<sub>40</sub>, and IC<sub>50</sub> values (or EC<sub>15</sub>, EC<sub>25</sub> ... etc.) in percent effluent
  7. TUC values (100/NOEC, 100/IC<sub>25</sub>, and 100/EC<sub>25</sub>)
  8. Mean percent mortality ( $\pm$ s.d.) after 96 hours in 100% effluent (if applicable)
  9. NOEC and LOEC values for reference toxicant test(s)
  10. IC<sub>50</sub> or EC<sub>50</sub> value(s) for reference toxicant test(s)
  11. Available water quality measurements for each test (ex. pH, D.O., temperature, conductivity, hardness, salinity, ammonia)
- B. Compliance Summary: The results of the chronic toxicity testing shall be provided in the most recent self-monitoring report and shall include a summary table of chronic toxicity data from at least eleven of the most recent samples. The information in the table shall include the items listed above under Section F.2.a, item numbers 1, 3, 5, 6(IC<sub>25</sub> or EC<sub>25</sub>), 7, and 8.
- C. Reporting Raw Data in Electronic Format: The discharger shall report all chronic toxicity data upon completion of chronic toxicity testing in the format specified in “Suggested Standardized Reporting Requirements for Monitoring Chronic Toxicity,” February 1993, SWRCB. The data shall be submitted in high density, double sided 3.5-inch floppy diskettes, or electronically via e-mail.

After at least twelve test rounds, the discharger may request the Executive Officer to decrease the required frequency of testing, and/or to reduce the number of compliance species to one. Such a request may be made only if toxicity exceeding the TUC values specified in the effluent limitations was never observed using that test species.

## VII. CHRONIC TOXICITY REPORTING REQUIREMENTS

- A. Routine Reporting: Toxicity test results for the current reporting period shall include the following, at a minimum, for each test:
1. Sample date(s)

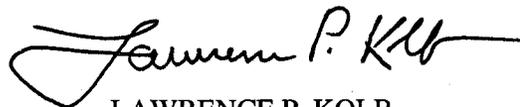
2. Test initiation date
  3. Test species
  4. End point values for each dilution (e.g., number of young, growth rate, percent survival)
  5. e. NOEC value(s) in percent effluent
  6. IC<sub>15</sub>, IC<sub>25</sub>, IC<sub>40</sub>, and IC<sub>50</sub> values (or EC<sub>15</sub>, EC<sub>25</sub> ... etc.) in percent effluent
  7. TUC values (100/NOEC, 100/IC<sub>25</sub>, and 100/EC<sub>25</sub>)
  8. Mean percent mortality ( $\pm$  s.d.) after 96 hours in 100% effluent
  9. NOEC and LOEC values for reference toxicant test(s)
  10. IC<sub>50</sub> or EC<sub>50</sub> value(s) for reference toxicant test(s)
  11. Available water quality measurements for each test (i.e., Ph, D.O., temperature, conductivity, hardness, salinity, ammonia)
- B. Compliance Summary: Each self-monitoring report shall include a summary table of chronic toxicity data of, at a minimum, samples collected during the most recent year.
- C. Reporting Raw Data in Electronic Format: On a semi-annual basis, by February 15 and August 15 of each year, the discharger shall report all chronic toxicity data for the previous semi-annual report in the format specified in "Suggested Standardized Reporting Requirements for Monitoring Chronic Toxicity", August 1993, SWRCB. The data shall be submitted in either high or low density, double 3.5-inch floppy diskettes.

### VIII. ELECTRONIC REPORTING

The discharger shall work with the Board to participate in the electronic reporting program.

I, Lawrence P. Kolb, Acting Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with procedures set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 00-059.
2. Had been amended and ordered by the Board on July 19, 2000.
3. May be revised by the Executive Officer pursuant to federal regulations (40 CFR 122.36); other revisions may be ordered by the Board.



LAWRENCE P. KOLB  
Acting Executive Officer

**TABLE 1**  
**SCHEDULE FOR SAMPLING, MEASUREMENTS AND ANALYSIS<sup>1,6</sup>**  
**NAPA SANITATION DISTRICT**

Sampling Station	A-002	E-001 <sup>2</sup>			E-001D <sup>2</sup>			CC-3	All other CC stations <sup>2</sup>	G-2
Type of Sample	C-24	G	C-24	Cont.	G	C-24	Cont.	G	G	G
Flow Rate (MGD)	D			D						
BOD <sub>5</sub> at 20° C (mg/l and kg/day)	2/W <sup>3</sup>		2/W							
Chlorine Residual & Dosage (mg/l & kg/day)							Cont. or 2H			
Settleable Matter			M							
Total Suspended Solids (mg/l & kg/day)	3/W <sup>3</sup>		3/W							
Oil & Grease (mg/l & kg/day) <sup>4</sup>			Q							
Total Coliform (MPN/100ml)					3/W			M		2/Y
Acute Toxicity 96-hr survival in undiluted effluent							M <sup>5</sup>			
Chronic Toxicity							M <sup>5</sup>			
Ammonia Nitrogen (mg/l & kg/day)			M					M		2/Y
Nitrate Nitrogen (mg/l)										2/Y
Nitrite Nitrogen (mg/l)										2/Y
Total Organic Nitrogen (mg/l)										2/Y
Total Phosphate (mg/l)										2/Y
Turbidity (Jackson turbidity units)			2/M					M	M	
pH (units)		D						M	M	2/Y

**TABLE 1 (CONTINUED)**

Sampling Station	E-001 <sup>2</sup>			CC-3	All other CC <sub>2</sub>	G-2	All L & P	All O
	G	C-24	Cont.	G	G	G	O	O
Dissolved Oxygen (mg/l & % Saturation)	D			M	M			
Temperature (°C)	D			M	M			
Apparent Color (color units)				M	M			
Chlorides (mg/l)		M		M	M			
Sulfides (if DO<5 mg/l), Total and Dissolved (mg/l)	D			M	M			
Arsenic (µg/l & kg/day)		M						
Cadmium (µg/l & kg/day)		M						
Chromium (µg/l & kg/day)		M						
Copper (µg/l & kg/day)		M						
Cyanide (µg/l & kg/day)		M						
Lead (µg/l & kg/day)		M						
Mercury (µg/l & kg/day)		M						
Nickel (µg/l & kg/day)		M						
Selenium (µg/l & kg/day)		M						
Silver (µg/l & kg/day)		M						
Zinc (µg/l & kg/day)		M						
Organic Priority Pollutants <sup>7</sup> (µg/l & kg/day) (test for 3 consecutive years)		2/Y						
All Applicable Standard Observations				M	M		W	E
Chlorophyll <i>a</i> (µg/l & kg/day)				M				
Un-ionized Ammonia as N (mg/l)				M				
River Flow (cfs)				D				
Volumetric Dilution, River to Effluent		D						
Total Dissolved Solids (mg/l)						2/Y		

**TYPES OF SAMPLES**

- G = grab samples
- C-24 = 24-hour composite sample
- Cont. = continuous sampling
- O = observation

**TYPES OF STATIONS**

- A = treatment facility influent stations
- E = waste effluent stations
- CC = receiving water stations
- L = treatment facilities perimeter stations
- P = basin and/or pond levee stations
- G = ground waters stations
- O = overflow and bypass stations

### FREQUENCY OF SAMPLING

E = each occurrence	Cont. = continuous
D = once each day	2/H = twice per hour
W = once each week	3/W = three days per week
2W = every two weeks	5/W = five days per week
M = once each month, during wet and dry season	2/Y = once in wet season, once in dry season
Q = quarterly	1/Y = once in March

### FOOTNOTES FOR TABLE 1

1. During any day when bypassing occurs from any treatment phase(s) in the facility, the monitoring program for the effluent shall include the following in addition to the above schedule for sampling, measurements, and analyses:
  - a. When bypassing occurs from any primary or secondary treatment unit(s), composite sample for BOD<sub>5</sub>, total suspended solids and settleable matter, grab sample for oil and grease (influent and effluent), and continuous monitoring for flow.
  - b. When bypassing chlorination, grab sample for coliform (total), and continuous monitoring for flow.
  - c. When bypassing dechlorination, grab sample for chlorine residual (continuous or every two hours), and continuous monitoring for flow.
  - d. Under any of the above situations, daily receiving water sampling and observation shall occur until it is demonstrated that no adverse impact on the receiving water is detected.
2. Sampling is required throughout the year, whether or not there is a discharge to the river.
3. Influent analyses for BOD<sub>5</sub> and total suspended solids are required 2 days and 3 days a week, respectively, during the wet season and during dry season is required.
4. Each oil and grease sample shall consist of three grab samples taken at two hour intervals during the sampling date, with each grab being collected in a glass container and analyzed separately. Results shall be expressed as a weighted average of the 3 values based upon the instantaneous flow rates occurring at the time of each grab sample.
5. Effluent samples for fish bioassays must be dechlorinated prior to testing. For acute toxicity tests, perform tests in accordance with the wastewater testing method specified in USEPA/600/4-90/027F, 4<sup>th</sup> edition and using juvenile fathead minnows. With regards to the chronic toxicity tests, after the TRE is completed, the discharger shall perform chronic toxicity tests monthly.
6. Testing conducted under the pretreatment and reclamation programs may be used to satisfy the monitoring requirements of this Order. All analyses shall be performed using current USEPA Methods, as specified in USEPA Water/Wastewater Methods (EPA-600 Series), except that mercury analyses shall be performed using USEPA Method 1631 (ultra-clean method). Metal limits are expressed as total recoverable metals.
7. The priority pollutants are the constituents listed in Table 2 of Attachment E of this Order shall be sampled for 3 consecutive years. After 3 years of data, the Table shall be revised based on completion of the RPA. The monthly metals sampling can be used for the biannual metals sampling.

**SELECTED CONSTITUENTS**  
**Selected Constituents Monitoring - Special Study for Effluent Characterization**

1. Effluent monitoring shall include evaluation for all constituents listed in Table 2 below by sampling and analysis of final effluent, in accordance with Provision F.13 of this Order.
2. Analyses shall be conducted using the lowest commercially available and reasonably achievable detection levels. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to the Minimum Levels given below. The constituent in bold has an interim concentration and/or mass limit.

**TABLE 2 - Selected Constituents**

CTR #	Constituent (a)	Minimum Level (µg/l) (b)											
		GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
1.	Antimony					10	5	50	0.5	5	0.5		1000
2.	Arsenic				20		2	10	2	2	1		1000
3.	Beryllium					20	0.5	2	0.5	1			1000
4.	Cadmium				10	0.5	10	0.25	0.5				1000
5a.	Chromium (III) (c)												
5b.	Chromium (VI)				10	5							1000
<b>6.</b>	<b>Copper (d)</b>					<b>25</b>	<b>5</b>	<b>10</b>	<b>0.5</b>	<b>2</b>			<b>1000</b>
7.	Lead					20	5	5	0.5	2			10,000
<b>8.</b>	<b>Mercury (e)</b>								<b>0.5</b>			<b>0.2</b>	
9.	Nickel					50	5	20	1	5			1000
10.	Selenium						5	10	2	5	1		1000
11.	Silver					10	1	10	0.25	2			1000
12.	Thallium					10	2	10	1	5			1000
13.	Zinc					20		20	1	10			
14.	Cyanide				5								
15.	Asbestos (c, f)												
<b>16.</b>	<b>2, 3, 7, 8-TCDD (Dioxin) (c, h)</b>												
17.	Acrolein	2.0	5										
18.	Acrylonitrile	2.0	2										
19.	Benzene	0.5	2										
20.	Bromoform	0.5	2										
21.	Carbon Tetrachloride	0.5	2										
22.	Chlorobenzene	0.5	2										
23.	Chlorodibromomethane	0.5	2										
24.	Chloroethane	0.5	2										
25.	2-Chloroethylvinyl Ether	1	1										
26.	Chloroform	0.5	2										
27.	Dichlorobromomethane	0.5	2										
28.	1,1-Dichloroethane	0.5	1										
29.	1,2-Dichloroethane	0.5	2										
30.	1, 1-Dichloroethylene or 1,1 Dichloroethene	0.5	2										
31.	1, 2-Dichloropropane	0.5	1										
32.	1, 3 - Dichloropropylene or 1,3-Dichloropropene	0.5	2										
33.	Ethylbenzene	0.5	2										

CTR #	Constituent (a)	Minimum Level (µg/l) (b)											
		GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
34.	Methyl Bromide	1.0	2										
35.	Methyl Chloride or Chloromethane	0.5	2										
36.	Methylene Chloride or Dichloromethane	0.5	2										
37.	1,1, 2,2-Tetrachloroethane	0.5	1										
38.	Tetrachloroethylene	0.5	2										
39.	Toluene	0.5	2										
40.	1,2-Trans-Dichloroethylene	0.5	1										
41.	1,1,1-Trichloroethane	0.5	2										
42.	1,1,2-Trichloroethane	0.5	2										
43.	Trichloroethylene or Trichloroethene	0.5	2										
44.	Vinyl Chloride	0.5	2										
45.	2-Chlorophenol	2	5										
46.	2, 4 Dichlorophenol	1	5										
47.	2,4-Dimethylphenol	1	2										
48.	2-Methyl-4,6-Dinitrophenol or Dinitro-2-methylphenol	10	5										
49.	2,4-Dinitrophenol	5	5										
50.	2-Nitrophenol		10										
51.	4-Nitrophenol	5	10										
52.	4-chloro-3-methylphenol	5	1										
53.	Pentachlorophenol	1	5										
54.	Phenol	1	1		50								
55.	2, 4, 6 Trichlorophenol	10	10										
56.	Acenaphthene	1	1	0.5									
57.	Acenaphthylene		10	0.2									
58.	Anthracene		10	2									
59.	Benzidine		5										
60.	Benzo(a)Anthracene or 1,2 Benzanthracene	10	5										
61.	Benzo(a)Pyrene		10	2									
62.	Benzo(b)Fluoranthene or 3,4 Benzofluoranthene		10	10									
63.	Benzo(ghi)Perylene		5	0.1									
64.	Benzo(k)Fluoranthene		10	2									
65.	Bis(2-Chloroethoxy) Methane		5										
66.	Bis(2-Chloroethyl) Ether	10	1										
67.	Bis(2-Chloroisopropyl) Ether	10	2										
68.	Bis(2-Ethylhexyl) Phthalate	10	5										
69.	4-Bromophenyl Phenyl Ether	10	5										
70.	Butylbenzyl Phthalate	10	10										
71.	2-Chloronaphthalene		10										
72.	4-Chlorophenyl Phenyl		5										

CTR #	Constituent (a)	Minimum Level (µg/l) (b)											
		GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
	Ether												
73.	Chrysene		10	5									
74.	Dibenzo(a,h) Anthracene		10	0.1									
75.	1, 2 Dichlorobenzene (volatile)	0.5	2										
	1, 2 Dichlorobenzene (semi-volatile)	2	2										
76.	1, 3 Dichlorobenzene (volatile)	0.5	2										
	1, 3 Dichlorobenzene (semi-volatile)	2	1										
77.	1, 4 Dichlorobenzene (volatile)	0.5	2										
	1, 4 Dichlorobenzene (semi-volatile)	2	1										
78.	3,3'-Dichlorobenzidine		5										
79.	Diethyl Phthalate	10	2										
80.	Dimethyl Phthalate	10	2										
81.	Di-n-Butyl Phthalate		10										
82.	2,4-Dinitrotoluene	10	5										
83.	2,6-Dinitrotoluene		5										
84.	Di-n-Octyl Phthalate		10										
85.	1,2-Diphenylhydrazine		1										
86.	Fluoranthene	10	1	0.05									
87.	Fluorene		10	0.1									
88.	Hexachlorobenzene	5	1										
89.	Hexachlorobutadiene	5	1										
90.	Hexachlorocyclopentadiene	5	5										
91.	Hexachloroethane	5	1										
92.	Indeno(1,2,3-cd)Pyrene		10	0.05									
93.	Isophorone	10	1										
94.	Naphthalene	10	1	0.2									
95.	Nitrobenzene	10	1										
96.	N-Nitrosodimethylamine	10	5										
97.	N-Nitrosodi-n-Propylamine	10	5										
98.	N-Nitrosodiphenylamine	10	1										
99.	Phenanthrene		5	0.05									
100.	Pyrene		10	0.05									
101.	1,2,4-Trichlorobenzene	1	5										
102.	Aldrin	0.005											
103.	α-BHC	0.01											
104.	β-BHC	0.005											
105.	γ-BHC (Lindane)	0.02											
106.	δ-BHC	0.005											
107.	Chlordane	0.1											
108.	4,4'-DDT	0.01											
109.	4,4'-DDE	0.05											
110.	4,4'-DDD	0.05											
111.	Dieldrin	0.01											

CTR #	Constituent (a)	Minimum Level (µg/l) (b)											
		GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
112.	Endosulfan (alpha)	0.02											
113.	Endosulfan (beta)	0.01											
114.	Endosulfan Sulfate	0.05											
115.	Endrin	0.01											
116.	Endrin Aldehyde	0.01											
117.	Heptachlor	0.01											
118.	Heptachlor Epoxide	0.01											
119-125	PCBs (g)	0.5											
126.	Toxaphene	0.5											
	Tributyltin (c)												
	Chlorpyrifos (c, i)												
	Diazinon (c, i)												

Notes:

- a.) Factors may be applied to the ML depending on the specific sample preparation steps employed. Dischargers are to instruct laboratories to establish calibration standards so that the ML value is the lowest calibration. At no time is the discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.
- b.) Laboratory techniques are defined as follows: GC = Gas Chromatography; GCMS = Gas Chromatography/Mass Spectrometry; LC = High Pressure Liquid Chromatography; Color = Colorimetric; FAA = Flame Atomic Absorption; GFAA = Graphite Furnace Atomic Absorption; Hydride = Gaseous Hydride Atomic Absorption; CVAA = Cold Vapor Atomic Absorption; ICP = Inductively Coupled Plasma; ICPMS = Inductively Coupled Plasma/Mass Spectrometry; SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption (i.e. EPA 200.9); DCP = Direct Current Plasma.
- c.) The SIP does not contain an ML for this constituent.
- d.) For copper, the discharger may also use the following laboratory techniques with the relevant minimum level: GFAA with a minimum level of 5 µg/L and SPGFAA with a minimum level of 2 µg/L.
- e.) Use ultra-clean sampling and analytical methods for mercury monitoring per 13267 letter issued to Discharger. ML for compliance purposes is as listed in table above until the SWRCB adopts alternative minimum level.
- f.) The discharger does not need to be sample for this constituent because sampling is not required for receiving waters with a municipal beneficial use designation.
- g.) PCBs refers to PCB 1016, 1221, 1232, 1242, 1248, 1254 and 1260.
- h.) Use Method 1613 for TCDD analysis and test for seventeen congeners.
- i.) The detection limit goals for these constituents are 0.03 µg/L.

**ATTACHMENT F**

**CHRONIC TOXICITY**

**DEFINITION OF TERMS AND**

**SCREENING PHASE**

**REQUIREMENTS**

**ATTACHMENT F**  
**CHRONIC TOXICITY - DEFINITION OF TERMS & SCREENING PHASE REQUIREMENTS**

**I. Definition of Terms**

- A. No observed effect level (NOEL) for compliance determination is equal to IC<sub>25</sub> or EC<sub>25</sub>. If the IC<sub>25</sub> or EC<sub>25</sub> cannot be statistically determined, the NOEL shall be equal to the NOEC derived using hypothesis testing.
- B. Effective concentration (EC) is a point estimate of the toxicant concentration that would cause an adverse effect on a quantal, "all or nothing," response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Kärber. EC<sub>25</sub> is the concentration of toxicant (in percent effluent) that causes a response in 25% of the test organisms.
- C. Inhibition Concentration (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a non-lethal, non-quantal biological measurement, such as growth. For example, an IC<sub>25</sub> is the estimated concentration of toxicant that would cause a 25% reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as EPA's Bootstrap Procedure.
- D. No observed effect concentration (NOEC) is the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. It is determined using hypothesis testing.

**II. Chronic Toxicity Screening Phase Requirements**

- A. The discharger shall perform screening phase monitoring:
  - 1. Subsequent to any significant change in the nature of the effluent discharged through changes in sources or treatment, except those changes resulting from reductions in pollutant concentrations attributable to pretreatment, source control, and waste minimization efforts, or
  - 2. Prior to Permit reissuance. Screening phase monitoring data shall be included in the NPDES Permit application for reissuance. The information shall be as recent as possible, but may be based on screening phase monitoring conducted within 5 years before the permit expiration date.
- B. Design of the screening phase shall, at a minimum, consist of the following elements:
  - 1. Use of test species specified in Tables F1 and F2 (attached), and use of the protocols referenced in those tables, or as approved by the Executive Officer;
  - 2. Two stages:
    - a. Stage 1 shall consist of a minimum of one battery of tests conducted concurrently. Selection of the type of test species and minimum number of tests shall be based on Table F3 (attached); and
    - b. Stage 2 shall consist of a minimum of two test batteries conducted at a monthly frequency using the three most sensitive species based on the Stage 1 test results and as approved by the Executive Officer.
  - 3. Appropriate controls; and
  - 4. Concurrent reference toxicant tests.
- C. The discharger shall submit a screening phase proposal to the Executive Officer for approval. The proposal shall address each of the elements listed above.

TABLE F1

## CRITICAL LIFE STAGE TOXICITY TESTS FOR ESTUARINE WATERS

SPECIES	(Scientific name)	EFFECT	TEST DURATION	REFERENCE
alga	( <u>Skeletonema costatum</u> ) ( <u>Thalassiosira pseudonana</u> )	growth rate	4 days	1
red alga	( <u>Champia parvula</u> )	number of cystocarps	7-9 days	5
Giant kelp	( <u>Macrocystis pyrifera</u> )	percent germination; germ tube length	48 hours	3
abalone	( <u>Haliotis rufescens</u> )	abnormal shell development	48 hours	3
oyster mussel	( <u>Crassostrea gigas</u> ) ( <u>Mytilus edulis</u> )	{abnormal shell development; {percent survival	48 hours	2
Echinoderms (urchins - (sand dollar -	<u>Strongylocentrotus purpuratus</u> , <u>S. franciscanus</u> ); <u>Dendraster excentricus</u> )	percent fertilization	1 hour	4
shrimp	( <u>Mysidopsis bahia</u> )	percent survival; growth; fecundity	7 days	5
silversides	( <u>Menidia beryllina</u> )	larval growth rate; percent survival	7 days	5

**Toxicity Test References:**

1. American Society for Testing Materials (ASTM). 1990. Standard Guide for conducting static 96-hour toxicity tests with microalgae. Procedure E 1218-90. ASTM Philadelphia, PA.
2. American Society for Testing Materials (ASTM). 1989. Standard Practice for conducting static acute toxicity tests with larvae of four species of bivalve molluscs. Procedure E 724-89. ASTM, Philadelphia, PA.
3. Anderson, B.B. J.W. Hunt, S.L. Turpen, A.R. Coulon, M. Martin, D.L. McKeown, and F.H. Palmer. 1990. Procedures manual for conducting toxicity tests developed by the marine bioassay project. California State Water Resources Control Board, Sacramento.
4. Dinnel, P.J., J. Link, and Q. Stober. 1987. Improved methodology for sea urchin sperm cell bioassay for marine waters. Archives of Environmental Contamination and Toxicology 16:23-32. and S.L. Anderson. September 1, 1989. Technical Memorandum. San Francisco Bay Regional Water Quality Control Board, Oakland, CA.
5. Weber, C.I., W.B. Horning, II, D.J. Klem, T.W. Neiheisel, P.A. Lewis, E.L. Robinson, J. Menkedick, and F. Kessler (eds.). 1988. Short-term methods for estimating the chronic toxicity of effluents and receiving waters to marine and estuarine organisms. EPA-600/4-87/028. National Technical Information Service, Springfield, VA.

**TABLE F 2  
 CRITICAL LIFE STAGE TOXICITY TESTS FOR FRESH WATERS**

SPECIES	(Scientific name)	EFFECT	TEST DURATION	REFERENCE
fathead minnow	( <u>Pimephales promelas</u> )	survival; growth rate	7 days	6
water flea	( <u>Ceriodaphnia dubia</u> )	survival; number of young	7 days	6
alga	( <u>Selenastrum capricornutum</u> )	cell division rate	4 days	6

**Toxicity Test Reference:**

6. Horning, W.B. and C.I. Weber (eds.). 1989. Short-term methods for estimating the chronic toxicity of effluents and receiving waters to freshwater organisms. Second edition. U.S. EPA Environmental Monitoring Systems Laboratory, Cincinnati, Ohio. EPA/600/4-89/001.

**TABLE F 3  
 TOXICITY TEST REQUIREMENTS FOR STAGE ONE SCREENING PHASE**

REQUIREMENTS	RECEIVING WATER CHARACTERISTICS		
	Discharges to Coast	Discharges to San Francisco Bay ‡	
	Ocean	Marine	Freshwater
Taxonomic Diversity:	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish
Number of tests of each salinity type: Freshwater (†): Marine:	0 4	1 or 2 3 or 4	3 0
Total number of tests:	4	5	3

† The fresh water species may be substituted with marine species if:

- 2) The salinity of the effluent is above 5 parts per thousand (ppt) greater than 75% of the time, or
- 2) The ionic strength (TDS or conductivity) of the effluent at the test concentration used to determine compliance is documented to be toxic to the test species.

‡ Marine refers to receiving water salinities greater than 5 ppt at least 75% of the time during a normal water year.

Fresh refers to receiving water with salinities less than 5 ppt at least 75% of the time during a normal water year.

**ATTACHMENT G**

**STANDARD PROVISIONS AND**

**REPORTING REQUIREMENTS**

**AUGUST 1993**



# California Regional Water Quality Control Board San Francisco Bay Region



**Winston H. Hickox**  
Secretary for  
Environmental  
Protection

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**Gray Davis**  
Governor

**AUG 02 2000**

**CERTIFIED MAIL** No. P 391 502 455  
**RETURNED RECEIPT REQUESTED**

File No.: 2139.3009 (CL)

Napa Sanitation District  
950 Imola Avenue West  
Napa, CA 94558

Attn: Mr. Mike Alexander, Managing Director

Notice: The item indicated by an "X" is enclosed herewith:

- A. One certified copy of an Order adopted by the Board on the date shown therein.
- B. Attachment to Order containing Requirements and Recommendations of other agencies.
- C. One copy of Executive Officer Summary Report which was considered by the Board on the date shown therein. The Motion(s) recommended therein was (were) adopted by the Regional Board on that date.
- D. Other - Copy of a Tentative Order.

Sincerely,

Lawrence P. Kolb  
Acting Executive Officer

cc: Terry Oda, USEPA Region 9, WTR-5

***California Environmental Protection Agency***