



# California Regional Water Quality Control Board



Linda S. Adams  
Secretary for Environmental  
Protection

## San Francisco Bay Region

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Arnold Schwarzenegger  
Governor

**ORDER NO. R2-2006-0036**

**NPDES NO. CA0038768**

The following Discharger is authorized to discharge in accordance with the conditions set forth in this Order:

<b>Discharger</b>	City of American Canyon
<b>Name of Facility</b>	American Canyon Wastewater Treatment Facility
<b>Facility Address</b>	151 Mezzetta Court
	American Canyon, CA, 94503
	Napa County

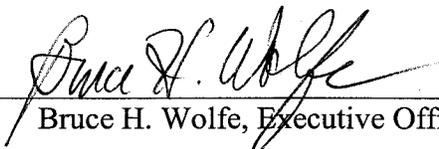
The Discharger is authorized to discharge from the following discharge points as set forth below:

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001-S	Tertiary treated, UV disinfected effluent	38° 11' 03.7" N	122° 16' 39.0" W	North Slough
003-R	Tertiary treated, UV disinfected effluent	38° 11' 05.7" N	122° 16' 44.8" W	Constructed freshwater wetlands

This Order was adopted by the Regional Water Board on:	June 14, 2006
This Order shall become effective on:	July 1, 2006
This Order shall expire on:	June 30, 2011
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Board have classified this discharge as a major discharge.	
The Discharger shall file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, not later than 180 days in advance of the Order expiration date as application for issuance of new waste discharge requirements.	

IT IS HEREBY ORDERED, that Order Nos. 00-003, 01-113, and R2-2002-0096 are rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in Division 7 of the California Water Code (CWC) and regulations adopted thereunder, and the provisions of the federal Clean Water Act (CWA), and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

I, Bruce H. Wolfe, Executive Officer, do hereby certify the following is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on June 14, 2006.

  
Bruce H. Wolfe, Executive Officer

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
REGION 2, SAN FRANCISCO BAY REGION**

ORDER NO. R2-2006-0036  
NPDES NO. CA0038768

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**I. FACILITY INFORMATION**

The following Discharger is authorized to discharge in accordance with the conditions set forth in this Order:

<b>Discharger</b>	City of American Canyon
<b>Name of Facility</b>	Wastewater Treatment and Reclamation Facility
<b>Facility Address</b>	151 Mezzetta Court
	American Canyon, CA, 94503
	Napa County
<b>Facility Contact, Title, and Phone</b>	Robert C. Weil, Public Works Director, (707) 647-4550
<b>Mailing Address</b>	300 Crawford Way, American Canyon, CA 94503
<b>Type of Facility</b>	POTW
<b>Facility Design Flow</b>	2.5 million gallons per day (MGD) (average dry weather flow)
	4.0 MGD (peak dry weather flow)
	5.0 MGD (peak wet weather flow)

## II. FINDINGS

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter Regional Water Board), finds:

- A. **Background.** The City of American Canyon (hereinafter Discharger) is currently discharging under Order Nos. 00-003, 01-013, R2-2002-0096 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0038768. The Discharger submitted a Report of Waste Discharge, dated October 18, 2004, and applied for a NPDES permit renewal to discharge treated wastewater from the City of American Canyon Wastewater Treatment Facility (hereinafter Facility).
- B. **Facility Description.** The Discharger owns and operates a tertiary level wastewater treatment facility. The Facility consists of an emergency overflow basin, headworks, screening, grit removal, biological aeration with membranes facilities, disinfection units including ultraviolet (UV) disinfection for all flow discharged to the receiving water bodies, sodium hypochlorite and a chlorine contact tank for disinfection of recycled water, chemical storage building, effluent pump station, and operations building. The Facility consists of two segregated wastewater treatment process streams. The main basin is used primarily for treating the low total dissolved solids (TDS) domestic wastewater from the south basin (about 75% of the total dry season influent flow). The north basin is used for treating the industrial wastewater, which has higher TDS levels of approximately 2000 mg/L. The Facility operators have the flexibility of combining the two waste streams prior to or after the treatment processes. During the wet season from November 1 through April 30, effluent is discharged from Discharge 001-S (see table on cover page) to the North Slough, a water of the United States and a tributary to the Napa River within the Napa River watershed; effluent can be discharged from Discharge 003-R to the constructed freshwater wetlands all year round, which eventually overflows to the North Slough; during the dry season from May 1 through October 31, a portion of the effluent is reclaimed for irrigation from Discharge 002-R. **Attachment B** provides a location map of the area around the Facility. **Attachment C** provides a flow schematic of the Facility.
- C. **Legal Authorities.** This Order is issued pursuant to section 402 of the Federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and Chapter 5.5, Division 7 of the California Water Code (CWC). It shall serve as a NPDES permit for point source discharges from this facility to surface waters.
- D. **Background and Rationale for Requirements.** The Regional Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and through special studies. **Attachments A through G**, which contain background information and rationale for Order requirements, are hereby incorporated into this Order and, thus, constitute part of the Findings for this Order.
- E. **California Environmental Quality Act (CEQA).** This action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21100, et seq.) in accordance with Section 13389 of the CWC.

- F. **Technology-based Effluent Limitations.** The Code of Federal Regulations (CFR) at 40 CFR §122.44(a) requires that permits include applicable technology-based limitations and standards. This Order includes technology-based effluent limitations based on tertiary treatment or equivalent requirements that meet both the technology-based secondary treatment standards for POTWs and protect the beneficial uses of the receiving waters. The Regional Water Board has considered the factors listed in CWC §13241 in establishing these requirements and/or Best Professional Judgment (BPJ) in accordance with 40 CFR §125.3. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet (**Attachment F**).
- G. **Water Quality-based Effluent Limitations.** Section 122.44(d) of 40 CFR requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality objectives/criteria (WQOs/WQC) to protect the beneficial uses of the receiving water. Where numeric water quality objectives have not been established, 40 CFR §122.44(d) specifies that WQBELs may be established using USEPA criteria guidance under CWA section 304(a), proposed State criteria or a State policy interpreting narrative criteria supplemented with other relevant information, or an indicator parameter.
- H. **Water Quality Control Plan.** The Regional Water Board adopted a Water Quality Control Plan for the San Francisco Bay Basin (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan.

The Basin Plan at Table 2-7 states that the beneficial uses of any specifically identified water body generally apply to its tributary streams. The Basin Plan does not specifically identify beneficial uses for the North Slough or the constructed freshwater wetlands but does identify present and potential uses for the Napa River and brackish Napa Wetlands, to which the North Slough is tributary, and the constructed freshwater wetlands are connected. Thus, by applying the tributary rule and BPJ, the applicable beneficial uses of the North Slough and the constructed freshwater wetlands are as listed in Table 1 (more detailed rationale can be found in the attached Fact Sheet [**Attachment F**]).

Requirements of this Order specifically implement the Water Quality Control Plan.

- I. **Thermal Plan.** The State Water Board adopted a *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for inland surface waters.
- J. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, which was amended on May 4, 1995, and November 9, 1999. About forty criteria in the NTR applied in California. On May 18, 2000, USEPA adopted the CTR, which incorporated the NTR criteria that were applicable in California. The CTR was amended on February 13, 2001. These rules include water quality criteria (WQC) for priority pollutants and are applicable to this discharge.

**Table 1. Applicable Receiving Water Body Beneficial Uses**

Discharge Point	Receiving Water Name	Beneficial Use(s)
001-S and 003-R	North Slough and Constructed Wetlands	<ul style="list-style-type: none"> <li>- Agricultural Supply (AGR)</li> <li>- Navigation (NAV)</li> <li>- Water Contact Recreation (REC-1)</li> <li>- Non-contact Water Recreation (REC-2)</li> <li>- Commercial and Sport Fishing (COM)</li> <li>- Wildlife Habitat (WILD)</li> <li>- Preservation of Rare and Endangered Species (RARE)</li> <li>- Fish Migration (MIGR)</li> <li>- Fish Spawning (SPWN)</li> <li>- Warm Freshwater Habitat (WARM)</li> <li>- Cold Freshwater Habitat (COLD)</li> <li>- Estuarine Habitat (EST)</li> </ul>

**K. State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Boards in their basin plans, with the exception of the provision on alternate test procedures for individual discharges that have been approved by USEPA Regional Administrator. The alternate test procedures provision was effective on May 22, 2000. The SIP became effective on May 18, 2000. The State Water Board subsequently amended the SIP on February 24, 2005, and the amendments became effective on July 31, 2005. The SIP includes procedures for determining the need for and calculating WQBELs and requires dischargers to submit data sufficient to do so. Requirements of this Order implement the SIP.

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

- M. **Antidegradation Policy.** Section 131.12 of 40 CFR requires that State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16, which incorporates the requirements of the federal antidegradation policy. Resolution 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. As discussed in detail in the Fact Sheet (**Attachment F**), the permitted discharge is consistent with the antidegradation provision of 40 CFR §131.12 and State Water Board Resolution 68-16.
- N. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 CFR §122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. Some effluent limitations in this Order are less stringent than those in the previous Order. As discussed in detail in the Fact Sheet (**Attachment F**), this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.
- O. **Monitoring and Reporting.** Section 122.48 of 40 CFR requires that all NPDES permits specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of the CWC authorize the Regional Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program (MRP) establishes monitoring and reporting requirements to implement federal and State requirements. This MRP is provided in **Attachment E**. The MRP may be amended by the Executive Officer pursuant to USEPA regulation 40 CFR 122.62, 122.63, and 124.5.
- P. **Standard and Special Provisions.** Standard Provisions, which in accordance with 40 CFR §§122.41 and 122.42, apply to all NPDES discharges and must be included in every NPDES permit, are provided in **Attachment D**. The Regional Water Board has also included in this Order special provisions applicable to the Discharger. A rationale for the special provisions contained in this Order is provided in the attached Fact Sheet (**Attachment F**).
- Q. **Notification of Interested Parties.** The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet (**Attachment F**).
- R. **Consideration of Public Comment.** The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet (**Attachment F**).

### III. DISCHARGE PROHIBITIONS

- A. Discharge of treated wastewater at a location or in a manner different from that described in the findings of this Order is prohibited.

- B. The bypass or overflow of untreated or partially treated wastewater to waters of the State, either at the Facility or from the collection system or pump stations tributary to the Facility, is prohibited, except as provided for bypasses under the conditions stated in 40 CFR §122.41(m)(4) and in A.13 of the *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993 (Attachment G)*.

The discharge of blended wastewater, that is, biologically treated wastewater blended with wastewater that has been diverted around biological treatment units or advanced treatment units, is allowable only (1) during wet weather and (2) when the discharge complies with the effluent and receiving water limitations contained in this Order. Furthermore, the Discharger shall operate the Facility as designed and in accordance with the Operation & Maintenance Manual developed for the Facility. This means that the Discharger shall optimize storage and use of equalization units, and shall fully utilize the biological treatment units and advanced treatment units, if applicable. The Discharger shall report incidents of blended effluent discharges in routine monitoring reports, and shall conduct monitoring of these discharges as specified elsewhere in this Order.

- C. Average dry weather flows greater than 2.5 MGD are prohibited. The average dry weather flow shall be determined over three consecutive dry weather months each year.
- D. Discharge of treated wastewater to North Slough through outfall 001-S is prohibited during the dry season period each year, from May 1 through October 31, unless the Discharger submits a report, which may be initially submitted over the telephone, to the Executive Officer and the Executive Officer approves it. This report must fully explain the need to discharge and the calculated dilution the discharge is expected to receive during this period (e.g., high flows related to late spring or early fall storm events, when reclamation is not feasible). Discharge of tertiary treated effluent to the constructed freshwater wetland (003-R) is permitted, provided reclamation need is satisfied.
- E. Discharges of water, materials, or wastes other than storm water, which are not otherwise authorized by an NPDES permit, to a storm drain system or waters of the State are prohibited.
- F. Neither the discharge to North Slough nor to the constructed wetlands shall create a nuisance as defined in Section 13050 of the California Water Code.

#### **IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS**

##### **A. Final Effluent Limitations – Discharge Points 001-S and 003-R**

###### **1. Conventional and Non-Conventional Pollutant Effluent Limitations**

The discharge of treated wastewater shall maintain compliance with the effluent limitations for conventional and non-conventional pollutants as specified in Table 2 below, at Discharge Points 001-S and 003-R, with compliance measured at Monitoring Locations M-001 and

M-003 (which may be the same as M-001) as described in the attached Monitoring and Reporting Program (**Attachment E**):

**Table 2. Effluent Limitations for Conventional and Non-Conventional Pollutants**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand 5-day (BOD <sub>5</sub> @ 20°C)	mg/L	10	15	--	--	--
BOD <sub>5</sub> percent removal <sup>1</sup>	%	85	--	--	--	--
Total Suspended Solids (TSS)	mg/L	10	15	--	--	--
TSS percent removal <sup>1</sup>	%	85	--	--	--	--
pH <sup>2</sup>	standard units (s.u)	--	--	--	6.5	8.5
Oil and Grease	mg/L	--	--	10	--	--
Chlorine Residual <sup>3</sup>	mg/L	--	--	--	--	0.0
Ammonia Nitrogen	mg/L	2.0	3.0	4.0	--	--
Turbidity	NTU	--	--	10	--	--

Footnotes for Table 2:

- [1] **Percent Removal:** The arithmetic mean of the BOD<sub>5</sub> and TSS values, by concentration, for effluent samples collected in each calendar month shall not exceed 15 percent of the arithmetic mean of the respective values for influent samples collected at approximately the same times during the same period.
- [2] **pH:** The Discharger may elect to use a continuous on-line monitoring system(s) for measuring pH. If the Discharger employs continuous monitoring, then the Discharger shall be in compliance with the pH limitation specified herein, provided that both of the following conditions are satisfied:
  - a. The total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and
  - b. No individual excursion from the range of pH values shall exceed 60 minutes.
- [3] **Chlorine Residual.** The effluent shall not contain a residual chlorine concentration greater than 0.0 mg/L at any time. This concentration limit is defined as below the limit of detection in standard test methods defined in the latest USEPA approved edition of *Standard Methods for the Examination of Water and Wastewater*. The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flows, chlorine and sodium bisulfate dosage (which could be

interpolated), and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Regional Water Board staff may conclude that these false positive chlorine residual exceedances are not violations of this permit limitation.

**2. Coliform Bacteria**

The treated wastewater, at some point in the treatment process prior to discharge, shall meet the following limitations of bacteriological quality:

- a. The moving median value for the most probable number (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 23 MPN/100 mL.

**3. Toxic Pollutants Final Effluent Limitations**

The discharge of treated wastewater shall maintain compliance with the effluent limitations for toxic pollutants as specified in Table 3 below at Discharge Points 001-S and 003-R, with compliance measured at Monitoring Locations M-001 and M-003 (which may be the same as M-001) as described in the attached Monitoring and Reporting Program (**Attachment E**):

**Table 3. Effluent Limitations for Toxic Pollutants [1][2]**

Parameter	Units	Final Effluent Limitations	
		Average Monthly	Maximum Daily
Copper [3]	µg/L	3.2	5.5
Mercury [4]	µg/L	0.021	0.039
Selenium	µg/L	4.2	8.0
Cyanide [3][5][6]	µg/L	0.5	1.0

Footnotes for Table 3:

- [1] a. Compliance with these limitations is intended to be achieved through tertiary treatment and, as necessary, pretreatment and source control.
  - b. All analyses shall be performed using current USEPA methods, or equivalent methods approved in writing by the Executive Officer.
  - c. Limitations apply to the average concentration of all samples collected during the averaging period (daily = 24-hour period; monthly = calendar month).
  - d. All metal limitations are total recoverable.
- [2] A daily maximum or average monthly value for a given constituent shall be considered noncompliant with the effluent limitations only if it exceeds the effluent limitation and the Reporting Level for that constituent. As outlined in Section 2.4.5 of the SIP, the table below indicates the Minimum Level (ML) upon which the Reporting Level is based for compliance

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

Constituent	ML ( $\mu\text{g/L}$ )
Copper	2
Mercury	0.002
Nickel	5
Selenium	2
Zinc	20
Cyanide	5

- [3] Final effluent limitations for copper shall become effective on May 18, 2010; and for cyanide, on April 28, 2010, or until the Regional Water Board amends the effluent limitations based on SSOs and/or additional information.
- [4] Effluent mercury monitoring shall be performed using ultra-clean sampling and analysis techniques, with a method detection limit of 0.002  $\mu\text{g/L}$  or lower.
- [5] Compliance may be demonstrated by measurement of weak acid dissociable cyanide.
- [6] Alternate cyanide WQBELs:
- a. If a cyanide SSO for the receiving water becomes legally effective, based on the assumptions in *Draft Staff Report on Proposed Site-Specific Water Quality Objectives and Effluent Limit Policy for Cyanide for San Francisco Bay*, dated November 10, 2005, upon its effective date, the following limitations shall supercede those cyanide limitations, above (the rationale for these effluent limitations can be found in the Fact Sheet [Attachment F]).  
  
MDEL of 19.4  $\mu\text{g/L}$ , and AMEL of 9.6  $\mu\text{g/L}$ .
  - b. If a different cyanide SSO for the receiving water is adopted, the alternate WQBELs based on the SSO will be determined after the SSO effective date.

#### 4. Whole Effluent Acute Toxicity

- a. Representative samples of the discharge shall meet the following limitations for acute toxicity. Bioassays shall be conducted in compliance with Section V.A of the Monitoring and Reporting Program (MRP, Attachment E).

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.

- b. These acute toxicity limitations are further 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 or less 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 or less bioassay tests show less than 70 percent survival.

- c. Bioassays shall be performed using the most up-to-date USEPA protocol and the most sensitive species as specified in writing by the Executive Officer based on the most recent screening test results. Bioassays shall be conducted in compliance with "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms," currently 5th Edition (EPA-821-R-02-012), with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP) upon the Discharger's request with justification.

## 5. Whole Effluent Chronic Toxicity

- a. 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 Section V.B of the MRP (**Attachment E**):
- 1) Conduct routine monitoring;
  - 2) Accelerate monitoring after exceeding a three sample median value of 1 TUC<sup>1</sup> or a single sample maximum of 2 TUC;
  - 3) Return to routine monitoring if accelerated monitoring does not exceed either "trigger" in "(2)";
  - 4) Initiate approved Toxicity Reduction Evaluation (TRE) work plan and continue accelerated monitoring if monitoring confirms consistent toxicity above either "trigger" in "(2)";

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<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 the MRP (**Attachment E**). 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.

5) Return to routine monitoring after appropriate elements of TRE work plan are implemented and toxicity drops below “trigger” levels in “(2),” or as directed by the Executive Officer.

b. *Test Species and Methods*: The Discharger shall conduct routine monitoring with the most sensitive species determined during the most recent chronic toxicity screening performed by the Discharger and approved by the Executive Officer. Chronic Toxicity Monitoring Screening Phase Requirements, Critical Life Stage Toxicity Tests and definitions of terms used in the chronic toxicity monitoring are identified in **Appendices E-1 and E-2** of the MRP (**Attachment E**). In addition, bioassays shall be conducted in compliance with the most recently promulgated test methods, “Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms,” currently third edition (EPA-821-R-02-014), and “Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms,” currently fourth Edition (EPA-821-R-02-013), with exceptions granted by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

**B. Interim Effluent Limitations – Discharge Points 001-S and 003-R**

**1. Interim limitations Under Current Reclamation Conditions**

The discharge shall maintain compliance with the interim limitations specified in Table 4 below at 001-S and 003-R with compliance measured at Monitoring Locations M-001 or M-003 (which may be the same as M-001) as described in the attached MRP (**Attachment E**). These interim effluent limitations shall apply in lieu of the corresponding final effluent limitations specified for the same parameters during the time period indicated in this provision.

**Table 4. Interim Limitations for Wet Season Discharge (November 1 – April 30) and Current Reclamation Condition Dry Season Discharge (May 1 – October 31)**

Parameter	Units	Interim Effluent Limitations [1]
		Daily Maximum
Copper	µg/L	9.6
Nickel	µg/L	15
Cyanide	µg/L	7.3
Zinc	µg/L	125

Footnote for Table 4:

[1] The interim limitations for copper shall remain in effect until May 17, 2010, for cyanide until April 27, 2010, for nickel and zinc until December 31, 2014, or until the Regional Water Board amends the limitations based on SSOs and/or additional information. The final effluent limitations specified in Table 3 for copper and cyanide shall become effective on May 18, 2010 and April 28, 2010, respectively.

## 2. Staged Interim Limitations Based on Reclamation Changes

Table 5 below lists staged interim limitations based on different reclamation scenarios. In order for these alternate interim limitations to take effect, the Discharger shall submit a request, certifying that a higher percentage of reclamation of the Discharger lower TDS effluent (consisting of municipal wastewater from the Main Basin) has been achieved. The Executive Officer may approve this request. More rationale for this staged interim limitation approach is included in the Fact Sheet (**Attachment F**).

**Table 5. Interim Limitations for Dry Season Discharge (May 1 – October 31) Under Different Reclamation Scenarios**

Reclamation Scenarios [1]	Interim Effluent Limitations			
	Daily Maximum (µg/L)			
	Copper	Nickel	Cyanide	Zinc
Current	9.6	15	7.3	125
25% recycled	9.9	16	7.4	128
50% recycled	11	17	8.4	137
75% recycled	12	21	11	154
100% recycled	18	33	19	216

Footnote for Table 5:

[1] The percentage is to be determined as the flow monitored at M-002 over the flow from the Main Basin, monitored at M-INF-001. See **Attachment E** for a description of the monitoring stations.

## 3. Mercury Mass Limit and Mass Trigger

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:

- a. Mass limit: The 12-month moving average annual load for mercury shall not exceed 2.7 grams per month (g/mo). Compliance shall be calculated using 12-month moving average loadings to the receiving water for the entire year (during both discharge and reclamation months).
- b. Mass trigger: If the 12-month moving average monthly mass loading for mercury exceeds 0.50 g/mo, the actions specified in Provision VI.C.3.b. shall be initiated. Failure to initiate and complete the actions will be considered a permit condition violation.
- c. Compliance determination method: Compliance for each month will be determined based on the 12-month moving averages over the previous 12 months of monitoring calculated using the method described below:

Monthly mass emission loading, in g/mo = (Flow 1 x Concentration 1 + Flow 2 x Concentration 2) x 115.0

12-month moving average Hg mass loading = Running average of last 12 monthly mercury mass loadings in g/mo

Where:

Flow 1 – monthly flow to the North Slough (001-S, measured at M-001), in MGD

Flow 2 – monthly flow to the constructed freshwater wetlands  
(003-R, measured at M-003), in MGD

Concentration 1 – mercury concentration measured at M-001, in µg/L

Concentration 2 – mercury concentration measured at M-003

115.0 - conversion factor

For mass emission trigger calculation, if there is no receiving water body discharge during a calendar month, the flow is set to zero for that month.

If there is no mercury effluent data, i.e., during non-discharge season, the concentration for that calendar month is left blank in the spreadsheet. If more than one measurement is obtained in a calendar month, the average of these concentrations is used as the monthly value for that month. If the results are less than the method detection limit used, the concentrations are assumed to be equal to the method detection limit.

- d. The mercury TMDL and WLAs will supersede this interim mass emission limitation upon their adoption. The Clean Water Act's anti-backsliding rule, Section 402(o), indicates that this Order may be modified to include a less stringent requirement following adoption of the TMDL and WLA, if the requirements for an exception to the rule are met.

## V. RECEIVING WATER LIMITATIONS

- A. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:
  1. Floating, suspended, or deposited macroscopic particulate matter or foams;
  2. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;
  3. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

4. Visible, floating, suspended, or deposited oil and other products of petroleum origin; and
  5. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or which render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.
- B. The discharge of waste shall not cause the following limits to be exceeded in waters of the State at any place within one foot of the water surface:
1. Dissolved Oxygen: 5.0 mg/L, minimum (during dry season from May 1 through October 31)  
7.0 mg/L, minimum, at all other times of the year
- 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, the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.
2. Dissolved Sulfide: 0.1 mg/L, maximum
  3. pH: Variation from normal ambient pH by more than 0.5 pH units.
  4. Un-ionized Ammonia: 0.025 mg/L as N, annual median; and  
0.16 mg/L as N, maximum.
  5. 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.
- C. The discharge shall not cause a violation of any particular water quality standard for receiving waters adopted by the Regional Water Board or the State Water 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 CWA, or amendments thereto, the Regional Water Board may reopen and modify this Order in accordance with such more stringent standards.
- D. Storm water discharges from the treatment facility shall not cause or contribute to a violation of any applicable WQO for receiving waters contained in the Basin Plan.

## VI. PROVISIONS

### A. Standard Provisions

1. **Federal Standard Provisions.** The Discharger shall comply with all Standard Provisions included in **Attachment D**.
2. **Regional Water Board Standard Provisions.** The Discharger shall comply with all applicable items of the attached *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993* (the Standard Provisions, **Attachment G**), and any amendment thereto. Where provisions or reporting requirements specified in this Order are different from equivalent or related provisions or reporting requirements given in the Standard Provisions (**Attachment G**), the specifications of this Order shall apply.

### B. Monitoring and Reporting Program Requirements

The Discharger shall comply with the Monitoring and Reporting Program, and future revisions thereto, in **Attachment E**. The Discharger shall also comply with the requirements contained in *Self-Monitoring Program, Part A, August 1993* (**Attachment G**).

### C. Special Provisions

#### 1. Reopener Provisions

The Regional Water Board may modify or reopen this Order prior to its expiration date in any of the following circumstances as allowed by law:

- a. If present or future investigations demonstrate that the discharge(s) governed by this Order will or have a reasonable potential to cause or contribute to, or will cease to, have adverse impacts on water quality and/or beneficial uses of the receiving waters;
- b. If new or revised WQOs, or TMDLs come into effect for the San Francisco Bay estuary and contiguous water bodies (whether statewide, regional, or site-specific). In such cases, effluent limitations in this Order will be modified as necessary to reflect updated WQOs and waste load allocations in TMDLs. Adoption of effluent limitations contained in this Order is not intended to restrict in any way future modifications based on legally adopted WQOs, TMDLs, or as otherwise permitted under Federal regulations governing NPDES permit modifications.
- c. If translator or other water quality studies provide new information and a basis for determining that a permit condition(s) should be modified;
- d. If new or site-specific objectives for copper and/or cyanide are not anticipated to be effective by May 17, 2010 or April 27, 2010, respectively, and applicable regulations

allow for an extension of the May 18, 2010 or April 28, 2010 compliance schedules for the WQBELs contained in this Order, the Order may be modified to shorten or extend the compliance schedule.

The Discharger may request Order modification based on the above or on any other valid legal basis. The Discharger shall include in any such request an antidegradation and antibacksliding analysis, if applicable.

## **2. Special Studies, Technical Reports and Additional Monitoring Requirements**

### **a. Effluent Characterization for Selected Constituents**

The Discharger shall continue to monitor and evaluate the discharge from Outfall 001-S and 003-R for the constituents listed in Enclosure A of the Regional Water Board's August 6, 2001 Letter (August 6, 2001 Letter), according to the sampling frequency specified in the attached MRP (**Attachment E**). Compliance with this requirement shall be achieved in accordance with the specifications stated in the Regional Water Board's August 6, 2001 Letter under Effluent Monitoring for Major Discharger.

A final report that presents all the data shall be submitted to the Regional Water Board no later than 180 days prior to the Order expiration date. This final report shall be submitted with the application for permit reissuance.

### **b. Ambient Background Receiving Water Study**

The Discharger shall collect or participate in collecting background ambient receiving water monitoring data for priority pollutants that is required to perform reasonable potential analyses and to calculate effluent limitations. The data on the conventional water quality parameters (pH, salinity, and hardness) shall also be sufficient to characterize these parameters in the receiving water at a point after the discharge has mixed with the receiving waters. This provision may be met through monitoring through the Collaborative Napa River Receiving Water Study or a similar ambient monitoring program for the Napa River. This permit may be reopened, as appropriate, to incorporate effluent limitations or other requirements based on Regional Water Board's review of these data.

The Discharger shall submit a final report that presents all the data to the Regional Water Board 180 days prior to Order expiration. This final report shall be submitted with the application for permit reissuance.

### **c. Regional Site-Specific Objective Study for Copper**

The Discharger shall continue its participation in the regional discharger-funded effort to develop site-specific saltwater aquatic life-based WQOs for copper in San Francisco Bay north of the Dumbarton Bridge. The Discharger shall also participate in the development

of a Copper Management Strategy (CMS), acceptable to the Executive Officer, designed to ensure that copper concentrations will not increase unacceptably in the receiving water as a result of controllable discharges. The CMS will describe baseline actions for wastewater and storm water dischargers and a program of additional monitoring and actions to be taken by those dischargers, triggered by specified increases in ambient copper concentrations.

**d. Constructed Wetland Management**

The constructed wetlands shall be operated and maintained in accordance with the Discharger's Constructed Wetlands Demonstration Project Management Plan, dated August 2001, and any new updates to the Management Plan.

**e. Reporting on Constructed Wetlands**

The Discharger shall include in its monthly self-monitoring reports monitoring results as described in the Regional Water Board's *Policy on The Use of Wastewater To Create, Restore, and/or Enhance Wetlands* in Resolution 94-086. Any changes to the finding of net environmental benefit shall be reported in the annual reports.

**f. Mass Offset (Optional)**

If the Discharger can demonstrate that further net reductions of the total mass loadings of 303(d)-listed pollutants to the receiving water cannot be achieved through economically feasible measures such as aggressive source control, wastewater reuse, and treatment plant optimization, but only through a mass offset program, the Discharger may submit to the Regional Water Board for approval a mass offset plan to reduce 303(d)-listed pollutants to the same watershed or drainage basin. The Regional Water Board may modify this Order to allow an approved mass offset program.

**g. Metal (Copper, Nickel, Zinc) Translator Study (Optional)**

To develop information that may be used to establish WQBELs based on dissolved criteria for metals that the Discharger has reasonable potential and has shown unable to achieve immediate compliance with the final WQBELs, optionally, the Discharger may implement a sampling plan to collect data for development of dissolved-to-total translators for, but not limited to, copper, nickel, and zinc in the Discharger's direct receiving water. If the Discharger chooses to proceed with the study, the work shall be performed in accordance with the following tasks:

Tasks	Schedule
(1) <i>Translator study plan:</i> The study plan shall outline data collection for establishment of dissolved-to-total metal translators. The study plan shall provide for development of translators in accordance with the State Board's SIP, USEPA guidelines, California Department of Fish and Game approval, and any relevant portions of the Basin Plan, as amended.	At the Discharger's discretion during the permit term.
(2) <i>Implementation of the plan:</i> Upon approval by the Executive Officer, or after 45 days of study plan submittal if the Executive Officer has not commented, the Discharger shall conduct the translator study. The study will use field sampling data close to the discharge point and in the vicinity of the discharge point, or as otherwise provided for in the approved workplan.	As specified in the study plan.
(3) <i>Final report:</i> A final report, acceptable to the Executive Officer, should be submitted, documenting the results of the translator study.	As specified in the study plan, but at least 180 days prior to permit expiration.

**h. Status Report on 303(d)-Listed Pollutants, Site-Specific Objectives (SSOs)**

By January 31 of each year, the Discharger shall submit an update to the Regional Water Board to document its participation efforts toward development of the TMDL(s) or SSO(s). The Discharger can submit updates through the regional Bay Area Clean Water Agencies (BACWA) studies for these pollutants. These status reports must address, but not be limited to, the Discharger's efforts in support of the SSO or TMDL for copper, cyanide and mercury.

**i. Toxicity Identification Evaluation/Toxicity Reduction Evaluation**

- 1) The Discharger shall prepare and submit to the Regional Water Board for Executive Officer approval a Toxicity Reduction Evaluation (TRE) work plan, or if the Executive Officer has not commented within 45 days of submittal, the Discharger may implement the plan as needed. An initial generic workplan shall be submitted within 90 days of permit effective date. The workplan shall be reviewed and updated as necessary in order to remain current and applicable to the discharge and the Discharger's Facility.
- 2) The TRE shall be initiated within 30 days of the completion date of the accelerated monitoring test observed to exceed either evaluation parameter.

- 3) The TRE shall be conducted in accordance with the workplan.
- 4) The TRE shall be specific to the discharge and Discharger's Facility, and be in accordance with current technical guidance and reference materials including USEPA guidance materials. The TRE shall be conducted as a tiered evaluation process, such as summarized below:
  - i) Tier 1 consists of basic data collection (routine and accelerated monitoring).
  - ii) Tier 2 consists of evaluation of optimization of the treatment process including operation practices and in-plant process chemicals.
  - iii) Tier 3 consists of a toxicity identification evaluation (TIE).
  - iv) Tier 4 consists of evaluation of options for additional effluent treatment processes.
  - v) Tier 5 consists of evaluation of options for modifications of in-plant treatment processes.
  - vi) Tier 6 consists of implementation of selected toxicity control measures, and follow-up monitoring and confirmation of implementation success.
- 5) The TRE may be ended at any stage if monitoring finds there is no longer consistent toxicity (complying with Effluent limitations Section IV.A.5.a(2)).
- 6) 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.
- 7) 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.
- 8) 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.
- 9) The Regional Water 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 Regional Water Board will be based in part on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.

### 3. Best Management Practices and Pollution Prevention

#### a. Pollution Prevention and Pollutant Minimization Program

- 1) The Discharger shall conduct, in a manner acceptable to the Executive Officer, a Pollutant Minimization Program to reduce loadings of copper, nickel, zinc, and cyanide to the plant and therefore to the receiving waters.
- 2) The Discharger shall submit an annual report, acceptable to the Executive Officer, no later than February 28th of each year. Annual reports shall cover January through December of the preceding year. Annual reports shall include at least the following information:
  - i) *A Brief Description of the Plant, 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. In particular, the Discharger shall address those pollutants for which there is a reasonable potential to cause or contribute to exceedance of WQOs/WQC, specifically, copper, nickel, cyanide, zinc, and TCDD TEQ.
  - 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 shall 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. The Discharger may implement tasks itself 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) *Outreach to Employees.* The Discharger shall inform employees about the pollutants of concern, potential sources, and how they might be able to help reduce the discharge of these pollutants of concern into the plant. The Discharger may provide a forum for employees to provide input to the program.

- vi) *Continuation of Public Outreach Program.* The Discharger shall prepare 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, conducting school outreach programs, conducting plant tours, and providing public information in newspaper articles or advertisements, radio or television stories or spots, newsletters, utility bill inserts, and web site. Information shall be specific to the target audiences. The Discharger shall coordinate with other agencies as appropriate.
  - vii) *Discussion of Criteria Used to Measure the 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 (2)(iv), (2)(v), and (2)(vi).
  - viii) *Documentation of Efforts and Progress.* This discussion shall detail all the Discharger's activities in the Pollution Prevention Program during the reporting year.
  - ix) *Evaluation of Program's and Tasks' Effectiveness.* The Discharger shall use the criteria established in (2)(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 to more effectively reduce the amount of pollutants to the plant, and subsequently in its effluent.
- 3) If the concentration of a priority pollutant in a monitoring sample is greater than the effluent limitation and greater than or equal to the reported Minimum Level, the Discharger shall expand its existing Pollution Minimization Program to include the priority pollutant. According to Section 2.4.5 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 (less than the Minimum Level) and the effluent limitation is less than the reported Minimum Level,
  - ii) a sample result is reported as not detected (less than the Method Detection Limit) and the effluent limitation is less than the Method Detection Limit; or,
  - iii) the dioxin TEQ exceeds the WQO (0.014 pg/L); then
- the Discharger shall expand its existing Pollution Minimization Program to include the priority pollutant.

- 4) If triggered by the reasons in (3) above and notified by the Executive Officer, the Discharger's Pollutant Prevention Program shall, within 6 months, also include the following:
  - i) An annual review and semiannual 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) Development of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy.
  - v) An annual status report that shall be sent to the Regional Water Board including the following:
    - (a) All Pollution Prevention monitoring results for the previous year.
    - (b) A list of potential sources of the reportable priority pollutant(s).
    - (c) A summary of all actions undertaken pursuant to the control strategy.
    - (d) A description of actions to be taken in the following year.
  - vi) To the extent that the requirements of the Pollution Prevention Program and the Pollutant Minimization Program overlap, the Discharger is allowed to continue, modify, or expand its existing Pollution Prevention Program to satisfy the Pollutant Minimization Program requirements.
  - vii) These Pollution Prevention/Pollutant Minimization Program requirements are not intended to fulfill the requirements in the Clean Water Enforcement and Pollution Prevention Act of 1999 (Senate Bill 709).

**b. Mercury Mass Loading Reduction**

If mass loading for mercury exceeds the trigger level specified in IV.B.3.b of this Order, then the following actions shall be initiated and subsequent reports shall include but not be limited to the following:

- 1) *Notification*: Any exceedance of the trigger specified in Effluent Limitation IV.B.3.b shall be reported to the Regional Water Board in accordance with Section V.E in **Attachment G** (The Standard Provisions).
- 2) *Identification of the problem*: Resample to verify the increase in loading. If 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 relates to changes in reclamation, increases 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.
- 3) *Investigation of corrective action*: Investigate the feasibility of the following actions:
  - (a) Improving public education and outreach,
  - (b) Reducing inflow and infiltration (I/I), and
  - (c) Increasing reclamation.

Within 60 days after confirmed exceedance, develop a plan and include time schedule as short as practicable, 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 IV.B.3.b.

- 4) *Investigation of aggressive prevention/reduction measures*: In the event the exceedance is related to growth and the plan required under (3) above is not expected to keep mercury mass loadings below the mass loading trigger, the Discharger shall submit a plan, acceptable to the Executive Officer. The plan should include an initiative to work with the local planning department to investigate the feasibility and potential benefits of requiring water conservation, reclamation, and dual plumbing for new development. This plan should be implemented as soon as practicable.

#### 4. Compliance Schedules

This Order grants compliance schedules for copper, nickel, zinc, and cyanide. Pursuant to Section 2.1 of the SIP and Chapter 4 of the Basin Plan, the Discharger shall (a) conduct pollution prevention/minimization in accordance with Provision C.3.a(2); (b) participate in and support the development of a TMDL or an SSO for copper, mercury, nickel, and cyanide; and (c) submit an update to the Regional Water Board in the annual self-monitoring report to document its efforts toward development of TMDL(s) or SSO(s), and pollution prevention.

##### a. Compliance Attainability Analysis for Copper and Cyanide

Regional Water Board staff shall review the status of TMDL and SSO development. In the event SSO(s) are not developed for copper or cyanide by July 1, 2009, the Discharger shall

submit by July 1, 2009, a schedule that documents how it will further reduce pollutant concentrations to ensure compliance with the final limitations specified in Effluent Limitations IV.A.3.

**b. Compliance Attainability Analysis for Nickel and Zinc**

The Discharger shall compile and submit nickel and zinc effluent data collected during the permit term, and a WQBEL attainability analysis at least 180 days prior to the permit expiration. This analysis shall indicate whether it is feasible for the Discharger to comply with the final WQBELs for nickel and zinc before the permit expires. This analysis shall also include information on the Discharger's past pollution prevention and source control measures to address nickel and zinc in the effluent, and propose new measures to reduce the pollutant in the future, if needed.

**5. Construction, Operation and Maintenance Specifications**

**a. Wastewater Facilities, Review and Evaluation, and Status Reports**

- 1) The Discharger shall operate and maintain its wastewater collection, treatment, and disposal facilities in a manner to ensure that all facilities are adequately staffed, supervised, financed, operated, maintained, repaired, and upgraded as necessary, in order to provide adequate and reliable transport, treatment, and disposal of all wastewater from both existing and planned future wastewater sources under the Discharger's service responsibilities.
- 2) The Discharger shall regularly review and evaluate its wastewater facilities and operation practices in accordance with section a.1 above. Reviews and evaluations shall be conducted as an ongoing component of the Discharger's administration of its wastewater facilities.
- 3) The Discharger shall provide the Executive Officer, upon request, a report describing the current status of its wastewater facilities and operation practices, including any recommended or planned actions and an estimated time schedule for these actions. The Discharger shall also include, in each annual self-monitoring report, a description or summary of review and evaluation procedures, and applicable wastewater facility programs or capital improvement projects.

**b. Operations and Maintenance Manual (O&M), Review and Status Reports**

- 1) The Discharger shall maintain an O&M Manual as described in the findings of this Order for the Discharger's wastewater facilities. The O&M Manual shall be maintained in usable condition and be available for reference and use by all applicable personnel.
- 2) The Discharger shall regularly review, revise, or update, as necessary, the O&M Manual(s) so that the document(s) may remain useful and relevant to current

equipment and operation practices. Reviews shall be conducted annually, and revisions or updates shall be completed as necessary. For any significant changes in treatment facility equipment or operation practices, applicable revisions shall be completed within 90 days of completion of such changes.

- 3) The Discharger shall provide the Executive Officer, upon request, a report describing the current status of its O&M manual, including any recommended or planned actions and an estimated time schedule for these actions. The Discharger shall also include, in each annual self-monitoring report, a description or summary of review and evaluation procedures and applicable changes to its operations and maintenance manual.

**c. Contingency Plan, Review and Status Reports**

- 1) The Discharger shall maintain a Contingency Plan as required by Regional Water Board Resolution 74-10 (**Attachment G**) and as prudent in accordance with current municipal facility emergency planning. 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.
- 2) The Discharger shall regularly review and update, as necessary, the Contingency Plan so that the plan may remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and updates shall be completed as necessary.
- 3) The Discharger shall provide the Executive Officer, upon request, a report describing the current status of its Contingency Plan review and update. The Discharger shall also include, in each annual self-monitoring report, a description or summary of review and evaluation procedures and applicable changes to its Contingency Plan.

**6. Special Provisions for POTW**

**a. Pretreatment Program**

The Discharger shall implement and enforce its pretreatment program in accordance with the substantive requirements contained in the following Federal Regulations and in **Attachment H**, except that the Discharger is not required to have a pretreatment program that meets the criteria established in 40 CFR §403.9 or requires approval in accordance with 40 CFR §403.11:

- 1) Enforcement of National Pretreatment Standards (e.g. prohibited dischargers, Categorical Standards) in accordance with 40 CFR §403.5 and Section 307 (b) and (c) of the Clean Water Act.

- 2) Implementation of the pretreatment program in accordance with legal authorities, policies, procedures, and financial provisions described in the General Pretreatment regulations (40 CFR §403).

**b. Sludge Management Practices Requirements**

- 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 §503. If the Discharger desires to dispose of sludge by a different method, a request for permit modification must be submitted to 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 Regional Water Board should be copied on relevant correspondence and reports forwarded to USEPA regarding sludge management practices.
- 2) Sludge treatment, storage and disposal or reuse shall not create a nuisance, such as objectionable odors or flies, or result in groundwater contamination.
- 3) 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 biosolids 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 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 biosolids incinerator as defined in 40 CFR §503, the Discharger shall submit an annual report to USEPA and the Regional Water 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 Regional Water Board's Standard Provisions (**Attachment G**), apply to sludge handling, disposal and reporting practices.
- 10) The Regional Water Board may amend this permit prior to expiration if changes occur in applicable state and federal sludge regulations.

**c. Sanitary Sewer Management Plan**

The Discharger shall fully participate in the sanitary sewer overflow control program developed by the Regional Water Board in collaboration with BACWA. The Discharger shall report sanitary sewer overflows electronically and develop and implement a discharger-specific sanitary sewer management plan (SSMP) as specified in the Regional Water Board's letters dated November 15, 2004 and July 7, 2005, respectively.

## VII. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in Section IV of this Order will be determined as specified below:

### A. Average Monthly Effluent Limitation (AMEL).

If the average of daily discharges over a calendar month exceeds the AMEL for a given parameter, an alleged violation will be flagged and the discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month). The average of daily discharges over the calendar month that exceeds the AMEL for a parameter will be considered out of compliance for that month only. If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the discharger will be considered out of compliance for that calendar month. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

### B. Average Weekly Effluent Limitation (AWEL).

If the average of daily discharges over a calendar week exceeds the AWEL for a given parameter, an alleged violation will be flagged and the discharger will be considered out of compliance for each day of that week for that parameter, resulting in 7 days of non-compliance. The average of daily discharges over the calendar week that exceeds the AWEL for a parameter will be considered out of compliance for that week only. If only a single sample is taken during the calendar week and the analytical result for that sample exceeds the AWEL, the discharger will be considered out of compliance for that calendar week. For any one calendar week during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar week.

### C. Maximum Daily Effluent Limitation (MDEL).

If a daily discharge exceeds the MDEL for a given parameter, an alleged violation will be flagged and the discharger will be considered out of compliance for that parameter for that 1 day only within the reporting period. For any 1 day during which no sample is taken, no compliance determination can be made for that day.

### D. Instantaneous Minimum Effluent Limitation.

If the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, a violation will be flagged and the discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both are lower than the instantaneous minimum effluent limitation would result in two instances of non-compliance with the instantaneous minimum effluent limitation).

### E. Instantaneous Maximum Effluent Limitation.

If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, a violation will be flagged and the discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be

considered separately (e.g., the results of two grab samples taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of non-compliance with the instantaneous maximum effluent limitation).

## ATTACHMENT A – DEFINITIONS

**Average Monthly Effluent Limitation (AMEL):** the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

**Average Weekly Effluent Limitation (AWEL):** the highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

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

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

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

**Instantaneous Maximum Effluent Limitation:** the highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

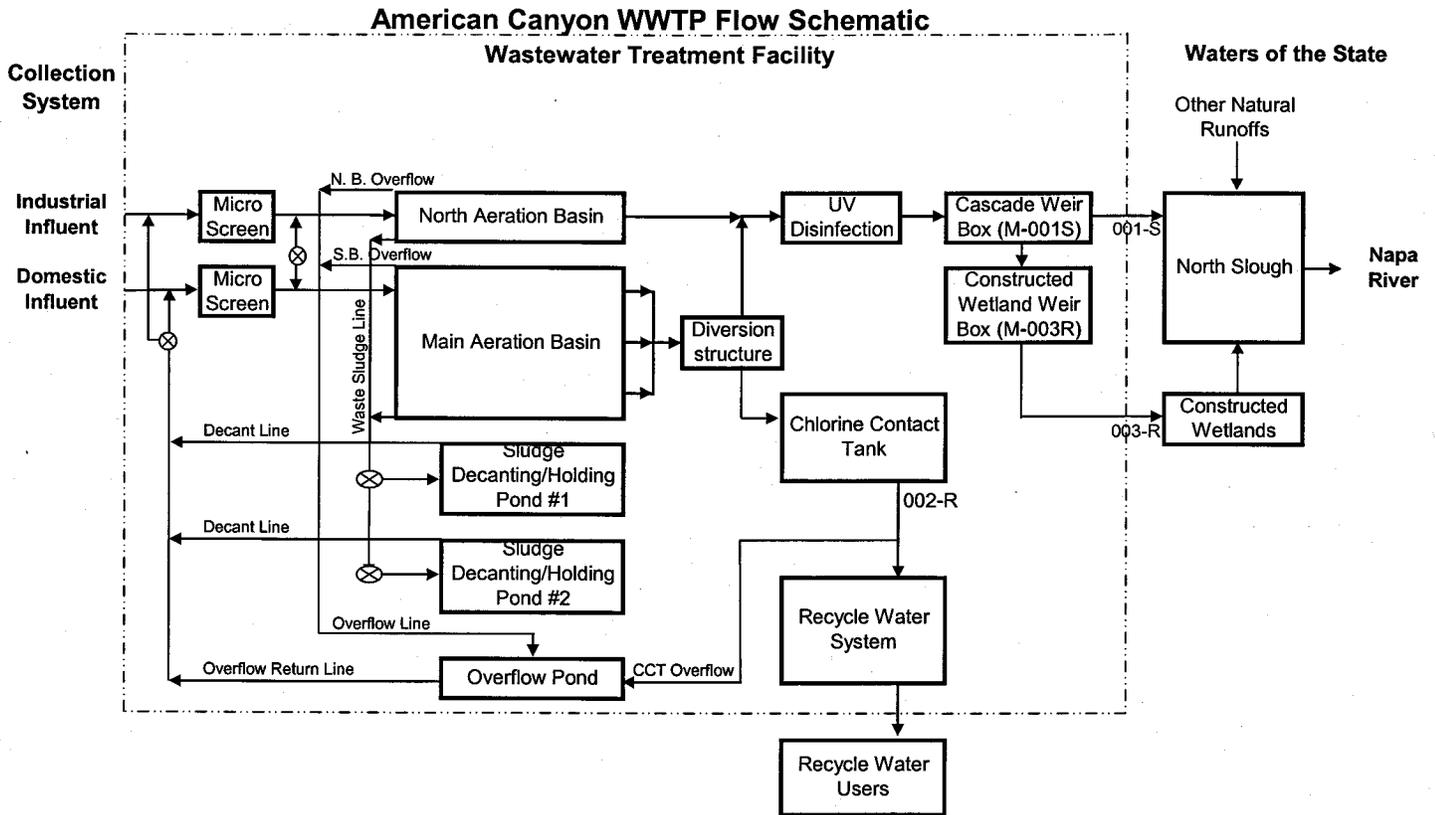
**Instantaneous Minimum Effluent Limitation:** the lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

**Maximum Daily Effluent Limitation (MDEL):** the highest allowable daily discharge of a pollutant.

**ATTACHMENT B – FACILITY LOCATION MAP**



**ATTACHMENT C – FLOW SCHEMATIC**



## **ATTACHMENT D – FEDERAL STANDARD PROVISIONS**

### **I. STANDARD PROVISIONS – PERMIT COMPLIANCE**

#### **A. Duty to Comply**

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code (CWC) and is grounds for enforcement action, for permit termination, revocation and reissuance, or denial of a permit renewal application [40 CFR §122.41(a)].
2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not been modified to incorporate the requirement [40 CFR §122.41(a)(1)].

#### **B. Need to Halt or Reduce Activity Not a Defense**

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order [40 CFR §122.41(c)].

#### **C. Duty to Mitigate**

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment [40 CFR §122.41(d)].

#### **D. Proper Operation and Maintenance**

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order [40 CFR §122.41(e)].

#### **E. Property Rights**

1. This Order does not convey any property rights of any sort or any exclusive privileges [40 CFR §122.41(g)].

2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations [40 CFR §122.5(c)].

#### **F. Inspection and Entry**

The Discharger shall allow the Regional Water Quality Control Board (Regional Water Board), State Water Resources Control Board (State Water Board), United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to [40 CFR §122.41(i)] [CWC 13383(c)]:

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order [40 CFR §122.41(i)(1)];
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order [40 CFR §122.41(i)(2)];
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order [40 CFR §122.41(i)(3)];
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the CWC, any substances or parameters at any location [40 CFR §122.41(i)(4)].

#### **G. Bypass**

1. Definitions
  - a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility [40 CFR §122.41(m)(1)(i)].
  - b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production [40 CFR §122.41(m)(1)(ii)].
2. Bypass not exceeding limitations – The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3 and I.G.5 below [40 CFR §122.41(m)(2)].

3. Prohibition of bypass – Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless [40 CFR §122.41(m)(4)(i)]:
  - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage [40 CFR §122.41(m)(4)(A)];
  - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance [40 CFR §122.41(m)(4)(B)]; and
  - c. The Discharger submitted notice to the Regional Water Board as required under Standard Provision – Permit Compliance I.G.5 below [40 CFR §122.41(m)(4)(C)].
4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above [40 CFR §122.41(m)(4)(ii)].
5. Notice
  - a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass [40 CFR §122.41(m)(3)(i)].
  - b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below [40 CFR §122.41(m)(3)(ii)].

## H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation [40 CFR §122.41(n)(1)].

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph H.2 of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review [40 CFR §122.41(n)(2)].

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that [40 CFR §122.41(n)(3)]:
  - a. An upset occurred and that the Discharger can identify the cause(s) of the upset [40 CFR §122.41(n)(3)(i)];
  - b. The permitted facility was, at the time, being properly operated [40 CFR §122.41(n)(3)(i)];
  - c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b [40 CFR §122.41(n)(3)(iii)]; and
  - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above [40 CFR §122.41(n)(3)(iv)].
3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof [40 CFR §122.41(n)(4)].

## II. STANDARD PROVISIONS – PERMIT ACTION

### A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition [40 CFR §122.41(f)].

### B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit [40 CFR §122.41(b)].

### C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the CWC [40 CFR §122.41(l)(3)] [40 CFR §122.61].

## III. STANDARD PROVISIONS – MONITORING

- A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity [40 CFR §122.41(j)(1)].

- B. Monitoring results must be conducted according to test procedures under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503 unless other test procedures have been specified in this Order [40 CFR §122.41(j)(4)] [40 CFR §122.44(i)(1)(iv)].

#### **IV. STANDARD PROVISIONS – RECORDS**

- A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time [40 CFR §122.41(j)(2)].

**B. Records of monitoring information shall include:**

1. The date, exact place, and time of sampling or measurements [40 CFR §122.41(j)(3)(i)];
2. The individual(s) who performed the sampling or measurements [40 CFR §122.41(j)(3)(ii)];
3. The date(s) analyses were performed [40 CFR §122.41(j)(3)(iii)];
4. The individual(s) who performed the analyses [40 CFR §122.41(j)(3)(iv)];
5. The analytical techniques or methods used [40 CFR §122.41(j)(3)(v)]; and
6. The results of such analyses [40 CFR §122.41(j)(3)(vi)].

**C. Claims of confidentiality for the following information will be denied [40 CFR §122.7(b)]:**

1. The name and address of any permit applicant or Discharger [40 CFR §122.7(b)(1)]; and
2. Permit applications and attachments, permits and effluent data [40 CFR §122.7(b)(2)].

#### **V. STANDARD PROVISIONS – REPORTING**

**A. Duty to Provide Information**

The Discharger shall furnish to the Regional Water Board, State Water Board, or USEPA within a reasonable time, any information which the Regional Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger

shall also furnish to the Regional Water Board, State Water Board, or USEPA copies of records required to be kept by this Order [40 CFR §122.41(h)] [CWC 13267].

## **B. Signatory and Certification Requirements**

1. All applications, reports, or information submitted to the Regional Water Board, SWRCB, and/or USEPA shall be signed and certified in accordance with paragraph (2.) and (3.) of this provision [40 CFR §122.41(k)].
2. All permit applications shall be signed as follows:
  - a. For a corporation: By a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures [40 CFR §122.22(a)(1)];
  - b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively [40 CFR §122.22(a)(2)]; or
  - c. For a municipality, State, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA) [40 CFR §122.22(a)(3)].
3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described in paragraph (b) of this provision, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
  - a. The authorization is made in writing by a person described in paragraph (2.) of this provision [40 CFR §122.22(b)(1)];

- b. The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company (a duly authorized representative may thus be either a named individual or any individual occupying a named position) [40 CFR §122.22(b)(2)]; and
  - c. The written authorization is submitted to the Regional Water Board, State Water Board, or USEPA [40 CFR §122.22(b)(3)].
4. If an authorization under paragraph (3.) of this provision is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (3.) of this provision must be submitted to the Regional Water Board, State Water Board, or USEPA prior to or together with any reports, information, or applications, to be signed by an authorized representative [40 CFR §122.22(c)].
  5. Any person signing a document under paragraph (2.) or (3.) of this provision shall make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations” [40 CFR §122.22(d)].

### C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program in this Order [40 CFR §122.41(l)(4)].
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices [40 CFR §122.41(l)(4)(i)].
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board [40 CFR §122.41(l)(4)(ii)].

4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order [40 CFR §122.41(l)(4)(iii)].

#### **D. Compliance Schedules**

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date [40 CFR §122.41(l)(5)].

#### **E. Twenty-Four Hour Reporting**

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance [40 CFR §122.41(l)(6)(i)].
2. The following shall be included as information that must be reported within 24 hours under this paragraph [40 CFR §122.41(l)(6)(ii)]:
  - a. Any unanticipated bypass that exceeds any effluent limitation in this Order [40 CFR §122.41(l)(6)(ii)(A)].
  - b. Any upset that exceeds any effluent limitation in this Order [40 CFR §122.41(l)(6)(ii)(B)].
  - c. Violation of a maximum daily discharge limitation for any of the pollutants listed in this Order to be reported within 24 hours [40 CFR §122.41(l)(6)(ii)(C)].
3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours [40 CFR §122.41(l)(6)(iii)].

#### **F. Planned Changes**

The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when [40 CFR §122.41(l)(1)]:

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR §122.29(b) [40 CFR §122.41(l)(1)(i)]; or

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in this Order nor to notification requirements under 40 CFR Part 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1) [40 CFR §122.41(l)(1)(ii)].
3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan [40 CFR §122.41(l)(1)(iii)].

#### **G. Anticipated Noncompliance**

The Discharger shall give advance notice to the Regional Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements [40 CFR §122.41(l)(2)].

#### **H. Other Noncompliance**

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting E.3, E.4, and E.5 at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E [40 CFR §122.41(l)(7)].

#### **I. Other Information**

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information [40 CFR §122.41(l)(8)].

### **VI. STANDARD PROVISIONS – ENFORCEMENT**

- A. The CWA provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed \$25,000 per day for each violation. The CWA provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a

person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the Clean Water Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions [40 CFR §122.41(a)(2)] [CWC 13385 and 13387].

- B. Any person may be assessed an administrative penalty by the Regional Water Board for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000 [40 CFR §122.41(a)(3)].
- C. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both [40 CFR §122.41(j)(5)].
- D. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this Order, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both [40 CFR §122.41(k)(2)].

## VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

### A. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural dischargers shall notify the Regional Water Board as soon as they know or have reason to believe [40 CFR §122.42(a)]:

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" [40 CFR §122.42(a)(1)]:
  - a. 100 micrograms per liter ( $\mu\text{g/L}$ ) [40 CFR §122.42(a)(1)(i)];
  - b. 200  $\mu\text{g/L}$  for acrolein and acrylonitrile; 500  $\mu\text{g/L}$  for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony [40 CFR §122.42(a)(1)(ii)];
  - c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge [40 CFR §122.42(a)(1)(iii)]; or
  - d. The level established by the Regional Water Board in accordance with 40 CFR §122.44(f) [40 CFR §122.42(a)(1)(iv)].
2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" [40 CFR §122.42(a)(2)]:
  - a. 500 micrograms per liter ( $\mu\text{g/L}$ ) [40 CFR §122.42(a)(2)(i)];
  - b. 1 milligram per liter (mg/L) for antimony [40 CFR §122.42(a)(2)(ii)];
  - c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge [40 CFR §122.42(a)(2)(iii)]; or
  - d. The level established by the Regional Water Board in accordance with 40 CFR §122.44(f) [40 CFR §122.42(a)(2)(iv)].

### B. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Regional Water Board of the following [40 CFR §122.42(b)]:

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to Sections 301 or 306 of the CWA if it were directly discharging those pollutants [*40 CFR §122.42(b)(1)*]; and
2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order [*40 CFR §122.42(b)(2)*].

Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW [*40 CFR §122.42(b)(3)*].

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## ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (CFR) at 40 CFR §122.48 requires that all NPDES permits specify monitoring and reporting requirements. CWC sections 13267 and 13383 also authorize the Regional Water Board to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement the federal and California regulations.

### I. GENERAL MONITORING PROVISIONS

- A. The Discharger shall comply with the MRP for this Order as adopted by the Regional Water Board, and with all of the requirements contained in Self-Monitoring Program, Part A, adopted August 1993 (SMP, **Attachment G**). The MRP and SMP may be amended by the Executive Officer pursuant to USEPA regulations 40 CFR 122.62, 122.63, and 124.5. If any discrepancies exist between the MRP and SMP, the MRP prevails.
- B. Sampling is required during the entire year when discharging. All analyses shall be conducted using current USEPA methods, or that have been approved by the USEPA Regional Administrator pursuant to 40 CFR 136.4 and 40 CFR 136.5, or equivalent methods that are commercially and reasonably available, and that provide quantification of sampling parameters and constituents sufficient to evaluate compliance with applicable effluent limitations and to perform reasonable potential analysis. Equivalent methods must be more sensitive than those specified in 40 CFR 136, must be specified in the permit, and must be approved for use by the Executive Officer, following consultation with the State Water Quality Control Board's Quality Assurance Program. The Regional Water Board will find the Discharger in violation of the limitation if the discharge concentration exceeds the effluent limitation and the Minimum Levels for the analysis for that constituent.
- C. Sampling and analysis of additional constituents is required pursuant to Table 1 of the Regional Water Board's August 6, 2001 Letter titled Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy.
- D. *Minimum Levels.* For compliance and reasonable potential monitoring, analyses shall be conducted using the commercially available and reasonably achievable detection levels that are lower than the WQOs/WQC or the effluent limitations, whichever is lower. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to the Minimum Levels given below. All Minimum Levels are expressed as µg/L approximately equal to parts per billion (ppb).

Table E-1 lists the test method the Discharger may use for compliance and reasonable potential monitoring for the pollutants with effluent limits.

**Table E-1. Test Methods and Minimum Levels for Pollutants with Reasonable Potential**

CTR #	Constituent	Types of Analytical Methods [a]											
		Minimum Levels (µg/L)											
		GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
6.	Copper								0.5	2			
8.	Mercury [b]								0.5			0.2	
9.	Nickel						5		1	5			
10.	Selenium								2		1		
13.	Zinc					20		20	1	10			
14.	Cyanide				5								
	TCDD TEQ [c]	USEPA 1613, 5-50 pg/L											

Footnotes for Table E-1:

[a] Analytical Methods / Laboratory techniques are defined as follows:

- GC = Gas Chromatography;
- GCMS = Gas Chromatography/Mass Spectrometry;
- Color = Colorimetric;
- GFAA = Graphite Furnace Atomic Absorption;
- ICPMS = Inductively Coupled Plasma/Mass Spectrometry;
- SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption (i.e. EPA 200.9); and
- CVAF = Cold Vapor Atomic Fluorescence.

[b] Use ultra-clean sampling (USEPA 1669) to the maximum extent practicable, and ultra-clean analytical methods (USEPA 1631) for mercury monitoring. The Discharger may use alternative methods of analysis (such as USEPA 245), if the alternative method has an ML of 2 ng/L or less.

[c] The Discharger shall achieve MLs for 2,3,7,8-TCDD and all other 16 congeners using USEPA 1613 developed in collaboration with BACWA as levels that were achievable by BACWA participants (see BACWA Letter dated April 23, 2002). These MLs range from 5 to 50 pg/L.

## II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

**Table E-2. Description of Monitoring Stations**

Discharge Point Name	Monitoring Location Name	Monitoring Location Description (include Latitude and Longitude when available)
--	M-INF-001 (A-001)	At any point in the treatment facilities headworks at which all waste from the North Basin (the northern portion of the service area) tributary to the treatment system is present, and preceding any phase of treatment. It is the flow through Process Train 1 of the Facility.
--	M-INF-002 (A-002)	At any point in the treatment facilities headworks at which all waste from the Main Basin (the southern portion of the service area) tributary to the treatment system is present, and preceding any phase of treatment. It is the flow through Process Train 2 of the Facility.
001	M-001 (E-001-S)	Effluent to North Slough Outfall: At a point in the treatment facility, at which all waste tributary to the discharge outfall is present, is representative of the discharge, and at which point adequate disinfection is assured for discharge to the North Slough.
002	M-002 (E-002-R)	Effluent to Irrigation Reuse: At a point in the treatment facility, at which point adequate treatment and disinfection for irrigation has taken place.
003	M-003 (E-003-R)	Effluent to Freshwater Wetlands: At a point in the treatment facility, at which all waste tributary to the discharge outfall is present, is representative of the discharge, and at which point adequate disinfection is assured for discharge to the constructed freshwater wetlands. Measurements can be taken at M-001 if the water quality at 001-S and 003-R are identical (except for flow).
--	R-001 (C-1)	Surface Water: At a point in North Slough directly above the center of the outfall.
--	R-002 (C-2)	Surface Water: At a point in the North Slough located 500 feet downstream of the center of the outfall.
--	R-003 (C-R)	Surface Water: At a point in North Slough located 2,000 feet downstream from the diffuser.
--	R-004 (C-W1)	At a point in the constructed wetland Pond 1.
--	R-005 (C-W2)	At a point in the constructed wetland Pond 2.
--	B-001	Biosolids monitoring.
--	P-001 thru P-008	Land Observations: Points located at the corners and at midpoints along the perimeter (fence line) of the wastewater treatment facilities. (A sketch showing the locations of these stations will accompany each report).
--	O-001 thru O-'n'	At points in the collection system including manholes, pump stations, or any other location where overflows and bypasses occur.

**III. INFLUENT MONITORING REQUIREMENTS - MONITORING LOCATIONS M-INF-001 AND M-INF-002**

1. The Discharger shall monitor the influent to the facility at M-INF-001 and M-INF-002 specified in Table E-3:

**Table E-3. Influent Monitoring Requirements for Conventional Pollutants**

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow Rate [1]	mgd	Continuous	Daily
BOD 5-day 20°C or CBOD	mg/L	C-24	3 / week
BOD 5-day 20°C or CBOD	kg/d	Calculated	3 / week
Total Suspended Solids	mg/L	C-24	3 / week
Total Suspended Solids	kg/d	Calculated	3 / week

Legend: C-24: 24-hour composite

Footnote for Table E-3:

- [1] Flows shall be monitored continuously and the following shall be reported in monthly self-monitoring reports:
- a. Influent, average, maximum and minimum daily flows;
  - b. Influent, maximum and minimum flow rates and times of occurrence.
  - c. Total influent flows from both M-INF-001 and M-INF-002.

2. Influent monitoring identified in the table above is the minimum required monitoring. Additional sampling and analyses may be required in accordance with Pretreatment Program or Pollution Prevention/Source Control Program requirements (see Section IX.C below).

**IV. EFFLUENT MONITORING REQUIREMENTS - MONITORING LOCATIONS M-001, M-002 (FLOW ONLY), AND M-003**

The Discharger shall monitor treated wastewater at M-001 and M-003 as specified in Table E-4 below (if the water quality is identical at 001-S and 003-R, the Discharger can take samples at only one location, i.e., M-001, except for flow):

**Table E-4. Schedule of Sampling, Measurement, and Analysis**

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow Rate [1]	mgd	Continuous	Continuous
BOD 5-day 20°C or CBOD [2]	mg/L and kg/day	C-24	3 / week
Total Suspended Solids [2]	mg/L and kg/day	C-24	3/ week
Oil and Grease [3]	mg/L and kg/day	C-24	1 / month

Parameter	Units	Sample Type	Minimum Sampling Frequency
Chlorine Residual [4]	mg/L	Grab	Each occurrence
Total Coliform [5]	MPN/100 ml	Grab	3 / week
Turbidity	NTU	C-24	3 / week
Dissolved Oxygen	mg/L and % saturation	Grab	1 / day
pH [6]	s.u.	Grab	1 / day or con.
Temperature	°F and °C	Grab	1 / day
Chronic Toxicity (Section V. B.) [7]	TUc	C-24	1 / quarter 1/ month*
Acute Toxicity [8]	% survival	Continuous	1 / month
Copper	µg/L	C-24	1 / month
Mercury [9]	µg/L	C-24/Grab	1 / month
Nickel	µg/L	C-24	1 / month
Selenium	µg/L	C-24	1 / month
Zinc	µg/L	C-24	1 / month
Cyanide	µg/L	Grab	1 / month
2,3,7,8-TCDD and congeners [10]	µg/L	Grab	2 / year (1/wet, 1/dry season)
Ammonia Nitrogen	mg/L as N	C-24	1 / week
Total Phosphate	mg/L	C-24	1 / week
Conductivity [11]	mg/L	Grab	1 / week
Salinity [11]	ppt	Grab	1 / week
Total Sulfides [12]	mg/L	Grab	1 / day
Standard Observations	--	--	1 / week
Other metals (antimony, arsenic, beryllium, cadmium, chromium, lead, silver, and thallium)	µg/L	According to the August 6, 2001 Letter	Quarterly or according to Pretreatment Program requirement [13]
All other priority pollutants, including tributyltin	µg/L or as appropriate	According to the August 6, 2001 Letter	1 / year or according to Pretreatment Program requirement [13]

Legend:

C-24	24-hour composite
Cont.	Continuous
1 / day	Once per day
1 / week	Once per week
3 / week	Three times per week
1 / month	Once per month
1 / quarter	Once per quarter
2 / year	Twice per year
1 / year	Once per year

Footnotes for Table E-4:

[1] Flow Monitoring:

Flows shall be monitored continuously and the following shall be reported in monthly self-monitoring reports:

- a. Effluent, daily flows, maximum and minimum flows to North Slough outfall (M-001);
- b. Effluent, daily average, maximum and minimum flows to Irrigation (M-002);
- c. Effluent, daily average, maximum and minimum flows to constructed wetlands (M-003);
- d. Total effluent flow, daily average.

[2] The percent removal for BOD and TSS shall be reported for each calendar month.

[3] Each oil & grease sampling event shall consist of a composite sample comprised of three grab samples taken at equal intervals during the sampling date, with each grab sample being collected in a glass container. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent rinsings as soon as possible after use, and the solvent rinsings shall be added to the composite sample for extraction and analysis.

[4] During all times when chlorine is used anywhere in the treatment process, e.g., maintenance of the treatment unit, effluent chlorine residual concentration shall be monitored by a grab sample during the period when chlorine is in use.

[5] When replicate analyses are made of a coliform sample, the reported result shall be the arithmetic mean of the replicate analysis sample.

[6] If pH is monitored continuously; the minimum and maximum pH values for each day shall be reported in monthly self-monitoring reports.

[7] Critical Life Stage Toxicity Test shall be performed and reported in accordance with the Chronic Toxicity Requirements specified in Sections V.B of the MRP.  
\*Accelerated monitoring is required to occur on a monthly basis.

[8] Acute bioassay test shall be performed in accordance with Section V.A of this MRP.

[9] The Discharger may, at its option, sample effluent mercury either as grab or as 24-hour composite samples. Use ultra-clean sampling (USEPA 1669) to the maximum extent practicable and ultra-clean analytical methods (USEPA 1631) for mercury monitoring. The Discharger may use alternative methods of analysis (such as USEPA 245), if that alternative method has an ML of 2 ng/L or less.

[10] Chlorinated dibenzodioxins and chlorinated dibenzofurans shall be analyzed using the latest version of USEPA Method 1613; the Discharger shall collect 4-liter samples to lower the detection limits to the greatest extent practicable. Alternative methods of analysis must be approved by the Executive Officer.

[11] Conductivity and salinity monitoring is required for the discharge through 003-R only.

[12] Sulfide analysis shall be run when dissolved oxygen concentrations fall below 2.0 mg/L.

[13] For the same pollutants, the sampling frequencies shall be the higher ones under this table or under the pretreatment program sampling required in IX.C of this MRP (Table E-7). Pretreatment program monitoring can be used to satisfy part of these sampling requirements.

## **V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS**

The Discharger shall monitor acute and chronic toxicity at M-001 and M-003 as follows (if the water quality is identical at 001-S and 003-R, sampling at one station satisfies the requirements):

### **A. Whole Effluent Acute Toxicity**

1. Compliance with the acute toxicity effluent limitations of this Order shall be evaluated by measuring survival of test organisms exposed to 96-hour continuous flow-through bioassays.
2. Test organisms shall be fathead minnows or rainbow trout unless specified otherwise in writing by the Executive Officer.
3. All bioassays shall be performed according to the most up-to-date protocols in 40 CFR Part 136, currently in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms," 5<sup>th</sup> Edition.
4. If specific identifiable substances in the discharge can be demonstrated by the Discharger as being rapidly rendered harmless upon discharge to the receiving water, compliance with the acute toxicity limit may be determined after the test samples are adjusted to remove the influence of those substances. Written approval from the Executive Officer must be obtained to authorize such an adjustment.
5. Effluent used for fish bioassays must be dechlorinated prior to testing. Monitoring of the bioassay water shall include, on a daily basis, the following parameters: pH, dissolved oxygen, ammonia (if toxicity is observed), temperature, hardness, and alkalinity. These results shall be reported. If a violation of acute toxicity requirements occurs or if the control fish survival rate is less than 90 percent, the bioassay test shall be restarted with new batches of fish and shall continue back to back until compliance is demonstrated.

### **B. Whole Effluent Chronic Toxicity**

1. The Discharger shall monitor and evaluate effluent discharged 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 requirements 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 be conducted on a monthly basis.

- c. If data from accelerated monitoring tests are found to be in compliance with the evaluation parameters, then routine monitoring shall be resumed.
- d. If accelerated monitoring tests continue to exceed either evaluation parameter, then the Discharger shall initiate a chronic toxicity reduction evaluation (TRE).
- e. Chronic Toxicity Monitoring Screening Phase Requirements, Critical Life Stage Toxicity Tests and definitions of terms used in the chronic toxicity monitoring are identified in **Appendices E-1 and E-2** of this MRP. The Discharger shall comply with these requirements as applicable to the discharge.

## 2. Chronic Toxicity Monitoring Requirements

- a. *Sampling.* The Discharger shall collect 24-hour composite samples of the Facility's effluent at the compliance point station specified in a table above, 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 species identified by screening phase testing or previous testing conducted under the ETCP. The Discharger shall conduct routine monitoring with the species approved by the Executive Officer. At the time of this permit adoption, the approved species is the mysid (*M. bahia*) (screening study was completed in July 2003).
- c. *Conditions for Accelerated Monitoring.* The Discharger shall accelerate monitoring to monthly when either of the following conditions is exceeded:
  - i. Three sample median value of 1 TUc, or
  - ii. Single sample maximum value of 2 TUc.
- d. *Methodology.* Sample collection, handling and preservation shall be in accordance with USEPA protocols. In addition, bioassays shall be conducted in compliance with the most recently promulgated test methods, "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms," currently third edition (EPA-821-R-02-014), and "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms," currently fourth Edition (EPA-821-R-02-013), with exceptions granted the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).
- e. *Dilution Series.* The Discharger shall conduct tests at 5%, 10%, 25%, 50%, and 100%. The "%" represents percent effluent as discharged.

## 3. Chronic Toxicity Reporting Requirements

- a. *Routine Reporting.* Toxicity test results for the current reporting period shall include, at a minimum, for each test:
  - i. Sample date(s)
  - ii. Test initiation date
  - iii. Test species
  - iv. End point values for each dilution (e.g. number of young, growth rate, percent survival)
  - v. NOEC value(s) in percent effluent
  - vi. IC15, IC25, IC40, and IC50 values (or EC15, EC25 ... etc.) in percent effluent
  - vii. TUC values (100/NOEC, 100/IC25, or 100/EC25)
  - viii. Mean percent mortality ( $\pm$ s.d.) after 96 hours in 100% effluent (if applicable)
  - ix. NOEC and LOEC values for reference toxicant test(s)
  - x. IC50 or EC50 value(s) for reference toxicant test(s)
  - xi. Available water quality measurements for each test (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 3.a, item numbers i, iii, v, vi(IC25 or EC25), vii, and viii.

## **VI. LAND DISCHARGE MONITORING REQUIREMENTS (N/A)**

This Order does not specify land discharge monitoring requirements for the Discharger, as there is no land discharge from the Facility.

## **VII. RECLAMATION MONITORING REQUIREMENTS**

The Discharger shall perform monitoring at M-002 according to the monitoring requirements contained in Regional Water Board Order No. 96-011.

### VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

The Discharger shall monitor North Slough at R-001, R-002, and R-003, when there is discharge to the North Slough, as specified in Table E-5:

**Table E-5. Receiving Water – North Slough - Monitoring Requirements [1]**

Parameter	Units	Sample Type	Minimum Sampling Frequency
Turbidity	NTU	Grab	1 / month
pH	s. u.	Grab	1 / month
Temperature	°F	Grab	1 / month
Dissolved Oxygen	mg/L and % saturation	Grab	1 / month
Ammonia [2]	mg/l as N	Grab	1 / month
Total Phosphate	mg/L	Grab	1 / month
Conductivity	µmhos	Grab	1 / month
Hardness (as CaCO <sub>3</sub> )	mg/L	Grab	1 / month
Salinity	ppt	Grab	1 / month
Chlorophyll- $\alpha$	mg/L	Grab	1 / month
Secchi Disk	inches	Grab	1 / month
Water Depth	feet	Grab	1 / month
Standard Observations	--	Visual	1 / month

Footnotes for Table E-5:

[1] Stations R-001, R-002, and R-003 shall be monitored monthly, and on the same day.

[2] Ammonia (as N) shall be measured as total ammonia; the unionized fraction shall be calculated based on the total ammonia, pH, total dissolved solids or salinity, and temperature.

### IX. OTHER MONITORING REQUIREMENTS

#### A. Monitoring Locations R-004, R-005

The Discharger shall monitor the freshwater constructed wetlands as specified in Table E-6:

**Table E-6. Freshwater Constructed Wetlands Monitoring Requirements**

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	Million gallons	Continuous	Continuous
pH	Std. Units	Grab	1 / month
Temperature	°F	Grab	1 / month
Hardness (as CaCO <sub>3</sub> )	mg/L	Grab	1 / month

Parameter	Units	Sample Type	Minimum Sampling Frequency
Salinity	Parts per thousand	Grab	1 / month
Dissolved Oxygen	mg/L and % saturation	Grab	1 / month

**B. Constructed Freshwater Wetlands Wildlife Monitoring**

Wildlife monitoring shall consist of a wildlife census. The census shall be conducted on an established transect that is representative of the wetlands. The survey's focus shall be on aquatic birds, but incidental observations of other wildlife species also shall be recorded. The census shall be conducted every quarter throughout the year.

**C. Pretreatment Program Monitoring (M-INF-001, M-001/M-003, and B-001)**

The Discharger shall comply with the pretreatment requirements as specified in Table E-7 for both influent (M-INF-001), effluent (M-001 and M-003), and biosolids (B-001):

**Table E-7. Pretreatment Program Monitoring Requirements**

Constituents	Sample Locations and Frequency			Required Test Methods
	Influent M-INF-001	Effluent M-001 and M-003	Biosolids (B-001)	
VOC [1]	2/Y	2/Y	[4]	624/8260
BNA [1]	2/Y	2/Y	[4]	625/8270
Hexavalent Chromium [2]	M	M	[4]	Standard Methods 3500
Metals [3]	M	M	[4]	GFAA, ICP, ICP-MS
Mercury	M	M	[4]	EPA 245, 1631, 7471 (SW846)
Cyanide	M	M	[4]	Standard Methods 4500-CN C or I, 9012A (SW846)

Legend:

M = once each month  
2/Y = each calendar year (at about 6 month intervals, once in the dry season, once in the wet season)

VOC = volatile organic compounds

BNA = base/neutrals and acids extractable organic compounds

Footnotes for Table E-7:

- [1] GC/MS methods used must be able to quantify to an equivalent level as applicable GC methods (EPA 601, 602, 603, 604, 606).
- [2] Total chromium may be substituted for hexavalent chromium at the Discharger's discretion.
- [3] The parameters are arsenic, cadmium, selenium, copper, lead, mercury, nickel, silver, zinc, and total chromium (if the Discharger elects to substitute total chromium for hexavalent chromium).
- [4] Biosolids will be analyzed prior to disposal activities.

**D. Sludge Monitoring (B-001)**

The Discharger shall analyze sludge prior to disposal for priority pollutant metals and organics. See above Pretreatment Monitoring for specific requirements.

**E. Overflows and Bypasses (O-001 thru O-'n')**

The Discharger shall monitor bypass or overflows from manholes, pump stations, collection systems or any sludge drying bed areas.

Constituent	Units	Sample Type	Minimum Sampling Frequency	Required Test Method
Standard Observations	--	Observation	Each occurrence	N/A

**F. Land Observances (P-001 thru P-008)**

The Discharger shall observe the periphery of the waste treatment or disposal facilities at equidistant intervals, not to exceed 200 feet at P-001 thru P-008 as follows:

Constituent	Units	Sample Type	Minimum Sampling Frequency	Required Test Method
Standard Observations	--	observation	1 / week	N/A

**X. REPORTING REQUIREMENTS**

**A. General Monitoring and Reporting Requirements**

The Discharger shall comply with all Standard Provisions (**Attachments D and G**) related to monitoring, reporting, and recordkeeping, except as otherwise specified below.

**B. Modifications to Part A of Self-Monitoring Program (Attachment G)**

1. If any discrepancies exist between SMP Part A, August 1993 (**Attachment G**) and this MRP, this MRP prevails.
2. Modify Section C.2.h of Part A as follows:
  - h. When any type of bypass occurs, except for bypasses that are consistent with Prohibition 2, composite samples shall be collected on a daily basis for all constituents at all affected discharge points that have effluent limits for the duration of the bypass.

When bypassing occurs from any treatment process (primary, secondary, chlorination, dechlorination, etc.) in the treatment facility that is consistent with Prohibition III.C, during high wet weather inflow, the self-monitoring program shall include the following sampling and analyses, in addition to the schedule given in this MRP:

- i. When bypassing occurs from any primary or secondary treatment unit(s), samples of the discharge shall be collected for the duration of the bypass event for BOD and TSS analyses in 24-hour composite or less increments, and continuous monitoring of flow, chlorine residual, and grabs for pH and coliform. Samples in accordance with proper sampling techniques for all other limited pollutant parameters shall also be collected and retained for analysis if necessary. If BOD or TSS values exceed the weekly average effluent limits, analysis of the retained samples shall be conducted for all these pollutant constituents that have effluent limits for the duration of the bypass, until the BOD and TSS are in compliance with their weekly effluent limitations. Holding times for these retain samples must be complied with.
  - ii. When bypassing the chlorination process, grab samples shall be collected at least daily for total coliform analyses; and continuous monitoring of flow.
  - iii. When bypassing the dechlorination process, grab samples shall be collected hourly for chlorine residual; and continuous monitoring of flow.
3. Sections C.3. and C.5. are satisfied by participation in the Regional Monitoring Program.
4. Amend Section E as Follows:

#### **Records to be Maintained**

Written reports, electronic records, strip charts, equipment calibration and maintenance records, and other records pertinent to demonstrating compliance with waste discharge requirements, including monitoring and reporting requirements, shall be maintained by the Discharger in a manner and at a location (e.g., wastewater treatment plant or Discharger offices) such that the records are accessible to Regional Water Board staff. These records shall be retained by the Discharger for a minimum of 3 years. This minimum period of retention shall be extended during the course of any unresolved litigation regarding the subject discharge, or when requested by the Regional Water Board or Regional Administrator of the USEPA, Region IX.

Records to be maintained shall include the following:

#### **1. Parameter Sampling and Analyses, and Observations**

For each sample, analysis, or observation conducted, records shall include the following:

- a. Parameter.
- b. Identity of sampling and observation stations, consistent with the station descriptions given in the MPR (**Attachment E**).
- c. Date and time of sampling and/or observations.

- d. Method of sampling (e.g., grab, composite, or other method).
- e. Date and time analyses are started and completed, and name of personnel or contract laboratory performing the analyses.
- f. Reference or description of procedure(s) and analytical method(s) used.
- g. Analytical method detection limits and related quantitation parameters.
- h. Results of the analyses and/or observations.

## **2. Flow Monitoring Data**

For all required flow monitoring (e.g., influent and effluent flows), records shall include the following:

- a. Total flow or volume, for each day.
- b. Maximum, minimum, and average daily flows for each calendar month.

## **3. Wastewater Treatment Process Solids**

- a. For each treatment unit process that involves solids removal from the wastewater stream, records shall include the following:
  - 1) Total volume and/or mass quantification of solids removed from each unit (e.g., grit, skimmings, undigested biosolids) for each calendar month.
  - 2) Final disposition of such solids (e.g., landfill, other subsequent treatment unit).
- b. For final dewatered biosolids from the treatment plant as a whole, records shall include the following:
  - 1) Total volume and/or mass quantification of dewatered biosolids for each calendar month.
  - 2) Solids content of the dewatered biosolids.
  - 3) Final disposition of dewatered biosolids (point of disposal location and disposal method).

#### **4. Disinfection Process**

For the disinfection process, records shall be maintained documenting process operation and performance, including the following:

For bacteriological analyses:

- 1) Date and time of each sample collected.
- 2) Wastewater flow rate at the time of sample collection.
- 3) Results of sample analyses (e.g., bacterial count).
- 4) Required statistical parameters for cumulative bacterial values (e.g., moving median or geometric mean for the number of samples or sampling period identified in waste discharge requirements).

#### **5. Treatment Process Bypasses**

A chronological log of all treatment process bypasses, including wet weather blending, shall include the following:

- a. Identification of the treatment process bypassed.
- b. Date(s) and times of bypass beginning and end.
- c. Total bypass duration.
- d. Estimated total volume.
- e. Description of, or reference to other report(s) describing, the bypass event, the cause, corrective actions taken, and any additional monitoring conducted.

#### **6. Collection System Overflows**

This section applies to records for overflows at the treatment facility. This includes the headworks and downstream. Overflows upstream in the collection system should comply with the Executive Officer's letter of November 15, 2004.

A chronological log of all collection system overflows shall include the following:

- a. Location of the overflow.
- b. Date(s) and times of overflow beginning and end.

- c. Total overflow duration.
- d. Estimated total volume.
- e. Description of, or reference to other report(s) describing, the overflow event, the cause, corrective actions taken, and any additional monitoring conducted.

4. Modify Section F.1 as follows:

**1. Spill of Oil or Other Hazardous Material Reports**

- a. A report shall be made of any spill of oil or other hazardous material.
- b. The spill shall be reported by telephone as soon as possible and no later than 24 hours following occurrence or Discharger's knowledge of occurrence. Spills shall be reported by telephone as follows:

During weekdays, during office hours of 8 am to 5 pm, to the Regional Water Board:  
(510) 622-5633, (510) 622-2460 (FAX).

During weekends and non-office hours, to the State Office of Emergency Services:  
(800) 852-7550.

- c. A written report shall be submitted to the Regional Water Board within five (5) working days following telephone notification, unless directed otherwise by Regional Water Board staff. A report submitted by facsimile transmission is acceptable for this reporting. The written report shall include the following:

[The rest of the section remains unchanged]

5. Modify Section F.2 (first paragraph) as follows:

**2. Reports of Plant Bypass, Treatment Unit Bypass and Order Violation**

The following requirements apply to all treatment plant bypasses and significant non-compliance occurrences, except for bypasses under the conditions contained in 40 CFR Part 122.41 (m)(4) as stated in Standard Provision A.13. In the event the Discharger violates or threatens to violate the conditions of the waste discharge requirements and prohibitions or intends to experience a plant bypass or treatment unit bypass due to:

[And add at the end of Section F.2 the following:]

The Discharger shall report in monthly and annual monitoring reports occurrence of blending events, their duration and certify that the blending was in compliance with effluent limits and O&M Plans.

6. Modify Section F.4 as follows:

**Self-Monitoring Reports**

For each calendar month, a self-monitoring report (SMR) shall be submitted to the Regional Water Board in accordance with the requirements listed in Self-Monitoring Program, Part A. The purpose of the report is to document treatment performance, effluent quality and compliance with waste discharge requirements prescribed by this Order, as demonstrated by the monitoring program data and the Discharger's operation practices.

[And add at the end of Section F.4 the following:]

g. If the Discharger wishes to invalidate any measurement, the letter of transmittal will include a formal request to invalidate the measurement; the original measurement in question, the reason for invalidating the measurement, all relevant documentation that supports the invalidation (e.g., laboratory sheet, log entry, test results, etc.), and discussion of the corrective actions taken or planned (with a time schedule for completion), to prevent recurrence of the sampling or measurement problem. The invalidation of a measurement requires the approval of Water Board staff and will be based solely on the documentation submitted at that time.

h. Reporting Data in Electronic Format

The Discharger has the option to submit all monitoring results in an electronic reporting format approved by the Executive Officer. If the Discharger chooses to submit SMRs electronically, the following shall apply:

- 1) Reporting Method: The Discharger shall submit SMRs electronically via the process approved by the Executive Officer in a letter dated December 17, 1999, Official Implementation of Electronic Reporting System (ERS) and in the Progress Report letter dated December 17, 2000, or in a subsequently approved format that the Permit has been modified to include.
- 2) Monthly or Quarterly Reporting Requirements: For each reporting period (monthly or quarterly as specified in SMP Part B), an electronic SMR shall be submitted to the Regional Water Board in accordance with Section F.4.a-g. above. However, until USEPA approves the electronic signature or other signature technologies, Dischargers that are using the ERS must submit a hard copy of the original transmittal letter, an ERS printout of the data sheet, a violation report, and a receipt of the electronic transmittal.
- 3) Annual Reporting Requirements: Dischargers who have submitted data using the ERS for at least one calendar year are exempt from submitting an annual report

electronically, but a hard copy of the annual report shall be submitted according to Section F.5 below.

7. Add at the end of Section F.5, Annual Reporting, the following:

- d. A plan view drawing or map showing the Discharger's facility, flow routing and sampling and observation station locations.

8. Add as Section F.6 the following:

**Reports of Wastewater Overflows**

Overflows of sewage from the Discharger's collection system, other than overflows specifically addressed elsewhere in this Order and MPR, shall be reported to the Regional Water Board in accordance the Regional Water Board's letter dated November 15, 2004.

**C. Self Monitoring Reports (SMRs)**

1. At any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit self-monitoring reports. Until such notification is given, the Discharger shall submit self-monitoring reports in accordance with the requirements described below.
2. The Discharger shall submit monthly and annual Self Monitoring Reports including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. Monthly reports shall be due on the 30<sup>th</sup> day following the end of each calendar month, covering samples collected during that calendar month; Annual reports shall be due on February 1 following each calendar year.
3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule in Table E-8.
4. The Dischargers shall report with each sample result the applicable Minimum Level (ML) or Reporting Level (RL) and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR Part 136.

The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

- a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
- b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

**Table E-8. Monitoring Period**

<b>Sampling Frequency</b>	<b>Monitoring Period Begins On...</b>	<b>Monitoring Period</b>
Continuous	Day after permit effective date	All
1 / day	Day after permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.
1 / week , 3/week, 5/week	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday
1 / month	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	1 <sup>st</sup> day of calendar month through last day of calendar month
1 / quarter	Closest of January 1, April 1, July 1, or October 1 following (or on) permit effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31
2 / year	November 1 following (or on) permit effective date	One during November 1 through April 30 One during May 1 through October 31
1 / year	Closest of May 1 or November 1 following (or on) permit effective date	Alternate between once during November 1 through April 30 (one year), and once during May 1 through October 31 (following year)
Each Occurrence	Anytime during the discharge event or as soon as possible after aware of the event	At a time which sampling can characterize the discharge event

- c. For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words “Estimated Concentration” (may be shortened to “Est. Conc.”). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy ( $\pm$  a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.
  - d. Sample results less than the laboratory’s MDL shall be reported as “Not Detected,” or ND.
  - e. The Dischargers shall instruct laboratories to establish calibration standards so that the RL value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. The Discharger shall not use analytical data derived from *extrapolation* beyond the lowest point of the calibration curve.
5. The Dischargers shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations.

6. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.
7. SMRs must be submitted to the Regional Water Board, signed and certified as required by the standard provisions (Attachment D), to the address listed below:

San Francisco Bay Regional Water Quality Control Board  
1515 Clay Street, Suite 1400  
Oakland, CA 94612  
Attn: NPDES Division

8. The Discharger has the option to submit all monitoring results in an electronic reporting format approved by the Executive Officer. The Electronic Reporting System (ERS) format includes, but is not limited to, a transmittal letter, summary of violation details and corrective actions, and transmittal receipt. If there are any discrepancies between the ERS requirements and the "hard copy" requirements listed in the MRP, then the approved ERS requirements supersede.

#### **D. Discharge Monitoring Reports (DMRs)**

1. As described in Section X.B.1 above, at any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit self-monitoring reports. Until such notification is given, the Discharger shall submit discharge monitoring reports (DMRs) in accordance with the requirements described below.
2. DMRs must be signed and certified as required by the standard provisions (**Attachment D**). The Discharge shall submit the original DMR and one copy of the DMR to the address listed below:

State Water Resources Control Board  
Discharge Monitoring Report Processing Center  
Post Office Box 671  
Sacramento, CA 95812

3. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self-generated or modified cannot be accepted.

## Appendix E-1

### CHRONIC TOXICITY

#### DEFINITION OF TERMS AND SCREENING PHASE REQUIREMENTS

##### I. Definition of Terms

- A. No observed effect level (NOEL) for compliance determination is equal to  $IC_{25}$  or  $EC_{25}$ . If the  $IC_{25}$  or  $EC_{25}$  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.  $EC_{25}$  is the concentration of toxicant (in percent effluent) that causes a response in 25 percent 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 nonlethal, nonquantal biological measurement, such as growth. For example, an  $IC_{25}$  is the estimated concentration of toxicant that would cause a 25 percent reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as USEPA'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 source control 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 1 and 2 (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 3 (attached).
    - 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.
  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.

Appendix E-2

SUMMARY OF TOXICITY TEST SPECIES REQUIREMENTS

**Critical Life Stage Toxicity Tests for Estuarine Waters**

Species	(Scientific Name)	Effect	Test Duration	Reference
Alga	( <i>Skeletonema costatum</i> ) ( <i>Thalassiosira pseudonana</i> )	Growth rate	4 days	1
Red alga	( <i>Champia parvula</i> )	Number of cystocarps	7-9 days	3
Giant kelp	( <i>Macrocystis pyrifera</i> )	Percent germination; germ tube length	48 hours	2
Abalone	( <i>Haliotis rufescens</i> )	Abnormal shell development	48 hours	2
Oyster Mussel	( <i>Crassostrea gigas</i> ) ( <i>Mytilus edulis</i> )	Abnormal shell development; percent survival	48 hours	2
Echinoderms - Urchins	( <i>Strongylocentrotus purpuratus</i> , <i>S. franciscanus</i> )	Percent fertilization	1 hour	2
Sand dollar	( <i>Dendraster excentricus</i> )			
Shrimp	( <i>Mysidopsis bahia</i> )	Percent survival; growth	7 days	3
Shrimp	( <i>Holmesimysis costata</i> )	Percent survival; growth	7 days	2
Topsmelt	( <i>Atherinops affinis</i> )	Percent survival; growth	7 days	2
Silversides	( <i>Menidia beryllina</i> )	Larval growth rate; percent survival	7 days	3

**Toxicity Test References:**

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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. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to West Coast Marine and Estuarine Organisms. EPA/600/R-95/136. August 1995.
3. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to Marine and Estuarine Organisms. EPA/600/4-90/003. July 1994.

### Critical Life Stage Toxicity Tests for Fresh Waters

Species	(Scientific Name)	Effect	Test Duration	Reference
Fathead minnow	<i>(Pimephales promelas)</i>	Survival; growth rate	7 days	4
Water flea	<i>(Ceriodaphnia dubia)</i>	Survival; number of young	7 days	4
Alga	<i>(Selenastrum capricornutum)</i>	Cell division rate	4 days	4

**Toxicity Test Reference:**

4. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, third edition. EPA/600/4-91/002. July 1994.

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Toxicity Test Requirements for Stage One Screening Phase

Requirements	Receiving Water Characteristics		
	Discharges to Coast	Discharges to San Francisco Bay <sup>[2]</sup>	
		Ocean	Marine/Estuarine
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 <sup>[1]</sup>	0	1 or 2	3
Marine/Estuarine	4	3 or 4	0
Total number of tests	4	5	3

[1] The freshwater species may be substituted with marine species if:

- (a) The salinity of the effluent is above 1 part per thousand (ppt) greater than 95 percent of the time, or
- (b) 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.

[2] (a) Marine/Estuarine refers to receiving water salinities greater than 1 ppt at least 95 percent of the time during a normal water year.

- (b) Fresh refers to receiving water with salinities less than 1 ppt at least 95 percent of the time during a normal water year.

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**ATTACHMENT F – FACT SHEET**

As described in Section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

**I. PERMIT INFORMATION**

The following table summarizes administrative information related to the facility.

<b>WDID</b>	2 283021001
<b>Discharger</b>	City of American Canyon
<b>Name of Facility</b>	Wastewater Treatment and Reclamation Facility
<b>Facility Address</b>	151 Mezzetta Court
	American Canyon, CA, 94503
	Napa County
<b>Facility Contact, Title and Phone</b>	Robert C. Weil, Public Works Director, (707) 647-4550
<b>Authorized Person(s) to Sign and Submit Reports</b>	Robert C. Weil, Peter Lee
<b>Mailing Address</b>	300 Crawford Way, American Canyon, CA 94503
<b>Billing Address</b>	SAME
<b>Type of Facility</b>	POTW
<b>Major or Minor Facility</b>	Major
<b>Threat to Water Quality</b>	--
<b>Complexity</b>	--
<b>Pretreatment Program</b>	Yes (not subject to USEPA approval)
<b>Reclamation Requirements</b>	Title 22
<b>Facility Permitted Flow</b>	4.0 MGD (peak dry weather flow)/
	5.0 MGD (peak wet weather flow)
<b>Facility Design Flow</b>	2.5 mgd (average dry weather flow)
<b>Watershed</b>	Napa River
<b>Receiving Water</b>	North Slough and constructed freshwater wetlands
<b>Receiving Water Type</b>	Estuarine

- A. City of American Canyon (hereinafter Discharger) is the owner/operator of the Wastewater Treatment and Reclamation Facility (hereinafter Facility), a POTW. The City owns and operates the property at 151 Mezzetta Court, American Canyon, on which the Facility is located.
  
- B. The Facility discharges wastewater to the North Slough, a water of the United States, and is currently regulated by Orders 00-003, 01-113, and R2-2002-0096 which were adopted on January 19, 2000, October 17, 2001, and September 18, 2002 and expired on January 19, 2005. The terms of the existing Orders automatically continued in effect after the permit expiration date.

- C. The Discharger filed a report of waste discharge and submitted an application for renewal of its Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit on October 18, 2004. Supplemental Information was requested on February 8, 2006 and received on March 2, 2006.

## II. FACILITY DESCRIPTION

### A. Description of Wastewater and Biosolids Treatment or Controls

1. The Facility has an average dry weather flow design capacity of 2.5 million gallons per day (mgd), and a peak wet weather capacity of 5.0 mgd.
2. *Treatment Process.* The treatment plant has two segregated wastewater treatment process streams. Process Train 1 is used for treating the higher total dissolved solids (TDS) wastewater from the City's commercial and industrial North Basin, and Process Train 2 is used for treating approximately 86% of the total flow (based on flow data from 2002-2005), which is primarily low in TDS domestic wastewater. The Facility operators have the flexibility of combining the two treated streams prior to or after the treatment processes. The treatment process consists of an emergency overflow basin (5 million gallons [MG]), screening (two self-cleaning inclined cylindrical screens), grit removal (one vortex-type grit removal chamber for Main Basin flow only), biological treatment using nitrifying aeration tanks with an anoxic zone for denitrification along with immersed membranes for solids separation (4 rectangular basins), ultraviolet (UV) disinfection for all flow discharged to the wetlands, and sodium hypochlorite and a chlorine contact tank for disinfection of recycled water for irrigation. Secondary treatment is accomplished with an activated sludge treatment system and immersed microfiltration membranes for solids separation. A cascade aeration outlet structure is used to elevate dissolved oxygen levels in effluent discharged to the wetlands. Facility influent is measured through two magnetic flow meters prior to the headworks.

Plant effluent flow is diverted either directly to the irrigation distribution system or to the outfall pipeline to the North Slough or constructed wetlands discharge point. Plant effluent flow discharged to the North Slough (M-001), to the constructed wetlands (M-003), and to irrigation (M-002) is measured separately.

3. *Reclamation.* The tertiary treated wastewater from the lower TDS water (Main Basin) will be recycled and used for agricultural and landscape irrigation. Initially, the recycled wastewater will be used for irrigation of vineyards at various locations primarily to the north and east of the Facility. Development in American Canyon may increase the potential for recycling. Possible uses include landscape irrigation at parks, schools and other common irrigation areas; toilet flushing; and dust control at construction sites. The Discharger has prepared a Recycled Water Master Plan and intends to maximize the use of reclaimed water. In February 1999, the Discharger completed a Recycled Water Master Plan. The Discharger has made certain necessary Facility modifications and improvements in preparation of the implementation of the water recycling program. In July 2005, the Discharger received approval from the Regional Water Board and the California

Department of Health Services to deliver the recycled water to users. During the 2005 recycled water season, about 10% of the wastewater treatment plant effluent was recycled. The Discharger's reclamation activities are governed by the Regional Water Board's general reclamation permit Order No. 96-011.

4. *Effluent Monitoring.* The effluent compliance monitoring point is at the discharge from the UV disinfection channel (M-001) for effluent released to North Slough, at M-003 for effluent discharged to the constructed wetlands, or at the discharge of the chlorine contact chamber effluent (M-002) for the recycled water. The UV disinfected effluent (001-S) flows to the North Slough or to the constructed wetlands (003-R). The chlorinated final effluent (002-R) flows to the wet well of the Reclaimed Water (RW) pump station. During peak irrigation demands, the effluent will be pumped from the wet well to the recycled water distribution system. During periods when irrigation demands are less than the flow through Process Train 2, any effluent from microfiltration in excess of the RW pump station demands will be diverted (prior to the chlorine contact tank) to the UV facilities. This will ensure that all disinfected effluent to the North Slough or constructed wetlands contains zero chlorine residual. In the event of excess flow reaching the RW pump station, an overflow weir will divert that excess water to the emergency storage basin. The UV system has been sized to accommodate the total Facility flow during winter periods to provide the required disinfection. A standby bank of UV equipment is included in the disinfection facilities to ensure reliability. Only water delivered to the recycled water irrigation system will be chlorinated. A 1.0 MG recycled water reservoir was constructed to meet peak irrigation demands. A chlorine residual will be maintained at the discharge from the chlorine contact tank to ensure that a chlorine residual is maintained in the recycled water distribution system.

The effluent discharged to North Slough (001-S) may be a combination of Process Trains 1 and 2 at any given time. The actual percentage of this blend varies daily based on Facility effluent flow and irrigation demands. The previous Orders specified that the effluent discharged to the constructed wetlands shall be the Main Basin low TDS effluent only; however, the Facility does not have the ability to UV disinfect two streams of effluent for discharge. Monitoring of the constructed wetlands shows the salinity in the wetlands has been below 1.0 parts per thousand (ppt) for all but one monitoring event; therefore, the water in the constructed wetlands can be classified as freshwater. In addition, on-going monitoring of the constructed wetlands for vegetation and aquatic life also suggest the healthy condition of the wetlands. Therefore, this Order allows the Discharger to discharge combined effluent to the constructed wetlands all year round. This Order specifies that M-001 and M-003 shall be monitored continuously for flow.

5. *Wet Weather Flow Handling.* The Facility has a wet weather treatment capacity of 5.0 mgd, and additional facilities for handling peak wet weather flows. These facilities include a 5 million gallon (MG) capacity earthen basin to store wastewater during instantaneous peak periods greater than the plant capacity and during emergency conditions. During peak flows or some other emergency event, influent can be diverted to and temporarily stored in the basin and subsequently returned to the Facility for full treatment after Facility flows

have subsided or the problem is corrected. The Facility and storage basin provide containment and treatment of all wastewater flows. The Facility has been designed for at least a 100-year storm event. When combined with the 5 MG storage basin, the peak wet weather capacity in the Facility should provide adequate protection to ensure that wet weather bypass to the wetlands will not occur.

6. *Collection System.* Wastewater collection systems are subject to increased flows during wet weather due to rainfall-induced infiltration and inflow. The Basin Plan states that, depending on the level of water quality protection required, collection systems should be designed to contain different recurrence interval storm flows. The previous permit has required the Discharger to conduct a study to evaluate the relative costs of providing infrastructure to accommodate 20-year, 10-year and 5-year storm events relative to the beneficial uses protected.

A Sanitary Sewer Analysis was completed in December 2001 by HydroScience Engineers, Inc. to determine if the existing sewer system capacity could accommodate a 20-year storm event with anticipated inflows and infiltration (I/I). Recommendations from the study included submitting the analysis to the Regional Water Board, submitting a plan to study alternatives for major storm events to the Regional Water Board, facilitating a winter season flow monitoring and rainfall data collection program, and including sewer line improvements/replacement in successive annual Capital Improvement Project funding. A Sewer System Management Plan (SSMP) is also being developed with guidance from the Regional Water Board. A follow-up review by Napa County Local Agency Formation Commission (LAFCO) confirmed the I/I problem, yet acknowledged that the Discharger is addressing its I/I reduction with connection fees and a robust Capital Improvement Program.

Currently, the Fiscal Year 2006 capital budget includes \$210,000 for sewer line replacement and additional funds for small projects and maintenance activities. Funds are also earmarked for televising sewer main lines to complete an internal audit by maintenance personnel that will identify lines with significant infiltration. A consultant will then be hired to develop a comprehensive, cost-effective program to reduce the inflow and infiltration problems identified by staff and through previous studies. The Discharger's Sewer Collection System maintenance crews have also achieved a significant reduction of inflow by monitoring and isolating new construction projects that are not yet accepted for inclusion in the sewer collection system.

7. *Biosolids Handling and Disposal.* Solids removed from the wastewater stream are stored in two earthen clay lined sludge storage basins (3 MG each). The supernatant returned to the headworks can be placed in Process Train 1 and ultimately discharged to the North Slough or returned to Process Train 2. The basins have been sized to provide an estimated storage capacity of up to 10 years of sludge.

Annual biosolids production in the year 2005 was approximately 311 dry metric tons (dmt). The land application of municipal wastewater biosolids is regulated by the USEPA under

federal regulations found in 40 CFR §503 (Standards for the Use or Disposal of Sewage Sludge), published as a final rule on February 19, 1993. Disposal of the biosolids will comply with all Federal and State regulations.

8. *Storm Water.*

- a. *Regulation.* Federal Regulations for storm water discharges were promulgated by the USEPA on November 19, 1990. The regulations [40 CFR Parts 122, 123, and 124] require specific categories of industrial activity (industrial storm water) to obtain an NPDES permit and to implement Best Available Technology Economically Available (BAT) and Best Conventional Pollutant Control Technology (BCT) to control pollutants in industrial storm water discharges.
- b. *Exemption from Coverage under Statewide Industrial Storm Water General Permit.* The State Board adopted a statewide NPDES permit for storm water discharges associated with industrial activities (NPDES General Permit CAS000001). The Discharger is not required to be covered under the General Permit because all of the storm water captured within the wastewater treatment plant storm drain system is directed to the headworks of the Facility and treated to the standards contained in the Discharger's permit.

**B. Freshwater Constructed Wetlands**

1. The Discharger has constructed and maintained a 6-acre freshwater wetland demonstration project to 1) demonstrate the beneficial use of year-round recycled water for creation of freshwater wetlands, 2) utilize excess effluent during the period while final irrigation customer agreements are completed and conveyance systems/facilities built, and 3) provide wastewater to the constructed wetlands into the future as the community grows and projected build-out conditions are achieved in order to continue demonstrating beneficial use of the recycled wastewater and demonstrate environmental benefit.
2. The wetlands are not part of the wastewater treatment and, therefore, must be considered waters of the State. The wetlands must be managed, and permit limitations have been included in this Order to prevent vector problems, nuisance and direct toxicity to wildlife, and to minimize the occurrence of avian botulism, other infectious diseases and bioaccumulation up the food chain.
3. The construction of the freshwater wetlands with tertiary treated water from the Facility has been endorsed by the California Department of Fish and Game and the Napa County Mosquito Abatement District. The constructed freshwater wetlands also provide a transition zone to the brackish wetlands of the North Slough.
4. The Discharger has prepared a *Constructed Wetlands Demonstration Project Management Plan*, dated August 2001 (Plan) in accordance with the Regional Water Board's *Policy on the Use of Wastewater to Create, Restore, and/or Enhance Wetlands, Resolution 94-086*. The Plan describes the location, design features, flows to the wetlands, vegetation and

wildlife management. The Discharger is expected to manage the constructed wetlands according to this Plan. The Discharger may discharge combined effluent to the constructed wetlands as described in Finding II.A.5 above, as long as this practice will not cause adverse impacts to the freshwater wetlands.

5. The constructed wetland project is consistent with Resolution 94-086, which states that an exception to the discharge policy may be allowed if it can be demonstrated that net environmental benefits will be derived as a result of the discharge. The proposed project will be a "demonstration project" until such time that net environmental benefits have been successfully demonstrated. Approximately 10 acres of non-indigenous eucalyptus trees have been removed and 6 acres of freshwater wetlands have been constructed to create fresh water and transitional brackish wetlands. The constructed wetlands are cultivated with different varieties of plants for the purpose of creating of a natural habitat. Since the discharge of tertiary treated wastewater to the wetlands, the reeds and the trees have developed a good cover and nesting habitat for fresh and brackish water species of birds. Recent bird surveys have confirmed the habitation of species such as grebes, coots, ducks, rails, sparrows, finches and other species in the ponds. These species found in the ponds generally represent those found in other brackish and fresh water ponds in the San Francisco Bay area.
6. This Order allows the Discharger to discharge combined effluent to the constructed wetlands at Discharge location 003-R. After the recycled water customer agreements are finalized and distribution facilities are constructed, more effluent from the Main Basin will be used for recycling. The flows to the constructed wetlands during the reclamation season will be decreased. Some of the effluent ultimately flows to North Slough.
7. The effluent compliance monitoring point for the constructed freshwater wetlands should be at M-003 (which may be the same as M-001 if the water quality is identical). Outfall 003-R delivers treated wastewater to the freshwater wetlands from the UV disinfection channel (001-S), which also delivers effluent to the North Slough tidal wetlands. Since some of the effluent to the constructed wetlands eventually overflows to the North Slough, effluent limitations that apply to 001-S also apply to the discharge through Outfall 003-R. The third outfall structure (002-R) will deliver chlorinated wastewater for unrestricted Title 22 reclaimed water from the chlorine contact chamber effluent.

### **C. Wetlands Restoration**

As of December 2005, the City of American Canyon has completed the Wetlands Restoration Project, funded jointly by CALFED and California Department of Fish and Game (CDFG). Tasks completed for this project include:

- Prepared CEQA / NEPA documentation,
- Obtained permitting,
- Removed wastewater pond berms and demolished existing wastewater ponds,

- Completed final design plans and specifications for earthwork/demolition/restoration work,
- Breached levees to restore tidal action,
- Constructed new levees to protect City facilities,
- Restored Port of Oakland-owned uplands, and
- Constructed viewing/educational area facilities.

The monitoring data collected during this project were compiled and submitted to the Regional Water Board. The Discharger will work with the CDFG to establish a long-term plan to manage the restored wetlands.

**D. Discharge Points and Receiving Waters**

The treated and disinfected effluent (001-S) is discharged throughout the wet season from November 1 to April 30 to the North Slough where it eventually enters the Napa River through existing tidal wetlands. From May 1 through October 31, the combined effluent is allowed to discharge to the constructed wetlands though outfall 003-R, most of which ultimately overflows to the North Slough. From May 1 through October 31, the lower TDS effluent, which amounts approximately to 75% of the total dry weather flow, will be distributed to various irrigation sites in the vicinity of the Facility.

**E. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data**

Effluent limitations/Discharge Specifications contained in the previous Orders (00-003, 01-113, R2-2002-0096) for discharges from 001-S and 003-R (Monitoring Locations M-001 and M-003) and representative monitoring data from the term of the previous Order are as follows. The priority pollutant data are included in **Appendix F-1** of this Fact Sheet.

**Summary of Conventional and Non-Conventional Pollutant Effluent Limitations and Data**

Parameter (units) – Conventional and non-conventional pollutants	Effluent Limitation			Monitoring Data (From September 2002 – To November 2005)		
	Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Biochemical Oxygen Demand 5-day (BOD <sub>5</sub> ) (mg/L)	10	15	20	3.5	5.8	10
BOD <sub>5</sub> Monthly Removal (%)	85%	--	--	99.7	98.8 (Lowest monthly)	--
Total Suspended Solids (TSS) (mg/L)	10	15	20	<4.8	5	8

Parameter (units) – Conventional and non- conventional pollutants	Effluent Limitation			Monitoring Data (From September 2002 – To November 2005)		
	Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
TSS Monthly Removal (%)	85%	--	--	100	97.8 (Lowest monthly)	--
Oil and Grease (mg/L)	--	--	10	<5	--	<5
pH (s.u.)	--	--	6.5 (minimum) – 8.5 (maximum)	--	--	6.5 (minimum) - 8.5 (maximum)
Total coliform (mpn/100 ml)	--	2.2 (7- sample median)	23 (single maximum)	--	3 (7- sample median)	92
Turbidity (NTU)	--	--	10	0.37	--	1.7
Temperature (C)	--	--	--	23	--	25
DO (mg/L)	--	--	--	3 (minimum)	--	1.7 (minimum)
DO saturation (%)	--	--	--	33 (minimum)	--	--
TKN (mg/L)	--	--	--	4.4	13	13
Organic Nitrogen (mg/L)	--	--	--	3.93	13	13
Nitrate Nitrogen (mg/L)	--	--	--	47	67	67
Ammonia Nitrogen (mg/L)	2.0	3.0	4.0	2.6	6.8	6.8
Un-ionized Nitrogen (mg/L)	--	--	--	0.09	0.35	0.35
Acute Toxicity (% survival)	11-sample median not to fall below 90% and 11-sample 90 <sup>th</sup> percentile not to fall below 70% survival			95 (11-sample median, minimum) 85 (single sample minimum)		
Chronic Toxicity (TUc)	3-sample median maximum 1 TUc and single maximum 2.0 TUc			--	--	--
Survival	--	--	--	<1.0 (single sample maximum)		
Growth	--	--	--	1.8 (single sample maximum)		

### Summary of Toxic Pollutant Effluent Limitations and Data

Parameters (units) - Priority pollutants	Effluent Limitation			Monitoring Data (From September 2002 – To November 2005)		
	Monthly Average	--	Daily Average	Average	Range	No. of Data Points
Antimony (µg/L)	--	--	--	0.35 [1]	0.1-0.7	36
Arsenic (µg/L)	--	--	20	0.76 [1]	0.14-4.5	38
Cadmium (µg/L)	--	--	1.1	0.039 [1]	<0.03-0.08	38
Chromium VI (µg/L)	--	--	11	0.68 [1]	<0.2-1.3	38
Copper (µg/L)	--	--	4.9	3.28	1.2-7.5	54
Lead (µg/L)	--	--	5.6	0.16 [1]	<0.04-0.42	38
Mercury (µg/L)	0.020	--	0.041	0.00205	0.0005- 0.0058	38
Nickel (µg/L)	--	--	7.1	5.64	2.4-15	44
Selenium (µg/L)	--	--	5	1.05 [1]	0.07-2	38
Silver (µg/L)	--	--	2.3	0.026[1][2]	<0.02-<0.5	38
Zinc (µg/L)	--	--	58	58.6	16-130	68
Cyanide (µg/L)	--	--	5	2.12 [1]	<0.8-8	37
PAHs (µg/L)	--	--	0.049	All ND		

**Footnotes for Table F-2:**

[1] Data contain non-detected values. Average was calculated using half-detection limits.

[2] all non-detect (ND).

#### F. Compliance Summary

From September 2002 (Facility start-up) through November 2005, the Discharger has been able to comply with all BOD, TSS, BOD and TSS removal, oil and grease, pH, turbidity, and acute toxicity effluent limits. The Discharger has been in compliance with most priority pollutants effluent limits.

However, during this period, there were occasional exceedances of total coliform, ammonia nitrogen, and toxic pollutants (copper, nickel, zinc, and cyanide) effluent limitations. Among these violations, zinc effluent limitation violations occurred in a consistent manner (12 violations). The Discharger has started working on resolving these issues, and identified two industrial users who exceeded their local limits. However, the Facility's major treatment unit, the microfilter, which performs both the secondary and tertiary treatment, does not seem to perform well in removing dissolved metals (an average of only 50% percent removal) due to relatively short detention time compared to traditional treatment processes, e.g., activated sludge, oxidation ponds, etc.

### III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in the proposed Order are based on the requirements and authorities described in this section.

#### A. Legal Authorities

This Order is issued pursuant to section 402 of the Federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and Chapter 5.5, Division 7 of the California Water Code (CWC). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to Article 4, Chapter 4 of the CWC for discharges that are not subject to regulation under CWA section 402.

#### B. California Environmental Quality Act (CEQA)

This action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21100, et seq.) in accordance with Section 13389 of the CWC.

#### C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** The Regional Water Board adopted a Water Quality Control Plan for the San Francisco Bay Basin (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan.
2. **Thermal Plan.** The State Water Board adopted a *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for inland surface waters.
3. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, which was amended on May 4, 1995, and November 9, 1999. About forty criteria in the NTR applied in California. On May 18, 2000, USEPA adopted the CTR, which incorporated the NTR criteria that were applicable in California. The CTR was amended on February 13, 2001. These rules include water quality criteria (WQC) for priority pollutants and are applicable to this discharge.
4. **State Implementation Policy.** On March 2, 2000, State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the CTR and to the priority pollutant objectives established by the Regional Water Boards in their basin plans, with the exception of the provision on alternate test procedures for individual discharges that has been approved by the USEPA Regional

Administrator. The alternate test procedures provision became effective on May 22, 2000. The SIP became effective on May 18, 2000. The State Water Board subsequently amended the SIP on February 24, 2005, and the amendments became effective on July 31, 2005. The SIP includes procedures for determining the need for and calculating WQBELs and requires dischargers to submit data sufficient to do so. Requirements of this Order implement the SIP.

5. **Antidegradation Policy.** Section 131.12 of 40 CFR requires that State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16, which incorporates the requirements of the federal antidegradation policy. Resolution 68-16 requires that existing water quality is maintained unless degradation is justified based on specific findings. As discussed in detail in this Fact Sheet, the permitted discharge is consistent with the antidegradation provision of 40 CFR §131.12 and State Water Board Resolution 68-16.
6. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and 40 CFR §122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. Some effluent limitations in this Order are less stringent than those in the previous Order. As discussed in detail later in this document, this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.
7. **Monitoring and Reporting Requirements.** Section 122.48 of 40 CFR requires that all NPDES permits specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of the CWA authorize the regional water boards to require technical and monitoring reports. The Monitoring and Reporting Program (MRP) establishes monitoring and reporting requirements to implement federal and State requirements. This MRP is provided in **Attachment E**.

#### **D. Impaired Water Bodies on CWA 303(d) List**

On June 6, 2003, USEPA approved a revised list of impaired water bodies prepared by the State. The list (hereinafter referred to as the 2002 303(d) list) was developed 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 a tributary to San Pablo Bay and both are listed as impaired water bodies on the 2002 303(d) list. The 2002 303(d) list includes San Pablo Bay as impaired by chlordane, DDT, diazinon, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, nickel, PCBs, dioxin-like PCBs, and selenium. Discharges of conservative pollutants (pollutants that do not break down readily) to Napa River could reach San Pablo Bay through sediment transport or in the water column, and may contribute to impairment of San Pablo Bay. The 2002 303(d) list includes the Napa River as impaired by sediment, pathogens, and nutrients.

**1. Total Maximum Daily Loads**

The Regional Water Board plans to adopt Total Maximum Daily Loads (TMDLs) for pollutants on the 303(d) list in the Napa River and San Pablo Bay within the next ten years. Future review of the 303(d)-list for the San Francisco Bay Region may result in revision of the schedules or provide schedules for other pollutants.

**2. Waste Load Allocations**

The TMDLs will establish waste load allocations (WLAs) for point sources and load allocations for non-point sources, and will result in achieving the water quality standards for the water bodies. Final WQBELs for 303(d)-listed pollutants in this discharge will be based on WLAs contained in the respective TMDLs.

**3. Implementation Strategy**

The Regional Water Board's strategy to collect water quality data and to develop TMDLs is summarized below:

- a. *Data Collection.* The Regional Water Board has given the dischargers the option 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 water quality objectives /water quality criteria (WQOs/WQC). This collective effort may include development of sample concentration techniques for approval by the USEPA. The Regional Water Board will require dischargers to characterize the pollutant loads from their facilities into the water-quality limited water bodies. The results will be used in the development of TMDLs, and may be used to update or revise the 303(d) list or change the WQOs/WQC for the impaired water bodies.
- b. *Funding Mechanism.* The Regional Water Board has received, and anticipates continuing to receive, resources from Federal and State agencies for TMDL development. To ensure timely development of TMDLs, the Regional Water Board intends to supplement these resources by allocating development costs among dischargers through the RMP or other appropriate funding mechanisms.

**E. Other Plans, Polices and Regulations**

This Order is also based on the following plans, polices, and regulations:

1. The Federal *Water Pollution Control Act*, Sections 301 through 305, and 307, and amendments thereto, as applicable (CWA);
2. The State Water Board's March 2, 2000 *Policy for the USEPA's May 18, 2000 Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California* or CTR;
3. The USEPA's *Quality Criteria for Water* [EPA 440/5-86-001, 1986] and subsequent amendments (the USEPA Gold Book);

4. Applicable Federal Regulations [40 CFR §§ 122 and 131];
5. 40 CFR §131.36(b) and amendments [Federal Register Volume 60, Number 86, 4 May 1995, pages 22229-22237];
6. USEPA's December 10, 1998 National Recommended Water Quality Criteria compilation [Federal Register Vol. 63, No. 237, pp. 68354-68364];
7. USEPA's December 27, 2002 Revision of National Recommended Water Quality Criteria compilation [Federal Register Vol. 67, No. 249, pp. 79091-79095]; and
8. Guidance provided with State Water Board actions remanding permits to the Regional Water Board for further consideration.

#### **IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS**

The CWA requires point source discharges to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations; and other requirements in NPDES permits. There are two principal bases for effluent limitations: 40 CFR §122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 CFR §122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Where numeric water quality objectives have not been established, three options exist to protect water quality: 1) 40 CFR §122.44(d) specifies that WQBELs may be established using USEPA criteria guidance under CWA section 304(a); 2) proposed State criteria or a State policy interpreting narrative criteria supplemented with other relevant information may be used; or 3) an indicator parameter may be established.

This Order contains restrictions on individual pollutants that are no more stringent than required by the Federal Clean Water Act. Individual pollutant restrictions consist of water quality-based effluent limitations that have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to Federal law and are the applicable Federal water quality standards. To the extent that toxic pollutant water quality-based effluent limitations were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR §131.38. The scientific procedures for calculating the individual water quality-based effluent limitations are based on the CTR-SIP, which was approved by USEPA prior to May 1, 2001, or Basin Plan provisions approved by USEPA on May 29, 2000. Most beneficial uses and WQOs contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any WQOs and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the [Clean Water] Act" pursuant to 40 CFR §131.21(c)(1). The remaining WQOs and beneficial uses implemented by this Order were approved by USEPA on January 5, 2005, and are applicable water quality standards pursuant to 40 CFR §131.21(c)(2).

Several specific factors affecting the development of limitations and requirements in this Order are discussed as follows:

## **A. Discharge Prohibitions**

### **1. Basis for Discharge Prohibitions**

- a. Discharge Prohibition III.A. (discharge of treated wastewater at a location or in a manner different from that described in the findings of this Order is prohibited): This prohibition is from the previous permit.
- b. Discharge Prohibition III.B & III.E (no bypass or overflow of untreated wastewaters, no discharge of anything other than storm water to storm drains, unless as authorized by this permit): These prohibitions are based on the Basin Plan. The Basin Plan prohibits the discharge of partially treated and untreated wastes (Chapter 4, Discharge Prohibition No.15). This prohibition is based on general concepts contained in Sections 13260 through 13264 of the CWC that relate to the discharge of waste to State waters without filing for and being issued a permit. Under certain circumstances, as stated in 40 CFR §122.41(m), facilities may bypass waste streams to waters of the State in order to prevent loss of life, personal injury, or severe property damage, or if there were no feasible alternatives to the bypass and the Discharger submitted notices of the anticipated bypass to waters of the State.
- d. Discharge Prohibition III.C. (average dry weather flow not to exceed 2.5 mgd): This prohibition is based on the historic reliable treatment capacity of the Facility. Exceedance of the Facility's average dry weather flow design capacity may result in lowering the reliability of achieving compliance with water quality requirements, unless the Discharger demonstrates otherwise through an antidegradation study. This prohibition is based on 40 CFR §122.41(l).
- e. Discharge Prohibition III.D. (no discharge of effluent to North Slough from May 1 through October 30): Discharge to North Slough during the dry weather season is prohibited by the Basin Plan, Chapter 4, Discharge Prohibition No. 1. However, an exception may be authorized by the Executive Officer under certain emergency situations such as a prolonged wet season that prohibits normal reclamation. Discharge of combined effluent to the constructed wetlands is allowed to maintain the water levels needed in the ponds. The discharge of low TDS effluent to the constructed wetlands will need to be reduced to satisfy the increased recycle water need when the City's recycled water project is established .
- f. Discharge Prohibition III.F. (no nuisance shall be caused by the discharge): This prohibition is based on the Basin Plan and is from the previous permit.

## **2. Basin Plan Discharge Prohibition and Exceptions**

- a. Discharge to the North Slough is contrary to one of the Discharge Prohibitions identified in the Basin Plan. The Basin Plan states, in part:

“It shall be prohibited to discharge:

Any wastewater which has particular 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 non-tidal water, dead-end slough, similar confined waters, or any tributary thereof.”

- b. The Basin Plan states that exceptions to the above prohibition will be considered for discharges where:

- An inordinate burden would be placed on the discharger relative to the 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
- A discharge is approved as part of a reclamation project; or
- It can be demonstrated that net environmental benefits will be derived as a result of the discharge.

The Basin Plan further states:

“Significant factors to be considered by the Regional Board in reviewing requests for exceptions will be 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.”

- c. The Regional Water Board has historically granted an exception to the prohibitions stated above, provided that the discharge afforded a net environmental benefit and the discharger complied with the requirements of its permit. Those permit requirements included maximizing reclaimed water use for irrigation, emergency wastewater storage preparation, completion of technical reports on maximizing reclaimed water use and discharge impacts on beneficial uses, and implementing report recommendations. The discharge from the Facility includes a combination of wetland discharge and maximizing the use of reclaimed water. The Discharger has prepared a recycled water system master plan and has required new development to install dual piping in areas where recycled water distribution is planned. Therefore, based on the information submitted by the Discharger, the reclamation project is similarly expected to result in a net environmental benefit.

d. Given the above considerations, exceptions to the shallow water discharge prohibitions described in the findings above are warranted for the discharges of tertiary treated effluent to North Slough and the constructed wetlands, provided the Discharger accomplishes the following:

- Provides a net environmental benefit,
- Provides high quality treated effluent,
- Operates all treatment facilities to assure high reliability and redundancy,
- Provides treated effluent to the North Slough, and
- Works to use the maximum feasible amount of reclaimed effluent for irrigation, and minimizes discharges to North Slough during dry weather.

## **B. Technology-Based Effluent Limitations**

### **1. Scope and Authority**

Permit effluent limitations for conventional pollutants are technology-based. Technology-based effluent limits are put in place to ensure that full secondary treatment is achieved by the wastewater treatment facility, as required under 40 CFR §133.102. Effluent limits for these conventional pollutants are defined by the Basin Plan. Further, these limits are the same as in the prior permit for the following constituents:

- Biochemical oxygen demand (BOD),
- BOD percent removal,
- Total suspended solids (TSS),
- TSS percent removal,
- pH,
- Oil and grease,
- Total chlorine residual,
- Total coliform organisms,
- Turbidity, and
- Ammonia nitrogen.

### **2. Applicable Technology-Based Effluent Limitations**

Technology-based effluent limitations are summarized in the table below.

**Summary of Technology-based Effluent Limitations  
Discharge Points <001-S and 003-R>**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand 5-day @ 20°C (BOD <sub>5</sub> )	mg/L	10	15	--	--	--
BOD <sub>5</sub> removal	%	85	--	--	--	--
Total Suspended Solids	mg/L	10	15	--	--	--
TSS removal	%	85	--	--	--	--
pH	standard units	--	--	--	6.5	8.5
Oil and Grease	mg/L	--	--	10	--	--
Total Chlorine Residual	mg/L	--	--	--	0.0	0.0
Total Coliform	mpn/100 mL	Not to exceed 2.2 as 7-sample median and 23 as single maximum				
Turbidity	NTU	--	--	10	--	--
Ammonia Nitrogen	mg/L	2.0	3.0	--	--	--

- a. The effluent limitations for BOD, TSS, Oil and Grease, turbidity, and ammonia nitrogen are technology-based limitations representative of, and intended to ensure, adequate and reliable tertiary level wastewater treatment. They are at least as stringent as the Basin Plan requirements (Chapter 4, page 4-8, and Table 4-2, at page 4-69). These limitations are unchanged from the previous permit, except daily maximum limitations are no longer required based on the 2005 Basin Plan amendment. General compliance has been demonstrated by existing Facility performance.
- b. The effluent limitations for BOD and TSS monthly removal are technology-based. They are unchanged from the previous permit and are based on Basin Plan requirements, derived from federal requirements (40 CFR §133.102; definition in §133.101). Compliance has been demonstrated by existing Facility performance.
- c. The effluent limitation for total chlorine residual is from Chapter 4 of the Basin Plan. 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, Regional Water Board staff may conclude that these false positives of chlorine residual exceedances are not violations of the permit limitation.
- d. Effluent Limitation for pH (minimum 6.5, maximum 8.5): These effluent limitations are technology-based and are unchanged from the previous permit. These limitations are based on the Basin Plan (Chapter 4, Table 4-2) for shallow water discharges, which are derived

from federal requirements (40 CFR §133.102). These are previous permit effluent limitations and compliance has been demonstrated by existing Facility performance. The Discharger may elect to use continuous on-line monitoring system(s) for measuring pH. In this case, 40 CFR §401.17 (pH Effluent Limitations under Continuous Monitoring), and best professional judgment (BPJ) are the basis for the compliance provisions for pH limitations. Excursions of the pH effluent limitations are permitted, provided that both of the following conditions are satisfied: (i) the total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and (ii) no individual excursion from the range of pH values shall exceed 60 minutes. For dry season discharges, since it is unlikely that the discharge lasts longer than a month, the condition for complying with pH limit under continuous monitoring is limited to (ii) above.

- e. The total coliform limitations require that the moving median value for the MPN of total coliform bacteria in any seven consecutive samples shall not exceed 2.2 MPN/100ml and any single sample shall not exceed 23 MPN/100mL, the 7-sample median limit is from the Basin Plan, Table 4-2. These limitations are unchanged from the previous permit. The purpose of these effluent limitations is to ensure adequate disinfection of the discharge in order to protect beneficial uses of the receiving waters.

Effluent limitations based on WQOs for bacteriological parameters for receiving water beneficial uses are given in terms of parameters which serve as surrogates for pathogenic organisms. The traditional parameter in this regard is coliform bacteria, either as total coliform or as fecal coliform. The Regional Water Board can allow the Discharger to use alternate limitations of bacteriological quality if the Discharger can establish to the satisfaction of the Regional Water Board that the use of the fecal coliform or enterococci limitations will not result in unacceptable adverse impacts on the beneficial uses of the receiving water.

### **C. Water Quality-Based Effluent Limitations (WQBELs)**

#### **1. Scope and Authority**

- a. Toxic substances are regulated by WQBELs derived from the Basin Plan, Tables 3-3 and 3-4, the CTR, the NTR, and/or best professional judgment (BPJ). WQBELs in this Order are revised and updated from the limitations in the previous permit, and their presence in this Order is based on an evaluation of the Discharger's data as described below under the Reasonable Potential Analysis. Numeric WQBELs are required for all constituents that have a reasonable potential to cause or contribute to an excursion above any State water quality standard. Reasonable potential is determined and final WQBELs are developed using the methodology outlined in the SIP. If the Discharger demonstrates that the final limitations will be infeasible to meet and provides justification for a compliance schedule, then interim limitations are established, with a compliance schedule to achieve the final limits.

- b. Maximum Daily Effluent Limitations (MDELs) are used in this permit to protect against acute water quality effects. It is impracticable to use weekly average limitations to guard against acute effects. Although weekly averages are effective for monitoring the performance of biological wastewater treatment plants, the MDELs are necessary for preventing fish kills or mortality to aquatic organisms.
- c. NPDES regulations, the SIP, and USEPA's Technical Support Document (TSD) provide the basis to establish MDELs. NPDES regulations at 40 CFR §122.45(d) state:  
  
"For continuous discharges all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall *unless impracticable* be stated as:  
  
(1) Maximum daily and average monthly discharge limitations for all discharges other than publicly owned treatment works; and  
  
(2) Average weekly and average monthly discharge limitations for POTWs."  
(Emphasis added.)
- d. The amended SIP (p. 8, Section 1.4) requires that WQBELs be expressed as MDELs and average monthly effluent limitations (AMELs). For aquatic life-based calculations (only), the amended SIP indicates MDELs are to be used in place of average weekly limitations for POTWs.
- e. The TSD (p. 96) states that a maximum daily limitation is appropriate for two reasons:  
  
(1) The basis for the 7-day average for POTWs derives from the secondary treatment requirements. This basis is not related to the need for assuring achievement of water quality standards.  
  
(2) The 7-day average, which could be comprised of up to seven or more daily samples, could average out peak toxic concentrations, and therefore the discharge's potential for causing acute toxic effects would be missed. A maximum daily limitation would be toxicologically protective of potential acute toxicity impacts.

## 2. Shallow Water Discharge

The North Slough is a seasonal drainage area that collects storm water runoff from a relatively small watershed draining the eastern slope of Napa Valley. The North Slough wetlands are subject to tidal influence and Napa River flows. Brackish in nature, the North Slough remains wet throughout the year as a result of a breach in its southern perimeter levee. Two channels lead to the North Slough in the vicinity of the discharge; the western-most channel is dry during the summer season. The discharge from the Facility is to the western channel leading to the North Slough. Approximately 500 to 600 feet of the western-most channel, before it reaches the main slough, is effluent-dominated during the

summer months. The Regional Water Board has classified the discharge as a shallow water discharge, and effluent limitations are calculated assuming no dilution (D=0). The actual dilution received by the discharge during the winter months has not been measured or modeled.

The Basin Plan, Shallow Water Discharges section (p. 4-12), specifies the issues that must be addressed to support requests for dilution credit. Shallow water dischargers may apply to the Regional Water Board for exceptions to the assigned dilution ratio of D=0 (and thus the shallow water effluent limitations) based on demonstration of compliance with water quality objectives in the receiving waters and implementation of an aggressive pretreatment and source control program. Based on special studies, the Discharger may consider applying for limited dilution credit.

**3. Beneficial Uses and Water Quality Criteria and Objectives**

- a. Beneficial Uses: The Basin Plan at Table 2-7 states that the beneficial uses of any specifically identified water body generally apply to its tributary streams. The Basin Plan does not specifically identify beneficial uses for the North Slough or the constructed freshwater wetlands but does identify present and potential uses for the Napa River and brackish Napa Wetlands, to which the North Slough is tributary and the constructed freshwater wetlands are connected. The following table lists the Basin Plan beneficial uses for the Napa River tidal portion (NR) and the brackish Napa Wetlands (NW):

<b>Applicable Beneficial Uses</b>	<b>Water Body</b>
Agricultural Supply	(NR)
Navigation	(NR)
Water Contact Recreation	(NR), (NW)
Non-contact Water Recreation	(NR), (NW)
Commercial and Sport Fishing	(NW)
Wildlife Habitat	(NR)
Preservation of Rare and Endangered Species	(NR), (NW)
Fish Migration	(NR), (NW)
Fish Spawning	(NR), (NW)
Estuarine Habitat	(NW)
Warm Freshwater Habitat	(NR), (NW)
Cold Freshwater Habitat	(NR)

Thus, by applying the tributary rule and the BPJ, the beneficial uses applicable to the North Slough and the constructed freshwater wetlands are listed in the table to follow:

- b. The WQOs/WQC applicable to the receiving water of this discharge are from the Basin Plan, CTR, and NTR.

- (1) The Basin Plan specifies numeric WQOs for 10 priority toxic pollutants, as well as narrative WQOs for toxicity and bioaccumulation in order to protect beneficial uses. The pollutants for which the Basin Plan specifies numeric objectives are arsenic, cadmium, chromium (VI), copper in fresh water, and lead, mercury, nickel, silver, zinc, and total polynuclear aromatic hydrocarbons (PAHs) in salt water. The narrative toxicity objective states in part “[a]ll waters shall be maintained free of

**Receiving Water Bodies Applicable Beneficial Uses**

Discharge Point	Receiving Water Name	Applicable Beneficial Use(s)
001-S and 003-R	North Slough/ Constructed Wetlands	<ul style="list-style-type: none"> <li>- Agricultural Supply (AGR),</li> <li>- Navigation (NAV),</li> <li>- Water Contact Recreation (REC-1),</li> <li>- Non-contact Water Recreation (REC-2),</li> <li>- Commercial and Sport Fishing (COM),</li> <li>- Wildlife Habitat (WILD),</li> <li>- Preservation of Rare and Endangered Species (RARE),</li> <li>- Fish Migration (MIGR),</li> <li>- Fish Spawning (SPWN),</li> <li>- Warm Freshwater Habitat (WARM),</li> <li>- Cold Freshwater Habitat (COLD), and</li> <li>- Estuarine Habitat (EST).</li> </ul>

toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms.” The bioaccumulation objective states in part “[c]ontrollable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered.” Effluent limitations and provisions contained in this Order are designed to implement these objectives, based on available information.

- (2) The CTR specifies numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries such as San Francisco Bay, except where the Basin Plan’s Tables 3-3 and 3-4 specify numeric objectives for certain of these priority toxic pollutants. The Basin Plan’s numeric objectives apply over the CTR (except in the South Bay south of the Dumbarton Bridge).
- (3) The NTR established numeric aquatic life criteria for selenium, numeric aquatic life and human health criteria for cyanide, and numeric human health criteria for 34 toxic organic pollutants for waters of San Francisco Bay upstream to, and including, Suisun Bay and the Sacramento-San Joaquin Delta. This includes the receiving water for this Discharger.

- c. Where numeric WQOs/WQC have not been established or updated in the Basin Plan, CTR, or NTR, 40 CFR §122.44(d) and Chapter 4 of the Basin Plan specify that WQBELs may be set based on USEPA criteria, supplemented where necessary by other relevant information, to attain and maintain narrative WQC to fully protect designated beneficial uses. This Fact Sheet discusses the specific bases and rationales for the effluent limitations, and is incorporated as part of the Order.
- d. *Basin Plan Amendment.* On January 21, 2004, the Regional Water Board adopted Resolution No. R2-2004-0003 amending the Basin Plan to (1) update the dissolved WQOs for metals to be identical to the CTR WQC except for cadmium; (2) to change the Basin Plan definitions of marine, estuarine and freshwater to be consistent with the CTR definitions; (3) to update NPDES implementation provisions to be consistent with the SIP; (4) to remove settleable matter effluent limitations for POTWs, and other editorial changes. Subsequent to approval by the State Water Resources Control Board (State Water Board) and the Office of Administrative Law (OAL) (July 22, 2004, and October 4, 2004, respectively), USEPA approved the amendment on January 5, 2005.
- e. *Basin Plan and CTR Receiving Water Salinity Policy.* The Basin Plan and CTR state that the salinity characteristics (i.e., freshwater versus saltwater) of the receiving water shall be considered in determining the applicable WQOs/WQC. Freshwater criteria shall apply to discharges to waters with salinities equal to or less than 1 ppt at least 95 percent of the time. Saltwater criteria shall apply to discharges to waters with salinities equal to or 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 tidally influenced fresh waters that support estuarine beneficial uses, the criteria shall be the lower of the salt- or freshwater criteria (the freshwater criteria for some metals are calculated based on ambient hardness), for each substance.
- f. *Receiving Water Salinity.* The receiving waters for the subject discharge are the waters of the North Slough, a tributary to the Napa River, which flows to San Pablo Bay. The Discharger samples at 5 receiving water stations near the discharge outfall (001-S). Monitoring data from September 2002 through November 2005 include 109 salinity data points below 1 ppt (74%) and 9 data points above 10 ppt (7.4%) out of a total of 147 data points. Therefore, the receiving water is classified as estuarine under both CTR and Basin Plan definitions. As a result, this Order's effluent limitations are based on the lower of the marine and fresh water WQOs/WQC. This is also consistent with the previous permit. Even though the discharge to the constructed wetlands is considered to be a discharge into a freshwater receiving water body, since most of the effluent eventually flows to the adjacent North Slough, to protect the beneficial uses of the estuarine environment, the same effluent limitations for the discharge to the North Slough will apply to the discharge to the constructed wetlands.
- g. *Receiving Water Hardness.* Ambient hardness values are used to calculate freshwater WQOs/WQC that are hardness dependent. In determining the WQOs/WQC for this Order, Regional Water Board staff used a hardness value of 260 mg/L as CaCO<sub>3</sub>, which

is the adjusted geometric mean (AGM) of 104 hardness values obtained from the Discharger's monitoring of the North Slough during the period of September 2002 through November 2005. The AGM represents the value that 30% of the data points fall below. The hardness data set was reduced (from 148 data points to 104 data points) to eliminate hardness values above 400 mg/L and to eliminate hardness values obtained when the receiving water salinity was above 1.0 ppt. The data and calculation can be found in **Appendix F-2** of this Fact Sheet. The following lists the procedure to calculate an AGM:

- (1) Calculate the logarithms of each hardness value.
- (2) Calculate the arithmetic mean of the logarithms.
- (3) Calculate the standard deviation (*s*) of the logarithms.
- (4) Calculate the standard error (SE) of the arithmetic mean:  
$$SE = s / \sqrt{n}$$
where *n* is the number of data points
- (5) Calculate *A* = arithmetic mean -  $t_{0.7} \times SE$   
where  $t_{0.7}$  is the value of Student's *t* statistics for a one-sided probability of 0.7 with *n*-1 degrees of freedom, *n*-sample size.
- (6) Take the antilogarithm of *A*, antilog *A* is the AGM.

### 3. Determining the Need for WQBELs

- a. As specified in 40 CFR §122.44(d)(1)(i), permits are required to include WQBELs 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 prescribed in Section 1.3 of the SIP, the Regional Water Board has analyzed the effluent data to determine whether the discharge, which is the subject of this Order, has a reasonable potential to cause or contribute to an excursion above an applicable water quality standard (reasonable potential analysis or RPA). For all parameters that have reasonable potential, numeric WQBELs are required. The RPA compares the effluent data with numeric and narrative WQOs in the Basin Plan and numeric WQC from the NTR and the CTR.
  - (1) *WQOs and WQC*. The RPA uses Basin Plan WQOs, including narrative toxicity objectives in the Basin Plan and applicable WQC in the CTR/NTR.
  - (2) *Methodology*. The RPA uses the methods and procedures prescribed in Section 1.3 of the SIP. Regional Water Board staff has analyzed the effluent and background data and the nature of facility operations to determine if the discharge has reasonable potential to cause or contribute to exceedences of applicable WQOs or WQC. **Appendix F-3** of this Fact Sheet shows the step-wise process described in Section 1.3 of the SIP.
  - (3) Ambient background values are used in the reasonable potential analysis and in the calculation of effluent limitations. For the RPA, ambient background concentrations

are the observed maximum water column concentrations. The SIP states that for calculating WQBELs, ambient background concentrations are either the observed maximum ambient water column concentrations or, for criteria/objectives intended to protect human health from carcinogenic effects, the arithmetic mean of observed ambient water concentrations. By letter dated August 6, 2001, the Executive Officer required the Discharger to conduct additional ambient monitoring pursuant to section 13267 of the California Water Code. On March 5, 2003, a group of five dischargers to the Napa River, including the Discharger, submitted the Collaborative Napa River Receiving Water Evaluation Study. Ambient data collected in 2002 from the Napa River Station near Napa were used in evaluating background water quality for this Order.

b. *Reasonable Potential Methodology.* The method for determining reasonable potential involves identifying the observed maximum pollutant concentration in the effluent (MEC) for each constituent, based on effluent concentration data. There are three triggers in determining reasonable potential.

(1) The first trigger (Trigger 1) is activated when the MEC is greater than or equal to the lowest applicable WQO/WQC, which has been adjusted for pH, hardness (for freshwater WQO/WQC only), and translator data, if appropriate. If the MEC is greater than or equal to the adjusted WQO/WQC, then that pollutant has reasonable potential and a WQBEL is required.

(2) The second trigger (Trigger 2) is activated if the observed maximum ambient background concentration (B) is greater than the adjusted WQO/WQC ( $B > WQO/WQC$ ), and either:

i. The MEC is less than the adjusted WQO/WQC ( $MEC < WQO/WQC$ ) or

ii. The pollutant was not detected in any of the effluent samples and all the detection levels are greater than or equal to the adjusted WQO/WQC.

(3) The third trigger (Trigger 3) is activated if a review of other information determines that a WQBEL is required even though both MEC and B are less than the WQO/WQC, or effluent and background data are unavailable or insufficient (e.g., all nondetects). A limitation is required only under certain circumstances to protect beneficial uses.

c. *RPA Determination*

(1) Regional Water Board staff conducted an RPA based on effluent data collected from September 2002 through November 2005, and receiving water ambient background data collected in 2002, for priority pollutants using the method prescribed in Section 1.3 of the SIP.

(2) The MECs, WQOs/WQC, basis for the WQOs/WQC, background concentrations and reasonable potential conclusions are listed in the table below for all constituents analyzed. The RPA results for some of the constituents in the CTR were not determined because of lack of an objective/criteria. Based on the RPA methodology in the SIP, the following constituents have been found to have reasonable potential to cause or contribute to an excursion above WQOs/WQC: copper, mercury, nickel, selenium, cyanide, zinc, and TCDD TEQ (dioxins and furans).

**Summary of Reasonable Potential Analysis**

# in CTR	Priority Pollutants	Governing WQO/WQC (µg/L)	Basis <sup>1</sup>	MEC or Minimum MDL <sup>2</sup> (µg/L)	Maximum Background or Minimum MDL <sup>2</sup> (µg/L)	RPA Results <sup>3</sup>
1	Antimony	4,300	CTR HH	0.6	1.7	No
2	Arsenic	36	BP, sw	4.5	34	No
3	Beryllium	No Criteria		0.06	0.06	Uo
4	Cadmium	2.40	BP, fw	0.08	0.04	No
5a	Chromium (III)	452.69	CTR, fw	NA	2.6	Ud
5b	Chromium (VI)	11.43	BP, sw	1	0.4	No
6	Copper	3.73	CTR, sw	7.5	18.5	Yes
7	Lead	8.52	BP, sw	0.42	0.78	No
8	Mercury	0.025	BP, sw	0.0058	0.011	Yes
9	Nickel	8.28	BP, sw	15	68.7	Yes
10	Selenium	5.00	NTR, sw/fw	2	19	Yes
11	Silver	2.24	BP, sw	0.02	0.02	No
12	Thallium	6.30	CTR, hh	0.09	0.3	No
13	Zinc	85.62	BP, sw	130	10	Yes
14	Cyanide	1.00	NTR, sw/fw	8	0.363	Yes
15	Asbestos	No Criteria	CTR	NA	0.2	Uo
	TCDD TEQ	1.4×10 <sup>-8</sup>	BP, narrative	3.68×10 <sup>-9</sup>	3.68×10 <sup>-8</sup>	Yes
17	Acrolein	780	CTR, hh	0.56	1	No
18	Acrylonitrile	0.66	CTR, hh	0.33	1	No
19	Benzene	71	CTR, hh	0.06	0.27	No
20	Bromoform	360	CTR, hh	0.5	0.1	No
21	Carbon Tetrachloride	4.4	CTR, hh	0.06	0.42	No
22	Chlorobenzene	21,000	CTR, hh	0.06	0.19	No
23	Chlorodibromomethane	34	CTR, hh	4	0.18	No
24	Chloroethane	No Criteria	CTR, hh	0.07	0.34	Uo
25	2-Chloroethylvinyl ether	No Criteria	CTR, hh	0.1	0.31	Uo
26	Chloroform	No Criteria	CTR, hh	63	1.5	Uo
27	Dichlorobromomethane	46	CTR, hh	12	0.6	No
28	1,1-Dichloroethane	No Criteria	CTR, hh	0.05	0.28	Uo

# in CTR	Priority Pollutants	Governing WQO/WQC (µg/L)	Basis <sup>1</sup>	MEC or Minimum MDL <sup>2</sup> (µg/L)	Maximum Background or Minimum MDL <sup>2</sup> (µg/L)	RPA Results <sup>3</sup>
29	1,2-Dichloroethane	99	CTR, hh	0.06	0.18	No
30	1,1-Dichloroethylene	3.2	CTR, hh	0.06	0.37	No
31	1,2-Dichloropropane	39	CTR, hh	0.05	0.2	No
32	1,3-Dichloropropylene	1,700	CTR, hh	NA	0.2	No
33	Ethylbenzene	29,000	CTR, hh	0.06	0.3	No
34	Methyl Bromide	4,000	CTR, hh	NA	0.42	No
35	Methyl Chloride	No Criteria	CTR, hh	NA	0.36	Uo
36	Methylene Chloride	1,600	CTR, hh	1	0.38	No
37	1,1,2,2-Tetrachloroethane	11	CTR, hh	0.06	0.3	No
38	Tetrachloroethylene	8.85	CTR, hh	0.06	0.32	No
39	Toluene	200,000	CTR, hh	0.06	0.25	No
40	1,2-Trans-Dichloroethylene	140,000	CTR, hh	NA	0.3	No
41	1,1,1-Trichloroethane	No Criteria	CTR, hh	0.06	0.35	Uo
42	1,1,2-Trichloroethane	42	CTR, hh	0.07	0.27	No
43	Trichloroethylene	81	CTR, hh	0.07	0.29	No
44	Vinyl Chloride	525	CTR, hh	0.05	0.34	No
45	2-Chlorophenol	400	CTR, hh	0.6	0.4	No
46	2,4-Dichlorophenol	790	CTR, hh	0.7	0.3	No
47	2,4-Dimethylphenol	2,300	CTR, hh	0.9	0.3	No
48	2-Methyl- 4,6-Dinitrophenol	765	CTR, hh	0.9	0.4	No
49	2,4-Dinitrophenol	14,000	CTR, hh	0.6	0.3	No
50	2-Nitrophenol	No Criteria	CTR, hh	0.7	0.3	Uo
51	4-Nitrophenol	No Criteria	CTR, hh	0.6	0.2	Uo
52	3-Methyl 4-Chlorophenol	No Criteria	CTR, hh	0.5	0.3	Uo
53	Pentachlorophenol	7.90	CTR, hh	0.9	0.4	No
54	Phenol	4,600,000	CTR, hh	0.4	0.2	No
55	2,4,6-Trichlorophenol	6.50	CTR, hh	0.6	0.2	No
56	Acenaphthene	2,700	CTR, hh	0.028	0.17	No
57	Acenaphthylene	No Criteria	CTR, hh	0.019	0.03	Uo
58	Anthracene	110,000	CTR, hh	0.028	0.16	No
59	Benzidine	0.00054	CTR, hh	1	0.3	No
60	Benzo(a)Anthracene	0.049	CTR, hh	0.019	0.12	No
61	Benzo(a)Pyrene	0.049	CTR, hh	0.019	0.09	No
62	Benzo(b)Fluoranthene	0.049	CTR, hh	0.028	0.11	No
63	Benzo(ghi)Perylene	No Criteria	CTR, hh	0.028	0.06	Uo
64	Benzo(k)Fluoranthene	0.049	CTR, hh	0.037	0.16	No
65	Bis(2-Chloroethoxy)Methane	No Criteria	CTR, hh	0.8	0.3	Uo
66	Bis(2-Chloroethyl)Ether	1.40	CTR, hh	0.7	0.3	No
67	Bis(2-Chloroisopropyl)Ether	170,000	CTR, hh	0.6	0.6	No

# in CTR	Priority Pollutants	Governing WQO/WQC (µg/L)	Basis <sup>1</sup>	MEC or Minimum MDL <sup>2</sup> (µg/L)	Maximum Background or Minimum MDL <sup>2</sup> (µg/L)	RPA Results <sup>3</sup>
68	Bis(2-Ethylhexyl)Phthalate	5.90	CTR, hh	0.5	0.3	No
69	4-Bromophenyl Phenyl Ether	No Criteria	CTR, hh	0.4	0.4	Uo
70	Butylbenzyl Phthalate	5,200	CTR, hh	0.8	0.4	No
71	2-Chloronaphthalene	4,300	CTR, hh	0.5	0.3	No
72	4-Chlorophenyl Phenyl Ether	No Criteria	CTR, hh	0.5	0.4	Uo
73	Chrysene	0.049	CTR, hh	0.028	0.14	No
74	Dibenzo(a,h)Anthracene	0.049	CTR, hh	0.028	0.04	No
75	1,2-Dichlorobenzene	17,000	CTR, hh	0.05	0.12	No
76	1,3-Dichlorobenzene	2,600	CTR, hh	0.07	0.16	No
77	1,4-Dichlorobenzene	2,600	CTR, hh	0.3	0.12	No
78	3,3 Dichlorobenzidine	0.077	CTR, hh	0.3	0.3	No
79	Diethyl Phthalate	120,000	CTR, hh	0.7	0.4	No
80	Dimethyl Phthalate	2,900,000	CTR, hh	0.7	0.4	No
81	Di-n-Butyl Phthalate	12,000	CTR, hh	0.6	0.4	No
82	2,4-Dinitrotoluene	9.10	CTR, hh	0.6	0.3	No
83	2,6-Dinitrotoluene	No Criteria	CTR, hh	0.5	0.3	Uo
84	Di-n-Octyl Phthalate	No Criteria	CTR, hh	0.7	0.4	Uo
85	1,2-Diphenylhydrazine	0.54	CTR, hh	0.6	0.3	No
86	Fluoranthene	370	CTR, hh	0.028	0.03	No
87	Fluorene	14,000	CTR, hh	0.028	0.02	No
88	Hexachlorobenzene	0.00077	CTR, hh	0.4	0.4	No
89	Hexachlorobutadiene	50	CTR, hh	0.7	0.2	No
90	Hexachlorocyclopentadiene	17,000	CTR, hh	0.4	0.1	No
91	Hexachloroethane	8.90	CTR, hh	0.3	0.2	No
92	Indeno(1,2,3-cd)Pyrene	0.049	CTR, hh	0.028	0.04	No
93	Isophorone	600	CTR, hh	0.5	0.3	No
94	Naphthalene	No Criteria	CTR, hh	0.019	0.05	Uo
95	Nitrobenzene	1,900	CTR, hh	0.7	0.3	No
96	N-Nitrosodimethylamine	8.10	CTR, hh	0.6	0.4	No
97	N-Nitrosodi-n-Propylamine	1.40	CTR, hh	0.8	0.3	No
98	N-Nitrosodiphenylamine	16	CTR, hh	0.6	0.4	No
99	Phenanthrene	No Criteria	CTR, hh	0.028	0.03	Uo
100	Pyrene	11,000	CTR, hh	0.028	0.03	No
101	1,2,4-Trichlorobenzene	No Criteria	CTR, hh	0.05	0.3	Uo
102	Aldrin	0.00014	CTR, hh	0.003	0.003	No
103	alpha-BHC	0.013	CTR, hh	0.003	0.002	No
104	beta-BHC	0.046	CTR, hh	0.003	0.001	No
105	gamma-BHC	0.063	CTR, hh	0.003	0.001	No
106	delta-BHC	No Criteria	CTR, hh	0.002	0.001	Uo
107	Chlordane (303d listed)	0.00059	CTR, hh	0.005	0.005	No

# in CTR	Priority Pollutants	Governing WQO/WQC (µg/L)	Basis <sup>1</sup>	MEC or Minimum MDL <sup>2</sup> (µg/L)	Maximum Background or Minimum MDL <sup>2</sup> (µg/L)	RPA Results <sup>3</sup>
108	4,4'-DDT (303d listed)	0.00059	CTR, hh	0.002	0.001	No
109	4,4'-DDE (linked to DDT)	0.00059	CTR, hh	0.002	0.001	No
110	4,4'-DDD	0.00084	CTR, hh	0.002	0.001	No
111	Dieldrin (303d listed)	0.00014	CTR, hh	0.002	0.002	No
112	alpha-Endosulfan	0.0087	CTR, hh	0.002	0.002	No
113	beta-Endosulfan	0.0087	CTR, hh	0.002	0.001	No
114	Endosulfan Sulfate	240	CTR, hh	0.002	0.001	No
115	Endrin	0.0023	CTR, hh	0.002	0.002	No
116	Endrin Aldehyde	0.81	CTR, hh	0.002	0.002	No
117	Heptachlor	0.00021	CTR, hh	0.003	0.003	No
118	Heptachlor Epoxide	0.00011	CTR, hh	0.002	0.002	No
119-125	PCBs sum (2)	0.00017	CTR, hh	0.07	0.07	No
126	Toxaphene	0.00020	CTR, hh	0.15	0.2	No
	Tributyltin	0.00740	CTR, hh	0.000455	0.00143	No
	Total PAHs	15	BP, sw	0	0	No

[1] RPA based on the following: BP = Basin Plan; CTR = California Toxics Rule; NTR=National Toxics Rule; fw = freshwater; sw = saltwater; hh= human health; H= ambient hardness value.

[2] Values for MEC or maximum background in **bold** are the actual detected concentrations, otherwise the values shown are the minimum detection levels.  
NA = Not Available (there is no monitoring data or WQO/WQC for this constituent).

[3] RP =Yes, if either MEC > WQO/WQC, or background > WQO/WQC when pollutant is detected in the effluent.  
RP = No, if both MEC or background < WQO/WQC or all effluent concentrations non-detect and background <WQO/WQC or no background available.  
RP = Uo (undetermined because no objective promulgated).  
RP = Ud (undetermined due to lack of effluent data).

(3) *RPA Results for Impairing Pollutants.* While TMDLs and WLAs are being developed, interim concentration limitations are established in this permit for 303(d)-listed pollutants that have a reasonable potential to cause or contribute to an excursion above the water quality standard. In addition, mass limitations are required for bioaccumulative 303(d)-listed pollutants that can be reliably detected. Constituents on the 303(d) list for which the RPA determined a need for effluent limitations are mercury, nickel, selenium, and dioxins. Final determination of reasonable potential for some other constituents identified on the 303(d) list could not be performed owing to the lack of an established WQO/WQC.

**d. RPA Considerations for Specific Pollutants**

- (1) **Copper.** This Order establishes effluent limitations for copper because the 7.5 µg/L MEC exceeds the governing WQC of 3.7 µg/L, demonstrating reasonable potential by Trigger 1. This governing WQC is based on CTR salt water chronic criteria for the protection of aquatic life.
- (2) **Mercury.** Using Trigger 3 as defined above, this Order establishes effluent limitations for mercury because San Pablo Bay is listed as impaired by mercury. Effluent limitations are necessary to limit the mercury loading into the Bay.
- (3) **Nickel.** This Order establishes effluent limitations for nickel because the 15 µg/L MEC exceeds the governing WQC of 8.3 µg/L, demonstrating reasonable potential by Trigger 1. This governing WQC is based on Basin Plan salt water chronic criteria for the protection of aquatic life.
- (4) **Selenium.** This Order establishes effluent limitations for selenium because the 19 µg/L maximum ambient concentration exceeds the governing WQC of 5 µg/L, and selenium is detected in the effluent, demonstrating reasonable potential by Trigger 2. This governing WQC is based on NTR salt water/fresh water chronic criteria for the protection of aquatic life.
- (5) **Cyanide.** This Order establishes effluent limitations for cyanide because the 8 µg/L MEC exceeds the governing WQC of 1.0 µg/L, demonstrating reasonable potential by Trigger 1. This governing WQC is based on NTR salt water/fresh water chronic criteria for the protection of aquatic life.
- (6) **Zinc.** This Order establishes effluent limitations for zinc because the 130 µg/L MEC exceeds the governing WQC of 86 µg/L, demonstrating reasonable potential by Trigger 1. This governing WQC is based on Basin Plan salt water chronic criteria for the protection of aquatic life.
- (7) **Dioxins and Furans.**
  - a) **Dioxin WQC.** The CTR establishes a numeric human health WQC of 0.014 picogram per liter (pg/L) for 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD) based on consumption of aquatic organisms. The preamble of the CTR states that California NPDES permits should use toxicity equivalents (TEQs) where dioxin-like compounds have a reasonable potential with respect to narrative criteria. In USEPA's National Recommended WQOs, December 2002, USEPA published the 1998 World Health Organization Toxicity Equivalence Factor (TEF)<sup>1</sup> scheme. In addition, the CTR preamble states USEPA's intent to

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<sup>1</sup> The 1998 WHO scheme includes TEFs for dioxin-like PCBs. Since dioxin-like PCBs are already included within "Total PCBs," for which the CTR has established a specific standard, dioxin-like PCBs are not included in this Order's version of the TEF scheme.

adopt revised WQC guidance subsequent to their health reassessment for dioxin-like compounds. The SIP applies to all toxic pollutants, including dioxins and furans. Staff used TEQs to translate the narrative WQOs to numeric WQOs for the other 16 congeners.

- b. The Basin Plan contains a narrative WQO for bioaccumulative substances:

“Many pollutants can accumulate on particulates, in sediments, or bioaccumulate in fish and other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered.”

This narrative WQO applies to dioxin and furan compounds, based in part on the consensus of the scientific community that these compounds associate with particulates, accumulate in sediments, and bioaccumulate in the fatty tissue of fish and other organisms.

- c. USEPA’s 303(d) listing determined that the narrative objective for bioaccumulative pollutants was not met because of the levels of dioxins and furans in the fish tissue.
- d. *RPA Results.* The dioxin TEQ MEC of 0.0368 pq/L is above the governing WQC, triggering reasonable potential using Trigger 1.
- f. *Dioxin Effluent Limits.* Due to the limited monitoring data, no dioxin limitations (final or interim) are established. The final limitations for dioxin TEQ will be based on the WLA assigned to the Discharger in the TMDL. This Order requires additional dioxin monitoring to complement the Clean Estuary Partnership’s special dioxin project, consisting of an impairment assessment and a conceptual model for dioxin loading into the Bay. The permit will be reopened, as appropriate, to include interim dioxin limitations when additional data become available.
- (8) *Polynuclear Aromatic Hydrocarbons (PAHs).* This Order implements the policy and regulations of the CTR and SIP in regard to PAHs, i.e., reasonable potential is determined for individual PAHs. The Basin Plan contains a WQO for total PAHs for the protection of saltwater aquatic life of 15 µg/L, as a 24-hour average; therefore, RPA is also performed on total PAHs. The previous permit included a WQBEL for total PAHs of 0.049 µg/L as a daily average for protection of the Basin Plan’s narrative toxicity objective. The Discharger’s monthly monitoring data for total PAHs from September 2002 through November 2005 contain all non-detected values. Therefore, there is no reasonable potential for total PAHs and no effluent limitation is included in this Order. The Discharger also analyzed individual PAH compounds included in the CTR and none were detected and no reasonable

potential was shown. Continued monitoring for these pollutants is required by Provision C.2.a.

(9) **Other Organics.** The Discharger has performed sampling and analysis for all but a few organic constituents listed in the CTR. The data were used to perform the RPA as shown in the table above. The Discharger will continue to monitor for these constituents in the effluent and the receiving water as required by Provision C.2.a.

(10) **Effluent Monitoring.** This Order does not include effluent limitations for constituents that do not show reasonable potential, but continued monitoring for these pollutants is required as described in Provision C.2.a. If concentrations of these constituents increase significantly, the Discharger will be required to investigate the source of the increases and establish remedial measures if the increases result in a reasonable potential to cause or contribute to an excursion above the applicable WQO/WQC.

### 5. Applicable WQOs/WQC QBEL Calculations

Toxic substances are regulated by QBELs derived from the Basin Plan (Tables 3-3 and 3-4), the CTR, the NTR, and/or BPJ. QBELs in this Order are revised and updated from the limitations in the previous Order, and their presence in this Order is based on the evaluation of the Discharger's data as described below under the Reasonable Potential Analysis. Numeric QBELs are required for all constituents that have a reasonable potential to cause or contribute to an excursion above any State water quality standard. Reasonable potential is determined and final QBELs are developed using the methodology outlined in the SIP. If the Discharger demonstrates that the final limitations will be infeasible to meet and provides justification for a compliance schedule, then interim limitations are established with a compliance schedule to achieve the final limits. The WQOs/WQC used for each pollutant with Reasonable Potential is indicated in the table below. Detailed QBEL calculation is demonstrated in **Appendix F-4** of the Fact Sheet.

#### Applicable WQOs/WQC for Toxic Pollutants with Reasonable Potential

Pollutant	Chronic WQO or WQC ( $\mu\text{g/L}$ )	Acute WQO or WQC ( $\mu\text{g/L}$ )	Human Health WQC ( $\mu\text{g/L}$ )	Basis of Lowest WQO or WQC Used in RP[1]
Copper	3.7	5.8	--	CTR, sw, T=0.83
Mercury	0.025	2.1	0.051	BP, sw
Nickel	8.3	75	4,600	BP, sw
Selenium	5.0	20	--	NTR, sw/fw
Zinc	86	95	--	BP, sw
Cyanide	1	1	220,000	NTR, sw
TCDD TEQ	--	--	$1.4 \times 10^{-8}$	BP, narrative

[1] BP = Basin Plan, sw = salt water, fw = fresh water, NTR = National Toxics Rule, hh = human health, T=CTR translator to convert from dissolved to total metals.

## 6. Whole Effluent Toxicity (WET)

### a. *Whole Effluent Acute Toxicity.*

- 1) ***Permit Requirements.*** This Order includes effluent limitations for whole-effluent acute toxicity that are unchanged from the previous Order. All bioassays shall be performed according to the USEPA approved method in 40 CFR §136, currently “Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 5<sup>th</sup> Edition.” If an edition method other than the 5<sup>th</sup> is being used, the Discharger is required to use the 5<sup>th</sup> Edition method for compliance determination upon the effective date of this Order.
- 2) ***Compliance History.*** The Discharger started to observe as high as 100% mortality to the fathead minnows, after it switched to the 5<sup>th</sup> Edition method. Elevated toxicity was observed during February and April 2004. The Discharger has performed parallel acute toxicity testing using zeolite; the results indicate ammonia is likely the pollutant that caused the observed toxicity.

### b. Whole Effluent Chronic Toxicity

- 1) ***Permit Requirements.*** This permit includes requirements for chronic toxicity monitoring based on the Basin Plan narrative toxicity objective, and in accordance with USEPA and State Water Board Task Force guidance, and BPJ. This permit includes the Basin Plan narrative toxicity objective as the applicable effluent limit, implemented via monitoring with numeric values as “triggers” to initiate accelerated monitoring and to initiate a chronic toxicity reduction evaluation (TRE) as necessary. The permit requirements for chronic toxicity are also consistent with the CTR and SIP requirements.
- 2) ***Screening Phase Study.*** The Discharger performed a screening phase test in 2003 and identified the most sensitive species to be mysid. The Discharger will start using the identified species as the compliance species upon the adoption of this Order.
- 3) ***Permit Reopener.*** The Regional Water Board will consider amending this permit to include numeric toxicity limitations if the Discharger fails to aggressively implement all reasonable control measures included in its approved TRE workplan, following detection of consistent significant non-artifactual toxicity.

## D. Final Effluent Limitations

The table below lists the QBELs for the toxic pollutants that the Regional Water Board determines to have reasonable potential. The QBELs calculation is attached as **Appendix F-4** of this Fact Sheet.

**Summary of Water Quality-based Effluent Limitations  
Discharge Points 001-S and 003-R**

Parameter	Unit	WQBELs	
		MDEL	AMEL
Copper	µg/L	5.6	3.2
Nickel [1]	µg/L	14	6.6
Mercury	µg/L	0.039	0.021
Selenium	µg/L	8.0	4.2
Zinc [1]	µg/L	95	57
Cyanide	µg/L	1.0	0.5

[1] Final effluent limitations for nickel and zinc are included in the Fact Sheet only as the compliance schedule (December 31, 2014) for both interim limitations as discussed in a later section extends beyond the Order expiration date.

a. Copper

- 1) *Copper WQC.* The saltwater criteria for copper in the CTR are 3.1 µg/L for chronic protection and 4.8 µg/L for acute protection. Included in the CTR are default translator values to convert these dissolved criteria to total criteria. Using the CTR default translator of 0.83, translated criteria of 3.7 µg/L for chronic protection and 5.8 µg/L for acute protection were used to determine reasonable potential and calculate effluent limitations.
- 2) *WQBELs.* The copper WQBELs calculated according to SIP procedures are 5.6 µg/L as the MDEL and 3.2 µg/L as the AMEL. The previous permit included a WQBEL of 4.9 µg/L as a daily average. Although the calculated MDEL is higher than the previous Order’s copper daily average limitation, the new WQBELs derived using the SIP procedures are considered to be more protective of the water quality. The AMEL will limit the discharge to a lower long-term average level than the previous permit limitation, which only limited the daily average concentration of the effluent, and as a result, the Discharger could practically discharge an effluent with long-term average at the previous daily average level. Therefore, the new WQBELs are considered to be more stringent, and are established as the new WQBELs.
- 3) *Site-Specific Objective (SSO).* During the permit term, the Regional Water Board may amend the copper WQBELs based on the SSO being developed for San Pablo Bay. San Pablo Bay SSOs will be applicable to the Napa River.
- 4) *Antibacksliding/Antidegradation.* As described in Finding a(2) above, the SIP WQBELs are more stringent than the limit in the previous permit, so there is no antibacksliding.

b. Mercury

- 1) *Mercury WQOs/WQC.* Both the Basin Plan and the CTR include objectives and criteria that govern mercury in the receiving water. The Basin Plan specifies objectives for the protection of salt water aquatic life of 0.025 µg/L as a 4-day average and 2.1 µg/L as a 1-hour average. The CTR specifies a long-term average criterion for protection of human health of 0.051 µg/L.
- 2) *Mercury WQBELs.* The mercury WQBELs calculated according to SIP procedures are 0.039 µg/L as the MDEL and 0.021 µg/L as the AMEL. The previous permit contained WQBELs of 0.020 µg/L as AMEL and 0.041 µg/L as MDEL. The newly calculated WQBELs are based on recent performance data, while the previous WQBELs were calculated using a default coefficient of variation of 0.6. Therefore, the new WQBELs are more up to date and equally protective as it is based on Facility specific data consistent with the SIP. Therefore, the new WQBELs are established as the effluent limitations in this Order. When the final Bay-wide mercury TMDL becomes effective, the Regional Water Board will amend the effluent limitations in this Order to be consistent with the WLA and other requirements specified in the TMDL.
- 3) *Discharger's Performance and Attainability.* During the period from September 2002 through November 2005, the Discharger's effluent mercury concentrations ranged from 0.0005 µg/L to 0.0058 µg/L (38 samples). All effluent concentrations are below the AMEL, therefore, the Discharger should be able to comply with the effluent limit for mercury.
- 4) *Mercury TMDL.* The current 303(d) list includes San Pablo Bay as impaired by mercury, due to high mercury concentrations in the tissue of fish from the Bay. Methyl-mercury, the highly toxic form of mercury, is a persistent bioaccumulative pollutant. There is no evidence to show that the mercury discharged is taken out of the hydrologic system, by processes such as evaporation before reaching San Pablo Bay. Absent this evidence, the Regional Water Board assumes that the mercury reaches the Bay through either sediment transport or water flows. The Regional Water Board intends to establish a TMDL that will lead towards overall reduction of mercury mass loadings into San Pablo Bay. The final mercury effluent limitations will be based on the Discharger's WLA in the TMDL. While the TMDL is being developed, the Discharger will comply with mercury concentration and mass-based limitations to cooperate in maintaining current ambient receiving water conditions.
- 5) *Mercury Source Control Strategy.* The Regional Water Board is developing a TMDL to control mercury levels in San Pablo Bay. The Regional Water Board, together with other stakeholders, will cooperatively develop source control strategies as part of the TMDL development. Municipal discharge point sources are not a significant source of mercury to San Pablo Bay. Therefore, the currently

preferred strategy is to apply interim mass loading limits to point source discharges while focusing mass reduction efforts on other more significant and controllable sources. While the TMDL is being developed, the Discharger will cooperate in maintaining ambient receiving water conditions by complying with performance-based mercury mass emission limits. Therefore, this Order includes interim mass loading effluent limitation for mercury. The Discharger is required to implement source control measures and cooperatively participate in special studies required by the Regional Water Board.

- 6) *Final Mercury Limitations.* Final mercury limitations will be revised/established to be consistent with the WLA assigned in the final mercury TMDL. While the TMDL is being developed, the Discharger will comply with performance-based mercury concentration and mass-based limitations to cooperate in maintaining current ambient receiving water conditions.
- 7) *Antibacksliding/Antidegradation.* The mercury effluent limitations are equally protective as those in the previous permit; therefore, the antibacksliding/antidegradation requirements are satisfied.

**c. Nickel**

- 1) *Nickel WQOs.* The Basin Plan contains numeric nickel salt water WQOs, which are 8.3 µg/L for chronic protection and 75 µg/L for acute protection, as total recoverable metal.
- 2) *WQBELs.* The nickel WQBELs calculated according to SIP procedures are 14 µg/L as the MDEL and 6.6 µg/L as the AMEL. The previous permit included a WQBEL of 7.1 µg/L as a daily average. This number is lower than the calculated MDEL, above. Although the calculated MDEL is higher than the previous Order's nickel daily average limitation, the new WQBELs derived using the SIP procedures are considered to be more protective of water quality. The AMEL will limit the discharge to a lower long-term average level than the previous permit limitation, which only limits the daily average concentration of the effluent, and as a result, the Discharger could practically discharge an effluent with long-term average at the previous daily average level. Therefore, the new WQBELs are considered to be more stringent, and are established as the new WQBELs.
- 3) *Anti-backsliding/Anti-degradation.* The anti-backsliding and anti-degradation requirements are satisfied as detailed in c.(2) above.

**d. Selenium**

- 1) *Selenium WQC.* To protect saltwater aquatic life, the NTR specifies WQC for selenium of 5 µg/L for chronic aquatic life protection and 20 µg/L for acute protection.

- 2) *WQBELs*. The selenium WQBELs calculated according to SIP procedures are 8.0  $\mu\text{g/L}$  MDEL and 4.2  $\mu\text{g/L}$  AMEL. The previous permit included a WQBEL of 5  $\mu\text{g/L}$  as a daily average, which is less stringent than the new WQBELs. Therefore, the new WQBELs calculated using SIP procedures are established as the new effluent limitations for selenium.
  - 3) *Plant Performance and Attainability*. During the period from September 2002 through November 2005, the Facility's effluent MEC for selenium was 2  $\mu\text{g/L}$ . The Discharger collected 38 samples, ranging from 0.07 to 2  $\mu\text{g/L}$ . Due to the lack of appropriate probability distribution fit to the data, it is not possible to perform a meaningful statistical analysis to determine feasibility. Since the MEC is well below the AMEL, the Regional Water Board has determined that it is feasible for the Discharger to comply with the WQBELs for selenium.
- e. *Antibacksliding/Antidegradation*. The new effluent limitations are more stringent; therefore, the antibacksliding and antidegradation requirements are satisfied.
- e. **Zinc**
- 1) *Zinc WQOs*. The Basin Plan contains numeric zinc salt water WQOs, which are 86  $\mu\text{g/L}$  for chronic protection and 95  $\mu\text{g/L}$  for acute protection, as total recoverable metal.
  - 2) *WQBELs*. The zinc WQBELs calculated according to SIP procedures are 95  $\mu\text{g/L}$  as the MDEL and 57  $\mu\text{g/L}$  as the AMEL. The previous permit included a WQBEL of 58  $\mu\text{g/L}$  as a daily average, which is less stringent. Therefore, the new WQBELs are established as the effluent limitations for zinc.
  - 3) *Anti-backsliding/Anti-degradation*. The anti-backsliding and anti-degradation requirements are satisfied because the new effluent limitations are more stringent.
- f. **Cyanide**
- 1) *Cyanide WQC*. The NTR includes WQC that govern cyanide for the protection of aquatic life in salt surface water. The NTR specifies a saltwater Criterion Maximum Concentration (CMC) and Criterion Chronic Concentration (CCC) of 1  $\mu\text{g/L}$ .
  - 2) *WQBELs*. The cyanide WQBELs calculated according to SIP procedures are 1.0  $\mu\text{g/L}$  MDEL and 0.5  $\mu\text{g/L}$  AMEL. The WQBELs based on cyanide SSOs are 9.6  $\mu\text{g/L}$  as AMEL and 19.4  $\mu\text{g/L}$  as MDEL.
  - 3) Cyanide is a regional problem associated with the analytical protocol for cyanide analysis due to matrix interferences. There is also evidence to suggest that, to some degree, cyanide measured in effluents may be an artifact of the analytical method

used or the result of analytical interferences. In general, the chemistry of cyanide formation in POTW effluents is highly complex, involving both chemical and environmental factors in ways that are still poorly understood, despite considerable research. In addition, it is not known whether the form(s) of cyanide that are measured in POTW effluents exhibit toxicity in these environments. A 3-year \$1.5 million investigation completed in late 2002, sponsored by the Water Environment Research Foundation (WERF), in which several Bay Area POTWs participated, described a number of possible mechanisms for cyanide formations, and shed new light on analytical issues, but found no process or operational measures that could be implemented by the Discharger to reduce observed cyanide levels in effluent.

- 4) *SSO and Ambient Background Data Collection.* A regional discharger-funded study is underway for development of a cyanide SSO or recalculation of the criteria. The cyanide study plan was submitted on October 29, 2001, and the final report was submitted on June 29, 2003. The WQBELs will be re-calculated based on a cyanide SSO, or updated criteria if adopted. A draft Basin Plan amendment including new SSOs for the Bay, compliance strategies for shallow water dischargers, and implementation policy for the SSOs has been developed and is under public review and comment.
- 5) *Alternate Limit for Cyanide.* As described in *Draft Staff Report on Proposed Site-Specific Water Quality Objectives and Effluent Limit Policy for Cyanide for San Francisco Bay*, dated November 10, 2005, the Regional Water Board is proposing to develop SSOs for cyanide. In this report, the proposed SSOs for marine waters are 2.9 µg/L as a four-day average and 9.4 µg/L as a one-hour average. For shallow water dischargers (i.e., American Canyon), this report also recommends using an attenuation factor of 3.5 in calculating final water quality based effluent limits. Based on these assumption, and the Discharger's current cyanide data, final water quality based effluent limitations for cyanide will be 19.4 µg/L as a MDEL and 9.6 µg/L as an AMEL. These alternative limitations will become effective only if the SSOs adopted for cyanide contains the same assumptions in the staff report, dated November 10, 2005.
- 6) *Anti-backsliding/Anti-degradation.* The new WQBELs are more stringent than the effluent limitations in the previous permit; therefore, anti-backsliding/anti-degradation requirements are satisfied. The adoption of alternate limits for cyanide also complies with the anti-backsliding/anti-degradation requirements, as the Discharger has demonstrated that it is not feasible to comply with the final WQBELs based on existing WQC under current treatment technology. Therefore, CWA Section 402(o)(2)(C) and (E) provides an exception to antibacksliding that is applicable to less stringent limitations for cyanide. The CWA states "relaxation is allowed only to the treatment levels actually achieved" if "the permittee has installed treatment facilities required to meet effluent limitations in the previous permit and has operated and maintained the facilities but still has been unable to meet the effluent limitations."

**E. Interim Effluent Limitations**

**1. Interim Limitations**

Interim effluent limitations were derived for those constituents (copper, nickel, cyanide, and zinc) for which the Discharger has shown infeasibility of complying with the respective final limitations and has demonstrated that compliance schedules are justified based on the Discharger’s source control and pollution minimization efforts in the past and continued efforts in the present and future. The interim effluent concentration limitations are based on statistical analysis or direct comparison of the effluent data. The interim limitations are discussed in more detail below.

**2. Feasibility Evaluation and Final WQBELs**

The Discharger submitted an Infeasibility Analysis on March 13, 2006, for copper, nickel, zinc, and cyanide (**Appendix F-7** of the Fact Sheet) (a revision was submitted on May 22, 2006). Regional Water Board staff performed statistical analysis using self-monitoring data from September 2002 through November 2005 to compare the mean, 95<sup>th</sup> percentile, and 99<sup>th</sup> percentile with the long-term average (LTA), AMEL, and MDEL, respectively, to confirm if it is feasible for the Discharger to comply with WQBELs. If LTA, AMEL, or MDEL exceed the mean, 95<sup>th</sup> percentile, or 99<sup>th</sup> percentile, respectively, the infeasibility for the Discharger to comply with WQBELs is confirmed statistically. If infeasibility is confirmed, the 99.87<sup>th</sup> percentile (or mean plus three standard deviations) of the recent performance data is established as the interim limit. When the statistical analysis is not meaningful due to lack of appropriate distribution fit, a direct comparison of MEC and the AMEL is made (as is the case with nickel); if infeasibility is confirmed, the MEC is set as the interim limit. The table below shows these comparisons in µg/L:

**Summary of Feasibility Analysis and Interim Limitations (unit: µg/L)**

	<u>Mean vs. LTA</u>	<u>95<sup>th</sup> vs. AMEL</u>	<u>99<sup>th</sup> vs. MDEL</u>	<u>Feasible to Comply</u>	<u>Interim Limits</u>
Copper	3.3>2.3	5.6>3.2	9.9 >5.6	No	9.5
Mercury	0.0021<0.015	0.0034<0.021	0.0054<0.039	Yes	--
Nickel	5.6>4.1	15>6.6 (MEC>AMEL)		No	15[1]
Zinc	59>42	95>57	110>95	No	125
Selenium	1.0<2.8	2.8<4.2	4.6<8.0	Yes	--
Cyanide	2.1>0.3	4.0>0.5	5.4>1.0	No	7.3

[1] The interim limit is the MEC due to lack of good probability distribution fit to the effluent data.

For dioxin compounds, due to limited effluent data, there is uncertainty in determining compliance or establishing an interim limitation. In addition, the Minimum Levels (MLs) developed for 2,3,7,8-TCDD and 16 congeners (referred to as dioxins) by the Regional Water Board and BACWA range from 5 pg/L to 50 pg/L, which are higher than the WQBELs. As a result, this permit does not contain an interim limitation for dioxin. The final limitations for dioxins will be based on the WLA assigned to the Discharger when the TMDL is adopted.

### 3. Interim Limitations and Compliance Schedules

a. Section 2.1.1 of the SIP states:

“the compliance schedule provisions for the development and adoption of a TMDL only apply when: ... (b) the Discharger has made appropriate commitments to support and expedite the development of the TMDL. In determining appropriate commitments, the RWQCB should consider the discharge’s contribution to current loadings and the Discharger’s ability to participate in TMDL development.”

The Discharger has agreed to assist the Regional Water Board in TMDL development through active participation in and contribution to the Clean Estuary Project through BACWA. The Regional Water Board adopted Resolution No. 01-103 on September 19, 2001, authorizing the Executive Officer of the Regional Water Board to enter into a Memorandum of Understanding with BACWA and other parties to accelerate the development of Water Quality Attainment Strategies (WQAS), including TMDLs, for the San Francisco Bay-Delta and its tributaries.

- b. Compliance schedules are established based on Section 2.2 of the SIP for limitations derived from CTR or NTR WQC or based on the Basin Plan for limits derived from Basin Plan WQOs. In addition, the Regional Water Board has reasonably construed the Basin Plan provision to authorize compliance schedules for new interpretations of existing standards resulting in more stringent effluent limitations. If an existing discharger cannot immediately comply with a new and more stringent effluent limitation, the SIP and the Basin Plan authorize a compliance schedule in the permit. To qualify for a compliance schedule, both the SIP and the Basin Plan require that the discharger demonstrate that it is infeasible to achieve immediate compliance with the new limit. The SIP and Basin Plan require that the following information be submitted to the Board to support a finding of infeasibility:
- Descriptions of diligent efforts the discharger has made to quantify pollutant levels in the discharge, sources of the pollutant in the waste stream, and the results of those efforts.
  - Descriptions of source control and/or pollution minimization efforts currently under way or completed.
  - Proposed schedule for additional or future source control measures, pollutant minimization, or waste treatment.
  - Demonstration that the proposed schedule is as short as practicable.
- c. Until final WQBELs or WLAs are adopted for 303(d)-listed pollutants, State and Federal anti-backsliding and antidegradation policies and the SIP require that the

Regional Water Board include interim effluent limitations for them. The interim effluent limitations will be the lower of the current performance or the previous permit's limitations.

- d. This Order establishes a compliance schedule until May 17, 2010 for copper, April 27, 2010 for cyanide, December 31, 2014 for nickel and zinc, as allowed by the CTR and Basin Plan. The final WQBELs for copper and cyanide shall become effective on May 18, 2010 and April 28, 2010, respectively, or until the Regional Water Board adopts the SSOs for copper and cyanide. This Order includes cyanide WQBELs based on the draft SSOs. Since the compliance schedules extend beyond 1 year, pursuant to the SIP and 40 CFR §122.47, the Regional Water Board shall establish interim numeric limitations and interim requirements to control the pollutants. To maintain existing water quality, this Order establishes interim limits for copper, nickel, zinc and cyanide based on the previous permit limits or existing plant performance, whichever is more stringent, unless antibacksliding and antidegradation requirements are satisfied. **Appendix F-5** of the Fact Sheet details the general basis for final compliance dates. The Regional Water Board may take appropriate enforcement actions if interim limitations and requirements are not met. Specific bases for these interim limits are described in the following findings for these pollutants.
- 1) Copper – An interim effluent limitation is required for copper since the Discharger has demonstrated and the Regional Water Board verified that the final WQBELs calculated according to the SIP will be infeasible to meet. There is a water quality-based effluent limit in the previous permit, 4.9 µg/L, which is less stringent than the newly calculated WQBELs. However, the Discharger has asserted and Regional Water Board staff concurred that it is infeasible for the Discharger to achieve immediate compliance with the previous permit effluent limit either. Therefore, a limit of 9.5 µg/L based on recent performance (mean plus 3 standard deviations) is established as the interim limit, expressed as a daily maximum. The establishment of a performance-based effluent limit is allowed by CWA Section 404(o)(2)(C) and (E). This interim limit will remain in effect until May 17, 2010, or until the Regional Water Board amends the limitation based on an SSO or additional data. A maximum of 5-year compliance schedule is also warranted as the Regional Water Board is in the process of adopting copper SSOs for San Francisco Bay, which would apply to this discharge.
  - 2) Nickel – An interim effluent limitation is required for nickel since the Discharger has demonstrated and the Regional Water Board verified that the final WQBELs calculated according to the SIP will be infeasible to meet. There is a water quality-based effluent limit in the previous permit, 7.1 µg/L, which is less stringent than the newly calculated WQBELs. However, the Discharger has asserted and Regional Water Board staff concurred that it is infeasible for the Discharger to achieve immediate compliance with the previous permit effluent limit either. Due to lack of good distribution fits to the effluent data, the MEC of 15 µg/L is established as the interim limit, expressed as a daily maximum. The establishment of a performance-

based limit is allowed by CWA Section 404(o)(2)(C) and (E)). This interim effluent limit will remain in effect until December 31, 2014, or until the Regional Water Board amends the limitation based on SSO or additional data. Although the maximum compliance schedule is granted at this time, this Order also includes a provision requiring the Discharger to submit a compliance attainability analysis with next permit renewal application. Regional Water Board staff will determine whether to shorten the compliance schedule at that time, based on the effluent data and the Discharger's efforts in reducing nickel concentrations in the effluent, as well as the progress of nickel SSO development.

- 3) Zinc - An interim effluent limitation is required for zinc since the Discharger has demonstrated and the Regional Water Board verified that the final WQBELs calculated according to the SIP will be infeasible to meet. There is a water quality-based effluent limit in the previous permit, 58 µg/L, which is less stringent than the newly calculated WQBELs. However, the Discharger has asserted and Regional Water Board staff concurred that it is infeasible for the Discharger to achieve immediate compliance with the previous permit effluent limit either. The Discharger has conducted zinc source identification and source control within the treatment plant and the City. The Discharger plans to continue these efforts and implement more aggressive measures, such as exploring the feasibility of alternative treatments for metal reduction, local limits study, etc. in the near future (a summary of past efforts and future commitments can be found in the Discharger's Infeasibility Analysis, **Appendix F-7** of the Fact Sheet). Therefore, a limit of 125 µg/L based on recent performance (mean plus 3 standard deviations) is established as the interim limit, expressed as a daily maximum. The establishment of a performance-based effluent limit is allowed by CWA Section 404(o)(2)(C) and (E). This interim limit will remain in effect until December 31, 2014, or until the Regional Water Board amends the limit based on additional data. Although the maximum compliance schedule is given at this time, this Order also includes a provision requiring the Discharger to submit a compliance attainability analysis with next permit renewal application. Regional Water Board staff will determine whether to shorten the compliance schedule at that time, based on the effluent data and the Discharger's efforts in reducing zinc concentrations in the effluent.
- 4) Cyanide – An interim effluent limitation is required for cyanide since the Discharger has demonstrated and the Regional Water Board verified that the final WQBELs calculated according to the SIP will be infeasible to meet. There is an interim limit of 5 µg/L in the previous permit, which was based on analytical method detection limit. However, the Discharger has asserted and Regional Water Board staff concurred that it is infeasible for the Discharger to achieve immediate compliance with the previous permit effluent limit either. Regional Water Board staff calculated a limit of 7.3 µg/L (mean plus 3 standard deviations) as the interim limitation, expressed as a daily maximum, and will remain in effect until April 27, 2010, or until the Regional Water Board amends the limitation based on an SSO or additional data. A maximum compliance schedule is also warranted as the Regional

Water Board is in the process of adopting cyanide SSOs for San Francisco Bay, which would apply to this discharge.

- e. This Order also establishes interim requirements in a provision for development and/or improvement of a Pollution Prevention and Minimization Program to reduce pollutant loadings to the Facility, and for submittal of annual reports on this Program.
- f. *Antibacksliding/Antidegradation.* Antibacksliding does not apply to interim effluent limits so long as there is compliance with antidegradation requirements. The interim limits in this permit are in compliance with antidegradation requirements, because they are based on current Facility performance and will limit the discharge to the existing treatment level. Even if antidegradation applies to interim limits, the interim limits for copper, nickel, zinc and cyanide in this permit are exempt pursuant to CWA 402(o)(2)(C) and (E).

g. Attainability of Interim Performance-Based Limitations

1) Copper

During the period of September 2002 through November 2005, the Discharger's effluent concentrations for copper ranged from 1.2  $\mu\text{g/L}$  to 7.5  $\mu\text{g/L}$  (54 samples). All 54 samples were below the interim limitation of 9.5  $\mu\text{g/L}$ . It is therefore expected that the Facility can comply with the interim limitation for copper.

2) Nickel

During the period of September 2002 through November 2005, the Discharger's effluent concentrations for nickel ranged from 2.4  $\mu\text{g/L}$  to 15  $\mu\text{g/L}$  (42 samples). All 42 samples were below or equal to the interim limitation of 15  $\mu\text{g/L}$ . It is therefore expected that the Facility can comply with the interim limitation for nickel.

3) Zinc

During the period of September 2002 through November 2005, the Discharger's effluent concentrations for zinc ranged from 16  $\mu\text{g/L}$  to 130  $\mu\text{g/L}$  (68 samples). All 65 samples but one were below the interim limitation of 125  $\mu\text{g/L}$ . It is therefore expected that the Facility can comply with the interim limitation for zinc.

4) Cyanide

During the period of September 2002 through November 2005, the Discharger's effluent concentrations for cyanide ranged from <0.9  $\mu\text{g/L}$  to 8  $\mu\text{g/L}$  (36 samples). All 36 samples but one were below the interim limitation of 7.3  $\mu\text{g/L}$ . It is

therefore expected that the Facility can comply with the interim limitation for cyanide.

h. Staged Interim Limits

This Order includes staged interim limits for the above four pollutants. During this permit term, alternate interim limits may become effective upon the request of the Discharger to the Executive Officer and Executive Officer's approval. The rationale for this approach is explained in more detail below.

The Discharger has determined and is working towards recycling more effluent from the Main Basin during the dry season, which will result in discharging more effluent from the North Basin (industrial area) that contains much higher concentrations of metals and cyanide. Thus, higher interim limits based on Facility performance under different reclamation scenarios would be needed for the Discharger to pursue this effort, without having an increased tendency to violate effluent limits.

Factors for developing a reasonable set of staged interim limits have been developed based on effluent monitoring of the two streams of effluent.

From July through November 2005, the Discharger's domestic and industrial influent streams were separated to accommodate recycled water re-use. At that time, samples were collected for metals and cyanide analyses from the two separate influents and from the domestic only effluent (to be used for re-use) and the combined domestic-industrial effluent. Flows for each of these streams were also available. Using the concentration and flow values, it was possible to back-calculate the industrial effluent concentrations for each of the metals. Then, once the domestic effluent concentration and flow and industrial effluent concentration and flow values were available, it was possible to compute a mass balance to determine what the effluent concentration would be when the domestic and industrial streams are combined in different proportions (e.g., as more domestic water is removed from the stream and used for re-use).

$$\text{Effluent Concentration} = \frac{\text{Industrial Eff} \times \text{Industrial Flow} + \text{Domestic Eff} \times \text{Domestic Flow}}{\text{Industrial Flow} + \text{Domestic Flow}}$$

computed by dividing the "new" metal or cyanide effluent concentration (based on X% recycled water) as calculated using the above mass-balance equation by the baseline metal or cyanide effluent concentration (based on current recycling, which are the observed effluent concentrations). These factors were then applied to the performance based interim limit values for copper, nickel, cyanide and zinc.

The factors described above were also applied to the maximum effluent concentration (MEC) values used in the 2006 reasonable potential analysis to assess whether any additional constituents would trigger reasonable potential as more domestic water is recycled. This analysis did not find any additional triggered constituents. Only copper,

nickel, cyanide and zinc would trigger reasonable potential based on MEC, even at 100% recycled water.

Results of the interim limit calculations are provided below.

### Summary of Staged Interim Limitations

Reclamation Scenarios	Interim Limits Calculations based on Metals & Cyanide Factors							
	Copper		Nickel		Cyanide		Zinc	
	Factor	Limit (µg/L)	Factor	Limit (µg/L)	Factor	Limit (µg/L)	Factor	Limit (µg/L)
current	1.00	9.6	1.00	15	1.00	7.3	1.00	125
25% recycled	1.03	9.9	1.04	16	1.06	7.4	1.03	128
50% recycled	1.10	11	1.15	17	1.21	8.4	1.09	137
75% recycled	1.26	12	1.38	21	1.52	11	1.23	154
100% recycled	1.83	18	2.22	33	2.64	19	1.73	216

i. Mercury Interim Mass Emission Limitation/Mass Trigger

This Order includes an interim mercury mass-based effluent limitation of 2.7 grams per month (g/mo) and a mass trigger of 0.50 g/mo. This mass-based effluent limitation is intended to maintain the discharge at current loadings while encouraging recycling and providing a buffer for growth. The mass limitation is retained from the previous permit. The mass trigger is recalculated using the ultra-clean data collected from September 2002 through November 2005 as it better reflects the Facility's performance. The recalculated mass trigger is a reflection of better mercury effluent data (sampling and analytical techniques have improved), (see **Appendix F-6** for the mercury mass trigger calculation.) The mass limit will maintain current loadings until a TMDL is established for San Pablo Bay. The final mercury effluent limitations will be based on the Discharger's WLA in the TMDL. If the mass trigger is exceeded, then the actions specified in Provision C.3.b are required.

The inclusion of interim performance-based mass limits for bioaccumulative pollutants is consistent with the guidance described in section 2.1.1 of the SIP. Because of their bioaccumulative nature, an uncontrolled increase in the total mass load of these pollutants in the receiving water will have significant adverse impacts on the aquatic ecosystem.

The Regional Water Board includes a mass limit and trigger level for mercury in the permit to maintain ambient water quality. The combination of limit and trigger will protect the receiving water and will not cause further degradation of the water's beneficial uses. The Regional Water Board bases the mercury mass trigger on Facility's performance (calculation based on all effluent flow); when more effluent is used for recycling, the mass loadings of the discharge to receiving water body will decrease. Therefore, the mass trigger and mass limit (which are higher than a performance-based

mass limit) will encourage more recycling. The mass trigger level in the permit requires the Discharger, when loading exceeds the trigger, to take certain specified actions to determine the cause of the higher load and to bring the mercury mass back below the trigger.

#### **F. Comparison to Previous Permit Limitations**

The effluent limitations for BOD, TSS, BOD and TSS removal, oil and grease, pH, turbidity, ammonia, and total coliform have been retained from the previous permit, except that the BOD and TSS daily maximum effluent limitations are no longer required per amendment to the Basin Plan in 2004. Settleable solids effluent limitations are no longer required. A chlorine residual effluent limitation was added back to this Order because, although the Facility uses UV disinfection, chlorine is used in the microfiltration unit for operation and maintenance needs. There is a possibility that the chlorine may leak into the effluent during maintenance. Therefore, the effluent limitation is warranted and a grab sample is required to confirm no chlorine leakage during the maintenance process.

The interim effluent limitations for copper, nickel, cyanide, and zinc are higher than those WQBELs in the previous permit, and the relaxation is needed and is in compliance with the SIP and the antibacksliding/antidegradation requirements.

The effluent limitations for mercury and selenium are either comparable or more stringent than those in the previous permit.

The effluent limitations for arsenic, cadmium, chromium, lead, silver, and PAHs are no longer required as there is no reasonable potential based on performance data.

The effluent limitations for acute and chronic toxicity are unchanged from the previous Order.

#### **G. Reclamation Specifications**

The Discharger has applied for coverage under the Regional Water Board's general reclamation permit Order NO. 96-011 for its reclamation activities. Therefore, the Discharger shall comply with all the requirements in Order 96-011 for its reclamation activities.

### **V. RATIONALE FOR RECEIVING WATER LIMITATIONS**

- A. Receiving Water Limitations V.1 and V.2. These limitations are in the existing permit and are based on water quality objectives for physical, chemical, and biological characteristics from Chapter III of the Basin Plan.
- B. Receiving Water Limitation V.3. This limitation is in the existing permit, requires compliance with Federal and State law, and is self-explanatory.
- C. Receiving Water Limitation V.4. This limitation is based on storm water regulations intended to protect beneficial uses of receiving waters from storm water pollutants.

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

Section 122.48 of 40 CFR requires all NPDES permits to specify recording and reporting of monitoring results. Sections 13267 and 13383 of the California Water Code authorize the Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program (**Attachment E**), establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program for this Facility.

The Discharger is required to conduct monitoring of the permitted discharges in order to evaluate compliance with permit conditions. Monitoring requirements are contained the MRP (**Attachment E**) and Self-Monitoring Program, Part A (**Attachment G**). Part A of the monitoring program (**Attachment G**) is a standard requirement in almost all NPDES permits issued by the Regional Water Board. Most of the requirements are also existing requirements for the Discharger. Part A contains definitions, specifies general sampling and analytical protocols, and specifies reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water Code, and Regional Water Board policy. The MRP (**Attachment E**) of this Order is specific for the Discharger. It defines the stations, constituents, and frequency of monitoring, and additional reporting requirements. Constituents required to be monitored include all parameters for which effluent limitations are specified. This is to allow determination of compliance with permit limitations in accordance with 40 CFR §122.44(i). Monitoring for additional constituents, for which no effluent limitations are established, is also required to provide data for future RPAs.

### **A. Influent Monitoring**

This Order requires monitoring of the influent for the same parameters as those in the previous Order. The Discharger shall also sample the influent for its pretreatment program according to the MRP.

### **B. Effluent Monitoring**

The MRP includes monitoring at the outfall for conventional, non-conventional, and toxic pollutants, and acute and chronic toxicity. This Order requires monthly monitoring for copper, mercury, nickel, selenium, zinc and cyanide to demonstrate compliance with the effluent limits. The Discharger will sample twice per year (once during the wet, once during the dry season season) for all the 2,3,7,8-TCDD congeners. The Discharger is required to sample for other priority pollutants either on a quarterly (metals) or once per year (other organic pollutants) basis, according to the Regional Water Board's 13267 Letter dated August 6, 2001, and submit the results with its self-monitoring reports and permit renewal application.

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

This Order requires monthly monitoring of the acute toxicity with either rainbow trout or fathead minnow, and quarterly monitoring for chronic toxicity with mysid. When either of the two

chronic toxicity triggers is exceeded, the Discharger will accelerate monitoring to monthly. The requirements are unchanged from the previous permit (except for the testing species and accelerated monitoring frequency).

#### **D. Receiving Water Monitoring**

This Order requires monthly monitoring of the North Slough for the same parameters as those contained in the previous permit, such as pH, temperature, nutrients, salinity, and hardness, and for the constructed wetlands for flow, temperature, hardness, salinity, pH, and dissolved oxygen. Salinity and dissolved oxygen are new requirements to examine the health condition of the wetlands. In addition, quarterly monitoring of the wetlands for wildlife is continued in this Order. In lieu of near field discharge specific ambient monitoring, it is generally acceptable that the Discharger participate in collaborative receiving water monitoring with other dischargers under the provisions of the Board's August 6, 2001 letter and the Regional Monitoring Program (RMP).

#### **E. Other Monitoring Requirements**

1. On August 6, 2001, the Board sent a letter (hereinafter referred to as the Board's August 6, 2001 Letter) to all permitted dischargers pursuant to Section 13267 of the California Water Code requiring submittal of effluent and receiving water data on priority pollutants and other toxic pollutants. This formal request for technical information addresses the insufficient effluent and ambient background data. The Discharger submitted a sampling plan, and has fulfilled the sampling requirement.
2. This Order does not include effluent limitations for constituents that do not show a Reasonable Potential, but continued monitoring for these pollutants is required as described in the Board's August 6, 2001 Letter. If concentrations of these constituents increase significantly, the Discharger will be required to investigate the source of the increases and establish remedial measures if the increases result in a reasonable potential to cause or contribute to an excursion above the applicable WQO/WQC.

### **VII. RATIONALE FOR PROVISIONS**

#### **A. Standard Provisions**

Standard Provisions, which in accordance with 40 CFR §§122.41 and 122.42 apply to all NPDES discharges and must be included in every NPDES permit, are provided in **Attachment D**.

#### **B. Monitoring and Reporting Requirements**

The Discharger is required to conduct monitoring of the permitted discharges in order to evaluate compliance with permit conditions. Monitoring requirements are contained in the the MRP (**Attachment E**) and Standard Provisions and SMP, Part A (**Attachment G**) of the Permit. This provision requires compliance with these documents, and is based on 40 CFR

122.63. The Standard Provisions and SMP, Part A are standard requirements in almost all NPDES permits issued by the Regional Water Board, including this Order. They contain definitions of terms, specify general sampling and analytical protocols, and set out requirements for reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water Code, and Regional Water Board's policies. The MRP contains a sampling program specific for the facility. It defines the sampling stations and frequency, the pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all parameters for which effluent limitations are specified. Monitoring for additional constituents, for which no effluent limitations are established, is also required to provide data for future completion of RPAs for them.

## C. Special Provisions

### 1. Reopener Provisions

These provisions are based on 40 CFR §123 and allow future modification of this Order and its effluent limitations as necessary in response to updated WQOs that may be established in the future.

### 2. Special Studies and Additional Monitoring Requirements

- a. Effluent Characterization for Selected Constituents: This provision is based on the Basin Plan and the SIP.
- b. Ambient Background Receiving Water Study: This provision is based on the Basin Plan and the SIP.
- c. Regional Copper Study and Schedule: This provision, based on BPJ, requires the Discharger to continue its participation in the regional discharger-funded effort to develop site-specific saltwater aquatic life-based WQOs for copper in San Francisco Bay north of the Dumbarton Bridge.
- d. Constructed Wetland Management: This is from the previous permit and is based on BPJ.
- e. Reporting of Constructed Wetlands: This is from the previous permit and is based on BPJ.
- f. Mass Offset (Optional): This option is provided to encourage the Discharger to further implement aggressive reduction of mass loads to the Napa River and San Pablo Bay.
- g. Metal (Copper, Nickel, Zinc) Translator Study (Optional): The Discharger has difficulty complying with the copper, nickel, and zinc WQBELs. Without site-specific data, the CTR default translator will be used. This optional provision is retained from the previous Order.

- h. 303(d)-Listed Pollutants, Site-Specific Objective and TMDL Status Review: Consistent with the SIP, the Discharger shall participate in the development of region-wide TMDL or SSO studies. By January 31 of each year, the Discharger shall submit, or participate in a submittal by a group of dischargers, an update to the Regional Water Board to document progress made on source control and pollutant minimization measures and development of TMDLs or SSOs. Regional Water Board staff shall review the status of TMDL development. This Order may be reopened in the future to reflect any changes required by TMDL development.
- i. Toxicity Identification Evaluation/Toxicity Reduction Evaluation: This is from the previous permit and is based on the Basin Plan.

### **3. Best Management Practices and Pollution Prevention**

- a. Pollution Prevention and Pollutant Minimization Program: This provision is based on the Basin Plan, pages 4-25 – 4-28, and the SIP, Section 2.1.
- b. Mercury Mass Loading Reduction: This provision will help to ensure no increases in mercury mass loadings until a TMDL and WLA are established. The Regional Water Board's determination of the need to maintain mass loadings at current levels for this bioaccumulative pollutant are based on Section 2.1.1 of the SIP.

### **4. Compliance Schedules**

This provision is based on the SIP 2.1, 40 CFR §122.47, and the Basin Plan.

### **5. Construction, Operation, and Maintenance Specifications**

- a. Wastewater Facilities, Review and Evaluation, Status Reports: This provision is based on the previous permit and the Basin Plan.
- b. Operations and Maintenance Manual, Review and Status Reports: This provision is based on the Basin Plan, the requirements of 40 CFR §122, and the previous permit.
- c. Contingency Plan, Review and Status Reports: This provision is based on the Basin Plan, the requirements of 40 CFR §122, and the previous permit.

### **6. Special Provisions for POTW**

- a. Pretreatment Program: This provision requires the Discharger to implement its pretreatment program in accordance with Federal pretreatment regulations (40 CFR §403). Due to the nature and volume of the industrial influent to the Discharger's Facility and past violations of toxic pollutant effluent limitations, the Regional Water

Board requires the Discharger to develop and maintain its pretreatment program. This provision is retained from the previous permit, and is based on 40 CFR §403.8.

- b. Biosolids Management Practices Requirements: This provision is based on the Basin Plan (Chapter IV) and 40 CFR §§257 and 503.
- c. Sanitary Sewer Management Plan: This provision requires the Discharger to actively participate in the BACWA and the Regional Water Board collaborative effort to address Sanitary Sewer Overflows. The effort is consistent with Regional Water Board Resolution No. R2-2003-0095 and Executive Officer's letters, dated November 15, 2004 and July 7, 2005, respectively.

## VIII. PUBLIC PARTICIPATION

The Regional Water Board is considering the issuance of waste discharge requirements (WDRs) that will serve as an NPDES permit for the City of American Canyon. As a step in the WDR adoption process, the Regional Water Board staff developed tentative WDRs (draft permit). The Regional Water Board encourages public participation in the WDR adoption process.

### A. Notification of Interested Parties

The Regional Water Board notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and provided them with an opportunity to submit their written comments and recommendations. Notification was provided through the following: (a) paper and electronic copies of this Order were relayed to the Discharger, and (b) the Napa Register published a notice that this item would appear before the Board on June 14, 2006.

### B. Written Comments

Staff determinations are tentative. Interested persons are invited to submit written comments concerning the tentative WDRs (draft permit). Comments should be submitted either in person or by mail to the Executive Office at the Regional Water Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Regional Water Board, written comments should be received at the Regional Water Board offices by 5:00 p.m. on May 9, 2006.

### C. Public Hearing

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

Date: June 14, 2006  
Time: 9:00 am

Location: Elihu Harris State Office Building  
1515 Clay Street  
Oakland, CA  
1<sup>st</sup> floor Auditorium  
Contact: Ms. Tong Yin, Phone: (510) 622-2418; email: [tyin@waterboards.ca.gov](mailto:tyin@waterboards.ca.gov)

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

Dates and venues may change. Our web address where you can access the current agenda for changes in dates and locations is: <http://www.waterboards.ca.gov/sanfrancisobay/>

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

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

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

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

The Report of Waste Discharge (RWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling (510) 622-2300.

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

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

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

Requests for additional information or questions regarding this tentative DWR (draft permit) should be directed to Tong Yin at (510) 622-2418 or email [tyin@waterboards.ca.gov](mailto:tyin@waterboards.ca.gov).

## **IX. APPENDICES**

- Appendix F-1:** Effluent Data for Priority Inorganic Pollutants
- Appendix F-2:** Representative Ambient Hardness Value Calculation
- Appendix F-3:** RPA Results for Priority Pollutants
- Appendix F-4:** Calculation of Final WQBELs
- Appendix F-5:** General Basis for Final Compliance Dates
- Appendix F-6:** Mercury Mass Trigger Calculation
- Appendix F-7:** Discharger's Infeasibility Analysis

**Fact Sheet Appendix F-1**  
**Priority Pollutants Effluent Data**  
**(Inorganics)**



**Fact Sheet Appendix F-2**

**Ambient Hardness Data  
and Representative Hardness Calculation**



**Fact Sheet Appendix F-3**

**Reasonable Potential Analysis Results**



Responsible Potential Analysis Results

Beginning	Constituent name	C (ug/L) swamp Criteria (Enter No Criteria for no criteria)	Element Data Available (Y/N)?	Step 2 Enter the effluent max conc (ug/L)	Step 3 All data points ND defection limit (MDL) (Y/N)?	Step 4 MEC vs. C	Step 5 MEC-C, go to Step 5 MDL-C, go to Step 5 No Criteria, go to Step 5	Step 6 Are all B points non- detects (Y/N)?	Step 7 Enter the measured max conc (ug/L)	Step 8 If B vs. C If B-C, effluent limitation is required	Final Result	Reason
85	2,4-Dichlorophenoxyacetic acid	0.00077	Y	0.8	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.3	No detected value of B, Step 8	UD, effluent data and B are ND	
86	Fluorene	14.000	Y	0.028	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.03	No detected value of B, Step 8	UD, effluent data and B are ND	
87	Fluorene	0.00077	Y	0.4	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.4	No detected value of B, Step 8	UD, effluent data and B are ND	
88	Hexachlorobenzene	50	Y	0.7	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.2	No detected value of B, Step 8	UD, effluent data and B are ND	
89	Hexachlorocyclopentadiene	1.50	Y	0.4	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.2	No detected value of B, Step 8	UD, effluent data and B are ND	
91	Hexachlorobenzene	0.60	Y	0.028	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.3	No detected value of B, Step 8	UD, effluent data and B are ND	
92	Infrared, 1,2,3,4-dibenzopyrene	0.60	Y	0.5	Y	No Criteria	No Criteria	Y	0.05	No Criteria	No Criteria	
94	Naphthalene	No Criteria	Y	0.019	Y	No Criteria	No Criteria	Y	0.03	No detected value of B, Step 8	UD, effluent data and B are ND	
95	1,2,3,4-tetrahydroquinoline	8.10	Y	0.6	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.3	No detected value of B, Step 8	UD, effluent data and B are ND	
96	1,4-Dioxane	1.40	Y	0.8	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.4	No detected value of B, Step 8	UD, effluent data and B are ND	
97	1,4-Nitrophenylpropanilamine	16	Y	0.6	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.4	No detected value of B, Step 8	UD, effluent data and B are ND	
98	1,4-Nitrophenylpropanilamine	No Criteria	Y	0.028	Y	No Criteria	No Criteria	Y	0.03	No detected value of B, Step 8	UD, effluent data and B are ND	
100	Propylamine	No Criteria	Y	0.05	Y	No Criteria	No Criteria	Y	0.03	No detected value of B, Step 8	UD, effluent data and B are ND	
101	1,2,4-Trichlorobenzene	0.00014	Y	0.009	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.003	No detected value of B, Step 8	UD, effluent data and B are ND	
102	Aldrin	0.00014	Y	0.009	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.003	No detected value of B, Step 8	UD, effluent data and B are ND	
103	alpha-BHC	0.013	Y	0.009	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.001	No detected value of B, Step 8	UD, effluent data and B are ND	
104	gamma-BHC	0.013	Y	0.009	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.001	No detected value of B, Step 8	UD, effluent data and B are ND	
105	delta-BHC	0.013	Y	0.002	Y	No Criteria	No Criteria	Y	0.001	No detected value of B, Step 8	UD, effluent data and B are ND	
106	Chlordane (3034 listed)	0.00059	Y	0.006	Y	No Criteria	No Criteria	Y	0.005	No detected value of B, Step 8	UD, effluent data and B are ND	
108	4,4'-DDE (3034 listed)	0.00059	Y	0.002	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.001	No detected value of B, Step 8	UD, effluent data and B are ND	
109	4,4'-DDE (3034 listed)	0.00084	Y	0.002	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.001	No detected value of B, Step 8	UD, effluent data and B are ND	
110	4,4'-DDE (3034 listed)	0.00014	Y	0.002	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.002	No detected value of B, Step 8	UD, effluent data and B are ND	
111	Dieldrin (3034 listed)	0.00014	Y	0.002	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.001	No detected value of B, Step 8	UD, effluent data and B are ND	
112	beta-Etoxofuran	0.0087	Y	0.002	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.001	No detected value of B, Step 8	UD, effluent data and B are ND	
113	beta-Etoxofuran	0.0087	Y	0.002	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.002	No detected value of B, Step 8	UD, effluent data and B are ND	
114	beta-Etoxofuran	0.0023	Y	0.002	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.002	No detected value of B, Step 8	UD, effluent data and B are ND	
115	Endrin	0.0023	Y	0.002	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.003	No detected value of B, Step 8	UD, effluent data and B are ND	
116	Endrin Aldehyde	0.0021	Y	0.003	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.002	No detected value of B, Step 8	UD, effluent data and B are ND	
117	Heptachlor	0.00017	Y	0.002	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.002	No detected value of B, Step 8	UD, effluent data and B are ND	
118	Heptachlor Epoxide	0.00017	Y	0.002	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.002	No detected value of B, Step 8	UD, effluent data and B are ND	
119	Endrin	0.00020	Y	0.15	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.07	No detected value of B, Step 8	UD, effluent data and B are ND	
120	Toxaphene	0.00740	Y	0.002495	Y	MEC-C, go to Step 5	MEC-C, go to Step 5	Y	0.00743	No detected value of B, Step 8	UD, effluent data and B are ND	
	Total PAHs	15.00000	Y		Y			Y	0			

a. No monitoring is required for this analysis.  
 b. Acronyms in the "Final Result" column:  
 UD: Cannot determine responsible potential due to the absence of data or incorrect information that is greater than water quality objective or CTR criteria  
 No: Interim monitoring is required

**Fact Sheet Appendix F-4**

**Water Quality-Based Effluent Limitation Calculation**

Fact Sheet Appendix F-4

City of American Canyon NPDES Permit Reissuance  
WQBEL Calculation

PRIORITY POLLUTANTS	Copper	Mercury	Nickle	Selenium	Zinc	Cyanide	Cyanide (SSO)	TCDD TEQ
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	pg/L
Basis and Criteria type	CTR SW	BP SW (4-d, 1-hr avg)	BP SW	NTR	BP SW	NTR SW	NTR SW	CTR_hh
Lowest WQO	3.70	0.025	8.30	5.00	86.00	1.00	2.90	0.014
Translators								
Dilution Factor (D) (if applicable)	0	0	0	0	0	0	3.5	0
No. of samples per month	4	4	4	4	4	4	4	4
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y	Y	Y	Y	Y	N
HH criteria analysis required? (Y/N)	N	Y	Y	N	N	Y	Y	Y
Applicable Acute WQO	5.80	2.1	75	20	95	1	9.4	na
Applicable Chronic WQO	3.70	0.025	8.3	5	86	1	2.9	na
HH criteria		0.051	4600			220000	220000	0.014
Background (max conc for Aq Life calc)	32	0.015	68.7	19	10	0.363	0.363	
Background (avg conc for HH calc)		0.00700	7.50			0.21	0.21	
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)	N	Y	N	Y	N	N	N	Y
ECA acute	5.8	2.1	75	20	95	1	41.0295	
ECA chronic	3.7	0.025	8.3	5	86	1	11.7795	
ECA HH		0.051	4600			220000	989999.2685	0.014
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	N	N	N	N	N	Y
Avg of effluent data points	3.174	0.0021	5.7864	1.0504	58.4706	2.0770	2.0770	
Std Dev of effluent data points	1.374	0.0011	3.8772	0.5722	23.0693	1.2508	1.2508	
CV calculated	0.43	0.50	0.67	0.54	0.39	0.60	0.60	N/A
CV (Selected) - Final	0.43	0.50	0.67	0.54	0.39	0.60	0.60	0.6
ECA acute mult99	0.42	0.37	0.29	0.35	0.44	0.32	0.32	
ECA chronic mult99	0.62	0.58	0.49	0.56	0.65	0.53	0.53	
LTA acute	2.41	0.79	21.90	6.96	42.16	0.32	13.13	
LTA chronic	2.30	0.015	4.10	2.78	55.64	0.53	6.20	
minimum of LTAs	2.30	0.015	4.10	2.78	42.16	0.32	6.20	
AMEL mult95	1.39	1.45	1.62	1.50	1.35	1.55	1.55	1.55
MDEL mult99	2.41	2.67	3.42	2.87	2.25	3.12	3.12	3.11
AMEL (aq life)	3.20	0.021	6.65	4.17	57.04	0.50	9.64	
MDEL (aq life)	5.54	0.039	14.04	7.99	95.00	1.00	19.37	
MDEL/AMEL Multiplier	1.73	1.84	2.11	1.92	1.67	2.01	2.01	2.01
AMEL (human hlth)		0.051	4600			220000	989999	0.014
MDEL (human hlth)		0.094	9716			442118	1989532	0.028
minimum of AMEL for Aq. life vs HH	3.20	0.02	6.65	4.17	57.04	0.50	9.64	0.014
minimum of MDEL for Aq. Life vs HH	5.54	0.039	14.04	7.99	95.00	1.00	19.37	0.028
Final limit - AMEL	3.2	0.021	6.6	4.2	57	0.5	9.6	0.014
Final limit - MDEL	5.5	0.039	14	8.0	95	1.0	19.4	0.028
Max Eff Conc (MEC)	7.5	0.0058	15.0	2.0	130	8	8	0.0002
Feasibility to comply?	No	Yes	No	Yes	No	No	Yes	No
Interim limit	9.6	NA	15	NA	125	7.3	NA	NA
Distribution	lognormal	lognormal	no good fit	lognormal	weibull	lognormal	lognormal	no good fit

**Fact Sheet Appendix F-5**

**Basis for Compliance Schedules**

**General Basis for Final Compliance Dates [1]**  
**for Discharges North of the Dumbarton Bridge**  
*Revised March 23, 2006*

Constituent	Reference for applicable standard	Maximum compliance schedule allowed	Compliance date and Basis
Cyanide Selenium	NTR	10 years	<b>10-yr, but no later than April 28, 2010</b> (10 years from effective date of SIP). Basis is the Basin Plan, see note [2].
Copper (salt)	CTR	5 years	<b>5-yr, but no later than May 18, 2010.</b> Bases are CTR and SIP. See note [4]
Mercury PAH EPA 610	Numeric Basin Plan (BP)	10 years	<b>10-yr, but no later than April 28, 2010</b> , which is 10 years from effective date of SIP (April 28, 2000). Basis is the Basin Plan, See note [2a].
Arsenic Cadmium Chromium (VI) Copper (fresh) Lead Nickel Silver (CMC) Zinc	Numeric BP	10 years	<b>10-yr, but no later than January 1, 2015.</b> This is 10 years (using full months) from effective date of 2004 BP amendment (January 5, 2005). Basis is the Basin Plan section 4.3.5.6. See note [2b]. Also, see note [3] for permits issued prior to effective date of 2004 BP amendment.
Dioxins/Furans Tributyltin Other toxic pollutants not in CTR	Narrative BP using SIP methodology	10 years	<b>10-yr from effective date of permit</b> (which is when new standard is adopted; no sunset date). Basis is the Basin Plan, see note [2c].
Other priority pollutants on CTR and not listed above	CTR	5 years	<b>5-yr, but no later than May 18, 2010</b> (this is 10 years from effective date of CTR/SIP). Basis is the CTR and SIP. See note [4]

[1] These dates are maximum allowable compliance dates applicable. As required by the Basin Plan, CTR, SIP, and 40CFR122.47, compliance should be as short as possible. These are only applicable for discharges north of the Dumbarton Bridge because applicable criteria for the south bay are different than those cited above.

- For pollutants where there are planned TMDLs or SSOs, and final WQBELs may be affected by those TMDLs and SSOs, maximum timeframes may be appropriate due the uncertain length of time it takes to develop the TMDL/SSO.
- However, for pollutants without planned TMDLs or SSOs, the State Board in the EBMUD remand order (WQO 2002-0012), directs the Regional Board to establish schedules that are as short as feasible in accordance with requirements.

[2] The Basin Plan provides for a 10-year compliance schedule for implementation of measures to comply with new standards as of the effective date of those standards. This provision has been construed to authorize compliance schedules for new interpretations of existing standards, such as the numeric and narrative water quality objectives specified in the Basin Plan, if the new interpretations result in more stringent limits than in the previous permit.

- a. For the numeric standards and objectives in place prior to the SIP (these include the 1995 Basin Plan objectives, and NTR criteria that were implemented in accordance with the Basin Plan), due to the adoption of the SIP, the Water Board has newly interpreted these objectives and standards. The

## Fact Sheet Appendix F-5

effective date of this new interpretation is the effective date of the SIP (April 28, 2000) for implementation of these numeric Basin Plan objectives.

- b. For numeric objectives for the seven pollutants adopted in the 2004 Basin Plan (amendments), the Water Board has newly adopted these objectives. The effective date of these new objectives is the approval date of the 2004 Basin Plan by U.S. EPA (January 5, 2005) for implementation of these numeric Basin Plan objectives. December is the last full month directly preceding the sunset date. Compliance should be set on the first day of the month to ease determination of monthly average limits. Therefore, compliance must begin on January 1, 2015.
- c. For narrative objectives, the Board must newly interpreted these objectives using best professional judgment as defined in the Basin Plan for each permit. Therefore, the effective date of this new interpretation will be the effective date of the permit.

[3] The schedules established in permits effective prior to the 2004 Basin Plan (amendments) should be continued into subsequent permits reissued after the 2004 Basin Plan. For example, Permit XX, adopted Nov 2004 became effective Feb 1, 2005. Permit XX establishes a compliance schedule for copper to end April 1, 2010. When next reissued in 2010, the compliance deadline for the same copper limit should remain April 1, 2010. However, if in applying the 2004 BP objective results in a more stringent limit for copper, then a new compliance schedule may extend to the new date in 2015, provided discharger XX justifies the need for the longer compliance schedule.

[4] Permits effective after SIP/CTR that specified 5-yr compliance schedules pursuant to SIP §2.1 for CTR pollutants do not qualify for another compliance schedule for those same CTR pollutants during reissuance.

- a. An exception to this would be if new data collected during the term of the permit results in more stringent limitations, then a compliance schedule may be allowable for the more stringent limits up to May 18, 2010.
- b. Another exception applies to pollutants granted a compliance schedule pursuant to the 2000 SIP §2.2.2, Interim Requirements for Providing Data (note 2005 SIP amendment deleted this section as it is not applicable to permits effective after May 18, 2003). Because SIP §2.1 provides for a maximum 5-year compliance schedule, and permittees granted §2.2.2 schedules have not been previously granted such a schedule under §2.1, those permittees who can demonstrate infeasibility to achieve immediate compliance with limits calculated using the data collected, qualify for a §2.1 schedule up to the maximum statutory date (April 28, 2010).

Cyanide was one pollutant for which the Water Board granted a §2.2.2 compliance schedules to collect better ambient data for cyanide, because the Regional Monitoring Program data were not complete primarily due to inadequate detection limits. BACWA and WSPA funded an effort to collect these data as part of the collaborative receiving water monitoring for other CTR pollutants. The Regional Water Board has received these data, which form the basis for current permits. However, upon further consideration, the SIP §2.2.2 compliance schedule was granted in error, because cyanide is an NTR criterion and not a CTR criterion, and the SIP compliance schedule provisions apply to "...CTR criterion and/or effluent limitations." Thus, it is more appropriate to apply the Basin Plan's compliance schedule provision, which was the implementation tool for NTR criteria prior to the SIP superceding the provisions in the Basin Plan related to calculation of water quality based effluent limitations. As such, the compliance schedule for cyanide should follow note [2a], above.

**Fact Sheet Appendix F-6**  
**Mercury Mass Trigger Calculation**

Fact Sheet Appendix F-6  
City of American Canyon  
NPDES Permit Reissuance  
Mercury Mass Trigger Calculation

Date	Effluent 003-R (MGD)	Effluent 001-S (MGD)	Total Effluent (MGD)	Hg Conc. (ug/L)	Mass loading (g/month)	12-month MA Mass (g/month)	LN(MA)
11/15/2002	0.38	0.729	1.109	0.0012	0.153175		
12/9/2002	0.344	1.082	1.426	0.0008	0.131306		
1/7/2003	0.434	1.147	1.581	0.0014	0.254762		
2/5/2003	0.406	1.053	1.459	0.0014	0.235103		
3/5/2003	0.396	0.997	1.393	0.0014	0.224468		
4/9/2003	0.412	1.001	1.413	0.0015	0.243954		
5/7/2003	1.41	0	1.41	0.0021	0.340811		
6/11/2003	1.325	0	1.325	0.0015	0.228761		
7/2/2003	1.43	0	1.43	0.0018	0.296267		
8/5/2003	1.088	0	1.088	0.0037	0.463347		
9/10/2003	1.124	0	1.124	0.0048	0.620988		
10/2/2003	1.07	0	1.07	0.002	0.246314	0.2866	-1.249651
11/10/2003	0.746	0.432	1.18	0.002	0.271636	0.2965	-1.215787
12/3/2003	0.755	0.773	1.527	0.0018	0.316364	0.3119	-1.165079
1/5/2004	0.772	0.804	1.576	0.0024	0.435354	0.3269	-1.117956
2/4/2004	0.861	1.087	1.949	0.0005	0.112165	0.3167	-1.149793
3/2/2004	0.763	0.743	1.507	0.0019	0.329566	0.3255	-1.122514
4/8/2004	0.742	0.609	1.351	0.0014	0.2177	0.3233	-1.129259
5/5/2004	1.019	0.063	1.082	0.0016	0.199261	0.3115	-1.16643
6/2/2004	1.025	0	1.025	0.0015	0.176966	0.3072	-1.180384
7/6/2004	1.04	0	1.04	0.0014	0.167586	0.2964	-1.21592
8/17/2004	1.002	0	1.002	0.0019	0.219127	0.2761	-1.287044
9/9/2004	1.015	0	1.015	0.0015	0.17524	0.2389	-1.431543
10/4/2004	1.053	0	1.053	0.0025	0.303001	0.2437	-1.411966
11/3/2004	0.785	0.54	1.305	0.0045	0.675925	0.2774	-1.282459
12/1/2004	0.708	0.853	1.56	0.0014	0.251378	0.2719	-1.302177
1/4/2005	0.929	0.88	1.809	0.0025	0.52054	0.2790	-1.276408
2/2/2005	0.916	0.903	1.819	0.0023	0.481544	0.3098	-1.171766
3/2/2005	0.965	0.944	1.909	0.0022	0.483397	0.3226	-1.131222
4/7/2005	0.843	0.891	1.734	0.0024	0.479	0.3444	-1.065912
5/2/2005	1.586	0	1.586	0.0024	0.438117	0.3643	-1.009727
6/2/2005	1.361	0	1.361	0.0017	0.266307	0.3718	-0.989498
7/18/2005	1.296	0	1.296	0.0028	0.417675	0.3926	-0.934953
8/1/2005	1.13	0	1.13	0.0027	0.35117	0.4036	-0.907312
9/12/2005	1.082	0	1.082	0.0025	0.311346	0.4149	-0.879598
10/5/2005	1.076	0	1.076	0.0017	0.210541	0.4072	-0.898341
11/1/2005	0.654	0.675	1.329	0.0019	0.290639	0.3751	-0.980462
						Mean	-1.141275
						SD	0.150637
						Mass Trigger (g/mo)	0.50

**Fact Sheet Appendix F-7**

**Discharger's Infeasibility Analysis**

**(March 13, 2006, revision received on May 22, 2006)**

City of American Canyon Wastewater Treatment and Reclamation Facility  
2006 NPDES Permit Renewal

## Infeasibility Analyses

March 13, 2006

*Revision received on May 22, 2006*

### Introduction

These infeasibility analyses and resulting requests for compliance schedules and interim limits are submitted to the Regional Water Quality Control Board (RWB) by the City of American Canyon (City) to demonstrate the City's inability to comply with the proposed water quality-based effluent limits for copper, nickel, zinc, and cyanide.

### Background

The Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California (SIP, 2000, 2005) establishes statewide policy for NPDES permitting. The SIP provides for the situation where an existing NPDES discharger cannot immediately comply with an effluent limitation derived from a California Toxics Rule (CTR) or Basin Plan objective. The SIP allows for the adoption of interim effluent limits and a schedule to come into compliance with the final limit in such cases. To qualify for interim limits and a compliance schedule, the SIP requires that an existing discharger demonstrate that it is infeasible to achieve immediate compliance with the CTR- or Basin Plan-based limit.

The term "infeasible" is defined in the SIP as "not capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors."

The SIP requires that the following information be submitted to the Regional Board to support a finding of infeasibility:

- (a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and sources of the pollutant in the waste stream, including the results of those efforts;
- (b) documentation of source control and/or pollution minimization efforts currently under way or completed;
- (c) a proposed schedule for additional or future source control measures, pollutant minimization or waste treatment; and
- (d) a demonstration that the proposed schedule is as short as practicable.

The following analysis pertains to the water-quality-based effluent limits proposed in the Reasonable Potential Analysis submitted by the RWB to the City in an e-mail dated March 2, 2006.

## Pollutants to be Evaluated

The pollutants for which interim limits are being requested by the City are as follows:

- Copper
- Nickel
- Zinc
- Cyanide

## Effluent Limit Attainability

The proposed final effluent limits contained in the reasonable potential analysis for these constituents are compared to the maximum observed effluent concentrations in Table 1.

**Table 1. Proposed Effluent Limits for American Canyon Wastewater Treatment Facility**

Pollutant	Water Quality Based Effluent Limits		City Effluent Quality
	AMEL <sup>[a]</sup>	MDEL <sup>[b]</sup>	MEC <sup>[c]</sup>
Copper	3.2	5.5	7.5
Nickel	6.6	14	15
Zinc	57	95	130
Cyanide	0.50	1.0	8.0

Notes:

All values in µg/L.

[a] AMEL: average monthly effluent limit

[b] MDEL: maximum daily effluent limit

[c] MEC: maximum effluent concentration (11/02 – 11/05)

The final effluent limits shown above are calculated using procedures described in Section 1.4 of the SIP. No dilution was applied and the receiving water was classified as estuarine (i.e., lowest of freshwater and saltwater criteria is used for effluent limit calculation). Hardness, where applicable, was assumed to be 260 mg/L. Other variables in the effluent limit calculation included coefficients of variation for the different pollutants.

Maximum observed effluent concentrations are based on recent plant effluent quality data (November 2002 – November 2005). As shown in the table above, the City will not be able to immediately comply with proposed effluent limits for copper, nickel, zinc, or cyanide. The infeasibility analyses for these constituents are discussed below.

## Source Control and Pollution Prevention Efforts

The City's source control program regulates 3 non-categorical significant industrial users, including a water-softener regeneration facility, beverage bottling plant, and food processor. The City has had an active pollution prevention program in place since early 2005, when zinc was identified as a pollutant of concern. In February 2005 the City implemented a source control program targeting zinc. By October 2005, most of the possible sources of zinc had been identified and further pollution prevention activities had begun. These activities are highlighted in Table 2. A Zinc Investigation Status Report was prepared and submitted to the RWB in February 2006.

**Table 2. City of American Canyon Pollution Prevention Program Activities**

Pollutant of Concern	Source Control Activities
Zinc	<ul style="list-style-type: none"><li>• Source identification, February 2005</li><li>• Cleaning of backwash process tanks to remove potential zinc buildup from within the treatment plant, April 2005</li><li>• Industrial source identification, June 2005</li><li>• Notices of violation sent to exceeding industries</li><li>• Identification and reduction of internal industrial zinc sources</li><li>• Industrial daily composite sampling, September and October 2005</li><li>• Portable composite sampling at major trunk lines, September and October 2005</li><li>• Source identification sampling from separate influents (domestic and industrial), October 2005</li></ul>

The City is also an active participant and supporter of several regional pollution prevention groups and programs, including:

- Bay Area Clean Water Agencies (BACWA)
- California Stormwater Quality Association
- Phase II NPDES Pollution Prevention Group
- CWEA Pollution Prevention Focus Group Meeting

The City also conducts general outreach on pollution prevention activities, including:

- Healthy People/Healthy Planet Environmental Fair
- City newsletter
- Brochures at City office
- Environmental Education Coalition of Napa County
- Elementary classroom presentations
- Plant tours for elementary schools
- 4<sup>th</sup> of July Pollution Prevention Outreach Booth

- Household Hazardous Waste collection

Additional information on pollution prevention activities targeting each of the four constituents requiring interim effluent limits is discussed below.

## Copper

The maximum observed effluent concentration for copper is 7.5 µg/L (measured in October 2003) which would exceed the proposed final AMEL of 3.2 µg/L and the proposed final MDEL of 5.5 µg/L. Fourteen samples taken between March 2003 and November 2004 have copper concentrations that would exceed the proposed final AMEL. Two of the 34 samples have copper concentrations that would exceed the proposed final MDEL. Effluent copper concentrations are shown in Figure 1. The statistical probabilities of compliance with the AMEL and MDEL are 58% and 92%, respectively. Therefore, the City will not be able to immediately comply with the proposed final limits for copper.

The City has not previously identified copper as a problem pollutant and therefore has not initiated source control actions targeting copper, with the exception of additional wastewater collection system monitoring in 2005 to discover the source of high influent concentrations. The data did not identify a single significant source. All 38 copper samples collected in the influent between November 2002 and November 2005 were detected, with values ranging from 1.6 µg/L to 160 µg/L, as shown in Figure 1, with an average of 60 µg/L. The effluent and influent concentrations follow the same general pattern, suggesting that effluent concentrations can be reduced by reducing the influent concentrations.

A full source identification study must be conducted to determine the most likely sources of copper to the treatment plant. The largest source of copper to treatment plants is typically from the corrosion of copper plumbing. Commercial and industrial sources of copper can include radiator repair shops, metal finishers, electroplaters, automotive machine shops or service stations, car washes, and printers. If industries are significant contributors, the City will work with its permitted industries to identify reduction opportunities. If commercial sources are significant contributors, appropriate source control programs such as inspections and incentive programs that reward clean business practices and encourage zero-discharge can be developed. If copper plumbing corrosion is a major source, the City will review corrosion control measures used by its water utility, and distribute plumbing BMPs to pipe fitters and building inspectors in the City's service area.

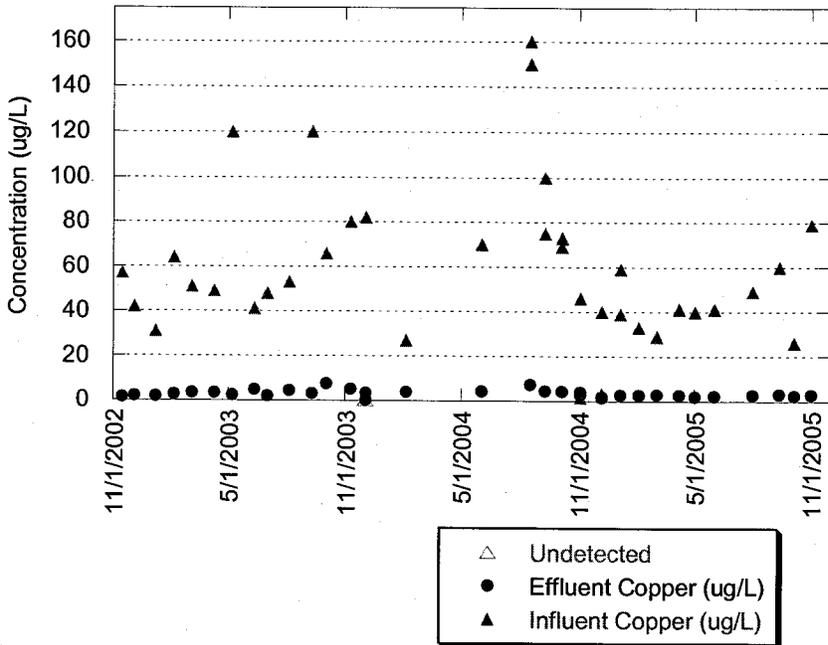


Figure 1. American Canyon Treatment Plant Influent and Effluent Copper Levels (µg/L)

## Nickel

The maximum observed effluent concentration for nickel is 15 µg/L (measured in June 2005) which would exceed a proposed final AMEL of 6.6 µg/L. In addition, the five samples collected in June and August 2005 all have zinc concentrations that would exceed the proposed final AMEL. Effluent nickel concentrations are shown in Figure 2. The statistical probabilities of compliance with the AMEL is 84%. Therefore, the City will not be able to immediately comply with the proposed final limits for nickel.

The City has not previously identified nickel as a problem pollutant and therefore has not initiated source control actions targeting nickel, with the exception of additional wastewater collection system monitoring in 2005 to discover the source of high influent concentrations. The data did not identify a single significant source. All 44 nickel samples collected in the influent between November 2002 and November 2005 were detected, with values ranging from 5.3 µg/L to 42 µg/L, as shown in Figure 2, and an average of 9.7 µg/L. The effluent and influent concentrations follow the same general pattern, suggesting that effluent concentrations can be reduced by reducing the influent concentrations.

A full source identification study must be conducted to determine the most likely sources of nickel to the treatment plant. Commercial and industrial sources of nickel can include radiator repair shops, metal finishers, electroplaters, automotive machine shops or service stations, car washes, and printers. A study performed by Petaluma found that food processors and bottlers (1 of each in American Canyon) may discharge nickel from their food processing machine cleaning operations. If industries are significant contributors, the City will work with its permitted industries to identify reduction opportunities. If commercial sources are significant contributors, appropriate source

control programs such as inspections and incentive programs that reward clean business practices and encourage zero-discharge can be developed.

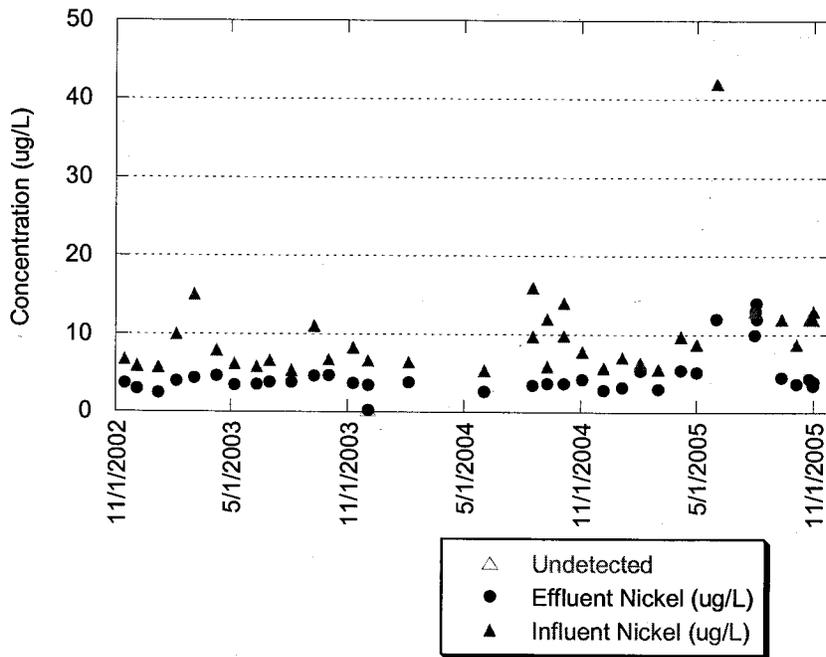


Figure 2. American Canyon Treatment Plant Influent and Effluent Nickel Levels (µg/L)

## Zinc

The maximum observed effluent concentration for zinc is 130 µg/L (measured in June 2005) which would exceed a proposed final AMEL of 57 µg/L and the proposed final MDEL of 95 µg/L. In addition, 24 of the 51 samples collected between November 2002 and November 2005 have zinc concentrations that would exceed the proposed final AMEL. Effluent zinc concentrations are shown in Figure 3. The statistical probabilities of compliance with the AMEL and MDEL are 60% and 87%, respectively. Therefore, the City will not be able to immediately comply with the proposed final limits for zinc.

The City has previously identified zinc as a pollutant of concern and has submitted an *Effluent Zn Concentration Exceedance Investigation Status Report*. All samples collected between November 2002 and November 2005 were detected in the effluent (51 samples) and the influent (44 samples), with average values of 56 µg/L (effluent) and 162 µg/L (influent).

Commercial and industrial sources of zinc can include machine shops, metal finishers, cooling towers, carpet cleaners, electroplaters, and automotive service stations. Zinc pollution prevention activities began in February 2005, as follows:

- A source identification study was conducted in February 2005 to determine the most likely sources of zinc to the treatment plant. This study did not identify a single significant source. Two of the regulated industries, the food processor and beverage bottler, were thought to be

contributors of zinc to the treatment plant, but they did not exceed their permitted limit of 3200 µg/L.

- In case the source was internal accumulation, the four backwash process tanks were super-chlorinated and rinsed in the month of April 2005. This action did not reduce the measured effluent zinc concentrations in May 2005.
- In June 2005, another industrial source identification study was conducted, and two regulated industries, the food processor and beverage bottler, had exceeded their permitted limit for zinc. Notices of Violation were immediately issued to the violating industries, and the City successfully helped them identify sources and reduce their zinc discharge concentrations by 84 percent.
- During September and October 2005, the City required industrial users to collect daily composite samples, and portable composite sampling was conducted at major trunk lines.
- By October 2005, the Domestic and Industrial influent were separated to accommodate recycled water re-use. The City was able to take samples from the two separate influents and identify that, while the industrial influent concentrations were higher than the domestic concentrations, the domestic flow contributes about 58 percent of the zinc influent load, while industrial discharge contributes about 29 percent of the zinc loading to the plant.

In conclusion, the discharge from industrial sources has consistently improved since June 2005, but plant effluent zinc concentrations remain mainly above the proposed final limits. As industrial concentrations have already been decreased by 84% and only contribute 29% of the total influent zinc loading to the plant, it is unlikely that further significant decreases can be achieved by industrial sources.

The City intends to continue zinc source control activities, including ongoing aeration basin cleaning, exploring the feasibility of alternative treatments for metal reduction, launching a long-term daily sampling event (one to two months) for source identification in early 2006, and a local limits study. The source identification study will examine the mass loads of zinc discharged from significant sources, not only the concentrations.

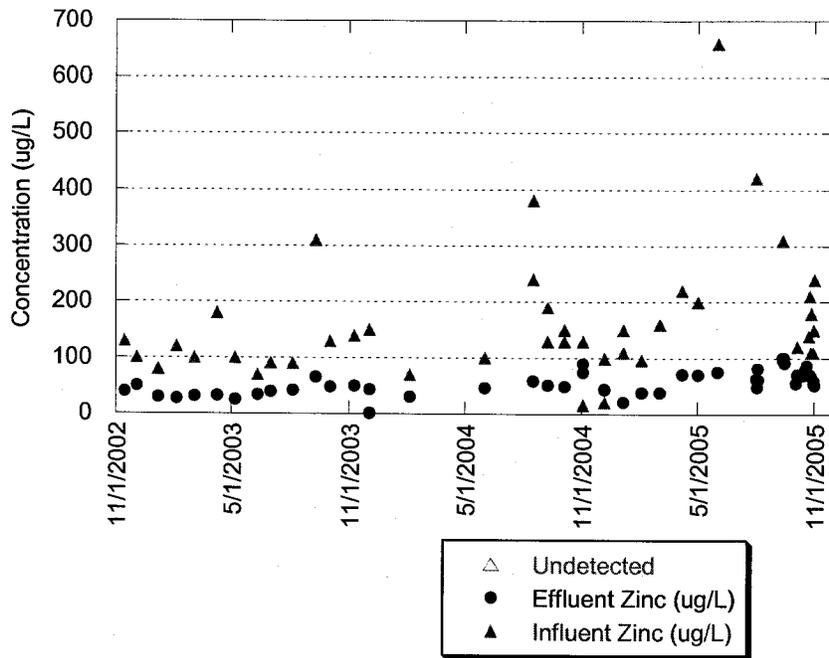


Figure 3. American Canyon Treatment Plant Influent and Effluent Zinc Levels (µg/L)

## Cyanide

The maximum observed effluent concentration for cyanide is 8.0 µg/L (measured in October 2004) which would exceed the proposed final AMEL of 0.50 µg/L and the proposed final MDEL of 1.0 µg/L. In addition, the proposed AMEL is less than the method detection limits (MDLs) of 0.8 and 0.9 µg/L. All of the detected or estimated data are greater than the proposed final MDEL. Effluent cyanide concentrations are shown in Figure 4. The statistical probabilities of compliance with the AMEL and MDEL are 6.6% and 29%, respectively. Therefore, the City will not be able to consistently comply with the proposed final limits for cyanide.

As the Regional Water Board has noted previously, “Cyanide is a regional problem associated with the analytical protocol for cyanide analysis due to matrix interferences. A body of evidence exists to show that cyanide measurements in effluent may be an artifact of the analytical method. This question is being explored in a national research study sponsored by the Water Environment Research Foundation (WERF),” (recent POTW permits).

The City supports current efforts to develop a site-specific objective for cyanide in the Bay, given that cyanide does not persist in the environment and that the current water quality objective was based on testing with East Coast species. A cyanide site specific objective for Puget Sound, Washington, using West Coast species has been approved by EPA Region X. The City is participating in a regional permittee-funded effort to conduct a study for the development of a site-specific objective through its BACWA affiliation. The cyanide study plan was submitted on October 29, 2001. A final report was submitted to the Board on June 29, 2003. The Basin Plan Amendment is currently being developed.

Typically, cyanide is not present in wastewater influent but is generated in the treatment plant disinfection process when chlorination is used. The WERF study also indicated that effluent cyanide levels are due to chlorination. The City's effluent data were detected more frequently than the influent data, at 68% detection in the effluent, and 23% detection in the influent. Influent cyanide data is shown in Figure 4. As the City's treatment plant mainly uses ultraviolet disinfection, not chlorine disinfection, the treatment process should not cause an increase in cyanide levels.

The City has not previously identified cyanide as a pollutant of concern and, therefore, has not conducted pollution prevention activities that directly target this constituent. The City will continue to perform influent and effluent monitoring to determine if there are potential influent cyanide sources. High effluent cyanide levels, when they have occurred, may be due to analytical interferences. If cyanide is detected consistently in the City's influent, the City will conduct cyanide source identification.

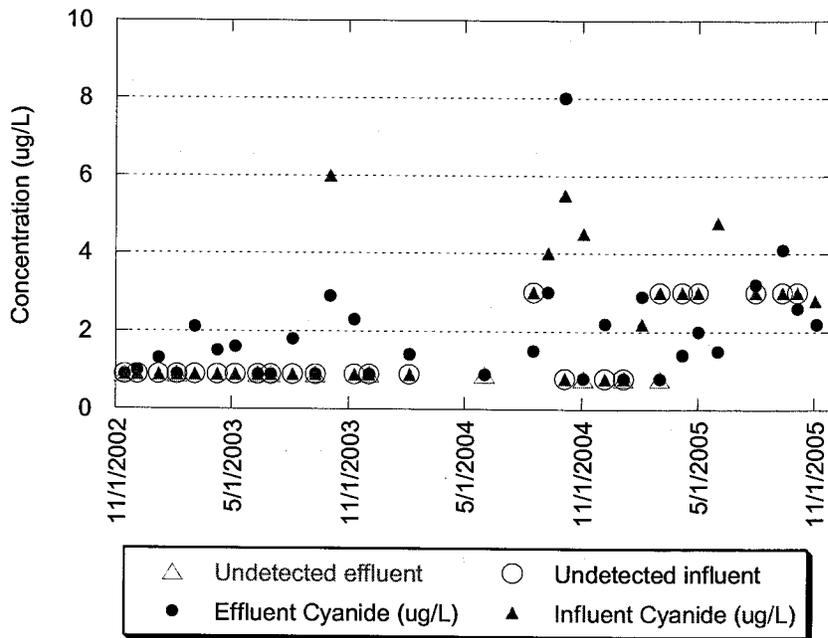


Figure 4. American Canyon Treatment Plant Influent and Effluent Cyanide Levels (ug/L)

### Summary

This evaluation indicates that immediate compliance with projected final effluent limits for copper, nickel, zinc, and cyanide is not feasible for the City. In accordance with the requirements of the SIP, the City requests that the RWB refrain from the adoption of final effluent limits for these constituents. In lieu of final limits, the NPDES permit should include interim performance based limits with which the City can comply.

In the course of the new permit the city will implement the following source control actions to identify and reduce the source of metals with interim limits as follow;

- Develop a new source control and pollution prevention plan using the P2 Guidance and Tools document dated April 2005.
- Join the Bay Area Pollution Prevention Group (BAPPG). The city will develop similar outreach materials developed by BAPPG, to reduce copper, nickel and zinc sources.
- Compile a list of present industrial users. Review the list and identify possible sources for metals of interest.
- Develop a sampling plan to target all possible sources such as industrial and domestic influent, the city's raw water sources, potable water, permitted and non permitted industries that are identified as possible contributors from the survey list.
- Based on the sampling results from each category, the city will take specific actions such as inspections, BMPs, follow up sampling, alternative chemical usage in the water treatment plant, usage of alternative plumbing material, educating, and enforcements to reduce the sources.
- Table 3 summarizes the tentative schedule for the actions mentioned above.

**Table 3. Source Control Action Schedule**

<b>Constituent</b>	<b>Proposed Measures</b>	<b>Estimated Time to Complete</b>
Copper/ Nickel/ Zinc	<ol style="list-style-type: none"> <li>1. Perform source identification</li> <li>2. Implement control strategies identified in the Source Control and Pollution Prevention Plan</li> <li>3. Conduct Local Limit Study</li> </ol>	<ol style="list-style-type: none"> <li>1. 15 months after permit adoption</li> <li>2. 1 year after completion of source identification</li> <li>3. 1 year after completion of source identification</li> </ol>
Cyanide	<ol style="list-style-type: none"> <li>1. Monitor influent and effluent</li> <li>2. Anticipate Site-Specific Objective for San Francisco Bay</li> </ol>	<ol style="list-style-type: none"> <li>1. Ongoing</li> <li>2. Ongoing</li> </ol>

## **ATTACHMENT G – OTHER REGIONAL WATER BOARD ATTACHMENTS**

The following documents are part of this Order but are not physically attached due to volume. They are available on the Internet at:

<http://www.waterboards.ca.gov/sanfranciscobay/Download.htm>.

- Self-Monitoring Program, Part A (August 1993)
- Standard Provisions and Reporting Requirements, August 1993
- Regional Water Board Resolution No. 74-10
- August 6, 2001 Regional Water Board staff letter, “Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy”

## ATTACHMENT H - PRETREATMENT REQUIREMENTS

### Pretreatment Program Provisions

1. The Discharger shall implement all pretreatment requirements contained in 40 CFR §403, as amended. The Discharger shall be subject to enforcement actions, penalties, and fines as provided in the Clean Water Act (33 USC 1351 *et seq.*), as amended. The Discharger shall implement and enforce its Approved Pretreatment Program or modified Pretreatment Program as directed by the Regional Water Board's Executive Officer or the EPA. The EPA and/or the State may initiate enforcement action against an industrial user for noncompliance with applicable standards and requirements as provided in the Clean Water Act.
2. The Discharger shall enforce the requirements promulgated under Sections 307(b), 307(c), 307(d) and 402(b) of the Clean Water Act. The Discharger shall cause industrial users subject to Federal Categorical Standards to achieve compliance no later than the date specified in those requirements or, in the case of a new industrial user, upon commencement of the discharge.
3. The Discharger shall perform the pretreatment functions as required in 40 CFR §403 and amendments or modifications thereto including, but not limited to:
  - i) Implement the necessary legal authorities to fully implement the pretreatment regulations as provided in 40 CFR §403.8(f)(1);
  - ii) Implement the programmatic functions as provided in 40 CFR §403.8(f)(2);
  - iii) Publish an annual list of industrial users in significant noncompliance as provided per 40 CFR §403.8(f)(2)(vii);
  - iv) Provide for the requisite funding and personnel to implement the pretreatment program as provided in 40 CFR §403.8(f)(3); and
  - v) Enforce the national pretreatment standards for prohibited discharges and categorical standards as provided in 40 CFR §§403.5 and 403.6, respectively.
4. The Discharger shall submit annually a report to the EPA Region 9, the State Water Board and the Regional Water Board describing its pretreatment program activities over the previous twelve months. In the event that the Discharger is not in compliance with any conditions or requirements of the Pretreatment Program, the Discharger shall also include the reasons for noncompliance and a plan and schedule for achieving compliance. The report shall contain, but is not limited to, the information specified in Appendix A entitled, "Requirements for Pretreatment Annual Reports," which is made a part of this Order. The annual report is due on the last day of February each year.
5. The Discharger shall submit semiannual pretreatment reports to the EPA Region 9, the State Water Board and the Regional Water Board describing the status of its significant industrial users (SIUs). The report shall contain, but is not limited to, the information specified in Appendix B entitled, "Requirements for Semiannual Pretreatment Reports," which is made

part of this Order. The semiannual reports are due July 31<sup>st</sup> (for the period January through June) and January 31<sup>st</sup> (for the period July through December) of each year. The Executive Officer may exempt a Discharger from the semiannual reporting requirements on a case by case basis subject to State Water Board and EPA's comment and approval.

6. The Discharger may combine the annual pretreatment report with the semiannual pretreatment report (for the July through December reporting period). The combined report shall contain all of the information requested in Appendices A and B and will be due on January 31<sup>st</sup> of each year.
7. The Discharger shall conduct the monitoring of its treatment plant's influent, effluent, and sludge as described in Appendix C entitled, "Requirements for Influent, Effluent and Sludge Monitoring," which is made part of this Order. The results of the sampling and analysis, along with a discussion of any trends, shall be submitted in the semiannual reports. A tabulation of the data shall be included in the annual pretreatment report. The Executive Officer may require more or less frequent monitoring on a case by case basis.

## APPENDIX A

### REQUIREMENTS FOR PRETREATMENT ANNUAL REPORTS

The Pretreatment Annual Report is due each year on the last day of February. [If the annual report is combined with the semiannual report (for the July through December period) the submittal deadline is January 31<sup>st</sup> of each year.] The purpose of the Annual Report is 1) to describe the status of the Publicly Owned Treatment Works (POTW) pretreatment program and 2) to report on the effectiveness of the program, as determined by comparing the results of the preceding year's program implementation. The report shall contain at a minimum, but is not limited to, the following information:

#### 1) **Cover Sheet**

The cover sheet must contain the name(s) and National Pollutant Discharge Elimination Discharge System (NPDES) permit number(s) of those POTWs that are part of the Pretreatment Program. Additionally, the cover sheet must include the name, address and telephone number of a pretreatment contact person; the period covered in the report; a statement of truthfulness; and the dated signature of a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for overall operation of the POTW (40 CFR §403.12(j)).

#### 2) **Introduction**

The Introduction shall include any pertinent background information related to the Discharger, the POTW and/or the industrial user base of the area. Also, this section shall include an update on the status of any Pretreatment Compliance Inspection (PCI) tasks, Pretreatment Performance Evaluation tasks, Pretreatment Compliance Audit (PCA) tasks, Cleanup and Abatement Order (CAO) tasks, or other pretreatment-related enforcement actions required by the Regional Water Board or the EPA. A more specific discussion shall be included in the section entitled, "Program Changes."

#### 3) **Definitions**

This section shall contain a list of key terms and their definitions that the Discharger uses to describe or characterize elements of its pretreatment program.

#### 4) **Discussion of Upset, Interference and Pass Through**

This section shall include a discussion of Upset, Interference or Pass Through incidents, if any, at the POTW(s) that the Discharger knows of or suspects were caused by industrial discharges. Each incident shall be described, at a minimum, consisting of the following information:

- a) a description of what occurred;
- b) a description of what was done to identify the source;

- c) the name and address of the industrial user (IU) responsible
- d) the reason(s) why the incident occurred;
- e) a description of the corrective actions taken; and
- f) an examination of the local and federal discharge limits and requirements for the purposes of determining whether any additional limits or changes to existing requirements may be necessary to prevent other Upset, Interference or Pass Through incidents.

**5) Influent, Effluent and Sludge Monitoring Results**

This section shall provide a summary of the analytical results from the "Influent, Effluent and Sludge Monitoring" as specified in Appendix C. The results should be reported in a summary matrix that lists monthly influent and effluent metal results for the reporting year.

A graphical representation of the influent and effluent metal monitoring data for the past five years shall also be provided with a discussion of any trends.

**6) Inspection and Sampling Program**

This section shall contain at a minimum, but is not limited to, the following information:

- a) Inspections: the number of inspections performed for each type of IU; the criteria for determining the frequency of inspections; the inspection format procedures;
- b) Sampling Events: the number of sampling events performed for each type of IU; the criteria for determining the frequency of sampling; the chain of custody procedures.

**7) Enforcement Procedures**

This section shall provide information as to when the approved Enforcement Response Plan (ERP) had been formally adopted or last revised. In addition, the date the finalized ERP was submitted to the Regional Water Board shall also be given.

**8) Federal Categories**

This section shall contain a list of all of the federal categories that apply to the Discharger. The specific category shall be listed including the subpart and 40 CFR section that applies. The maximum and average limits for the each category shall be provided. This list shall indicate the number of Categorical Industrial Users (CIUs) per category and the CIUs that are being regulated pursuant to the category. The information and data used to determine the limits for those CIUs for which a combined waste stream formula is applied shall also be provided.

9) **Local Standards**

This section shall include a table presenting the local limits.

10) **Updated List of Regulated SIUs**

This section shall contain a complete and updated list of the Discharger's Significant Industrial Users (SIUs), including their names, addresses, and a brief description of the individual SIU's type of business. The list shall include all deletions and additions keyed to the list as submitted in the previous annual report. All deletions shall be briefly explained.

11) **Compliance Activities**

- a) **Inspection and Sampling Summary:** This section shall contain a summary of all the inspections and sampling activities conducted by the Discharger over the past year to gather information and data regarding the SIUs. The summary shall include:
- (1) the number of inspections and sampling events conducted for each SIU;
  - (2) the quarters in which these activities were conducted; and
  - (3) the compliance status of each SIU, delineated by quarter, and characterized using all applicable descriptions as given below:
    - (a) in consistent compliance;
    - (b) in inconsistent compliance;
    - (c) in significant noncompliance;
    - (d) on a compliance schedule to achieve compliance, (include the date final compliance is required);
    - (e) not in compliance and not on a compliance schedule;
    - (f) compliance status unknown, and why not.
- b) **Enforcement Summary:** This section shall contain a summary of the compliance and enforcement activities during the past year. The summary shall include the names of all the SIUs affected by the following actions:
- (1) Warning letters or notices of violations regarding SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

- (2) Administrative Orders regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.
- (3) Civil actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.
- (4) Criminal actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.
- (5) Assessment of monetary penalties. Identify the amount of penalty in each case and reason for assessing the penalty.
- (6) Order to restrict/suspend discharge to the POTW.
- (7) Order to disconnect the discharge from entering the POTW.

## 12) **Baseline Monitoring Report Update**

This section shall provide a list of CIUs that have been added to the pretreatment program since the last annual report. This list of new CIUs shall summarize the status of the respective Baseline Monitoring Reports (BMR). The BMR must contain all of the information specified in 40 CFR §403.12(b). For each of the new CIUs, the summary shall indicate when the BMR was due; when the CIU was notified by the POTW of this requirement; when the CIU submitted the report; and/or when the report is due.

## 13) **Pretreatment Program Changes**

This section shall contain a description of any significant changes in the Pretreatment Program during the past year including, but not limited to, legal authority, local limits, monitoring/ inspection program and frequency, enforcement protocol, program's administrative structure, staffing level, resource requirements and funding mechanism. If the manager of the pretreatment program changes, a revised organizational chart shall be included. If any element(s) of the program is in the process of being modified, this intention shall also be indicated.

**14) Pretreatment Program Budget**

This section shall present the budget spent on the Pretreatment Program. The budget, either by the calendar or fiscal year, shall show the amounts spent on personnel, equipment, chemical analyses and any other appropriate categories. A brief discussion of the source(s) of funding shall be provided.

**15) Public Participation Summary**

This section shall include a copy of the public notice as required in 40 CFR §403.8(f)(2)(vii). If a notice was not published, the reason shall be stated.

**16) Sludge Storage and Disposal Practice**

This section shall have a description of how the treated sludge is stored and ultimately disposed. The sludge storage area, if one is used, shall be described in detail. Its location, a description of the containment features and the sludge handling procedures shall be included.

**17) PCS Data Entry Form**

The annual report shall include the PCS Data Entry Form. This form shall summarize the enforcement actions taken against SIUs in the past year. This form shall include the following information: the POTW name, NPDES Permit number, period covered by the report, the number of SIUs in significant noncompliance (SNC) that are on a pretreatment compliance schedule, the number of notices of violation and administrative orders issued against SIUs, the number of civil and criminal judicial actions against SIUs, the number of SIUs that have been published as a result of being in SNC, and the number of SIUs from which penalties have been collected.

**18) Other Subjects**

Other information related to the Pretreatment Program that does not fit into one of the above categories should be included in this section.

Signed copies of the reports shall be submitted to the Regional Administrator at U.S. EPA, the State Water Board and the Regional Water Board at the following addresses:

Regional Administrator  
United States Environmental Protection Agency  
Region 9, Mail Code: WTR-7  
Clean Water Act Compliance Office  
Water Division  
75 Hawthorne Street  
San Francisco, CA 94105

Pretreatment Program Manager

City of American Canyon  
Wastewater Treatment Facility  
Order No. R2-2006-0036  
NPDES No. CA0038768

Regulatory Unit  
State Water Resources Control Board  
Division of Water Quality  
1001 I Street  
Sacramento, CA 95814

Pretreatment Coordinator  
NPDES Permits Division  
SF Bay Regional Water Quality Control Board  
1515 Clay Street, Suite 1400  
Oakland, CA 94612

**APPENDIX B:  
REQUIREMENTS FOR SEMIANNUAL PRETREATMENT REPORTS**

The semiannual pretreatment reports are due on July 31<sup>st</sup> (for pretreatment program activities conducted from January through June) and January 31<sup>st</sup> (for pretreatment activities conducted from July through December) of each year, unless an exception has been granted by the Regional Water Board's Executive Officer. The semiannual reports shall contain, at a minimum, but is not limited to, the following information:

**1) Influent, Effluent and Sludge Monitoring**

The influent, effluent and sludge monitoring results shall be included in the report. The analytical laboratory report shall also be included, with the QA/QC data validation provided upon request. A description of the sampling procedures and a discussion of the results shall be given. (Please see Appendix C for specific detailed requirements.) The contributing source(s) of the parameters that exceed NPDES limits shall be investigated and discussed. In addition, a brief discussion of the contributing source(s) of all organic compounds identified shall be provided.

The Discharger has the option to submit all monitoring results via an electronic reporting format approved by the Executive Officer. The procedures for submitting the data will be similar to the electronic submittal of the NPDES self-monitoring reports as outlined in the December 17, 1999 Regional Water Board letter, Official Implementation of Electronic Reporting System (ERS). The Discharger shall contact the Regional Water Board's ERS Project Manager for specific details in submitting the monitoring data.

If the monitoring results are submitted electronically, the analytical laboratory reports (along with the QA/QC data validation) should be kept at the discharger's facility.

**2) Industrial User Compliance Status**

This section shall contain a list of all Significant Industrial Users (SIUs) that were not in consistent compliance with all pretreatment standards/limits or requirements for the reporting period. The compliance status for the previous reporting period shall also be included. Once the SIU has determined to be out of compliance, the SIU shall be included in the report until consistent compliance has been achieved. A brief description detailing the actions that the SIU undertook to come back into compliance shall be provided.

For each SIU on the list, the following information shall be provided:

- a. Indicate if the SIU is subject to Federal categorical standards; if so, specify the category including the subpart that applies.
- b. For SIUs subject to Federal Categorical Standards, indicate if the violation is of a categorical or local standard.

- c. Indicate the compliance status of the SIU for the two quarters of the reporting period.
- d. For violations/noncompliance occurring in the reporting period, provide (1) the date(s) of violation(s); (2) the parameters and corresponding concentrations exceeding the limits and the discharge limits for these parameters and (3) a brief summary of the noncompliant event(s) and the steps that are being taken to achieve compliance.

3) **POTW's Compliance with Pretreatment Program Requirements**

This section shall contain a discussion of the Discharger's compliance status with the Pretreatment Program Requirements as indicated in the latest Pretreatment Compliance Audit (PCA) Report, Pretreatment Compliance Inspection (PCI) Report or Pretreatment Performance Evaluation (PPE) Report. It shall contain a summary of the following information:

- a. Date of latest PCA, PCI or PPE and report.
- b. Date of the Discharger's response.
- c. List of unresolved issues.
- d. Plan and schedule for resolving the remaining issues.

The reports shall be signed by a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for the overall operation of the Publicly Owned Treatment Works (POTW) (40 CFR §403.12(j)). Signed copies of the reports shall be submitted to the Regional Administrator at U.S. EPA, the State Water Resources Control Board and the Regional Water Board at the following addresses:

Regional Administrator  
United States Environmental Protection Agency  
Region 9, Mail Code: WTR-7  
Clean Water Act Compliance Office  
Water Division  
75 Hawthorne Street  
San Francisco, CA 94105

Pretreatment Program Manager  
Regulatory Unit  
State Water Resources Control Board  
Division of Water Quality  
1001 I Street  
Sacramento, CA 95814

Pretreatment Coordinator

City of American Canyon  
Wastewater Treatment Facility  
Order No. R2-2006-0036  
NPDES No. CA0038768

NPDES Permits Division  
SF Bay Regional Water Quality Control Board  
1515 Clay Street, Suite 1400  
Oakland, CA 94612

## APPENDIX C

### REQUIREMENTS FOR INFLUENT, EFFLUENT AND SLUDGE MONITORING

The Discharger shall conduct sampling of its treatment plant's influent, effluent and sludge at the frequency as shown in Table 2 on Page 5 of the Self-Monitoring Program (SMP).

The monitoring and reporting requirements of the POTW's Pretreatment Program are in addition to those specified in Table 1 of the SMP. Any subsequent modifications of the requirements specified in Table 1 shall be adhered to and shall not affect the requirements described in this Appendix unless written notice from the Regional Water Board is received. When sampling periods coincide, one set of test results, reported separately, may be used for those parameters that are required to be monitored by both Table 1 and the Pretreatment Program. The Pretreatment Program monitoring reports shall be sent to the Pretreatment Program Coordinator.

#### 1. Influent and Effluent Monitoring

The Discharger shall monitor for the parameters using the required test methods listed in Table 3 on page 5 of the SMP. Any test method substitutions must have received prior written Regional Water Board approval. Influent and effluent sampling locations shall be the same as those sites specified in the Self-Monitoring Program.

The influent and effluent sampled should be taken during the same 24-hour period. All samples must be representative of daily operations. A grab sample shall be used for volatile organic compounds, cyanide and phenol. In addition, any samples for oil and grease, polychlorinated biphenyls, dioxins/furans, and polynuclear aromatic hydrocarbons shall be grab samples. For all other pollutants, 24-hour composite samples must be obtained through flow-proportioned composite sampling. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR §136 and amendments thereto. For effluent monitoring, the reporting limits for the individual parameters shall be at or below the minimum levels (MLs) as stated in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (2000) [also known as the State Implementation Policy (SIP)]; any revisions to the MLs shall be adhered to. If a parameter does not have a stated minimum level, then the Discharger shall conduct the analysis using the lowest commercially available and reasonably achievable detection levels.

The following standardized report format should be used for submittal of the influent and effluent monitoring report. A similar structured format may be used but will be subject to Regional Water Board approval. The monitoring reports shall be submitted with the Semiannual Reports.

- A. Sampling Procedures – This section shall include a brief discussion of the sample locations, collection times, how the sample was collected (i.e., direct collection using vials or bottles, or other types of collection using devices such as automatic samplers, buckets, or beakers), types of containers used, storage procedures and holding times.

Include description of prechlorination and chlorination/dechlorination practices during the sampling periods.

- B. Method of Sampling Dechlorination – A brief description of the sample dechlorination method prior to analysis shall be provided.
- C. Sample Compositing – The manner in which samples are composited shall be described. If the compositing procedure is different from the test method specifications, a reason for the variation shall be provided.
- D. Data Validation – All quality assurance/quality control (QA/QC) methods to be used shall be discussed and summarized. These methods include, but are not limited to, spike samples, split samples, blanks and standards. Ways in which the QA/QC data will be used to qualify the analytical test results shall be identified. A certification statement shall be submitted with this discussion stating that the laboratory QA/QC validation data has been reviewed and has met the laboratory acceptance criteria. The QA/QC validation data shall be submitted to the Regional Water Board upon request.
- E. A tabulation of the test results shall be provided.
- F. Discussion of Results – The report shall include a complete discussion of the test results. If any pollutants are detected in sufficient concentration to upset, interfere or pass through plant operations, the type of pollutant(s) and potential source(s) shall be noted, along with a plan of action to control, eliminate, and/or monitor the pollutant(s). Any apparent generation and/or destruction of pollutants attributable to chlorination/dechlorination sampling and analysis practices shall be noted.

## 2. Sludge Monitoring

Sludge should be sampled in the same 24-hour period during which the influent and effluent are sampled except as noted in (C) below. The same parameters required for influent and effluent analysis shall be included in the sludge analysis. The sludge analyzed shall be a composite sample of the sludge for final disposal consisting of:

- A. Sludge lagoons – 20 grab samples collected at representative equidistant intervals (grid pattern) and composited as a single grab, or
- B. Dried stockpile – 20 grab samples collected at various representative locations and depths and composited as a single grab, or
- C. Dewatered sludge- daily composite of 4 representative grab samples each day for 5 days taken at equal intervals during the daily operating shift taken from a) the dewatering units or b) from each truckload, and shall be combined into a single 5-day composite.

The U.S. EPA manual, POTW Sludge Sampling and Analysis Guidance Document, August 1989, containing detailed sampling protocols specific to sludge is recommended as a guidance for

sampling procedures. The U.S. EPA manual Analytical Methods of the National Sewage Sludge Survey, September 1990, containing detailed analytical protocols specific to sludge, is recommended as a guidance for analytical methods.

In determining if the sludge is a hazardous waste, the Dischargers shall adhere to Article 2, "Criteria for Identifying the Characteristics of Hazardous Waste," and Article 3, "Characteristics of Hazardous Waste," of Title 22, California Code of Regulations, Sections 66261.10 to 66261.24 and all amendments thereto.

Sludge monitoring reports shall be submitted with the appropriate Semiannual Report. The following standardized report format should be used for submittal of the report. A similarly structured form may be used but will be subject to Regional Water Board approval.

- A. Sampling procedures – Include sample locations, collection procedures, types of containers used, storage/refrigeration methods, compositing techniques and holding times. Enclose a map of sample locations if sludge lagoons or stockpiled sludge is sampled.
- B. Data Validation – All quality assurance/quality control (QA/QC) methods to be used shall be discussed and summarized. These methods include, but are not limited to, spike samples, split samples, blanks and standards. Ways in which the QA/QC data will be used to qualify the analytical test results shall be identified. A certification statement shall be submitted with this discussion stating that the laboratory QA/QC validation data has been reviewed and has met the laboratory acceptance criteria. The QA/QC validation data shall be submitted to the Regional Water Board upon request.
- C. Test Results – Tabulate the test results and include the percent solids.
- D. Discussion of Results – The report shall include a complete discussion of test results. If the detected pollutant(s) is reasonably deemed to have an adverse effect on sludge disposal, a plan of action to control, eliminate, and/or monitor the pollutant(s) and the known or potential source(s) shall be included. Any apparent generation and/or destruction of pollutants attributable to chlorination/ dechlorination sampling and analysis practices shall be noted.

The Discharger shall also provide any influent, effluent or sludge monitoring data for non-priority pollutants that the permittee believes may be causing or contributing to Interference, Pass Through or adversely impacting sludge quality.