UNCONTESTED

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

STAFF SUMMARY REPORT (Heather Ottaway)
MEETING DATE: July 14, 2010

ITEM: 5C

SUBJECT: Union Sanitary District, Raymond A. Boege Alvarado Wastewater Treatment Plant, Wet Weather Discharge Outfall, Union City, Alameda County - Reissuance of NPDES Permit

CHRONOLOGY: January 2004—NPDES Permit Reissued

DISCUSSION: This Revised Tentative Order (Appendix A) would reissue the NPDES permit for the District's Wet Weather Discharge Outfall. The District is a member of the East Bay Dischargers Authority (EBDA) and is allowed to discharge up to 42.9 million gallons a day of secondarily-treated wastewater from its wastewater treatment plant to the EBDA transport pipeline. This permit would continue to allow the District to discharge up to 8.4 million gallons of treated wastewater from its plant to Old Alameda Creek during significant wet weather events when its flows exceed its EBDA allowance.

We received one comment letter (Appendix B) from the District, and as explained in our response to its comments (Appendix C), we subsequently revised the tentative order where appropriate. Specifically, we revised the effluent limitation for bacteria based on additional information the District provided. We also revised the effluent limits for copper and cyanide after further considering the short duration of the discharge. We expect this item to remain uncontested.

RECOMMEN-
DATION: Adopt the Revised Tentative Order

APPENDICES: A. Revised Tentative Order
B. Comment Letters
C. Response to Comments

Appendix A
Revised Tentative Order

Linda S. Adams
Secretary for
Environmental Protection

California Regional Water Quality Control Board

San Francisco Bay Region

1515 Clay Street, Suite 1400, Oakland CA 94612
(510) 622-2300 • Fax (510) 622-2460
http://www.waterboards.ca.gov/sanfranciscobay

Arnold Schwarzenegger
Governor

REVISED TENTATIVE ORDER
NPDES NO. CA0038733

The following Discharger is subject to waste discharge requirements set forth in this Order.

Table 1. Discharger Information

Discharger	Union Sanitary District
Name of Facility	Raymond A. Boege Alvarado Wastewater Treatment Plant
Facility Address	5072 Benson Road Union City, CA 94587 Alameda County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a minor discharge.	

The discharge by the Union Sanitary District from Raymond A. Boege Alvarado Wastewater Treatment Plant from the discharge point identified below is subject to waste discharge requirements as set forth in this Order.

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
E-Wet Weather (WW)	Secondary Treated Municipal Wastewater	37°35'37.10"N	122°5'31.45"W	Old Alameda Creek

Table 3. Administrative Information

This Order was adopted by the Regional Water Board on:	_____
This Order shall become effective on:	**September 1, 2010**
This Order shall expire on:	**August 31, 2015**
CIWQS Regulatory Measure Number	_____
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	**180 days prior to the Order expiration date**

I, Bruce H. Wolfe, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on _____.

_____
Bruce H. Wolfe**,** Executive Officer

Table of Contents

I. Facility Information 3
II. Findings 3
III. Discharge Prohibitions 9
IV. Effluent Limitations and Discharge Specifications 9
V. Receiving Water Limitations 11
VI. Provisions 12
A. Standard Provisions 12
B. Monitoring and Reporting Program (MRP) Requirements 12
C. Special Provisions 12
1. Reopener Provisions 12
2. Best Management Practices and Pollution Minimization 13
VII. Compliance Determination 15

Tables

Table 1. Discharger Information 1
Table 2. Discharge Location 1
Table 3. Administrative Information 1
Table 4. Facility Information 3
Table 5. Beneficial Uses of Lower San Francisco Bay and Old Alameda Creek 6
Table 6. Effluent Limitations for Conventional and Non-Conventional Pollutants 10
Table 7. Effluent Limitations for Toxic Pollutants 10

Attachments

Attachment A – Definitions
Attachment B – Maps showing location of the Facility
Attachment C – Treatment Plant Process Flow Diagram
Attachment D – Federal Standard Provisions
Attachment E – Monitoring and Reporting Program (MRP)
Attachment F – Fact Sheet
Attachment G – Regional Standard Provisions, and Monitoring and Reporting Requirements

I. FACILITY INFORMATION

Union Sanitary District (hereinafter "Discharger") is subject to the waste discharge requirements set forth in this Order.

Table 4. Facility Information

Discharger	Union Sanitary District
Name of Facility	Old Alameda Creek Intermittent Wet Weather Discharge
Facility Address	5072 Benson Road
	Union City, CA 94587
	Alameda County
Facility Contact, Title, and Phone	David Livingston, Manager/Treatment & Disposal Services (510) 477-7560
Discharger Mailing Address	5072 Benson Road, Union City, CA 94587
CIWQS Party Number	47792
CIWQS Place Number	269042
Facility Operator	Union Sanitary District, 5072 Benson Road, Union City, CA 94587
Operator Contact	David Livingston (510) 477-7560
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Design Flow	33 million gallons per day (MGD) under dry weather conditions with secondary treatment
Facility Permitted Flow	8.4 million gallons per discharge event
Service Areas	Fremont, Newark, Union City
Service Population	333,648

II. FINDINGS

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

A. Background. The Discharger has been discharging under Order No. R2-2004-0002 (previous permit) and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0038733. On August 27, 2008, the Discharger submitted an application for reissuance of its NPDES permit to discharge secondarily treated wastewater from the Raymond A. Boege Alvarado Wastewater Treatment Plant to waters of the State and the United States. The Discharger's discharge is also currently covered under Order No. R2-2007-0077 (NPDES Permit CA0038849) that superseded all requirements on mercury from wastewater discharges in the region. The mercury permit is unaffected by this Order.

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and State laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

B. Facility and Discharge Description

1. Facility Description

The Discharger owns and operates a municipal wastewater treatment plant, the Raymond A. Boege Alvarado Wastewater Treatment Plant (Plant), which serves Newark, Union City, and the Fremont area. The Plant provides secondary treatment of domestic, and, to a lesser extent, industrial and commercial wastewaters. Treatment consists of screening, primary sedimentation, activated sludge, secondary clarification, and chlorination. The Discharger's service area is divided into the Alvarado Basin, Newark Basin, and Irvington Basin. The Discharger also owns and maintains the sewer collection system, which consists of three pump stations, one for each of the three drainage basins, and approximately 780 miles of sewer lines. Wastewater in each basin flows by gravity to its pump station, and is then pumped to the Plant.

The Discharger is a member of the East Bay Dischargers Authority (EBDA). EBDA operates under a Joint Exercise of Powers Agreement (JPA) among the City of Hayward, City of San Leandro, Union Sanitary District, Oro Loma Sanitary District, Castro Valley Sanitary District, and the Livermore-Amador Valley Water Management Agency. By contractual agreement, EBDA transports treated wastewater from its member agencies to its dechlorination station near the San Leandro Marina and then to its deep water outfall for discharge to lower San Francisco Bay. The discharge through the deep water outfall is regulated under a separate NPDES permit (CA0037869). Under current contractual agreement, the Discharger can discharge a maximum of 42.9 million gallons per day (MGD) to the EBDA transport pipeline during peak wet weather flow.

In addition to the Plant, the Discharger, together with the East Bay Regional Park District, owns and maintains a 145-acre constructed wastewater marsh system (Hayward Marsh). Hayward Marsh can hydraulically accept up to 20 MGD of treated wastewater from the Plant. Hayward Marsh typically receives approximately 3 to 5 MGD under normal operational conditions, and that discharge is regulated under a separate permit (CA0038636).

2. Discharge Description

The Plant has two outfalls. One is a wet weather outfall (E-WW), which discharges treated effluent to Old Alameda Creek and is subject to this permit. The other outfall is the discharge point from the Plant to the EBDA pipeline (M-002D). The treated wastewater discharged through the wet weather outfall is a portion of the flow diverted from the EBDA pipeline. This wet weather discharge would be discharged through the EBDA pipeline if that pipe were large enough to transport all the wet weather flow. The JPA with EBDA and other agencies allots 42.9 MGD (on a 24-hour basis) of capacity in the pipeline to the Discharger. Due to hydraulic limitations, the actual instantaneous maximum capacity available to the Discharger in the EBDA pipeline may be less than 42.9 MGD during wet weather events. If flow exceeds the maximum hydraulic capacity, the Discharger must discharge to its wet weather outfall to avoid flooding and damage to the Plant. Both outfalls receive fully treated effluent from the Plant. The only differences between discharges from these two outfalls are the location and timing of discharge. The discharge to Old Alameda Creek is dechlorinated.

There are two types of discharges from the wet weather outfall: discharges during peak wet weather conditions, and discharges from exercising the bypass valve located in the wet weather outfall pipe for maintenance purposes. The bypass valve is exercised to ensure that the line is flushed and the discharge flap gate is operational when it is necessary to use the outfall under peak wet weather conditions. The bypass valve is exercised briefly up to twice per year during the wet season, October 1 to April 1, and takes place during storm events that produce a significant increase in flow in Old Alameda Creek. The Discharger visually inspects the wet weather outfall before each discharge.

The wet weather outfall discharge to Old Alameda Creek is located about three miles upstream of Lower San Francisco Bay. Alameda County installed a tide gate in the creek about a half mile upstream of the wet weather discharge point. The tide gate is used to prevent flooding in Union City when a heavy storm event coincides with a high tide condition. This tide gate acts as a one-way valve, which allows upstream water to flow down to the Bay and prevents tidal water from traveling beyond the tidal gate.

Other than discharges during valve exercises, there have been no wet weather discharges to Old Alameda Creek since February 1998. On three days that month, the discharge volumes ranged from 980,000 gallons to 1,340,000 gallons with a duration ranging from 2 to 3 hours each. Future discharges are expected to be infrequent (approximately once in 10 years) and only during peak wet weather events when there is high natural flow in Old Alameda Creek.

C. Legal Authorities. This Order is issued pursuant to Clean Water Act (CWA) section 402 and implements regulations adopted by the U.S. Environmental Protection Agency (USEPA). This Order is also issued pursuant to California Water Code (CWC) Chapters 5.5, Division 7, commencing with section 13370. It serves as an NPDES permit for point source discharges from the Plant to surface waters. This Order also serves as Waste Discharge Requirements pursuant to CWC Article 4, Chapter 4, Division 7, commencing with section 13260.

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 other available information. The Fact Sheet (**Attachment F**), which contains background information and rationale for requirements of the Order, is hereby incorporated into this Order and constitutes part of the findings for this Order. **Attachments A through E and G** are also incorporated into this Order.

E. California Environmental Quality Act (CEQA). Under CWC section 13389 and section 3733 of Title 23 of the California Code of Regulations, this action to adopt an NPDES permit is exempt from the provisions of Chapter 3 but not from the policy provisions of Chapter 1 of CEQA.

F. Technology-Based Effluent Limitations. CWA Section 301(b) and NPDES regulations at 40 CFR 122.44 require that permits include conditions meeting applicable technology-based requirements at minimum and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 CFR Part 133. A detailed discussion of technology-based effluent limitation development is included in the Fact Sheet.

G. Water Quality-Based Effluent Limitations. CWA section 301(b) and NPDES regulations at 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

NPDES regulations at 40 CFR 122.44(d)(1)(i) mandate that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant that has no numeric criterion or objective, water quality-based effluent limitations (WQBELs) must be established using (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in 40 CFR 122.44(d)(1)(vi).

H. Water Quality Control Plans. *The Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan) is the Regional Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Regional Water Board and approved by the State Water Resources Control Board (State Water Board), USEPA, and the Office of Administrative Law. Requirements of this Order implement the Basin Plan.

Old Alameda Creek is a tributary of Lower San Francisco Bay. Beneficial uses of Lower San Francisco Bay, and thus Old Alameda Creek, are listed in Table 5. The Basin Plan implements State Water Board Resolution No. 88-63, which establishes State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply (MUN). Because of the marine influence on receiving waters of San Francisco Bay, total dissolved solids levels in San Francisco Bay exceed 3,000 milligrams per liter (mg/L) and thereby meet an exception to State Water Board Resolution No. 88-63. The MUN designation is therefore not applicable to the receiving water.

Table 5. Beneficial Uses of Lower San Francisco Bay and Old Alameda Creek

Discharge Point	Receiving Water Name	Beneficial Uses
E-WW	Old Alameda Creek	Industrial Service Supply (IND) Navigation (NAV) Ocean Commercial and Sport Fishing (COMM) Preservation of Rare and Endangered Species (RARE) Fish Migration (MIGR) Shellfish Harvesting (SHELL) Estuarine Habitat (EST) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2)

I. National Toxics Rule (NTR) and California Toxics Rule (CTR). USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995, and November 9, 1999. About 40 criteria in the NTR apply in California. On May 18, 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the State. USEPA amended the CTR on February 13, 2001. These rules contain water quality criteria for priority pollutants.

J. 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 USEPA promulgated for California through the NTR and the priority pollutant objectives the Regional Water Board established in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria USEPA promulgated through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

K. Compliance Schedules and Interim Requirements. The State Water Board adopted Resolution No. 2008-0025 on April 15, 2008, titled "Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits." Under limited circumstances, this policy allows the Regional Water Board to grant a compliance schedule based on a discharger's request and demonstration that it is infeasible to comply immediately with certain effluent limits. This policy became effective on August 27, 2008, superseding the Basin Plan's compliance schedule policy. This Order does not contain a compliance schedule or any interim effluent limit for any constituent.

L. Alaska Rule. On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards become effective for CWA purposes [65 Fed. Reg. 24641 (April 27, 2000) (codified at 40 CFR 131.21)]. Under the revised regulation (also known as the Alaska Rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.

M. Stringency of Requirements for Individual Pollutants. This Order contains both technology-based and water quality-based effluent limits. The technology-based effluent limitations consist of restrictions on oil and grease, pH, bacteria, total suspended solids (TSS), and five-day biochemical oxygen demand (BOD_5). Derivation of these technology-based limitations is discussed in the Fact Sheet (**Attachment F**). This Order's technology-based pollutant restrictions implement the minimum applicable federal technology-based requirements. In addition, this Order contains effluent limitations more stringent than the minimum federal technology-based requirements as necessary to meet water quality standards.

Water Quality Based Effluent Limits (WQBELs) have been 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 WQBELs were derived from the CTR, the CTR is the applicable standard

pursuant to 40 CFR 131.38. The procedures for calculating the individual WQBELs for priority pollutants are based on the SIP, which was approved by USEPA on May 18, 2000. All beneficial uses and water quality objectives contained in the Basin Plan were approved under State law and submitted to USEPA. Any water quality objectives 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 the purposes of the CWA" pursuant to 40 CFR 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

N. Antidegradation Policy. NPDES regulations at 40 CFR 131.12 require that State water quality standards include an antidegradation policy consistent with federal policy. The State Water Board established California's antidegradation policy through State Water Board Resolution No. 68-16, which incorporates the federal antidegradation policy where the federal policy applies under federal law and requires that existing water quality be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, both State and federal antidegradation policies. As discussed in detail in the Fact Sheet (III.C.5), the permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16.

O. Anti-Backsliding Requirements. CWA sections 402(o)(2) and 303(d)(4) and NPDES regulations at 40 CFR122.44(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. As discussed in detail in the Fact Sheet (III.C.6), the permitted discharge is consistent with anti-backsliding requirements.

P. Endangered Species Act. This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the State. The Discharger is responsible for meeting all requirements of applicable State and federal laws pertaining to threatened and endangered species.

Q. Monitoring and Reporting. 40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. CWC sections 13267 and 13383 authorize the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. This Monitoring and Reporting Program is provided in **Attachment E**.

R. Standard and Special Provisions. Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in **Attachment D**. The Discharger must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR 122.42. The Regional Water Board has also included in this Order special provisions applicable to the Discharger. A rationale for the special provisions is provided in the Fact Sheet (**Attachment F**).

S. Provisions and Requirements Implementing State Law. No provisions or requirements in this Order are included to implement State law only. All provisions and requirements are required or authorized under the federal CWA; consequently, violations of these provisions and requirements are subject to the enforcement remedies available for NPDES violations.

T. 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 written comments and recommendations. Details of the notification are provided in the Fact Sheet (**Attachment F**).

U. 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**).

IT IS HEREBY ORDERED that this Order supersedes Order No. R2-2004-0002, except for enforcement purposes, and to meet the provisions contained in Division 7 of the California Water Code (commencing with section 13000) 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.

III. DISCHARGE PROHIBITIONS

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

B. Discharge to Old Alameda Creek is prohibited except during peak wet weather flows after the Discharger fully utilizes the maximum hydraulic capacity (42.9 MGD on a 24-hour basis) available in the EBDA pipeline, and except during exercise of the bypass valve as described in Prohibition C. Such discharge shall not exceed 8.4 million gallons per event.

C. Discharge to Old Alameda Creek during exercise of the bypass valve more than twice per year is prohibited, and shall only take place during the wet season, October 1 to April 1, and when there is a significant flow increase in Old Alameda Creek.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

1. Effluent Limitations for Conventional and Non-Conventional Pollutants

The Discharger shall maintain compliance with the following effluent limitations at Discharge Point E-WW, with compliance measured at Monitoring Locations M-002D and EFF-WW as described in the attached MRP (**Attachment E**).

a. Conventional and Non-Conventional Pollutants

Effluent limitations for conventional and non-conventional pollutants are presented in Table 6.

Table 6. Effluent Limitations for Conventional and Non-Conventional Pollutants

Parameter	Units	Effluent Limitations			
		Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand (5-day @ 20°C) (BOD_5)	mg/L	40	--	---	---
Total Suspended Solids (TSS)	mg/L	45	--	---	---
Oil and Grease	mg/L	---	20	---	---
pH [(1)]	s.u.	---	---	6.5	8.5
Total Residual Chlorine	mg/L	---	---	---	0.0 [(2)]
Fecal Coliform Organisms	MPN/100ml	---	400	---	---

Footnotes for Table 6:

(1) If the Discharger monitors pH continuously, pursuant to 40 CFR 401.17, the Discharger shall be in compliance with the pH limitation specified herein, 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.

(2) The Discharger may elect to use a continuous on-line monitoring system for measuring flows, sodium hypochlorite, 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 will conclude that these chlorine residual exceedances are false positives and are not violations of this Order's total residual chlorine limit.

b. 85% Removal: The concentration-based average monthly percent removal of BOD_5 and TSS shall not be less than 85 percent.

2. Effluent Limitations for Toxic Pollutants

The Discharger shall maintain compliance with the following effluent limitations at Discharge Point E-WW, with compliance measured at Monitoring Location M-002D, as described in the attached MRP (**Attachment E**).

Table 7. Effluent Limitations for Toxic Pollutants

Parameter	Units	Effluent Limitations [1,2]	
		AMEL	MDEL
Copper	µg/L	31	63
Lead	µg/L	3.8	8.5
Cyanide	µg/L	44	137

Footnotes for Table 7:

(1) a. Limitations for toxic pollutants apply to the average concentration of all samples collected during the averaging period (daily = 24-hour period; monthly = calendar month). For example, if discharge is only for one day, that concentration for one day shall be used for compliance with the AMEL.

b. Metals limitations are expressed as total recoverable metal.

[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. The Regional Standard Provisions (**Attachment G**) provide Minimum Levels (MLs) for compliance determination purposes. An ML 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.

V. RECEIVING WATER LIMITATIONS

1. The discharge shall not cause the following in Old Alameda Creek:

   a. Floating, suspended, or deposited macroscopic particulate matter or foams;

   b. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;

   c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

   d. Visible, floating, suspended, or deposited oil and other products of petroleum origin; or

   e. Toxic or other deleterious substances to be present in concentrations or quantities that will cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or that render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State within 1 foot of the water surface:

   a. Dissolved Oxygen 5.0 mg/L, minimum

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

   b. Dissolved Sulfide Natural background levels

   c. pH Within range from 6.5 to 8.5

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

3. The discharge shall not cause a violation of any water quality standard for receiving waters adopted by the Regional Water Board or the State Water Board as required by the CWA and regulations adopted thereunder. If more stringent applicable water quality standards are

promulgated or approved, the Regional Water Board may revise and modify this Order in accordance with such more stringent standards.

VI. PROVISIONS

A. Standard Provisions

1. **Federal Standard Provisions.** The Discharger shall comply with Federal Standard Provisions included in **Attachment D** of this Order.

2. **Regional Standard Provisions.** The Discharger shall comply with all applicable items of the Regional Standard Provisions, and Monitoring and Reporting Requirements (Supplement to **Attachment D**) for NPDES Wastewater Discharge Permits (**Attachment G**) including amendments thereto.

B. Monitoring and Reporting Program (MRP) Requirements

The Discharger shall comply with the MRP (**Attachment E**), and future revisions thereto, including sampling and reporting requirements in the two standard provisions listed in VI.A.

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 discharges governed by this Order will have, or will cease to have, a reasonable potential to cause or contribute to adverse impacts on water quality or beneficial uses of the receiving waters.

b. If new or revised WQOs or Total Maximum Daily Loads (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 may be modified as necessary to reflect updated WQOs and wasteload 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 or TMDLs, or as otherwise permitted under federal regulations governing NPDES permit modifications.

c. If translator or other water quality studies provide a basis for determining that a permit condition should be modified.

d. If State Water Board precedential decisions, new policies, new laws, or new regulations on chronic toxicity or total chlorine residual become available.

e. If an administrative or judicial decision on a separate NPDES permit or WDR addresses requirements similar to this discharge.

f. Or as otherwise authorized by law.

The Discharger may request permit modifications based on the above. The Discharger shall include with any such request an antidegradation and anti-backsliding analysis.

2. Best Management Practices and Pollution Minimization

a. Pollution Minimization Program (PMP)

The Discharger shall continue to improve, in a manner acceptable to the Executive Officer, its existing PMP to promote minimization of pollutant loadings to the treatment plant and therefore to the receiving waters.

b. Annual Pollution Prevention Report

The Discharger shall submit an annual report, acceptable to the Executive Officer, no later than August 31st of each calendar year. The annual report shall cover July of the preceding year through June of the current year. The Discharger may provide one report, which covers effluent flows transported through the EBDA outfall, to the Hayward Marsh, and through the wet weather outfall. Each annual report shall include at least the following information:

(1) *Brief description of the treatment plant, treatment plant processes and service area.*

(2) *Discussion of the current pollutants of concern.* Periodically, the Discharger shall 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.

(3) *Identification of sources for the pollutants of concern.* This discussion shall include how the Discharger intends to estimate and identify pollutant sources. 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.

(4) *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 the tasks themselves or participate in group, regional, or national tasks that will address its pollutants of concern. The Discharger is strongly encouraged to participate in group, regional, or national actions 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.

(5) *Outreach to employees.* The Discharger shall inform its employees about the pollutants of concern, potential sources, and how they might be able to help reduce the discharge of these pollutants into the treatment facilities. The Discharger may provide a forum for employees to provide input.

(6) *Continuation of Public Outreach Program.* The Discharger shall prepare a public outreach program to communicate pollution minimization measures 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 various media. Information shall be specific to target audiences. The Discharger shall coordinate with other agencies as appropriate.

(7) *Discussion of criteria used to measure PMP's and tasks' effectiveness.* The Discharger shall establish criteria to evaluate the effectiveness of its PMP. This discussion shall address the specific criteria used to measure the effectiveness of each of the tasks in Provision VI.C.3.b.(3-6), above.

(8) *Documentation of efforts and progress.* This discussion shall detail all of the Discharger's activities in the PMP during the reporting year.

(9) *Evaluation of PMP's and tasks' effectiveness.* The Discharger shall use the criteria established in b.(7), above, to evaluate the PMP's and tasks' effectiveness.

(10) *Identification of specific tasks and time schedules for future efforts.* Based on the evaluation of effectiveness, the Discharger shall describe how it will continue or change its PMP tasks to more effectively reduce the loadings of pollutant to the Plant, and therefore in its effluent.

c. Pollutant Minimization Program for Pollutants with Effluent Limitations

The Discharger shall develop and conduct a PMP as further described below when there is evidence (e.g., sample results reported as Detected but Not Quantified [DNQ] when the effluent limitation is less than the method detection limit [MDL], sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either:

(1) A sample result is reported as DNQ and the effluent limitation is less than the Reporting Limit (RL); or

(2) A sample result is reported as Not Detected (ND) and the effluent limitation is less than the MDL, using definitions described in the SIP.

d. Pollutant Minimization Program Submittals for Pollutants with Effluent Limitations

If triggered by the reasons in **3.c**. above, the Discharger's PMP shall include, but not be limited to, the following actions and submittals acceptable to the Regional Water Board:

(1) An annual review and semi-annual monitoring of potential sources of the reportable priority pollutants, 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;

(2) Quarterly monitoring for the reportable priority pollutants 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;

(3) Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutants in the effluent at or below the effluent limitation;

(4) Implementation of appropriate cost-effective control measures for the reportable priority pollutants, consistent with the control strategy; and

(5) The annual report required by **3.b.** above, shall specifically address the following items:

i. All PMP monitoring results for the previous year;

ii. A list of potential sources of the reportable priority pollutant(s);

iii. A summary of all actions undertaken pursuant to the control strategy; and

iv. A description of actions to be taken in the following year.

VII. COMPLIANCE DETERMINATION

Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined in the MRP (**Attachment E**) and Fact Sheet Section VI. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ), also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

$$\textbf{Arithmetic mean} = \mu = \Sigma x / n$$

where: Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

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) is 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.

Bioaccumulative pollutants are those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Carcinogenic pollutants are substances that are known to cause cancer in living organisms.

Coefficient of Variation (*CV*) is a measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

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 this Order), 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.

Detected, but Not Quantified (DNQ) are those sample results less than the RL, but greater than or equal to the laboratory's MDL.

Dilution Credit is the amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and receiving water.

Effluent Concentration Allowance (ECA) is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in USEPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration is the estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters include, but are not limited to, the Sacramento-San Joaquin Delta, as defined in California Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Inland Surface Waters are all surface waters of the State that do not include the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation is 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 is 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) means the highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Median is the middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the $n/2$ and $n/2+1$).

Method Detection Limit (MDL) is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in title 40 of the Code of Federal Regulations, Part 136, Attachment B, revised as of July 3, 1999.

Minimum Level (ML) 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.

Mixing Zone is a limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

Not Detected (ND) are those sample results less than the laboratory's MDL.

Ocean Waters are the territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. Discharges to ocean waters are regulated in accordance with the State Water Board's California Ocean Plan.

Persistent pollutants are substances for which degradation or decomposition in the environment is nonexistent or very slow.

Pollutant Minimization Program (PMP) means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to California Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

Pollution Prevention means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in California Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State or Regional Water Board.

Reporting Level (RL) is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. The ML is based on the proper application of

method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

Source of Drinking Water is any water designated as municipal or domestic supply (MUN) in a Regional Water Board Basin Plan.

Standard Deviation (σ) is a measure of variability that is calculated as follows:

$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

where:

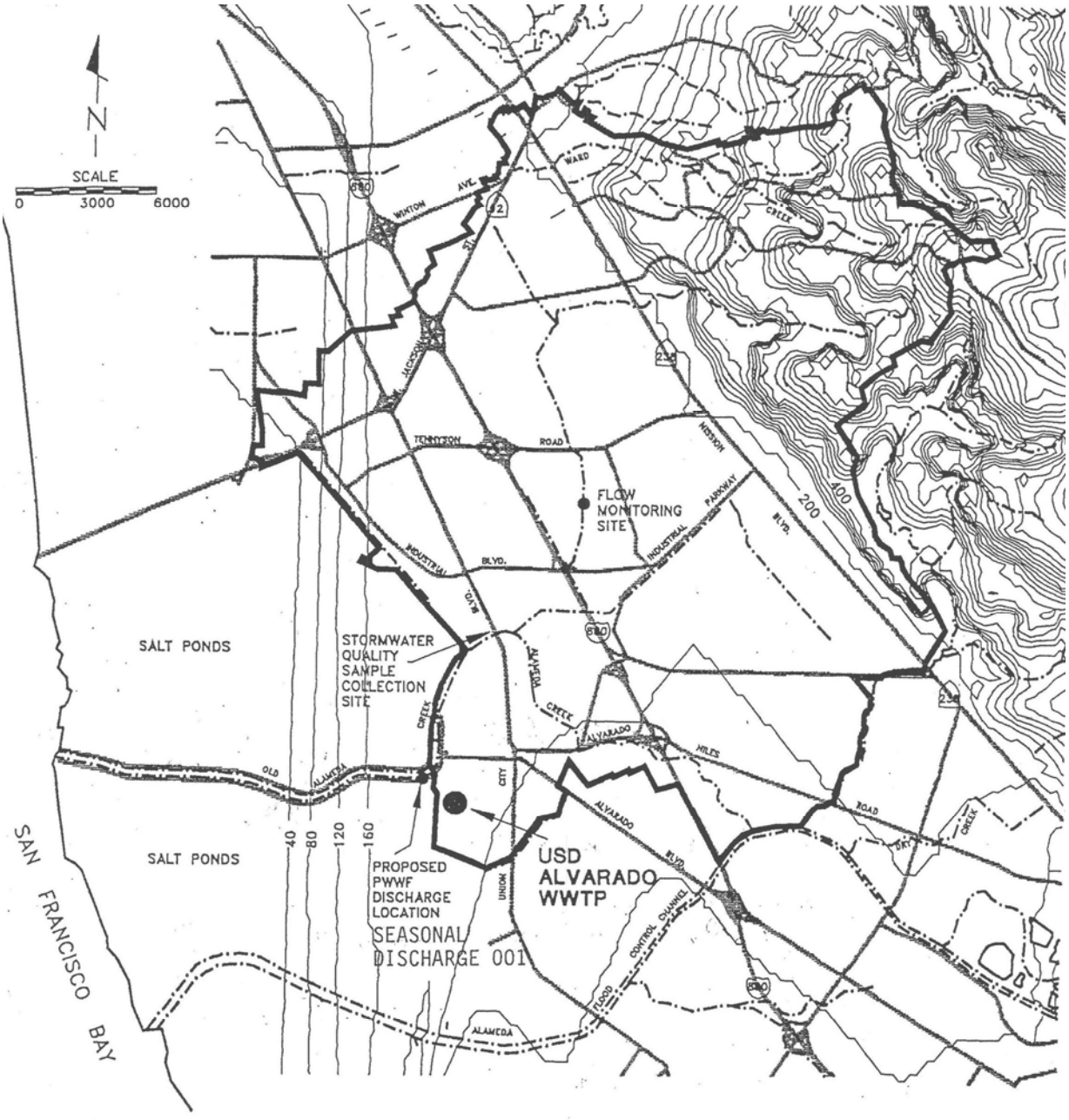
x is the observed value;

μ is the arithmetic mean of the observed values; and

n is the number of samples.

ATTACHMENT B – FACILITY MAP

Figure B-1. Facility Location



ATTACHMENT C – PROCESS FLOW DIAGRAMS

Figure C-1. Process Flow Diagram

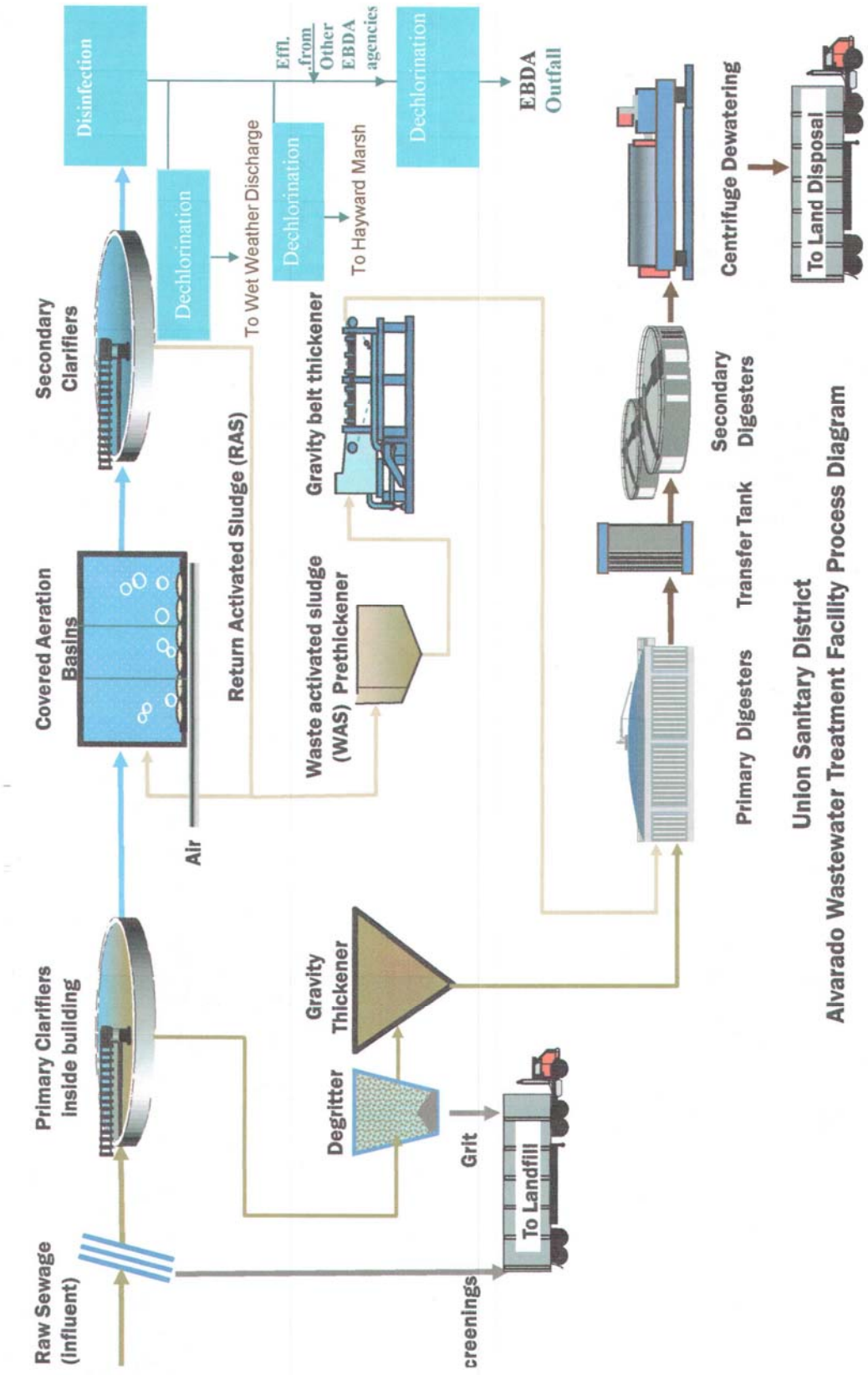
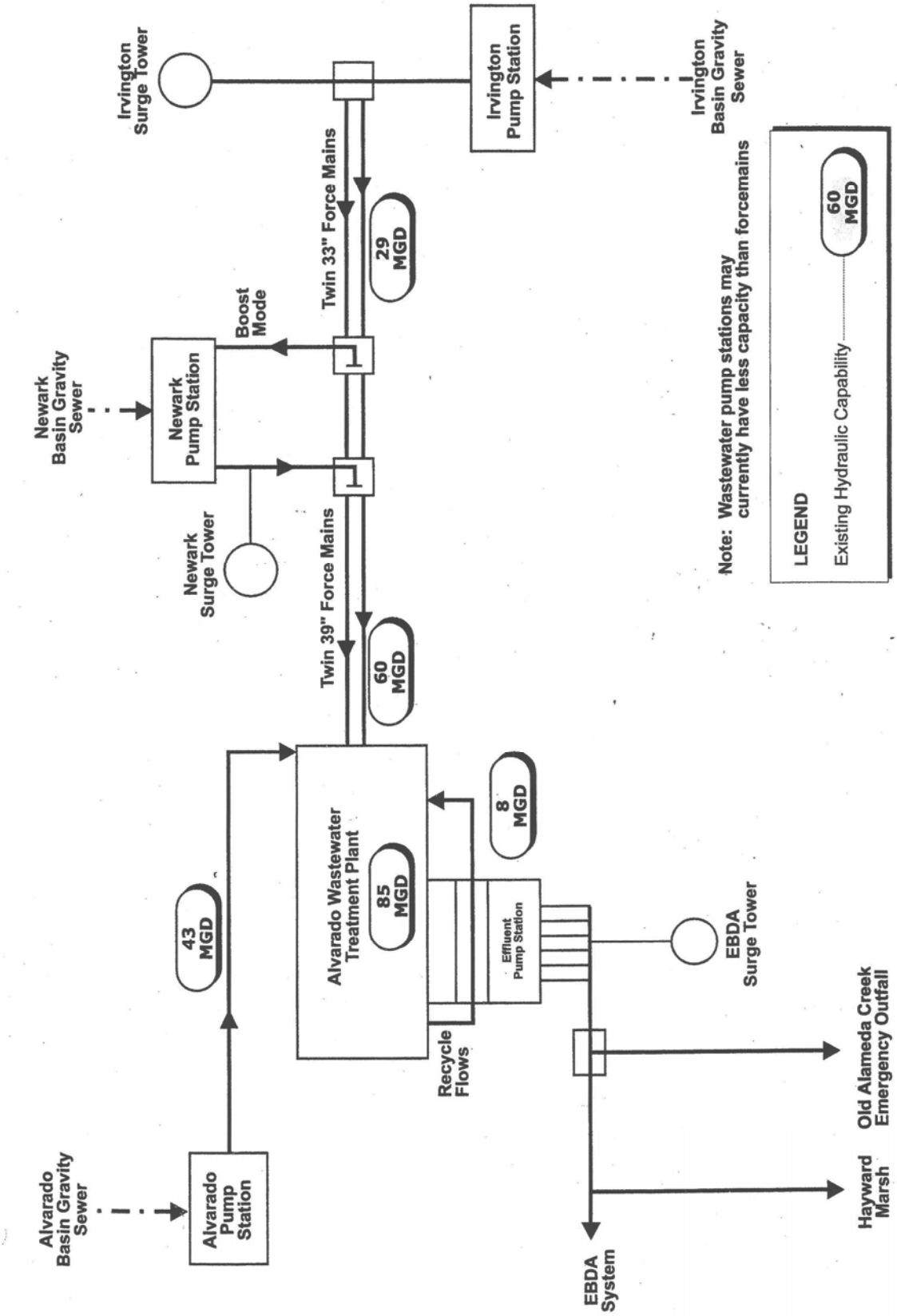


Figure C-2. Existing Transport System Capacities in Boost Mode



ATTACHMENT D –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 and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; 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 CWA 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 yet 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 §22.41(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 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); Wat. Code, § 13383):

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)); and

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, 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, I.G.4, 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)(i)(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)(i)(B)); and

c. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 CFR §122.41(m)(4)(i)(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 (24-hour notice). (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 Discharger. 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 Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by an 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)(ii));

c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (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 this Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 CFR §122.41(l)(3); § 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 Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503 unless other test procedures have been specified in this Order. (40 CFR §122.41(j)(4); §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 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); Water Code, §13267.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 CFR §122.41(k).)

2. All permit applications shall be signed 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 Standard

Provisions – Reporting V.B.2 above, 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 Standard Provisions – Reporting V.B.2 above (40 CFR §122.22(b)(1));

b. The authorization specifies 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 and State Water Board. (40 CFR §122.22(b)(3).)

4. If an authorization under Standard Provisions – Reporting V.B.3 above 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 Standard Provisions – Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board 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 Standard Provisions – Reporting V.B.2 or V.B.3 above 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 (**Attachment E**) in this Order. (40 CFR §122.22(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 Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in 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).)

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 section 122.29(b) (40 CFR §122.41(l)(1)(i));

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order (40 CFR §122.41(l)(1)(ii)); or

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 V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. (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 Regional Water Board is authorized to enforce the terms of this Order under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. 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 this Order. (40 CFR §122.42(b)(2).)

3. 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).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Table of Contents

I. General Monitoring Provisions 2
II. Monitoring Locations 2
III. Effluent Monitoring Requirements 3
IV. Receiving water Monitoring Requirements 4
V. Reporting Requirements 5
A. General Monitoring and Reporting Requirements 5
B. Self Monitoring Reports (SMRs) 5
C. Discharge Monitoring Reports 7

Tables

Table E-1. Monitoring Station Locations 3
Table E-2. Effluent Monitoring, Analysis for Peak Wet Weather Discharges 3
Table E-3. Effluent Monitoring, Analysis for Bypass Valve Exercise Discharges 4
Table E-4. Receiving Water Monitoring 5
Table E-5. Monitoring Periods and Reporting Schedule 6

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

National Pollutant Discharge Elimination System (NPDES) regulations at 40 CFR 122.48 require that all NPDES permits specify monitoring and reporting requirements. California Water Code (CWC) sections 13267 and 13383 also authorize the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement the federal and State regulations.

I. GENERAL MONITORING PROVISIONS

A. The Discharger shall comply with this MRP and with all of the requirements contained in the Regional Standard Provisions (**Attachment G**). The MRP may be amended by the Executive Officer pursuant to U.S. Environmental Protection Agency (USEPA) regulations 40 CFR Parts 122.62, 122.63, and 124.5.

B. All analyses shall be conducted using current USEPA methods, methods that have been approved by the USEPA Regional Administrator pursuant to 40 CFR Part 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 limits and to perform reasonable potential analyses. 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 (State Water Board) Quality Assurance Program.

C. Sampling and analysis of additional constituents is required pursuant to the Regional Standard Provisions (**Attachment G**).

D. Laboratories analyzing monitoring samples shall be certified by the California Department of Public Health (CDPH) under the Environmental Laboratory Accreditation Program (ELAP), in accordance with CWC section 13176, and shall include in reports quality assurance/quality control data.

E. For compliance and reasonable potential monitoring, analyses shall be conducted using commercially available and reasonably achievable detection levels that are lower than the WQOs or the effluent limitations, whichever are lower.

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-1. Monitoring Station Locations

Type of Sampling Location	Monitoring Location Name	Monitoring Location Description
Effluent	EFF-WW	Any point in the outfall from the treatment facility at which adequate disinfection has taken place and just prior to discharge through the wet weather outfall, and the point at which all waste tributary to that outfall is present.
Effluent	M-002D	At any point in the outfall from the treatment facility just prior to where the Plant transfers control of its effluent to the EBDA pipeline.
Receiving Water	RW-001	At a point in Old Alameda Creek within 40 feet downstream of discharge location EFF-WW.

III. EFFLUENT MONITORING REQUIREMENTS

A. The Discharger shall monitor treated effluent from the Plant at M-002D (all parameters) and EFF-WW (chlorine residual) during peak wet weather discharge events. If there is no discharge from the wet weather outfall in a particular year, samples shall be taken at least once each year from outfall M-002D, preferably during a wet weather event between October 1 and April 1. These samples shall be analyzed for all constituents in Table E-2, except for constituents regularly monitored at M-002D under separate permit (i.e., CA0037869) and those that are not applicable (i.e., duration of discharge and chlorine dosage). Effluent limitations in this Order shall not apply to monitoring data collected from M-002D when there is no discharge to Old Alameda Creek; these data will be used to conduct a reasonable potential analysis for the next permit cycle.

Table E-2. Effluent Monitoring, Analysis for Peak Wet Weather Discharges

Parameter	Units	Sample Type	Minimum Sampling Frequency
Duration of Discharge	Hours and minutes	--	1/discharge event
Flow Volume	Gallons	Continuous	1/discharge event
Oil and Grease [(2)]	mg/L	Grab	1/discharge event
pH [(3)]	s.u.	Grab	1/discharge event
Temperature	^{o}C	Grab	1/discharge event
BOD_5	mg/L	24-hour C[(1)]	1/discharge event
TSS	mg/L	24-hour C[(1)]	1/discharge event
Fecal Coliform Organisms	MPN/100mL	Grab	1/discharge event
Chlorine Residual	mg/L	Continuous or Hourly[(4)]	1/discharge event
Ammonia (total as N)	mg/L as N	Grab	1/discharge event
Copper, Total Recoverable	µg/L	24-hour C[(1)]	1/discharge event
Cyanide, Total (as CN)	µg/L	Grab	1/discharge event
Lead	µg/L	24-hour C[(1)]	1/discharge event
Remaining Priority Pollutants	µg/L	Grab	Once per year [(5)]

Legend for Table E-2:

Units:

MPN/100mL	=	most probable number per 100 milliliters
°C	=	degrees Celsius
µg/L	=	micrograms per liter
mg/L	=	milligrams per liter

Sample Type:

24-hour C	=	24-hour composite

Footnotes for Table E-2

(1) If the discharge is expected to last less than 24 hours, the Discharger has the option of taking a grab sample or composite sample by mechanically or manually compositing samples on an hourly, or once-every-two-hours basis for the duration of the discharge.

(2) Each oil and 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. The grab samples shall be mixed in proportion to the instantaneous flow rates occurring at the time of each grab sample, within the accuracy of plus or minus 5%. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent as soon as possible after use, and the solvent rinseate shall be added to the composite sample for extraction and analysis.

(3) If pH is monitored continuously, the minimum and maximum pH values for each day shall be reported in monthly Self-Monitoring Reports (SMRs).

(4) The dechlorinated effluent shall be monitored continuously or, at a minimum, every 2 hours during discharge. The Discharger shall report on a daily basis both maximum and minimum concentrations for samples taken both prior to and following dechlorination. If a violation is detected, the maximum and average concentrations and duration of each non-zero residual event shall be reported, along with the cause and corrective actions taken. The Discharger may elect to use a continuous on-line monitoring system(s) to measure flows, chlorine residual, and sodium bisulfite (or other dechlorinating chemical) dosage (including a safety factor) to demonstrate that chlorine residual exceedences are false positives.

(5) During discharge through the wet weather outfall or during the wet season if no discharge to Old Alameda Creek. Pretreatment program monitoring that is conducted in accordance with the EBDA permit (CA 0037869) can be used to satisfy relevant parts of these sampling requirements.

B. The Discharger shall monitor treated effluent from the Plant at EFF-WW during regular valve exercise as follows:

Table E-3. Effluent Monitoring, Analysis for Bypass Valve Exercise Discharges

Parameter	Unit	Sample Type	Frequency
Duration of discharge	Minutes	--	1/discharge event
Discharge volume	Gallons	--	1/discharge event
Chlorine residual	mg/L	Grab	1/discharge event
Fecal Coliform Organisms	MPN/100 ml	Grab	1/discharge event

IV. RECEIVING WATER MONITORING REQUIREMENTS

The sampling, measurements, and analysis for receiving water shall follow the schedule in Table E-4. Samples shall be taken between October 1 and April 1 during wet weather events as

safety permits. If safety is of concern during the discharge event, the receiving water monitoring may be conducted outside the discharge period, as long as the sample is collected during wet weather conditions and is conducted as close to the wet weather discharge as is safe to do so.

Table E-4. Receiving Water Monitoring

Parameter	Unit	Sample Type	Frequency
pH	s.u.	Grab	Twice/permit term
Temperature	^{o}C	Grab	Twice/permit term
Salinity	ppt	Grab	Twice/permit term
Hardness	mg/L as $CaCO_3$	Grab	Twice/permit term
Ammonia (total as N)	mg/L as N	Grab	Twice/permit term
Dissolved oxygen	mg/L	Grab	Twice/permit term
Priority pollutants	µg/L	Grab	Once/permit term
Standard observations	See Attachment G		Once/discharge event or once/year if no discharge

V. 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.

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this Order, the State or Regional Water Board may notify the Discharger to electronically submit SMRs using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html). Until such notification is given, the Discharger shall submit hard copy SMRs. The CIWQS Web site will provide additional directions for SMR submittal in the event that there will be service interruption for electronic submittal.

2. The Discharger shall submit an Annual Report including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the Annual Report. 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:

Table E-5. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period
Continuous	Day after permit effective date	All
Hourly	Day after permit effective date	Hourly
Annually	October 1 following (or on) permit effective date	October 1 through April 1
Per Discharge Event	Anytime during the discharge event or as soon as possible after aware of the event	At a time when sampling can characterize the discharge event

4. The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current Method Detection Limit (MDL) as determined by the procedure in 40 CFR 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.

      For 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 the laboratory considers appropriate.

   c. Sample results less than the laboratory's MDL shall be reported as "Not Detected" or ND.

   d. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from *extrapolation* beyond the lowest point of the calibration curve.

5. The Discharger shall submit SMRs in accordance with the following requirements:

   a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the Plant is operating in compliance with effluent limitations in this Order. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format

within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.

b. The Discharger shall attach a cover letter with the SMR. The cover letter shall clearly identify violations of the WDRs, discuss corrective actions taken or planned, and include proposed time schedules for corrective actions. SMRs shall include a description of the requirements violated and a description of the violations.

c. SMRs must be submitted to the Regional Water Board, signed and certified as required by the Federal Standard Provisions (**Attachment D**), to the address listed below:

Executive Officer
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612
ATTN: NPDES Wastewater Division

C. Discharge Monitoring Reports

1. As described in section V.B.1 above, at any time during the term of this Order, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of Discharge Monitoring Reports (DMRs). Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.

2. Once notified by the State or Regional Water Board, the Discharger shall submit hard copy DMRs. DMRs must be signed and certified as required by the Federal Standard Provisions (**Attachment D**). The Discharge shall submit the original DMR and one copy of the DMR to one of the addresses listed below:

Standard Mail	**FedEx/UPS/Other Private Carriers**
State Water Resources Control Board Division of Water Quality c/o DMR Processing Center PO Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15th Floor Sacramento, CA 95814

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 will not be accepted unless they follow the exact same format as EPA Form 3320-1.

ATTACHMENT F - FACT SHEET

Table of Contents

I. Permit Information 3
II. Facility Description 4
A. Description of Wastewater Treatment 4
B. Discharge Description 4
C. Summary of Existing Requirements and Self-Monitoring Report Data 5
D. Compliance Summary 7
E. Planned Changes 8
III. Applicable Plans, Policies, and Regulations 8
A. Legal Authorities 8
B. California Environmental Quality Act (CEQA) 8
C. State and Federal Regulations, Policies, and Plans 8
D. Impaired Water Bodies on CWA 303(d) List 10
IV. Rationale For Effluent Limitations and Discharge Specifications 10
A. Discharge Prohibitions 10
B. Technology-Based Effluent Limitations 11
1. Scope and Authority 11
2. Applicable Technology-Based Effluent Limitations 11
C. Water Quality-Based Effluent Limitations (WQBELs) 13
1. Scope and Authority 13
2. Applicable Beneficial Uses and Water Quality Criteria and Objectives 13
3. Determining the Need for WQBELs 15
4. WQBEL Calculations. 19
5. Whole Effluent Toxicity 25
D. Anti-backsliding and Antidegradation 25
V. Rationale for Receiving Water Limitations 26
VI. Rationale for Monitoring and Reporting Requirements 26
A. Effluent Monitoring 27
B. Receiving Water Monitoring 27
VII. Rationale for Provisions 27
A. Standard Provisions (Provision VI.A) 27
B. Monitoring and Reporting Requirements (Provision VI.B) 28
C. Special Provisions (Provision VI.C) 28
1. Reopener Provisions 28
2. Best Management Practices and Pollution Minimization Program 28
VIII. Public Participation 28
A. Notification of Interested Parties 28
B. Written Comments 28
C. Public Hearing 28
D. Waste Discharge Requirements Petitions 29
E. Information and Copying 29
F. Register of Interested Persons 29
G. Additional Information 29

List of Tables

Table F-1. Facility Information 3
Table F-2. Effluent Limitations in Previous Permit for Conventional 6
And Non-Conventional Pollutants 6
Table F-3. Effluent Limitations in Previous Permit 6
Table F-4. Effluent Quality from Bypass Valve Exercise 6
Table F-5. Effluent Quality at the Plant Outfall to the EBDA Pipeline, M-002D 7
Table F-6. Required Reports and Studies Progress 7
Table F-7. Beneficial Uses of Lower San Francisco Bay and Old Alameda Creek 9
Table F-8. Reasonable Potential Analysis Summary 16
Table F-9. Effluent Limit Calculations 24

ATTACHMENT F – FACT SHEET

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

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for dischargers in California. Only those sections or subsections of this Order that are specifically identified as "not applicable" have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as "not applicable" fully apply to this Discharger.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Union Sanitary District Raymond A. Boege Alvarado Wastewater Treatment Plant (Plant) and its collection system.

Table F-1. Facility Information

WDID	2 019060002
Discharger	Union Sanitary District
Name of Facility	Old Alameda Creek Intermittent Wet Weather Discharge
Facility Address	5072 Benson Road
	Union City, CA 94587
	Alameda County
Facility Contact, Title, and Phone	David Livingston, Manager/Treatment & Disposal Services (510) 477-7560
Discharger Mailing Address	5072 Benson Road, Union City, CA 94587
CIWQS Party Number	47792
CIWQS Place Number	269042
Facility Operator	Union Sanitary District, 5072 Benson Road, Union City, CA 94587
Facility Operator Contact	David Livingston (510) 477-7560
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Design Flow	33 million gallons per day (MGD) under dry weather conditions with secondary treatment
Service Areas	Fremont, Newark, Union City
Service Population	333,648
Major or Minor Facility	Minor
Threat to Water Quality	2
Complexity	B
Pretreatment Program	No
Reclamation Requirements	No
Mercury Discharge Requirement	Order No. R2-2007-0077
Facility Design Flow	33 million gallons per day (MGD), average dry weather conditions providing secondary treatment
Facility Permitted Flow	8.4 million gallons per discharge event
Watershed	Lower San Francisco Bay
Receiving Water and Type	Old Alameda Creek

The Discharger has been discharging under Order No. R2-2004-0002 (previous permit) and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0038733. On August 27, 2008, the Discharger submitted an application for reissuance of its NPDES permit to discharge secondarily treated wastewater from the Plant to waters of the State and the United States. The Discharger's discharge is also currently covered under Order No. R2-2007-0077 (NPDES Permit CA0038849), which supersedes all requirements on mercury from wastewater discharges in the region. The mercury permit is unaffected by this Order.

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and State laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

II. FACILITY DESCRIPTION

A. Description of Wastewater Treatment

The Discharger owns and operates a municipal wastewater treatment plant, the Raymond A. Boege Alvarado Wastewater Treatment Plant (Plant), which serves Newark, Union City and the Fremont area. The Plant provides secondary treatment of domestic, and, to a lesser extent, industrial and commercial wastewaters. Treatment consists of screening, primary sedimentation, activated sludge, secondary clarification, and chlorination. The Discharger's service area is divided into the Alvarado Basin, Newark Basin, and Irvington Basin. The Discharger also owns and maintains the sewer collection system, which consists of three pump stations, one for each of the three drainage basins and approximately 780 miles of sewer lines. Wastewater in each basin flows by gravity to its pump station, and is then pumped to the Plant.

The Discharger is a member of the East Bay Dischargers Authority (EBDA). EBDA operates under a Joint Exercise of Powers Agreement (JPA) among the City of Hayward, City of San Leandro, Union Sanitary District, Oro Loma Sanitary District, Castro Valley Sanitary District, and the Livermore-Amador Valley Water Management Agency. By contractual agreement, EBDA transports treated wastewater from its member agencies to its dechlorination station near the San Leandro Marina and then to its deep water outfall for discharge to lower San Francisco Bay. The discharge through the deep water outfall is regulated under a separate NPDES permit (CA0037869). Under current contractual agreement, the Discharger can discharge a maximum of 42.9 million gallons per day (mgd) to the EBDA transport pipeline.

In addition to the Plant, the Discharger, together with the East Bay Regional Park District, owns and maintains a 145-acre constructed wastewater marsh system (Hayward Marsh). Hayward Marsh can hydraulically accept up to 20 mgd of treated wastewater from the Plant. Hayward Marsh typically receives approximately 3 to 5 mgd under normal operational conditions, and that discharge is regulated under a separate permit (CA0038636).

B. Discharge Description

The Plant has two outfalls. One is a wet weather outfall (E-WW), which discharges treated effluent to Old Alameda Creek and is subject to this permit. The other outfall is where wastewater from the Plant is discharged to the EBDA pipeline (M-002D). The treated wastewater discharged through the wet weather outfall is a portion of the flow diverted from the

EBDA pipeline. This wet weather discharge would be discharged through the EBDA pipeline if that pipe were large enough to transport all the wet weather flow. Both outfalls receive fully treated effluent from the treatment plant. The only differences between discharges from these two outfalls are the location and timing of discharge. The discharge to Old Alameda Creek is dechlorinated.

There are two types of discharges from the wet weather outfall, discharges during peak wet weather conditions, and discharges from exercising the valve located in the wet weather outfall pipe for maintenance purpose. The valve is exercised to ensure that the line is flushed and the discharge flap gate is operational when it is necessary to use the outfall under peak wet weather conditions. The valve may be exercised up to twice per year during wet weather conditions as defined in IV.A.3. The Discharger visually inspects the wet weather outfall before each discharge.

The wet weather outfall discharges to Old Alameda Creek at a location about three miles upstream of Lower San Francisco Bay. Alameda County installed a tide gate in the creek about a half mile upstream of the wet weather discharge point. The tide gate is used to prevent flooding of Union City when a heavy storm event coincides with a high tide condition. This tide gate acts as a one-way valve, which allows upstream water to flow down to the Bay and prevents tidal water traveling beyond the tidal gate.

There have been no wet weather discharges to Old Alameda Creek since February 1998. On three days that month, the discharge volumes ranged from 980,000 gallons to 1,340,000 gallons with a duration ranging from 2 to 3 hours each. The discharge is expected to be infrequent (approximately once in 10 years) and only during peak wet weather events when there are high natural flows in Old Alameda Creek.

C. Summary of Existing Requirements and Self-Monitoring Report Data

Effluent limitations contained in the previous permit for wet weather discharges to Old Alameda Creek are shown in Table F-2 and Table F-3. Representative monitoring data are not available because no wet weather discharges to Old Alameda Creek occurred during the term of the previous permit.

Table F-2. Effluent Limitations in Previous Permit for Conventional And Non-Conventional Pollutants

Parameter	Units	Effluent Limitations		
		Weekly Average	Instantaneous Maximum	Daily Maximum
Oil and Grease	mg/L	--	--	20
pH	standard units	Discharge must be within 6.5 to 8.5		
Total Suspended Solids (TSS)	mg/L	45	--	--
Biochemical Oxygen Demand [5-day @ 20 °C] (BOD_5)	mg/L	40	--	--
Fecal Coliform Organisms	MPN/ 100 mL	--	--	500
Chlorine, Total Residual	mg/L	--	0.0	--

Footnotes for Table F-2:
mg/L = milligrams per liter, mL/L-hr = milliliters per liter per hour
MPN/100 mL = Most Probable Number per 100 milliliters

Table F-3. Effluent Limitations in Previous Permit

Parameter	Units	Interim Limits Daily Maximum
Copper	µg/L	37
Mercury	µg/L	0.087
Nickel	µg/L	65
Zinc	µg/L	580
Cyanide	µg/L	10

Footnotes for Table F-3:
Units: µg/L = micrograms per liter

The Discharger tests its bypass valve and discharges treated effluent through its wet weather outfall. Table F-4 summarizes the effluent quality from these discharges during the term of the previous permit based on self-monitoring reports submitted from January 2006 to December 2008. This Order allows the Discharger to exercise the bypass valve during wet weather up to twice per year during wet weather.

Table F-4. Effluent Quality from Bypass Valve Exercise

Parameter	5-day Log Mean	90th Percentile
Chlorine Residual (mg/L)	--	0.0
Fecal Coliform Organisms (MPN/100mL)	23	50

The main discharge of treated effluent from the Plant is regulated under a separate NPDES permit (CA0037869). Monitoring results for parameters detected in treated effluent samples from the discharge to the main EBDA pipeline (M002-D) collected annually during wet weather events, as required by the previous permit, are summarized in Table F-5. The effluent quality from M002-D would be the same as the discharge to the wet weather outfall, except the wet weather outfall discharge (E-WW) is dechlorinated before discharge to Old Alameda Creek.

Table F-5. Effluent Quality at the Plant Outfall to the EBDA Pipeline, M-002D

Parameter	Units	Daily Maximum
Arsenic	µg/L	4.5
Chromium	µg/L	1.5
Copper	µg/L	20.4
Lead	µg/L	0.38
Mercury	µg/L	0.0148
Nickel	µg/L	5.0
Selenium	µg/L	2.0
Silver	µg/L	0.27
Zinc	µg/L	50
Bromoform	µg/L	13
Chloroform	µg/L	2.7
Cyanide	µg/L	0.9
Tetrachloroethene	µg/L	0.8

D. Compliance Summary

1. **Compliance with Numeric Effluent Limits.** No exceedances of numeric effluent limits were observed during the previous permit term.

2. **Compliance with Previous Permit Provisions.** A list of special activities required by the previous permit and the status of those requirements are shown in Table F-6 below.

Table F-6. Required Reports and Studies Progress

Provision Number	Requirement	Date Due	Statues of Completion
D.1	Optional Receiving Water Dilution Study and Schedule	To be completed 6 months prior to expiration of date of previous permit and submitted with permit renewal application	Completed April 2, 2010
D.2	Optional site-specific translator study	Submit with permit renewal application	Discharger did not choose to complete this optional study.
D.3	Pollutant Prevention and Minimization Program	Annually no later than August 30th	As allowed by the previous permit, the Discharger submitted one annual report each year for effluent flows to the EBDA outfall, Hayward Marsh, and the wet weather outfall.
D.4	SSO/TMDL Participation	By January 31 of each year	This requirement was completed by the Bay Area Clean Water Agencies (BACWA) work on 303(d) listed pollutants, (including dioxin, cyanide, copper, mercury, and selenium); SSOs; and TMDLs. BACWA prepared annual status reports for all agencies.
D.5	Self-Monitoring Program	Quarterly; and an Annual Report	The Discharger submitted all required quarterly and annual reports.

E. Planned Changes

No changes are planned for the term of this Order; however, the Discharger plans to conduct an engineering study to determine the need for more effluent equalization within the next three years in response to changed conditions and assumptions used in the Wastewater Equalization Storage Facilities Pre-Design in 1999. In particular, the Plant average annual effluent flow has decreased over 8 of the last 10 years, with an overall decrease of 16.6% since 1998, and the peak hour wet weather flows have also decreased over the last 5 years. Although construction of one 1.8 MG equalization basin at Irvington Pump Station was completed in 2003, at a cost of $14 million, construction of additional equalization storage facilities will likely be re-evaluated.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

This Order is issued pursuant to the Clean Water Act (CWA) section 402 and implementing regulations adopted by the U. S. Environmental Protection Agency (USEPA) and pursuant to California Water Code (CWC) Chapter 5.5, Division 7 (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from the Plant to surface waters. This Order also serves as a WDR pursuant to CWC Article 4, Chapter 4, Division 7 (commencing with section 13260).

B. California Environmental Quality Act (CEQA)

Under CWC section 13389 and section 3733 of Title 23 of the California Code of Regulations, this action to adopt an NPDES permit is exempt from the provisions of Chapter 3 but not from the policy provisions of Chapter 1 of CEQA.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** The *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan) is the Regional Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives (WQOs) for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was adopted by the Regional Water Board and approved by the State Water Board, USEPA, and the Office of Administrative Law. Requirements of this Order implement the Basin Plan.

   The receiving water, Old Alameda Creek, is a tributary of Lower San Francisco Bay. Beneficial uses of Lower San Francisco Bay, and thus Old Alameda Creek, are listed in Table F-7. The Basin Plan implements State Water Board Resolution No. 88-63, which establishes State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply (MUN). Old Alameda Creek is tidally influenced, and because of the marine influence on receiving waters of San Francisco Bay, total dissolved solids levels in San Francisco Bay commonly (and often significantly)

exceed 3,000 mg/L and thereby meet an exception to State Water Board Resolution No. 88-63. The MUN designation is therefore not applicable to the receiving water.

Table F-7. Beneficial Uses of Lower San Francisco Bay and Old Alameda Creek

Discharge Point	Receiving Water Name	Beneficial Uses
E-WW	Old Alameda Creek	Industrial Service Supply (IND) Navigation (NAV) Ocean Commercial and Sport Fishing (COMM) Preservation of Rare and Endangered Species (RARE) Fish Migration (MIGR) Shellfish Harvesting (SHELL) Estuarine Habitat (EST) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2)

2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, and amended it on May 4, 1995 and November 9, 1999. About 40 criteria in the NTR applied in California. On May 18, 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that applied in the state. USEPA amended the CTR on February 13, 2001. These rules contain water quality criteria for priority toxic pollutants, which apply to the receiving water.

3. **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 USEPA promulgated for California through the NTR and the priority pollutant objectives the Regional Water Board established in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria USEPA promulgated through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005 that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

4. **Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards become effective for CWA purposes [40 CFR 131.21, 65 Fed. Reg. 24641 (April 27, 2000)]. Under the revised regulation (also known as the Alaska Rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.

5. **Antidegradation Policy.** 40 CFR 131.12 requires that State water quality standards include an antidegradation policy consistent with federal policy. The State Water Board established California's antidegradation policy through State Water Board Resolution No. 68-16 which

incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both State and federal antidegradation policies. As discussed in section II.N, the permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16.

6. **Anti-Backsliding Requirements.** CWA Sections 402(o)(2) and 303(d)(4) and NPDES regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. As discussed in section II.O, the permitted discharge is consistent with anti-backsliding requirements.

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

In November 2006, USEPA approved a revised list of impaired water bodies prepared by the State (hereinafter referred to as the 303(d) list), pursuant to CWA section 303(d), which requires identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. Old Alameda Creek is not listed as an impaired waterbody; however, Lower San Francisco Bay is listed as an impaired waterbody for chlordane, DDT, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and dioxin-like PCBs. The SIP requires effluent limitations for all 303(d)-listed pollutants to be consistent with Total Maximum Daily Loads (TMDLs) and associated waste load allocations.

A TMDL for mercury in Lower San Francisco Bay became effective on February 12, 2008. Order No. R2-2007-0077 implements the mercury TMDL and regulates discharges of mercury from the Plant. The requirements of Order No. R2-2007-0077 are unaffected by this Order.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants discharged into 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 in the NPDES regulations: 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 (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria (WQC) to protect the beneficial uses of the receiving water. Specific factors affecting the development of limitations and requirements in this Order are discussed as follows.

A. Discharge Prohibitions

1. **Discharge Prohibition III.A (No discharge other than that described in this Order):** This prohibition is the same as in the previous permit and is based on CWC section 13260, which requires filing a Report of Waste Discharge before discharges can occur. Discharges

not described in the Report of Waste Discharge, and subsequently in this Order, are prohibited.

2. **Discharge Prohibition III.B (Discharge only during peak wet weather).** This prohibition is intended to ensure that the discharge to Old Alameda Creek is limited to flows of up to 8.4 million gallons in excess of the Discharger's allotted capacity of 42.9 MGD to the EBDA pipeline. The 8.4 million gallon flow is the flow expected from a 20-year return frequency storm as determined in studies conducted by the Discharger[1]. Peak wet weather discharges are expected to exceed the allotted capacity to the EBDA transport pipeline approximately once every 10 years and be less than 8.4 million gallons.

   Discharges during dry weather violate this prohibition. As the Basin Plan allows, an exception to the prohibition is granted during extreme wet weather because otherwise 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 (i.e., by far, most of the Discharger's effluent is discharged through the EBDA outfall).

3. **Dischage Prohibition III.C (Discharges during exercise of the bypass valve shall not occur more than twice per year, and must be during wet weather).** This prohibition is intended to limit potential water quality impacts to Old Alameda Creek during bypass valve exercises by allowing a maximum of two discharges per year and requiring that these dischargers occur during significant wet weather events when flow in Old Alameda Creek is high. By restricting these operations to wet weather, this Order ensures that they occur during conditions that reflect the assumptions underlying the reasonable potential analysis and effluent limitations calculations in this Order.

B. Technology-Based Effluent Limitations

1. Scope and Authority

CWA section 301(b)(1)(B) requires USEPA to develop secondary treatment standards (the level of effluent quality attainable through application of secondary or equivalent treatment) for POTWs. USEPA promulgated such technology-based effluent guidelines for POTWs at 40 CFR Part 133. These secondary treatment regulations include the minimum requirements for POTWs that apply to discharges from the Plant.

2. Applicable Technology-Based Effluent Limitations

In accordance with Secondary Treatment requirements in 40 CFR Part 133 and Basin Plan Table 4-2, this Order retains technology-based effluent limitations from the previous permit except for fecal coliform organisms. The effluent limitation for fecal coliform organisms is not retained from the previous permit because it was erroneously based on a study EBDA conducted for receiving waters in the vicinity of its deep water outfall. That study did not address shallow water discharges to Old Alameda Creek. The technology-based limit applicable to this discharge is the daily maximum total coliform limitation for shallow water

[1] District Wide Master Plan 1994, and Wastewater Equalization Storage Facilities Pre-Design 1998.

specified in Basin Plan Table 4-2 (240 MPN/100ml); however, the Basin Plan (Table 4-2 footnotes d and e) allows the Regional Water Board to consider less stringent requirements for discharges that occur during wet weather, and to grant an exception to total coliform limits when evidence demonstrates that beneficial uses will not be compromised. An exception to the total coliform limit is warranted based on information supplied by the Discharger to demonstrate water contact recreation and shellfish harvesting beneficial uses will be protected:

- Access for both water contact recreation and shellfish harvesting in the receiving water near the outfall, as well as stretches adjacent to this area, is blocked by fencing and locked gates.

- A literature review indicates that the natural conditions of the receiving water body would not support shellfish harvesting during discharge. In particular, *Venerupis philippinarum* (Japanese littleneck clam) and *Mya arenaria* (soft-shell clam) are the primary shellfish species harvested for sport in the San Francisco Bay.[2] *V. philippinarum* can tolerate salinities down to 10 – 15 parts per thousand (ppt), but grows best at 24 – 31 ppt. Adult *M. arenaria* can tolerate salinities down to 5 ppt.[3] Under potential discharge conditions (peak wet weather flow), Old Alameda Creek is freshwater, and freshwater water quality objectives are used to calculate the effluent limitations in this Order. Freshwater objectives apply to discharges to waters with salinities equal to or less than 1 ppt at least 95 percent of the time. These salinity levels would be too low to support the primary species of harvestable shellfish. Furthermore, the proposed Basin Plan amendment adding unnamed water bodies and beneficial uses to the Basin Plan does not indicate the shellfish beneficial use applies to Old Alameda Creek.

- The wet weather outfall would only be used during large storm events, when flows in Old Alameda Creek are estimated to be at least 290 MGD, as described in the District's April 2, 2010, Mixing Zone Analysis. The high flows themselves would be dangerous and therefore prohibitive of recreational uses.

- Significant dilution of the discharge is achieved within 100 feet downstream of the outfall and is estimated to be at least 32:1 based on the District's April 2, 2010, mixing zone analysis.

- Discharges from the wet weather outfall occur only rarely (approximately once every 10 years), and only for very limited durations (the most recent peak wet weather discharges from this outfall lasted only two to three hours each). Therefore, the beneficial uses are further protected simply by the very infrequent nature and short duration of the discharge.

[2] Cohen, A., Cosentino-Manning, N., and Schaeffer, K. 2007. *Habitat Type and Associated Biological Assemblages – Shellfish Beds*. Chapter from: *Report on the Subtidal Habitats and Associated Biological Taxa in San Francisco Bay.* Pg. 50. National Oceanic and Atmospheric Association: National Marine Fisheries Service. Santa Rosa, CA.
[3] Cohen, Andrew N. 2005 *Guide to the Exotic Species of San Francisco Bay.* San Francisco Estuary Institute, Oakland, CA, www.exoticsguide.org Accessed June 14, 2010.

For the reasons set forth above, the daily maximum fecal coliform limit of 400 MPN/100ml, which is equivalent to the fecal coliform water quality objective for water contact recreation, is protective of the water contact recreation beneficial use. Because the revised limit is expressed as a daily maximum, it is actually more protective than the water contact recreation water quality objective, which is expressed as a 90th percentile. However, a daily maximum limit is more practical due to the short duration of the discharge. The revised limit is also protective of the shellfish harvesting beneficial use because the substantial dilution within 100 feet of the outfall, an area where the shellfish harvesting beneficial use does not exist, would achieve the fecal coliform water quality objective for shellfish harvesting (43 MPN/100ml as a 90th percentile) at the edge of that mixing zone.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

a. 40 CFR 122.44(d)(1)(i) requires permits to include WQBELs for pollutants that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an excursion above any state water quality standard (Reasonable Potential). The process for determining Reasonable Potential and, when necessary, calculating WQBELs is intended to (1) protect the designated beneficial uses of the receiving water specified in the Basin Plan and (2) achieve applicable Water Quality Objectives contained in the California Toxics Rule (CTR), National Toxics Rule (NTR), and the Basin Plan and other State plans and policies.

b. NPDES regulations and the SIP provide the basis to establish Maximum Daily Effluent Limitations (MDELs).

(1) NPDES Regulations. 40 CFR 122.45(d) states, "For continuous discharges all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall *unless impracticable* be stated as maximum daily and average monthly discharge limitations for all discharges other than publicly owned treatment works."

(2) SIP. SIP section 1.4 requires that WQBELs be expressed as MDELs and average monthly effluent limitations (AMELs).

MDELs are necessary to protect against acute water quality effects and for preventing fish kills or acute mortality to aquatic organisms.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

The water quality criteria (WQC) and water quality objectives (WQOs) applicable to the receiving waters for this discharge are from the Basin Plan; the CTR, established by USEPA at 40 CFR 131.38; and the NTR, established by USEPA at 40 CFR 131.36. Some pollutants have WQC or WQOs established by more than one of these three sources.

a. Basin Plan. 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 freshwater, lead, mercury, nickel, silver, zinc, and cyanide. The narrative toxicity objective states in part, "All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms." Effluent limitations and provisions contained in this Order are based on available information to implement this objective.

b. CTR. The CTR specifies numeric aquatic life criteria for 23 toxic pollutants and numeric human health criteria for 57 toxic pollutants. These criteria apply to all inland surface waters and enclosed bays and estuaries of the San Francisco Bay Region, although Basin Plan Tables 3-3 and 3-4 contain numeric objectives for certain toxic pollutants that supersede the CTR criteria in some circumstances.

c. NTR. The NTR establishes numeric aquatic life criteria for selenium and numeric human health criteria for 33 toxic pollutants for waters of San Francisco Bay upstream to and including Suisun Bay and the Sacramento River Delta. These criteria apply to Old Alameda Creek, the receiving water for this discharger.

d. Basin Plan Receiving Water Salinity Policy. The Basin Plan (like the CTR and the NTR) states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable WQOs. Freshwater objectives apply to discharges to waters with salinities equal to or less than one part per thousand (ppt) at least 95 percent of the time. Saltwater criteria 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 water with salinities in between these two categories, or tidally influenced freshwaters that support estuarine beneficial uses, the criteria are to be the lower of the salt or freshwater criteria (the latter calculated based on ambient hardness) for each substance.

Limited salinity data are available for Old Alameda Creek to determine the salinity of the receiving water. The receiving water receives upstream freshwater flows, but is tidally influenced, being located approximately three miles upstream from Lower San Francisco Bay. Under peak wet weather discharge conditions the receiving water is freshwater because of the large amount of fresh storm water flow from upstream, as described in section VI.C.4.c of this Fact Sheet. Because the receiving water would be freshwater during wet weather discharges, this Order's effluent limitations are based on freshwater water quality objectives and criteria (WQO/WQC).

f. Receiving Water Hardness. Ambient hardness is used to calculate freshwater WQOs that are hardness-dependent. In determining the WQOs for this Order, Regional Water Board staff used a hardness of 140 milligrams per liter (mg/L) as $CaCO_3$, as determined from data collected during wet weather events in early 2010. This value represents the adjusted geometric mean of the hardness data collected during two storms in January 2010, when salinity in the receiving water was equal to or less than 1.0 ppt (freshwater conditions).

g. Metals Translators. Because 40 CFR 122.45(c) requires that effluent limitations for metals be expressed as total recoverable metal, and applicable WQOs for metals are typically expressed as dissolved metal, translators must be used to convert metals concentrations from dissolved to total recoverable and vice versa. In general, the dissolved form of the metals is more available and more toxic to aquatic life than the filterable forms. In the CTR, USEPA establishes default translators often used for NPDES permits. Site-specific translators can be developed to account for site-specific conditions, thereby preventing exceedingly stringent or under protective WQOs.

The Discharger has not developed site-specific translators; therefore, freshwater default translators USEPA established in the CTR at 40 CFR 131.38(b)(2), Table 2, were used to calculate WQBELs for copper and lead.

3. Determining the Need for WQBELs

Assessing whether a pollutant has Reasonable Potential is the fundamental step in determining whether or not a WQBEL is required. Using the methods prescribed in SIP Section 1.3, the effluent data were analyzed to determine if the discharge demonstrates Reasonable Potential. The Reasonable Potential Analysis (RPA) compares the effluent data with numeric and narrative WQOs in the Basin Plan, the NTR, and the CTR.

a. Reasonable Potential Methodology. The RPA identifies the observed MEC in the effluent for each pollutant based on effluent concentration data. There are three triggers in determining Reasonable Potential, according to SIP Section 1.3.

(1) The first trigger (Trigger 1) is activated if the MEC is greater than or equal to the lowest applicable WQO (MEC $\geq$ WQO), which has been adjusted, if appropriate, for pH, hardness, and translator data. If the MEC is greater than or equal to the adjusted WQO, 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 (B > WQO), and the pollutant is detected in any of the effluent samples (MEC > ND).

(3) The third trigger (Trigger 3) is activated if a review of other information determines that a WQBEL is necessary to protect beneficial uses, even though both MEC and B are less than the WQO.

b. Effluent Data. 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*, formally required the Discharger (pursuant to CWC Section 13267) to initiate or continue monitoring for the priority pollutants using analytical methods that provide the best detection limits reasonably feasible. These effluent data and the nature of the discharge were analyzed to determine if the discharge has Reasonable Potential. The RPA was based on the effluent monitoring data collected by the Discharger at Monitoring Location M-002D from November 2005 through November 2008 for most inorganic pollutants, and from February 2005 through August 2008 for most organic pollutants.

c. Ambient Background Data. Ambient background values are typically used to determine reasonable potential and to calculate effluent limitations, when necessary. For the RPA, ambient background concentrations are the observed maximum detected water column concentrations. The SIP states that for calculating WQBELs, ambient background concentrations are either the observed maximum ambient water column concentrations or, for WQOs intended to protect human health from carcinogenic effects, the arithmetic mean of observed ambient water concentrations. The background data used in the RPA were generated in three receiving water sampling events conducted by the Discharger during the term of the previous permit from February 2005 to February 2008.

d. Reasonable Potential Determination. The MECs, most stringent applicable WQOs, and background concentrations used in the RPA are presented in the following table, along with the RPA results (Yes or No) for each pollutant analyzed. Reasonable Potential was not determined for all pollutants, because there are not applicable WQOs for all pollutants, and monitoring data were not available for others. The RPA determined that copper and cyanide exhibit Reasonable Potential by Trigger 1, and lead exhibits Reasonable Potential by Trigger 2.

Table F-8. Reasonable Potential Analysis Summary

CTR #	Priority Pollutants	MEC or Minimum DL [(a)(b)] (µg/L)	Governing WQO (µg/L)	Maximum Background or Minimum DL [(a)(b)] (µg/L)	RPA Results [(c)]
1	Antimony	0.9	4300	0.8	No
2	Arsenic	4.5	150	8.4	No
3	Beryllium	<0.041	No Criteria	0.06	Ud
4	Cadmium	<0.03	1.48	0.1	No
5a	Chromium (III)	4.1	272.65	Not Available	No
5b	Chromium (VI)	4.7	11.43	8.5	No
6	**Copper**	**24.35**	**12.44**	**11.0**	**Yes**
7	**Lead**	**0.5**	**4.88**	5.7	**Yes**
8	Mercury (303d listed)	0.0148	0.025	0.026	Yes[(d)]
9	Nickel	11	69.34	**16**	No
10	Selenium	1.2	5	4	No
11	Silver	0.86	7.24	0.05	No
12	Thallium	<0.03	6.3	0.01	No
13	Zinc	59.9	159.34	43	No
14	**Cyanide**	**44.6**	**5.2**	**2.6**	**Yes**
15	Asbestos	0	No Criteria	Not Available	Ud
16	2,3,7,8-TCDD (Dioxin)	<0.00001	0.000000014	Not Available	Ud
17	Acrolein	<0.56	780	< 0.56	No
18	Acrylonitrile	<0.33	0.66	< 0.33	No
19	Benzene	<0.06	71	< 0.06	No
20	Bromoform	1.3	360	< 0.07	No
21	Carbon Tetrachloride	<0.06	4.4	<0.06	No
22	Chlorobenzene	<0.06	21000	< 0.06	No
23	Chlorodibromomethane	0.49	34	< 0.07	No
24	Chloroethane	<0.07	No Criteria	< 0.07	Ud
25	2-Chloroethylvinyl Ether	<0.1	No Criteria	< 0.1	Ud
26	Chloroform	2.7	No Criteria	< 0.6	Ud

27	Dichlorobromomethane	0.4	46	< 0.06	No
28	1,1-Dichloroethane	<0.05	No Criteria	< 0.05	Ud
29	1,2-Dichloroethane	<0.06	99	<0.06	No
30	1,1-Dichloroethylene	<0.06	3.2	< 0.06	No
31	1,2-Dichloropropane	<0.05	39	< 0.05	No
32	1,3-Dichloropropylene	<0.06	1700	<0.05	No
33	Ethylbenzene	<0.06	29000	< 0.06	No
34	Methyl Bromide	<0.05	4000	< 0.05	No
35	Methyl Chloride	<0.04	No Criteria	0.05	Ud
36	Methylene Chloride	0.4	1600	< 0.07	No
37	1,1,2,2-Tetrachloroethane	<0.06	11	< 0.06	No
38	Tetrachloroethylene	0.8	8.85	0.09	No
39	Toluene	0.71	200000	0.1	No
40	1,2-Trans-Dichloroethylene	<0.05	140000	< 0.05	No
41	1,1,1-Trichloroethane	<0.06	No Criteria	< 0.06	Ud
42	1,1,2-Trichloroethane	<0.07	42	< 0.07	No
43	Trichloroethylene	0.1	81	0.07	No
44	Vinyl Chloride	<0.05	525	< 0.05	No
45	Chlorophenol	<0.2	400	< 0.8	No
46	2,4-Dichlorophenol	<0.17	790	< 0.7	No
47	2,4-Dimethylphenol	<0.12	2300	< 0.8	No
48	2-Methyl-4,6-Dinitrophenol	<0.6	765	< 0.6	No
49	2,4-Dinitrophenol	<0.6	14000	< 0.6	No
50	2-Nitrophenol	<0.16	No Criteria	< 0.6	Ud
51	4-Nitrophenol	<0.29	No Criteria	< 0.7	Ud
52	3-Methyl-4-Chlorophenol	<0.16	No Criteria	< 0.6	Ud
53	Pentachlorophenol	<0.14	7.400148	< 0.6	No
54	Phenol	0.56	4600000	Not Available	No
55	2,4,6-Trichlorophenol	0.33	6.5	< 0.6	No
56	Acenaphthene	<0.031	2700	< 0.03	No
57	Acenaphthylene	<0.021	No Criteria	< 0.02	Ud
58	Anthracene	<0.0034	110000	< 0.03	No
59	Benzidine	<0.96	0.00054	< 1	No
60	Benzo(a)Anthracene	<0.0058	0.049	< 0.02	No
61	Benzo(a)Pyrene	<0.0079	0.049	< 0.02	No
62	Benzo(b)Fluoranthene	<0.0079	0.049	< 0.02	No
63	Benzo(ghi)Perylene	<0.012	No Criteria	< 0.02	Ud
64	Benzo(k)Fluoranthene	<0.02	0.049	< 0.02	No
65	Bis(2-Chloroethoxy)Methane	<0.13	No Criteria	< 0.7	Ud
66	Bis(2-Chloroethyl)Ether	<0.15	1.4	< 0.7	No
67	Bis(2-Chloroisopropyl)Ether	<0.16	170000	< 0.6	No
68	Bis(2-Ethylhexyl)Phthalate	2.8	5.9	0.7	No
69	4-Bromophenyl Phenyl Ether	<0.11	No Criteria	< 1	Ud
70	Butylbenzyl Phthalate	<0.13	5200	< 0.7	No
71	2-Chloronaphthalene	<0.16	4300	< 0.6	No
72	4-Chlorophenyl Phenyl Ether	<0.15	No Criteria	< 1	Ud
73	Chrysene	<0.0036	0.049	< 0.02	No
74	Dibenzo(a,h)Anthracene	<0.0054	0.049	< 0.03	No
75	1,2-Dichlorobenzene	<0.05	17000	< 0.05	No
76	1,3-Dichlorobenzene	<0.07	2600	< 0.07	No

77	1,4-Dichlorobenzene	0.95	2600	< 0.06	No
78	3,3-Dichlorobenzidine	<0.17	0.077	< 0.06	No
79	Diethyl Phthalate	<0.42	120000	< 0.6	No
80	Dimethyl Phthalate	<0.042	2900000	< 0.6	No
81	Di-n-Butyl Phthalate	3.4	12000	3.4	No
82	2,4-Dinitrotoluene	<0.075	9.1	< 1.8	No
83	2,6-Dinitrotoluene	<0.096	No Criteria	< 0.5	Ud
84	Di-n-Octyl Phthalate	<0.14	No Criteria	< 0.7	Ud
85	1,2-Diphenylhydrazine	<0.6	0.54	< 0.6	Ud
86	Fluoranthene	<0.009	370	< 0.03	No
87	Fluorene	<0.0073	14000	< 0.03	No
88	Hexachlorobenzene	<0.002	0.00077	< 0.8	No
89	Hexachlorobutadiene	<0.15	50	< 0.8	No
90	Hexachlorocyclopentadiene	<0.061	17000	< 0.8	No
91	Hexachloroethane	<0.15	8.9	< 0.9	No
92	Indeno(1,2,3-cd) Pyrene	<0.0045	0.049	< 0.02	No
93	Isophorone	<0.14	600	< 0.5	No
94	Naphthalene	<0.021	No Criteria	< 0.02	Ud
95	Nitrobenzene	<0.16	1900	< 0.7	No
96	N-Nitrosodimethylamine	1.7	8.1	< 0.6	No
97	N-Nitrosodi-n-Propylamine	<0.16	1.4	< 0.6	No
98	N-Nitrosodiphenylamine	<0.14	16	< 0.6	No
99	Phenanthrene	<0.0063	No Criteria	< 0.02	Ud
100	Pyrene	<0.0027	11000	< 0.02	No
101	1,2,4-Trichlorobenzene	<0.16	No Criteria	< 1.3	Ud
102	Aldrin	<0.0014	0.00014	< 0.002	No
103	alpha-BHC	<0.0018	0.013	< 0.002	No
104	beta-BHC	<0.002	0.046	< 0.002	No
105	gamma-BHC	<0.002	0.063	< 0.002	No
106	delta-BHC	<0.002	No Criteria	< 0.002	Ud
107	Chlordane (303d listed)	<0.0136	0.00059	< 0.02	No
108	4,4-DDT (303d listed)	<0.0028	0.00059	< 0.002	No
109	4,4-DDE	<0.0018	0.00059	< 0.003	No
110	4,4-DDD	<0.002	0.00084	< 0.002	No
111	Dieldrin (303d listed)	<0.002	0.00014	< 0.002	No
112	alpha-Endosulfan	<0.002	0.056	< 0.002	No
113	beta-Endosulfan	<0.002	0.056	< 0.002	No
114	Endosulfan Sulfate	<0.00289	240	< 0.002	No
115	Endrin	<0.002	0.036	< 0.002	No
116	Endrin Aldehyde	<0.002	0.81	< 0.002	No
117	Heptachlor	<0.00175	0.00021	< 0.003	No
118	Heptachlor Epoxide	<0.00199	0.00011	< 0.002	No
119-125	PCBs sum (303d listed)	<0.0194	0.00017	< 0.03	No
126	Toxaphene	<0.0698	0.0002	< 0.15	No
	Tributyltin	<0.0035	0.072	Not Available	No
	Total PAHs	<0.0027	No Criteria	< 0.043	Ud
	Total Ammonia (mg/L N)	Not Available	Not Available[(e)]	Not Available	Ud

Footnotes for Table F-8:

(a) The Maximum Effluent Concentration (MEC) and maximum background concentration (B) are the actual detected concentrations unless preceded by a "<" sign, in which case the value shown is the minimum detection level (DL).

(b) The MEC or B is "Not Available" when there are no monitoring data for the constituent.

(c) RPA Results = Yes, if MEC > WQO, B > WQO and MEC is detected, or Trigger 3;
= No, if MEC and B are < WQO or all effluent data are undetected;
= Undetermined (Ud), if no objectives have been promulgated or there are insufficient data.

(d) Discharges of mercury to San Francisco Bay are regulated by Regional Water Board Order No. R2-2007-0077, which became effective March 1, 2008. Order No. R2-2007-0077 is a Watershed Permit that implements the San Francisco Bay Mercury TMDL and establishes wasteload allocations for industrial and municipal wastewater discharges of this pollutant.

(e) Receiving water data not available to calculate WQC.

(1) Constituents with limited data. In some cases, Reasonable Potential cannot be determined because effluent data are limited or ambient background concentrations are not available. The Discharger will continue to monitor for these constituents in the effluent using analytical methods that provide the best feasible detection limits. When additional data become available, further RPA will be conducted to determine whether to add numeric effluent limitations to this Order or to continue monitoring.

(2) Pollutants with No Reasonable Potential. WQBELs are not included in this Order for constituents that do not demonstrate Reasonable Potential; however, monitoring for those pollutants is still required. If concentrations of these constituents are found to have increased significantly, the Discharger will be required to investigate the sources of the increases. Remedial measures are required if the increases pose a threat to water quality in the receiving water.

4. WQBEL Calculations.

a. Pollutants with Reasonable Potential. WQBELs were developed for the toxic and priority pollutants determined to have reasonable potential to cause or contribute to exceedances of applicable WQOs or WQC. The WQBELs were calculated based on appropriate WQOs and the appropriate procedures specified in SIP Section 1.4. The WQOs used for each pollutant with reasonable potential are discussed below.

b. Shallow/Deep Water Discharge. Because the discharge does not receive an initial dilution of 10:1, the discharge is classified by the Regional Water Board as a shallow water discharge.

c. Dilution Credit. This Order allows dilution credits for copper and cyanide. SIP Section 1.4.2 allows dilution credits for completely-mixed discharges and, under certain circumstances, for incompletely-mixed discharges. The outfall does not have a diffuser and the Discharger's April 2010 mixing zone analysis[4] did not provide evidence that the discharge is completely-mixed; therefore the discharge is classified as incompletely-mixed.

The Discharger's mixing zone analysis justifies mixing zones and associated dilution credits for copper and cyanide in accordance with SIP requirements. The SIP allows mixing zones for incompletely-mixed discharges, but the mixing zones must be as small as practicable. The Discharger identified a mixing zone extending from the outfall to a distance of 100 feet downstream and encompassing the entire width and depth of the creek within this reach. At 100 feet from the outfall, during wet weather, the channel flow

[4] Union Sanitary District Wet Weather Outfall NPDES Permit Renewal Mixing Zone Analysis, April 2, 2010.

and discharge flow are thoroughly combined with storm water flow from the Alvarado Flood Control Pump Station outfall. Based on expected channel flow during a 10-year return frequency storm (260 mgd), and based on the maximum discharge of 8.4 million gallons (conservatively estimated based on a 20-year storm), the mixing zone would result in dilution of at least 32:1 (D=31). This is the highest dilution justified. On a pollutant-by-pollutant basis, the smallest practicable mixing zone can be no larger than the one corresponding to this dilution. Since the 100-foot mixing zone meets the SIP criteria, as summarized below, smaller mixing zones also meet these criteria.

As SIP Section 1.4.2.2 requires, the mixing zone does not:

i. **Compromise the integrity of the entire water body.** The mixing zone providing 32:1 dilution extends 100 feet downstream of the wet weather outfall, and comprises 0.5% of the receiving waterbody length and surface area. The actual dilution credits applied, 19:1 for copper and 16.5:1 for cyanide, define even smaller areas of the channel. Because of this, and the infrequency of the discharge, the mixing zone will not compromise the integrity of the entire water body.

ii. **Cause acutely toxic conditions to aquatic life passing through the mixing zone.** Acute toxicity is not expected because organisms that drift or swim through the mixing zone are exposed much less than the one-hour averaging period on which acute criteria are based (*Technical Support Document for Water Quality-based Toxics Control,* USEPA, 1991).

iii. **Restrict the passage of aquatic life.** The mixing zone dimensions are less than the actual channel width during storm flows because the mixing zone is based on the trapezoidal channel bottom width. During storm events water in the channel is estimated to be up to 50 feet wider. Additionally, upstream passage is blocked already by a tide control structure located 2,100 feet above the wet weather outfall.

iv. **Adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws.** The area surrounding the outfall consists of sheltered tidal flats and low vegetated riverine banks that do not provide critical habitat for any state or federally listed protected endangered or sensitive species.

v. **Produce undesirable or nuisance aquatic life.** Discharge during a peak wet weather event cannot support or sustain algal growth or other nuisance aquatic life. In addition, the Discharger's effluent will comply with receiving water limitation V.1.b, which prohibits bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses.

vi. **Result in floating debris, oil, or scum.** The Plant is equipped with properly designed, installed, and maintained scum/debris collection devices (scum baffles) to effectively collect and properly dispose of oils, grease, debris, and scum, so the effluent is free of these materials. The Discharger's treatment process also includes

effluent screens that remove remaining floatables and plastics. In addition, the Discharger's effluent is in compliance with NPDES receiving water limitation V.1.b, which specifically prohibits floating debris, oil, and scum.

vii. **Produce objectionable color, odor, taste, or turbidity.** All effluent discharged through the wet weather outfall receives full secondary treatment and is properly disinfected. Secondary treatment generally addresses these issues through the biological degradation of organic compounds. When the infrequent discharges do occur through the wet weather outfall, the Discharger will visually monitor the effluent to confirm that objectionable color, odor, or turbidity is not present.

viii. **Cause objectionable bottom deposits.** All effluent discharged through the wet weather outfall receives full secondary treatment, which removes a minimum of 85% of BOD and TSS. Secondary treatment biologically degrades and removes suspended particles from the wastewater that may otherwise contribute to receiving water bottom deposits.

ix. **Cause a nuisance.** California Water Code 13050(m) defines "nuisance" to mean anything that meets all of the following requirements:

(1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.
(2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.
(3) Occurs during, or as a result of, the treatment or disposal of wastes.

No nuisances will be created because the effluent receives full secondary treatment and has been properly disinfected, and will comply with permit limits that specifically prohibit the discharge from creating a nuisance in Old Alameda Creek.

x. **Dominate Old Alameda Creek or overlap a mixing zone from a different outfall.** The Regional Water Board has not established any other mixing zones for a nearby discharger. The mixing zone does not extend beyond the Alvarado flood control pump station outfall.

xi. **Exist near any drinking water intake.** The receiving water is not used for drinking water supplies.

Since the 100-foot mixing zone with 32:1 dilution meets these SIP criteria, the smallest practicable mixing zone was determined based on the smallest dilution credit less than 32:1 that results in WQBELs with which the Discharger can comply. Copper dilution credits were set so the 99th percentile of the historic effluent data is less than the resulting AMEL and MDEL; and the mean is less than the resulting long term average of the projected distribution. Because the discharges from E-WW are

expected to last less than one day, both the AMEL and MDEL were compared to the 99th percentile (usually the AMEL is compared to the 95th percentile of the data set). This Order allows a dilution credit of 19:1 (D=18) for copper and 16.5:1 (D=15.5) for cyanide.

d. Development of WQBELs for Specific Pollutants

(1) Copper

(a) Copper WQC. The most stringent applicable WQC for copper are the freshwater criteria from the Basin Plan. These WQC were converted to total recoverable metal using CTR default translators of 0.96 for both acute and chronic objectives, as described in IV.C.2.g, and applied a hardness of 140 mg/L as $CaCO_3$, as described in IV.C.2.f. The resulting chronic WQC of 12.4 µg/L and acute WQC of 19.2 µg/L were used to perform the RPA.

(b) RPA Results. This Order establishes effluent limitations for copper because the MEC (24.4 µg/L) exceeds the governing WQC (12.4 µg/L) for copper, demonstrating Reasonable Potential by Trigger 1.

(c) Copper WQBELs. Effluent limitations for copper, calculated according to SIP Section 1.4, using CTR default translators, a hardness of 140 mg/L, and a dilution credit of 19:1 (D=18), are an AMEL of 31µg/L and an MDEL of 63 µg/L.

(d) Immediate Compliance Feasible. As described in section IV.C.4.c, the 99th percentile of the effluent data for copper collected over the period of February 2006 to November 2008 was used to determine the smallest practicable mixing zone and its associated dilution credit. This results in WQBELs with which the Discharger can comply. The 99th percentile of the data (31 µg/L) is no greater than the MDEL (63 µg/L) and the AMEL (31µg/L). The Regional Water Board therefore concludes that immediate compliance with these effluent limitations is feasible.

(f) Anti-backsliding. Anti-backsliding requirements are satisfied because the previous permit did not include final effluent limitations for copper.

(2) Lead

(a) Lead WQC. The most stringent applicable WQC for lead are the freshwater criteria from the Basin Plan, expressed as dissolved metal. These WQC were converted to total recoverable metal using CTR default translators of 0.74 for both acute and chronic objectives, as described in IV.C.2.g, and applied a hardness of 140 mg/L, as described in IV.C.2.f. The resulting chronic WQC of 4.9 µg/L and acute WQC of 125 µg/L were used to perform the RPA.

(b) RPA Results. This Order establishes effluent limitations for lead because the receiving water background maximum concentration (5.7 µg/L) exceeds the

governing WQC (4.9 µg/L) for lead, and lead was detected in the effluent, demonstrating Reasonable Potential by Trigger 2.

(c) Lead WQBELs. Effluent limitations for lead, calculated according to SIP Section 1.4, using CTR default translators, a hardness of 140 mg/L, and no dilution credit, are an AMEL of 3.8 µg/L and an MDEL of 8.5 µg/L.

(d) Immediate Compliance Feasible. Statistical analysis of effluent data for lead collected over the period of February 2006 to November 2008 shows that the 95th percentile (1.5 µg/L) is less than the AMEL (3.8 µg/L); the 99th percentile (1.7 µg/L) is less than the MDEL (8.5 µg/L); and the mean (0.19 µg/L) is less than the LTA of the non-parametric effluent data set after accounting for effluent variability (2.2 µg/L). The Regional Water Board therefore concludes that immediate compliance with these effluent limitations is feasible.

(f) Anti-backsliding. Anti-backsliding requirements are satisfied because the previous permit did not include final effluent limitations for lead.

(3) Cyanide

(a) Cyanide WQC. The most stringent applicable WQC for cyanide are established by the NTR for protection of aquatic life in freshwater, and include an acute WQC of 22 µg/L and a chronic WQC of 5.2 µg/L.

(b) RPA Results. This Order establishes effluent limitations for cyanide because the MEC (44.6 µg/L) exceeds the governing WQC (5.2 µg/L), demonstrating Reasonable Potential by Trigger 1.

(c) Cyanide WQBELs. Effluent limitations for cyanide, calculated according to SIP Section 1.4 using a CV of 2.14, and a dilution credit of 16.5:1 (D=15.5), are an AMEL of 44 µg/L and an MDEL of 108 µg/L.

(d) Immediate Compliance Feasible. As described in section IV.C.4.c, the 99th percentile of the effluent data for cyanide collected over the period of February 2006 to November 2008 was used to determine the smallest practicable mixing zone and its associated dilution credit. This results in WQBELs with which the Discharger can comply. The 99th percentile of the effluent data (43.6 µg/L) is less than the MDEL (137µg/L) and the AMEL (44 µg/L), and the mean (4.8 µg/L) is less than the LTA of the non-parametric effluent data set after accounting for effluent variability (15.3µg/L). The Regional Water Board therefore concludes that immediate compliance with these effluent limitations is feasible.

(f) Anti-backsliding. Anti-backsliding requirements are satisfied because the previous permit did not include final limitations for cyanide.

e. Effluent Limit Calculations

Table F-9 summarizes the calculation of WQBELs for copper, lead, and cyanide.

Table F-9. Effluent Limit Calculations

PRIORITY POLLUTANTS	Copper	Lead	Cyanide
Units	**µg/L**	**µg/L**	**µg/L**
Basis and Criteria type	FW	FW	FW
Criteria -Acute	19.2	125	22
Criteria -Chronic	12.4	4.9	5.2
SSO Criteria -Acute	----	-----	----
SSO Criteria -Chronic	----	-----	----
Water Effects ratio (WER)	1	1	1
Lowest WQO	12.4	4.9	5.2
Site Specific Translator - MDEL	0.96	0.74	-----
Site Specific Translator - AMEL	0.96	0.74	-----
Dilution Factor (D) (if applicable)	18	0	15.5
No. of samples per month	4	4	4
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y
HH criteria analysis required? (Y/N)	N	N	Y
Applicable Acute WQO	19.2	125	22
Applicable Chronic WQO	12.4	4.9	5.2
HH criteria	-----	----	220000
Background (Maximum Conc for Aquatic Life calc)	11.0	5.7	0.4
Background (Average Conc for Human Health calc)	-----	----	2.6
Is the pollutant on the 303d list (Y/N)?	N	N	N
ECA acute	167.2	125	357
ECA chronic	38.3	5	79.6
ECA HH	----	----	3629960
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	N
Avg of effluent data points	10.2	0.2	4.8
Std Dev of effluent data points	6.2	0.1	10.3
CV calculated	0.61	0.75	2.14
CV (Selected) - Final	0.61	0.75	2.14
ECA acute mult99	0.32	0.26	0.11
ECA chronic mult99	0.52	0.46	0.19
LTA acute	53.0	33.1	40.0
LTA chronic	20.0	2.2	15.3
minimum of LTAs	20.0	2.2	15.3
AMEL mult95	1.6	1.70	2.87
MDEL mult99	3.2	3.78	8.92
AMEL (aq life)	31.3	3.8	43.9
MDEL(aq life)	63	8.5	136.6
MDEL/AMEL Multiplier	2.02	2.22	3.11
AMEL (human hlth)	----	----	3629960
MDEL (human hlth)	----	----	11286400
minimum of AMEL for Aq. life vs HH	31.3	3.8	43.9
minimum of MDEL for Aq. Life vs HH	63.2	8.5	136.6
Current limit in permit (30-day average)	-----	-----	-----
Current limit in permit (daily)	37 (Interim)	None	10 (Interim)
Final limit - AMEL	31	3.8	44
Final limit - MDEL	63	8.5	137
Max Effl Conc (MEC)	24.35	0.5	44.6

5. Whole Effluent Toxicity

This Order does not require whole effluent acute or chronic toxicity testing because of the short-term nature and infrequency of the discharge.

D. Anti-backsliding and Antidegradation

1. **Effluent Limitations Retained from Previous Permit**. Limitations for the following parameters are unchanged.

   - Oil and grease
   - pH
   - BOD_5 and TSS
   - Total residual chlorine
   - 85% removal requirement for BOD_5 and TSS

   Retaining effluent limitations for these parameters ensures that these limitations are at least as stringent as those in the previous permit, meeting CWA anti-backsliding requirements. Retaining effluent limitations for these parameters also ensures that the existing receiving water quality will not be degraded in terms of these parameters thus meeting antidegradation requirements.

2. **New Effluent Limitations**. This Order establishes new WQBELs for lead, which was not limited by the previous permit. The establishment of effluent limitations for lead effectively creates limitations that are more stringent than those in the previous permit, therefore meeting applicable anti-backsliding requirements and ensuring that existing receiving water quality will not be degraded.

3. **More Stringent Effluent Limitations.** The limitation for fecal coliform organisms is more stringent than the previous permit. This Order establishes a daily maximum limit for total coliform organisms of 400 MPN/100ml. This limit is more stringent than the limit in the previous permit for fecal coliform organisms (500 MPN/100ml); however, this limit was erroneously based on a study EBDA conducted for receiving waters in the vicinity of its deep water outfall, and did not consider the shallow water discharge to Old Alameda Creek.

   The AMEL for copper, which will have to be met due to the short duration of the discharge, is more stringent than the interim daily maximum limit in the previous order.

   By imposing limitations that are more stringent than those in the previous permit, this Order meets applicable anti-backsliding requirements and ensures that existing receiving water quality will not be degraded.

4. **Effluent Limitations Not Retained from the previous Permit.** This Order does not retain interim performance-based limitations for the following parameters.

   - Copper
   - Cyanide

- Mercury
- Nickel
- Zinc

The previous permit included an interim effluent limitation for mercury, which is not retained, because, effective March 1, 2008, Regional Water Board Order No. R2-2007-0077 now regulates San Francisco Bay mercury discharges. Order No. R2-2007-0077 was established consistent with anti-backsliding and antidegradation requirements.

The previous permit included interim effluent limitations for nickel and zinc; however, because the RPA showed that Plant discharges no longer demonstrate reasonable potential for these pollutants, this Order does not retain these limitations. Interim effluent limitations were also included in the previous permit for copper and cyanide; however these have been replaced by final effluent limitations. Elimination of these WQBELs is consistent with anti-backsliding and antidegradation policies as discussed in State Water Board Order WQ 2001-16.

5. **Effluent Limitations Higher Than in Previous Permit.** The MDEL for copper and the AMEL and MDEL for cyanide, are higher than the interim limitations in the previous permit. Backsliding requirements are satisfied because the previous permit did not include final effluent limitations for copper. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16. This Order continues the status quo with respect to the volume of, and level of treatment provided for, the discharge, and thus there will be no change in water quality beyond the level that was authorized in the previous permit. The limitations in this Order comply with antidegradation requirements because they hold the Discharger to performance levels that will neither cause nor contribute to water quality impairment, nor further water quality degradation.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

Receiving water limitations are retained from the previous permit and reflect applicable Basin Plan WQOs.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

The principal purposes of a Monitoring and Reporting Plan (MRP) by a discharger are to:

- Document compliance with WDRs and prohibitions established by the Regional Water Board;
- Facilitate self-policing by the discharger in the prevention and abatement of pollution arising from waste discharge;
- Develop or assist in the development of limitations, discharge prohibitions, national standards of performance, pretreatment and toxicity standards, and other standards; and
- Prepare water and wastewater quality inventories.

The MRP is a standard requirement in almost all NPDES permits the Regional Water Board issues, including this Order. It contains definitions of terms, specifies general sampling and analytical protocols, and sets out requirements for reporting spills, violations, and routine monitoring data in accordance with NPDES requirements. The MRP also 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 RPAs.

The following provides the rationale for the monitoring and reporting requirements contained in the MRP (**Attachment E**).

A. Effluent Monitoring

The MRP retains most effluent monitoring requirements from the previous permit. However, monitoring for nickel and zinc is no longer required because these pollutants no longer demonstrate Reasonable Potential. Monthly monitoring for mercury is no longer required because Regional Water Board Order No. R2-2007-0077 now regulates mercury discharges.

Routine effluent monitoring for copper, lead, and cyanide, is established to determine the Discharger's compliance with this Order's effluent limitations. Monitoring for all other priority toxic pollutants is to be conducted in accordance with the frequency and methods described in the MRP (**Attachment E**) and the Regional Standard Provisions (**Attachment G**).

Monitoring of ammonia, pH, and temperature in the effluent is required to conduct a reasonable potential analysis for ammonia for the next permit cycle.

B. Receiving Water Monitoring

Receiving water monitoring is required to provide data to perform a reasonable potential analysis for the next permit cycle and to ensure compliance with receiving water limits.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions (Provision VI.A)

Federal Standard Provisions, which in accordance with 40 CFR 122.41and 122.42 apply to all NPDES discharges and must be included in every NPDES permit, are provided in **Attachment D** of this Order. 40 CFR 122.41(a)(1) and (b) through (n) establish conditions that apply to all state-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. 40 CFR 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. The Regional Standard Provisions (**Attachment G**) supplement the Federal Standard Provisions. In accordance with 40 CFR 123.25, this Order omits federal conditions that address enforcement authority specified in 40 CFR 122.41(j)(5) and (k)(2) because the enforcement authority under CWC is more stringent. In lieu of these conditions, this Order incorporates by reference CWC section 13387(e).

B. Monitoring and Reporting Requirements (Provision VI.B)

The Discharger is required to monitor the permitted discharges in order to evaluate compliance with permit conditions. Monitoring requirements are contained in the MRP (**Attachment E**) and the Regional Standard Provisions (**Attachment G**). This provision requires compliance with these documents and is based on 40 CFR 122.63 and CWC section 13267.

C. Special Provisions (Provision VI.C)

1. Reopener Provisions

These provisions are based on 40 CFR Part 123 and allow modification of this Order and its effluent limitations as necessary in response to updated information.

2. Best Management Practices and Pollution Minimization Program

This provision is based on Basin Plan Chapter 4 (section 4.13.2) and SIP Section 2.4.5.

VIII. PUBLIC PARTICIPATION

The Regional Water Board is considering the issuance of WDRs that will serve as an NPDES permit for the Plant's discharge. As a step in the WDR adoption process, the Regional Water Board developed tentative WDRs. The Regional Water Board encouraged 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 WDRs for the discharge and provided them with an opportunity to submit their written comments and recommendations. Notification was provided through The Argus on May 7, 2010.

B. Written Comments

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

To receive full consideration and a written response, written comments should be received at the Regional Water Board offices by 5:00 p.m. on **June 7, 2010.**

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: **July 14, 2010**
Time: 9:00 am
Location: Elihu Harris State Office Building
1515 Clay Street, 1st Floor Auditorium
Oakland, CA 94612

Contact: Heather Ottaway, (510) 622-2116, email HOttaway@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. The Regional Water Board Web address is http://www.waterboards.ca.gov/sanfranciscobay where one can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

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

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

E. Information and Copying

The Report of Waste Discharge, 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, except from noon to 1:00 p.m. 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 these WDRs and NPDES permit should contact the Regional Water Board, reference this facility, and provide a name, address, phone number, and preferably an email address.

G. Additional Information

Requests for additional information or questions regarding this Order should be directed to Heather Ottaway at (510) 622-2116 (e-mail at HOttaway@waterboards.ca.gov).

Appendix B
Comment Letter

June 7, 2010

VIA EMAIL: To: hottaway@waterboards.ca.gov
Cc: bwolfe@waterboards.ca.gov; ltang@waterboards.ca.gov; wjohnson@waterboards.ca.gov; moakley@oakleywater.com

Ms. Heather Ottaway
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Subject: Union Sanitary District Comments on Tentative Order for NPDES Permit CA0038773

Dear Ms. Ottaway:

The Union Sanitary District appreciates the opportunity to comment on the tentative order for the District's NPDES Permit. The District would also like to commend your staff for their diligence and care in preparing these documents. The District owns and operates the Raymond A. Boege Alvarado Wastewater Treatment Plant which provides secondary level treatment for the Cities of Newark, Union City, and Fremont. The population served is approximately 333,648.

Attached you will find the District's detailed comments on the tentative order. We would like to highlight a couple of the comments in particular:

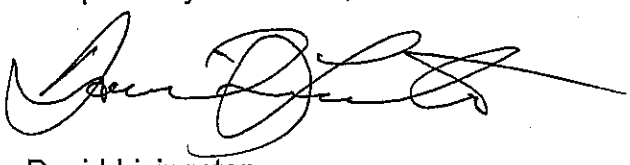
1. The District requests that the bacteria indicator effluent limit be promulgated as fecal coliform consistent with the Basin Plan and beneficial uses.

2. The District requests adjustment to the cyanide effluent limit taking into account the full set of recent discharge data.

5072 Benson Road Union City, CA 94587-2508
P.O. Box 5050 Union City, CA 94587-8550
(510) 477-7500 FAX (510) 477-7505
www.unionsanitary.com

The District appreciates the consideration of these comments by the Regional Water Board. Please do not hesitate to contact me if you have any questions or would like to discuss anything. Thank you very much.

Respectfully submitted,



David Livingston,
Treatment and Disposal Work Group Manager
Union Sanitary District

cc: Bruce Wolfe, Regional Water Board
Lila Tang, Regional Water Board
Bill Johnson, Regional Water Board
Monica Oakley, Oakley Water Strategies

Union Sanitary District
Wet Weather Outfall

Comments Regarding Tentative NPDES Permit

June 7, 2010

The Union Sanitary District (District) appreciates the opportunity to submit the following comments on the Tentative Order (TO) reissuing the National Pollutant Discharge Elimination System (NDPES) Permit CA0038773. Comments on the permit are shown roughly in the order that the topics appear in the permit.

COMMENTS ON THE TENTATIVE ORDER

1. **The District requests that the Discharge Description and Prohibition B, pertaining to the allowable discharge through the East Bay Dischargers Authority (EBDA) pipeline, be revised to more accurately reflect the Joint Exercise of Powers Agreement (JPA) and actual hydraulic limitations.**

(Page 4 and Page 9)

The EBDA JPA and related resolutions allot the District a maximum discharge capacity of 42.9 million gallons per day (MGD) to the EBDA transport pipeline. Under these agreements, MGD is defined as the total flow in million gallons for a 24-hour period; instantaneous flow rates may exceed daily capacity allocations[1]. Due to hydraulic limitations of the system, higher-than-average flows from other agencies can temporarily limit the capacity available to the District in the EBDA pipeline. For this reason, the District may need to divert effluent to the wet weather outfall (EFF-WW) in cases where instantaneous maximum flows do not exceed 42.9 MGD in order to prevent flooding and damage to the plant. The Tentative Order should be revised to more accurately describe the District's capacity allocation and to reflect these dynamic physical constraints, as follows:

Page 4:

2. Discharge Description

...This wet weather discharge would be discharged through the EBDA pipeline if that pipe were large enough to transport all the wet weather flow. The JPA with EBDA and other agencies allots 42.9 MGD (on a 24-hour basis) of capacity in the pipeline to the Discharger. Due to hydraulic limitations, the actual instantaneous maximum capacity available to the Discharger in the EBDA pipeline may be less than 42.9 MGD during wet weather events. If flow exceeds th~~e~~is maximum hydraulic capacity available in the EBDA pipeline, the Discharger must discharge to its wet weather outfall to avoid flooding and damage to the Plant. Both outfalls receive fully treated effluent from the Plant. The only differences between discharges from these two outfalls are the location and timing of discharge. The discharge to Old Alameda Creek is dechlorinated.

[1] East Bay Dischargers Commission, Resolution No. 91-16. Resolution Adopting a Policy Defining the Joint Powers Authority Flow.

Page 9:

B. Discharge to Old Alameda Creek is prohibited except during peak wet weather flows after the Discharger fully utilizes ~~its allotted capacity of 42.9 MGD~~ the maximum hydraulic capacity available in the EBDA pipeline, and except during exercise of the bypass valve as described in Prohibition C. Such discharge shall not exceed 8.4 million gallons per event. The Discharger is allotted a capacity of 42.9 MGD (on a 24-hour basis) for discharge to the EBDA pipeline.

2. The District requests Finding E pertaining to the California Environmental Quality Act (CEQA) be revised for accuracy.

(Page 5)

The California Water Code section 13389 exempts NPDES permits from Chapter 3 of CEQA, but not Chapters 1 or 2.6. These chapters require some environmental assessment, though not a full Environmental Impact Report (*County of Los Angeles v. California State Water Resources Control Board* (2006) 143 Cal.App.4th 985).

The District requests the following language revision to Finding E:

E. California Environmental Quality Act (CEQA). Under CWC section 13389, this action to adopt an NPDES permit is exempt from ~~the~~ Chapter 3 ~~provisions~~ of CEQA.

3. The District requests Finding P pertaining to the Endangered Species Act be removed from the Tentative Order, as it does not apply.

(Page 8)

The Endangered Species Act is not applicable to this NPDES permit. The treatment plant was approved and constructed under CEQA, which considered the Endangered Species Act, and CEQA (under which the Endangered Species Act would be considered for this permit) does not apply to this permit. The District requests that Finding P be removed.

4. The District requests that Finding S pertaining to requirements under state law be removed.

(Page 8)

There are many provisions in the permit which are promulgated under state law only, including requirements for technology-based and water-quality based effluent limits as well as special studies, pollution prevention, and other activities. In particular, there are several instances where the permit requirements are more stringent than required by the federal Clean Water Act. As a result, the District requests removal of this finding.

5. The District requests that the Total Coliform limit in Table 6, Effluent Limitations for Conventional and Non-Conventional Pollutants, be revised.

(Page 10)

The Tentative Order includes a proposed maximum daily total coliform limit of 240 MPN/100mL. This limit is not attainable. This limit would replace the previous fecal

coliform maximum daily limit of 500 MPN/100mL, and is considerably more stringent. Fecal coliform is generally understood to be a subset of total coliform.

A more appropriate effluent limit for bacteria would reflect both regulatory and practical considerations. These considerations and a recommended revised limit are described in the following paragraphs.

Compliance

Wet weather data from January – March and October – December of 2004, the last year during which total and fecal coliform were analyzed in parallel, indicate that the 99th percentile of total coliform data is 9,990 MNP/100mL. Compliance with a daily maximum total coliform limit of 240 MPN/100mL is therefore not feasible under current operating conditions. These data and the 99th percentile are shown in **Figure 1**, below.

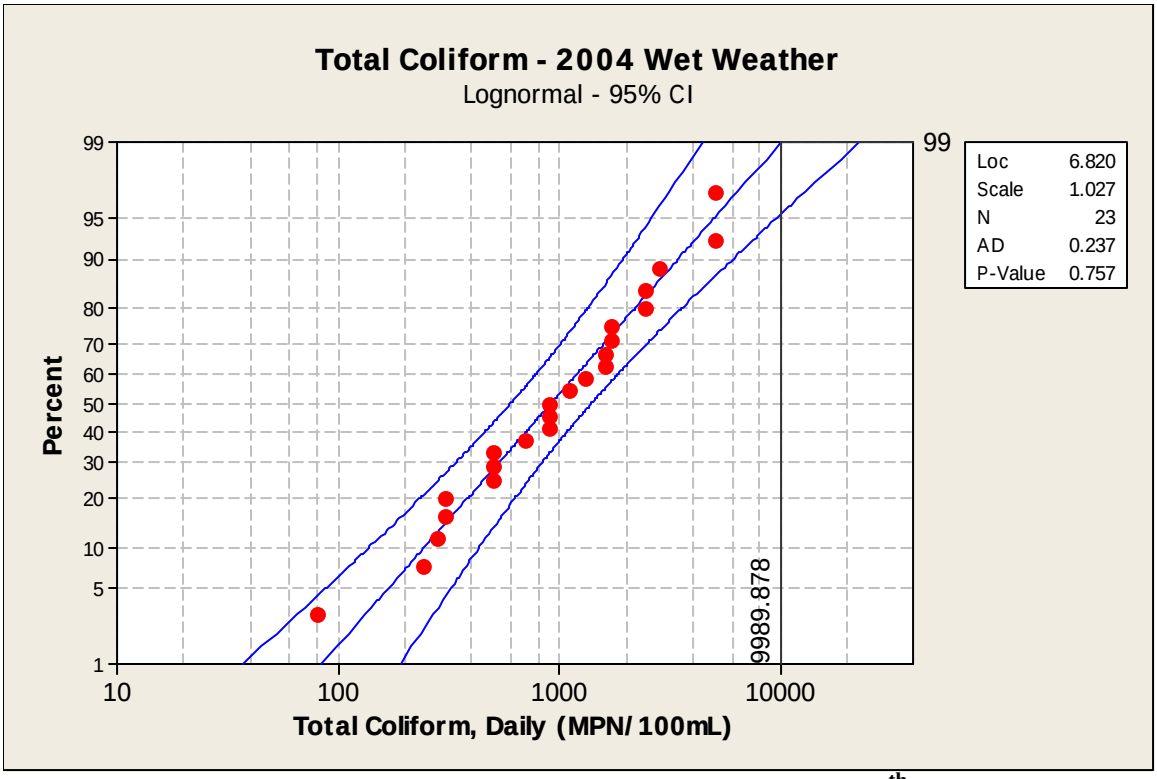


Figure 1. 2004 Wet Weather Total Coliform Data and 99th percentile

The proposed total coliform limit would replace the previous fecal coliform limit of 500 MPN/100mL. The geometric mean of the ratios of parallel total to fecal coliform data (21.5) indicates that a total coliform limit of 10,750 MPN/100mL would be comparable to the previous fecal coliform limit for all data during the entire year of 2004. The geometric mean of just the wet weather data (29.2) would result in a total coliform limit of 14,600 MPN/100mL. Both estimations of a total coliform limit that is comparable to the current fecal coliform limit (10,750 or 14,600 MPN/100mL), are far greater than the proposed total coliform limit (240 MPN/100mL). A regression analysis indicates a relatively linear correlation (R-squared = 0.76), between total and fecal coliform data pairs. The 2004 total and fecal coliform data used in these calculations are shown in **Table 1**, below.

Table 1. 2004 Total and Fecal Coliform (MPN/100mL)

Date	Total (Daily)	Fecal (Daily)	Total/Fecal	Date	Total (Daily)	Fecal (Daily)	Total/Fecal
1/5	1600	11	145.5	7/6	16000	900	17.8
1/12	2800	110	25.5	7/12	130	23	5.7
1/20	1700	17	100.0	7/19	80	8	10.0
1/26	500	6	83.3	7/26	900	80	11.3
2/2	900	8	112.5	8/2	220	13	16.9
2/9	1300	9	144.4	8/9	240	22	10.9
2/17	300	18	16.7	8/17	300	17	17.6
2/23	300	14	21.4	8/23	1300	50	26.0
3/1	1100	17	64.7	8/30	2400	220	10.9
3/8	240	11	21.8	9/7	1300	70	18.6
3/15	80	4	20.0	9/13	300	17	17.6
3/23	280	30	9.3	9/20	2400	170	14.1
3/29	900	110	8.2	9/27	1600	140	11.4
4/6	1600	11	145.5	10/5	500	50	10.0
4/12	2400	70	34.3	10/11	1600	30	53.3
4/19	2400	220	10.9	10/19	1700	300	5.7
4/26	90	21	4.3	10/25	700	80	8.8
5/3	500	23	21.7	10/1	2400	170	14.1
5/10	240	30	8.0	11/8	5000	70	71.4
5/17	900	50	18.0	11/15	500	8	62.5
5/24	2400	170	14.1	11/22		22	
6/1	1600	22	72.7	11/29	5000	90	55.6
6/7	900	80	11.3	12/6	900	30	30.0
6/14	300	30	10.0	12/13	2400	500	4.8
6/21	16000	700	22.9	12/20	NA	500	
6/28	2800	75	37.3	12/27	NA	210	
						Geometric Mean:	**21.5**

Operational Considerations: Chlorine Demand

The District has several concerns with the application of chlorine to the wet weather discharge to meet such a stringent total coliform limit. These concerns are described in the following paragraphs.

Coliform records from 2004 indicate that a change from a 500 MPN/100mL fecal to a 240 MPN/100mL total coliform effluent limit would require a significant increase in chlorination. Chlorine is a known toxic chemical and the District is concerned that it would be used unecessarily. In addition, the District desires to find an alternative approach that will result in fewer disinfection byproducts entering receiving waters while still achieving water quality objectives set forth in the San Francisco Bay Basin Water Quality Control Plan (Basin Plan).

The wastewater treatment plant is equipped with two chlorine pumps. Under normal, dry weather conditions, one pump is maximized. Under peak wet weather conditions, with a shorter available chlorine contact time, the District does not believe it would be possible to pump enough sodium hypochlorite to meet the proposed limits.

It is known from common experience that chlorine dosages for any particular wastewater disinfection system can only be reliably determined empirically. Plant operators adjust chlorine levels based on previous test results. Over time, by recording the dosages, inactivation rates, and flows, operators become familiar with typical chlorine dosages required to meet bacteria limits through the range of typical flow rates at a plant. However, discharges to the wet weather outfall (EFF-WW) only occur during peak wet weather events when the plant is operating under conditions at the very high end of design. The infrequency of these conditions severely limits the quantity of data available regarding necessary chlorine dosages at these peak flow rates, and therefore dosages would have to be even greater than possibly needed due to the need for conservatism in the face of this uncertainty.

Due to the significant difference between the proposed bacteria effluent limit for the wet weather outfall and the bacteria effluent limit for all other discharge situations, the District would have to predict a discharge from the wet weather outfall far enough in advance to provide adequate chlorine dosage and contact time, as well as to prepare for sufficient dechlorination to meet chlorine residual limitations. Cautious predictions would likely lead to false alarms, wasting even more sodium hypochlorite than would be needed in an actual discharge event.

Operating the plant under peak wet weather flows is challenging without a very stringent bacteria effluent limit. The wet weather outfall is designed to provide a safety net during the most extreme conditions, to avoid potentially serious overflows or damage to the plant. Adjusting chlorination and dechlorination procedures to meet bacteria effluent limits in a short emergency is simply not practical.

Regulatory Requirements

Either Table 4-2 of the existing San Francisco Bay Basin Water Quality Control Plan (Basin Plan), or Table 2-4A of the recently adopted Basin Plan Amendment for bacteria water quality objectives indicates a total coliform daily maximum effluent limit of 240 MPN/100mL for shallow water discharges in the immediate vicinity of public contact or shellfish harvesting. This limit is further qualified by footnotes both in Table 4-2 (and Table 4-2A) of the Basin Plan.

Exceptions Permitted for Wet Weather Discharges

Footnote e. of Table 4-2 and footnote d. of Table 4-2A both allow the Regional Water Board to grant exceptions to the total coliform limits listed for shallow water discharges where it is demonstrated that beneficial uses will not be compromised by such an exception, and provided that the listed limit is not exceeded during dry weather. All discharges from the wet weather outfall occur during wet weather; therefore the dry weather condition is not applicable.

Footnote d. of Table 4-2 and footnote c. of Table 4-2A allow the Regional Water Board to consider substituting total coliform limits with fecal coliform limits where it is demonstrated that the substitution will not result in any adverse impacts to beneficial uses, and allows the Regional Water Board to establish less stringent requirements than those listed for any discharges during wet weather.

Beneficial Uses: Public Contact and Shellfish Harvesting

The proposed limit (240 MPN/100mL) is indicated for a shallow water discharge in the immediate vicinity of public contact or shellfish harvesting. The District believes that it meets the requirements for an exception to the proposed total coliform limit at EFF-WW for the following reasons:

- Access to the shorelines around the mixing zone, as well as stretches adjacent to this area, is blocked by fencing and locked gates, preventing access for both water contact recreation and shellfish harvesting in the receiving water near the outfall.
- The wet weather outfall would only discharge during large storm events, when flows in Old Alameda Creek are estimated to be at least 293 million gallons per day (MGD), as described in the District's April 2, 2010 Mixing Zone Analysis. The high flows themselves would be dangerous and therefore prohibitive of recreational uses.
- Significant dilution of the discharge is achieved within 100 feet downstream of the outfall and was conservatively estimated to be 35:1, as described in the District's April 2, 2010 Mixing Zone analysis.
- Discharges from the wet weather outfall occur only rarely (estimated at once every 10 years), and only for very limited amounts of time (available data indicate that the most recent peak wet weather discharges from this outfall lasted only two to three hours each). So the beneficial uses are further protected simply by the very infrequent nature and short duration of the discharge.
- The Regional Water Board's proposed basin plan amendment, *Addition of Water Bodies and Beneficial Uses to San Francisco Bay Basin Water Quality Control Plan,* indicates that the shellfish harvesting beneficial use does not apply to Old Alameda Creek.

A more thorough analysis of bacteria regulations and impacts to beneficial uses is currently being completed and will be submitted separately.

Recommended Effluent Limit

The Basin Plan includes water quality objectives for both fecal and total coliform bacteria in Table 3-1.

The District requests a fecal coliform limit, rather than a total coliform limit, for analytical consistency (the District monitors fecal coliform for all effluent discharged to the EBDA pipeline). Also, significant variability has been observed in total coliform, a less specific indicator than fecal coliform, in comparison to fecal coliform.

In particular, the District requests that the proposed total coliform limit of 240 MPN/100mL be revised to a fecal coliform limit of 400 MPN/100mL. Table 3-1 includes a fecal coliform water quality objective of 400 MPN/100mL as a 90^{th} percentile of multiple samples. The Basin Plan indicates that this objective is protective of human health in the context of water contact recreation.

The 400 MPN/100mL used as an effluent limit is conservative in that it would apply the water quality objective directly to the effluent, it is more stringent than the current fecal coliform limit of 500 MPN/100mL, and although the objective is intended to be met at the 90^{th} percentile of a collected data set, in this case it would have to be met as a maximum,

considering the short duration of discharge. Due to the conditions stated above, and the infrequency of the discharge, incorporating this fecal coliform effluent limit in place of a total coliform limit would be fully protective of beneficial uses for the receiving water.

6. The District requests that only MDELs be included for toxic pollutants.

(Page 10)

The District's last wet weather discharge was in 1998, for a total of 2 to 3 hours each, on three days (TO, page 5). The discharge is expected to be infrequent (approximately once in 10 years). For continuous discharges, compliance with AMELs may be determined based on effluent concentration data collected and averaged over an entire month of continuous discharge. Averaged monthly concentration limits are not appropriate for this infrequent, short-term, non-continuous discharge.

In addition, the inclusion of AMELs for toxic pollutants is not consistent with the exclusion of average monthly technology-based effluent limit, nor with the text on page F-19 of the TO, where it is stated that: "No average monthly limits are included in this Order because the discharge is unlikely to exceed more than a few days."

The District therefore requests that the AMELs be removed from Table 7.

7. The District requests that the Regional Water Board consider revising compliance feasibility analyses and resulting water-quality based effluent limits (WQBELs).

(Page 10)

The TO indicates that compliance with the proposed WQBELs was deemed feasible when the 99th percentile of the effluent data was less than the resulting MDEL, the 95th percentile of the effluent data was less than the resulting AMEL, and the mean was less than the long term average (LTA). Since discharges from EFF-WW are expected to last less than one day, the District would have to comply with AMELs during an averaging period that is shorter than that associated with the MDELs. Therefore, the District requests that the Regional Water Board consider calculating WQBELs such that the 99th percentile is less than the AMEL.

8. The District requests that the cyanide effluent limits be revised to incorporate all existing effluent data from the September 2006 – November 2008 period.

(Page 10)

The TO indicates that compliance feasibility (for proposed cyanide effluent limits) was determined based on a data set from September 2006 – November 2008 that excluded elevated values in February and March 2008. The District requests that these values be included in the WQBEL calculation process.

The smallest dilution credit that results in cyanide WQBELs with which the District can comply was determined from the full data set. Compliance was deemed feasible when the 99th percentile of the effluent data was less than the resulting MDEL, the 95th percentile of the effluent data was less than the resulting AMEL, and the mean was less than the long term average (LTA).

The 99th and 95th percentile of the data can by estimated in several ways. A common regulatory method involves use of the following equations:

99th percentile = exp(transformed mean + 2.326*transformed standard deviation)
95th percentile = exp(transformed mean + 1.645*transformed standard deviation)

In this case:

99th percentile = exp(0.9 + 2.326*1.02) = 26.4
95th percentile = exp(0.9 + 1.645*1.02) = 13.2

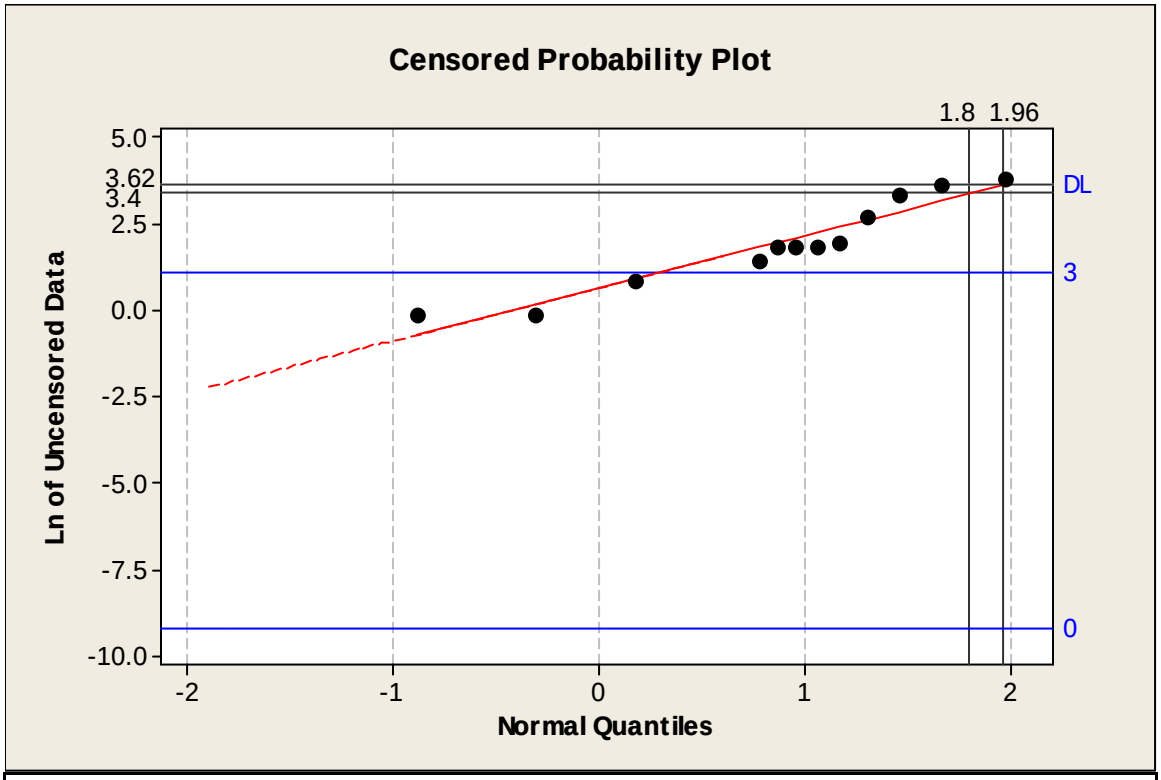
In this method, non-detected data points are set at a value of one half the minimum detection limit. The data used for this calculation, as well as to calculate the coefficient of variation (CV) for use in the WQBEL calculations, are included in **Table 2**, below.

Table 2. Cyanide CV Calculation

Date	Qual	Value	Calc Value	LN Value
09/06/06	<	**3**	1.5	0.4055
10/04/06	<	**3**	1.5	0.4055
11/02/06	<	**3**	1.5	0.4055
12/07/06	<	**3**	1.5	0.4055
01/04/07	<	**3**	1.5	0.4055
02/07/07		**6.4**	6.4	1.8563
03/08/07	<	**3**	1.5	0.4055
04/05/07	<	**3**	1.5	0.4055
05/03/07	<	**3**	1.5	0.4055
06/07/07	<	**3**	1.5	0.4055
07/12/07	<	**3**	1.5	0.4055
08/01/07	<	**3**	1.5	0.4055
09/05/07	<	**3**	1.5	0.4055
10/03/07	<	**3**	1.5	0.4055
11/07/07	<	**3**	1.5	0.4055
12/05/07	<	**3**	1.5	0.4055
01/14/08	<	**3**	1.5	0.4055
01/22/08		**4.2**	4.2	1.4351
01/23/08		**15.2**	15.2	2.7213
01/24/08		**0.9**	0.9	-0.1054
01/25/08		**2.4**	2.4	0.8755
01/28/08		**6.5**	6.5	1.8718
01/29/08		**0.9**	0.9	-0.1054
01/30/08		**7**	7	1.9459
02/01/08		**38**	38	3.6376
02/06/08	<	**3**	1.5	0.4055
03/05/08		**44.6**	44.6	3.7977
04/02/08	<	**3**	1.5	0.4055
05/07/08	<	**3**	1.5	0.4055
06/05/08	<	**3**	1.5	0.4055
07/02/08		**28.2**	28.2	3.3393
07/25/08	<	**3**	1.5	0.4055
07/28/08	<	**3**	1.5	0.4055

Date	Qual	Value	Calc Value	LN Value
08/06/08		**6.5**	6.5	1.8718
09/03/08	<	**3**	1.5	0.4055
10/01/08	<	**3**	1.5	0.4055
11/05/08	<	**3**	1.5	0.4055
% ND		**68%**		
Mean			**5.4**	**0.9**
St Dev			**10.1**	**1.02**
CV			**1.88**	

A second approach was also considered, using Minitab software to conduct a robust regression on order statistics (ROS) analysis taking into consideration the lognormally-distributed data set with non-detect values. The 99th and 95th percentiles were estimated based on the resulting statistics and the censored probability plot. This method resulted in a 99th percentile of 37.3 and a 95th percentile of 30.0. This approach provides a more rigorous method for analyzing a data set with non-detected data points. The censored probability plot and statistics are included in **Figure 2**, below.



ROS Estimated Statistics

Variable	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
ESTIMATE	37	0	5.42	1.66	10.11	0.11	0.77	1.86	4.48	44.60

Figure 2. Censored Probability Plot and Statistics

The smallest dilution credit needed to ensure compliance feasibility was then determined, and WQBELs calculated accordingly. These calculations are shown in **Table 3**, below.

Table 3. Cyanide WQBEL Calculations

Calculation Step	Result
Units	µg/L
Basis and Criteria type	FW
Criteria - Acute	22
Criteria -Chronic	5.2
SSO Criteria –Acute	----
SSO Criteria -Chronic	----
Water Effects ratio (WER)	1
Lowest WQO	5.2
Site Specific Translator - MDEL	-----
Site Specific Translator - AMEL	-----
Dilution Factor (D) (if applicable)	**7.1**
No. of samples per month	1
Aquatic life criteria analysis required? (Y/N)	Y
HH criteria analysis required? (Y/N)	Y
Applicable Acute WQO	22
Applicable Chronic WQO	5.2
HH criteria	220000
Background (Maximum Conc. for Aquatic Life calc)	0.4
Background (Average Conc. for Human Health calc)	2.6
Is the pollutant on the 303d list (Y/N)?	N
ECA acute	175
ECA chronic	39.3
ECA HH	1781982
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N
Avg of effluent data points	5.4
Std Dev of effluent data points	10.1
CV calculated	1.88
CV (Selected) - Final	1.88
ECA acute mult99	0.12
ECA chronic mult99	0.22
LTA acute	21.4
LTA chronic	8.5
minimum of LTAs	8.5
AMEL mult95	3.55
MDEL mult99	8.20
AMEL (aq life)	30.1
MDEL(aq life)	69.4
MDEL/AMEL Multiplier	2.31
AMEL (human hlth)	1781982

Calculation Step	Result
MDEL (human hlth)	4115997
minimum of AMEL for Aq. life vs HH	30.1
minimum of MDEL for Aq. Life vs HH	69.4
Current limit in permit (30-day average)	-----
Current limit in permit (daily)	10 (Interim)
Final limit - AMEL	**30.1**
Final limit - MDEL	**69.4**
Max Effluent Concentration (MEC)	44.6
99th Percentile of Data:	**37.3**
95th Percentile of Data:	**30.0**

Based on these calculations, the District requests a dilution credit of 8.1:1 (D=7.1) and an AMEL of 30.1 ug/L and an MDEL of 69.4 ug/L for cyanide. This dilution credit is significantly lower than actual dilution of 35:1.

Comments 9 and 10 pertain to monitoring requirements in Table E-3. The language revisions for these comments are provided in one location following Comment 10.

9. The District requests clarification that pretreatment program monitoring can be used to satisfy effluent monitoring requirements when no discharge occurs.

(Page E-3)

Table E-2 requires that the District monitor for "remaining priority pollutants" once per year during a wet weather event. Under pretreatment program requirements in NPDES permit CA 0037869, the District is already required to monitor for these priority pollutants twice each year, once in the dry season and once in the wet season. The District currently coordinates the wet weather priority pollutant sampling date with the other dischargers in the EBDA system. It is important that all dischargers in the EBDA system sample on the same day so that sources of priority pollutants detected in the final effluent may be identified. In addition, a full array of priority pollutant analyses costs the District about $7,000. For clarification, simplicity, and efficiency, the District therefore requests that Table E-3 indicate that pretreatment program monitoring in permit CA 0037869 can be used to satisfy relevant monitoring requirements included in this Table. (See requested revisions after Comment 10.)

10. The District requests that Footnote 1 in Table E-3 be corrected to clarify sampling requirements.

(Page E-3)

Footnote 1 to Table E-3 describes alternatives to 24-hour composite sampling when a discharge from EFF-WW is expected to last less than 24 hours. This footnote should uniformly apply to all 24-hour composite sampling requirements in Table E-3.

Language revisions for Comments 9 and 10 are as follows (all revisions are highlighted for clarity):

Table E-2. Effluent Monitoring, Analysis for Peak Wet Weather Discharges

Parameter	Units	Sample Type	Minimum Sampling Frequency
Duration of Discharge	Hours and minutes	--	1/discharge event
Flow Volume	Gallons	Continuous[1]	1/discharge event
Oil and Grease [2]	mg/L	Grab	1/discharge event
pH [3]	s.u.	Grab	1/discharge event
Temperature	°C	Grab	1/discharge event
BOD_5	mg/L	24-hour C[1]	1/discharge event
TSS	mg/L	24-hour C[1]	1/discharge event
Total Coliform Bacteria	MPN/100mL	Grab	1/discharge event
Chlorine Residual	mg/L	Continuous or Hourly[4]	1/discharge event
Chlorine Dosage[5]	gallons/day	Meter	1/Day during each discharge event
Ammonia (total as N)	mg/L as N	Grab	1/discharge event
Copper, Total Recoverable	µg/L	24-hour C[1]	1/discharge event
Cyanide, Total (as CN)	µg/L	Grab	1/discharge event
Lead	µg/L	24-hour C[1]	1/discharge event
Remaining Priority Pollutants	µg/L	Grab	Once per year [6]

Legend for Table E-2:

Units:

MPN/100mL = most probable number per 100 milliliters
°C = degrees Celsius
µg/L = micrograms per liter
mg/L = milligrams per liter

Sample Type:

24-hour C = 24-hour composite

Footnotes for Table E-2

(1) If the discharge is expected to last less than 24 hours, the Discharger has the option of taking a grab sample or composite sample by mechanically or manually compositing samples on an hourly, or once-every-two-hours basis for the duration of the discharge.

(2) Each oil and 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. The grab samples shall be mixed in proportion to the instantaneous flow rates occurring at the time of each grab sample, within the accuracy of plus or minus 5%. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent as soon as possible after use, and the solvent rinseate shall be added to the composite sample for extraction and analysis.

(3) If pH is monitored continuously, the minimum and maximum pH values for each day shall be reported in monthly Self-Monitoring Reports (SMRs).

(4) The dechlorinated effluent shall be monitored continuously or, at a minimum, every 2 hours during discharge. The Discharger shall report on a daily basis both maximum and minimum concentrations for samples taken both prior to and following dechlorination. If a violation is detected, the maximum

and average concentrations and duration of each non-zero residual event shall be reported, along with the cause and corrective actions taken. The Discharger may elect to use a continuous on-line monitoring system(s) to measure flows, chlorine residual, and sodium bisulfite (or other dechlorinating chemical) dosage (including a safety factor) to demonstrate that chlorine residual exceedences are false positives.

(5) Total chlorine dosage shall be recorded on a daily basis during each discharge event.

(6) During discharge through the wet weather outfall or during the wet season ~~a wet weather event~~ if no discharge to Old Alameda Creek. Pretreatment program monitoring that is conducted in accordance with the EBDA permit (CA 0037869) can be used to satisfy relevant parts of these sampling requirements.

Comments 12 – 17 pertain to typographical errors identified in the TO.

11. *Revision to Page 3:*

Table 4. Facility Information

Discharger	Union Sanitary District
Name of Facility	Old Alameda Creek Intermittent Wet Weather Discharge
Facility Address	5072 Benson Road
	Union City CA 94587
	Alameda County
Facility Contact, Title, and Phone	David Livingston, Manager/Treatment & Disposal Services (510) 477-~~1~~7560
Discharger Mailing Address	5072 Benson Road, Union City, CA 94587
CIWQS Party Number	47792
CIWQS Place Number	269042
Facility Operator	Union Sanitary District, 5072 Benson Road, Union City CA 94587
Operator Contact	David Livingston (510) 477-7560
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Design Flow	33 million gallons per day (MGD) under dry weather conditions with secondary treatment
Facility Permitted Flow	8.4 million gallons per discharge event
Service Areas	Fremont, Newark, Union City
Service Population	333,648

12. *Revision to Page 10:*

The Discharger shall maintain compliance with the following effluent limitations at Discharge Point EFF-WW, with compliance measured at Monitoring Location M-002D, as described in the attached MRP (Attachment E).

13. *Revision to Page F-11:*

Table F-1. Facility Information

WDID	2 019060002
Discharger	Union Sanitary District
Name of Facility	Old Alameda Creek Intermittent Wet Weather Discharge
Facility Address	5072 Benson Road
	Union City CA 94587
	Alameda County

Facility Contact, Title, and Phone	David Livingston, Manager/Treatment & Disposal Services (510) 477-7560
Discharger Mailing Address	5072 Benson Road, Union City, CA 94587
CIWQS Party Number	47792
CIWQS Place Number	269042
Facility Operator	Union Sanitary District, 5072 Benson Road, Union City CA 94587
Facility Operator Contact	David Livingston (510) 477-7560
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Design Flow	33 million gallons per day (MGD) under dry weather conditions with secondary treatment
Service Areas	Fremont, Newark, Union City
Service Population	~~327,652~~ 333,648
Major or Minor Facility	Minor
Threat to Water Quality	2
Complexity	B
Pretreatment Program	No
Reclamation Requirements	No
Mercury Discharge Requirement	Order No. R2-2007-0077
Facility Design Flow	33 million gallons per day (MGD), average dry weather conditions providing secondary treatment
Facility Permitted Flow	8.4 million gallons per discharge event
Watershed	Lower San Francisco Bay
Receiving Water and Type	Old Alameda Creek

14. *Revision to Page F-14:*

Table F-3. Effluent Limitations in Previous Permit ~~and Monitoring Data for Toxic Pollutants~~

Parameter	Units	Interim Limits
		Daily Maximum
Copper	µg/L	37
Mercury	µg/L	0.087
Nickel	µg/L	65
Zinc	µg/L	580
Cyanide	µg/L	10

Footnotes for Table F-3:
Units: µg/L = micrograms per liter

15. *Revision to Page F-29:*

(a) Lead WQC. The most stringent applicable WQC for lead are the freshwater criteria from the Basin Plan, expressed as dissolved metal. These WQC were converted to total recoverable metal using CTR default translators of 0.74 for both acute and chronic objectives, as described in IV.C.2.g, and applied a hardness of 140 mg/L, as described in IV.C.2.f. The resulting chronic WQC of 4.9~~125~~ µg/L and acute WQC of 1254.9 ~~µg/L~~ were used to perform the RPA.

16. *Revision to Page F-30:*

(f) Antibacksliding. Antibacksliding requirements are satisfied because the previous permit did not include final effluent limitations for lead~~copper~~.

Appendix C
Response to Comments

RESPONSE TO WRITTEN COMMENTS

On the Reissuance of Waste Discharge Requirements for
Union Sanitary District, Raymond A. Boege Alvarado Wastewater Treatment Plant, Wet Weather Discharge Outfall
Union City, Alameda County

The tentative order was circulated for public review from May 6, 2010, through June 7, 2010. We received comments from Union Sanitary District (District) on June 7, 2010. The format of this staff response begins with a brief synopsis of the District's comment in *italics*, followed by our response. Interested persons should refer to the original letter to ascertain the full substance and context of each comment.

Comment 1
The District requests that the Discharge Description and Prohibition B, pertaining to the allowable discharge through the East Bay Dischargers Authority (EBDA) pipeline, be revised to more accurately reflect the Joint Exercise of Powers Agreement (JPA) and actual hydraulic limitations.

Response 1
We changed the discharge description in sections II.B.2 and III.B to respond to the District's comment. The change clarifies that the Discharger is allotted a capacity of 42.9 MGD (on a 24-hour basis) for discharge to the EBDA pipeline, but during wet weather events due to hydraulic limitations, the actual instantaneous maximum capacity available may be less than 42.9 MGD.

Comment 2
The District requests Finding E pertaining to the California Environmental Quality Act (CEQA) be revised for accuracy.

Response 2
We agree that section 13389 exempts the Board from complying with the requirements in Chapter 3 of CEQA when it adopts an NPDES permit. We also agree that the Board remains subject to the policy provisions of Chapter 1 of CEQA. (California Code of Regulations, Title 23, section 3733.)

We disagree with the District's assertion that the Board is subject to Chapter 2.6 of CEQA when it adopts an NPDES permit. The District cites *County of Los Angeles v. California State Water Resources Control Board* (2006) 143 Cal. App. 4th 985 to support its claim. In fact the decision expressly rejected the argument that a Regional Water Board is subject to Chapter 2.6 of CEQA when it adopts an NPDES permit. (*Id.* at 1006.) We also disagree with the District's claim that the *County of Los Angeles* decision holds that the Board must prepare "some environmental assessment, though not a full Environmental Report." The decision holds the opposite. (*Id.*, at 1007.)

We have revised the language of Finding E as follows:

> **E. California Environmental Quality Act (CEQA).** Under CWC section 13389 and section 3733 of Title 23 of the California Code of Regulations, this action to adopt an NPDES permit is exempt from the provisions of Chapter 3 but not from the policy provisions of Chapter 1 of CEQA.

Comment 3
The District requests Finding P pertaining to the Endangered Species Act be removed from the Tentative Order, as it does not apply.

Response 3
We did not make this change. As stated in Finding P, the District is responsible for meeting all requirements of applicable State and federal laws pertaining to threatened and endangered species. Although the Endangered Species Act was considered under CEQA during construction of the treatment plant, it remains applicable because the preservation of rare and endangered species is a beneficial use of Old Alameda Creek.

Comment 4
The District requests that Finding S pertaining to requirements under state law be removed.

Response 4
We retained Finding S because all provisions in the permit are derived from federal law. The District specifically listed special studies, technology-based and water-quality based effluent limits, and pollution prevention as being promulgated under state law only. These requirements are based on federal regulations and Basin Plan and State Implementation Policy (SIP) requirements that set forth and implement water quality standards adopted pursuant to the federal Clean Water Act and subsequently approved by the U.S. Environmental Protection Agency.

Comment 5
The District requests that the total coliform limit in Table 6, Effluent Limitations for Conventional and Non-Conventional Pollutants, be revised.

Response 5
We changed the daily maximum total coliform limit of 240 MPN/100ml to a daily maximum fecal coliform limit of 400 MPN/100ml. We had proposed reducing the limit from the current permit's fecal coliform limit of 500 MPN/100 ml to the daily maximum 240 MPN/100 ml total coliform limitation specified in Basin Plan Table 4-2 for shallow water discharges. As part of its comment, the District provided supplemental information to support an exception to the 240 MPN/100 ml limit. Basin Plan Table 4-2 footnotes d and e authorize the exception. Specifically, the footnotes allow the Regional Water Board to consider less stringent requirements for discharges that occur during wet weather, and to grant an exception to total coliform limits when evidence demonstrates

that beneficial uses will not be compromised. This approach is also consistent with the recently adopted Basin Plan amendment regarding bacteria objectives for marine and estuarine waters and their implementation.

Based on the following evidence provided by the District, water contact recreation and shellfish harvesting beneficial uses will be protected:

- Access for both water contact recreation and shellfish harvesting in the receiving water near the outfall, as well as stretches adjacent to this area, is blocked by fencing and locked gates.
- A literature review indicates that the natural conditions of the receiving water body would not support shellfish harvesting during discharge. In particular, *Venerupis philippinarum* (Japanese littleneck clam) and *Mya arenaria* (soft-shell clam) are the primary shellfish species harvested for sport in the San Francisco Bay.[1] *V. philippinarum* can tolerate salinities down to 10 – 15 parts per thousand (ppt), but grows best at 24 – 31 ppt. Adult *M. arenaria* can tolerate salinities down to 5 ppt.[2] Under potential discharge conditions (peak wet weather flow), Old Alameda Creek is freshwater, and freshwater water quality objectives are used to calculate the effluent limitations in this Order. Freshwater objectives apply to discharges to waters with salinities equal to or less than 1 ppt at least 95 percent of the time. These salinity levels would be too low to support the primary species of harvestable shellfish. Furthermore, the proposed Basin Plan amendment adding unnamed water bodies and beneficial uses to the Basin Plan does not indicate the shellfish beneficial use applies to Old Alameda Creek.
- The wet weather outfall would only be used during large storm events, when flows in Old Alameda Creek are estimated to be at least 290 MGD, as described in the District's April 2, 2010, Mixing Zone Analysis. The high flows themselves would be dangerous and therefore prohibitive of recreational uses.
- Significant dilution of the discharge is achieved within 100 feet downstream of the outfall and is estimated to be at least 32:1 based on the District's April 2, 2010, mixing zone analysis.
- Discharges from the wet weather outfall occur only rarely (approximately once every 10 years), and only for very limited durations (the most recent peak wet weather discharges from this outfall lasted only two to three hours each). Therefore, the beneficial uses are further protected simply by the very infrequent nature and short duration of the discharge.

For the reasons set forth above, the daily maximum fecal coliform limit of 400 MPN/100ml, which is equivalent to the fecal coliform water quality objective for water contact recreation, is protective of the water contact recreation beneficial use. Because the revised limit is expressed as a daily maximum, it is actually more protective

[1] Cohen, A., Cosentino-Manning, N., and Schaeffer, K. 2007. *Habitat Type and Associated Biological Assemblages – Shellfish Beds*. Chapter from: *Report on the Subtidal Habitats and Associated Biological Taxa in San Francisco Bay*. Pg. 50. National Oceanic and Atmospheric Association: National Marine Fisheries Service. Santa Rosa, CA.
[2] Cohen, Andrew N. 2005 *Guide to the Exotic Species of San Francisco Bay.* San Francisco Estuary Institute, Oakland, CA, www.exoticsguide.org Accessed June 14, 2010.

than the water contact recreation water quality objective, which is expressed as a 90th percentile. However, a daily maximum limit is more practical due to the short duration of the discharge. The revised limit is also protective of the shellfish harvesting beneficial use because the substantial dilution within 100 feet of the outfall, an area where the shellfish harvesting beneficial use does not exist, would achieve the fecal coliform water quality objective for shellfish harvesting (43 MPN/100ml as a 90th percentile) at the edge of that mixing zone.

Comment 6
The District requests that only maximum daily effluent limitations (*MDELs*) *be included for toxic pollutants.*

Response 6
We did not make this change. This Order implements the requirements of the SIP. SIP section 1.4 requires that water-quality based effluent limitations be expressed as MDELs and average monthly effluent limitations (AMELs). We removed the statement on page F-19 that "no average monthly limits are included in this Order because the discharge duration is unlikely to exceed more than a few days." This statement had been inadvertently included in the tentative order and is not reflected elsewhere in the order (e.g., average weekly limits are included for BOD and TSS).

Comment 7
The District requests that the Regional Water Board consider revising compliance feasibility analyses and resulting water-quality based effluent limits. Specifically, the District requests that we consider only the 99th percentile in determining the feasibility to comply with both AMELs and MDELs.

Response 7
We agree that it is appropriate to compare both the AMEL and MDEL to the 99th percentile for copper and cyanide water-quality based effluent limits. Because the District could not readily comply with limits for these constituents without dilution credit, we conducted a feasibility analysis to determine the smallest practicable mixing zone. Normally when conducting a feasibility analysis, we compare the 95th percentile of the data set to the AMEL, and the 99th percentile to the MDEL. Because the discharges from EFF-WW are expected to last less than one day, the District would have to comply with AMELs during an averaging period that is shorter than that associated with the MDELs. For this reason, we compared both the AMEL and MDEL to the 99th percentile only. This revised analysis resulted in a dilution of 19:1 (D=18) for copper, and 16.5 (D=15.5) for cyanide. Based on these dilution credits copper limits were changed to 31 µg/L (AMEL) and 63 µg/L; and cyanide limits were changed to 44 µg/L (AMEL) and 137 µg/L (MDEL). Table 7 of the Order, and section IV.C.4 of the Fact Sheet were revised to reflect these changes.

Comment 8
The District requests that the cyanide effluent limits be revised to incorporate all existing effluent data from the September 2006 – November 2008 period, and that the data set be

re-evaluated to calculate a more representative coefficient of variation (CV), and 95th and 99th percentile values.

Response 8
In the tentative order submitted for public comment, we did not include two cyanide data points because the District indicated that these were isolated incidents and not representative of typical data. At the request of the District we have included all effluent data points from September 2006 to November 2008 and recalculated water-quality based effluent limits for cyanide using this data set.

We also recalculated the coefficient of variation (CV) by setting the non-detected data points to one half the minimum detection limits; which resulted in a CV of 2.14 (previously 1.22). We revised the 95th and 99th percentile values used to determine the smallest mixing zone practicable. As discussed in our response to Comment 7, we compared the AMEL and MDEL to the 99th percentile only. See our response to comment 7 for the revised cyanide limits.

Comment 9
The District requests clarification that pretreatment program monitoring can be used to satisfy effluent monitoring requirements when no discharge occurs.

Response 9
We modified footnote 6 of Table E-2 to clarify that priority pollutant monitoring conducted under the pretreatment program required by the EBDA permit (CA0037869) can be used to satisfy relevant priority pollutant monitoring requirements included in Table E-2 if there is no discharge to Old Alameda Creek.

Comment 10
The District requests that footnote 1 in Table E-3 be corrected to clarify sampling requirements.

Response 10
We assume the District's comment refers to Table E-2 and not Table E-3. We added footnote 1 to all parameters with a 24-hour composite sample type. We inadvertently added footnote 1 to continuous flow volume monitoring and forgot to include it for lead monitoring. This footnote includes language that allows grab samples to be taken for these parameters if a discharge is less than 24 hours.

Comments 11-16
Comments 11-16 pertain to typographical errors.

Response 11-16
We corrected the identified typographical errors.

Regional Board Staff Initiated Change

We removed the monitoring requirement for chlorine dosage in Table E-2. This requirement was inadvertently included and is not applicable to this discharge.

We re-calculated the CV for lead using one-half the detection limit for non-detected values. This resulted in a slightly higher CV (0.65 to 0.75), which changed the AMEL and MDEL for lead. The limits were changed in Table 7 from an AMEL of 4.0 µg/L to 3.8µg/L, and an MDEL of 8.0µg/L to 8.5µg/L. Table F-9 was modified to include the revised CV and other numbers in the effluent limit calculation.