Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Inland Empire Utilities Agency
Regional Plant No. 4
Title 22 Engineering Report

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Section 1
Introduction

In March 2005, the Inland Empire Utilities Agency (IEUA) submitted a Title 22 Engineering Report for Regional Water Recycling Plant No. 4 (RP-4) that covered plant modifications to improve its energy efficiency and maintain its reliability to treat its previous 7 million gallons per day (mgd) average flow capacity in compliance with all existing and proposed quality requirements.

In May 2005, IEUA awarded a construction contract for additional modifications designed to expand the plant's average capacity from 7 to 14 mgd. The expansion is being conducted in two phases. Phase 1 work converted the original 7 mgd oxidation ditch plant to a biological nitrogen removal activated sludge process with 7 mgd of capacity and was completed in 2007. Phase 1 also included construction of new primary and secondary clarifiers. Phase 2 features construction of another 7 mgd of new biological nitrogen removal activated sludge capacity, increasing the total plant capacity to 14 mgd. Phase 2 also involves other improvements, such as modifications to the headworks, addition of new primary clarifiers, addition of secondary clarifiers, addition of new tertiary cloth filters, and installation of an odor control biofilter. Phase 2 is expected to be completed by summer 2009. The rationale for the modifications is contained in the Preliminary Design Report prepared by Black & Veatch (B&V) in October 2002 (Black & Veatch, 2002).

The purpose of this engineering report is to describe the treatment system that will be in place after the expansion to 14 mgd capacity is complete in 2009 and to demonstrate its compliance with water recycling criteria and the design and reliability requirements set forth in Title 22 of the California Code of Regulations. This section describes the background of the facility and the objective of this document.

1.1 Background

IEUA owns and operates RP-4, located in San Bernardino County east of Interstate 15 and between the Interstate 10 and Interstate 210 Freeways. The plant site is at the southwest corner of Etiwanda Avenue and Sixth Street at 12811 Sixth Street in the City of Rancho Cucamonga (Section 17, T1S, R6W, SBB&M). RP-4 serves a 35 square mile area including portions of the Cities of Rancho Cucamonga and Fontana and some unincorporated areas of San Bernardino County. RP-4 began operation in July 1997 and serves as an upstream satellite plant to IEUA Regional Plant No. 1 (RP-1) by scalping flow from the Etiwanda sewer that would otherwise flow to RP-1. RP-4 treats the wastewater it receives to the quality of disinfected tertiary recycled water, as defined in Title 22, but returns solids to the trunk sewer for conveyance to RP-1 for processing with the influent to that plant.

Recycled water from RP-4 is pumped into a dedicated pipeline (the RP-4 Outfall) which conveys it southward to recycled water users and groundwater recharge basins in the 1158 pressure zone. Two new reservoirs were recently constructed to increase the supply of recycled water in the 1158 pressure zone. Excess recycled water flows south to RP-1 and is discharged to Cucamonga Creek. With the completion of the RP-1 and RP-4 Recycled Water Pumping Stations, the RP-4 Outfall has been converted to a pressurized recycled water delivery pipeline for all uses between RP-1 and RP-4. Any RP-4 recycled water not removed from the outfall for use will continue to mix with RP-1 effluent and be discharged at Discharge Point No. 002. IEUA recently added a second recycled water pump station at RP-4 to create two pressure zones. The recycled water is pumped from 1158 pressurized pipeline to convey recycled water northward to users in the 1299 pressure zone. A reservoir will be purchased and retrofitted to serve this pressure zone by 2010. If the 1158 pump station experiences low flow due to low RP-4 influent flow or high recycled water demand, the 1158 reservoirs have the capacity of supplying recycled water to the suction header of the 1299 pump station.

RP-4 operates under a consolidated permit with three other IEUA plants, including RP-1, Regional Plant No. 5 (RP-5) and Carbon Canyon Water Recycling Facility (CCWRF), issued as Regional Water Quality Control Board, Santa Ana Region (RWQCB) Order No. R8-2009-0021 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA8000409 (RWQCB, 2009) A copy of the permit is included in Appendix A. According to the permit, RP-4 is designed to treat an annual average flow of 14 mgd.

1.2 Objective

The objective of this report is to demonstrate RP-4 compliance with California Code of Regulations Title 22, Division 4, Chapter 3, entitled Water Recycling Criteria (California, 2001). Section 60323, Article 7 of these Criteria requires submittal of an engineering report to the RWQCB and California Department of Public Health (CDPH) (formerly California Department of Health Services (DHS)).

Since IEUA is both increasing plant capacity and making significant improvements to RP-4, a new engineering report demonstrating compliance with Title 22 is necessary. Separate Title 22 Engineering Reports have been prepared addressing the use of RP-1 and RP-4 recycled water for the Phase I and Phase II Chino Basin Recycled Water Groundwater Recharge Projects (CH2M Hill, 2003 and DDB Engineering, Inc. and Wildermuth Environmental, Inc., 2006).

Section 2
Regulatory Requirements

Wastewater treatment, disposal, and reuse are regulated by local, State, and Federal requirements primarily to protect public health, safety, and general welfare. In California, water recycling has received support from the U. S. Environmental Protection Agency (EPA), State Water Resources Control Board (SWRCB), and CDPH as a means of effluent reuse and disposal. This section describes the types of reuse and regulatory requirements that pertain to RP-4.

2.1 Types of Reuse

Treated effluent from RP-4 is piped to RP-1 where the two tertiary effluents are mingled prior to discharge through RP-1's outfall into Cucamonga Creek (Discharge Point No. 002), which has a beneficial use designation of REC-1 (water contact recreation). A portion of the RP-4 effluent is recycled for landscape irrigation, industrial uses such as power plant cooling water, in-plant utility water needs, and groundwater recharge. Recycled water is discharged to Prado Park Lake (Discharge Point No. 001), which is tributary to Chino Creek. Further description of recycled water uses is given in Section 8.

2.2 Water Recycling Criteria

Water recycling criteria are specified in the California Code of Regulations, Title 22, Division 4, Chapter 3. Water reclamation requirements and guidelines are established by CDPH. Enforcement of these criteria is the role of the SWRCB and its nine Regional Water Quality Control Boards. RP-4 is under the jurisdiction of Regional Board No. 8, the Santa Ana River Basin RWQCB.

Commonly referred to as Title 22 Criteria, the treatment and effluent quality requirements are dependent upon the proposed type of water reuse. In addition to these requirements, Title 22 specifies reliability criteria to ensure protection of public health.

Effluent from RP-4 must comply with the highest categories of reuse, spray irrigation and non-restricted recreational and landscape impoundments. Under Title 22, wastewater is required to be oxidized, coagulated (as needed for turbidity reduction – see Section 3), filtered, and disinfected, or treated by a sequence of unit processes assuring an equivalent degree of treatment and reliability. Title 22 specifies that recycled water for the highest level of reuse shall be disinfected tertiary effluent. The NPDES permit requires the flow from RP-4 to meet that requirement, except when the receiving water provides a dilution flow of 20:1 or greater. In that case the effluent can be a disinfected oxidized wastewater with a median number of coliforms not exceeding 23 per 100 milliliters. However, since RP-4 recycled water will be pumped directly to users or will be pumped into the RP-4 Outfall, which has some recycled water users withdrawing water, RP-4 will have to comply with the requirements for disinfected tertiary effluent at all times, even though some of the water may eventually be discharged to Cucamonga Creek during periods when dilutions of 20:1 are available.

With regard to filtration, the Title 22 Water Recycling Criteria specify a maximum filtration rate and effluent turbidity requirements. For gravity dual media (anthracite/sand) filters like those at RP-4, the maximum filtration rate is limited to 5 gallons per minute per square foot (gpm/sf) of surface area. For the new cloth filters at RP-4, the maximum filtration rate is limited to 6 gpm/sf of surface area. Under Title 22, the turbidity of the filtered wastewater may not exceed any of the following: (1) an average of 2 Nephelometric Turbidity Units (NTU) within a 24-hour period; (2) 5 NTU more than 5 percent of the time within a 24-hour period; and (3) 10 NTU at any time. RWQCB Order No. R8-2009-0021 specifies that RP-4 and RP-1 must meet the turbidity requirements specified in Title 22, as summarized above.

Permissible coliform bacteria levels are used as an indicator of effluent quality. For water reuse for spray irrigation and non-restricted recreational and landscape impoundments, the median number of coliform organisms must not exceed a most probable number (MPN) of 2.2 per 100 milliliter (mL) sample of effluent for the last 7 days for which bacteriological analyses have been completed. In addition, the median number of coliform organisms must not be more than 23 MPN per 100 mL sample of effluent in more than one sample within any 30-day period. No sample may exceed an MPN of 240 total coliform bacteria per 100 mL. If a chlorination disinfection process is used, such as that being implemented at RP-4, Title 22 specifies that a contact time (CT) value of at least 450 milligram-minutes per liter (mg-min/L) with a modal contact time of at least 90 minutes (based on peak dry weather design flow) be provided.

In addition to treatment and effluent quality, Title 22 sets forth general reliability requirements. The facilities must be designed for flexibility so that a high degree of treatment can be achieved under varying conditions. Components of a flexible design include multiple or standby treatment units or pieces of equipment. In addition, alarms are required to alert plant operators of power supply failure or failure of any treatment plant unit processes. In the event of a power supply failure, Title 22 requires the plant to provide either a standby power source or automatically actuated short-term or long-term storage or disposal provisions.

In order to assure that wastewater reclamation facilities comply with the regulations, Title 22 requires that an engineering report describing the proposed reclamation system and the means for the system complying with listed requirements be prepared and submitted to the RWQCB and CDPH for approval. The engineering report must be amended or resubmitted in the event that there are significant modifications to an existing project.

2.3 Creek Discharge Requirements

Product water that is not used from the RP-4 outfall before it reaches RP-1 will be commingled with RP-1 effluent and discharged to either Prado Park Lake, which is designated as Discharge Point No. 001, or to Cucamonga Creek, which is designated as Discharge Point No. 002. The RP-1/RP-4 NPDES permit requires that discharges to the creek be disinfected tertiary effluent suitable for non-restricted recreational impoundments as required under Title 22, except when the creek provides at least a 20:1 dilution ratio. When at least 20:1 dilution of the wastewater effluent can be provided by the natural flow of the creek at the point of discharge, the discharge may be disinfected secondary effluent. The discharge shall be considered adequately disinfected if at some location in the treatment process, the median number of coliform organisms does not exceed 23 per 100 milliliters. As mentioned previously, with the RP-4 outfall converted to a recycled water delivery system, this requirement may be applicable at RP-1, but there will not be any time when the effluent from RP-4 can be at less than full treatment.

Section 3
Wastewater Flow and Quality

This section describes wastewater flow and quality characteristics, as well as treated effluent quality limitations for RP-4.

3.1 Wastewater Flow Characteristics

Influent and effluent flows are monitored continuously at RP-4. Table 3-1 summarizes flow data from January 2008 through December 2008.

Table 3-1
Average Influent and Effluent Flows [1]

	Minimum Month [2] (mgd)	Average Month (mgd)	Maximum Month [3] (mgd)
Raw Influent Flow	3.4	6.1	7.4
Effluent Flow	2.4	4.8	6.3

1. Source: (IEUA, 2008a), monthly average flow data for 2008.
2. Minimum monthly average raw influent flow and minimum monthly average effluent flow occurred in February 2008.
3. Maximum monthly average raw influent flow and maximum monthly average effluent flow occurred in September 2008.

3.2 Influent Quality Characteristics

The chemical composition of raw wastewater influent to RP-4 based on 2008 data is summarized in Table 3-2.

Table 3-2
Typical Influent Wastewater Characteristics [1]

Constituent	Units	Minimum	Maximum	Average
Specific Conductance	µmhos/cm	730	1,230	933
pH	Unit	6.6	7.9	7.5
Total Organic Carbon (TOC)	mg/L	104	348	171
Total Suspended Solids (TSS)	mg/L	50	709	251
Total Dissolved Solids (TDS)	mg/L	422	618	489
Biochemical Oxygen Demand (BOD_5)	mg/L	163	602	294
Ammonia - Nitrogen	mg/L	27.0	58.5	49.0
Total Inorganic Nitrogen (TIN)	mg/L	43.6	51.7	49.2
Boron	mg/L	0.3	0.4	0.3

Table 3-2
Typical Influent Wastewater Characteristics [1]

Constituent	Units	Minimum	Maximum	Average
Chloride	mg/L	72	114	92
Cyanide, Free	µg/L	<2	3	<2
Fluoride	mg/L	0.2	0.3	0.3
Sulfate	mg/L	22	75	40
Total Hardness	mg/L	145	190	162
Arsenic	µg/L	<10	<10	<10
Total Recoverable Chromium	µg/L	<10	<10	<10
Total Recoverable Copper	µg/L	50	110	76
Total Recoverable Cadmium	µg/L	<10	<10	<10
Total Recoverable Lead	µg/L	<20	<20	<20
Total Recoverable Mercury	µg/L	<0.5	0.6	<0.5
Total Recoverable Nickel	µg/L	<10	<10	<10
Total Recoverable Selenium	µg/L	<20	<20	<20
Total Recoverable Silver	µg/L	<10	<10	<10
Total Recoverable Zinc	µg/L	100	250	162
Bis (2-ethylhexyl) phthalate	µg/L	<10	18	12

1. Source: IEUA, 2008a

3.3 Source Control

IEUA maintains a comprehensive industrial pretreatment and source control program approved by the RWQCB to control waste discharges from point sources into the wastewater collection system. The focus of this source control program is to prevent adverse effects on the treatment facilities and the environment. Because of the Chino Basin Recycled Water Groundwater Recharge Program, the scope and purpose of this source control program will be expanded to include not only contaminants that may be detrimental to the facilities, but also contaminants specified by the CDPH that may be harmful to human health and drinking water supplies. In accordance with the groundwater recharge permit RWQCB Order No. R8-2007-0039 (RWQCB, 2007a), IEUA will review its current source control program to mitigate future impacts on the groundwater recharge program. The program review will determine whether additional constituents should be included in the industry permitting process and if additional pretreatment requirements are necessary particularly for industries that discharge wastewater to RP-1 and RP-4 collections systems. Through a comprehensive monitoring program implemented by IEUA, IEUA will ensure that the recycled water produced at RP-1 and RP-4 for recharge into the Chino Basin is not contaminated with toxic chemicals of industrial origin that are of concern to CDPH and the RWQCB in drinking water sources. IEUA owns and operates a non-reclaimable wastewater (NRW) collection and conveyance system that provides disposal for industrial wastewater and brines. The NRW discharges either into the Orange County Sanitation District's wastewater treatment facilities or to the County Sanitation Districts of Los Angeles County wastewater treatment facilities for treatment and disposal. The industrial pretreatment program and the NRW system provide source control and salinity management for the IEUA water reclamation facilities.

IEUA plans to further mitigate wastewater constituent impacts on the groundwater recharge program by maximizing the use of the NRW system. Requirements pertaining to IEUA's industrial pretreatment and source control program are specified in RWQCB Order No. R8-2009-0021 (RWQCB 2009).

The permit (RWQCB, 2009) incorporates source control requirements that CDPH recommended for groundwater recharge and effluent from RP-1 and RP-4, which is used for the Chino Basin Recycled Water Groundwater Recharge Program, which is regulated under RWQCB Order No. R8-2007-0039 (RWQCB, 2007). The permit requires IEUA to operate the wastewater collection system under a comprehensive industrial pretreatment and pollutant control program for the control of discharge of toxic wastes from point sources. If CDPH identifies any contaminants that may pose a risk of contamination to a drinking water supply, the permit specifies that CDPH may designate those contaminants for inclusion into the pretreatment and source control program requirements for IEUA to minimize the possibility that the influent wastewater to RP-1 and RP-4 will be contaminated with such toxic chemicals. The source control program shall include:

- An assessment of the fate of the specified contaminant compounds through the wastewater and recycled water treatment systems.
- A source investigation and monitoring program focused on the specified contaminants.
- An outreach program to industrial, commercial and residential communities within the sewage collection agency's service area to manage and minimize the discharge of compounds of concern at the source.
- A proactive program for maintaining an inventory of compounds discharged into the wastewater collection system so that new compounds of concern can be evaluated rapidly.

3.4 Effluent Quality Limits

Consolidated effluent discharge limits are established for RP-1, RP-4, RP-5, and CCWRF in RWQCB Order No. R8-2009-0021 NPDES Permit No. CA8000409 (RWQCB, 2009), which became effective July 21, 2009. The RWQCB issues discharge limits based on the beneficial uses and water quality objectives established in the "Santa Ana River Basin Water Quality Control Plan" (RWQCB, 1995), commonly referred to as the "Basin Plan", and recommendations from other regulatory agencies, such as CDPH. RP-4 is a tertiary treatment plant that produces recycled water for reuse in the IEUA service area. RP-4 discharges some of its effluent, commingled and dechlorinated with effluent from RP-1, to

Cucamonga Creek, Reach 1, through Discharge Point No. 002. Reach 1 is a lined flood control channel which discharges to Mill Creek and thence to Chino Creek, which is tributary to Santa Ana River, Reach 3. Solids from RP-4 are returned to the Etiwanda Trunk sewer and conveyed to RP-1 for removal and treatment. Specific effluent quality requirements for RP-4 are discussed below, based on the existing permit rates RP-4 at an average capacity of 14 mgd.

3.4.1 Biochemical Oxygen Demand and Suspended Solids Limits

Table 3-3 lists biochemical oxygen demand (BOD) and total suspended solids (TSS) limits from the RP-1/RP-4 discharge permit. These values are achievable with tertiary treatment and are intended to ensure that only adequately oxidized wastewater is discharged.

Table 3-3
Effluent BOD and TSS Limitations[1]

Constituent	Average Weekly Concentration (mg/L)	Average Monthly Concentration (mg/L)
For Discharges Without 20:1 Dilution:		
BOD	30	20
TSS	30	20
For Discharges With 20:1 Dilution:		
BOD	45	30
TSS	45	30

1. Source: RWQCB, 2009.

3.4.2 Ammonia-Nitrogen and Chlorine Residual Limits

Table 3-4 lists the ammonia-nitrogen and total chlorine residual concentration limits for protection of receiving waters.

Compliance determinations for total chlorine residual are based on 99 percent compliance with the following conditions:

- The total time during which the total chlorine residual values are above 0.1 mg/L (instantaneous maximum value) shall not exceed 7 hours and 26 minutes in any calendar month;
- No individual excursion from 0.1 mg/L value shall exceed 5 minutes; and
- No individual excursion shall exceed 5.0 mg/L.

Table 3-4
Effluent Ammonia-Nitrogen and Chlorine Residual Limitations[1]

Constituent	Instantaneous Maximum (mg/L)	Average Monthly (mg/L)
Ammonia-Nitrogen	---	4.5
Total Chlorine Residual[2] - For Discharges Without 20:1 Dilution	0.1	---
Total Chlorine Residual[2] - For Discharges With 20:1 Dilution	2.1	---

1. Source: RWQCB, 2009.
2. Applies to surface water discharges. See discussion above for compliance determination.

3.4.3 Total Dissolved Solids and Total Inorganic Nitrogen Limits

Restrictions are imposed for effluent salinity and Total Inorganic Nitrogen (TIN). Total Dissolved Solids (TDS - a measure of salinity) and TIN limits are summarized in Table 3-5 on the following page.

The permit recognizes that effluent TDS is based on the TDS of the water supply sources utilized in the IEUA service area. The RWQCB will not initiate enforcement action for TDS limit violations if the violation is due to the TDS of the water supply sources utilized in the IEUA service area and that all reasonable steps have been taken to ensure that the best TDS quality supplies are obtained and utilized in the service area. Furthermore, the RWQCB will not initiate enforcement action for violations of the TDS limits if the cause is solely due to chemical additions in the treatment processes needed to meet the waste discharge requirements, provided that IEUA has taken steps to optimize chemical additions to minimize TDS increases.

TIN is the sum of nitrate, nitrite, and ammonia, measured as nitrogen. The TIN limits in Order No. R8-2009-0021, NPDES No. CA8000409, (RWQCB, 2009) are based on the RWQCB's revised wasteload allocation for TIN in Publicly Owned Treatment Works discharges to the Santa Ana River and its tributaries and to groundwater in the Upper Santa Ana River Basin. The permit (RWQCB, 2009) allows IEUA to meet the limitation on an agency-wide basis using flow weighted averages of the discharges from all four plants,(RP-1, RP-4, RP-5, and CCWRF.

Table 3-5
Effluent TDS and TIN Limitations [1]

Constituent	12-Month Running Average (mg/L)
TDS	550[2]
TIN	8

1. Source: RWQCB, 2009.
2. The 12-month average limit for TDS cannot exceed the 12-month average TDS in the water supply by more than 250 mg/L. Compliance is based on the lower of the two limits, either 550 mg/L or 250 mg/L above the weighted averages of the water supplies in the RP-1, RP-4, RP-5, and CCWRF service areas.

3.4.4 Mineral/Inorganic Effluent Limitations

The RWQCB imposes restrictions on effluent inorganics to meet surface water quality objectives established to protect beneficial uses designated in the Basin Plan. Typically regulated constituents include boron, chloride, fluoride, sodium, sulfate, and total hardness. Based on its review of historic effluent data, the RWQCB determined that discharges from RP-1 and RP-4 were unlikely to cause or contribute to violations of water quality objectives for these mineral constituents. Consequently, the permit contains no effluent limitations, although monitoring is still required for these mineral constituents.

3.4.5 Trace Constituent Effluent Limitations

The RP-1/RP-4 NPDES permit specifies maximum concentrations for trace constituents in the effluent as summarized in Table 3-6.

Table 3-6
Effluent Trace Constituent Limitations [1]

Constituent	Maximum Daily Concentration (μg/L)	Average Monthly Concentration (μg/L)
Cyanide, Free	8.5	4.2
Selenium	8.2	4.1
Bis(2-ethylhexyl)phthalate	11.9	5.9

1. Source: RWQCB, 2009.

3.4.6 Effluent Limitations for TOC and Nitrogen Compounds

IEUA began recharging the Chino Groundwater Basin using recycled water from RP-1 and RP-4 as part of its Chino Basin Recycled Water Groundwater Recharge Project. More recently, IEUA began recharging more recycled water from RP-1 and RP-4 with the Phase II Chino Basin Recycled Water Groundwater Recharge Project. Effluent must comply with CDPH requirements for groundwater recharge. At present, groundwater recharge is allowed under Title 22 Water Recycling Criteria on a case-by-case basis. Based on the proposed Draft Groundwater Recharge Criteria issued by CDPH on August 5, 2008 (CDPH, 2007a), recharge water that is percolated at spreading basins is required to comply with specified limits for TOC and nitrogen compounds, including total nitrogen, ammonia-nitrogen, organic nitrogen, nitrite-nitrogen, and nitrate-nitrogen. The recharge water will be a blend of recycled water, stormwater, and imported water. Recharge water quality will be dependent upon the performance of RP-1 and RP-4, dilution with non-wastewater sources, and soil aquifer treatment as the recharge water percolates.

The RWQCB issued the original permit for the Phase I Recharge Project in 2005 (RWQCB, 2005). When Phase II was approved by CDPH in April 2007 (CDPH, 2007), the RWQCB issued a new permit covering both Phase I and Phase II Recharge Projects under the same Order No. R8-2007-0039 (RWQCB, 2007a) so that the regulatory requirements would be identical for both phases.

3.4.7 Other Effluent Limitations

Treatment requirements specified in the RP-1/RP-4 NPDES permit are dependent upon the flow in the receiving waters and the amount of effluent dilution that will be provided. (Monitoring location R-002U is used to determine the dilution ratio in Cucamonga Creek.)

If the flow in Cucamonga Creek is less than that required for a 20:1 (ratio of receiving water flow to wastewater flow) dilution at the point of discharge, the discharge must be tertiary effluent that has been adequately oxidized, coagulated, filtered, and disinfected. The discharge is considered adequately filtered if the turbidity does not exceed: (1) an average of 2 Nephlometric Turbidity Units (NTU) within a 24-hour period; (2) 5 NTU more than 5 percent of the time during any 24-hour period; and (3) 10 NTU at any time. The discharge is considered adequately disinfected if: (1) the median number of coliform organisms does not exceed a most probable number (MPN) of 2.2 per 100 mL over the last seven days; (2) the number of coliform organisms does not exceed an MPN of 23 per 100 mL in more than one sample within any 30-day period, and (3) the number of coliform organisms does not exceed an MPN of 240 per 100 mL in any sample.

If the flow in Cucamonga Creek is more than that required for a 20:1 dilution at the point of discharge, the discharge must be at least secondary effluent that has been adequately oxidized and disinfected. The discharge is considered adequately disinfected if the median number of coliform organisms does not exceed 23 per 100 mL over the last 7 days.

The permit includes other general effluent limitations that restrict oil and grease, pH and toxicity for all discharges. Visible oil and grease in the effluent is not permissible, and the effluent pH must be within 6.5 and 8.5 units. Compliance determinations for pH require compliance with the following conditions:

- The total time during which the pH values are outside the required range of 6.5 to 8.5 units shall not exceed 7 hours and 26 minutes in any calendar month; and
- No individual excursion from the range of 6.5 to 8.5 pH units shall exceed 60 minutes.

Effluent toxicity is required to be monitored monthly. Monitoring of toxicity shall be accelerated as specified in the NPDES permit when the result of any single chronic toxicity test of the effluent exceeds 1.0 chronic toxicity units (TUc). An Initial Investigation Toxicity Reduction Evaluation (IITRE) shall be developed and followed when the result of the chronic toxicity tests exceeds a two month median value of 1.0 TUc for survival or reproduction endpoint, or 1.7 TUc for survival endpoint for any single test.

Although the above requirements for discharge to Cucamonga Creek apply equally to effluent from both RP-1 and RP-4, RP-4 will be meeting the more strict requirements at all times because the RP-4 outfall has now been converted to a recycled water distribution pipeline and there will be users requiring disinfected tertiary effluent at all times.

The use of recycled water for landscape irrigation or other similar uses shall comply with the limitations set forth in the consolidated permit. In order to comply with Title 22 requirements for spray irrigation and non-restricted recreational landscape impoundments, recycled water must be tertiary effluent that has been adequately disinfected, oxidized, coagulated (as needed for turbidity reduction), and filtered. The same BOD_5, TSS, turbidity and disinfection requirements apply for recycled water production as for surface water discharges with less than 20:1 dilution. The same TDS and TIN limitations also apply for recycled water production as for surface water discharges with less than 20:1 dilution. However, if those limitations are not met, more restrictive antidegradation limitations are included in the RP-1/RP-4 NPDES permit for recycled water overlying specific local groundwater management zones.

The pH for recycled water effluent should be within an instantaneous minimum and maximum of 6 and 9 pH units, respectively.

3.5 Effluent Quality Characteristics

IEUA submits monitoring reports to the RWQCB in accordance with the NPDES permit. Table 3-7 summarizes recent recycled water quality data for some of the major regulated parameters. Complete monitoring and reporting records are available from IEUA or the RWQCB.

Table 3-7
Typical RP-4 Effluent Quality [1]

Constituent	Units	Minimum	Maximum	Average
Specific Conductance	µmhos/cm	695	965	805
pH	unit	6.7	7.2	6.9
Turbidity	NTU	0.2	0.6	0.4
TOC	mg/L	3.7	10.9	4.5
TSS	mg/L	<0.1	3.2	0.2
TDS	mg/L	426	538	472
Carbonate Alkalinity	mg/L	0	0	0
Bicarbonate Alkalinity	mg/L	93	145	121
Nitrate Nitrogen (NO_3-N)	mg/L	1.3	28.3	5.8
Nitrite Nitrogen (NO_2-N)	mg/L	<0.01	0.45	<0.01
Ammonia Nitrogen (NH_3-N)	mg/L	<0.1	3.7	<0.1
TKN	mg/L	<0.5	5.3	0.6
Total Inorganic Nitrogen (TIN as N)	mg/L	1.3	32.4	5.8
Calcium	mg/L	36	43	39
Chloride	mg/L	102	144	127
Magnesium	mg/L	8	11	10
Sodium	mg/L	97	113	107
Sulfate	mg/L	42	58	50

Source: IEUA, 2008a.

Section 4
Plant Facilities

IEUA's RP-4 provides wastewater treatment that conforms to the highest level of California water reclamation criteria. This section describes the existing and newly constructed facilities and presents the basis for compliance of the expanded RP-4 facilities with the treatment, recycled water quality, and reliability requirements set forth in Title 22. As mentioned in Section 1, IEUA has already shown that the existing facilities comply with Title 22 in an Engineering Report submitted in March 2005 (DDB Engineering, Inc., 2005).

4.1 General Description of Facilities

The previously existing RP-4 was designed to treat an annual average flow of 7 mgd. Improvements are being constructed that will increase the plant's rated capacity to 14 mgd. The improvements are being implemented in two phases. Phase 1 work converted the previous 7 mgd oxidation ditch plant to a biological nitrogen removal activated sludge process with 7 mgd of capacity. Phase 1 was commissioned in July 2007. Phase 2 features construction of an additional 7 mgd capacity biological nitrogen removal activated sludge train, also including the addition of new primary and secondary clarifiers, increasing the total plant capacity to 14 mgd. The standby oxidation ditch will also be converted to a biological nutrient removal activated sludge process system. Phase 2 also involves other improvements, such as modifications to the headworks, including primary enhancement chemical addition, and addition of new tertiary cloth filters, clarifiers, and an odor control biofilter. Phase 2 is expected to be completed by summer 2009.

4.1.1 Previous 7-MGD Plant Process Configuration

RP-4 currently provides preliminary, secondary, and tertiary treatment and solids wasting facilities. The existing plant was originally designed to treat an annual average flowrate of 7 mgd and peak flow of 14 mgd. Figure 4-1 presents the process flow schematic and Figure 4-2 shows the site plan for RP-4 as it existed at the initiation of construction for the expansion from an average flow of 7 mgd to 14 mgd. The 7-mgd plant's treatment sequence is comprised of bar screens, an influent pumping station, grit removal, anoxic tanks, oxidation ditches (mechanical aerators were abandoned in place and all of them were fine bubble aeration), intrachannel (BOAT™) clarifiers, waste activated sludge (WAS) thickening units, filtration, and sodium hypochlorite disinfection. It formerly included aerated digesters and centrifuge dewatering facilities, but they have since been relocated.

Raw wastewater passes through a mechanical bar screen and then is pumped to a vortex (Pista) grit chamber and Parshall flume on its way to the flow splitter that apportions flows among the three parallel secondary process trains. Screenings

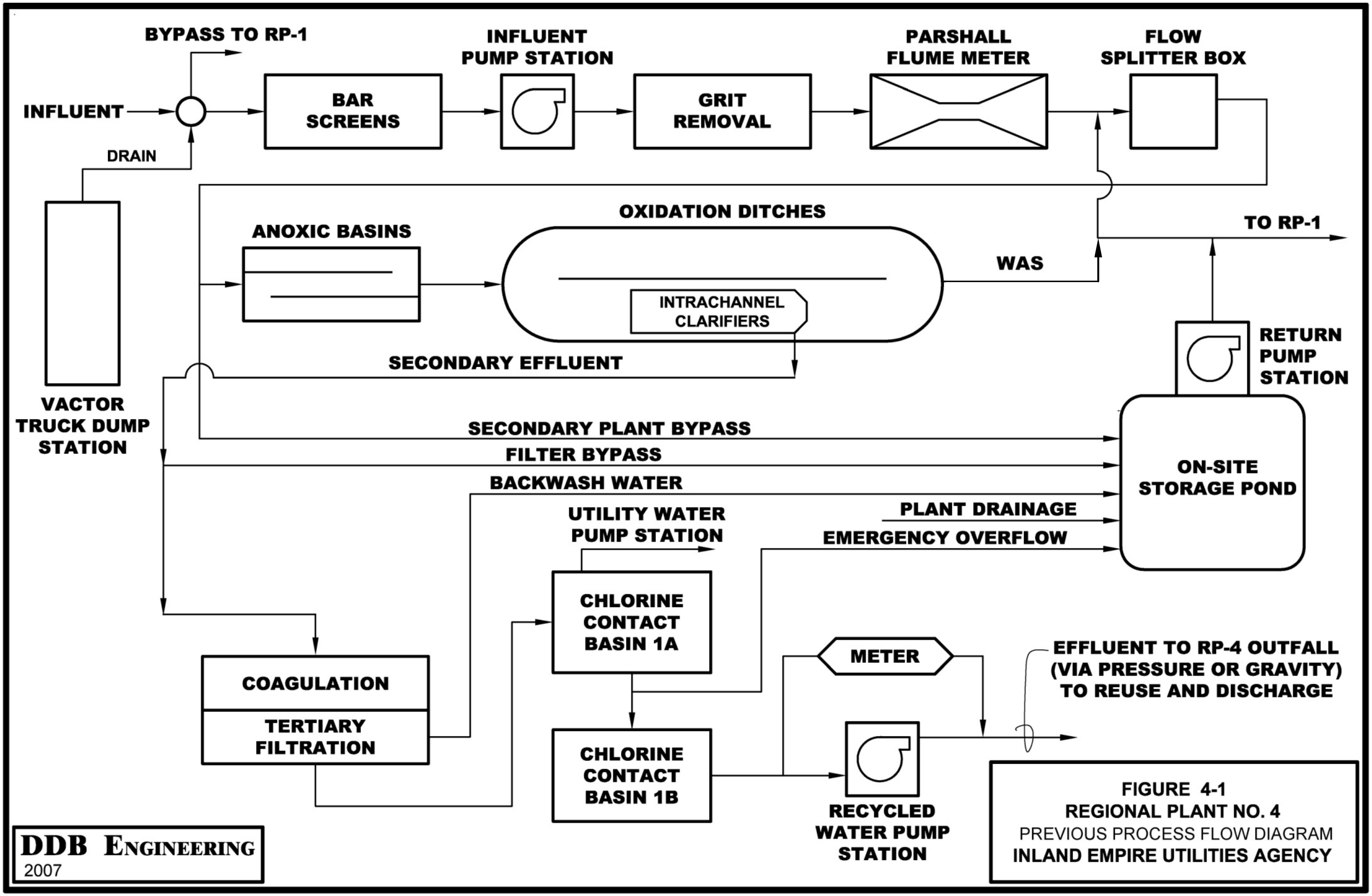

FIGURE 4-1
REGIONAL PLANT NO. 4
PREVIOUS PROCESS FLOW DIAGRAM
INLAND EMPIRE UTILITIES AGENCY

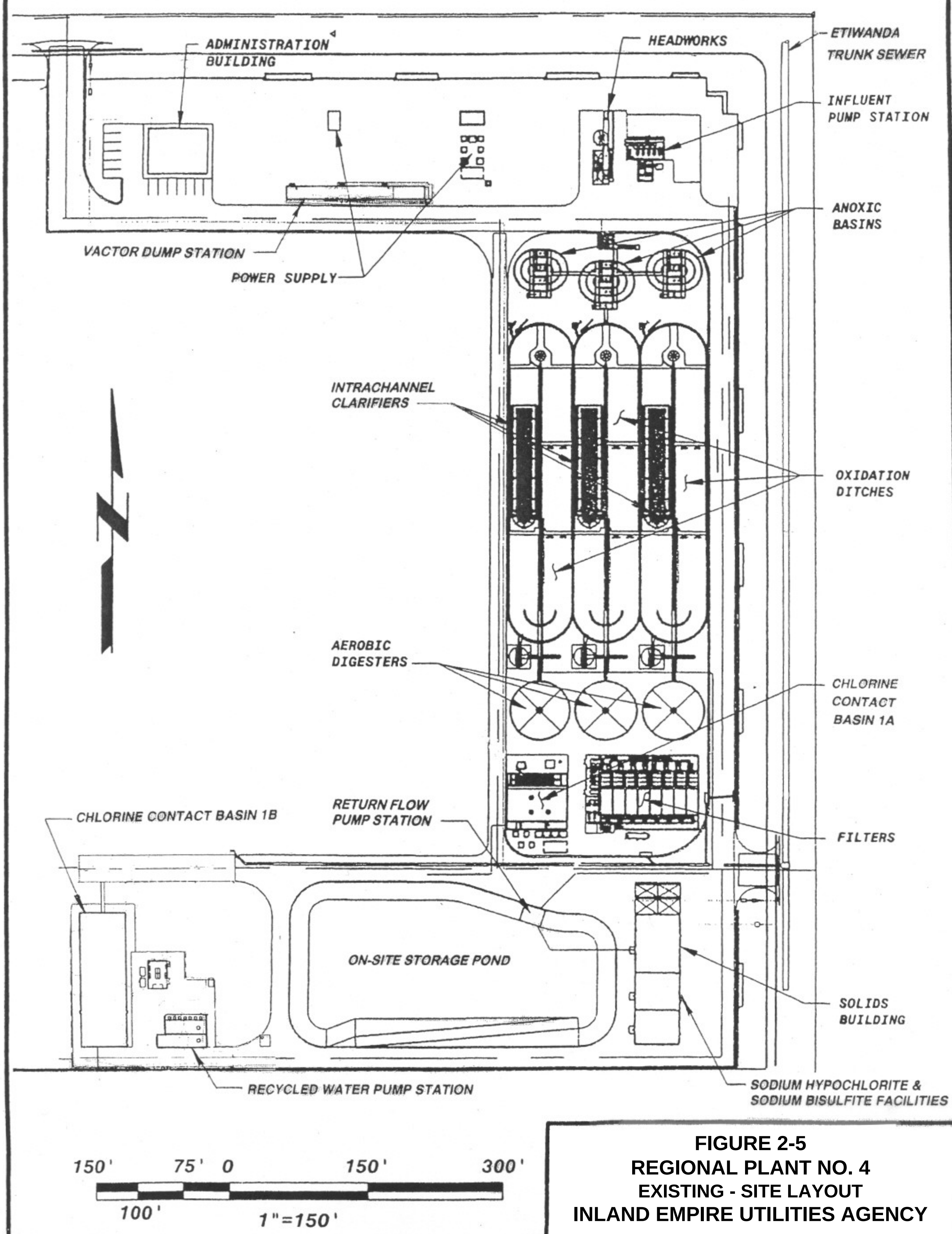

FIGURE 2-5
REGIONAL PLANT NO. 4
EXISTING - SITE LAYOUT
INLAND EMPIRE UTILITIES AGENCY

and grit are dewatered and hauled to a landfill. All other solids removed during treatment are returned to the trunk sewer and conveyed to RP-1 for removal, processing and disposal.

Secondary treatment consists primarily of biological destruction and stabilization of suspended and dissolved organic materials. Nitrification and denitrification is also achieved by utilizing an anoxic tank with recycle streams and an oxidation ditch aeration tank with a BOAT™ clarifier for solids separation at RP-4. This biological treatment process uses both aerobic (oxic) and anoxic bacteria and other microorganisms to break down organic matter and to remove nitrogen found in the wastewater. All three aeration tanks use fine bubble diffusers.

Tertiary treatment consists of coagulation, filtration, and disinfection to produce high quality recycled water. Filtered effluent is disinfected using sodium hypochlorite. The required 90-minute contact time is achieved through the two baffled chlorine contact tanks (1A and 1B) operated in series. The effluent from Basin 1B enters the wet well of the Recycled Water Pumping Station and is pumped into the RP-4 outfall for delivery to recycled water users. Recycled water can be brought back into the plant to be used for plant utility water either through a 10-inch connection to the discharge line from the RP-4 recycled water pump station or through a 6-inch connection to the RP-4 outfall pressure line in Etiwanda Avenue. Any water not reused eventually reaches RP-1 where it is mixed with RP-1 effluent and dechlorinated before discharge to Prado Park Lake or Cucamonga Creek.

WAS generated during biological treatment and filter backwash waste are sent to the holding pond for the filter backwash water, or returned to the trunk sewer in Etiwanda Avenue and conveyed with other raw sewage to RP-1 for removal, processing and disposal.

4.1.2 Modified and Expanded Treatment Process Configuration

The major change to the process sequence for the expansion of capacity from 7 to 14 mgd is the conversion of the activated sludge/BOAT™ clarifier system to a multi-stage Bardenpho process with the addition of primary and secondary clarifiers and a second anoxic zone in the aeration tanks. The existing BOAT™ clarifiers were removed. Additions to the plant facilities during the expansion will include:

- Influent Pump Station No. 2
- Headworks Splitter Box
- Headworks No. 2 / Grit Screening
- Primary Clarifier Splitter Box
- Primary Clarifiers Nos. 1 and 2
- Primary Sludge Waste Station
- Anoxic Basin Splitter Box
- Modification of 3 oxidation ditches

- Secondary Clarifiers Nos. 1, 2 and 3
- RAS/WAS Pump Station
- Secondary Clarifier Splitter Box
- Four new Cloth Disc Filters
- Chlorine Contact Basin No. 2
- Ferric/Polymer Feed System
- Odor Control System/Biofilters

The modified flow schematic and the modified site plan, illustrated on Figures 4-3 and 4-4, respectively, show the plant as it will operate when the modifications and expansion to 14 mgd are complete. As described earlier in this Section, the improvements are being implemented in two phases. Phase 1 modifications, included the conversion of the previous 7 mgd oxidation ditch plant to a biological nitrogen removal activated sludge process that was commissioned in July 2007. Phase 2, which includes conversion of the standby activated sludge train, addition of new primary and secondary clarifiers, and addition of a new 7 mgd biological nitrogen removal activated sludge system, new tertiary cloth filters and clarifiers, and modifications to the headworks, should be completed by summer 2009.

The following sections describe the basis of design for each of the treatment processes in detail and demonstrate how Title 22 compliance will be achieved for an annual average flow of 14 mgd. Capacities of each unit process are determined for operation as defined under the following conditions:

- Peak Capacity – total peak flow capacity with all units in service.
- Annual Average Capacity Without Redundancy – annual average capacity with all units in service.
- Title 22 Reliable Annual Average Capacity – annual average capacity conforming to the reliability requirements set forth in Title 22. Reliability may be provided by redundant, standby, or alternative equipment or processes. Typically, the Title 22 Reliable Annual Average Capacity for each treatment process is determined with the largest unit out of service. In other cases, alternative means of reliability is provided by storage or another treatment process. The specific means of establishing reliability is described for each treatment process.

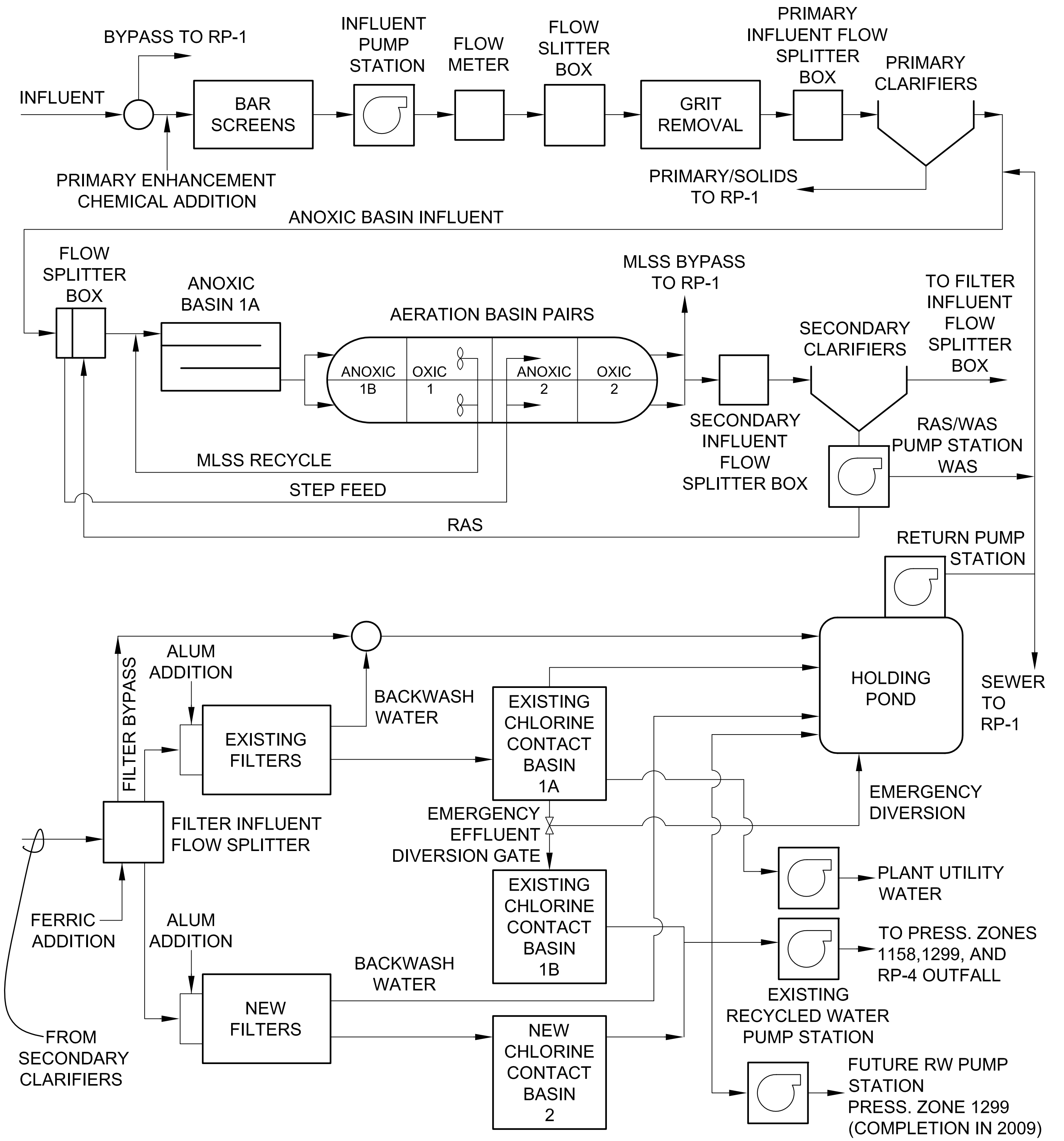

FIGURE 4-3
REGIONAL TREATMENT PLANT NO. 4
EXPANSION - PROCESS FLOW DIAGRAM
INLAND EMPIRE UTILITIES AGENCY

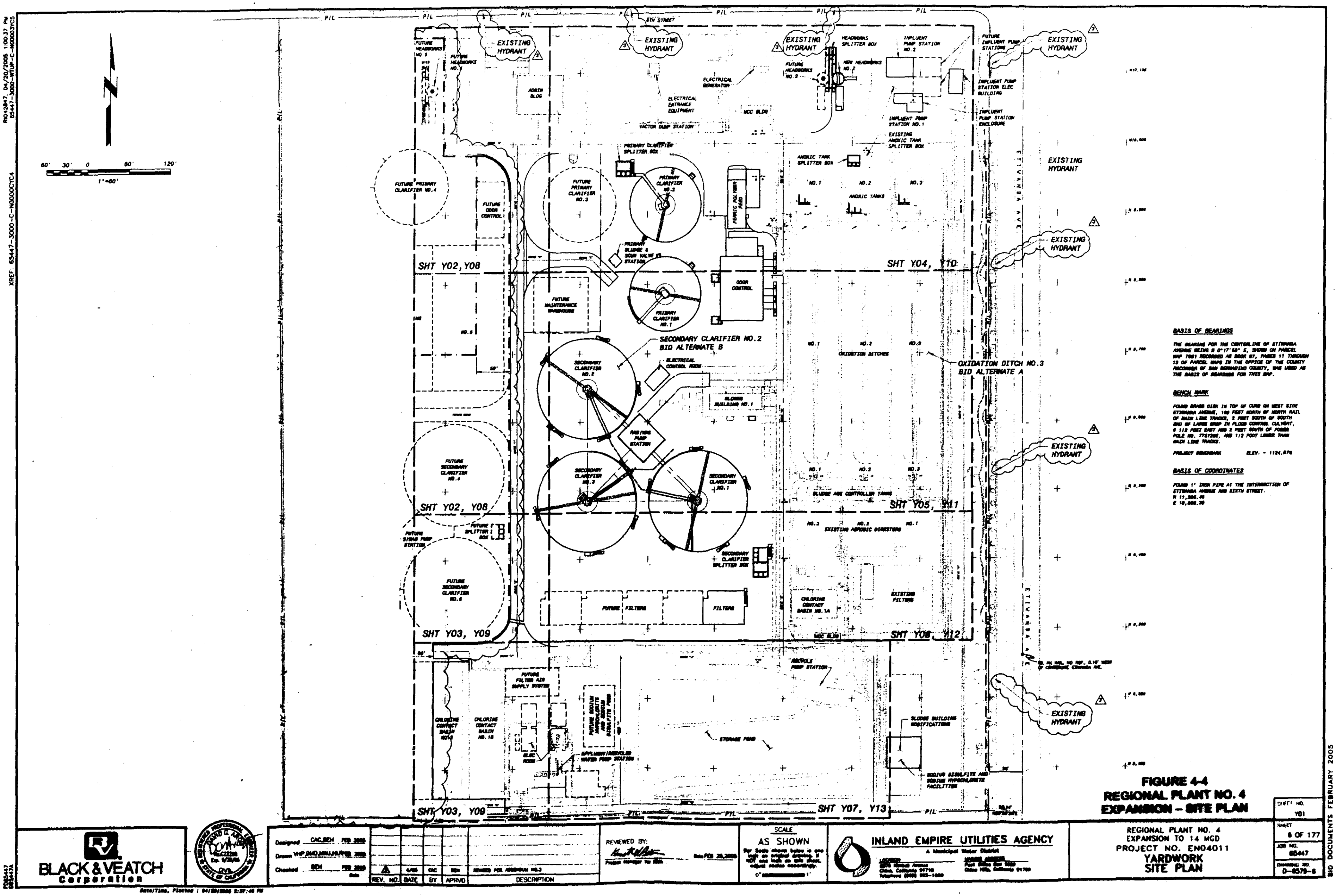

FIGURE 4-4
REGIONAL PLANT NO. 4
EXPANSION – SITE PLAN

4.2 Design Flowrates

RP-4 is being expanded to an average annual day flow (AADF) rated capacity of 14 mgd. The Peak Hour Dry Weather Flow (PHDWF) peaking factor is conservatively assumed to be 2.0 based on IEUA experience, making the PHDWF rate 28.0 mgd. The Peak Hour Wet Weather Flow (PHWWF) peaking factor for the plant is 2.3, and the PHWWF rate is 32.2 mgd, based on the Black and Veatch design drawings, sheet 5 (IEUA, 2005).

IEUA (IEUA, 2000a and 2000b) generally uses the following formula for PHDWF:

$$PHDWF = 1.8 * (AADF)^{0.94}$$

Based on the expansion design AADF of 14 mgd for RP-4, this formula gives a PHDWF of:

$$PHDWF = 1.8 * (14)^{0.94} = 21.5 \text{ mgd}$$

This is equivalent to a dry weather peaking factor of 1.54 (21.51 mgd/14 mgd). Using a dry weather peaking factor of 2.0 for the design PHDWF is conservative. Table 4-1 summarizes the flowrates and peaking factors for RP-4 that are used as the basis of this report.

Table 4-1
Summary of RP-4 Flowrates and Peaking Factors for Title 22 Compliance

Parameter	Flowrate (mgd)[1]	Peaking Factor[2]
Raw Influent Flow		
Average Annual Day Flow (AADF)	14.0	1.0
Maximum Month Flow (MMF)	16.1	1.15
Peak Day Flow (PDF)	28.0	2.0
Peak Hour Dry Weather Flow (PHDWF)	28.0	2.0
Peak Hour Wet Weather Flow (PHWWF)	32.2	2.3

1. Source: IEUA, 2005, and Black & Veatch, 2004, (Table 5-1).
2. Peaking factor = $\frac{\text{PHWWF (mgd)}}{\text{AADF(mgd)}}$ (or PHDWF (mgd))

4.3 Design Wastewater Characteristics

The typical chemical composition of the raw influent wastewater to RP-4, based on 2000-2001 data, is summarized in Table 4-2. These data were used for the design of the modifications and expansion to 14 mgd.

Table 4-2
Design Raw Wastewater Characteristics [1]

Parameter	Units	Value	Reference
Annual Average Raw Influent Quality:			
BOD-5 day	mg/L	245	See Note 2
TSS	mg/L	256	See Note 2
Ammonia	mg/L	28	See Note 2
TKN	mg/L	43	See Note 2
Average temperature	degrees C	23	See Note 2
Annual Average Raw Influent Loadings at 14 mgd:			
BOD-5 day	lbs/day	28,600	calculated [3]
TSS	lbs/day	29,880	calculated [3]
Peak Month Average Raw Influent Quality:			
BOD-5day	mg/L	294	See Note 2
TSS	mg/L	308	See Note 2
Ammonia	mg/L	34	See Note 2
TKN	mg/L	52	See Note 2
Winter temperature	degrees C	20	See Note 2
Summer temperature	degrees C	26	See Note 2
Peak Month Average Raw Influent Loadings at 14 mgd:			
BOD-5 day	lbs/day	34,320	calculated [3]
TSS	lbs/day	35,960	calculated [3]

1. Raw wastewater characteristics based on RP-4 data from June 2000 through July 2001.
2. Black & Veatch, 2002.
3. For more information on calculated values, see Appendix B.

4.4 Preliminary Treatment

The preliminary treatment process at RP-4 consists of two mechanical bar screens ahead of Influent Pump Stations Nos. 1 and 2, a 42-inch diameter magnetic flow meter (replacing the original Parshall flume), a headworks splitter box and two vortex-type grit chambers with grit concentrators. Table 4-3 presents design criteria for the preliminary treatment facilities.

Table 4-3
Headworks Design Criteria

Parameter	Units	Value	Reference
Mechanical Bar Screens:			
Number	units	2	See Note 1
Channel width	feet	6.0	See Note 1
Channel depth	feet	18.0	See Note 1
Bar clear opening	inches	0.375	See Note 1
Max velocity through screen	feet/second	1.5	See Note 1
Peak flow capacity	mgd, each	36.2	See Note 1
Total peak flow capacity	mgd	72.4	calculated [2]
Screenings Press:			
Number	units	1	See Note 1
Capacity	cu ft/hour	32	See Note 1
Percent solids	percent	8	See Note 1
Influent Pump Stations Nos. 1 & 2:			
Pump Station Number 1:			
Number of pumps	units	5	See Note 1
Type	type	centrifugal	See Note 1
Motor horsepower, each	hp	50	See Note 1
Rated Capacity per pump	gpm	3,275	See Note 1
Rated head @ 870 rpm	ft	38	See Note 1
Pump Station Number 2:			
Number of pumps	units	3	See Note 1
Type	type	submersible	See Note 1
Motor horsepower, each	hp	100	See Note 1
Rated Capacity per pump	gpm	6,000	See Note 1
Rated head	ft	40	See Note 1
Reliable capacity with 7 pumps	mgd	40.8	calculated [2]
Magnetic Flow Meter:			
Number	units	1	See Note 3
Throat size	inches	42	See Notes 1 & 3
Maximum capacity	mgd	48.3	See Notes 1 & 3
Grit Chambers:			
Number	units	2	See Note 1
Type	type	vortex	See Note 1
Diameter	feet	16	See Note 4
Depth	feet	2.92	See Note 4
Volume, each	gallons	4,400	calculated [2]

Table 4-3
Headworks Design Criteria

Parameter	Units	Value	Reference
Detention time at PHWWF, all units in service	minutes	0.39	calculated [2]
Peak design capacity, each	mgd	20	See Note 1
Grit Pumps:			
Number	units	3	See Note 5
Type	type	Recessed impeller, centrifugal	See Note 5
Motor horsepower	hp	2 @ 5; 1 @ 7.5	See Note 5
Capacity, each	gpm	250	See Note 1
Rated head	feet	30	See Note 1
Grit Dewatering Equipment:			
Number of cyclones	units	2	See Notes 5 & 6
Number of classifiers	units	2	See Notes 5 & 6

1. Black & Veatch, 2004.
2. For more information on calculated values, see Appendix B.
3. Black & Veatch, 2002.
4. NBS/Lowry, 2000.
5. IEUA staff, 2004-2009.
6. IEUA, 2005.

The raw wastewater flow entering RP-4 is controlled by diversion manholes and the influent pump station. Raw influent flow enters the plant through a 42-inch gravity sewer from a diversion manhole in the Etiwanda Trunk Sewer in Etiwanda Avenue. The diverted wastewater flows by gravity to another diversion manhole upstream of the plant's influent pumps. Flows exceeding the designated influent pumping rate are diverted via a weir back to the Etiwanda Trunk Sewer for conveyance to RP-1. Below the diversion point, the Etiwanda Trunk Sewer is 24-inches in diameter as it flows to RP-1.

As it enters RP-4, the gravity flow passes through a mechanical bar screen with a maximum capacity of 36.2 mgd. A second mechanical bar screen of the same flow capacity is available as standby. With both screens in service, the peak flow capacity of the screening process is 72.4 mgd. Therefore, no additional screening capacity is required for the expansion of plant capacity to a PHWWF of 32.2 mgd.

After screening, the influent flow is pumped up to the headworks splitter box utilizing the existing Pump Station No. 1, with five constant speed units at about

4.7 mgd each, and the new Influent Pump Station No. 2, with three submersible pumps, two of which have adjustable frequency drives. The two pump stations share an interconnected wet well and their flows join into a 42-inch diameter force main containing a magnetic flow meter prior to reaching the splitter box. Each of the new pumps is capable of delivering 6,000 gpm or 8.6 mgd. With one of the new pumps out of service, the combined peak capacity of the other seven pumps is 40.8 mgd. This is equivalent to an average reliable capacity (with one of the larger pumps out of service) of 17.7 mgd (40.8 mgd / 2.3 peaking factor under PHWWF conditions = 17.7 mgd AADF capacity). The peak capacity of all eight pumps is 49.5 mgd.

The magnetic flow meter is designed for a peak flow of 48.3 mgd, which is equivalent to an average flow of 21 mgd, based on a peaking factor of 2.3 under PHWWF conditions. It is in a 42-inch line and has a bypass around it to facilitate maintenance.

The headworks splitter box divides the flow between the existing and new vortex grit basins (Grit Basins Nos. 1 and 2). The design peak capacity of each grit basin is 20.0 mgd (Black & Veatch 2002 and 2004 and NBS/Lowry 1996). It should be noted that optimum grit removal is not essential to the plant's overall treatment ability. Operating with one grit chamber out of service, grit would still be removed with waste solids from the primary clarifiers. This flexibility allows the grit removal process to comply with Title 22 because a downstream process would still remove grit.

Based on these criteria, the capacity of each preliminary treatment unit process, as defined in Section 4.1, is summarized in Table 4-4.

Table 4-4
Preliminary Treatment Capacity

Process	Peak Capacity (mgd)	Annual Average Capacity With All Units in Service (mgd)	Title 22 Reliable Annual Average Capacity (mgd)
Bar screens	72.4	31.5 [1]	15.7 [2]
Influent Pump Stations	49.5	21.5 [3]	17.7 [4,7]
Magnetic flow meter	48.3	21 [3]	21 [3]
Grit chambers	40.0 [5]	17.4 [6]	17.4 [6,7]

1. Peak Capacity/PHWWF Peaking Factor = 72.4/2.3 = 31.5
2. Peak Capacity with one screen out of service/PHWWF Peaking Factor = 36.2/2.3 = 15.7
3. Peak Capacity/PHWWF Peaking Factor = 49.5/2.3 = 21.5; 48.3/2.3 = 21.0;
4. Reliable Annual Average Capacity = Peak Capacity with one large pump out of service/PHWWF Peaking Factor = 40.8 / 2.3 = 17.7.
5. Black & Veatch 2002 and 2004 and NBS/Lowry 1996.
6. Annual Average Capacity = Peak Capacity/PHWWF Peaking Factor = 40.0 / 2.3 = 17.4
7. See discussion above regarding reliable capacity of these processes.

In summary, the preliminary treatment facilities comply with Title 22 requirements by providing standby units and back-up treatment capacity. The preliminary treatment processes can effectively handle an annual average flow of 15.7 mgd.

4.5 Primary Treatment

The expansion includes construction of two 7-mgd-capacity primary clarifiers in order to reduce the load on the secondary treatment system. A third clarifier is not considered necessary as a standby because the downstream treatment systems can handle the additional load for short periods if one of the two clarifiers is out of service. The design criteria for the primary clarifiers are presented in Table 4-5.

Table 4-5
Primary Treatment Design Criteria

Parameter	Units	Value	Reference
Primary Clarifiers:			
Number	units	2	See Note 1
Diameter	ft	105	See Note 1
Side Water Depth	ft	13	See Note 1
Surface Area, each	sq. ft.	8,659	Calculated[2]
Volume, each	gallons	844,254	Calculated[2]
Design Capacity, each	mgd	7	See Note 1
Overflow rate at AADF, all units in service	gpd/sf	810	See Note 1
Overflow rate at PHWWF, all units in service	gpd/sf	1,860	Calculated[2]
Annual Average Title 22 Capacity	mgd	14	See Note 3

1. Black & Veatch, 2004.
2. For more information on calculated values, see Appendix B.
3. See above discussion.

4.6 Secondary Treatment

The plant expansion includes major revisions to the flow patterns for the biological treatment system and the addition of final clarifiers to convert the existing structures into a more conventional secondary treatment system.

4.6.1 Biological Secondary Treatment Facilities

As part of the plant expansion, the existing anoxic basins and oxidation ditches are being modified into a multi-stage Bardenpho configuration to provide activated sludge biological treatment with biological nitrogen removal. The existing BOAT™ clarifiers will be removed and each of the three existing oxidation ditches will be divided into a pair basins, which have the ability to operate in the plug flow or step feed mode, for a total of six basins. Each basin will be further divided into anoxic and oxic zones through the installation of baffles. Each pair of basins provides a 7 mgd treatment train. Two of the three trains will provide the design capacity of 14 mgd and the third will be available as a standby or redundant system.

A flow splitter box divides the primary effluent flow among the three biological treatment trains. The existing anoxic tanks provide stage 1A and additional anoxic capacity (1B) is provided by a baffled section at the head of converted oxidation ditch. This is followed by Oxic Zone 1, Anoxic Zone 2, and Oxic Zone 2. Anoxic Zone 2 is divided by a baffle into zones 2A and 2B. Anoxic tanks 1A are constructed of three concentric rings, but they are being baffled to provide a serpentine flow pattern from one side of the outside ring to the other. Primary effluent enters the outside ring on the east side and mixes with the recycled mixed liquor suspended solids (MLSS) coming into the outside ring from the south side. The flow is then directed by baffles through the other rings and to the overflow launders in the outside ring on the southwest side. The launders discharge the mixed flow through 42-inch gravity lines to the east and west halves of each 7 mgd treatment train. Submersible mixers have been located in the serpentine channel to maintain the flow and keep the mix of primary effluent and MLSS in suspension.

The effluent from the 1A anoxic tanks enters the treatment trains in each basin in Anoxic Zone 1B at the head end of the aeration tanks. The flow then passes sequentially through Oxic Zone 1, Anoxic Zone 2A and Oxic Zone 2B. Diffused aeration is provided in each oxic zone and submersible mixers in each anoxic zone. Mixed liquor suspended solids (MLSS) are recycled from the end of Oxic Zone 1 to Anoxic Tank 1A at rates of 1 to 4 times the annual average day flow (AADF). A portion of the primary effluent (up to 15% of plant influent flow, 1 mgd minimum) may be diverted from the Anoxic Basin Splitter Box through a 14-inch gravity line to the head end of Anoxic Zone 2A to provide a step feed configuration.

The purpose of the alternating anoxic and oxic zones, accompanied by recirculation and step feed, is to both treat the carbonaceous BOD and reduce nitrogen compounds to achieve an effluent TIN level below 8 mg/L. It is anticipated that the MLSS will average about 4,000 mg/L and that the solids inventory will exceed 15,000 lbs per mgd treated.

Biological secondary treatment design criteria are summarized in Table 4-5. The secondary system is designed to treat 21 mgd, because the three treatment trains already existed as oxidation ditches before their conversion to Bardenpho. Therefore, one-third of the equipment and tanks in Table 4-6 are redundant for the design capacity of 14 mgd.

Table 4-6
Biological Secondary Treatment Design Criteria

Parameter	Units	Value	Reference
Anoxic Tanks 1A:			
Number	units	3	See Note 1
Volume, each	gallons	339,315	See Note 1
Detention Time, based on annual average flow of 7 mgd, each, without recycle	hours	1.16	Calculated[2]
Anoxic Tank 1A Mixers:			
Type	type	Flygt submersible propeller	See Note 1
Number per tank	units	3	See Note 1
Motor horsepower, each	hp	6.2	See Note 1
Size	inches	63	See Note 1
Process Trains:			
Number	trains	3	See Note 1
Basins per train	units	2	See Note 1
Volume, each basin	gallons	1,486,000	See Note 1
Length	feet	383.5	See Note 1
Width	feet	35	See Note 1
Side Water Depth	feet	16	See Note 1
Average flow per basin	mgd	3.5	See Note 1
Hydraulic Detention Time, based on annual average incoming flow of 3.5 mgd per basin (not including mixed liquor recycle flow)	hours	10.2	Calculated[2]
Anoxic Zone 1B:			
Number	units	6	See Note 1
Volume, each	gallons	120,000	See Note 1
Anoxic Zone 1B Mixers:			
Type	type	submersible propeller	See Note 1
Number per zone	units	1	See Note 1
Motor horsepower, each	hp	20	See Note 3
Size	inches	30	See Note 3
Average flow	mgd	3.5	See Note 3
Oxic Zone 1:			
Number	units	6	See Note 1
Volume, each	gallons	863,500	See Note 3

Table 4-6
Biological Secondary Treatment Design Criteria

Parameter	Units	Value	Reference
Anoxic Zone 2A:			
Number	units	6	See Note 1
Volume, each	gallons	117,300	See Note 1
Anoxic Zone 2B:			
Number	units	6	See Note 1
Volume, each	gallons	117,300	See Note 1
Anoxic Zone 2 Mixers:			
Type	type	submersible propeller	See Note 1
Number per zone	units	1	See Note 1
Motor horsepower, each	hp	20	See Note 1
Size	inches	30	See Note 1
Average flow	mgd	3.5	See Note 1
Oxic Zone 2:			
Number	units	6	See Note 1
Volume, each	gallons	228,300	See Note 3
Diffused Aeration System:			
Type	type	Fine Bubble Aerostrip	See Note 1
Oxic Zone 1:			
No. of diffusers per zone	units	338	See Note 3
Air requirements, per zone:			
Average	scfm	2,105	See Note 1
Max month (summer)	scfm	3,515	See Note 1
Peak Day	scfm	3,750	See Note 1
Oxic Zone 2:			
No. of diffusers per zone	units	80	See Note 3
Air requirements, per zone:			
Average	scfm	243	See Note 1
Max month (summer)	scfm	371	See Note 1
Peak Day	scfm	1,255	See Note 1
Air Blowers:			
Number	units	3	See Note 1
Rated capacity, each	scfm	8,000	See Note 1
Discharge pressure	psia	22.93	See Note 3
Motor hp, each	hp	2 @ 500; 1 @ 450	See Note 1
Mixed Liquor Recycle Pumps:			
Number	units	6	See Note 1
Number per basin	unit	1	See Note 1

Table 4-6
Biological Secondary Treatment Design Criteria

Parameter	Units	Value	Reference
Type	type	submersible horizontal propeller	See Note 1
Capacity range, each, at rated head	mgd	3.5 – 7.0	See Note 1
Motor hp, each	hp	40	See Note 1
Rated head	ft	1.4 to 4.5	See Note 1

1. Black & Veatch, 2004.
2. For more information on calculated values, see Appendix B.
3. IEUA, 2005.

4.6.2 Secondary Clarification

Secondary clarification is being added to RP-4 in the form of 3 circular clarifiers that replace the in-channel BOAT™ clarifiers that were within the former oxidation ditches. Each clarifier is 145 feet in diameter and equipped with an energy dissipating inlet, hydraulic flocculating feedwell, spiral shaped rotating scrapers, full-radius ducking scum skimmers and a rotating pipe weir assembly for scum collection. Each clarifier will serve one of the three 7.0 mgd biological treatment trains.

The design criteria for the secondary clarifiers are presented in Table 4-7. Secondary activated sludge is wasted from the system by using manual control valves with a local flow meter on the return activated sludge (RAS) pumps' discharge line and the mixed liquor return pumps' discharge line. Waste solids are sent directly to the sewer that conveys wastewater flow to RP-1.

Table 4-7
Secondary Clarifier Design Criteria

Parameter	Units	Value	Reference
Secondary Clarifiers:			
Number	units	3	See Note 1
Diameter	ft	145	See Note 1
Side Water Depth	ft	18	See Note 1
Surface area, each	sf	16,500	See Note 1
Volume, each	gallons	2,212,000	Calculated[2]
Average flow, each	mgd	7.0	See Note 1
Peak Capacity, each	mgd	16.1	Calculated[2]
Overflow rate at 16.1 mgd	gpd/sf	976	Calculated[2]
Inlet well diameter (minimum)	ft	10	See Note 3
Flocculating feedwell	ft	30	See Note 3

Table 4-7
Secondary Clarifier Design Criteria

Parameter	Units	Value	Reference
diameter (minimum)			
Collector Drive	Hp	1	See Note 1
Return Activated Sludge (RAS) Pumps			
Type	--	Horizontal non-clog centrifugal	See Note 1
Number	units	4 (3 duty, 1 standby)	See Note 1
Rated Capacity, each	gpm	7,072	See Note 1
Rated Head, each	ft	48	See Note 1
Motor hp, each	hp	100	See Note 1
Drive type	--	Variable frequency drive	See Note 1
RAS Flow, each train	mgd	2 – 8.75	See Note 1
Waste Activated Sludge (WAS)			
Number of Flow Control Valves	units	2	See Notes 1 & 4
WAS Production, annual average	ppd	11,214	See Note 1
WAS Production, maximum month	ppd	14,390	See Note 1
WAS Continuous Flow Rate, annual average	gpm	115	See Note 1
WAS Continuous Flow Rate, maximum month	gpm	141	See Note 1

1. Black & Veatch, 2004.
2. For more information on calculated values, see Appendix B.
3. IEUA, 2005.
4. WAS system has two flow control valves: one valve wastes Mixed Liquor and the other valve wastes RAS from the RAS pumps' discharge line.

Based on these criteria, the capacity for the RP-4 secondary treatment process, as described in Section 4.6, is summarized in Table 4-8.

Table 4-8
Secondary Treatment Capacity

Process	Peak Capacity (mgd)	Annual Average Capacity With All Units in Service (mgd)	Title 22 Reliable Annual Average Capacity (mgd)
Bardenpho anoxic/oxic tanks,	16.1 [1]	21 [2]	14 [2]
Secondary Clarifiers	28.0 [3]	21 [4]	14

1. Peak Capacity based on Maximum Month loading per Black & Veatch, 2004,
2. Based on evaluation summarized in Black & Veatch, 2004. Each biological train rated at 7 mgd average capacity.
3. Peak Capacity based on Peak Day loading per Black & Veatch, 2004.
4. Based on two tanks in operation. See discussion below regarding reliable capacity.

The average treatment capacity of the secondary treatment process is 21 mgd with all three trains in service and operating effectively. The average Title 22 design capacity of 14 mgd can be handled with two of the three treatment trains, so the third train provides standby capacity or redundancy for either of the two trains in operation. Short term wet weather flows with a peaking factor of 2.3 can be handled through the biological system with short term overloading or the redundant train can be placed in operation, if necessary. In addition, there is currently sufficient capacity in the trunk sewer and at RP-1 to divert up to 7 mgd, the average capacity of one RP-4 train, in the event of a problem with the quality of the recycled water produced by one of the two operating trains. If for any reason the RP-4 effluent quality is poor, partially treated flow can be sent to the on-site storage pond. From there, it can be pumped to the sewer, which flows to RP-1 for treatment. More detail about emergency on-site storage is available later in this Section. This ability to partially divert the flow to RP-1 provides additional reliability for the recycled water stream.

The secondary clarifiers are rated at 50.1 mgd of peak hydraulic capacity, including incoming flows, RAS, filter backwash, return flows, and future solids handling return flows for their design (Black & Veatch, 2004). The secondary clarifiers are designed for a peak hour incoming flow capacity of 34.2 mgd, which is more than the PHWWF capacity of 32.2 mgd (PHWWF peaking factor 2.3 times 14 mgd = 32.2 mgd). However, they can be operated at higher loading rates for short periods and still perform satisfactorily with the addition of coagulant for the downstream filters. Since one clarifier is devoted to each of the three biological treatment trains, their average capacity is 7 mgd each. With a wet weather (PHWWF) peaking factor of 2.3, their peak capacity is 16.1 mgd each, or 48.3 mgd total, for short-term hourly peak flows. With one clarifier available as a standby unit, the reliable average capacity of the clarifier system is 14.0 mgd. It is highly unlikely that a clarifier would be totally out of service during wet weather, since maintenance activities can be scheduled during dry weather periods.

The existing permit (RWQCB, 2009) sets a maximum TIN limit of 8 mg/L on a 12-month average basis on combined discharges from IEUA plants (RP-1, RP-4, RP-5 and CCWRF). RP-4 effluent TIN has recently averaged approximately 6 mg/L, indicating that its secondary treatment processes achieve good levels of nitrogen removal.

4.7 Tertiary Treatment

The Title 22 Water Recycling Criteria (California, 2001) require that “filtered wastewater” be an oxidized wastewater that has passed through a mono, dual or mixed media gravity, upflow or pressure filtration system at a rate that does not exceed 5 gallons per minute per square foot of surface area. Cloth filters have been approved at a rate not exceeding 6 gpm/sf (CDPH, 2005). The turbidity of the filtered wastewater must not exceed (a) an average of 2 NTU within a 24-hour period, (b) 5 NTU more than 5 percent of the time within a 24-hour period, and (c) 10 NTU at any time. Under Title 22 requirements, the maximum filtration process capacity is calculated with the largest filter out of service.

The filtered effluent is disinfected with sodium hypochlorite using chlorine contact tanks. A new chlorine contact tank has been added as part of the expansion to provide the modal contact time required by Title 22 regulations. The Title 22 quality effluent is then available for reuse or is discharged through a dedicated pipeline to RP-1 where it mixes and is dechlorinated before being discharged to either Prado Park Lake through Discharge Point 001 or to Cucamonga Creek through outfall Discharge Point 002. If necessary, disinfected tertiary effluent can also be dechlorinated with sodium bisulfite at RP-4.

4.7.1 Previous Filtration System

The previously existing filtration system utilizes dual-media gravity filters preceded by a coagulation/flocculation/clarification step.

4.7.1.1 Coagulation/Flocculation/Clarification

For the existing dual-media gravity filters, a combined coagulation, flocculation, and clarification step is the first-stage, or upflow “contra-clarifier” component, of the filtration facilities. As described in the following section, the US Filter Co. “Trident” contact clarifier/filter unit is comprised of eight separate contact coagulation/flocculation/clarifier cells, or one cell per filter. The “contra-clarifier” compartment uses floating media, and an air blower provides air scouring for backwashing solids captured by the filter media. Alum is typically continuously fed as the coagulant. If necessary, polymer can also be added. The upflow action through the floating media serves to pre-treat and clarify the filter influent. Table 4-9 summarizes the design criteria for the coagulation/flocculation/clarification facilities. Because the “contra-clarifiers” are integral with the filters, the capacity of this pretreatment process is essentially the same as that for the filtration process for Title 22 compliance, a peak flow of 2.25 mgd per cell.

Table 4-9
Dual-Media Filtration
Coagulation/Flocculation/Clarification Facilities Design Criteria

Parameter	Units	Value	Reference
Type	type	“Contra-clarifier” upflow	See Notes 1, 2 & 3
Number of “contra-clarifier” cells	units	8	See Notes 1, 2 & 3
Length per cell	feet	14	See Note 3
Width per cell	feet	10	See Note 3
Side water depth	feet	9.5	See Note 3
Volume per cell	gallons	9,950	calculated[4]
Total volume, all cells in service	gallons	79,600	calculated[4]
Detention time at average flow, all cells in service	minutes	14.7	calculated[4]
Detention time at peak flow, all filter cells in service	minutes	6.4	calculated[4]
Alum storage and feed system			
Total Storage Bulk Tank (new) Day Tanks (2 X existing)	gallons	2,600 1,800 400 each	See Note 5
Number of pumps	units	2	See Note 3
Maximum dose	mg/L	20	See Note 1
Polymer storage and feed system – not typically used			
Total Storage	gallons	250	See Note 5
Number of pumps	units	2	See Note 3
Maximum dose	mg/L	1	See Note 1
Maximum coagulation/flocculation /clarification capacity, all cells in service	mgd	18.0 [1]	See Note 6
Annual average capacity (Title 22 reliable capacity), one cell out for maintenance	mgd	6.8 [3]	See Note 6

1. Black & Veatch, 2004.
2. NBS/Lowry, 1996.
3. NBS/Lowry and North American Treatment Systems, 2000.
4. For more information on calculated values, see Appendix B.
5. North American Treatment Systems, Inc., 1997.
6. Capacity is the same as that for the filtration process because the “contra-clarifiers” are an integral component of the dual-media gravity filters. See Table 4-10.

4.7.1.2 Dual-Media Filtration

The existing filter system is comprised of eight separate cells, each of which is comprised of a first-stage upflow “contra clarifier”, described in the previous section, followed by a downflow dual-media anthracite coal/sand filtration stage. These filters will be maintained in operation and a new cloth filter system (described in Section 4.7.2) will be installed to increase the combined capacity of the filter system to a reliable maximum of 14 mgd. Based on CDPH approvals for use of dual-media gravity filters for Title 22 compliance, the filtration rate is restricted to no more than 5 gpm/sf (CDPH, 2005) or 2.25 mgd per filter. Cloth filters have been approved by CDPH at a maximum rate of 6 gpm/sf (CDPH, 2005) or 5.6 mgd per filter. Reliability of the entire filtration system is based on one dual media filter cell being in backwash and one cloth filter out of service.

Table 4-10 presents design criteria for the existing RP-4 tertiary filtration facilities. Alum and polymer are fed upstream of the filtration systems. Sodium hypochlorite is added as necessary to maintain a clean filter. An air blower provides air scouring before each backwash. Backwash water is discharged to the on-site storage pond, from which it is pumped to RP-1 or to the RP-4 secondary influent flow splitter box.

Each existing filter is a “Trident” clarifier/filter unit manufactured by US Filter Co. Each cell of the filter provides 313 sf of surface area (downflow dual-media filter). Each filter cell has a flowmeter to measure the flowrate. The plant flow is divided among the existing and new filters at the secondary effluent splitter box using weir gates. When the flow to the operating filter cells reaches a filtration rate of 4 gpm/sf, which is a conservative set point, another cell is opened to make sure the filtration rate complies with Title 22 at all times.

Table 4-10
Dual-Media Filter Design Criteria

Parameter	Units	Value	Reference
Number of filters	units	1	See Note 1
Number of cells per filter	units	8	See Note 1
Type	type	Dual media	See Note 1
Media	type	Anthracite/sand	See Note 1
Depth	inches	Anthracite : 18 Sand : 12	See Note 2
Length per filter cell	feet	31.3	See Note 2
Width per filter cell	feet	10	See Note 2
Surface area per filter cell	sf	313	See Note 1
Total surface area, all filter cells in service	sf	2,504	See Note 1

Table 4-10
Dual-Media Filter Design Criteria

Parameter	Units	Value	Reference
Firm surface area, one filter cell out for maintenance or backwash	sf	2,191	calculated[3]
Maximum filtration rate, (Title 22 reliable capacity), one filter cell out for maintenance or backwash	gpm/sf	5	See Note 4
Maximum capacity per filter cell	mgd	2.25	See Note 1 and calculated[3]
Maximum capacity, all filter cells in service	mgd	18.0	See Note 1
Maximum capacity, (Title 22 reliable capacity), one filter cell out for backwash	mgd	15.7 [5]	calculated[3]
Annual average capacity (Title 22 reliable capacity), one filter cell out for backwash	mgd	6.8 [6]	calculated[3]
Filter backwash pumping			
Number of pumps	units	2	See Note 7
Type	type	Vertical turbine	See Note 7
Capacity per pump	gpm	8,500	See Note 7
Total capacity	gpm	17,000	See Note 7

1. Black & Veatch, 2004.
2. NBS/Lowry and North American Treatment Systems, 2000.
3. For more information on calculated values, see Appendix B.
4. California, 2001. Maximum filtration rate of 5 gpm/sf is used for calculations in this table.)
5. See discussion above regarding reliable capacity (7 of 8 filter cells in service and 1 filter cell in backwash).
6. Annual average capacity is based on maximum reliable capacity/PHWWF peaking factor (15.7/2.3 =6.8 mgd).
7. IEUA, 2004-2009.

4.7.2 New Filtration System

The RP-4 expansion to 14 mgd includes a new cloth media disc filter installation in parallel with the existing dual-media filters. When the expansion is complete, the effluent from the secondary clarifiers flows via gravity to the secondary effluent/filter influent splitter box which divides the flow between the existing dual-media gravity filters and the new cloth filters. Each set of filters is designed to treat about half of the plant average flow.

Title 22 reliable capacity is conservatively based on having one dual-media filter cell in backwash (out of service) and one cloth filter out of service (for maintenance) at the same time, while still staying at or below the maximum approved filtration loading rates. For RP-4, the Title 22 reliability requirement is that the system be able to treat a peak flow with one of the largest (cloth) filters out of service and without exceeding the approved loading rates. he eight existing dual-media gravity filter cells have a peak capacity of 2.25 mgd each at the approved loading rate of 5 gpm/sf. The peak capacity of each of the four cloth filters is 5.6 mgd at the approved loading rate of 6 gpm/sf. Therefore, the peak capacity of the entire filtration system with one of the dual-media filters in backwash and one of the cloth filters out of service is 32.5 mgd (7 x 2.25 plus 3 x 5.6 = 32.5). This is more than the required peak flow of 32.2 mgd (2.3 PHWWF peaking factor times 14 mgd).

The new cloth disc filters follow chemical addition and flocculation facilities which are described below.

4.7.2.1 Vertical Flocculators

Three vertical flocculating mixers installed in three flocculating basins in series precede the new cloth disc filters. The flocculating/mixing equipment effectively flocculates the filter-aid in order to obtain optimum floc formation with minimum chemical usage. The velocity gradient “G” applied by the mixers decreases from 60, to 40, to 20 1/second as flow travels through the three flocculating basins. Design criteria are summarized in Table 4-11.

Table 4-11
Cloth Disc Filtration
Vertical Flocculation Design Criteria

Parameter	Units	Value	Reference
Flocculator type	type	Vertical Impeller	See Note 1
Number per flocculation basin	each	1	See Note 1
Number of flocculation basins	each	3, in series	See Note 1
Length per basin	feet	16.5	See Note 1
Width per basin	feet	16.5	See Note 1
Side water depth	feet	10.8 to 12.1	See Note 1
Average Volume per basin	gallons	23,300 ±	calculated[2]
Total volume, all 3 basins	gallons	70,000±	calculated[2]
Detention time at average flow (7 mgd), all 3 basins	minutes	13.8	calculated[2]
Detention time at peak flow (22.4 mgd), all basins in service	minutes	4.5	calculated[2]
Range of velocity gradient “G”	1/seconds	20 to 60	See Note 1

Table 4-11
Cloth Disc Filtration
Vertical Flocculation Design Criteria

Parameter	Units	Value	Reference
Maximum capacity, all filters in service	mgd	22.4 [3]	calculated[2]
Maximum capacity, (Title 22 reliable capacity), one filter out for maintenance	mgd	16.8 [4]	calculated[2]
Annual average capacity (Title 22 reliable capacity), one filter out for maintenance	mgd	7.3 [5]	calculated[2]

1. IEUA, 2005.
2. For more information on calculated values, see Appendix B.
3. Maximum flow with four cloth filters operating at 6 gpm/sf, or 5.6 mgd each.
4. Based on three filters operating at 5.6 mgd per filter; one not in service.
5. Based on the maximum capacity of three filters and a PHWWF Peaking Factor of 2.3.

4.7.2.2 Cloth Disc Filters

In order to provide filtering capacity for a peak flow of 32.2 mgd for RP-4 while still providing reliability, it is assumed that one of the existing dual-media filters will be in backwash and the remaining seven will be in operation at 5 gpm/sf for a total reliable peak capacity of 15.7 mgd (7 times 2.25 mgd per filter). The remaining required 16.5 mgd (32.2 less 15.7 mgd) will be provided by new cloth disc filters. Allowing for one of the cloth disc filters to be out of service, the total peak capacity of the cloth disc filters (3 operating and one standby) is actually 16.8 mgd (3 times 5.6 mgd each). The cloth disc filters have a smaller footprint than dual-media gravity filters and can operate at higher flux rates since they are approved to operate at peak flow rates of 6 gpm/sf. In addition, the cloth disc filters are able to automatically backwash while maintaining filtration production. In total, the cloth filters and the existing dual-media filters reliability provide 32.5 mgd of peak filtration capacity. The design criteria for the cloth disc filters are presented in Table 4-12.

Table 4-12
Cloth Disc Filter Design Criteria

Parameter	Units	Value	Reference
Filter backwash pumping:			
Number of pumps per filter	units	2	See Note 1
Type	type	horizontal centrifugal	See Note 1
Capacity per pump	gpm	130	See Note 1

Table 4-12
Cloth Disc Filter Design Criteria

Parameter	Units	Value	Reference
Total dynamic head	ft	41	See Note 1
Number of filters	units	4	See Note 1
Number of discs per filter	units	12	See Note 1
Submerged surface area per disc	sf	53.8	See Note 1
Maximum hydraulic loading rate	gpm/sf	6	See Note 2
Maximum capacity per filter	mgd	5.6	calculated[3]
Total submerged surface area, all filter discs in service	sf	2,582	calculated[3]
Firm submerged surface area, one filter out for maintenance	sf	1,937	calculated[3]
Maximum capacity, all filters in service	mgd	22.4 [4]	calculated[3]
Maximum capacity, (Title 22 reliable capacity), one filter out for maintenance	mgd	16.8 [5]	calculated[3]
Annual average capacity (Title 22 reliable capacity), one filter out for maintenance	mgd	7.3 [6]	calculated[3]

1. IEUA, 2005.
2. Black & Veatch, 2004.
3. For more information on calculated values, see Appendix B.
4. Maximum flow with four cloth filters operating at 6 gpm/sf, or 5.6 mgd each.
5. Based on three filters operating at 5.6 mgd per filter; one filter not in service.
6. Based on the maximum capacity of three filters and a PHWWF Peaking Factor of 2.3.

4.7.3 Filtration Summary

In summary, the combination of the older dual-media filters and new cloth disc filters will result in the filtration capacity listed in Table 4-13. Reliability for Title 22 compliance is based on one dual-media filter cell in backwash and one cloth disc filter out of service. On this basis, the rated reliable annual average capacity of the filtration process is 14.1 mgd.

Flows to the filters are controlled by weir gates at the secondary effluent/filter influent splitter box. The weir gates are set to split the flow between the dual media and cloth disc filters. The weir gates can be adjusted to balance the flow and maintain compliance with the maximum allowable filtration rates (5 gpm/sf for the dual-media filters and 6 gpm/sf for the cloth disc filters), although the weir gates are not designated as flow control gates.

The dual media filters have a modulating control valve located at the inlet of each filter, which maximizes the filter's loading to each filter before placing another filter online.

The cloth filters are manually regulated by a weir gate at the secondary effluent/filter influent splitter box, as well as the inlet to each filter. There are flow meters on each filter to monitor filter loading at all times.

On this basis, the rated reliable annual average capacity of the filtration process is 14.1 mgd.

Table 4-13
Summary of Filtration Treatment Capacity

Process	Peak Capacity (mgd) All in service [1]	Annual Average Capacity With All Units in Service (mgd) [2]	Title 22 Reliable Annual Average Capacity (mgd) [3]
Dual-media gravity filters	18.0	7.8	6.8
Cloth disc filters	22.4	9.7	7.3
Total	40.4	17.5	14.1

1. Peak Capacity = All filters in service at maximum allowable loading rates.
2. Based on all filters in service and a PHWWF Peaking Factor of 2.3
3. Based on one dual-media filter in backwash and one cloth filter out of service and PHWWF Peaking Factor of 2.3

4.8 Disinfection

Disinfection of the recycled water will be accomplished by adding sodium hypochlorite to the filter effluent prior to the chlorine contact basins. The existing chlorine contact basins are comprised of two basins in sequence (1A and 1B) as described in the Title 22 Engineering Report for the 7 mgd RP-4 facility (DDB Engineering, Inc., 2005). A new chlorine contact basin, No. 2, was added with the objective of bringing the average treatment capacity to 14 mgd. Generally, the flow from the dual-media filters is directed to Contact Basin 1A and flow from the cloth disc filters is directed to Contact Basin No. 2, although the flow from the new filters can also be directed to Contact Basin 1B. Sodium bisulfite will be available for addition at the end of Basin 1B and the flow from Basin 2 can be directed to the dechlorination chamber when necessary to provide dechlorination of the recycled water flows. However, this sodium bisulfite system will not be used unless it is needed to reduce chlorine residuals for a recycled water user taking water directly from the RP-4 outfall because RP-4 effluent to the creek is dechlorinated at RP-1.

4.8.1 Sodium Hypochlorite System

Table 4-14 summarizes the design criteria for the existing sodium hypochlorite system provided at the time of the expansion to 7 mgd. This equipment will remain in service and be supplemented by the addition of an additional metering pump to deliver sodium hypochlorite to Basin 2, as summarized in Table 4-15. Each contact basin has dedicated and backup chemical feed pumps. The system includes enhanced monitoring, alarms, and controls to integrate the sodium hypochlorite system controls into the existing plant control system (See Section 4.13).

The plant effluent flow is measured using ultrasonic level sensors to track the head over the contact basin overflow weirs in Basin 1B and Basin 2 (IEUA, 2005). The signals from the filter effluent flow meters are used to flow pace the addition of sodium hypochlorite to the head end of Contact Basins 1A and 2. Chlorine residual recorders at the head and tail ends of the basins are used to regulate the dosage and maintain the required residuals.

Table 4-14
Existing Sodium Hypochlorite System Design Criteria

Parameter	Units	Value	Reference
Sodium hypochlorite concentration	percent available Cl_2	12.5	See Note 1
Maximum Cl_2 dose @ average flow	mg/L	25	See Note 1
Bulk Storage System:			
Number of tanks	units	3	See Note 2
Volume per tank	gallons	2,250	See Note 2
Total volume	gallons	6,750	calculated[3]
Feed System:			
Number of metering pumps	units	2	See Note 2
Capacity per pump	gph	180	See Note 1
Treatment Capacity:			
Peak capacity at 10 mg/L Cl_2 feedrate, all units in service	mgd	103.6	calculated[3]
Annual average capacity at 9 mg/L Cl_2 feedrate, all units in service	mgd	50.0	calculated[3]
Annual average capacity at 9 mg/L Cl_2 feedrate, one pump out of service	mgd	21.7	calculated[3]

1. Black & Veatch, 2004.
2. IEUA, 2004-2009.
3. For more information on calculated values, see Appendix B.

Table 4-15
New Sodium Hypochlorite System Design Criteria

Parameter	Units	Value	Reference
Sodium hypochlorite concentration	percent available Cl_2	12.5	See Note 1
Maximum Cl_2 dose @ average flow	mg/L	25	See Note 1
Number of metering pumps	units	2	See Note 1
Capacity per pump	gph	19 to 117	See Note 4
Annual average capacity at 9 mg/L Cl_2 feedrate, one pump out of service	mgd	16.3	calculated[2,3]

1. Black & Veatch, 2003 and IEUA, 2009.
2. For more information on calculated values, see Appendix B.
3. (117 gal/hr * 1 lb/gal * 24 hrs/day)/(9 mg/L * 8.34 lb/mil gal/mg/L * 2.3 PHWWF peaking factor) = 16.3 mgd
4. IEUA, 2005.

4.8.2 Chlorine Contact Basins

4.8.2.1 Existing Chlorine Contact Basins 1A and 1B

The existing disinfection system for 7 mgd utilizes two chlorine contact basins in series: Basins 1A and 1B are connected by a pipeline that provides additional contact time. The existing chlorine contact basin design parameters are presented in Table 4-16. The Title 22 requirement is that there be a CT of 450 mg-min/L at all times and a modal contact time of at least 90 minutes during the dry weather peak hour flow. For RP-4, the dry weather peak hour flow (PHDWF) peaking factor is 2.0 times the average annual day flow of 14.0 mgd, which is equal to 28.0 mgd

In January 2005, IEUA completed chlorine contact testing at RP-4 that demonstrated that the modal contact time of Basins 1A and 1B plus the interconnecting piping was 130 minutes at a flow rate of 9.912 mgd (SFE Global, 2005). Appendix C contains a copy of the Modal Contact Time Report. Based on the dimensions of contact basins at that time, the study demonstrated that the modal contact time was approximately 91 percent of the calculated hydraulic detention time. Based on the results of that study, it was determined that these existing facilities would handle a peak flow of 14.3 mgd while providing the required modal contact time of 90 minutes at peak dry weather flow. ((130 minutes x 9.912 mgd)/90 minutes = 14.3 mgd). At that time, the peak dry weather and peak wet weather flows were both 14.0 mgd based on a peaking factor of 2.0 (DDB Engineering, Inc., 2005). This peaking factor yielded an annual average reliable Title 22 capacity rating of 7.1 mgd for the existing chlorine contact tanks and associated interconnecting piping.

Since the previous Title 22 Engineering Report was prepared, however, record drawings of Basin 1B have confirmed that the actual length of Basin 1B apparently changed during construction from 130 ft to 163 ft, increasing the calculated hydraulic detention time. Using this longer length with the results of the Modal Contact Time Report (SFE Global, 2005), the modal contact time may be as low as 78 percent of the calculated hydraulic detention time of Basins 1A and 1B, plus the interconnecting pipe. In other words, the total calculated volume of the existing chlorine contact system is actually larger, 1,150,080 gallons, because of the longer Basin 1B. At the test flow of 9.912 mgd, this equates to a calculated hydraulic detention time of 167 minutes. Because of short-circuiting and inefficiencies, the modal contact time demonstrated by the test was only 130 minutes. This is equivalent to 78 percent of the calculated hydraulic detention time.

The expanded RP-4 is designed to handle a higher dry weather PHDWF peaking factor of 2.0, or 28.0 mgd (2.0 times 14 mgd). Based on the previous Modal Contact Time Report (SFE Global, 2005), for the demonstrated peak flow capacity of 14.3 mgd, the annual average flow capacity corresponding to this peak flow would be approximately 7.2 mgd for the existing Basins 1A and 1B plus piping (14.3 mgd / 2.0 PHDWF peaking factor = 7.2 mgd).

Table 4-16
Existing Chlorine Contact Basin Design Criteria

Parameter	Units	Value	Reference
Number of tanks	units	2	See Note 1
Chlorine Contact Basin 1A:			
Overall footprint	feet x feet	69 x 39	See Note 1
Number of passes	units	5	See Note 1
Length of each pass	feet	65.5	See Note 1
Effective overall length	feet	327.5	See Note 1
Channel width	feet	7.33	See Note 2
Side water depth	feet	13	See Note 1
Length : width	ratio	45 : 1	calculated[3]
Length : depth	ratio	25 : 1	calculated[3]
Volume	gallons	233,430	calculated[3]
Chlorine Contact Basin 1A Effluent Channel:			
Length	feet	63.6	See Note 4
Width	feet	7.0	See Note 4
Side water depth	feet	2.75	See Note 4
Volume	gallons	9,160	calculated[3]
Interconnecting Pipe (on-site):			
Length of 42-in. diam. Pipe	feet	140	See Note 5
Volume of 42-in. diam. Pipe	gallons	10,080	calculated[3]

Table 4-16
Existing Chlorine Contact Basin Design Criteria

Parameter	Units	Value	Reference
Length of 36-in. diam. Pipe	feet	370	See Note 4
Volume of 36-in. diam. Pipe	gallons	19,560	calculated[3]
Total pipe volume	gallons	29,640	calculated[3]
Chlorine Contact Basin 1B:			
Overall footprint	feet x feet	163 x 49	See Note 1
Number of passes	units	6	See Note 1
Length of each pass	feet	163	See Notes 1 and 4
Effective overall length	feet	978	See Note 1
Channel width	feet	7.5	See Note 2
Side water depth	feet	16	See Note 1
Length : width	ratio	130 : 1	calculated[3]
Length : depth	ratio	61 : 1	calculated[3]
Volume	gallons	877,850	calculated[3]
Totals:			
Total Volume (Basins 1A & 1B, 1A Effluent Channel, & Interconnecting Pipe)	gallons	1,150,080	calculated[3]
Required modal contact time (at PHDWF)	minutes	90	See Note 6
Required CT (at PHDWF)	mg-min/L	450	See Note 6
Estimated Peak (dry weather) capacity, at 90 minutes modal contact time, all units in service	mgd	14.3 [7]	See Note 9
Estimated Annual Average capacity, at 90 minutes modal contact time, all units in service	mgd	7.2 [8]	calculated[3]
Estimated Peak (wet weather) capacity, all units in service	mgd	16.5 [10]	calculated[3]

1. Black & Veatch, 2004.
2. NBS/Lowry and North American Treatment Systems, 2000.
3. For more information on calculated values, see Appendix B.
4. IEUA, 2004-2009.
5. Black & Veatch, 2003.
6. California, 2001.
7. Based on dye test results. See Appendix C.
8. Based on PHDWF capacity divided by the peaking factor (14.3/2.0 = 7.2)
9. SFE Global, 2005.
10. Based on AADF capacity times the wet weather peaking factor (7.2 x 2.3 = 16.5)

4.8.2.2 New Chlorine Contact Basin No. 2

Chlorine Contact Basin No. 2 has been recently constructed adjacent to Basin 1B with the intent of bringing the reliable annual average capacity of the disinfection system up to at least 14 mgd. It is comprised of two 3-pass trains in parallel and so arranged that one can be taken out for cleaning while the other is in operation. Ultrasonic level detectors ahead of the effluent weirs are used to monitor flow and permit flow pacing of the chlorine addition at the head end of the tanks. A water champ mixer is used to obtain rapid mixing of the sodium hypochlorite as it enters the basin. Residual chlorine analyzers are located near the head and tail ends of each train to facilitate regulation of the dosage to assure a CT value of at least 450 mg-min/L is maintained. The design criteria for Contact Basin No. 2 are presented in Table 4-17.

Table 4-17
New Chlorine Contact Basin No. 2 Design Criteria

Parameter	Units	Value	Reference
Number of basins	units	1	See Note 1
Number of trains per basin	units	2	See Note 1
Number of passes per train	units	3	See Note 1
Overall basin footprint	feet x feet	53.33 x 198	See Note 1
Length of each pass	feet	188	See Note 1
Effective overall length per train	feet	564	calculated[2]
Width of each pass, or channel	feet	7.5	See Note 1
Side water depth	feet	16	See Note 1
Length : width per train	ratio	74 : 1	calculated[2]
Length : depth per train	ratio	35 : 1	calculated[2]
Volume per train	gallons	506,250	calculated[2]
Length : width, total basin	ratio	150 : 1	calculated[2]
Length : width, total basin	ratio	70 : 1	calculated[2]
Total Volume per basin	gallons	1,012,500	calculated[2]
Required modal contact time (at PHDWF)	minutes	90	See Note 3
Required CT (at PHDWF)	mg-min/L	450	See Note 3
Estimated Peak (dry weather) capacity, at 90 minutes modal contact time, all units in service	mgd	14.0	calculated[2]
Estimated Annual Average capacity, at 90 minutes modal contact time, all units in service	mgd	7.0	See Note 1
Estimated Peak (wet weather) capacity, all units in service	mgd	16.1 [5]	calculated[2]

1. Black & Veatch, 2004.
2. For more information on calculated values, see Appendix B.
3. California, 2001.
4. Based on AADF capacity times the PHWWF peaking factor (7.0 x 2.3 = 16.1)

Using the annual average capacity of 7.0 mgd from basis of design (Black & Veatch, 2004), the estimated peak dry weather capacity of the new chlorine contact basin is 14.0 mgd based on providing 90 minutes modal contact time. The actual modal contact time and associated rated capacity of the new Contact Basin 2 will be confirmed by dye/salt testing.

4.8.2.3 Overall Chlorine Contact Capacity

In summary, the combination of the existing and new chlorine contact basins results in the total capacity listed in Table 4-18.

Table 4-18
Summary of Chlorine Contact Capacity

Process	Peak Capacity All units in service [1] (mgd)	Annual Average Capacity With All Units in Service[2] (mgd)	Title 22 Reliable Annual Average Capacity [3] (mgd)
Existing chlorine contact basins (Nos. 1A & 1B)	14.3 (dry) 16.5 (wet)	7.2	7.2
New chlorine contact basin (No. 2)	14.0 (dry) 16.1 (wet)	7.0[4]	7.0[4]
Total	28.3 (dry) 32.6 (wet)	14.2	14.2

1. Peak capacity shown under dry and wet weather conditions. For example, total dry weather peak capacity is 28.3 mgd to provide the minimum 450 mg-min/L CT and 90 minute modal contact time required by Title 22 for peak dry weather flows based on modal contact time test (SFE Global, 2005). Total wet weather peak capacity is based on annual average capacity times the wet weather PHWWF peaking factor of 2.3 (14.2x2.3=32.6 mgd).
2. Total average annual capacity is based on the dry weather PHDWF peaking factor of 2.0 (28.3/2.0=14.2 mgd). Based on all contact basins in service and a dry weather PHDWF peaking factor of 2.0 (See Tables 4-17 and 4-18).
3. See discussion below regarding reliable capacity.
4. Black & Veatch, 2004. Dye/salt testing will be conducted to confirm the actual capacity.

The peak dry weather capacity of all contact basins is the sum of the capacities for Basins 1A/1B and 2, which comes to 28.3 mgd. This equates to a Title 22 reliable average flow of 14.2 mgd based on the dry weather PHDWF peaking factor of 2.0. Thus, the total peak contact basin capacity (28.3 mgd for basins 1A/1B and 2) complies with Title 22 annual average rating of the chlorine contact process.

During the dry weather peak flow periods, the required chlorine residual at the end of the contact basins would be approximately 5 mg/L (90 minutes modal contact time times 5 mg/L chlorine residual = 450 mg-min/L). The existing sodium hypochlorite system has sufficient feed capacity, standby equipment, and alarms, as described elsewhere in this Section, to maintain an adequate chlorine residual and comply with the CT requirement under dry weather peak flow conditions.

With regard to reliability of the chlorine contact tanks, it is highly unlikely that the tanks would ever be out of service because they have no mechanical equipment to malfunction. Thus, it is reasonable to use the annual average capacity of all chlorine contact tanks as the reliable capacity for Title 22 compliance.

4.8.3 Dechlorination

The existing dechlorination chamber located at the end of Chlorine Contact Basin 1B will generally not be used because recycled water produced at RP-4 is reused and discharged with a chlorine residual. Any excess effluent from RP-4 is combined with effluent from RP-1 and dechlorinated at RP-1 prior to being discharged at either Prado Park Lake (Discharge Point No. 001) or Cucamonga Creek (Discharge Point No. 002). If necessary, the RP-4 dechlorination facilities could be used to trim the chlorine residual of RP-4's effluent.

While use of the RP-4 dechlorination system is unlikely, it could be used to serve the flows from Chlorine Contact Basins 1B and 2. Dechlorination could be accomplished with a 38 percent solution of sodium bisulfite instead of the 25.4 percent solution formerly used. No changes are being made to the sodium bisulfite storage or delivery systems except that the two existing metering pumps are being replaced with one larger pump as part of the expansion to 14 mgd. The design parameters for the storage, feed and dechlorination system are presented in Table 4-19.

Table 4-19
Dechlorination Design Criteria
(Typically Not Used at RP-4)

Parameter	Units	Value	Reference
Influent Average Dry Weather Flow	mgd	14	See Note 1
Sodium Bisulfite Dosage Range	mg/L	0-23.8	See Note 1
Sodium Bisulfite Storage:			
Number of tanks	units	1	See Note 1
Volume	gallons	2,000	See Note 1
Capacity @ Avg. Flow Rate and 10 mg/L feedrate	days	5.4	calculated[2]
Solution Strength	percent	38	See Notes 3 and 4
Sodium Bisulfite Feed Pumps:			
Number of pumps	units	1	See Note 1
Capacity per pump	gph	115	See Note 3

Table 4-19
Dechlorination Design Criteria
(Typically Not Used at RP-4)

Parameter	Units	Value	Reference
Max Feed rate	gpd	2,760	calculated[2]
Capacity at 20 mg/L feedrate, all units in service	mgd	52	calculated[2]
Capacity at 10 mg/L feedrate, all units in service	mgd	104	calculated[2]
Capacity at 10 mg/L, one pump out of service	mgd	0	calculated[2]
Dechlorination Chamber:			
Overall footprint	feet x feet	10 x 10	See Notes 1 and 3
Approximate depth	feet	10.5	See Note 1
Volume	gallons	7,854	calculated[2]
Mixer horsepower	hp	15	See Note 5

1. Black & Veatch, 2004, and IEUA, 2009.
2. For more information on calculated values, see Appendix B.
3. Black & Veatch, 2003. Specification Section 11727.
4. 3.17 lb/gal for a 38% solution.
5. Black & Veatch, 2002.

4.9 On-Site Storage Pond and Return Pumping

RP-4 features a 4 million gallon on-site storage pond and return pumping facilities at the south end of the plant. The existing return pump station returns stored water from the emergency storage and drain holding pond to the sewer to RP-1 at a flowrate of 4.7 mgd using one constant speed pump with one standby pump. It can also pump to the splitter box upstream of the anoxic tanks. Table 4-20 presents design criteria for the storage pond and return pump station.

Table 4-20
On-Site Storage Pond and Return Pumping Design Criteria

Parameter	Units	Value	Reference
On-Site Storage Pond:			
Number of basins	units	1	See Note 1
Volume	million gallons	4	See Note 1
Volume as a percent of annual average flow	percent	28.5	calculated[2]
Retention time at annual average flow	hours	6.85	calculated[2]

Table 4-20
On-Site Storage Pond and Return Pumping Design Criteria

Parameter	Units	Value	Reference
Return Pumping:			
Number of pumps	units	2	See Note 1
Type of pumps	type	Self-priming centrifugal	See Note 1
Capacity per pump	gpm	3,275	See Note 1
Rated head @ 870 rpm	feet	38	See Note 1
Motor horsepower	hp	50	See Note 1

1. Black & Veatch, 2004.
2. For more information on calculated values, see Appendix B.

The on-site storage pond can be used to hold secondary effluent, filter effluent or final effluent during short-term emergency conditions. Backwash water is also directed to the storage pond from which it is pumped back to the splitter box ahead of the anoxic basins or to the sewer to RP-1. At an annual average flow of 14 mgd, the short-term storage basin provides up to 6.85 hours of emergency on-site holding capacity. However, such storage will generally not be required because of the ability to regulate the number of influent pumps in service and divert peak flows in excess of the plant design flow to RP-1 for treatment.

4.10 Recycled Water Pump Station

From the end of the final chlorination basins, plant effluent is directed to a recycled water pump station for delivery to recycled water users in Pressure Zones 1158 and 1299 and to the RP-4 Outfall that also carries unused recycled water to RP-1. Recycled water from RP-4 is discharged to the RP-4 Outfall, which can operate as either a gravity line or as a pressurized pipeline with a design pressure rating of 250 psi. The recycled water pump station pressurizes the RP-4 Outfall for recycled water distribution to customers. There is no recycled water storage tank on site. The existing recycled water pump station design parameters are presented in Table 4-21 and 4-22.

Table 4-21
1158 Recycled Water Pump Station Design Criteria

Parameter	Units	Value	Reference
Recycled Water Pumps:			
Number	units	3	Note 1
Type	type	Peerless Vertical Turbine	Note 1
Motor horsepower, each	hp	200	Note 1
Rated Capacity per pump	gpm	2,700	Note 1
Rated Head @ 1775 rpm	feet	223	Note 1
Motor Drive	type	Variable Frequency	Note 1
Number	units	2	Note 2
Type	type	Flowserve Vertical Turbine	Note 2
Motor horsepower, each	hp	300	Note 2
Rated Capacity per pump	gpm	7280	Note 2
Rated Head @ 1185	feet	119	Note 2
Motor Drive	type	Variable Frequency	Note 2

1. Black & Veatch, 2004.
2. IEUA 2009

A new Recycled Water Pump Station and two 5.5 million gallon offsite reservoirs are scheduled to be completed in 2009. This additional pump station will discharge recycled water from RP-4 to future users in Pressure Zone 1299.

Table 4-22
1299 Recycled Water Pump Station Design Criteria

Parameter	Units	Value	Reference
Recycled Water Pumps:			
Number	units	7	Note 2
Type	type	Flowserve Vertical Turbine	Note 2
Motor horsepower, each	hp	350	Note 2
Rated Capacity per pump	gpm	4600	Note 2
Rated Head	feet	202	Note 2
Motor Drive	type	Variable Frequency	Note 2

Recycled water can be brought back into the plant to be used for plant utility water either through a 10-inch connection to the discharge line from the RP-4 recycled water pump station or through a 6-inch connection to the RP-4 outfall pressure line in Etiwanda Avenue.

4.11 Solids Handling

RP-4 does not have any on-site solids treatment facilities. All primary solids and secondary waste activated sludge and scum is returned to the trunk sewer for conveyance to RP-1 for removal, treatment and disposal.

4.12 Power Supply

The primary source of power to RP-4 is from Southern California Edison (SCE). The other power source is a 2-megawatt Caterpillar diesel generator on standby.

4.13 Monitoring and Alarms

Title 22 requires that alarm devices be provided for: (1) loss of power from the normal supply, (2) failure of the biological treatment process, (3) failure of the disinfection process, (4) failure of the coagulation process, and (5) failure of the filtration process. Operation of these systems is constantly monitored and alarms are provided. RP-4 has a state-of-the-art supervisory control and data acquisition (SCADA) system that monitors all vital functions of the plant and assists operations staff. The control system records data on process operation and for permit compliance and provides information on the status of equipment and plant operation. The RP-4 control system also provides a communication link to other IEUA treatment facilities and to standby operators when the plant is not staffed.

The RP-4 alarm devices monitor the following functions:

- Loss of normal power
- Failure of the influent pump station
- Failure of the biological treatment process
- Failure of the coagulation process (see below)
- Failure of the filtration process
- Failure of the disinfection process

Plant alarms are automatically powered by the emergency (standby) generator if the primary power supply is interrupted. With regard to coagulation, the new cloth disc filters have alarms for the failure of the alum feed pumps; however, the existing Trident clarifier/filters are not equipped with alarms to indicate failure of the alum feed pumps. While it is not staffed continuously, the RP-4 operation is monitored remotely by the assigned standby operator via cell phone through the SCADA system. Alarms that occur during any unmanned periods are annunciated through the SCADA system. A cell phone paging system is used to notify the standby operator of any alarms, if the plant operation is not being actively monitored. Standby operators have laptop computers for remote SCADA system access to enable them to address alarm conditions and remotely monitor and control plant operations. A summary of key alarms is presented in Table 4-23. A detailed list of the RP-4 alarms is included in Appendix D.

Table 4-23
Summary of Principle Alarms

System Component	Parameter/Equipment	Alarm Conditions
Power	Primary electrical service	Failure
	Standby generator	On
Influent Pumping	Pumps	Failure
	Water level	High and low
Biological	Dissolved oxygen level	Low
	Blowers	On and failure
	Mixers	Failure
Mixed Liquor Return	Pumps	Failure
Coagulation	Turbidity	High
Filtration Filtration	Filter influent turbidity	High
	Valves	Failure
	Flow	High
	Effluent turbidity [1]	High
Chlorination	Chlorine Residual	Low, High
	CT [2]	Low [2]
Effluent	pH	Low, High

1. Measured at Chlorine Contact Tanks 1A and 2.
2. Measured at the end of Chlorine Contact Tanks 1B and 2 based on filter effluent flow meters.

Power supply reliability is discussed in the preceding section. RP-4 has two electrical power sources: (1) Southern California Edison, and (2) an emergency generator. The diesel powered emergency generator is activated automatically during a power failure to maintain critical equipment and alarms.

As shown in Table 4-24, RP-4 utilizes on-line instruments to monitor continuous compliance with Title 22 requirements.

Table 4-25 lists instruments used in the operation and control of the filtration and disinfection systems along with the associated alarm conditions and contingency actions.

Table 4-24
Continuous Monitoring for Title 22 Compliance

Tag #'s	Description	Measures	Control/Monitoring Action
AIT4110	Secondary Effluent Turbidity	Filter Influent Turbidity	If influent turbidity increases above the setpoint, the alarm notifies the operator to check the turbidimeter and/or the alum feed pumps.
AIT5210	Filtered Effluent turbidity	Compliance with Title 22 requirements for Turbidity	If effluent turbidity increases above a warning setpoint an alarm is annunciated and operators respond. If effluent turbidity continues to increase the effluent is diverted to storage pond and RP1.
AIT-6110A, 6110B, AIT-6120A, 6120B,	Residual Chlorine analyzers	Compliance with Title 22 requirements for CT. Residual chlorine is used with effluent flow and CT is calculated.	Alarm annunciated if effluent is not in compliance with CT. Effluent is diverted by the operator to storage pond and RP1 until chlorine residual re-established.
FIT-6110, 6120, 6130, 6140	Chlorinated Effluent Flow meters	Compliance with Title 22 requirements for CT. Residual chlorine is used with effluent flow and CT is calculated.	Alarm annunciated if effluent is not in compliance with CT. Effluent is diverted by the operator to storage pond and RP-1 until flowmeter is re-established.

Table 4-25
Alarms and Contingency Actions for Filtration and Disinfection Processes

Tag #	Description	Alarm Condition	Consequence	Contingency Action
AIT4110	Secondary Effluent Turbidity	Turbidity High	Filter influent exceeds 5 NTU design specification.	Alarm annunciated. Operator checks turbidimeter and/or alum feed pumps.
MPCP-7530 MPCP-7540	Alum Metering Pump 7530/7540 (For new cloth filters only)	Metering Pump Failure	No alum addition, possible increase in effluent soluble phosphorus, and high turbidity.	Alarm annunciated. Operator switches to standby pump.
MPCP-7530 MPCP-7540	Alum Metering Pump 7530/7540 (For new cloth filters only)	Pressure Switch High	Low or No alum addition, possible increase in effluent soluble phosphorus and high turbidity.	Alarm annunciated. Operator switches to standby pump. Blockage removed.
FCP-7500	Alum storage tank level 7500 (Bulk alum storage tank) (Day storage tanks are filled by the bulk tank. Day tanks have visual level check only.)	Bulk storage tank level indication (no alarm)	Low or No alum addition, possible increase in effluent soluble phosphorus and high turbidity.	Bulk storage tank level indication (no alarm) for operator to refill tank. Effluent diverted to RP1 if grab sample effluent P or effluent turbidity goes above specification.
LCP-5001	Coagulant Rapid Mixer Local Control Panel	Mixer Failure	Alum is not well mixed into secondary effluent, therefore higher soluble P and turbidity.	Alarm annunciated. Maintenance called out. Effluent diverted to RP-1 if grab sample effluent or effluent turbidity goes above specification.

Table 4-25
Alarms and Contingency Actions for Filtration and Disinfection Processes

Tag #	Description	Alarm Condition	Consequence	Contingency Action
FLC-5110 FLC-5120 FLC-5130	Flocculator 5110 Flocculator 5120 Flocculator 5130	YA = Flocculator Failure	Alum floc is not well formed.	Alarm annunciated. Maintenance called out. If 2 out of the three flocculators are in operation floc should form. If 2 or more flocculators fail, effluent will be diverted to RP-1
FLCP-1/2	Filter 1 Level Filter 2 Level Filter 3 Level Filter 4 Level	High Level in Filtration	Overflow of filter or backflow.	Alarm annunciated. Operator performs additional backwash or isolates filter.
FLCP-1/2	Filter backwash tank level	Low level in Backwash tank	Filter backwash will stop for all filters.	Alarm annunciated. Maintenance called out. Will not deteriorate effluent quality unless remaining in fault.
AIT5210	Filtered Effluent turbidity	Turbidity high	Will exceed Title 22 specification for turbidity if continues to increase.	Alarm annunciated. Effluent diverted to storage pond and RP-1.
LCP-6010	MX-6010 NaOCl (Chlorine) Injection Mixer	YA = Mixer Failure	Chlorine injector mixer failure will reduce efficiency of chlorine contact tank.	Alarm annunciated. Effluent diverted to storage pond and RP-1.
AIT-6110A, 6110B, AIT-6120A, 6120B,	Residual Chlorine analyzers	Residual chlorine low	Effluent fails to meet Title 22 requirements for CT.	Alarm annunciated. Effluent is diverted by the operator to storage pond and RP-1 until chlorine residual is re-established.

Table 4-25
Alarms and Contingency Actions for Filtration and Disinfection Processes

Tag #	Description	Alarm Condition	Consequence	Contingency Action
FIT-5510, 5520,5530,5540	Filter Effluent Flow meters	Flow meter fails	Effluent fails to meet Title 22 requirements for CT when in flow proportional control.	Alarm annunciated. Effluent is diverted by the operator to storage pond and RP-1 until flowmeter is re-established.
NAOC-P7410	Sodium Hypochlorite dosing pump control	Pump Fails	No NaOCl addition. Fail to meet CT specification.	Alarm annunciated. Operator switches to standby pump.
NAOC-P7410	Sodium Hypochlorite dosing pump control	High discharge pressure	No NaOCl addition. Fail to meet CT specification.	Alarm annunciated. Operator switches to standby pump. Clears blockage in NaOCl system. If blockage in common pipe then divert effluent to storage pond and RP-1 until problem resolved.
MPCP-7310, 7320	Sodium Bisulfite dosing pump control	Pump Fails	No NAHS addition. Fail to dechlorinate effluent	Alarm annunciated. Operator switches to standby pump.
MPCP – 7310, 7320	Sodium Bisulfite dosing pump control	High discharge pressure	No NAHS addition. Fail to dechlorinate effluent.	Alarm annunciated. Operator switches to standby pump. Clears blockage in NAHS system. If blockage in common pipe then divert effluent to storage pond and RP-1 until problem resolved.

Section 5
Monitoring Program

This section demonstrates how the RP-4 monitoring program complies with Title 22 Water Recycling Criteria.

5.1 Sampling and Analysis

Water quality monitoring is required under Title 22 Water Recycling Criteria and RP-4's discharge permit. Monitoring locations are specified in the permit, which is included in Appendix A. Title 22 requires that effluent samples be taken at least daily for suspended solids and coliform bacteria. Continuous turbidity monitoring and recording is required.

Specific guidelines and parameters are established in Order No. R8-2009-0021 for sampling and analysis of the influent and effluent streams. Depending on the constituent, sampling is required to be a continuous, 24-hour composite, or grab specimen taken on regularly scheduled intervals (daily, weekly, monthly, quarterly, or annually).

5.2 Monitoring Program

The performance of each of the treatment processes is closely monitored at RP-4. Influent flow is measured continuously by a magnetic flow meter at monitoring location M-INF1B. RP-4 effluent flow is also metered continuously prior to discharge to the RP-1 for subsequent reclamation and discharge to Cucamonga Creek. RP1/RP-4 combined effluent turbidity, pH and conductivity are monitored continuously at monitoring location M-002A prior to discharge to Cucamonga Creek. The chlorine residual of treated effluent produced at RP-4 is monitored at the chlorine contact tanks for compliance with the disinfection CT requirement. Prior to discharge to Cucamonga Creek, the combined RP-1/RP-4 effluent chlorine residual is continuously monitored at M-002A to be sure that the dechlorination facilities are functioning properly. Other constituents that are monitored and the frequency of the sampling and analyses are listed in Tables 5-1, 5-2, 5-3, 5-4, 5-5 and 5-6. In conformance with its permit, IEUA prepares an annual water quality report summarizing all monitoring data and relating any operational incidents.

Table 5-1
Influent Monitoring Program Summary[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method[6]
Flow	mgd	Recorder/ totalizer	Continuous	--
pH	pH Units	Recorder	Continuous	--
Specific conductance	µmhos/cm	Recorder	Continuous	--
TOC	mg/L	Composite	Weekly	5310C
BOD_5[2]	mg/L	Composite	Weekly	405.1
Total Suspended Solids	mg/L	Composite	Weekly	160.2
TDS	mg/L	Composite	Weekly	2540C
Ammonia-Nitrogen	mg/L	Grab	Weekly	4500NH3H
Total Nitrogen	mg/L	Composite	Weekly	4500NO3F
TIN	mg/L	Composite	Weekly	--
Cyanide (Free)[3]	µg/l	Grab	Quarterly	335.3
Total Hardness	mg/L	Composite	Quarterly	200.7
Boron	mg/L	Composite	Quarterly	200.7
Chloride	mg/L	Composite	Quarterly	300.0
Fluoride	mg/L	Composite	Quarterly	300.0
Sodium	mg/L	Composite	Quarterly	200.7
Sulfate	mg/L	Composite	Quarterly	300.0
Arsenic	µg/l	Composite	Quarterly	200.8
Cadmium	µg/l	Composite	Quarterly	200.8
Total Chromium / Chromium, IV	µg/l	Composite	Quarterly	200.7
Total Recoverable Copper	µg/l	Composite	Quarterly	200.8
Total Recoverable Lead	µg/l	Composite	Quarterly	200.8
Total Recoverable Mercury	µg/l	Composite	Quarterly	200.8
Total Recoverable Nickel	µg/l	Composite	Quarterly	200.8
Selenium	µg/l	Composite	Quarterly	200.7
Total Recoverable Silver	µg/l	Composite	Quarterly	200.8
Total Recoverable Zinc	µg/l	Composite	Quarterly	200.8

Table 5-1
Influent Monitoring Program Summary[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method[6]
Bis (2-ethylhexyl) phthalate	µg/l	Grab	Quarterly	525.2
2,3,7,8-TCDD (Dioxin)[4]	µg/l	Composite	Semi-Annually	1613B
Volatile organic portion of EPA Priority Pollutants[5]	µg/l	Grab	Annually	524.2
Remaining EPA Priority Pollutants[5]	µg/l	Composite	Annually	200.8

1. Source: RWQCB, 2009.
2. BOD_s is calculated base on a BOD_5/TOC correlation approved by the RWQCB.
3. Free cyanide is measured as aquatic free cyanide (ASTM Method D7237 without sodium hydroxide (NaOH) preservation.
4. Applies at M-INF 3B & 3D and M-INF 4 only.
5. See waste discharge permit (Order No. R8-2009-0021) (RWQCB, 2009) for complete list or description.
6. Suggested laboratory methods from U.S. Environmental Protection Agency and Standard Methods for the Examination for Water and Wastewater (American Public Health Association, American Water Works Association and Water Environment Federation) and the reportable detection limits (RDL) or minimum levels (ML) for the associated laboratory methods are shown. Test Methods correspond with the reportable detection limits. It should be noted that there are other test methods allowed. Refer to 40 CFR 136.

Table 5-2
Effluent Monitoring Program Summary for Recycled Water
(Without 20:1 Dilution in the Receiving Water)[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Recorder/ totalizer	Continuous	--
Specific conductance[3]	µmhos/cm	Recorder	Continuous	--
pH	pH units	Recorder	Continuous	--
Turbidity[4]	NTU	Recorder	Continuous	--
Total Chlorine Residual[3]	mg/L	Recorder	Continuous	--
Coliform Organisms[5,6]	MPN per 100 ml[13]	Grab	Daily	9221B
CT	mg-minutes/L	Recorder	Continuous[7]	--
TOC	mg/L	Composite	Daily	5310C
BOD_5[8]	mg/L	Composite	Daily	405.1
Total Suspended Solids[3]	mg/L	Composite	Daily	160.2
Ammonia-Nitrogen	mg/L	Grab	Weekly	4500NH3H
Temperature	°C	Grab	Weekly	--
TDS	mg/L	Grab	Monthly	2540C
TIN	mg/L	Composite	Monthly	--
Total Nitrogen	mg/L	Composite	Monthly	4500NO3F
Cyanide (Free)[9]	µg/L	Grab	Monthly	335.3
Total Recoverable Copper	µg/L	Composite	Monthly	200.8
Toxicity[3]	TUc	Composite	Monthly	--
Total Hardness	mg/L	Grab	Monthly	200.7
Bicarbonate	mg/L	Composite	Monthly	--
Boron	mg/L	Composite	Monthly	200.7
Calcium	mg/L	Composite	Monthly	200.7
Carbonate	mg/L	Composite	Monthly	2340B
Chloride	mg/L	Composite	Monthly	300.0
Fluoride	mg/L	Composite	Monthly	300.0
Magnesium	mg/L	Composite	Monthly	200.7
Sodium	mg/L	Composite	Monthly	200.7
Sulfate	mg/L	Composite	Monthly	300.0
Total Recoverable Cadmium	µg/L	Composite	Monthly	200.8
Chromium (VI) or Total Chromium[10]	µg/L	Composite	Monthly	200.7
Total Recoverable Lead	µg/L	Composite	Monthly	200.8
Total Recoverable Mercury	µg/L	Composite	Monthly	200.8

Table 5-2
Effluent Monitoring Program Summary for Recycled Water
(Without 20:1 Dilution in the Receiving Water)[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total Recoverable Selenium	µg/L	Composite	Monthly	200.8
Total Recoverable Silver	µg/L	Composite	Monthly	200.7
Total Recoverable Zinc	µg/L	Composite	Monthly	200.8
Bis-(2-ethylhexyl) phthalate	µg/L	Grab	Monthly	525.2
Bromodichloromethane[11]	µg/L	Grab	Monthly	524.2
Aluminum	mg/L	Composite	Quarterly	200.8
Antimony	mg/L	Composite	Quarterly	200.8
Arsenic	µg/l	Composite	Quarterly	200.8
Barium	µg/l	Composite	Quarterly	200.8
Cobalt	µg/l	Composite	Quarterly	200.7
Total Recoverable Nickel	µg/l	Composite	Quarterly	200.8
2,3,7,8-TCDD (Dioxin)[12]	µg/l	Composite	Quarterly	1613B
Volatile organic portion of EPA Priority Pollutants[2]	µg/l	Grab	Annually	524.2
Remaining EPA Priority Pollutants[2]	µg/l	Composite	Annually	5310C

1. Source: RWQCB, 2009. Effluent compliance is for tertiary treated effluent for DP-001, DP-002, DP-003 and DP-004 at Monitoring Locations M-001B, M-002A, M-003 and M-004.
2. See waste discharge permit (Order No. R8-2009-0021) (RWQCB, 2009) for complete list or description.
3. Except M-001B.
4. Turbidity analysis shall be continuous, performed by a continuous recording turbidimeter. Compliance with the daily average operating filter effluent turbidity shall be determined by averaging the levels or recorded turbidity taken at a minimum of four-hour intervals over a 24-hour period. The results of the daily average turbidity determinations shall be reported monthly.
5. Samples for total coliform bacteria shall be collected daily. Samples shall be taken from the disinfected effluent.
6. M-001B is the coliform monitoring location for DP 001 & DP002. Alternative monitoring at M-002B is available if gate is closed between Chlorine Contact Basin 2 and 3.
7. The CT and modal contact time shall be continuously calculated and recorded. The minimum daily value shall be reported monthly. Modal contact time and CT shall be calculated based on the minimum one-hour average value in a 24-hour period.
8. BOD_5 is calculated daily based on a BOD_5/TOC correlation approved by the Regional Water Board.
9. Free Cyanide is measured as aquatic free cyanide (ASTM Method D7237) without NaOH preservations.
10. If Total Chromium test result is greater than 11 µg/L, the following sample shall be tested for Chromium VI, until directed otherwise.
11. Applies at M-003 only.
12. Applies at M-003 and M-004 only.

Table 5-3
Effluent Monitoring Program Summary for Diluted Discharges
(With 20:1 Dilution in the Receiving Water)[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Test Method
Flow	mgd	Recorder/ totalizer	Continuous	--
pH	pH units	Recorder/ totalizer	Continuous	--
Total Residual Chlorine	mg/L	Recorder/ totalizer	Continuous	--
BOD_5	mg/L	Grab	Daily (when discharging)	405.1
Total Dissolved Solids	mg/L	Grab	Daily (when discharging)	2540C
Coliform Organisms	MPN per 100 ml[3]	Grab	Daily (when discharging)	9221B
Suspended Solids	mg/L	Grab	Daily (when discharging)	160.2
Total Hardness	mg/L	Grab	When Discharge	200.7
EPA Priority Pollutants[2]	µg/L	Grab	Annually[4]	200.8/200.7

1. Source: RWQCB, 2009. Effluent compliance is for disinfected secondary treated effluent for DP-001 at Monitoring Locations M-002A.
2. See waste discharge permit (Order No. R8-2009-0021) (RWQCB, 2009) for complete list or description.
3. MPN/100mL – Most Probable Number per 100 milliliters.
4. Sample is collected from the first discharge, once a year.

Table 5-4
Reclamation Monitoring Program Summary[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Recorder/ totalizer	Continuous	--
pH	Standard units	Recorder/ totalizer	Continuous	--
Turbidity[2]	NTU	Recorder	Continuous	--
CT	mg-minutes/L	Recorder	Continuous[3]	--
Coliform Organisms	MPN per 100 mL	Grab	Daily	9221B
BOD_5	mg/L	Composite	Daily	405.1
Total Suspended Solids	mg/L	Composite	Daily	160.2
TDS	mg/L	Composite	Monthly	2540C

1. Source: RWQCB, 2009. Reclamation monitoring locations at REC-001 to REC-004.
2. Turbidity samples shall be collected at M-001A, M-002A, M-003 and M-004, respectively.
3. The CT and modal contact time shall be continuously calculated and recorded. Modal contact time and CT shall be calculated based on the minimum one-hour average value in a 24-hr period.

Table 5-5
Receiving Water Monitoring Program Summary
(At Monitoring Location R-002U)[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Estimate	Weekly	--
Dissolved Oxygen	mg/L	Grab	Weekly	--
Temperature	°C	Grab	Weekly	--
pH	pH unit	Grab	Weekly	--
Total Dissolved Solids	mg/L	Grab	Monthly	2540C
Total Inorganic Nitrogen	mg/L	Grab	Monthly	--
Total Hardness	mg/L	Grab	Quarterly	200.7
Total Suspended Solids	mg/L	Grab	Quarterly	160.2
EPA Priority Pollutants[2]	µg/L	Grab	Annually	200.8/200.7

1. Source: RWQCB, 2009. Monitoring Location R-002U is within 500 feet upstream of the point of discharge DP-002 in Cucamonga Creek.
2. See waste discharge permit (Order No. R8-2009-0021) (RWQCB, 2009) for complete list or description.

Table 5-6
Receiving Water Monitoring Program Summary
(At Monitoring Location R-002D)[1]

Parameter	Units	Sample Type	Minimum Sampling & Testing Frequency	Required Analytical Test Method
Dissolved Oxygen	mg/L	Grab	Weekly	--
Temperature	°C	Grab	Weekly	--
pH	pH unit	Grab	Weekly	--
Color change, foam, deposition of material, odor	--	Observe	Weekly	2120B
Total Hardness	mg/L	Grab	Quarterly	200.7
Total Suspended Solids	mg/L	Grab	Quarterly	160.2
EPA Priority Pollutants[2]	µg/L	Grab	Annually	200.8/200.7

1. Source: RWQCB, 2009.

Section 6
Contingency Plan

IEUA's contingency plan to maintain continuous, high-level treatment at RP-4 is described in this section.

6.1 Contingency Plan

The basis for the RP-4 contingency plan relies on the use of multiple treatment units and standby equipment, storage, and the ability to divert flow to RP-1. As described for each process in Section 4 of this report, RP-4 has capacity to treat flows averaging at least 14 mgd and peaks up to 32.2 mgd for all units. Reliability is provided by a combination of the following:

- standby treatment units and equipment,
- reliance on downstream treatment processes,
- standby engine generator for emergency power,
- on-site, short-term emergency storage, and
- diversion of flow to RP-1.

For pumping stations and similar mechanical facilities, standby units are available in the event that duty units are out of service. For major processes, such as the biological secondary treatment process, full redundancy for one of the two treatment trains is available.

The plant headworks allows RP-4 to divert raw wastewater back to the trunk sewer for conveyance to RP-1. The influent pump discharge flowrate is continuously monitored by the influent flow meter.. The flowrate to the tertiary filters and chlorine contact tanks is monitored continuously to ensure these processes are operated properly and in compliance with Title 22. As discussed in Section 4.6 on Monitoring and Alarms, if any critical unit process fails or approaches the limit of its Title 22 capacity, an alarm is annunciated and the operator takes appropriate action, including the possibility of shutting down one of the influent pumps to limit the flow into the plant or divert flow to the on-site storage pond, i.e. when the tertiary filters reach Title 22 capacity, the influent pumps reduce flow to maintain Title 22 compliance for recycled water. If the plant is unmanned, the on-call operator can log-on remotely to the SCADA system to review the alarm condition and determine the appropriate course of action. If necessary, RP-1 currently has the capacity to handle limited amounts of RP-4 diverted flow.

Another important part of RP-4's contingency plan involves IEUA's preventive maintenance program. Described in Section 7, this program ensures that all mechanical equipment is kept in reliable working order. RP-4 has an excellent operating and monitoring record, which also helps to avert problems before they become serious concerns.

Section 7

Operation and Maintenance Plan

Operation and maintenance of RP-4 are described in this section. IEUA's plans for staffing the facility and performing preventive maintenance are discussed.

7.1 Staffing

RP-4 is fully staffed with operation and maintenance personnel. Operators are physically working at the plant 10 hours per day and are on-call 14 hours per day, 7 days per week. Certified operators at the plant are listed in Table 7-1. In addition to these personnel, IEUA has a Deputy Manager of Operations for RP-4 and RP-1, who is a Grade V wastewater operator. IEUA also has a Manager of Operations, who is a Grade V operator, in charge of wastewater administration for the entire IEUA service area.

Table 7-1
Operations Staff

Operator Grade[1]	Position	Number of Persons[2]
V	Operations Supervisor	1
III - V	Senior Operator	1
III-V	Operator	2

1. State Wastewater Certification
2. Source: IEUA, 2007.

Mechanical, electrical, and instrumentation maintenance personnel are also on duty as required. Table 7-2 lists the maintenance staff available to RP-4 and shared with RP-1.

7.2 Preventive Maintenance Program

Under IEUA's preventive maintenance program, inspections, lubrications, and operational rotation and repair of all mechanical, electrical, and support equipment are regularly scheduled. In addition to retaining manufacturers' maintenance manuals, files are kept for all major equipment. Routine or regularly scheduled maintenance activities are carried out with the aid of detailed checklists to ensure that important checks and servicing are not overlooked and that complete records are kept for all major equipment components. An organized system, based on work orders with priority determined on a "need" basis, coordinates the operation and maintenance personnel at the plant. The maintenance department normally keeps lists of replacement parts necessary for specific equipment, and in many cases, stocks the replacement parts at the plant site.

Table 7-2
Plant Maintenance Staff

Position	Number of Persons[1]
RP-1 and RP-4 Plant Maintenance	
Plant Maintenance Technician II	4
Senior Maintenance Technician	1
Senior Mechanic	1
Mechanic II	4
Machinist	1
RP-1 and RP-4 Electrical and Instrumentation Maintenance	
Senior Electrical and Instrumentation Technician	1
Electrical Technician II	5
Instrumentation Technician II	6
Office Assistant	1

1. Source: IEUA, 2008b.

Section 8
Recycled Water Use

This section of the report describes the recycled water users, demands, distribution system, and on-site user facilities.

8.1 Users and Demands

Water reclamation has been practiced within IEUA for some time and is specified in the RP-1/RP-4 waste discharge permit, which notes that treated effluent is recycled for landscape irrigation, agricultural, industrial applications, dust control, and groundwater recharge. Besides these uses, treated effluent is used as utility water for in-plant needs. With the recent startup of the Joint IEUA/County Sanitation Districts of Los Angeles County Inland Empire Regional Composting Facility, RP-4 supplies utility water to that complex as well. Based on customer needs, peak recycled water demands occur primarily during the summer months; however, RP-4 can meet high recycled water demands on a year-round basis, if needed. Current and proposed users on the system are listed in Table 8-1.

With the completion of the RP-4 recycled water pumping station, the RP-4 Outfall has been converted from a 1270 pressure zone to an 1158 pressure zone to convey recycled water in a pressurized distribution pipeline from RP-4 to RP-1.

To produce more recycled water at RP-4, IEUA is constructing a 6 mgd (average daily flow) sewage pump station on San Bernardino Avenue in Fontana. Completion is expected in 2009. The project will reroute raw wastewater to RP-4 that is now flowing to RP-1. It will include a force main pipeline to RP-4. The existing gravity sewer with limited capacity will continue to be used to convey wastewater to RP-4. The project will allow more recycled water to be utilized at RP-4 to ensure recycled water system reliability and pumping cost savings.

By 2009, IEUA plans to add a second recycled water pump station at RP-4 to create two pressure zones. The new RP-4 pump station will serve pressure zone 1299. A reservoir will be purchased and retrofitted to serve this pressure zone by 2010. The existing pump station will lift recycled water to two new reservoirs which have already been purchased and retrofitted in 2009. These reservoirs serve the 1158 pressure zone, which includes RP-4, and the RP-4 Outfall If the 1158 pump station experiences low flow due to low RP-4 influent flow or high recycled water demand, the 1158 reservoirs have the capability of supplying recycled water to the suction header of the 1299 pump station. The Inland Empire Regional Composting Facility is served by the 1299 pressure zone.

Table 8-1
Existing and Potential Recycled Water Users and Demands Served by RP-4

User Name[1]	Purveyor	Use Type	Service Source	Avg. Annual Demand (afy)[1]
Arical Properties, Inc	CVWD	Irrigation	RP-4 West Ext. Phase II	49
Bank/America CAINLE030	Ontario	Irrigation	RP-4 Outfall	9
Bernt Comm School	Ontario	Irrigation	San Antonio Seg. A	9
Bluefield Association	CVWD	Irrigation	San Antonio Seg. A	5
Bradshaw International, Inc	CVWD	Irrigation	RP-4 West Ext. Phase I	29
Buena Vista Elem School	MVWD	Irrigation	San Antonio Seg. B	1
Cal Industrial Properties	CVWD	Irrigation	RP-4 West Ext. Phase I	41
Cal Trans - I-10 (4th to Vineyard)	Ontario	Irrigation	San Antonio Seg. A	44
Chaffey High School (150 W 4th St)	Ontario	Irrigation	San Antonio Seg. B	16
Chaffey High School (245 N Euclid Ave)	Ontario	Irrigation	San Antonio Seg. B	68
Chaffey High School (500 W 4th)	Ontario	Irrigation	San Antonio Seg. B	15
City of Ontario - Colony Park	Ontario	Irrigation	San Antonio Seg. B	14
City of Ontario - Mem. Grove Park	Ontario	Irrigation	San Antonio Seg. A	6
City of Ontario - Sunrise Park	MVWD	Irrigation	San Antonio Seg. B	8
City of Ontario (2931 E Philadelphia Ave)	Ontario	Irrigation	RP-4 Outfall	7
City of Ontario (900 E I st)	Ontario	Irrigation	San Antonio Seg. A	5
City of Ontario (City-4/Harvard)	Ontario	Irrigation	Calaveras St Lateral	11
City of Rancho Cucamonga (10500 4th St)	CVWD	Irrigation	San Antonio Seg. A	4
City of Rancho Cucamonga (Milliken Ave & 4th St)	CVWD	Irrigation	San Antonio Seg. A	9
Corona Elementary School	Ontario	Irrigation	(7th & 8th St or San Antonio Seg. A)	21
County of San Bernardino	CVWD	Irrigation	RP-4 Outfall	78
Del Norte Elementary School	Ontario	Irrigation	Calaveras St Lateral	22
E L Yeager	Ontario	Irrigation	(Wineville or RP-4 Outfall)	78
Edwards Theater Bk Chp11	Ontario	Irrigation	RP-4 West Ext. Phase I or Phase II	25
Empire Lakes Golf Course	CVWD	Irrigation	RP-4 West Ext. Phase I	600
Flex-Trim Moldings	CVWD	Irrigation	RP-4 West Ext. Phase I	7
Frito Lay Inc	CVWD	Irrigation	RP-4 West Ext. Phase I	16
Fruit Growers Supply	Ontario	Industrial	Wineville	30
Fujita California Partners	CVWD	Irrigation	RP-4 West Ext. Phase II	19

Table 8-1
Existing and Potential Recycled Water Users and Demands Served by RP-4

User Name[1]	Purveyor	Use Type	Service Source	Avg. Annual Demand (afy)[1]
GATX LOGISTICS	Ontario	Irrigation	Wineville	26
General Dynamics	CVWD	Industrial	RP-4 West Ext. Phase I	659
Griffin Industries (2400 E 4th St)	CVWD	Irrigation	RP-4 West Ext. Phase II or San Antonio Seg. A	18
Griffin Industries (Springbrook Ct)	CVWD	Irrigation	RP-4 West Ext. Phase II	10
Guasti Regional Park	Ontario	Irrigation	Rp-4 West Ext. Phase II	202
Haven Business Center	CVWD	Irrigation	RP-4 West Ext. Phase I	33
Inland Paperboard & Packaging I (5100 Jurupa Ave)	Ontario	Industrial	Wineville	1,400
Insigna-O'Donnell Commercial (Trademark Pkwy #3)	CVWD	Irrigation	RP-4 West Ext. Phase II	6
Insignia-O'Donnell Commercial (9481 Haven Ave)	CVWD	Irrigation	RP-4 West Ext. Phase II	23
K MART #8287	Ontario	Irrigation	RP-4 Outfall or Wineville	3
Kraftmaid Cabinets	Ontario	Industrial	RP-4 Outfall	4
Kushwood MFG	Ontario	Irrigation	RP-4 Outfall	7
L A Dpt Airports	Ontario	Irrigation	RP-4 Outfall or Wineville	10
Landmark Inn	Ontario	Irrigation	RP-4 Outfall	1
Leisure Crats	CVWD	Irrigation	RP-4 West Ext. Phase I	14
Lincoln Rancho Cucamonga Assoc	CVWD	Irrigation	RP-4 Outfall or Wineville	12
LOGISTICS & REPAIR	Ontario	Irrigation	RP-4 Outfall or Wineville	20
Longs Drug Store	CVWD	Irrigation	RP-4 Outfall	29
M. S. Vickers	CVWD	Irrigation	RP-4 Outfall	5
Monte Vista Elem School	MVWD	Irrigation	San Antonio Seg. B	14
Oltmans Investment Co	CVWD	Irrigation	RP-4 West Ext. Phase I	17
Ont/Mont School Dist - Elem School	MVWD	Irrigation	San Antonio Seg. B	11
Ontario Hotel Assoc	Ontario	Irrigation	RP-4 West Ext. Phase II	8
Ontario Montclair (429 W 4th St)	Ontario	Irrigation	San Antonio Seg. B	31
Ontario Montclair (890 N Del Norte)	Ontario	Irrigation	7th & 8th St. or San Antonio Seg. A	37
Our Lady of Lourdes	MVWD	Irrigation	San Antonio Seg. B	8
PFS Inc	CVWD	Irrigation	RP-4 Outfall	26
Pic-N-Save Corp	CVWD	Irrigation	Etiwanda Ave	26
Proficient Food Company	CVWD	Irrigation	RP-4 West Ext. Phase I	8

Table 8-1
Existing and Potential Recycled Water Users and Demands Served by RP-4

User Name[1]	Purveyor	Use Type	Service Source	Avg. Annual Demand (afy)[1]
Proulx Manufacture Inc	CVWD	Irrigation	RP-4 West Ext. Phase I	15
Rancho Verde Village/Apt Mang	CVWD	Irrigation	7th & 8th St.	41
RCDC I	CVWD	Irrigation	RP-4 West Ext. Phase I or Phase II	5
RPM Transportation	CVWD	Irrigation	RP-4 Outfall	16
State Farm	CVWD	Irrigation	RP-4 West Ext. Phase II	5
TA Operation COR, DBA	Ontario	Irrigation	RP-4 Outfall	34
The Abulafia Trust	CVWD	Irrigation	RP-4 West Ext. Phase I	19
The Villas at Terra Vista	CVWD	Irrigation	RP-4 West Ext. Phase I	14
Travelcenter OF	Ontario	Irrigation	RP-4 Outfall	28
Unifirst Corp	Ontario	Irrigation	RP-4 Outfall or Wineville	75
Vernon Middle School	MVWD	Irrigation	San Antonio Seg. B	25
Viana Tool & Machine Inc	CVWD	Irrigation	RP-4 West Ext. Phase I	5
Vineyard Elementary School	Ontario	Irrigation	7th & 8th St.	36
Vineyard Park	Ontario	Irrigation	7th & 8th St.	41
Wohl/Empire Lakes LLC (10860 6th St)	CVWD	Irrigation	RP-4 West Ext. Phase II	8
Wohl/Empire Lakes LLC (9160 Cleveland Ave)	CVWD	Irrigation	7th & 8th St.	8
Wohl/Empire Lakes LLC (9220 Cleveland Ave)	CVWD	Irrigation	7th & 8th St.	7
California Commerce Center - North	Ontario	Irrigation	RP-4 Outfall	20
Catellus Development	Ontario	Irrigation	RP-4 Outfall	5
Ontario Mills Pkwy Development (Piamonte)	Ontario	Irrigation	RP-4 Outfall	15
Cintas I	Ontario	Industrial	RP-4 Outfall	150
Chrysler Dealer	Ontario	Irrigation	Wineville	2
Coca-Cola	Ontario	Irrigation	Wineville Extension	80
Sketchers USA	Ontario	Irrigation	Wineville Extension	16
Cintas II	Ontario	Industrial	Wineville Extension	75
Crothall	Ontario	Industrial	Wineville Extension	176
Fairfield Development	Ontario	Irrigation	RP-4 West Extension	5
John Galvin Park	Ontario	Irrigation	San Antonio Seg A	52
Ontario Montclair (Seg A)	Ontario	Irrigation	San Antonio Seg A	2

Table 8-1
Existing and Potential Recycled Water Users and Demands Served by RP-4

User Name[1]	Purveyor	Use Type	Service Source	Avg. Annual Demand (afy)[1]
Griffin Industries 1	Ontario	Irrigation	San Antonio Seg A	2
City of Ontario (Seg A)	Ontario	Irrigation	San Antonio Seg A	2
Ontario Montclair (Seg B)	Ontario	Irrigation	San Antonio Seg B	2
City of Ontario (Seg B)	Ontario	Irrigation	San Antonio Seg B	2
Gibbs Park	Ontario	Irrigation	San Antonio Seg B	37
Mountain Shadow Assoc.	Ontario	Irrigation	San Antonio Seg B	18
Bellevue Cemetery	Ontario	Irrigation	San Antonio Seg B	200
7th & 8th Basins	Ontario	Recharge	7th & 8th Street	1,220
6th Street Customers	CVWD	Irrigation	RP-4 West Extension	40
6th Street Customers	MVWD	Irrigation	San Antonio Seg B	16
Kingsley Elementary School	MVWD	Irrigation	San Antonio Seg B	37
Kingsley Little League	MVWD	Irrigation	San Antonio Seg B	1
Buena Vista Elementary School	MVWD	Irrigation	San Antonio Seg B	51
Montclair Highschool	MVWD	Irrigation	San Antonio Seg B	15
Alma Hoffman Park	MVWD	Irrigation	San Antonio Seg B	5
City Hall	MVWD	Irrigation	San Antonio Seg B	18
Lehigh Elementary School	MVWD	Irrigation	San Antonio Seg B	23
Sunset Park	MVWD	Irrigation	San Antonio Seg B	20
Brooks Basin	Ontario	Recharge	San Antonio Seg A	2,100
First Methodist Church	Ontario	Irrigation	San Antonio Seg A	21
City of Ontario (100 E I Street)	Ontario	Irrigation	San Antonio Seg A	8
City of Ontario (101 E I Street)	Ontario	Irrigation	San Antonio Seg A	24
G Street Apartments	Ontario	Irrigation	San Antonio Seg A	15
Griffin Indsutries 3	Ontario	Irrigation	San Antonio Seg A	6
Good Night Inn	Ontario	Irrigation	San Antonio Seg A	4
Sheraton Hotel	Ontario	Irrigation	San Antonio Seg A	2
Super 8 Lodge	Ontario	Irrigation	San Antonio Seg A	52
Ontario Convention Center	Ontario	Irrigation	San Antonio Seg A	2
Red Roof Inn	Ontario	Irrigation	San Antonio Seg A	1

Table 8-1
Existing and Potential Recycled Water Users and Demands Served by RP-4

User Name[1]	Purveyor	Use Type	Service Source	Avg. Annual Demand (afy)[1]
Country Side Suites	Ontario	Irrigation	San Antonio Seg A	55
Coastal Ontario LLC	Ontario	Irrigation	San Antonio Seg A	2
Lexington Hotel Suites	Ontario	Irrigation	San Antonio Seg A	20
Double Tree Hotel	Ontario	Irrigation	San Antonio Seg A	2
Best Western Hotel	Ontario	Irrigation	San Antonio Seg A	10
Marriott (2158 E Holt Blvd)	Ontario	Irrigation	San Antonio Seg A	14
Marriott (2200 E Holt Blvd)	Ontario	Irrigation	San Antonio Seg A	100
Future Ontario Business Center @ Ontario Airport	Ontario	Irrigation	7th & 8th Street Basin	45
Valley View High School	Ontario	Irrigation	7th & 8th Street Basin	25
Dorothy Gibson CS	Ontario	Irrigation	Auto Center Lateral	7
Exclusively Volvo	Ontario	Irrigation	Auto Center Lateral	6
Superior Pontiac	CVWD	Irrigation	RP-4 West Ext. Phase II	49
Reliant Energy Power Station	IEUA	Industrial	RP-4 Outfall	3,000
Caltrans	Ontario	Irrigation	RP-4 Outfall	69
City of Ontario	Ontario	Irrigation	RP-4 Outfall	1
Inland Paperboard	Ontario	Industrial	RP-4 Outfall	1,100
Whispering Lakes Golf Course	Ontario	Irrigation	Philadelphia Pipeline [2]	1,036
Banana Recharge Basin	IEUA	Recharge	RP-4	785
Hickory Recharge Basin	IEUA	Recharge	RP-4	704
Ely Recharge Basin	IEUA	Recharge	RP-4	373
Turner Recharge Basin	IEUA	Recharge	RP-4	831
TOTAL Average Annual Demand (afy)				***17,072***

1. IEUA, 2007a.
2. Whispering Lakes Golf Course is typically served recycled water from RP-1, but it can be served from RP-4.

IEUA utilizes RP-4 recycled water for IEUA's Phase I and Phase II Chino Basin Recycled Water Groundwater Recharge System (Groundwater Recharge Project). The Groundwater Recharge Project is part of a comprehensive water supply enhancement program jointly sponsored by IEUA and the Chino Basin Watermaster, Chino Basin Water Conservation District, and San Bernardino County Flood Control District to improve the quality of local drinking water wells, enhance water supply reliability, and lower the cost of water to residents throughout the Chino Groundwater Basin. IEUA is the lead agency for the project. The Phase I Groundwater Recharge Project features up to seven recharge basins that are used to recharge a blend of up to about 44,000 afy of recycled water, stormwater, and imported water. The initial project utilizes approximately 8,000 afy of recycled water from RP-1 and RP-4. Ultimately under Phase II, it is planned for the Groundwater Recharge Project to be expanded to approximately 19 recharge sites and up to 134,000 afy of recycled water, stormwater, and imported water. Regulatory compliance is addressed in the "Title 22 Engineering Report for the Phase I Chino Basin Recycled Water Groundwater Recharge Project" (CH2M Hill, 2003) and the associated CDPH Findings of Fact (DHS, 2004), plus the "Phase II Chino Basin Recycled Water Groundwater Recharge Project Title 22 Engineering Report" (DDB Engineering, Inc. and Wildermuth Environmental, Inc., 2006) and the associated CDPH Findings of Fact (DHS, 2007), which address current CDPH groundwater recharge draft regulations (DHS, 2008). In June, 2007, the RWQCB approved Order No. R8-2007-0039 (RWQCB, 2007a) that establishes water recycling requirements for the Phase I and Phase II Chino Basin Recycled Water Groundwater Recharge Program.

8.2 Distribution System

Recycled water is supplied from the recycled water pump station described in Section 4.10. The new 1299 Pump Station supplies a series of pressurized pipelines which supply recycled water to the IEUA northeast and northwest service areas. The 1299 pressure zone pipeline currently serves the nearby Reliant Energy Power Station, Empire Lakes Golf Course, Groundwater Recharge, RP-4 utility water, utilized for plant use and landscaping, and the City of Rancho Cucamonga. The existing 1158 pressure zone pipeline currently serves Caltrans freeway irrigation as well as other users along the pressurized RP-4 Outfall pipeline from RP-4 to RP-1. Additional users will be added to the RP-4 recycled water distribution system.

8.3 Recycled Water User Facilities

IEUA Ordinance No. 69 (IEUA, 2000a), adopted by the IEUA Board of Directors in May, 2000, establishes rules, requirements, and responsibilities, under which, recycled water service is provided to customers. Applicants for recycled water service agree to comply with the terms of their Recycled Water Use Permit, as well as applicable Federal, State and Local statutes, to protect public health. The on-site operational controls must be appropriate for the beneficial use approved in the Recycled Water Use Permit for the safe and reliable delivery of recycled water. Specific identification, signage, and cross-connection prevention requirements include the following measures:

- All recycled water valves, outlets, quick couplers, and sprinkler heads shall be of a type, or secured in a manner that only permits operation by personnel authorized by the customer.
- All recycled water valves and outlets shall be appropriately tagged to warn the public and employees that the water is not intended nor allowed for drinking.
- All piping, valves and outlets shall be color-coded (purple) or otherwise marked to differentiate recycled water from non-recycled water facilities.
- Hose bibs shall not be used in the recycled water system; quick couplers or comparable connection devices shall be used instead.
- Adequate means of notification shall be provided to inform the public, employees and others that recycled water is being used. Such notification shall include the posting of conspicuous recycled water information signage with proper wording in both English and Spanish of sufficient size to be clearly read, which shall be posted at adequate intervals around the use area. Signage shall be in conformance with CDPH Title 22 regulations.
- Cross-connection prevention measures, such as backflow preventers or reduced pressure principle devices, shall be installed and maintained to comply with requirements of CDPH and local potable water purveyors.

The current users are served by the City of Ontario, or in the case of the Reliant Energy Power Station, directly by IEUA. The City of Ontario has a Recycled Water Use Ordinance (City of Ontario) that requires recycled water users to complete a Title 22 engineering report and obtain a user permit from the City. IEUA has a contract with Reliant Energy that requires them to comply with IEUA's Ordinance No. 69 and have an approved Title 22 engineering report.

IEUA encourages the maximum use of recycled water for beneficial purposes. As part of this effort, IEUA maintains guidance to educate and support local member agencies and recycled water customers in the proper design, installation, operation, and maintenance of their on-site recycled water systems.

IEUA maintains an employee training program that covers procedures used when working with recycled water, rules and regulations associated with recycled water use, hazards of working with recycled water, and basic cross-connection prevention and backflow principles and procedures.

Section 9

Conclusions and Recommendations

This chapter summarizes the findings of the evaluation of RP-4 for compliance with Title 22 Water Recycling Criteria. Conclusions and recommendations are presented.

9.1 Conclusions

This Title 22 Engineering Report demonstrates how IEUA's RP-4 provides reliable treatment capacity in compliance with Title 22 Water Recycling Criteria for an annual average flow of 14 mgd, peak dry weather capacity of 28 mgd, and peak wet weather capacity of 32.2 mgd for all facilities. Table 9-1 on the following page summarizes the rated capacity of each treatment process. Described in detail in Section 4, capacity is based on the following criteria:

- Design criteria and actual operating parameters;
- Provision for redundant, standby, or alternative equipment or treatment processes; and
- Improvements currently under construction.

Because the expansion project is currently under construction at RP-4, this Engineering Report is based on the facilities that will exist with the completion of the expansion. These modifications and additions include the conversion of the oxidation ditch biological treatment system into a Bardenpho nutrient removal plug-flow or step-feed arrangement. As part of the 7 mgd modifications that were completed in early 2005, the UV disinfection system was replaced with sodium hypochlorite disinfection and chlorine contact tanks to achieve the required 90-minute modal contact time.

The construction schedule for the expansion is taking place in phases. Phase 1 converted the existing 7-mgd oxidation ditch plant to an activated sludge process with 7 mgd of capacity became operational in July 2007. Phase 2 is construction of another 7 mgd of new activated sludge capacity, increasing the total plant permit-rated capacity to 14 mgd. This is expected to be completed by summer 2009.

Table 9-1
RP-4 Process Capacity Summary [1]

Process	Peak Capacity [2] (mgd)	Annual Average Capacity With All Units in Service [3] (mgd)	Title 22 Reliable Annual Average Capacity [4] (mgd)
Preliminary Treatment:			
Bar screens	72.4	31.5	15.7
Influent P.S.	49.5	21.5	17.7
Flow meter	48.3	21	21
Grit chamber	40.0	17.4	17.4
Primary Treatment	32.2	14	14
Secondary Treatment:			
Bardenpho activated sludge	16.1 [8]	21	14
Clarifiers	28.0 [9]	21	14
Tertiary Treatment:			
Dual-Media Filters [5]			
Coagulation	18.0	7.8	6.8
Filtration	18.0	7.8	6.8
Cloth Disc Filters [5]			
Coagulation	22.4	9.7	7.3
Filtration	22.4	9.7	7.3
Total of Filters [5]	40.4	17.5	14.1
Disinfection			
Sodium hypochlorite	103.6	82.6	38.0
Contact tanks [6]	28.3 (dry) 32.6 (wet)	14.2	14.2
Dechlorination [7]	52	104	0

1. Capacity shown is for the treatment configuration that will exist after completion of the expansion to 14 mgd capacity in summer 2009.
2. Peak Capacity = total peak flow capacity with all units in service.
3. Annual Average Capacity with all units in service equals Peak Capacity/2.3
4. Title 22 Reliable Annual Capacity = annual average flow capacity conforming to the reliability requirements set forth in Title 22. Reliability may be provided by redundant, standby, or alternative equipment or processes. The specific means of establishing reliability is described in Section 4 for each treatment process.
5. Filtration Title 22 Annual Average Capacity is based on having one dual-media filter in backwash and one cloth disc filter out of service.
6. Dry weather peak capacity is 28.3 mgd to provide the minimum 450 mg-min/L CT and 90 minute modal contact time required by Title 22 for peak dry weather flows based on modal contact time test for Basins 1A and 1B (SFE Global, 2005) and estimated modal contact time for Basin 2. Average annual capacity is based on the dry weather PHDWF peaking factor of 2.0 (28.3/2.0=14.2 mgd). Wet weather peak capacity is based on the wet weather peaking factor of 2.3 (14.2x2.3=32.6 mgd).
7. Dechlorination will typically not be used at RP-4 because recycled water is delivered to customers from the pressurized RP-4 Outfall. Discharges to Cucamonga Creek (001) and

Prado Park Lake (002) are dechlorinated at RP-1. Peak capacity based on 20 mg/L dosage. Average capacity based on 10 mg/L. No standby at RP-4. Standby pump at RP-1.

8. Peak capacity based on maximum month loadings (Black & Veatch, 2004).
9. Black & Veatch, 2004.

9.2 Recommendations

RP-4 currently complies with Title 22 Water Recycling Criteria at an annual average capacity of 7 mgd.

In summer 2009, the expansion to 14 mgd of capacity should be complete for all facilities. As described above, the expanded facilities comply with Title 22 Water Recycling Criteria at an annual average capacity of 14 mgd. It is recommended that modal contact time testing be conducted at the chlorine contact basins to re-evaluate their capacity to handle peak flows.

Flow monitoring will be important to assure that the next RP-4 expansion is completed in a timely manner and the capacity of the overflow bypass to RP-1 remains sufficient to handle any flows that may exceed the plant's peak capacity.

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RWQCB, 2006. Order No. R8-2006-0010, National Pollution Discharge Elimination System (NPDES) Permit No. CA0105279, “Waste Discharge and

Producer/User Water Reclamation Requirements for the Inland Empire Utilities Agency Regional Water Recycling Plants No. 1 & No. 4", May 2006.

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Appendix A

ORDER NO. R8-2006-0010
NPDES NO. CA0105279

WASTE DISCHARGE AND PRODUCER /USER RECLAMATION REQUIREMENTS
FOR THE
INLAND EMPIRE UTILITIES AGENCY
REGIONAL WATER RECYLING PLANTS NO. 1 & NO. 4
DISCHARGE TO REACH 3 OF SANTA ANA RIVER

AND

ORDER NO. R8-2007-0045

AMENDING ORDER NO. R8-2006-0010, NPDES NO. CA0105279

WASTE DISCHARGE AND PRODUCER/USER REQUIREMENTS
FOR
INLAND EMPIRE UTILITIES AGENCY
RECYCLED WATER RECYCLING PLANTS NO. 1 & NO. 4

California Regional Water Quality Control Board
Santa Ana Region

July 20, 2009

ITEM: *7

SUBJECT: Issuance of Waste Discharge and Producer/User Reclamation Requirements for the Inland Empire Utilities Agency's Regional Water Recycling Facilities, Surface Water Discharges and Recycled Water Use, Order No. R8-2009-0021, NPDES No. CA8000409, San Bernardino County

DISCUSSION:

See attached Fact Sheet

RECOMMENDATIONS:

Adopt Order No. R8-2009-0021, NPDES No. CA8000409 as presented.

COMMENT SOLICITATION:

Comments were solicited from the discharger and the following agencies:

U.S. Environmental Protection Agency, Permits Issuance Section (WTR-5) – Doug Eberhardt
U.S. Army District, Los Angeles, Corps of Engineers - Regulatory Branch
U.S. Fish and Wildlife Service, Carlsbad – Christine Medak
State Water Resources Control Board, Office of the Chief Counsel – David Rice
State Department of Fish and Game, Los Alamitos - Ms. Latonio
California Department of Public Health, San Bernardino – Sean McCarthy
California Department of Public Health, Carpenteria - Jeff Stone
State Department of Water Resources, Glendale – Charles Keene
Santa Ana Watershed Project Authority – Celeste Cantu
Santa Ana River Dischargers Association – Ed Filadelfia
Orange County Water District - Nira Yamachika
San Bernardino County Transportation/Flood Control District – Naresh Varma
San Bernardino County Environmental Health Services – Daniel Avera
City of Chino, Public Works Department – Jose Alire
City of Chino Hills - Public Works Department
City of Fontana – Chuck Hays, chays@fontana.org
City of Montclair - Nicole Greene
City of Ontario – Mohamed El-Amamy
City of Upland – Maria Linzay
Cucamonga Valley Water District -
Inland Empire Waterkeeper – Autumn DeWoody
Orange County Coastkeeper - Garry Brown
Lawyers for Clean Water C/c San Francisco Baykeeper
Natural Resources Defense Council – David Beckman
Inland Empire Utilities Agency - Patrick Sheilds

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

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ORDER NO. R8-2009- 0021
NPDES NO. CA8000409

WASTE DISCHARGE AND PRODUCER/USER RECLAMATION REQUIREMENTS FOR INLAND EMPIRE UTILITIES AGENCY REGIONAL WATER RECYCLING FACILITIES SURFACE WATER DISCHARGES AND RECYCLED WATER USE

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

Table 1. Discharger Information

Discharger/ Operator	Inland Empire Utilities Agency			
Name of Facility	Regional Water Recycling Plant No. 1 (RP-1)	Regional Water Recycling Plant No. 4 (RP-4)	Regional Water Recycling Plant No. 5 (RP-5)	Carbon Canyon Water Reclamation Facility (CCWRF)
Facility Address	2450 East Philadelphia Street	12811 Sixth Street	6068 Kimball Ave, Building "C".	14950 Telephone Avenue
	Ontario, CA 91761	Rancho Cucamonga, CA 91729	Chino, CA 91708	Chino, CA 91710
	San Bernardino County			
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a major discharge.				

The discharge by Inland Empire Utilities Agency (IEUA) from the discharge points identified below is subject to waste discharge requirements as set forth in this Order:

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Tertiary treated effluent from RP-1	N33°56'39"	W117°38'34"	Prado Park Lake, overflow from the lake to an unnamed creek, then to Reach 1A of Chino Creek, a tributary to Reach 3 of Santa Ana River in Prado Basin
002	Tertiary treated effluent from RP-1&RP-4	N34°01'31"	W117°33'56"	Reach 1 of Cucamonga Creek, then to Mill Creek, then to Reach 1A of Chino Creek, a tributary to Reach 3 of Santa Ana River in Prado Basin
003	Tertiary treated effluent from RP-5	N33°57'44"	W117°40'41"	Reach 1B of Chino Creek, a tributary to Reach 3 of Santa Ana River
004	Tertiary treated effluent from CCWRF	N33°58'56	W117°41'48"	Reach 2 of Chino Creek, a tributary to Reach 3 of Santa Ana River
005	Recycled water from RP-1	N34°01'29"	W117°35'57"	Use area overlying Chino North "Max Benefit" GMZ (or Chino 1, 2, and 3 "Antidegradation" GMZs – see Fact Sheet)
006	Recycled water from RP-4	N34°04'59"	W117°31'35"	
007	Recycled water from RP-5	N33°57'51"	W117°40'24"	
008	Recycled water from CCWRF	N33°58'47"	W117°41'37"	
S-001	Stormwater from RP-1	N34°01'36"	W117°35'59"	Stormwater runoff to Reach 1 of Cucamonga Creek
S-002	Stormwater from RP-1	N34°01'28"	W117°35'58"	Stormwater runoff to Reach 1 of Cucamonga Creek

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	July 20, 2009
This Order shall become effective on:	July 20, 2009
This Order shall expire on:	July 1, 2014
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:	January 2, 2014

I, Gerard J. Thibeault, 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, Santa Ana Region, on July 20, 2009.

Gerard J. Thibeault, Executive Officer

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List of Tables

List of Attachments

I. FACILITY INFORMATION

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

Table 4. Facility Information

Discharger/Operator	Inland Empire Utilities Agency			
Name of Facility (RWRF)	RP-1	RP-4	RP-5	CCWRF
Address	2450 East Philadelphia Street	12811 Sixth Street	6068 Kimball Avenue Building “C”	14950 Telephone Avenue
	Ontario, CA 91761	Rancho Cucamonga, CA 91729	Chino, CA 91708	Chino, CA 91710
	San Bernardino County			
Facility Contact, Title and Phone	Patrick O. Sheilds, Executive Manager of Operations, (909) 993-1806			
Authorized Person to Sign and Submit Reports	Patrick O. Sheilds, Executive Manager of Operations, (909) 993-1806			
Address	6075 Kimball Avenue, Chino, CA 91708			
Mailing/Billing Address	P.O. Box 9020, Chino Hills, CA 91709			
Type of Facility	POTW			
Facilities Permitted Flow	84.4 million gallons per day (mgd)			
Facility Design Flow	44 mgd	14 mgd	15 mgd (and 1.3 mgd RP-2 sludge treatment system wastewater flows)	11.4 mgd

II. FINDINGS

The California Regional Water Quality Control Board, Santa Ana Region (hereinafter Regional Water Board), finds:

A. Background. The Inland Empire Utilities Agency (hereinafter Discharger, or IEUA) owns and operates a regional wastewater collection system and four regional water recycling facilities (hereinafter, Facilities), including Regional Water Recycling Plants Nos. 1, 4, and 5 and the Carbon Canyon Water Reclamation Facility (CCWRF). The Discharger is currently discharging from these Facilities pursuant to the following waste discharge and producer/user water reclamation requirements:

1. Order No. R8-2006-0010, National Pollutant Discharge Elimination System (NPDES) Permit No. CA0105279, as amended by Orders No. R8-2007-0045 and No. R8-2007-0078, for treated wastewater discharges from Regional Water Recycling Plant No. 1 (RP-1) and Regional Water Recycling Plant No. 4 (RP-4);

2. Order No. R8-2008-0028, NPDES No. CA8000402 for treated wastewater discharges from Regional Water Recycling Plant No. 5 (RP-5); and

3. Order No. R8-2004-0020, NPDES No. CA8000073, as amended by Orders No. R8-2006-0038 and No. R8-2007-0078, for treated wastewater discharges from Carbon Canyon Water Reclamation Facility (CCWRF).

The Discharger submitted a Report of Waste Discharge (ROWD), dated January 27, 2009, and applied for a NPDES permit to consolidate the three waste discharge and producer/user water reclamation requirements identified above into one permit to regulate a total discharge of up to 84.4 million gallons per day (mgd) of tertiary treated wastewater from RP-1, RP-4, RP-5, and CCWRF.

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 Description. IEUA owns and operates a regional wastewater collection system and four water recycling plants. Wastewater can be diverted to different plants via available routing options built into the regional system (see Figure 1 of Attachment C for further detail). After treatment, effluent/recycled water can be discharged to nearby outfall(s) or it can be recycled for industrial uses, irrigation and groundwater recharge. The wastewater treatment systems consist of primary, secondary, and tertiary treatment. Treated wastewater is discharged from various discharge points either to Prado Park Lake, Reach 1 of Cucamonga Creek, or Chino Creek. The lake and the creeks are tributaries to Reach 3 of the Santa Ana River within the Prado Basin Management Zone. Recycled water is used in areas overlying the Chino North “Maximum Benefit” Groundwater Management Zone (GMZ) (or Chino 1, 2, and 3 “Antidegradation” GMZs). Groundwater recharge of recycled water is regulated under separate waste discharge requirements. Attachment B provides maps of the area around these Facilities. Attachment C provides flow schematics at each Facility, the IEUA System-Wide influent flow interrelationship diagram, and a schematic of the IEUA System-Wide Water Recycling Distribution System.

C. **Legal Authorities.** This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from this Facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, Division 7 of the Water Code (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 Order requirements, is hereby incorporated into this Order and constitutes part of the Findings for this Order. Attachments A through E and G through K are also incorporated into this Order.

E. **California Environmental Quality Act (CEQA).** Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code section 21000 et seq. (*County of Los Angeles v. California State Water Resources Control Board* (2006) 143 Cal.App.4th 985, mod. (Nov. 6, 2006, B184034) 50 Cal.Rptr.3d 619, 632-636). This action also involves the re-issuance of waste discharge requirements for an existing facility that discharges treated wastewater to land and as such, is exempt from the provisions of California Environmental Quality Act (commencing with Section 21100) in that the activity is exempt pursuant to Title 14 of the California Code of Regulations Section 15301.

F. **Technology-based Effluent Limitations**. Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations[1], require that permits include conditions meeting applicable technology-based requirements at a 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 Part 133 and/or Best Professional Judgment (BPJ) in accordance with Part 125, section 125.3. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet (Attachment F).

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[1] *All further statutory references are to title 40 of the Code of Federal Regulations unless otherwise indicated.*

G. **Water Quality-Based Effluent Limitations.** Section 301(b) of the CWA and section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains requirements, expressed as a technology equivalence requirement, more stringent than secondary treatment requirements. These requirements are necessary to meet applicable water quality standards.

   The rationale for these requirements, which consist of tertiary or equivalent treatment requirements and other provisions, is discussed in the Fact Sheet.

   Section 122.44(d)(1)(i) mandates 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, but there is no numeric criterion or objective for the pollutant, 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 section 122.44(d)(1)(vi).

H. **Water Quality Control Plans.** The Regional Water Board adopted a revised Water Quality Control Plan for the Santa Ana Region (hereinafter Basin Plan) that became effective on January 24, 1995. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters in the Santa Ana Region addressed through the plan. More recently, the Basin Plan was amended significantly to incorporate revised boundaries for groundwater subbasins, now termed "management zones", new nitrate-nitrogen and TDS objectives for the new management zones, and new nitrogen and TDS management strategies applicable to both surface and ground waters.

   This Basin Plan Amendment was adopted by the Regional Water Board on January 22, 2004. The State Water Resources Control Board (State Water Board) and Office of Administrative Law (OAL) approved the Amendment on September 30, 2004 and December 23, 2004, respectively. EPA approved the surface water standards components of the N/TDS Amendment on June 20, 2007.

   In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Based on the criteria specified in the State Water Board Resolution, the Basin Plan specifies that Reaches 1A, 1B, and 2 of Chino Creek, Reach 1 of Cucamonga Creek and Reach 5 of the Santa Ana River, beginning at the intersection of Orange Avenue in the City of Redlands, and downstream reaches are excepted from the municipal and domestic supply beneficial use.

As discussed in detail in the Fact Sheet (Attachment F), beneficial uses applicable to the Prado Basin Management Zone, Reach 1 of Cucamonga Creek, Reaches 1A, 1B, and 2 of Chino Creek, and Reach 3 of the Santa Ana River are as follows:

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water	Beneficial Uses
001	Prado Park Lake overflow from the lake to an unnamed creek, then to Reach 1A of Chino Creek	Present or Potential: Water contact recreation (REC-1), non-contact water recreation (REC-2), warm freshwater habitat, wildlife habitat (WILD), and rare, threatened and endangered species. Recreational use at Prado Park Lake is restricted to fishing and boating. Excepted from Municipal and Domestic Supply.
002	Reach 1 of Cucamonga Creek, then to Mill Creek, thence to Reach 1A of Chino Creek	Present or Potential: Groundwater Recharge, Water contact recreation (REC-1), non-contact water recreation (REC-2), Limited warm freshwater habitat, and wildlife habitat (WILD). Excepted from Municipal and Domestic Supply.
003	Reach 1B of Chino Creek	Present or Potential: Water contact recreation (REC-1), non-contact water recreation (REC-2), warm freshwater habitat, wildlife habitat (WILD), and rare, threatened and endangered species. Excepted from Municipal and Domestic Supply.
004	Reach 2 of Chino Creek	Present or Potential: Groundwater Recharge, Water contact recreation (REC-1), non-contact water recreation (REC-2), Cold freshwater habitat, and wildlife habitat (WILD). Excepted from Municipal and Domestic Supply.
001, 002, 003, 004, S-001, & S-002	Reach 3 of Santa Ana River within Prado Basin Area	Present or Potential: Agricultural supply, groundwater recharge, water contact recreation, non-contact water recreation, warm freshwater habitat, wildlife habitat, and rare, threatened or endangered species. Excepted from Municipal and Domestic Supply.
001, 002, 003, 004, 005, 006, 007, 008, S-001, & S-002	Chino North “Max Benefit” GMZ/Chino 1, 2 and 3 “antidegradation” GMZs	Present or Potential: Municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.
	Orange GMZ (affected GMZ downstream of discharge points)	Present or Potential: Municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.

Requirements of this Order implement the Basin Plan.

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 forty 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 were applicable in the state. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority pollutants.

J. **Compliance Schedules and Interim Requirements – Not Applicable**

K. **State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000 with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the USEPA 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.

L. **Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes. (40 C.F.R. section 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.

M. **Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based and water quality based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on BOD_5 and Suspended Solids. Restrictions on the same pollutants are discussed in Section IV.B.2. of 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 that are necessary to meet water quality standards. These limitations are not more stringent than required by the CWA.

Water quality-based effluent limitations have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant water quality-based effluent limitations were derived from the CTR, the CTR is the applicable standard pursuant to section 131.38. The scientific procedures for calculating the individual water quality-based effluent limitations for priority pollutants are based on the CTR-SIP, which was approved by USEPA on May 18, 2000. With the exception of certain surface water standards changes adopted as part of the Nitrogen/TDS Basin Plan Amendment (see Section H, above), all beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. 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 purposes of the CWA” pursuant to section 131.21(c)(1). The surface water standards changes adopted as part of the Nitrogen/TDS Basin Plan Amendment were approved by USEPA on June 20, 2007.

N. Antidegradation Policy. Section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California’s antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board’s Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. As discussed in the Fact Sheet, discharges in accordance with the terms and conditions of this Order will not result in a lowering of water quality. Therefore, the permitted discharges are consistent with the antidegradation provisions of section 131.12 and State Water Board Resolution No. 68-16.

O. Anti-Backsliding Requirements. Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code of Federal Regulations section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit. With the exception of the average monthly limitation for free cyanide, all effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Orders and are consistent with the anti-backsliding requirements of the CWA and federal regulations.

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 the applicable Endangered Species Act.

Q. **Monitoring and Reporting.** Section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorizes 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. **Pretreatment:** The Discharger has established an approved regional pretreatment program. The approved pretreatment program and its components, such as Ordinance No.97-OR5, local limits (adopted by the Discharger in 2000), and control mechanisms, among others, are hereby made an enforceable condition of this Order.

S. **Biosolids Requirements.** On February 19, 1993, the USEPA issued a final rule for the use and disposal of sewage sludge, 40 CFR, Part 503. This rule requires that producers of sewage sludge meet certain reporting, handling, and disposal requirements. The State of California has not been delegated the authority to implement this program, therefore, the U.S. Environmental Protection Agency is the implementing agency. However, this Order includes Regional Water Board biosolids requirements.

T. **State General Waste Discharge Requirements for Sanitary Sewer Systems.** The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003 on May 2, 2006, requiring public agencies that own sanitary sewer systems comprised of more than one mile of pipes or sewer lines, to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs).

   This Order requires the Discharger and other governmental agencies[2] to obtain enrollment for regulation under the General Water Quality Order No. 2006-0003. The Discharger has already enrolled.

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[2] *Member agencies and sewering agencies discharging wastewater into the Facility.*

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

V. Provisions and Requirements Implementing State Law. The provisions/requirements in subsections IV.B, IV.C, V.B, and VI.C. of this Order are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

W. Notification of Interested Parties. The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet of this Order.

X. 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 of this Order.

IT IS HEREBY ORDERED, that this Order supersedes Order No. R8-2006-0010 as amended by Orders No. R8-2007-0045 and No. R8-2007-0078; Order No. R8-2008-0028, and Order No. R8-2004-0020 as amended by Order Nos. R8-2006-0038, and R8-2007-0078, except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the 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. The direct discharge of secondary treated wastewater to Chino Creek and Reach 1 of Cucamonga Creek other than when the flow[3] in the creeks results in a dilution of 20:1 or more at the point of discharge is prohibited.

B. Discharge of wastewater at a location or in a manner different from those described in this Order is prohibited.

C. The bypass or overflow of untreated wastewater or wastes to surface waters or surface water drainage courses is prohibited, except as allowed in Standard Provision I.G. of Attachment D, Federal Standard Provisions.

D. The discharge of any substances in concentrations toxic to animal or plant life is prohibited.

E. The discharge of any radiological, chemical, or biological warfare agent or high level radiological waste is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations –Discharge Points (DP) 001, 002, 003, and 004

Unless otherwise specifically specified hereinafter, compliance with the following effluent limitations is measured at monitoring locations M-001, M-002, M-003 and M-004 as described in the attached MRP (Attachment E).

1. Final Effluent Limitations for discharges under conditions <u>without</u> 20:1 dilution in the receiving water – DPs 001, 002, 003 and 004

a. The Discharge shall maintain compliance with the following effluent limitations at:

(1) DPs 001, 002, 003 and 004 with compliance measured at Monitoring Locations M-001A & B, M-002A & B, M-003 and M-004, respectively, as described in the attached MRP:

Table 6. Effluent Limitations at DP 001 through DP 004

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	20	30	--	--	--
Total Suspended Solids	mg/L	20	30	--	--	--
Ammonia-Nitrogen	mg/L	4.5	--	--	--	--
Total Chlorine Residual[3]	mg/L					0.1

(2) DPs 001 and 002 with compliance measured at Monitoring Locations M-001B and M-002A, respectively, as described in the attached MRP:

3 *See Section VII.M. – Compliance Determination.*

Table 7. Effluent Limitations Applicable at DP 001 and DP 002 only

Parameter	Units	Effluent Limitations		
		Average Monthly	Average Weekly	Maximum Daily
Free Cyanide	µg/L	4.2	--	8.5
Bis(2-ethylhexyl) Phthalate	µg/L	5.9		11.9
Selenium	µg/L	4.1		8.2

(3) DP 003 with compliance measured at Monitoring Location M-003, as described in the attached MRP:

Table 8. Effluent Limitations Applicable at DP 003 only

Parameter	Units	Effluent Limitations		
		Average Monthly	Average Weekly	Maximum Daily
Free Cyanide	µg/L	4.6	--	7.3
Bromodichloromethane	µg/L	46	--	92

(4) DP 004 with compliance measured at Monitoring Location M-004, as described in the attached MRP:

Table 9. Effluent Limitations Applicable at DP 004 only

Parameter	Units	Effluent Limitations		
		Average Monthly	Average Weekly	Maximum Daily
Free Cyanide	µg/L	4.3	--	8.5
Bis(2-ethylhexyl) Phthalate	µg/L	5.9	--	11.9

b. **Percent Removal:** The average monthly percent removal of BOD 5-day 20°C and total suspended solids shall not be less than 85 percent. (See Compliance Determination Section VII.N.)

c. **TDS Limitations** - The lower of the two total dissolved solids (TDS) limits specified in (1) or (2), below, is the limit.

(1) The 12-month flow weighted running average TDS constituent concentration and mass emission rates shall not exceed 550 mg/L and 366,960 lbs/day[4], respectively. This limitation may be met on an agency-wide basis using flow weighted averages of the discharges from the Discharger's RP-1, RP-4, RP-5 and CCWRF, or

(2) The 12-month flow weighted running average TDS concentration shall not exceed the 12-month flow weighted running average TDS concentration in the water supply by more than 250 mg/L[5]. This limitation may be met on an agency-wide basis using flow weighted averages of the water supplied to the Discharger's RP-1, RP-4, RP-5 and CCWRF service areas.

d. The 12-month flow weighted running average Total Inorganic Nitrogen (TIN) concentration and mass emission rates shall not exceed 8 mg/L and 5,338 lbs/day[6], respectively. This limitation may be met on an agency-wide basis using flow weighted averages of the discharges from the Discharger's RP-1, RP-4, RP-5 and CCWRF.

e. The discharge shall at all times be adequately oxidized, filtered, and disinfected treated wastewater and shall meet the following limitations.

(1) The turbidity of the filtered wastewater shall not exceed any of the following:

(a) Average of 2 Nephelometric Turbidity Unit (NTU) within any 24-hour period;

(b) 5 NTU more than 5 percent of the time in any 24-hour period; and

(c) 10 NTU at any time.

(2) The disinfected effluent shall meet the following:

(a) When chlorine disinfection process is utilized following filtration, a CT (the product of total chlorine residual and modal contact time measured at the same point) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes[7], based on peak dry weather design flow[8;] shall be provided[9].

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4 *Based on wasteload allocation volume of 80 mgd and concentration of 550 mg/L.*

5 *See Section VII.L. - Compliance Determination.*

6 *Based on wasteload allocation volume of 80 mgd and concentration of 8 mg/L.*

7 *The modal contact time requirement is applicable only to the use of recycled water and not to surface water discharges, provided the receiving water provides a 1:1 dilution. The receiving water considered here shall exclude upstream POTW effluent flow.*

8 *"Peak Dry Weather Flow" means the arithmetic mean of the maximum peak flow rates sustained over some period of time (for example three hours) during the maximum 24-hour dry weather period. Dry weather period is defined as period of little or no rainfall.*

(b) When a disinfection process combined with the filtration process is utilized, the combined process shall demonstrate[10] inactivation and/or removal of 99.999 percent of the plaque-forming units of F-specific bacteriophage MS-2[11], or polio virus in the wastewater. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of the demonstration.

(c) The weekly average concentration of total coliform bacteria shall not exceed a Most Probable Number (MPN) of 2.2 total coliform bacteria per 100 milliliters (ml). (see Compliance Determination VII.J.1., below)

(d) The number of total coliform bacteria shall not exceed an MPN of 23 total coliform bacteria per 100 ml in more than one sample in any 30-day period.

(e) No total coliform bacteria sample shall exceed an MPN of 240 total coliform bacteria per 100 ml.

f. There shall be no visible oil and grease in the discharge.

g. The pH of the discharge shall be within 6.5 to 8.5 pH[12].

h. Wastewater discharged at DP 001 shall be limited to treated and disinfected effluent that meets the conditions in Section IV.A.1.

i. Wastewater discharged at DP 002 through DP 004 shall be limited to treated and disinfected effluent that meets the conditions in Section IV.A.1., except for discharges of treated wastewater that meets the conditions specified in Section IV.A.4., when the flow[13] in Reaches 1B or 2 of Chino Creek or Reach 1 of Cucamonga Creek results in a dilution of 20:1 or more at the point of discharge.

2. Interim Effluent Limitations – Not Applicable

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9 *Modal contact time and CT shall be calculated based on the minimum one-hour average value in a 24-hr period.*

10 *Meeting the discharge limits in A.1.e.(2).(c),(d), and (e) shall constitute the demonstration required by this sub-paragraph.*

11 *F-Specific bacteriophage MS-2 means a strain of a specific type of virus that infects coliform bacteria that is traceable to the American Type Culture Collection (ATCC) 15597B1) and is grown on lawns of E. coli (ATCC 15597).*

12 *See Section VII.K. Compliance Determination.*

13 *Exclusive of discharges to surface waters from upstream publicly owned treatment works.*

3. Toxicity Requirements/Discharge Specifications

a. There shall be no acute or chronic toxicity in the plant effluent nor shall the plant effluent cause any acute or chronic toxicity in the receiving water. All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in human, plant, animal, or indigenous aquatic life. This Order contains no numeric limitation for toxicity. However, the Discharger shall conduct chronic toxicity monitoring.

b. The Discharger shall implement the accelerated monitoring as specified in Attachment E when the result of any single chronic toxicity test of the effluent exceeds 1.0 TUc.

4. Effluent Limitations at DPs 002, 003, and 004, Under Conditions with 20:1 or More Dilution

The discharge of treated and disinfected effluent when the creek flow[14] at monitoring locations R-002U, R-003U, and/or R-004U results in a dilution of 20:1 (receiving water flow : wastewater flow) or more shall maintain compliance with the following effluent limitations at DPs 002, 003, and/or 004 with compliance measured at Monitoring Locations M002, M003 and M-004, respectively, as described in the attached MRP.

a. Numeric Effluent Limitations

Table 10. Effluent Limitations Under 20:1 Dilution

Parameter	Units	Effluent Limitations			
		Average Monthly	Average Weekly	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	30	45	- -	- -
Total Suspended Solids	mg/L	30	45	- -	- -
Total Residual Chlorine	mg/L	-	-	-	2.1

b. Treated wastewater shall at all times be adequately oxidized and disinfected wastewater and shall meet the following limitations:

(1) The weekly average number of coliform bacteria does not exceed a median of 23 per 100 milliliters as determined from the daily coliform bacteria values for the last seven (7) days. (see also Compliance Determination VII.J.2., below)

[14] *Exclusive of discharges to surface waters from upstream publicly owned treatment works.*

(2) The discharge shall be considered adequately oxidized if the 5-day @ 20°C Biochemical Oxygen Demand and Total Suspended Solids constituent concentrations of the discharge are less than or equal to the limitations shown in IV.A.4.a., above.

c. The monthly average biochemical oxygen demand and suspended solids concentrations of the discharge shall not be greater than fifteen percent (15%) of the monthly average influent concentration.

d. The pH of the discharge shall be within 6.5 to 8.5 pH[15].

B. Land Discharge Specifications – Not Applicable

C. Reclamation Specifications – DP 005 through DP 008

1. Upon the effective date of this Order, the use of recycled water for parks, landscape irrigation, and/or other similar uses shall maintain compliance with the following effluent limitations at DP 005 through DP 008 with compliance measured at monitoring locations REC-001 through REC-004, respectively, and where representative samples of recycled water can be obtained for laboratory testing and analysis as described in the attached Monitoring and Reporting Program (Attachment E). The Discharger shall submit for approval by the Executive Officer a list of other monitoring location(s) not specified herein where representative samples of recycled water could be obtained for laboratory testing and analysis.

a. Physical/Biological Limitations:

Table 11. Recycled Water Effluent Limitations

Parameter	Units	Effluent Limitations	
		Average Monthly	Average Weekly
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	20	30
Total Suspended Solids	mg/L	20	30

b. TDS Limitations: The following TDS limitations apply to recycled water uses, except groundwater recharge, that would affect underlying local Groundwater Management Zone(s). These limitations may be met on an agency-wide basis using flow-weighted averages of the discharges from the Discharger's RP-1, RP-4, RP-5 and CCWRF.

15 *See Section VII.K. Compliance Determination*

(1) If maximum benefit is demonstrated (see Provisions VI.C.6.), the 12-month flow weighted running average total dissolved solids concentration shall not exceed 550 mg/L.

(2) If maximum benefit is not demonstrated (see Provisions VI.C.6.), the 12-month flow weighted running average total dissolved solids concentration shall not exceed the following:

Table 12. Recycled Water Effluent TDS Limitations

Groundwater Management Zone	TDS limit, mg/L
Chino 1	280
Chino 2	250
Chino 3	260

c. Recycled water described in Section 60307(a) of Division 4, Chapter 3, Title 22, California Code of Regulations and for irrigation of food crops, parks and playground, school yards, residential landscaping and other irrigation uses not specified in Section 60304(a) of Division 4, Chapter 3, Title 22, California Code of Regulations or not prohibited in other Sections of the California Code of Regulations shall at all times be adequately oxidized, filtered, and disinfected tertiary treated wastewater and shall meet the following limitations:

(1) The turbidity of the filter effluent when filtration is through natural undisturbed soils or a bed of filter media shall not exceed any of the following:

(a) Average of 2 Nephelometric Turbidity Units (NTU) within any 24-hour period;
(b) 5 NTU more than 5 percent of the time in any 24-hour period; and
(c) 10 NTU at any time.

(2) The disinfected effluent shall meet the following:

(a) The weekly average total coliform bacteria[16] shall not exceed a Most Probable Number (MPN) of 2.2 total coliform bacteria per 100 milliliters (ml).
(b) The number of total coliform organism shall not exceed an MPN of 23 total coliform bacteria per 100 ml in more than one sample in any 30-day period.
(c) No total coliform sample shall exceed an MPN of 240 total coliform bacteria per 100 ml.

[16] *See Compliance Determination Section VII.J.1.*

(d) A chlorine disinfection process following filtration that provides a CT (the product of total chlorine residual and modal contact time[17] measured at the same point) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow.

d. Recycled water used for irrigation of food crops where the edible portion is produced above ground and not contacted by the recycled water shall at all times be adequately oxidized and disinfected so that average weekly total coliform bacteria in the disinfected effluent does not exceed a most probable number (MPN) of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform bacteria does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30-day period.

e. Recycled water used for the uses listed below shall be an oxidized and disinfected water so that the average weekly total coliform bacteria[18] in the disinfected effluent does not exceed a most probable number (MPN) of 23 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform bacteria does not exceed an MPN of 240 per 100 milliliters in more than one sample in any 30 day period.

(1) Industrial boiler feed, nonstructural fire fighting, backfill consolidation around nonpotable piping, soil compaction, mixing concrete, dust control on roads and streets, cleaning roads, sidewalks and outdoor work areas and industrial process water that will not come into contact with workers.
(2) Irrigation of cemeteries, freeway landscaping, restricted access golf courses, ornamental nursery stock and sod farms where access by the general public is not restricted, pasture for animals producing milk for human consumption, and any nonedible vegetation where access is controlled so that irrigated area cannot be used as if it were part of a park, playground or school yard.

f. For recycled water uses specified in Sections 60304 and 60307 of Title 22 where filtration is provided pursuant Section 60301.320(a) and coagulation is not used as part of the treatment process, the Discharger shall comply with the following:

(1) The turbidity of the influent to the filters is continuously measured and the influent turbidity does not exceed 5 NTU for more than 15 minutes and never exceeds 10 NTU;
(2) The filtered wastewater turbidity shall not exceed 2 NTU within any 24-hour period; and;

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[17] *Modal contact time and CT shall be calculated daily based on the minimum one-hour average value in a 24-hour period.*

[18] *See Compliance Determination Section VII.J.2.*

(3) Should the filter influent turbidity exceed 5 NTU for more than 15 minutes, chemical addition shall be automatically activated if available, if not, the wastewater shall be diverted.

2. For new reuse sites, the use of recycled water shall only commence after the California Department of Public Health (CDPH) grants final approval for such use. The Discharger shall provide the Regional Water Board with a copy of the CDPH approval letter within 30 days of the approval notice.

3. The Discharger shall be responsible for assuring that recycled water is delivered and utilized in conformance with this Order, the recycling criteria contained in Title 22, Division 4, Chapter 3, Sections 60301 through 60355, California Code of Regulations. The Discharger shall conduct periodic inspections of the facilities of the recycled water users to monitor compliance by the users with this Order.

4. The Discharger shall establish and enforce Rules and Regulations for Recycled Water users, governing the design and construction of recycled water use facilities and the use of recycled water in accordance with the uniform statewide recycling criteria established pursuant to the California Water Code Section 13521.

   a. Use of recycled water by the Discharger shall be consistent with its Rules and Regulations for Recycled Water Use.

   b. Any revisions made to the Rules and Regulations shall be subject to the review of the Regional Water Board, the California Department of Public Health, and the County Environmental Health Department. The revised Rules and Regulations or a letter certifying that the Discharger's Rules and Regulations contain the updated provisions in this Order, shall be submitted to the Regional Water Board within 60 days of adoption of this Order by the Regional Water Board.

5. The Discharger shall, within 60 days of the adoption of this Order, review and update as necessary its program to conduct compliance inspections of recycled water reuse sites. Inspections shall determine the status of compliance with the Discharger's Rules and Regulations for Recycled Water Use.

6. The storage, delivery, or use of recycled water shall not individually or collectively, directly or indirectly, result in a pollution or nuisance, or adversely affect water quality, as defined in the California Water Code.

7. Prior to delivering recycled water to any new user, the Discharger shall submit to the California Department of Public Health and the County Environmental Health Department a report containing the following information for review and approval:

   a. The average number of persons estimated to be served at each use site area on a daily basis.

b. The specific boundaries of the proposed use site area including a map showing the location of each facility, drinking water fountain, and impoundment to be used.

c. The person or persons responsible for operation of the recycled water system at each use area.

d. The specific use to be made of the recycled water at each use area.

e. The methods to be used to assure that the installation and operation of the recycled system will not result in cross connections between the recycled water and potable water piping systems. This shall include a description of the pressure, dye or other test methods to be used to test the system.

f. Plans and specifications which include following:
(1) Proposed piping system to be used.
(2) Pipe locations of both the recycled and potable systems.
(3) Type and location of the outlets and plumbing fixtures that will be accessible to the public.
(4) The methods and devices to be used to prevent backflow of recycled water into the potable water system.
(5) Plan notes relating to specific installation and use requirements.

8. The Discharger shall require the user(s) to designate an on-site supervisor responsible for the operation of the recycled water distribution system within the recycled water use area. The supervisor shall be responsible for enforcing this Order, prevention of potential hazards, the installation, operation and maintenance of the distribution system, maintenance of the distribution and irrigation system plans in "as-built" form, and for the distribution of the recycled wastewater in accordance with this Order.

9. Recycled water shall at all times be maintained within the property lines of any user. There shall be no direct or indirect discharge of recycled water into drainage systems that could affect surface water quality standards.

D. Stormwater Discharge Specifications – S-001 and S-002

1. Storm water[19] discharges shall maintain compliance with the following effluent limitations at S-001 and S-002 with compliance measured at monitoring locations STORM-001 and STORM-002 and shall not:

a. Cause or contribute to a violation of any applicable water quality standards contained in the Basin Plan or in the State or Federal regulations.

b. Cause or threaten to cause pollution, contamination, or nuisance.

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[19] *Storm water means storm water runoff and surface runoff and drainage.*

c. Contain a hazardous substance equal to or in excess of a reportable quantity listed in 40 CFR Part 117 and/or 40 CFR Part 302.

d. Adversely impact human health or the environment.

e. Result in noncompliance with the lawful requirements of municipalities, counties, drainage districts, and other local agencies on storm water discharges into storm drain systems or other courses under their jurisdiction.

2. Stormwater discharges from this Facility shall comply with the Stormwater Requirements in Attachment J and K.

3. The Discharger must update and implement the Storm Water Pollution Prevention Plan for the Facility in accordance with Attachment J of this Order.

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

1. Receiving water limitations are based upon water quality objectives contained in the Basin Plan. As such, they are a required part of this Order. The discharge shall not cause the following in Prado Park Lake, Reach 1 of Cucamonga Creek, Reaches 1A, 1B and 2 of Chino Creek or Reach 3 of the Santa Ana River and downstream reaches:

   a. Coloration of the receiving waters, which causes a nuisance or adversely affects beneficial uses.

   b. Deposition of oil, grease, wax or other materials in the receiving waters in concentrations which result in a visible film or in coating objects in the water, or which cause a nuisance or affect beneficial uses.

   c. An increase in the amounts of suspended or settleable solids in the receiving waters, which will cause a nuisance or adversely affect beneficial uses as a result of controllable water quality factors.

   d. Taste or odor-producing substances in the receiving waters at concentrations, which cause a nuisance or adversely affect beneficial uses.

   e. The presence of radioactive materials in the receiving waters in concentrations, which are deleterious to human, plant or animal life.

   f. The depletion of the dissolved oxygen concentration below 5.0 mg/L.

   g. The temperature of the receiving waters to be raised above 90°F (32°C) during the period of June through October, or above 78°F (26°C) during the rest of the year.

h. The concentration of pollutants in the water column, sediments, or biota to adversely affect the beneficial uses of the receiving water. The discharge shall not result in the degradation of inland surface water communities and populations, including vertebrate, invertebrate, and plant species.

2. The discharge of wastes shall not cause a violation of any applicable water quality standards for receiving waters adopted by the Regional Water Board or State Water Board, as required by the Clean Water Act and regulations adopted thereunder.

3. Pollutants not specifically mentioned and limited in this Order shall not be discharged at levels that will bioaccumulate in aquatic resources to levels, which are harmful to human health or animal life.

4. The discharge shall not contain constituent concentrations of mercury that will result in the bioaccumulation of methylmercury in fish flesh tissue greater than 0.3 milligram methylmercury/kilogram. (See also Section VI.C.1.e. and VI.C.2.a., below).

B. Groundwater Limitations

The use of recycled water shall not cause the underlying groundwater to be degraded, to exceed water quality objectives, unreasonably affect beneficial uses, or cause a condition of pollution or nuisance.

VI. PROVISIONS

A. Standard Provisions

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

2. The Discharger shall comply with the following provisions:

   a. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this Facility, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Discharger to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.

b. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, discharge limitations (e.g., maximum daily effluent limitation), or receiving water limitation of this Order, the Discharger shall notify the Regional Water Board by telephone (951) 782-4130 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Regional Water Board waives confirmation. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and, prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the normal monitoring report.

c. Neither the treatment nor the discharge of pollutants shall create a pollution, contamination, or nuisance as defined by Section 13050 of the CWC.

d. The Discharger shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this Order, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the noncomplying discharge.

e. This Order may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following:

   (1) Violation of any terms or conditions of this Order;
   (2) Obtaining this Order by misrepresentation or failure to disclose fully all relevant facts, or;
   (3) In addition to any other grounds specified herein, this Order may be modified or revoked at any time if, on the basis of any data, the Regional Water Board determines that continued discharges may cause unreasonable degradation of the aquatic environment.

f. If an effluent standard or discharge prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307 (a) of the Clean Water Act for a toxic pollutant which is present in the discharge, and such standard or prohibition is more stringent than any limitation for that pollutant in this Order, this Order may be modified or revoked and reissued to conform to the effluent standard or discharge prohibition.

g. The Discharger shall file with the Regional Water Board a Report of Waste Discharge at least 180 days before making any material change in the character, location, or volume of the discharge. A material change includes, but is not limited to, the following:

   (1) Adding a major industrial waste discharge to a discharge of essentially domestic sewage, or adding a new process or product by an industrial facility resulting in a change in the character of the waste.
   (2) Significantly changing the disposal method or location, such as changing the disposal to another drainage area or water body.
   (3) Significantly changing the method of treatment.
   (4) Increasing the treatment plant design capacity beyond that specified in this Order.

h. The provisions of this Order are severable, and if any provision of this Order, or the application of any provision of this Order to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Order, shall not be affected thereby.

i. The Discharger shall maintain a copy of this Order at the site so that it is available to site operating personnel at all times. Key operating personnel shall be familiar with its content.

j. The Discharger shall optimize chemical additions needed in the treatment process to meet waste discharge requirements so as to minimize total dissolved solid increases in the treated wastewater.

k. Collected screenings, sludge, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Regional Water Board's Executive Officer.

l. The Discharger has demonstrated a correlation between the biological oxygen demand (BOD_5) and total organic carbon (TOC) concentrations in the effluent to the satisfaction of the Executive Officer. Therefore, compliance with the BOD_5 limits and monitoring requirements contained in this Order may be determined based on analyses of the TOC of the effluent.

m. In the event of any change in control or ownership of land or waste discharge facility presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be forwarded to the Regional Water Board.

n. The treatment facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

B. Monitoring and Reporting Program (MRP) Requirements

The Discharger shall comply with the MRP, and future revisions thereto, in Attachment E of this Order. This monitoring and reporting program may be modified by the Executive Officer at any time during the term of this Order, and may include an increase in the number of parameters to be monitored, the frequency of the monitoring or the number and size of samples to be collected. Any increase in the number of parameters to be monitored, the frequency of the monitoring or the number and size of samples to be collected may be reduced back to the levels specified in the original monitoring and reporting program at the discretion of the Executive Officer.

C. Special Provisions

1. Reopener Provisions

a. This Order will be reopened to address any changes in State or federal plans, policies or regulations that would affect the quality requirements for the discharges.

b. This Order may be reopened to include effluent limitations for pollutants determined to be present in the discharge in concentrations that pose a reasonable potential to cause or contribute to violations of water quality standards.

c. This Order may be reopened and modified in accordance with the requirements set forth at 40 CFR 122 and 124, to include the appropriate conditions or limits to address demonstrated effluent toxicity based on newly available information, or to implement any EPA-approved new State water quality standards applicable to effluent toxicity.

d. This Order may be reopened for modification, or revocation and reissuance, as a result of the detection of a reportable priority pollutant generated by special conditions included in this Order. These special conditions may be, but are not limited to, fish tissue sampling, whole effluent toxicity, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in this Order as a result of the special condition monitoring data.

e. This Order may be reopened to include an appropriate bioaccumulation based effluent limit for mercury if test results (as required in Attachment E of this Order) show that the concentration levels of methylmercury in the fish tissue are at or above 0.3 milligrams per kilogram.

f. This Order may be reopened to incorporate appropriate biosolids requirements if the State Water Resources Control Board and the Regional Water Quality Control Board are given the authority to implement regulations contained in 40 CFR 503.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. By September 1, 2009, the Discharger shall notify the Executive Officer of its continuous involvement with the comprehensive mercury investigation program currently being conducted by a group of Santa Ana River system dischargers. If the Discharger discontinues its involvement with this comprehensive program, the Discharger shall, within 60 days of that date, submit for the approval of the Executive Officer its plan for the annual testing of mercury levels in fish flesh samples collected from the Santa Ana River, upstream of, at, and downstream of the point of the discharge point. Upon approval, the Discharger shall implement the plan.

b. Toxicity Reduction Requirements.

(1) The Discharger shall develop an Initial Investigation Toxicity Reduction Evaluation (IITRE) work plan that describes the steps the Discharger intends to follow if required by Toxicity Requirements b.(2), below. The work plan shall include at a minimum:

(a) A description of the investigation and evaluation techniques that will be used to identify potential causes/sources of the exceedance, effluent variability, and/or efficiency of the treatment system in removing toxic substances. This shall include a description of an accelerated chronic toxicity testing program.

(b) A description of the methods to be used for investigating and maximizing in-house treatment efficiency and good housekeeping practices.

(c) A description of the evaluation process to be used to determine if implementation of a more detailed TRE\TIE is necessary.

(2) The Discharger shall implement the IITRE work plan whenever the results of chronic toxicity tests of the effluent exceed:

(a) A two month median value of 1.0 TUc for survival or reproduction endpoint or,
(b) Any single test value of 1.7 TUc for survival endpoint.

(3) The Discharger shall develop a detailed Toxicity Reduction Evaluation and Toxicity Identification Evaluation (TRE/TIE) work plan that shall describe the steps the Discharger intends to follow if the implemented IITRE fails to identify the cause of, or to rectify, the toxicity.

(4) The Discharger shall use as guidance, at a minimum, EPA manuals EPA/600/2-88/070 (industrial), EPA/600/4-89-001A (municipal), EPA/600/6-91/005F (Phase I), EPA/600/R-92/080 (Phase II), and EPA-600/R-92/081 (Phase III) to identify the cause(s) of toxicity. If during the life of this Order the aforementioned EPA manuals are revised or updated, the revised/updated manuals may also be used as guidance. The detailed TRE/TIE work plan shall include:

(a) Further actions to investigate and identify the cause of toxicity;
(b) Actions the Discharger will take to mitigate the impact of the discharge and to prevent the recurrence of toxicity; and
(c) A schedule for these actions.

(5) The Discharger shall implement the TRE/TIE workplan if the IITRE fails to identify the cause of, or rectify, the toxicity, or if in the opinion of the Executive Officer the IITRE does not adequately address an identified toxicity problem.

(6) The Discharger shall assure that adequate resources are available to implement the required TRE/TIE.

3. Best Management Practices and Pollution Prevention

a. Pollutant Minimization Program

(1) The Discharger shall develop and conduct a Pollutant Minimization Program (PMP) as further described below when there is evidence (e.g., sample results reported as DNQ when the effluent limitation is less than the 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:

(a) A sample result is reported as DNQ and the effluent limitation is less than the RL; or
(b) A sample result is reported as ND and the effluent limitation is less than the MDL.

(2) The PMP shall include, but not be limited to, the following actions and submittals acceptable to the Regional Water Board:

(a) An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling;

(b) Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system;

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

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

(e) An annual status report that shall be sent to the Regional Water Board including:

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.

4. Construction, Operation and Maintenance Specifications

a. The Discharger's wastewater treatment plants shall be supervised and operated by persons possessing certificates of appropriate grade pursuant to Title 23, Division 3, Chapter 14, California Code of Regulations.

b. The Discharger shall provide safeguards to assure that should there be reduction, loss, or failure of electric power, the Discharger will comply with the requirements of this Order.

c. The Discharger shall update as necessary, the "Operation and Maintenance Manual(s) (O&M Manual)" which it has developed for the treatment facilities to conform to latest plant changes and requirements. The O&M Manual(s) shall be readily available to operating personnel onsite. The O&M Manual(s) shall include the following:

(1) Description of the treatment plant table of organization showing the number of employees, duties and qualifications and plant attendance schedules (daily, weekends and holidays, part-time, etc). The description should include documentation that the personnel are knowledgeable and qualified to operate the treatment facility so as to achieve the required level of treatment at all times.
(2) Detailed description of safe and effective operation and maintenance of treatment processes, process control instrumentation and equipment.
(3) Description of laboratory and quality assurance procedures.
(4) Process and equipment inspection and maintenance schedules.
(5) Description of safeguards to assure that, should there be reduction, loss, or failure of electric power, the Discharger will be able to comply with requirements of this Order.
(6) Description of preventive (fail-safe) and contingency (response and cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. These plans shall identify the possible sources (such as loading and storage areas, power outage, waste treatment unit failure, process equipment failure, tank and piping failure) of accidental discharges, untreated or partially treated waste bypass, and polluted drainage.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Sewer Collection System Requirements: The Discharger’s collection system is part of the system that is subject to this Order. As such, the Discharger must properly operate and maintain its collection system (40 C.F.R. § 122.41(e)). The Discharger must report any non-compliance (40 C.F.R. § 122.41(l)(6) and (7)) and mitigate any discharge from the collection system in violation of this Order (40 C.F.R. § 122.41(d)). See the Order at Standard Provision VI.A.2.b. and Attachment D, subsections I.D, V.E, V.H, and I.C.

Furthermore, the General Waste Discharge Requirements for Collection System Agencies (Order No. 2006-0003 DWQ) contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. While the Discharger must comply with both Order No. 2006-0003 DWQ and this Order, the General Collection System WDR more clearly and specifically stipulates requirements for operation and maintenance and for reporting and mitigating sanitary sewer overflows. The Discharger and other governmental agencies that are discharging wastewater into the facility are required to obtain enrollment for regulation under Order No. 2006-0003-DWQ.

b. Sludge Disposal Requirements

(1) Collected screenings, sludge, and other solids removed from liquid wastes shall be disposed of in a manner that is consistent with State Water Board and Integrated Waste Management Board's joint regulations (Title 27) of the California Code of Regulations and approved by the Regional Water Board's Executive Officer.
(2) The use and disposal of biosolids shall comply with existing Federal and State laws and regulations, including permitting requirements and technical standards included in 40 CFR 503.
(3) Any proposed change in biosolids use or disposal practice from a previously approved practice should be reported to the Executive Officer and EPA Regional Administrator at least 90 days in advance of the change.
(4) The Discharger shall take all reasonable steps to minimize or prevent any discharge or biosolids use or disposal that has the potential of adversely affecting human health or the environment.

c. Pretreatment Program

(1) The Discharger shall update as necessary and implement an acceptable pretreatment program.

(2) The Discharger shall update as necessary the appropriate contractual agreements with all governmental agencies[20]. The contractual agreements shall give the Discharger the authority to implement and enforce the approved pretreatment program within the sewer service areas of the treatment Facility. The Discharger shall assure that any other steps necessary to provide this implementation and enforcement authority (e.g. adoption of ordinances, etc.) are taken by all governmental agencies. If a governmental agency has an EPA approved pretreatment program for any portion of the service area of the treatment facility, the Discharger's pretreatment program shall contain provisions ensuring that that governmental agency's program is implemented. In the event that any agency discharging to Discharger's facility fails to effectively implement its individual EPA approved pretreatment program, the Discharger shall implement and enforce its approved program within that agency's service area.

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[20] *Member agencies and sewering agencies discharging wastewater into the Facility.*

(3) The Discharger shall ensure that the POTW[21] pretreatment program for all contributory agencies discharging to the Discharger's treatment facility are implemented and enforced. The Discharger shall be responsible and liable for the performance of all Control Authority pretreatment requirements contained in 40 CFR 403, including any subsequent regulatory revisions to Part 403. Where Part 403 or subsequent revisions place mandatory actions upon the Discharger as Control Authority but does not specify a timetable for completion of the actions, the Discharger shall submit for approval of the Regional Water Board's Executive Officer, a schedule for implementation of the required actions and shall implement the approved schedule. The schedule for implementation shall be submitted within six months from the date that such mandatory actions are established. For violations of pretreatment requirements, the Discharger shall be subject to enforcement actions, penalties, fines and other remedies by the EPA, or other appropriate parties, as provided in the CWA, as amended (33 USC 1351 et seq.). The EPA or the Regional Water Board may also initiate enforcement action against an industrial user (IU) for non-compliance with applicable standards and requirements as provided in the CWA.

(4) The Discharger shall perform the pretreatment functions as required in 40 CFR Part 403 including, but not limited to:

(a) Enforce the pretreatment requirements under 40 CFR 403.5 and 403.6;

(b) Implement the necessary legal authorities as provided in 40 CFR 403.8(f)(1);

(c) Implement the programmatic functions as provided in 40 CFR 403.8(f)(2);

(d) Publish a list of significant non-compliance as required by 40 CFR 403.8(f)(2)(vii); and

(e) Provide the requisite funding and personnel to implement the pretreatment program as provided in 40 CFR 403.8(f)(3).

(5) The following wastes shall not be introduced into the treatment works:

(a) Wastes which create a fire or explosion hazard in the treatment works;

(b) Wastes which will cause corrosive structural damage to treatment works, but, in no case, wastes with a pH lower than 5.0 unless the works are designed to accommodate such wastes;

[21] *Publicly owned treatment works.*

(c) Wastes at a flow rate and/or pollutant discharge rate which is excessive over relatively short time periods so that there is a treatment process upset and subsequent loss of treatment efficiency;

(d) Solid or viscous wastes in amounts that would cause obstruction to the flow in sewers or otherwise interfere with the proper operation of the treatment works.

(6) The Discharger shall ensure compliance with any existing or future pretreatment standard promulgated by EPA under Section 307 of the CWA or amendments thereto for any discharge to the municipal system.

(7) The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants 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.

(8) The Discharger shall require each user not in compliance with any pretreatment standard to submit periodic notice (over intervals not to exceed nine months) of progress toward compliance with applicable toxic and pretreatment standards developed pursuant to the CWA or amendments thereto. The Discharger shall forward a copy of such notice to the Regional Water Board and to the EPA Regional Administrator.

(9) The Discharger shall operate the wastewater collection system under a comprehensive industrial pretreatment and pollutant control program for the control of discharge of toxic wastes from point sources. If the California Department of Health Services identifies any contaminants that may pose a risk of contamination to a drinking water supply, it may designate those contaminants for inclusion in the pretreatment and source control program requirements for IEUA to minimize the possibility that the influent wastewater to RP-1 and RP-4 will be contaminated with such toxic chemicals. The source control program shall include:

(a) An assessment of the fate of the specified contaminant compounds through the wastewater and recycled water treatment systems.

(b) A source investigation and monitoring program focused on the specified contaminants.

(c) An outreach program to industrial, commercial and residential communities within the sewage collection agency's service area to manage and minimize the discharge of compounds of concern at the source.

(d) A proactive program for maintaining an inventory of compounds discharged into the wastewater collection system so that new compounds of concern can be evaluated rapidly.

6. Other Special Provisions

a. As necessary based on the consideration of evidence regarding the implementation of the maximum benefit commitments shown in Attachment L , the Regional Water Board will be asked to make a determination of whether those commitments are being satisfied. If the Regional Water Board finds that the maximum benefit commitments are not being satisfied, then the Discharger shall implement a mitigation program approved by the Regional Water Board for recycled water use in the Chino 1, 2 or 3 Groundwater Management Zones using recycled water in excess of the limitations applicable to the Groundwater Management Zones (Sections IV.A.1.c. and IV.A.1.d., and Sections IV.C.1.b.). A proposed mitigation plan and schedule shall be submitted within 60-days of notification by the Regional Water Board Executive Officer of the need to do so. The Discharger shall implement the plan and schedule upon approval by the Regional Water Board.

7. Compliance Schedules – Not Applicable

VII. COMPLIANCE DETERMINATION

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

A. General.

Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined in the MRP and Attachment A of this Order. 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).

B. Multiple Sample Data.

When determining compliance with an AMEL or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of “Detected, but Not Quantified” (DNQ) or “Not Detected” (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

1. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

2. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

C. Average Monthly Effluent Limitation (AMEL).

If the average (or when applicable, the median determined by subsection B above for multiple sample data) of daily discharges over a calendar month exceeds the AMEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month). If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the Discharger will be considered out of compliance for that calendar month. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

D. Average Weekly Effluent Limitation (AWEL).

If the average or when applicable, the median determined by subsection B above for multiple sample data of daily discharges over a calendar week exceeds the AWEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that week for that parameter, resulting in 7 days of non-compliance. If only a single sample is taken during the calendar week and the analytical result for that sample exceeds the AWEL, the Discharger will be considered out of compliance for that calendar week. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar week during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar week.

E. Maximum Daily Effluent Limitation (MDEL).

If a daily discharge or when applicable, the median determined by subsection B above for multiple sample data of a daily discharge exceeds the MDEL for a given parameter, the Discharger will be considered out of compliance for that parameter for that 1 day only within the reporting period. For any 1 day during which no sample is taken, no compliance determination can be made for that day.

F. Instantaneous Minimum Effluent Limitation.

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

G. Instantaneous Maximum Effluent Limitation.

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

H. 12-Month Running Average Effluent Limitation (12-MRAEL).

Compliance with the 12-month flow weighted running average limits under Discharge Specification IV.A.1.c., IV.A.1.d., and IV.C.1.b. shall be determined by the arithmetic mean of the last twelve monthly averages.

I. Turbidity Limitations.

The Discharger shall be considered in compliance with Discharge Specifications IV.A.1.e.(1) and IV.C.1.c.(1), if the following conditions are met. If the Discharger is using a properly operating backup turbidimeter, the reading of the backup turbidimeter shall be considered in determining whether there has been an actual noncompliance:

1. There are no excursions above the limits specified in Discharge Specifications IV.A.1.e.(1)(a) and (b) and IV.C.1.c.(1)(a) and (b);
2. Exceedances of the “10 NTU at any time” turbidity requirement do not exceed a duration of one minute.
3. The apparent exceedance was caused by interference with, or malfunction of, the monitoring instrument.

J. Coliform Organism Effluent Limitations.

1. Compliance with the average weekly total coliform limit expressed in Discharge Specification IV.A.1.e.(2)(b), IV.C.1.c.(2)(a), and IV.C.1.d. shall be based on a median of test results from the previous 7 days. To comply with the limit, the 7-day median MPN must not exceed 2.2 per 100 milliliters on any day during the week. However, only one violation is recorded for each calendar week, even if the 7-day median MPN value is greater than 2.2 for more than one day in the week.

2. Compliance with the average weekly total coliform limit expressed in Discharge Specification IV.C.1.e. shall be based on a median of test results from the previous 7 days. To comply with the limit, the 7-day median MPN must not exceed 23 per 100 milliliters on any day during the week. However, only one violation is recorded for each calendar week, even if the 7-day median MPN value is greater than 23 for more than one day in the week.

K. pH Effluent Limitations.

Pursuant to 40 CFR 401.17, the Discharger shall be in compliance with the pH limitations specified in the Discharge Specification IV.A.1.g., IV.A.4.d., above, provided that both of the following conditions are satisfied:

1. The total time during which the pH values are outside the required range of 6.5-8.5 pH values shall not exceed 7 hours and 26 minutes in any calendar month; and
2. No individual excursion from the range of pH values shall exceed 60 minutes.

L. TDS Increment Limit.

Compliance with Discharge Specifications IV.A.1.c.(2) shall be based on IEUA's (RP-1, RP- 4, RP-5, and CCWRF) agency-wide flow weighted TDS water supply quality and shall be determined from TDS analysis of secondary treated wastewater. The Discharger shall provide the necessary calculations showing the overall TDS water supply quality.

M. Total Chlorine Residual Limitation (TCR)

Compliance determinations for total chlorine residual shall be based on 99% compliance. To determine 99% compliance with the effluent limitation for total chlorine residual, the following conditions shall be satisfied:

1. For TCR Limit specified in Section IV.A.1. :
   a The total time during which the total chlorine residual values are above 0.1 mg/L (instantaneous maximum value) shall not exceed 7 hours and 26 minutes in any calendar month;
   b No individual excursion from 0.1 mg/L value shall exceed 5 minutes; and
   c No individual excursion shall exceed 5.0 mg/L.

2. For TCR Limit specified in Section IV.A.4.:
   a The total time during which the total chlorine residual values are above 2.1 mg/L (instantaneous maximum value) shall not exceed 7 hours and 26 minutes in any calendar month;
   b No individual excursion from 2.1 mg/L value shall exceed 5 minutes; and
   c No individual excursion shall exceed 10.5 mg/L.

N. Percent Removal

Compliance with the 85 percent average monthly removal requirement (See Effluent Limitations and Discharge Specifications Section IV.A.1.b.)shall be determined for each individual facility (RP-1, RP-4, RP- 5, and CCWRF).

O. Priority Pollutants.

The Discharger shall be deemed out of compliance with an effluent limitation if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation.

1. Compliance determination shall be based on the reporting level selected from minimum level (ML)[22] specified in Attachment H of this Order, unless an alternative reporting level is approved by the Regional Water Board's Executive Officer. When there is more than one ML value for a given substance, the Discharger shall select the ML value that is below the calculated effluent limitation, and use its associated analytical method, listed in Attachment H of this Order. If no ML value is below the effluent limitation, then the Regional Water Board will select as the reporting level the lowest ML value and its associated analytical method.

2. When determining compliance with an average monthly limit and more than one sample result is available in a month, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of detected but not quantified (DNQ) or not detected (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

    a. The data set shall be ranked from low to high, reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

    b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ. If a sample result, or the arithmetic mean or median of multiple sample results, is below the reporting level, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the Discharger conducts a pollutant minimization program (PMP)[23] the Discharger shall not be deemed out of compliance.

P. Non-Priority Pollutants.
The discharge shall be considered to be in compliance with an effluent limitation that is less than or equal to the method detection limit (MDL) specified in 40 CFR 136 if the arithmetic mean of all test results for the monitoring period is less than the constituent effluent limitation. Analytical results that are less than the specified MDL shall be assigned a value of zero.

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[22] *Minimum level is the concentration at which the entire analytical system must give a recognizable signal and acceptable 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.*

[23] *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.*

Q. Compliance Determination

Compliance determinations shall be based on available analyses for the time interval associated with the effluent limitation. Where only one sample analysis is available in a specified time interval (e. g., monthly or weekly average), that sample shall serve to characterize the discharge for the entire interval. If quarterly sample results show noncompliance with the average monthly limit and that sample result is used for compliance determinations for each month of the quarter, then three separate violations of the average monthly limit shall be deemed to have occurred.

Compliance with a single effluent limitation which applies to a group of chemicals (e.g., PCBs), based on a single sample shall be determined by considering the concentrations of individual members of the group to be zero if the analytical response for the individual chemical falls below the method detection limit (MDL) for that chemical.

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:

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): 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.

Best Management Practices (BMPs) are methods, measures, or practices designed and selected to reduce or eliminate the discharge of pollutants to surface waters from point and nonpoint source discharges including storm water. BMPs include structural and non-structural controls, and operation and maintenance procedures, which can be applied before, during, and/or after pollution producing activities.

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.

Criteria Continuous Concentration (CCC) equals the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (4 days) without deleterious effects.

Criteria Maximum Concentration (CMC) equals the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time without deleterious effects.

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

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

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

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

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).

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.

Existing Discharger means any discharger that is not a new discharger. An existing discharger includes an "increasing discharger" (i.e., an existing facility with treatment systems in place for its current discharge that is or will be expanding, upgrading, or modifying its existing permitted discharge after the effective date of the State Implementation Policy).

Infeasible means not capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

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

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

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

Load Allocation (LA) is the portion of receiving water's total maximum daily load that is allocated to one of its non-point sources of pollution or to natural background sources.

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.

Maximum Daily Flow is the maximum flow sample of all samples collected in a calendar day.

MEC: Maximum Effluent Concentration is the observed maximum pollutant concentration for the effluent.

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.

Objectionable Bottom Deposits are an accumulation of materials or substances on or near the bottom of a water body, which creates conditions that adversely impact aquatic life, human health, beneficial uses, or aesthetics. These conditions include, but are not limited to, the accumulation of pollutants in the sediments and other conditions that result in harm to benthic organisms, production of food chain organisms, or fish egg development. The presence of such deposits shall be determined by RWQCB(s) on a case-by-case basis.

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 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 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[1] 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.

Satellite Collection System is the portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility that a sanitary sewer system is tributary to.

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

1 *SIP refers to the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California.*

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

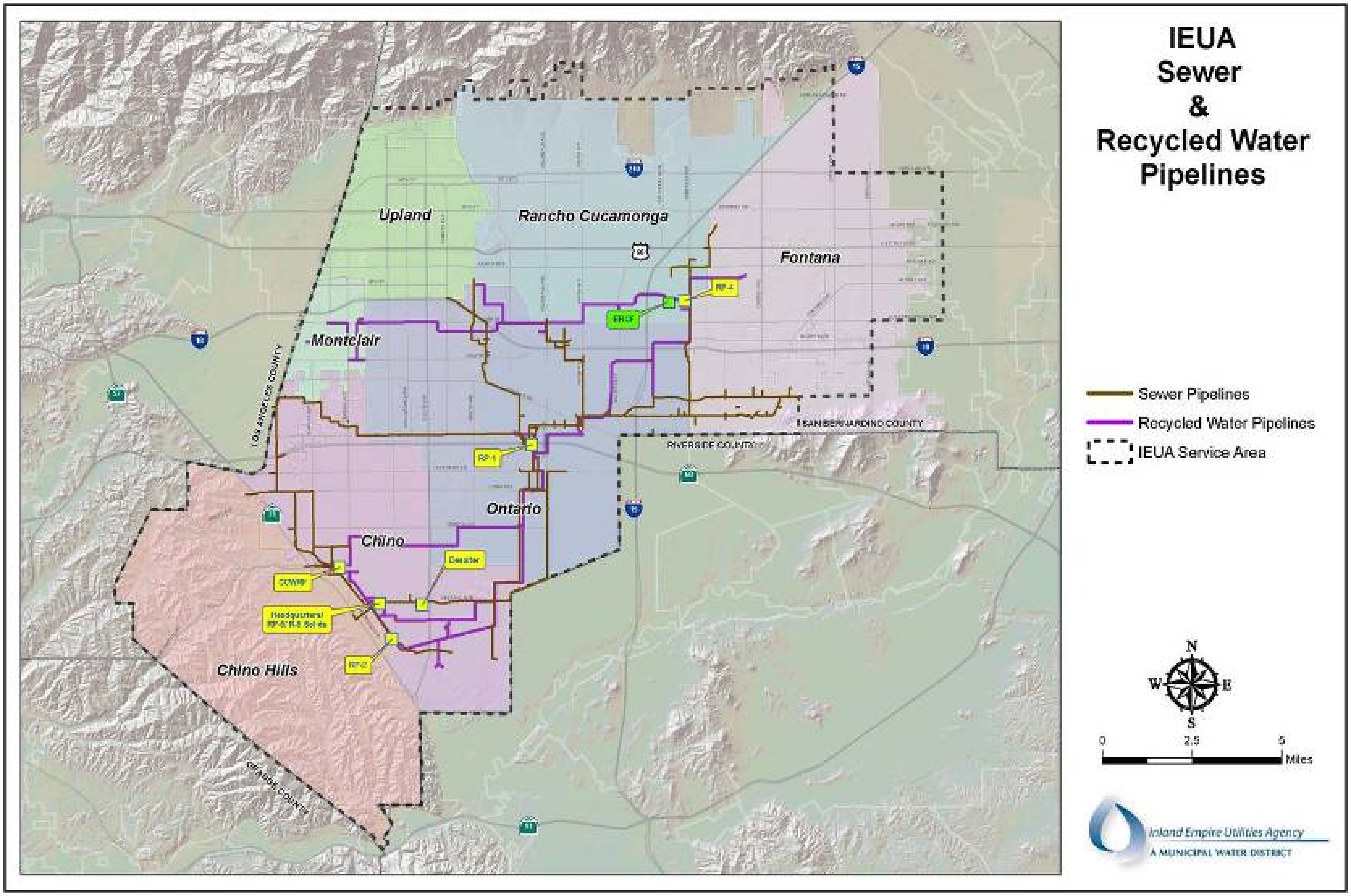
n is the number of samples.

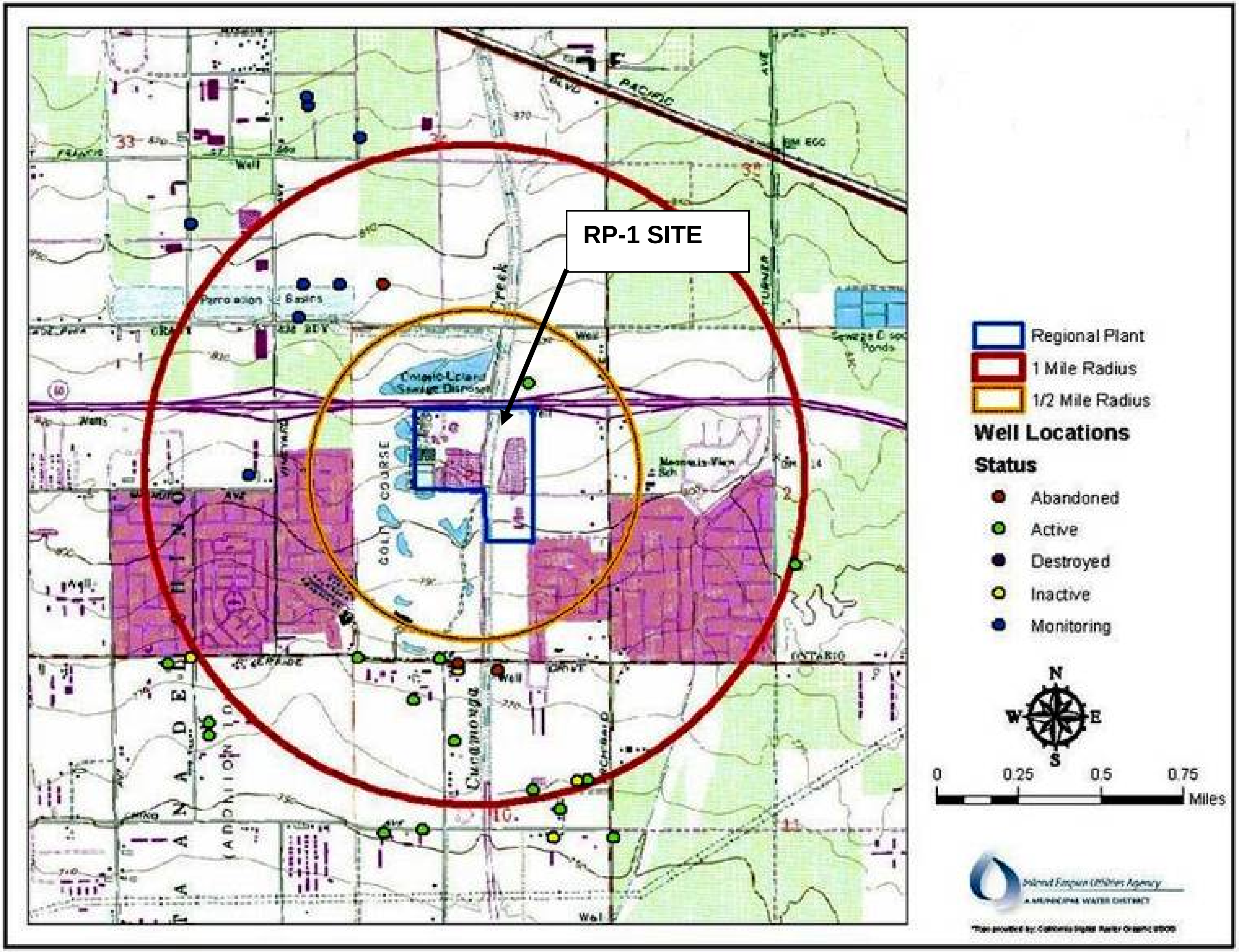
Toxicity Reduction Evaluation (TRE) is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

Water Effect Ratio (WER) is an appropriate measure of the toxicity of a material obtained in a site water divided by the same measure of the toxicity of the same material obtained simultaneously in a laboratory dilution water.

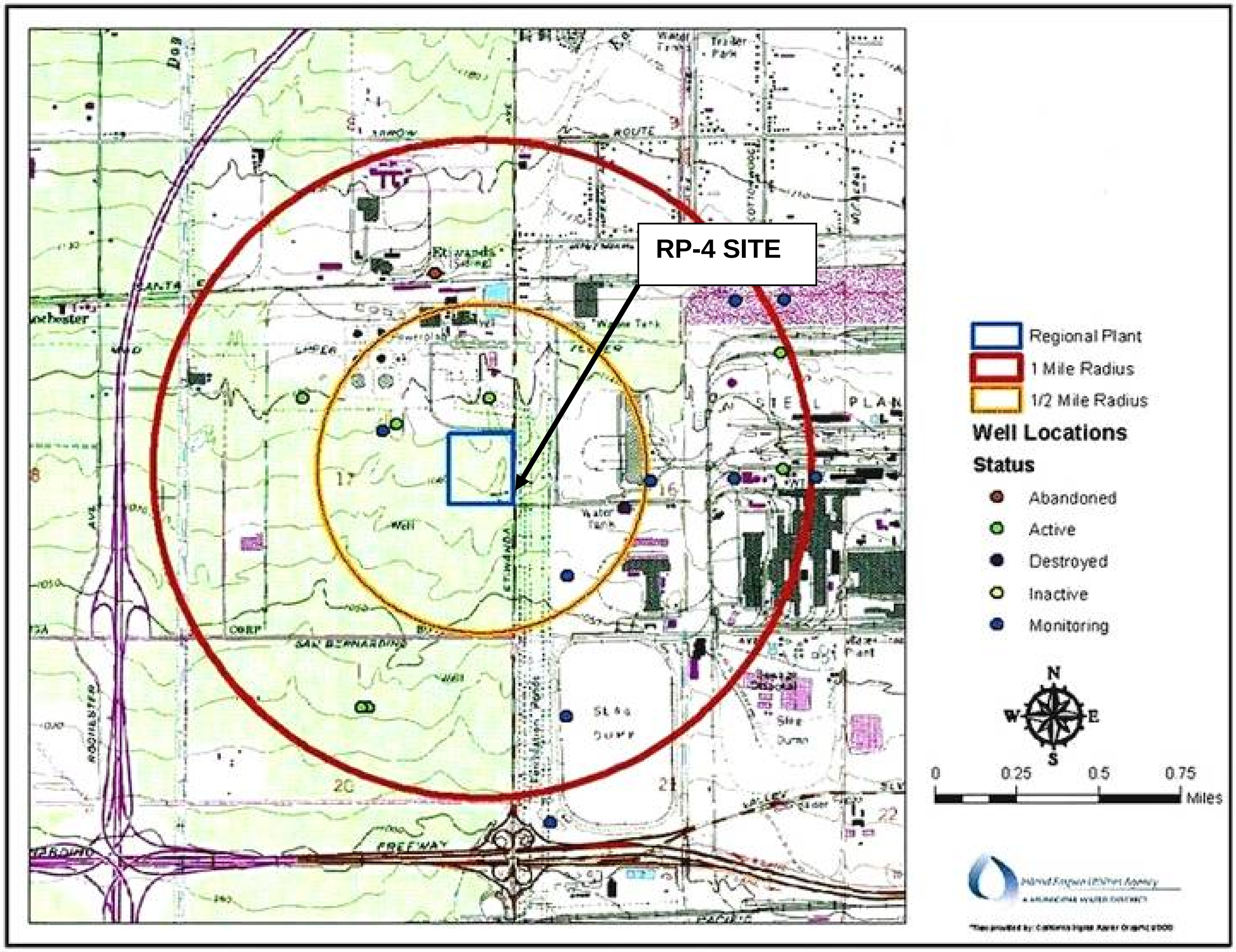
12-Month Running Average Effluent Limitation (12-MRAEL): the highest allowable average of monthly discharges over last twelve months, calculated as the sum of all monthly discharges measured during last twelve months divided by the number of monthly discharges measured during that time period.

ATTACHMENT B – LOCATION

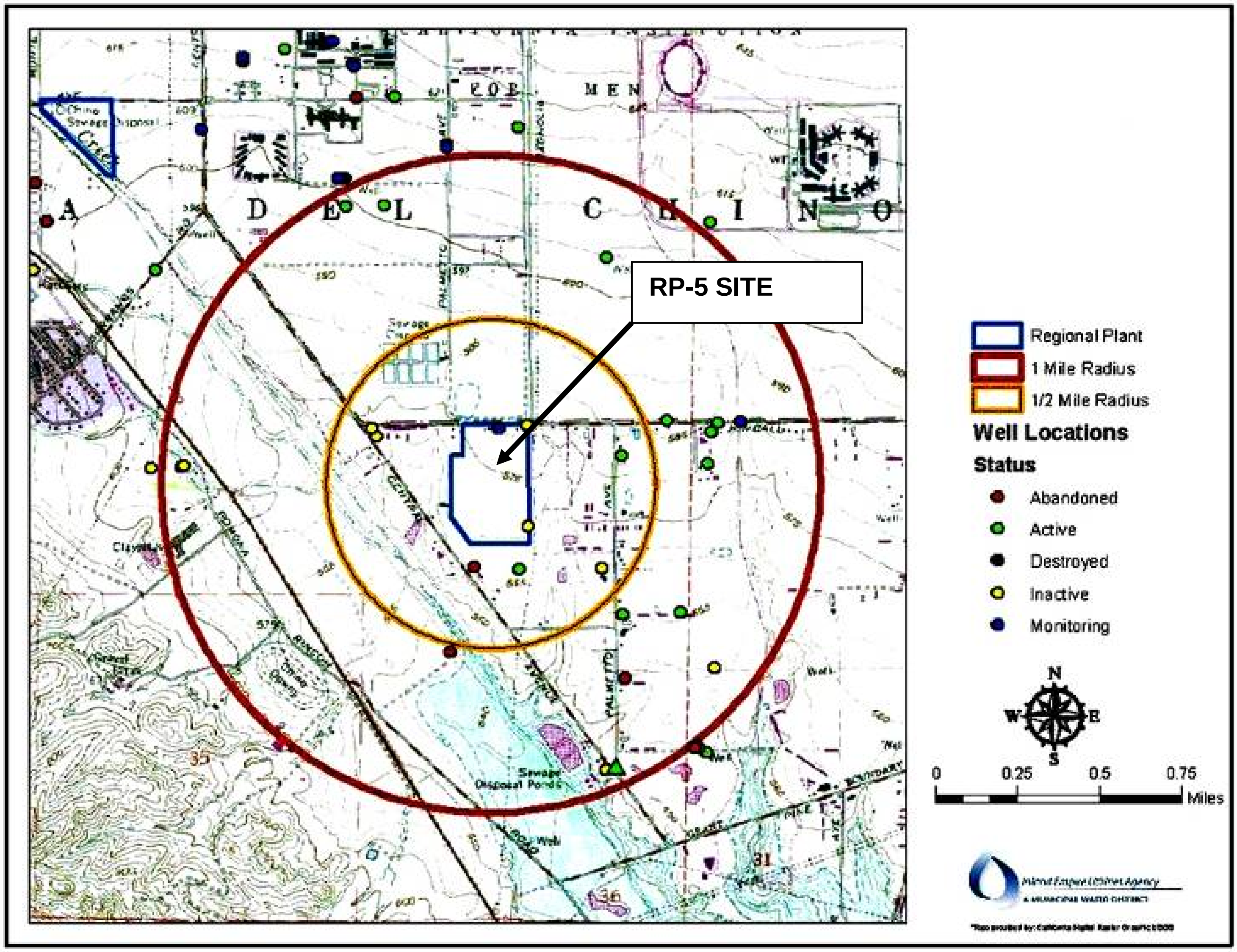




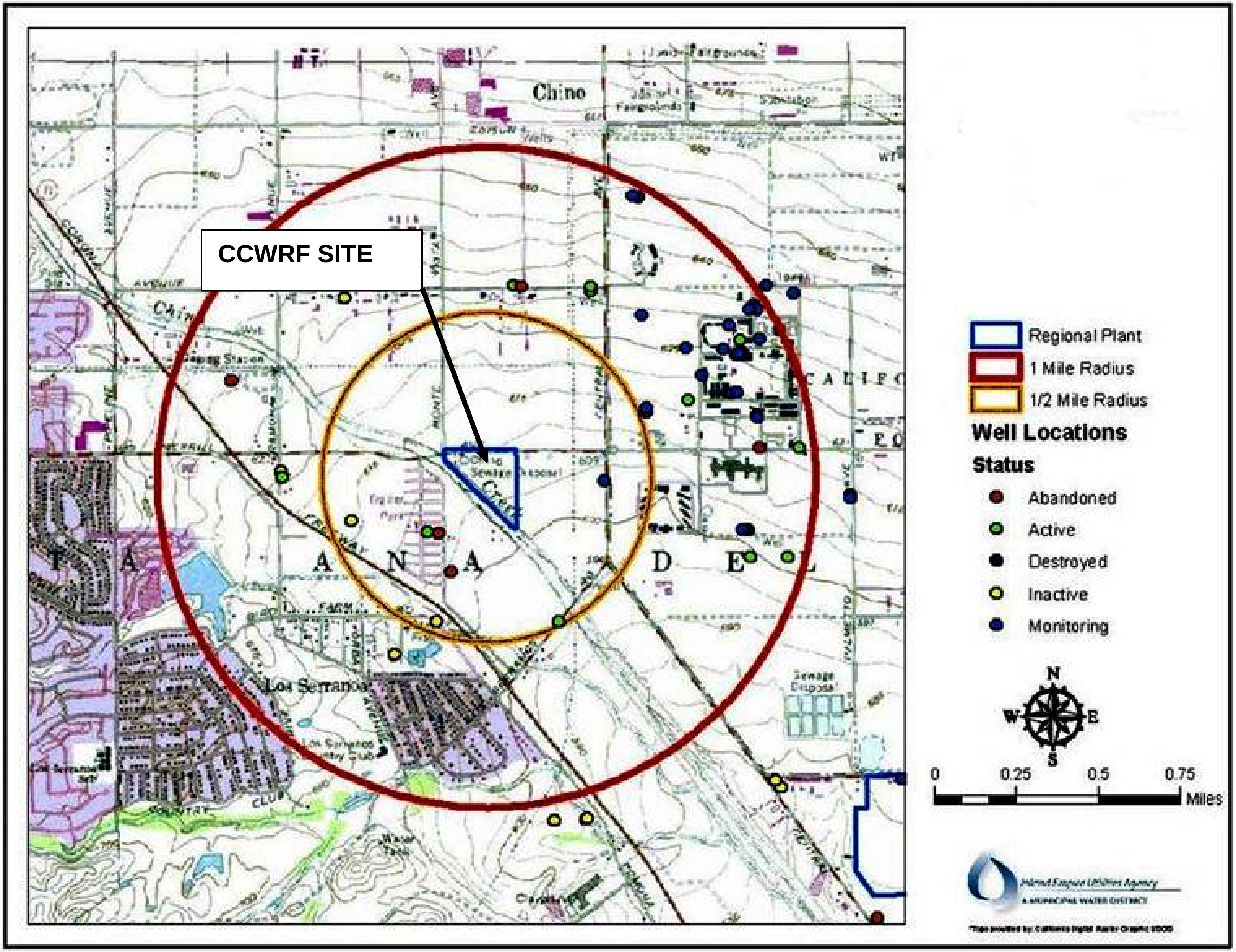
RP-1 LOCATION MAP



RP-4 LOCATION MAP

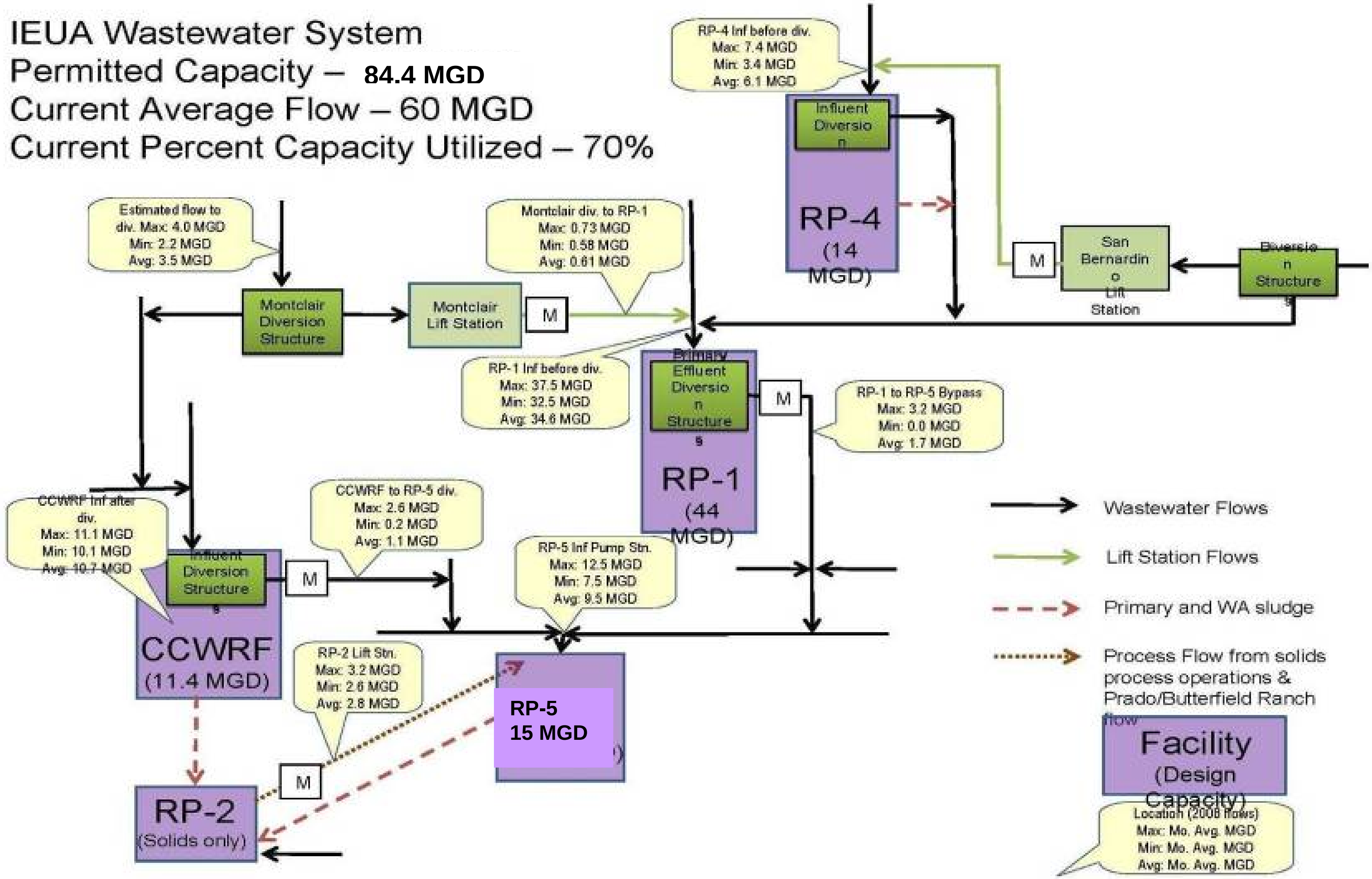


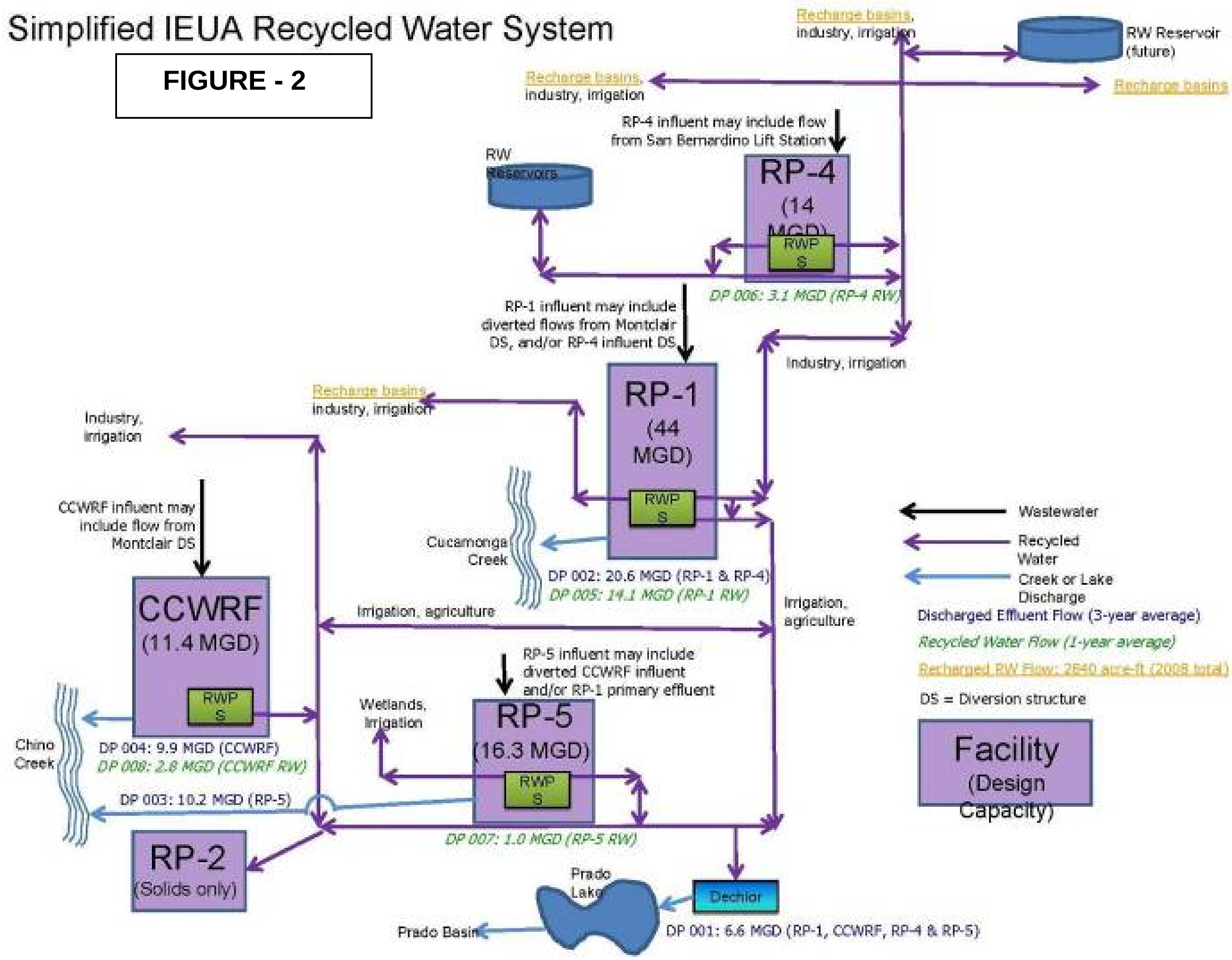
RP-5 LOCATION MAP

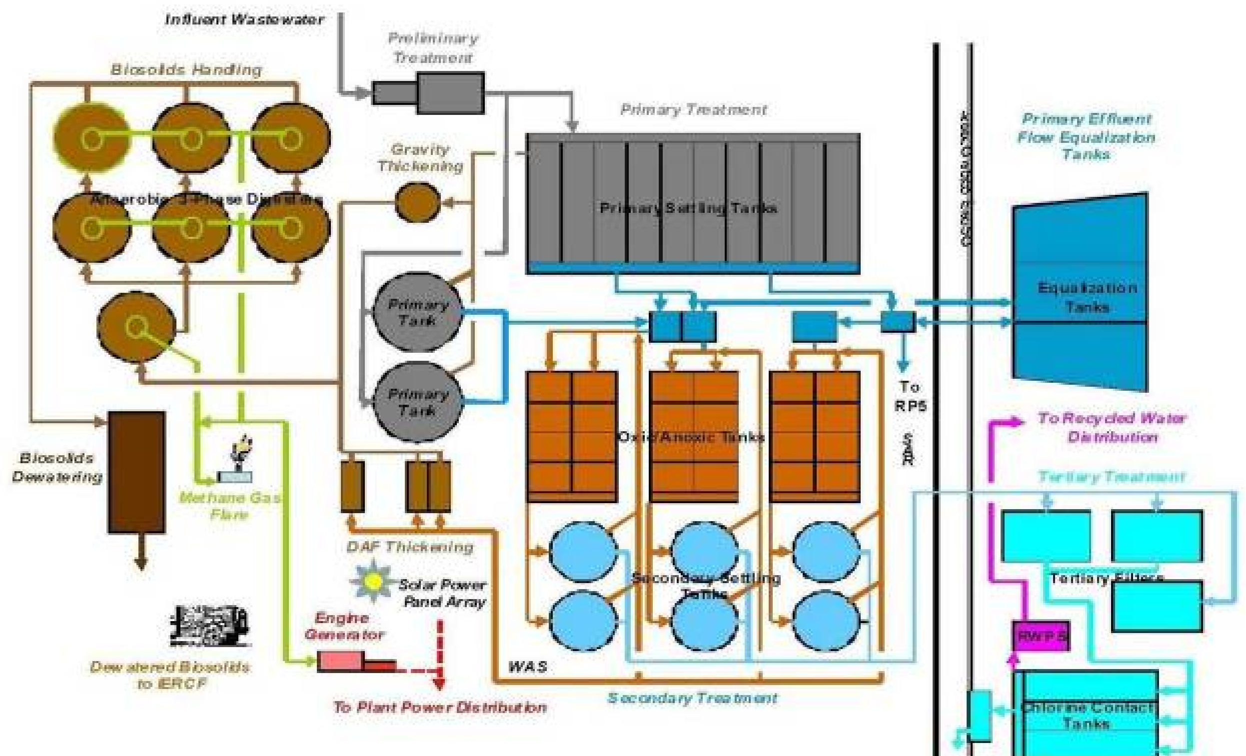


CCWRF LOCATION MAP

ATTACHMENT C – FIGURE 1

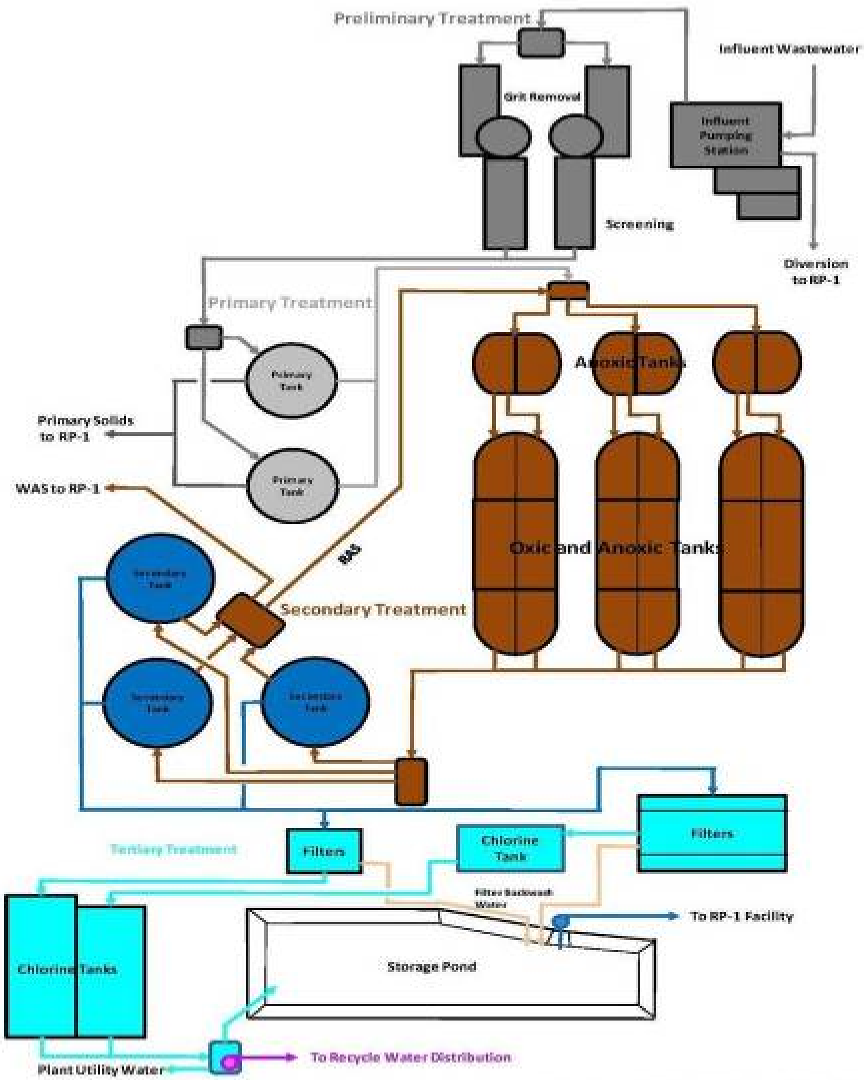



Simplified IEUA Recycled Water System
FIGURE - 2
Recharge basins, industry, irrigation
RW Reservoir (future)
Recharge basins, industry, irrigation
Recharge basins
RP-4 influent may include flow from San Bernardino Lift Station
RW Reservoirs
RP-4 (14 MGD)
RWPS
DP 006: 3.1 MGD (RP-4 RW)
RP-1 influent may include diverted flows from Montclair DS, and/or RP-4 influent DS
Industry, irrigation
Recharge basins industry, irrigation
RP-1 (44 MGD)
RWPS
Industry, irrigation
CCWRF influent may include flow from Montclair DS
Cucamonga Creek
DP 002: 20.6 MGD (RP-1 & RP-4)
DP 005: 14.1 MGD (RP-1 RW)
Irrigation, agriculture
Irrigation, agriculture
CCWRF (11.4 MGD)
RWPS
RP-5 influent may include diverted CCWRF influent and/or RP-1 primary effluent
Wetlands, Irrigation
RP-5 (16.3 MGD)
RWPS
Chino Creek
DP 004: 9.9 MGD (CCWRF)
DP 008: 2.8 MGD (CCWRF RW)
DP 003: 10.2 MGD (RP-5)
DP 007: 1.0 MGD (RP-5 RW)
RP-2 (Solids only)
Prado Lake
Dechlor
Prado Basin
DP 001: 6.6 MGD (RP-1, CCWRF, RP-4 & RP-5)
Wastewater
Recycled Water
Creek or Lake Discharge
Discharged Effluent Flow (3-year average)
Recycled Water Flow (1-year average)
Recharged RW Flow: 2840 acre-ft (2008 total)
DS = Diversion structure
Facility (Design Capacity)



Regional Plant No. 1 (RP-1)

FIGURE - 3



Regional Plant No. 4 (RP-4)

FIGURE - 4

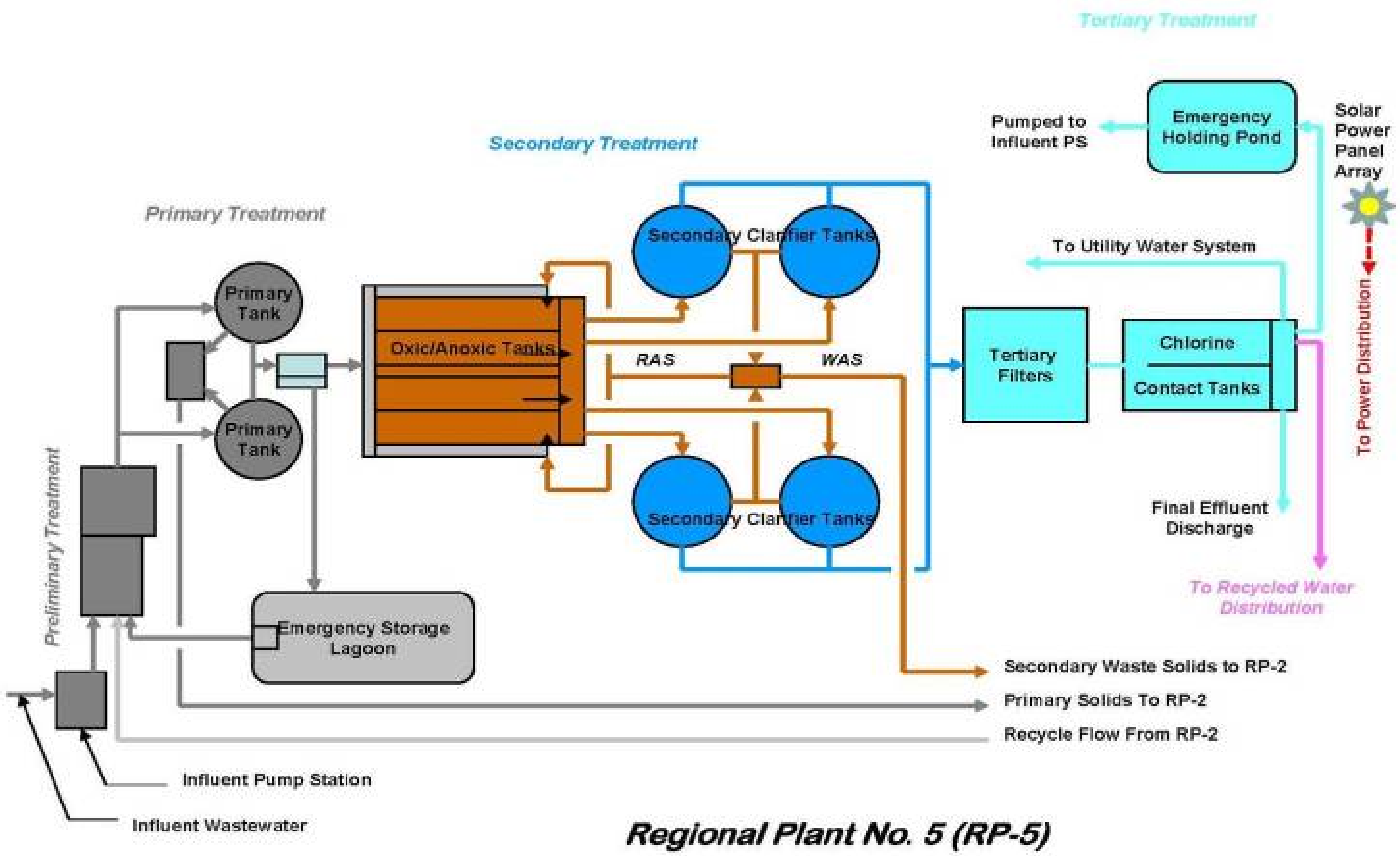
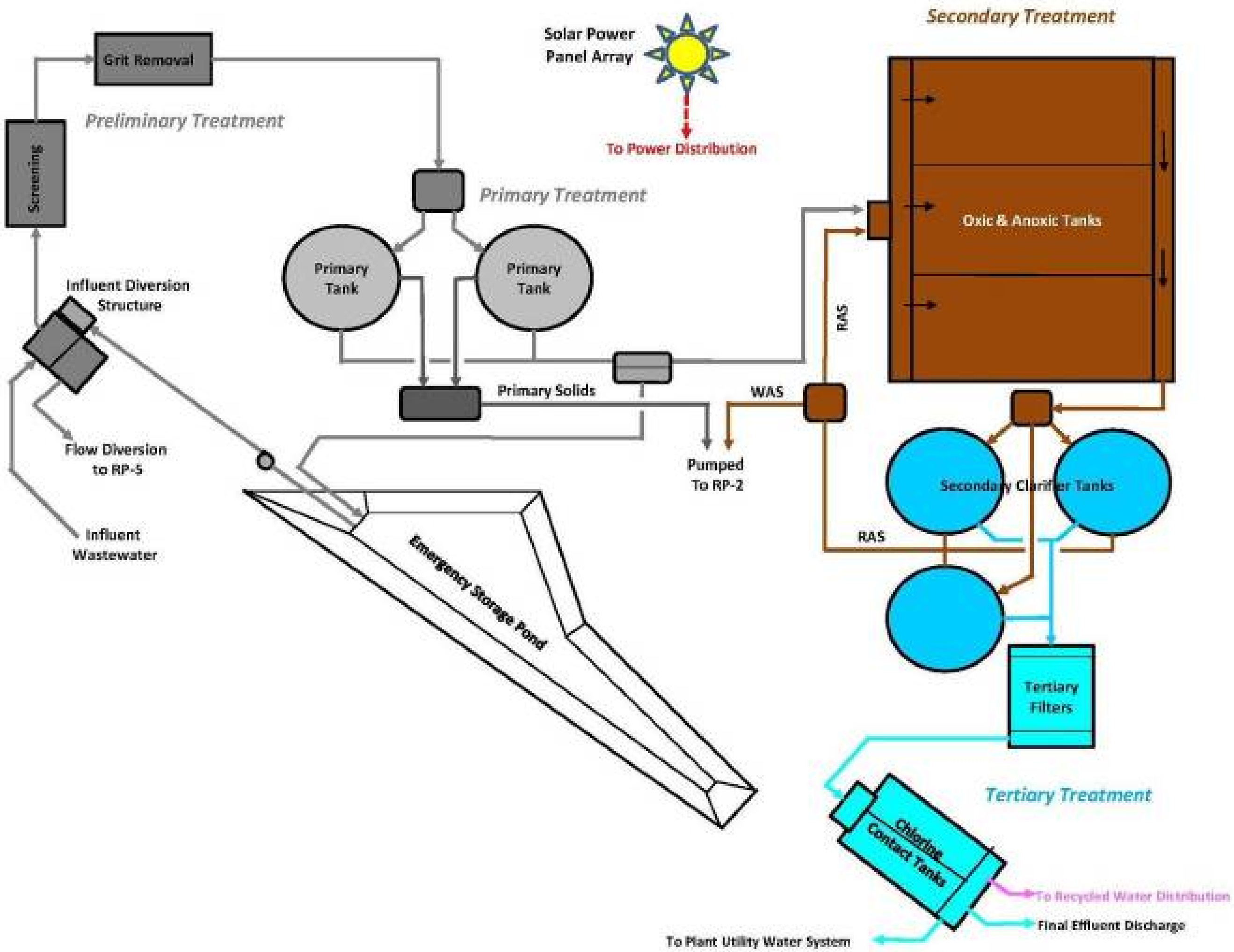

Tertiary Treatment
Secondary Treatment
Primary Treatment
Preliminary Treatment
Emergency Holding Pond
Pumped to Influent PS
Solar Power Panel Array
To Power Distribution
Secondary Clarifier Tanks
Primary Tank
Primary Tank
Oxic/Anoxic Tanks
RAS
WAS
To Utility Water System
Tertiary Filters
Chlorine
Contact Tanks
Final Effluent Discharge
To Recycled Water Distribution
Secondary Clarifier Tanks
Emergency Storage Lagoon
Secondary Waste Solids to RP-2
Primary Solids To RP-2
Recycle Flow From RP-2
Influent Pump Station
Influent Wastewater
Regional Plant No. 5 (RP-5)

FIGURE - 5



Carbon Canyon Water Recycle Facility (CCWRF)

FIGURE - 6

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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(e).)

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)

2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(m)(4)(i)):

   a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 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 C.F.R. § 122.41(n)(3)):

   a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));

   b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 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 C.F.R. § 122.41(n)(3)(iii)); and

   d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(b).)

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(j)(2).)

B. Records of monitoring information shall include:

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

C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):

1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and

2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 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 C.F.R. § 122.41(h); Wat. 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.22(b)(2)); and

c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(l)(6)(i).)

2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 C.F.R. § 122.41(l)(6)(ii)):

   a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)

   b. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(l)(1)(i)); or

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

3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 C.F.R.§ 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

A. The Regional Water Board is authorized to enforce the terms of this permit 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 C.F.R. § 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 C.F.R. § 122.42(b)(1)); and

2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order. (40 C.F.R. § 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 C.F.R. § 122.42(b)(3).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations section 122.48 requires that all NPDES permits specify monitoring and reporting requirements. Water Code 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, which implement the federal and California regulations.

I. GENERAL MONITORING PROVISIONS

A. General Monitoring Provision

1. All sampling and sample preservation shall be in accordance with the current edition of “Standard Methods for the Examination of Water and Wastewater” (American Public Health Association) or 40CFR136. (revised as of April 11, 2007) "Guidelines Establishing Test Procedures for the Analysis of Pollutants," promulgated by the United States Environmental Protection Agency (EPA).

2. All laboratory analyses shall be performed in accordance with test procedures under 40 CFR 136 (revised as of April 11, 2007) "Guidelines Establishing Test Procedures for the Analysis of Pollutants," promulgated by the United States Environmental Protection Agency (EPA), unless otherwise specified in this MRP. In addition, the Regional Water Board and/or EPA, at their discretion, may specify test methods that are more sensitive than those specified in 40 CFR 136.

3. Chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the California Department of Public Health in accordance with the provision of Water Code Section 13176, or conducted at a laboratory certified for such analyses by the EPA or at laboratories approved by the Regional Water Board's Executive Officer.

4. In conformance with federal regulations 40 CFR 122.45(c), analyses to determine compliance with the effluent limitations for metals shall be conducted using the total recoverable method. For Chromium (VI), the dissolved method in conformance with 40 CFR 136 may be used to measure compliance with the Chromium (VI) limitation.

5. The Discharger shall have, and implement an acceptable written quality assurance (QA) plan for laboratory analyses. Duplicate chemical analyses must be conducted on a minimum of ten percent (10%) of the samples, or at least one sample per month, whichever is greater. A similar frequency shall be maintained for analyzing spiked samples. When requested by the Regional Water Board or EPA, the Discharger will participate in the NPDES discharge monitoring report QA performance study.

6. For every item of monitoring data where the requirements are not met, the monitoring report shall include a statement discussing the reasons for noncompliance, the actions undertaken or proposed that will bring the discharge into full compliance with requirements at the earliest time, and an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Water Board by letter when compliance with the time schedule has been achieved.

7. The Discharger shall assure that records of all monitoring information are maintained and accessible for a period of at least five years (this retention period supersedes the retention period specified in Section IV.A. of Attachment D) from the date of the sample, report, or application. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or by the request of the Regional Water Board at any time. Records of monitoring information shall include:

    a. The information listed in Attachment D- IV Standard Provisions – Records, subparagraph B. of this Order;
    b. The laboratory which performed the analyses;
    c. The date(s) analyses were performed;
    d. The individual(s) who performed the analyses;
    e. The modification(s) to analytical techniques or methods used;
    f. All sampling and analytical results, including
        (1) Units of measurement used;
        (2) Minimum reporting level for the analysis (minimum level);
        (3) Results less than the reporting level but above the method detection limit (MDL);
        (4) Data qualifiers and a description of the qualifiers;
        (5) Quality control test results (and a written copy of the laboratory quality assurance plan);
        (6) Dilution factors, if used; and
        (7) Sample matrix type.
    g. All monitoring equipment calibration and maintenance records;
    h. All original strip charts from continuous monitoring devices;
    i. All data used to complete the application for this Order; and,
    j. Copies of all reports required by this Order.
    k. Electronic data and information generated by the Supervisory Control And Data Acquisition (SCADA) System.

8. The flow measurement system shall be calibrated at least once per year or more frequently, to ensure continued accuracy.

9. Monitoring and reporting shall be in accordance with the following:

    a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

    b. The monitoring and reporting of influent, effluent, and sludge shall be done more frequently as necessary to maintain compliance with this Order and or as specified in this Order.

    c. Whenever the Discharger monitors any pollutant more frequently than is required by this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the discharge monitoring report specified by the Executive Officer.

    d. A "grab" sample is defined as any individual sample collected in less than 15 minutes.

    e. A composite sample is defined as a combination of no fewer than eight individual grab samples obtained over the specified sampling period. The volume of each individual grab sample shall be proportional to the discharge flow rate at the time of sampling. The compositing period shall equal the specific sampling period, or 24 hours, if no period is specified.

    f. Daily samples shall be collected on each day of the week.

    g. Monthly samples shall be collected on any representative day of each month.

    h. Quarterly samples shall be taken on any representative day of January, April, July, and October.

    i. Semi-annual samples shall be collected in January and July.

    j. Annual samples shall be collected in accordance with the following schedule:

Table 1 Annual Sampling Schedule

Year	Annual Samples
2010	July
2011	October
2012	January
2013	April
2014	July
2015	October

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 2 Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description	Latitude and Longitude
001/002	M-INF 1A	RP-1 influent line, before Headworks	34°01'48"N, 117°36'07"W
001/002	M-INF 1B	RP-4 influent line, before Headworks	34°05'09"N, 117°31'28"W
001	M-001A	RP-1 effluent Outfall to Prado Park Lake	33°56'39"N, 117°38'34"W
001	M-001B	At the RP-1splitter box	34°01'29"N, 117°35'57"W
002	M-002A	RP-1 and RP-4 Effluent outfall to Reach 1 of Cucamonga Creek	34°01'31"N, 117°35'56"W
002	M-002B	RP-1 at the end of CCB 3 (Chlorine Contact Basin) before outfall discharge to Reach 1 of Cucamonga Creek	34°01'28"N, 117°35'57"W
003	M-INF 3A	RP-5 influent upstream of any in-plant return flows (theoretical point of combined M-INFB & M-INFD flows)	33°58'04"N, 117°40'28"W
003	M-INF 3B	RP-5 Influent Pump Station	33°57'38"N, 117°40'16"W
003	M-INF 3C	RP-2 Recycle Flow	33°57'29"N, 117°40'23"W
003	M-INF 3D	RP-2 Lift Station	33°57.08”N, 117°40’00”W
003	M-003	RP-5 Effluent to Reach 2 of Chino Creek	33°57’44”N, 117°40’41”W
004	M-INF 4	Influent sampling at CCWRF	33°58’56”N, 117°41’48”W
004	M-004	CCWRF Effluent to Reach 2 of Chino Creek	33°58’47”N, 117°41’39”W
005	REC-001	RP-1 Effluent to recycled water use area, same as M-001B	34°01'29"N, 117°35'57"W
006	REC-002	RP-4 Effluent to recycled water use area	34°04’59”N, 117°31’35”W
007	REC-003	RP-5 Effluent to recycled water use area - Same as M-003	33°57’44”N, 117°40’41”W
008	REC-004	CCWRF Effluent to recycled water use area – Same as M-004	33°58’47”N, 117°41’39”W
002	R-002U	Cucamonga Creek within 100 feet upstream of the DP 002	34°01'29"N, 117°35'58"W
002	R-002D	Cucamonga Creek within 500 feet downstream of DP 002 after blending	34°00'43"N, 117°35'59"W
003	R-003U	Chino Creek within 100 feet upstream of DP 003	33º57’45”N, 117º40’41”W
003	R-003D	Chino Creek within 500 feet downstream of DP 003 in	33º57’45”N, 117º40’41”W
004	R-004U	Chino Creek within 100 feet upstream of DP 004	33º58’47”N, 117º40’41”W
004	R-004D	Chino Creek within 500 feet downstream of DP 004 in	33º58’46”N, 117º40’38”W
S-001	STORM-001	Storm water runoff from RP-1, west	34°01'36"N, 117°35'59"W

Table 2 Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description	Latitude and Longitude
S-002	STORM-002	Storm water runoff from RP-1, east	34°01'28"N, 117°35'58"W

Note: RP-5 influent consists of RP-5 Influent Pump Station flows and RP-2 Lift Station flows, which include RP-2 Recycle Flow and Prado/Butterfield Ranch flows. Therefore, values reported for M-INF3A are flow-weighted values based on flows from RP-5 Pump Station and RP-2 Lift Station.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Locations M-INFs 1A, 1B, 3A, 3B, 3C, 3D, and M-INF 4

1. Sampling stations shall be established for the points of inflow to each treatment plant. The sampling stations shall be located upstream of any in-plant return flows and where representative samples of the influent of the treatment plant can be obtained.

2. The Discharger shall monitor the influent to the Facility at Monitoring Locations M-INFs 1A, 1B, 3A, 3B, 3C, 3D, and M-INF 4 as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level:

Table 3 Influent Monitoring M-INFs 1A, 1B, 3A, 3B, 3C, 3D, and M-INF 4

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Recorder/Totalizer	Continuous	--
pH	pH Units	Recorder	Continuous	--
Specific Conductance	µmhos/cm	Recorder	Continuous	--
TOC	mg/L	Composite	Weekly	See Section I.A.2 & 3, above, of this MRP
BOD_5 [1]	mg/L	Composite	Weekly	"
Total Suspended Solids	mg/L	Composite	Weekly	"
Total Dissolved Solids	mg/L	Composite	Weekly	"
Ammonia-Nitrogen	mg/L	Grab	Weekly	"
Total Nitrogen	mg/L	Composite	Weekly	"
Total Inorganic Nitrogen	mg/L	Composite	Weekly	"
Cyanide (Free)[2]	µg/l	Grab	Monthly	"

1 *BOD_5 is calculated based on a BOD_5/TOC correlation approved by the Regional Water Board.*

2 *Free cyanide is measured as aquatic free cyanide (ASTM Method D7237) without sodium hydroxide (NaOH) preservation.*

Table 3 Influent Monitoring M-INFs 1A, 1B, 3A, 3B, 3C, 3D, and M-INF 4

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total Hardness	mg/L	Composite	Quarterly	"
Boron	mg/L	Composite	Quarterly	"
Chloride	mg/L	Composite	Quarterly	"
Fluoride	mg/L	Composite	Quarterly	"
Sodium	mg/L	Composite	Quarterly	"
Sulfate	mg/L	Composite	Quarterly	See Section I.A.3. above, of this MRP
Arsenic	µg/L	Composite	Quarterly	See Section I.A.2. above, of this MRP
Cadmium	µg/L	Composite	Quarterly	"
Total Chromium or Chromium VI	µg/L	Composite	Quarterly	See Section I.A.2. above, of this MRP
Total Recoverable Copper	µg/L	Composite	Quarterly	"
Total Recoverable Lead	µg/L	Composite	Quarterly	"
Total Recoverable Mercury	µg/L	Composite	Quarterly	"
Total Recoverable Nickel	µg/L	Composite	Quarterly	"
Selenium	µg/L	Composite	Quarterly	"
Total Recoverable Silver	µg/L	Composite	Quarterly	"
Total Recoverable Zinc	µg/L	Composite	Quarterly	"
Bis (2-ethylhexyl) phthalate	µg/L	Grab	Quarterly	See Sections I.A.2., I.A.3., above of this MRP
2,3,7,8-TCDD (Dioxin)[3]	µg/L	Composite	Semi-Annually	See Section I.A.3. above, RL 1 pg/L
Volatile organic portion of EPA Priority Pollutants[4] (See Attachment G)	µg/L	Grab	Annually	See Section I.A.2. above, of this MRP
Remaining EPA Priority Pollutants[5] (See Attachment G)	µg/L	Composite	Annually	"

3 *Applies at M-INF 3B & 3D and M-INF 4 only.*

4 *EPA priority pollutants are those remaining volatile organic pollutants listed in Attachment "G" which are not specifically listed in this monitoring program table.*

5 *Remaining EPA priority pollutants are those pollutants listed in Attachment "G" which are not volatile organics and pollutants not specifically listed in this monitoring program table.*

IV. EFFLUENT MONITORING REQUIREMENTS TO SURFACE WATER

The Discharger shall monitor tertiary effluent at monitoring locations M-001, M-002, M-003, and M-004 as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level.

A. Effluent Monitoring Locations M-001 to M-004

1. The Discharger shall monitor tertiary treated effluent for DP 001, DP 002, DP 003, and DP 004 at Monitoring Locations M-001B, M-002A, M-003, and M-004 as follows.

Table 4 Tertiary Effluent Monitoring at M-001B, M-002A, M-003, and M-004

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and Minimum Level, units, respectively
Flow	mgd	Recorder/ Totalizer	Continuous	--
Specific Conductance[6]	µmhos/cm	Recorder	Continuous	--
pH	pH units	Recorder	Continuous	--
Turbidity[7]	NTU	Recorder	Continuous	--
Total Chlorine Residual[8]	mg/L	Recorder	Continuous	--
Coliform Organisms[9], [10]	MPN per 100 ml[11]	Grab	Daily	See Section I.A.3., above of this MRP
CT	mg-minutes/L	Recorder	Continuous[12]	--
Total Organic Carbon (TOC)	mg/L	Composite	Daily	See Section I.A.3. above, of this MRP
BOD_5[13]	mg/L	Composite	Daily	See Section I.A.3. above, of

[6] *Except M-001B.*

[7] *Turbidity analysis shall be continuous, performed by a continuous recording turbidimeter. Compliance with the daily average operating filter effluent turbidity shall be determined by averaging the levels of recorded turbidity taken at a minimum of four-hour intervals over a 24-hour period. The results of the daily average turbidity determinations shall be reported monthly.*

[8] *Except M-001B.*

[9] *Samples for total coliform bacteria shall be collected daily. Samples shall be taken from the disinfected effluent.*

[10] *M-001B is the coliform monitoring location for DP 001 & DP 002. Alternative monitoring at M-002B is available if gate is closed between Chlorine Contact Basin 2 and 3.*

[11] *MPN/100mL = Most Probable Number per 100 milliliters.*

[12] *The CT and modal contact time shall be continuously calculated and recorded. The minimum daily value shall be reported monthly. Modal contact time and CT shall be calculated based on the minimum one-hour average value in a 24-hr period.*

Table 4 Tertiary Effluent Monitoring at M-001B, M-002A, M-003, and M-004

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and Minimum Level, units, respectively
				this MRP
Total Suspended Solids	mg/L	Composite	Daily	See Section I.A.3. above
Ammonia-Nitrogen	mg/L	Grab	Weekly	See Section I.A.3. above, of this MRP
Temperature	°C	Grab	Weekly	--
Total Dissolved Solids[14]	mg/L	Composite	Monthly	See Section I.A.3. above
Total Inorganic Nitrogen	mg/L	Composite	Monthly	See Section I.A.3. above
Total Nitrogen	mg/L	Composite	Monthly	See Section I.A.3. above
Cyanide, free[15]	µg/L	Grab	Monthly	See Sections I.A.2., I.A.3., above of this MRP and RL 5 µg/L
Total Recoverable Copper	µg/L	Composite	Monthly	See Sections I.A.2., I.A.3. above of this MRP and RL 0.5 µg/L
Toxicity[16]	TUc	See Section V.A, Below	Monthly	See Section V, Below
Total Hardness	mg/L	Composite	Monthly	See Section I.A.3. above
Bicarbonate	mg/L	Composite	Monthly	See Section I.A.3. above, of this MRP
Boron	mg/L	Composite	Monthly	See Section I.A.3. above
Calcium	mg/L	Composite	Monthly	See Section I.A.3. above
Carbonate	mg/L	Composite	Monthly	See Section I.A.3. above
Chloride	mg/L	Composite	Monthly	See Section I.A.3. above
Fluoride	mg/L	Composite	Monthly	See Section I.A.3. above, of this MRP
Magnesium	mg/L	Composite	Monthly	See Section I.A.3. above
Sodium	mg/L	Composite	Monthly	See Section I.A.3. above
Sulfate	mg/L	Composite	Monthly	See Section I.A.3. above
Total Recoverable Cadmium	µg/L	Composite	Monthly	See Sections I.A.2., I.A.3., above of this MRP and RL 0.5 µg/L

13 *BOD_5 is calculated daily based on a BOD_5/TOC correlation approved by the Regional Water Board.*

14 *Except M-001B.*

15 *Free cyanide is measured as aquatic free cyanide (ASTM Method D7237) without NaOH preservation.*

16 *Except M-001B.*

Table 4 Tertiary Effluent Monitoring at M-001B, M-002A, M-003, and M-004

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and Minimum Level, units, respectively
Chromium (VI) or Total Chromium[17]	µg/L	Composite	Monthly	See Sections I.A.2., I.A.3. above of this MRP and RL 5 µg/L, Total Cr, RL 2 µg/L
Total Recoverable Lead	µg/L	Composite	Monthly	See Sections I.A.2., I.A.3. above of this MRP and RL 2 µg/L
Total Recoverable Mercury	µg/L	Composite	Monthly	See Sections I.A.2., I.A.3. above of this MRP and RL 0.05 µg/L
Total Recoverable Selenium	µg/L	Composite	Monthly	See Sections I.A.2., I.A.3. above of this MRP and RL 2 µg/L
Total Recoverable Silver	µg/L	Composite	Monthly	See Sections I.A.2., I.A.3., above of this MRP and RL 1 µg/L
Total Recoverable Zinc	µg/L	Composite	Monthly	See Sections I.A.2., I.A.3., above of this MRP
Bis (2-ethylhexyl) phthalate	µg/L	Grab	Monthly	See Sections I.A.2., I.A.3., above of this MRP
Bromodichloromethane[18]	µg/L	Grab	Monthly	See Sections I.A.2., I.A.3., above of this MRP, ML 5 µg/L
Aluminum	mg/L	Composite	Quarterly	See Section I.A.3. above
Antimony	mg/L	Composite	Quarterly	See Sections I.A.2., I.A.3., above of this MRP
Arsenic	µg/L	Composite	Quarterly, (See IV.A.3., below)	See Section I.A.3. above
Barium	µg/L	Composite	Quarterly, (See IV. A.3., below)	See Section I.A.3. above
Cobalt	µg/L	Composite	Quarterly (See IV.A.3., below)	See Section I.A.3. above,
Total Recoverable Nickel	µg/L	Composite	Quarterly (See IV.A.3., below)	See Section I.A.3. above,
2,3,7,8-TCDD (Dioxin)[19]	µg/L	Composite	Quarterly (See IV.A.5., below)	See Section I.A.3. above, RL 1 pg/L
Volatile organic portion of remaining EPA Priority Pollutants (See Attachment G)	µg/L	Grab	Annually (See IV.A.4., below)	See Sections I.A.2., I.A.3., above of this MRP
Remaining EPA Priority Pollutants (See Attachment G)	µg/L	Composite	Annually (See IV.A.4., below)	See Sections I.A.2., I.A.3., above of this MRP

[17] *If Total Chromium test result is greater than 11 µg/L, the following sample shall be tested for Chromium VI, until directed otherwise.*

[18] *Applies at M-003 only.*

[19] *Applies at M-003 and M-004 only.*

2. The Discharger shall monitor tertiary treated effluent for DPs 001 and 002 at M-001A as follows:

Table 5 Effluent Monitoring Requirements at M-001A

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Test Method
Turbidity	NTU	Recorder	Continuous	--
Total Chlorine Residual	mg/l	Recorder	Continuous	--
Specific Conductance	µmhos/cm	Recorder	Continuous	--
Total Dissolved Solids	mg/l	Composite	Monthly	See Sections I.A.2., I.A.3., above of this MRP
Toxicity	TUc	See Section V.A, Below	Monthly	See Section V, Below

3. The monitoring frequency for those priority pollutants that are detected during the required quarterly monitoring at a concentration greater than the concentration specified for that pollutant[20] in Attachment I - Triggers for Monitoring Priority Pollutants shall be accelerated to monthly. To return to the monitoring frequency specified, the Discharger shall request and receive approval from the Regional Water Board's Executive Officer or designee.

4. The monitoring frequency for those priority pollutants that are detected during the required semi-annual or annual monitoring at a concentration greater than the concentration specified for that pollutant in Attachment I shall be accelerated to quarterly for one year. To return to the specified monitoring frequency, the Discharger shall request and receive approval from the Regional Water Board's Executive Officer or designee.

5. The Discharger is required to conduct quarterly monitoring for Dioxin for one year. After one year, if quarterly monitoring result show non-detect values at acceptable reporting levels, the Discharger may reduce the frequency of monitoring for Dioxin from quarterly to semi-annual monitoring upon approval by the Regional Water Board Executive Officer or designee.

B. Secondary Effluent Monitoring at M-002, M-003 and M-004 with 20:1 Dilution

1. The Discharger shall monitor secondary treated effluent at M-002B, M-003 and M-004 when 20:1 dilution is provided by the receiving surface water at the time of the discharge, as follows:

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[20] *For those priority pollutants without specified criteria values, accelerated monitoring is not required.*

Table 6 Secondary Effluent Monitoring at M-002B to M-004 w/ 20:1 Dilution

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Test Method
Flow	mgd	Grab	Daily (when discharging)	--
pH	pH units	Recorder/Totalizer	Continuous	--
Total Chlorine Residual	mg/L	Recorder	Continuous	--
BOD_5	mg/L	Grab	Daily (when discharging)	See Section I.A.3., above, of this MRP
Total Dissolved Solids	mg/L	Grab	when discharging	“
Coliform Organisms	MPN per 100 ml[21]	Grab	Daily (when discharging)	See Sections I.A.2., I.A.3., above of this MRP
Suspended Solids	mg/L	Grab	Daily (when discharging)	See Sections I.A.2., I.A.3., above of this MRP
Total Hardness	mg/L	Grab	When discharge	See Section I.A.3., above, of this MRP
EPA Priority Pollutants	µg/L	Grab	Annually[22] (See IV.A.3., above)	See Sections I.A.2., I.A.3., above of this MRP

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Toxicity Monitoring Requirements at M-001A, M-002A, M-003, and M-004

1. The Discharger shall conduct critical life stage chronic toxicity testing in accordance with Method 1002.0 - Survival and Reproduction test for water flea, *Ceriodaphnia dubia* as specified in "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms", Fourth Edition, Environmental Monitoring Systems Laboratory, U.S. Environmental Protection Agency 2002, Cincinnati, Ohio (October 2002, EPA-821-R-02-013).

2. The Discharger shall establish procedures to ensure that the toxicity testing laboratory notifies the Discharger of the results of toxicity testing by the end of the next business day following the completion of such tests.

3. A minimum of one monthly chronic toxicity test shall be conducted on representative composite samples.

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21 *MPN/100mL = Most Probable Number per 100 milliliters*

22 *Sample is collected from the first discharge, once a year.*

4. The Discharger shall increase the frequency of chronic toxicity testing to every two weeks whenever any test result exceeds 1.0 TUc. The first test under the accelerated schedule shall be conducted within two weeks of receiving notice of the test that exceeds 1.0 TUc, and every two weeks thereafter. The Discharger may resume the regular test schedule when two consecutive chronic toxicity tests result in 1.0 TUc, or when the results of the Initial Investigation Reduction Evaluation conducted by the Discharger have adequately addressed the identified toxicity problem.

5. The presence of chronic toxicity shall be estimated as specified in Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. Fourth Edition. EPA-821-R-02-013.

6. Results for both survival and reproduction endpoints shall be reported in TUc, where TUc = 100/NOEC or 100/ICp or ECp (p is the percent effluent). The no observed effect concentration (NOEC) is the highest concentration of toxicant to which organisms are exposed in a chronic test, that causes no observable adverse effect on the tests organisms (e.g., the highest concentration of toxicant to which the values for the observed responses are not statistically significant different from the controls). The inhibition concentration (IC) is a point estimate of the toxicant concentration that causes a given percent reduction in a non-quantal biological measurement (e.g., reproduction or growth) calculated from a continuous model (the EPA Interpolation Method). The effective concentration (EC) is a point estimate of the toxicant concentration that would cause a given percent reduction in quantal biological measurement (e.g., larval development, survival) calculated from a continuous model (e.g., probit).

7. Additional Testing Requirements

   a. A series of at least five dilutions and a control will be tested. Five dilutions of the series shall be within 60% to 100% effluent concentration.
   b. If organisms are not cultured in-house, concurrent testing with reference toxicants shall be conducted. Where organisms are cultured in-house, monthly reference toxicant testing is sufficient. Reference toxicants shall also be conducted using the same test conditions as the effluent toxicity test (e.g., same test duration, etc).
   c. If either of the reference toxicant test or the effluent tests do not meet all test acceptability criteria as specified in the manual[23], then the Discharger must re-sample and re-test within 14 days or as soon as the Discharger receives notification of failed tests.
   d. Control and dilution water should be receiving water or lab water, as appropriate, as described in the manual. If the dilution water used is different from the culture water, a second control, using culture water shall also be used.

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[23] *Refers to USEPA Manual "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. - 4th Ed., October 2002, EPA-821-R-02-013.*

8. Quality Assurance/Control:

   a. A quality assurance/quality control (QA/QC) program shall be instituted to verify the results of the effluent toxicity monitoring program. The QA/QC program shall include but shall not be limited to the following: (1) Selection of an independent testing laboratory; (2) Approval by the Regional Water Board's Executive Officer or Executive Officer's designee of the independent testing laboratory; (3) Once during the year, the Discharger shall split samples with the independent laboratory for conducting chronic toxicity testing; (4) Results from the independent laboratory shall be submitted to the Regional Water Board and the Discharger for evaluation; (5) The Discharger shall review the test acceptability criteria in accordance with the EPA test protocols, Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. Fourth Edition. EPA-821-R-02-013.

   b. Results from the independent laboratory of the annual QA/QC split samples are to be used for Quality Assurance/Quality Control (QA/QC) purposes only and not for purposes of determining compliance with other requirements of this Order.

9. The use of alternative methods for measuring chronic toxicity may be considered by the Executive Officer on a case–by-case basis. The use of a different test species, in lieu of conducting the required test species may be considered and approved by the Executive Officer on a case-by case basis upon submittal of the documentation supporting Discharger’s determination that a different species is more sensitive and appropriate.

10. Reporting: Results of all toxicity testing conducted within the month following the reporting period shall be submitted monthly in accordance with "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. Fourth Edition. EPA-821-R-02-013.” The report shall include a determination of the median value of all chronic toxicity testing results conducted during the two previous months.

11. Whenever an Initial Investigation Reduction Evaluation is conducted, the results of the evaluation shall be submitted upon completion. In addition, monthly status reports shall be submitted as part of the Discharger’s monitoring report for the previous month.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECLAMATION MONITORING REQUIREMENTS

A. Monitoring Locations REC-001 to REC-004

1. The Discharger shall monitor recycled water at REC-001, REC-002, REC-003 and REC-004 as follows:

Table 7 Reclamation Monitoring at REC-001 to REC-004

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Recorder/Totalizer	Continuous	--
pH	Standard units	Recorder/Totalizer	Continuous	--
Turbidity[24]	NTU	Recorder	Continuous	--
CT	mg-minutes/L	Recorder	Continuous[25]	--
Coliform Organisms	MPN per 100 mL	Grab	Daily	See Section I.A.3., above, of this MRP
BOD_5	mg/L	Composite	Daily	See Section I.A.3., above, of this MRP
Total Suspended Solids	mg/L	Composite	Daily	See Section I.A.3., above, of this MRP
TDS	mg/L	Composite	Monthly	See Section I.A.3., above, of this MRP

B. Monitoring Users

Whenever recycled water is supplied to a user, the Discharger shall record on a permanent log: the volume of recycled water supplied; the user of recycled water; the locations of those sites including the names of the groundwater management zones underlying the recycled water use sites; type of use (e.g. irrigation, industrial, etc); and the dates at which water is supplied. The Discharger shall submit annually a summary report of the recorded information by groundwater management zone to the Regional Water Board.

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[24] *Turbidity samples shall be collected at M-001A, M-002A, M-003, and M-004, respectively.*

[25] *The CT and modal contact time shall be continuously calculated and recorded. Modal contact time and CT shall be calculated based on the minimum one-hour average value in a 24-hr period.*

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Flow Measurements at Monitoring Locations R-002U, R-003U, and R-004U During 20:1 Dilution.

The Discharger shall make provisions for the measurement of the receiving water flow at a suitable location in the creek and determine whether a 20:1 dilution exists at DP 002, DP 003, or DP 004, before discharging secondary treated effluent. A dilution of 20:1 or more exclusive of discharges to surface waters from upstream publicly owned treatment works is required at the point of discharge for the discharge of secondary effluent. Flow measurements shall be made prior to any direct discharge to the creeks and shall continue on a daily basis until the discharge is terminated.

B. Monitoring Locations R-002U, R-003U, and R-004U

1. The Discharger shall monitor the receiving water at R-002U, R-003U, and R-004U for the following parameters/constituents when there is flowing water:

Table 8 Receiving Water Monitoring at R-002U, R-003U, and R-004U

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	estimate	Weekly	--
Dissolved Oxygen	mg/L	Grab	Weekly	--
Temperature	^{0}C	“	Weekly	--
pH	pH unit	Grab	Weekly	--
Total Dissolved Solids	mg/L	Grab	Monthly	See Sections I.A.3. above of this MRP
Total Inorganic Nitrogen	mg/L	Grab	Monthly	See Sections I.A.3. above of this MRP
Total Hardness	mg/L	Grab	Quarterly	See Sections I.A.3. above of this MRP
Total Suspended Solids	mg/L	Grab	Quarterly	See Sections I.A.3. above of this MRP
EPA Priority Pollutants (see VIII.C.2., below)	µg/L	Grab	Annually	See Sections I.A.2., 3. above of this MRP

C. Monitoring Locations R-002D & R-003D

1. The Discharger shall monitor the receiving water at R-002D, R-003D, when there is flowing water upstream of the discharge point for the following constituents:

Table 9 Receiving Water Monitoring at R-002D & R-003D

Parameter	Units	Sample Type	Minimum Sampling & Testing Frequency	Required Analytical Test Method
Dissolved Oxygen	mg/L	Grab	Weekly	--
Temperature	^{0}C	Grab	Weekly	--
pH	pH unit	Grab	Weekly	--
Color change, foam, deposition of material, odor	--	Observe	Weekly	See Section I.A.3., above, of this MRP
Total Hardness	mg/L	Grab	Quarterly	See Sections I.A.3. above of this MRP
Total Suspended Solids	mg/L	Grab	Quarterly	“
EPA Priority Pollutants (see VIII.C.2., below)	µg/L	Grab	Annually	See Sections I.A.2., 3. above of this MRP

2. For the annual monitoring of the heavy metals EPA Priority Pollutants, the total recoverable and total dissolved metal concentrations shall be determined.

D. Regional Monitoring for Fish Flesh Testing:

Unless otherwise directed by the Regional Water Board Executive Officer, the Discharger shall implement the approved plan for the annual sampling and testing of mercury levels in fish flesh samples collected from the Santa Ana River. The frequency of monitoring and submission of reports shall be as stipulated in the approved plan.

E. Monitoring Requirements for Groundwater – Not Applicable

Monitoring of groundwater by the Discharger is addressed in Order No.R8-2007-0039.

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids Monitoring

1. Biosolids monitoring shall be conducted as follows:

Table 10 Biosolids Monitoring Requirements

Biosolids Monitoring	Units	Type of Sample	Minimum Frequency of Sampling & Testing
Priority Pollutants	mg/kg	Grab	Semi-annually
Moisture Content (% solid)	mg/kg	Grab	Quarterly

2. The Discharger shall maintain a permanent log of solids hauled away from the treatment facilities for use/disposal elsewhere, including the date hauled, the volume or weight (in dry tons), type (screening, grit, raw sludge, biosolids), application (agricultural, composting, etc), and destination. This information shall be reported quarterly.

B. Stormwater Monitoring

The Discharger shall monitor discharges at Discharge Points S-001 to S-002 (as specified in Table 2 of this MRP) and submit monitoring reports in accordance with Attachments J and K - Stormwater Monitoring and Reporting Requirements.

C. Water Supply Monitoring

1. In August of each year, a sample of each source of the water supplied to the sewered area shall be obtained and analyzed for total dissolved solids concentration expressed in "mg/L".

2. Monthly reports shall be submitted stating the amount (in percentage or acre-feet) supplied to the sewered area from each source of water and the resulting flow-weighted water supply quality for total dissolved solids.

D. Pretreatment Monitoring and Reporting

1. The Discharger shall submit to the Regional Water Board and the EPA Region 9, a quarterly compliance status report. The quarterly compliance status reports shall cover the periods January 1 - March 31, April 1 - June 30, July 1 - September 30, and October 1 -December 31. Each report shall be submitted by the end of the month following the quarter, except that the report for April 1 - June 30 may be included in the annual report. This quarterly reporting requirement shall commence for the first full quarter following issuance of this Order. The reports shall identify:

   a. All significant industrial users (SIUs) which violated any standards or reporting requirements during that quarter;

   b. The violations committed (distinguish between categorical and local limits);

   c. The enforcement actions undertaken; and

d. The status of active enforcement actions from previous periods, including closeouts (facilities under previous enforcement actions which attained compliance during the quarter).

2. Annually, the Discharger shall submit a report to the Regional Water Board, the State Water Resources Control Board and the EPA Region 9 describing the pretreatment activities within the service area during the previous year. In the event that any control authority within the service area is not in compliance with any conditions or requirements of this Order or their approved pretreatment program (such as due to industrial user discharges, interjurisdictional agency agreement implementation issues, or other causes,) then the Discharger shall also include the reasons for non-compliance and state how and when the Discharger and the control authority shall comply with such conditions and requirements. This annual report shall cover operations from July 1 through June 30 of each fiscal year and is due on September 30 of each year. The report shall contain, but not be limited to, the following information:

   a. A summary of analytical results from representative, flow-proportioned, 24-hour composite sampling of the POTWs' influent and effluent wastewaters for those pollutants which are known or suspected to be discharged by industrial users (IUs) as identified by EPA under Section 307(a) of the CWA. The summary will include the result of annual full priority pollutant scan, with quarterly samples analyzed only for those pollutants[26] detected in the full scan. The Discharger shall also provide any influent or effluent monitoring data for non-priority pollutants which the Discharger believes may be causing or contributing to Interference, Pass Through or adversely impacting sludge quality. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR 136 and amendments thereto.

   b. A discussion of any upset, interference, or pass-through incidents at the treatment plants (if any), which the Discharger knows or suspects were caused by IUs of the POTW system. The discussion shall include the following:

      (1) The reasons why the incidents occurred, the corrective actions taken, and, if known, the name and address of the IU(s) responsible.

      (2) A review of the applicable pollutant limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent pass through, interference or noncompliance with sludge disposal requirements.

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26 The Discharger is not required to analyze for asbestos.

c. A complete and updated list of the Discharger's significant industrial users (SIUs), including names, Standard Industrial Classification (SIC) code(s) and addresses, and a list of any SIU deletions and/or additions. The Discharger shall provide a brief explanation for each deletion. The SIU list shall identify the SIUs subject to Federal Categorical Standards by specifying which set(s) of standards are applicable to each SIU. The list shall also indicate which SIUs are subject to local limitations more stringent than Federal Categorical Standards and those, which are not subject to local limits.

d. A list or table characterizing the industrial compliance status of each SIU, including:

(1) SIU name;
(2) Industrial category;
(3) The type (processes) of wastewater treatment in place;
(4) Number of samples taken by the POTW during the year;
(5) Number of samples taken by the SIU during the year;
(6) Whether all needed certifications (if allowed) were provided by SIUs which have limits for total toxic organics;
(7) Federal and Regional Standards violated during the year, reported separately;
(8) Whether the SIU at any time in the year was in Significant Noncompliance (SNC)[27], as defined by 40 CFR 403.12 (f)(2)(vii); and
(9) A summary of enforcement actions against the SIU taken during the year, including the type of action, final compliance date, and amount of fines assessed/collected (if any). Proposed actions, if known, should be included.
(10) Number of inspections conducted at each SIU during the year.

e. A compliance summary table which includes:

(1) SIU's which were in SNC at any time during the year;
(2) The total number of SIUs which are in SNC with pretreatment compliance schedules during the year;
(3) The total number of notices of violation and administrative orders issued against SIUs during the year;
(4) The total number of civil and criminal judicial actions filed against SIUs during the year;
(5) The number of SIUs which were published as being in SNC during the year; and
(6) The number of IUs from which penalties were collected during the year.

27 *SNC is determined at the beginning of each quarter based on data of the previous six months.*

f. A short description of any significant changes in operating the pretreatment program which differ from the previous year including, but not limited to changes concerning:

(1) The program's administrative structure;
(2) Local industrial discharge limitations;
(3) Monitoring program or monitoring frequencies;
(4) Legal authority or enforcement policy;
(5) Funding mechanisms; and
(6) Resource requirements and/or staffing levels.

g. A summary of the annual pretreatment budget, including the cost of pretreatment program functions and equipment purchases.

h. A summary of public participation activities to involve and inform the public.

i. A description of any changes in sludge disposal methods and a discussion of any concerns not described elsewhere in the report.

3. The cumulative number of industrial users that the Discharger has notified regarding Baseline Monitoring Reports and the cumulative number of industrial user responses.

4. The Discharger shall submit the quarterly compliance status reports and the annual pretreatment report to EPA Region 9, the State Board and the Regional Water Board.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. All analytical data shall be reported with method detection limit[28] (MDLs) and with identification of either reporting level or limits of quantitation (LOQs). Quality assurance/quality control data shall be submitted upon request. Test results shall be reported in either milligrams/liter (mg/L) or micrograms/liter (µg/L), or picograms/L (pg/L), as appropriate.
3. For effluent wastewater monitoring:

[28] *The standardized test procedure to be used to determine the method detection limit (MDL) is given at Appendix B, 'Definition and Procedure for the Determination of the Method Detection Limit' of 40 CFR 136.*

a. The Discharger shall require its testing laboratory to calibrate the analytical system down to the minimum level (ML)[29] specified in Attachment H for priority pollutants with effluent limitations in this Order, unless an alternative minimum level is approved by the Regional Water Board's Executive Officer. When there is more than one ML value for a given substance, the Discharger shall use the ML values, and their associated analytical methods, listed in Attachment H that are below the calculated effluent limitation. The Discharger may select any one of those cited analytical methods for compliance determination. If no ML value is below the effluent limitation, then the lowest ML value and its associated analytical method, listed in Attachment H shall be used. Any internal quality control data associated with the sample must be reported when requested by the Executive Officer. The Regional Water Board will reject the quantified laboratory data if quality control data is unavailable or unacceptable.

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

(1) Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

(2) Sample results less than the reported ML, but greater than or equal to the laboratory's current Method Detection Limit (MDL)[30], shall be reported as "Detected, but Not Quantified," or "DNQ." The estimated chemical concentration of the sample shall also be reported.

(3) Sample results not detected above the laboratory's MDL shall be reported as "not detected" or "ND."

4. For receiving water monitoring and for those priority pollutants without effluent limitations, the Discharger shall require its testing laboratory to quantify constituent concentrations to the lowest achievable MDL as determined by the procedure found in 40 CFR 136 (revised as of April 11, 2007). In situations where the most stringent applicable receiving water objective (freshwater or human health (consumption of organisms only), as specified for that pollutant in 40 CFR 131.38[31] is below the minimum level value specified in Attachment H and the Discharger cannot achieve an MDL value for that pollutant below the ML value, the Discharger shall submit justification why a lower MDL value cannot be achieved. Justification shall be submitted together with monthly monitoring reports.

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[29] *Minimum level is the concentration at which the entire analytical system must give a recognizable signal and acceptable 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.*

[30] *MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analytical concentration is greater than zero, as defined in 40 CFR 136, Appendix B, revised as of April 11, 2007.*

[31] *See Federal Register/ Vol. 65, No. 97 / Thursday, May 18, 2000 / Rules and Regulations.*

5. For non-priority pollutants monitoring, all analytical data shall be reported with method detection limits, as determined by the procedure found in 40 CFR 136 (revised as of April 11, 2007).
6. Any internal quality control data associated with the sample must be reported when requested by the Executive Officer. The Regional Water Board will reject the quantified laboratory data if quality control data is unavailable or unacceptable.
7. Discharge monitoring data shall be submitted in a format acceptable by the Regional Water Board. Specific reporting format may include preprinted forms and/or electronic media. The results of all monitoring required by this Order shall be reported to the Regional Water Board, and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order.
8. The Discharger shall tabulate the monitoring data to clearly illustrate compliance and/or noncompliance with the requirements of the Order.
9. The Discharger shall submit to the Regional Water Board reports necessary to determine compliance with effluent limitations in this Order and shall follow the chemical nomenclature and sequential order of priority pollutant constituents shown in Attachment G – Priority Pollutant Lists for reporting the required annual priority pollutant monitoring.
10. The reports for June and December shall include a roster of plant personnel, including job titles, duties, and level of State certification for each individual.
11. The Discharger shall report monitoring results for specific parameters in accordance with the following table:

Table 11 Reporting Requirements

Parameter	Measurement
Flow	Daily total flow
pH	Daily High and daily low
Total Residual Chlorine	Daily Maximum
Electrical Conductivity	Daily High
Turbidity	Daily maximum

12. The Discharger shall file a written report with the Regional Water Board within ninety (90) days after the average dry-weather waste flow for any month equals or exceeds 75 percent of the design capacity of the waste treatment and/or disposal facilities. The Discharger's senior administrative officer shall sign a letter which transmits that report and certifies that the policy making body is adequately informed about it. The report shall include:

    a. Average daily flow for the month, the date on which the instantaneous peak flow occurred, the rate of that peak flow, and the total flow for the day.

    b. The Discharger's best estimate of when the average daily dry-weather flow rate will equal or exceed the design capacity of the treatment facilities.

c. The Discharger's intended schedule for studies, design, and other steps needed to provide additional capacity for the waste treatment and/or disposal facilities before the waste flow rate equals the capacity of present units.

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit Self-Monitoring Reports (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 there will be service interruption for electronic submittal.

2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under Sections III through IX. Additionally, the Discharger shall report in the SMR the results of any special studies, acute and chronic toxicity testing, TRE/TIE, PMP, and Pollution Prevention Plan required by Special Provisions – VI.C. of this Order. The Discharger shall submit monthly, quarterly, and annual SMRs 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 SMR.

3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table 12 Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On	Monitoring Period	SMR Due Date
Continuous	The effective day of this Order	All	Submit with monthly SMR
Daily	The effective day of this Order	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with monthly SMR
Weekly	The effective day of this Order	Sunday through Saturday	Submit with monthly SMR
Monthly	First day of calendar month following permit effective date or on permit date if that date is first day of the month	1st day of calendar month through last day of calendar month	First day of the second month following the reporting period, submit as monthly SMR

Table 12 Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On	Monitoring Period	SMR Due Date
Quarterly[32]	Closest of January 1, April 1, July 1, or October 1 following permit effective date	January 1 through March 31, samples are collected in January; April 1 through June 30; samples are collected in April; July 1 through September 30; samples are collected in July; October 1 through December 31; samples are collected in October	First day of the second month following the reporting period, submit with monthly SMR
Semi-annually	Closest of January 1 or July 1 following permit effective date	January 1 through June 30, samples are collected in January. July 1 through December 31, samples are collected in July.	first day of the second month following the reporting period, submit with monthly SMR
Annually	The effective day of this Order	January 1 through December 31, see Table 1.	April 1 each year including report requirements in Attachments Pretreatment report due to September, 1

4. Reporting Protocols. The Discharger shall report with each sample result the applicable reported Minimum Level (ML) and the current Method Detection Limit (MDL), as determined by the procedure in Part 136.

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

   a. Sample results greater than or equal to the reported ML 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.

   c. For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (+ a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

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32 *Quarterly monitoring result for certain constituents may be used to satisfy the annual monitoring for the same constituents.*

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

e. 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 hard copy SMRs (with an original signature) when required by subsection B.1 above 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 facility is operating in compliance with interim and/or final effluent limitations.

   b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

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

      California Regional Water Quality Control Board
      Santa Ana Region
      3737 Main Street, Suite 500
      Riverside, CA 92501-3348

6. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

7. By April 1 of each year, the Discharger shall submit an annual report to the Regional Water Board. The annual report shall include the following:

   a. Tabular and graphical summaries of the monitoring data obtained during the previous year;

   b. A discussion of the compliance record and the corrective actions taken or planned, which may be needed to bring the discharge into full compliance with the waste discharge requirements;

   c. A summary of the quality assurance (QA) activities for the previous year; and

d. For priority pollutant constituents that do not have effluent limitations but are required to be monitored, the Discharger shall evaluate the monitoring data obtained during the previous year and determine whether detected constituents are at levels that would warrant reopening the permit to include effluent limitations for such constituent(s). To conduct this evaluation, the concentration of detected constituents shall be compared to the most stringent applicable receiving water objectives (freshwater or human health (consumption of organisms only) as specified for that pollutant in 40 CFR 131.38[33]). The Discharger shall include a discussion of the corrective actions taken or planned to address values above receiving water objectives.

C. Discharge Monitoring Reports (DMRs)

1. As described in Section X.B.1 above, at any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit 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. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharger shall submit the original DMR and one copy of the DMR to the address listed below:

Table 13 Monitoring Reporting Submittal

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 of EPA Form 3320-1.

   Regional Administrator
   U. S. Environmental Protection Agency
   Region 9 – Attention WTR – 7
   75 Hawthorne Street
   San Francisco, CA 94105

[33] *See Federal Register/ Vol. 65, No. 97 / Thursday, May 18, 2000 / Rules and Regulations.*

D. Other Reports

1. The Discharger shall report the results of any special studies, acute and chronic toxicity testing, TRE/TIE, PMP, and Pollution Prevention Plan required by Special Provisions – VI.C. of this Order. The Discharger shall submit reports with the first monthly SMR scheduled to be submitted on or immediately following the report due date in compliance with SMR reporting requirements described in subsection X.B.5 above.

2. **Site Spills**

   a. In accordance with the requirements of Health and Safety Code section 5411.5, the Discharger shall provide notification to the local health officer or the director of environmental health with jurisdiction over the affected water body of any unauthorized release of sewage or other waste that causes, or probably will cause, a discharge to any waters of the state.

   b. In accordance with the requirements of Water Code section 13271, the Discharger shall provide notification to the Office of Emergency Services of the release of reportable amounts of hazardous substances or sewage that causes, or probably will cause, a discharge to any waters of the state. The California Code of Regulations, Title 23, section 2250, defines a reportable amount of sewage as being 1,000 gallons. The phone number for reporting these releases to the Office of Emergency Services is (800) 852-7550.

   c. The Discharger shall notify the Regional Water Board of any unauthorized release of sewage from its wastewater treatment plant that causes, or probably will cause, a discharge to a water of the state as soon as possible, but not later than two (2) hours after becoming aware of the release. This notification does not need to be made if the Discharger has notified the Office of Emergency Services. The phone number for reporting these releases of sewage to the Regional Water Board is (951) 782-4130. At a minimum, the following information shall be provided:

      (1) The location, date, and time of the release.

      (2) The water body that received or will receive the discharge.

      (3) An estimate of the amount of sewage or other waste released and the amount that reached a surface water at the time of notification.

      (4) If ongoing, the estimated flow rate of the release at the time of the notification.

      (5) The name, organization, phone number and email address of the reporting representative.

d. As soon as possible, but not later than twenty four (24) hours after becoming aware of an unauthorized discharge of sewage or other waste from its wastewater treatment plant to a water of the state, the Discharger shall submit a statement to the Regional Water Board by email at spillreportR8@waterboards.ca.gov. If the discharge is 1,000 gallons or more, this statement shall certify that the State Office of Emergency Services has been notified of the discharge in accordance with Water Code section 13271. The statement shall also certify that the local health officer or director of environmental health with jurisdiction over the affected water bodies has been notified of the discharge in accordance with Health and Safety Code section 5411.5. The statement shall also include at a minimum the following information:

(1) Agency and Order No.

(2) The location, date, and time of the discharge.

(3) The water body that received the discharge.

(4) A description of the level of treatment of the sewage or other waste discharged.

(5) An initial estimate of the amount of sewage or other waste released and the amount that reached a surface water.

(6) The Office of Emergency Services control number and the date and time that notification of the incident was provided to the Office of Emergency Services.

(7) The name of the local health officer or director of environmental health representative notified (if contacted directly); the date and time of notification; and the method of notification (e.g., phone, fax, email).

Attachment F – Fact Sheet

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List of Tables

ATTACHMENT F – FACT SHEET

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

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” are fully applicable to this Discharger.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table 1. Facility Information

<table>
<tr><td colspan="2">WDID</td><td colspan="4">8 332818001</td></tr>
<tr><td colspan="2">Discharger/Operator</td><td colspan="4">Inland Empire Utilities Agency</td></tr>
<tr><td colspan="2">Name of Facility</td><td>Regional Water Recycling Plant No. 1 (RP-1)</td><td>Regional Water Recycling Plant No. 4 (RP-4)</td><td>Regional Water Recycling Plant No. 5 (RP-5)</td><td>Carbon Canyon Water Reclamation Facility (CCWRF)</td></tr>
<tr><td colspan="2" rowspan="3">Address</td><td>2450 East Philadelphia Street.</td><td>12811 Sixth Street</td><td>6068 Kimball Avenue, Building “C”</td><td>14950 Telephone Avenue</td></tr>
<tr><td>Ontario, CA 91761</td><td>Rancho Cucamonga, CA 91729</td><td>Chino, CA 91708</td><td>Chino, CA 91710</td></tr>
<tr><td colspan="4">San Bernardino County</td></tr>
<tr><td colspan="2">Facility Contact, Title and Phone</td><td colspan="4">Patrick O. Sheilds, Executive Manager of Operations, (909) 993-1806</td></tr>
<tr><td colspan="2">Authorized Person to Sign and Submit Reports</td><td colspan="4">Patrick O. Sheilds, Executive Manager of Operations, (909) 993-1806</td></tr>
<tr><td colspan="2">Address</td><td colspan="4">6075 Kimball Avenue, Chino, CA 91708</td></tr>
<tr><td colspan="2">Mailing/Billing Address</td><td colspan="4">P.O. Box 9020, Chino Hills, CA 91709</td></tr>
<tr><td colspan="2">Major or Minor Facility</td><td colspan="4">Major</td></tr>
<tr><td colspan="2">Type of Facility</td><td colspan="4">POTW</td></tr>
<tr><td colspan="2">Threat to Water Quality</td><td colspan="4">1</td></tr>
<tr><td colspan="2">Complexity</td><td colspan="4">A</td></tr>
<tr><td colspan="2">Pretreatment Program</td><td colspan="4">Y</td></tr>
<tr><td colspan="2">Reclamation Requirements</td><td colspan="4">Y</td></tr>
<tr><td colspan="2">Facilities Permitted Flow</td><td colspan="4">84.4 million gallons per day (mgd)</td></tr>
<tr><td colspan="2">Facility Design Flow</td><td>44 mgd</td><td>14 mgd</td><td>15 mgd (and 1.3 mgd flow from sludge treatment system at Regional Water Recycling Plant No.2 (RP-2))</td><td>11.4 mgd</td></tr>
<tr><td colspan="2">Watershed</td><td colspan="4">Santa Ana River watershed</td></tr>
<tr><td rowspan="2">Receiving Water</td><td>Surface Waters</td><td colspan="2">Prado Park Lake, Reach 1A of Chino Creek, Reach 1 of Cucamonga Creek, Mill Creek, and Reach 3 of Santa Ana River</td><td>Reach 1B of Chino Creek and Reach 3 of Santa Ana River</td><td>Reach 2 of Chino Creek and Reach 3 of Santa Ana River</td></tr>
<tr><td>Groundwater</td><td colspan="4">Chino North “Maximum Benefit” Groundwater Management Zone/Chino 1, 2, and 3 “Antidegradation” Groundwater Management Zones</td></tr>
<tr><td colspan="2">Receiving Water Type</td><td colspan="4">Inland surface water and groundwater</td></tr>
</table>

A. Inland Empire Utilities Agency (hereinafter Discharger, or IEUA) is the owner and operator of four regional water recycling facilities, appurtenant structures[1], sewer pipeline system, and recycled water distribution system (hereinafter Facilities). The four Facilities are linked as shown in Figures 1 and 2 of Attachment C.

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. The Discharger produces tertiary treated wastewater and discharges to surface waters at different locations, including discharges into Reaches IA, IB and 2 of Chino Creek, Reach 1 of Cucamonga Creek, Prado Park Lake, and Reach 3 of the Santa Ana River. Chino Creek, Reach 1 of Cucamonga Creek, Prado Park Lake, and the Santa Ana River are waters of the United States. Discharges from the Facilities are regulated pursuant to the following Orders tabulated below for each facility:

Table 2. List of Orders adopted for each Facility

Facility	Order No.	Order Adoption Date	Expiration Date	WDR Regulatory Scope
RP-1 & RP-4	R8-2006-0010, amended by R8-2007-0045 and R8-2007-0078	May 19, 2006	May 1, 2011	Regulates discharges to Prado Park Lake and Reach 1 of Cucamonga Creek, tributaries to Reach 3 of Santa Ana River and recycled water use.
RP-5	R8-2008-0028	Sept. 5, 2008	Sept. 1, 2013	Regulates discharges to Reach 1B of Chino Creek, a tributary to Reach 3 of Santa Ana River and recycled water use.
CCWRF	R8-2004-0020, amended by R8-2006-0038 and R8-2007-0078	August 13, 2004	August 1, 2009	Regulates discharges to Reach 2 of Chino Creek, a tributary to Reach 3 of Santa Ana River and recycled water use.

The terms and conditions of the current Orders remain in effect until new Waste Discharge Requirements and NPDES permit are adopted pursuant to this Order.

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1 *Appurtenant structures among other things include the Regional Water Recycling Plant No.2 (RP-2) facility. RP-2 is an existing tertiary wastewater treatment plant owned by the Discharger. Cease and Desist Order No. 94-74 required the Discharger to relocate the liquid treatment facilities at RP-2 to a site not subject to flooding. Consequently, RP-5 replaced RP-2. Only the sludge treatment systems at RP-2 are operational and there are no longer surface water discharges from RP-2. Primary and waste activated sludge from RP-5 and CCWRF are piped to the regional solids handling facility at RP-2 for sludge treatment. Dewatered wastewater from RP-2 is pumped back to the headworks of RP-5.*

C. The Discharger filed a report of waste discharge and submitted an application for a new Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit on January 27, 2009. The Discharger requests consolidation of all three permits into one permit for the Discharger's Facilities. This request is consistent with the interconnected nature of the facilities and the approach specified in the individual Orders to regulate certain constituents (TDS and TIN) on an agency-wide, flow-weighted average basis. This new permit will regulate the discharges from the Facilities to surface waters and will also regulate recycled water use. Supplemental information was requested starting February 13, 2009. The latest supplemental information was received on May 21, 2009. A site visit was conducted on May 19, 2009, to observe operations and collect additional data to develop permit limitations and conditions. The application was deemed complete on May 21, 2009.

II. FACILITY DESCRIPTION

A. Description of Wastewater and Biosolids Treatment or Controls

1. Discharger and Service Area

Inland Empire Utilities Agency (IEUA) is a municipal water supply and wastewater treatment agency. IEUA owns and operates a regional wastewater collection system and water recycling plants, including RP-1, RP-4, RP-5, and CCWRF. The treatment Facilities receive domestic, commercial, and industrial waste waters generated within the IEUA service areas. Wastewater can be diverted to different plants via available routing options built into the regional system (see Figure 1 of Attachment C for further detail). After treatment, recycled water can be discharged to nearby outfall(s) or recycled for industrial uses, irrigation and groundwater recharge. The following table summarizes the service areas and the population served by each Facility.

Table 3. Summary of Service Areas & Population Served

Facility	Population Served	Cities/Agency Served
RP-1 & RP-4	602,000	Chino, Fontana, Montclair, Upland, Ontario, and Cucamonga Valley Water District
RP-5	104,000	Chino, Chino Hills, and Ontario; Montclair and Upland via CCWRF
CCWRF	126,400	Chino, Chino Hills, Montclair, and Upland

Attachment B provides a map of the area at each water recycling Facility.

Attachment C provides the IEUA System-Wide influent flow interrelationship diagram, IEUA System-Wide Water Recycling Distribution System and treatment flow schematic for each Facility.

2. Design Characteristics and Biosolids Treatment

The treatment processes at each Facility are tabulated as follows:

Table 4. Plant Treatment Processes

Facility	RP-1	RP-4	RP-5	CCWRF
Preliminary & Primary Treatment	Mechanical bar screens, grit chambers, chemical addition, primary clarifiers, flow equalization /emergency storage basins	Mechanical bar screens, grit chambers, chemical addition, primary clarifiers	Mechanical bar screen, grit chambers, one storage basin (, primary clarifiers	Mechanical bar screen, grit removal, chemical addition, primary clarifiers, emergency storage basin
Secondary Treatment	Aeration trains with oxic/anoxic zones, secondary clarifiers	Aeration basins with oxic /anoxic zones, secondary clarifiers	Aeration basins with anoxic/oxic zones, secondary clarifiers	Aeration basins with anoxic/oxic zones, secondary clarifiers
Tertiary Treatment	Coagulation/Flocculation, sedimentation, filtration, chlorination, dechlorination	Coagulation/Flocculation, filtration, chlorination, de-chlorination (not used), emergency diversion pond	Coagulation/Flocculation, filtration, chlorination, de-chlorination, emergency overflow pond	Coagulation/flocculation, filtration, chlorination, dechlorination
Design Capacity, mgd	44	14	15 (and 1.3 mgd RP-2 sludge treatment system wastewater flows)	11.4
Solids Handling	The solids handling for these facilities takes place at RP-1. RP-4 primary sludge and waste activated sludge are conveyed through the sewer system and enter RP-1 as influent. Solids treatment includes gravity thickener and dissolved air flotation thickeners, anaerobic digestion, digester gas utilization, and belt press dewatering. Belt press wash water is pumped to the DAFT units where the solids can be recovered and the remaining liquid is returned to the activated sludge process.[2] Belt press filtrate is pumped to the Non-Reclaimable Waste System (NRWS) line and is ultimately treated by the County Sanitation Districts of Los Angeles County.		Primary and waste activated sludge wastes from RP-5 and CCWRF are piped to the regional solids handling facility at RP-2 for sludge treatment. The solids treatment system at RP-2 includes gravity thickeners; dissolved air flotation thickeners; anaerobic digestion; aerobic digestion; belt press, and centrifuge dewatering. Dewatered biosolids are hauled away to approved disposal sites Sludge treatment system wastewater from RP-2 is pumped back to headworks of RP-5.	

2 *IEUA plans to construct a building to house four new centrifuges for dewatering digested sludge. This will replace the belt press dewatering. The tentative project completion and start-up date is 2012.*

3. Recycled Water Uses

The Discharger delivers tertiary treated wastewater through the regional recycled water system at various locations for recycling use. The recycled water is used for landscape irrigation by public and private users, for agricultural irrigation by farmers, for dust control at construction sites and for industrial purposes, including equipment/machinery cooling. Total average flow for recycled water use has increased significantly in recent years, with a peak annual average usage of approximately 20 mgd in 2008. This Order also regulates the recycled water use within the Discharger's service area.

Recycled water from RP-1 and RP- 4 is also used for groundwater recharge in areas overlying the Chino North Groundwater Management Zone. This groundwater recharge is regulated under a separate Order (Order No. R8-2007-0039). Order No. R8-2007-0039 was issued to the Discharger and the Chino Basin Watermaster to regulate the use of recycled water for the Chino Basin Recycled Water Groundwater Recharge Project, Phase I and Phase II. Order No. R8-2009-0021 does not regulate the use of recycled water for groundwater recharge.

B. Discharge Points and Receiving Waters

1. Discharge Points to Surface Water

Tertiary treated wastewater from each of the four Facilities is discharged at different Discharge Points (DPs 001, 002, 003, & 004) to surface waters that include Reaches 1A, 1B and 2 of Chino Creek, Reach 1 of Cucamonga Creek, and Prado Park Lake. These waterbodies are tributary to Reach 3 of the Santa Ana River within the Prado Basin Management Zone.

2. Stormwater Discharge points

Stormwater flows generated on site at RP-1 are collected and pumped to a liquid process stream for treatment. In the event that stormwater flows exceed the capacity to store and/or pump to a liquid process stream, stormwater may enter Reach 1 of Cucamonga Creek via S-001 or S-002.

Stormwater flows generated on site at RP- 4 are fully contained in an onsite, 4 million gallon capacity storage basin. All water captured in this basin is then pumped to a liquid process stream for treatment.

Stormwater flows generated on site at RP-5 and CCWRF plant are collected and pumped to the liquid process stream for treatment.

3. Recycled Water Use Area
Recycled water for irrigation is delivered to IEUA's service area through Discharge Points (DP) 005 through DP 008.

4. Receiving Water

Surface water. Tertiary treated wastewater discharges from the Facilities are either into Reaches 1A, 1B and 2 of Chino Creek, Reach 1 of Cucamonga Creek, and Prado Park Lake, tributaries of Reach 3 of the Santa Ana River within the Prado Basin Management Zone (PBMZ).

Groundwater. The Discharger distributes recycled water throughout its service area. The current recycled water use area overlies the Chino North "Maximum Benefit" Groundwater Management Zone (or Chino 1, 2, and 3 "Antidegradation" groundwater management zones).

There is little or no groundwater storage within the PBMZ.

Table 5 shows a summary of the discharge points, discharge coordinates (longitude and latitude), affected receiving waters, and estimated volume of discharge:

Table 5. Summary of Discharge Points and Receiving Waters

Discharge Point	Latitude	Longitude	Discharging Facility	Effluent Description and Receiving Water	Flow (MGD) & Frequency
001	N33°56'39"	W117°38'34"	RP-1	Tertiary treated effluent into Prado Park Lake. Overflow from the lake to an unnamed creek, then to Reach 1A of Chino Creek, a tributary to Reach 3 of Santa Ana River in Prado Basin	6.6 mgd 3-year average Continuous discharge
002	N34°1'31"	W117°33'56"	RP-1 & RP-4	Reach 1 of Cucamonga Creek, then to Mill Creek, then Reach 1A of Chino Creek, a tributary to Reach 3 of Santa Ana River in Prado Basin	20.6 mgd 3-year average Continuous discharge
003	N33°57'44"	W117°40'41"	RP-5	Reach 1B of Chino Creek, a tributary to Reach 3 of Santa Ana River	10.2 mgd 3-year average Continuous discharge
004	N33°58'56	W117°41'48"	CCWRF	Reach 2 of Chino Creek, a tributary to Reach 3 of Santa Ana River	9.9 mgd 3-year average Continuous discharge

Table 5. Summary of Discharge Points and Receiving Waters

Discharge Point	Latitude	Longitude	Discharging Facility	Effluent Description and Receiving Water	Flow (MGD) & Frequency
005	N34°01'29"	W117°35'57"	RP-1	Recycled water use in areas overlying Chino North "Max Benefit" GMZ	14.1 mgd 1-year average - intermittent
006	N34°04'59"	W117°31'35"	RP-4	Recycled water use in areas overlying Chino North "Max Benefit" GMZ	3.1 mgd 1-year average (2007) - intermittent
007	N33°57'51"	W117°40'24"	RP-5	Recycled water use in areas overlying Chino North "Max Benefit" GMZ	1.0 MGD 1-year average - intermittent
008	N33°58'47"	W117°41'37"	CCWRF	Recycled water use in areas overlying Chino North "Max Benefit" GMZ	2.8 mgd 1-year average - intermittent
S-001	N34°01'36"	W117°35'59"	RP-1	Stormwater runoff to Reach 1 of Cucamonga Creek	Varies during storm event
S-002	N34°01'28"	W117°35'58"	RP-1	Stormwater runoff to Reach 1 of Cucamonga Creek	Varies during storm event

C. Summary of Previous Requirements and Self-Monitoring Report (SMR) Data

1. Effluent Limitations/Discharge Specifications contained in the previous Order No. R8-2006-0010 for discharges from RP-1 & RP-4 at Discharge Point 001 and DP002 and representative monitoring data from the term of the previous Order are as follows:

Table 6. RP-1 Historic Effluent Limitations and Monitoring Data at M-001A and M-001B

Parameter (units)	Effluent Limitation			Monitoring Data (From Aug. 2004 to December 2008)			
	Average Monthly	**Average Weekly**	**Maximum Daily**	**Highest Average Monthly Discharge**	**Highest Average Weekly Discharge**	**Highest Daily Discharge**	**Highest 12-Month Average**
Flow (mgd) (Jan 06 to Dec 08)				11.1		11.7	Avg: 6.5
pH Daily Average (SU)			Range 6.5-8.5			Range 6.7-8.4	
BOD5 (mg/L)	20	30		2	3		
Suspended Solids (mg/L)	20	30		2	3		
Coliform Organisms (MPN/100 mL)	23 (1/mo.)	2.2			2		
Ammonia-Nitrogen (mg/L)	4.5			2.9			

Table 6. RP-1 Historic Effluent Limitations and Monitoring Data at M-001A and M-001B

Parameter (units)	Effluent Limitation			Monitoring Data (From Aug. 2004 to December 2008)			
	Average Monthly	**Average Weekly**	**Maximum Daily**	**Highest Average Monthly Discharge**	**Highest Average Weekly Discharge**	**Highest Daily Discharge**	**Highest 12-Month Average**
Total Residual Chlorine (mg/L)			0.1 Instant. Max			0.0	
TDS (mg/L)	12-M, 550 agency-wide[3]			543			505 combined M-001 and M-002
Total Hardness (mg/L)					5th percentile 123	159	
Toxicity, TUc				1.7 Reproduction			
TIN[4] (mg/L)	12-M, 8 agency-wide						9.8 Note: combined RP-1 and RP-4
Arsenic(µg/L)				6		6	
Cadmium(µg/L)				<0.25		<0.25	
Total recoverable Chromium (VI) (µg/L)				4.6		4.6	
Copper (µg/L)				7		7	
Free Cyanide (µg/L)[5]	4.2		8.5	24		24	
Lead (µg/L)				<0.5		<0.5	
Mercury (µg/L)				<0.05		<0.05	
Nickel (µg/L)				16		16	
Total recoverable Selenium (µg/L)	4.1		8.2	7		7	
Silver (µg/L)				0.7		0.7	
Zinc (µg/L)				122		122	
Bis(2-Ethylhexyl) Phthalate (µg/L)	5.9		11.8	9		9	
Bromodichloro Methane (µg/L)				34		34	
Chlorodibromo Methane (µg/L)				13		13	

3 *This limitation may be met on an agency-wide basis using flow weighted averages of the discharges from all treatment plants operated by the Discharger*

4 *Agency wide, the Discharger currently complies with the total inorganic nitrogen limitations in the Orders for RP-1, RP-4, RP-5 and CCWRF.*

5 *Prior to January 2008, "Available cyanide" was measured rather than just "Free Cyanide". Available cyanide encompasses weak-acid dissociable cyanide compounds (that can release free cyanide) and free cyanide.*

Table 6. RP-1 Historic Effluent Limitations and Monitoring Data at M-001A and M-001B

Parameter (units)	Effluent Limitation			Monitoring Data (From Aug. 2004 to December 2008)			
	Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge	Highest 12-Month Average
Turbidity, NTU			2			>2	

Table 7. RP-1 & RP-4 Historic Effluent Limitations and Monitoring Data at M-002A and M-002B

Parameter (units)	Effluent Limitation			Monitoring Data (From Aug 2004 to December 2008)			
	Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge	Highest 12-Month Average
Flow (mgd) (Jan 06 to Dec 08)				28.5		40.9	Avg: 20.4
pH Daily Average (SU)			Range 6.5-8.5			Range 6.5-8.0	
BOD5 (mg/L)	20	30		2	3		
Suspended Solids (mg/L)	20	30		5	12		
Coliform Organisms (MPN/100 mL)	23 (1/mo.)	2.2	240		2		
Ammonia-Nitrogen (mg/L)	4.5			3.0			
Total Residual Chlorine (mg/L)			0.1 instant. Max			4.8	
TDS (mg/L)	12-M, 550 agency-wide			534			505 Note: combined RP-1 and RP-4
Total Hardness (mg/L)					5th percentile 120	162	
Toxicity, TUc				1.3 Reproduction			
TIN (mg/L)	12-M, 8 agency-wide						9.8 combined M-001 and M-002 only
Arsenic(µg/L)				6		6	
Cadmium(µg/L)				<0.25		<0.25	
Total recoverable Chromium (VI) (µg/L)				4.3		4.3	
Copper (µg/L)				8		8	
Free Cyanide (µg/L)[6]	4.2		8.5	15		15	
Lead (µg/L)				5		5	
Mercury (µg/L)				<0.05		<0.05	
Nickel (µg/L)				4		4	

6 *Prior to January 2008, "Available" cyanide was measured rather than "Free Cyanide".*

Table 7. RP-1 & RP-4 Historic Effluent Limitations and Monitoring Data at M-002A and M-002B

Parameter (units)	Effluent Limitation			Monitoring Data (From Aug 2004 to December 2008)			
	Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge	Highest 12-Month Average
Total recoverable Selenium (µg/L)	4.1		8.2	8		8	
Silver (µg/L)				0.37		0.37	
Zinc (µg/L)				59		59	
Bis(2-Ethylhexyl) Phthalate (µg/L)	5.9		11.8	7		7	
Bromodichloro Methane (µg/L)				31		31	
Chlorodibromo Methane (µg/L)				13		13	

2. Effluent limitations/Discharge Specifications contained in the previous Order No. R8-2008-0028 for discharges from RP-5 at discharge Point 003 and representative monitoring data from the term of the previous Order are as follows:

Table 8. RP-5 Historic Effluent Limitations and Monitoring Data at M-003

Parameter (units)	Effluent Limitation			Monitoring Data (From Aug 2004 to December 2008)			
	Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge	Highest 12-Month Average
Flow (mgd) (Jan 06 to Dec 08)				13.0		15.4	Avg: 10.3
pH Daily Average (SU)			Range 6.5-8.5			Range 6.5-8.1	
BOD5 (mg/L)	20	30		<2	<3		
Suspended Solids (mg/L)	20	30		4	7		
Coliform Organisms (MPN/100 mL)	23 (1/mo.)	2.2	240		2		
Ammonia-Nitrogen (mg/L)	4.5			0.4			
Total Residual Chlorine (mg/L)			0.1 Instant. Max.			0.0	
TDS (mg/L)	12-M, 550 agency-wide			557			533
Total Hardness (mg/L)					5th percentile 148	215	
Toxicity, TUc				>1.7 Reproduction			
TIN (mg/L)	12-M, 8 agency-wide						6.5
Arsenic (µg/L)				7		7	
Cadmium (µg/L)				1.7		1.7	

Table 8. RP-5 Historic Effluent Limitations and Monitoring Data at M-003

Parameter (units)	Effluent Limitation			Monitoring Data (From Aug 2004 to December 2008)			
	Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge	Highest 12-Month Average
Total recoverable Chromium (VI) (µg/L)				9		9	
Copper (µg/L)				13		13	
Free Cyanide (µg/L) [7]	4.6		7.3	8		8	
Lead (µg/L)				3		3	
Mercury (µg/L)				<0.05		<0.05	
Nickel (µg/L)				7		7	
Total recoverable Selenium (µg/L)				3		3	
Silver (µg/L)				0.5		0.5	
Zinc (µg/L)				69		69	
Bis(2-Ethylhexyl) Phthalate (µg/L)				3		3	
Bromodichloro Methane (µg/L)				48		48	
Chlorodibromo Methane (µg/L)				21		21	
2,3,7,8-TCDD (Dioxin), (µg/L)						0.0000035	

3. Effluent limitations/Discharge Specifications contained in the previous Order No. R8-2004-0020 for discharges from CCWRF at Discharge Point 004 and representative monitoring data from the term of the previous Order are as follows:

Table 9. CCWRF Historic Effluent Limitations and Monitoring Data at M-004

Parameter (units)	Effluent Limitation			Monitoring Data (From Aug 2004 to December 2008)			
	Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge	Highest 12-Month Average
Flow (mgd) (Jan 06 to Dec 08)	11.4			10.0		13.2	Avg: 6.9
pH Daily Average (SU)			Range 6.5-8.5			Range 6.6-7.7	
BOD5 (mg/L)	20	30		2	3		
Suspended Solids (mg/L)	20	30		2	8		
Coliform Organisms (MPN/100 mL)	23 (1/mo.)	2.2	240		2		
Ammonia-Nitrogen (mg/L)	4.5			0.2			

7 *Prior to January 2008, "Available cyanide" was measured rather than "Free Cyanide".*

Table 9. CCWRF Historic Effluent Limitations and Monitoring Data at M-004

Parameter (units)	Effluent Limitation			Monitoring Data (From Aug 2004 to December 2008)			
	Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge	Highest 12-Month Average
Total Residual Chlorine (mg/L)			0.1 instant. Max			0.0	
TDS (mg/L)	12M, 550 agency-wide			554			537
Total Hardness (mg/L)					5^{th} percentile 130		
Toxicity, TUc				1.7 Reproduction			
TIN (mg/L)	12M, 8						7.5
Arsenic(µg/L)				7		7	
Cadmium(µg/L)				<0.25		<0.25	
Total recoverable Chromium (VI) (µg/L)	8.2		16.3	4.1		4.1	
Copper (µg/L)				12		12	
Free Cyanide (µg/L)[8]	4.1		8.2	8		8	
Lead (µg/L)				0.5		0.5	
Mercury (µg/L)				<0.05		<0.05	
Nickel (µg/L)				20		20	
Total recoverable Selenium (µg/L)	4.1		8.2	<2		<2	
Silver (µg/L)				0.9		0.9	
Zinc (µg/L)				57		57	
Bis(2-Ethylhexyl) Phthalate(µg/L)	5.9		11.8	25		25	
Bromodichloro Methane (µg/L)				33		33	
Chlorodibromo Methane (µg/L)				10		10	
2,3,7,8-TCDD (Dioxin) (µg/L)						0.00000026	

D. Compliance Summary

Based on a review of effluent monitoring data submitted by the Discharger for the period from 2004 through 2008, the following Table shows the compliance summary for each Facility:

8 *Prior to January 2008, “Available cyanide” was measured rather than Free Cyanide.*

Table 10. Compliance Status RP-1, RP-5 and CCWRF

Date	Plant	Parameter	Value	Permit Limit	Reason for Violation	Corrective Measures
01/02/04	RP-1 (001)	Chlorine Residual	4.6 mg/L	0.1mg/L	Sodium Bisulfite (SBS) crystallized due to low temps	Heat tape installed to the SBS piping distribution system to prevent crystallization of SBS in the line
10/17/04	RP-1 (001)	Chlorine Residual	6.5 mg/L	0.1mg/L or not exceed 5 mg/L	Dechlor Station power failure	Monthly standby generator testing and automated V-1 valve closure
03/14/05	RP-1 (001)	Turbidity	>2 NTU	2 NTU	Plant upset, unstable activated sludge system , and one activated sludge train was in repair	Placed train back into service, reseeded one activated sludge system, polymer addition, chlorinated RAS.
03/14/05 - 03/16/05	RP-1 (002)	Turbidity	>2 NTU	2 NTU, 5 NTU 5%		
07/24/06	RP-1 (002)	Chlorine Residual	4.8 mg/L	0.1mg/L	Stage 2 Power Alert. Standby generator at pump stations and Dechlor stn power failure	Preventative maintenance procedures reviewed, revised, and implemented.
10/01/06	RP-1 (002)	Coliform	900 MPN/100 mL	240 MPN/ 100mL	Sample contamination	Staff retrained in sample collection and handling techniques
09/05/07	RP-1 (001)	Coliform	500 MPN/100 mL	240 MPN/ 100mL	Sample contamination	Staff retrained in sample collection and handling techniques
11/22/07	RP-1 (002)	Coliform	>1600 MPN/100 mL	240 MPN/ 100mL	Metal tip at sampling point contaminated sample	Discontinued use of metal tip at sampling point
03/06/07	CCWRF	Bis(2-ethylhexyl phthalate	25 µg/L	5.9 µg/L avg; 11.8 µg/L max	Sample contamination	Compound commonly used in the manufacturing of plastics. Influent concentration was "non-detect"
01/04/05	RP-5	Chlorine Residual	5.29 mg/L	0.1mg/L or not exceed 5 mg/L	Sodium Bisulfite (SBS) crystallized due to low temps	Heat tape installed to the SBS piping distribution system to prevent crystallization of SBS in the line.
01/09/05	RP-5	Chlorine Residual	>5.0 mg/L	0.1mg/L or not exceed 5 mg/L	Control analyzer failure	Allow effluent gate to close automatically as designed.

E. Planned Changes – Not Applicable

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

A. Legal Authorities

This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and Chapter 5.5, Division 7 of the California Water Code (commencing with Section 13370). It shall serve as a NPDES permit for point source discharges from the Regional Water Recycling Facilities to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, Chapter 4, Division 7 of the Water Code (commencing with Section 13260). This Order also includes Producer/User Recycling Requirements to regulate recycled water use for irrigation and other industrial uses.

B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code section 21000 et seq. (*County of Los Angeles v. California State Water Resources Control Board* (2006) 143 Cal.App.4th 985, mod. (Nov. 6, 2006, B184034) 50 Cal.Rptr.3d 619, 632-636.)

This action also involves the re-issuance of waste discharge requirements for an existing Facility that discharges treated wastewater to land and as such, is exempt from the provisions of California Environmental Quality Act (commencing with Section 21100) in that the activity is exempt pursuant to Title 14 of the California Code of Regulations Section 15301.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** The Regional Water Board adopted an updated Water Quality Control Plan for the Santa Ana Basin (hereinafter Basin Plan) that became effective on January 24, 1995. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, State Water Resources Control Board (State Water Board) Resolution No. 88-63 (Sources of Drinking Water Policy) requires that, with certain exceptions, the Regional Water Board assign the municipal and domestic water supply use to water bodies. Based on the exception criteria specified in Resolution No. 88-63, the Regional Water Board excepted certain waters from the municipal and domestic supply beneficial use.

   On January 22, 2004, the Regional Water Board adopted Resolution No. R8-2004-0001, amending the Basin Plan to incorporate revised boundaries for groundwater subbasins, now termed “management zones”, new nitrate-nitrogen and TDS objectives for the new management zones, and new nitrogen and TDS management strategies applicable to both surface and ground waters. The State Water Board and Office of Administrative Law (OAL) approved the N/TDS

Amendment on September 30, 2004 and December 23, 2004, respectively. EPA approved the surface water standards components of the N/TDS Amendment on June 20, 2007. Effluent limitations in this Order for TDS and TIN discharges to Chino Creek, Reach 1 of Cucamonga Creek, Prado Park Lake, and Reach 3 of the Santa Ana River are based on applicable wasteload allocations specified in the Basin Plan as amended.

The designated beneficial uses of receiving waters affected by the discharge from the Facility are as follows:

Table 11. Basin Plan Beneficial Uses

Discharge Point	Receiving Water	Beneficial Uses
001	Prado Park Lake, overflow from the lake to an unnamed creek, then to Reach 1A of Chino Creek	Present or Potential: Water contact recreation (REC-1), non-contact water recreation (REC-2), warm freshwater habitat, wildlife habitat (WILD), and rare, threatened and endangered species. Recreational use at Prado Park Lake is restricted to fishing and boating. Excepted from Municipal and Domestic Supply.
002	Reach 1 of Cucamonga Creek, to Mill Creek, then Reach 1A of Chino Creek	Present or Potential: Groundwater Recharge, Water contact recreation (REC-1), non-contact water recreation (REC-2), Limited warm freshwater habitat, and wildlife habitat (WILD). Excepted from Municipal and Domestic Supply.
003	Reach 1B of Chino Creek	Present or Potential: Water contact recreation (REC-1), non-contact water recreation (REC-2), warm freshwater habitat, wildlife habitat (WILD), and rare, threatened and endangered species. Excepted from Municipal and Domestic Supply.
004	Reach 2 of Chino Creek	Present or Potential: Groundwater Recharge, Water contact recreation (REC-1), non-contact water recreation (REC-2), Cold freshwater habitat, and wildlife habitat (WILD). Excepted from Municipal and Domestic Supply.
001, 002, 003, 004, S-001, & S-002	Reach 3 of Santa Ana River within Prado Basin Management Zone	Present or Potential: Agricultural supply, groundwater recharge, water contact recreation, non-contact water recreation, warm freshwater habitat, wildlife habitat, rare, threatened or endangered species, and spawning, reproduction, and development waters supporting high quality aquatic habitats. Excepted from Municipal and Domestic Supply.

Table 11. Basin Plan Beneficial Uses

Discharge Point	Receiving Water	Beneficial Uses
001, 002, 003, 004, 005, 006, 007, 008, S-001, & S-002	Chino North "Max Benefit" GMZ / Chino 1, 2 and 3 "antidegradation" GMZs	Present or Potential: Municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.
	Orange GMZ (affected GMZ downstream of discharge points)	Present or Potential: Municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.

Requirements of this Order implement the Basin Plan.

2. **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 forty 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 were applicable in the state. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority pollutants.

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 promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the USEPA 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 (WQS) become effective for CWA purposes (40 C.F.R. § 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 the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 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 the State and federal antidegradation policies. As discussed in Section IV. E. 2 of this Fact Sheet, the permitted discharges are consistent with the antidegradation provisions of § 131.12 and State Water Board Resolution No. 68-16.

6. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code of Federal Regulations[9] section 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. All effluent limitations in the Order are at least as stringent as the effluent limitations in the previous Orders for each Facility.

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

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

Reach 1 of Chino Creek, Mill Creek (Prado Area) and Prado Park Lake are included in the USEPA approved 2006 CWA 303(d) list due to nutrients resulting principally from agricultural and dairy operations inputs during storm events. Reaches 1 & 2 of Mill Creek are also listed due to pathogen indicators, also resulting principally from dairy operations inputs during storm events. This Order requires that the wastewater discharged from the Facilities be essentially free of pathogens/pathogen indicators and that the wastewaters comply with the applicable Basin Plan wasteload allocation for total inorganic nitrogen (8 mg/L) for surface water discharges.

E. Other Plans, Polices and Regulations-Not Applicable

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[9] *All further statutory references are to title 40 of the Code of Federal Regulations unless otherwise indicated.*

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 that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: section 122.44(a) requires that permits include applicable technology-based limitations and standards; and section 122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water

A. Discharge Prohibitions

The discharge prohibitions are based on the Federal Clean Water Act, Basin Plan, State Water Board's plans and policies, U.S. Environmental Protection Agency guidance and regulations, and previous permit provisions in Orders No. R8-2006-0010, R8-2008-0028, and R8-2004-0020 and are consistent with the requirements set for other discharges regulated by NPDES permits adopted by the Regional Water Board.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations, require that permits include conditions meeting applicable technology-based requirements at a 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 Part 133 and/or Best Professional Judgment (BPJ) in accordance with Part 125, section 125.3.

Regulations promulgated in 40 CFR §125.3(a)(1) require technology-based effluent limitations for municipal dischargers to be placed in waste discharge requirements based on Secondary Treatment Standards or Equivalent to Secondary Treatment Standards.

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTWs [defined in Section 304(d)(1)]. Section 301(b)(1)(B) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the USEPA Administrator.

Based on this statutory requirement, USEPA developed secondary treatment regulations, which are specified in 40 CFR Part 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of biochemical oxygen demand (BOD_5), total suspended solids (TSS), and pH.

2. Applicable Technology-Based Effluent Limitations for 20:1 dilution

This Facility meets the technology-based regulations for the minimum level of effluent quality attainable by secondary treatment in terms of BOD_5, total suspended solids and removal rate as summarized in the Table below. These effluent limitations have been set for secondary treated wastewater discharges at Discharge Points (DPs) 002, 003, and 004 under 20:1 dilution conditions.

Table 12. Summary of Technology-Based Effluent Limits for Secondary Treatment

Constituent	Average Weekly (mg/L)	Average Monthly (mg/L)	Average Monthly Removal Rate %
Biochemical Oxygen Demand, 5-day 20^{0}C	45	30	85
Total Suspended Solids	45	30	85

DP 001 discharges to Prado Park Lake. This lake is a property of the County of San Bernardino. The County and the Discharger agreed that the Discharger will provide up to 6.6 mgd of tertiary treated recycled water to the lake for recreation and fishing. There are no other discharges into the lake except stormwater from the tributary drainage area. Overflow from this lake discharges continuously to an unnamed creek, then to Reach 1A of Chino Creek. Consequently, discharges of secondary treated wastewater under 20:1 dilution condition into the lake is not allowed.

C. WQBEL-Based Effluent Limitations for DP 001 through DP 004

1. Scope and Authority

Section 301(b) of the CWA and section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

Section 122.44(d)(1)(i) mandates 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, but there is no numeric criterion or objective for the pollutant, 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 section 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the CTR and NTR.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

a. The Basin Plan specifies narrative and numeric water quality objectives applicable to surface water as follows.

Table 13. Applicable Basin Plan Surface Water Quality Objectives

Constituents	Basis for Limitations
Ammonia Nitrogen	Dissociates under certain conditions to the toxic un-ionized form. Thus, nitrogen discharges to surface water pose a threat to aquatic life and instream beneficial uses, as well as to the beneficial uses of affected groundwater. The Basin Plan specifies total ammonia and un-ionized ammonia objectives and an effluent limit of 4.5 mg/L for discharges to surface waters--Chino Creek and Mill Creek.
Hydrogen Ion (pH)	Hydrogen Ion (pH) is a measure of Hydrogen Ion concentration in the water. A pH range of 6.5 to 8.5 for surface water discharges is specified.
Oil & Grease	Oil and related materials have a high surface tension and are not soluble in water, resulting in odors and visual impacts.
Total Dissolved Solids	High levels of TDS can adversely impact groundwater affected by recharge of the affected receiving waters, as well as the use of that groundwater for supply purposes. The TDS limit for surface water discharges is based on the amended Basin Plan <u>wasteload allocation for the discharger of 550 mg/L</u>[10] <u>and 80 mgd flow</u>.
Total Inorganic Nitrogen	Nitrogen discharges to the Santa Ana River pose a threat to aquatic life and instream beneficial uses, as well as to the beneficial uses of affected groundwater. The TIN limit for surface water discharges is based on the amended Basin Plan <u>wasteload allocation of 8.0 mg/L and 80 mgd flow</u> .
Total Chlorine Residual	Wastewater disinfection with chlorine usually produces chlorine residual. Chlorine and its reaction products are toxic to aquatic life. To protect aquatic life, the chlorine residual in wastewater discharged to inland surface waters shall not exceed 0.1 mg/L.

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10 *The Basin Plan specifies in Table 5-5 that TDS and TIN discharges to surface waters from the Discharger's wastewater treatment facilities are to be regulated pursuant to a single wasteload allocation, applied as a flow-weighted average of the discharges from the facilities. The TDS and TIN wasteload allocations are not contingent on "maximum benefit" objectives or implementation.*

(1) TDS and TIN: TDS and TIN limitations are specified in the Order for discharges of tertiary treated effluent at DPs 001, 002, 003, and 004. These TDS/TIN limits are based on the waste load allocation specified in Table 5-5 of the amended Basin Plan.

(2) TDS: This Order also includes a TDS limit based on the flow weighted running average quality of the water supplied to the service area plus a reasonable use increment of 250 mg/L. This reasonable use increment addition is discussed and authorized in the Basin Plan.

(3) For surface water discharges, the more restrictive of the TDS limit based on the wasteload allocation or the TDS limit based on water supply quality plus the reasonable use increment applies to discharges from the Facilities.

(4) In accordance with 40 CFR Section 122.45(d), there may be instances in which the basis for a limit for a particular continuous discharge may be impracticable to be stated as a maximum daily, average weekly, or average monthly effluent limitation. The Regional Water Board has determined that it is not practicable to express TDS and TIN effluent limitations as average weekly and average monthly effluent limitations because the TDS and TIN objectives in the Basin Plan were established primarily to protect the underlying groundwater. Consequently, a 12-month average period is more appropriate.

b. **NTR, CTR and SIP**. The National Toxics Rule, California Toxics Rule (CTR) and State Implementation Policy specify numeric objectives for toxic substances and the procedures whereby these objectives are to be implemented. The procedures include those used to conduct reasonable potential analysis to determine the need for effluent limitations for priority and non-priority pollutants.

c. **Requirement to meet 2.2 total coliform bacteria limit in the effluent.** Article 3, Section 60305 of Title 22, Chapter 3, "Use of Recycled water for impoundments" of the California Code of Regulations specifies that recycled water used as a source of supply in a nonrestricted recreational impoundment shall be at all times an adequately disinfected, oxidized, coagulated, clarified, filtered wastewater (tertiary treated). The degree of treatment specified represents an approximately 5-log reduction in the virus content of the water. The California State Department of Public Health (CDPH) has determined that this degree of virus removal is necessary to protect the health of people using these impoundments for water contact recreation. The CDPH has developed wastewater disinfection guidelines ("Wastewater Disinfection for Health Protection", Department of Health Services, Sanitary Engineering Branch, February 1987) for discharges of wastewater to surface waters where water contact recreation (REC-1) is a beneficial use. The disinfection guidelines recommend the same treatment requirements for wastewater discharges to REC-1 waters as those stipulated in Title 22 for supply of recycled water to nonrestricted recreational impoundments, since the public health risks under both scenarios are analogous. The disinfection guidelines are based on sound science and are widely used as guidance to assure public health and beneficial use protection.

None of the surface waters to which the discharges regulated under this Order occur are considered to be “nonrestricted recreational impoundments”, nor is “recycled water[11]” being used as a supply source pursuant to the definitions in Title 22. However, to protect the water contact recreation beneficial use and to prevent nuisance and health risk, it is necessary and appropriate to require the same degree of treatment for wastewater discharges to the affected waterbodies as would be required for the use of recycled water in a nonrestricted recreational impoundment. Thus, this Order specifies requirements based on tertiary or equivalent treatment.

d. **Requirement to meet disinfection CT limit in the effluent**. The Board has consulted with the CDPH regarding the applicability of the process design standards (specifically filter rates, CT, and modal contact) for discharges of waste to flowing streams. CDPH has determined that although compliance with these standards is necessary to protect public health when recycled water is used, compliance with these standards is not necessary to protect public health for discharges into waterbodies that provide dilution of the wastewater, provided the performance standards are consistently met. During periods when the receiving water can provide a 1:1 dilution of the wastewater discharge, the Order provides that the specified filter rates, CT, and modal contact time do not apply to wastewater discharges to surface water. The specified filter rates, CT, and modal contact time applies to recycled water use.

3. Determining the Need for WQBELs

In accordance with Section 1.3 of the SIP, the Regional Water Board conducted a reasonable potential analysis (RPA) for each priority pollutant with an applicable criterion or objective to determine if a WQBEL is required in the Order. The Regional Water Board analyzed effluent data to determine if a pollutant in a discharge has the reasonable potential to cause or contribute to an excursion above a state water quality standard. For all parameters that have the reasonable potential to cause or contribute to an excursion above a water quality standard, numeric WQBELs are required. The RPA considers criteria from the CTR, and when applicable, water quality objectives specified in the Basin Plan. For hardness dependent metals, a fixed hardness value for each outfall, based on the lowest 5th percentile of effluent hardness measurements from each plant, is used to facilitate the determination of compliance. The decision to use the 5th percentile of effluent hardness measurements is based on previous practice resulting from the Santa Ana River Use Attainability Analysis conducted in 1994 and a 2008 special study conducted by the State Water Board staff.

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11 *As defined in the Reclamation Criteria, recycled water means water which, as a result of treatment of domestic wastewater, is suitable for a direct beneficial use or a controlled use that would not otherwise occur.*

Sufficient data are needed to conduct a complete RPA. If data are not sufficient, the Discharger will be required to gather the appropriate data for the Regional Water Board to conduct the RPA. Upon review of the data, and if the Regional Water Board determines that WQBELs are needed to protect the beneficial uses, the permit will be reopened for appropriate modification.

The RPA was performed by reviewing the data provided by the Discharger in accordance with the SIP. Total recoverable selenium, and bis(2-ethylhexyl) phthalate were determined to have reasonable potential to cause an excursion above applicable pollutant criteria or objectives for discharges at DP 001 and DP 002. For discharges at DP 003, cyanide, selenium, bis(2-ethylhexyl) phthalate, and Bromodichloromethane were determined to have reasonable potential to cause an excursion above applicable pollutant criteria or objectives. For discharges at DP 004, bis(2-ethylhexyl) phthalate was determined to have reasonable potential to cause an excursion above applicable pollutant criteria or objectives. For CCWRF, the RPA also determined that total recoverable chromium (VI) does not have the reasonable potential to cause an excursion above applicable pollutant criteria or objectives. Consequently, effluent limitations for this constituent are not included in this Order.

The December 2007 monitoring data for 2,3,7,8-TCDD (Dioxin) at DP 003 and DP 004 showed one detected value each at 0.0000035 µg/L and 0.00000026 µg/L, respectively. These values are above the water quality criteria for Dioxin. However, the prior monitoring results before detection showed non-detect values and subsequent to detection, three monitoring data for each outfall also showed non-detect values. Considering the previous and subsequent monitoring results, it is determined that there is no reasonable potential for Dioxin to exceed applicable pollutant criteria. Consequently, no effluent limitation for Dioxin is included in the Order. However, the Order requires the Discharger to conduct quarterly monitoring for Dioxin for one year. The monitoring frequency is reduced to semi-annual if quarterly monitoring results show non-detect values at acceptable reporting levels.

For free cyanide, the RPA was based on the previous RPA that was done for each facility because the EPA approved test method for free cyanide is in question and the Discharger is using a test method that is currently being verified for accuracy and repeatability. This test method will be submitted to EPA for approval. Meanwhile, this Order retains the current effluent limits for free cyanide for RP-1, RP-4, RP-5 and CCWRF.

The following tables show the RPA study results for each Facility. Effluent limitations are established in this Order for those parameters with “yes” in the RPA column of the tables.

Table 14. RP-1 - Comparing DP 001 Effluent Data with WQOs

Parameter	unit	Effluent MEC[12]	CTR-Fresh water			Basin Plan	RPA
		Fresh water	CMC/CCC	WQO	Human Health Organisms Only	WQO	
Cyanide, Free	µg/L	24	22/5.2				yes
Bis(2-ethylhexyl) Phthalate	µg/L	9			5.9		yes
Total recoverable selenium	µg/L	7.0	0/5.0				yes

*: 5th percentile of effluent hardness of 124 mg/l is used to calculate metals criteria with hardness related.

Table 15. RP-1 & RP-4 - Comparing DP 001 & DP 002 Effluent Data with WQOs

Parameter	unit	Effluent MEC	CTR-Fresh water			Basin Plan	RPA
		Fresh water	CMC/CCC	WQO	Human Health	WQO	
Cyanide, Free	µg/L	15	22/5.2				yes
Bis(2-ethylhexyl) Phthalate	µg/L	7			5.9		yes
Total recoverable selenium	µg/L	8.0	0/5.0				yes

*: 5th percentile of effluent hardness of 122 mg/l is used to calculate metals criteria with hardness related.

Table 16. RP-5 - Comparing DP 003 Effluent Data with WQOs

Parameter	unit	Effluent MEC	CTR-Fresh water			Basin Plan	RPA
		Fresh water	CMC/CCC	WQO	Human Health	WQO	
Cyanide, Free	µg/L	8	22/5.2				yes
Bis(2-ethylhexyl) Phthalate	µg/L	4			5.9		no
Total recoverable Selenium	µg/L	3	0/5.0				No
2,3,7,8-TCDD (Dioxin)	µg/L	0.0000035			0.000000014		No, see Section IV.C.3., above
Bromodichloromethane	µg/L	48			46		yes

*: 5th percentile of effluent hardness of 148 mg/l is used to calculate metals criteria with hardness related.

12 *MEC, CMC, CCC are defined in Attachment A.*

Table 17. CCWRF - Comparing DP 004 Effluent Data with WQOs

Parameter	unit	Effluent MEC	CTR-Fresh water			Basin Plan	RPA
		Fresh water	CMC/CCC	WQO	Human Health	WQO	
Cyanide, Free	µg/L	8	22/5.2				yes
Bis(2-ethylhexyl) Phthalate	µg/L	25			5.9		yes
Total recoverable chromium (VI)	µg/L	4.1	16/11				No
Total recoverable Selenium	µg/L	<2	0/5.0				No
2,3,7,8-TCDD (Dioxin)	µg/L	0.00000026			0.000000014		No, see Section IV.C.3., above

*: 5^{th} percentile of effluent hardness of 130 mg/l is used to calculate metals criteria with hardness related.

4. WQBEL Calculations

No mixing zone allowance is included in the calculation of effluent limits in this Order. Consequently, compliance with the effluent limits is required to be determined at the end of the discharge pipe for freshwater discharge.

a. For priority pollutants, water quality based effluent limits based on monitoring results and the calculation process outlined in Section 1.4 of the California Toxic Rule and the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California are summarized in the following Tables 19, 20 and 21. The criteria calculation is based on CTR criteria for freshwater.

The calculated coefficients of variation (CVs) for data sets of total recoverable selenium and cyanide are based on standard deviation, number of samples and mean of the data set.

This Order retains the free cyanide limits in the prior permits. The following table shows the free cyanide limits.

Table 18. Cyanide Limits in prior Orders

Discharge Point	Order	Facility	Effluent Limitations, µg/L	
			Average Monthly	Maximum Daily
DP 001&DP 002	R8-2006-0010	RP-1/RP-4	4.2	8.5
DP 003	R8-2008-0028	RP-5	4.6	7.3
DP 004	R8-2004-0020	CCWRF	4.3	8.5

Table 19. Calculation of Effluent Limits at DP 001 and DP002

				CV = 0.6, long-term average			Aquatic Life		Human		Permit Limit	
	CTR Criteria			Acute M	Chronic M	LTA	Objective/limits		Health Limits		Concentration Limit	
	Fresh water		Human Health	0.321	0.527		**3.11**	**1.55**	**2.01**			
Constituent	CMC	CCC		Acute LTA	Chronic LTA		MDEL	AMEL	MDEL	AMEL	MDEL	AMEL
Bis(2-ethylhexyl) Phthalate			5.9						11.9	5.9	**11.9**	**5.9**
Total recoverable selenium		5.0			2.6	***2.6***	8.2	4.1			**8.2**	**4.1**

Table 20. Calculation of Effluent Limits at DP 003

Bromodichloromethane			46						92.5	46.0	**92**	**46**

Table 21. Calculation of Effluent Limits at DP 004

Constituent	CMC	CCC		Acute LTA	Chronic LTA		MDEL	AMEL	MDEL	AMEL	MDEL	AMEL
Bis(2-ethylhexyl) Phthalate			5.9						11.9	5.9	**11.9**	**5.9**

5. Whole Effluent Toxicity (WET)

This Order does not specify WET limits but requires chronic toxicity monitoring. This Order, as in the previous Orders, also requires the Discharger to conduct the accelerated monitoring as specified in Attachment E when the result of any single chronic toxicity test of the effluent exceeds 1.0 TUc. The monitoring data for all the Facilities during the past three years (2005-2008) indicated that the monthly trigger of 1 TUc has not been exceeded.

D. BPJ - Based Effluent Specifications for DP 001 through DP 004

For tertiary treated wastewater, the BOD_5 and TSS concentration limits are based on Best Professional Judgment. The technology-based secondary treatment standards specify BOD_5 and TSS concentration limits that are less stringent.

Table 22. Tertiary Effluent BOD_5 and TSS Limits

Constituent	Average Weekly	Average Monthly
Biochemical Oxygen Demand	30 mg/L	20 mg/L
Suspended Solids	30 mg/L	20 mg/L

E. Summary of Final Effluent Limitations

1. Satisfaction of Anti-Backsliding Requirements

All effluent limitations in this Order are at least as stringent as the effluent limitations in previous Orders.

2. Satisfaction of Antidegradation Policy

The discharges addressed in this Order are existing discharges regulated under waste discharge requirements issued for each of the Facilities. This Order consolidates those requirements. The effluent limitations in this Order are at least as stringent as those specified in the prior individual waste discharge requirements. No increases in the regulated discharge flows are proposed. Therefore, discharges conducted in conformance with the requirements of this Order will not result in a lowering of water quality. The discharges therefore conform to antidegradation requirements specified in Resolution No. 68-16, which incorporates the federal antidegradation policy at 40 CFR 131.12 where, as here, is it applicable.

3. Stringency of Requirements for Individual Pollutants

Water quality-based effluent limitations have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant water quality-based effluent limitations were derived from the CTR, the CTR is the applicable standard pursuant to section 131.38. The scientific procedures for calculating the individual water quality-based effluent limitations for priority pollutants are based on the CTR-SIP, which was approved by USEPA on May 18, 2000. Apart from certain surface water standards changes resulting from the N/TDS Basin Plan amendment that do not materially affect the quality requirements for the discharges regulated by this Order, all beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. 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 purposes of the CWA” pursuant to section 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.

4. Summary of Final Effluent Limitations

Table 23. Summary of Water Quality-Based Effluent Limits at all DPs

Parameter	Units	Effluent Limitations					Basis
		Average Monthly	Average Weekly	Max Daily	Instant. Max.	Range	
BOD_5	mg/L	20	30	--	--	--	Basin Plan
Total Suspended Solids	mg/L	20	30	--	--	--	BP
pH	Std. unit	--	--	--		6.5-8.5	BP
Total Residual Chlorine	mg/L				0.1		BP
Coliform	MPN	--		2.2 MPN	--	--	Title 22
Ammonia Nitrogen	mg/L	4.5					BP
Free Cyanide	µg/L	4.0		9.2			CTR
Bis (2-Ethylhexyl) Phthalate at DPs 001, 002, & 004	µg/L	5.9		12			CTR
Total recoverable selenium at DPs 001 & 002	µg/L						CTR
Bromodichloromethane At DP 003	µg/L	46		92	µg/L		CTR

F. Interim Effluent Limitations - Not Applicable

G. Land Discharge Specifications – Not Applicable

H. Reclamation Specifications

1. Section 13523 of the California Water Code provides that a Regional Water Board, after consulting with and receiving the recommendations from the CDPH and any party who has requested in writing to be consulted, and after any necessary hearing, shall prescribe water reclamation requirements for water which is used or proposed to be used as recycled water, if, in the judgment of the Board, such requirements are necessary to protect the public health, safety, or welfare. Section 13523 further provides that such requirements shall include, or be in conformance with, the statewide uniform water recycling criteria established by the CDPH pursuant to California Water Code Section 13521.

2. Reclamation specifications in the proposed Order are based upon the recycling criteria contained in Title 22, Division 4, Chapter 3, Sections 60301 through 60355, California Code of Regulations, and the California Water Code Section 13521.

3. As shown in Chapter 4 of the Basin Plan as amended by the N/TDS Amendment, Resolution No. R8-2004-0001, two sets of groundwater management zones (GMZs) and respective TDS objectives have been adopted for a portion of the Chino Basin. "Maximum benefit" objectives are established for the Chino North GMZ, while "antidegradation" objectives are set for the Chino 1, 2 and 3 GMZs. Order Nos. R8-2004-0020, R8-2006-0010, and R8-2008-0028 include TDS limits for recycled water use that implement the Chino North and Chino 1, 2, and 3 TDS objectives. Provided that applicable maximum benefit commitments specified in Chapter 5 of the amended Basin Plan (and shown in Attachment J of this Order) are satisfied by the Discharger and the Chino Basin Watermaster, the TDS discharges from the combined effluent quality from the Discharger's treatment plants will be limited to 550 mg/L. Note that the "maximum benefit" objective for the Chino North GMZ is 420 mg/L. The basis for the TDS limit of 550 mg/L is as follows. The TDS value of 550 mg/L for recycled water use was assumed as part of the development of the maximum benefit objective for the Chino North GMZ and the maximum benefit program. Implementation of that program, which entails blending of recycled water with other sources of supply (stormwater, imported State Project Water) will assure that the TDS objective of the Chino North GMZ is achieved and maintained. If the Regional Board finds that thee maximum benefit commitments are not satisfied, then the Chino 1, 2 and 3 "antidegradation" management zones and their respective TDS objectives apply. Since the Chino 1, 2 and 3 GMZs lack assimilative capacity for TDS, the TDS limits are the same as the management zone objectives.

Table 24. TDS Limitations

Receiving Groundwater Management Zone	12-Mo Average TDS Concentration, mg/L
Chino 1	280
Chino 2	250
Chino 3	260
Chino – North “maximum benefit”	550

4. TIN limits: When recycled water is reused for irrigation, no nitrogen limit is established for the effluent, since nitrogen is anticipated to be used by plants and will not affect water quality.

I. Stormwater Discharge Requirements

On April 17, 1997, the State Board adopted the General Industrial Storm Water Permit, Order No. 97-03-DWQ, NPDES No. CAS000001. This General Permit implements the Final Regulations (40 CFR 122, 123, and 124) for stormwater runoff published on November 16, 1990 by EPA in compliance with Section 402(p) of the Clean Water Act (CWA). Industrial facilities, including POTW sites, are required to obtain NPDES Permits for stormwater discharges. Accordingly, this Order incorporates requirements for the discharge of stormwater from RP-1[13].

J. Groundwater Recharge Requirements – Not Applicable

Order No. R8-2007-0039 regulates the use of recycled water from RP-1 and RP-4 for groundwater recharge.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

The surface water receiving water limitations in this Order are based upon the water quality objectives contained in the Basin Plan. As such, they are required part of the proposed Order.

B. Groundwater – Not Applicable

13 *Stormwater discharges from the Discharger’s other Facilities are treated onsite (see II. B. 2, above).*

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

Section 122.48 of 40 CFR requires all NPDES permits to specify recording and reporting of monitoring results. Sections 13267 and 13383 of the CWC authorize the Regional Water Boards to require technical and monitoring reports. The MRP, Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and State requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for these Facilities.

A. Influent Monitoring

This Order carries forward the treatment plant influent monitoring requirements specified in Orders No. R8-2004-0020, R8-2006-0010, and R8-2008-0028 with modifications. Influent monitoring is required to determine the effectiveness of the treatment program and assess treatment plant performance, and to implement EPA source control/pretreatment program.

B. Effluent Monitoring

The Discharger is required to conduct monitoring of the permitted discharges in order to evaluate compliance with permit conditions. Monitoring requirements are given in the proposed monitoring and reporting program (Attachment E). This provision requires compliance with the monitoring and reporting program, and is based on 40 CFR 122.44(i), 122.62, 122.63 and 124.5. The SMP is a standard requirement in almost all NPDES permits (including the proposed Order) issued by the Regional Water Board. In addition to containing definitions of terms, it specifies general sampling/analytical protocols and the requirements of reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water Code, and Regional Water Board's policies. The monitoring and reporting program also contains sampling program specific for the Discharger's wastewater treatment plant. It defines the sampling stations and frequency, pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all pollutants for which effluent limitations are specified. Further, in accordance with Section 1.3 of the SIP, periodic monitoring is required for all priority pollutants defined by the CTR, for which criteria apply and for which no effluent limitations have been established, to evaluate reasonable potential to cause or contribute to an excursion above a water quality standard.

This Order continues the monitoring requirements specified in the Order No. R8-2004-0020, No. R8-2006-0010, and No. R8-2008-0028, with modifications. This Order also requires the Discharger to conduct accelerated monitoring for those constituents that are detected in the annual priority pollutant scan.

C. Whole Effluent Toxicity Testing Requirements

Whole effluent toxicity (WET) protects the receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. WET tests measure the degree of response of exposed aquatic test organisms to an effluent. The WET approach implements the narrative "no toxics in toxic amounts" criterion. There are two types of WET tests: acute and chronic. An acute toxicity test is conducted over a shorter time period and measures mortality. A chronic toxicity test is conducted over a longer period of time and may measure mortality, reproduction, and growth.

The Basin Plan specifies a narrative objective for toxicity, requiring that all waters be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental response on aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alterations in population, community ecology, or receiving water biota.

In addition to the Basin Plan requirements, Section 4 of the SIP states that a chronic toxicity effluent limitation is required in permits for all discharges that will cause, have the reasonable potential to cause, or contribute to chronic toxicity in receiving waters. Therefore, in accordance with the SIP, this Order requires the Discharger to conduct chronic toxicity testing. In addition, the Order establishes thresholds that when exceeded require the Discharger to conduct accelerated toxicity testing and/or to conduct toxicity identification evaluation (TIE) studies.

This Order requires the Discharger to conduct chronic toxicity testing of the effluent from each of the Facilities on a monthly basis. The Order also requires the Discharger to conduct an Initial Investigation Toxicity Reduction Evaluation (IITRE) program when either the two-month median of toxicity test results exceeds 1 TUc or any single test exceeds 1.7 TUc for survival endpoint. Based on the results of this investigation program and at the discretion of the Executive Officer, a more rigorous Toxicity Reduction Evaluation/Toxicity Identification Evaluation (TRE/TIE) may be required. A re-opener provision is included in the Order to incorporate a chronic toxicity effluent limitation if warranted by the toxicity test results.

D. Receiving Water Monitoring

1. Surface Water

Receiving water monitoring is required to determine compliance with receiving water limitations and to characterize the water quality of the receiving water. Requirements are based on the Basin Plan.

2. Groundwater – Not Applicable

E. Other Monitoring Requirements

1. **Water Supply Monitoring** - The Discharger is required to collect a sample of each source of water supplied and analyze for total dissolved solids. The result of this monitoring will enable the Discharger to show compliance with TDS limitations in the Order.

2. **Biosolids Monitoring** - This Order continues the monitoring requirements specified in Order No. R8-2004-0020, No. R8-2006-0010, and No. R8-2008-0028, with modifications.

3. **Pretreatment Monitoring** - These monitoring and reporting requirements are established pursuant EPA 40 CFR 403 regulations.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with section 122.41, and additional conditions applicable to specified categories of permits in accordance with section 122.42, are provided in Attachment D. The Discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42.

Section 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. Section 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with section 123.25, this Order omits federal conditions that address enforcement authority specified in section0s 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

The provisions are based on 40 CFR Parts 122.44(c) and 123. The Regional Water Board may reopen the permit to modify permit conditions and requirements. Causes for modifications include the promulgation of new regulations, modification in sludge use or disposal practices, or adoption of new regulations by the State Water Board or Regional Water Board, including revisions to the Basin Plan.

2. Special Studies and Additional Monitoring Requirements

Toxicity Identification Evaluations or Toxicity Reduction Evaluations. This provision is based on the SIP, Section 4, Toxicity Control Provisions.

3. Best Management Practices and Pollution Prevention

Best Management Practices and Pollution Prevention - The requirements are based on the SIP Section 2.4.5.1

4. Construction, Operation, and Maintenance Specifications

Construction, Operation, and Maintenance Specifications - The requirements are based on requirements that were specified in prior Orders issued to the Discharger.

5. Special Provisions for Municipal Facilities - POTWs Only

a. Oxidized, filtered, and disinfected by UV or chlorine Wastewater Requirements: These requirements are based on Title 22 requirements for the use of recycled water.

b. Pretreatment: The system treatment plants capacity is 84.4 mgd. Consequently, this Order contains requirements for the implementation of an effective pretreatment program pursuant to Section 307 of the Federal Clean Water Act; Parts 35 and 403 of Title 40, Code of Federal Regulations (40 CFR 35 and 40 CFR 403); and/or Section 2233, Title 23, California Code of Regulations.

c. The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ (General Order) on May 2, 2006. The General Order requires public agencies that own or operate sanitary sewer systems with greater than one mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs), among other requirements and prohibitions. The Discharger has enrolled and implemented these requirements.

   Furthermore, the General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. Inasmuch as the Discharger's collection system is part of the system that is subject to this Order, Provisions section VI.C.5.a. of this Order applies. For instance, the 24-hour reporting requirements in this Order (Provisions section VI.A.2.b.) are not included in the General Order. The Discharger must comply with both the General Order and this Order. The Discharger and public agencies that are discharging wastewater into one or more of the individual facilities were required to obtain enrollment for regulation under the General Order. The Discharger and public agencies that are discharging wastewater into one or more of the individual facilities have enrolled and implemented these requirements.

d. Biosolids: On February 19, 1993, the USEPA issued a final rule for the use and disposal of sewage sludge, 40 CFR, Part 503. This rule requires that producers of sewage sludge meet certain reporting, handling, and disposal requirements. The State of California has not been delegated the authority to implement this program, therefore, the U.S. Environmental Protection Agency is the implementing agency.

6. Other Special Provisions – Not Applicable

7. Compliance Schedules – Not Applicable

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, Santa Ana Region (Regional Water Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for Inland Empire Utilities Agency's Regional Water Recycling Facilities. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through the posting of a Notice of Public Hearing at the Inland Empire Utilities Agency's RP-1, RP-4, RP-5, CCWRF Facilities and office, and at the Regional Water Board website http://www.waterboards.ca.gov/santaana/board_decisions/tentative_orders/index.shtml and publication in the local newspaper on June 10, 2009.

B. Written Comments

The 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 Executive Officer at the Regional Water Board at the address shown below.

To be fully responded to by staff and considered by the Regional Water Board, written comments should be received at the Regional Water Board offices by 5:00 p.m. on June 19, 2009.

Jane Qiu
California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, CA 92501-3348

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 20, 2009
Time:	10:00 A.M.
Location:	California Regional Water Quality Control Board Santa Ana Region 3737 Main Street, Suite 500 Riverside, CA 92501-3348

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.

Please be aware that dates and venues may change. Our web address is http://www.waterboards.ca.gov/santaana. You 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 (RWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 9:00 a.m. and 3:00 p.m. Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling Jane Qiu (951) 320-2008.

F. Register of Interested Persons

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

G. Additional Information

Requests for additional information or questions regarding this Order should be directed to Jane Qiu at (951) 320-2008.

ATTACHMENT G - EPA PRIORITY POLLUTANT LIST

EPA PRIORITY POLLUTANT LIST					
Metals		**Acid Extractibles**		**Base/Neutral Extractibles (continuation)**	
1.	Antimony	45.	2-Chlorophenol	91.	Hexachloroethane
2.	Arsenic	46.	2,4-Dichlorophenol	92.	Indeno (1,2,3-cd) Pyrene
3.	Beryllium	47.	2,4-Dimethylphenol	93.	Isophorone
4.	Cadmium	48.	2-Methyl-4,6-Dinitrophenol	94.	Naphthalene
5a.	Chromium (III)	49.	2,4-Dinitrophenol	95.	Nitrobenzene
5b.	Chromium (VI)	50.	2-Nitrophenol	96.	N-Nitrosodimethylamine
6.	Copper	51.	4-Nitrophenol	97.	N-Nitrosodi-N-Propylamine
7.	Lead	52.	3-Methyl-4-Chlorophenol	98.	N-Nitrosodiphenylamine
8.	Mercury	53.	Pentachlorophenol	99.	Phenanthrene
9.	Nickel	54.	Phenol	100.	Pyrene
10.	Selenium	55.	2, 4, 6 – Trichlorophenol	101.	1,2,4-Trichlorobenzene
11.	Silver		**Base/Neutral Extractibles**		**Pesticides**
12.	Thallium	56.	Acenaphthene	102.	Aldrin
13.	Zinc	57.	Acenaphthylene	103.	Alpha BHC
Miscellaneous		58.	Anthracene	104.	Beta BHC
14.	Cyanide, Free	59.	Benzidine	105.	Delta BHC
15.	Asbestos (not required unless requested)	60.	Benzo (a) Anthracene	106.	Gamma BHC
16.	2,3,7,8-Tetrachlorodibenzo-P-Dioxin (TCDD)	61.	Benzo (a) Pyrene	107.	Chlordane
Volatile Organics		62.	Benzo (b) Fluoranthene	108.	4, 4' - DDT
17.	Acrolein	63.	Benzo (g,h,i) Perylene	109.	4, 4' - DDE
18.	Acrylonitrile	64.	Benzo (k) Fluoranthene	110.	4, 4' - DDD
19.	Benzene	65.	Bis (2-Chloroethoxy) Methane	111.	Dieldrin
20.	Bromoform	66.	Bis (2-Chloroethyl) Ether	112.	Alpha Endosulfan
21.	Carbon Tetrachloride	67.	Bis (2-Chloroisopropyl) Ether	113.	Beta Endosulfan
22.	Chlorobenzene	68.	Bis (2-Ethylhexyl) Phthalate	114.	Endosulfan Sulfate
23.	Chlorodibromomethane	69.	4-Bromophenyl Phenyl Ether	115.	Endrin
24.	Chloroethane	70.	Butylbenzyl Phthalate	116.	Endrin Aldehyde
25.	2-Chloroethyl Vinyl Ether	71.	2-Chloronaphthalene	117.	Heptachlor
26.	Chloroform	72.	4-Chlorophenyl Phenyl Ether	118.	Heptachlor Epoxide
27.	Dichlorobromomethane	73.	Chrysene	119.	PCB 1016
28.	1,1-Dichloroethane	74.	Dibenzo (a,h) Anthracene	120.	PCB 1221
29.	1,2-Dichloroethane	75.	1,2-Dichlorobenzene	121.	PCB 1232
30.	1,1-Dichloroethylene	76.	1,3-Dichlorobenzene	122.	PCB 1242
31.	1,2-Dichloropropane	77.	1,4-Dichlorobenzene	123.	PCB 1248
32.	1,3-Dichloropropylene	78.	3,3'-Dichlorobenzidine	124.	PCB 1254
33.	Ethylbenzene	79.	Diethyl Phthalate	125.	PCB 1260
34.	Methyl Bromide	80.	Dimethyl Phthalate	126.	Toxaphene
35.	Methyl Chloride	81.	Di-n-Butyl Phthalate		
36.	Methylene Chloride	82.	2,4-Dinitrotoluene		
37.	1,1,2,2-Tetrachloroethane	83.	2-6-Dinitrotoluene		
38.	Tetrachloroethylene	84.	Di-n-Octyl Phthalate		
39.	Toluene	85.	1,2-Dipenylhydrazine		
40.	1,2-Trans-Dichloroethylene	86.	Fluoranthene		
41.	1,1,1-Trichloroethane	87.	Fluorene		
42.	1,1,2-Trichloroethane	88.	Hexachlorobenzene		
43.	Trichloroethylene	89.	Hexachlorobutadiene		
44.	Vinyl Chloride	90.	Hexachlorocyclopentadiene		

ATTACHMENT H – MINIMUM LEVELS

MINIMUM LEVELS IN PPB (μg/l)

Table 1- VOLATILE SUBSTANCES[1]	GC	GCMS
Acrolein	2.0	5
Acrylonitrile	2.0	2
Benzene	0.5	2
Bromoform	0.5	2
Carbon Tetrachloride	0.5	2
Chlorobenzene	0.5	2
Chlorodibromomethane	0.5	2
Chloroethane	0.5	2
Chloroform	0.5	2
Dichlorobromomethane	0.5	2
1,1 Dichloroethane	0.5	1
1,2 Dichloroethane	0.5	2
1,1 Dichloroethylene	0.5	2
1,2 Dichloropropane	0.5	1
1,3 Dichloropropylene (volatile)	0.5	2
Ethylbenzene	0.5	2
Methyl Bromide (*Bromomethane*)	1.0	2
Methyl Chloride (*Chloromethane*)	0.5	2
Methylene Chloride (*Dichloromethane*)	0.5	2
1,1,2,2 Tetrachloroethane	0.5	1
Tetrachloroethylene	0.5	2
Toluene	0.5	2
trans-1,2 Dichloroethylene	0.5	1
1,1,1 Trichloroethane	0.5	2
1,1,2 Trichloroethane	0.5	2
Trichloroethylene	0.5	2
Vinyl Chloride	0.5	2
1,2 Dichlorobenzene (volatile)	0.5	2
1,3 Dichlorobenzene (volatile)	0.5	2
1,4 Dichlorobenzene (volatile)	0.5	2

Selection and Use of Appropriate ML Value:

ML Selection: When there is more than one ML value for a given substance, the discharger may select any one of those ML values, and their associated analytical methods, listed in this Attachment that are below the calculated effluent limitation for compliance determination. If no ML value is below the effluent limitation, then the discharger shall select the lowest ML value, and its associated analytical method, listed in the PQL Table.

ML Usage: The ML value in this Attachment represents the lowest quantifiable concentration in a sample based on the proper application of all method-based analytical procedures and the absence of any matrix interferences. Assuming that all method-specific analytical steps are followed, the ML value will also represent, after the appropriate application of method-specific factors, the lowest standard in the calibration curve for that specific analytical technique. Common analytical practices sometimes require different treatment of the sample relative to calibration standards.
Note: chemical names in parenthesis and italicized is another name for the constituent.

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1 *The normal method-specific factor for these substances is 1, therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance.*

MINIMUM LEVELS IN PPB (μg/l)

Table 2 – Semi-Volatile Substances[2]	GC	GCMS	LC
2-Chloroethyl vinyl ether	1	1	
2 Chlorophenol	2	5	
2,4 Dichlorophenol	1	5	
2,4 Dimethylphenol	1	2	
4,6 Dinitro-2-methylphenol	10	5	
2,4 Dinitrophenol	5	5	
2- Nitrophenol		10	
4- Nitrophenol	5	10	
4 Chloro-3-methylphenol	5	1	
2,4,6 Trichlorophenol	10	10	
Acenaphthene	1	1	0.5
Acenaphthylene		10	0.2
Anthracene		10	2
Benzidine		5	
Benzo (a) Anthracene (*1,2 Benzanthracene*)	10	5	
Benzo(a) pyrene (*3,4 Benzopyrene*)		10	2
Benzo (b) Flouranthene (*3,4 Benzofluoranthene*)		10	10
Benzo(g,h,i)perylene		5	0.1
Benzo(k)fluoranthene		10	2
bis 2-(1-Chloroethoxyl) methane		5	
bis(2-chloroethyl) ether	10	1	
bis(2-Chloroisopropyl) ether	10	2	
bis(2-Ethylhexyl) phthalate	10	5	
4-Bromophenyl phenyl ether	10	5	
Butyl benzyl phthalate	10	10	
2-Chloronaphthalene		10	
4-Chlorophenyl phenyl ether		5	
Chrysene		10	5
Dibenzo(a,h)-anthracene		10	0.1
1,2 Dichlorobenzene (semivolatile)	2	2	
1,3 Dichlorobenzene (semivolatile)	2	1	
1,4 Dichlorobenzene (semivolatile)	2	1	
3,3-Dichlorobenzidine		5	
Diethyl phthalate	10	2	
Dimethyl phthalate	10	2	
di-n-Butyl phthalate		10	
2,4 Dinitrotoluene	10	5	
2,6 Dinitrotoluene		5	
di-n-Octyl phthalate		10	
1,2-Diphenylhydrazine		1	
Fluoranthene	10	1	0.05
Fluorene		10	0.1
Hexachloro-cyclopentadiene	5	5	
1,2,4 Trichlorobenzene	1	5	

MINIMUM LEVELS IN PPB (μg/l)

Table 2 - SEMI-VOLATILE SUBSTANCES[2]	GC	GCMS	LC	COLOR
Pentachlorophenol	1	5		
Phenol [3]	1	1		50
Hexachlorobenzene	5	1		
Hexachlorobutadiene	5	1		
Hexachloroethane	5	1		
Indeno(1,2,3,cd)-pyrene		10	0.05	
Isophorone	10	1		
Naphthalene	10	1	0.2	
Nitrobenzene	10	1		
N-Nitroso-dimethyl amine	10	5		
N-Nitroso -di n-propyl amine	10	5		
N-Nitroso diphenyl amine	10	1		
Phenanthrene		5	0.05	
Pyrene		10	0.05	

Table 3– INORGANICS[4]	FAA	GFAA	ICP	ICPMS	SPGFAA	HYDRIDE	CVAA	COLOR	DCP
Antimony	10	5	50	0.5	5	0.5			1000
Arsenic		2	10	2	2	1		20	1000
Beryllium	20	0.5	2	0.5	1				1000
Cadmium	10	0.5	10	0.25	0.5				1000
Chromium (total)	50	2	10	0.5	1				1000
Chromium VI	5							10	
Copper	25	5	10	0.5	2				1000
Lead	20	5	5	0.5	2				10000
Mercury				0.5			0.2		
Nickel	50	5	20	1	5				1000
Selenium		5	10	2	5	1			1000
Silver	10	1	10	0.25	2				1000
Thallium	10	2	10	1	5				1000
Zinc	20		20	1	10				1000
Cyanide								5	

2 *With the exception of phenol by colorimetric technique, the normal method-specific factor for these substances is 1000, therefore, the lowest standards concentration in the calibration curve is equal to the above ML value for each substance multiplied by 1000.*

3 *Phenol by colorimetric technique has a factor of 1.*

4 *The normal method-specific factor for these substances is 1, therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance.*

MINIMUM LEVELS IN PPB (μg/l)

Table 4- PESTICIDES – PCBs[5]	GC
Aldrin	0.005
alpha–BHC (*a-Hexachloro-cyclohexane*)	0.01
beta–BHC (*b-Hexachloro-cyclohexane*)	0.005
Gamma–BHC (*Lindane; g-Hexachloro-cyclohexane*)	0.02
Delta-BHC (*d-Hexachloro-cyclohexane*)	0.005
Chlordane	0.1
4,4'-DDT	0.01
4,4'-DDE	0.05
4,4'-DDD	0.05
Dieldrin	0.01
Alpha-Endosulfan	0.02
Beta-Endosulfan	0.01
Endosulfan Sulfate	0.05
Endrin	0.01
Endrin Aldehyde	0.01
Heptachlor	0.01
Heptachlor Epoxide	0.01
PCB 1016	0.5
PCB 1221	0.5
PCB 1232	0.5
PCB 1242	0.5
PCB 1248	0.5
PCB 1254	0.5
PCB 1260	0.5
Toxaphene	0.5

Techniques:
GC - Gas Chromatography
GCMS - Gas Chromatography/Mass Spectrometry
HRGCMS - High Resolution Gas Chromatography/Mass Spectrometry (i.e., EPA 1613, 1624, or 1625)
LC - High Pressure Liquid Chromatography
FAA - Flame Atomic Absorption
GFAA - Graphite Furnace Atomic Absorption
HYDRIDE - Gaseous Hydride Atomic Absorption
CVAA - Cold Vapor Atomic Absorption
ICP - Inductively Coupled Plasma
ICPMS - Inductively Coupled Plasma/Mass Spectrometry
SPGFAA - Stabilized Platform Graphite Furnace Atomic Absorption (i.e., EPA 200.9)
DCP - Direct Current Plasma
COLOR - Colorimetric

5 *The normal method-specific factor for these substances is 100, therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance multiplied by 100.*

ATTACHMENT I – TRIGGERS FOR MONITORING PRIORITY POLLUTANTS

Table I-1. For DP001 and DP002

	CONSTITUENT	µg/L		CONSTITUENT	µg/L
1	Antimony	2150	38	Tetratchloroethylene	4.43
2	Arsenic	75	*39*	***Toluene***	***150***
3	Beryllium	--	*40*	***1,2,-Trans-dichloroethylene***	***10***
4	Cadmium	3.7	*41*	***1,1,1-Trichloroethane***	***200***
5a	Chromium III	122	42	***1,1,2-Trichloroethane***	***5***
5b	Chromium VI	5.5	*43*	***Trichloroethylene***	***5***
6	Copper	14	*44*	***Vinyl Chloride***	***0.5***
7	Lead	12	45	2-Chlorophenol	200
8	Mercury	0.026	46	2,4-Dichlorophenol	395
9	Nickel	31	47	2,4-Dimethylphenol	1150
10	Selenium	2.5	48	2-Methy-4,6-Dinitrophenol	383
11	Silver	2.9	49	2,4-Dinitrophenol	7000
12	Thallium	3.2	50	2-Nitrophenol	--
13	Zinc	71	51	4-Nitrophenol	--
14	Cyanide	2.6	52	3-Methyl-4-Chlorophenol	--
15	Asbestos	--	53	***Pentachlorophenol***	***1***
16	2,3,7,8-TCDD (Dioxin)	0.000000007	54	Phenol	2,300,000
17	Acrolein	390	55	2,4,6-Trichlorophenol	3.3
18	Acrylonitrile	0.33	56	Acenapthene	1,350
19	***Benzene***	***1***	57	Acenapthylene	--
20	Bromoform	180	58	Anthracene	55,000
21	***Carbon Tetrachloride***	***0.5***	59	Benzidine	0.00027
22	Chlorobenzene	10500	60	Benzo (a) anthracene	0.025
23	Chlorodibromomethane	17	61	Benzo (a) pyrene	0.025
24	Chloroethane	--	62	Benzo (b) fluoranthene	0.025
25	2-Chloroethyl vinyl ether	--	63	Benzo (g,h,i) pyrylene	--
26	Chloroform	--	64	Benzo (k) fluorantene	0.025
27	Dichlorobromomethane	23	65	Bis (2-Chloroethoxy) methane	--
28	***1,1-Dichloroethane***	***5***	66	Bis (2-Chloroethyl) ether	0.7
29	***1,2-Dichloroethane***	***0.5***	67	Bis (2-Chloroisopropyl) ether	85,000
30	1,1-Dichloroethylene	1.6	68	Bis (2-ethyhexyl) phthalate	3.0
31	***1,2-Dichloropropane***	***5***	69	4-Bromophenyl phenyl ether	--
32	***1,3-Dichloropropylene***	***0.5***	70	Butyl benzyl phthalate	2600
33	***Ethylbenzene***	***300***	71	2- Chloronapthalene	2150
34	Methyl Bromide	2000	72	4-Chlrorphenyl phenyl ether	--
35	Methyl Chloride	--	73	Chrysene	0.025
36	Methylene Chloride	800	74	Dibenzo (a,h) anthracene	0.025
37	***1,1,2,2-Tetratchloroethane***	***1***	***75***	***1,2-Dichlorobenzene***	***600***

Table I-1. For DP001 and DP002--Continued

	CONSTITUENT	µg/L
76	1,3-Dichlorobenzene	1,300
77	***1,4-Dichlorobenzene***	***5***
78	3,3-Dichlorobenzidine	0.039
79	Diethyl phthalate	60,000
80	Dimethyl phthalate	1,450,000
81	Di-N-butyl phthalate	6,000
82	2,4-Dinitrotoluene	4.6
83	2,6-Dinitrotoluene	--
84	Di-N-octyl phthalate	--
85	1,2-Diphenylhydrazine	0.27
86	Fluoranthene	185
87	Fluorene	7,000
88	Hexachlorobenzene	0.00039
89	Hexachlorobutadiene	25
90	***Hexachlorocyclopentadiene***	***50***
91	Hexachloroethane	4.5
92	Indeno (1,2,3-cd) pyrene	0.025
93	Isophorone	300
94	***Naphthalene***	***17***
95	Nitrobenzene	950
96	***N-Nitrosodimethylamine***	***0.01***
97	***N-Nitrosodi-N-propylamine***	***0.01***
98	N-Nitrosodiphenylamine	8
99	Phenantrene	--

	CONSTITUENT	µg/L
100	Pyrene	5,500
101	***1,2,4 -Trichlorobenzene***	***5***
102	Aldrin	0.00007
103	BHC Alpha	0.0065
104	BHC Beta	0.023
105	BHC Gamma	0.032
106	BHC Delta	--
107	Chlordane	0.0003
108	4,4-DDT	0.0003
109	4,4-DDE	0.0003
110	4,4-DDD	0.00042
111	Dieldrin	0.00007
112	Endosulfan Alpha	0.028
113	Endosulfan Beta	0.028
114	Endosulfan Sulfate	120
115	Endrin	0.018
116	Endrin Aldehyde	0.42
117	Heptachlor	0.00011
118	Heptachlor Epoxide	0.000055
119	PCB 1016	0.000085
120	PCB 1221	0.000085
125	PCB 1260	0.000085
126	Toxaphene	0.0001

Notes:

1. For constituents not shown italicized, the values shown in the Table are fifty percent of the most stringent applicable receiving water objectives (freshwater or human health (consumption of water and organisms) as specified for that pollutant in 40 CFR 131.38[1]).
2. For constituents shown bold and italicized, the values shown in the Table are based on the California Department of Public Health maximum contaminant levels (MCLs) or Notification Level. Notification Level based trigger is underlined.
3. For hardness dependent metals, the hardness value used is 122 mg/L as 5th percentile of effluent flows and for pentachlorophenol, the pH value used is 7.5 standard units.

[1] *See Federal Register/ Vol. 65, No. 97 / Thursday, May 18, 2000 / Rules and Regulations.*

Table I-1. For DP003

	CONSTITUENT	μg/L		CONSTITUENT	μg/L
1	Antimony	2150	38	Tetratchloroethylene	4.43
2	Arsenic	75	*39*	***Toluene***	***150***
3	Beryllium	--	*40*	***1,2,-Trans-dichloroethylene***	***10***
4	Cadmium	4.4	*41*	***1,1,1-Trichloroethane***	***200***
5a	Chromium III	143	42	***1,1,2-Trichloroethane***	***5***
5b	Chromium VI	5.5	*43*	***Trichloroethylene***	***5***
6	Copper	17	*44*	***Vinyl Chloride***	***0.5***
7	Lead	16	45	2-Chlorophenol	200
8	Mercury	0.026	46	2,4-Dichlorophenol	395
9	Nickel	36	47	2,4-Dimethylphenol	1150
10	Selenium	2.5	48	2-Methy-4,6-Dinitrophenol	383
11	Silver	4.0	49	2,4-Dinitrophenol	7000
12	Thallium	3.2	50	2-Nitrophenol	--
13	Zinc	84	51	4-Nitrophenol	--
14	Cyanide	2.6	52	3-Methyl-4-Chlorophenol	--
15	Asbestos	--	53	***Pentachlorophenol***	***1***
16	2,3,7,8-TCDD (Dioxin)	0.000000007	54	Phenol	2,300,000
17	Acrolein	390	55	2,4,6-Trichlorophenol	3.3
18	Acrylonitrile	0.33	56	Acenapthene	1,350
19	***Benzene***	***1***	57	Acenapthylene	--
20	Bromoform	180	58	Anthracene	55,000
21	***Carbon Tetrachloride***	***0.5***	59	Benzidine	0.00027
22	Chlorobenzene	10500	60	Benzo (a) anthracene	0.025
23	Chlorodibromomethane	17	61	Benzo (a) pyrene	0.025
24	Chloroethane	--	62	Benzo (b) fluoranthene	0.025
25	2-Chloroethyl vinyl ether	--	63	Benzo (g,h,i) pyrylene	--
26	Chloroform	--	64	Benzo (k) fluorantene	0.025
27	Dichlorobromomethane	23	65	Bis (2-Chloroethoxy) methane	--
28	***1,1-Dichloroethane***	***5***	66	Bis (2-Chloroethyl) ether	0.7
29	***1,2-Dichloroethane***	***0.5***	67	Bis (2-Chloroisopropyl) ether	85,000
30	1,1-Dichloroethylene	1.6	68	Bis (2-ethyhexyl) phthalate	3.0
31	***1,2-Dichloropropane***	***5***	69	4-Bromophenyl phenyl ether	--
32	***1,3-Dichloropropylene***	***0.5***	70	Butyl benzyl phthalate	2600
33	***Ethylbenzene***	***300***	71	2- Chloronapthalene	2150
34	Methyl Bromide	2000	72	4-Chlrorphenyl phenyl ether	--
35	Methyl Chloride	--	73	Chrysene	0.025
36	Methylene Chloride	800	74	Dibenzo (a,h) anthracene	0.025
37	***1,1,2,2-Tetratchloroethane***	***1***	***75***	***1,2-Dichlorobenzene***	***600***

Table I-1. For DP003--Continued

	CONSTITUENT	µg/L
76	1,3-Dichlorobenzene	1,300
77	***1,4-Dichlorobenzene***	***5***
78	3,3-Dichlorobenzidine	0.039
79	Diethyl phthalate	60,000
80	Dimethyl phthalate	1,450,000
81	Di-N-butyl phthalate	6,000
82	2,4-Dinitrotoluene	4.6
83	2,6-Dinitrotoluene	--
84	Di-N-octyl phthalate	--
85	1,2-Diphenylhydrazine	0.27
86	Fluoranthene	185
87	Fluorene	7,000
88	Hexachlorobenzene	0.00039
89	Hexachlorobutadiene	25
90	***Hexachlorocyclopentadiene***	***50***
91	Hexachloroethane	4.5
92	Indeno (1,2,3-cd) pyrene	0.025
93	Isophorone	300
94	***Naphthalene***	***17***
95	Nitrobenzene	950
96	***N-Nitrosodimethylamine***	***0.01***
97	***N-Nitrosodi-N-propylamine***	***0.01***
98	N-Nitrosodiphenylamine	8
99	Phenantrene	--

	CONSTITUENT	µg/L
100	Pyrene	5,500
101	***1,2,4 -Trichlorobenzene***	***5***
102	Aldrin	0.00007
103	BHC Alpha	0.0065
104	BHC Beta	0.023
105	BHC Gamma	0.032
106	BHC Delta	--
107	Chlordane	0.0003
108	4,4-DDT	0.0003
109	4,4-DDE	0.0003
110	4,4-DDD	0.00042
111	Dieldrin	0.00007
112	Endosulfan Alpha	0.028
113	Endosulfan Beta	0.028
114	Endosulfan Sulfate	120
115	Endrin	0.018
116	Endrin Aldehyde	0.42
117	Heptachlor	0.00011
118	Heptachlor Epoxide	0.000055
119	PCB 1016	0.000085
120	PCB 1221	0.000085
125	PCB 1260	0.000085
126	Toxaphene	0.0001

Notes:

4. For constituents not shown italicized, the values shown in the Table are fifty percent of the most stringent applicable receiving water objectives (freshwater or human health (consumption of water and organisms) as specified for that pollutant in 40 CFR 131.38[2]).
5. For constituents shown bold and italicized, the values shown in the Table are based on the California Department of Public Health maximum contaminant levels (MCLs) or Notification Level. Notification Level based trigger is underlined.
6. For hardness dependent metals, the hardness value used is 148 mg/L as 5th percentile of effluent flows and for pentachlorophenol, the pH value used is 7.5 standard units.

2 *See Federal Register/ Vol. 65, No. 97 / Thursday, May 18, 2000 / Rules and Regulations.*

Table I-2. For DP004

	CONSTITUENT	µg/L
1	Antimony	2150
2	Arsenic	75
3	Beryllium	--
4	Cadmium	3.9
5a	Chromium III	128
5b	Chromium VI	5.5
6	Copper	15
7	Lead	14
8	Mercury	0.026
9	Nickel	33
10	Selenium	2.5
11	Silver	3.2
12	Thallium	3.2
13	Zinc	75
14	Cyanide	2.6
15	Asbestos	--
16	2,3,7,8-TCDD (Dioxin)	0.000000007
17	Acrolein	390
18	Acrylonitrile	0.33
19	***Benzene***	***1***
20	Bromoform	180
21	***Carbon Tetrachloride***	***0.5***
22	Chlorobenzene	10500
23	Chlorodibromomethane	17
24	Chloroethane	--
25	2-Chloroethyl vinyl ether	--
26	Chloroform	--
27	Dichlorobromomethane	23
28	***1,1-Dichloroethane***	***5***
29	***1,2-Dichloroethane***	***0.5***
30	1,1-Dichloroethylene	1.6
31	***1,2-Dichloropropane***	***5***
32	***1,3-Dichloropropylene***	***0.5***
33	***Ethylbenzene***	***300***
34	Methyl Bromide	2000
35	Methyl Chloride	--
36	Methylene Chloride	800
37	***1,1,2,2-Tetratchloroethane***	***1***

	CONSTITUENT	µg/L
38	Tetratchloroethylene	4.43
39	***Toluene***	***150***
40	***1,2,-Trans-dichloroethylene***	***10***
41	***1,1,1-Trichloroethane***	***200***
42	***1,1,2-Trichloroethane***	***5***
43	***Trichloroethylene***	***5***
44	***Vinyl Chloride***	***0.5***
45	2-Chlorophenol	200
46	2,4-Dichlorophenol	395
47	2,4-Dimethylphenol	1150
48	2-Methy-4,6-Dinitrophenol	383
49	2,4-Dinitrophenol	7000
50	2-Nitrophenol	--
51	4-Nitrophenol	--
52	3-Methyl-4-Chlorophenol	--
53	***Pentachlorophenol***	***1***
54	Phenol	2,300,000
55	2,4,6-Trichlorophenol	3.3
56	Acenapthene	1,350
57	Acenapthylene	--
58	Anthracene	55,000
59	Benzidine	0.00027
60	Benzo (a) anthracene	0.025
61	Benzo (a) pyrene	0.025
62	Benzo (b) fluoranthene	0.025
63	Benzo (g,h,i) pyrylene	--
64	Benzo (k) fluorantene	0.025
65	Bis (2-Chloroethoxy) methane	--
66	Bis (2-Chloroethyl) ether	0.7
67	Bis (2-Chloroisopropyl) ether	85,000
68	Bis (2-ethyhexyl) phthalate	3.0
69	4-Bromophenyl phenyl ether	--
70	Butyl benzyl phthalate	2600
71	2- Chloronapthalene	2150
72	4-Chlrorphenyl phenyl ether	--
73	Chrysene	0.025
74	Dibenzo (a,h) anthracene	0.025
75	***1,2-Dichlorobenzene***	***600***

Table I-1. For DP004--Continued

	CONSTITUENT	µg/L		CONSTITUENT	µg/L
76	1,3-Dichlorobenzene	1,300	100	Pyrene	5,500
77	***1,4-Dichlorobenzene***	***5***	***101***	***1,2,4 -Trichlorobenzene***	***5***
78	3,3-Dichlorobenzidine	0.039	102	Aldrin	0.00007
79	Diethyl phthalate	60,000	103	BHC Alpha	0.0065
80	Dimethyl phthalate	1,450,000	104	BHC Beta	0.023
81	Di-N-butyl phthalate	6,000	105	BHC Gamma	0.032
82	2,4-Dinitrotoluene	4.6	106	BHC Delta	--
83	2,6-Dinitrotoluene	--	107	Chlordane	0.0003
84	Di-N-octyl phthalate	--	108	4,4-DDT	0.0003
85	1,2-Diphenylhydrazine	0.27	109	4,4-DDE	0.0003
86	Fluoranthene	185	110	4,4-DDD	0.00042
87	Fluorene	7,000	111	Dieldrin	0.00007
88	Hexachlorobenzene	0.00039	112	Endosulfan Alpha	0.028
89	Hexachlorobutadiene	25	113	Endosulfan Beta	0.028
90	***Hexachlorocyclopentadiene***	***50***	114	Endosulfan Sulfate	120
91	Hexachloroethane	4.5	115	Endrin	0.018
92	Indeno (1,2,3-cd) pyrene	0.025	116	Endrin Aldehyde	0.42
93	Isophorone	300	117	Heptachlor	0.00011
94	***Naphthalene***	***17***	118	Heptachlor Epoxide	0.000055
95	Nitrobenzene	950	119	PCB 1016	0.000085
96	***N-Nitrosodimethylamine***	***0.01***	120	PCB 1221	0.000085
97	***N-Nitrosodi-N-propylamine***	***0.01***	125	PCB 1260	0.000085
98	N-Nitrosodiphenylamine	8	126	Toxaphene	0.0001
99	Phenantrene	--			

Notes:

7. For constituents not shown italicized, the values shown in the Table are fifty percent of the most stringent applicable receiving water objectives (freshwater or human health (consumption of water and organisms) as specified for that pollutant in 40 CFR 131.38[3]).
8. For constituents shown bold and italicized, the values shown in the Table are based on the California Department of Public Health maximum contaminant levels (MCLs) or Notification Level. Notification Level based trigger is underlined.
9. For hardness dependent metals, the hardness value used is 130 mg/L as 5^{th} percentile of effluent flows and for pentachlorophenol, the pH value used is 7.5 standard units.

[3] *See Federal Register/ Vol. 65, No. 97 / Thursday, May 18, 2000 / Rules and Regulations.*

ATTACHMENT J – STORMWATER POLLUTION PREVENTION PLAN REQUIREMENTS

1. *Implementation Schedule*

The storm water pollution prevention plan (SWPPP) shall be updated and implemented in a timely manner, but in no case later than October 30, 2009.

2. *Objectives*

The SWPPP has two major objectives: (a) to identify and evaluate sources of pollutants associated with industrial activities that may affect the quality of storm water discharges and authorized non-storm water discharges from the facility; and (b) to identify and implement site-specific best management practices (BMPs) to reduce or prevent pollutants associated with industrial activities in storm water discharges and authorized non-storm water discharges. BMPs may include a variety of pollution prevention measures or other low-cost pollution control measures. They are generally categorized as non-structural BMPs (activity schedules, prohibitions of practices, maintenance procedures, and other low-cost measures) and as structural BMPs (treatment measures, run-off controls, over-head coverage). To achieve these objectives, dischargers should consider the five phase process for SWPPP development and implementation as shown in Table A, below.

The SWPPP requirements are designed to be sufficiently flexible to meet the various needs of the facility. SWPPP requirements that are not applicable to the facility should not be included in the SWPPP.

A facility's SWPPP is a written document that shall contain a compliance activity schedule, a description of industrial activities and pollutant sources, descriptions of BMPs, drawings, maps, and relevant copies or references of parts of other plans. The SWPPP shall be revised whenever appropriate and shall be readily available for review by facility employees or Regional Water Board inspectors.

3. *Planning and Organization*

   a. *Pollution Prevention Team*

   The SWPPP shall identify a specific individual or individuals and their positions within the facility organization as members of a storm water pollution prevention team responsible for developing the SWPPP, assisting the facility manager in SWPPP implementation and revision, and conducting all monitoring program activities required in the Stormwater monitoring program of Order No. R8-2009-0021. The SWPPP shall clearly identify the storm water pollution prevention related responsibilities, duties, and activities of each team member.

b. Review Other Requirements and Existing Facility Plans

The SWPPP may incorporate or reference the appropriate elements of other regulatory requirements. The discharger shall review all local, state, and federal requirements that impact, complement, or are consistent with the requirements of Order No. R8-2009-0021. The discharger shall identify any existing facility plans that contain storm water pollutant control measures or relate to the requirements of Order No. R8-2009-0021. As examples, dischargers whose facilities are subject to Federal Spill Prevention Control and Countermeasures' requirements should already have instituted a plan to control spills of certain hazardous materials. Similarly, the discharger whose facilities are subject to air quality related permits and regulations may already have evaluated industrial activities that generate dust or particulates.

4. *Site Map*

The SWPPP shall include a site map. The site map shall be provided on an 8-1/2 x 11 inch or larger sheet and include notes, legends, and other data as appropriate to ensure that the site map is clear and understandable. If necessary, the discharger may provide the required information on multiple site maps. The following information shall be included on the site map:

a. The facility boundaries; the outline of all storm water drainage areas within the facility boundaries; portions of the drainage area impacted by run-on from surrounding areas; and direction of flow of each drainage area, on-site surface water bodies, and areas of soil erosion. The map shall also identify nearby water bodies (such as rivers, lakes, ponds) and municipal storm drain inlets where the facility's storm water discharges and authorized non-storm water discharges may be received.

b. The location of the storm water collection and conveyance system, associated points of discharge, and direction of flow. Include any structural control measures that affect storm water discharges, authorized non-storm water discharges, and run-on. Examples of structural control measures are catch basins, berms, detention ponds, secondary containment, oil/water separators, diversion barriers, etc.

c. An outline of all impervious areas of the facility, including paved areas, buildings, covered storage areas, or other roofed structures.

d. Locations where materials are directly exposed to precipitation and the locations where significant spills or leaks identified in Section 6.a.(4)., below, have occurred.

e. Areas of industrial activity. This shall include the locations of all storage areas and storage tanks, shipping and receiving areas, fueling areas, vehicle and equipment storage/maintenance areas, material handling and processing areas, waste treatment and disposal areas, dust or particulate generating areas, cleaning and rinsing areas, and other areas of industrial activity which are potential pollutant sources.

5. *List of Significant Materials*

The SWPPP shall include a list of significant materials handled and stored at the site. For each material on the list, describe the locations where the material is being stored, received, shipped, and handled, as well as the typical quantities and frequency. Materials shall include raw materials, intermediate products, final or finished products, recycled materials, and waste or disposed materials.

6. *Description of Potential Pollutant Sources*

a. The SWPPP shall include a narrative description of the facility's industrial activities, as identified in Section 4.e., above, associated potential pollutant sources, and potential pollutants that could be discharged in storm water discharges or authorized non-storm water discharges. At a minimum, the following items related to a facility's industrial activities shall be considered:

1) Industrial Processes

Describe each industrial process, the type, characteristics, and quantity of significant materials used in or resulting from the process, and a description of the processes (manufacturing or treatment), cleaning, rinsing, recycling, disposal, or other activities related to the process. Where applicable, areas protected by containment structures and the corresponding containment capacity shall be described.

2) Material Handling and Storage Areas

Describe each handling and storage area, type, characteristics, and quantity of significant materials handled or stored, description of the shipping, receiving, and loading procedures, and the spill or leak prevention and response procedures. Where applicable, areas protected by containment structures and the corresponding containment capacity shall be described.

3) Dust and Particulate Generating Activities

Describe all industrial activities that generate dust or particulates that may be deposited within the facility's boundaries and identify their discharge locations; the characteristics of dust and particulate pollutants; the approximate quantity of dust and particulate pollutants that may be deposited within the facility boundaries; and a description of the primary areas of the facility where dust and particulate pollutants would settle.

4) Significant Spills and Leaks

Describe materials that have spilled or leaked in significant quantities in storm water discharges or non-storm water discharges. Include toxic chemicals (listed in 40 Code of Federal Regulations [CFR] Part 302) that have been discharged to storm water as reported on U.S. Environmental Protection Agency (U.S. EPA) Form R, and oil and hazardous substances in excess of reportable quantities (see 40 CFR, Parts 110, 117, and 302).

The description shall include the type, characteristics, and approximate quantity of the material spilled or leaked, the cleanup or remedial actions that have occurred or are planned, the approximate remaining quantity of materials that may be exposed to storm water or non-storm water discharges, and the preventative measures taken to ensure spills or leaks do not reoccur. Such list shall be updated as appropriate during the term of Order No. R8-2009-0021.

5) Non-Storm Water Discharges

The discharger shall investigate the facility to identify all non-storm water discharges and their sources. As part of this investigation, all drains (inlets and outlets) shall be evaluated to identify whether they connect to the storm drain system.

All non-storm water discharges shall be described. This shall include the source, quantity, frequency, and characteristics of the non-storm water discharges and associated drainage area.

Non-storm water discharges that contain significant quantities of pollutants or that do not meet the conditions of Order No. R8-2009-0021 are prohibited. (Examples of prohibited non-storm water discharges are contact and non-contact cooling water, boiler blowdown, rinse water, wash water, etc.). The SWPPP must include BMPs to prevent or reduce contact of non-storm water discharges with significant materials or equipment.

6) Soil Erosion

Describe the facility locations where soil erosion may occur as a result of industrial activity, storm water discharges associated with industrial activity, or authorized non-storm water discharges.

b. The SWPPP shall include a summary of all areas of industrial activities, potential pollutant sources, and potential pollutants. This information should be summarized similar to Table B below. The last column of Table B, "Control Practices", should be completed in accordance with Section 8., below.

7. *Assessment of Potential Pollutant Sources*

   a. The SWPPP shall include a narrative assessment of all industrial activities and potential pollutant sources as described in Section 6., above, to determine:

      1) Which areas of the facility are likely sources of pollutants in storm water discharges and authorized non-storm water discharges, and

      2) Which pollutants are likely to be present in storm water discharges and authorized non-storm water discharges. The discharger shall consider and evaluate various factors when performing this assessment such as current storm water BMPs; quantities of significant materials handled, produced, stored, or disposed of; likelihood of exposure to storm water or authorized non-storm water discharges; history of spill or leaks; and run-on from outside sources.

   b. The discharger shall summarize the areas of the facility that are likely sources of pollutants and the corresponding pollutants that are likely to be present in storm water discharges and authorized non-storm water discharges.

      The discharger is required to develop and implement additional BMPs as appropriate and necessary to prevent or reduce pollutants associated with each pollutant source. The BMPs will be narratively described in Section 8., below.

8. *Storm Water Best Management Practices*

The SWPPP shall include a narrative description of the storm water BMPs to be implemented at the facility for each potential pollutant and its source identified in the site assessment phase (Sections 6. and 7., above). The BMPs shall be developed and implemented to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. Each pollutant and its source may require one or more BMPs. Some BMPs may be implemented for multiple pollutants and their sources, while other BMPs will be implemented for a very specific pollutant and its source.

The description of the BMPs shall identify the BMPs as (1) existing BMPs, (2) existing BMPs to be revised and implemented, or (3) new BMPs to be implemented. The description shall also include a discussion on the effectiveness of each BMP to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. The SWPPP shall provide a summary of all BMPs implemented for each pollutant source. This information should be summarized similar to Table B.

The discharger shall consider the following BMPs for implementation at the facility:

a. Non-Structural BMPs: Non-structural BMPs generally consist of processes, prohibitions, procedures, schedule of activities, etc., that prevent pollutants associated with industrial activity from contacting with storm water discharges and authorized non-storm water discharges. They are considered low technology, cost-effective measures. The discharger should consider all possible non-structural BMPs options before considering additional structural BMPs (see Section 8.b., below). Below is a list of non-structural BMPs that should be considered:

1) Good Housekeeping: Good housekeeping generally consist of practical procedures to maintain a clean and orderly facility.

2) Preventive Maintenance: Preventive maintenance includes the regular inspection and maintenance of structural storm water controls (catch basins, oil/water separators, etc.) as well as other facility equipment and systems.

3) Spill Response: This includes spill clean-up procedures and necessary clean-up equipment based upon the quantities and locations of significant materials that may spill or leak.

4) Material Handling and Storage: This includes all procedures to minimize the potential for spills and leaks and to minimize exposure of significant materials to storm water and authorized non-storm water discharges.

5) Employee Training: This includes training of personnel who are responsible for (a) implementing activities identified in the SWPPP, (b) conducting inspections, sampling, and visual observations, and (c) managing storm water. Training should address topics such as spill response, good housekeeping, and material handling procedures, and actions necessary to implement all BMPs identified in the SWPPP. The SWPPP shall identify periodic dates for such training. Records shall be maintained of all training sessions held.

6) Waste Handling/Recycling: This includes the procedures or processes to handle, store, or dispose of waste materials or recyclable materials.

7) Record Keeping and Internal Reporting: This includes the procedures to ensure that all records of inspections, spills, maintenance activities, corrective actions, visual observations, etc., are developed, retained, and provided, as necessary, to the appropriate facility personnel.

8) Erosion Control and Site Stabilization: This includes a description of all sediment and erosion control activities. This may include the planting and maintenance of vegetation, diversion of run-on and runoff, placement of sandbags, silt screens, or other sediment control devices, etc.

9) Inspections: This includes, in addition to the preventative maintenance inspections identified above, an inspection schedule of all potential pollutant sources. Tracking and follow-up procedures shall be described to ensure adequate corrective actions are taken and SWPPPs are made.

10) Quality Assurance: This includes the procedures to ensure that all elements of the SWPPP and Monitoring Program are adequately conducted.

b. Structural BMPs: Where non-structural BMPs as identified in Section 8.a., above, are not effective, structural BMPs shall be considered. Structural BMPs generally consist of structural devices that reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. Below is a list of structural BMPs that should be considered:

1) Overhead Coverage: This includes structures that provide horizontal coverage of materials, chemicals, and pollutant sources from contact with storm water and authorized non-storm water discharges.

2) Retention Ponds: This includes basins, ponds, surface impoundments, bermed areas, etc., that do not allow storm water to discharge from the facility.

3) Control Devices: This includes berms or other devices that channel or route run-on and runoff away from pollutant sources.

4) Secondary Containment Structures: This generally includes containment structures around storage tanks and other areas for the purpose of collecting any leaks or spills.

5) Treatment: This includes inlet controls, infiltration devices, oil/water separators, detention ponds, vegetative swales, etc., that reduce the pollutants in storm water discharges and authorized non-storm water discharges.

9. *Annual Comprehensive Site Compliance Evaluation*

The discharger shall conduct one comprehensive site compliance evaluation in each reporting period (July 1-June 30). Evaluations shall be conducted within 8-16 months of each other. The SWPPP shall be revised, as appropriate, and the revisions implemented within 90 days of the evaluation. Evaluations shall include the following:

a. A review of all visual observation records, inspection records, and sampling and analysis results.

b. A visual inspection of all potential pollutant sources for evidence of, or the potential for, pollutants entering the drainage system.

c. A review and evaluation of all BMPs (both structural and non-structural) to determine whether the BMPs are adequate, properly implemented and maintained, or whether additional BMPs are needed. A visual inspection of equipment needed to implement the SWPPP, such as spill response equipment, shall be included.

d. An evaluation report that includes, (1) identification of personnel performing the evaluation, (2) the date(s) of the evaluation, (3) necessary SWPPP revisions, (4) schedule, as required in Section 10.e, below, for implementing SWPPP revisions, (5) any incidents of non-compliance and the corrective actions taken, and (6) a certification that the discharger is in compliance with Order No. R8-2009-0021. If the above certification cannot be provided, explain in the evaluation report why the discharger is not in compliance with this order. The evaluation report shall be submitted as part of the annual report, retained for at least five years, and signed and certified in accordance with Attachment D, Standard Provision, Section V Reporting, Subsection B. Signatory and Certification Requirements of Order No. R8-2009-0021.

10. *SWPPP General Requirements*

a. The SWPPP shall be retained on site and made available upon request by a representative of the Regional Water Board and/or local storm water management agency (local agency) which receives the storm water discharges.

b. The Regional Water Board and/or local agency may notify the discharger when the SWPPP does not meet one or more of the minimum requirements of this section. As requested by the Regional Water Board and/or local agency, the discharger shall submit a SWPPP revision and implementation schedule that meets the minimum requirements of this section to the Regional Water Board and/or local agency that requested the SWPPP revisions. Within 14 days after implementing the required SWPPP revisions, the discharger shall provide written certification to the Regional Water Board and/or local agency that the revisions have been implemented.

c. The SWPPP shall be revised, as appropriate, and implemented prior to changes in industrial activities which (1) may significantly increase the quantities of pollutants in storm water discharge, (2) cause a new area of industrial activity at the facility to be exposed to storm water, or (3) begin an industrial activity which would introduce a new pollutant source at the facility.

d. The SWPPP shall be revised and implemented in a timely manner, but in no case more than 90 days after a discharger determines that the SWPPP is in violation of any requirement(s) of Order No. R8-2009-0021.

e. When any part of the SWPPP is infeasible to implement by the deadlines specified in Order No. R8-2009-0021, due to proposed significant structural changes, the discharger shall submit a report to the Regional Water Board prior to the applicable deadline that (1) describes the portion of the SWPPP that is infeasible to implement by the deadline, (2) provides justification for a time extension, (3) provides a schedule for completing and implementing that portion of the SWPPP, and (4) describes the BMPs that will be implemented in the interim period to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. Such reports are subject to Regional Water Board approval and/or modifications. The discharger shall provide written notification to the Regional Water Board within 14 days after the SWPPP revisions are implemented.

f. The SWPPP shall be provided, upon request, to the Regional Water Board. The SWPPP is considered a report that shall be available to the public by the Regional Water Board under Section 308(b) of the Clean Water Act.

TABLE A

FIVE PHASES FOR DEVELOPING AND IMPLEMENTING INDUSTRIAL STORM WATER POLLUTION PREVENTION PLANS

PLANNING AND ORGANIZATION

*Form pollution prevention team
*Review other plans

ASSESSMENT PHASE

*Develop a site map
*Identify potential pollutant sources
*Inventory of materials and chemicals
*List significant spills and leaks
*Identify non-storm water discharges
*Assess pollutant risks

BEST MANAGEMENT PRACTICES IDENTIFICATION PHASE

*Non-structural BMPs
*Structural BMPs
*Select activity and site-specific BMPs

IMPLEMENTATION PHASE

*Train employees
*Implement BMPs
*Conduct record keeping and reporting

EVALUATION / MONITORING

*Conduct annual site evaluation
*Review monitoring information
*Evaluate BMPs
*Review and revise SWPPP

TABLE B

EXAMPLE

ASSESSMENT OF POTENTIAL POLLUTION SOURCES AND CORRESPONDING BEST MANAGEMENT PRACTICES SUMMARY

AREA	ACTIVITY	POLLUTANT SOURCE	POLLUTANT	BEST MANAGEMENT PRACTICES
Vehicle & equipment fueling	Fueling	Spills and leaks during delivery	Fuel oil	- Use spill and overflow protection - Minimize run-on of storm water into the fueling area - Cover fueling area - Use dry cleanup methods rather than hosing down area - Implement proper spill prevention control program - Implement adequate preventative maintenance program to prevent tank and line leaks - Inspect fueling areas regularly to detect problems before they occur - Train employees on proper fueling, cleanup, and spill response techniques.
		Spills caused by topping off fuel oil	Fuel oil	
		Hosing or washing down fuel area	Fuel oil	
		Leaking storage tanks	Fuel oil	
		Rainfall running off fueling areas, and rainfall running onto and off fueling area	Fuel oil	

ATTACHMENT K – STORMWATER MONITORING AND REPORTING REQUIREMENTS

1. *Implementation Schedule*

The discharger shall continue to implement their existing Stormwater monitoring program and implement any necessary revisions to their Stormwater monitoring program in a timely manner, but in no case later than December 30, 2009. The discharger may use the monitoring results conducted in accordance with their existing Stormwater monitoring program to satisfy the pollutant/parameter reduction requirements in Section 5.c., below, and Sampling and Analysis Exemptions and Reduction Certifications in Section 10, below.

2. Objectives

The objectives of the monitoring program are to:

a. Ensure that storm water discharges are in compliance with waste discharge requirements specified in Order No. R8-2009-0021.

b. Ensure practices at the facility to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges are evaluated and revised to meet changing conditions.

c. Aid in the implementation and revision of the SWPPP required by Attachment "J" Stormwater Pollution Prevention Plan of Order No. R8-2009-0021.

d. Measure the effectiveness of best management practices (BMPs) to prevent or reduce pollutants in storm water discharges and authorized non-storm water discharges. Much of the information necessary to develop the monitoring program, such as discharge locations, drainage areas, pollutant sources, etc., should be found in the Storm Water Pollution Prevention Plan (SWPPP). The facility's monitoring program shall be a written, site-specific document that shall be revised whenever appropriate and be readily available for review by employees or Regional Water Board inspectors.

3. *Non-Storm Water Discharge Visual Observations*

a. The discharger shall visually observe all drainage areas within their facility for the presence of unauthorized non-storm water discharges;

b. The discharger shall visually observe the facility's authorized non-storm water discharges and their sources;

c. The visual observations required above shall occur quarterly, during daylight hours, on days with no storm water discharges, and during scheduled facility operating hours[1]. Quarterly visual observations shall be conducted in each of the following periods: January-March, April-June, July-September, and October-December. The discharger shall conduct quarterly visual observations within 6-18 weeks of each other.

d. Visual observations shall document the presence of any discolorations, stains, odors, floating materials, etc., as well as the source of any discharge. Records shall be maintained of the visual observation dates, locations observed, observations, and response taken to eliminate unauthorized non-storm water discharges and to reduce or prevent pollutants from contacting non-storm water discharges. The SWPPP shall be revised, as necessary, and implemented in accordance with Attachment "J" Stormwater Pollution Prevention Plan Requirements of Order No. R8-2009-0021.

4. *Storm Water Discharge Visual Observations*

a. With the exception of those facilities described in Section 4.d., below, the discharger shall visually observe storm water discharges from one storm event per month during the wet season (October 1-May 30). These visual observations shall occur during the first hour of discharge and at all discharge locations. Visual observations of stored or contained storm water shall occur at the time of release.

b. Visual observations are only required of storm water discharges that occur during daylight hours that are preceded by at least three (3) working days[2] without storm water discharges and that occur during scheduled facility operating hours.

c. Visual observations shall document the presence of any floating and suspended material, oil and grease, discolorations, turbidity, odor, and source of any pollutants. Records shall be maintained of observation dates, locations observed, observations, and response taken to reduce or prevent pollutants in storm water discharges. The SWPPP shall be revised, as necessary, and implemented in accordance with Attachment "J" Stormwater Pollution Prevention Plan Requirements of Order No. R8-2009-0021.

1 *"Scheduled facility operating hours" are the time periods when the facility is staffed to conduct any function related to industrial activity, but excluding time periods where only routine maintenance, emergency response, security, and/or janitorial services are performed.*

2 *Three (3) working days may be separated by non-working days such as weekends and holidays provided that no storm water discharges occur during the three (3) working days and the non-working days.*

d. The discharger with storm water containment facilities shall conduct monthly inspections of their containment areas to detect leaks and ensure maintenance of adequate freeboard. Records shall be maintained of the inspection dates, observations, and any response taken to eliminate leaks and to maintain adequate freeboard.

5. *Sampling and Analysis*

a. The discharger shall collect storm water samples during the first hour of discharge from (1) the first storm event of the wet season, and (2) at least one other storm event in the wet season. All storm water discharge locations shall be sampled. Sampling of stored or contained storm water shall occur at the time the stored or contained storm water is released. The discharger that does not collect samples from the first storm event of the wet season are still required to collect samples from two other storm events of the wet season and shall explain in the "Annual Stormwater Report" (see Section 12, below) why the first storm event was not sampled.

b. Sample collection is only required of storm water discharges that occur during scheduled facility operating hours and that are preceded by at least (3) three working days without storm water discharge.

c. The samples shall be analyzed for:

1) Total suspended solids (TSS) pH, specific conductance, and total organic carbon (TOC). Oil and grease (O&G) may be substituted for TOC;

2) Toxic chemicals and other pollutants that are likely to be present in storm water discharges in significant quantities. If these pollutants are not detected in significant quantities after two consecutive sampling events, the discharger may eliminate the pollutant from future sample analysis until the pollutant is likely to be present again;

3) The discharger is not required to analyze a parameter when either of the two following conditions are met: (a) the parameter has not been detected in significant quantities from the last two consecutive sampling events, or (b) the parameter is not likely to be present in storm water discharges and authorized non-storm water discharges in significant quantities based upon the discharger's evaluation of the facilities industrial activities, potential pollutant sources, and SWPPP; and

4) Other parameters as required by the Regional Water Board.

6. *Sample Storm Water Discharge Locations*

   a. The discharger shall visually observe and collect samples of storm water discharges from all drainage areas that represent the quality and quantity of the facility's storm water discharges from the storm event.

   b. If the facility's storm water discharges are commingled with run-on from surrounding areas, the discharger should identify other visual observation and sample collection locations that have not been commingled by run-on and that represent the quality and quantity of the facility's storm water discharges from the storm event.

   c. If visual observation and sample collection locations are difficult to observe or sample (e.g., sheet flow, submerged outfalls), the discharger shall identify and collect samples from other locations that represent the quality and quantity of the facility's storm water discharges from the storm event.

   d. The discharger that determines that the industrial activities and BMPs within two or more drainage areas are substantially identical may either (1) collect samples from a reduced number of substantially identical drainage areas, or (2) collect samples from each substantially identical drainage area and analyze a combined sample from each substantially identical drainage area. The discharger must document such a determination in the annual Stormwater report.

7. Visual Observation and Sample Collection Exceptions

The discharger is required to be prepared to collect samples and conduct visual observations at the beginning of the wet season (October 1) and throughout the wet season until the minimum requirements of Sections 4. and 5., above, are completed with the following exceptions:

   a. The discharger is not required to collect a sample and conduct visual observations in accordance with Section 4 and Section 5, above, due to dangerous weather conditions, such as flooding, electrical storm, etc., when storm water discharges begin after scheduled facility operating hours or when storm water discharges are not preceded by three working days without discharge. Visual observations are only required during daylight hours. The discharger that does not collect the required samples or visual observations during a wet season due to these exceptions shall include an explanation in the "Annual Stormwater Report" why the sampling or visual observations could not be conducted.

b. The discharger may conduct visual observations and sample collection more than one hour after discharge begins if the discharger determines that the objectives of this section will be better satisfied. The discharger shall include an explanation in the "Annual Stormwater Report" why the visual observations and sample collection should be conducted after the first hour of discharge.

8. *Alternative Monitoring Procedures*

The discharger may propose an alternative monitoring program that meets Section 2, above, monitoring program objectives for approval by the Regional Water Board's Executive Officer. The discharger shall continue to comply with the monitoring requirements of this section and may not implement an alternative monitoring plan until the alternative monitoring plan is approved by the Regional Water Board's Executive Officer. Alternative monitoring plans are subject to modification by the Regional Water Board's Executive Officer.

9. Monitoring Methods

a. The discharger shall explain how the facility's monitoring program will satisfy the monitoring program objectives of Section 2., above. This shall include:

1) Rationale and description of the visual observation methods, location, and frequency;

2) Rationale and description of the sampling methods, location, and frequency; and

3) Identification of the analytical methods and corresponding method detection limits used to detect pollutants in storm water discharges. This shall include justification that the method detection limits are adequate to satisfy the objectives of the monitoring program.

b. All sampling and sample preservation shall be in accordance with the current edition of "Standard Methods for the Examination of Water and Wastewater" (American Public Health Association). All monitoring instruments and equipment (including the discharger's own field instruments for measuring pH and Electro-conductivity) shall be calibrated and maintained in accordance with manufacturers' specifications to ensure accurate measurements. All laboratory analyses must be conducted according to test procedures under 40 CFR Part 136, unless other test procedures have been specified in Order No. R8-2009-0021 or by the Regional Water Board's Executive Officer. All metals shall be reported as total recoverable metals or unless otherwise specified in Order No. R8-2009-0021. With the exception of analysis conducted by the discharger, all laboratory analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. The discharger may conduct their own sample analyses if the discharger has sufficient capability (qualified employees, laboratory equipment, etc.) to adequately perform the test procedures.

10. *Sampling and Analysis Exemptions and Reductions*

A discharger who qualifies for sampling and analysis exemptions, as described below in Section 10.a.(1) or who qualifies for reduced sampling and analysis, as described below in Section 10.b., must submit the appropriate certifications and required documentation to the Regional Water Board prior to the wet season (October 1) and certify as part of the annual Stormwater report submittal. A discharger that qualifies for either the Regional Water Board or local agency certification programs, as described below in Section 10.a.(2) and (3), shall submit certification and documentation in accordance with the requirements of those programs. The discharger who provides certification(s) in accordance with this section are still required to comply with all other monitoring program and reporting requirements. The discharger shall prepare and submit their certification(s) using forms and instructions provided by the State Water Board, Regional Water Board, or local agency or shall submit their information on a form that contains equivalent information. The discharger whose facility no longer meets the certification conditions must notify the Regional Water Board's Executive Officer (and local agency) within 30 days and immediately comply with Section 5., Sampling and Analysis requirements. Should a Regional Water Board (or local agency) determine that a certification does not meet the conditions set forth below, the discharger must immediately comply with the Section 5., Sampling and Analysis requirements.

a. Sampling and Analysis Exemptions

A discharger is not required to collect and analyze samples in accordance with Section 5., above, if the discharger meets all of the conditions of one of the following certification programs:

1) No Exposure Certification (NEC)

This exemption is designed primarily for those facilities where all industrial activities are conducted inside buildings and where all materials stored and handled are not exposed to storm water. To qualify for this exemption, the discharger must certify that their facilities meet all of the following conditions:

a) All prohibited non-storm water discharges have been eliminated or otherwise permitted.

b) All authorized non-storm water discharges have been identified and addressed in the SWPPP.

c) All areas of past exposure have been inspected and cleaned, as appropriate.

d) All significant materials related to industrial activity (including waste materials) are not exposed to storm water or authorized non-storm water discharges.

e) All industrial activities and industrial equipment are not exposed to storm water or authorized non-storm water discharges.

f) There is no exposure of storm water to significant materials associated with industrial activity through other direct or indirect pathways such as from industrial activities that generate dust and particulates.

g) There is periodic re-evaluation of the facility to ensure conditions (a), (b), (d), (e), and (f) above are continuously met. At a minimum, re-evaluation shall be conducted once a year.

2) Regional Water Board Certification Programs

The Regional Water Board may grant an exemption to the Section 5. Sampling and Analysis requirements if it determines a discharger has met the conditions set forth in a Regional Water Board certification program. Regional Water Board certification programs may include conditions to (a) exempt the discharger whose facilities infrequently discharge storm water to waters of the United States, and (b) exempt the discharger that demonstrate compliance with the terms and conditions of Order No. R8-2009-0021.

3) Local Agency Certifications

A local agency may develop a local agency certification program. Such programs must be approved by the Regional Water Board. An approved local agency program may either grant an exemption from Section 5. Sampling and Analysis requirements or reduce the frequency of sampling if it determines that a discharger has demonstrated compliance with the terms and conditions of the Industrial Activities Storm Water General Permit Order No. 97-03-DWQ which was adopted by the State Water Resources Control Board on April 17, 1997.

b. Sampling and Analysis Reduction

1) A discharger may reduce the number of sampling events required to be sampled for the remaining term of Order No. R8-2009-0021 if the discharger provides certification that the following conditions have been met:

a) The discharger has collected and analyzed samples from a minimum of six storm events from all required drainage areas;

b) All prohibited non-storm water discharges have been eliminated or otherwise permitted;

c) The discharger demonstrates compliance with the terms and conditions of the Order No. R8-2009-0021 for the previous two years (i.e., completed Annual Stormwater Reports, performed visual observations, implemented appropriate BMPs, etc.);

d) The discharger demonstrates that the facility's storm water discharges and authorized non-storm water discharges do not contain significant quantities of pollutants; and

e) Conditions (b), (c), and (d) above are expected to remain in effect for a minimum of one year after filing the certification.

2) Unless otherwise instructed by the Regional Water Board, the discharger shall collect and analyze samples from two additional storm events during the remaining term of Order No. R8-2009-0021 in accordance with Table A, below. The discharger shall collect samples of the first storm event of the wet season. The discharger that does not collect samples from the first storm event of the wet season shall collect samples from another storm event during the same wet season. The discharger that does not collect a sample in a required wet season shall collect the sample from another storm event in the next wet season. The discharger shall explain in the "Annual Stormwater Report" why the first storm event of a wet season was not sampled or a sample was not taken from any storm event in accordance with the Table A schedule, below.

Table A. REDUCED MONITORING SAMPLING SCHEDULE

Discharger Filing Sampling Reduction Certification By	Samples Shall be Collected and Analyzed in these wet seasons	
	Sample 1	Sample 2
Sept. 1, 2008	Oct. 1, 2008-May 31, 2009	Oct. 1, 2008-May 31, 2009
Sept. 1, 2009	Oct. 1, 2009-May 31, 2010	Oct. 1, 2009-May 31, 2010
Sept. 1, 2010	Oct. 1, 2010-May 31, 2011	Oct. 1, 2010-May 31, 2011
Sept. 1, 2011	Oct. 1, 2011-May 31, 2012	Oct. 1, 2011-May 31, 2012
Sept. 1, 2012	Oct. 1, 2012-May 31, 2013	Oct. 1, 2012-May 31, 2013
Sept. 1, 2013	Oct. 1, 2013-May 31, 2014	Oct. 1, 2013-May 31, 2014

11. *Records*

Records of all storm water monitoring information and copies of all reports (including the Annual Stormwater Reports) required by Order No. R8-2009-0021 shall be retained for a period of at least five years. These records shall include:

a. The date, place, and time of site inspections, sampling, visual observations, and/or measurements;

b. The individual(s) who performed the site inspections, sampling, visual observations, and or measurements;

c. Flow measurements or estimates;

d. The date and approximate time of analyses;

e. The individual(s) who performed the analyses;

f. Analytical results, method detection limits, and the analytical techniques or methods used;

g. Quality assurance/quality control records and results;

h. Non-storm water discharge inspections and visual observations and storm water discharge visual observation records (see Sections 3. and 4., above);

i. Visual observation and sample collection exception records (see Section 5.a, 6.d, 7, and 10.b.(2), above;

j. All calibration and maintenance records of on-site instruments used;

k. All Sampling and Analysis Exemption and Reduction certifications and supporting documentation (see Section 10);

l. The records of any corrective actions and follow-up activities that resulted from the visual observations.

12. *Annual Report*

The discharger shall submit an Annual Stormwater Report by July 1 of each year to the Executive Officer of the Regional Water Board and to the local agency (if requested). The report shall include a summary of visual observations and sampling results, an evaluation of the visual observation and sampling and analysis results, laboratory reports, the Annual Comprehensive Site Compliance Evaluation Report required in Section 9. of Attachment "J" of Order No. R8-2009-0021, an explanation of why a facility did not implement any activities required by Order No. R8-2009-0021 (if not already included in the Evaluation Report), and records specified in Section 11., above. The method detection limit of each analytical parameter shall be included. Analytical results that are less than the method detection limit shall be reported as "less than the method detection limit". The Annual Stormwater Report shall be signed and certified in accordance with Attachment D. Federal Standard Provisions, Section V-Reporting, Subsection B. Signatory and Certification requirements of Order No. R8-2009-0021. The discharger shall prepare and submit their Annual Stormwater Reports using the annual report forms provided by the State Water Board or Regional Water Board or shall submit their information on a form that contains equivalent information.

13. *Watershed Monitoring Option*

Regional Water Boards may approve proposals to substitute watershed monitoring for some or all of the requirements of this section if the Regional Water Board finds that the watershed monitoring will provide substantially similar monitoring information in evaluating discharger compliance with the requirements of Order No. R8-2009-0021.

ATTACHMENT L – CHINO BASIN MAXIMUM BENEFIT COMMITMENTS

Table 5-8a of Resolution No. R8-2004-0001

Chino Basin Maximum Benefit Commitments

Description of Commitment	Compliance Date – as soon as possible, but no later than
1. Surface Water Monitoring Program	
a. Submit Draft Monitoring Program to Regional Board	a. January 23, 2005 (complied)
b. Implement Monitoring Program	b. Within 30 days from date of Regional Board approval of monitoring plan
c. Quarterly data report submittal	c. April 15, July 15, October 15, January 15
d. Annual data report submittal	d. February 15th
2. Groundwater Monitoring Program	
a. Submit Draft Monitoring Program to Regional Board	a. January 23, 2005(complied)
b. Implement Monitoring Program	b. Within 30 days from date of Regional Board approval of monitoring plan
c. Annual data report submittal	c. February 15th
3. Chino Desalters	
a. Chino 1 desalter expansion to 10 MGD	a. Prior to recharge of recycled water
b. Chino 2 desalter at 10 MGD design	b. Recharge of recycled water allowed once award of contract and notice to proceed issued for construction of desalter treatment plant
4. Future desalters plan and schedule submittal	October 1, 2005 Implement plan and schedule upon Regional Board approval
5. Recharge facilities (17) built and in operation	June 30, 2005 (Partially complied)
6. IEUA wastewater quality improvement plan and schedule submittal	60 days after agency-wide 12 month running average effluent TDS quality equals or exceeds 545 mg/L for 3 consecutive months or agency-wide 12 month running average TIN equals or exceeds 8 mg/L in any month. Implement plan and schedule upon approval by Regional Board

Table 5-8a of Resolution No. R8-2004-0001

Chino Basin Maximum Benefit Commitments (cont.)

Description of Commitment	Compliance Date – as soon as possible, but no later than
7. Recycled water will be blended with other recharge sources so that the 5-year running average TDS and nitrate-nitrogen concentrations of water recharged are equal to or less than the "maximum benefit" water quality objectives for the affected Management Zone (Chino North or Cucamonga).	Compliance must be achieved by end of 5th year after initiation of recycled water recharge operations.
a. Submit a report that documents the location, amount of recharge, and TDS and nitrogen quality of stormwater recharge before the OBMP recharge improvements were constructed and what is projected to occur after the recharge improvements are completed	a. Prior to initiation of recycled water recharge
b. Submit documentation of amount, TDS and nitrogen quality of all sources of recharge and recharge locations. For stormwater recharge used for blending, submit documentation that the recharge is the result of CBW/IEUA enhanced recharge facilities.	b. Annually, by February 15th, after initiation of construction of basins/other facilities to support enhanced stormwater recharge.
8. Hydraulic Control Failure	
a. Plan and schedule to correct loss of hydraulic control	a. 60 days from Regional Board finding that hydraulic control is not being maintained
b. Achievement and maintenance of hydraulic control	b. In accordance with plan and schedule approved by Regional Board. The schedule shall assure that hydraulic control is achieved as soon as possible but no later than 180 days after loss of hydraulic control is identified.
c. Mitigation plan for temporary failure to achieve/maintain hydraulic control	c. By January 23, 2005(complied). Implement plan upon Regional Board determination that hydraulic control is not being maintained.
9. Ambient groundwater quality determination	July 1, 2005 and every 3 years thereafter

Appendix B
Plant Facilities Calculations

Appendix B
Plant Facilities Calculations

B.1 Calculations follow for Tables in Section 4:

(Only those tables in Section 4 that have calculated or estimated values are shown herein. See Section 4 for other tables, references, and explanations.)

Table 4-2
Design Raw Wastewater Characteristics [1]

Parameter	Units	Value	Reference
Annual Average Raw Influent Quality:			
BOD-5 day	mg/L	245	See Note 2
TSS	mg/L	256	See Note 2
Ammonia	mg/L	28	See Note 2
TKN	mg/L	43	See Note 2
Average temperature	degrees C	23	See Note 2
Annual Average Raw Influent Loadings at 14 mgd:			
BOD-5 day	lbs/day	28,600	calculated [3]
TSS	lbs/day	29,880	calculated [3]
Peak Month Average Raw Influent Quality:			
BOD-5day	mg/L	294	See Note 2
TSS	mg/L	308	See Note 2
Ammonia	mg/L	34	See Note 2
TKN	mg/L	52	See Note 2
Winter temperature	degrees C	20	See Note 2
Summer temperature	degrees C	26	See Note 2
Peak Month Average Raw Influent Loadings at 14 mgd:			
BOD-5 day	lbs/day	34,320	calculated [3]
TSS	lbs/day	35,960	calculated [3]

1. Raw wastewater characteristics based on RP-4 data from June 2000 through July 2001.
2. Black & Veatch, 2002.
3. For more information on calculated values, see comments in right margin.

Comment [MSOffice1]: 245 mg/L * 14 mgd * 8.34 lb/mil gal/mg/L = 28,600 lb/d

Comment [MSOffice2]: 256 mg/L * 14 mgd * 8.34 lb/mil gal/mg/L = 29,880 lb/d

Comment [MSOffice3]: 294 mg/L * 14 mgd * 8.34 lb/mil gal/mg/L = 34,320 lb/d

Comment [MSOffice4]: 308 mg/L * 14 mgd * 8.34 lb/mil gal/mg/L = 35,960 lb/d

Table 4-3
Headworks Design Criteria

Parameter	Units	Value	Reference
Mechanical Bar Screens:			
Number	units	2	See Note 1
Channel width	feet	6.0	See Note 1
Channel depth	feet	18.0	See Note 1
Bar clear opening	inches	0.375	See Note 1
Max velocity through screen	feet/second	1.5	See Note 1
Peak flow capacity	mgd, each	36.2	See Note 1
Total peak flow capacity	mgd	72.4	calculated [2]
Screenings Press:			
Number	units	1	See Note 1
Capacity	cu ft/hour	32	See Note 1
Percent solids	percent	8	See Note 1
Influent Pump Stations Nos. 1 & 2:			
Pump Station Number 1:			
Number of pumps	units	5	See Note 1
Type	type	centrifugal	See Note 1
Motor horsepower, each	hp	50	See Note 1
Rated Capacity per pump	gpm	3,275	See Note 1
Rated head @ 870 rpm	ft	38	See Note 1
Pump Station Number 2:			
Number of pumps	units	3	See Note 1
Type	type	submersible	See Note 1
Motor horsepower, each	hp	100	See Note 1
Rated Capacity per pump	gpm	6,000	See Note 1
Rated head	ft	40	See Note 1
Reliable capacity with 7 pumps	mgd	40.8	calculated [2]
Magnetic Flow Meter:			
Number	units	1	See Note 3
Throat size	inches	42	See Notes 1 & 3
Maximum capacity	mgd	48.3	See Notes 1 & 3
Grit Chambers:			
Number	units	2	See Note 1
Type	type	vortex	See Note 1
Diameter	feet	16	See Note 4
Depth	feet	2.92	See Note 4

Comment [MSOffice5]: 2 units*36.2 mgd/unit = 72.4 mgd

Comment [MSOffice6]: ((5 units*3,275 gpm + 2 units * 6,000 gpm) * 1,440 min/d) / 10^6) = 40.8 mgd

Table 4-3
Headworks Design Criteria

Parameter	Units	Value	Reference
Volume, each	gallons	4,400	calculated [2]
Detention time at PHWWF, all units in service	minutes	0.39	calculated [2]
Peak design capacity, each	mgd	20	See Note 1
Grit Pumps:			
Number	units	3	See Note 5
Type	type	Recessed impeller, centrifugal	See Note 5
Motor horsepower	hp	2 @ 5; 1 @ 7.5	See Note 5
Capacity, each	gpm	250	See Note 1
Rated head	feet	30	See Note 1
Grit Dewatering Equipment:			
Number of cyclones	units	2	See Notes 5 & 6
Number of classifiers	units	2	See Notes 5 & 6

1. Black & Veatch, 2004.
2. For more information on calculated values, see comments in right margin.
3. Black & Veatch, 2002.
4. NBS/Lowry, 2000.
5. IEUA staff, 2004-2009.
6. IEUA, 2005.

Comment [MSOffice7]: 1 unit*3.14/4*16ft^2 * 2.92ft*7.5gal/cuft = 4,400 gal

Comment [MSOffice8]: (4,400 gal * 2 tanks)/32,200,000 gpd*(1 day/1440 min)) = 0.39 min

Table 4-5
Primary Treatment Design Criteria

Parameter	Units	Value	Reference
Primary Clarifiers:			
Number	units	2	See Note 1
Diameter	ft	105	See Note 1
Side Water Depth	ft	13	See Note 1
Surface Area, each	sq.ft.	8,659	calculated [2]
Volume, each	gallons	844,254	calculated [2]
Design Capacity, each	mgd	7	See Note 1
Overflow rate at AADF, all units in service	gpd/sf	810	See Note 1
Overflow rate at PHWWF, all units in service	gpd/sf	1,860	calculated [2]
Annual Average Title 22 Capacity	mgd	14	See Note 3

1. Black & Veatch, 2004.
2. For more information on calculated values, see comments in right margin.
3. See Section 4.

Comment [MSOffice9]: (3.1415 * 105^2) / 4 = 8,659 sf

Comment [MSOffice10]: 8,659 sf * 13 ft * 7.5 gal/cf = 844,254 gallons

Comment [DDB11]: 810 gpd/sf * 2.3 wet weather peaking factor = 1,863 gpd/sf

Table 4-6
Biological Secondary Treatment Design Criteria

Parameter	Units	Value	Reference
Anoxic Tanks 1A:			
Number	units	3	See Note 1
Volume, each	gallons	339,315	See Note 1
Detention Time, based on annual average flow of 7 mgd, each, without recycle	hours	1.16	calculated [2]
Anoxic Tank 1A Mixers:			
Type	type	Flygt submersible propeller	See Note 1
Number per tank	units	3	See Note 1
Motor horsepower, each	hp	6.2	See Note 1
Size	inches	63	See Note 1
Process Trains:			
Number	trains	3	See Note 1
Basins per train	units	2	See Note 1
Volume, each basin	gallons	1,486,000	See Note 1
Length	feet	383.5	See Note 1
Width	feet	35	See Note 1
Side Water Depth	feet	16	See Note 1
Average flow per basin	mgd	3.5	See Note 1
Hydraulic Detention Time, based on annual average flow of 3.5 mgd per basin	hours	10.2	calculated [2]
Anoxic Zone 1B:			
Number	units	6	See Note 1
Volume, each	gallons	120,000	See Note 1
Anoxic Zone 1B Mixers:			
Type	type	submersible propeller	See Note 1
Number per zone	units	1	See Note 1
Motor horsepower, each	hp	20	See Note 3
Size	inches	30	See Note 3
Average flow	mgd	3.5	See Note 3
Oxic Zone 1:			
Number	units	6	See Note 1
Volume, each	gallons	863,500	See Note 3
Anoxic Zone 2A:			
Number	units	6	See Note 1

Comment [MSOffice12]: 339,315 gal / (7 mgd * 10^6 gal/mg * (1 day/24 hr)) = 1.16 hr

Comment [MSOffice13]: 1,486,000 gal / (3.5 mgd * 10^6 gal/mg * (1 day/24 hr)) = 10.2 hr

Table 4-6
Biological Secondary Treatment Design Criteria

Parameter	Units	Value	Reference
Volume, each	gallons	117,300	See Note 1
Anoxic Zone 2B:			
Number	units	6	See Note 1
Volume, each	gallons	117,300	See Note 1
Anoxic Zone 2 Mixers:			
Type	type	submersible propeller	See Note 1
Number per zone	units	1	See Note 1
Motor horsepower, each	hp	20	See Note 1
Size	inches	30	See Note 1
Average flow	mgd	3.5	See Note 1
Oxic Zone 2:			
Number	units	6	See Note 1
Volume, each	gallons	228,300	See Note 3
Diffused Aeration System:			
Type	type	Fine Bubble Aerostrip	See Note 1
Oxic Zone 1:			
No. of diffusers per zone	units	338	See Note 3
Air requirements, per zone:			
Average	scfm	2,105	See Note 1
Max month (summer)	scfm	3,515	See Note 1
Peak Day	scfm	3,750	See Note 1
Oxic Zone 2:			
No. of diffusers per zone	units	80	See Note 3
Air requirements, per zone:			
Average	scfm	243	See Note 1
Max month (summer)	scfm	371	See Note 1
Peak Day	scfm	1,255	See Note 1
Air Blowers:			
Number	units	3	See Note 1
Rated capacity, each	scfm	8,000	See Note 1
Discharge pressure	psia	22.93	See Note 3
Motor hp, each	hp	2 @ 500; 1 @ 450	See Note 1
Mixed Liquor Recycle Pumps:			
Number	units	6	See Note 1
Number per basin	unit	1	See Note 1

Table 4-6
Biological Secondary Treatment Design Criteria

Parameter	Units	Value	Reference
Type	type	submersible horizontal propeller	See Note 1
Capacity range, each, at rated head	mgd	3.5 – 7.0	See Note 1
Motor hp, each	hp	40	See Note 1
Rated head	ft	1.4 to 4.5	See Note 1

1. Black & Veatch, 2004.
2. For more information on calculated values, see comments in right margin.
3. IEUA, 2005.

Table 4-7
Secondary Clarifier Design Criteria

Parameter	Units	Value	Reference
Secondary Clarifiers:			
Number	units	3	See Note 1
Diameter	ft	145	See Note 1
Side Water Depth	ft	18	See Note 1
Surface area, each	sf	16,500	See Note 1
Volume, each	gallons	2,212,000	calculated [2]
Average flow, each	mgd	7.0	See Note 1
Peak Capacity, each	mgd	16.1	calculated [2]
Overflow rate at 16.1 mgd	gpd/sf	976	calculated [2]
Inlet well diameter (minimum)	ft	10	See Note 3
Flocculating feedwell diameter (minimum)	ft	30	See Note 3
Collector Drive	Hp	1	See Note 1
Return Activated Sludge (RAS) Pumps			
Type	--	Horizontal non-clog centrifugal	See Note 1

Comment [MSOffice14]: 16,500 sf * 18 ft * 7.48 gal/cf = 2,212,000 gallons

Comment [MSOffice15]: 7.0 mgd * Peaking Factor 2.3 = 16.1 mgd

Comment [MSOffice16]: (16.1 mgd * 10^6 gal/mg) / 16,500 sf = 976 gpd/sf

Table 4-7
Secondary Clarifier Design Criteria

Parameter	Units	Value	Reference
Number	units	4 (3 duty, 1 standby)	See Note 1
Rated Capacity, each	gpm	7,072	See Note 1
Rated Head, each	ft	48	See Note 1
Motor hp, each	hp	100	See Note 1
Drive type	--	Variable frequency drive	See Note 1
RAS Flow, each train	mgd	2 – 8.75	See Note 1
Waste Activated Sludge (WAS)			
Number of Flow Control Valves	units	2	See Notes 1 & 4
WAS Production, annual average	ppd	11,214	See Note 1
WAS Production, maximum month	ppd	14,390	See Note 1
WAS Continuous Flow Rate, annual average	gpm	115	See Note 1
WAS Continuous Flow Rate, maximum month	gpm	141	See Note 1

1. Black & Veatch, 2004.
2. For more information on calculated values, see comments in right margin.
3. IEUA, 2005.
4. WAS system has two flow control valves: one valve wastes Mixed Liquor and the other valve wastes RAS from the RAS pumps' discharge line.

Table 4-9
Dual-Media Filtration
Coagulation/Flocculation/Clarification Facilities Design Criteria

Parameter	Units	Value	Reference
Type	type	"Contra-clarifier" upflow	See Notes 1, 2 & 3
Number of "contra-clarifier" cells	units	8	See Notes 1, 2 & 3
Length per cell	feet	14	See Note 3
Width per cell	feet	10	See Note 3
Side water depth	feet	9.5	See Notes 1, 2 & 3

Table 4-9
Dual-Media Filtration
Coagulation/Flocculation/Clarification Facilities Design Criteria

Parameter	Units	Value	Reference
Volume per cell	gallons	9,950	calculated[4]
Total volume, all cells in service	gallons	79,600	calculated[4]
Detention time at average flow, all filter cells in service	minutes	14.7	calculated[4]
Detention time at peak flow, all filter cells in service	minutes	6.4	calculated[4]
Alum storage and feed system			
Total Storage Bulk Tank (new) Day Tanks (2 X existing)	gallons	2,600 1,800 400 each	See Note 5
Number of pumps	units	2	See Note 3
Maximum dose	mg/L	20	See Note 1
Polymer storage and feed system – not typically used			
Total Storage	gallons	250	See Note 5
Number of pumps	units	2	See Note 3
Maximum dose	mg/L	1	See Note 1
Maximum coagulation/flocculation /clarification capacity, all cells in service	mgd	18.0 [1]	See Note 6
Annual average capacity (Title 22 reliable capacity), one cell for maintenance	mgd	6.8 [3]	See Note 6

1. Black & Veatch, 2004.
2. NBS/Lowry, 1996.
3. NBS/Lowry and North American Treatment Systems, 2000.
4. For more information on calculated values, see comments in right margin.
5. North American Treatment Systems, Inc., 1997.
6. Capacity is the same as that for the filtration process because the “contra-clarifiers” are an integral component of the dual-media gravity filters. See Section 4.

Comment [MSOffice17]: 14 ft *10 ft * 9.5 ft * 7.48 gal/cf = 9,950 gallons

Comment [MSOffice18]: 9,950 gal/unit * 8 units = 79,600 gallons

Comment [MSOffice19]: (79,600 gal / 7,800,000 gpd) * 1440 min/day) = 14.7 min

Comment [MSOffice20]: (79,600 gal / 18,000,000 gpd) * 1440 min/day) = 6.4 min

Table 4-10
Dual-media Filter Design Criteria

Parameter	Units	Value	Reference
Number of filters	units	1	See Note 1
Number of cells per filter	units	8	See Note 1
Type	type	Dual media	See Note 1
Media	type	Anthracite/sand	See Note 1
Depth	inches	Anthracite : 18 Sand : 12	See Note 2
Length per filter cell	feet	31.3	See Note 2
Width per filter cell	feet	10	See Note 2
Surface area per filter cell	sq ft	313	See Note 1
Total surface area, all filter cells in service	sq ft	2,504	See Note 1
Firm surface area, one filter cell out for maintenance or backwash	sq ft	2,191	calculated[3]
Maximum filtration rate, (Title 22 reliable capacity), one filter cell out for maintenance or backwash	gpm/sq ft	5	See Note 4
Maximum capacity per filter cell	mgd	2.25	See Note 1 and calculated[3]
Maximum capacity, all filter cells in service	mgd	18.0	See Note 1
Maximum capacity, (Title 22 reliable capacity), one filter cell out for maintenance	mgd	15.7[5]	calculated[3]
Annual average capacity (Title 22 reliable capacity), one filter cell out for backwash	mgd	6.8[6]	calculated[3]
Filter backwash pumping			
Number of pumps	units	2	See Note 7
Type	type	Vertical turbine	See Note 7
Capacity per pump	gpm	8,500	See Note 7
Total capacity	gpm	17,000	See Note 7

1. Black & Veatch, 2004.
2. NBS/Lowry and North American Treatment Systems, 2000.
3. For more information on calculated values, see comments in right margin.
4. California, 2001. Maximum filtration rate of 5 gpm/sf is used for calculations in this table.)
5. See Section 4 regarding reliable capacity (7 of 8 filter cells in service and 1 filter cell in backwash).

Comment [MSOffice21]: 2,504 sf – 313 sf = 2,191 sf

Comment [DDB22]: (313 sf * 5 gpm/sf) / 694.44 gpm/mgd = 2.25 mgd per filter

Comment [MSOffice23]: 2.25 mgd * 7 filters in service = 15.75 mgd

Comment [MSOffice24]: 15.75 mgd / peaking factor of 2.3= 6.8 mgd

6. Annual average capacity is based on maximum reliable capacity/PHWWF peaking factor (15.7/2.3 =6.8 mgd).
7. IEUA, 2004-2009.

Table 4-11
Vertical Flocculation Design Criteria

Parameter	Units	Value	Reference
Flocculator type	type	Vertical Impeller	See Note 1
Number per flocculation basin	each	1	See Note 1
Number of flocculation basins	each	3, in series	See Note 1
Length per basin	feet	16.5	See Note 1
Width per basin	feet	16.5	See Note 1
Side water depth	feet	10.8 to 12.1	See Note 1
Average Volume per basin	gallons	23,300 ±	calculated[2]
Total volume, all 3 basins	gallons	70,000±	calculated[2]
Detention time at average flow (7.3 mgd), all 3 basins	minutes	13.8	calculated[2]
Detention time at peak flow (22.4 mgd), all basins in service	minutes	4.5	calculated[2]
Range of velocity gradient "G"	1/seconds	20 to 60	See Note 1
Maximum capacity, all filters in service	mgd	22.4 [3]	calculated[2]
Maximum capacity, (Title 22 reliable capacity), one filter out for maintenance	mgd	16.8 [4]	calculated[2]
Annual average capacity (Title 22 reliable capacity), one filter out for maintenance	mgd	7.3 [5]	calculated[2]

1. IEUA, 2005.
2. For more information on calculated values, see comments in right margin.
3. Maximum flow with four cloth filters operating at 6 gpm/sf, or 5.6 mgd each.
4. Based on three filters operating at 5.6 mgd per filter; one not in service.
5. Based on the maximum capacity of three filters and a PHWWF Peaking Factor of 2.3.

Comment [MSOffice25]: (16.5 ft * 16.5 ft * ((10.8 + 12.1)/2))* 7.48 = 23,300 gallons

Comment [MSOffice26]: 3 basins * 23,300 gal/basin = 69,900 gallons (rounded)

Comment [MSOffice27]: (70,000 gal / 7,300,000 gpd) * 1440 min/day) = 13.8 min

Comment [MSOffice28]: (69,900 gal / 22,400,000 gpd) * 1440 min/day) =4.5 min

Comment [MSOffice29]: See Table 4-12 calculations below

Comment [MSOffice30]: See Table 4-12 calculations below

Comment [MSOffice31]: See Table 4-12 calculations below

Table 4-12
Cloth Disc Filter Design Criteria

Parameter	Units	Value	Reference
Filter backwash pumping:			
Number of pumps per filter	units	2	See Note 1
Type	type	horizontal centrifugal	See Note 1
Capacity per pump	gpm	130	See Note 1
Total dynamic head	ft	41	See Note 1
Number of filters	units	4	See Note 1
Number of discs per filter	units	12	See Note 1
Submerged surface area per disc	sq ft	53.8	See Note 1
Maximum hydraulic loading rate	gpm/sf	6	See Note 2
Maximum capacity per filter	mgd	5.6	calculated[3]
Total submerged surface area, all filter discs in service	sq ft	2,582	calculated[3]
Firm submerged surface area, one filter out for maintenance	sq ft	1,937	calculated[3]
Maximum capacity, all filters in service	mgd	22.4 [4]	calculated[3]
Maximum capacity, (Title 22 reliable capacity), one filter out for maintenance	mgd	16.8 [5]	calculated[3]
Annual average capacity (Title 22 reliable capacity), one filter out for maintenance	mgd	7.3 [6]	calculated[3]

1. IEUA, 2005.
2. Black & Veatch, 2004.
3. For more information on calculated values, see comments in right margin.
4. Maximum flow with four cloth filters operating at 6 gpm/sf, or 5.6 mgd each.
5. Based on three filters operating at 5.6 mgd per filter; one not in service.
6. Based on the maximum capacity of three filters and a PHWWF Peaking Factor of 2.3.

Comment [MSOffice32]: (53.8 sf/disc * 12 discs/filter * 6 gpm/sf * 1,440 min/day)/ 10^6 = 5.6 mgd

Comment [MSOffice33]: 53.8 sf/disc * 12 disc/filter * 4 filters = 2,582 sf

Comment [MSOffice34]: 2,582 sf/4 filters * 0.75 = 1,937 sf for 3 filters

Comment [MSOffice35]: 5.6 mgd/filter * 4 filters = 22.4 mgd

Comment [MSOffice36]: 5.6 mgd/filter * 3 filters = 16.8 mgd

Comment [MSOffice37]: 16.8 mgd / peaking factor 2.3 = 7.3 mgd

Table 4-14
Existing Sodium Hypochlorite System Design Criteria

Parameter	Units	Value	Reference
Sodium hypochlorite concentration	percent available Cl_2	12.5	See Note 1
Maximum Cl_2 dose @ average flow	mg/L	25	See Note 1
Bulk Storage System:			
Number of tanks	units	3	See Note 2
Volume per tank	gallons	2,250	See Note 2
Total volume	gallons	6,750	calculated[3]
Feed System:			
Number of metering pumps	units	2	See Note 2
Capacity per pump	gph	180	See Note 1
Treatment Capacity:			
Peak capacity at 10 mg/L Cl_2 feedrate, all units in service	mgd	103.6	calculated[3]
Annual average capacity at 9 mg/L Cl_2 feedrate, all units in service	mgd	50.0	calculated[3]
Annual average capacity at 9 mg/L Cl_2 feedrate, one pump out of service	mgd	21.7	calculated[3]

1. Black & Veatch, 2004.
2. IEUA, 2004-2009.
3. For more information on calculated values, see comments in right margin.

Comment [MSOffice38]: 2,250 gallons/tank * 3 tanks = 6,750 gallons

Comment [MSOffice39]: (2 units * 180 gal/hr/unit * 1 lb/gal * 24 hr/day) / (10 mg/L*8.34 lb/mil gal/mg/L) =103.6 mgd

Comment [MSOffice40]: (2 units * 180 gal/hr/unit * 1 lb/gal * 24 hr/day) / (9 mg/L*8.34 lb/mil gal/mg/L * 2.3 peaking factor = 50.0 mgd

Comment [MSOffice41]: 50.0 mgd / 2.3 peaking factor = 21.7 mgd

Table 4-15
New Sodium Hypochlorite Metering System Design Criteria

Parameter	Units	Value	Reference
Sodium hypochlorite concentration	percent available Cl_2	12.5	See Note 1
Maximum Cl_2 dose @ average flow	mg/L	25	See Note 1
Number of metering pumps	units	2	See Note 1
Capacity per pump	gph	19 to 117	See Note 4
Annual average capacity at 9 mg/L Cl_2 feedrate	mgd	16.3	calculated[2,3]

1. Black & Veatch, 2003 and IEUA, 2009.
2. For more information on calculated values, see comments in right margin.
3. (117 gal/hr * 1 lb/gal * 24 hrs/day)/(9 mg/L * 8.34 lb/mil gal/mg/L * 2.3 peaking factor) = 16.3 mgd
4. IEUA, 2005.

Comment [MSOffice42]: (117 gal/hr * 1 lb/gal * 24 hrs/day)/(9 mg/L * 8.34 lb/mil gal/mg/L * 2.3 peaking factor) = 16.3 mgd

Table 4-16
Existing Chlorine Contact Basin Design Criteria

Parameter	Units	Value	Reference
Number of tanks	units	2	See Note 1
Chlorine Contact Basin 1A:			
Overall footprint	feet x feet	69 x 39	See Note 1
Number of passes	units	5	See Note 1
Length of each pass	feet	65.5	See Note 1
Effective overall length	feet	327.5	See Note 1
Channel width	feet	7.33	See Note 2
Side water depth	feet	13	See Note 1
Length : width	ratio	45 : 1	calculated[3]
Length : depth	ratio	25 : 1	calculated[3]
Volume	gallons	233,430	calculated[3]
Chlorine Contact Basin 1A Effluent Channel:			
Length	feet	63.6	See Note 4
Width	feet	7.0	See Note 4
Side water depth	feet	2.75	See Note 4
Volume	gallons	9,160	calculated[3]
Interconnecting Pipe (on-site):			
Length of 42-in. diam. pipe	feet	140	See Note 5
Volume of 42-in. diam. pipe	gallons	10,080	calculated[3]
Length of 36-in. diam. pipe	feet	370	See Note 4
Volume of 36-in. diam. pipe	gallons	19,560	calculated[3]
Total pipe volume	gallons	29,640	calculated[3]
Chlorine Contact Basin 1B:			
Overall footprint	feet x feet	163 x 49	See Note 1
Number of passes	units	6	See Note 1
Length of each pass	feet	163	See Notes 1 and 4
Effective overall length	feet	978	See Note 1
Channel width	feet	7.5	See Note 2
Side water depth	feet	16	See Note 1
Length : width	ratio	130 : 1	calculated[3]
Length : depth	ratio	61 : 1	calculated[3]
Volume	gallons	877,850	calculated[3]
Total Volume (Basins 1A & 1B, 1A Effluent Channel, & Interconnecting Pipe)	gallons	1,150,080	calculated[3]

Comment [MSOffice43]: 327.5 ft / 7.33 ft = 45

Comment [MSOffice44]: 327.5 ft / 13 ft = 25

Comment [MSOffice45]: 327.5 ft * 13 ft * 7.33 ft * 7.48 gal/cf = 233,430 gallons

Comment [MSOffice46]: 63.6 ft * 7.0 ft * 2.75 ft * 7.48 gal/cf = 9,160 gallons

Comment [MSOffice47]: π/4 * (42 in/12 in/ft)^2 * 140 ft * 7.48 gal/cu ft = 10,080 gallons

Comment [MSOffice48]: π/4 * (36 in/12 in/ft)^2 * 370 ft * 7.48 gal/cu ft = 19,560 gallons

Comment [MSOffice49]: 10,080 gal + 10,560 gal = 29,640 gallons

Comment [MSOffice50]: 978 ft / 7.5 ft = 130

Comment [MSOffice51]: 978ft / 16 ft = 61

Comment [MSOffice52]: 978 ft *7.5 ft * 16 ft *7.48 gal/cu ft = 877,850 gallons

Comment [MSOffice53]: 233,430 gal + 9,160 gal + 10,080 gal + 877,850 gal + 19,560 gal = 1,150,080 gallons

Table 4-16
Existing Chlorine Contact Basin Design Criteria

Parameter	Units	Value	Reference
Required modal contact time (at PHDWF)	minutes	90	See Note 6
Required CT (at PHDWF)	mg-min/L	450	See Note 6
Estimated Peak (dry weather) capacity, at 90 minutes modal contact time, all units in service	mgd	14.3 [7]	See Note 9
Estimated Annual Average capacity, at 90 minutes modal contact time, all units in service	mgd	7.2 [8]	calculated[3]
Estimated Peak (wet weather) capacity, all units in service	mgd	16.5 [10]	calculated[3]

1. Black & Veatch, 2004.
2. NBS/Lowry and North American Treatment Systems, 2000.
3. For more information on calculated values, see comments in right margin.
4. IEUA, 2004-2007.
5. Black & Veatch, 2003.
6. California, 2001.
7. Based on dye test results. See Appendix C.
8. Based on PHDWF capacity divided by the peaking factor (14.3/2.0 = 7.2)
9. SFE Global, 2005.
10. Based on AADF capacity times the wet weather peaking factor (7.2 x 2.3 = 16.5)

Comment [MSOffice54]: 14.3 mgd / PHDWF peaking factor of 2.0 = 7.2 mgd

Comment [DDB55]: 7.2 mgd * PHWWF peaking factor of 2.3 =16.5 mgd

Table 4-17
New Chlorine Contact Basin No. 2 Design Criteria

Parameter	Units	Value	Reference
Number of basins	units	1	See Note 1
Number of trains per basin	units	2	See Note 1
Number of passes per train	units	3	See Note 1
Overall basin footprint	feet x feet	53.33 x 198	See Note 1
Length of each pass	feet	188	See Note 1
Effective overall length per train	feet	564	calculated[2]
Width of each pass, or channel	feet	7.5	See Note 1
Side water depth	feet	16	See Note 1
Length : width per train	ratio	74 : 1	calculated[2]
Length : depth per train	ratio	35 : 1	calculated[2]
Volume per train	gallons	506,250	calculated[2]
Length : width, total basin	ratio	150 : 1	calculated[2]
Length : width, total basin	ratio	70 : 1	calculated[2]
Total Volume per basin	gallons	1,012,500	calculated[2]
Required modal contact time (at PHDWF)	minutes	90	See Note 3
Required CT (at PHDWF)	mg-min/L	450	See Note 3
Estimated Peak (dry weather) capacity, at 90 minutes modal contact time, all units in service	mgd	14.0	calculated[2]
Estimated Annual Average capacity, at 90 minutes modal contact time, all units in service	mgd	7.0	See Note 1
Estimated Peak (wet weather) capacity, all units in service	mgd	16.1 [5]	calculated[2]

1. Black & Veatch, 2004.
2. For more information on calculated values, see comments in margin at right.
3. California, 2001.
4. Based on AADF capacity times the wet weather peaking factor (7.0 x 2.3 = 16.1)

Comment [MSOffice56]: 188 ft/train * 3 trains = 564 ft

Comment [MSOffice57]: 564 ft/7.5 ft = 74

Comment [MSOffice58]: 564 ft / 16 ft = 35

Comment [MSOffice59]: 564 ft * 7.5 ft * 16 ft * 7.48 gal/cf = 506,250 gallons

Comment [MSOffice60]: 506,250 gallons/train * 2 trains = 1,012,500 gallons

Comment [MSOffice61]: 7.0* PHDWF peaking factor of 2.0 = 14.0

Comment [DDB62]: 7.0 mgd * PHWWF peaking factor of 2.3 = 16.1 mgd

Table 4-19
Dechlorination Design Criteria

Parameter	Units	Value	Reference
Influent Average Dry Weather Flow	mgd	14	See Note 1
Sodium Bisulfite Dosage Range	mg/L	0-23.8	See Note 1
Sodium Bisulfite Storage:			
Number of tanks	units	1	See Note 1
Volume	gallons	2,000	See Note 1
Capacity @ Avg Flow Rate and 10 mg/L feedrate	days	5.4	calculated[2]
Solution Strength	percent	38	See Notes 3 and 4
Sodium Bisulfite Feed Pumps:			
Number of pumps	units	1	See Note 1
Capacity per pump	gph	115	See Note 3
Max Feed rate	gpd	2,760	calculated[2]
Capacity at 20 mg/L feedrate, all units in service	mgd	52	calculated[2]
Capacity at 10 mg/L feedrate, all units in service	mgd	104	calculated[2]
Capacity at 10 mg/L, one pump out of service	mgd	0	calculated[2]
Dechlorination Chamber:			
Overall footprint	feet x feet	10 x 10	See Notes 1 and 3
Approximate depth	feet	10.5	See Note 1
Volume	gallons	7,854	calculated[2]
Mixer horsepower	hp	15	See Note 5

1. Black & Veatch, 2004 and IEUA, 2009.
2. For more information on calculated values, see comments in right margin.
3. Black & Veatch, 2003. Specification Section 11727.
4. 3.17 lb/gal for a 38% solution.
5. Black & Veatch, 2002.

Comment [MSOffice63]: (3.17 lb/gal * 2,000 gal) / (14 mgd * 10 mg/L * 8.34 #/gal) = 5.4 days

Comment [MSOffice64]: 115 gph/pump * 24 hr/d * 1 pump = 2,760 gpd

Comment [MSOffice65]: (2,760gpd * 3.17 #/gal)/ (8.34 #/gal * 20 ppm) = 52 mgd

Comment [MSOffice66]: 52 mgd * 20/10 = 104 mgd

Comment [MSOffice67]: No standby pump at RP-4. Use pump at RP-1.

Comment [MSOffice68]: 10 ft * 10 ft * 10.5 ft * 7.48 gal/cf
= 7,854 gallons

Table 4-20
On-Site Storage Pond & Return Pumping Design Criteria

Parameter	Units	Value	Reference
On-Site Storage Pond:			
Number of basins	units	1	See Note 1
Volume	million gallons	4	See Note 1
Volume as a percent of annual average flow	percent	28.5	calculated[2]
Retention time at annual average flow	hours	6.85	calculated[2]
Return Pumping:			
Number of pumps	units	2	See Note 1
Type of pumps	type	Self-priming centrifugal	See Note 1
Capacity per pump	gpm	3,275	See Note 1
Rated head @ 870 rpm	feet	38	See Note 1
Motor horsepower	hp	50	See Note 1

1. Black & Veatch, 2004.
2. For more information on calculated values, see comments in right margin.

Comment [MSOffice69]: (4 million gall/14 mgd) * 100 = 28.5%

Comment [MSOffice70]: 0.285 * 24 hours = 6.85 hours

Appendix C
Regional Plant No. 4
2005 Chlorine Contact Basin
Contact Time Testing

January 20, 2005

Inland Empires Utilities Agency
PO Box 9020
Chino Hills, CA
91709

Attention: Ms. Mary Blasingame

Re: Final Report – 2005 Contact Time Test - SFE Global Project #C46-02

Dear Madame,

Please find enclosed, our final report on the Contact Basin Testing performed January 5th, 2005 at the RP-4 WWTP.

Thank you for having SFE Global complete this work on your behalf. If you have any questions or comments, please do not hesitate to contact me directly.

Yours truly,
SFE Global

Kevin McMillan
Senior Project Manager

KMC/af

C.C.: Ms. LeAnne Hamilton

enclosed: final report

Rancho Cucamonga, California
CCB Contact Time Testing – RP-4 WWTP
January 2005
SFE File #C46-02

Final Report

Submitted To:

Inland Empires Utilities Agency
PO Box 9020
Chino Hills, California
91709
Attn: Ms. Mary Blasingame

SFE Global NW
Suite 3, 4141 Northgate Blvd.
Sacramento, California
95834
(866) 332-9876

1.0 INTRODUCTION

This report provides details of the Chlorine Contact Basin (CCB) testing conducted by SFE Global at the RP-4 WWTP near Rancho Cucamonga. California. The project included the injection of concentrated salt solution into the CCB and the measurement of conductivity at two points near the outlet of two contact basins connected in series. Testing was performed on January 5th, 2005.

Mr. Rob Larson, as Project Manager and Mr. Jason Scott as Field Service Technician represented SFE during this project.

2.0 TESTING PROGRAM

Testing was performed according to methodology developed by Turner Designs, the manufacturer of fluorometry equipment utilized by SFE Global. Due to high chlorine residual concentration an alternative method of testing was performed with a slug injection of supersaturated salt solution. Conductivity measurements were performed at the two CCB outlets with a Foxborough Digital Conductivity Meter and data logger. Logged data and manual readings were used to determine Modal contact time of the Chlorine Contact Basin, relative to the time of slug-injection at the inlet.

The methodology used for this application was as follows:

- Install conductivity meter at the outlet, approximately two feet below water surface.
- Dose granular salt into water and mix until dissolved.
- Slug inject salt solution near the CCB chlorine injection diffuser.
- Read conductivity data at outlet Site #1 and record values for calculation of Modal contact time.
- Move conductivity equipment to Site #2 and record values for calculation of Modal contact time.
- Site #2 is near the de-chlorination chemical injection

Conditions were excellent for this testing. Flow rate information from the plant filter magnetic meters and the Chlorine Contact Basin 1A ultrasonic flow meters was obtained and recorded during the test. Data obtained indicated a well-defined peak conductivity for Site #1 and a flatter, less pronounced peak for Site #2.

3.0 TEST RESULTS

Chlorine Contact Basin #2 modal contact time is the contact time for the whole system, including Basin #1, Basin #2 and the interconnecting pipeline.

Site 1: Chlorine Contact Basin #1	
Parameter	**Elapsed Time (minutes)**
Minimum	20
Maximum	64
Modal	30

Site 2: Chlorine Contact Basin #2	
Parameter	**Elapsed Time (minutes)**
Minimum	102
Maximum	N/A**
Modal	130

Average flow for duration of test: 9.912 mgd.

Note: Flow rate derived from average flow rate reported by the plant over the duration of the test. Flow rate values were provided by Distributed Control System staff as retrieved from the SCADA system output and converted from GPM to MGD by SFE Global.

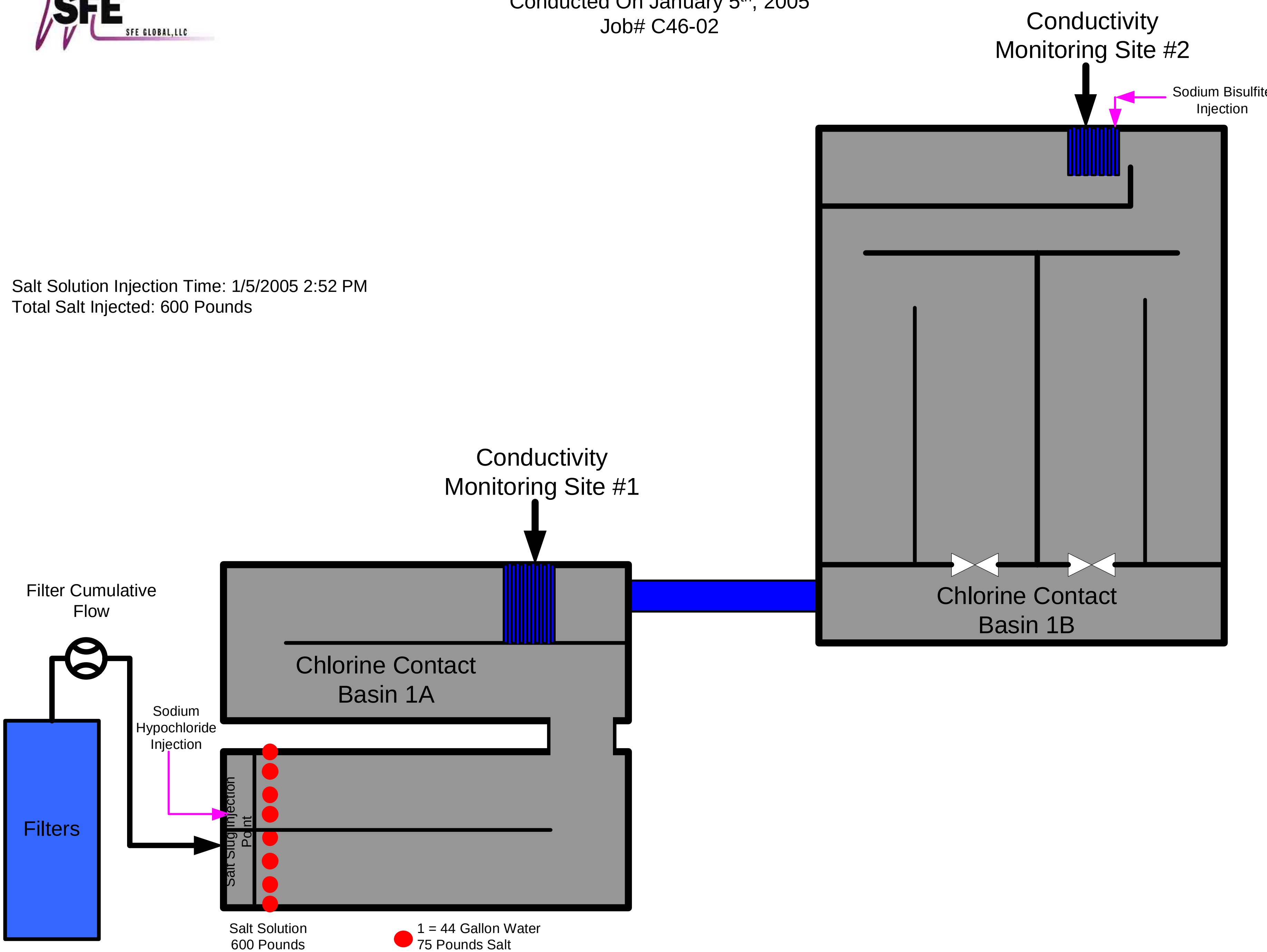
**** Residual salt was present in the CCB#2 for an extended period from dispersion; therefore no maximum contact time was available.**

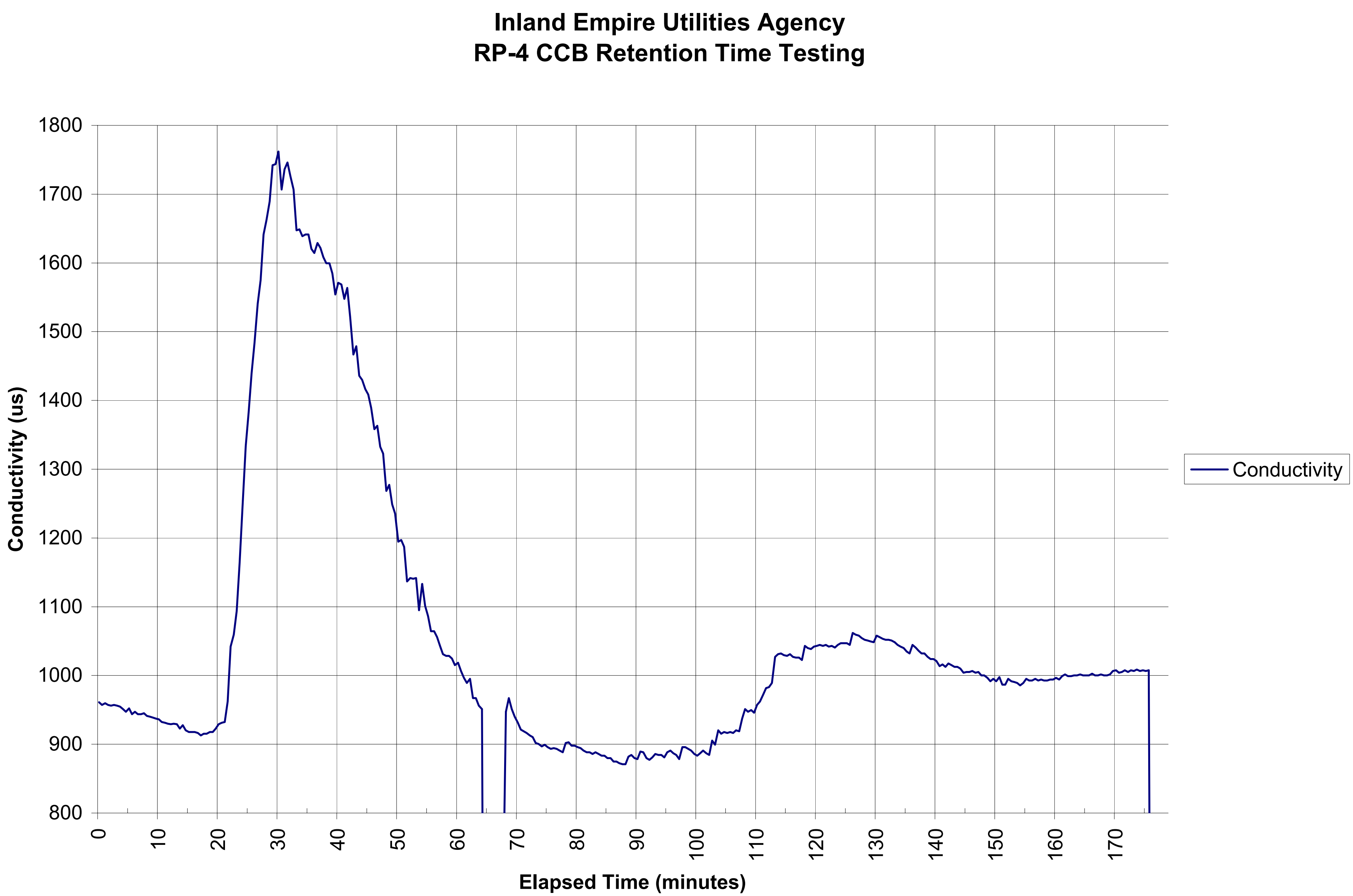
4.0 CONCLUSION

The testing performed on the RP-4 WWTP CCB was considered successful and a well-defined conductivity peak was observed. Plant flow rate was observed and recorded on the data spreadsheet attached.

Inland Empire Utilities Agency
RP-4 CCB Retention Time Testing
Conducted On January 5th, 2005
Job# C46-02

Salt Solution Injection Time: 1/5/2005 2:52 PM
Total Salt Injected: 600 Pounds




Inland Empire Utilities Agency
RP-4 CCB Retention Time Testing
Conductivity (us)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
Elapsed Time (minutes)
Conductivity

Inland Empire
RP-4 Chloring Contact Basin Flow Rates
January 5th, 2004

Date / Time	Effluent Meter Flow MGD	Date / Time	Combined Filter Flow MGD
1/5/2005 14:52	8.507	1/5/2005 14:52	8.844
1/5/2005 14:52	8.384	1/5/2005 14:52	8.990
1/5/2005 14:53	8.648	1/5/2005 14:53	9.020
1/5/2005 14:54	8.800	1/5/2005 14:54	8.911
1/5/2005 14:54	8.929	1/5/2005 14:54	8.418
1/5/2005 14:55	8.721	1/5/2005 14:55	9.266
1/5/2005 14:56	8.934	1/5/2005 14:56	9.603
1/5/2005 14:56	9.284	1/5/2005 14:56	10.123
1/5/2005 14:57	9.976	1/5/2005 14:57	9.353
1/5/2005 14:58	10.106	1/5/2005 14:58	9.425
1/5/2005 14:58	10.077	1/5/2005 14:58	9.350
1/5/2005 15:00	10.089	1/5/2005 14:59	9.638
1/5/2005 15:01	10.038	1/5/2005 15:00	9.462
1/5/2005 15:01	10.167	1/5/2005 15:01	9.598
1/5/2005 15:02	10.050	1/5/2005 15:01	9.811
1/5/2005 15:03	10.179	1/5/2005 15:02	9.632
1/5/2005 15:03	10.140	1/5/2005 15:03	9.611
1/5/2005 15:04	10.055	1/5/2005 15:03	9.665
1/5/2005 15:05	10.027	1/5/2005 15:04	9.592
1/5/2005 15:05	10.122	1/5/2005 15:05	9.680
1/5/2005 15:06	10.275	1/5/2005 15:05	9.579
1/5/2005 15:07	10.257	1/5/2005 15:06	9.786
1/5/2005 15:07	10.347	1/5/2005 15:07	9.708
1/5/2005 15:08	10.336	1/5/2005 15:07	9.521
1/5/2005 15:09	10.302	1/5/2005 15:08	9.773
1/5/2005 15:09	10.314	1/5/2005 15:09	9.812
1/5/2005 15:10	10.325	1/5/2005 15:09	9.657
1/5/2005 15:11	10.342	1/5/2005 15:10	9.968
1/5/2005 15:12	**10.285**	1/5/2005 15:11	9.766
1/5/2005 15:13	10.363	1/5/2005 15:11	9.811
1/5/2005 15:13	10.324	**1/5/2005 15:12**	**9.793**
1/5/2005 15:15	10.363	1/5/2005 15:13	9.791
1/5/2005 15:15	10.465	1/5/2005 15:14	9.971
1/5/2005 15:16	10.432	1/5/2005 15:14	9.711
1/5/2005 15:17	10.500	1/5/2005 15:15	9.808
1/5/2005 15:17	10.471	1/5/2005 15:16	9.812
1/5/2005 15:18	10.455	1/5/2005 15:16	9.924
1/5/2005 15:19	10.465	1/5/2005 15:17	9.927
1/5/2005 15:20	10.556	1/5/2005 15:18	9.940
1/5/2005 15:20	10.522	1/5/2005 15:18	9.929
1/5/2005 15:21	10.562	1/5/2005 15:19	10.031
1/5/2005 15:22	**10.590**	1/5/2005 15:20	9.778
1/5/2005 15:22	10.516	1/5/2005 15:20	9.932
1/5/2005 15:23	10.471	1/5/2005 15:21	9.887
1/5/2005 15:24	10.561	**1/5/2005 15:22**	**9.903**
1/5/2005 15:24	10.533	1/5/2005 15:22	9.937
1/5/2005 15:25	10.522	1/5/2005 15:23	9.982
1/5/2005 15:26	10.426	1/5/2005 15:24	9.814
1/5/2005 15:26	10.482	1/5/2005 15:24	9.873

Salt Test Flow Rate Averag

Effluent Average	10.218
Filter Average	9.648
Average Flow	9.912
Min #1 Avg	10.039
Max #1 Avg	9.965
Modal #1 Avg	10.246
Min #2 Avg	10.969
Modal #2 Avg	9.277

1/5/2005 15:27	10.539	1/5/2005 15:25	9.930
1/5/2005 15:28	10.510	1/5/2005 15:26	10.175
1/5/2005 15:28	10.500	1/5/2005 15:26	9.809
1/5/2005 15:29	10.556	1/5/2005 15:27	9.848
1/5/2005 15:30	10.471	1/5/2005 15:28	9.950
1/5/2005 15:30	10.539	1/5/2005 15:28	9.884
1/5/2005 15:31	10.522	1/5/2005 15:29	9.812
1/5/2005 15:32	10.449	1/5/2005 15:30	9.782
1/5/2005 15:33	10.545	1/5/2005 15:31	9.687
1/5/2005 15:33	10.432	1/5/2005 15:31	9.935
1/5/2005 15:35	10.392	1/5/2005 15:32	9.873
1/5/2005 15:35	10.437	1/5/2005 15:33	9.956
1/5/2005 15:37	10.471	1/5/2005 15:33	9.808
1/5/2005 15:38	10.494	1/5/2005 15:34	10.009
1/5/2005 15:39	10.455	1/5/2005 15:35	9.752
1/5/2005 15:42	10.494	1/5/2005 15:35	9.801
1/5/2005 15:43	10.482	1/5/2005 15:36	9.956
1/5/2005 15:43	10.494	1/5/2005 15:37	9.847
1/5/2005 15:44	10.443	1/5/2005 15:37	10.011
1/5/2005 15:45	10.488	1/5/2005 15:38	9.841
1/5/2005 15:45	10.421	1/5/2005 15:39	9.834
1/5/2005 15:46	10.398	1/5/2005 15:39	9.858
1/5/2005 15:47	10.370	1/5/2005 15:40	9.742
1/5/2005 15:48	10.381	1/5/2005 15:41	9.684
1/5/2005 15:49	10.426	1/5/2005 15:41	9.806
1/5/2005 15:49	10.387	1/5/2005 15:42	9.804
1/5/2005 15:50	10.482	1/5/2005 15:43	9.835
1/5/2005 15:52	10.370	1/5/2005 15:43	9.942
1/5/2005 15:53	10.381	1/5/2005 15:44	9.662
1/5/2005 15:54	10.410	1/5/2005 15:45	9.742
1/5/2005 15:55	10.370	1/5/2005 15:45	9.560
1/5/2005 15:56	**10.308**	1/5/2005 15:46	9.867
1/5/2005 15:57	10.218	1/5/2005 15:47	9.681
1/5/2005 15:58	10.297	1/5/2005 15:47	9.648
1/5/2005 15:58	10.240	1/5/2005 15:48	9.776
1/5/2005 15:59	10.285	1/5/2005 15:49	9.769
1/5/2005 16:00	10.252	1/5/2005 15:50	9.729
1/5/2005 16:01	10.173	1/5/2005 15:50	9.599
1/5/2005 16:02	10.269	1/5/2005 15:51	9.550
1/5/2005 16:03	10.465	1/5/2005 15:52	9.603
1/5/2005 16:03	10.353	1/5/2005 15:52	9.622
1/5/2005 16:04	10.330	1/5/2005 15:53	9.756
1/5/2005 16:05	10.398	1/5/2005 15:54	10.051
1/5/2005 16:05	10.207	1/5/2005 15:54	9.613
1/5/2005 16:06	10.330	1/5/2005 15:55	9.776
1/5/2005 16:07	10.308	1/5/2005 15:56	9.792
1/5/2005 16:07	10.230	**1/5/2005 15:56**	**9.622**
1/5/2005 16:08	10.179	1/5/2005 15:57	9.736
1/5/2005 16:09	10.145	1/5/2005 15:58	9.742
1/5/2005 16:09	10.111	1/5/2005 15:58	9.596
1/5/2005 16:10	10.083	1/5/2005 15:59	9.644
1/5/2005 16:11	10.111	1/5/2005 16:00	9.685
1/5/2005 16:12	10.038	1/5/2005 16:01	9.507
1/5/2005 16:12	10.066	1/5/2005 16:01	9.474
1/5/2005 16:14	10.150	1/5/2005 16:02	9.337
1/5/2005 16:16	10.167	1/5/2005 16:03	9.926
1/5/2005 16:16	10.009	1/5/2005 16:03	9.622
1/5/2005 16:17	10.235	1/5/2005 16:04	9.516

1/5/2005 16:18	9.948	1/5/2005 16:05	9.405
1/5/2005 16:18	10.072	1/5/2005 16:05	9.580
1/5/2005 16:19	10.167	1/5/2005 16:06	9.734
1/5/2005 16:20	9.976	1/5/2005 16:07	9.249
1/5/2005 16:20	9.537	1/5/2005 16:08	9.179
1/5/2005 16:21	9.796	1/5/2005 16:08	9.462
1/5/2005 16:22	9.784	1/5/2005 16:09	9.179
1/5/2005 16:22	9.734	1/5/2005 16:10	9.190
1/5/2005 16:23	9.627	1/5/2005 16:10	9.456
1/5/2005 16:24	9.559	1/5/2005 16:11	9.562
1/5/2005 16:24	9.447	1/5/2005 16:12	9.605
1/5/2005 16:25	9.402	1/5/2005 16:12	9.693
1/5/2005 16:26	9.160	1/5/2005 16:13	9.553
1/5/2005 16:27	8.996	1/5/2005 16:14	9.513
1/5/2005 16:27	9.565	1/5/2005 16:14	9.511
1/5/2005 16:28	9.548	1/5/2005 16:15	9.547
1/5/2005 16:29	9.847	1/5/2005 16:16	9.387
1/5/2005 16:30	10.398	1/5/2005 16:16	9.579
1/5/2005 16:31	10.678	1/5/2005 16:17	9.259
1/5/2005 16:31	10.875	1/5/2005 16:18	9.937
1/5/2005 16:32	11.033	1/5/2005 16:18	8.829
1/5/2005 16:33	11.004	1/5/2005 16:19	8.548
1/5/2005 16:33	11.213	1/5/2005 16:20	10.205
1/5/2005 16:34	**11.285**	1/5/2005 16:20	10.469
1/5/2005 16:35	11.189	1/5/2005 16:21	8.569
1/5/2005 16:36	11.240	1/5/2005 16:22	8.608
1/5/2005 16:37	11.179	1/5/2005 16:22	8.652
1/5/2005 16:37	10.925	1/5/2005 16:23	8.692
1/5/2005 16:38	11.066	1/5/2005 16:24	9.055
1/5/2005 16:39	10.898	1/5/2005 16:25	8.450
1/5/2005 16:39	10.988	1/5/2005 16:25	8.621
1/5/2005 16:40	10.970	1/5/2005 16:26	8.816
1/5/2005 16:41	10.880	1/5/2005 16:27	9.122
1/5/2005 16:42	10.965	1/5/2005 16:27	9.095
1/5/2005 16:43	10.920	1/5/2005 16:28	9.213
1/5/2005 16:44	10.892	1/5/2005 16:29	10.623
1/5/2005 16:44	10.858	1/5/2005 16:29	10.607
1/5/2005 16:45	10.869	1/5/2005 16:30	10.912
1/5/2005 16:46	10.976	1/5/2005 16:31	10.639
1/5/2005 16:46	10.925	1/5/2005 16:31	10.606
1/5/2005 16:48	10.835	1/5/2005 16:32	10.843
1/5/2005 16:48	10.824	1/5/2005 16:33	10.596
1/5/2005 16:49	10.712	1/5/2005 16:33	10.483
1/5/2005 16:50	10.605	**1/5/2005 16:34**	**10.653**
1/5/2005 16:52	10.555	1/5/2005 16:35	10.502
1/5/2005 16:52	10.527	1/5/2005 16:35	10.387
1/5/2005 16:53	10.077	1/5/2005 16:36	10.270
1/5/2005 16:54	9.665	1/5/2005 16:37	10.081
1/5/2005 16:54	9.436	1/5/2005 16:37	10.079
1/5/2005 16:55	9.312	1/5/2005 16:38	10.292
1/5/2005 16:56	9.166	1/5/2005 16:39	10.421
1/5/2005 16:56	9.036	1/5/2005 16:40	10.133
1/5/2005 16:57	9.086	1/5/2005 16:40	10.204
1/5/2005 16:58	9.041	1/5/2005 16:41	10.176
1/5/2005 16:59	9.075	1/5/2005 16:42	9.996
1/5/2005 17:00	9.222	1/5/2005 16:42	10.260
1/5/2005 17:01	9.362	1/5/2005 16:43	10.248
1/5/2005 17:02	**9.464**	1/5/2005 16:44	10.328

1/5/2005 16:44	10.093
1/5/2005 16:45	10.339
1/5/2005 16:46	10.136
1/5/2005 16:46	9.979
1/5/2005 16:47	10.113
1/5/2005 16:48	9.936
1/5/2005 16:48	9.756
1/5/2005 16:49	10.017
1/5/2005 16:50	9.726
1/5/2005 16:50	9.863
1/5/2005 16:51	9.742
1/5/2005 16:52	9.317
1/5/2005 16:52	8.329
1/5/2005 16:53	8.554
1/5/2005 16:54	8.122
1/5/2005 16:55	8.231
1/5/2005 16:55	8.453
1/5/2005 16:56	8.656
1/5/2005 16:57	8.582
1/5/2005 16:57	8.706
1/5/2005 16:58	8.760
1/5/2005 16:59	9.012
1/5/2005 16:59	8.844
1/5/2005 17:00	8.810
1/5/2005 17:01	8.974
1/5/2005 17:01	8.983
1/5/2005 17:02	**9.091**

Appendix D
Regional Plant No. 4
Alarms

RP-4 List of Alarms

Equipment Tag	Associated Process Area / Equipment	Description of Alarm
P-6 to P-8	Influent Pump Station - Pumps	Pump Failure
P-6 to P-8	Influent Pump Station - Pumps	AFD Fault
LIT-1101 (Primary) LIT-1102 (Reference)	Influent Pump Station - Wetwell Level	5% Discrepancy Alarm
LSLL-1101	Influent Pump Station - Wetwell Level	Low Water Cutoff Level Reached
AIT-1100	Influent Wetwell Ambient Gas Detector	Ambient Gas LEL Alarm Level Reached
AIT-1100	Bar Screen Enclosure Ambient Gas Detector	Ambient Gas LEL Alarm Level Reached
AIT-1100	Influent Wetwell Ambient Gas Detector	Detector Failure
FPSP-1100	Influent Pump Station Fire Alarm Control Panel	General Alarm
DSW-1270	Grit Classifier and Dewatering Screw	Classifier Failure
GRB-1210	Vortex Grit Basin	Drive Failure
V-1221	Vortex Grit Basin Flushing Water Valve	Valve Failure
P-1240	Grit Pump	Pump Failure
P-1240	Grit Pump	Low Seal Water
MX-3310-1 to MX-3310-6	Aeration Basin Anoxic Zone Mixers	Mixer Failure
MX-3610-1 to MX-3610-6	Aeration Basin Anoxic Zone Mixers	Mixer Failure
MX-3620-1 to MX-3620-6	Aeration Basin Anoxic Zone Mixers	Mixer Failure
AIT-3410-1 to AIT-3410-6 AIT-3420-1 to AIT-3420-6 AIT-3430-1 to AIT-3430-6 AIT-3710-1 to AIT-3710-6	Aeration Basin No. 2 Oxic Zone DO Meter	High DO

RP-4 List of Alarms

Equipment Tag	Associated Process Area / Equipment	Description of Alarm
AIT-3410-1 to AIT-3410-6 AIT-3420-1 to AIT-3420-6 AIT-3430-1 to AIT-3430-6 AIT-3710-1 to AIT-3710-6	Aeration Basin No. 2 Oxic Zone DO Meter	Low DO
AIT-3410-1 to AIT-3410-6 AIT-3420-1 to AIT-3420-6 AIT-3430-1 to AIT-3430-6 AIT-3710-1 to AIT-3710-6	Aeration Basin No. 2 Oxic Zone DO Meter	Aeration Air Low Flow
V-3410-1 to V-3410-6 V-3420-1 to V-3420-6 V-3430-1 to V-3430-6 V-3440-1 to V-3440-6 V-3450-1 to V-3450-6 V-3460-1 to V-3460-6 V-3470-1 to V 3470-6 V-3480-1 to V-3480-6	Aeration Diffuser Valves	Valve Failure
V-3115A/B, V-3125A/B, V-3135-A/B	Aeration Process Manifold Header Air Bleed Valves	Valve Failure
V-3110B, V-3120B, V-3130B	Aeration Process Manifold Header Air Flow Control Valves	Valve Fail
FIT-3110A/B, FIT-3120A/B, FIT-3130A/B FIT-3410-1 to FIT-3410-6 FIT-3440-1 to FIT-3440-6 FIT-3480-1 to FIT-3480-6 FIT-3710-1 to FIT-3710-6	Aerostrip Diffuser Collapse/Flex Control Air Flow	Low Flow
MX-5001	Rapid Mixer Basin	Mixer Failure
FLC-5110, FLC-5120, FLC-5130	Flocculation Basin Mixers	Mixer Failure
NAOC-7410	Sodium Hypochlorite Metering Pump	Pump Failure
NAOC-7410	Sodium Hypochlorite Metering Pump	High Discharge Pressure
MPCP-7310, P-7320	Sodium Bisulfite Metering Pumps	Pump Failure
MPCP-7310, P-7320	Sodium Bisulfite Metering Pumps	High Discharge Pressure
P-7510, P-7520	Alum Transfer Pump	Pump Failure

RP-4 List of Alarms

Equipment Tag	Associated Process Area / Equipment	Description of Alarm
P-7530, P-7540	Alum Metering Pumps (new cloth filters)	Pump Failure
P-7530, P-7540	Alum Metering Pumps (new cloth filters)	High Discharge Pressure
P-3530, P3540	Mixed Liquor Recycle Pumps	Pump Failure
MX-2010	Primary Clarifier Splitter Box Mixer	Mixer Failure
SLC-2110, SLC-2120	Primary Clarifier Sludge Collectors	High-High Torque Alarm
SLC-2110, SLC-2120	Primary Clarifier Sludge Collectors	Collector Failure
AIT-2100A/B	Primary Clarifier No. 1 and 2 Ambient Gas Detector	Alarm Level Reached
AIT-2100C	Primary Clarifier No. 2 Scum Pit Gas Detector	Alarm Level Reached
AIT-2100	Primary Clarifier Area Gas Detector	Detector Failure
V-2172, V-2182	Primary Sludge Valves	Valve Fail
V-2121	Primary Scum Valve	Valve Failure
SCW-4115, SCW-4125, SCW-4135	Secondary Clarifier Rotating Scum Weir	Scum Weir Failure
SLC-4110, SLC-4120, SLC-4130	Secondary Sludge Collector	Collector Failure
SLC-4110, SLC-4120, SLC-4130	Secondary Sludge Collector	High Torque Alarm
V-4150	Secondary Scum Valve	Valve Failure
LIT-4101	Secondary Scum Wetwell Level	High Level Alarm
P-4210, P-4220, P-4230, P-4240	Return Activated Sludge (RAS) Pumps	Pump Failure
P-4210, P-4220, P-4230, P-4240	Return Activated Sludge (RAS) Pumps	Low Seal Water Pressure
LCP-4210	RAS Pump Station Sump	High Level Alarm
FPSP-2100	RAS Pump Station Fire Alarm Control Panel	General Alarm
V-3910	Waste Activated Sludge (WAS) Control Valve	Valve Failure

RP-4 List of Alarms

Equipment Tag	Associated Process Area / Equipment	Description of Alarm
ES/EEW-7001, 7002, 7003	Ferric Chloride / Polymer Feed Area Eyewash Station	Alarm Activated
LSH-7001	Ferric Chloride / Polymer Feed Area Sump	High Level Alarm
P-7110, P-7120	Ferric Chloride Metering Pumps	Pump Failure
P-7110, P-7120	Ferric Chloride Metering Pumps	High Discharge Pressure
LCP-7210, 7220	Coagulant Aid Polymer Feeder Blenders	Feeder/Blender Failure
OCP-8110	Odor Control Fan	Fan Failure
OCP-8110	Odor Control Fan	Fan Low Current Draw Alarm (Ventilation System Failure)
LCP-8101	Odor Control Area Sump	High Level Alarm
PIT-	Aeration Blowers Discharge Header Pressure	High Discharge Pressure
PIT-	Aeration Blowers Discharge Header Pressure	Low Discharge Pressure
AB-02	Aeration Blowers	Motor Temperature High Alarm
AB-02	Aeration Blowers	Blower Vibration High Alarm
AB-02	Aeration Blowers	Blower Surge Alarm
AB-02	Aeration Blowers	Blower Overload Overload Alarm
AB-02	Aeration Blowers	Blower Motor Fail Alarm
AB-02	Aeration Blowers	Blower Emergency Stop Alarm
AB-02	Aeration Blowers	Blower Common Alarm
AIT-4110	Secondary Effluent Turbidity	Filter Influent Turbidity (Notifies operator to check the turbidimeter and/or alum feed pumps)
AIT-5210	Filter Effluent Turbidity	High Filter Effluent Turbidity Alarm (Effluent is diverted to on-site storage pond and RP-1)

RP-4 List of Alarms

Equipment Tag	Associated Process Area / Equipment	Description of Alarm
AIT-6110A, 6110B, AIT 6120A, 6120B	Residual Chlorine Analyzers	Monitors residual chlorine. Residual chlorine is used with effluent flow to calculate CT. Low CT Alarm (Effluent is diverted to on-site storage pond and RP-1)
FIT-5510, 5520, 5530 5540	Filter Influent Flow Meters	Filter flow is used with residual chlorine to calculate CT. Low CT Alarm (Effluent is diverted to on-site storage pond and RP-1)
FCP-7500	Alum Bulk Storage Tank Level	Low Alum Bulk Storage Alarm (Tank is refilled. Effluent is diverted to on-site storage pond and RP-1 if effluent phosporus or turbidity goes above the setpoint limit.)
FLCP-1/2	Filtration High Level	Filter High Level Alarm (Overflow of filter or backflow. Operator performs additional backwash or isolates filter.)
FLCP-1/2	Backwash Tank Low Level	Backwash Tank Low Level Alarm (Stops filter backwash for all filters)
LCP-6010	Sodium Hypochlorite Mixer Failure	Mixer Failure Alarm (Effluent is diverted to on-site storage pond and RP-1)

IEUA RP-4 SUMMARY OF ALARMS

Tag Name	Description	Direction	Severity
FILT\1_CLAR_AIR_VALV_FAIL	UNIT #1 CLARIFIER AIR VALVE FAILURE TO SCADA	ON	1
FILT\1_CLAR_OVER_PRESS_SD	UNIT #1 CLARIFIER OVER PRESSURE SHUTDOWN TO SCADA	ON	1
FILT\1_EFF_VALV_FAIL	Unit #1 Effluent Valve Fail To Scada	ON	1
FILT\1_HIGH_DP	UNIT 1 HIGH DP	ON	1
FILT\1_INF_VALV_FAIL	Unit #1 Influent Valve Fail To Scada	ON	1
FILT\2_CLAR_OVER_PRESS_SD	Unit #2 Clarifier Overpressure Shutdown To Scada	ON	1
FILT\2_EFF_VALV_FAIL	Unit #2 Effluent Valve Failure To Scada	ON	1
FILT\2_HIGH_DP	UNIT 2 HIGH DP	ON	1
FILT\2_INF_VALV_FAIL	Unit #2 Influent Valve Failure To Scada	ON	1
FILT\3_CLAR_OVER_PRESS_SD	Unit #3 Clarifier Overpressure Shutdown To Scada	ON	1
FILT\3_EFF_VALV_FAIL	Unit #3 Effluent Valve Fail To Scada	ON	1
FILT\3_HIGH_DP	UNIT 3 HIGH DP	ON	1
FILT\3_INF_VALV_FAIL	Unit #3 Influent Valve Fail To Scada	ON	1
FILT\4_CLAR_OVER_PRESS_SD	UNIT #4 CLARIFIER OVERPRESSURE SHUT DOWN TO SCADA	ON	1
FILT\4_EFF_VALV_FAIL	UNIT #4 FAIL TO SCADA	ON	1
FILT\4_HIGH_DP	UNIT 4 HIGH DP	ON	1
FILT\4_INF_VALV_FAIL	UNIT #4 INFLUENT VALVE FAIL TO SCADA	ON	1
FILT\5_CLAR_OVER_PRESS_SD	UNIT #5 CLARIFIER OVERPRESSURE SHUT DOWN TO SCADA	ON	1
FILT\5_EFF_VALV_FAIL	UNIT # 5 EFF VALVE FAIL TO SCADA	ON	1
FILT\5_HIGH_DP	UNIT 5 HIGH DP	ON	1
FILT\5_INF_VALV_FAIL	UNIT #5 INFLUENT VALVE FAIL TO SCADA	ON	1
FILT\6_CLAR_OVER_PRESS_SD	UNIT #6 CLARIFIER OVER PRESSURE SHUT DOWN TO SCADA	ON	1
FILT\6_EFF_VALV_FAIL	UNIT #6 EFF VALVE FAIL TO SCADA	ON	1
FILT\6_HIGH_DP	UNIT 6 HIGH DP	ON	1
FILT\6_INF_VALV_FAIL	UNIT #6 INFLUENT VALVE FAIL TO SCADA	ON	1
FILT\7_CLAR_OVER_PRESS_SD	UNIT #7 CLARIFIER OVER PRESSURE SHUT DOWN TO SCADA	ON	1
FILT\7_EFF_VALV_FAIL	UNIT #7 EFF VALVE FAIL TO SCADA	ON	1
FILT\7_FILT_HI_HDLOSS_SW	UNIT 7 FILTER HI HEADLOSS SWITCH PSL701	ON	1
FILT\7_HIGH_DP	UNIT 7 HIGH DP	ON	1
FILT\7_INF_VALV_FAIL	UNIT #7 INFLUENT VALVE FAIL TO SCADA	ON	1
FILT\8_CLAR_OVER_PRESS_SD	UNIT #8 CLARIFIER OVER PRESSURE SHUT DOWN TO SCADA	ON	1
FILT\8_EFF_VALV_FAIL	UNIT #8 EFF VALVE FAIL TO SCADA	ON	1
FILT\8_HIGH_DP	UNIT 8 HIGH DP	ON	1
FILT\8_INF_VALV_FAIL	UNIT #8 INFLUENT VALVE FAIL TO SCADA	ON	1
FILT\AIR_PRESS_LOW	Pneumatic System Low Pressure Alarm To Scada	ON	1
FILT\BLOWER_1_FAIL	FILTER AIR BLOWER #1 FAILURE	ON	1
FILT\BLOWER_2_FAIL	FILTER AIR BLOWER #2 FAILURE	ON	1
FILT\BW_FLO_FAIL	Back Wash Flow Fail Alarm To Scada	ON	1
FILT\BW_HI_RATE_VAL_FAIL	BACKWASH HIGH RATE VALVE FAILURE	ON	1
FILT\BW_LOW_RATE_VAL_FAIL	BACKWASH LOW RATE VALVE FAILURE	ON	1
FILT\BW_PMP_1_FAIL	FILTER BACKWASK PUMP 1 FAILURE	ON	1
FILT\BW_PMP_2_FAIL	FILTER BACKWASH PUMP 2 FAILURE	ON	1
FILT\FILT_MSG_BLK_FAIL		ON	1
FILT\HDWKS_FLOW_SIGNAL_FAIL		ON	1
FILT\RTU1_COMM_FAIL	RTU1 COMM FAIL TO FILTERS	ON	1
Filters\F1\ALARMS\Backwash_Pump_1_FAULT	F1: Backwash Pump 1 FAULT Alarm Trigger 12	ON	1
Filters\F1\ALARMS\Backwash_Pump_1_HIGH_Vacu	F1: Backwash Pump 1 HIGH Vacuum Alarm Trigger 46	ON	1
Filters\F1\ALARMS\Backwash_Pump_2_FAULT	F1: Backwash Pump 2 FAULT Alarm Trigger 13	ON	1
Filters\F1\ALARMS\Backwash_Pump_2_HIGH_Vacu	F1: Backwash Pump 2 HIGH Vacuum Alarm Trigger 47	ON	1
Filters\F1\ALARMS\Backwash_Pump_3_FAULT	F1: Backwash Pump 3 FAULT Alarm Trigger 14	ON	1
Filters\F1\ALARMS\Backwash_Pump_4_FAULT	F1: Backwash Pump 4 FAULT Alarm Trigger 15	ON	1
Filters\F1\ALARMS\Backwash_Pump_5_FAULT	F1: Backwash Pump 5 FAULT Alarm Trigger 16	ON	1
Filters\F1\ALARMS\Backwash_Pump_6_FAULT	F1: Backwash Pump 6 FAULT Alarm Trigger 17	ON	1
Filters\F1\ALARMS\Basin_Level_HIGH	F1: Basin Level HIGH Alarm Trigger 4	ON	1
Filters\F1\ALARMS\Basin_Level_HIGH_HIGH	F1: Basin Level HIGH HIGH Alarm Trigger 9	ON	1
Filters\F1\ALARMS\Effluent_Level_HIGH	F1: Effluent Level HIGH Alarm Trigger 5	ON	1
Filters\F1\ALARMS\Effluent_Turbidity_HIGH	F1: Effluent Turbidity HIGH Alarm Trigger 49	ON	1
Filters\F1\ALARMS\Filter_Air_Pressure	F1: Filter Air Pressure Alarm Trigger 8	ON	1
Filters\F1\ALARMS\Filter_Main_Drive_Motor_MCP_T	F1: Filter Main Drive Motor MCP TRIP Alarm Trigger 52	ON	1
Filters\F1\ALARMS\Filter_Sludge_Pump_MCP_TRIP	F1: Filter Sludge Pump MCP TRIP Alarm Trigger 53	ON	1
Filters\F1\ALARMS\HPS_Pump_1_FAULT	F1: HPS Pump 1 FAULT Alarm Trigger 18	ON	1
Filters\F1\ALARMS\HPS_Pump_2_FAULT	F1: HPS Pump 2 FAULT Alarm Trigger 19	ON	1
Filters\F1\ALARMS\Level_Switch_Fault	F1: Level Switch Fault Alarm Trigger 55	ON	1
Filters\F1\ALARMS\Main_Drive_Motor_FAULT	F1: Main Drive Motor FAULT Alarm Trigger 10	ON	1
Filters\F1\ALARMS\PLC-HMI_Communication_LOSS	F1: PLC-HMI Communication LOSS Alarm Trigger 2	ON	1
Filters\F1\ALARMS\PLC-SCADA_Communication_L	F1: PLC-SCADA Communication LOSS Alarm Trigger 3	ON	1
Filters\F1\ALARMS\Sludge_Waste_Pump_Motor_FA	F1: Sludge Waste Pump Motor FAULT Alarm Trigger 11	ON	1
Filters\F2\ALARMS\Backwash_Pump_1_FAULT	F2: Backwash Pump 1 FAULT Alarm Trigger 12	ON	1
Filters\F2\ALARMS\Backwash_Pump_2_FAULT	F2: Backwash Pump 2 FAULT Alarm Trigger 13	ON	1

IEUA RP-4 SUMMARY OF ALARMS

Tag Name	Description	Direction	Severity
Filters\F2\ALARMS\Backwash_Pump_3_FAULT	F2: Backwash Pump 3 FAULT Alarm Trigger 14	ON	1
Filters\F2\ALARMS\Backwash_Pump_4_FAULT	F2: Backwash Pump 4 FAULT Alarm Trigger 15	ON	1
Filters\F2\ALARMS\Backwash_Pump_5_FAULT	F2: Backwash Pump 5 FAULT Alarm Trigger 16	ON	1
Filters\F2\ALARMS\Backwash_Pump_6_FAULT	F2: Backwash Pump 6 FAULT Alarm Trigger 17	ON	1
Filters\F2\ALARMS\Basin_Level_HIGH	F2: Basin Level HIGH Alarm Trigger 4	ON	1
Filters\F2\ALARMS\Basin_Level_HIGH_HIGH	F2: Basin Level HIGH HIGH Alarm Trigger 9	ON	1
Filters\F2\ALARMS\Effluent_Level_HIGH	F2: Effluent Level HIGH Alarm Trigger 5	ON	1
Filters\F2\ALARMS\Effluent_Turbidity_HIGH	F2: Effluent Turbidity HIGH Alarm Trigger 49	ON	1
Filters\F2\ALARMS\Effluent_Turbidity_Transducer_O	F2: Effluent Turbidity Transducer OUT of RANGE Alarm Trigger 58	ON	1
Filters\F2\ALARMS\Filter_Air_Pressure	F2: Filter Air Pressure Alarm Trigger 8	ON	1
Filters\F2\ALARMS\Filter_Main_Drive_Motor_MCP_T	F2: Filter Main Drive Motor MCP TRIP Alarm Trigger 52	ON	1
Filters\F2\ALARMS\Filter_Sludge_Pump_MCP_TRIP	F2: Filter Sludge Pump MCP TRIP Alarm Trigger 53	ON	1
Filters\F2\ALARMS\HPS_Pump_1_FAULT	F2: HPS Pump 1 FAULT Alarm Trigger 18	ON	1
Filters\F2\ALARMS\HPS_Pump_2_FAULT	F2: HPS Pump 2 FAULT Alarm Trigger 19	ON	1
Filters\F2\ALARMS\Level_Switch_Fault	F2: Level Switch Fault Alarm Trigger 55	ON	1
Filters\F2\ALARMS\Main_Drive_Motor_FAULT	F2: Main Drive Motor FAULT Alarm Trigger 10	ON	1
Filters\F2\ALARMS\PLC-HMI_Communication_LOSS	F2: PLC-HMI Communication LOSS Alarm Trigger 2	ON	1
Filters\F2\ALARMS\PLC-SCADA_Communication_L	F2: PLC-SCADA Communication LOSS Alarm Trigger 3	ON	1
Filters\F2\ALARMS\Sludge_Waste_Pump_Motor_FA	F2: Sludge Waste Pump Motor FAULT Alarm Trigger 11	ON	1
Filters\F3\ALARMS\Backwash_Pump_1_FAULT	F3: Backwash Pump 1 FAULT Alarm Trigger 12	ON	1
Filters\F3\ALARMS\Backwash_Pump_2_FAULT	F3: Backwash Pump 2 FAULT Alarm Trigger 13	ON	1
Filters\F3\ALARMS\Backwash_Pump_3_FAULT	F3: Backwash Pump 3 FAULT Alarm Trigger 14	ON	1
Filters\F3\ALARMS\Backwash_Pump_4_FAULT	F3: Backwash Pump 4 FAULT Alarm Trigger 15	ON	1
Filters\F3\ALARMS\Backwash_Pump_5_FAULT	F3: Backwash Pump 5 FAULT Alarm Trigger 16	ON	1
Filters\F3\ALARMS\Backwash_Pump_6_FAULT	F3: Backwash Pump 6 FAULT Alarm Trigger 17	ON	1
Filters\F3\ALARMS\Basin_Level_HIGH	F3: Basin Level HIGH Alarm Trigger 4	ON	1
Filters\F3\ALARMS\Basin_Level_HIGH_HIGH	F3: Basin Level HIGH HIGH Alarm Trigger 9	ON	1
Filters\F3\ALARMS\Effluent_Level_HIGH	F3: Effluent Level HIGH Alarm Trigger 5	ON	1
Filters\F3\ALARMS\Effluent_Turbidity_HIGH	F3: Effluent Turbidity HIGH Alarm Trigger 49	ON	1
Filters\F3\ALARMS\Filter_Air_Pressure	F3: Filter Air Pressure Alarm Trigger 8	ON	1
Filters\F3\ALARMS\Filter_Main_Drive_Motor_MCP_T	F3: Filter Main Drive Motor MCP TRIP Alarm Trigger 52	ON	1
Filters\F3\ALARMS\Filter_Sludge_Pump_MCP_TRIP	F3: Filter Sludge Pump MCP TRIP Alarm Trigger 53	ON	1
Filters\F3\ALARMS\HPS_Pump_1_FAULT	F3: HPS Pump 1 FAULT Alarm Trigger 18	ON	1
Filters\F3\ALARMS\HPS_Pump_2_FAULT	F3: HPS Pump 2 FAULT Alarm Trigger 19	ON	1
Filters\F3\ALARMS\Level_Switch_Fault	F3: Level Switch Fault Alarm Trigger 55	ON	1
Filters\F3\ALARMS\Main_Drive_Motor_FAULT	F3: Main Drive Motor FAULT Alarm Trigger 10	ON	1
Filters\F3\ALARMS\PLC-HMI_Communication_LOSS	F3: PLC-HMI Communication LOSS Alarm Trigger 2	ON	1
Filters\F3\ALARMS\PLC-SCADA_Communication_L	F3: PLC-SCADA Communication LOSS Alarm Trigger 3	ON	1
Filters\F3\ALARMS\Sludge_Waste_Pump_Motor_FA	F3: Sludge Waste Pump Motor FAULT Alarm Trigger 11	ON	1
Filters\F4\ALARMS\Backwash_Pump_1_FAULT	F4: Backwash Pump 1 FAULT Alarm Trigger 12	ON	1
Filters\F4\ALARMS\Backwash_Pump_2_FAULT	F4: Backwash Pump 2 FAULT Alarm Trigger 13	ON	1
Filters\F4\ALARMS\Backwash_Pump_3_FAULT	F4: Backwash Pump 3 FAULT Alarm Trigger 14	ON	1
Filters\F4\ALARMS\Backwash_Pump_4_FAULT	F4: Backwash Pump 4 FAULT Alarm Trigger 15	ON	1
Filters\F4\ALARMS\Backwash_Pump_5_FAULT	F4: Backwash Pump 5 FAULT Alarm Trigger 16	ON	1
Filters\F4\ALARMS\Backwash_Pump_6_FAULT	F4: Backwash Pump 6 FAULT Alarm Trigger 17	ON	1
Filters\F4\ALARMS\Basin_Level_HIGH	F4: Basin Level HIGH Alarm Trigger 4	ON	1
Filters\F4\ALARMS\Basin_Level_HIGH_HIGH	F4: Basin Level HIGH HIGH Alarm Trigger 9	ON	1
Filters\F4\ALARMS\Effluent_Flow_Transducer_OUT_	F4: Effluent Flow Transducer OUT of RANGE Alarm Trigger 57	ON	1
Filters\F4\ALARMS\Effluent_Level_HIGH	F4: Effluent Level HIGH Alarm Trigger 5	ON	1
Filters\F4\ALARMS\Effluent_Turbidity_HIGH	F4: Effluent Turbidity HIGH Alarm Trigger 49	ON	1
Filters\F4\ALARMS\Effluent_Turbidity_Transducer_O	F4: Effluent Turbidity Transducer OUT of RANGE Alarm Trigger 58	ON	1
Filters\F4\ALARMS\Filter_Main_Drive_Motor_MCP_T	F4: Filter Main Drive Motor MCP TRIP Alarm Trigger 52	ON	1
Filters\F4\ALARMS\Filter_Sludge_Pump_MCP_TRIP	F4: Filter Sludge Pump MCP TRIP Alarm Trigger 53	ON	1
Filters\F4\ALARMS\HPS_Pump_1_FAULT	F4: HPS Pump 1 FAULT Alarm Trigger 18	ON	1
Filters\F4\ALARMS\HPS_Pump_2_FAULT	F4: HPS Pump 2 FAULT Alarm Trigger 19	ON	1
Filters\F4\ALARMS\Level_Switch_Fault	F4: Level Switch Fault Alarm Trigger 55	ON	1
Filters\F4\ALARMS\Main_Drive_Motor_FAULT	F4: Main Drive Motor FAULT Alarm Trigger 10	ON	1
Filters\F4\ALARMS\PLC-HMI_Communication_LOSS	F4: PLC-HMI Communication LOSS Alarm Trigger 2	ON	1
Filters\F4\ALARMS\PLC-SCADA_Communication_L	F4: PLC-SCADA Communication LOSS Alarm Trigger 3	ON	1
Filters\F4\ALARMS\Sludge_Waste_Pump_Motor_FA	F4: Sludge Waste Pump Motor FAULT Alarm Trigger 11	ON	1
MEMTAGS\FILTERS_PLC_FAIL	FILTERS PLC FAILURE (OR ALL RTU'S, FILTERS, UV)	ON	1
MEMTAGS\RTU_1_FAIL	RTU 1 PLC FAILURE (OR FROM ALL RTU'S, FILTERS, UV)	ON	1
MEMTAGS\RTU_2_FAIL	RTU 2 FAILURE (OR ALL RTU'S, FILTERS, UV)	ON	1
MEMTAGS\RTU_3_FAIL	RTU 3 FAILURE (OR ALL RTU'S, FILTERS, UV)	ON	1
MEMTAGS\RTU_4_FAIL	RTU 4 FAILURE (OR ALL RTU'S, FILTERS, UV)	ON	1
RP4_DO_BLOWERS\BLWR_1_HI_OIL_TEMP	BLOWER 1 HIGH OIL TEMPATURE ALARM	ON	1
RP4_DO_BLOWERS\BLWR_1_HIGH_OIL_TEMP	BLOWER 1 HIGH OIL TEMP ALARM	ON	1
RP4_DO_BLOWERS\BLWR_1_INLET_AIR_TEMP	BLOWER 1 INLET AIR TEMP ALARM	ON	1
RP4_DO_BLOWERS\BLWR_1_LOW_OIL_LEVEL	BLOWER 1 LOW OIL LEVEL ALARM	ON	1

IEUA RP-4 SUMMARY OF ALARMS

Tag Name	Description	Direction	Severity
RP4_DO_BLOWERS\BLWR_1_LOW_OIL_LVL	BLOWER 1 LOW OIL LEVEL ALARM	ON	1
RP4_DO_BLOWERS\BLWR_1_LOW_OIL_PRESS	BLOWER 1 LOW OIL PRESSURE	ON	1
RP4_DO_BLOWERS\BLWR_1_SURGE_TRIP	BLOWER 1 SURGE TRIP ALARM	ON	1
RP4_DO_BLOWERS\BLWR_2_HI_OIL_TEMP	BLOWER 2 HIGH OIL TEMPATURE ALARM	ON	1
RP4_DO_BLOWERS\BLWR_2_HIGH_OIL_TEMP	BLOWER 2 HIGH OIL TEMP ALARM	ON	1
RP4_DO_BLOWERS\BLWR_2_INLET_AIR_TEMP	BLOWER 2 INLET AIR TEMP ALARM	ON	1
RP4_DO_BLOWERS\BLWR_2_LOW_OIL_LEVEL	BLOWER 2 LOW OIL LEVEL ALARM	ON	1
RP4_DO_BLOWERS\BLWR_2_LOW_OIL_LVL	BLOWER 2 LOW OIL LEVEL ALARM	ON	1
RP4_DO_BLOWERS\BLWR_2_LOW_OIL_PRESS	BLOWER 2 LOW OIL PRESSURE	ON	1
RP4_DO_BLOWERS\BLWR_2_SURGE_TRIP	BLOWER 2 SURGE TRIP ALARM	ON	1
RP4_DO_BLOWERS\BLWR1_INLET_AIR_TEMP	BLOWER 1 INLET AIR TEMPATURE ALARM	ON	1
RP4_DO_BLOWERS\BLWR2_INLET_AIR_TEMP	BLOWER 2 INLET AIR TEMPATURE ALARM	ON	1
RP4_DO_BLOWERS\RTU1_To_Blowers_MCP_Con	RTU1 to Blower MCP HeartBeat Alarm	ON	1
RTU1\BKR_52A_OPEN_ALM	BREAKER 52-A OPEN ALARM	ON	1
RTU1\BKR_52B_OPEN_ALM	BREAKER 52-B OPEN ALARM	ON	1
RTU1\BKR_52C_OPEN_ALM	BREAKER 52-C OPEN ALARM	ON	1
RTU1\BS_Hydro_Alarm	Barscreen High Hydrogen Level Alarm	ON	1
RTU1\BS_LEL_Alarm	Barscreen High LEL Alarm	ON	1
RTU1\CLIMBER_SCRN_FAIL	CLIMBER SCREEN FAIL	ON	1
RTU1\DWS_1270_Alarm_Fail	Classifier Fail	ON	1
RTU1\DWS_1270_Alarm_FTStart	Classifier Fail to Start	ON	1
RTU1\DWS_1270_Alarm_FTStop	Classifier Fail to Stop	ON	1
RTU1\DWS_1270_Alarm_Over_Torq	Classifier Over Torque	ON	1
RTU1\Edison_Fail_Stopped_Blowrs_RWPumps	Edison fail disabled Blwrs and RW Pumps, use HMI Resets	OFF	1
RTU1\FILTERS_PLC_FAIL	FILTERS PLC/ FAILURE	ON	1
RTU1\GEN_BKR_CLOSED_ALM	GENERATOR BREAKER CLOSED	ON	1
RTU1\GRB_1210_Alarm_Fail	Fail	ON	1
RTU1\GRB_1210_Alarm_FTStart	Grit Basin Fail to Start	ON	1
RTU1\GRB_1210_Alarm_FTStop	Grit Basin Fail to Stop	ON	1
RTU1\GRIT_HOP_HIGH_LVL	GRIT HOPPER HIGH LEVEL	ON	1
RTU1\HDWKS_HIGH_INF_LVL	HEADWORKS HIGH INF CHANNEL LEVEL	ON	1
RTU1\Headworks_Gas_Detect_Fail	Headworks Gas Detection System Fail	ON	1
RTU1\HIGH_GEN_AMPS	HIGH GENERATOR AMPERAGE	ON	1
RTU1\HIGH_INF_COND	HIGH INFLUENT CONDUCTIVITY	ON	1
RTU1\HIGH_INF_PH	HIGH INFLUENT pH	ON	1
RTU1\HIGH_PLT_AMPS	HIGH PLANT AMPERAGE	ON	1
RTU1\HIGH_PLT_INF_FLOW	HIGH PLANT INFLUENT FLOW	ON	1
RTU1\INF_PMP_1_FAIL	INFLUENT PUMP #1 FAIL (PASSED FROM IPS)	ON	1
RTU1\INF_PMP_2_FAIL	INFLUENT PUMP #2 FAIL (PASSED FROM IPS)	ON	1
RTU1\INF_PMP_3_FAIL	INFLUENT PUMP #3 FAIL (PASSED FROM IPS)	ON	1
RTU1\INF_PMP_4_FAIL	INFLUENT PUMP #4 FAIL (PASSED FROM IPS)	ON	1
RTU1\INF_PMP_5_FAIL	INFLUENT PUMP #5 FAIL (PASSED FROM IPS)	ON	1
RTU1\INF_PMP_STA_HIGH_LVL	INFLUENT PUMP STATION HIGH LEVEL (PASSED FROM IPS)	ON	1
RTU1\INF_PMP_STA_LOW_AIR	IPS LOW AIR	ON	1
RTU1\INF_PMP_STA_LOW_LVL	INFLUENT PUMP STATION LOW LEVEL (PASSED FROM IPS)	ON	1
RTU1\IPS_PLC_FAIL	IPS PLC/COMM FAILURE	ON	1
RTU1\LIT_1101_Val_1_hi	IPS Wet Well High Level Alarm	ON	1
RTU1\LIT_1101_Val_1_lo	IPS Wet Well Low Level Alarm	ON	1
RTU1\LOW_INF_PH	LOW INFLUENT pH	ON	1
RTU1\LOW_PLT_INF_FLOW	LOW PLANT INFLUENT FLOW	ON	1
RTU1\MCC1_POWER_LOSS_TX2	MCC-1 LOSS OF POWER TX2	ON	1
RTU1\MCC1_POWER_LOSS_TX3	MCC-1 LOSS OF POWER TX3	ON	1
RTU1\MESSAGE_BLK_FAIL		ON	1
RTU1\MX_3310_1FAILURE	Mixer Failure	ON	1
RTU1\MX_3310_2FAILURE	Mixer Failure	ON	1
RTU1\MX_3310_3_Alarm_Fail	Fail	ON	1
RTU1\MX_3310_3_Alarm_FTStart	Mixer Fail to Start	ON	1
RTU1\MX_3310_3_Alarm_FTStop	Mixer Fail to Stop	ON	1
RTU1\MX_3310_4_Alarm_Fail	Fail	ON	1
RTU1\MX_3310_4_Alarm_FTStart	Mixer Fail to Start	ON	1
RTU1\MX_3310_4_Alarm_FTStop	Mixer Fail to Stop	ON	1
RTU1\MX_3610_1FAILURE	Mixer Failure	ON	1
RTU1\MX_3610_2FAILURE	Mixer Failure	ON	1
RTU1\MX_3610_3_Alarm_Fail	Fail	ON	1
RTU1\MX_3610_3_Alarm_FTStart	Mixer Fail to Start	ON	1
RTU1\MX_3610_3_Alarm_FTStop	Mixer Fail to Stop	ON	1
RTU1\MX_3610_4_Alarm_Fail	Fail	ON	1
RTU1\MX_3610_4_Alarm_FTStart	Mixer Fail to Start	ON	1
RTU1\MX_3610_4_Alarm_FTStop	Mixer Fail to Stop	ON	1

IEUA RP-4 SUMMARY OF ALARMS

Tag Name	Description	Direction	Severity
RTU1\MX_3620_1FAILURE	Mixer Failure	ON	1
RTU1\MX_3620_2FAILURE	Mixer Failure	ON	1
RTU1\MX_3620_3_Alarm_Fail	Fail	ON	1
RTU1\MX_3620_3_Alarm_FTStart	Mixer Fail to Start	ON	1
RTU1\MX_3620_3_Alarm_FTStop	Mixer Fail to Stop	ON	1
RTU1\MX_3620_4_Alarm_Fail	Fail	ON	1
RTU1\MX_3620_4_Alarm_FTStart	Mixer Fail to Start	ON	1
RTU1\MX_3620_4_Alarm_FTStop	Mixer Fail to Stop	ON	1
RTU1\P_1110_Alarm_Fail	IPS Pump 1 Fail	ON	1
RTU1\P_1110_Alarm_FTStart	IPS Pump 1 Fail to Start	ON	1
RTU1\P_1110_Alarm_FTStop	IPS Pump 1 Fail to Stop	ON	1
RTU1\P_1120_Alarm_Fail	IPS Pump 2 Fail	ON	1
RTU1\P_1120_Alarm_FTStart	IPS Pump 2 Fail to Start	ON	1
RTU1\P_1120_Alarm_FTStop	IPS Pump 2 Fail to Stop	ON	1
RTU1\P_1130_Alarm_Fail	IPS Pump 3 Fail	ON	1
RTU1\P_1130_Alarm_FTStart	IPS Pump 3 Fail to Start	ON	1
RTU1\P_1130_Alarm_FTStop	IPS Pump 3 Fail to Stop	ON	1
RTU1\P_1140_Alarm_Fail	IPS Pump 4 Fail	ON	1
RTU1\P_1140_Alarm_FTStart	IPS Pump 4 Fail to Start	ON	1
RTU1\P_1140_Alarm_FTStop	IPS Pump 4 Fail to Stop	ON	1
RTU1\P_1150_Alarm_Fail	IPS Pump 5 Fail	ON	1
RTU1\P_1150_Alarm_FTStart	IPS Pump 5 Fail to Start	ON	1
RTU1\P_1150_Alarm_FTStop	IPS Pump 5 Fail to Stop	ON	1
RTU1\P_1160_Alarm_FTStart	IPS Pump 6 Fail to Start	ON	1
RTU1\P_1160_Alarm_FTStop	IPS Pump 6 Fail to Stop	ON	1
RTU1\P_1160_Alarm_VFD_Fail	IPS Pump 6 VFD Fail	ON	1
RTU1\P_1170_Alarm_FTStart	IPS Pump 7 Fail to Start	ON	1
RTU1\P_1170_Alarm_FTStop	IPS Pump 7 Fail to Stop	ON	1
RTU1\P_1170_Alarm_VFD_Fail	IPS Pump 7 VFD Fail	ON	1
RTU1\P_1180_Alarm_Fail	IPS Pump 8 Fail	ON	1
RTU1\P_1180_Alarm_FTStart	IPS Pump 8 Fail to Start	ON	1
RTU1\P_1180_Alarm_FTStop	IPS Pump 8 Fail to Stop	ON	1
RTU1\P_1240_Alarm_Fail	Pump Fail	ON	1
RTU1\P_1240_Alarm_FTStart	Pump Fail to Start	ON	1
RTU1\P_1240_Alarm_FTStop	Pump Fail to Stop	ON	1
RTU1\RTU_2_PLC_FAIL	RTU 2 PLC/COMM FAILURE	ON	1
RTU1\RTU_3_PLC_FAIL	RTU 3 PLC/COMM FAILURE	ON	1
RTU1\RTU_4_PLC_FAIL	RTU 4 PLC/COMM FAILURE	ON	1
RTU1\RTU1_FO_CHAN_A_FAIL	RTU1 FIBER OPTIC CHANNEL A FAILURE	ON	1
RTU1\RTU1_FO_CHAN_B_FAIL	RTU1 FIBER OPTIC CHANNEL B FAILURE	ON	1
RTU1\SCREEN_PRESS_PER_ALM	SCREENING PRESS PERSONNEL ALARM	ON	1
RTU1\SCRN_PRESS_FAIL	SCREENING PRESS FAIL	ON	1
RTU1\V_1221_Alarm_Fail	Valve Failure	ON	1
RTU1\V_1221_Alarm_FTClose	Valve Faile to Close	ON	1
RTU1\V_1221_Alarm_FTOpen	Valve Fail to Open	ON	1
RTU1\WAUK_NOT_RUNNING	WALKASHA NOT RUNNING	ON	1
RTU1\WW_LEL_Alarm	Wetwell High LEL Alarm	ON	1
RTU2\AIT_5210_Turb_Hi_Alarm	AQUA DISK FILTER EFFLUENT TURBIDITY HIGH ALARM	ON	1
RTU2\ALUM_DAY_TNK_LO_LVL	ALUM DAY TANK LOW LEVEL	ON	1
RTU2\CL2_HIGH_ALARM	CL2 RESIDUAL HIGH ALARM	ON	1
RTU2\CL2_LOW_ALARM	CL2 RESIDUAL LOW ALARM	ON	1
RTU2\EFF_COND_HI_ALM	EFFLUENT CONDUCTIVITY HIGH ALARM	ON	1
RTU2\EFF_GATE_CLOSED	EFFLUENT GATE CLOSED	ON	1
RTU2\EFF_GATE_FAIL_CLS		ON	1
RTU2\EFF_GATE_FAIL_OPN		ON	1
RTU2\EFF_PH_HI_ALM	EFFLUENT pH HIGH ALARM	ON	1
RTU2\EFF_PH_LO_ALM	EFFLUENT pH LOW ALARM	ON	1
RTU2\ES_7501	Chemical Room East Eyewash Station	ON	1
RTU2\ES_7502	Chemical Room West Eyewash Station	ON	1
RTU2\FIBER_CHANNEL_A_FAIL	RTU2 FIBER OPTIC CHANNEL A HAS FAILED	ON	1
RTU2\FIBER_CHANNEL_B_FAIL	RTU2 FIBER OPTIC CHANNEL B FAILURE	ON	1
RTU2\FILTERS_PLC_FAIL	FILETRS PLC FAILURE	ON	1
RTU2\FLT_AIR_COMP__1_FAIL	FILTER AIR COMPRESSOR #1 FAIL	ON	1
RTU2\FLT_AIR_COMP__2_FAIL	FILTER AIR COMPRESSOR #2 FAIL	ON	1
RTU2\HI_TURB_ALM	HIGH TURBIDITY ALARM	ON	1
RTU2\MESSAGE_BLK_FAIL		ON	1
RTU2\PRO_W_AIR_COM_LO_AIR	PROCESS WATER AIR COMPRESSOR LOW AIR	ON	1
RTU2\PRO_W_PMP_1_MTR_FAIL	PROCESS WATER PUMP #1 MOTOR FAIL	ON	1
RTU2\PRO_W_PMP_2_MTR_FAIL	PROCESS WATER PUMP #2 MOTOR FAIL	ON	1

IEUA RP-4 SUMMARY OF ALARMS

Tag Name	Description	Direction	Severity
RTU2\RECYC_PMP_1_MTR_FAIL	RECYCLE PUMP #1 MOTOR FAIL (PASSED FROM RPS)	ON	1
RTU2\RECYC_PMP_2_MTR_FAIL	RECYCLE PUMP #2 MOTOR FAIL (PASSED FROM RPS)	ON	1
RTU2\RECYC_PMP_STA_HI_LVL	RECYCLE PUMP STATION HIGH LEVEL (PASSED FROM RPS)	ON	1
RTU2\RTU_1_PLC_FAIL	RTU 1 PLC FAILURE	ON	1
RTU2\RTU_4_FAIL	RTU 4 PLC FAILURE	ON	1
RTU2\TX_4_POWER_FAIL	MCC-2 LOSS OF POWER TX4	ON	1
RTU2\TX_5_POWER_FAIL	MCC-2 LOSS OF POWER TX5	ON	1
RTU2A\CB1A_Mixer_Fail	CB1A WATER CHAMP FAIL	ON	1
RTU2A\CB1A_NAOCL_PUMP_1_FAILED		ON	1
RTU2A\CB1A_NAOCL_Pump_1_High_Press		ON	1
RTU2A\CB1A_NAOCL_PUMP_2_FAILED		ON	1
RTU2A\CB1A_NAOCL_Pump_2_High_Press		ON	1
RTU2A\Reliant_Water_Flow_Alarm	Reliant water flowing alarm	ON	1
RTU2A\RP4_CT	CL2 LOW CONTACT TIME<450	<450	1
RTU2A\RP4_DT	DETENTION TIME <90	<90	1
RTU2A\RP4_FL	FILTER LOADING	>5	1
RTU3\Aeration_Flex_Air_Low_Flow_4	Aeration Basin Train 4 Air Low Flow Alarm	ON	1
RTU3\Aeration_Flex_Failure_1	Aeration Flex Operation Failure Train 1	ON	1
RTU3\Aeration_Flex_Failure_2	Aeration Flex Operation Failure Train 2	ON	1
RTU3\B_REC_PMP_1_VFD_FAIL	BIO RECIRC PUMP #1 VFD FAIL	ON	1
RTU3\B_REC_PMP_2_VFD_FAIL	BIO RECIRC PUMP #2 VFD FAIL	ON	1
RTU3\B_REC_PMP_3_VFD_FAIL	BIO RECIRC PUMP #3 VFD FAIL	ON	1
RTU3\Basin_2E_Grp1_Hi_DO	Basin 2 East Valve Group 1 High DO Alarm	ON	1
RTU3\Basin_2E_Grp1_Hi_Flow	Basin 2 East Valve Group 1 High Flow Alarm	ON	1
RTU3\Basin_2E_Grp1_Lo_DO	Basin 2 East Valve Group 1 Low DO Alarm	ON	1
RTU3\Basin_2E_Grp1_Lo_Flow	Basin 2 East Valve Group 1 Low Flow Alarm	ON	1
RTU3\Basin_2E_Grp2_Hi_DO	Basin 2 East Valve Group 2 High DO Alarm	ON	1
RTU3\Basin_2E_Grp2_Hi_Flow	Basin 2 East Valve Group 2 High Flow Alarm	ON	1
RTU3\Basin_2E_Grp2_Lo_DO	Basin 2 East Valve Group 2 Low DO Alarm	ON	1
RTU3\Basin_2E_Grp2_Lo_Flow	Basin 2 East Valve Group 2 Low Flow Alarm	ON	1
RTU3\Basin_2E_Grp3_Hi_DO	Basin 2 East Valve Group 3 High DO Alarm	ON	1
RTU3\Basin_2E_Grp3_Hi_Flow	Basin 2 East Valve Group 3 High Flow Alarm	ON	1
RTU3\Basin_2E_Grp3_Lo_DO	Basin 2 East Valve Group 3 Low DO Alarm	ON	1
RTU3\Basin_2E_Grp3_Lo_Flow	Basin 2 East Valve Group 3 Low Flow Alarm	ON	1
RTU3\Basin_2E_Grp4_Hi_DO	Basin 2 East Valve Group 4 High DO Alarm	ON	1
RTU3\Basin_2E_Grp4_Hi_Flow	Basin 2 East Valve Group 4 High Flow Alarm	ON	1
RTU3\Basin_2E_Grp4_Lo_DO	Basin 2 East Valve Group 4 Low DO Alarm	ON	1
RTU3\Basin_2E_Grp4_Lo_Flow	Basin 2 East Valve Group 4 Low Flow Alarm	ON	1
RTU3\Basin_2W_Grp1_Hi_DO	Basin 2 West Valve Group 1 High DO Alarm	ON	1
RTU3\Basin_2W_Grp1_Hi_Flow	Basin 2 West Valve Group 1 High Flow Alarm	ON	1
RTU3\Basin_2W_Grp1_Lo_DO	Basin 2 West Valve Group 1 Low DO Alarm	ON	1
RTU3\Basin_2W_Grp1_Lo_Flow	Basin 2 West Valve Group 1 Low Flow Alarm	ON	1
RTU3\Basin_2W_Grp2_Hi_DO	Basin 2 West Valve Group 2 High DO Alarm	ON	1
RTU3\Basin_2W_Grp2_Hi_Flow	Basin 2 West Valve Group 2 High Flow Alarm	ON	1
RTU3\Basin_2W_Grp2_Lo_DO	Basin 2 West Valve Group 2 Low DO Alarm	ON	1
RTU3\Basin_2W_Grp2_Lo_Flow	Basin 2 West Valve Group 2 Low Flow Alarm	ON	1
RTU3\Basin_2W_Grp3_Hi_DO	Basin 2 West Valve Group 3 High DO Alarm	ON	1
RTU3\Basin_2W_Grp3_Hi_Flow	Basin 2 West Valve Group 3 High Flow Alarm	ON	1
RTU3\Basin_2W_Grp3_Lo_DO	Basin 2 West Valve Group 3 Low DO Alarm	ON	1
RTU3\Basin_2W_Grp3_Lo_Flow	Basin 2 West Valve Group 3 Low Flow Alarm	ON	1
RTU3\Basin_2W_Grp4_Hi_DO	Basin 2 West Valve Group 4 High DO Alarm	ON	1
RTU3\Basin_2W_Grp4_Hi_Flow	Basin 2 West Valve Group 4 High Flow Alarm	ON	1
RTU3\Basin_2W_Grp4_Lo_DO	Basin 2 West Valve Group 4 Low DO Alarm	ON	1
RTU3\Basin_2W_Grp4_Lo_Flow	Basin 2 West Valve Group 4 Low Flow Alarm	ON	1
RTU3\Basin_Flex_Train_1_Aborted_Alarm	Train 1 Flex Aborted Alarm	ON	1
RTU3\Basin_Flex_Train_1_Alarm	Flex Failure	ON	1
RTU3\Basin_Flex_Train_2_Aborted_Alarm	Train 2 Flex Aborted Alarm	ON	1
RTU3\Basin_Flex_Train_2_Alarm	Flex Failure	ON	1
RTU3\Basin_Flex_Train_3_Aborted_Alarm	Train 3 Flex Aborted Alarm	ON	1
RTU3\Basin_Flex_Train_3_Alarm	Flex Failure	ON	1
RTU3\Basin_Flex_Train_4_Aborted_Alarm	Train 4 Flex Aborted Alarm	ON	1
RTU3\Basin_Flex_Train_4_Alarm	Flex Failure	ON	1
RTU3\DH_1_HIGH_LVL	DITCH #1 HIGH LEVEL	ON	1
RTU3\DH_1_OD_CN_FLOW_LOW	DITCH #1 ODOR CONTROL FLOW LOW	ON	1
RTU3\DH_1_OD_CN_VALV_FAIL	DITCH #1 ODOR CONTROL VALVE FAIL	ON	1
RTU3\DH_2_HIGH_LVL	DITCH #2 HIGH LEVEL	ON	1
RTU3\DH_3_HIGH_LVL	DITCH #3 HIGH LEVEL	ON	1
RTU3\DITCH_LOCKOUT	DITCH HIGH LEVEL LOCKOUT	ON	1
RTU3\MESSAGE_BLK_FAIL		ON	1

IEUA RP-4 SUMMARY OF ALARMS

Tag Name	Description	Direction	Severity
RTU3\Oxic_Zone_Aeration_Hi_Flow_1	Oxic Zone Aeration High Flow Alarm Group 1	ON	1
RTU3\Oxic_Zone_Aeration_Hi_Flow_2	Oxic Zone Aeration High Flow Alarm Group 2	ON	1
RTU3\Oxic_Zone_Aeration_Hi_Flow_3	Oxic Zone Aeration High Flow Alarm Group 3	ON	1
RTU3\Oxic_Zone_Aeration_Hi_Flow_4	Oxic Zone Aeration High Flow Alarm Group 4	ON	1
RTU3\Oxic_Zone_Aeration_Hi_Flow_5	Oxic Zone Aeration High Flow Alarm Group 5	ON	1
RTU3\Oxic_Zone_Aeration_Hi_Flow_6	Oxic Zone Aeration High Flow Alarm Group 6	ON	1
RTU3\Oxic_Zone_Aeration_Hi_Flow_7	Oxic Zone Aeration High Flow Alarm Group 7	ON	1
RTU3\Oxic_Zone_Aeration_Hi_Flow_8	Oxic Zone Aeration High Flow Alarm Group 8	ON	1
RTU3\Oxic_Zone_Low_DO_1	Oxic Zone Low DO Alarm Group 1	ON	1
RTU3\Oxic_Zone_Low_DO_2	Oxic Zone Low DO Alarm Group 2	ON	1
RTU3\Oxic_Zone_Low_DO_3	Oxic Zone Low DO Alarm Group 3	ON	1
RTU3\Oxic_Zone_Low_DO_4	Oxic Zone Low DO Alarm Group 4	ON	1
RTU3\Oxic_Zone_Low_DO_5	Oxic Zone Low DO Alarm Group 5	ON	1
RTU3\Oxic_Zone_Low_DO_6	Oxic Zone Low DO Alarm Group 6	ON	1
RTU3\Oxic_Zone_Low_DO_7	Oxic Zone Low DO Alarm Group 7	ON	1
RTU3\Oxic_Zone_Low_DO_8	Oxic Zone Low DO Alarm Group 8	ON	1
RTU3\P_3510Failure	Pump Failure	ON	1
RTU3\P_3520Failure	Pump Failure	ON	1
RTU3\RTU_1_PLC_FAIL	RTU 1 PLC FAILURE	ON	1
RTU3\RTU_2_PLC_FAILURE	RTU 2 PLC FAILURE	ON	1
RTU3\RTU_4_PLC_FAIL	RTU 4 PLC FAILURE	ON	1
RTU3\V_3110A_F	Valve Failure	ON	1
RTU3\V_3110B_F	Valve Failure	ON	1
RTU3\V_3115AFailure	Valve Failure	ON	1
RTU3\V_3115BFailure	Valve Failure	ON	1
RTU3\V_3120A_Alarm_Fail	Valve Failure	ON	1
RTU3\V_3120B_Alarm_Fail	Valve Failure	ON	1
RTU3\V_3125A_Failure	Valve Failure	ON	1
RTU3\V_3125B_Failure	Valve Failure	ON	1
RTU3\V_3410_1_F	Valve Failed during Operation	ON	1
RTU3\V_3410_2_F	Valve Failed during Operation	ON	1
RTU3\V_3410_3_Alarm_Fail	Valve Failure	ON	1
RTU3\V_3410_4_Alarm_Fail	Valve Failure	ON	1
RTU3\V_3420_1_F	Valve Failed during Operation	ON	1
RTU3\V_3420_2_F	Valve Failed during Operation	ON	1
RTU3\V_3420_3_Alarm_Fail	Valve Failure	ON	1
RTU3\V_3420_4_Alarm_Fail	Valve Failure	ON	1
RTU3\V_3430_1_F	Valve Failed during Operation	ON	1
RTU3\V_3430_2_F	Valve Failed during Operation	ON	1
RTU3\V_3430_3_Alarm_Fail	Valve Failure	ON	1
RTU3\V_3430_4_Alarm_Fail	Valve Failure	ON	1
RTU3\V_3440_1_F	Valve Failed during Operation	ON	1
RTU3\V_3440_2_F	Valve Failed during Operation	ON	1
RTU3\V_3440_3_Alarm_Fail	Valve Failure	ON	1
RTU3\V_3440_4_Alarm_Fail	Valve Failure	ON	1
RTU3\V_3450_1_F	Valve Failed during Operation	ON	1
RTU3\V_3450_2_F	Valve Failed during Operation	ON	1
RTU3\V_3450_3_Alarm_Fail	Valve Failure	ON	1
RTU3\V_3450_4_Alarm_Fail	Valve Failure	ON	1
RTU3\V_3460_1_F	Valve Failed during Operation	ON	1
RTU3\V_3460_2_F	Valve Failed during Operation	ON	1
RTU3\V_3460_3_Alarm_Fail	Valve Failure	ON	1
RTU3\V_3460_4_Alarm_Fail	Valve Failure	ON	1
RTU3\V_3470_1_F	Valve Failed during Operation	ON	1
RTU3\V_3470_2_F	Valve Failed during Operation	ON	1
RTU3\V_3470_3_Alarm_Fail	Valve Failure	ON	1
RTU3\V_3470_4_Alarm_Fail	Valve Failure	ON	1
RTU3\V_3480_1_F	Valve Failed during Operation	ON	1
RTU3\V_3480_2_F	Valve Failed during Operation	ON	1
RTU3\V_3480_3_Alarm_Fail	Valve Failure	ON	1
RTU3\V_3480_4_Alarm_Fail	Valve Failure	ON	1
RTU3\V_3710_1_F	Valve Failed during Operation	ON	1
RTU3\V_3710_2_F	Valve Failed during Operation	ON	1
RTU3\V_3710_3_Alarm_Fail	Valve Failure	ON	1
RTU3\V_3710_4_Alarm_Fail	Valve Failure	ON	1
RTU3\V_3720_1_F	Valve Failed during Operation	ON	1
RTU3\V_3720_2_F	Valve Failed during Operation	ON	1
RTU3\V_3720_3_Alarm_Fail	Valve Failure	ON	1
RTU3\V_3720_4_Alarm_Fail	Valve Failure	ON	1

IEUA RP-4 SUMMARY OF ALARMS

Tag Name	Description	Direction	Severity
RTU3A\BLOWER_1_FAIL	BLOWER #1 FAIL	ON	1
RTU3A\BLOWER_2_FAIL	BLOWER #4 FAIL	ON	1
RTU3A\BLOWER_3_FAIL	BLOWER #2 FAIL	ON	1
RTU3A\RTU_3A_PLC_FAIL	RTU 3A PLC FAILURE	ON	1
RTU4\EDISON_INT_DISABLE	EDISON INTERUPT DISABLE	OFF	1
RTU4\FIBER_OP_A_FAIL	FIBEROPTIC CHANNEL 'A' FAILURE	ON	1
RTU4\FIBER_OP_B_FAIL	FIBEROPTIC CHANNEL 'B' FAILURE	ON	1
RTU4\MESSAGE_BLK_FAIL		ON	1
RTU4\PAGER_TEST_ALM		ON	1
RTU4\RP1_TELEM_ALARM	RP1 TO RP4 TELEMETRY FAIL	ON	1
RTU4\RP4_ATTND_STAT	RP4 PLANT ATTENDDED STATUS	ON	1
RTU4\SCE_INT_ALM	SCE INTERUPT ALARM	ON	1
RTU4\SCE_TRIP_ALM	SCE TRIP ALARM	ON	1
RTU5\AIT_6110A_HI_Alarm	AIT 6110A CL2 High Alarm CCB2 East	ON	1
RTU5\AIT_6110A_Lo_Alarm	AIT 6110A CL2 Low Alarm CCB2 East	ON	1
RTU5\AIT_6110B_HI_Alarm	AIT 6110B CL2 High Alarm CCB2 East	ON	1
RTU5\AIT_6110B_Lo_Alarm	AIT 6110B CL2 Low Alarm CCB2 East	ON	1
RTU5\AIT_6120A_HI_Alarm	AIT 6120A CL2 High Alarm CCB2 West	ON	1
RTU5\AIT_6120A_Lo_Alarm	AIT 6120A CL2 Low Alarm CCB2 West	ON	1
RTU5\AIT_6120B_HI_Alarm	AIT 6120B CL2 High Alarm CCB2 West	ON	1
RTU5\AIT_6120B_Lo_Alarm	AIT 6120B CL2 Low Alarm CCB2 West	ON	1
RTU5\CB1B_Final_Eff_CL2_High_Alarm	Contact Basin 1B Final Effluent CL2 High Alarm	ON	1
RTU5\CB1B_Final_Eff_CL2_Low_Alarm	Contact Basin 1B Final Effluent CL2 Low Alarm	ON	1
RTU5\Final_Eff_Turbidity_Hi_Alarm	Final Effluent Turbidity High	ON	1
RTU5\Final_Eff_Turbidity_Hi_Hi_Alarm	Final Effluent Turbidity High-High	ON	1
RTU5\Final_Eff_Turbidity_Page_Alm	RP4 Final Effluent Turbidity Value	>1	1
RTU5\FINAL_PH_HI_ALM		ON	1
RTU5\FINAL_PH_LO_ALM		ON	1
RTU5\RP4_RP1_HB_ALARM	RP4 TO RP1 HEARTBEAT ALARM	ON	1
RTU5\RTU_5C_COMMFAIL	RTU 5C to RTU 5 COMMUNICATION FAIL ALARM	ON	1
RTU5\RTU1_To_RTU5_Comm_Fail	RTU1 to RTU5 Heartbeat Alarm	ON	1
RTU5\RWPS_IN_OVERRIDE	RP4 RW PUMPS IN OVERRIDE PB	ON	1
RTU5\RWPS_QUALITY_SHUTDOWN	RP4 RWPS WATER QUALITY SHUTDOWN	ON	1
RTU5\Z1158_HI_HI_SYSTEM_PRESS	Zone 1158 Hi Hi System Pressure	ON	1
RTU5\Z1158_LO_LO_SYSTEM_PRESS	Zone 1158 Lo Lo System Pressure	ON	1
RTU5\Z3_Hi_Press	RP4 PRESS MODE	ON	1
RTU5\Z3_Low_Level_Shut_Down	Recycled Water Pump Station Low Level Shut Down	ON	1
RTU5\Z3_Pump_1_Alarm	Recycled Water Pump Station Pump 1 Alarm	ON	1
RTU5\Z3_Pump_2_Alarm	Recycled Water Pump Station Pump 2 Alarm	ON	1
RTU5\Z3_Pump_3_Alarm	Recycled Water Pump Station Pump 3 Alarm	ON	1
RTU5B\ALARMS\AC7470_HI_HI_ALARM	AIR COMPRESSOR 7470 TANK HI HI PRESSURE ALARM	ON	1
RTU5B\ALARMS\AC7470_LO_LO_ALARM	AIR COMPRESSOR 7470 TANK LO LO PRESSURE ALARM	ON	1
RTU5B\ALARMS\M7450_HI_HI_ALARM	SURGE TANK 7450 HI HI ALARM	ON	1
RTU5B\ALARMS\M7450_LO_LO_ALARM	SURGE TANK 7450 LO LO ALARM	ON	1
RTU5B\ALARMS\M7460_HI_HI_ALALRM	SURGE TANK 7460 HI HI ALARM	ON	1
RTU5B\ALARMS\M7460_LO_LO_ALARM	SURGE TANK 7460 LO LO ALARM	ON	1
RTU5B\ALARMS\RTU_5_COMM_FAIL	RTU 5 to RTU 5B COMMUNICATION FAULT	ON	1
RTU5B\ALARMS\RTU_5C_COMM_FAIL	RTU 5C to RTU 5B COMMUNICATION FAULT	ON	1
RTU5B\ALARMS\Z1299_HI_HI_SYSTEM_PRESS	Zone 1299 Hi Hi System Pressure	ON	1
RTU5B\ALARMS\Z1299_LO_LO_SYSTEM_PRESS	Zone 1299 Lo Lo System Pressure	ON	1
RTU5C\ALARMS\1158_RES_1_ALTITUDE_VLV_ST	1158 Reservoir 1 Altitude Valve Status	OFF	1
RTU5C\ALARMS\1158_RES_2_ALTITUDE_VLV_ST	1158 Reservoir 2 Altitude Valve Status	OFF	1
RTU5C\ALARMS\R1_HI_HI_LEVEL_ALARM	RESERVOIR 1 HI HI LEVEL ALARM	ON	1
RTU5C\ALARMS\R1_LO_LEVEL_ALARM	RESERVOIR 1 LO LEVEL ALARM	ON	1
RTU5C\ALARMS\R2_HI_HI_LEVEL_ALARM	RESERVOIR 2 HI HI LEVEL ALARM	ON	1
RTU5C\ALARMS\R2_LO_LEVEL_ALARM	RESERVOIR 2 LO LEVEL ALARM	ON	1
RTU5C\ALARMS\RTU5C_INTRUSION_ALARM	1158 Reservoir Intrusion Alarm	ON	1
RTU6\Clar_Gas_Detect_Fail	Clarifier 1/2 Gas Detection System Fail	ON	1
RTU6\Clar1_LEL_Alarm	Clarifier 1 LEL Alarm	ON	1
RTU6\Clar2_LEL_Alarm	Clarifier 2 LEL Alarm	ON	1
RTU6\ES_7001	Eye Wash Station Alarm	ON	1
RTU6\ES_7002	Eye Wash Station Alarm	ON	1
RTU6\ES_7003	Eye Wash Station Alarm	ON	1
RTU6\ES_7004	Eye Wash Station Alarm	ON	1
RTU6\ES_7005	Eye Wash Station Alarm	ON	1
RTU6\ES_7006	Eye Wash Station Alarm	ON	1
RTU6\LSH_4201	RAS Pump Station Sump High Level	ON	1
RTU6\LSH_7001	FeCl / Polymer Sump Level High	ON	1
RTU6\LSH_8101	Odor Control Sump Level High	ON	1

IEUA RP-4 SUMMARY OF ALARMS

Tag Name	Description	Direction	Severity
RTU6\MX_2010FAILURE	Mixer Failure	ON	1
RTU6\OCF_8110_Alarm_Fail	Fan Fail	ON	1
RTU6\OCF_8110_Alarm_Lo_Press	Fan Low Pressure (Ventilation System Failure)	ON	1
RTU6\P_3510_COS	P_3510 Fail to Start/Stop	ON	1
RTU6\P_3520_COS	P_3520 Fail to Start/Stop	ON	1
RTU6\P_3530_Alarm_Fail	Pump Fail	ON	1
RTU6\P_3530_Alarm_FTStart	Pump Fail to Start	ON	1
RTU6\P_3530_Alarm_FTStop	Pump Fail to Stop	ON	1
RTU6\P_3540_Alarm_Fail	Pump Fail	ON	1
RTU6\P_3540_Alarm_FTStart	Pump Fail to Start	ON	1
RTU6\P_3540_Alarm_FTStop	Pump Fail to Stop	ON	1
RTU6\P_4210FAILURE	RAS Pump Failure (Low Pressure,AFD Fail, High Temperature)	ON	1
RTU6\P_4210LOW_PRESS	Pump Low Seal Water Pressure	ON	1
RTU6\P_4220FAILURE	RAS Pump Failure (Low Pressure,AFD Fail, High Temperature)	ON	1
RTU6\P_4220LOW_PRESS	Pump Low Seal Water Pressure	ON	1
RTU6\P_4230FAILURE	RAS Pump Failure (Low Pressure,AFD Fail, High Temperature)	ON	1
RTU6\P_4230LOW_PRESS	Pump Low Seal Water Pressure	ON	1
RTU6\RAS_LOW_FLOW_ALARM	RAS LOW FLOW ALARM	ON	1
RTU6\SCW_4115FAILURE	Scum Weir Fail	ON	1
RTU6\SCW_4125FAILURE	Scum Weir Fail	ON	1
RTU6\SCW_4135FAILURE	Scum Weir Fail	ON	1
RTU6\SLC_2110FAILURE	Motor Failure	ON	1
RTU6\SLC_2110HIGH_TORQUE	High Torque Alarm	ON	1
RTU6\SLC_2120FAILURE	Motor Failure	ON	1
RTU6\SLC_2120HIGH_TORQUE	High Torque Alarm	ON	1
RTU6\SLC_4120FAILURE	Motor Failure	ON	1
RTU6\SLC_4120HIGH_TORQUE	High Torque Alarm	ON	1
RTU6\SLC_4130FAILURE	Motor Failure	ON	1
RTU6\SLC_4130HIGH_TORQUE	High Torque Alarm	ON	1
RTU6\V_2121_HiLvl_Alarm	Primary Clarifiers Scum Pit High Level Alarm	ON	1
RTU6\V_2121FAILURE	Valve Failed during Operation	ON	1
RTU6\V_2172FAILURE	Valve Failed during Operation	ON	1
RTU6\V_2182FAILURE	Valve Failed during Operation	ON	1
RTU6\V_3910FAILURE	Valve Failed during Operation	ON	1
RTU6\V_4150FAILURE	Valve Failed during Operation	ON	1
BLWRS\LCP1\BLWR_HS_IN_TEMP_ALM		ON	2
BLWRS\LCP1\BLWR_HS_OUT_TEMP_ALM		ON	2
BLWRS\LCP1\BLWR_HS_THRUST_TEMP_ALM		ON	2
BLWRS\LCP1\BLWR_SS_IN_TEMP_ALM		ON	2
BLWRS\LCP1\BLWR_SS_OUT_TEMP_ALM		ON	2
BLWRS\LCP1\BLWR_VIB_ALM		ON	2
BLWRS\LCP1\DI_PLC_PS1_FAULT		ON	2
BLWRS\LCP1\DI_PLC_PS2_FAULT		ON	2
BLWRS\LCP1\DIRTY_OIL_FILTER_ALM		ON	2
BLWRS\LCP1\DISCH_AIR_TEMP_ALM		ON	2
BLWRS\LCP1\HI_OIL_TEMP_ALM		ON	2
BLWRS\LCP1\INLET_AIR_TEMP_ALM		ON	2
BLWRS\LCP1\LOW_OIL_LEVEL_ALM		ON	2
BLWRS\LCP1\LOW_OIL_TEMP_ALM		ON	2
BLWRS\LCP1\MTR_AMP_ALM		ON	2
BLWRS\LCP1\MTR_B_WIND_TEMP_ALM		ON	2
BLWRS\LCP1\REV_ROTATION_ALM		ON	2
BLWRS\LCP2\BLWR_HS_IN_TEMP_ALM		ON	2
BLWRS\LCP2\BLWR_HS_OUT_TEMP_ALM		ON	2
BLWRS\LCP2\BLWR_HS_THRUST_TEMP_ALM		ON	2
BLWRS\LCP2\BLWR_SS_IN_TEMP_ALM		ON	2
BLWRS\LCP2\BLWR_SS_OUT_TEMP_ALM		ON	2
BLWRS\LCP2\BLWR_VIB_ALM		ON	2
BLWRS\LCP2\DIRTY_INLET_ALM		ON	2
BLWRS\LCP2\DIRTY_OIL_FILTER_ALM		ON	2
BLWRS\LCP2\HI_OIL_TEMP_ALM		ON	2
BLWRS\LCP2\INLET_AIR_TEMP_ALM		ON	2
BLWRS\LCP2\LOW_OIL_LEVEL_ALM		ON	2
BLWRS\LCP2\LOW_OIL_TEMP_ALM		ON	2
BLWRS\LCP2\MTR_A_WIND_TEMP_ALM		ON	2
BLWRS\LCP2\MTR_B_WIND_TEMP_ALM		ON	2
BLWRS\LCP2\MTR_C_WIND_TEMP_ALM		ON	2
BLWRS\LCP2\REV_ROTATION_ALM		ON	2
BLWRS\LCP4\BLWR_HS_IN_TEMP_ALM		ON	2

IEUA RP-4 SUMMARY OF ALARMS

Tag Name	Description	Direction	Severity
BLWRS\LCP4\BLWR_HS_OUT_TEMP_ALM		ON	2
BLWRS\LCP4\BLWR_HS_THRUST_TEMP_ALM		ON	2
BLWRS\LCP4\BLWR_HS_X_VIB_ALM		ON	2
BLWRS\LCP4\BLWR_HS_Y_VIB_ALM		ON	2
BLWRS\LCP4\BLWR_HS_Z_MAX_ALM		ON	2
BLWRS\LCP4\BLWR_HS_Z_MIN_ALM		ON	2
BLWRS\LCP4\BLWR_SS_IN_TEMP_ALM		ON	2
BLWRS\LCP4\BLWR_SS_OUT_TEMP_ALM		ON	2
BLWRS\LCP4\BLWR_SS_X_ALM		ON	2
BLWRS\LCP4\BLWR_SS_Y_ALM		ON	2
BLWRS\LCP4\BLWR_VIB_ALM		ON	2
BLWRS\LCP4\DIRTY_OIL_FILTER_ALM		ON	2
BLWRS\LCP4\DIRTY_SEC_INLET_ALM		ON	2
BLWRS\LCP4\DISCH_AIR_TEMP_ALM		ON	2
BLWRS\LCP4\HI_OIL_TEMP_ALM		ON	2
BLWRS\LCP4\INLET_AIR_TEMP_ALM		ON	2
BLWRS\LCP4\LOW_OIL_LEVEL_ALM		ON	2
BLWRS\LCP4\LOW_OIL_TEMP_ALM		ON	2
BLWRS\LCP4\MTR_AMP_ALM		ON	2
BLWRS\LCP4\MTR_B_WIND_TEMP_ALM		ON	2
BLWRS\LCP4\MTR_C_WIND_TEMP_ALM		ON	2
BLWRS\LCP4\MTR_IN_BRG_TEMP_ALM		ON	2
BLWRS\LCP4\MTR_OUT_BRG_TEMP_ALM		ON	2
BLWRS\LCP4\MTR_TEMP_ALM		ON	2
FILT\1_BW_VALV_FAIL	Unit #1 Back Wash Valve Fail To Scada	ON	2
FILT\1_FILT_AIR_VALV_FAIL	Unit #1 Filter Air Valve Failure To Scada	ON	2
FILT\1_FTW_VALV_FAIL	Filter To Waste Valve Travel Time	ON	2
FILT\1_W_GATE_FAIL	Unit #1 Waste Gate Failure To Scada	ON	2
FILT\2_BW_VALV_FAIL	Unit #2 Back Wash Valve Fail To Scada	ON	2
FILT\2_CLAR_AIR_VALV_FAIL	Unit #2 Clarifier Air Valve Failure To Scada	ON	2
FILT\2_FILT_AIR_VALV_FAIL	Unit #2 Filter Air Valve Failure To Scada	ON	2
FILT\2_FTW_VALV_FAIL	Unit #2 Filter To Waste Valve Failure To Scada	ON	2
FILT\2_W_GATE_FAIL	Unit #2 Waste Gate Failure To Scada	ON	2
FILT\3_BW_VALV_FAIL	Unit #3 Back Wash Valve Fail To Scada	ON	2
FILT\3_CLAR_AIR_VALV_FAIL	Unit #3 Clarifier Air Valve Failure To Scada	ON	2
FILT\3_FILT_AIR_VALV_FAIL	Unit #3 Filter Air Valve Failure To Scada	ON	2
FILT\3_FTW_VALV_FAIL	Unit #3 Filter To Waste Valve Failure To Scada	ON	2
FILT\3_W_GATE_FAIL	Unit #3 Waste Gate Failure To Scada	ON	2
FILT\4_BW_VALV_FAIL	UNIT #4 BACKWASH VALVE FAILURE TO SCADA	ON	2
FILT\4_CLAR_AIR_VALV_FAIL	UNIT #4 CLARIFIER AIR VALVE FAILURE TO SCADA	ON	2
FILT\4_FILT_AIR_VALV_FAIL	UNIT #4 FILTER AIR VALVE FAIL TO SCADA	ON	2
FILT\4_FTW_VALV_FAIL	UNIT #4 FILTER TO WASTE VALVE FAIL TO SCADA	ON	2
FILT\4_W_GATE_FAIL	UNIT #4 WASTE GATE FAIL TO SCADA	ON	2
FILT\5_BW_VALV_FAIL	UNIT #5 BACKWASH VALVE FAILURE TO SCADA	ON	2
FILT\5_CLAR_AIR_VALV_FAIL	UNIT #5 CLARIFIER AIR VALVE FAILURE TO SCADA	ON	2
FILT\5_FILT_AIR_VALV_FAIL	UNIT #5 FILTER AIR VALVE FAIL TO SCADA	ON	2
FILT\5_FTW_VALV_FAIL	UNIT #5 FILTER TO WASTE VALVE FAIL TO SCADA	ON	2
FILT\5_W_GATE_FAIL	UNIT #5 WASTE GATE FAIL TO SCADA	ON	2
FILT\6_BW_VALV_FAIL	UNIT #6 BACKWASH VALVE FAILURE TO SCADA	ON	2
FILT\6_CLAR_AIR_VALV_FAIL	UNIT #6 CLARIFIER AIR VALVE FAILURE TO SCADA	ON	2
FILT\6_FILT_AIR_VALV_FAIL	UNIT #6 FILTER AIR VALVE FAIL TO SCADA	ON	2
FILT\6_FTW_VALV_FAIL	UNIT #6 FILTER TO WASTE VALVE FAIL TO SCADA	ON	2
FILT\6_W_GATE_FAIL	UNIT #6 WASTE GATE FAIL TO SCADA	ON	2
FILT\7_BW_VALV_FAIL	UNIT #7 BACKWASH VALVE FAILURE TO SCADA	ON	2
FILT\7_CLAR_AIR_VALV_FAIL	UNIT #7 CLARIFIER AIR VALVE FAILURE TO SCADA	ON	2
FILT\7_FILT_AIR_VALV_FAIL	UNIT #7 FILTER AIR VALVE FAIL TO SCADA	ON	2
FILT\7_FTW_VALV_FAIL	UNIT #7 FILTER TO WASTE VALVE FAIL TO SCADA	ON	2
FILT\7_W_GATE_FAIL	UNIT #7 WASTE GATE FAIL TO SCADA	ON	2
FILT\8_BW_VALV_FAIL	UNIT #8 BACKWASH VALVE FAILURE TO SCADA	ON	2
FILT\8_CLAR_AIR_VALV_FAIL	UNIT #8 CLARIFIER AIR VALVE FAILURE TO SCADA	ON	2
FILT\8_FILT_AIR_VALV_FAIL	UNIT #8 FILTER AIR VALVE FAIL TO SCADA	ON	2
FILT\8_FTW_VALV_FAIL	UNIT #8 FILTER TO WASTE VALVE FILTER TO SCADA	ON	2
FILT\8_W_GATE_FAIL	UNIT #8 WASTE GATE FAIL TO SCADA	ON	2
FILT\BW_TM_EXCEEDED	BACKWASH TIME EXCEEDED	ON	2
FILT\FLSH_TM_EXCEEDED	FLUSH TIME EXCEEDED	ON	2
FILT\NO_BLOWERS_AVAIL		ON	2
FILT\NO_BW_PMPS_AVAIL		ON	2
Filters\F1\ALARMS\Backwash_Valve_1_Failed_to_C	F1: Backwash Valve 1 Failed to CLOSE Alarm Trigger 25	ON	2
Filters\F1\ALARMS\Backwash_Valve_1_Failed_to_O	F1: Backwash Valve 1 Failed to OPEN Alarm Trigger 24	ON	2

IEUA RP-4 SUMMARY OF ALARMS

Tag Name	Description	Direction	Severity
Filters\F1\ALARMS\Backwash_Valve_2_Failed_to_C	F1: Backwash Valve 2 Failed to CLOSE Alarm Trigger 27	ON	2
Filters\F1\ALARMS\Backwash_Valve_2_Failed_to_C	F1: Backwash Valve 2 Failed to OPEN Alarm Trigger 26	ON	2
Filters\F1\ALARMS\Backwash_Valve_3_Failed_to_C	F1: Backwash Valve 3 Failed to CLOSE Alarm Trigger 29	ON	2
Filters\F1\ALARMS\Backwash_Valve_3_Failed_to_C	F1: Backwash Valve 3 Failed to OPEN Alarm Trigger 28	ON	2
Filters\F1\ALARMS\Backwash_Valve_4_Failed_to_C	F1: Backwash Valve 4 Failed to CLOSE Alarm Trigger 31	ON	2
Filters\F1\ALARMS\Backwash_Valve_4_Failed_to_C	F1: Backwash Valve 4 Failed to OPEN Alarm Trigger 30	ON	2
Filters\F1\ALARMS\Backwash_Valve_5_Failed_to_C	F1: Backwash Valve 5 Failed to CLOSE Alarm Trigger 33	ON	2
Filters\F1\ALARMS\Backwash_Valve_5_Failed_to_C	F1: Backwash Valve 5 Failed to OPEN Alarm Trigger 32	ON	2
Filters\F1\ALARMS\Backwash_Valve_6_Failed_to_C	F1: Backwash Valve 6 Failed to CLOSE Alarm Trigger 35	ON	2
Filters\F1\ALARMS\Backwash_Valve_6_Failed_to_C	F1: Backwash Valve 6 Failed to OPEN Alarm Trigger 34	ON	2
Filters\F1\ALARMS\Basin_Level_Too_LOW_For_Ba	F1: Basin Level Too LOW For Backwash Alarm Trigger 6	ON	2
Filters\F1\ALARMS\Basin_Level_Too_LOW_For_Slu	F1: Basin Level Too LOW For Sludge Waste Alarm Trigger 7	ON	2
Filters\F1\ALARMS\Effluent_Flow_Transducer_OUT_	F1: Effluent Flow Transducer OUT of RANGE Alarm Trigger 57	ON	2
Filters\F1\ALARMS\Effluent_Turbidity_Transducer_C	F1: Effluent Turbidity Transducer OUT of RANGE Alarm Trigger 58	ON	2
Filters\F1\ALARMS\Filter_Basin_Level_Transducer_	F1: Filter Basin Level Transducer OUT of RANGE Alarm Trigger 50	ON	2
Filters\F1\ALARMS\Filter_Effluent_Level_Transducer	F1: Filter Effluent Level Transducer OUT of RANGE Alarm Trigger 51	ON	2
Filters\F1\ALARMS\HPS_Drain_Valve_Failed_to_CL	F1: HPS Drain Valve Failed to CLOSE Alarm Trigger 45	ON	2
Filters\F1\ALARMS\HPS_Drain_Valve_Failed_to_OP	F1: HPS Drain Valve Failed to OPEN Alarm Trigger 44	ON	2
Filters\F1\ALARMS\HPS_Reservoir_Level_LOW	F1: HPS Reservoir Level LOW Alarm Trigger 48	ON	2
Filters\F1\ALARMS\HPS_Wash_Valve_1_Failed_to_	F1: HPS Wash Valve 1 Failed to CLOSE Alarm Trigger 37	ON	2
Filters\F1\ALARMS\HPS_Wash_Valve_1_Failed_to_	F1: HPS Wash Valve 1 Failed to OPEN Alarm Trigger 36	ON	2
Filters\F1\ALARMS\HPS_Wash_Valve_2_Failed_to_	F1: HPS Wash Valve 2 Failed to CLOSE Alarm Trigger 39	ON	2
Filters\F1\ALARMS\HPS_Wash_Valve_2_Failed_to_	F1: HPS Wash Valve 2 Failed to OPEN Alarm Trigger 38	ON	2
Filters\F1\ALARMS\HPS_Wash_Valve_3_Failed_to_	F1: HPS Wash Valve 3 Failed to CLOSE Alarm Trigger 41	ON	2
Filters\F1\ALARMS\HPS_Wash_Valve_3_Failed_to_	F1: HPS Wash Valve 3 Failed to OPEN Alarm Trigger 40	ON	2
Filters\F1\ALARMS\HPS_Wash_Valve_4_Failed_to_	F1: HPS Wash Valve 4 Failed to CLOSE Alarm Trigger 43	ON	2
Filters\F1\ALARMS\HPS_Wash_Valve_4_Failed_to_	F1: HPS Wash Valve 4 Failed to OPEN Alarm Trigger 42	ON	2
Filters\F1\ALARMS\Influent_Turbidity_Transducer_O	F1: Influent Turbidity Transducer OUT of RANGE Alarm Trigger 56	ON	2
Filters\F1\ALARMS\Influent_Valve_Failed_to_CLOSE	F1: Influent Valve Failed to CLOSE Alarm Trigger 21	ON	2
Filters\F1\ALARMS\Influent_Valve_Failed_to_OPEN	F1: Influent Valve Failed to OPEN Alarm Trigger 20	ON	2
Filters\F1\ALARMS\PLC_Battery_LOW	F1: PLC Battery LOW Alarm Trigger 1	ON	2
Filters\F1\ALARMS\Sludge_Valve_Failed_to_CLOSE	F1: Sludge Valve Failed to CLOSE Alarm Trigger 23	ON	2
Filters\F1\ALARMS\Sludge_Valve_Failed_to_OPEN	F1: Sludge Valve Failed to OPEN Alarm Trigger 22	ON	2
Filters\F2\ALARMS\Backwash_Pump_1_HIGH_Vacu	F2: Backwash Pump 1 HIGH Vacuum Alarm Trigger 46	ON	2
Filters\F2\ALARMS\Backwash_Pump_2_HIGH_Vacu	F2: Backwash Pump 2 HIGH Vacuum Alarm Trigger 47	ON	2
Filters\F2\ALARMS\Backwash_Valve_1_Failed_to_C	F2: Backwash Valve 1 Failed to CLOSE Alarm Trigger 25	ON	2
Filters\F2\ALARMS\Backwash_Valve_1_Failed_to_C	F2: Backwash Valve 1 Failed to OPEN Alarm Trigger 24	ON	2
Filters\F2\ALARMS\Backwash_Valve_2_Failed_to_C	F2: Backwash Valve 2 Failed to CLOSE Alarm Trigger 27	ON	2
Filters\F2\ALARMS\Backwash_Valve_2_Failed_to_C	F2: Backwash Valve 2 Failed to OPEN Alarm Trigger 26	ON	2
Filters\F2\ALARMS\Backwash_Valve_3_Failed_to_C	F2: Backwash Valve 3 Failed to CLOSE Alarm Trigger 29	ON	2
Filters\F2\ALARMS\Backwash_Valve_3_Failed_to_C	F2: Backwash Valve 3 Failed to OPEN Alarm Trigger 28	ON	2
Filters\F2\ALARMS\Backwash_Valve_4_Failed_to_C	F2: Backwash Valve 4 Failed to CLOSE Alarm Trigger 31	ON	2
Filters\F2\ALARMS\Backwash_Valve_4_Failed_to_C	F2: Backwash Valve 4 Failed to OPEN Alarm Trigger 30	ON	2
Filters\F2\ALARMS\Backwash_Valve_5_Failed_to_C	F2: Backwash Valve 5 Failed to CLOSE Alarm Trigger 33	ON	2
Filters\F2\ALARMS\Backwash_Valve_5_Failed_to_C	F2: Backwash Valve 5 Failed to OPEN Alarm Trigger 32	ON	2
Filters\F2\ALARMS\Backwash_Valve_6_Failed_to_C	F2: Backwash Valve 6 Failed to CLOSE Alarm Trigger 35	ON	2
Filters\F2\ALARMS\Backwash_Valve_6_Failed_to_C	F2: Backwash Valve 6 Failed to OPEN Alarm Trigger 34	ON	2
Filters\F2\ALARMS\Basin_Level_Too_LOW_For_Ba	F2: Basin Level Too LOW For Backwash Alarm Trigger 6	ON	2
Filters\F2\ALARMS\Basin_Level_Too_LOW_For_Slu	F2: Basin Level Too LOW For Sludge Waste Alarm Trigger 7	ON	2
Filters\F2\ALARMS\Effluent_Flow_Transducer_OUT_	F2: Effluent Flow Transducer OUT of RANGE Alarm Trigger 57	ON	2
Filters\F2\ALARMS\Filter_Basin_Level_Transducer_	F2: Filter Basin Level Transducer OUT of RANGE Alarm Trigger 50	ON	2
Filters\F2\ALARMS\Filter_Effluent_Level_Transducer	F2: Filter Effluent Level Transducer OUT of RANGE Alarm Trigger 51	ON	2
Filters\F2\ALARMS\HPS_Drain_Valve_Failed_to_CL	F2: HPS Drain Valve Failed to CLOSE Alarm Trigger 45	ON	2
Filters\F2\ALARMS\HPS_Drain_Valve_Failed_to_OP	F2: HPS Drain Valve Failed to OPEN Alarm Trigger 44	ON	2
Filters\F2\ALARMS\HPS_Reservoir_Level_LOW	F2: HPS Reservoir Level LOW Alarm Trigger 48	ON	2
Filters\F2\ALARMS\HPS_Wash_Valve_1_Failed_to_	F2: HPS Wash Valve 1 Failed to CLOSE Alarm Trigger 37	ON	2
Filters\F2\ALARMS\HPS_Wash_Valve_1_Failed_to_	F2: HPS Wash Valve 1 Failed to OPEN Alarm Trigger 36	ON	2
Filters\F2\ALARMS\HPS_Wash_Valve_2_Failed_to_	F2: HPS Wash Valve 2 Failed to CLOSE Alarm Trigger 39	ON	2
Filters\F2\ALARMS\HPS_Wash_Valve_2_Failed_to_	F2: HPS Wash Valve 2 Failed to OPEN Alarm Trigger 38	ON	2
Filters\F2\ALARMS\HPS_Wash_Valve_3_Failed_to_	F2: HPS Wash Valve 3 Failed to CLOSE Alarm Trigger 41	ON	2
Filters\F2\ALARMS\HPS_Wash_Valve_3_Failed_to_	F2: HPS Wash Valve 3 Failed to OPEN Alarm Trigger 40	ON	2
Filters\F2\ALARMS\HPS_Wash_Valve_4_Failed_to_	F2: HPS Wash Valve 4 Failed to CLOSE Alarm Trigger 43	ON	2
Filters\F2\ALARMS\HPS_Wash_Valve_4_Failed_to_	F2: HPS Wash Valve 4 Failed to OPEN Alarm Trigger 42	ON	2
Filters\F2\ALARMS\Influent_Turbidity_Transducer_O	F2: Influent Turbidity Transducer OUT of RANGE Alarm Trigger 56	ON	2
Filters\F2\ALARMS\Influent_Valve_Failed_to_CLOSE	F2: Influent Valve Failed to CLOSE Alarm Trigger 21	ON	2
Filters\F2\ALARMS\Influent_Valve_Failed_to_OPEN	F2: Influent Valve Failed to OPEN Alarm Trigger 20	ON	2
Filters\F2\ALARMS\PLC_Battery_LOW	F2: PLC Battery LOW Alarm Trigger 1	ON	2
Filters\F2\ALARMS\Sludge_Valve_Failed_to_CLOSE	F2: Sludge Valve Failed to CLOSE Alarm Trigger 23	ON	2
Filters\F2\ALARMS\Sludge_Valve_Failed_to_OPEN	F2: Sludge Valve Failed to OPEN Alarm Trigger 22	ON	2

IEUA RP-4 SUMMARY OF ALARMS

Tag Name	Description	Direction	Severity
Filters\F3\ALARMS\Backwash_Pump_1_HIGH_Vacu	F3: Backwash Pump 1 HIGH Vacuum Alarm Trigger 46	ON	2
Filters\F3\ALARMS\Backwash_Pump_2_HIGH_Vacu	F3: Backwash Pump 2 HIGH Vacuum Alarm Trigger 47	ON	2
Filters\F3\ALARMS\Backwash_Valve_1_Failed_to_C	F3: Backwash Valve 1 Failed to CLOSE Alarm Trigger 25	ON	2
Filters\F3\ALARMS\Backwash_Valve_1_Failed_to_C	F3: Backwash Valve 1 Failed to OPEN Alarm Trigger 24	ON	2
Filters\F3\ALARMS\Backwash_Valve_2_Failed_to_C	F3: Backwash Valve 2 Failed to CLOSE Alarm Trigger 27	ON	2
Filters\F3\ALARMS\Backwash_Valve_2_Failed_to_C	F3: Backwash Valve 2 Failed to OPEN Alarm Trigger 26	ON	2
Filters\F3\ALARMS\Backwash_Valve_3_Failed_to_C	F3: Backwash Valve 3 Failed to CLOSE Alarm Trigger 29	ON	2
Filters\F3\ALARMS\Backwash_Valve_3_Failed_to_C	F3: Backwash Valve 3 Failed to OPEN Alarm Trigger 28	ON	2
Filters\F3\ALARMS\Backwash_Valve_4_Failed_to_C	F3: Backwash Valve 4 Failed to CLOSE Alarm Trigger 31	ON	2
Filters\F3\ALARMS\Backwash_Valve_4_Failed_to_C	F3: Backwash Valve 4 Failed to OPEN Alarm Trigger 30	ON	2
Filters\F3\ALARMS\Backwash_Valve_5_Failed_to_C	F3: Backwash Valve 5 Failed to CLOSE Alarm Trigger 33	ON	2
Filters\F3\ALARMS\Backwash_Valve_5_Failed_to_C	F3: Backwash Valve 5 Failed to OPEN Alarm Trigger 32	ON	2
Filters\F3\ALARMS\Backwash_Valve_6_Failed_to_C	F3: Backwash Valve 6 Failed to CLOSE Alarm Trigger 35	ON	2
Filters\F3\ALARMS\Backwash_Valve_6_Failed_to_C	F3: Backwash Valve 6 Failed to OPEN Alarm Trigger 34	ON	2
Filters\F3\ALARMS\Basin_Level_Too_LOW_For_Ba	F3: Basin Level Too LOW For Backwash Alarm Trigger 6	ON	2
Filters\F3\ALARMS\Basin_Level_Too_LOW_For_Slu	F3: Basin Level Too LOW For Sludge Waste Alarm Trigger 7	ON	2
Filters\F3\ALARMS\Effluent_Flow_Transducer_OUT_	F3: Effluent Flow Transducer OUT of RANGE Alarm Trigger 57	ON	2
Filters\F3\ALARMS\Effluent_Turbidity_Transducer_O	F3: Effluent Turbidity Transducer OUT of RANGE Alarm Trigger 58	ON	2
Filters\F3\ALARMS\Filter_Basin_Level_Transducer_	F3: Filter Basin Level Transducer OUT of RANGE Alarm Trigger 50	ON	2
Filters\F3\ALARMS\Filter_Effluent_Level_Transduce	F3: Filter Effluent Level Transducer OUT of RANGE Alarm Trigger 51	ON	2
Filters\F3\ALARMS\HPS_Drain_Valve_Failed_to_CL	F3: HPS Drain Valve Failed to CLOSE Alarm Trigger 45	ON	2
Filters\F3\ALARMS\HPS_Drain_Valve_Failed_to_OP	F3: HPS Drain Valve Failed to OPEN Alarm Trigger 44	ON	2
Filters\F3\ALARMS\HPS_Reservoir_Level_LOW	F3: HPS Reservoir Level LOW Alarm Trigger 48	ON	2
Filters\F3\ALARMS\HPS_Wash_Valve_1_Failed_to_	F3: HPS Wash Valve 1 Failed to CLOSE Alarm Trigger 37	ON	2
Filters\F3\ALARMS\HPS_Wash_Valve_1_Failed_to_	F3: HPS Wash Valve 1 Failed to OPEN Alarm Trigger 36	ON	2
Filters\F3\ALARMS\HPS_Wash_Valve_2_Failed_to_	F3: HPS Wash Valve 2 Failed to CLOSE Alarm Trigger 39	ON	2
Filters\F3\ALARMS\HPS_Wash_Valve_2_Failed_to_	F3: HPS Wash Valve 2 Failed to OPEN Alarm Trigger 38	ON	2
Filters\F3\ALARMS\HPS_Wash_Valve_3_Failed_to_	F3: HPS Wash Valve 3 Failed to CLOSE Alarm Trigger 41	ON	2
Filters\F3\ALARMS\HPS_Wash_Valve_3_Failed_to_	F3: HPS Wash Valve 3 Failed to OPEN Alarm Trigger 40	ON	2
Filters\F3\ALARMS\HPS_Wash_Valve_4_Failed_to_	F3: HPS Wash Valve 4 Failed to CLOSE Alarm Trigger 43	ON	2
Filters\F3\ALARMS\HPS_Wash_Valve_4_Failed_to_	F3: HPS Wash Valve 4 Failed to OPEN Alarm Trigger 42	ON	2
Filters\F3\ALARMS\Influent_Turbidity_Transducer_O	F3: Influent Turbidity Transducer OUT of RANGE Alarm Trigger 56	ON	2
Filters\F3\ALARMS\Influent_Valve_Failed_to_CLOS	F3: Influent Valve Failed to CLOSE Alarm Trigger 21	ON	2
Filters\F3\ALARMS\Influent_Valve_Failed_to_OPEN	F3: Influent Valve Failed to OPEN Alarm Trigger 20	ON	2
Filters\F3\ALARMS\PLC_Battery_LOW	F3: PLC Battery LOW Alarm Trigger 1	ON	2
Filters\F3\ALARMS\Sludge_Valve_Failed_to_CLOSE	F3: Sludge Valve Failed to CLOSE Alarm Trigger 23	ON	2
Filters\F3\ALARMS\Sludge_Valve_Failed_to_OPEN	F3: Sludge Valve Failed to OPEN Alarm Trigger 22	ON	2
Filters\F4\ALARMS\Backwash_Pump_1_HIGH_Vacu	F4: Backwash Pump 1 HIGH Vacuum Alarm Trigger 46	ON	2
Filters\F4\ALARMS\Backwash_Pump_2_HIGH_Vacu	F4: Backwash Pump 2 HIGH Vacuum Alarm Trigger 47	ON	2
Filters\F4\ALARMS\Backwash_Valve_1_Failed_to_C	F4: Backwash Valve 1 Failed to CLOSE Alarm Trigger 25	ON	2
Filters\F4\ALARMS\Backwash_Valve_1_Failed_to_C	F4: Backwash Valve 1 Failed to OPEN Alarm Trigger 24	ON	2
Filters\F4\ALARMS\Backwash_Valve_2_Failed_to_C	F4: Backwash Valve 2 Failed to CLOSE Alarm Trigger 27	ON	2
Filters\F4\ALARMS\Backwash_Valve_2_Failed_to_C	F4: Backwash Valve 2 Failed to OPEN Alarm Trigger 26	ON	2
Filters\F4\ALARMS\Backwash_Valve_3_Failed_to_C	F4: Backwash Valve 3 Failed to CLOSE Alarm Trigger 29	ON	2
Filters\F4\ALARMS\Backwash_Valve_3_Failed_to_C	F4: Backwash Valve 3 Failed to OPEN Alarm Trigger 28	ON	2
Filters\F4\ALARMS\Backwash_Valve_4_Failed_to_C	F4: Backwash Valve 4 Failed to CLOSE Alarm Trigger 31	ON	2
Filters\F4\ALARMS\Backwash_Valve_4_Failed_to_C	F4: Backwash Valve 4 Failed to OPEN Alarm Trigger 30	ON	2
Filters\F4\ALARMS\Backwash_Valve_5_Failed_to_C	F4: Backwash Valve 5 Failed to CLOSE Alarm Trigger 33	ON	2
Filters\F4\ALARMS\Backwash_Valve_5_Failed_to_C	F4: Backwash Valve 5 Failed to OPEN Alarm Trigger 32	ON	2
Filters\F4\ALARMS\Backwash_Valve_6_Failed_to_C	F4: Backwash Valve 6 Failed to CLOSE Alarm Trigger 35	ON	2
Filters\F4\ALARMS\Backwash_Valve_6_Failed_to_C	F4: Backwash Valve 6 Failed to OPEN Alarm Trigger 34	ON	2
Filters\F4\ALARMS\Basin_Level_Too_LOW_For_Ba	F4: Basin Level Too LOW For Backwash Alarm Trigger 6	ON	2
Filters\F4\ALARMS\Basin_Level_Too_LOW_For_Slu	F4: Basin Level Too LOW For Sludge Waste Alarm Trigger 7	ON	2
Filters\F4\ALARMS\Filter_Air_Pressure	F4: Filter Air Pressure Alarm Trigger 8	ON	2
Filters\F4\ALARMS\Filter_Basin_Level_Transducer_	F4: Filter Basin Level Transducer OUT of RANGE Alarm Trigger 50	ON	2
Filters\F4\ALARMS\Filter_Effluent_Level_Transduce	F4: Filter Effluent Level Transducer OUT of RANGE Alarm Trigger 51	ON	2
Filters\F4\ALARMS\HPS_Drain_Valve_Failed_to_CL	F4: HPS Drain Valve Failed to CLOSE Alarm Trigger 45	ON	2
Filters\F4\ALARMS\HPS_Drain_Valve_Failed_to_OP	F4: HPS Drain Valve Failed to OPEN Alarm Trigger 44	ON	2
Filters\F4\ALARMS\HPS_Reservoir_Level_LOW	F4: HPS Reservoir Level LOW Alarm Trigger 48	ON	2
Filters\F4\ALARMS\HPS_Wash_Valve_1_Failed_to_	F4: HPS Wash Valve 1 Failed to CLOSE Alarm Trigger 37	ON	2
Filters\F4\ALARMS\HPS_Wash_Valve_1_Failed_to_	F4: HPS Wash Valve 1 Failed to OPEN Alarm Trigger 36	ON	2
Filters\F4\ALARMS\HPS_Wash_Valve_2_Failed_to_	F4: HPS Wash Valve 2 Failed to CLOSE Alarm Trigger 39	ON	2
Filters\F4\ALARMS\HPS_Wash_Valve_2_Failed_to_	F4: HPS Wash Valve 2 Failed to OPEN Alarm Trigger 38	ON	2
Filters\F4\ALARMS\HPS_Wash_Valve_3_Failed_to_	F4: HPS Wash Valve 3 Failed to CLOSE Alarm Trigger 41	ON	2
Filters\F4\ALARMS\HPS_Wash_Valve_3_Failed_to_	F4: HPS Wash Valve 3 Failed to OPEN Alarm Trigger 40	ON	2
Filters\F4\ALARMS\HPS_Wash_Valve_4_Failed_to_	F4: HPS Wash Valve 4 Failed to CLOSE Alarm Trigger 43	ON	2
Filters\F4\ALARMS\HPS_Wash_Valve_4_Failed_to_	F4: HPS Wash Valve 4 Failed to OPEN Alarm Trigger 42	ON	2
Filters\F4\ALARMS\Influent_Turbidity_Transducer_O	F4: Influent Turbidity Transducer OUT of RANGE Alarm Trigger 56	ON	2
Filters\F4\ALARMS\Influent_Valve_Failed_to_CLOS	F4: Influent Valve Failed to CLOSE Alarm Trigger 21	ON	2

IEUA RP-4 SUMMARY OF ALARMS

Tag Name	Description	Direction	Severity
Filters\F4\ALARMS\Influent_Valve_Failed_to_OPEN	F4: Influent Valve Failed to OPEN Alarm Trigger 20	ON	2
Filters\F4\ALARMS\PLC_Battery_LOW	F4: PLC Battery LOW Alarm Trigger 1	ON	2
Filters\F4\ALARMS\Sludge_Valve_Failed_to_CLOSE	F4: Sludge Valve Failed to CLOSE Alarm Trigger 23	ON	2
Filters\F4\ALARMS\Sludge_Valve_Failed_to_OPEN	F4: Sludge Valve Failed to OPEN Alarm Trigger 22	ON	2
Reliant\Reliant_PLC_to_RTU2A_comm_fail		ON	2
Reliant\Reliant_Water_High_Level_Alarm		ON	2
Reliant\Reliant_Water_Low_Level_Alarm		ON	2
Reliant\Reliant_Water_Valve_Fail_To_Close		ON	2
Reliant\Reliant_Water_Valve_Fail_To_Open		ON	2
RTU1\ANOX_MX_1_NT_IN_AUTO	ANOXIC MIXER #1 NOT IN AUTO	ON	2
RTU1\ANOX_MX_2_NT_IN_AUTO	ANOXIC MIXER #2 NOT IN AUTO	ON	2
RTU1\ANOX_MX_3_NT_IN_AUTO	ANOXIC MIXER #3 NOT IN AUTO	ON	2
RTU1\ANOX_MX_4_NT_IN_AUTO	ANOXIC MIXER #4 NOT IN AUTO	ON	2
RTU1\ANOX_MX_5_NT_IN_AUTO	ANOXIC MIXER #5 NOT IN AUTO	ON	2
RTU1\ANOX_MX_6_NT_IN_AUTO	ANOXIC MIXER #6 NOT IN AUTO	ON	2
RTU1\ANOX_MX_7_NT_IN_AUTO	ANOXIC MIXER #7 NOT IN AUTO	ON	2
RTU1\ANOX_MX_8_NT_IN_AUTO	ANOXIC MIXER #8 NOT IN AUTO	ON	2
RTU1\ANOX_MX_9_NT_IN_AUTO	ANOXIC MIXER #9 NOT IN AUTO	ON	2
RTU1\ANOXIC_MIXER_1_FAIL	ANOXIC MIXER #1 FAIL	ON	2
RTU1\ANOXIC_MIXER_2_FAIL	ANOXIC MIXER #2 FAIL	ON	2
RTU1\ANOXIC_MIXER_3_FAIL	ANOXIC MIXER #3 FAIL	ON	2
RTU1\ANOXIC_MIXER_4_FAIL	ANOXIC MIXER #4 FAIL	ON	2
RTU1\ANOXIC_MIXER_5_FAIL	ANOXIC MIXER #5 FAIL	ON	2
RTU1\ANOXIC_MIXER_6_FAIL	ANOXIC MIXER #6 FAIL	ON	2
RTU1\ANOXIC_MIXER_7_FAIL	ANOXIC MIXER #7 FAIL	ON	2
RTU1\ANOXIC_MIXER_8_FAIL	ANOXIC MIXER #8 FAIL	ON	2
RTU1\ANOXIC_MIXER_9_FAIL	ANOXIC MIXER #9 FAIL	ON	2
RTU1\BS_Hydro_Warning	Barscreen High Hydrogen Level Warning	ON	2
RTU1\BS_LEL_Warning	Barscreen High LEL Warning	ON	2
RTU1\GEN_BRKR_STATUS	GENERATOR BREAKER STATUS	ON	2
RTU1\INF_PMP_1_NT_IN_AUTO	INFLUENT PUMP #1 NOT IN AUTO (PASSED FROM IPS)	OFF	2
RTU1\INF_PMP_2_NT_IN_AUTO	INFLUENT PUMP #2 NOT IN AUTO (PASSED FROM IPS)	OFF	2
RTU1\INF_PMP_3_NT_IN_AUTO	INFLUENT PUMP #3 NOT IN AUTO (PASSED FROM IPS)	OFF	2
RTU1\INF_PMP_4_NT_IN_AUTO	INFLUENT PUMP #4 NOT IN AUTO (PASSED FROM IPS)	OFF	2
RTU1\INF_PMP_5_NT_IN_AUTO	INFLUENT PUMP #5 NOT IN AUTO (PASSED FROM IPS)	OFF	2
RTU1\MX_3310_1_COS	MX_3310_1 Fail to Start/Stop	ON	2
RTU1\MX_3310_2_COS	MX_3310_2 Fail to Start/Stop	ON	2
RTU1\MX_3310_5_Alarm_Fail	Fail	ON	2
RTU1\MX_3310_5_Alarm_FTStart	Mixer Fail to Start	ON	2
RTU1\MX_3310_5_Alarm_FTStop	Mixer Fail to Stop	ON	2
RTU1\MX_3310_6_Alarm_Fail	Fail	ON	2
RTU1\MX_3310_6_Alarm_FTStart	Mixer Fail to Start	ON	2
RTU1\MX_3310_6_Alarm_FTStop	Mixer Fail to Stop	ON	2
RTU1\MX_3610_1_COS	MX_3610_1 Fail to Start/Stop	ON	2
RTU1\MX_3610_2_COS	MX_3610_2 Fail to Start/Stop	ON	2
RTU1\MX_3610_5_Alarm_Fail	Fail	ON	2
RTU1\MX_3610_5_Alarm_FTStart	Mixer Fail to Start	ON	2
RTU1\MX_3610_5_Alarm_FTStop	Mixer Fail to Stop	ON	2
RTU1\MX_3610_6_Alarm_Fail	Fail	ON	2
RTU1\MX_3610_6_Alarm_FTStart	Mixer Fail to Start	ON	2
RTU1\MX_3610_6_Alarm_FTStop	Mixer Fail to Stop	ON	2
RTU1\MX_3620_1_COS	MX_3620_1 Fail to Start/Stop	ON	2
RTU1\MX_3620_2_COS	MX_3620_2 Fail to Start/Stop	ON	2
RTU1\MX_3620_5_Alarm_Fail	Fail	ON	2
RTU1\MX_3620_5_Alarm_FTStart	Mixer Fail to Start	ON	2
RTU1\MX_3620_5_Alarm_FTStop	Mixer Fail to Stop	ON	2
RTU1\MX_3620_6_Alarm_Fail	Fail	ON	2
RTU1\MX_3620_6_Alarm_FTStart	Mixer Fail to Start	ON	2
RTU1\MX_3620_6_Alarm_FTStop	Mixer Fail to Stop	ON	2
RTU1\WW_LEL_Warning	Wetwell High LEL Warning	ON	2
RTU2\FLC_5110_Alarm_Fail	Flocculator Fail	ON	2
RTU2\FLC_5110_Alarm_FTStart	Flocculator Fail to Start	ON	2
RTU2\FLC_5110_Alarm_FTStop	Flocculator Fail to Stop	ON	2
RTU2\FLC_5120_Alarm_Fail	Flocculator Fail	ON	2
RTU2\FLC_5120_Alarm_FTStart	Flocculator Fail to Start	ON	2
RTU2\FLC_5120_Alarm_FTStop	Flocculator Fail to Stop	ON	2
RTU2\FLC_5130_Alarm_Fail	Flocculator Fail	ON	2
RTU2\FLC_5130_Alarm_FTStart	Flocculator Fail to Start	ON	2
RTU2\FLC_5130_Alarm_FTStop	Flocculator Fail to Stop	ON	2

IEUA RP-4 SUMMARY OF ALARMS

Tag Name	Description	Direction	Severity
RTU2\LOW_CHANNEL		ON	2
RTU2\MX_5001_Alarm_Fail	Mixer Fail	ON	2
RTU2\MX_5001_Alarm_FTStart	Mixer Fail to Start	ON	2
RTU2\MX_5001_Alarm_FTStop	Mixer Fail to Stop	ON	2
RTU2\P_7310_Alarm_Fail	Pump Fail	ON	2
RTU2\P_7310_Alarm_FTStart	Pump Fail to Start	ON	2
RTU2\P_7310_Alarm_FTStop	Pump Fail to Stop	ON	2
RTU2\P_7310_Alarm_Hi_Press	High Discharge Pressure	ON	2
RTU2\P_7320_Alarm_Fail	Pump Fail	ON	2
RTU2\P_7320_Alarm_FTStart	Pump Fail to Start	ON	2
RTU2\P_7320_Alarm_FTStop	Pump Fail to Stop	ON	2
RTU2\P_7320_Alarm_Hi_Press	High Discharge Pressure	ON	2
RTU2\P_7410_Alarm_Fail	Pump Fail	ON	2
RTU2\P_7410_Alarm_FTStart	Pump Fail to Start	ON	2
RTU2\P_7410_Alarm_FTStop	Pump Fail to Stop	ON	2
RTU2\P_7410_Alarm_Hi_Press	High Discharge Pressure	ON	2
RTU2\P_7420_Alarm_Fail	Pump Fail	ON	2
RTU2\P_7420_Alarm_FTStart	Pump Fail to Start	ON	2
RTU2\P_7420_Alarm_FTStop	Pump Fail to Stop	ON	2
RTU2\P_7420_Alarm_Hi_Press	High Discharge Pressure	ON	2
RTU2\P_7530_Alarm_Fail	Pump Fail	ON	2
RTU2\P_7530_Alarm_FTStart	Pump Fail to Start	ON	2
RTU2\P_7530_Alarm_FTStop	Pump Fail to Stop	ON	2
RTU2\P_7530_Alarm_Hi_Press	High Discharge Pressure	ON	2
RTU2\P_7540_Alarm_Fail	Pump Fail	ON	2
RTU2\P_7540_Alarm_FTStart	Pump Fail to Start	ON	2
RTU2\P_7540_Alarm_FTStop	Pump Fail to Stop	ON	2
RTU2\P_7540_Alarm_Hi_Press	High Discharge Pressure	ON	2
RTU2\REC_PMP_1_NT_IN_AUTO	RECYCLE PUMP #1 NOT IN AUTO	ON	2
RTU2\REC_PMP_2_NT_IN_AUTO	RECYCLE PUMP #2 NOT IN AUTO	ON	2
RTU2\REC_PMP_ST_LO_LV_ALM	RECYC PUMP STATION LOW LEVEL ALARM	ON	2
RTU2\Sec_Turb_Hi_Alarm	Secondary Splitter box Turbidity Alarm	ON	2
RTU2A\CB1A_Sample_Pump_1_Low_Flow		ON	2
RTU2A\CB1A_TANK_VOL_HALVED		ON	2
RTU2A\CCT_ONE_HALF	ONLY 2 SECTIONS OF CCT ONLINE	ON	2
RTU2A\CCT_ONE_QUARTER	ONLY 1 SECTION OF CCT ONLINE	ON	2
RTU2A\CCT_THREE_QUARTERS	ONLY 3 SECTIONS OF CCT ONLINE	ON	2
RTU3\Aeration_Flex_Air_Low_Flow_1	Aeration Flex Low Flow Alarm	OFF	2
RTU3\Aeration_Flex_Air_Low_Flow_2	Aeration Flex Low Flow Alarm	OFF	2
RTU3\Aeration_Flex_Air_Low_Flow_3	Aeration Basin Train 3 Air Low Flow Alarm	ON	2
RTU3\Aeration_Flex_Air_Low_Flow_5	Aeration Basin Train 5 Air Low Flow Alarm	ON	2
RTU3\Aeration_Flex_Air_Low_Flow_6	Aeration Basin Train 6 Air Low Flow Alarm	ON	2
RTU3\B_REC_P_1_NT_IN_AUTO	BIO RECIRC PUMP #1 NOT IN AUTO	ON	2
RTU3\B_REC_P_2_NT_IN_AUTO	BIO RECIRC PUMP #2 NOT IN AUTO	ON	2
RTU3\B_REC_P_3_NT_IN_AUTO	BIO RECIRC PUMP #3 NOT IN AUTO	ON	2
RTU3\Basin_3E_Grp1_Hi_DO	Basin 3 East Valve Group 1 High DO Alarm	ON	2
RTU3\Basin_3E_Grp1_Hi_Flow	Basin 3 East Valve Group 1 High Flow Alarm	ON	2
RTU3\Basin_3E_Grp1_Lo_DO	Basin 3 East Valve Group 1 Low DO Alarm	ON	2
RTU3\Basin_3E_Grp1_Lo_Flow	Basin 3 East Valve Group 1 Low Flow Alarm	ON	2
RTU3\Basin_3E_Grp2_Hi_DO	Basin 3 East Valve Group 2 High DO Alarm	ON	2
RTU3\Basin_3E_Grp2_Hi_Flow	Basin 3 East Valve Group 2 High Flow Alarm	ON	2
RTU3\Basin_3E_Grp2_Lo_DO	Basin 3 East Valve Group 2 Low DO Alarm	ON	2
RTU3\Basin_3E_Grp2_Lo_Flow	Basin 3 East Valve Group 2 Low Flow Alarm	ON	2
RTU3\Basin_3E_Grp3_Hi_DO	Basin 3 East Valve Group 3 High DO Alarm	ON	2
RTU3\Basin_3E_Grp3_Hi_Flow	Basin 3 East Valve Group 3 High Flow Alarm	ON	2
RTU3\Basin_3E_Grp3_Lo_DO	Basin 3 East Valve Group 3 Low DO Alarm	ON	2
RTU3\Basin_3E_Grp3_Lo_Flow	Basin 3 East Valve Group 3 Low Flow Alarm	ON	2
RTU3\Basin_3E_Grp4_Hi_DO	Basin 3 East Valve Group 4 High DO Alarm	ON	2
RTU3\Basin_3E_Grp4_Hi_Flow	Basin 3 East Valve Group 4 High Flow Alarm	ON	2
RTU3\Basin_3E_Grp4_Lo_DO	Basin 3 East Valve Group 4 Low DO Alarm	ON	2
RTU3\Basin_3E_Grp4_Lo_Flow	Basin 3 East Valve Group 4 Low Flow Alarm	ON	2
RTU3\Basin_3W_Grp1_Hi_DO	Basin 3 West Valve Group 1 High DO Alarm	ON	2
RTU3\Basin_3W_Grp1_Hi_Flow	Basin 3 West Valve Group 1 High Flow Alarm	ON	2
RTU3\Basin_3W_Grp1_Lo_DO	Basin 3 West Valve Group 1 Low DO Alarm	ON	2
RTU3\Basin_3W_Grp1_Lo_Flow	Basin 3 West Valve Group 1 Low Flow Alarm	ON	2
RTU3\Basin_3W_Grp2_Hi_DO	Basin 3 West Valve Group 2 High DO Alarm	ON	2
RTU3\Basin_3W_Grp2_Hi_Flow	Basin 3 West Valve Group 2 High Flow Alarm	ON	2
RTU3\Basin_3W_Grp2_Lo_DO	Basin 3 West Valve Group 2 Low DO Alarm	ON	2
RTU3\Basin_3W_Grp2_Lo_Flow	Basin 3 West Valve Group 2 Low Flow Alarm	ON	2

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Tag Name	Description	Direction	Severity
RTU3\Basin_3W_Grp3_Hi_DO	Basin 3 West Valve Group 3 High DO Alarm	ON	2
RTU3\Basin_3W_Grp3_Hi_Flow	Basin 3 West Valve Group 3 High Flow Alarm	ON	2
RTU3\Basin_3W_Grp3_Lo_DO	Basin 3 West Valve Group 3 Low DO Alarm	ON	2
RTU3\Basin_3W_Grp3_Lo_Flow	Basin 3 West Valve Group 3 Low Flow Alarm	ON	2
RTU3\Basin_3W_Grp4_Hi_DO	Basin 3 West Valve Group 4 High DO Alarm	ON	2
RTU3\Basin_3W_Grp4_Hi_Flow	Basin 3 West Valve Group 4 High Flow Alarm	ON	2
RTU3\Basin_3W_Grp4_Lo_DO	Basin 3 West Valve Group 4 Low DO Alarm	ON	2
RTU3\Basin_3W_Grp4_Lo_Flow	Basin 3 West Valve Group 4 Low Flow Alarm	ON	2
RTU3\Basin_Flex_Train_5_Aborted_Alarm	Train 5 Flex Aborted Alarm	ON	2
RTU3\Basin_Flex_Train_5_Alarm	Flex Failure	ON	2
RTU3\Basin_Flex_Train_6_Aborted_Alarm	Train 6 Flex Aborted Alarm	ON	2
RTU3\Basin_Flex_Train_6_Alarm	Flex Failure	ON	2
RTU3\Oxic_Zone_Aeration_Low_Flow_1	Oxic Zone Aeration Low Flow Alarm Group 1	ON	2
RTU3\Oxic_Zone_Aeration_Low_Flow_2	Oxic Zone Aeration Low Flow Alarm Group 2	ON	2
RTU3\Oxic_Zone_Aeration_Low_Flow_3	Oxic Zone Aeration Low Flow Alarm Group 3	ON	2
RTU3\Oxic_Zone_Aeration_Low_Flow_4	Oxic Zone Aeration Low Flow Alarm Group 4	ON	2
RTU3\Oxic_Zone_Aeration_Low_Flow_5	Oxic Zone Aeration Low Flow Alarm Group 5	ON	2
RTU3\Oxic_Zone_Aeration_Low_Flow_6	Oxic Zone Aeration Low Flow Alarm Group 6	ON	2
RTU3\Oxic_Zone_Aeration_Low_Flow_7	Oxic Zone Aeration Low Flow Alarm Group 7	ON	2
RTU3\Oxic_Zone_Aeration_Low_Flow_8	Oxic Zone Aeration Low Flow Alarm Group 8	ON	2
RTU3\Oxic_Zone_High_DO_1	Oxic Zone High DO Alarm Group 1	ON	2
RTU3\Oxic_Zone_High_DO_2	Oxic Zone High DO Alarm Group 2	ON	2
RTU3\Oxic_Zone_High_DO_3	Oxic Zone High DO Alarm Group 3	ON	2
RTU3\Oxic_Zone_High_DO_4	Oxic Zone High DO Alarm Group 4	ON	2
RTU3\Oxic_Zone_High_DO_5	Oxic Zone High DO Alarm Group 5	ON	2
RTU3\Oxic_Zone_High_DO_6	Oxic Zone High DO Alarm Group 6	ON	2
RTU3\Oxic_Zone_High_DO_7	Oxic Zone High DO Alarm Group 7	ON	2
RTU3\Oxic_Zone_High_DO_8	Oxic Zone High DO Alarm Group 8	ON	2
RTU3\V_3130A_Alarm_Fail	Valve Failure	ON	2
RTU3\V_3130B_Alarm_Fail	Valve Failure	ON	2
RTU3\V_3135A_Failure	Valve Failure	ON	2
RTU3\V_3135B_Failure	Valve Failure	ON	2
RTU3\V_3410_5_Alarm_Fail	Valve Failure	ON	2
RTU3\V_3410_6_Alarm_Fail	Valve Failure	ON	2
RTU3\V_3420_5_Alarm_Fail	Valve Failure	ON	2
RTU3\V_3420_6_Alarm_Fail	Valve Failure	ON	2
RTU3\V_3430_5_Alarm_Fail	Valve Failure	ON	2
RTU3\V_3430_6_Alarm_Fail	Valve Failure	ON	2
RTU3\V_3440_5_Alarm_Fail	Valve Failure	ON	2
RTU3\V_3440_6_Alarm_Fail	Valve Failure	ON	2
RTU3\V_3450_5_Alarm_Fail	Valve Failure	ON	2
RTU3\V_3450_6_Alarm_Fail	Valve Failure	ON	2
RTU3\V_3460_5_Alarm_Fail	Valve Failure	ON	2
RTU3\V_3460_6_Alarm_Fail	Valve Failure	ON	2
RTU3\V_3470_5_Alarm_Fail	Valve Failure	ON	2
RTU3\V_3470_6_Alarm_Fail	Valve Failure	ON	2
RTU3\V_3480_5_Alarm_Fail	Valve Failure	ON	2
RTU3\V_3480_6_Alarm_Fail	Valve Failure	ON	2
RTU3\V_3710_5_Alarm_Fail	Valve Failure	ON	2
RTU3\V_3710_6_Alarm_Fail	Valve Failure	ON	2
RTU3\V_3720_5_Alarm_Fail	Valve Failure	ON	2
RTU3\V_3720_6_Alarm_Fail	Valve Failure	ON	2
RTU3A\BASIN_1_NO_FM_SELECTED	BASIN 1 NO FLOW METER SELECTED	ON	2
RTU3A\BASIN_2_NO_FM_SELECTED	BASIN 2 NO FLOW METER SELECTED	ON	2
RTU3A\BASIN_3_NO_FM_SELECTED	BASIN 3 NO FLOW METER SELECTED	ON	2
RTU4\UP_PRI_ONE	UPLAND PRIORITY ONE ALARM	ON	2
RTU5\MX_6010_Alarm_Fail	Pump Fail	ON	2
RTU5\MX_6010_Alarm_FTStart	Mixer Fail to Start	ON	2
RTU5\MX_6010_Alarm_FTStop	Mixer Fail to Stop	ON	2
RTU5\RP4_PRESS_MODE	RP4 PRESS MODE	ON	2
RTU5\RP4_PRESS_MODE_CALL	RP4 CALL FOR PRESS MODE	ON	2
RTU6\Clar1_LEL_Warn	Clarifier 1 LEL Warning	ON	2
RTU6\Clar2_LEL_Warn	Clarifier 2 LEL Warning	ON	2
RTU6\LIT_4101_HMI_High_Level_Alarm	Secondary Scum Pit High Level Alarm	ON	2
RTU6\MX_2010_COS	MX_2010 Fail to Start/Stop	ON	2
RTU6\P_3550_Alarm_Fail	Pump Fail	ON	2
RTU6\P_3550_Alarm_FTStart	Pump Fail to Start	ON	2
RTU6\P_3550_Alarm_FTStop	Pump Fail to Stop	ON	2
RTU6\P_3560_Alarm_Fail	Pump Fail	ON	2

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Tag Name	Description	Direction	Severity
RTU6\P_3560_Alarm_FTStart	Pump Fail to Start	ON	2
RTU6\P_3560_Alarm_FTStop	Pump Fail to Stop	ON	2
RTU6\P_4210_COS	P_4210 Fail to Start/Stop	ON	2
RTU6\P_4220_COS	P_4220 Fail to Start/Stop	ON	2
RTU6\P_4230_COS	P_4230 Fail to Start/Stop	ON	2
RTU6\P_7110_Alarm_Fail	Pump Fail	ON	2
RTU6\P_7110_Alarm_FTStart	Pump Fail to Start	ON	2
RTU6\P_7110_Alarm_FTStop	Pump Fail to Stop	ON	2
RTU6\P_7110_Alarm_Hi_Press	High Discharge Pressure	ON	2
RTU6\P_7120_Alarm_Fail	Pump Fail	ON	2
RTU6\P_7120_Alarm_FTStart	Pump Fail to Start	ON	2
RTU6\P_7120_Alarm_FTStop	Pump Fail to Stop	ON	2
RTU6\P_7120_Alarm_Hi_Press	High Discharge Pressure	ON	2
RTU6\P_7210_Alarm_Fail	Blender Fail	ON	2
RTU6\P_7210_Alarm_FTStart	Blender Fail to Start	ON	2
RTU6\P_7210_Alarm_FTStop	Blender Fail to Stop	ON	2
RTU6\P_7220_Alarm_Fail	Blender Fail	ON	2
RTU6\P_7220_Alarm_FTStart	Blender Fail to Start	ON	2
RTU6\P_7220_Alarm_FTStop	Blender Fail to Stop	ON	2
RTU6\SLC_2110_COS	Change of State Alarm	ON	2
RTU6\SLC_2120_Alarm_Fail	Sludge Collector Fail	ON	2
RTU6\SLC_2120_Alarm_FTStart	Sludge Collector Fail to Start	ON	2
RTU6\SLC_2120_Alarm_FTStop	Sludge Collector Fail to Stop	ON	2
RTU6\SLC_2120_Alarm_Over_Torq	High Torque	ON	2
RTU6\SLC_2120_COS	Change of State Alarm	ON	2
RTU6\SLC_4110_Alarm_Fail	Sludge Collector Fail	ON	2
RTU6\SLC_4110_Alarm_FTStart	Sludge Collector Fail to Start	ON	2
RTU6\SLC_4110_Alarm_FTStop	Sludge Collector Fail to Stop	ON	2
RTU6\SLC_4110_Alarm_Over_Torq	High Torque	ON	2
RTU6\SLC_4120_COS	Change of State Alarm	ON	2
RTU6\SLC_4130_COS	Change of State Alarm	ON	2
FILT\1_IN_BACKWASH	Unit #1 In Back Wash To Scada	ON	3
FILT\1_IN_FLUSH	Unit #1 In Flush To Scada	ON	3
FILT\2_IN_BACKWASH	Unit #2 In Back Wash To Scada	ON	3
FILT\2_IN_FLUSH	Unit #2 In Flush To Scada	ON	3
FILT\3_IN_BACKWASH	Unit #3 In Back Wash To Scada	ON	3
FILT\3_IN_FLUSH	Unit #3 In Flush To Scada	ON	3
FILT\4_IN_BACKWASH	Unit #4 In Back Wash To Scada	ON	3
FILT\4_IN_FLUSH	Unit #4 In Flush To Scada	ON	3
FILT\5_IN_BACKWASH	UNIT #5 IN BACKWASH TO SCADA	ON	3
FILT\5_IN_FLUSH	UNIT #5 IN FLUSH	ON	3
FILT\6_IN_BACKWASH	UNIT #6 IN BACKWASH TO SCADA	ON	3
FILT\6_IN_FLUSH	UNIT #6 IN FLUSH	ON	3
FILT\7_IN_BACKWASH	UNIT #7 IN BACKWASH TO SCADA	ON	3
FILT\7_IN_FLUSH	UNIT #7 IN FLUSH	ON	3
FILT\8_IN_BACKWASH	UNIT #8 IN BACKWASH TO SCADA	ON	3
FILT\8_IN_FLUSH	UNIT # 8 IN FLUSH	ON	3
RTU2\EFF_GT_NOT_AUTO	HOA NOT IN AUTO	ON	3
Win911_Alarm_HB		ON	8