State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
320 West 4th Street, Suite 200, Los Angeles

FACT SHEET

WASTE DISCHARGE REQUIREMENTS FOR CITY OF LOS ANGELES (Donald C. Tillman Water Reclamation Plant) (File No. 70-117)

NPDES No. CA0056227
Public Notice No.: 06-056

PLANT ADDRESS	**MAILING ADDRESS**
Donald C. Tillman Water Reclamation Plant	City of Los Angeles
6100 Woodley Avenue	433 South Springs Street, Suite 400
Van Nuys, CA 91406	Los Angeles, CA 90013
Contact Person: Hiddo Netto	Contact Person: Rita L. Robinson
Title: Plant Manager	Title: Director
Phone No.: 818-778-4121	Bureau of Sanitation
	Phone No.: 213-473-7999

I. PUBLIC PARTICIPATION

1. The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) is considering issuance of Waste Discharge Requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the above-referenced plant. As an initial step in the WDR process, the Regional Board staff has developed tentative WDRs. The Regional Board encourages public participation in the WDR adoption process.

   A. Public Comment Period

   Interested persons are invited to submit written comments on the tentative WDRs for the City of Los Angeles (City or Discharger), Donald C. Tillman Water Reclamation Plant (Tillman WRP). Comments should be submitted either in person or by mail to:

   EXECUTIVE OFFICER
   California Regional Water Quality Control Board, Los Angeles Region
   320 W. 4th Street, Suite 200
   Los Angeles, CA 90013
   ATTN: Don Tsai

To be fully responded to by staff and considered by the Regional Board, written comments should be received by 5:00 p.m. on November 2, 2006.

B. Public Hearing

The Regional Board will consider the tentative WDRs and NPDES permit during a public hearing on the following date, time and place:

Date: December 14, 2006
Time: 9:00 a.m.
Location: Metropolitan Water District of Southern California
Board Room
700 North Alameda Street
Los Angeles, California

Interested parties and persons are invited to attend. At the public hearing, the Regional Board will hear testimony, if any, pertinent to the waste discharge that will be regulated and the proposed 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/losangeles/* where you can access the current agenda for changes in dates and locations, and any special hearing procedures.

C. Information and Copying

Copies of the tentative WDRs and NPDES permit, report of waste discharge, Fact Sheet, comments received, and other documents relative to this tentative WDRs and permit are available at the Regional Board office. Inspection and/or copying of these documents are by appointment scheduled between 8:00 a.m. and 4:50 p.m., Monday through Friday, excluding holidays. For appointment, please call the Los Angeles Regional Board at (213) 576-6600.

D. Register of Interested Persons

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

E. Waste Discharge Requirements Appeals

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

State Water Resources Control Board
Office of Chief Counsel
ATTN: Elizabeth Miller Jennings
P.O. Box 100
Sacramento, CA 95812

II. PURPOSE OF ORDER

The City discharges tertiary-treated municipal wastewater from the Tillman WRP under WDRs contained in Order No. 98-046, adopted by this Regional Board on June 15, 1998. This Order serves as the permit under the NPDES program (NPDES No. CA0056227). The Discharger's permit was administratively extended beyond the May 10, 2003 expiration date. The City filed a Report of Waste Discharge (ROWD) and applied for renewal of its WDRs and NPDES permit on July 1, 2002. Therefore, the Discharger's permit has been administratively extended until the Regional Board acts on the new WDRs and NPDES permit.

III. LITIGATION HISTORY-CHRONOLOGY

1. **1998 –** On July 14, 1998, the City filed a petition with the State Water Resources Control Board (State Board) for a stay of Order No. 98-046. The State Board dismissed the City's petition for review and its request for stay without review for the Donald C. Tillman WRP's NPDES permit.

2. **1999 –** On December 23, 1999, the City filed a Petition for a Writ of Mandate and application for stay challenging their permit (Order No. 98-046) and their associated Time Schedule Orders and Cease and Desist Order. On December 29, 1999, the Court issued a stay of the contested effluent limits contained in these Orders.

3. **2000 –** On January 20, 2000, the City filed an Amended Petition for Writ of Mandate and request for Stay challenging their permit (Order No. 98-046) and their Time Schedule Order (Order No. 98-070). On August 21, 2000, the City filed a complaint for declaratory and injunctive relief with the United States District Court, Central District of California, Western Division, (*City of Los Angeles, City of Burbank, City of Simi Valley, and County Sanitation Districts of Los Angeles County, by and through their agent County Sanitation District Number 2 of Los Angeles County vs. United States Environmental Protection Agency, and Alexis Strauss, Director, Water Division, United States Environmental Protection Agency, Region IX [Case No. BS 060 957]*). The matter went before the court on August 31 and September 1, 2000. On November 30, 2000, the Superior Court filed its Decision on the matter [*Case No. BS 060 957*] and ordered counsel for the petitioner to prepare, serve, and lodge a proposed Statement of Decision, Judgement and Writ, on or before December 14, 2000 with a final decision overturning portions of USEPA's partial approval letter of May 26, 2000 related to the conditional potential MUN (P* MUN) beneficial use for surface waters. Respondents were given until December 28, 2000, to serve and file objections.

4. **2001 –** Respondents filed objections on January 19, 2001, and Petitioners lodged a revised proposed Statement of Decision, Judgement of Writ, and a response to Respondent's objections on February 13, 2001. On April 4, 2001, the Superior Court

signed and filed its final Statement of Decision, ordering that the judgement be entered granting the Petitioners' petition for a Writ of Mandamus, commanding the Respondents to vacate the Contested Effluent Limits, and ordering the adoption of new effluent limits at a new hearing. In June 2001, the Regional Board filed a notice of appeal with the State Court of Appeals contesting several, but not all, issues in the Superior Court's decision.

5. **2002 –** In its December 24, 2002, opinion, the Court of Appeal unanimously reversed the trial court decision; and, made the following determinations:

   A. **Cost Issues –** For existing objectives, water quality-based effluent limitations (WQBELs) must be developed without reference to costs and Clean Water Act (CWA) Section 301(b)(1)(C) does apply to POTWs. (POTWs are not exempt from WQBELS.)

   B. **CEQA Requirements** – The Environmental Impact Report (EIR) exemption in Section 13389 of the Water Code means that "CEQA imposes no additional procedural or substantive requirements" other than compliance with the CWA and Porter-Cologne Act. (NPDES permits are exempt from CEQA.)

   C. **Compliance Schedules –** Compliance schedules may be included within a NPDES permit only if the applicable water quality standards or water quality control plans permit inclusion of compliance schedules. (Compliance schedules must be contained in a Time Schedule Order or similar enforcement document if the Basin Plan does not allow the inclusion of compliance schedules in a NPDES permit.)

   D. **Narrative Toxicity –** The Regional Board's narrative toxicity objective which was upheld does not violate 40 CFR 131.11(a)(2). (The narrative standard can remain in NPDES permits as an effluent limitation.)

   Although the Court of Appeal decided in favor of the State Board on every issue they appealed, the December 24, 2002, decision was not certified for publication at that time.

6. **2003 –** In January 2003, the Court of Appeals took action to reconsider their decision. In February 2003, the Court of Appeals issued its final decision reversing the Superior Court's ruling on the issues appealed. On August 14, 2003, after rehearing, the Court of Appeals issued its final decision reversing the Superior Court's ruling on the issues appealed. The City of Los Angeles and City of Burbank (Cities) filed a petition with the Supreme Court on September 23, 2003. On November 19, 2003, the Supreme Court granted review of the Cities' Petition for Review of the underlying Court of Appeal decision. The granting of review automatically supercedes the Court of Appeal's decision and makes the decision no longer valid and precedent citable in court documents. The Cities submitted their opening briefs on December 19, 2003.

7. **2004 –** On March 8, 2004, the State Board filed their Answer to the Cities' Opening Brief to the Supreme Court. The Cities submitted their reply to the State Board's

Answer on March 28, 2004. On April 25, 2004, six amicus curiae briefs were submitted to the Supreme Court in favor of the Cities' position. One amicus curiae brief was submitted in opposition to the Cities' position by the NRDC. On May 10, 2004, the CA Supreme Court accepted all seven amicus curiae briefs. Answers to the amicus briefs were originally due on May 26, 2004; however, the State Board asked for an extension until June 25, 2004. The Cities did the same and both extensions were granted. The answers to the amicus briefs were submitted on June 25, 2004.

8. **2005 –** Oral arguments for the Supreme Court were heard on January 4, 2005. An order from the Supreme Court limited the issue for oral argument to "Whether California's Porter-Cologne Water Quality Control Act requires a Regional Water Quality Control Board to take into account compliance costs when it sets specific pollutant limitations in a wastewater discharge permit issued to a publicly owned wastewater treatment facility." On April 4, 2005, the California Supreme Court issued its decision, affirming the judgement of the Court of Appeal, reinstating the wastewater discharge permits to the extent that the specified numeric limitations on chemical pollutants are necessary to satisfy federal Clean Water Act requirements for treated wastewater. Ordinarily the Court's decision would become final 30 days after issuance (i.e., it would have become final on May 4, 2005); however, both the Water Boards and the Cities filed petitions for rehearing. The Supreme Court reviewed the petitions for rehearing and remanded one remaining issue back to the trial court for resolution. The trial court was required to determine whether or not the permit restrictions were "more stringent" than required by federal law.

9. **2006 –** On June 28, 2006, the judge signed the Statement of Decision. The Court found that the following constituents had numeric effluent limitations more stringent than required to meet the federal law existing at the time that the Regional Board adopted the NPDES permit: benzene, bis(2-ethylhexyl)phthalate, cadmium, chromium VI, 1,2-dichloroethane, ethylbenzene, lead, selenium, tetrachloroethylene, toluene, and toxaphene. It was also ordered that the contested effluent limits contained in Order No. 98-046 be vacated; that the respondents file a return (a revised NPDES permit) with the Court by December 31, 2006; and that the stay of contested effluent limitations remain in effect until the return is served and filed by the Respondents with the Court.

IV. DESCRIPTION OF FACILITY AND TREATMENT PROCESS

1. The Tillman WRP is a publicly owned treatment work (POTW) owned and operated by the City's Department of Public Works, Bureau of Sanitation. The Tillman WRP is located at 6100 Woodley Avenue, Van Nuys, California. Figure 1 is the vicinity map for the Tillman WRP. The Plant consists of two identical treatment trains, each with a dry weather average design capacity of 40 million gallons per day (mgd), for a total 80 mgd. In 2005, the total tertiary-treated municipal wastewater discharged to the Los Angeles River, at Van Nuys, California, was approximately 38 mgd.

2. The Tillman WRP is one of the three upstream water reclamation plants in the Hyperion Service Area (HSA) owned by the City of Los Angeles. The other two upstream plants are the Los Angeles/Glendale Water Reclamation Plant and the Burbank Water

Reclamation Plant.

The Bureau maintains and operates the Hyperion Treatment System which collects, treats, and processes municipal wastewater from domestic, commercial, and industrial sources from the entire city (except the Terminal Island Service Area surrounding the Los Angeles Harbor area) and from a number of cities and other agencies under contractual agreements. Sewage enters the Tillman WRP via both the Additional Valley Outfall Relief Sewer (AVORS) and the East Valley Interceptor Sewer (EVIS) from the communities of Chatsworth, Canoga Park, West Hills, Woodland Hills, Northridge, Granada Hills, and Van Nuys, and from the City of San Fernando, the Las Virgenes Municipal Water District, and the Triunfo Canyon Sanitation District under contractual agreements. There are approximately 4 million people living in the Hyperion Service Area with approximately one million people in the San Fernando Valley served by the Tillman Plant.

In case of plant operational problems or a need for plant shutdown, wastewater can be diverted back to the AVORS for treatment at the Hyperion Treatment Plant.

3. The treatment system at the Tillman WRP currently consists of grit removal, screening, flow equalization, primary sedimentation, nitrification and denitrification (NDN) activated sludge biological treatment with fine pore aeration, secondary clarification, coagulation, mixed dual media filtration (Hardinge Filters), disinfection by chlorination, and dechlorination. No facilities are provided for solids processing at the plant. Solids from the Plant are returned to the collection system for ultimate treatment and processing at the Hyperion Treatment Plant. Solids returned to the sewer consist of grit, primary and secondary sludge and skimmings, and filter backwash (approximately 10 mgd). Figure 2 is the schematic of wastewater flow.

   In order to achieve compliance with the ammonia Basin Plan objectives, the City began to test the different NDN treatments, including Modified Ludzack-Ettinger (MLE) Process, Enhanced Modified Ludzack-Ettinger (eMLE) Process, Step-Feed Process. The City expects to complete construction of the NDN treatment facility in September 2007, and anticipates taking 90 days to optimize operation of the NDN facilities.

   A. **Grit removal –** Grit removal is used to remove as much sand and silt as possible to prevent wear on pumps, accumulations in aeration tanks, clarifiers, and digesters, and clogging of sludge piping.

   B. **Screen –** Screen used in the wastewater treatment plant is to remove coarse solids, which are typical wood, plastic materials, and rags.

   C. **Flow equalization –** Flow equalization basins provide a relatively constant flow rate to the subsequent treatment operations and processes; thus, it enhances the degree of treatment. Not only does equalization dampen the daily variation in the flow rate, but it also dampens the variation in the concentration of effluent BOD_5, suspended solids, and so on, through the day.

   D. **Primary sedimentation –** The main objective of primary sedimentation is to remove solids from the wastewater by gravity. The heavier solids (settleable

solids) precipitate out and are scraped out of the primary sedimentation basin. The lighter solids float to the top and are skimmed off. However, some solids remain in suspension.

E. **NDN activated sludge –** The NDN activated sludge treatment system in which the incoming wastewater is mixed with existing biological floc (microorganisms, bugs, or activated sludge) is processed in an aeration basin. Activated sludge converts non-settleable and dissolved organic contaminants into biological floc, which can then be removed from the wastewater with further treatment.

F. **Secondary sedimentation with coagulation –** The main objective of secondary sedimentation is to remove biological floc from the wastewater. Chemicals, such as aluminum sulfate (alum) and polymer, may be added as part of the treatment process to enhance solids removal. Alum causes the biological floc to combine into larger clumps (coagulate), thus making them easier to remove.

G. **Mixed dual media filtration –** The filtration process is used to remove or reduce suspended or colloidal matter from a liquid stream, by passing the water through a bed of graded granular material. Filters remove the solids that the secondary sedimentation process did not remove, thus, improving the disinfection efficiency and reliability.

H. **Chlorination –** Sodium hypochlorite is used as a disinfectant in the Tillman WRP. Disinfectant is added to the treated effluent prior to the filters to destroy bacteria, pathogens and viruses, and to minimize algal growth in the filters. Additional disinfectant may be dosed prior to the chlorine contact tank.

I. **Dechlorination –** Sodium bisulfate is added to neutralize the chlorine prior to the discharge of treated water to the Los Angeles River.

4. In order to achieve compliance with the ammonia Basin Plan objectives, the City began to test the different NDN treatments, including Modified Ludzack-Ettinger (MLE) Process, Enhanced Modified Ludzack-Ettinger (eMLE) Process, Step-Feed Anoxic Process, and Nitrification combined with the use of Denitrifying Filters with methanol addition (in the third quarter of 1998). The City expects to complete construction of the NDN treatment facility in September 2007, and anticipates taking 90 days to optimize operation of the NDN facilities.

5. Flow to the plant consists of domestic, commercial and industrial wastewater. For Fiscal Year 2005, industrial wastewater represented approximately 10 % of the total flow to the plant.

6. The United States Environmental Protection Agency (USEPA) and the Regional Board have classified the Tillman WRP as a major discharger. It has a Threat to Water Quality and Complexity rating of 1-A pursuant to CCR, Title 23, Section 2200.

7. Pursuant to 40 CFR, Part 403, the City developed, and has been implementing, an industrial wastewater Pretreatment Program for the Tillman WRP, which has been approved by the USEPA and the Regional Board.

8. The use of recycled water is regulated under Water Reclamation Requirements contained in Order No. 70-117. Order No. 70-117 was readopted on March 24, 1986, through blanket Order No. 86-039 and the same Order was readopted again on May 12, 1997, through blanket Order No. 97-072. Current uses include maintaining flows in the Japanese Garden Lake, Lake Balboa, and the Wildlife Lake, located in the Sepulveda Basin. Other approved cases include landscape irrigation and fire protection.

9. ***Storm Water Management*** – The City collects the initial flush of each storm event at the Tillman WRP and diverts it to the AVORS for treatment. After collection of the initial flush, the remaining stormwater is discharged to the Los Angeles River. The City has filed a Notice of Intent to comply with State Board's General NPDES Permit No. CAS000001 and Waste discharge requirements for Discharges of Storm Water Associated with Industrial Activities; has developed a Storm Water Pollution Prevention Plan (SWPPP) for storm water that does not enter the treatment system; and, has retained coverage under the General Industrial Storm Water permit.

   The industrial stormwater discharge is not regulated under this individual NPDES permit, but is instead regulated under the Statewide General Stormwater Permit for Industrial discharges.

V. DISCHARGE OUTFALL AND RECEIVING WATER DESCRIPTION

1. The Tillman WRP discharges tertiary-treated effluent to the upper Los Angeles River, a water of the United States, at a point located 878 feet downstream of the Sepulveda Dam Spillway (Discharge Serial No. 008: Latitude 34^0 09' 54", Longitude 118^0 28' 15"), (see Figure 1).

2. The Tillman WRP is located within the Sepulveda Dam Basin. The 100-year flood water surface elevation under the "U.S. Corps of Engineers Modified Spillway Gate Operating Plan" for the Sepulveda Dam Basin is 714.4 feet. The City's Department of Public Works in 1994 completed construction of a berm surrounding the Tillman Plant to a finished elevation of 715 feet. The City also completed construction in 1993 of Discharge Serial No. 008, located downstream of the Sepulveda Dam and downstream of Discharge Serial No. 001, which was formerly used as the discharge outfall for the Plant prior to the use of Discharge Serial No. 008. Discharge Serial No. 001 is now inactive but is still in place. The berm and new outfall (Discharge Serial No. 008) were measures necessary to protect the Plant from flood conditions within the Sepulveda Flood Control Basin.

3. The City is currently using treated effluent to maintain the Japanese Garden, the recreation lake (Lake Balboa), and the Wildlife Lake. The Wildlife and Recreation Lakes are operated and maintained by the City's Department of Recreation and Parks. The Department of Recreation and Parks has developed management plans for these lakes, which include measures to be implemented in the operation, maintenance, and monitoring of the Lakes.

4. The Department of Recreation and Parks has used up to 17 mgd of treated effluent in the 27.5-acre Lake Balboa. The treated effluent is discharged from the Plant to the

Lake at the southeast corner of Victory and Balboa Boulevards, Los Angeles, (Discharge Serial No. 002: Latitude 34^0 10' 38", Longitude 118^0 28'20"). The treated effluent flows through the Lake and eventually discharges through weirs, spillways and a bottom drain to three Outfalls: at Bull Creek (Lake Discharge Serial No. 004), Hayvenhurst Channel (Lake Discharge Serial No. 005), and the Los Angeles River (Lake Discharge Serial No. 006). Bull Creek and Hayvenhurst Channel are tributaries to the Los Angeles River above the Estuary (see Figure 1).

5. The Department of Recreation and Parks uses approximately 5 mgd of treated effluent as recycled water for the Wildlife Lake and approximately 2 mgd in Haskell Flood Control Channel during September through May. The treated effluent flows by gravity to the Wildlife Lake located northeast of Burbank Boulevard and Woodley Avenue (Discharge Serial No. 003: Latitude 34^0 10' 38", Longitude 118^0 28' 20"). The treated effluent flows through the 10-acre Wildlife Lake and is discharged to the Haskell Flood Control Channel (Lake Discharge Serial No. 007), thence to the Los Angeles River, above the Estuary (see Figure 1).

   During the summer months, the Wildlife Lake may be drained (for maintenance and to minimize nuisance resulting from mosquito breeding), resulting in as increased discharge of treated effluent to Haskell Flood Control Channel up to 5 mgd.

VI. QUALITY DESCRIPTION

1. From January 1998 to December 2005, the Discharger's discharge monitoring reports showed the following:

   A. Treated wastewater average annual dry weather effluent flow rate of approximately 50 mgd.

   B. Average annual removal rate of >95% and >99%, for BOD and total suspended solids, respectively.

   C. 7-day median and daily maximum coliform values as <1 coliform forming units (MPN)/ 100 ml in the treated wastewater.

2. The characteristics of the wastewater discharged, based on data submitted in the 2005 Annual Summary discharge monitoring report, are as follows in Table F1. The "<" symbol indicates that the pollutant was not detected (ND) at that concentration level. It is not known if the pollutant was present at a lower concentration.

Table F1 - 2005 Annual Summary Effluent Monitoring Summary

CTR#	Constituent	Unit	Average	Maximum	Minimum
	Flow	mgd	38.3	74.0	17.0
	pH	pH units	7.4	7.6	6.8
	Temperature- winter (Nov. – April) summer (May – Oct.)	℉ ℉	72 winter 80 summer	75 82	70 76
	$BOD_{5@20℃}$	mg/L	7	9	5
	Suspended solids	mg/L	<1	2.6	<1

Table F1 - 2005 Annual Summary Effluent Monitoring Summary					
CTR#	**Constituent**	**Unit**	**Average**	**Maximum**	**Minimum**
	Settleable solids	ml/L	<0.1	<0.1	<0.1
	Total dissolved solids	mg/L	614	948	449
	Chloride	mg/L	113	152	82
	Sulfate	mg/L	155	309	103
	Boron	mg/L	0.7	1.0	0.4
	Total Phosphate	mg/L	1.7	2.56	1.15
	Turbidity (24-HR composite)	NTU	2	5	1
	Oil and grease	mg/L	<0.1	<0.1	<0.1
	Fluoride	mg/L	0.8	1.0	0.3
	MBAS	mg/L	0.14	0.20	0.07
	Residual Chlorine (Dechlorinated)	mg/L	<0.7	7.0	<0.1
	Total Coliform	MPN/100mL	<1	2	<1
	Ammonia-N	mg/L	17.5	22.3	17.6
	Organic-N	mg/L	1.7	2.5	1.8
	Nitrate-N	mg/L	0.88	4.57	0.32
	Nitrite-N	mg/L	0.58	1.50	0.34
	Nitrate + Nitrite	mg/L	1.5	5.3	1.2
	Total Nitrogen	mg/L	22.9	25.9	21.3
	Total Hardness	mg/L	228	418	160
1	Antimony	ug/L	1.00	1.45	0.45
2	Arsenic	ug/L	<2.1	3.7	<0.4
3	Beryllium	ug/L	<0.4	<0.4	<0.4
4	Cadmium	ug/L	<0.3	<0.3	<0.3
5	Chromium total	ug/L	<3.3	26.9	<0.1
6	Copper	ug/L	21	29	15
7	Lead	ug/L	<1.2	3	<1
8	Mercury	ug/L	<0.022	<0.022	<0.022
9	Nickel	ug/L	<2.9	24	<1
10	Selenium	ug/L	<1.18	6.7	<0.2
11	Silver	ug/L	0.61	1.38	0.27
12	Thallium	ug/L	<0.13	0.24	<0.01
13	Zinc	ug/L	<39.4	60	<4
14	Cyanide	ug/L	<4	<4	<4
16	2,3,7,8-TCDD (Dioxin)	ng/L	<0.46	<0.97	<0.20
17	Acrolein	ug/L	<2	<2	<2
18	Acrylonitrile	ug/L	<0.31	<0.31	<0.31
19	Benzene	ug/L	<0.22	<0.22	<0.22
20	Bromoform	ug/L	<0.19	<0.19	<0.19
21	Carbon tetrachloride	ug/L	<0.15	<0.15	<0.15
22	Chlorobenzene	ug/L	<0.12	<0.12	<0.12
23	Dibromochloromethane	ug/L	<0.69	2.38	<0.12
24	Chloroethane	ug/L	<0.13	<0.13	<0.13
25	2-Chloroethylvinyl ether	ug/L	<0.5	<0.5	<0.5
26	Chloroform	ug/L	3.16	4.78	2.01

Table F1 - 2005 Annual Summary Effluent Monitoring Summary					
CTR#	**Constituent**	**Unit**	**Average**	**Maximum**	**Minimum**
27	Bromodichloromethane	ug/L	<0.71	2.03	<0.1
28	1,1-Dichloroethane	ug/L	<0.08	<0.08	<0.08
29	1,2-Dichloroethane	ug/L	<0.05	<0.05	<0.05
30	1,1-Dichloroethylene	ug/L	<0.13	<0.13	<0.13
31	1,2-Dichloropropane	ug/L	<0.16	<0.16	<0.16
32	1,3-Dichloropropylene	ug/L	<0.11	<0.11	<0.11
33	Ethylbenzene	ug/L	<0.08	<0.08	<0.08
34	Methyl bromide (Bromomethane)	ug/L	<0.28	<0.28	<0.28
35	Methyl chloride (Chloromethane)	ug/L	<0.36	1.03	<0.14
36	Methylene chloride	ug/L	<0.13	<0.13	<0.13
37	1,1,2,2-Tetrachloroethane	ug/L	<0.11	<0.11	<0.11
38	Tetrachloroethylene	ug/L	<0.16	<0.16	<0.16
39	Toluene	ug/L	<0.08	<0.08	<0.08
40	1,2-Trans-dichloroethylene	ug/L	<0.15	<0.15	<0.15
41	1,1,1-Trichloroethane	ug/L	<0.18	<0.18	<0.18
42	1,1,2-Trichloroethane	ug/L	<0.14	<0.14	<0.14
43	Trichloroethylene	ug/L	<0.17	<0.17	<0.17
44	Vinyl chloride	ug/L	<0.08	<0.08	<0.08
45	2-Chlorophenol	ug/L	<0.09	<0.09	<0.09
46	2,4-Dichlorophenol	ug/L	<0.09	<0.09	<0.09
47	2,4-Dimethylphenol	ug/L	<0.17	<0.17	<0.17
48	2-Methyl-4,6-dinitrophenol	ug/L	<0.4	<0.4	<0.4
49	2,4-Dinitrophenol	ug/L	<0.21	<0.21	<0.21
50	2-Nitrophenol	ug/L	<0.09	<0.09	<0.09
51	4-Nitrophenol	ug/L	<0.06	<0.06	<0.06
52	3-Methyl-4-chlorophenol	ug/L	<0.18	<0.18	<0.18
53	Pentachlorophenol	ug/L	<0.4	<0.4	<0.4
54	Phenol	ug/L	4	8	2
55	2,4,6-Trichlorophenol	ug/L	<0.09	<0.09	<0.09
56	Acenaphthene	ug/L	<0.04	<0.04	<0.04
57	Acenaphthylene	ug/L	<0.06	<0.06	<0.06
58	Anthracene	ug/L	<0.06	<0.06	<0.06
59	Benzidine	ug/L	<5	<5	<5
60	Benzo[a]anthracene	ug/L	<0.09	<0.09	<0.09
61	Benzo[a]pyrene	ug/L	<0.06	<0.06	<0.06
62	Benzo[b]fluoranthene	ug/L	<0.07	<0.07	<0.07
63	Benzo[g,h,I]perylene	ug/L	<0.05	<0.05	<0.05
64	Benzo[k]fluoranthene	ug/L	<0.19	<0.19	<0.19
65	Bis(2-chloroethoxy)methane	ug/L	<0.05	<0.05	<0.05
66	Bis(2-chloroethyl)ether	ug/L	<0.09	<0.09	<0.09
67	Bis(2-chloroisopropyl)ether	ug/L	<0.05	<0.05	<0.05
68	Bis(2-ethylhexyl)phthalate	ug/L	<0.6	1.8	<0.3
69	4-Bromophenyl phenyl ether	ug/L	<0.07	<0.07	<0.07
70	Butylbenzyl phthalate	ug/L	<0.04	<0.04	<0.04

Table F1 - 2005 Annual Summary Effluent Monitoring Summary					
CTR#	**Constituent**	**Unit**	**Average**	**Maximum**	**Minimum**
71	2-Chloronaphthalene	ug/L	<0.07	<0.07	<0.07
72	4-Chlorophenyl phenyl ether	ug/L	<0.04	<0.04	<0.04
73	Chrysene	ug/L	<0.05	<0.05	<0.05
74	Dibenzo[a,h]anthracene	ug/L	<0.05	<0.05	<0.05
75	1,2-Dichlorobenzene	ug/L	<0.06	<0.06	<0.06
76	1,3-Dichlorobenzene	ug/L	<0.05	<0.05	<0.05
77	1,4-Dichlorobenzene	ug/L	1.25	1.77	0.97
78	3,3'-Dichlorobenzidine	ug/L	<0.11	<0.11	<0.11
79	Diethyl phthalate	ug/L	<0.06	<0.06	<0.06
80	Dimethyl phthalate	ug/L	<0.27	<0.27	<0.27
81	Di-n-butyl phthalate	ug/L	<0.30	1.23	<0.07
82	2,4-Dinitrotoluene	ug/L	<0.08	<0.08	<0.08
83	2,6-Dinitrotoluene	ug/L	<0.022	<0.022	<0.022
84	Di-n-octyl phthalate	ug/L	<0.15	<0.15	<0.15
85	1,2-Diphenylhydrazine	ug/L	<0.06	<0.06	<0.06
86	Fluoranthene	ug/L	<0.06	<0.06	<0.06
87	Fluorene	ug/L	<0.05	<0.05	<0.05
88	Hexachlorobenzene	ug/L	<0.07	<0.07	<0.07
89	Hexachlorobutadiene	ug/L	<0.07	<0.07	<0.07
90	Hexachlorocyclopentadiene	ug/L	<2.9	<2.9	<2.9
91	Hexachloroethane	ug/L	<0.07	<0.07	<0.07
92	Indeno[1,2,3-cd]pyrene	ug/L	<0.07	<0.07	<0.07
93	Isophorone	ug/L	<0.07	<0.07	<0.07
94	Naphthalene	ug/L	<0.028	<0.028	<0.028
95	Nitrobenzene	ug/L	<0.05	<0.05	<0.05
96	N-Nitrosodimethylamine (NDMA)	ug/L	<0.17	<0.17	<0.17
97	N-Nitrosodi-n-propylamine	ug/L	<0.13	<0.13	<0.13
98	N-Nitrosodiphenylamine	ug/L	<0.09	<0.09	<0.09
99	Phenanthrene	ug/L	<0.08	<0.08	<0.08
100	Pyrene	ug/L	<0.07	<0.07	<0.07
101	1,2,4-Trichlorobenzene	ug/L	<0.08	<0.08	<0.08
102	Aldrin	ug/L	<0.0016	<0.0016	<0.0016
103	alpha-BHC	ug/L	<0.0023	<0.0023	<0.0023
104	beta-BHC	ug/L	<0.0019	<0.0019	<0.0019
105	gamma-BHC (Lindane)	ug/L	<0.002	<0.002	<0.002
106	delta-BHC	ug/L	<0.0007	<0.0007	<0.0007
107	Chlordane	ug/L	<0.06	<0.06	<0.06
108	4,4-DDT	ug/L	<0.006	<0.006	<0.006
109	4,4-DDE	ug/L	<0.0018	<0.0018	<0.0018
110	4,4-DDD	ug/L	<0.001	<0.001	<0.001
111	Dieldrin	ug/L	<0.0009	<0.0009	<0.0009
112	alpha-Endosulfan	ug/L	<0.0014	<0.0014	<0.0014
113	beta-Endosulfan	ug/L	<0.001	<0.001	<0.001
114	Endosulfan sulfate	ug/L	<0.004	<0.004	<0.004

Table F1 - 2005 Annual Summary Effluent Monitoring Summary					
CTR#	**Constituent**	**Unit**	**Average**	**Maximum**	**Minimum**
115	Endrin	ug/L	<0.007	<0.007	<0.007
116	Endrin aldehyde	ug/L	<0.002	<0.002	<0.002
117	Heptachlor	ug/L	<0.002	<0.002	<0.002
118	Heptachlor epoxide	ug/L	<0.0018	<0.0018	<0.0018
	Polychlorinated biphenyls (PCBs)				
119	Aroclor 1016	ug/L	<5.7	<7	<4.4
120	Aroclor 1221	ug/L	<20.5	<40	<1
121	Aroclor 1232	ug/L	<6.35	<12	<0.7
122	Aroclor 1242	ug/L	<2.7	<3	<2.4
123	Aroclor 1248	ug/L	<15.05	<26	<4.1
124	Aroclor 1254	ug/L	<22.5	<26	<19
125	Aroclor 1260	ug/L	<8.15	<11	<5.3
126	Toxaphene	ug/L	<0.4	<0.4	<0.4
	Mirex	ug/L	<0.008	<0.008	<0.008
	Methoxychlor	ug/L	<0.007	<0.007	<0.007
	2,4-D	ug/L	<0.02	<0.02	<0.02
	2,4,5-TP	ug/L	<0.01	<0.01	<0.01

VII. STUDIES

1. Lake Balboa Fish Tissue Study

A. The Lake Balboa Fish Tissue Study for Tillman WRP was conducted to fulfill a requirement of the Time Schedule Order No. 98-070. The purpose of the Study was to determine the degree of pollutant bioaccumulation, which occurs in fish caught in Lake Balboa and to determine if the human consumption of these fish is likely to cause an unacceptable risk to human health.

B. The Final Report for this Study, submitted by the City on September 29, 2000, concluded that the current monthly average effluent limits for lindane, total DDT, and dieldrin for the Tillman WRP's discharge into Lake Balboa are adequate to protect human health from fish tissue uptake to concentrations likely to cause unacceptable risk to human health.

2. Receiving Water Copper Translator and Hardness Study, and Copper Analyses

A. The City of Los Angeles proposed a site-specific copper conversion factor for the areas downstream of the Tillman WRP based on a study performed by Larry Walker Associates (LWA) (LWA, 2003). For the area downstream of the Tillman WRP, the proposed conversion factors for copper were 0.57 for chronic and 0.72 for acute (Table P2). EPA and the Regional Board expressed concern about the use of these numbers given the lack of consistent relationships between total recoverable and dissolved concentrations in the dataset.

Table P2 - Receiving Water Copper Translator and Hardness for Tillman WRP				
Copper Translator (Dissolved/Total)				
Chronic	0.57			
Acute	0.72			
Hardness (mg/L)				
	Dry Season		Wet Season	
	Above Outfall	Below Outfall	Above Outfall	Below Outfall
Average	733	229	777	325
Median	708	212	752	282
Minimum	588	186	646	222
Maximum	918	434	889	518
N	23	35	9	13

A hardness value of 246 mg/L was used to convert the dissolved metal CTR criteria into the total recoverable metal form. The detailed information is available in Section X.1.B.i. of this Fact Sheet.

B. Suspecting that the relationship between hardness and copper concentrations may be affected by total suspended solids, LWA used partition coefficient modeling to account for variation due to total suspended solids. In this approach, the conversion factor is the dissolved fraction, calculated using a site-specific partition coefficient and total suspended solids. This is in accordance with EPA guidance for calculating the conversion factor (USEPA, 1996) and is allowed for in the SIP (SWRCB, 2000). Using this approach LWA proposed using 0.74 as a chronic conversion factor and 0.92 as an acute conversion factor for the area located downstream of Tillman WRP. Because the revised values were determined according to EPA and SIP guidances, they have been adopted and used in TMDL Resolution R05-006 for the areas of the Los Angeles River located downstream of the Tillman WRP. These conversion factors will be used in Reasonable Potential Analysis for copper in this permit.

C. While all testing requires an ELAP-Certified Laboratory, the City of Los Angeles provided a rationale for selecting non-certified Frontier Geosciences Laboratory, because of its ability to perform testing at low detection limit for copper (0.1 µg/L). There are no California laboratories under ELAP-Certification capable of performing such low-level tests.

   a. On January 9, 2002, the City transmitted documents, containing four items listed below requested by the Regional Board staff, requiring the use of Frontier Geosciences Laboratory to analyze the samples for the Los Angeles River Copper Translator Study.

      i. Standard Operating Procedure;

      ii. Data regarding Detection Limit Studies;

iii. Example of Copper Testing Analytical Runs Including Calibrations, Sample Analysis, Duplicates, and Spikes; and

iv. Performance Evaluation Study Results

b. In accordance with Standard Provisions Applicable to Waste Discharge Requirements, Item 14 "Unless otherwise permitted by the Regional Board Executive Officer, all analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. The Regional Board Executive Officer may allow use of an uncertified laboratory under exceptional circumstances, such as when the closest laboratory to the monitoring location is outside the State boundaries and therefore not subject to certification." Therefore, the Executive Officer approved the City's use of the Frontier Geosciences Laboratory for the low detection analyses of copper for the translator study on February 11, 2002.

3. **Los Angeles River Diurnal Study**

The 2005 Los Angeles River Diurnal Study was submitted to the Regional Board in July 2005. Included herein is a synopsis of the Report and explanation of historical occurrences:

During the hot summer months, the Plant occasionally exceeds the receiving water permit levels for DO and/or temperature. In the past, these exceedances were not considered violations by the City of Los Angeles, based on the results of a small Diurnal Study performed in 1991, which has since been lost due to its storage in an outdated computer format. A new study was conducted from September 2002 to September 2003 to determine the seasonal and diurnal pattern of pH, DO, and temperature in the L.A. River at sampling locations upstream and downstream of the Plant's discharge. The Study also would assess whether any exceedance of the limitations at the downstream station (R-7) are a result of the effluent discharged. Results of this Diurnal Study show that exceedances of DO and temperature at R-7 are caused by the natural seasonal and diurnal pattern of the River or the physical environment of the sampling location, and are not directly a result of the effluent discharged, and should not be considered a violation of the NPDES permit. The results of this Diurnal Study also indicate that the optimum time to sample Receiving Water Station R-7 to obtain a sample representative of the majority of the day, is from 0900 to 1100.

VIII. APPLICABLE LAWS, PLANS, POLICIES, AND REGULATIONS

The requirements contained in the proposed Order are based on the requirements and authorities contained in the following:

1. ***Federal Clean Water Act –*** Section 301(a) of the federal Clean Water Act (CWA) requires that point source discharges of pollutants to a water of the United States must be done in conformance with a NPDES permit. NPDES permits establish effluent limitations that incorporate various requirements of the CWA designed to

protect and to enhance water quality. CWA section 402 authorizes the USEPA or States with an approved NPDES program to issue NPDES permits. The State of California has an approved NPDES program.

2. ***Basin Plan –*** The Regional Board adopted a revised *Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan) on June 13, 1994, and amended it by various Regional Board Resolutions. This updated and consolidated plan represents the Board's master water quality control planning document and regulations. The State Board and the State of California Office of Administrative Law (OAL) approved the revised Basin Plan on November 17, 1994, and February 23, 1995, respectively. On May 26, 2000, the USEPA approved the revised Basin Plan except for the implementation plan for potential municipal and domestic supply (P* MUN) designated surface waterbodies, which is not applicable to this discharge.

Ammonia Water Quality Objective (WQO) – The 1994 Basin Plan contained water quality objectives for ammonia to protect aquatic life, in Tables 3-1 through Tables 3-4. However, those ammonia objectives were revised on April 25, 2002, by the Regional Board, with the adoption of Resolution No. 2002-011, Amendment to the Water Quality Control Plan for the Los Angeles Region to Update the Ammonia Objectives for Inland Surface Waters (including enclosed bays, estuaries and wetlands) with Beneficial Use designations for protection of Aquatic Life. Resolution No. 2002-011 was approved by the State Board, the Office of Administrative Law, and USEPA on April 30, 2003, June 5, 2003, and June 19, 2003, respectively, and are now in effect. The final effluent limitations for ammonia prescribed in this Order are based on the revised ammonia criteria (see Attachment H) and apply at the end of pipe.

Chloride WQO – The 1994 Basin Plan contained water quality objectives for chloride in Table 3-8. However, the chloride objectives for some waterbodies were revised on January 27, 1997, by the Regional Board, with the adoption of Resolution No. 97-02, *Amendment to the Water Quality Control Plan for the Los Angeles Region to Incorporate a Policy for Addressing Levels of Chloride in Discharges of Wastewaters*. Resolution No. 97-02 was approved by the State Board, the Office of Administrative Law, and USEPA on October 23, 1997, January 9, 1998, and February 5, 1998, respectively, and are now in effect. The chloride WQO was revised from 150 mg/L to 190 mg/L, for the following segments of the Los Angeles River:

A. Between Sepulveda Flood Control Basin and Figueroa Street (including Burbank Western Channel only), and,

B. Between Figueroa Street and the estuary (including Rio Hondo below Santa Ana Freeway only).

The final effluent limitations for chloride prescribed in this Order are based on the revised chloride WQOs and apply at the end of pipe.

The Basin Plan (i) designates beneficial uses for surface and groundwater, (ii) sets narrative and numerical objectives that must be attained or maintained to protect the designated (existing and potential) beneficial uses and conform to the State's antidegradation policy, and (iii) includes implementation provisions, programs, and policies to protect all waters in the Region. In addition, the Basin Plan incorporates (by reference) all applicable State and Regional Board plans and policies and other pertinent water quality policies and regulations. The 1994 Basin Plan was prepared to be consistent with all State and Regional Board plans and policies adopted in 1994 and earlier. This Order implements the plans, policies, and provisions of the Board's Basin Plan.

3. ***Sources of Drinking Water Policy –*** On May 19, 1988, the State Water Resources Control Board (State Board) adopted Resolution No. 88-63, *Sources of Drinking Water (SODW) Policy*, which established a policy that all surface and ground waters, with limited exemptions, are suitable or potentially suitable for municipal and domestic supply. To be consistent with State Board's SODW policy, on March 27, 1989, the Regional Board adopted Resolution No. 89-03, Incorporation of Sources of Drinking Water Policy into *the Water Quality Control Plans (Basin Plans) – Santa Clara River Basin (4A)/ Los Angeles River Basin (4B)*.

4. ***Potential Municipal and Domestic Supply (P* MUN) –*** Consistent with Regional Board Resolution No. 89-03 and State Board Resolution No. 88-63, in 1994 the Regional Board conditionally designated all inland surface waters in Table 2-1 of the 1994 Basin Plan as existing, intermittent, or potential for Municipal and Domestic Supply (MUN). However, the conditional designation in the 1994 Basin Plan included the following implementation provision: "no new effluent limitations will be placed in Waste Discharge Requirements as a result of these [potential MUN designations made pursuant to the SODW policy and the Regional Board's enabling resolution] until the Regional Board adopts [a special Basin Plan Amendment that incorporates a detailed review of the waters in the Region that should be exempted from the potential MUN designations arising from SODW policy and the Regional Board's enabling resolution]." On February 15, 2002, as a result of a legal challenge and federal court order, the USEPA clarified its partial approval (May 26, 2000) of the 1994 Basin Plan amendments and acknowledged that the conditional designations do not currently have a legal effect, do not reflect new water quality standards subject to USEPA review, and do not support new effluent limitations based on the conditional designations stemming from the SODW Policy until a subsequent review by the Regional Board finalizes the designations for these waters. This permit is designed to be consistent with the existing Basin Plan.

5. ***State Implementation Plan (SIP) and California Toxics Rule (CTR) –*** The State Board adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (also known as the State Implementation Plan or SIP) on March 2, 2000. The SIP was amended by Resolution No. 2000-30, on April 26, 2000, and the Office of Administrative Law approved the SIP on April 28, 2000. On this date, the SIP became effective 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 applies to discharges of toxic pollutants in the inland surface waters,

enclosed bays and estuaries of California which are subject to regulation under the State's Porter-Cologne Water Quality Control Act (Division 7 of the Water Code) and the Federal Clean Water Act (CWA). This policy also establishes the following:

A. Implementation provisions for priority pollutant criteria promulgated by USEPA through the CTR and for priority pollutant objectives established by Regional Boards in their Basin Plans;

B. Monitoring requirements for priority pollutants with insufficient data to determine reasonable potential;

C. Monitoring requirements for 2, 3, 7, 8 – TCDD equivalents; and

D. Chronic toxicity control provisions.

The CTR became effective on May 18, 2000 (codified as 40 CFR Part 131.38). The SIP (which implements CTR criteria) was revised by the State Board on February 24, 2005. The revised SIP became effective on May 31, 2005. Toxic pollutant limits are prescribed in this Order to implement the CTR, the SIP, and Basin Plan.

In the CTR, USEPA promulgated criteria that protects the general population at an incremental cancer risk level of one in a million (10^{-6}), for all priority toxic pollutants regulated as carcinogens. USEPA recognizes that adoption of a different risk factor is outside of the scope of the CTR. However, states have the discretion to adopt water quality criteria that result in a higher risk level, if they can demonstrate that the chosen risk level is adequately protective of the most highly exposed subpopulation, and have completed all necessary public participation. This demonstration has not happened in California. Further, the information that is available on highly exposed subpopulations in California supports the need to protect the general population at the 10^{-6} level. The Discharger may undertake a study, in accordance with the procedures set forth in Chapter 3 of USEPA's Water Quality Standards Handbook: Second Edition (EPA-823-B-005a, August 1994) to demonstrate that a different risk factor is more appropriate. Upon completion of the study, the State Board will review the results and determine if the risk factor needs to be changed. In the mean time, the State will continue using a 10^{-6} risk level, as it has done historically, to protect the population against carcinogenic pollutants.

6. ***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 CFR 131.21, 65 FR 24641, April 27, 2000). Under USEPA's new regulation (also known as the *Alaska Rule*), new and revised standards submitted to USEPA after May 30, 2000, must be approved 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 EPA.

7. ***Beneficial Uses –*** The Basin Plan contains water quality objectives and beneficial uses for the Los Angeles River and its contiguous waters.

A. The beneficial uses of the receiving surface water are:

Los Angeles River upstream of Figueroa Street - Hydrologic Unit 405.21	
Existing:	ground water recharge; contact[3] and non-contact water recreation; warm freshwater habitat; wildlife habitat; and wetland habitat[1].
Potential:	municipal and domestic supply[2]; and industrial service supply.
Los Angeles River downstream of Figueroa Street - Hydrologic Unit 405.15	
Existing:	ground water recharge; contact[3] and non-contact water recreation; and warm freshwater habitat.
Potential:	municipal and domestic supply[2]; industrial service supply; and wildlife habitat.
Los Angeles River downstream of Figueroa Street - Hydrologic Unit 405.12	
Existing:	ground water recharge; contact[3] and non-contact water recreation; warm freshwater habitat; marine habitat; wildlife habitat; and rare, threatened, or endangered species.
Potential:	municipal and domestic supply[2]; industrial service supply; industrial process supply; migration of aquatic organisms; spawning, reproduction, and/or early development; and shellfish harvesting[3].
Los Angeles River Estuary - Hydrologic Unit 405.12	
Existing:	industrial service supply; navigation; contact and non-contact water recreation; commercial and sport fishing; estuarine habitat; marine habitat; wildlife habitat; rare, threatened, or endangered species[4]; migration of aquatic organisms[5]; spawning, reproduction, and/or early development[5]; and wetland habitat[2].
Potential:	shellfish harvesting.

Footnote:

[1]. This wetland habitat may be associated with only a portion of the waterbody. Any regulatory action would require a detailed analysis of the area.

[2]. The potential municipal and domestic supply beneficial uses for the water body is consistent with the State Water Resources Control Board Order No. 88-63 and Regional Board Resolution No. 89-003; however, the Regional Board has only designated the MUN beneficial use and at this time cannot establish effluent limitations designed to protect the conditional designation.

[3]. Access prohibited by Los Angeles County Department of Public Works.

[4]. One or more rare species utilize estuaries and coastal wetlands for foraging and/or nesting.

[5]. Aquatic organisms utilize estuary and coastal wetland, to a certain extent, for spawning and early development. This may include migration into areas, which are heavily influenced by freshwater inputs.

B. The beneficial uses of the receiving groundwater are:

San Fernando Basins (East of Highway 405 overall) – DWR Basin No. [1] 4-12	
Existing:	municipal and domestic supply; industrial service supply; industrial process supply; and agricultural supply.
Los Angeles Coastal Plain (Central Basin) – DWR Basin No. [1] 4-11	
Existing:	municipal and domestic supply; industrial service supply; industrial process supply; and agricultural supply.
Los Angeles Coastal Plain (West Basin) – DWR Basin No. [1] 4-11	
Existing:	municipal and domestic supply; industrial service supply; industrial process supply; and agricultural supply.

Footnote:

[1]. Basins are numbered according to DWR Bulletin No. 118-80 (DWR, 1980).

C. The requirements in this Order are intended to protect designated beneficial uses and enhance the water quality of the watershed. Effluent limits must protect both existing and potential beneficial uses.

8. ***Title 22 of the California Code of Regulations –*** The California Department of Health Services established primary and secondary maximum contaminant levels (MCLs) for inorganic, organic, and radioactive contaminants in drinking water.

These MCLs are codified in Title 22, California Code of Regulations (Title 22). The Basin Plan (Chapter 3) incorporates Title 22 primary MCLs by reference. This incorporation by reference is prospective including future changes to the incorporated provisions as the changes take effect. Title 22 primary MCLs have been used as bases for effluent limitations in WDRs and NPDES permits to protect the groundwater recharge beneficial use when that receiving groundwater is designated as MUN. Also, the Basin Plan specifies that "Ground waters shall not contain taste or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses." Therefore the secondary MCL's, which are limits based on aesthetic, organoleptic standards, are also incorporated into this permit to protect groundwater quality.

MCL Development Process – Health and Safety Code §116365(a) requires the Department of Health Services (DHS), while placing primary emphasis on the protection of public health, to establish a contaminant's maximum contaminant level (MCL) at a level as close as is technically and economically feasible to its public health goal (PHG). The PHG—established by Cal/EPA's Office of Environmental Health Hazard Assessment (OEHHA)—is the contaminant's concentration in drinking water that does not pose any significant risk to health, derived from a human health risk assessment.

As part of the MCL process, DHS evaluates the technical and economic feasibility of regulating a chemical contaminant. Technical feasibility includes an evaluation of commercial laboratories' ability to analyze for and detect the chemical in drinking water, the costs of monitoring, and the costs of treatment required to remove it. Costs are required by law to be considered whenever MCLs are adopted.

Then, the proposed MCL moves through a formal regulatory process. DHS releases proposed regulations for a 45-day public comment period. If any "Post-hearing" changes made in response to comments, DHS subsequently provides an additional 15-day public comment period. Once DHS completes its process, it submits the regulation package, including responses to public comments, to the Office of Administrative Law (OAL). OAL has 30 working days to review the regulation and approve or reject it. If approved by OAL, it is filed with the Secretary of State, becoming effective in 30 calendar days.

Groundwater Recharge – Sections of the Los Angeles River, downstream of the Tillman WRP discharge points, are designated as GWR. Surface water from the Los Angeles River enters the San Fernando Valley and the Central Los Angeles Coastal Plain Groundwater Basins. The depth to groundwater below the Tillman WRP is approximately 47 feet below ground surface. Since ground water from these Basins is used to provide drinking water to people, Title 22-based limits are needed to protect that drinking water supply. By limiting the contaminants in the Tillman WRP discharge, the amount of pollutants entering the surface waters and groundwater basins are correspondingly reduced. Once groundwater basins are contaminated, it may take years to clean up, depending on the pollutant. Compared to surface water pollution, investigations and remediation of groundwater are often more difficult, costly, and extremely slow. For these reasons Title 22-based limits will remain in the NPDES permit.

Groundwater levels in the San Fernando Valley Groundwater Basin (Basin) have been fairly stable over the past 20 years since adjudication of the Basin. However, hydrographs show a variation of approximately 5 feet to 40 feet in the western part of the Basin, 40 feet in the southern and northern parts of the Basin, and a variation of approximately 80 feet in the eastern part of the Basin (Update 2003, Department of Water Resources Bulletin 118 *California's Groundwater*).

Groundwater Data obtained from the Regional Boards' Leaking Underground Storage Tank Program database was reviewed. Groundwater monitoring wells in the vicinity of the Glendale Narrows soft-bottom Los Angeles River area indicate that groundwater ranges between 5 to 55.6 feet below ground surface. The base of the Los Angeles River channel is approximately 24 feet below ground surface (July 2004, Appendix A Details of Channel Geometry, *Modeling Analysis for the Development of TMDLs for Metals in the Los Angeles River and Tributaries*). Therefore groundwater is encountered down to approximately 30 feet below the base of the Los Angeles River. Depending upon groundwater pumping rates and seasonal variation, the soft-bottom reach of the Los Angeles River can act as both a gaining and losing stream situation. Thus, there is the potential for interaction and mixing of groundwater and surface water in the effluent-dominated Los Angeles River. In times of drought, when the groundwater table drops, the Glendale Narrows segment of the Los Angeles River is

more of a losing stream, because surface water percolates to recharge the groundwater basin.

9. ***Antidegradation Policy –*** On October 28, 1968, the State Board adopted Resolution No. 68-16*, Maintaining High Quality Water*, which established an antidegradation policy for State and Regional Boards. The State Board has, in State Board Order No. 86-17 and an October 7, 1987 guidance memorandum, interpreted Resolution No. 68-16 to be fully consistent with the federal antidegradation policy. Similarly, the CWA (section 304(d)(4)(B)) and USEPA regulations (40 CFR, Section 131.12) require that all permitting actions be consistent with the federal antidegradation policy. Together, the State and Federal policies are designed to ensure that a water body will not be degraded resulting from the permitted discharge. The provisions of this Order are consistent with the antidegradation policies.

10. ***Watershed Approach –*** This Regional Board has been implementing a Watershed Management Approach (WMA), to address water quality protection in the Los Angeles Region, as detailed in the Watershed Management Initiative (WMI). The WMI is designed to integrate various surface and ground water regulatory programs while promoting cooperative, collaborative efforts within a watershed. It is also designed to focus limited resources on key issues and use sound science. Information about the Los Angeles River Watershed and other watersheds in the region can be obtained from the Regional Board's web site at *http://www.waterboards.ca.gov/losangeles/* and clicking on the word "Watersheds".

    Pursuant to this Regional Board's watershed initiative framework, the Los Angeles River Watershed Management Area was the targeted watershed for fiscal year 1999-2000. However, the NPDES permit renewals were originally re-scheduled for the 2002-2003 fiscal year so that provisions of the CTR and SIP could be incorporated into the permits. However, delays in the renewal were caused by lengthy litigation.

IX. REGULATORY BASIS FOR EFFLUENT AND RECEIVING WATER LIMITS AND OTHER DISCHARGE REQUIREMENTS

1. ***Water Quality Objectives and Effluent Limits –*** *Water* Quality Objectives (WQOs) and effluent limitations in this permit are based on:

    A. Applicable State Regulations/Policies/Guidances

        a. The plans, policies and water quality standards (beneficial uses + objectives + antidegradation policy) contained in the 1994 *Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*, as amended, including chemical constituent limitations established by incorporating the California Code of Regulations, Title 22, Maximum Contaminant Levels designed to protect the existing drinking water use of the receiving groundwaters;

        b. California Toxics Rule (40 CFR 131.38);

c. The State Board's "Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California" (the State Implementation Plan or SIP); and

d. Administrative Procedures Manual and Administrative Procedure Updates; and,

e. Porter-Cologne Water Quality Act (Water Code § 13000 et seq).

B. Applicable Federal Regulations/Policies/Guidances

a. Federal Clean Water Act;

b. 40 CFR, Parts 122, 131, among others;

c. Best Professional Judgment (pursuant to 40 CFR 122.44);

d. USEPA Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Programs Final May 31, 1996;

e. USEPA Whole Effluent Toxicity (WET) Control Policy (EPA-833-B-94-002), July 1994;

f. Inspectors Guide for Evaluation of Municipal Wastewater Treatment Plants, April 1979 (EPA/430/9-79-010);

g. Fate of Priority Pollutants in Publicly Owned Treatment Works Pilot Study October 1979 (EPA-440/1-79-300);

h. *Technical Support Document for Water Quality Based Toxics Control,* March 1991 (EPA-505/ 2-90-001);

i. *U.S. EPA NPDES Permit Writers' Manual,* December 1996 (EPA-833-B-96-003);

j. USEPA National Recommended Water Quality Criteria: 2002, November 2002 (EPA –822-R-02-047);

k. *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, October, 2002 (EPA-821-R-02-012); and,

l. *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, October 2002 (EPA-821-R-02-013).

Where numeric water quality objectives have not been established in the Basin Plan, 40 CFR Part 122.44(d) specifies that water quality based effluent limits may be set based on USEPA criteria and supplemented where necessary by

other relevant information to attain and maintain narrative water quality criteria to fully protect designated beneficial uses.

2. ***Mass and Concentration Limits –*** 40 CFR section 122.45(f)(1) requires that, except under certain conditions, all permit limits, standards, or prohibitions be expressed in terms of mass units. 40 CFR section 122.45(f)(2) allows the permit writer, at their discretion, to express limits in additional units (e.g., concentration units). The regulations mandate that, where limits are expressed in more than one unit, the permittee must comply with both.

   Generally, mass-based limits ensure that proper treatment, and not dilution, is employed to comply with the final effluent concentration limits. Concentration-based effluent limits, on the other hand, discourage the reduction in treatment efficiency during low-flow periods and require proper operation of the treatment units at all times. In the absence of concentration-based effluent limits, a permittee would be able to increase its effluent concentration (i.e., reduce its level of treatment) during low-flow periods and still meet its mass-based limits. To account for this, this permit includes mass and concentration limits for some constituents; however, the mass-based limits are inappropriate during wet weather flows when plant flows may exceed design capacity. Therefore, during storm events when flows exceed design capacity, only concentration-based limits are applicable.

3. ***Maximum Daily Effluent Limitations –*** Pursuant to 40 CFR section 122.45(d)(2), for POTWs continuous discharges, all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall, unless impracticable, be stated as average weekly and average monthly discharge limitations. It is impracticable to only include average weekly and average monthly effluent limitations for certain pollutants in the permits, because a single daily discharge of certain pollutants, in excess amounts, can cause violations of water quality objectives. The effects of certain pollutants on aquatic organisms are often rapid. For many pollutants, an average weekly or average monthly effluent limitation alone is not sufficiently protective of beneficial uses. As a result, maximum daily effluent limitations, as referenced in 40 CFR section 122.45(d)(1), are included in the permit for certain constituents as discussed in the Fact Sheet accompanying this Order.

4. ***Pretreatment –*** Pursuant to 40 CFR Part 403, the City developed and has been implementing an approved industrial wastewater Pretreatment Program for POTWs owned and operated by the City. The City's Pretreatment Program was approved by USEPA on June 30, 1983. In 1989, USEPA delegated the authority to administer pretreatment programs in California to the State Board and Regional Boards. Thus, this Regional Board became the approval authority of pretreatment programs in the Los Angeles and Ventura Counties. This Order requires the City to continue the implementation of the approved Pretreatment Program and modifications thereof.

5. ***Sludge Disposal –*** To implement CWA Section 405(d), on February 19, 1993, the USEPA promulgated 40 CFR, Part 503 to regulate the use and disposal of municipal sewage sludge. This regulation was amended on September 3, 1999. The regulation requires that producers of sewage sludge meet certain reporting, handling,

and disposal requirements. It is the responsibility of the City to comply with said regulations that are enforceable by USEPA, because California has not been delegated the authority to implement this program.

6. ***Storm Water Management –*** CWA section 402(p), as amended by the Water Quality Act of 1987, requires NPDES permits for storm water discharges. Pursuant to this requirement, in 1990, USEPA promulgated 40 CFR section 122.26 that established requirements for storm water discharges under an NPDES program. To facilitate compliance with federal regulations, on November 1991, the State Board issued a statewide general permit, *General NPDES Permit No. CAS000001 and Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities.* This permit was amended in September 1992 and reissued on April 17, 1997 in State Board Order No. 97-03-DWQ to regulate storm water discharges associated with industrial activity. The Tillman WRP is covered by general NPDES permit No. CAS000001. The City developed and currently implements a Storm Water Pollution Prevention Plan (SWPPP), to comply with the State Board's Order No. 97-03-DWQ.

7. ***Clean Water Act Effluent Limitations –*** Numeric and narrative effluent limitations are established pursuant to Section 301 (Effluent Limitations), Section 302 (Water Quality-Related Effluent Limitations), Section 303 (Water Quality Standards and Implementation Plans), Section 304 (Information and Guidelines [Effluent]), Section 305 (Water Quality Inventory), Section 307 (Toxic and Pretreatment Effluent Standards), and Section 402 (NPDES) of the CWA. The CWA and amendments thereto are applicable to the discharges herein.

8. ***Antibacksliding Policies –*** Antibacksliding provisions are contained in Sections 303(d)(4) and 402(o) of the CWA, and in 40 CFR section 122.44(l). Those provisions require a reissued permit to be as stringent as the previous permit with some exceptions. Section 402(o) of the CWA establishes express statutory language prohibiting the backsliding of effluent limitations. It consists of the following three parts:

   A. Section 402(o)(1) prohibits (subject to exceptions in section 303(d)(4) and/or 402(o)(2)) the relaxation of effluent limitations for two situations:

      a. When a permittee seeks to revise a technology-based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent; and,

      b. When a permittee seeks relaxation of an effluent limitation which is based upon a changed State treatment standard or water quality standard.

   B. Section 402(o)(2) outlines specific exceptions to the general prohibition against establishment of less stringent effluent limitations. Codified in the NPDES regulations at 40 CFR 122.44(l), Section 402(o)(2) provided that the establishment of less stringent limits may be allowed where:

a. There have been material and substantial alterations or additions to the permitted facility which justify this relaxation;

b. New information (other than revised regulations, guidance, or test methods) is available that was not available at the time of permit issuance which would have justified a less stringent effluent limitation;

c. Technical mistakes or mistaken interpretations of the law were made in issuing the permit under Section 402(a)(1)(b);

d. Good cause exists due to events beyond the permittee's control (e.g., acts of God) and for which there is no reasonably available remedy;

e. The permit has been modified under certain specified sections of the CWA; or,

f. The permittee has installed and properly operated and maintained required treatment facilities, but still has been unable to meet the permit limitations (relaxation may only be allowed to the treatment levels actually achieved).

Although the statute identified six exceptions where effluent limitations may be relaxed, the language specifically stated that exception "c" (as listed above) does not apply to water quality-based effluent limitations. Further, exception "e" as listed above only concerns sections of the CWA governing technology-based limits. Thus, exceptions c & e would only apply to technology-based effluent limitations.

C. Section 402(o)(3) prohibits the relaxation of effluent limitations in all cases if a revised effluent limitation would result in a violation of applicable effluent limitation guidelines or water quality standards, including antidegradation requirements. Thus, even if any of the antibacksliding exceptions outlined in either the statute or regulations are applicable, Section 402(o)(3) acts as a floor and restricts the extent to which effluent limitations may be relaxed. This requirement affirms existing provisions of the CWA that require limits, standards, and conditions to ensure compliance with applicable technology-based limits and water quality standards.

9. ***Applicable Water Quality Objectives –*** 40 CFR, Section 122.44(d)(vi)(A) requires the establishment of effluent limitations to attain and maintain applicable narrative water quality criteria to protect the designated beneficial use.

The Basin Plan includes narrative and numeric Water Quality Objectives (WQOs). The CTR promulgates numeric aquatic life criteria for 24 toxic pollutants and numeric human health criteria for 92 toxic pollutants. A compliance schedule provision in the CTR and the SIP authorizes the State to issue schedules of compliance for new or revised NPDES permit limits based on the federal CTR criteria when certain conditions are met. CTR's Compliance Schedule provisions sunsetted on May 18, 2005. After this date, the provisions of the SIP allow for Compliance Schedules not to

exceed five years from issuance or past May 17, 2010, which ever is sooner. Where numeric water quality objectives have not been established in the Basin Plan, 40 CFR section 122.44(d) specifies that WQBELs may be set based on USEPA criteria and supplemented, where necessary, by other relevant information to attain and maintain narrative water quality criteria to fully protect designated beneficial uses.

10. ***Types of Pollutants –*** For CWA regulatory purposes, pollutants are grouped into three general categories under the NPDES program: conventional, toxic, and non-conventional. By definition, there are five conventional pollutants (listed in 40 CFR 401.16) – 5-day biochemical oxygen demand, total suspended solids, fecal coliform, pH, and oil and grease. Toxic or "priority" pollutants are those defined in Section 307(a)(1) of the CWA (and listed in 40 CFR 401.12 and 40 CFR Part 423, Appendix A) and include heavy metals and organic compounds. Non-conventional pollutants are those which do not fall under either of the two previously described categories and include such parameters as ammonia, phosphorous, chemical oxygen demand, whole effluent toxicity, etc.

11. ***Technology-Based Limits for Municipal Facilities (POTWs) –*** Technology-based effluent limits require a minimum level of treatment for industrial/municipal point sources based on currently available treatment technologies while allowing the Discharger to use any available control techniques to meet the effluent limits. The 1972 CWA required POTWs to meet performance requirements based on available wastewater treatment technology. Section 301 of the CWA established a required performance level—referred to as "secondary treatment"—that all POTWs were required to meet by July 1, 1977. More specifically, Section 301(b)(1)(B) of the CWA required that USEPA develop secondary treatment standards for POTWs as defined in Section 304(d)(1). Based on this statutory requirement, USEPA developed national secondary treatment regulations, which are specified in 40 CFR Part 133. These technology-based regulations apply to all POTWs and identify the minimum level of effluent quality to be attained by secondary treatment in terms of five-day biochemical oxygen demand, total suspended solids, and pH.

12. ***Water Quality Based Effluent Limits (WQBELs) –*** Water quality-based effluent limits are designed to protect the quality of the receiving water by ensuring that State water quality standards are met by discharges from an industrial/municipal point source. If, after technology-based effluent limits are applied, a point source discharge will cause, have the reasonable potential to cause, or contribute to an exceedance of an applicable water quality criterion, then 40 CFR 122.44(d)(1) requires that the permit contain a WQBEL. Although the CWA establishes explicit technology-based requirements for POTWs, Congress did not exempt POTWs from additional regulation to protect water quality standards. As a result, POTWs are also subject to WQBELs. This was upheld by the Appellate Court in *the City of Burbank, City of Los Angeles v. State Water Resources Control Board* case. Applicable water quality standards for the Los Angeles River are contained in the Basin Plan and CTR, as described in previous findings.

13. ***Water Quality Based Effluent Limitations for Toxic Pollutants –*** Toxic substances are regulated in this permit by water quality based effluent limitations derived from the 1994 Basin Plan, the CTR, and/or best professional judgment (BPJ)

pursuant to Part 122.44. If a discharge causes, has a reasonable potential to cause, or contribute to a receiving water excursion above a narrative or numeric objective within a State water quality standard, federal law and regulations, as specified in 40 CFR 122.44(d)(1)(i), and in part, the SIP, require the establishment of WQBELs that will protect water quality. As documented in the fact sheet, pollutants exhibiting reasonable potential in the discharge, authorized in this Order, are identified in the Reasonable Potential Analysis (RPA) section and have final effluent limits. Because ambient receiving water data is not available, reasonable potential was not triggered for some of the 126 priority pollutants and final limits cannot be determined at this time. The Discharger is required to gather the appropriate data and the Regional Board will determine if final effluent limits are needed. If final limits are needed, the permit will be reopened and limits will be included in the permit.

14. **Stringency 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 and TSS. Restrictions on BOD and TSS are specified in federal regulations as discussed in findings. 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.

    This Order contains some pollutant restrictions that are more stringent than applicable federal requirements and standards. Specifically, this Order includes limitations for tetrachloroethylene, and bis(2-ethylhexyl)phthalate that are more stringent than applicable federal standards, but that are nonetheless necessary to meet numeric objectives or protect the beneficial uses of both surface water (under the CWA) and groundwaters (under CWC). The rationale for including these limitations is explained in Section XII.2 of this Fact Sheet. In addition, the Regional Water Board has considered the factors in Water Code section 13241, as discussed in Section XII.3 of this Fact Sheet.

    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 California Toxics Rule, the California Toxics Rule is the applicable standard pursuant to 40 C.F.R. 131.38. The scientific procedures for calculating the individual water quality-based effluent limitations are based on the CTR-SIP, which was approved by USEPA on May 1, 2001. All designated 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 [Clean Water] Act" pursuant to 40 C.F.R. 131.21(c)(1). [The remaining water quality objectives (Basin Plan Amendments) implemented by this Order were subsequently approved by USEPA, and are applicable water quality standards pursuant to 40

C.F.R. 131.21(c)(2).] Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the technology-based requirements of the Clean Water Act and the applicable water quality standards for purposes of the Clean Water Act.

15. ***Basis for Effluent Limits for 303(d) Listed Pollutants –*** For 303(d) listed pollutants, the Regional Board plans to develop and adopt total maximum daily loads (TMDLs) which will specify wasteload allocations (WLAs) for point sources and load allocations (LA) for non-point sources, as appropriate. Following the adoption of TMDLs by the Regional Board, NPDES permits will be issued, and where appropriate, reopened to include effluent limits consistent with the assumptions of the TMDL, based on applicable WLAs. In the absence of a TMDL, the permits will include water quality-based effluent limitations derived as provided in the CTR and SIP (if applicable). These effluent limits are based on criteria applied end-of-pipe due to no mixing zone or dilution credits allowed.

16. ***303(d) Listed Pollutants –*** On July 25, 2003, USEPA approved the State's most recent list of impaired waterbodies. The list (hereinafter referred to as the 303(d) list) was prepared in accordance with Section 303(d) of the Federal Clean Water Act to identify specific impaired waterbodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources.

    Los Angeles River, Los Angeles River Estuary, and their tributaries are on the 303(d) List. The following pollutants/stressors, from point and non-point sources, were identified as impacting the receiving waters:

    A. Los Angeles River Reach 4 (Sepulveda Drive to Sepulveda Dam) – Hydrologic Unit 405.21: Ammonia, high coliform count, lead, nutrients, odors, and scum/foam-unnatural;

    B. Los Angeles River Reach 3 (Figueroa Street to Riverside Drive) – Hydrologic Unit 405.21: Ammonia, nutrients (algae), odors, and scum/foam-unnatural;

    C. Los Angeles River Reach 2 (Carson to Figueroa Street) – Hydrologic Unit 405.15: Ammonia, high coliform count, lead, nutrients (algae), odors, oil, scum/foam-unnatural, and trash;

    D. Los Angeles River Reach 1 (Estuary to Carson Street) – Hydrologic Unit 405.12: Total aluminum, ammonia, dissolved cadmium, dissolved copper, and high coliform count, lead, nutrients (algae), pH, scum/foam-unnatural, and dissolved zinc; and,

    E. Los Angeles River Estuary (Queensway Bay) – Hydrologic Unit 405.12: Chlordane, DDT (sediment), Lead (sediment), PCBs (sediment), and Zinc (sediment).

    The Regional Board revised the 303(d) list in 2002 and submitted the draft to the State Board for approval. The State Board had scheduled the draft 303(d) list, dated

October 15, 2002, for approval at two of its meetings, however the item was postponed to hold additional workshops and to allow more time for the public to submit comments. The draft 303(d) list dated October 15, 2002, was revised on January 13, 2003, based on comments received. The draft 303(d) list, dated January 13, 2003, was adopted by the State Board at its February 4, 2003 meeting. The adopted 303(d) list was approved by USEPA on July 25, 2003.

17. ***Relevant Total Maximum Daily Loads –*** A Total Maximum Daily Load (TMDL) is a determination of the amount of a pollutant, from point, nonpoint, and natural background sources, including a margin of safety, which may be discharged to a water quality-limited water body. Section 303(d) of the CWA established the TMDL process. The statutory requirements are codified at 40 CFR, § 130.7. TMDLs must be developed for the pollutants of concern which impact the water quality of water bodies on the 303(d) list. According to the TMDL schedule, under the amended consent decree, Heal the Bay, Santa Monica Bay Keeper, et al. v. Browner, et al. (March 23, 1999), the trash, nitrogen, and metals TMDLs for the Los Angeles River must be completed by March 2001, March 2003, and March 2004, respectively. The coliform TMDL for Los Angeles Harbor is scheduled for completion by March 2006.

A. **Nitrogen Compounds TMDL –** On July 10, 2003, the Regional Board adopted Resolution No. 2003-009, *Amendment to the Basin Plan for the Los Angeles Region to Include a TMDL for Nitrogen Compounds and Related Effects in the Los Angeles River (Nitrogen Compounds TMDL*). On November 19, 2003, the State Board approved the *Nitrogen Compounds TMDL*. However, on December 4, 2003, the Regional Board revised the Nitrogen Compound TMDL by adopting Resolution No. 2003-016*, Revision of Interim Effluent Limits for Ammonia in the Amendment to the Water Quality Control Plan for the Los Angeles Region to Include a TMDL for Nitrogen Compounds and Related Effects in the Los Angeles River*. Resolution No. 2003-016 only revised the portion of the Nitrogen Compounds TMDL containing interim limits for total ammonia as nitrogen, for the Glendale and Tillman WRPs. All other portions of the TMDL remained unchanged. The *Nitrogen Compounds TMDL* went into effect on March 23, 2004, when the Regional Board filed the Notice of Decision with the California Resources Agency.

B. **Trash TMDL –** On January 25, 2001, the Regional Board adopted Resolution No. 01-006. However, on September 19, 2001, the Regional Board reconsidered Resolution No. 01-006 and adopted Resolution No. 2001-013, Amendment to the Basin Plan for the Los Angeles Region to Incorporate a TMDL for Trash in the Los Angeles River (Trash TMDL), which supercedes Resolution No. 01-006. On February 19, 2002, the State Board adopted Resolution No. 02-038, approving the Regional Board's Trash TMDL.

The TMDL subsequently was approved by the State Water Quality Control Board on February 19, 2002 and by OAL on July 16, 2002. Since the State Board and OAL failed to approve the TMDL in time to meet the relevant federal consent decree, USEPA promulgated its own Trash TMDL. Upon approval of the regional Board's TMDL by OAL, USEPA approved the regional Board's LA

River Trash TMDL on august 1, 2002, and deemed it to have superceeded the TMDL promulgated by USEPA.

The City of Los Angeles and the County of Los Angeles both filed petitions and complaints in the Los Angeles Superior Court challenging the LA River Trash TMDL. Subsequent negotiations led to a settlement agreement, which became effective on September 23, 2003. The Court of Appeal rejected the claims litigated by the cities, but found that the Water Board did not adequately complete the environmental checklist. The Court therefore affirmed a writ of mandate issued by the trial court, which orders the Water Board to set aside and not implement the TMDL until it has been brought into compliance with CEQA.

On June 6, the Regional Board set aside the TMDL and Resolution No. 01-013 which established it, pursuant to the writ of mandate. On June 28, 2006, a CEQA scoping meeting was conducted. Regional Board staff revised the CEQA checklist in response to comments received; prepared a Basin Plan Amendment to incorporate the LA River Trash TMDL; and, have scheduled the item for board adoption at the October 24, 2006 public hearing, which was cancelled. A new hearing schedule is not available.

C. **Metal TMDL –** On June 2, 2005, the Regional Board adopted Resolution No. R05-006, *Amendment to the Water Quality Control Plan for the Los Angeles Region to Incorporate a Total Maximum Daily Load for Metals for the Los Angeles River and its Tributaries* (*LA River Metals TMDL*). The LA River Metals TMDL contains Waste Load Allocations for cadmium, copper, lead, and zinc. Reasonable Potential Analysis (RPA) showed exceedances of water quality objectives in receiving water for copper and lead. Therefore, numeric limitations have been prescribed for these metals in this permit. Cadmium and zinc did not show reasonable potential. However, consistent with the SIP Procedures and the TMDL WLAs, effluent limitations for these metals have been prescribed. On October 20, 2005, the State Board approved the *LA River Metals TMDL* by adopting Resolution No. 2005-0077. On December 9, 2005 and December 22, 2005, respectively, OAL and USEPA approved the *LA River Metals TMDL*. It went into effect on January 11, 2006. The numeric limitations are consistent with the WLAs and provisions of the TMDL. "EPA's interpretation of 40 CFR 122.44(d)(1)(vii)(B) is that available waste load allocations must be incorporated into corresponding permit effluent limitations, irrespective of reasonable potential."

The LA River Metals TMDL is in effect. It assigns wasteload allocations (a portion of the loading capacity of the **receiving water**) to each identified priority pollutant source of waste. Wasteload allocations for select metals in a TMDL were calculated by taking the median hardness, referenced in the TMDL staff report, and adjusting the CTR chronic or acute criteria according to Section 1.4.1 and Appendix 3 of the SIP. These TMDL wasteload allocations were not expressed with averaging periods in the TMDL.

Therefore, NPDES permit writers must take the extra step of expressing the assigned wasteload allocations as WQBELs by using the calculation procedures in Section 1.4 of the SIP. This is consistent with the LA River Metals TMDL implementation element. Calculating end of pipe effluent limitations will ensure that the in-stream concentrations of each metal meet water quality standards.

D. **Calculation for End of Pipe Copper Effluent Limitations**

a. The CTR criteria were adjusted for hardness using the following equations:

CMC_{SIP} = WER × (Acute Conversion Factor) × (exp{m_A[ln(hardness)] + b_A})
= 1 × 0.96 × (exp{0.9422[ln(246)] – 1.700})
= 31.38 (µg/L $_{\text{Dissolved Metal}}$)

CCC_{SIP} = WER × (Chronic Conversion Factor) × (exp{m_A[ln(hardness)] + b_A})
= 1 × 0.96 × (exp{0.8545[ln(246)] – 1.702})
= 19.33 (µg/L $_{\text{Dissolved Metal}}$)

b. The WQBELs were calculated using the Site-Specific Translators presented in the following equations:

$CMC_{\text{Total Recoverable Metal}}$ = CMC_{SIP}/Site-specific Translator $_{\text{Acute}}$
= 31.38 (µg/L)/0.92
= 34.11 (µg/L)

$CCC_{\text{Total Recoverable Metal}}$ = CCC_{SIP}/Site-specific Translator $_{\text{Chronic}}$
= 19.33 (µg/L)/0.74
= 26.12 (µg/L)

34.11 µg/L and 26.11 µg/L were entered into the Table A5 to calculate the final copper effluent limitations, which are 34 µg/L and 23 µg/L for daily maximum and monthly average, respectively.

18. ***Mixing Zones, Water Effects Ratio (WER), Translators, and Dilution Credits –*** Mixing zones, dilution credits, WER, and attenuation factors are not authorized in this Order except as consistent with those used in the determination of a wasteload allocation under an approved TMDL. Allowance of a mixing zone is in the Regional Board's discretion under Section 1.4.2 of the SIP and under the Basin Plan (Basin Plan Chapter 4, page 30). If the Discharger subsequently conducts appropriate mixing zone, WER, and dilution credit studies, the Regional Board can evaluate the propriety of granting a mixing zone or establishing dilution credits.

Water Effects Ratio – The City of Los Angeles, in conjunction with the City of Burbank, is pursuing two separate water effect ratio (WER) studies, one for copper

and another for ammonia. Larry Walker Associates (LWA) has been hired by the cities to conduct both the LA River Copper WER Study and the LA River Ammonia WER, according to their respective approved workplans. Technical Advisory Committees (TACs) have been assembled to provide independent review of the proposed WERs. A memorandum dated June 20, 2006, written by LWA, addressed to the Copper WER TAC, presents the results of sampling conducted and recommends different WERs for various reaches of the LA River. Both WER studies have yet to be approved by the Regional Board. Although the WER studies may not be finalized before the NPDES permit goes to the Board for renewal, this permit contains a reopener which allows the modification of final effluent limits, if at the conclusion of necessary studies conducted by the Cities, the Regional Board determines that dilution credits, attenuation factors, water effect ratios, or metal translators are warranted.

Dilution and Attenuation Factors – On July 16, 2003, the State Board adopted Order No. WQO 2003-0009, directing Regional Board staff to work with County Sanitation Districts of Los Angeles County (CSDLAC), once data was provided, to determine whether dilution and attenuation are appropriate factors to consider in developing effluent limits to protect the GWR beneficial use, in the Whittier Narrows WRP NPDES permit. However, this does not apply to the Tillman WRP at this time, because the City has not provided the necessary site-specific data or studies regarding the groundwater basins in the San Fernando Valley and the Central Los Angeles Coastal Plain Groundwater Basin areas.

At this time, the Regional Board has concluded that mixing zones, WER, and dilution credits would be inappropriate to grant, in light of the following factors:

A. The Tillman WRP discharge contributes the largest flow into the Los Angeles watershed in the vicinity of the discharge point it overwhelms the receiving water providing limited mixing and dilution;

B. Even in the absence of the Tillman WRP discharge, the receiving water primarily consists of nuisance flows and other effluents, limiting its ability to assimilate additional waste;

C. Several reaches of the Los Angeles River [including those subject to this Order] are 303(d) listed (i.e., impaired) for certain constituents;

D. Impaired waters do not have the capacity to assimilate pollutants of concern at concentrations greater than the applicable objective;

E. For the protection of the beneficial uses is listed on Section VIII.7;

F. Consistent with Antidegradation Policies;

G. Because a mixing zone study has not been fully conducted; and,

H. Because a hydrologic model of the discharge and the receiving water have not been conducted.

I. Because the final WER study reports have not been approved by the Board.

Translators – Please see Section VII.2. of this Fact Sheet.

19. Specific effluent limitations for each constituent contained in this Order were developed in accordance with the foregoing laws, regulations, plans, policies, and guidance. The specific methodology and example calculations are documented in the Fact Sheet prepared by Regional Board staff that accompanies this Order.

X. REASONABLE POTENTIAL ANALYSIS

1. As specified in 40 CFR Part 122.44(d)(1)(i), permits are required to include limits for all pollutants "which the Director (defined as the Regional Administrator, State Director, or authorized representative in 40 CFR Part 122.2) determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard."

   A. Using the method described in the TSD, the Regional Board has conducted Reasonable Potential Analysis (RPA) for:

      a. **Ammonia and other Nitrogen Species –** RPA was conducted for Ammonia, Nitrate plus Nitrite as Nitrogen, Nitrate Nitrogen, and Nitrite Nitrogen (Table A3 of the accompanying Fact Sheet) using the Discharger's effluent data from their self monitoring reports. Ammonia Nitrogen, Nitrate plus Nitrite as Nitrogen, Nitrate Nitrogen, and Nitrite Nitrogen effluent data is summarized in Table A1 of the accompanying Fact Sheet. Temperature and pH effluent data is summarized in Table A2 of the accompanying Fact Sheet. The RPA compares the effluent data with the Basin Plan water quality objectives (WQOs). The Discharger's projected effluent exceeded the Basin Plan WQOs for Ammonia, Nitrate plus Nitrite as Nitrogen, Nitrate Nitrogen, and Nitrite Nitrogen, during the last permit cycle. Based on this information, the Regional Board has determined that there is a reasonable potential that the discharge will cause or contribute to an exceedance of the Basin Plan WQOs and, consistent with 40 CFR 122.44(d), the Order contains numeric effluent limitations for Ammonia, Nitrate plus Nitrite as Nitrogen, Nitrate Nitrogen, and Nitrite Nitrogen, based on the corresponding Basin Plan WQOs and TMDL Waste Load Allocations.

      b. **MBAS –** RPA was conducted for MBAS (Table A3 of the accompanying Fact Sheet) using the Discharger's effluent data from their self monitoring reports. MBAS is summarized in Table A1 of the accompanying Fact Sheet. The RPA compares the effluent data with the Basin Plan water quality objective (WQOs). The Discharger's projected effluent exceeded the Basin Plan WQOs for MBAS during the last permit cycle. Based on this information, the Regional Board has determined that there is a reasonable potential that the discharge will cause or contribute to an exceedance of the Basin Plan WQOs and, consistent with 40 CFR 122.44(d), the Order contains a numeric effluent limitation for MBAS.

c. **Oil and Grease –** RPA was conducted for Oil and Grease (Table A3 of the accompanying Fact Sheet) using the Discharger's effluent data from their self monitoring reports. Oil and Grease is summarized in Table A1 of the accompanying Fact Sheet. The RPA compares the effluent data with the Basin Plan water quality objective (WQOs). The Discharger's projected effluent exceeded the Basin Plan WQOs for Oil and Grease during the last permit cycle. Based on this information, the Regional Board has determined that there is a reasonable potential that the discharge will cause or contribute to an exceedance of the Basin Plan WQOs and, consistent with 40 CFR.

d. **Acute and Chronic Toxicity –** RPA was conducted for Acute Toxicity (Table A3 of the accompanying Fact Sheet) using the Discharger's effluent data from their self monitoring reports. Acute Toxicity is summarized in Table A1 of the accompanying Fact Sheet. The RPA compares the effluent data with the USEPA's water quality objective (WQOs). The Discharger's projected effluent exceeded the USEPA's WQOs for Acute Toxicity during the last permit cycle. Based on this information, the Regional Board has determined that there is a reasonable potential that the discharge will cause Acute Toxicity in the receiving water and, consistent with SIP section 4, the Order contains an effluent limitation for Acute Toxicity. As for Chronic Toxicity, there is no need to conduct RPA. Because Chronic Toxicity exceeded the 1.0 TUc trigger for the most of time and was as high as 16 TUc.

B. Using the method described in the SIP, the Regional Board has conducted Reasonable Potential Analyses (RPA) using the discharger's effluent data contained in Table A4. The RPA compares the effluent data with water quality objectives in the Basin Plan and CTR.

a. **Reasonable Potential Determination –** The RPA (per the SIP) involves identifying the observed maximum pollutant concentration in the effluent (MEC) for each constituent based on the effluent concentration data. There are three tiers to determining reasonable potential. If any of the following three tiers is triggered, then reasonable potential exists:

i. For the first tier, the MEC is compared with the lowest applicable Water Quality Objective (WQO), which has been adjusted for pH, hardness and translator data, if appropriate. If the MEC is greater than the (adjusted) WQO, then there is reasonable potential for the constituent to cause or contribute to an excursion above the WQO and a water quality-based effluent limitation (WQBEL) is required. However, if the pollutant was not detected in any of the effluent samples and all of the reported detection limits are greater than or equal to the WQO, proceed with Tier 2. The Regional Board exercised its discretion in identifying all available, valid, relevant, representative data and information in accordance with SIP Section 1.2 (Page 3).

ii. For the second tier, the observed maximum ambient background concentration (B) for the pollutant is compared with the adjusted WQO. If B is greater than the adjusted WQO and the pollutant was present in the effluent, then a WQBEL is required, because the effluent has reasonable potential to contribute to an exceedance of the WQO. The Regional Board exercised its discretion in identifying all available, applicable ambient background data in accordance with SIP Section 1.4.3 (Page 16).

iii. For the third tier, other information is used to determine RPA, such as the current CWA 303(d) List. Section 1.3 of the SIP describes the type of information that can be considered in Tier 3.

For all parameters that have reasonable potential to cause or contribute to an exceedance of a WQO/criteria, numeric WQBELs are required. Section 1.4, Step 5 of the SIP (Page 8) states that MDELs shall be used for publicly-owned treatment works (POTWs) in place of average weekly limitations. WQBELs are based on CTR, USEPA water quality criteria, applicable TMDLs, and Basin Plan objectives (among which are the MCLs included by reference).

If the data are unavailable or insufficient to conduct the RPA for the pollutant, or if all reported detection limits of the pollutant in the effluent are greater than or equal to the WQO, the Regional Board shall require additional monitoring, in accordance with Section 1.3. of the SIP.

A numerical limit has not been prescribed for a toxic constituent if it has been determined that it has no reasonable potential to cause or contribute to excursions of water quality standards. However, if the constituent had a limit in the previous permit, and if none of the Antibacksliding exceptions apply, then the limit will be retained. A narrative limit to comply with all water quality objectives is provided in *Standard Provisions* for the priority pollutants, which have no available numeric criteria.

b. **RPA Data –** The RPA was based on effluent monitoring data for January 1998 through November 2005. Table A5 of the Fact Sheet summarizes the RPA, lists the constituents, and where available, the lowest, adjusted WQO, the MEC, the "Reasonable Potential" result, and the limits from the previous permit.

i. **Metals Water Quality Objective –** For metals, the lowest applicable Water Quality Objective (WQO) was expressed as total recoverable, and where applicable, adjusted for hardness. Regional Board Staff used a hardness value of 246 mg/L, which is the value used in the calculation of the Metal TMDL for the Los Angeles River Watershed (Resolution No. R05-006 adopted on June 2, 2005), to convert the dissolved metal CTR criteria into the total recoverable metal form.

ii. **Interim Monitoring Requirements –** In accordance with the SIP, the Regional Board may impose interim monitoring requirements upon the Discharger, so that the Discharger obtains adequate ambient, background water data for priority pollutants upstream of the discharge point as well as suitable effluent data. On June 5, 2001 letter, the Executive Officer directed the Discharger to begin an interim monitoring program for the duration of 18 months, beginning July 2001. The Discharger collected samples on a monthly basis for all priority pollutants, with the exception of asbestos and 2,3,7,8-TCDD that were sampled semiannually, and reporting the results quarterly to the Regional Board. Section 1.3, Step 8, of the SIP authorizes the Regional Board to use the gathered data to conduct RPA, as outlined in Steps 1 through 7, and determine if a water quality-based effluent limitation is required.

A reopener provision is included in this Order that allows the permit to be reopened to allow the inclusion of new numeric limitations for any constituent that exhibits reasonable potential to cause or contribute to exceedance of applicable water quality objectives.

c. The numeric limitations contained in this Order are intended to protect and maintain existing and potential beneficial uses of the receiving waters. Environmental benefits provided by these limitations are reasonable and necessary.

d. Regional Board Staff have determined that copper, lead, mercury, selenium, cyanide, tetrachloroethylene, bis(2-ethylhexyl)phthalate, and gamma-BHC showed the potential to exceed their respective CTR criteria, and, therefore, require CTR-based effluent limitations. In addition, Regional Board Staff have determined that tetrachloroethylene and bis(2-ethylhexyl)phthalate showed the potential to exceed the Basin Plan's Groundwater Quality Objective, therefore, requires Basin Plan-based effluent limitations. Regional Board Staff also have determined that effluent limitations for cadmium and zinc are consistent with the *Metals TMDL* implementation procedure.

2. This Order is consistent with State and Federal antidegradation policies in that it does not authorize a change in the quantity of wastewater discharged by the facility, nor does it authorize a change or relaxation in the manner or level of treatment. As a result, both the quantity and quality of the discharge are expected to remain the same consistent with antidegradation policies. The accompanying monitoring and reporting program requires continued data collection and if monitoring data show a reasonable potential for a constituent to cause or contribute to an exceedance of water quality standards, the permit will be reopened to incorporate appropriate WQBELs. Such an approach ensures that the discharge will adequately protect water quality standards for potential and existing uses and conforms with antidegradation policies and antibacksliding provisions.

XI. PROPOSED EFFLUENT LIMITATIONS

1. Numeric toxic constituent limitations are based on the Basin Plan the narrative water quality objective for toxic constituents, "All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in, human, plant, animal, or aquatic life"; on the CTR; and, the interpretation of the Basin Plan narrative criteria using USEPA's 304(a) nationally recommended water quality criteria. For toxic constituents that have no reasonable potential to cause or contribute to excursions of water quality objectives, no numerical limitations are prescribed.

2. Pursuant to 40 CFR 122.45(d)(2), for a POTWs continuous discharges, all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall, unless impracticable, be stated as average weekly and average monthly discharge limitations for POTWs. It is impracticable to only include average weekly and average monthly effluent limitations in the permit, because a single daily discharge of a pollutant, in excess amounts, can cause violations of water quality objectives. The effects of pollutants on aquatic organisms are often rapid. For many pollutants, an average weekly or average monthly effluent limitation alone is not sufficiently protective of beneficial uses. As a result, maximum daily effluent limitations, as referenced in 40 CFR 122.45(d)(1), are included in the permit.

3. **Impracticability Analysis** – Federal NPDES regulations contained in Subsection 122.45 40 CFR for continuous dischargers, states that all permit limitations, standards, and prohibitions, including those to achieve water quality standards, shall unless impracticable be stated as maximum daily and average monthly discharge limitations for all dischargers other than POTWs.

   As stated by USEPA in its long standing guidance (1991, USEPA *Technical Support Document for Water Quality-based Toxics Control*) for developing water quality-based effluent limitations (WQBELs) average limitations alone are not practical for limiting acute, chronic, and human health toxic affects.

   For example, a POTW sampling for a toxicant to evaluate compliance with a 7-day average limitation could fully comply with this average limit, but still be discharging toxic effluent on one, two, three, or up to four of these seven days and not be meeting 1-hour average acute criteria or 4-day average chronic criteria. For these reason, USEPA recommends daily maximum and 30-day average limits for regulating toxics in all NPDES discharges. For the purposes of protecting the acute effects of discharges containing toxicants (CTR human health for the ingestion of fish), daily maximum limitations have been established in this NPDES permit for Mercury, bis(2-ethylhexyl)phthalate, and gamma-BHC, because they are environmental endocrine disruptors (1998, *Pure & Appl. Chem*, Vol.70, No. 12, pp. 2319-2326). A 7-day average alone would not protect one, two, three, or fours days of discharging pollutants in excess of the acute and chronic criteria. Fish exposed to these endocrine disrupting chemicals will be passed on to the human consumer. Endocrine disrupters alter hormonal functions by several means. These substances can:

A. mimic or partly mimic the sex steroid hormones estrogens and androgens (the male sex hormone) by binding to hormone receptors or influencing cell signaling pathways.

B. block, prevent and alter hormonal binding to hormone receptors or influencing cell signaling pathways.

C. alter production and breakdown of natural hormones.

D. modify the making and function of hormone receptors.

Mercury is also bioaccumulative in fish tissue and will be passed on to the human consumer.

Daily maximum limitations for $BOD_5$20°C, TSS, settleable solids, oil and grease, and total residual chlorine have been carried over from the previous two permits to avoid backsliding, and also because these pollutants can cause acute impacts to the environment and fish and other organisms. Numeric daily maximum limitations for oil and grease and total residual chlorine have been prescribed in order to implement objectives contained in the USEPA-approved Basin Plan, and because chlorine is highly acutely toxic to aquatic life, and oily films caused by discharge of oil and grease can coat birds and aquatic organisms, impacting respiration and thermal regulation. $BOD_5$20°C can cause a receiving water to become rapidly depleted in dissolved oxygen, resulting in fish kills. TSS and Setteable solids can destroy spawning habitat, blanket benthic organisms, and abrade the gills of larval fish (1994, *Water Quality Control Plan Los Angeles Region*).

4. Furthermore, Section 1.4 of the SIP requires the step-by-step procedure to "adjust" or convert CTR numeric criteria into Average Monthly Effluent Limitations (AMELs) and Maximum Daily Effluent Limitations (MDELs), for toxics.

   A. Step 3 of Section 1.4 of the SIP (page 6) lists the statistical equations that adjust CTR criteria for effluent variability.

   B. Step 5 of Section 1.4 of the SIP (page 8) lists the statistical equations that adjust CTR criteria for averaging periods and exceedance frequencies of the criteria/ objectives. This section also reads, "For this method only, maximum daily effluent limitations shall be used for publicly-owned treatment works (POTWs) in place of average weekly limitations.

5. Table R is the spreadsheet that staff used to calculate the AMELs and MDELs for priority pollutants.

6. 40 CFR section 122.45(f)(1) requires that except under certain conditions, all permit limits, standards, or prohibitions be expressed in terms of mass units. 40 CFR section 122.45(f)(2) allows the permit writer, at its discretion, to express limits in additional units (e.g., concentration units). The regulations mandate that, where limits are expressed in more than one unit, the permittee must comply with both.

7. Generally, mass-based limits ensure that proper treatment, and not dilution, is employed to comply with the final effluent concentration limits. Concentration-based effluent limits, on the other hand, discourage the reduction in treatment efficiency during low-flow periods and require proper operation of the treatment units at all times. In the absence of concentration-based effluent limits, a permittee would be able to increase its effluent concentration (i.e., reduce its level of treatment) during low-flow periods and still meets its mass-based limits. To account for this, this permit includes mass and concentration limits for some constituents, except during wet-weather, storm events that cause flows to the treatment plant to exceed the plant's design capacity.

A. Effluent Limitations

a. Conventional and nonconventional pollutants

Constituent	Unit	**Discharge Limitations**		
		Monthly Average[1]	**Weekly Average[1]**	**Daily Maximum[2]**
Settleable solids[3]	ml/L	0.1	--	0.3
Suspended solids[4]	mg/L	15	40	45
	lbs/day[5]	10,010	26,690	30,020
Oil and Grease[6]	mg/L	10	--	15
	lbs/day[5]	6,670	--	10,010
$BOD_{5@20℃}$[4]	mg/L	20	30	45
	lbs/day[5]	13,340	20,020	30,020
Total residual chlorine[7]	mg/L	--	--	0.1[8]
	lbs/day[5]	--	--	66.8
Total dissolved solids[9]	mg/L	950	--	--
	lbs/day[5]	633,840	--	--
Chloride[9]	mg/L	190	--	--
	lbs/day[5]	126,770	--	--
Sulfate[9]	mg/L	300	--	--
	lbs/day[5]	200,160	--	--
Fluoride[10]	mg/L	2.0	--	--
	lbs/day[5]	1,330	--	--
Detergents (as MBAS)[11]	mg/L	0.5	--	--
	lbs/day[5]	330	--	--
Nitrate (as N)[12]	mg/L	7.2[13]	--	--
Nitrite (as N)[12]	mg/L	0.9[13]	--	--
Nitrate + Nitrite (as N)[12]	mg/L	7.2[13]	--	--
	mg/L	8.0[14]	--	--
Total ammonia (as N)[12]	mg/L	1.4[13]	--	4.2[13, 14]

Footnotes:

[1]. Average Monthly Discharge Limitation means the highest allowable average of daily discharge over a calendar month, calculated as the sum of all daily

discharges measured during that month divided by the number of days on which monitoring was performed.

Average Weekly Discharge Limitation means the highest allowable average of daily discharge over a calendar week, calculated as the sum of all daily discharges measured during that week divided by the number of days on which monitoring was performed.

[2]. The daily maximum effluent concentration limit shall apply to both flow weighted 24-hour composite samples and grab samples, as specified in the Monitoring and Reporting Program (Attachment T).

[3]. See detailed information on suspended solids in the following Section XI.6.B.b.

[4]. See detailed information on settleable solids in the following Section XI.6.B.a.

[5]. The mass emission rate limitations are based on the existing plant design flow rate of 80 mgd, and are calculated as follows: Flow(MGD) x Concentration (mg/L) x 8.34 (conversion factor) = lbs/day.

[6]. See detailed information on settleable solids in the following Section XI.6.B.c.

[7]. See detailed information on settleable solids in the following Section XI.6.B.d.

[8]. Determination of compliance with the final effluent limitation 0.10 mg/L for total residual chlorine will be based solely on end of pipe grab samples.

[9]. See detailed information on settleable solids in the following Section XI.6.B.f.

[10]. See detailed information on settleable solids in the following Section XI.6.B.e.

[11]. See detailed information on settleable solids in the following Section XI.6.B.g.

[12]. See detailed information on settleable solids in the following Section XI.6.B.h.

[13]. This is the waste load allocation (WLA), according to the *Nitrogen Compounds TMDL* Resolution No. 2003-009, adopted by the Regional Board on July 10, 2003. The WLA serves as the effluent limitation for the discharge. It became effective on March 23, 2004, after the USEPA approves the *Nitrogen Compounds TMDL,* and after the Regional Board filed the Notice of Decision with the California Resources Agency. Note that the interim effluent limitations contained in the *Nitrogen Compounds TMDL* would apply to the City's discharge, because construction and start-up operations of the NDN facilities have not been completed until September 2007 (See Footnote [14] below).

[14]. This is the interim limit according to the Nitrogen TMDL Resolution No. 03-016, adopted by the Regional Board on December 4, 2003. This interim limit automatically became effective when the USEPA March 23, 2004 approved the *Nitrogen TMDL* for the Los Angeles River and continues for the duration of the TMDL interim limit provisions. This interim limit is only available till September 30, 2007. On October 1, 2007, the limit specified with Footnote [13] shall be applied.

B. Basis for conventional and nonconventional pollutants

a. *Biochemical Oxygen Demand (BOD) and Suspended solids*

Biochemical oxygen demand (BOD) is a measure of the quality of the organic matter in the water and, therefore, the water's potential for becoming depleted in dissolved oxygen. As organic degradation takes place, bacteria and other decomposers use the oxygen in the water for respiration. Unless there is a steady re-supply of oxygen to the system, the water will quickly become depleted of oxygen. Adequate dissolved oxygen levels are required to support aquatic life. Depressions of dissolved oxygen can lead to anaerobic conditions resulting in odors, or, in extreme cases, in fish kills.

40 CFR, Part 133 describes the minimum level of effluent quality attainable by secondary treatment, for BOD and suspended solids, as:

i. the monthly average shall not exceed 30 mg/L; and,

ii. the 7-day average shall not exceed 45 mg/L.

Tillman WRP provides tertiary treatment, as such, the limits in the permit are more stringent than secondary treatment requirements. The Plant achieves solids removal that are better than secondary-treated wastewater by adding a polymer (Alum) to enhance the precipitation of solids, and by filtering the effluent.

The monthly average, the 7-day average, and the daily maximum limits cannot be removed because none of the antibacksliding exceptions apply. Those limits were all included in the previous permit (Order 98-046) and the Tillman WRP has been able to meet all three limits (monthly average, the 7-day average, and the daily maximum), for both BOD and suspended solids.

In addition to having mass-based and concentration-based effluent limitations for BOD and suspended solids, the Tillman WRP also has a percent removal requirement for these two constituents. In accordance with 40 CFR section 133.102(a)(3) and 133.102(b)(3), the 30-day average percent removal shall not be less than 85 percent. Percent removal is defined as a percentage expression of the removal efficiency across a treatment plant for a given pollutant parameter, as determined from the 30-day average values of the raw wastewater influent pollutant concentrations to the facility and the 30-day average values of the effluent pollutant concentrations for a given time period.

b. *Settleable solids*

Excessive deposition of sediments can destroy spawning habitat, blanket benthic (bottom dwelling) organisms, and abrade the gills of larval fish. The limits for settleable solids are based on the Basin Plan (page 3-16)

narrative, "Waters shall not contain suspended or settleable material in concentrations that cause nuisance or adversely affect beneficial uses." The numeric limits are empirically based on results obtained from the settleable solids 1-hour test, using an Imhoff cone.

It is impracticable to use a 7-day average limitation, because short term spikes of settleable solid levels that would be permissible under a 7-day average scheme would not be adequately protective of all beneficial uses. The monthly average and the daily maximum limits cannot be removed because none of the antibacksliding exceptions apply. The monthly average and daily maximum limits were both included in the previous permit (Order 95-080) and the Tillman WRP has been able to meet both limits.

c. *Oil and grease*

Oil and grease are not readily soluble in water and form a film on the water surface. Oily films can coat birds and aquatic organisms, impacting respiration and thermal regulation, and causing death. Oil and grease can also cause nuisance conditions (odors and taste), are aesthetically unpleasant, and can restrict a wide variety of beneficial uses. The limits for oil and grease are based on the Basin Plan (Page 3-11) narrative, "Waters shall not contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect beneficial uses."

The numeric limits are empirically based on concentrations at which an oily sheen becomes visible in water. It is impracticable to use a 7-day average limitation, because spikes that occur under a 7-day average scheme could cause visible oil sheen. A 7-day average scheme would not be sufficiently protective of beneficial uses. The monthly average and the daily maximum limits cannot be removed because none of the antibacksliding exceptions apply. Both limits were included in the previous permit (Order 98-046) and the Tillman WRP has been able to meet both limits.

d. *Residual chlorine*

Disinfection of wastewaters with chlorine produces a chlorine residual. Chlorine and its reaction products are toxic to aquatic life. The limit for residual chlorine is based on the Basin Plan (Page 3-9) narrative, "Chlorine residual shall not be present in surface water discharges at concentrations that exceed 0.1 mg/L and shall not persist in receiving waters at any concentration that causes impairment of beneficial uses."

It is impracticable to use a 7-day average or a 30-day average limitation, because it is not as protective as of beneficial uses as a daily maximum limitation is. Chlorine is very toxic to aquatic life and short term exposures of chlorine may cause fish kills.

e. *Fluoride*

The existing permit effluent limitation of 2.0 mg/l for fluoride was developed based on the Basin Plan incorporation of Title 22, *Drinking Water Standards,* by reference, for the protection of GWR.

f. *Total Dissolved Solids, Chloride, Sulfate, and Boron*

The limits for total dissolved solids, chloride, and sulfate are based on Basin Plan Table 3-8 (page 3-13), for the Los Angeles River watershed, above Figueroa Street. TDS = 950 mg/L and Sulfate = 300 mg/L. There is no Boron WQO for that reach of the Los Angeles River and there is no reasonable potential. Therefore a limitation to protect underlying groundwater is not necessary. The Chloride limit is no longer 150 mg/L, but 190 mg/L, which resulted from Regional Board Resolution No. 97-02*, Amendment to the Water Quality Control Plan to incorporate a Policy for Addressing Levels of Chloride in Discharges of Wastewaters*. Resolution 97-02 was adopted by Regional Board on January 27, 1997; approved by SWRCB (Resolution 97-94); and, approved by OAL on January 8, 1998; and served to revise the chloride water quality objective in the Los Angeles River and other surface waters. It is practicable to express these limits as monthly averages, since they are not expected to cause acute effects on beneficial uses.

g. *Methylene Blue Activated Substances (MBAS)*

The MBAS procedure tests for the presence of anionic surfactants (detergents) in surface and ground waters. Surfactants disturb the water surface tension, which affects insects and can affect gills in aquatic life. The MBAS can also impart an unpleasant soapy taste to water, as well as cause scum and foaming in waters, which impact the aesthetic quality of both surface and ground waters.

Given the nature of the facility (a POTW) which accepts domestic wastewater into the sewer system and treatment plant, and the characteristics of the wastes discharged, the discharge has reasonable potential to exceed both the numeric MBAS water quality objective (WQO) and the narrative WQO for prohibition of floating material such as foams and scums. Therefore an effluent limitation is required.

In past self-monitoring reports submitted to the Regional Board under MRP requirements, the Discharger has reported MBAS concentrations in the effluent in excess of 0.5 mg/L. The 0.5 mg/L concentration (which has been determined to be protective of beneficial uses and the aesthetic quality of waters), is based on the Department of Health Services' secondary drinking water standard, and on the Basin Plan WQO (p.3-11) which reads, "Waters shall not have MBAS concentrations greater than 0.5 mg/L in waters designated MUN." While the wastewater from this POTW is not directly discharged into a MUN designated surface water body, it will percolate into

unlined reaches of the Los Angeles River [via ground water recharge designated beneficial use (GWR)] to ground water designated for MUN beneficial use. In addition, the Basin Plan states that "Ground water shall not contain taste or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses." Therefore, the secondary MCL should be the MBAS limit for this discharge to protect ground water recharge and the MUN use of the underlying ground water, while also protecting surface waters from exhibiting scum or foaming.
Since the Basin Plan objective is based on a secondary drinking water standard, it is practicable to have a monthly average limitation in the permit.

h. *Nitrogen Compounds*

i. *Total inorganic nitrogen* - Total inorganic nitrogen is the sum of Nitrate-nitrogen and Nitrite-nitrogen. Nitrogen is considered to be a nutrient. High nitrate levels in drinking water can cause health problems in humans. Infants are particularly sensitive and can develop methemoglobinemia (blue-baby syndrome). Nitrogen is also considered a nutrient. Excessive amounts of nutrients can lead to other water quality impairments, ex. algae*.

*Algae – Several reaches of the Los Angeles River are 303(d) listed for algae. Excessive growth of algae and/or other aquatic plants can degrade water quality. Algal blooms sometimes occur naturally, but they are often the result of excess nutrients (i.e., nitrogen, phosphorus) from waste discharges or nonpoint sources. These algal blooms can lead to problems with tastes, odors, color, and increased turbidity and can depress the dissolved oxygen content of the water, leading to fish kills. Floating algal scum and algal mats are also an aesthetically unpleasant nuisance.

The 303(d) listing for algae is being addressed by applying the narrative WQO for biostimulatory substances, "Waters shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses," and other relevant information to arrive at a mass based-limit intended to be protective of the beneficial uses, pursuant to 40 CFR 122.44(d).

- **Concentration-based Limit -** The current effluent limit for total inorganic nitrogen (NO2-N + NO3-N) of 8 mg/L is based on Basin Plan Table 3-8 (Page 3-13), for the Los Angeles River Watershed (above Figueroa Street). The proposed effluent limit for total inorganic nitrogen (NO2-N + NO3-N) of 7.2 mg/L is based on The Nutrient TMDL Waste Load Allocation, and supercedes the Basin Plan-based effluent limitation, since the TMDL is in effect. However, if the LA River is eventually restored and the River becomes de-listed for nitrate plus nitrite

nitrogen, then the Basin Plan-based effluent limit would apply, and the permit reopened.

Watershed-wide monitoring will track concentration levels of phosphorus and all nitrogen series pollutants present in the effluent and receiving waters, pursuant to 40 CFR 122.44(d)(1)(vi)(C)(3).

- **Mass based limit.** There is no mass emission rate for NO_2-N + NO_3-N because the TMDL did not specify a mass-based WLA.

ii. *Ammonia as N*

- Ammonia is a pollutant routinely found in the wastewater effluent of POTWs, in landfill-leachate, as well as in run-off from agricultural fields where commercial fertilizers and animal manure are applied. Ammonia exists in two forms – un-ionized ammonia (NH_3) and the ammonium ion (NH_4^+). They are both toxic, but the neutral, un-ionized ammonia species (NH_3) is much more toxic, because it is able to diffuse across the epithelial membranes of aquatic organisms much more readily than the charged ammonium ion. The form of ammonia is primarily a function of pH, but it is also affected by temperature and other factors. Additional impacts can also occur as the oxidation of ammonia lowers the dissolved oxygen content of the water, further stressing aquatic organisms. Oxidation of ammonia to nitrate may lead to groundwater impacts in areas of recharge. [There is groundwater recharge in these reaches]. Ammonia also combines with chlorine (often both are present in POTW treated effluent discharges) to form chloramines – persistent toxic compounds that extend the effects of ammonia and chlorine downstream.

- Ammonia is 303(d) listed in the Los Angeles River. Since ammonia has a WLA in the LA River Nutrient TMDL, a TMDL-based effluent limitation for total ammonia as nitrogen is required in order to implement the provisions of the TMDL and to try and restore the water quality in that section of the receiving water.

- The 1994 Basin Plan contained water quality objectives for ammonia to protect aquatic life, in Tables 3-1 through Tables 3-4. However, those ammonia objectives were revised on April 25, 2002, by the Regional Board, with the adoption of Resolution No. 2002-011, *Amendment to the Water Quality Control Plan for the Los Angeles Region to Update the Ammonia Objectives for Inland Surface Waters (including enclosed bays, estuaries and wetlands) with Beneficial Use designations for protection of Aquatic Life*. Resolution No.

2002-011 was approved by the State Board, the Office of Administrative Law, and USEPA on April 30, 2003, June 5, 2003, and June 19, 2003, respectively, and is now in effect. The final effluent limitations for ammonia prescribed in this Order are based on the LA River Nutrient TMDL. However, if the LA River is restored and the River becomes de-listed for ammonia, then the permit would be re-opened to include Basin Plan-based effluent limits for ammonia. (The revised Ammonia Tables would then apply.)

i. *Coliform/Bacteria*

Total and fecal coliform bacteria are used to indicate the likelihood of pathogenic bacteria in surface waters. Given the nature of the facility, a wastewater treatment plant, pathogens are likely to be present in the effluent in cases where the disinfection process is not operating adequately. As such, the permit contains the following:

i. Effluent Limitations:

- The 7 day median number of coliform organisms at some point in the treatment process must not exceed 2.2 Most Probable Number (MPN) per 100 milliliters, and

- The number of coliform organisms must not exceed 23 MPN per 100 milliliters in more than one sample within any 30-day period.

These disinfection-based effluent limitations for coliform are for human health protection and are consistent with requirements established by the Department of Health Services. These limits for coliform must be met at the point of the treatment train immediately following disinfection, as a measure of the effectiveness of the disinfection process.

ii. Receiving Water Limitation

- Geometric Mean Limits

  * E.coli density shall not exceed 126/100 mL.
  * Fecal coliform density shall not exceed 200/100 mL.

- Single Sample Limits

  * E.coli density shall not exceed 235/100 mL.
  * Fecal coliform density shall not exceed 400/100 mL.

These receiving water limitations are based on Resolution No. 01-018, Amendment to the Water Quality Control Plan for the Los Angeles Region to Update the Bacteria Objectives for Water Bodies Designated for Water Contact Recreation, adopted by the Regional Board on October 25, 2001. The Resolution was approved by State Board, OAL, and USEPA, on July 18, 2002, September 19, 2002, and September 25, 2002, respectively.

j. *pH*

The hydrogen ion activity of water (pH) is measured on a logarithmic scale, ranging from 0 to 14. While the pH of "pure" water at 25°C is 7.0, the pH of natural waters is usually slightly basic due to the solubility of carbon dioxide from the atmosphere. Minor changes from natural conditions can harm aquatic life. The effluent limitation for pH which reads, "the wastes discharged shall at all times be within the range of 6.5 to 8.5," is taken from the Basin Plan (Page 3-15) which reads" the pH of inland surface waters shall not be depressed below 6.5 or raised above 8.5 as a result of waste discharge.

k. *Turbidity*

Turbidity is an expression of the optical property that causes light to be scattered in water due to particulate matter such as clay, silt, organic matter, and microscopic organisms. Turbidity can result in a variety of water quality impairments. The effluent limitation for turbidity which reads, "For the protection of the water contact recreation beneficial use, the wastes discharged to water courses shall have received adequate treatment, so that the turbidity of the wastewater does not exceed: (a) a daily average of 2 Nephelometric turbidity units (NTUs); and (b) 5 NTUs more than 5 percent of the time (72 minutes) during any 24 hour period," is based on the Basin Plan (Page 3-17).

l. *Radioactivity*

Radioactive substances are generally present in natural waters in extremely low concentrations. Mining or industrial activities increase the amount of radioactive substances in waters to levels that are harmful to aquatic life, wildlife, or humans. Section 301 (f) of the CWA contains the following statement with respect to effluent limitations for radioactive substances: "Notwithstanding any other provisions of this ACT it shall be unlawful to discharge any radioactive waste, or any medical waste, into the navigable waters." Chapter 5.5 of the Water Code contains a similar prohibition under Section 13375, which reads as follows: "The discharge of any radiological, chemical, or biological warfare agent into the waters of the state is hereby prohibited." However, rather than give a hard and fast absolute prohibition on radioactive substances, Regional Board staff have set the following effluent limit for radioactivity: "Radioactivity of the wastes discharged shall not exceed the limits specified in Title 22, Chapter

15, Article 5, Section 64443, of the California Code of Regulations, or subsequent revisions." The limit is based on the Basin Plan incorporation of Title 22, *Drinking Water Standards,* by reference, to protect beneficial uses. Therefore, the accompanying Order will retain the limit for radioactivity.

m. *Temperature*

USEPA document, *Quality Criteria for Water 1986* [EPA 440/5-86-001, May 1, 1986], also referred to as the *Gold Book*, discusses temperature and its effectson beneficial uses, such as recreation and aquatic life.

i. The Federal Water Pollution Control Administration in 1967 called temperature "a catalyst, a depressant, an activator, a restrictor, a stimulator, a controller, a killer, and one of the most important water quality characteristics to life in water." The suitability of water for total body immersion is greatly affected by temperature. Depending on the amount of activity by the swimmer, comfortable temperatures range from 20°C to 30°C (68 °F to 86 °F).

ii. Temperature also affects the self-purification phenomenon in water bodies and therefore the aesthetic and sanitary qualities that exist. Increased temperatures accelerate the biodegradation of organic material both in the overlying water and in bottom deposits which makes increased demands on the dissolved oxygen resources of a given system. The typical situation is exacerbated by the fact that oxygen becomes less soluble as water temperature increases. Thus, greater demands are exerted on an increasingly scarce resource which may lead to total oxygen depletion and obnoxious septic conditions. Increased temperature may increase the odor of water because of the increased volatility of odor-causing compounds. Odor problems associated with plankton may also be aggravated.

iii. Temperature changes in water bodies can alter the existing aquatic community. Coutant (1972) has reviewed the effects of temperature on aquatic life reproduction and development. Reproductive elements are noted as perhaps the most thermally restricted of all life phases, assuming other factors are at or near optimum levels. Natural short-term temperature fluctuations appear to cause reduced reproduction of fish and invertebrates.

The Basin Plan lists temperature requirements for the receiving waters. Based on the requirements of the Basin Plan and a white paper developed by Regional Water Board staff entitled *Temperature and Dissolved Oxygen Impacts on Biota in Tidal Estuaries and Enclosed Bays in the Los Angeles Region*, a maximum effluent temperature limitation of 86 °F is included in the Order. The white paper evaluated the optimum temperatures for steelhead, topsmelt, ghost shrimp, brown rock crab, jackknife clam, and blue mussel. The new temperature effluent limitation is reflective of new information available that indicates that the 100°F temperature is not protective of aquatic organisms. A survey was

completed for several kinds of fish and the 86°F temperature was found to be protective. It is impracticable to use a 7-day average or a 30-day average limitation for temperature, because it is not as protective as of beneficial uses as a daily maximum limitation is. A daily maximum limit is necessary to protect aquatic life and is consistent with the fishable/swimmable goals of the CWA.

C. Toxicity

Ambient monitoring data indicates that the background concentration in the lower Los Angeles River is toxic to aquatic organisms, and therefore exceeds water quality standards. Final effluent water quality data, contained in the Discharger's monitoring reports, also shows that chronic toxicity in the effluent has exceeded 1TUc (EPA WQO) for the most of times. As such, the permit should contain a numeric effluent limitation for toxicity.

The following support the inclusion of toxicity numeric effluent limitations for chronic toxicity:

a. 40 CFR 122.2 (Definition of Effluent Limitation);

b. 40 CFR 122.44(d)(v) – limits on whole effluent toxicity are necessary when chemical-specific limits are not sufficient to attain and maintain applicable numeric or narrative water quality standards;

c. 40 CFR 122.44(d)(vi)(A) – where a State has not developed a water quality criterion for a specific pollutant that is present in the effluent and has reasonable potential, the permitting authority can establish effluent limits using numeric water quality criterion;

d. Basin Plan objectives and implementation provisions for toxicity;

e. Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Programs Final May 31, 1996;

f. Whole Effluent Toxicity (WET) Control Policy July 1994; and,

g. Technical Support Document (several chapters and Appendix B).

However, the circumstances warranting a numeric chronic toxicity effluent limitation when there is reasonable potential were reviewed by the State Water Resources Control Board (State Board) in SWRCB/OCC Files A-1496 & A-1496(a) [Los Coyotes/Long Beach Petitions]. On September 17, 2003, at a public hearing, the State Board decided to defer the issue of numeric chronic toxicity effluent limitations until a subsequent version of the SIP is adopted. In the mean time, the State Board replaced the numeric chronic toxicity limit with a narrative effluent limitation and a 1 TUc trigger, in the Long Beach and Los Coyotes WRP NPDES permits. This permit contains a similar chronic toxicity effluent trigger. This Order also contains a reopener to allow the Regional

Board to modify the permit, if necessary, consistent with any new policy, law, or regulation.

Acute Toxicity Limitation:

The Dischargers may test for Acute toxicity by using USEPA's *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, October 2002 (EPA-821-R-02-012). Acute toxicity provisions in the accompanying Order are derived from the Basin Plan's toxicity standards (Basin Plan Pages 3-16 and 3-17). The provisions require the Discharger to accelerate acute toxicity monitoring and take further actions to identify the source of toxicity and to reduce acute toxicity.

Chronic Toxicity Limitation and Requirements:

Chronic toxicity provisions in the accompanying Order are derived from the Basin Plan's toxicity standards (Basin Plan Pages 3-16 and 3-17). The provisions require the Discharger to accelerate chronic toxicity monitoring and take further actions to identify the source of toxicity and to reduce chronic toxicity. The monthly median trigger of 1.0 TU_c for chronic toxicity is based on *USEPA Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity (WET) Programs* Final May 31, 1996 (Chapter 2 – Developing WET Permitting Conditions, Page 2-8). In cases where effluent receives no dilution or where mixing zones are not allowed, the I.0 TU_c chronic criterion should be expressed as a monthly median. The "median" is defined as the middle value in a distribution, above which and below which lie an equal number of values. For example, if the results of the WET testing for a month were 1.5, 1.0, and 1.0 TU_c, the median would be 1.0 TU_c.

The *USEPA Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity (WET) Programs* Final May 31, 1996 (Chapter 2 – Developing WET Permitting Conditions, page 2-8) recommends two alternatives: using 2.0 TUc as the maximum daily limit; or using a statistical approach to develop a maximum daily effluent limitation.

D. Final Limits for priority pollutants discharged through Discharge Serial No. 002, to the Los Angeles River:

CTR #[1]	Constituent	Units	Discharge Limitations	
			Monthly Average[2]	Daily Maximum
4	Cadmium[3, 4]	µg/L	4.1[5, 6, 7]	8.2[5, 6, 7]
		lbs/day[8]	2.7	5.5
6	Copper[3, 4, 9]	µg/L	23[6, 10, 11, a]	34[6, 10, 11, a]
		lbs/day[8]	15	23
7	Lead[3, 4, 9]	µg/L	7.3[6, 10, 11]	18[6, 10, 11]
		lbs/day[8]	4.9	12

CTR #[1]	Constituent	Units	Discharge Limitations	
			Monthly Average[2]	Daily Maximum
8	Mercury[4, 9]	µg/L	0.051[10]	0.12[10]
		lbs/day[8]	0.034	0.080
10	Selenium [4, 9, 12]	µg/L	3.6	9.2
		lbs/day[8]	2.4	6.1
13	Zinc[3, 4]	µg/L	193[5, 6, 7]	257[5, 6, 7]
		lbs/day[8]	129	171
14	Cyanide[9, 14]	µg/L	3.8	9.4
		lbs/day[8]	2.5	6.3
38	Tetrachloroethylene[9, 14]	µg/L	5[13]	--
		lbs/day[8]	3.3	--
68	Bis(2-ethylhexyl)phthalate[9, 14]	µg/L	4[13]	16
		lbs/day[8]	2.7	11
105	Gamma-BHC[9, 12]	µg/L	0.063	0.17
		lbs/day[8]	0.042	0.11

Footnotes:

[1]. This number corresponds to the compound number found in Table 1 of CTR. It is simply the order in which the 126 priority pollutants were listed in 40 CFR section 131.38 (b)(1).

[2]. Average Monthly Discharge Limitation means the highest allowable average of daily discharge over a calendar month, calculated as the sum of all daily discharges measured during that month divided by the number of days on which monitoring was performed.

[3]. Hardness value of 246 mg/L from the Los Angeles River Metal TMDL was used to assess compliance with CTR criteria.

[4]. Concentration expressed as total recoverable.

[5]. This is consistent with the Metal TMDL implementation procedure.

[6]. This is the **wet weather** waste load allocation (WLA), according to Resolution No. R05-006, *Amendment to the Water Quality Control Plan for the Los Angeles Region to Incorporate a Total Maximum Daily Load for Metals for the Los Angeles River and its Tributaries* (*LA River Metals TMDL*), adopted by the Regional Board on June 2, 2005. The Metals TMDL was approved by the State Board, with the adoption of Resolution No. 2005-0077. On December 9, 2005 and December 22, 2005, respectively, OAL and USEPA approved the *LA River Metals TMDL*. It went into effect on January 11, 2006. According to the LA River Metals TMDL, wet weather is "when the maximum daily flow in the River is greater than 500 cfs."

[7]. This effluent limitation will not be in effect until January 11, 2011, five years after the Metals TMDL effective date, according to the LA River Metals TMDL Implementation Section.

[8]. The mass emission rate limitations are based on the plant design flow rate of 80 mgd, and are calculated as follows: Flow(MGD) x Concentration (µg/L) x 0.00834 (conversion factor) = lbs/day. During wet-weather storm events when flow exceeds the design capacity, the mass emission rate limit shall not apply. Only the concentration limits shall apply. According to the LA River Metals, the mass-based limits for cadmium and zinc do not apply during wet weather (based on Footnote [6] on Page F-52 above).

[9]. This constituent shows reasonable potential.

[10]. This CTR-based effluent limitation will not be in effect until May 17, 2010, and until that time the Discharger shall comply with the interim limits established in I.A.(9) below.

[11]. This is the **dry weather** waste load allocation (WLA), according to Resolution No. R05-006, *Amendment to the Water Quality Control Plan for the Los Angeles Region to Incorporate a Total Maximum Daily Load for Metals for the Los Angeles River and its Tributaries* (*LA River Metals TMDL*), adopted by the Regional Board on June 2, 2005. The Metals TMDL was approved by the State Board, with the adoption of Resolution No. 2005-0077. On December 9, 2005 and December 22, 2005, respectively, OAL and USEPA approved the *LA River Metals TMDL*. It went into effect on January 11, 2006. According to the LA River Metals TMDL, dry weather is "when the maximum daily flow in the River is less than 500 cfs."

[12]. The interim limits are not applicable for selenium and gamma-BHC, because there were only one and two exceedances for selenium and gamma-BHC, respectively, over 8 years.

[13]. The MEC of this constituent exceeded the applicable water quality objectives (State and Federal MCLs). Therefore, MCL was set as Monthly Average in order to protect groundwater quality. The more detailed information is available in the following Section XII GROUNDWATER RECHARGE PROTECTION of this accompanying Fact Sheet.

[14]. The interim limits are not applicable for tetrachloroethylene, because only two exceedances happened in 1998 over 8 years.

[a]. This is consistent with the SIP and Metal TMDL implementation procedures. The monthly average and daily maximum were derived using the Site-Specific Translators of 0.74 (chronic) and 0.92 (acute), respectively. Detailed discussions and calculations are found in the Fact Sheet, section IX.17.D.

E. Basis for priority pollutants:

Mixing zones, dilution credits, and attenuation factors are not used in the accompanying Order and would be inappropriate to grant, at this time, in light of the factors discussed in Section IX.19 through I of this Fact Sheet.

Allowance of a mixing zone is in the Regional Board's discretion under Section 1.4.2 of the SIP and under the Basin Plan (Basin Plan Chapter 4, Page 30). If the Discharger subsequently conducts appropriate mixing zone and dilution

credit studies, the Regional Board can evaluate the propriety of granting a mixing zone or establishing dilution credits.

F. Example calculation: Mercury
Is a limit required? What is RPA?

a. From Attachment A, *Reasonable Potential & Limit Derivation*, we determined that Reasonable potential analysis (RPA) = Yes, therefore a limit is required.

Step 1: Identify applicable water quality criteria.

From California Toxics Rule (CTR), we can obtain the Criterion Maximum Concentration (CMC) and the Criterion Continuous Concentration (CCC).

Freshwater Aquatic Life Criteria:
CMC = NA µg/L (CTR page 31712, column B1) and
CCC = NA µg/L (CTR page 31712, column B1); and
Human Health Criteria for Water & Organisms = 0.051µg/L (CTR Page 31712, column D2).

Step 2: Calculate effluent concentration allowance (ECA)

ECA = Criteria in CTR, since no dilution is allowed.

Step 3: Determine long-term average (LTA) discharge condition

Calculate CV:

CV = Standard Deviation / Mean
= 0.84136

ii. Find the ECA Multipliers from SIP Table 1 (page 7), or by calculating them using equations on SIP page 6. When CV = 0.6, then:

ECA Multiplier acute = 0.23833 and
ECA Multiplier chronic = 0.42424

iii. LTA acute = ECA acute x ECA Multiplier acute
= NA µg/L x 0. 23833 = NA µg/L

iv. LTA chronic = ECA chronic x ECA Multiplier chronic
= NA µg/L x 0.42424 = NA µg/L

Step 4: Select the lowest LTA

In this case, the lowest LTA is not applicable.

Step 5: Calculate the Average Monthly Effluent Limitation (AMEL) & Maximum Daily Effluent Limitation (MDEL) for AQUATIC LIFE

i. Find the multipliers. You need to know CV and n (frequency of sample collection per month). If effluent samples are collected 4 times a month or less, then n = 4. CV was determined to be 0.6 in a previous step.

AMEL Multiplier = 1.79061
MDEL Multiplier = 4.19588

ii. AMEL aquatic life = lowest LTA (from Step4) x AMEL Multiplier
= NA µg/L x 1.79061 = NA µg/L

iii. MDEL aquatic life = lowest LTA (from Step4) x AMEL Multiplier
= NA µg/L x 4.19588 = NA µg/L

Step 6: Find the Average Monthly Effluent Limitation (AMEL) & Maximum Daily Effluent Limitation (MDEL) for HUMAN HEALTH

i. Find factors. Given CV = 0.84136 and n = 4.

For AMEL human health limit, there is no factor.
The MDEL/AMEL human health factor = 2.34327

ii. AMEL human health = ECA = 0.051 µg/L

iii. MDEL human health = ECA x MDEL/AMEL factor
= 0.051 µg/L x 2.34327 = 0.11951 µg/L

Step 7: Compare the AMELs for Aquatic life and Human health and select the lowest. Compare the MDELs for Aquatic life and Human health and select the lowest

i. Lowest AMEL = 0.051 µg/L (Based on Human Health protection)

ii. Lowest MDEL = 0.120 µg/L (Based on Human Health protection)

G. A numerical limit has not been prescribed for a toxic constituent if it has been determined that it has no reasonable potential to cause or contribute to excursions of water quality standards. A narrative limit to comply with all water quality objectives is provided in *Standard Provisions* for the priority pollutants, which have no available numeric criteria.

H. The numeric limitations contained in the accompanying Order were derived using best professional judgement and are based on applicable state and federal authorities, and as they are met, will be in conformance with the goals of the aforementioned water quality control plans, and water quality criteria;

and will protect and maintain existing and potential beneficial uses of the receiving waters.

XII. GROUNDWATER RECHARGE PROTECTION

1. The issue of using MCLs as the basis for establishing final effluent limitations in an NPDES permit, to protect the GWR beneficial use of surface waters and the MUN beneficial use of the groundwater basins, has been addressed by the State Board in its WQO No. 2003-0009, in the *Matter of the Petitions of County Sanitation District No. 2 of Los Angeles and Bill Robinson for Review of Waste Discharge Requirements Order No. R4-2002-0142 and Time Schedule Order No. R4-2002-0143 for the Whittier Narrows Water Reclamation Plant*. The groundwater recharge (GWR) beneficial use is premised on a hydrologic connection between surface waters and groundwater, where the groundwater in this case is designated with an existing MUN beneficial use. Since there are no criteria or objectives specific to the GWR beneficial use, the Los Angeles Regional Board's Basin Plan, staff based effluent limitations for the GWR use on the groundwater MUN objectives. By doing so, the Regional Board ensures that the use of surface waters to recharge groundwater used as an existing drinking water source is protected. The fact that there are no criteria or objectives specific to the GWR beneficial use does not deprive the Regional Board the ability to protect the use. The CWA contemplates enforcement of both beneficial uses as well as criteria in state water quality standards. In California, an NPDES permit also serves as waste discharge requirements under state law.

2. The prior NPDES permit for the Tillman WRP contained effluent limits for tetrachloroethylene and bis(2-ethylhexyl)phthalate, based on MCLs and expressed as daily maximum, which had to be met at the end of pipe.
   Reasonable potential analysis was conducted using new data and the TSD methodology. The analysis showed that the discharge had reasonable potential to exceed the MCLs for the constituents listed in the above Table in Section XI.7.D, therefore a limit is included in the permit. However, the point of compliance was changed from surface water to groundwater for these three MCL-based limits, given the conditionally designated p*MUN beneficial use for the Los Angele River, the need to protect the groundwater recharge (GWR) beneficial use in the surface waters, and the MUN beneficial use in the groundwater basins. In addition, the limit was expressed as a monthly average rather than a daily maximum, because it was assumed that the groundwater basins have assimilative capacity for these pollutants. The monthly averaging period is justified because these pollutants are not expected to produce acute effects. The City raised the issue that, aside from their effluent, there are several sources recharging the groundwater basins. The City does not have the ability to control those other sources. However, the City does have control over what they discharge through their final effluent outfall. Since the discharge has reasonable potential to exceed the MCLs, final effluent limitations are needed. Therefore, the groundwater receiving water limitations have been deleted and replaced with end-of-pipe limitations.

   The California MCL for Bis(2-ethylhexyl)phthalate is more stringent than the USEPA MCL and more stringent than the CTR criteria, therefore the monthly average effluent

limitation for Bis(2-ethylhexyl)phthalate is the only limit more stringent than the federal requirements. Therefore, an economic analysis should be done for Bis(2-ethylhexyl)phthalate

3. According to Section 13241 of the CWC, the factors to be considered by a regional board in establishing water quality objectives include, but are not necessarily be limited to, all of the following:

   A. Past, present, and probable future beneficial uses of water.

   B. Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.

   C. Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.

   D. Economic considerations.

   E. The need for developing housing within the region.

   F. The need to develop and use recycled water.

   Regional Board staff have considered all of the above factors.

   A. The proposed Order is protective of all beneficial uses of surface waters (using CWA) and ground water (using CWC);

   B. The environmental characteristics of the discharge and of the watershed in which the facility is located have been taken into consideration and provisions of the applicable TMDLs have been incorporated into the Order, in an attempt to restore waters under section 303(d) of the CWA;

   C. Limitations which could reasonably be achieved have been placed in the Order to protect the water quality of the immediate receiving waters and those located downstream of the discharge point;

   D. Economic considerations have also been considered

      a. **DHS' Economic Analysis**. As discussed in Section VIII.8 of this Fact Sheet, the technical and economic feasibility of regulating MCLs is evaluated as part of the MCL development and adoption process by the California Department of Health Services, a sister agency. The technical feasibility includes an evaluation of commercial laboratories' ability to analyze for and detect the chemical in drinking water, the costs of monitoring, and the costs of treatment required to remove it.

      b. **Requirements under WDR Order No. 86-39**. The City of Los Angeles is currently required to comply with the Maximum Contaminant Levels of the current California Drinking Water Standards for inorganic and organic

chemicals, under Order No. 86-39, which are separate waste discharge requirements for water recycling. Since the Tillman WRP is already required to meet the MCLs in order to serve the recycled water, no additional treatment units are believed to be necessary in order to meet the limitations in the accompanying NPDES permit.

c. **Similar Facilities**. Other POTWs in Region 4 have similar NPDES permit requirements. When Regional Board staff was preparing the first set of permits that would implement the SIP and the CTR, they asked the State Board, Division of Water Quality's Standard Development Section to prepare an economic analysis of the cost of complying with the California Toxics Rule for the five Los Angeles County Sanitation District (LACSD) inland POTWs in the San Gabriel River Watershed. The State Board contracted Sciences Applications International Corporation (SAIC) to prepare the economic analysis. Their report titled, *Potential Costs of Complying with the California Toxics Rule for Five Los Angeles County Sanitation District Facilities* (March 21, 2001), presented a worst case scenario and a most likely control scenario for all five facilities. For the Pomona WRP, the worst case control scenario would require the use of Granular Activated Carbon (GAC), with a construction cost of about $12 Million, and an operation costs of $387,000 per year. The most likely control scenario required implementation of a source control or pollutant minimization program, a plant study for process optimization, and an improved coagulant chemical addition process, at a cost of $141,000 per year. Although the focus of the study was to consider CTR-based limits, the study did include consideration of the 4 µg/L MCL-based limit for Bis(2-ethylhexyl)phthalate. The LACSD plants have focused on source control and pollution prevention, process optimization, and cleaner laboratory analytical techniques to achieve compliance with their permit limitations. In the case of Bis(2-ethylhexyl)phthalate, using cleaner sampling techniques has made a big difference in eliminating the amounts of detects (or false positives) obtained. The clean hands technique involved using gloves and bottles that were free of phthalates, for example using teflon and glassware. In no case did any of the LACSD POTWs have to install costly treatment systems for the removal of CTR-based or MCL-based pollutants.

Regional Board staff conclude that additional treatment units would not be required to meet the new limitations contained in the accompanying Order. The City of Los Angeles may conduct an economic analysis and submit it to the Regional Board for consideration, during the public comment period, if so desired.

E. As a mature built-out city, we are not aware of any significant need for developing housing in the City of Los Angeles.

F. The Tillman WRP already recycles large quantities of treated effluent for irrigation and industrial purposes every year.

XIII. INTERIM REQUIREMENTS

1. Pollutant Minimization Program

   A. The accompanying Order provides for the use of Pollutant Minimization Program, developed in conformance with Section 2.4.5.1 of the SIP, 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 included in the permit in accordance with sections 2.4.2 or 2.4.3 above, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organisms tissue sampling) that a priority pollutant is present in the discharger's effluent above an effluent limitation.

   B. The Discharger shall develop a Pollutant Minimization Program (PMP), in accordance with Section 2.4.5.1. of the SIP, if all of the following conditions are true, and shall submit the PMP to the Regional Board within 120 days of determining the conditions are true:

      a. when there is evidence that the priority pollutant is present in the effluent above an effluent limitation and either:

         i. A sample result is reported as detected but not quantified (DNQ) and the effluent limitation is less than the reported ML; or

         ii. A sample result is reported as nondetect (ND) and the effluent limitation is less than the MDL.

      b. Examples of evidence that the priority pollutant is present in the effluent above an effluent limitation are:

         i. sample results reported as DNQ when the effluent limitation is less than the method detection limit (MDL);

         ii. sample results from analytical methods more sensitive than those methods included in the permit in accordance with Sections 2.4.2 or 2.4.3;

         iii. presence of whole effluent toxicity;

         iv. health advisories for fish consumption; or,

         v. results of benthic or aquatic organism tissue sampling.

   C. The goal of the PMP is to reduce all potential sources of a priority pollutant(s) through pollution minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the WQBEL.

D. The Discharger shall propose a plan with a logical sequence of actions to achieve full compliance with the limits in this Order. The first phase of the plan is to investigate the sources of the high levels of contaminants in the collection system. If the sources can be identified, source reduction measures (including, when appropriate, Pollution Minimization Plans) will be instituted. At the time this Order is considered, the Discharger is unsure whether or not all sources contributing to the high contaminant levels can be identified. Therefore, a parallel effort will be made to evaluate the appropriateness of Site Specific Objectives (SSO) and, where appropriate, Use Attainability Analyses (UAA), and modifications to and/or construction of treatment facilities. If it is determined that a SSO or UAA is necessary and appropriate, the Discharger will submit a written request for a SSO study, accompanied by a preliminary commitment to fund the study, to the Regional Board. The Discharger will then develop a workplan and submit it to the Regional Board for approval prior to the initiation of the studies.

2. Interim Limits

A. The Tillman WRP may not be able to achieve immediate compliance with the limits for copper, lead, and mercury contained in the accompanying Order Section I.1B.b. Data submitted in previous self-monitoring reports indicate that these constituents have been detected in the effluent, at least once, at a concentration greater than the new limit proposed in the accompanying Order.

B. 40 CFR, Section 131.38(e) provides conditions under which interim effluent limits and compliance schedules may be issued, but the current Basin Plan does not allow inclusion of interim limits and compliance schedules in NPDES permits for effluent limits. The SIP allows inclusion of interim limits in NPDES permits for CTR-based priority pollutants. The CTR provides for a five-year maximum compliance schedule, while the SIP allows for longer, TMDL-based compliance schedule. However, the USEPA has yet to approve the longer compliance schedules. Therefore, this Order includes interim limits and compliance schedules based on the CTR for CTR-based priority pollutants limits when the Discharger has been determined to have problems in meeting the new limits. This Order also includes a reopener to allow the Regional Board to grant TMDL-based compliance schedules if the USEPA approves the longer compliance schedule provisions of the SIP.

C. In conformance with the CTR and the relevant provisions of SIP Section 2.1, the Discharger has submitted documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutants entering the POTW. In addition, the Discharger already has in place a source control and pollutant minimization approach through its existing pollutant minimization strategies and through the pretreatment program. The duration of interim requirements established in this order was developed in coordination with Regional Board staff and the Discharger, and the proposed schedule is as short as practicable. In fact, the five-year compliance schedule is based on the maximum duration compliance schedule available because the Regional Board anticipates it will take longer than five years to achieve the final limits.