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

FACT SHEET

ORDER NO. R4-2003-0087
WASTE DISCHARGE REQUIREMENTS
FOR
OJAI VALLEY SANITARY DISTRICT
(Ojai Valley Wastewater Treatment Plant)

NPDES No. CA0053961
Public Notice No. : R4-2003-070

FACILITY ADDRESS	FACILITY MAILING ADDRESS
Ojai Valley Wastewater Treatment Plant 6363 North Ventura Avenue Ventura, CA 93001	Ojai Valley Sanitary District 1072 Tico Road Ojai, CA 93023 Contact: Ronald Sheets Telephone: (805) 646-5548

I. Public Participation

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the above-referenced facility. 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. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments should be submitted either in person or by mail to:

Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

To be fully responded to by staff and considered by the Regional Board, written comments should be received at the Regional Board offices by 5:00 p.m. on May 16, 2003.

B. Public Hearing

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

Date: June 5, 2003
Time: 9:00 a.m.
Location: City of Simi Valley, Council Chambers,
2929 Tapo Canyon Road
Simi Valley, CA 93063

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

Please be aware that dates and venues may change. Our web address is www.swrcb.ca.gov/rwqcb4 where you can access the current agenda for changes in dates and locations.

C. Information and Copying

The Report of Waste Discharge (ROWD), related documents, tentative effluent limitations and special conditions, comments received, and other information are on file and may be inspected at 320 West 4th Street, Suite 200, Los Angeles, California 90013, at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged by calling 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 the WDRs and 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 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
P.O. Box 100, 1001 I Street
Sacramento, CA 95812

II. BACKGROUND

Ojai Valley Sanitary District (OVSD or District) operates the Ojai Valley Wastewater Treatment Plant, a publicly owned treatment work (POTW). OVSD provides wastewater collection services for an estimated population of 23,000 people in the City of Ojai, the unincorporated communities of Meiners Oaks, Mira Monte, Oak View, Casitas Springs, and Foster Park. The wastewater, a mixture of domestic and industrial, receives tertiary treatment and disinfection prior to discharge to the Ventura River.

III. PURPOSE OF ORDER

The OVSD discharge treated wastewater from the Ojai Valley Treatment Plant to the Ventura River, a water of the State and the United States, is regulated under WDRs contained in Order No. 96-041 adopted by this Board on June 10, 1996, and Order No. 99-063, a revised Monitoring and Reporting Program (CI-4245), adopted by this Board on July 8, 1999. These Orders also serve as a permit under National Pollutant Discharge Elimination System (NPDES) Permit No. CA0053961. The WDRs and NPDES permit expired on May 10, 2001. Since Ojai has submitted a complete renewal application, the term of the existing WDRs and NPDES permit will be automatically extended until the Board has considered their reissuance per 40 CFR 122.6. The tentative order is the reissuance of the WDRs and NPDES permit for discharges from the treatment plant.

The United States Environmental Protection Agency (USEPA) and the Regional Board have classified the Ojai Valley Treatment Plant as a major discharger.

IV. FACILITY AND TREATMENT PROCESS DESCRIPTION

A. Ojai Valley Wastewater Treatment Plant is located at 6363 North Ventura Avenue, Ventura. It has a treatment design capacity of 3.0 million gallons per day (mgd) and an instantaneous peak flow capacity of 9 mgd. The plant discharges an average of 2.17 mgd of tertiary treated wastewater through Discharge Serial No. 1 (latitude 34^{o} 20' 33", longitude 119^{o} 17' 26") to the Ventura River, above the estuary.

B. On May 21, 1990, the Regional Board issued Cease and Desist Order No. 90-063 requiring the District to upgrade the treatment plant, particularly providing tertiary treatment and disinfection to the discharge because of the recreational beneficial use of the river downstream of the discharge. There were also problems of dissolved oxygen depletion and nuisance aquatic growth in the river due to high BOD and nutrients in the discharge. The upgrade had design specifications of 2.0 mg/L for phosphorous and 8.0 for nitrogen. Regional Board staff's best professional judgement is that it is necessary to limit the amount of nutrients discharged in the plant effluent into the Ventura River in order to limit excessive algal and aquatic plant growth and depressed dissolved oxygen that has been linked to the discharge.

C. The District completed the plant upgrade in the fall of 1997. Currently, wastewater treatment at the plant consists of: influent grinding, grit removal and screening, biological treatment using an oxidation ditch with aerobic and

anaerobic-anoxic zones for BOD, nitrogen, and phosphorous removal, final clarification, tertiary filtration, ultraviolet disinfection with chlorination/dechlorination as backup, and reaeration. Figure 2 of the permit shows the schematic diagram of the Ojai Valley Treatment Plant wastewater flow.

Following clarification, waste activated sludge is stabilized in an aerobic holding tank, dewatered in belt presses, and then dried and/or composted in sludge drying beds. Sludge is composted onsite (windrow) during dry weather and hauled to an offsite composting facility during wet weather.

D. The following are brief descriptions of the major unit processes, operations, and/or equipment:

Influent grinding: Solids such as paper and rags are ground prior to entering the treatment process to prevent entangling of these solids in the mechanical parts of the treatment chain.

Grit removal and screening: Grit is a wide assortment of inorganic solids such as pebbles, sand, silt, egg shells, glass, and metal fragments. Grit is removed by screening and settling. This material is collected and disposed of to a landfill.

Oxidation ditch. The aeration zone provides oxygen for living microorganisms that are produced and maintained to breakdown and consume the organic material in the incoming wastewater. The mixture of wastewater with such microorganisms in the oxidation ditch is known as mixed liquor. In the anoxic zone, denitrification and in anaerobic/aerobic zone phosphorus removal are accomplished biologically by anaerobic microorganisms that consume organic matter in the wastewater and reduce nitrates to nitrogen gas and phosphorus is incorporated into microbial cells.

Final clarification in secondary clarifiers: In this stage, solids (sludge) are separated from the effluent and the sludge blanket is thickened.

Equalization Basins*:* Allow for adjustments of flow to the filters throughout the day and during storm events.

Tertiary 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 granular material. In the case of the Ojai Valley Treatment Plant, sand is the filtration media. Filters remove the solids that the secondary sedimentation process did not remove, thus, improving the disinfection efficiency and reliability.

Ultraviolet disinfection: Irradiation with UV light is a promising method of disinfection. Although it provides no residual, this method is effective in inactivating both bacteria and viruses. When applied to a thin sheet of turbidity-free water it has been proven to be effective. UV spans wavelengths from 2000-3900 angstroms. The most effective band for disinfection is in the shorter range of 2000-3000 angstroms.

Chlorination. Sodium hypochlorite is used as a disinfectant in the Ojai Valley Treatment Plant as a backup to the UV system during storm events or normal process interruptions. The disinfecting agent is added to the treated effluent to destroy bacteria, pathogens and viruses, and to minimize algal growth.

Dechlorination. Prior to discharge, sodium bisulfite is added to the treated effluent to remove residual chlorine.

Belt press: Sludge is pressed between two belts to remove water.

Sludge drying beds: The sludge beds provide an area for storage and drying of sludge during dry weather so it can be windrow composted.

V. OVERVIEW OF THE WATERSHED

To implement the watershed management approach (WMA) in water quality protection, the Regional Board has divided the Los Angeles Region into 11 watershed management areas. The WMA integrates activities across the Regional Board's many diverse programs, particularly, permitting, basin planning, and other surface water oriented programs. It enables the Regional Board to better assess cumulative impacts of pollutants from all sources (point and nonpoint), and more efficiently develop watershed specific solutions that balance the environmental and economic aspects.

The Ventura River, the receiving water for the Ojai Valley WTP discharges, is part of the Regional Board designated Ventura River Watershed Management. The watershed covers a fan-shaped area of 225 square miles that is drained to the ocean by the Ventura River and its tributaries. The surface water system in the watershed generally flows in a southerly direction into an estuary at the mouth of the Ventura River. At its mouth, the river traverses an alluvial delta and forms a lagoon at the ocean shore. A sand bar generally closes this lagoon during low flow months, although during winter months the bar may be breached by high river flows. The upper end of the lagoon is part of the Emma Wood State Beach-Ventura River Group Camp, while the lower end is part of the City of San Buenaventura's Seaside Wilderness Park.

The Ventura River Watershed supports a diversity of wildlife, and is one of the southernmost rivers where endangered Steelhead Trout historically ran in large numbers. Aquatic life, such as fish, invertebrates, and algae, as well as birds, amphibians, and mammals exist in the Ventura River Watershed.

A majority of the water quality problems in the watershed involve eutrophication (excessive nutrients and their effects) although some DDT and metals have been found in mussels and fish tissues. Sediment in the estuary, however, appears uncontaminated and laboratory tests conducted by *Bay Protection and Toxic Cleanup Program* showed little sediment toxicity. In some sub-watersheds, high total dissolved solids concentrations impair the use of water for agriculture. Certain reaches of the Ventura River are listed as impaired for DDT, algae, heavy metals, trash, groundwater pumping, and/or water diversions in the 1998 Clean Water Act (CWA) Section 303(d) listing. The OVSD upgrade has addressed some of these problems, but dams and diversions remain a large problem in the watershed.

Ojai Valley Treatment Plant is the only major discharger in the watershed. For much of the year, the plant's effluent makes up two-thirds of the total river flow. Other permitted discharges in the watershed are four minor general permittees discharging wastes from groundwater seepage dewatering, recreational lake overflows, swimming pool wastes and/or water ride wastes, and 27 general industrial storm water enrollees.

VI. DISCHARGE OUTFALL

A. The Ojai Valley Treatment Plant discharges to the Ventura River, a water of the State and the United States, through one discharge point, Discharge Serial No. 001, located at the following approximate coordinates:

Latitude	34^{o} 20' 33"
Longitude	119^{o} 17' 26"

The outfall is approximately 3,000 feet upstream from the confluence of the Ventura River with Canada Larga. From the discharge point of the treatment plant, the Ventura River flows about 5 miles through the Ventura River Valley to the Pacific Ocean.

VII. DISCHARGE QUALITY

A. The Ojai Valley Treatment Plant discharges tertiary treated and disinfected municipal and industrial wastewater. In 1990, the plant effluent was implicated in a number of water quality problems in the river downstream of the discharge:

- Public health hazard – the effluent was not filtered at the time while there was an increasing use of the river, the lagoon, and surrounding beaches for recreational use;
- Nuisance aquatic plant growth because of high nitrates in the effluent; and,
- Low dissolved oxygen that could not support cold water habitat because of high BOD content of the effluent.

Furthermore, the District would not be able to comply with effluent limits for BOD, suspended solids, or turbidity without filtration, or the receiving water requirement for unionized ammonia which were adopted in Order No. 90-062. Because of the foregoing impacts of the effluent discharged on the river, the Regional Board issued Cease and Desist Order No. 90-063 on May 21, 1990, requiring the District to upgrade the plant. The District completed the upgrades in the fall of 1997.

B. Data from the OVSD's monitoring reports from the fall of 1997 to June 2002 showed that the quality of effluent discharged has significantly improved:

- The effluent is now being disinfected to an average total coliform 7-day median value of <2 MPN/100 ml. MPN is the most probable number of total coliform organisms.
- Nitrate + nitrite nitrogen has been reduced to an average of 5.3 mg/L.
- BOD has been reduced to an average of 2.55 mg/L with annual average removal of about 99.1 %.

- Suspended solids have been reduced to an average of 2.66 mg/L with annual average removal of about 99.3 %.

C. During the review process of discharge data, Regional Board staff requested the District to conduct a 48 hour continuous diurnal study of temperature and dissolved oxygen at two stations, one upstream (R-3) and one downstream (R-4) of the discharge. The purpose of this study was to determine whether the discharge affects the typical diurnal cycle of these two constituents.

Staff review of the data obtained showed that, despite the District's efforts to increase the dissolved oxygen levels in the stream to well above levels required in the Basin Plan, there are still effects from the discharge. While the data from the station upstream exhibit the typical diurnal curve for both dissolved oxygen and temperature, the data from the downstream station showed much less of the diurnal character. Temperature fluctuations during the day result from solar heating of shallow waters. Dissolved oxygen levels also fluctuate diurnally due to the following cycle. During the day, photosynthesis occurs by algae and aquatic plants, thus increasing the oxygen content of the water column. At night, photosynthesis does not occur. Plants, invertebrates, and fish are still using oxygen, thereby, decreasing the dissolved oxygen content of the water column during nighttime hours. The dissolved oxygen content of all surface waters designated as both COLD and SPWN shall not be depressed below 7 mg/L as a result of waste discharges.

Additionally, staff noticed that the temperature difference between the upstream and downstream stations exceeded five degrees which is a violation of the Basin Plan which states "for waters designated with a cold freshwater habitat, the temperature of the receiving water at any time or place and within any given 24-hour period shall not increase by more than $5^{o}F$ as a result of the waste discharged". Reaches 3 and 4 of the Ventura River are 303(d) listed for withdrawals and diversions. It is staff's best professional judgement that once these are addressed, and the flow increased to the lower watershed, there will not be a problem with temperature as a result of the discharge. However, it is important to note that the Ventura River is steelhead trout territory and as such, temperature is very important. Steelhead trout have been observed in the river in temperatures outside of their normal range; it is believed that some populations in the south have adapted to these warmer temperatures.

However, the District indicated that the downstream temperature probe employed in the study was placed no more than 150 feet downstream of the discharge and, as such, its location may be within the mixing zone. Therefore, the temperature data may not be representative.

D. Due to the upgrade of the treatment plant, instead of the usual past five years effluent data, only those gathered from the fall of 1997 through June, 2002, were used for effluent characterization. For this period, the volume and characteristics of the discharged effluent (conventional and non-conventional) obtained from the OVSD's monitoring reports are given in the following table. Attachment R of the permit contains a more extensive statistical analysis of effluent priority pollutant data collected by the District from fall 1997 to June 2002. 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 1
Effluent Characteristics – October 1997 to June 2002

Constituents	Unit	Average	Maximum	Minimum
Flow	MGD	2.25	3.61	1.93
pH	pH unit	7.74	8.0	7.1
Temperature	^{o}F	70	78	63
$BOD_5$20^{o}C	mg/L	2.55	4	2
Total Suspended Solids	mg/L	2.33	----	----
Dissolved Oxygen	mg/L	8.41	9.8	7.63
Ammonia Nitrogen	mg/L	0.06	----	----
Total phosphorous	mg/L	1.69	5	0.3
Oil and Grease	mg/L	4	5	3
Total Dissolved Solids	mg/L	840	900	750
MBAS	mg/L	<0.1	<0.1	<0.05
Settleable Solids	mg/L	<0.1	----	----

E. Table 2 shows the characteristics of the wastewater discharged based on data submitted in the District's 2001 annual summary. report 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. The 'CTR' number corresponds to the number in the California Toxics Rule.

Table 2
Effluent Characteristics – 2001

CTR#	Constituents	Units	Average	Maximum	Minimum
	Flow	MGD	2.35	3.61	1.97
	pH	pH unit	7.8	8.0	7.6
	Temperature	^{o}F	70	77	61
	$BOD_5$20^{o}C	mg/L	3	----	----
	Total Suspended Solids	mg/L	2	----	----
	Dissolved Oxygen	mg/L	8.3	9.8	7.1
	Ammonia Nitrogen	mg/L	0.3	0.46	<0.05
	Total phosphorous	mg/L	1.1	2.0	0.3
	Settleable solids	mg/L	<0.1	<0.1	<0.1
	Oil and Grease	mg/L	<3	5	<1
	Total Dissolved Solids	mg/L	821	890	750
	MBAS	mg/L	<0.1	<0.1	<0.1
	Chloride	mg/L	120	120	107
	Sulfate	mg/L	257	290	230
	Boron	mg/L	0.52	0.56	0.50
	Turbidity	NTU	<1	1	<1
	Fluoride	mg/L	0.4	0.5	0.3

	Organic-N	mg/L	1.2	2.2	0.5
CTR#	Constituents	Units	Average	Maximum	Minimum
	Nitrate-N + Nitrite N	mg/L	4.9	14.2	2.11
	Total Nitrogen	mg/L	6.1	15.5	3.2
	Aluminum	µg/L	105	210	0.2
1	Antimony	µg/L	<0.25	<1	<0.5
2	Arsenic	µg/L	<0.25	<1	<0.5
	Barium	µg/L	25	26	<0.1
3	Beryllium	µg/L	1.9	3.9	<0.1
4	Cadmium	µg/L	<0.005	<0.1	0.01
5a	Chromium III	µg/L	0.4	0.4	0.4
5b	Chromium VI	µg/L	0.89	2	0.009
	Chromium (total)	µg/L	<0.25	0.25	<0.5
	Cobalt	µg/L	<0.5	<0.5	<0.5
6	Copper	µg/L	2.8	2.9	2.7
	Iron	µg/L	<0.025	<50	<0.05
7	Lead	µg/L	0.96	1	0.92
8	Mercury	µg/L	<0.00025	0.0008	<0.0005
	Molybdenum	µg/L	15.5	20	11
9	Nickel	µg/L	2.7	3.4	2
10	Selenium	µg/L	0.5	1	<1
11	Silver	µg/L	<0.1	<0.1	<0.1
12	Thallium	µg/L	<0.05	<0.5	<0.1
	Vanadium	µg/L	0.85	1.7	<2
13	Zinc	µg/L	34	39	29
14	Cyanide	µg/L	<1.5	<10	<3
15	Asbestos	fibers/L	<0.73	<0.73	<0.73
16	2,3,7,8-TCDD (Dioxin)	µg/L	8.47E-07	8.47E-07	8.47E-07
17	Acrolein	µg/L	<2.5	<100	<5
18	Acrylonitrile	µg/L	<1	<100	<2
19	Benzene	µg/L	<0.5	<0.5	<0.5
20	Bromoform	µg/L	0.95	1.9	<0.5
21	Carbon tetrachloride	µg/L	<0.5	<0.5	<0.5
22	Chlorobenzene	µg/L	<0.5	<0.5	<0.5
23	Dibromochloromethane	µg/L	21	36	6
24	Chloroethane	µg/L	<0.5	<0.5	<0.5
25	2-Chloroethylvinyl ether	µg/L	<0.5	<10	<1
26	Chloroform	µg/L	5.5	6.9	<0.5
27	Bromodichloromethane	µg/L	6.3	12.6	<0.5
28	1,1-Dichloroethane	µg/L	<0.5	<0.5	<0.5
29	1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5
30	1,1-Dichloroethylene	µg/L	<0.5	<0.5	<0.5
31	1,2-Dichloropropane	µg/L	<0.5	<0.5	<0.5
32	1,3-Dichloropropylene	µg/L	<0.25	<2	<0.5
33	Ethylbenzene	µg/L	<0.5	<0.5	<0.5
34	Methyl bromide	µg/L	<0.25	<1	<0.5

CTR#	Constituents	Units	Average	Maximum	Minimum
35	Methyl chloride (Bromomethane)	µg/L	<0.5	<0.5	<0.5
36	Methylene chloride (Chloromethane)	µg/L	<0.25	<2	<0.5
37	1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5
38	Tetrachloroethylene	µg/L	<0.5	<0.5	<0.5
39	Toluene	µg/L	<0.5	<0.5	<0.5
40	1,2-Trans-dichloroethylene	µg/L	<0.5	<0.5	<0.5
41	1,1,1-Trichloroethane	µg/L	<0.5	<0.5	<0.5
42	1,1,2-Trichloroethane	µg/L	<0.5	<0.5	<0.5
43	Trichloroethylene	µg/L	<0.5	<0.5	<0.5
44	Vinyl chloride	µg/L	<0.5	<0.5	<0.5
45	2-Chlorophenol	µg/L	<2.5	<10	<5
46	2,4-Dichlorophenol	µg/L	<2.5	<10	<5
47	2,4-Dimethylphenol	µg/L	<1	<10	<2
48	2-Methyl-4,6-dinitrophenol	µg/L	<50	<50	<50
49	2,4-Dinitrophenol	µg/L	<2.5	<50	<5
50	2-Nitrophenol	µg/L	<2.5	<10	<5
51	4-Nitrophenol	µg/L	<2.5	<50	<5
52	3-Methyl-4-chlorophenol	µg/L	<2.5	<20	<5
53	Pentachlorophenol	µg/L	<0.5	<50	<1
54	Phenol	µg/L	<0.5	<10	<1
55	2,4,6-Trichlorophenol	µg/L	<2.5	<10	<5
56	Acenaphthene	µg/L	<0.15	<10	<0.3
57	Acenaphthylene	µg/L	<0.1	<10	<0.2
58	Anthracene	µg/L	<0.15	<10	<0.3
59	Benzidine	µg/L	<2.5	<50	<5
60	Benzo(a)anthracene	µg/L	<0.15	<10	<0.3
61	Benzo(a)pyrene	µg/L	<0.15	<10	<0.3
62	Benzo(b)fluoranthene	µg/L	<0.15	<10	<0.3
63	Benzo(g,h,i)perylene	µg/L	<0.05	<10	<0.1
64	Benzo(k)fluoranthene	µg/L	<0.15	<10	<0.3
65	Bis(2-chloroethoxy)methane	µg/L	<2.5	<10	<5
66	Bis(2-chloroethyl)ether	µg/L	<0.5	<10	<1
67	Bis(2-chloroisopropyl)ether	µg/L	<1	<10	<2
68	Bis(2-ethylhexyl)phthalate	µg/L	<2.5	<10	<5
69	4-Bromophenyl phenyl ether	µg/L	<2.5	<10	<5
70	Butylbenzyl phthalate	µg/L	<2.5	<10	<5
71	2-Chloronaphthalene	µg/L	<2.5	<10	<5
72	4-Chlorophenyl phenyl ether	µg/L	<2.5	<10	<5
73	Chrysene	µg/L	<0.15	<10	<0.3
74	Dibenzo(a,h)anthracene	µg/L	<0.05	<10	<0.1
75	1,2-Dichlorobenzene	µg/L	<0.25	<10	<0.5
76	1,3-Dichlorobenzene	µg/L	<0.25	<10	<0.5
77	1,4-Dichlorobenzene	µg/L	<0.25	<10	<0.5
78	3,3'-Dichlorobenzidine	µg/L	<2.5	<20	<5

CTR#	Constituents	Units	Average	Maximum	Minimum
79	Diethyl phthalate	µg/L	<1	<10	<2
80	Dimethyl phthalate	µg/L	<1	<10	<2
81	Di-n-butyl phthalate	µg/L	<2.5	<10	<5
82	2,4-Dinitrotoluene	µg/L	<2.5	<10	<5
83	2,6-Dinitrotoluene	µg/L	<2.5	<10	<5
84	Di-n-octyl phthalate	µg/L	<2.5	<10	<5
85	1,2-Diphenylhydrazine	µg/L	<0.5	<50	<1
86	Fluoranthene	µg/L	<0.025	<10	<0.05
87	Fluorene	µg/L	<0.05	<10	<0.1
88	Hexachlorobenzene	µg/L	<0.5	<10	<1
89	Hexachlorobutadiene	µg/L	<0.5	<10	<1
90	Hexachlorocyclopentadiene	µg/L	<2.5	<10	<5
91	Hexachloroethane	µg/L	<0.5	<10	<1
92	Indeno(1,2,3-cd)pyrene	µg/L	<10	<10	<10
93	Isophorone	µg/L	<0.5	<10	<1
94	Naphthalene	µg/L	<0.1	<10	<0.2
95	Nitrobenzene	µg/L	<0.5	<10	<1
96	N-nitrosodimethylamine	µg/L	<2.5	<10	<5
97	N-nitrosodi-n-propylamine	µg/L	<2.5	<20	<5
98	N-nitrosodiphenylamine	µg/L	<0.5	<10	<1
99	Phenanthrene	µg/L	<0.025	<10	<0.05
100	Pyrene	µg/L	<0.025	<10	<0.05
101	1,2,4-Trichlorobenzene	µg/L	<2.5	<10	<5
102	Aldrin	µg/L	<0.0005	<0.005	<0.001
103	Alpha-BHC	µg/L	<0.001	<0.01	<0.002
104	Beta-BHC	µg/L	<0.001	<0.005	<0.002
105	Gamma-BHC (Lindane)	µg/L	0.0185	0.03	0.007
106	Delta-BHC	µg/L	<0.001	<0.005	<0.002
107	Chlordane	µg/L	<0.001	<0.2	<0.002
108	4,4'-DDT	µg/L	<0.0005	<0.01	<0.001
109	4,4'-DDE	µg/L	<0.0005	<0.01	<0.001
110	4,4'-DDD	µg/L	<0.0005	<0.01	<0.001
111	Dieldrin	µg/L	<0.0005	<0.01	<0.001
112	Alpha-endosulfan	µg/L	<0.0005	<0.01	<0.001
113	Beta-endosulfan	µg/L	<0.0025	<0.01	<0.005
114	Endosulfan sulfate	µg/L	<0.001	<0.01	<0.002
115	Endrin	µg/L	<0.0025	<0.01	<0.005
116	Endrin aldehyde	µg/L	<0.01	<0.01	<0.01
117	Heptachlor	µg/L	<0.001	<0.01	<0.002
118	Heptachlor epoxide	µg/L	<0.0025	<0.01	<0.005
Polychlorinated biphenyls (PCBs)					
119	Aroclor 1016	µg/L	<0.005	<0.1	<0.01
120	Aroclor 1221	µg/L	<0.005	<0.1	<0.01
121	Aroclor 1232	µg/L	<0.005	<0.1	<0.01
122	Aroclor 1242	µg/L	<0.005	<0.1	<0.01
CTR#	Constituents	Units	Average	Maximum	Minimum

123	Aroclor 1248	µg/L	<0.005	<0.1	<0.01
124	Aroclor 1254	µg/L	<0.005	<0.1	<0.01
125	Aroclor 1260	µg/L	<0.005	<0.1	<0.01
126	Toxaphene	µg/L	<0.005	<0.5	<0.01
	Phenols (chlorinated)	µg/L	<2.5	<50	<5
	Phenols (non-chlorinated)	µg/L	<2.5	<50	<5
	Radioactivity–gross alpha	pCi/L	2±4	2±5	1±2
	Radioactivity-gross beta	pCi/L	6±13	12±7	4±8

VIII. APPLICABLE PLANS, POLICIES, AND REGULATIONS

A. ***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. Both state and federal antidegradation policies require that where the quality of the waters exceed levels necessary to support the beneficial uses, that quality shall be maintained and protected unless allowing lower quality is necessary to accommodate important economic or social development, and provided the lower water quality is adequate to support the existing beneficial uses.

B. ***Sources of Drinking Water Policy.*** On May 19, 1988, the State Board adopted Resolution No. 88-63, *Sources of Drinking Water Policy*, which required all Regional Boards to designate all surface and ground waters, with limited exemptions, as suitable or potentially suitable for municipal and domestic supply. 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).*

C. ***Basin Plan.*** On June 13, 1994, the Regional Board adopted a revised *Water Quality Control Plan for the Los Angeles Region:Basin Plan for the Coastal Watershed of Los Angeles and Ventura Counties* (Basin Plan). The Regional Board amended the Basin Plan via Regional Board Resolution No. 97-02 on January 27, 1997. This updated and consolidated plan represents the Board's master quality control planning document and regulations. The revised Basin Plan was approved by the SWRCB and the State of California Office of Administrative Law (OAL) on November 17, 1994, and February 23, 1995, respectively. The Basin Plan (i) designates beneficial uses for surface and groundwaters, (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 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 update of the Basin Plan has been prepared to be consistent with all State and Regional Board

plans and policies adopted to date. This Order implements the plans, policies and provisions of the Board's Basin Plan.

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, 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.

D. ***Beneficial Uses***. The Basin Plan contains water quality objectives and beneficial uses for the Ventura River and contiguous waters.

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

<u>Ventura River:</u> Hydrologic Unit 402.10

Existing: industrial service supply, agricultural supply, groundwater recharge, freshwater replenishment, contact and non-contact water recreation, warm freshwater habitat, cold freshwater habitat, wild life habitat, rare, threatened or endangered species, migration of aquatic organisms, spawning, reproduction and early development, and wetland habitat.

Potential*: municipal and domestic supply.

The potential* MUN beneficial use is pursuant to regional Board Resolution 89-03; therefore, no effluent limits are prescribed to protect this beneficial use at this time.

<u>Ventura River Estuary</u> - Hydrologic Unit 402.10

Existing: navigation, commercial and sport fishing, contact and non-contact water recreation, warm freshwater habitat, estuary habitat, marine habitat, wildlife habitat, rare, threatened or endangered species, migration of aquatic organisms, spawning, reproduction and early development, shellfish harvesting, and wetland habitat.

2. There is public contact in the receiving water downstream of the discharge; therefore, the quality of wastewater discharged to Ventura River and to the Ventura River Estuary must be such that no public health hazard is created.

3. The beneficial uses of the receiving ground water are:

   Lower Ventura Groundwater Basin:

   Existing: industrial service supply, industrial process supply, and agricultural supply.

   Potential: municipal and domestic supply, industrial process supply.

3. 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.

E. ***Title 22 of the California Code of Regulations***. The California Department of Health Services establishes primary and secondary maximum contaminant levels (MCLs) for a number of chemical and radioactive contaminants. These MCLs can be found in Title 22, California Code of Regulations (Title 22). Chapter 3 of the Basin Plan incorporates Title 22 by reference. Title 22 MCLs have been incorporated into NPDES permits and Non-Chapter 15 WDRs to protect the groundwater recharge (GWR) beneficial uses.

Groundwater Recharge. Section of the Ventura River, Hydro Unit 402.10 is designated for GWR. Surface water from the Ventura River enters the Ojai Valley and the Ventura Groundwater Basin. Since flowing river recharges the groundwater, the Basin Plan requires Title 22-based limits be imposed to protect the precious sources of groundwater. By limiting the contaminants in the Ojai Valley WRP discharges, 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.

F. ***State Implementation Plan (SIP) and California Toxics Rule (CTR).*** The SWRCB adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (also known as the State Implementation Plan or SIP) on March 2, 2000. 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. 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: implementation provisions for priority pollutant criteria promulgated by USEPA through the California Toxics Rule (CTR) and for priority pollutant objectives established by Regional Water Quality Control Boards (RWQCBs) in their water quality control plans (Basin

Plans); monitoring requirements for priority pollutants with insufficient data to determine reasonable potential; monitoring requirements for 2, 3, 7, 8 –TCDD equivalents; and chronic toxicity control provisions. The CTR became effective on May 18, 2000 (codified as 40 CFR Part 131.38). Toxic pollutant limits are prescribed in this Order to implement the CTR 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 it can demonstrate that the chosen risk level is adequately protective of the most highly exposed subpopulation, and has 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 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.

G. ***303(d) Listed Pollutants.*** On May 12, 1999, the 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.

Within the Ventura River Watershed, the Ventura River Estuary , as well as Reaches 1, 2, 3 and 4, were classified as impaired. Reaches 3 and 4 are above the treatment
plant and will not be addressed here. The following pollutants/stressors, from point and non-point sources, were identified as impacting the receiving waters:

<u>Ventura River Estuary</u> – Hydrologic Unit 402.10
- Algae, eutrophication, DDT, and trash;

<u>Ventura River Reach 1 (Estuary to Main Street)</u> – Hydrologic Unit 402.10
- Algae, copper, silver, and zinc (metals in fish tissue); and,

<u>Ventura River Reach 2 (Main Street to Weldon Canyon)</u> – Hydrologic Unit 402.10
- Algae, copper, selenium, silver, and zinc (metals in fish tissue)

Recent data shows a downward trend in concentration for copper and silver. Selenium and zinc have higher concentrations upstream than downstream of the discharge.

Reasonable potential analysis did not trigger a limit for any of these constituents. Limits are carried over from the existing permit due to antibacksliding.

H. ***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, that 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 Part 130.7. TMDLs must be developed for the pollutants of concern which impact the water quality of water bodies on the 303(d) list. The Regional Board is developing a TMDL that assesses the extent and sources of the algae and eutrophication problem in the Ventura River. 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 algae and eutrophication TMDLs for the Ventura River Watershed are expected to be completed by 2004/05. The remaining TMDLs, such as metals (copper, silver, selenium, and zinc) and trash, are scheduled for completion by 2005/06.

I. Pursuant to Section 402(p) of the Clean Water Act and 40 CFR Parts 122, 123, and 124, the State Water Resources Control Board (State Board) adopted general NPDES permits to regulate stormwater discharges associated with industrial activity (State Board Order No. 91-13-DWQ adopted in November 1991, amended by Order No. 92-12-DWQ adopted in September 1992). The requirements of this general permit are incorporated into this permit.

J. ***Watershed Approach*****.** This Regional Board has been working to implement a Watershed Management Approach, in accordance with *Watershed Protection: A Project Focus* (EPA841-R-95-003, August 1995)*,* to address water quality protection in the Los Angeles Region. The objective is to provide a more comprehensive and integrated strategy resulting in water resource protection, enhancement, and restoration while balancing economic and environmental impacts within a hydrological-defined drainage basin or watershed. The Watershed Management Approach emphasizes cooperative relationships between regulatory agencies, the regulated community, environmental groups, and other stakeholders in the watershed to achieve the greatest environmental improvements with the resources available. This Order fosters the implementation of this approach by protecting beneficial uses in the watershed and requiring OVSD to participate with the Ventura County Watershed Protection Division, Santa Barbara ChannelKeeper, and other stakeholders, in the development and implementation of a volunteer watershed-wide monitoring program. The watershed-wide monitoring program has been developed and implemented.

The *Ventura River Volunteer Monitoring Program* is a collaborative effort between the State Board, Regional Board, Ventura County, the City of San Buenaventura, OVSD, and other stakeholders to develop and implement a volunteer based water quality monitoring program to provide scientific data on the water quality of the Ventura River Watershed. Another goal is to assess the physical, and eventually biological, health of the system and to address non point sources of pollution such as equestrian activities. Santa Barbara

ChannelKeeper is the lead volunteer organization in conjunction with the Ventura chapter of SurfRider. Both nonprofit organizations are attempting to track activities throughout the Ventura River watersheds. The goal of the volunteer monitoring program is to help facilitate a process to preserve, restore, and enhance all aspects of the watershed. Currently, the group has received funding and completed first round of monitoring. The monitoring results are published on Ventura County's web site.

The *Ventura River Steelhead Restoration and Recovery Plan* group was developed in response to the listing of steelhead trout as an endangered species by the National Marine Fisheries Service (NMFS) in August 1997. The plan was developed to 1) identify measures to mitigate impacts of ongoing operations and maintenance activities, 2) to identify future projects and, 3) identify and evaluate opportunities to promote recovery and restoration of the steelhead trout in the watershed. Stakeholders of the group consist of the Casitas Municipal Water District, City of Ventura, Ventura County Flood Control District, and seven other local public and private agencies. The plan was released in December of 1997.

Also as a result of the listing of steelhead trout as an endangered species and in relation to the *Ventura River Steelhead Restoration and Recovery Plan* group, a number of public agencies have joined together in a cooperative effort to develop a *Habitat Conservation Plan* (HCP) for the Ventura River. These agencies include the City of Ventura, Casitas Municipal Water District, County of Ventura (Flood Control District, Transportation, and Solid Waste), Ojai Valley Sanitary District, Southern California Water Company, Ojai Basin GMA, City of Ojai, and Ventura River County Water District. These agencies operate and maintain facilities along portions of the river that could affect species designated threatened or endangered by the federal government. To ensure compliance with the federal Endangered Species Act (ESA), these agencies are proactively seeking an incidental take permit under Section 10(a) of the ESA, which allows take of listed species and their habitat incidental to other lawful activities, provided the take is minimized and other measures are implemented to mitigate the impact, as described in the HCP.

IX. REGULATORY BASIS FOR EFFLUENT LIMITS AND DISCHARGE REQUIREMENTS

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

- The State Water Resources Control Board's "Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California" (the State Implementation Plan or SIP);
- The plans, policies and water quality 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;
- Administrative Procedures Manual and Administrative Procedure Updates;
- California Toxics Rule (Federal Register Volume 65, No. 97);
- Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Programs Final May 31, 1996;
- Whole Effluent Toxicity (WET) Control Policy July 1994;

- Applicable Federal Regulations
  - Federal Clean Water Act, and
  - 40 CFR Parts 122, 131, among others; and,
- Best professional judgment (pursuant to 40 CFR 122.44).

Where numeric effluent limitations have not been established in the Basin Plan, 40 CFR Part 122.44(d)(1)(vi) specifies that water quality-based effluent limits may be set based on USEPA criteria, for example, USEPA's national recommended Section 304(a) water quality criteria for nonpriority pollutants and pollutants having organoleptic effects, and supplemented where necessary by other relevant information to attain and maintain narrative water quality criteria to fully protect designated beneficial uses.

B. U.S. EPA regulations, policy, and guidance documents upon which Best Professional Judgment (BPJ) was developed may include in part:

- Inspectors Guide for Evaluation of Municipal Wastewater Treatment Plants, April 1979 (EPA/430/9-79-010);
- Fate of Priority Pollutants in Publicly Owned Treatment Works Pilot Study October 1979 (EPA-440/1-79-300);
- Technical Support Document for Water Quality Based Toxics Control March 1991 (EPA-505/ 2-90-001); and,
- USEPA NPDES Permit Writers' Manual, December 1996 (EPA-833-B-96-003).

C. Pursuant to 40 CFR Part 403, OVSD developed and has implemented an approved industrial wastewater pretreatment program. This Order requires implementation of the approved pretreatment program. Two non-categorical Significant Industrial Users (SIUs) and two Categorical Industrial Users (non-discharging at this time) are subject to OVSD's pretreatment program. The two SIUs are subject to local limits, but not categorical pretreatment standards.

D. To implement Section 405 (d) of the Clean Water Act, on February 19, 1993, USEPA promulgated 40 CFR Part 503 to regulate the use and disposal of municipal sewage sludge. This Order implements the regulations and it is the responsibility of the Discharger to comply with said regulations, which are enforceable by USEPA.

E. Pursuant to Section 402(p) of the Clean Water Act and 40 CFR Parts 122, 123, and 124, the State Water Resources Control Board (State Board) adopted general NPDES permits to regulate stormwater discharges associated with industrial activity (State Board Order No. 91-13-DWQ adopted in November 1991, amended by Order No. 92-12-DWQ adopted in September 1992). The requirements of this general permit are incorporated into this permit.

F. ***Federal Water Pollution Control Act (CWA).*** Effluent limitations and toxic effluent standards 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.

Antibacksliding provisions are contained in Sections 303(d)(4) and 402(o) of the CWA, and in 40 CFR Part 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:

1. 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 State treatment standard or water quality standard.

2. 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 40 CFR 122.62, or a variance has been granted; 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 exceptions "c" and "e" (as listed above) do not apply to water quality-based effluent limitations. Thus, exceptions c & e would only apply to technology-based effluent limitations derived using best professional judgement.

3. 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 and met, 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.

G. ***Applicable Water Quality Objectives***.

The Basin Plan includes narrative and numeric Water Quality Objectives (WQOs). The CTR promulgates numeric aquatic life criteria for 23 toxic pollutants and numeric human health criteria for 57 toxic pollutants. A compliance schedule provision in the SIP authorizes the State to issue schedules of compliance for new or revised NPDES permit limits based on the federal criteria when certain conditions are met.

Where a narrative water quality objective has been established in the Basin Plan and there is reasonable potential for a discharge to exceed this objective, 40 CFR Part 122.44(d)(1)(vi) specifies that numeric water quality-based effluent limitations must be established to ensure the attainment and maintenance of the narrative objective protecting the designated beneficial use. For example, in accordance with 40 CFR Part 122.44(d)(1)(vi)(A), such water quality-based effluent limitations may be based on USEPA's national recommended Section 304(a) water quality criteria and supplemented, where necessary, by other relevant information to attain and maintain the narrative water quality objective protecting designated beneficial uses. In California, pollutant parameters limited in this manner would likely include nonpriority pollutants at concentrations which produce toxic effects and pollutants at concentrations which produce organoleptic effects. Organoleptic effects are those affect sensory organs; such as smell, taste, etc.

H. ***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 423, Appendix A) and include metals and man-made organic compounds. Non-conventional pollutants are those that do not fall under either of the two previously described categories and include such parameters as ammonia, nitrogen, phosphorous, chemical oxygen demand, and whole effluent toxicity.

I. ***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 that are specified in 40 CFR 133. These technology-based regulations apply to all POTWs and identify the minimum level of effluent quality attainable by secondary treatment in terms of five-day biochemical oxygen demand, total suspended solids, and pH.

J. ***Water Quality-Based Effluent Limitations (WQBEL).*** 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. Applicable water quality standards for the Ventura River are contained in the Basin Plan and CTR, as described in previous findings.

K. ***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 water quality based effluent limits (WQBELs) that will protect water quality. As documented in Attachment R and 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.

The Attachment R documents the reasonable potential analysis. Analysis include previous 5 years monitoring data and the interim monitoring data from July 2001 through June 2002 for effluent and receiving water. After completion of 18 months interim monitoring, the permit will be reopened to run RPA to prescribe the final effluent limits.

L. ***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 with effluent limits for water quality based on applicable WLAs. In the absence of a TMDL, effluent limits for 303(d) listed pollutants will be addressed in the following manner:

a. If the impairment is due to water column exceedances of effective numeric water quality objectives/criteria, then the only WQBEL which will not allow

the discharge to cause or contribute to a violation of the numeric water quality objectives/criteria protecting the beneficial use(s) are end-of-pipe effluent limits based on these objectives/criteria.

X. REASONABLE POTENTIAL ANALYSIS

Reasonable Potential Analyses for Toxic Pollutants. As specified in 40 CFR Part 122.44(d)(1)(i), permits are required to include limits for all pollutants that the permitting authority determined are or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard. Using the method described in the SIP, Regional Board staff have conducted Reasonable Potential Analyses (RPA) on priority pollutants using the Discharger's monitoring data and other available information regarding the discharge and receiving water. Attachment R summarizes the results of RPA; and where available, the lowest adjusted criteria (C_a) the maximum effluent concentrations (MECs), and the calculated effluent limits.

a. ***RPA Data.*** Regional Board staff used priority pollutant data from January 1998 (i.e., when operation of the upgraded plant had stabilized) through June 2002, including the results of the interim monitoring program, in the RPAs.

b. ***Interim Monitoring.*** In accordance with the SIP and pursuant to Water Code section 13267, the Regional Board required the Discharger to conduct monthly interim monitoring of priority pollutants (except for asbestos and 2,3,7,8-TCDD) in the effluent and receiving water. Monitoring for asbestos and 2,3,7,8-TCDD is semiannual. The goal is to obtain an adequate number of data points for statistical analyses. Interim monitoring started in July 2001 and completed in December 2002. Results of interim monitoring are reported to the Regional Board on a quarterly basis.

   Interim monitoring data from July 2001 to June 2002 were used in the RPAs. Once the reports for the remaining six months (July to December 2002) are received, Regional Board staff will again conduct RPAs, and when appropriate, reopen this Order to include the results of the revised RPAs.

c. ***Reasonable Potential Determination.*** Section 1.3 of the SIP details the procedure in conducting a RPA. The preliminary steps involve the following:

   i. Identifying the lowest or most stringent criterion or water quality objective for the pollutant "(C)";
   ii. Adjusting the selected criterion/objective, when appropriate, for hardness, pH, and translators of the receiving water (C_a). For the OVSD permit, the hardness used was 400 mg/L as $CaCO_3$. Ambient hardness ranged from 327 to 488 mg/L averaging 427. The SIP only allows a freshwater maximum hardness of 400 mg/L as $CaCO_3$.
   iii. Collating the appropriate effluent data for the pollutant;
   iv. Determining the observed maximum concentration in the effluent (MEC) from the effluent data; and
   v. Determining the observed maximum ambient background concentration of the pollutant (B).

There are three tiers in determining reasonable potential:

- For the first tier, the MEC is compared with the adjusted lowest applicable water quality objective or criterion (C_a). If the pollutant was not detected in any samples and the reported detection limits were below C_a, the lowest detection limit is used as the MEC. If the MEC is greater than C_a, then there is reasonable potential for the constituent to cause or contribute to an excursion above C_a and a WQBEL must be prescribed. If the MEC is less than C_a or if the pollutant were not detected in any of the effluent samples and all of the reported detection limits were greater than or equal to C_a, proceed with Tier 2.

- For the second tier, if the MEC is less than C_a or if the pollutant was not detected in any of the effluent samples and all of the detection limits were greater than or equal to C_a, then the observed maximum ambient background concentration (B) of the pollutant is compared with C_a. If B is greater than C_a, then a WQBEL is required. If B is less than C_a, proceed to Tier 3.

- For the third tier, other information available, such as the CWA 303(d) List and fish advisories, is reviewed to determine RPA,. Section 1.3 of the SIP describes the type of information that can be considered in Tier 3. If the review indicates the need for a WQBEL to protect the beneficial uses, regardless of the results of Tier 1 and Tier 2, a WQBEL is prescribed.

On contract with the State Board, Scientific Applications International Corporation (SAIC) developed software to determine RPAs and, when reasonable potential exists, calculate the WQBELs, following procedures in SIP. Regional Board staff used this software, known as California Permit Writers Training Tool (CAPWTT). However if the pollutant has an MCL, Regional Board staff compares the CAPWITT-calculated WQBEL with the MCL-based WQBEL and selects the more stringent of the two as the limit.

Using the method described in the TSD, the Regional Board has conducted Reasonable Potential Analyses for Chronic Toxicity using the discharger's effluent data from their ROWD and annual self monitoring reports. The RPA compares the effluent data with USEPA's 1 Tuc water quality criteria. The Discharger's effluent demonstrated Chronic 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 toxicity in the receiving water and, consistent with SIP section 4, the Order contains a numeric effluent limitation for Chronic Toxicity. Furthermore, the Discharger has not conducted any Toxicity Identification Evaluations (TIEs) or Toxicity Reduction Evaluations (TREs). The circumstances warranting a numeric Chronic Toxicity effluent limitation are presently under review by the State Water Resources Control Board (State Board) in SWRCB/OCC Files A-1496 & A-1496(a) [Los Coyotes/Long Beach Petitions]. The State Board's decision is expected in July 2003. In the event the State Board removes the numeric chronic toxicity effluent limitation from the Los Coyotes/Long Beach permits or replaces the limit with a narrative chronic toxicity effluent limitation, this Order contains a

reopener to allow the Regional Board to modify this permit, if necessary, consistent with the State Board order on the Los Coyotes/Long Beach Petitions.

Toxic Pollutant WQBELs**.** The following toxic pollutants exhibited reasonable potentials to exceed their respective most stringent water quality objective or criterion, therefore, WQBELS are prescribed in this Order: bromodichloromethane, dibromochloromethane, bis(2-ethylhexyl)phthalate, cyanide, thallium and lindane. WQBELS for thallium and bis(2-ethylhexyl)phthalate were based on Title 22 MCLs, the others were based on the CTR criteria.

In general, no numerical limit is prescribed for a toxic pollutant that has been determined to have no reasonable potential to cause or contribute to excursions of water quality objectives or CTR criteria. Arsenic, cadmium copper, mercury, selnium, chromium VI, iron, lead, silver, and toluene did not exhibit reasonable potential on their respective most stringent CTR criteria – aquatic life protection - but had limits in the previous permit, Order No. 96-041. The previous permit limits which were based on either Title 22 MCLs or the USEPA Water Quality Criteria are being retained for consistency with the Antibacksliding Policy.

There are only two data points for TCDD – one is below the most stringent criterion and one is above the criterion. The corresponding receiving water data show that TCDD has not been detected. Ojai Valley WTP has no industrial users that could be a source of TCDD. Based on this information and exercising best professional judgement, no TCDD limit is prescribed in this Order; however, the Discharger is required to monitor on a semiannual basis for the next two years to obtain adequate information for an RPA. In the event that there is a confirmed detection of TCDD, the Discharger is required to conduct a source investigation and develop and implement a Pollution Minimization Program (PMP) for this constituent. If the additional results indicate that there is reasonable potential, then the permit will be reopened and CTR-based limits for TCDD will be added.

XI. WASTE DISCHARGE REQUIREMENTS

A. On the basis of the preliminary staff review and application of state and federal authorities, the Board proposes to renew the permit.

B. Numeric toxic constituent limitations are based on the Basin Plan's 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 unless a limit exists in the current Order.

C. Pursuant to 40 CFR 122.45(d)(2), for 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. Pursuant to 40 CFR

122.45(d)(1), daily maximum limitations are included in the permit. 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.

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.

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

- 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.

Attachment R shows ECA, LTA and, AMELs and MDELs tables and limit calculations for priority pollutants that triggered limits.

D. Pursuant to 40 CFR 122.45(f), mass-based limits are included in the tentative permit, in addition to concentration-based limits.

E. The numeric limitations contained in this Order are intended to protect and maintain existing and potential beneficial uses of the receiving waters.

F. Effluent Limitations:

1. Limits for Conventional and nonconventional pollutants:

		Discharge Limitations	
Constituents	**Units**	**Monthly Average [1/]**	**Daily Maximum [2/]**
BOD_5 (20°C)	mg/L	10	15
	lbs/day[3/]	250	375
Suspended Solids	mg/L	10	15
	lbs/day[3/]	250	375
Oil and Grease	mg/L	10	15
	lbs/day[3/]	250	375
Residual Chlorine	mg/L	----	0.1
Settleable Solids	ml/L	0.1	0.2
Total Dissolved Solids	mg/L	1500	----
	lbs/day[3/]	37,500	----
Sulfate	mg/L	500	----
	lbs/day[3/]	12,500	----

Chloride	mg/L	300	----
	lbs/day[3/]	7,500	----
Fluoride	mg/L	1.0	----
	lbs/day[3/]	25.02	----

		Discharge Limitations	
Constituents	**Units**	**Monthly Average [1/]**	**Daily Maximum [2/]**
Boron	mg/L	1.5	----
	lbs/day[3/]	37.5	----
Nitrate-N+Nitrite-N	mg/L	8[4/]	10
	lbs/day[3/]		250
Nitrite-N	mg/L		1
	lbs/ day[3/]		25
Phosphorous	mg/L	2[4/]	
Total ammonia**	mg/L	**	**
	lbs/day[3/]	**	**
Detergents (as MBAS)	mg/L	0.5	----
	lbs/day[3/]	12.5	----

1/ As defined in Standard Provisions, Attachment N.

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

3/ Based on the plant design flow rate of 3.0 MGD. During events, such as storms, in which the flow exceeds the design capacity, the mass discharge rate limitations will be tabulated using the concentration limits and the actual flow rates.

4/ Based on the design capability of the plant. This is only a performance goal and not an enforceable limit. In the event of exceedance of the goal, the Discharger shall investigate the cause, implement remedial measures, and report findings. Performance goals are intended to encourage and facilitate the minimization of pollutant loading while, at the same time, maintaining the incentive for future voluntary improvements of water quality whenever feasible, without the imposition of more stringent limits based on improved performance. They are not considered as limitations or standards for the regulation of the discharge from the treatment facility.

** Ojai Valley Treatment Plant must meet the total ammonia limitations contained in Attachment H, Basin Plan Tables 3-1 and 3-3, for the protection of freshwater aquatic habitat, immediately.

2. 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 resupply 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:

- the monthly average shall not exceed 30 mg/L and
- the 7-day average shall not exceed 45 mg/L.

Ojai Valley Treatment Plant provides tertiary treatment, as such, the limits in the permit are more stringent than secondary treatment requirements. The Plant achieves solids removal that is better than secondary-treated wastewater by filtering the effluent.

The monthly average and the daily maximum limits cannot be removed because none of the exceptions under the Antibacksliding Policy apply. Those limits were all included in the previous permit (Order 96-041) and the Plant has been able to meet both limits for both BOD and suspended solids.

In addition to having mass-based and concentration-based effluent limitations for BOD and suspended solids, the Ojai Valley Treatment Plant also has a percent removal requirement for these two constituents. In accordance with 40 CFR Parts 133.102(a)(3) and 133.102(b)(3), the monthly 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 monthly average values of the raw wastewater influent pollutant concentrations to the facility and the monthly 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 exceptions under the Antibacksliding Policy apply. The monthly average and daily maximum limits were both included in the previous permit (Order 96-041) and the Plant 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 a 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 exceptions under the Antibacksliding Policy apply. Both limits were included in the previous permit (Order 96-041) and the Plant has been able to meet both limits.

d. *Residual chlorine*

Disinfection of wastewater 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 Monthly Average limitation, because it is not as protective 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. *Total Dissolved Solids, Sulfate, Chloride, and Boron*

The limits for total dissolved solids, sulfate, chloride, and boron are based on the Basin Plan Table 3-8 (page 3-13). This table contains these specific limitations for this reach of the Ventura River. It is practicable to express the limit as a monthly average, since these constituents are not expected to cause acute effects on beneficial uses.

f. *Fluoride*

The limit for fluoride is based on the Basin Plan Table 3-6 (page 3-9). It is practicable to express the limit as a monthly average, since fluoride is not expected to cause acute effects on beneficial uses.

g. *Iron*

The limit for Iron is based on the Basin Plan (incorporation of Title 22, *Drinking Water Standards,* by reference*)*. 300 µg/L is the secondary MCL for iron. Iron is not a priority pollutant. The monthly average limit cannot be removed because none of the exceptions under the Antibacksliding Policy apply. This limit was included in the previous permit (Order 96-041) and the Plant has been able to meet the limit.

h. *Methylene Blue Activated Substances (MBAS)*
The MBAS procedure tests for the presence of anionic surfactants (detergents) in water. Surfactants disturb the water surface tension which affects insects and can affect gills in aquatic life. The monthly average limit for Methylene Blue Activated Substances (MBAS) is based on the Basin Plan (page 3-11), which reads, "Waters shall not have concentrations greater than 0.5 mg/L." The Basin Plan references the Department of Health Services (DHS) secondary drinking water standard. Since the Basin Plan objective is based on a secondary drinking water objective, it is practicable to have a monthly average limitation. At concentrations of 0.5 mg/L, foaming has not been observed in the effluent.

i. *Total Inorganic Nitrogen* Total inorganic nitrogen is the sum of Nitrate-nitrogen and Nitrite-nitrogen. Nitrogen is considered 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).

1) **Algae**. Several reaches of the Ventura 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). Total nitrogen will be the indicator parameter intended to control algae, pursuant to 40 CFR 122.44(d)(1)(vi)(C).

2) **Concentration-based limit**. The performance goal for total inorganic nitrogen of 8 mg/L is based on the average concentration achievable by the plant design incorporated during the upgrade by the Discharger.

3) Mass based limit. The mass based limit for inorganic nitrogen was based on the plant design flow of 3 MGD.

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).

j. *Total ammonia*

Since ammonia has reasonable potential to cause or contribute to an excursion of a water quality objective, a water quality-based effluent limitation is required in order to be protective of the water quality objective. The Basin Plan states that the limit for ammonia must be met no later than June 14, 2002, OVSD must meet this limit because the Ventura River is steelhead trout habitat and therefore immediate compliance is necessary. The upgraded plant was designed to fully oxidize ammonia and staff do not believe this will be a problem for OVSD. The numerical limits are contained in Basin Plan Tables 3-1 and 3-3 (Attachment H).

The values that appear in the 1994 Basin Plan Ammonia Tables were based on the *Quality Criteria for Water 1986* (EPA 440/5-86-001) document.

To express the 1-Hour and the 4-Day total ammonia concentrations as nitrogen, the tabulated values should be multiplied by the 0.822 conversion factor. The factor was obtained by using stoichiometry.

Atomic mass of nitrogen = 14.01. Atomic mass of hydrogen = 1.008. In one mole of ammonia (NH_3), there is one nitrogen for every 3 hydrogens. Therefore, the molecular weight of NH_3 = 14.01 + (3 x 1.008) = 17.034. The conversion factor is:

$$\frac{1 \text{ mole N}}{1 \text{ mole } NH_3} = \frac{14.01 \text{ mg N}}{17.037 \text{ mg } NH_3} = 0.822$$

k. *Coliform*

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 technology-based effluent limitations for total coliform:

- the median number of coliform organisms at the end of the UV channel, during normal operation of the UV channel, and at the end of the chlorine contact chamber, when the backup method is used, does not exceed 7-day median of 2.2 per 100 milliliters, and
- the number of coliform organisms must not exceed 23 per 100 milliliters in more than one sample within any 30-day period.

These limits for coliform must be met at the point of the treatment train immediately following disinfection. The disinfection and filtration processes reduce the likelihood of having pathogens in the effluent. The technology-based effluent limitation is also protective of water quality.

l. 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. 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.

m. 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).

n. 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. The effluent limitation for radioactivity which reads, "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," is based on the Basin Plan (page 3-15)

3. *Toxicity.*
Reasonable potential exists for toxicity because in the previous years toxicity exceeded 1 TUc. As such, the permit contains effluent limitations for toxicity.

The toxicity limitations are based on:
- the Basin Plan objectives (page 3-16 and 3-17)
- USEPA Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Programs Final May 31, 1996, and
- USEPA Whole Effluent Toxicity (WET) Control Policy July 1994.

Acute Toxicity Limitation:

The dischargers may test for acute toxicity by using USEPA's Methods for Measuring the Acute Toxicity of effluent to Freshwater and Marine Organisms, September 1991(EPA 600/4-90/027).

a. The acute toxicity of the effluent shall be such that: (i) the average survival in the undiluted effluent for any three (3) consecutive 96-hour static or continuous flow bioassay tests shall be at least 90%, and (ii) no single test producing less than 70% survival.

b. If either of the above requirements in (a) is not met, the Discharger shall conduct six additional tests over a six-week period. The Discharger shall ensure that they receive results of a failing acute toxicity test within 24 hours of the completion of the test and the additional tests shall begin within 3 business days of the receipt of the result. If the additional tests indicate compliance with acute toxicity limitation, the Discharger may resume regular testing. However, if the results of any two of the six accelerated tests is less than 90% survival, then the Discharger shall begin a Toxicity Identification Evaluation (TIE). The TIE shall include all reasonable steps to identify the sources of toxicity. Once the sources are identified, the Discharger shall take all reasonable steps to reduce toxicity to meet the objective.

c. If the initial test and any of the additional six acute toxicity bioassay tests result in less than 70% survival, including the initial test, the Discharger shall immediately implement the initial investigation TRE workplan.

d. The Discharger shall conduct acute toxicity monitoring as specified in Monitoring and Reporting Program No. 4245.

Chronic Toxicity Limitation and Requirements:
Final effluent water quality data, contained in the Discharger's monitoring reports, shows that chronic toxicity in the effluent has exceeded 1 TUc several times. Those same monitoring reports lack any information discussing TIE or TRE efforts on the part of the Discharger, which lead staff to conclude that TREs were not conducted. Therefore, pursuant to the SIP and the TSD, reasonable potential exists for toxicity. As such, the permit contains numeric effluent limitations for toxicity.

The toxicity numeric effluent limitations are based on:

- 40 CFR 122.2 (Definition of Effluent Limitation)
- 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.
- 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.
- Basin Plan objectives and implementation provisions for toxicity
- Regions 9 & 10 Guidance for implementing Whole Effluent Toxicity Programs Final May 31, 1996.
- Whole Effluent Toxicity (WET) Control Policy July 1994
- Technical Support Document (several chapters and Appendix B)

a. The chronic toxicity of the effluent shall be expressed and reported in toxic units, where:

$$TU_c = \frac{100}{NOEC}$$

The No Observable Effect Concentration (NOEC) is expressed as the maximum percent effluent concentration that causes no observable effect on test organisms, as determined by the results of a critical life stage toxicity test.

b. Chronic toxicity of 100% effluent shall not exceed a monthly median of 1.0 TU_c or a daily maximum of 2.0 TU_c in a critical life stage test.

c. If the chronic toxicity of the effluent exceeds the monthly median of 1.0 TU_c, the Discharger shall immediately implement accelerated chronic toxicity testing according to MRP No. 4245, Section VII. 3.b. If any three out of the initial test and the six accelerated tests results exceed 1.0 TU_c, the Discharger shall initiate a TIE and implement the Initial Investigation TRE Workplan, as specified in the following section of this Order (Section I.C.4).

d. The Discharger shall conduct chronic toxicity monitoring as specified in MRP No. 4245.

The monthly median effluent limitation 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 a statistical approach to developing a maximum daily effluent limitation. The daily maximum limit of 2.0 TU_c was derived from plant criteria using historical effluent chronic toxicity data from annual discharge monitoring reports as well as being consistent with other similar treatment plants.

4. Limits for priority pollutants:

			Discharge Limitations	
CTR*	**Constituent**	**Units**	**Monthly Average [1/4]**	**Daily Maximum [2/]**
12	Thallium [5/]	µg/L	2 [7/, 8/, b]	
		lbs/day [3/]	0.05	
14	Cyanide[6/,]	µg/L	3.4 [8/,c]	9.6 [8/,c]
		lbs/day [3/]	0.084	0.240
105	Lindane	µg/L	0.063 [8/,d]	0.23 [8/,d]
		lbs/day [3/]	0.0016	0.0058
23	Dibromochloromethane	µg/L	34.00 [8/,d]	133 [8/,d]
		lbs/day [3/]	0.852	3.33

27	Dichlorobromomethane	µg/L lbs/day [3/]	46 [8/,d] 1.153	190 [8/,d] 4.85
68	Bis(2-ethylhexyl)phthalate	µg/L lbs/day [3/]	4.0 [7/,8/,b] 0.100	---
CTR*	**Constituent**	**Units**	**Monthly Average [1/4]**	**Daily Maximum [2/]**
2	Arsenic	µg/L lbs/day [3/]	50 [9/] 1.25	---
4	Cadmium	µg/L lbs/day [3/]	50 [9/] 1.25	---
5	Chromium	µg/L lbs/day [3/]	5 [9/] 0.125	---
6	Copper	µg/L lbs/day [3/]	1000 [10/] 25	---
	Iron	µg/L lbs/day [3/]	300 [10/] 7.5	---
7	Lead	µg/L lbs/day [3/]	50 [10/] 1.25	---
8	Mercury	µg/L lbs/day [3/]	2 [9/] 0.05	---
10	Selenium	µg/L lbs/day [3/]	50 [9/] 1.25	---
11	Silver	µg/L lbs/day [3/]	50 [10/] 1.25	---
13	Zinc	µg/L lbs/day [3/]	5000 [10/] 125	---
39	Toluene	µg/L lbs/day [3/]	150 [9/] 3.75	---

1/ As defined in Standard Provisions, Attachment N.

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

3/ Based on the plant design flow rate of 3.0 MGD. During events, such as storms, in which the flow exceeds the design capacity, the mass discharge rate limitations will be tabulated using the concentration limits and the actual flow rates.

4/ Compliance may be determined from a single analysis or from the average of the initial analysis and three additional analyses taken one week apart once the results of the initial analysis are obtained.

5/ Based on total recoverable metals. These limits may be modified to total dissolved metals if the Discharger requests and has conducted a study on the site specific translator according to USEPA guidance document and/or state protocols, if applicable.

6/ The recovery of free cyanide from metal complexes must be comparable to that achieved by Standard Methods 412 F, G, and H (Standard Methods for the Examination of Water and Wastewater; Joint Editorial Board, American Public Health Association, American Water Works Association, and Water Pollution Control Federation [Water Environment Federation]; most recent edition).

7/ Basin Plan, Title 22 MCLs. MCL limits are more stringent than RPA triggered limits.

8/ For priority pollutants, Section 2.4.5 of CTR *Compliance Determination*, reads, "Dischargers shall be deemed out of compliance with an effluent limitation if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported ML."

9/ Limits carried over from the previous Order to prevent backsliding. These limits are based on Basin Plan (Title 22) MCL drinking water for the protection of the groundwater recharge beneficial use.

10/ Limits carried over from the previous Order to prevent backsliding. Limit based on USEPA water quality Criteria for water 1986 [EPA 440/5-86-001, May 1, 1986].

Additional Footnotes - Priority Pollutants:

a. It is carried over from Order 96-041. Due to antibacksliding, the limit can not be removed until we have information to warrant its removal.

b. Based on Basin Plan (incorporation of Title 22, *Drinking Water Standards,* by reference) is more stringent than RPA limit therefore MCL limit is prescribed.

c. Based on most stringent CTR criteria [Criterion Continuous Concentration (CCC)] for the protection of freshwater aquatic life. To arrive at this calculated limitation, the CTR CCC was adjusted, according to SIP Section 1.4.

Federal Register Vol. 65, No. 97, page 31689, discusses the basis for the aquatic life criteria in the CTR. The Criterion Maximum Concentration (CMC), a short term concentration limit, and the Criterion Continuous Concentration (CCC), a four day concentration limit, are designed to provide protection of aquatic life and its uses from acute and chronic toxicity to animals and plants. The criteria are intended to identify average pollutant concentrations which will produce water quality generally suited to maintenance of aquatic life and designated uses while restricting the duration of excursions over the average so that total exposures will not cause unacceptable adverse effects.

Federal Register Vol. 65, No. 97, page 31691, discusses how CCC is intended to be the highest concentration that could be maintained indefinitely in a water body without causing an unacceptable effect on aquatic community or its uses.

d. Based on most stringent CTR criteria for the protection of human health from consumption of organisms. CTR criteria were adjusted according to SIP Section 1.4, to arrive at this calculated limitation.

5. Basis for priority pollutants:

Mixing zones and dilution credits are not used because of the following reasons:

a. Mixing occurs 290 feet from the discharge point, which is over the allowed 250 feet maximum.

b. The OVSD discharge constitutes the largest flow into the Ventura River near the vicinity and downstream of the discharge point.

c. There were instances in which 1Q10 and 7Q10 were 0 cubic feet per second (cfs). There is also wide variability in monthly average flows upstream of the discharge – 1723 cfs in January 1995 to 0 in November 1991, October 1994, and November 1994 (U.S. Geological Survey Data).

d. The receiving water primarily consists of agricultural runoff limiting its ability to assimilate additional wastes.

e. Reaches of the Ventura River, at the discharge point and downstream, are included in the 303(d) list of impaired water bodies for a number of constituents.

Allowance of a mixing zone is discretionary under Section 1.4.2 of the SIP. The Regional Board has not allowed mixing zones or dilution credits to any inland discharger.

6. Example calculation: Cyanide

Is a limit required? What is RPA?

- From Table R, *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 = 22 µg/L (CTR page 31712, column B1) and
CCC = 5.2 µg/L (CTR page 31712, column B2); and

Human Health Criteria for Organisms = 220,000 µg/L.

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

a. Calculate CV:
CV = Standard Deviation / Mean
= 1.435

b. Find the ECA Multipliers from SIP Table 1 (page 7), or by calculating them using equations on SIP page 6. When CV = 1.435, then:
ECA Multiplier acute = 0.149 and
ECA Multiplier chronic = 0.275.

c. LTA acute = ECA acute x ECA Multiplier acute
= 22 µg/L x 0.149 = 3.278 µg/L

d. LTA chronic = ECA chronic x ECA Multiplier chronic
= 5.2 µg/L x 0.275 = 1.429 µg/L

Step 4 – Select the lowest LTA.
In this case, LTA chronic < LTA acute, therefore lowest LTA = 1.429 µg/L

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

a. 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 1.435 in a previous step.
AMEL Multiplier = 2.345
MDEL Multiplier = 6.693

b. AMEL aquatic life = lowest LTA (from Step4) x AMEL Multiplier
= 1.429 µg/L x 2.345 = 3.351 µg/L

c. MDEL aquatic life = lowest LTA (from Step4) x MDEL Multiplier
= 1.429 µg/L x 6.693 = 9.546 µg/L

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

a. Find factors. Given CV = 1.435 and n = 4.
For AMEL human health limit, there is no factor.
The MDEL/AMEL = (9.546/ 3.351) human health factor = 2.853

b. AMEL human health = ECA = 220,000 µg/L

c. MDEL human health = ECA x MDEL/AMEL factor
= 220,000 µg/L x 2.853 = 627660 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.

a. Lowest AMEL = 3.35 µg/L (Based on Aquatic life protection)

b. Lowest MDEL = 9.56 µg/L (Based on Aquatic life protection)

7. 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.

8. The numeric limitations contained in this 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.

G. Pollutant Minimization Program

Compliance with effluent limitations shall be determined as follows:

1. Dischargers shall be deemed out of compliance with an effluent limitation if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported minimum level (ML).

2. The Discharger shall be required to conduct a Pollutant Minimization Program (PMP), in accordance with Section 2.4.5.1. of the SIP, when there is

evidence that the priority pollutant is present in the effluent above an effluent limitation and either:

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

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

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

- sample results reported as when the effluent limitation is less than the method detection limit (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;
- presence of whole effluent toxicity;
- health advisories for fish consumption; or,
- results of benthic or aquatic organism tissue sampling.

If a sample result, or the arithmetic mean or median of multiple sample results, is below the reported ML, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the discharger conducts a PMP (as described in Section 2.4.5.1 of the SIP), the discharger shall not be deemed out of compliance.

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.