A Water Quality Inventory Series
Biological and Physical/ Habitat Assessment of
California Water Bodies

San Diego Regional Water Quality Control Board: 1999 Biological Assessment Annual Report

Report in SD River File

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Urgent? Yes [ ] No [✓]

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UNIT R-9 STAFF SWCCB

FROM: Ron Wright

MESSAGE/SPECIAL INSTRUCTIONS: Here's the raw data – pls call if you need more detailed description of areas or lab procedures

R—

City of San Diego, Water Department
Cleveland National Forest, Descanso Ranger District

Pine Creek Assessment Project (PCAP), 1998
Raw Bactl Data

Station	Date	Total Coliform Bacteria MPN/100ml (MPN method)	Fecal Coliform Bacteria CFU/100ml (MF method)	Enterococcus Bacteria CFU/100ml (MF method)
NPC3A	01/14	1300	1	15
	02/04	1100	48	440
	02/24	800	17	96
	03/04	240	2	13
	03/18	170	21	6
	04/15	500	11	21
	05/20	130	38	21
	06/16	70	69	57
	07/14	110	7	58
	08/18	300	19	>60
	09/15	NS	NS	NS
NPC3B	01/14	220	<1	37
	02/04	5000	20	280
	02/24	1100	21	90
	03/04	300	1	8
	03/18	140	13	4
	04/15	700	8	16
	05/20	110	37	17
	06/16	1100	75	44
	07/14	110	22	100
	08/18	140	35	>60
	09/15	NS	NS	NS
NPC3C	01/14	240	4	140
	02/04	1100	5	580
	02/24	2200	20	120
	03/04	170	1	9
	03/18	170	12	6
	04/15	500	14	15
	05/20	130	38	20
	06/16	280	73	44
	07/14	500	21	74
	08/18	170	100	>60
	09/15	NS	NS	NS
NPC3D	01/14	NS	NS	NS
	02/04	3000	95	1400
	02/24	800	58	190
	03/04	500	<1	8
	03/18	170	6	9
	04/15	300	140	48
	05/20	170	27	20
	06/16	240	35	38
	07/14	300	8	61
	08/18	NS	NS	NS
	09/15	NS	NS	NS
PVC1A	01/14	44	9	20
	02/04	30000	20000	20000
	02/24	17000	740	2100
	03/04	90	42	50
	03/18	350	8	27
	04/15	8000	470	530
	05/20	220	110	100
	06/16	1100	81	140
	07/14	500	86	130
	08/18	240	100	280
	09/15	240	23	100

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City of San Diego, Water Department
Cleveland National Forest, Descanso Ranger District
Pine Creek Assessment Project (PCAP), 1998
Main Sampling Stations
Log Transformed Bacti Data

Station	Date	Total Coliform Bacteria MPN/100ml (MPN method)	Fecal Coliform Bacteria CFU/100ml (MF method)	Enterococcus Bacteria CFU/100ml (MF method)
NPC3A	01/14	3	0	1
	02/04	3	2	3
	02/24	3	1	2
	03/04	2	0	1
	03/18	2	1	1
	04/15	3	1	1
	05/20	2	2	1
	06/16	2	2	2
	07/14	2	1	2
	08/18	2	1	>1.78
	09/15	NS	NS	NS
NPC3B	01/14	2	<0	2
	02/04	4	1	2
	02/24	3	1	2
	03/04	2	0	1
	03/18	2	1	1
	04/15	3	1	1
	05/20	2	2	1
	06/16	3	2	2
	07/14	2	1	2
	08/18	2	2	>1.78
	09/15	NS	NS	NS
NPC3C	01/14	2	1	2
	02/04	3	1	3
	02/24	3	1	2
	03/04	2	0	1
	03/18	2	1	1
	04/15	3	1	1
	05/20	2	2	1
	06/16	2	2	2
	07/14	3	1	2
	08/18	2	2	>1.78
	09/15	NS	NS	NS
NPC3D	01/14	NS	NS	NS
	02/04	3	2	3
	02/24	3	2	2
	03/04	3	<0	1
	03/18	2	1	1
	04/15	2	2	2
	05/20	2	1	1
	06/16	2	2	2
	07/14	2	1	2
	08/18	NS	NS	NS
	09/15	NS	NS	NS
PVC1A	01/14	2	1	1
	02/04	4	4	4
	02/24	4	3	3
	03/04	2	2	2
	03/18	3	1	1
	04/15	4	3	3
	05/20	2	2	2
	06/16	3	2	2
	07/14	3	2	2
	08/18	2	2	2
	09/15	2	1	2

City of San Diego, Water Department

Cleveland National Forest, Descanso Ranger District

Pine Creek Assessment Project (PCAP), 1998

Main Sampling Stations

Raw Nutrients Data

Station	Date	Nitrate Nitrogen (mg/l) MDL 0.2 mg/l	Orthophosphate (mg/l) MDL 0.02 mg/l	Total Phosphorous (mg/l) MDL 0.025 mg/l	TDS (mg/l calculated)	Turbidity NTU
NPC3A	01/14	nd	nd	nd	na	0.48
	02/04	0.686	nd	0.0414	115.0	11.8
	02/24	0.482	nd	0.0384	88.0	4.36
	03/04	0.028	0.042	nd	132.1	1.15
	03/18	nd	0.041	0.54	184.0	0.84
	04/15	nd	0.1	0.038	94.0	2.73
	05/20	nd	na	nd	159.0	1.10
	06/18	nd	na	nd	203.0	0.7
	07/14	nd	na	nd	na	0.42
	08/18	nd	na	nd	259.0	0.28
	09/15	NS	NS	NS	NS	NS
NPC3B	01/14	0.531	nd	nd	na	0.21
	02/04	0.682	nd	0.263	124	10.6
	02/24	0.502	nd	0.0538	89.3	4.71
	03/04	nd	0.038	nd	132.0	1.11
	03/18	nd	0.034	0.343	181.0	0.88
	04/15	nd	0.057	0.0654	92.0	2.83
	05/20	nd	na	nd	158.0	1.18
	06/18	nd	na	nd	184.7	0.50
	07/14	nd	na	nd	na	0.53
	08/18	nd	na	nd	244.0	0.22
	09/15	NS	NS	NS	NS	NS
NPC3C	01/14	0.503	nd	nd	na	0.5
	02/04	0.820	nd	0.0818	117.0	23.9
	02/24	0.489	nd	0.0545	88.0	5.38
	03/04	nd	0.041	nd	131.0	1.16
	03/18	nd	0.062	nd	179.0	0.99
	04/15	0.029	0.052	nd	89.0	2.88
	05/20	nd	na	nd	156.7	1.25
	06/18	nd	na	nd	186.0	0.72
	07/14	nd	na	nd	na	0.81
	08/18	nd	na	nd	232.0	0.47
	09/15	NS	NS	NS	NS	NS
NPC3D	01/14	NS	NS	NS	NS	NS
	02/04	0.56	nd	0.143	126.0	23.5
	02/24	0.51	nd	0.057	89.0	6.48
	03/04	0.049	0.03	nd	132.0	0.99
	03/18	nd	0.039	0.0259	176.0	5.27
	04/15	nd	0.046	0.0268	98.0	4.44
	05/20	nd	na	nd	158.7	1.13
	06/18	nd	na	nd	188.7	0.53
	07/14	nd	na	nd	na	0.55
	08/18	NS	NS	NS	NS	NS
	09/15	NS	NS	NS	NS	NS
PVC1A	01/14	3.52	nd	nd	na	0.46
	02/04	4.04	0.982	1.03	79.8	475
	02/24	1.025	nd	0.0631	79.2	82.8
	03/04	0.85	0.042	nd	139.5	2.25
	03/18	0.738	0.044	0.0401	179.0	1.19
	04/15	0.908	0.104	0.123	103.0	40.3
	05/20	1.22	na	nd	188.0	1.81
	06/16	1.1	na	nd	202.0	0.52
	07/14	2.1	na	nd	na	0.78
	08/18	3.62	na	nd	na	0.75
	09/15	3.35	nd	nd	287.0	0.48

na = not analyzed

nd = not detected

NS = Not Sampled

Stream Data on Trabuco/Holy Jim and San Juan/Hot Springs drainages Inside the Rec Residence Tracts - 1998 data

Sample Identification	phosphorus mg/l	pH	Nitrate mg/L	Coliform MPN/100 mL	Fecal Coliform MPN/100mL	Streptococcus MPN/100mL	Enterococcus MPN/100mL	Yr	Month	Day	Time	Drainage
SJHJ#1	0.1	8.0	ND	50	4	23	8	98	June	26	955	Hot Springs/San Juan
SJHJ#2	ND	8.0	ND	130	23	80	50	98	June	26	1010	Hot Springs/San Juan
SJHJ#3	ND	8.0	ND	2400	2400	130	130	98	June	26	1022	Hot Springs/San Juan
SJHJ#4	ND	8.0	ND	300	170	30	30	98	June	26	1040	Hot Springs/San Juan
SJHJ#5	ND	8.0	ND	230	80	300	50	98	June	26	1050	Hot Springs/San Juan
SJHJ#6	ND	8.2	ND	230	50	23	8	98	June	26	1100	Hot Springs/San Juan
SJHJ#2	0.1	8.2	ND	90	26	240	130	98	October	30	940	Hot Springs/San Juan
SJHJ#4	ND	7.9	ND	230	230	130	30	98	October	30	1000	Hot Springs/San Juan
SJHJ#5	ND	8.2	ND	110	50	110	50	98	October	30	1005	Hot Springs/San Juan
SJHJ#6	ND	8.4	ND	300	230	50	50	98	October	30	1010	Hot Springs/San Juan
SJHJ#7	ND	8.6	ND	80	2	80	22	98	October	30	1030	Hot Springs/San Juan
HJT#1	ND	7.5	ND	130	50	50	8	98	June	25	955	Holy Jim/Trabuco
HJT#2	ND	7.4	ND	500	2	13	13	98	June	25	1010	Holy Jim/Trabuco
HJT#3	ND	7.8	ND	4	4	50	2	98	June	25	1020	Holy Jim/Trabuco
HJT#4	ND	7.7	ND	130	30	50	30	98	June	25	1105	Holy Jim/Trabuco
HJT#5	ND	8.0	ND	34	13	27	4	98	June	25	1120	Holy Jim/Trabuco
HJT#6	ND	8.1	ND	50	8	23	2	98	June	25	1030	Holy Jim/Trabuco
HJT#7	ND	8.1	ND	50	30	50	2	98	June	25	1132	Holy Jim/Trabuco
HJT#8	ND	8.0	ND	50	30	23	2	98	June	25	1045	Holy Jim/Trabuco
HJT#9	ND	8.1	ND	130	130	17	4	98	June	25	1055	Holy Jim/Trabuco
HJT#1	ND	7.2	ND	22	2	17	2	98	October	29	1020	Holy Jim/Trabuco
HJT#3	ND	7.8	ND	30	2	4	2	98	October	29	1040	Holy Jim/Trabuco
HJT#4	ND	8.1	ND	230	8	11	2	98	October	29	1205	Holy Jim/Trabuco
HJT#5	ND	8.1	ND	50	2	2	2	98	October	29	1100	Holy Jim/Trabuco
HJT#6	ND	7.5	ND	130	2	23	8	98	October	29	1145	Holy Jim/Trabuco
HJT#7	ND	7.6	ND	50	8	13	2	98	October	29	1150	Holy Jim/Trabuco
HJT#8	ND	8.2	ND	80	30	240	50	98	October	29	1115	Holy Jim/Trabuco
HJT#9	ND	8.3	ND	50	4	70	13	98	October	29	1125	Holy Jim/Trabuco

This data set is from the Trabuco Ranger District in ORANGE CO.

THE STREAMS INCLUDE

Trabuco
Holy Jim
San Juan
Hot Springs

modeling study re: Capo Valley

Hydrology Studies – San Juan and Aliso Creeks Watersheds

San Juan and Aliso Creeks Watershed Management Study. 1997. Orange County, California. Reconnaissance Report. The U.S. Army Corps of Engineers, Los Angeles District.

San Juan Creek Watershed Management Study. 1999. Orange County, California. Feasibility Phase, Draft Watershed Management Report. U.S. Army Corps of Engineers, Los Angeles District.

Data Synopsis

The U.S. Army Corps of Engineers (USACE) has assessed available water quality data in the Aliso Creek and San Juan Creek watersheds as part of comprehensive watershed studies to determine a process for restoring habitat and alleviating potential flood damage. Lower Oso Creek, just before the confluence with Trabuco, and the lower portion of Trabuco Creek, are heavily influenced by urban run-off that is creating excess flow. The disappearance of historical flood plains, upstream development and partial channalization of the stream have increased flow rates and volume. Heavy undercutting of banks in the lower portion of Oso Creek makes excess turbidity a likely concern and is leading to loss of riparian habitat. See the attached document for further descriptions of the data

This data set alone does not constitute enough information to list the waterbodies on the 303(d) list. It may be combined with other data sets, and this could then constitute enough information for 303(d) listing.

08/15/01
jgs

ORANGE COUNTY SW PERMIT FACT SHEET PARAGRAPHS

(6/8/01) draft (6/11/01 or 7/3/01) draft

I. WATER QUALITY

Inland surface water quality data in southern Orange County has been collected under the NPDES program by the Municipal Stormwater Copermittees and under a number of other efforts, notably the Aliso Creek Watershed Management Study that was funded by a 205(j) grant from the State Water Resources Control Board. Data from these two sources have been among the most thoroughly assessed in the region and provide the best representation of contemporary water quality during the period of the Copermittees' DAMP. In particular, the U.S. Army Corps of Engineers (USACE) has assessed available water quality data in the Aliso Creek and San Juan Creek watersheds as part of comprehensive watershed studies to determine a process for restoring habitat and alleviating potential flood damage. A qualitative analysis of urban runoff was also performed by at least four Orange County Grand Juries from 1998-2001. Together, these sources of data and subsequent analyses indicate that urban runoff and stormwater in southern Orange County is impairing water quality and that additional management efforts can have a positive impact of constituents of concern.

NPDES STORMWATER SAMPLING: Stormwater monitoring in the San Diego region in the 1999/2000 reporting period showed CTR (California Toxics Rule) exceedances of acute metals at the point of discharge to receiving waters in 94% of reported samples. From 1992 to 2000 the copermittees report EMC data for one stream in the south county, Oso Creek. There are no discernible trends over time in the Oso Creek EMC data. There were no assessments for 1997, 1998, 2000. At best, the data show a lack of water quality improvement, implying that the DAMP is not having a positive effect on EMC parameters in Oso Creek.

ALISO CREEK 205(J) BACTERIA INVESTIGATIONS: Bacteriological sampling demonstrated that high levels of total and fecal coliform and enterococcus were commonplace in the watershed. REC-2 standards were exceeded at all monitored stations except the uppermost. For example, three sampling locations on tributaries to Aliso creek had E. coli averages over 2,000 MPN/100ml and two sampling locations on the mainstem of Aliso Creek had average fecal coliform or E.coli averages greater than 2,000 MPN/100ml during the study period.

SOUTH EAST REGIONAL RECLAMATION AUTHORITY (SERRA) SURF ZONE BACTERIA DATA: Bacteriological sampling conducted by SERRA in the surf zone near the mouths of Prima Deshecha indicate elevated levels of fecal coliform and enterococcus are present. One surf zone station is approximately 100 feet north of the Prima Deshecha beach outfall. From June 2000 through February 2001, 26 of 59 (44%) samples exceeded ocean water criteria for enterococcus at this station. Regional Board staff does not attribute these elevated levels to the effluent discharged from SERRA's ocean outfall, but believe the creek may be a significant source of fecal coliform and enterococcus.

USACE SAN JUAN CREEK WATERSHED STUDY: The USACE San Juan Creek Watershed Management Feasibility Study identifies high fecal coliform counts measured at the lowermost end of San Juan Creek as the greatest water quality concern in the watershed. Their analysis of water quality data from 1992-1995 further showed moderate contamination in San Juan Creek, Trabuco Creek, and Oso Creek. Their survey of historical data indicated that lead levels have dropped, copper levels have increased, and spikes of chromium and nitrates occur. The Feasibility Study concludes that *"WATER QUALITY IN THE SAN JUAN CREEK WATERSHED AREA IS PRIMARILY INFLUENCED BY NONPOINT SOURCE STORMWATER RUNOFF PRIMARILY FROM URBAN AND RESIDENTIAL AREAS."* (P.E44, SEC. 4.4.2.1).

USACE ALISO CREEK WATERSHED STUDY: In the USACE environmental evaluation for Aliso Creek watershed water quality, pollution concerns include runoff of pesticides and herbicides in areas near the creek. Nonpoint source pollution is attributed to an increase in urban developments and the associated stormwater runoff. *"DUE TO THE INCREASE IN DEVELOPMENT IN THE UPPER REGIONS OF THE ALISO CREEK WATERSHED, STORMWATER RUNOFF IS LIKELY THE MOST PROMINENT ON-GOING FACTOR CAUSING DETERIORATION OF WATER QUALITY."* (P.E40, SEC. 4.4.1.1).

GRAND JURY FINDINGS: The 1999-2000Grand Jury investigating "The Rainy Season's "First Flush" Hits the Harbors of Orange County," found that in spite of the County's strong emphasis on public education as required by the DAMP, a significant amount of trash finds its way into the County-maintained flood control channels and County-maintained storm drains, rather than being disposed of properly. In "The Urban Runoff Battle: Ready, Fire, Aim!" the 2001 Grand Jury examined beach advisory postings and concluded that since the total number of postings is nearly identical in 1999 and 2000, "virtually no improvement has occurred."

II. IMPACTS OF URBAN RUNOFF

Urban runoff enters the storm drains and then discharges to inland surface waters or, in some coastal areas, discharges directly to the ocean. Urban runoff carries with it pollutants from land surfaces, such as lawns and hillsides or pollutants that were deposited into the streets and storm drains. Impacts from pollutants carried by urban runoff and the discharge of the runoff itself to surface waters include damage to riparian and in-stream habitats, increased flooding potential, threats to human and animal health, and economic ramifications thereto.

A May 1999 draft of the Aliso Creek Watershed Management Feasibility Study (Aliso Study), led by the USACE, concluded that the Aliso Creek watershed "is not in good health," and attributes many of the problems to stormwater runoff. The Aliso Study developed a watershed management plan intended to identify feasible management options to improve environmental and economic conditions in the watershed and reestablish a stable, healthy, and sustainable watershed environment. The feasibility study and a concurrent one prepared for the San Juan Creek watershed do not guarantee the "feasible" projects will be implemented, but instead provide information to the County of Orange, the cities, water districts and other partners regarding potential corrective actions and the current impacts from urban runoff.

BEACH CLOSURES: Several beach postings in the area of the copermittees, including locations in Dana Point, Aliso Beach, and others are attributed to pollution from urban runoff. Beaches are posted and can be closed when bacteria levels indicate a potential health risk to humans. Coastal economies suffer when people decrease their time spent at beaches due to beach closings or fear of coastal water pollution.

Copermittees understand the connection between urban runoff pollution and beach impairments. Several of the coastal copermittees, including Laguna Beach and Dana Point, have implemented or are proposing dry-weather diversions that route urban runoff in streams or storm drain outfalls to sewer lines in an attempt to keep pollution contained in urban runoff from impacting beaches.

The following table, adapted from the 2001 Grand Jury report "The Urban Runoff Battle: Ready, Fire, Aim!" and based on data obtained from the Orange County Health Care Agency, lists the number of beach postings at South County Beaches in 2000.

Posting Location	Number of Postings	Total Days Posted	Posting Location	Number of Postings	Total Days Posted
Crystal Cove State Park	9	23	Doheny State Beach Park	9	315
Laguna Beach	32	77	Capistrano County Beach	6	248
Aliso Beach	13	23	Capistrano Bay District	7	107

Monarch Beach	5	49	Poche Beach	5	163
Salt Creek Beach	3	4	San Clemente City Beach	8	20
Dana Point Harbor	12	739*	San Clemente State Beach	1	3
* includes 2 long term postings totaling 569 days					

HABITAT STRESS: An aquatic life assessment conducted as part of the Aliso Creek Watershed 205(j) study demonstrated habitat within the study sites is unstable and under considerable environmental stress. The poor conditions were deemed likely attributable to high variability in flow volumes and velocities, sediment load and movement, high water temperatures, poor riparian development, and poor water quality. All of these influences can, at least in part, be attributable to a change in the runoff regime associated with urban development. The 205(j) study report concludes that continued development in the watershed without appropriate mitigation would lead to increased riparian habitat degradation. In addition, the USACE studies conclude that channel downcutting is responsible for the loss of riparian habitat in many reaches of both Aliso Creek and San Juan Creek watersheds. Downcutting of channels decreases the ability of water to reach the floodplains and riparian zones. Downcutting is attributable to altered hydrology, including increased volume of runoff. Habitat loss and degradation were also cited as a major problem in the USACE San Juan Creek Watershed Study.

CHANNEL INSTABILITY: According to the USACE San Juan Creek Watershed Study, intense development since the 1980's is correlated with significant downcutting and bank erosion on San Juan Creek and its main tributaries, especially in the lower reaches. Erosion and channel instability are identified in the USACE study as one of the major watershed problems. Channel instability and erosion degrade existing in-stream and riparian habitat and prevent the establishment of further stable habitat areas.

In addition, private and public property, including important infrastructure such as rail lines, sewer and water lines, and roads, have been threatened by erosion within the San Juan Creek and Aliso Creek watersheds.

FLOODING: The USACE San Juan Creek Watershed Study concluded that the threat of flooding in the lower San Juan Creek watershed has been exacerbated by changes to the creek's hydrology as a result of urbanization in the watershed. Potential flooding of the downstream portions of Oso, Trabuco, and San Juan Creeks is characterized by the USACE as a major watershed problem.

TOXICITY: A water quality data assessment conducted as part of the Aliso 205(j) study characterized surface water from several locations in the watershed and determined aquatic toxicity tests during two storm events caused varying degrees of mortality to test organisms. Storm sampling for toxicity was conducted twice at five locations within Aliso Creek during the study period. While two of the ten samples showed no mortality for Ceriodaphnia, six samples resulted in 100% mortality, one showed 85% mortality and one showed 95% mortality. The report suggests several possible sources of aquatic toxicity, all of which are derived from urban runoff.

III. ECONOMIC IMPLICATIONS OF URBAN RUNOFF

Urban runoff degrades surface water quality, but its impacts spread beyond the channel banks. Beach closures and other losses of recreational opportunity have a direct economic impact on communities whose economies are dependant on access to surface waters. Furthermore, property loss or damage from erosion and flooding has direct and indirect economic impacts on communities. In addition, replacement or perennial protection of public infrastructure from problems associated with urban runoff requires significant amount of public expenditures, thus diverting funds from other public agency concerns. The copermittees have the power to encourage choices that decrease the impacts of urban runoff though activities such as public education on water quality issues and enforcement of water quality-related ordinances. The relationship between urban runoff, water quality, and both micro and macro-economics in southern Orange County has been addressed in several reports, including the USACE watershed studies, Orange County Grand Jury reports, and others.

Water quality affects the recreational value of a waterbody and watershed. A recreational use analysis conducted within the Aliso 205(j) Watershed Study identified potential increases in recreational value would occur if the water quality improvements in the USACE Aliso Creek Watershed studies were implemented. The analysis noted that the largest benefit would be realized at Aliso Beach Park, but would require watershed-scale action because of the nature of the impacts derived from urban runoff.

An individual's choice to protect water quality may be a decision based on micro-economics. The enforcement of local ordinances is an important tool of the copermittees that affects an individual's decisions. The disincentive to pollute created by enforcement, however, has been found to be insufficient by the 1998-1999 Orange County Grand Jury investigating "Coastal Water Quality and Urban Runoff in Orange County." The Grand Jury concluded that current local fines were less than abatement costs, thus the level of enforcement may actually invite some polluters to continue polluting. The Grand Jury recommended that the County address the possibility of increasing fines for violators.

<u>DANA POINT:</u> In response to a Grand Jury finding (1999-2000 Rainy Season's First Flush Hits the Harbors of Orange County), the city of Dana Point notes the interrelationship between the clean coastal water and the economic health of the city. Dana Point reports receiving $5.2 million in T.O.T. funds in FY 1999-2000 "due in large part because of proximity to the beach. Without clean beaches, Dana Point risks losing its major revenue source."

<u>LAGUNA BEACH:</u> Tourism is one of the primary components of the Laguna Beach economy, and the beach is one of the main tourist attractions in the city. In 1999, hotel/motel bed tax revenue was approximately $3 million, representing 13% of the City's general fund revenue. The City Council recognizes the value of the beaches to tourists and the local population and has funded several low-flow diversion systems in an attempt to decrease beach pollution and beach closures.

<u>DOHENY STATE BEACH:</u> In 1997, the USACE prepared an economic analysis as part of the San Juan Creek and Aliso Creek Watershed Study. Recreational value for Doheny State Beach, based on annual visitation of 670,545 people in 1995, was calculated at $2,850,000. Furthermore, the USACE notes that lifeguards reported that beach attendance falls dramatically when there are unhealthy conditions in the ocean. In 1999, the USACE prepared an updated economic study as part of the Feasibility Phase of the San Juan Creek Watershed Management Study. The 1999 study reports that average beach attendance from 1996 to 1998 increased to 918,735. The USACE places a recreation value per visitor at $5.76, which implies the annual recreational value of Doheny State Beach for 1996 to 1998 was $5,291,914.

<u>ALISO BEACH:</u> In 1997, the USACE prepared an economic analysis as part of the San Juan Creek and Aliso Creek Watershed Study. Recreational value for Aliso Beach, based on annual visitation of 3,477,369 people in 1995, was calculated at $14,779,000. In the 1999 Draft Feasibility Report for the Aliso Creek Watershed Management Study, the USACE noted that the average beach attendance from 1996 to 1998 decreased to 1,148,374. The recreation value per visitor was calculated at $4.50 and the average annual impact from water quality-related beach closures at Aliso Beach Park was estimated to be $468,392. This number is comparable to an economic analysis conducted as part of the Aliso Creek Watershed 205(j) study that estimated the annual average recreational value impact of beach closures at Aliso Beach Park to be $468,400.

TABLE 1

Toxic Substances Monitoring Program
Regions 4, 8, and 9
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Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
402.10.05	Ventura R/d/s OVSD Discharge	AC	W	08/17/00	<1.0	<1.0	2.5	<1.0	<2.0	<2.0	2.8	1.6	6.9	<2.0	<2.0
402.10.06	Ventura R/u/s OVSD Discharge	LMB	F	08/17/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
402.20.02	Casitas Lake	LMB	F	08/17/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
403.11.00	Santa Clara River Estuary	AC	W	08/09/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
403.11.00	Santa Clara River Estuary	AC	W	08/09/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.0	<1.0	1.0	<2.0	<2.0
403.12.06	Calleguas Creek	AC	W	08/09/00	<1.0	<1.0	7.5	1.5	4.3	4.3	15.2	1.9	34.7	2.1	4.7
403.64.03	Arroyo Conejo/d/s Forks	BLB	F	08/09/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.8	<1.0	1.8	7.9	<2.0
403.64.05	Arroyo Conejo/u/s HCTP	AC	W	08/09/00	<1.0	<1.0	7.1	<1.0	3.0	6.8	17.8	7.3	42.1	<2.0	3.7
403.64.05	Arroyo Conejo/u/s HCTP	PROI	F	08/09/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
403.67.08	Arroyo Simi/Madera Rd	AC	W	08/09/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.8	1.1	2.9	<2.0	3.6

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethion
402.10.05	3.9	<2.0	<2.0	<2.0	11.0	<3.0	<5.0	<3.0	NA	11.0	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
402.10.06	<2.0	<2.0	<2.0	<2.0	2.4	<3.0	<5.0	<3.0	NA	2.4	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
402.20.02	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
403.11.00	<2.0	<2.0	<2.0	<2.0	17.0	<3.0	<5.0	<3.0	NA	17.0	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
403.11.00	<2.0	<2.0	<2.0	<2.0	18.3	<3.0	<5.0	<3.0	NA	18.3	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
403.12.06	6.6	12.2	65.1	22.7	1758.0	50.9	14.6	31.2	NA	1954.7	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
403.64.03	2.0	<2.0	<2.0	<2.0	7.4	<3.0	<5.0	<3.0	NA	7.4	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
403.64.05	9.7	<2.0	2.1	<2.0	61.3	<3.0	<5.0	<3.0	NA	63.4	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
403.64.05	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
403.67.08	<2.0	<2.0	<2.0	<2.0	23.5	<3.0	<5.0	<3.0	NA	23.5	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
402.10.05	<1.0	<2.0	<2.0	13.2	13.2	<2.0	<1.0	0.8	<5.0	<3.0	<2.0	<4.0	<25.0	11.0	<10.0	11.0	<20.0	24.0
402.10.06	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
402.20.02	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
403.11.00	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	24.9	24.9
403.11.00	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	27.9	28.9
403.12.06	<1.0	<2.0	<2.0	4.1	4.1	<2.0	3.8	4.9	<5.0	7.7	<2.0	<4.0	<25.0	53.0	47.0	100.0	766.0	815.2
403.64.03	<1.0	<2.0	<2.0	2.5	2.5	<2.0	<1.0	1.0	<5.0	3.9	5.2	<4.0	<25.0	<10.0	<10.0	ND	<20.0	6.4
403.64.05	<1.0	<2.0	<2.0	<1.0	ND	<2.0	3.3	0.5	<5.0	5.3	<2.0	<4.0	<25.0	12.0	<10.0	12.0	26.7	81.9
403.64.05	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
403.67.08	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.5	<5.0	10.5	<2.0	<4.0	<25.0	18.0	<10.0	18.0	<20.0	2.9

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Table 2.

TABLE 1

Toxic Substances Monitoring Program
Regions 4, 8, and 9
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Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
404.21.04	Malibu Cr/Tapia Park	LMB	W	08/10/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.3	<1.0	1.3	<2.0	<2.0
404.21.05	Malibu Cr/u/s Tapia Discharge	LMB	F	08/10/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
404.21.07	Malibou Lake	LMB	F	08/16/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.9	<1.0	1.9	<2.0	<2.0
405.15.04	San Gabriel River	TL	F	08/08/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
405.21.06	Los Angeles R/Los Feliz Rd	GAM	W	08/08/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	2.6	1.7	4.3	<2.0	<2.0
405.41.##	San Jose Creek	GAM	W	08/07/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	2.5	1.3	3.7	3.1	<2.0
405.43.##	San Gabriel R/W.F./d/s Cogswell Res	RBT	F	08/07/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.3	<1.0	1.3	<2.0	<2.0
801.11.05	Delhi Channel	GAM	W	07/13/00	<1.0	<1.0	<2.0	<1.0	<2.0	2.5	6.5	2.6	11.6	5.8	<2.0
801.11.05	Delhi Channel	PRS	W	07/13/00	<1.0	<1.0	7.7	<1.0	4.8	4.2	9.6	1.9	28.2	16.4	<2.0
801.11.05	Delhi Channel	TL	W	07/13/00	<1.0	<1.0	<2.0	<1.0	<2.0	2.3	5.1	1.1	8.5	3.8	<2.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethion
404.21.04	<2.0	<2.0	<2.0	<2.0	4.7	<3.0	<5.0	<3.0	NA	4.7	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
404.21.05	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
404.21.07	<2.0	<2.0	<2.0	<2.0	4.7	<3.0	<5.0	<3.0	NA	4.7	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
405.15.04	<2.0	<2.0	<2.0	<2.0	3.1	<3.0	<5.0	<3.0	NA	3.1	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
405.21.06	3.9	<2.0	5.4	<2.0	17.2	<3.0	<5.0	<3.0	NA	22.6	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
405.41.##	3.4	<2.0	<2.0	<2.0	8.4	<3.0	<5.0	<3.0	NA	8.4	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
405.43.##	<2.0	<2.0	<2.0	<2.0	2.5	<3.0	<5.0	<3.0	NA	2.5	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
801.11.05	2.3	<2.0	5.3	<2.0	38.8	<3.0	<5.0	<3.0	NA	44.1	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
801.11.05	2.4	<2.0	9.9	<2.0	61.1	<3.0	<5.0	3.3	NA	74.4	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
801.11.05	<2.0	<2.0	4.8	<2.0	29.6	<3.0	<5.0	<3.0	NA	34.4	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
404.21.04	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	1.3
404.21.05	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
404.21.07	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	10.0	<10.0	10.0	<20.0	1.9
405.15.04	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
405.21.06	<1.0	<2.0	<2.0	3.3	3.3	<2.0	<1.0	<0.3	<5.0	7.5	<2.0	<4.0	<25.0	14.0	<10.0	14.0	<20.0	11.4
405.41.##	<1.0	<2.0	<2.0	2.2	2.2	<2.0	1.1	0.4	<5.0	<3.0	<2.0	<4.0	<25.0	11.0	<10.0	11.0	<20.0	10.5
405.43.##	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	11.0	<10.0	11.0	<20.0	1.3
801.11.05	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	62.0	13.0	75.0	<20.0	13.9
801.11.05	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	2.2	<5.0	5.5	<2.0	<4.0	20.0	82.0	33.0	135.0	27.8	58.4
801.11.05	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	48.0	16.0	64.0	<20.0	8.5

NA Means that the sample was not analyzed for the chemical.
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Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
801.11.07	San Diego Cr/Michelson Dr	PRS	W	07/12/00	<1.0	<1.0	2.8	<1.0	2.0	<2.0	4.7	2.0	11.6	<2.0	<2.0
801.11.09	San Diego Cr/Barranca Pkwy	PRS	W	07/12/00	<1.0	<1.0	2.4	<1.0	<2.0	<2.0	4.4	1.5	8.3	<2.0	<2.0
801.11.96	Peters Canyon Channel	PRS	W	07/12/00	<1.0	<1.0	5.3	<1.0	3.3	4.2	8.8	1.9	23.4	<2.0	<2.0
801.11.99	Upper Newport Bay/Newport Dunes	CH	F	07/13/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.7	<1.0	1.7	<2.0	<2.0
801.71.07	Big Bear Lk/Dam	CP	F	07/10/00	<1.0	<1.0	10.5	<1.0	4.2	7.0	10.1	<1.0	31.8	<2.0	<2.0
801.71.07	Big Bear Lk/Dam	LMB	F	07/10/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
801.71.10	Big Bear Lake	LMB	F	07/10/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
801.71.10	Big Bear Lake	LMB	F	07/10/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
801.71.12	Big Bear Lk/Rathbone Creek	CP	F	07/10/00	<1.0	<1.0	3.6	<1.0	<2.0	2.6	3.8	<1.0	10.0	<2.0	<2.0
801.71.12	Big Bear Lk/Rathbone Creek	LMB	F	07/10/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethion
801.11.07	4.5	2.2	17.3	<2.0	133.0	<3.0	<5.0	6.2	NA	158.7	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
801.11.09	<2.0	<2.0	10.5	<2.0	132.0	<3.0	<5.0	4.7	NA	147.2	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
801.11.96	5.3	3.5	25.2	3.6	432.0	5.9	<5.0	14.5	NA	484.7	NA	40.8	<2.0	NA	NA	ND	<2.0	<6.0
801.11.99	<2.0	<2.0	3.1	<2.0	47.7	<3.0	<5.0	<3.0	NA	50.8	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
801.71.07	<2.0	2.0	20.1	<2.0	66.0	<3.0	<5.0	4.9	NA	93.0	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
801.71.07	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
801.71.10	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
801.71.10	<2.0	<2.0	<2.0	<2.0	3.6	<3.0	<5.0	<3.0	NA	3.6	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
801.71.12	<2.0	<2.0	7.3	<2.0	34.0	<3.0	<5.0	<3.0	NA	41.3	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
801.71.12	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
801.11.07	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.4	<5.0	52.6	<2.0	<4.0	<25.0	49.0	11.0	60.0	26.2	42.3
801.11.09	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.7	<5.0	77.6	<2.0	<4.0	<25.0	49.0	<10.0	49.0	33.1	41.4
801.11.96	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.5	<5.0	57.2	<2.0	<4.0	<25.0	26.0	10.0	36.0	48.1	76.8
801.11.99	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	18.0	<10.0	18.0	<20.0	1.7
801.71.07	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	1.1	<5.0	<3.0	<2.0	<4.0	<25.0	140.0	178.0	318.0	<20.0	31.8
801.71.07	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
801.71.10	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
801.71.10	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	11.0	11.0	22.0	<20.0	ND
801.71.12	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.6	<5.0	<3.0	<2.0	<4.0	<25.0	50.0	109.0	159.0	<20.0	10.0
801.71.12	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Table 2.

TABLE 1

Toxic Substances Monitoring Program
Regions 4, 8, and 9

Preliminary Summary of 2000 Data: Organic Chemicals in Fish an Crayfish (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
802.31.00	Lake Elsinore	CP	F	07/11/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
901.20.#A	San Juan Cr/Camino Capistrano	AC	W	07/25/00	<1.0	<1.0	2.5	<1.0	<2.0	<2.0	3.6	1.5	7.6	<2.0	<2.0
901.20.#A	San Juan Cr/Camino Capistrano	PRS	W	07/25/00	<1.0	<1.0	3.1	<1.0	<2.0	<2.0	4.0	<1.0	7.1	<2.0	<2.0
905.11.00	San Dieguito Lagoon	CH	F	07/25/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
906.50.##	Tecolote Creek Estuary	CKF	W	07/24/00	<1.0	<1.0	5.2	<1.0	<2.0	5.4	10.9	2.4	23.9	<2.0	<2.0
907.11.00	Famosa Slough	MOL	W	07/25/00	<1.0	<1.0	8.3	<1.0	3.9	7.9	9.8	1.9	31.8	<2.0	<2.0
908.22.01	Chollas Creek/Main Street	CKF	W	07/24/00	<1.0	<1.0	4.3	<1.0	<2.0	4.3	9.2	1.8	19.6	<2.0	<2.0
908.31.##	7th Street Ch/Trolley Xing	CKF	W	07/24/00	<1.0	<1.0	2.4	<1.0	<2.0	2.3	5.3	1.2	11.1	<2.0	<2.0
908.32.##	Paradise Creek Marsh	CKF	W	07/24/00	<1.0	<1.0	4.1	<1.0	<2.0	3.9	6.8	1.2	15.9	<2.0	<2.0
909.12.00	F-G St Salt Marsh/Chula Vista	CKF	W	07/24/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethion
802.31.00	<2.0	<2.0	<2.0	<2.0	23.8	<3.0	<5.0	<3.0	NA	23.8	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
901.20.#A	2.0	<2.0	3.6	<2.0	28.1	<3.0	<5.0	<3.0	NA	31.7	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
901.20.#A	<2.0	<2.0	3.9	<2.0	29.7	<3.0	<5.0	<3.0	NA	33.6	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
905.11.00	<2.0	<2.0	<2.0	<2.0	21.7	<3.0	<5.0	<3.0	NA	21.7	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
906.50.##	2.5	<2.0	2.8	<2.0	12.6	<3.0	<5.0	<3.0	NA	15.4	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
907.11.00	2.5	<2.0	3.1	<2.0	9.1	<3.0	<5.0	<3.0	NA	12.2	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
908.22.01	2.6	<2.0	5.8	<2.0	18.9	<3.0	<5.0	<3.0	NA	24.7	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
908.31.##	<2.0	2.7	14.6	<2.0	18.7	<3.0	<5.0	3.3	NA	39.4	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
908.32.##	<2.0	<2.0	2.9	<2.0	21.6	<3.0	<5.0	<3.0	NA	24.5	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
909.12.00	<2.0	<2.0	<2.0	<2.0	6.8	<3.0	<5.0	<3.0	NA	6.8	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
802.31.00	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	43.0	10.0	<10.0	53.0	<20.0	ND
901.20.#A	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	88.8	<2.0	<4.0	<25.0	35.0	<10.0	35.0	<20.0	9.6
901.20.#A	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	120.0	<2.0	<4.0	<25.0	41.0	<10.0	41.0	<20.0	7.1
905.11.00	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
906.50.##	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	6.8	<2.0	<4.0	<25.0	32.0	<10.0	32.0	<20.0	26.4
907.11.00	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	49.0	14.0	63.0	<20.0	34.3
908.22.01	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	15.0	<2.0	<4.0	<25.0	81.0	20.0	101.0	<20.0	22.1
908.31.##	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	31.4	<2.0	<4.0	<25.0	85.0	<10.0	85.0	<20.0	11.1
908.32.##	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	24.0	<10.0	24.0	<20.0	15.9
909.12.00	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	33.0	114.0	10.0	157.0	<20.0	ND

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Table 2.

TABLE 1

Toxic Substances Monitoring Program
Regions 4, 8, and 9

<u>Preliminary</u> Summary of 2000 Data: Organic Chemicals in Fish an Crayfish (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
909.12.01	Sweetwater Marsh	CKF	W	07/24/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.6	<1.0	1.6	<2.0	<2.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethion
909.12.01	<2.0	<2.0	2.8	<2.0	25.6	<3.0	<5.0	<3.0	NA	28.4	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
909.12.01	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	75.0	14.0	89.0	<20.0	1.6

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Table 2.

TABLE 2
Toxic Substances Monitoring Program
Regions 4, 8, and 9
2000 Species Code List

Freshwater Fish *

Species Code	Common Name	Species Name	Family Name
AC	Arroyo Chub	*Gila orcutti*	Cyprinidae
BLB	Black Bullhead	*Ameiurus melas*	Ictaluridae
CP	Carp	*Cyprinus carpio*	Cyprinidae
GAM	Mosquitofish	*Gambusia affinis*	Poeciliidae
LMB	Largemouth Bass	*Micropterus salmoides*	Centrarchidae
MOL	Sailfin Molly	*Poecilia latipinna*	Poeciliidae
PRS	Red Shiner	*Cyprinella lutrensis*	Cyprinidae
RBT	Rainbow Trout	*Oncorhynchus mykiss*	Salmonidae
TL	Tilapia	*Tilapia sp.*	Cichlidae

Marine Fish *

Species Code	Common Name	Species Name	Family Name
CH	California Halibut	*Paralichthys californicus*	Bothidae
CKF	California Killifish	*Fundulus parvipinnis*	Cyprindontidae

Non-Fish

Species Code	Common Name	Species Name	Family Name
PROI	Red Swamp Crayfish	Procambarus clarki	Astacidae

* Common and scientific fish names were obtained from Robins, C.R., R.M. Bailey, C.E. Bond, J.R. Brooker, E.A. Lachner, R.N. Lea, and W.B. Scott. 1991. Common and Scientific Names of Fishes from the United States and Canada. American Fisheries Society Special Publication 20, Bethesda, Maryland.

From: Del Rasmussen
To: Linda Pardy; Michael Lyons; Pavlova Vitale
Date: 5/2/01 8:59AM
Subject: 2000 Organic Data

Hi,

Attached is the 2000 TSM organic data for your Region. It looks like the metal data will not be ready in time for you station selections. Let me know if you have any questions.

Del Rasmussen
Water Quality Assessment Unit
Division of Water Quality
State Water Resources Control Board
(916) 341-5545
rasmd@dwq.swrcb.ca.gov

CC: Dave Crane; Laurie Smith

	Test Duration	Temperature	TOTAL AMMONIA (mg/L)			UNIONIZED AMMONIA (mg/L)			TOTAL SULFIDE (mg/L)			HYDROGEN SULFIDE (mg/L)		
			LOEC	NOEC	LC50	LOEC	NOEC	LC50	LOEC	NOEC	LC50	LOEC	NOEC	LC50
Ampelisca abdita	96 hour	20			49.8		0.4	0.83						
Survival					Kohn 1994		EPA 1994	Kohn 1994						
Atherinops affinis	96 hour	15				0.59	0.44	0.56						
Survival						MPSL 2000								
Eohaustorius estuarius	96 hour	15			125.5		0.8	2.49	1.92	1.216	3.33	0.114	0.072	0.198
Survival					Kohn 1994		EPA 1994	Kohn 1994	Knezovich 1995					
Holmesimysis costata	96 hour	15				1.18	0.76	0.84						
Survival						MPSL 2000								
Haliotis rufescens	48 hour	15				0.10	0.04	0.08						
Development						MPSL 2000								
Macrocystis pyrifera	48 hour	15				1.10	0.64	1.33						
Germination						MPSL 2000								
Macrocystis pyrifera	48 hour	15				1.10	0.64	1.35						
Growth						MPSL 2000								
Mysidopsis bahia	*96 hour*	*25*	*60*	*29*	*37*	*3.9*	*1.6*	*2.3*						
Survival			AMEC 2000			AMEC 2000								
Mytilus galloprovincialis	48 hour	15				0.15	0.08	0.19	0.09	0.0544	0.096	0.0053	0.0032	0.0057
Development						Tang 1997			Knezovich 1995					
Neanthes arenaceodentata		20				1.25	0.68		10	5				
Survival						Dillon 1993			Dillon 1993					
Pimephales promelas	96 hours	25	29	14	19.3	0.9	0.46	0.61						
Survival			AMEC 2000			AMEC 2000								
Rhepoxynius abronius	96 hour	15			78.7		0.4	1.59	1.47	0.992	1.6	0.087	0.059	0.095
Survival					Kohn 1994		EPA 1994	Kohn 1994	Knezovich 1995					
Strongylocentrotus purpuratus	96 hour	15				0.01	0.05/0.01	0.07/0.03	0.128	0.096	0.189	0.0076	0.0057	0.0112
Development						*Bay 1993*	*Bay 1993/Tang 1997*		*Knezovich 1995*					
Strongylocentrotus purpuratus		15					>1.4	>1.4					0.007	0.017
Fertilization							Bay 1993						Bay unpub	

Sulfide and Ammonia References

Bay, S., R. Burgess, and D. Nacci. 1993. Status and applications of echinoid (Phylum Echinodermata) toxicity test methods. In: W.G. Landis, J.S. Hughes, and M.A. Lewis, Eds., Environmental Toxicology and Risk Assessment, ASTM STP 1179. American Society for Testing and Materials

Dillon, T.M., D.W. Moore, and A.B. Gibson. 1993. Development of a chronic sublethal bioassay for evaluating contaminated sediment with the marine polychaete worm Nereis (Neanthes) arenaceodentata. Environ. Toxicol. Chem. 12: 589-605.

EPA. 1994. Methods for assessing the toxicity of sediment-associated contaminants with estuarine and marine amphipods. EPA 600/R-94/025.

Kohn, N.P., Word, J.Q., Niyogi, D.K., Ross, L.T., Dillon, T. and Moore, D.W. (1994). Acute toxicity of ammonia to four species of marine amphipod. *Mar. Environ. Res.* 38,1-15.

Knezovich, J.P., D.J. Steichen, J.A. Jelinski, and S.L. Anderson. 1995 Sulfide tolerance of four marine species used to evaluate sediment and pore-water toxicity. UCRL-JC-121893. Lawrence Livermore National Laboratory, Livermore, CA.

MPSL 2000 SETAC Poster

Tang, A., J.G. Kalocai, S. Santos, B. Jamil, J. Stewart. 1997. Sensitivity of blue mussel and purple sea urchin larvae to ammonia. Poster, Society of Environmental Toxicology and Chemistry, 18th Annual Meeting, San Francisco.

San Juan Creek (901.250 to 901.280) – 303(d) Fact Sheet
County of Orange NPDES Annual Progress Report

San Juan Creek should not be listed at this time based on this data.

Watershed Characteristics

San Juan Creek is a 14.2 mile waterway in the San Juan Watershed of Region 9. It is classified inland surface water with the following beneficial uses: AGR, IND, REC1, REC2, WARM, COLD and WILD[1].

Water Quality Objectives not Obtained

Region 9 Basin Plan[1] standards for pH, ammonia (NH_3) and phosphate (PO_4) were exceeded. The secondary maximum contaminant level[2] of 900μhmos for electrical conductivity was also exceeded.

Evidence of Impairment

Basin plan standards for pH, NH_3 and PO_4 were also exceeded in no more than 7% of the samples. The electrical conductivity standard of 900μhmos[2] was exceeded for 13 of 29 total samples. See Table 1 for standards and number of exceedances.

Extent of Impairment

There is too little impairment to estimate spatial extent.

Potential Sources

Unknown

TMDL Priority

No TMDL is required at this time.

Notes

The high electrical conductivity is indicative of excess ions in the waters. This alone is not enough for focused concern at this time. Since NH_3 and PO_4 concentrations did exceed standards on one occasion each, it could explain the excess ions in the water. Nutrient levels should continue to be monitored.

Information Sources

[1] Water Quality Control Plan for the San Diego Basin (9), 1994

[2] State of California, 2001. California Code of Regulations, TITLE 22. Social Security Division 4. Environmental Health Chapter 15. Domestic Water Quality and Monitoring Regulations, Articles 4 and 16.

08/15/01
jgs

Table 1 - San Juan Creek NPDES Annual Data
SJNL01
Sampling from 2 July 97 through 31 May 00

	EC (umhos)	Trubidity (NTU)	pH	NO3 (mg/L)	NH3 (mg/L)	TKN (mg/L)	PO4 (mg/L)	o-PO4 (mg/L)	TSS (mg/L)	VSS (mg/L)	Cd (ug/L)	Cr (ug/L)	Cu (ug/L)	Pb (ug/L)	Ni (ug/L)	Ag (ug/L)	Zn (ug/L)	Hardness (mg/L)
Basin Plan Std		20	6.5 - 9.0	45	0.025	?	0.306	?			5	50	1000		100	100	5000	
A Compilation of Water Quality Goals														280				
MCL from K. Cole	900																	
from B. Ott									350	275								300
# of times the standard was exceeded	13 of 15 (87%)	none	1 of 15 (7%)	none	none		1 of 15 (7%)		none	none	none	none	none	none	none	none	none	NA
National Toxics Rule (Freshwater Aquatic Life) 1-hr avg											0.35- 51	83- 3600	1.5- 118	5-700	67- 3284	0.07- 181	17- 824	
Cal Ocean Plan (Instnts Max)											10	20	30	20	150	7	200	
# of times the standard was exceeded											none	none	none	none	none	none	none	

SJOL01
Sampling from 2 July 97 through 31 May 00

	EC (umhos)	Trubidity (NTU)	pH	NO3 (mg/L)	NH3 (mg/L)	TKN (mg/L)	PO4 (mg/L)	o-PO4 (mg/L)	TSS (mg/L)	VSS (mg/L)	Cd (ug/L)	Cr (ug/L)	Cu (ug/L)	Pb (ug/L)	Ni (ug/L)	Ag (ug/L)	Zn (ug/L)	Hardness (mg/L)
Basin Plan Std		20	6.5 - 9.0	45	0.025	?	0.306	?			5	50	1000		100	100	5000	
A Compilation of Water Quality Goals														280				
MCL from K. Cole	900																	
from B. Ott									350	275								300
# of times the standard was exceeded	none	none	none	none	1 of 14 (7%)		none		none	none	none	none	none	none	none	none	none	NA
National Toxics Rule (Freshwater Aquatic Life) 1-hr avg											0.35- 51	83- 3600	1.5- 118	5-700	67- 3284	0.07- 181	17- 824	
Cal Ocean Plan (Instnts Max)											10	20	30	20	150	7	200	
# of times the standard was exceeded											none	none	none	none	none	none	none	

May 15, 2001

SAN DIEGO
BAYKEEPER

Chairman John Minan and Boardmembers
Regional Water Quality Control Board, San Diego Region
9771 Clairemont Mesa Blvd., Suite A
San Diego, CA 92124

Re: <u>CWA Section 303(d) Listing</u>

Dear Chairman Minan and Boardmembers:

San Diego BayKeeper, a community-based 501(c)(3) non-profit organization dedicated to protecting and restoring the region's bays, coastal waters and watersheds, submits these comments on the 2002 Clean Water Act (CWA) section 303(d) listing. San Diego BayKeeper has serious concerns with the adequacy of the current 303(d) list for the region, and we are equally concerned about the direction staff may be taking in compiling the April 2002 listing.

First, we remain concerned that Region 9's proposed 303(d) list is not based on a comprehensive assembly and review of information and data on water quality and other impairments regarding all water bodies in Region 9, as the Clean Water Act and its implementing regulations require. *See, e.g., 40 C.F.R. Section 130.7.* Indeed, wholly apart from the Section 303(d) scheme, under Clean Water Act Section 305(b) and accompanying regulations, each regional board must conduct a regional water quality assessment (WQA) of all water bodies in its region. It is clear from an even cursory review of the most recent 1998 California Water Quality Assessment Report, prepared in August 1999 by the Division of Water Quality, State Water Resources Control Board, that such a comprehensive review has yet to be performed in the San Diego region. After a brief review of data in the 1998 WQA, BayKeeper has concluded that, more then twenty years after these requirements were established, at least 80% of San Diego's waters have not yet been fully assessed. Moreover, much of the data that has been gathered may not be easily accessed or understandable. In other words, this data is never fully reviewed or analyzed.

BayKeeper is also concerned about the requirements placed upon organizations wishing to submit information to support the upcoming 2002 CWA section 303(d) listing. The 305(b) and 303(d) lists are essential steps in first understanding and then addressing the overall health of our waters. Not only will the development of comprehensive and accurate 303(d) and 305(b) reports ensure that waters receive the appropriate level of protection through development of Total Maximum Daily Loads or antidegradation policies, but accurate lists will help ensure resources will be allocated wisely. Proper listings will also allow the region to tap into state and federal dollars earmarked for protecting impaired waters (e.g. SWRCB's 319(h) program or Proposition 13). Despite the importance of the 303(d) list, though, those local residents most knowledgeable about their local waters and most impacted by pollution will have a difficult time complying with the submittal requirements established by this Board even though they may have vital and reliable data. Some of our specific concerns relate to:

<u>Timeframe</u> – Region 9, like other regions, is requiring all information to be submitted by May 15, 2001, a full 11 months prior to the final 2002 303(d) listing. We believe this deadline is not only arbitrary, but also extremely difficult to comply with due to the amount of information being requested in a short timeframe. The San Diego Regional Board did not issue their solicitation for information until March 2001, and a formal workshop to discuss the Board's submission requirements was not held until April 4, 2001. This has left interested parties with a scant six weeks to gather and process information. Considering the more than twenty years the regional board has had to develop sufficient 303(d) and

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305(b) reports (which we are still waiting for), less than six weeks to provide needed data is wholly insufficient. BayKeeper intends to continue providing information to regional board staff through the two remaining public comment periods – August 2001 (when RWQCBs solicit input on draft 303(d) list recommendations) and Winter/Spring 2002 (when the SWRCB conducts formal public hearings on the draft 303(d) list). It is our expectation that the data provided in this timeframe will be reviewed and assessed by regional and state board staff for the 2002 listing.

Required Documentation – The regional board has indicated they will consider information and data generated since July 1997 that is provided both in hard copy as well as electronic formats, and that includes "bibliographic citations, identification of software used, model outputs with calibration and quality assurance information and description and interpretation of information provided." In separate meetings with regional board staff, BayKeeper has been told that data that can demonstrate trend analysis, that has been replicated and that covers physical, chemical *and* biological parameters will be most useful in helping to establish an accurate 303(d) list.

BayKeeper appreciates that the more comprehensive the data we are able to provide, the better. We are nonetheless concerned that these requirements are far beyond the criteria of 'reliability' which we believe is appropriate. In fact, it is our assertion that the Regional Board must use *all* relevant, reasonably available data (e.g. water quality, sediment, fish tissue, photos, narrative standards, land use plans, videotapes media coverage) to list waters. Listing should occur if evidence under reasonably foreseeable conditions indicates that a standard (e.g., California Toxics Rule, National Toxics Rule, Basin Plans, beneficial uses) is, or will be, violated. Where judgment calls are required, BayKeeper believes the Regional Board must err on the side of environmental and human health protection.

We assert such an interpretation is embodied in the requirement that "Each State shall identify those waters within is boundaries for which the effluent limitations…are not stringent enough to implement *any* water quality standard applicable to such waters." (CWA, section 303(d)(1)(A); *emphasis added*) Furthermore, the Clean Water Act and its implementing regulations also distinguish between those existing uses that are actually being attained and designated beneficial uses that *must still be protected* whether or not they are currently being attained.

Yet, the submittal requirements of the regional board require a rigor that is both unrealistic and unnecessary for listing. First, it is extremely costly to undertake much of the scientific analysis being requested by the Board, particularly if multiple replicates are being requested, as is trend analysis. It is unreasonable to expect small, grassroots organizations or concerned citizens to incur these types of expenses. In fact, to undertake some of the water quality analysis being requested by the regional board is costing BayKeeper thousands of dollars, and these costs would be substantially higher if we rushed our orders to meet the May 15 deadline. With limited resources, we decided not to rush these orders, meaning certified lab testing of metals, pesticides and herbicides along the San Diego River will be submitted after May 15, but as soon as is practicable.

It is also often impossible for local residents to gain access to some heavily polluted waters to conduct the types of analysis being requested, particularly as these residents often fear reprisals from local businesses that may be impacted by a demonstration that they are polluting these waters. This is a real and serious problem BayKeeper has faced in trying to gather data for this listing from local residents, particularly along certain areas of the San Diego River.

BayKeeper is also uncertain about the requirement that data be generated since July 1997. Again, we understand the need for reliable data, and more current data would be preferable. We also recognize that it is not necessary to provide pre-1997 data that has already led to a listing in 1998 or before (other than possibly using data to ensure that inappropriate delisting does not occur). However, we believe that valid pre-1997 data (particularly that data that the Board already possess) that demonstrates impairment, but which has not yet led to a listing, must be considered by this Board. If fact, as is discussed in greater detail below, the 1998 WQA report includes listings of several water bodies that show some level of impairment but which have not yet been listed. Listing those waters for which information already exists must be the first step in the 2002 listing.

Finally, while BayKeeper – through its ever-expanding Citizen Water Quality Monitoring taskforce – looks forward to working closely with regional board staff to undertake a more comprehensive assessment of local waters, the ultimate burden of listing lies with your agency. Because of the importance of the 2002 list in terms of water quality protections as well as access to resources to help restore waters, we will do everything within our power to point regional board staff in the direction of identifying impaired waters. However, we believe it is the duty of this Board – a duty that has not yet been met – to prepare complete and accurate 305(b) and 303(d) lists. The following information on waters we believe should be listed will need follow-up from regional board staff, and in no way is meant to represent a comprehensive listing of all of San Diego's waters which may be impaired.

<u>303(d) List</u>
BayKeeper believes the first step in preparing an accurate 2002 303(d) list is necessarily to review the most recent 1998 Water Quality Assessment. In that report, a matrix is provided which lists east separate hydrological unit in San Diego, and indicates whether each unit has or has not been assessed. For those that have been assessed, the matrix indicates whether these waters are supporting designated beneficial uses fully, partially, not at all, or whether beneficial uses are threatened. For the reasoning highlighted above, BayKeeper believes it is incumbent on the regional board to err on the side of environmental and human health protection, meaning that listing should occur for every assessed water body that is not meeting designated beneficial uses. This is not the case with the 1998 WQA report, and some examples follow:

Dana Point Harbor (Hydrological Unit 901.140) – listed as 215 acres fully supporting designated beneficial uses. Yet, the assessment comments column indicates that Dana Point Harbor and Baby Beach were closed from 8/96 to 7/97 to water contact recreation. As Dana Point Harbor is listed as meeting Recreation 1 and 2 standards, it should be listed as impaired if it was indeed closed for nearly a year to water contact.

San Diego Bay (Hydrological Unit 900.00) – While 222 acres of San Diego bay are listed as impaired due to benthic community effects, sediment toxicity and copper, 11772 acres are threatened, but not listed as impaired. The WQA assessment indicates that the entire bay (12000 acres) is posted with warnings for pregnant women and young children against consumption of fish due to elevated levels of PCB's, mercury and PAH's. By the Regional Board's own findings and by definition, BayKeeper believes the entire Bay should be listed as impaired.

Escondido Creek - (Hydrological Unit 904.600) – 23 miles of Escondido Creek are considered 'threatened' due to excessive sediment and nutrients, and should thus be listed as impaired.

Forester Creek - (Hydrological Unit 907.130) – 1 mile of Forester Creek is considered 'threatened' due to elevated fish tissue levels, and should thus be listed as impaired.

Otay River - (Hydrological Unit 910.200) – 5 miles of the Otay River are listed as only partially supporting designated beneficial uses, and should thus be listed as impaired

Salt Creek - (Hydrological Unit 901.140) – Salt Creek was closed regularly in 1996 and 1997 due to elevated coliform levels from sewage spills, and should thus be listed as impaired.

San Diego River, Lower - (Hydrological Unit 907.110) – 6 miles of the Lower San Diego River is considered 'threatened' due to elevated coliform levels and exotic plant species, and should thus be listed as impaired. (Discussed in greater detail below.)

San Juan Creek, Upper Middle - (Hydrological Unit 901.260) – 3.2 miles of the Upper Middle San Juan Creek is considered 'threatened' due to elevated coliform levels, and should thus be listed as impaired.

San Luis Rey River, Lower - (Hydrological Units 903.100) – 18.7 miles of the Lower San Luis Rey River is considered 'threatened' due to elevated coliform levels and exotic plant species, and should thus be listed as impaired.

San Diego River

BayKeeper is submitting a separate letter and supporting materials detailing portions of the San Diego River for which sufficient information exists to require a 303(d) listing.

Otay/Sweetwater Rivers

BayKeeper is aware of several comment letters and photographs submitted by Ray Ymzon, Board Member of the Sweetwater Valley Civic Association to the San Diego Regional Water Quality Control relating to 401 certification for the proposed SR-125 toll road. These letters and photos demonstrate increasing trash, and apparent oil and grease problems, at a minimum, along stretches of the rivers, particularly the Sweetwater. We believe further investigation and likely listing is warranted based on the information provided. BayKeeper has not provided copies of these materials, as they should already be in your files.

On behalf of San Diego BayKeeper, I appreciate the opportunity to provide comments on the 2002 CWA section 303(d) listing, and hope they are helpful. A great deal of work is needed to ensure a complete and accurate listing in 2002 and beyond, and BayKeeper looks forward to working with the regional board to ensure such listings. Please do not hesitate to contact me should you have any questions need additional information.

Sincerely,

Bruce Reznik
Executive Director