

Watershed Summary Information

Accounting Unit Name:	Santa Ana
State(s):	CA
Political Boundaries:	Orange, San Bernardino
Major Waterways:	San Diego Cr Peters Canyon Wash
Number of Stations in Watershed:	Tier1 - 24 Tier2 - 68 Tier3 - 16



Figure 187. Watershed Location Map

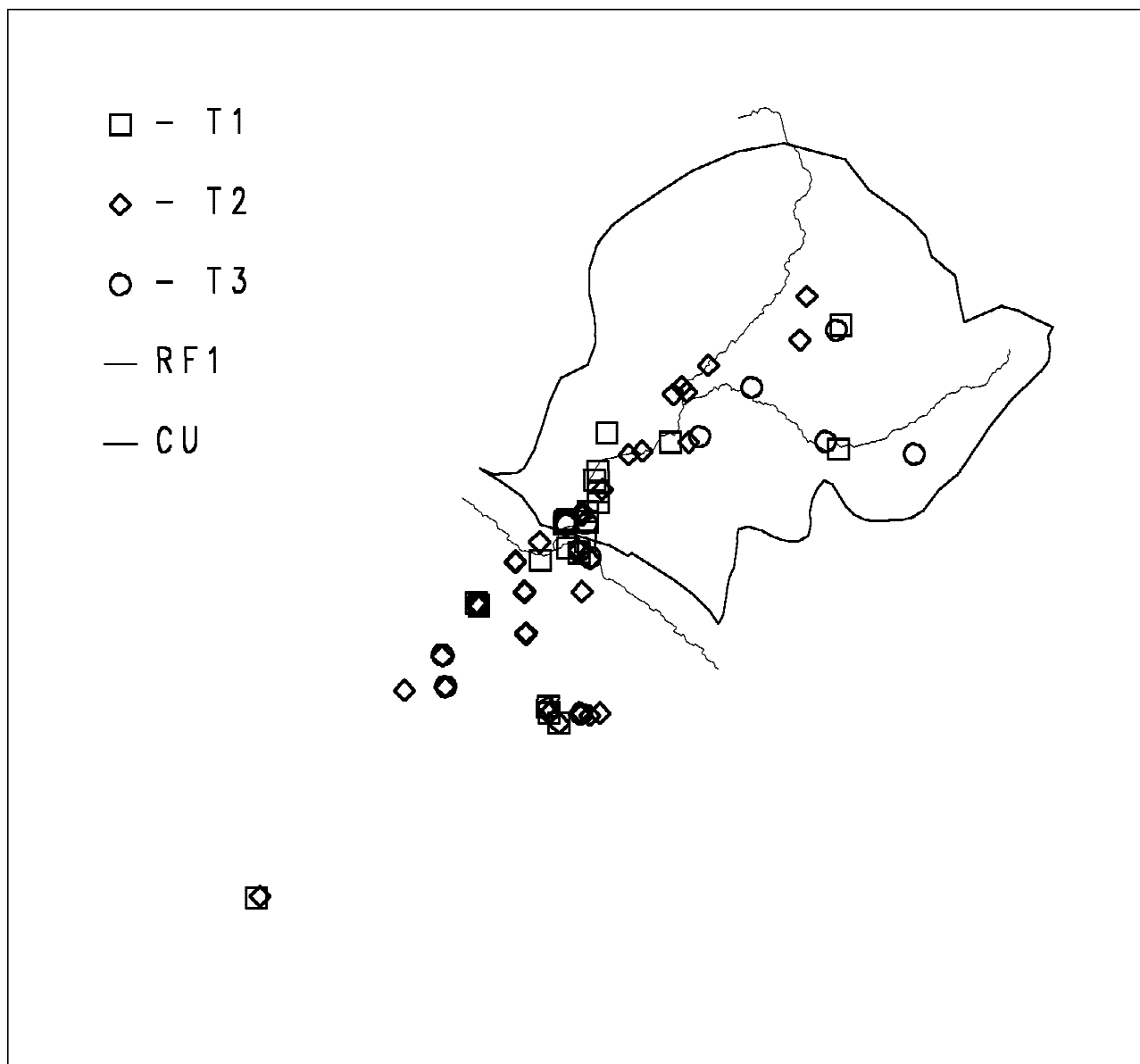


Figure 188. Major Waterways and Location of Sampling Stations

Data Source(s) Used in Evaluation

Source: **COSED** Agency: **NS&T**
 Monitoring Program: **NOAA/National Status and Trends**
 Num. of Stations: 3 Date Range: 1986-87

Source: **DMATS** Agency: **R9**
 Monitoring Program: **EPA Region 9 Dredged Material Program**
 Num. of Stations: 27 Date Range: 1982-90

Source: **DMATS** Agency: **09**
 Monitoring Program: **EPA Region 9 Dredged Material Program**
 Num. of Stations: 6 Date Range: 1989-90

Source: **ODES** Agency: **OC**
 Monitoring Program: **Orange County 301(h)**
 Num. of Stations: 45 Date Range: 1985-90

Source: **SEACOE** Agency: **NOAA84**
 Monitoring Program: **Benthic Surveillance 1984**
 Num. of Stations: 2 Date Range: 1984

Source: **STORET** Agency: **21CAOCFC**
 Monitoring Program: **Orange County (Ca) Environ Mgmt Generl Water Quality & Sediment Data**
 Num. of Stations: 25 Date Range: 1980-92

Chemicals Responsible for Sampling Station Classification as Tier 1 or Tier 2

Classifying Parameter	Number of Stations							
	All Parameters				Aquatic Life		Human Health	
	Total	T.1&2	Tier1	Tier2	Tier1	Tier2	Tier1	Tier2
DDT	91	55	11	44	11	44	.	21
Copper	102	47	.	47	.	47	.	.
Cadmium	105	35	.	35	.	35	.	.
Bis(2-ethylhexyl)phthalate	38	25	2	23	2	23	.	6
Mercury	96	23	10	13	10	13	.	.
Nickel	81	23	.	23	.	23	.	.
Polychlorinated biphenyls	99	20	1	19	1	9	.	20
Arsenic	86	19	.	19	.	19	.	.
Lead	104	15	.	15	.	15	.	.
BHC	83	14	.	14	.	14	.	1
Chromium	98	11	.	11	.	11	.	.
Zinc	101	10	.	10	.	10	.	.
Silver	85	9	.	9	.	9	.	.
Benzo(a)pyrene	69	4	.	4	.	.	.	4
Fluoranthene	76	4	.	4	.	4	.	.
Chlordane	78	3	.	3	.	3	.	3
Dieldrin	77	3	.	3	.	1	.	2
Phenol	48	3	.	3	.	3	.	.
Endosulfan, beta-	75	2	.	2	.	2	.	.
Benzoic acid	6	1	.	1	.	1	.	.
Dibenzo(a,h)anthracene	69	1	.	1	.	1	.	.
Dichloromethane	31	1	.	1	.	.	.	1
Diethyl phthalate	48	1	.	1	.	1	.	.
Methylnaphthalene, 2-	16	1	.	1	.	1	.	.

Sediment Chemistry Data: Chemical Summary

Sediment Parameter	Total Observations			Detected Observations		
	Num.	Mean (ppb)	Median (ppb)	Num.	Max (ppb)	Min (ppb)
Acenaphthene	119	0.00	0.00	0	.	.
Acenaphthylene	123	0.00	0.00	0	.	.
Acetone	28	1.57	0.00	2	34.00	10.00
Acrylonitrile	19	0.00	0.00	0	.	.
Aldrin	248	0.01	0.00	2	1.01	0.50
Anthracene	122	0.22	0.00	1	26.60	26.60
Antimony	81	14.20	0.00	2	590.00	560.00
Arsenic	175	4210.95	3370.00	171	22000.00	5.00
Benzene	50	0.00	0.00	0	.	.
Benzo(a)anthracene	126	0.58	0.00	5	30.00	7.20
Benzo(a)pyrene	120	0.72	0.00	5	29.00	9.30
Benzo(b)fluoranthene	114	0.22	0.00	1	25.00	25.00
Benzo(ghi)perylene	121	0.00	0.00	0	.	.
Benzo(k)fluoranthene	111	0.20	0.00	1	22.00	22.00
Benzoic acid	17	141.18	0.00	8	1200.00	11.00
Benzyl alcohol	28	0.00	0.00	0	.	.
Bis(2-ethylhexyl)phthalate	60	589.13	204.00	50	3560.00	22.00
Bromophenyl phenyl ether, 4-	64	0.00	0.00	0	.	.
Butyl benzyl phthalate	75	1.28	0.00	3	42.00	22.00
BHC	927	0.05	0.00	18	13.30	0.00
Cadmium	255	1055.75	389.00	194	67000.00	103.00
Chlordane	242	0.60	0.00	15	59.00	0.23
Chlorobenzene	55	0.00	0.00	0	.	.
Chromium	255	16978.12	13000.00	252	129000.0	1.60
Chrysene	128	1.05	0.00	6	50.00	11.00
Copper	264	16037.53	11000.00	260	153000.0	7.90
Cresol, o	28	0.00	0.00	0	.	.
Cresol, p-	18	0.00	0.00	0	.	.
Di-n-butyl phthalate	62	3.00	0.00	6	52.00	17.00
Di-n-octyl phthalate	78	12.29	0.00	13	414.00	8.70
Dibenzo(a,h)anthracene	125	0.06	0.00	1	7.00	7.00
Dibenzofuran	71	0.00	0.00	0	.	.
Dibromochloromethane	56	0.00	0.00	0	.	.
Dichlorobenzene, 1,2-	73	0.00	0.00	0	.	.
Dichlorobenzene, 1,3-	67	0.00	0.00	0	.	.
Dichlorobenzene, 1,4-	68	0.00	0.00	0	.	.
Dichloroethane 1,1-	56	0.00	0.00	0	.	.
Dichloroethane 1,2-	56	0.00	0.00	0	.	.
Dichloroethene, trans-1,2-	18	0.00	0.00	0	.	.
Dichloromethane	43	158.29	0.00	12	5920.00	5.70
Dichloropropane, 1,2-	55	0.00	0.00	0	.	.
Dieldrin	239	0.02	0.00	9	1.20	0.16

Sediment Parameter	Total Observations			Detected Observations		
	Num.	Mean (ppb)	Median (ppb)	Num.	Max (ppb)	Min (ppb)
Diethyl phthalate	78	10.22	0.00	9	430.00	7.70
Dimethyl phthalate	78	0.00	0.00	0	.	.
Dimethylphenol, 2,4-	79	0.00	0.00	0	.	.
Dioxins	19	0.00	0.00	0	.	.
DDT	743	40.10	0.00	217	13000.00	0.00
Endosulfan mixed isomers	15	0.00	0.00	0	.	.
Endosulfan, alpha-	188	0.00	0.00	3	0.01	0.01
Endosulfan, beta-	203	0.24	0.00	4	31.00	0.01
Endrin	243	0.02	0.00	3	1.88	1.81
Ethylbenzene	55	0.00	0.00	0	.	.
Fluoranthene	129	10.97	0.00	17	362.50	13.00
Fluorene	123	0.00	0.00	0	.	.
Heptachlor	173	0.00	0.00	0	.	.
Heptachlor epoxide	247	0.00	0.00	1	0.30	0.30
Hexachlorobenzene	75	0.00	0.00	0	.	.
Hexachlorobutadiene	72	0.00	0.00	0	.	.
Hexachloroethane	73	0.00	0.00	0	.	.
HMW_PAHs	2	90.00	90.00	1	180.00	180.00
Indeno(1,2,3-cd)pyrene	121	0.00	0.00	0	.	.
Isophorone	71	0.00	0.00	0	.	.
Lead	266	21617.86	9400.00	221	257000.0	1400.00
LMW_PAHs	2	0.00	0.00	0	.	.
Malathion	137	0.00	0.00	0	.	.
Mercury	214	159.39	29.10	142	5230.00	10.00
Methoxychlor	156	0.00	0.00	0	.	.
Methyl ethyl ketone	28	0.00	0.00	0	.	.
Methylnaphthalene, 2-	30	8.07	0.00	3	220.00	8.00
Mirex/Dechlorane	1	0.15	0.15	1	0.15	0.15
Naphthalene	119	0.00	0.00	0	.	.
Nickel	150	9800.22	7510.00	145	49000.00	2.50
Nitrosodiphenylamine, N-	73	0.00	0.00	0	.	.
Pentachlorophenol	77	2.26	0.00	2	130.00	44.00
Phenanthrene	126	1.03	0.00	7	36.00	7.00
Phenol	75	70.03	0.00	30	1110.00	7.60
Polychlorinated biphenyls	1584	0.56	0.00	30	200.00	0.40
Pyrene	123	3.57	0.00	13	95.00	13.40
Silver	141	184.54	127.00	82	1700.00	55.00
Tetrachloroethane, 1,1,2,2-	28	0.00	0.00	0	.	.
Tetrachloroethene	56	0.00	0.00	0	.	.
Tetrachloromethane	55	0.00	0.00	0	.	.
Toluene	47	0.00	0.00	0	.	.
Toxaphene	237	0.00	0.00	0	.	.
Tribromomethane/Bromoform	56	0.00	0.00	0	.	.
Trichlorobenzene, 1,2,4-	73	0.00	0.00	0	.	.

Sediment Parameter	Total Observations			Detected Observations		
	Num.	Mean (ppb)	Median (ppb)	Num.	Max (ppb)	Min (ppb)
Trichloroethane, 1,1,1-	52	0.00	0.00	0	.	.
Trichloroethane, 1,1,2-	56	0.00	0.00	0	.	.
Trichloroethene	53	0.00	0.00	0	.	.
Trichloromethane/Chloroform	48	0.00	0.00	0	.	.
Xylenes	28	0.00	0.00	0	.	.
Zinc	263	57339.30	41000.00	263	333000.0	5.10

Biotoxicity Data

Lat.	Long.	Date	Species Name	Phase	% Mortality		Sign.
					Test	Control	
Monitoring Program: EPA Region 9 Dredged Material Program							
33.6000	117.9186	82-06-27	Macoma Nasuta	S	5.00	1.00	no
			Neanthes Arenacedonta	S	5.00	2.00	no
33.6017	117.8903	82-06-27	Neanthes Arenacedonta	S	5.00	2.00	no
33.6086	117.9189	82-06-27	Macoma Nasuta	S	1.00	1.00	no
			Neanthes Arenacedonta	S	6.00	2.00	no
33.6089	117.8931	82-06-27	Macoma Nasuta	S	2.00	1.00	no
			Neanthes Arenacedonta	S	15.00	2.00	no
33.6175	117.8925	82-06-27	Neanthes Arenacedonta	S	5.00	2.00	no
33.6194	117.9036	82-06-27	Macoma Nasuta	S	2.00	1.00	no
			Neanthes Arenacedonta	S	5.00	2.00	no
33.6214	117.8950	82-06-22	Neanthes Arenacedonta	S	17.00	2.00	no
33.6222	117.8958	82-06-22	Neanthes Arenacedonta	S	3.00	2.00	no
33.6228	117.8950	82-06-22	Neanthes Arenacedonta	S	16.00	2.00	no
33.6417	117.8861	85-03-12	Macoma Nasuta	S	0.00	1.00	no
			Neanthes Arenacedonta	S	4.00	8.00	no