

# **Appendix A1. Trawl station locations and characteristics in the regional survey of the mainland shelf of southern California, July-August 1994.**

Station	(1994)	Agency <sup>b</sup>	Ves. <sup>c</sup>	Station Coordinates <sup>a</sup>								Tow Characteristics				Station Accepted?	Com. <sup>d</sup>	
				Nominal Trawl				Trawl Start				Time	Depth (m)	Dur. (min)	Speed (m/s)			Dist. (m)
				Lat N (dm)	Long W (dm)	Lat N (dm)	Long W (dm)	Lat N (dm)	Long W (dm)									
0016	7/19	SC	W	34 27.15	120 1.69	34 27.18	120 1.90	16:24	26	10	1.05	767	Yes	-				
0032	7/19	SC	W	34 26.86	120 13.40	34 26.83	120 13.58	11:59	62	10	1.05	755	Yes	-				
0038	7/19	SC	W	34 26.67	120 3.88	34 26.63	120 3.91	14:38	53	10	1.05	750	Yes	-				
0059	7/19	SC	W	34 26.19	120 14.00	34 26.23	120 14.00	11:12	73	10	1.20	684	Yes	-				
0115	7/19	SC	W	34 24.98	120 20.20	34 24.97	120 20.15	8:51	71	10	1.05	213	Yes	-				
0122	7/18	SC	W	34 24.85	120 24.89	34 24.71	120 25.09	8:47	74	10	1.05	532	Yes	-				
0150	7/18	SC	W	34 24.39	120 24.54	34 24.47	120 24.60	9:44	78	10	1.05	609	Yes	-				
0161	7/20	SC	W	34 24.23	119 46.88	34 24.27	119 47.31	16:06	18	10	1.05	806	Yes	-				
0228	7/20	SC	W	34 23.29	119 47.33	34 23.33	119 47.58	14:19	50	10	1.05	762	Yes	-				
0234	7/20	SC	W	34 23.15	119 40.85	34 23.13	119 40.75	17:16	38	10	1.05	888	Yes	-				
0245	7/18	SC	W	34 22.94	120 24.85	34 22.83	120 25.09	14:41	132	10	1.05	729	Yes	-				
0252	7/26	SC	W	34 22.85	119 37.60	34 23.05	119 38.14	13:16	42	10	1.10	800	Yes	-				
0255	7/18	SC	W	34 22.79	120 23.98	34 22.81	120 23.85	15:54	175	10	1.15	631	Yes	-				
0278	7/23	SC	W	34 22.39	119 57.09	-	-	-	-	300	-	-	-	No	D			
0289	7/24	SC	W	34 22.16	119 38.83	34 22.16	119 38.84	17:18	51	10	1.10	713	Yes	-				
0365	7/20	SC	W	34 20.24	119 45.87	34 20.29	119 45.95	11:31	87	10	1.05	82	No	H				
0366	7/24	SC	W	34 20.24	119 26.80	34 20.24	119 26.80	12:44	20	10	1.10	700	Yes	-				
0381	7/20	SC	W	34 19.84	119 46.98	34 19.87	119 47.01	9:20	156	10	1.05	603	Yes	-				
0398	7/24	SC	W	34 19.45	119 31.98	34 19.39	119 31.77	14:22	54	10	1.10	703	Yes	-				
0407	7/24	SC	W	34 19.28	119 33.76	34 19.25	119 33.64	15:09	62	10	1.10	737	Yes	-				
0446	7/26	SC	W	34 18.10	119 40.82	-	-	-	-	111	-	-	-	No	I			
0474	7/24	SC	W	34 17.19	119 30.69	34 17.25	119 30.72	10:52	71	10	1.10	647	Yes	-				
0480	7/26	SC	W	34 17.07	119 38.55	34 17.01	119 38.42	8:57	104	10	1.10	675	Yes	-				
0499	7/26	SC	W	34 16.45	119 38.56	34 16.67	119 38.79	11:30	113	10	1.10	700	Yes	-				
0502	7/24	SC	W	34 16.38	119 24.57	34 16.51	119 24.61	7:50	33	10	1.05	705	Yes	-				
0537	7/24	SC	W	34 15.26	119 26.10	34 15.24	119 26.11	8:35	43	10	1.10	709	Yes	-				
0542	7/24	SC	W	34 15.21	119 29.57	34 15.26	119 29.63	9:43	69	10	1.10	687	Yes	-				
0577	7/25	SC	W	34 14.36	119 35.91	34 14.34	119 35.91	15:10	105	10	1.10	626	Yes	-				
0604	7/25	SC	W	34 13.63	119 37.11	34 13.62	119 37.12	14:18	160	10	1.10	581	Yes	-				
0652	7/21	SC	W	34 12.49	119 20.83	34 12.54	119 21.04	8:40	24	10	1.05	662	Yes	-				
0665	7/21	SC	W	34 12.25	119 20.78	34 12.37	119 20.91	9:12	24	10	1.05	704	Yes	-				
0670	7/25	SC	W	34 12.16	119 39.88	34 12.14	119 39.77	11:56	203	10	1.10	624	Yes	-				
0682	7/25	SC	W	34 11.83	119 38.00	34 11.82	119 37.87	9:30	203	10	1.10	622	Yes	-				
0708	7/25	SC	W	34 11.09	119 34.15	34 11.05	119 33.92	8:03	185	10	1.10	578	Yes	-				
0714	7/23	SC	W	34 10.65	119 27.24	34 10.61	119 27.11	16:03	100	10	1.10	708	Yes	-				
0739	7/23	SC	W	34 9.86	119 26.79	34 9.78	119 26.64	14:38	150	10	1.10	691	Yes	-				
0753	7/23	SC	W	34 9.34	119 25.54	34 9.36	119 25.54	11:36	156	10	1.10	722	Yes	-				
0758	7/21	SC	W	34 9.06	119 16.78	34 9.28	119 17.00	11:16	19	10	1.05	722	Yes	-				
0759	7/21	SC	W	34 9.04	119 17.89	34 9.20	119 18.05	10:41	21	10	1.05	673	Yes	-				
0814	7/22	SC	W	34 5.74	119 9.96	34 5.79	119 10.10	16:45	25	10	1.10	90	Yes	-				
0815	7/21	SC	W	34 5.69	119 17.52	34 5.79	119 17.66	14:24	193	10	1.05	650	Yes	-				
0820	7/22	SC	W	34 5.34	119 4.41	34 5.33	119 4.89	12:26	9	10	1.05	86	Yes	-				
0823	7/22	SC	W	34 5.22	119 15.01	34 5.20	119 15.04	7:44	107	10	1.05	725	Yes	-				
0830	7/22	SC	W	34 4.83	119 10.15	34 4.94	119 10.35	16:01	41	10	1.05	802	Yes	-				

## Appendix A1 (Continued)

Station	(1994)	Agency <sup>a</sup>	Ves. <sup>b</sup>	Station Coordinates								Tow Characteristics				Station Accepted?	Com. <sup>c</sup>	
				Nominal Trawl				Trawl Start				Time	Depth (m)	Dur. (min)	Speed (m/s)			Dist. (m)
				Lat N (dm)	Long W (dm)	Lat N (dm)	Long W (dm)											
0846	7/22	SC	W	34	3.93	119	6.93	34	3.82	119	7.10	13:56	63	10	1.05	875	Yes	-
0859	7/23	SC	W	34	3.51	119	12.37	34	3.31	119	12.59	9:20	192	10	1.00	876	Yes	-
0890	7/22	SC	W	34	1.64	118	56.35	34	1.75	118	56.70	9:24	41	10	1.05	696	Yes	-
0902	8/10	HY	LM	34	1.36	118	42.32	34	1.35	118	42.24	9:28	19	10	0.85	493	Yes	-
0943	8/15	HY	LM	34	0.42	118	35.69	34	0.41	118	35.59	8:44	42	10	0.90	36	Yes	-
0947	7/22	SC	W	34	0.33	118	55.11	-	-	-	-	-	89	-	-	-	No	R
0960	8/10	HY	LM	33	59.95	118	35.71	33	59.92	118	35.58	12:38	50	10	0.75	418	Yes	-
0976	7/22	SC	W	33	59.65	118	59.99	33	59.58	119	0.19	10:42	163	10	1.10	577	Yes	-
0993	8/10	HY	LM	33	59.35	118	35.61	33	59.32	118	35.45	11:03	58	10	0.75	427	Yes	-
1028	8/11	HY	LM	33	57.93	118	35.37	33	57.90	118	35.28	13:04	128	10	0.80	447	Yes	-
1042	8/15	HY	LM	33	56.99	118	28.82	33	57.42	118	29.03	14:03	23	10	0.80	540	Yes	-
1046	8/16	HY	LM	33	56.86	118	27.61	33	56.00	118	27.60	14:02	14	10	0.75	647	Yes	-
1049	8/11	HY	LM	33	56.63	118	32.28	33	56.62	118	32.28	8:13	53	10	0.75	527	Yes	-
1052	8/15	HY	LM	33	56.32	118	36.41	33	56.32	118	36.36	11:31	215	10	0.90	419	Yes	-
1072	8/11	HY	LM	33	54.99	118	32.88	33	54.90	118	32.67	9:57	66	10	0.80	623	Yes	-
1077	-	HY	LM	33	54.43	118	38.08	-	-	-	-	-	-	-	-	-	No	D
1081	8/4	HY	LM	33	54.33	118	26.51	-	-	-	-	-	14	-	-	-	No	S
1105	8/16	HY	LM	33	53.05	118	32.37	33	53.18	118	32.16	8:50	57	10	-	314	No	H/T
1106	8/17	HY	LM	33	53.02	118	36.90	-	-	-	-	-	85	-	-	-	No	H/T
1108	8/18	HY	LM	33	52.94	118	29.88	33	53.03	118	29.68	8:53	58	10	0.75	356	Yes	-
1109	8/22	HY	LM	33	52.93	118	31.11	33	52.75	118	30.98	10:38	57	10	0.85	390	Yes	-
1120	8/17	HY	LM	33	52.31	118	37.78	-	-	-	-	-	-	10	-	-	No	H/T
1126	8/18	HY	LM	33	51.96	118	29.29	33	51.97	118	29.19	11:14	83	10	0.75	400	Yes	-
1129	8/16	HY	LM	33	51.91	118	31.22	33	52.15	118	31.50	10:46	67	10	0.80	374	No	I
1142	7/28	LA	OS	33	51.13	118	27.66	33	51.08	118	27.52	10:52	75	10	0.90	608	Yes	-
1148	8/16	HY	LM	33	51.01	118	31.06	33	50.96	118	30.96	11:36	100	10	0.85	495	Yes	-
1152	8/17	HY	LM	33	50.66	118	35.37	33	50.66	118	35.46	12:06	171	10	0.75	-	Yes	-
1159	7/28	LA	OS	33	50.21	118	26.26	33	50.54	118	26.14	13:10	127	10	0.95	578	Yes	-
1169	7/27	LA	OS	33	49.81	118	30.53	33	49.90	118	30.39	12:27	135	10	0.90	585	Yes	-
1173	7/29	LA	OS	33	49.56	118	24.98	33	49.41	118	25.31	9:25	62	10	0.90	71	Yes	-
1175	7/27	LA	OS	33	49.25	118	32.95	33	49.21	118	32.87	10:01	208	10	0.90	573	Yes	-
1194	8/17	LA	OS	33	46.44	118	26.06	-	-	-	-	-	-	-	-	-	No	K
1208	7/26	LA	OS	33	44.05	118	8.67	33	44.02	118	8.87	12:13	13	10	0.85	533	Yes	-
1222	7/26	LA	OS	33	43.37	118	12.45	33	43.34	118	12.27	8:59	16	10	0.85	560	Yes	-
1227	7/26	LA	OS	33	43.09	118	9.61	33	43.07	118	9.79	11:34	19	10	0.90	-	Yes	-
1236	8/17	LA	OS	33	42.66	118	14.68	-	-	-	-	-	-	-	-	-	No	B
1256	7/26	LA	OS	33	41.87	118	11.17	33	41.91	118	11.29	10:18	23	10	0.90	491	Yes	-
1267	8/2	LA	OS	33	41.34	118	18.04	33	41.26	118	17.85	9:09	44	10	0.95	630	Yes	-
1272	7/22	OC	C	33	41.21	118	5.44	33	41.20	118	5.37	14:37	16	10	0.90	565	Yes	-
1287	7/23	OC	C	33	40.67	118	4.02	33	40.67	118	3.98	11:54	15	10	0.90	533	Yes	-
1300	7/22	OC	C	33	39.98	118	6.51	33	39.97	118	6.44	13:53	24	10	0.90	562	Yes	-
1306	7/26	OC	C	33	39.90	118	2.75	33	39.95	118	2.82	10:40	14	10	0.95	593	Yes	-
1332	7/26	LA	OS	33	38.69	118	8.72	33	38.78	118	8.89	13:55	32	10	0.95	-	Yes	-
1348	7/27	OC	C	33	38.13	118	0.91	33	38.10	118	0.84	9:19	16	10	0.95	600	Yes	-
1355	7/22	OC	C	33	37.93	118	5.18	33	37.90	118	5.04	12:06	33	10	0.95	568	Yes	-
1401	7/26	OC	C	33	36.30	117	58.29	33	36.32	117	58.24	7:50	21	10	0.90	540	Yes	-

## Appendix A1 (Continued)

Station	(1994)	Date	Agency <sup>a</sup>	Ves. <sup>b</sup>	Station Coordinates								Tow Characteristics				Station Accepted?	Com. <sup>c</sup>	
					Nominal Trawl				Trawl Start				Time	Depth (m)	Dur. (min)	Speed (m/s)			Dist. (m)
					Lat N (dm)	Long W (dm)	Lat N (dm)	Long W (dm)											
1406	7/26	OC	C	33	36.20	118	3.01	33	36.18	118	2.79	12:24	35	10	0.95	584	Yes	-	
1415	7/26	OC	C	33	35.92	118	0.98	33	35.87	118	0.80	14:25	33	10	0.95	566	Yes	-	
1417	7/27	OC	C	33	35.88	117	58.17	33	35.88	117	58.08	7:40	30	10	0.95	781	Yes	-	
1418	7/23	OC	C	33	35.82	118	6.58	33	35.69	118	6.48	9:12	97	10	0.90	573	Yes	-	
1424	7/23	OC	C	33	35.69	117	55.33	33	35.66	117	55.18	13:30	22	10	0.95	571	Yes	-	
1426	7/27	OC	C	33	35.62	118	3.15	33	35.60	118	3.01	11:20	44	10	0.95	588	Yes	-	
1450	7/23	OC	C	33	34.76	118	4.14	-	-	-	-	-	300	-	0.90	-	No	D	
1469	7/22	OC	C	33	34.31	118	2.94	33	34.25	118	2.72	8:28	162	10	0.95	607	Yes	-	
1476	7/29	LA	OS	33	33.88	118	8.77	33	33.89	118	9.14	12:53	113	11	0.90	576	Yes	-	
1533	7/20	OC	C	33	23.96	117	37.02	-	-	-	-	-	-	-	-	-	No	H	
1550	7/21	OC	C	33	21.43	117	34.93	33	21.35	117	34.80	14:26	14	10	0.95	522	Yes	-	
1551	7/21	OC	C	33	21.33	117	39.02	33	21.13	117	38.83	11:47	174	10	0.95	596	Yes	-	
1571	8/1	OC	C	33	19.24	117	37.61	33	19.21	117	37.59	10:38	188	10	0.95	594	Yes	-	
1574	7/21	OC	C	33	19.08	117	36.76	33	19.01	117	36.64	10:33	95	10	0.95	584	Yes	-	
1585	7/21	OC	C	33	17.94	117	34.83	33	17.86	117	34.75	9:32	72	10	0.95	592	Yes	-	
1617	8/1	OC	C	33	15.17	117	28.09	33	15.10	117	28.03	8:22	17	10	0.95	575	Yes	-	
1650	8/1	OC	C	33	10.94	117	24.03	33	10.84	117	23.93	7:15	16	10	0.95	571	Yes	-	
1655	7/20	OC	C	33	10.63	117	27.67	33	10.51	117	27.47	14:22	197	10	1.00	557	Yes	-	
1662	7/20	OC	C	33	9.56	117	25.63	33	9.46	117	25.43	12:17	176	10	1.00	559	Yes	-	
1667	7/20	OC	C	33	8.64	117	22.68	33	8.50	117	22.54	10:46	65	10	0.90	595	Yes	-	
1684	7/20	OC	C	33	4.26	117	18.96	33	4.05	117	18.92	9:26	15	10	1.00	557	Yes	-	
1734	7/12	SD	M	32	53.10	117	16.33	32	52.84	117	16.32	11:15	49	10	0.75	499	Yes	-	
1737	7/12	SD	M	32	52.67	117	18.87	32	52.67	117	18.87	9:32	187	10	1.00	757	Yes	-	
1739	7/12	SD	M	32	52.29	117	15.40	-	-	-	-	-	20	-	-	-	No	D	
1767	7/13	SD	M	32	48.30	117	20.81	32	48.30	117	20.81	10:20	85	10	0.80	673	Yes	-	
1769	7/13	SD	M	32	48.19	117	19.71	32	48.07	117	19.67	11:59	70	7	1.00	453	Yes	-	
1770	7/19	SD	M	32	47.78	117	21.58	32	47.46	117	21.38	9:25	91	10	1.00	-	No	H/T	
1774	8/17	SD	M	32	47.58	117	22.23	32	47.50	117	22.30	11:09	104	10	1.00	56	Yes	-	
1776	7/14	SD	M	32	47.43	117	16.97	32	47.21	117	16.88	7:34	24	10	1.00	625	Yes	-	
1780	7/14	SD	M	32	47.05	117	16.09	32	46.89	117	16.04	9:22	15	10	1.00	654	Yes	-	
1794	7/19	SD	M	32	45.84	117	21.99	32	45.59	117	21.92	12:50	97	10	1.00	555	Yes	-	
1797	7/14	SD	M	32	45.47	117	20.27	32	45.57	117	20.26	11:36	86	10	1.00	546	Yes	-	
1823	7/21	SD	M	32	42.58	117	16.45	-	-	-	-	-	21	-	-	-	No	K	
1825	7/21	SD	M	32	42.46	117	18.26	32	42.49	117	18.27	8:26	170	10	1.00	768	No	H/T	
1828	7/21	SD	M	32	42.24	117	19.16	32	42.17	117	19.03	9:37	83	10	1.00	205	No	H/T	
1833	7/27	SD	M	32	41.66	117	19.40	32	41.53	117	19.30	12:21	91	10	1.00	540	Yes	-	
1839	7/27	SD	M	32	40.65	117	16.48	32	40.62	117	16.46	7:53	41	10	1.00	568	Yes	-	
1850	7/21	SD	M	32	39.68	117	19.77	32	39.50	117	19.76	12:09	110	10	1.00	518	Yes	-	
1867	8/4	SD	M	32	38.82	117	11.24	32	38.58	117	11.18	7:40	17	10	1.00	590	Yes	-	
1871	8/5	SD	M	32	38.53	117	18.70	32	38.21	117	18.62	8:24	89	10	1.00	671	Yes	-	
1874	8/15	SD	M	32	38.40	117	25.81	32	38.06	117	25.79	9:04	145	10	0.25	382	No	H/T	
1888	8/5	SD	M	32	37.80	117	20.94	32	37.73	117	20.90	11:22	178	10	1.00	461	No	H/T	
1892	8/4	SD	M	32	37.65	117	16.47	32	37.37	117	16.37	9:13	62	10	1.00	483	Yes	-	
1903	8/19	SD	M	32	37.16	117	20.10	-	-	-	-	-	110	-	-	-	No	I	
1905	8/15	SD	M	32	37.12	117	25.28	32	37.13	117	25.31	10:27	145	9	1.00	253	No	W	
1908	8/17	SD	M	32	37.01	117	20.80	32	37.01	117	20.68	15:02	177	10	1.00	890	No	N	

## Appendix A1 (Continued)

				Station Coordinates								Tow Characteristics						
Date				Nominal Trawl				Trawl Start				Depth		Dur.	Speed	Dist.	Station	
Station	(1994)	Agency <sup>a</sup>	Ves. <sup>b</sup>	Lat N (dm)	Long W (dm)	Lat N (dm)	Long W (dm)	Lat N (dm)	Long W (dm)	Lat N (dm)	Long W (dm)	Time	(m)	(min)	(m/s)	(m)	Accepted?	Com. <sup>c</sup>
1916	8/15	SD	M	32	36.57	117	23.90	32	36.67	117	23.90	12:49	133	10	1.00	658	No	H/T
1944	8/1	SD	M	32	35.40	117	9.67	32	35.29	117	9.65	12:13	18	10	1.00	572	Yes	-
1998	8/19	SD	M	32	32.93	117	22.98	-	-	-	-	-	-	-	-	-	No	M
2001	8/1	SD	M	32	32.73	117	13.95	32	32.46	117	13.87	11:05	43	10	1.00	580	Yes	-

Ves. = Vessel; Dur. = Duration; Dist. = Distance.

<sup>a</sup>Station Coordinates

Lat N (dm) = Latitude North (degree minutes).

Long W (dm) = Longitude West (degree minutes).

<sup>b</sup>Agencies

HY = City of Los Angeles, Environmental Monitoring Division.

LA = County Sanitation Districts of Los Angeles County.

OC = County Sanitation Districts of Orange County.

SC = Southern California Coastal Water Research Project.

SD = City of San Diego, Metropolitan Wastewater Department.

<sup>c</sup>Vessels

C = *Crusader*.

LM = *La Mer*.

M = *Monitor III*.

OS = *Ocean Sentinel*.

W = *Westwind*.

<sup>d</sup>Com. = Station Comments

B = Too close to breakwater.

D = Too deep.

H = Net hung up.

H/T = Net hung up and torn.

I = Irregular bottom.

K = In kelp bed.

M = In Mexico.

N = Net did not fish.

R = On ridge.

S = Too close to shore.

W = Net twisted.

**Appendix A2. Subpopulation designation and area-weights of trawl stations sampled in the regional survey of the mainland shelf of southern California, July-August, 1994.**

Station	Depth Zone <sup>a</sup>	Region <sup>b</sup>	Middle Shelf POTW <sup>c</sup>	Area Weights <sup>d</sup> (km <sup>2</sup> )
0016	Middle Shelf	Northern	No	47.30
0032	Middle Shelf	Northern	No	47.30
0038	Middle Shelf	Northern	No	47.30
0059	Middle Shelf	Northern	No	47.30
0115	Middle Shelf	Northern	No	47.30
0122	Middle Shelf	Northern	No	47.30
0150	Middle Shelf	Northern	No	47.30
0161	Inner Shelf	Northern	No	23.65
0228	Middle Shelf	Northern	No	47.30
0234	Middle Shelf	Northern	No	47.30
0245	Outer Shelf	Northern	No	23.65
0252	Middle Shelf	Northern	No	47.30
0255	Outer Shelf	Northern	No	23.65
0278	Outer Shelf	Northern	No	23.65
0289	Middle Shelf	Northern	No	47.30
0365	Middle Shelf	Northern	No	47.30
0366	Inner Shelf	Northern	No	23.65
0381	Outer Shelf	Northern	No	23.65
0398	Middle Shelf	Northern	No	47.30
0407	Middle Shelf	Northern	No	47.30
0446	Outer Shelf	Northern	No	23.65
0474	Middle Shelf	Northern	No	47.30
0480	Outer Shelf	Northern	No	23.65
0499	Outer Shelf	Northern	No	23.65
0502	Middle Shelf	Northern	No	47.30
0537	Middle Shelf	Northern	No	47.30
0542	Middle Shelf	Northern	No	47.30
0577	Outer Shelf	Northern	No	23.65
0604	Outer Shelf	Northern	No	23.65
0652	Inner Shelf	Northern	No	23.65
0665	Inner Shelf	Northern	No	23.65
0670	Outer Shelf	Northern	No	23.65
0682	Outer Shelf	Northern	No	23.65
0708	Outer Shelf	Northern	No	23.65
0714	Middle Shelf	Northern	No	47.30
0739	Outer Shelf	Northern	No	23.65
0753	Outer Shelf	Northern	No	23.65
0758	Inner Shelf	Northern	No	23.65
0759	Inner Shelf	Northern	No	23.65
0814	Inner Shelf	Northern	No	23.65
0815	Outer Shelf	Northern	No	23.65
0820	Inner Shelf	Northern	No	23.65
0823	Outer Shelf	Northern	No	23.65
0830	Middle Shelf	Northern	No	47.30
0846	Middle Shelf	Northern	No	47.30

## Appendix A2 (Continued)

Station	Depth Zone	Region	Middle Shelf POTW	Area Weights (km <sup>2</sup> )
0859	Outer Shelf	Northern	No	23.65
0890	Middle Shelf	Northern	No	47.30
0902	Inner Shelf	Central	No	23.65
0943	Middle Shelf	Central	Yes	12.61
0947	Middle Shelf	Northern	No	23.65
0960	Middle Shelf	Central	Yes	12.61
0976	Outer Shelf	Northern	No	23.65
0993	Middle Shelf	Central	Yes	12.61
1028	Outer Shelf	Central	Yes	12.61
1042	Inner Shelf	Central	No	23.65
1049	Middle Shelf	Central	Yes	12.61
1052	Outer Shelf	Central	No	23.65
1072	Middle Shelf	Central	Yes	12.61
1105	Middle Shelf	Central	Yes	12.61
1106	Middle Shelf	Central	No	47.30
1108	Middle Shelf	Central	Yes	12.61
1109	Middle Shelf	Central	Yes	12.61
1120	Outer Shelf	Central	No	23.65
1126	Middle Shelf	Central	Yes	12.61
1129	Middle Shelf	Central	Yes	12.61
1142	Middle Shelf	Central	Yes	12.61
1148	Middle Shelf	Central	Yes	12.61
1159	Outer Shelf	Central	No	23.65
1169	Outer Shelf	Central	Yes	12.61
1173	Middle Shelf	Central	Yes	12.61
1175	Outer Shelf	Central	No	23.65
1208	Inner Shelf	Central	No	23.65
1222	Inner Shelf	Central	No	23.65
1227	Inner Shelf	Central	No	23.65
1256	Inner Shelf	Central	No	23.65
1267	Middle Shelf	Central	Yes	12.61
1272	Inner Shelf	Central	No	23.65
1287	Inner Shelf	Central	No	23.65
1300	Inner Shelf	Central	No	23.65
1306	Inner Shelf	Central	No	23.65
1332	Middle Shelf	Central	No	47.30
1348	Inner Shelf	Central	No	23.65
1355	Middle Shelf	Central	No	47.30
1401	Inner Shelf	Central	Yes	12.61
1406	Middle Shelf	Central	Yes	12.61
1415	Middle Shelf	Central	Yes	12.61
1417	Middle Shelf	Central	Yes	12.61
1418	Middle Shelf	Central	No	47.30
1424	Inner Shelf	Central	No	23.65
1426	Middle Shelf	Central	Yes	12.61
1450	Outer Shelf	Central	Yes	12.61

## Appendix A2 (Continued)

Station	Depth Zone	Region	Middle Shelf POTW	Area Weights (km <sup>2</sup> )
1469	Outer Shelf	Central	Yes	12.61
1476	Outer Shelf	Central	No	23.65
1550	Inner Shelf	Southern	No	23.65
1551	Outer Shelf	Southern	No	23.65
1571	Outer Shelf	Southern	No	23.65
1574	Middle Shelf	Southern	No	47.30
1585	Middle Shelf	Southern	No	47.30
1617	Inner Shelf	Southern	No	23.65
1650	Inner Shelf	Southern	No	23.65
1655	Outer Shelf	Southern	No	23.65
1662	Outer Shelf	Southern	No	23.65
1667	Middle Shelf	Southern	No	47.30
1684	Inner Shelf	Southern	No	23.65
1734	Middle Shelf	Southern	No	47.30
1737	Outer Shelf	Southern	No	23.65
1739	Inner Shelf	Southern	No	23.65
1767	Middle Shelf	Southern	Yes	12.61
1769	Middle Shelf	Southern	Yes	12.61
1770	Middle Shelf	Southern	Yes	12.61
1774	Outer Shelf	Southern	No	23.65
1776	Inner Shelf	Southern	Yes	12.61
1780	Inner Shelf	Southern	Yes	12.61
1794	Middle Shelf	Southern	Yes	12.61
1797	Middle Shelf	Southern	Yes	12.61
1823	Inner Shelf	Southern	Yes	12.61
1825	Outer Shelf	Southern	Yes	12.61
1828	Middle Shelf	Southern	Yes	12.61
1850	Outer Shelf	Southern	Yes	12.61
1867	Inner Shelf	Southern	No	23.65
1871	Middle Shelf	Southern	Yes	12.61
1874	Outer Shelf	Southern	No	23.65
1888	Outer Shelf	Southern	No	23.65
1892	Middle Shelf	Southern	No	47.30
1903	Outer Shelf	Southern	Yes	12.61
1905	Outer Shelf	Southern	No	23.65
1908	Outer Shelf	Southern	No	23.65
1916	Outer Shelf	Southern	No	23.65
1944	Inner Shelf	Southern	No	23.65
1998	Outer Shelf	Southern	No	23.65
2001	Middle Shelf	Southern	No	47.30
1833	Middle Shelf	Southern	Yes	12.61
1839	Middle Shelf	Southern	Yes	12.61
1046	Inner Shelf	Central	No	23.65
1194	Inner Shelf	Central	Yes	12.61
1236	Inner Shelf	Central	No	23.65
1533	Inner Shelf	Southern	No	23.65

## Appendix A2 (Continued)

Station	Depth Zone	Region	Middle Shelf POTW	Area Weights (km <sup>2</sup> )
1152	Outer Shelf	Central	No	23.65
1081	Inner Shelf	Central	No	23.65
1077	Outer Shelf	Central	No	23.65

<sup>a</sup> Inner shelf = 10-25 m; Middle shelf = 26-100 m; Outer shelf = 101-200 m.

<sup>b</sup> Northern = Point Conception to Point Dume; Central = Point Dume to Dana Point;  
Southern = Dana Point to U.S.-Mexico international border.

<sup>c</sup> POTW = Publicly owned treatment work monitoring areas (i.e., area surrounding  
wastewater discharge site that is monitored for impact).

<sup>d</sup> Trawl Area Weights - Area represented by trawl station.



**Appendix A3. Physical characteristics of trawl stations in the regional survey of the mainland shelf of southern California, July-August 1994.<sup>a</sup>**

Station	Water-column Characteristics at Bottom					Grab Sample Depth(m)	Sediment (Percent Fines)	Chlorinated Hydrocarbons	
	CTD Sample	Temp.	Salinity	DO	Trans.			Total DDT	Total PCB
	Depth (m)	(C <sup>0</sup> )	(psu)	(mg/L)	(Percent)			(ng/g)	(ng/g)
0016	32	13.3	33.5	8.3	80.1	27	28.9	12.9	27.8
0032	65	10.2	33.6	5.7	84.5	62	40.7	10.1	20.5
0038	55	10.5	33.5	6.2	81.8	52	43.0	15.2	4.0
0059	76	9.6	33.9	4.5	84.9	75	38.2	9.9	3.4
0115	64	10.0	33.7	5.9	86.6	63	19.5	2.1	nd
0122	73	9.7	33.8	4.6	88.1	77	17.7	nd	nd
0150	80	9.6	33.8	4.6	88.7	77	35.2	1.7	nd
0161	20	11.8	33.5	7.5	82.4	16	13.4	nd	nd
0228	52	10.4	33.6	6.1	80.9	49	59.3	21.7	7.9
0234	40	11.1	33.5	6.8	59.0	33	25.5	2.6	nd
0245	125	9.5	34.0	3.9	87.6	120	11.6	2.1	nd
0252	45	11.0	33.5	5.2	51.7	42	99.0	16.9	3.7
0255	185	9.1	34.1	3.0	82.9	172	21.6	9.2	36.4
0289	52	10.6	33.5	5.7	66.9	51	94.7	16.6	5.8
0366	22	12.2	33.5	7.7	32.9	21	28.8	1.3	nd
0381	166	9.5	34.0	3.9	85.5	156	82.2	35.1	28.8
0398	56	10.2	33.6	5.2	64.1	53	100.0	1.0	nd
0407	65	10.1	33.6	5.4	66.8	62	99.5	0.7	nd
0474	72	9.9	33.7	5.2	67.8	70	100.0	40.8	48.7
0480	105	9.7	33.8	4.7	78.8	100	85.4	1.9	nd
0499	119	9.7	33.8	4.7	65.3	113	70.7	1.0	nd
0502	34	11.7	33.5	7.1	50.2	33	91.5	26.6	7.9
0537	45	11.1	33.5	7.0	60.3	43	99.3	21.5	nd
0542	70	9.9	33.7	5.0	75.2	68	92.5	52.2	16.3
0577	111	9.4	34.0	4.0	80.5	104	39.1	17.8	5.5
0604	161	9.3	34.0	3.6	66.5	153	37.9	12.3	5.1
0652	24	13.2	33.4	9.0	81.5	24	54.8	8.9	4.2
0665	25	13.3	33.4	8.9	81.6	24	59.8	nd	nd
0670	218	9.1	34.2	2.9	79.6	208	37.8	1.0	nd
0682	203	9.2	34.1	2.9	84.4	185	22.6	1.1	nd
0708	215	9.1	34.1	3.0	80.2	198	29.8	1.0	nd
0714	98	9.7	33.8	4.6	77.3	94	46.6	27.0	nd
0739	149	9.4	34.0	3.5	76.0	132	37.8	14.0	6.4
0753	153	9.4	34.0	3.5	68.8	137	38.8	16.5	18.0
0758	19	12.1	33.5	9.1	84.7	18	27.7	5.1	nd
0759	21	12.5	33.5	8.1	82.7	21	43.9	1.0	nd
0814	28	12.1	33.4	9.3	85.7	26	21.3	7.6	nd
0815	197	8.9	34.2	2.8	83.9	190	29.0	6.3	2.7
0820	8	12.8	33.4	9.1	77.9	10	8.8	1.4	nd
0823	126	9.6	33.8	4.3	87.4	112	23.7	11.8	4.5
0830	43	11.4	33.5	7.3	83.4	42	28.9	19.0	5.2
0846	69	10.3	33.6	6.2	82.6	63	29.5	55.2	9.7

# Appendix A3 (Continued)

Station	Water-column Characteristics on Bottom					Grab Sample Depth(m)	Sediment (Percent Fines)	Chlorinated Hydrocarbons	
	CTD Sample	Temp.	Salinity	DO	Trans.			Total	Total
	Depth (m)	(C <sup>0</sup> )	(psu)	(mg/L)	(Percent)			DDT (ng/g)	PCB (ng/g)
0859	203	9.2	34.1	2.8	83.1	196	72.9	1.4	nd
0890	50	11.5	33.4	7.6	84.3	50	36.3	1.1	nd
0902	16	12.1	33.5	9.2	63.9	18	35.5	1.8	nd
0943	37	10.8	33.5	5.8	82.6	43	52.1	51.1	32.2
0960	45	10.5	33.5	6.1	81.8	51	42.5	42.7	42.9
0976	175	9.5	34.0	3.7	82.8	166	19.4	2.2	nd
0993	57	10.5	33.6	5.5	81.6	60	36.0	54.6	40.4
1028	120	9.5	33.9	4.0	82.0	126	70.1	95.0	235.6
1042	22	12.2	33.5	9.8	76.1	25	54.2	23.0	46.0
1046	12	15.5	33.5	9.7	75.6	12	14.8	1.2	nd
1049	48	10.9	33.5	6.4	85.4	55	34.4	36.2	116.0
1052	210	9.1	34.2	2.6	77.4	220	99.9	7.8	nd
1072	64	10.2	33.6	5.5	83.9	71	35.7	29.2	72.1
1108	53	10.3	33.6	5.9	86.1	58	59.7	99.9	85.8
1109	54	10.2	33.6	5.7	82.1	58	25.4	40.0	33.9
1126	78	9.7	33.8	4.8	80.9	84	74.6	394.5	184.7
1142	71	9.9	33.7	4.8	84.8	75	46.6	349.0	52.3
1148	95	9.7	33.8	4.6	72.9	100	81.6	344.2	174.7
1152	155	9.4	34.1	3.2	77.1	170	43.5	188.2	42.4
1159	129	9.1	34.1	2.7	85.3	127	42.2	464.0	69.0
1169	131	9.5	33.9	3.4	78.8	135	88.6	808.8	141.9
1173	66	10.6	33.6	5.4	84.1	60	36.0	261.6	31.0
1175	198	9.1	34.2	2.6	88.7	208	56.8	487.1	52.0
1208	10	14.1	33.4	7.8	71.6	13	76.4	31.9	31.1
1222	15	12.5	33.4	7.4	74.6	15	9.9	8.9	2.9
1227	15	12.3	33.4	7.4	73.9	18	29.2	25.1	28.3
1256	22	11.6	33.4	6.9	82.7	23	8.6	14.1	24.4
1267	43	10.4	33.6	5.7	82.9	43	40.7	986.6	109.5
1272	14	15.0	33.5	9.5	80.3	16	2.0	nd	nd
1287	14	14.6	33.6	9.7	78.6	15	13.4	nd	12.8
1300	22	12.2	33.4	8.1	80.9	24	18.2	2.4	nd
1306	11	18.1	33.4	8.6	80.6	13	11.6	0.6	0.1
1332	32	11.4	33.5	7.3	84.2	32	15.4	14.2	19.3
1348	14	15.9	33.6	8.9	80.6	16	12.6	0.6	0.3
1355	31	11.9	33.4	7.1	84.2	33	19.8	4.2	1.4
1401	20	13.1	33.5	9.1	79.6	22	31.7	nd	nd
1406	33	11.1	33.5	5.9	79.4	35	20.5	0.9	nd
1415	31	11.2	33.5	6.0	78.8	33	24.2	4.8	4.2
1417	29	11.7	33.4	7.1	81.2	31	38.8	nd	nd
1418	83	10.0	33.7	4.2	83.4	84	29.5	8.8	6.9
1424	19	15.1	33.5	9.2	76.3	22	15.2	1.7	nd
1426	43	10.2	33.7	5.0	80.4	45	25.4	nd	nd
1469	161	9.5	34.0	3.4	84.8	162	65.4	2.3	nd

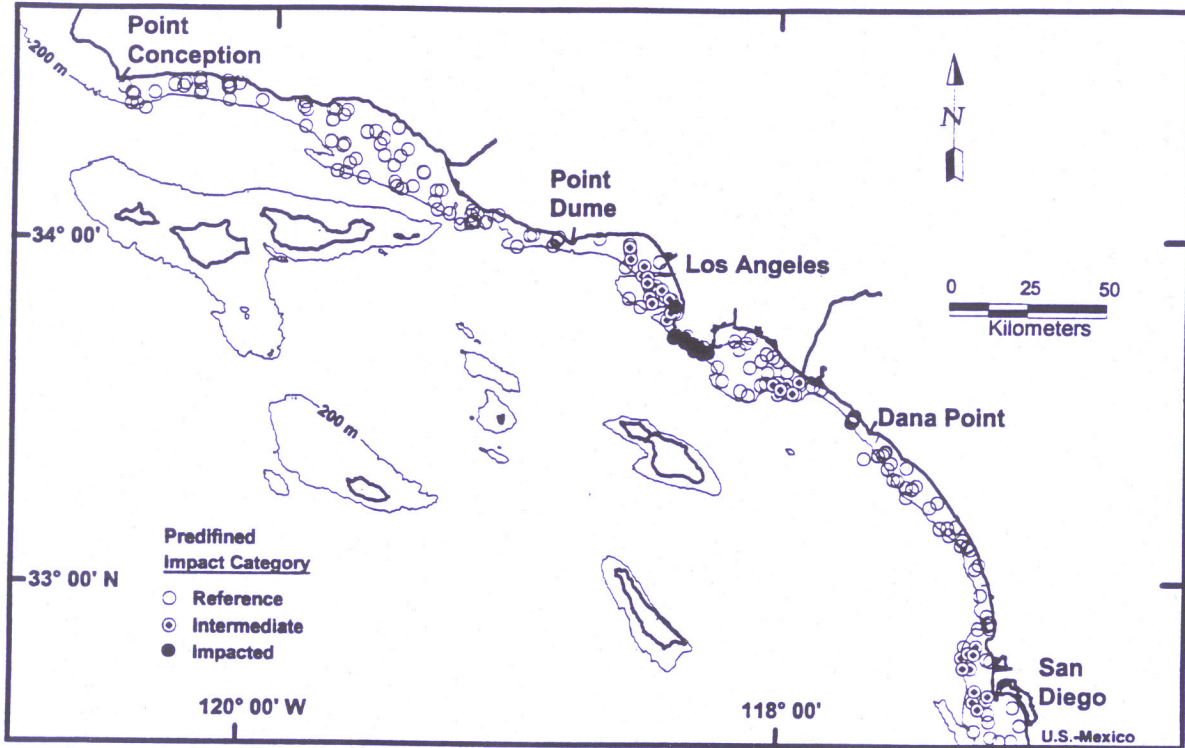
### Appendix A3 (Continued)

Station	Water-column Characteristics on Bottom					Grab Sample Depth(m)	Sediment (Percent Fines)	Chlorinated Hydrocarbons	
	CTD Sample	Temp.	Salinity	DO	Trans.			Total	Total
	Depth (m)	(C <sup>0</sup> )	(psu)	(mg/L)	(Percent)			DDT (ng/g)	PCB (ng/g)
1476	115	9.6	33.9	4.3	87.5	116	-	-	-
1550	13	14.2	33.4	8.9	73.1	14	29.3	1.1	0.1
1551	165	9.4	34.0	3.4	83.4	176	83.7	14.9	4.1
1571	175	9.4	34.1	3.1	86.9	188	80.4	2.1	nd
1574	94	9.8	33.8	4.2	88.1	94	50.4	nd	nd
1585	73	10.2	33.7	4.5	84.9	72	60.9	nd	nd
1617	16	12.8	33.5	8.9	79.0	17	19.9	8.2	1.1
1650	15	13.2	33.4	9.0	77.7	16	18.9	nd	nd
1655	191	9.2	34.1	2.8	84.1	196	78.2	11.6	3.3
1662	190	9.4	34.1	2.8	86.3	176	78.7	nd	nd
1667	62	10.5	33.6	5.0	81.5	65	69.0	1.3	nd
1684	12	14.3	33.4	9.0	84.5	13	8.2	nd	nd
1734	48	11.1	33.6	6.4	86.9	49	24.9	nd	nd
1737	204	9.3	34.0	3.6	88.7	188	50.6	1.8	nd
1767	86	10.0	33.7	5.1	84.4	87	58.5	1.6	nd
1769	68	10.3	33.7	5.1	79.7	74	50.3	1.4	nd
1774	102	9.7	33.8	4.9	88.3	103	35.1	nd	nd
1776	23	12.4	33.6	8.7	75.8	24	11.8	nd	nd
1780	14	13.7	33.6	10.6	70.1	15	6.6	nd	nd
1794	97	9.7	33.9	4.6	88.0	97	30.2	nd	nd
1797	83	9.9	33.8	5.2	83.7	85	65.7	1.9	nd
1833	90	9.9	33.8	5.1	83.7	91	55.7	nd	nd
1839	44	10.8	33.6	5.3	82.1	42	0.0	nd	nd
1850	102	9.9	33.8	4.9	86.7	106	42.2	1.0	nd
1867	16	12.2	33.6	6.5	60.9	17	8.4	nd	nd
1871	88	9.9	33.8	4.4	83.3	89	44.8	1.8	nd
1892	62	10.1	33.7	4.7	75.6	61	54.5	4.6	nd
1944	17	12.1	33.5	7.0	77.4	17	16.7	1.2	nd
2001	43	10.5	33.7	5.2	87.3	43	0.0	nd	nd

nd = Not detected.

<sup>a</sup> Measurement values are rounded. See Southern California Bight Pilot Project database for unrounded values.

Temp. = Temperature; DO = Dissolved oxygen; Trans. = Transmissivity



Appendix A4. Location of trawl stations collected from 1973 to 1994 on the mainland shelf of southern California at depths of 10-200m in demersal fish index calibration data set by impact category.

**Appendix A5. Characteristics of trawl stations on the mainland shelf of southern California used for the demersal fish index calibration database.**

Station	Agency <sup>a</sup>	Year	Depth (m)	Station Coordinates <sup>b</sup>			Impact Category	Fin Erosion	Tumor
				Lat N (dm)	Long W (dm)				
T1-023	LA	1973	23	33 44.42	118 25.06		Intermediate	No	Yes
T2-023	LA	1973	23	33 44.08	118 22.50		Intermediate	No	No
T3-023	LA	1973	23	33 43.75	118 25.25		Intermediate	No	No
T4-023	LA	1973	23	33 42.48	118 20.26		Intermediate	Yes	No
T5-023	LA	1973	23	33 42.18	118 19.00		Intermediate	Yes	No
T1-061	LA	1973	61	33 44.18	118 25.18		Impacted	Yes	Yes
T2-061	LA	1973	61	33 43.75	118 23.00		Impacted	Yes	No
T2-061	LA	1973	61	33 43.75	118 23.00		Impacted	Yes	No
T3-061	LA	1973	61	33 43.00	118 22.50		Impacted	Yes	No
T4-061	LA	1973	61	33 42.18	118 20.43		Impacted	Yes	No
T5-061	LA	1973	61	33 41.33	118 19.23		Impacted	Yes	Yes
T1-137	SC	1973	134	33 40.97	118 19.13		Intermediate	-	-
T1-137	LA	1973	137	33 44.00	118 25.29		Intermediate	Yes	No
T2-137	LA	1973	137	33 43.00	118 23.00		Impacted	Yes	No
T3-137	LA	1973	137	33 42.58	118 22.00		Impacted	Yes	No
T4-137	LA	1973	137	33 41.54	118 21.01		Impacted	Yes	Yes
T5-137	LA	1973	137	33 41.13	118 19.37		Impacted	Yes	No
T5-137	SC	1973	146	33 43.80	118 25.40		Impacted	-	-
R12	SC	1977	53	34 7.25	119 18.34		Reference	No	No
R35	SC	1977	55	33 41.30	118 18.90		Impacted	Yes	No
R37	SC	1977	55	33 36.33	118 14.80		Reference	No	No
R53	SC	1977	55	33 24.10	117 39.50		Reference	No	No
R54	SC	1977	55	33 22.13	117 38.15		Reference	No	No
R36	SC	1977	56	33 38.75	118 15.85		Reference	No	No
R30	SC	1977	57	33 47.00	118 27.00		Intermediate	No	No
R52	SC	1977	57	33 22.93	117 44.00		Reference	No	No
R11	SC	1977	58	34 9.83	119 23.17		Reference	No	No
R14	SC	1977	58	34 1.67	118 57.41		Reference	No	No
R15	SC	1977	58	34 0.75	118 51.53		Reference	No	No
R32	SC	1977	58	33 43.42	118 22.95		Impacted	Yes	No
R39	SC	1977	58	33 35.80	118 3.82		Intermediate	No	No
R02	SC	1977	59	34 22.08	120 22.00		Reference	No	No
R03	SC	1977	59	34 26.47	120 15.92		Reference	No	Yes
R10	SC	1977	59	34 13.50	119 27.49		Reference	No	No
R29	SC	1977	59	33 48.25	118 26.25		Intermediate	No	No
R31	SC	1977	59	33 43.90	118 24.90		Impacted	Yes	No
R33	SC	1977	59	33 42.80	118 21.50		Impacted	Yes	No
R43	SC	1977	59	33 34.75	118 0.83		Intermediate	No	No
R50	SC	1977	59	33 35.17	117 53.53		Reference	No	No
R55	SC	1977	59	33 17.60	117 33.50		Reference	No	No
R56	SC	1977	59	33 14.20	117 29.75		Reference	No	No
NT5	OC	1977	60	33 35.00	118 2.20		Intermediate	No	No
R25	SC	1977	60	33 54.60	118 31.50		Reference	No	No
R26	SC	1977	60	33 53.55	118 31.50		Reference	No	No
R27	SC	1977	60	33 52.33	118 28.33		Reference	No	No

## Appendix A5 (Continued)

Station	Agency	Year	Depth (m)	Station Coordinates		Impact Category	Fin Erosion	Tumor
				Lat N (dm)	Long W (dm)			
R38	SC	1977	60	33 34.60	118 10.84	Reference	No	No
R48	SC	1977	60	33 34.38	117 59.59	Intermediate	No	No
R49	SC	1977	60	33 34.22	117 58.95	Intermediate	Yes	No
R51	SC	1977	60	33 30.10	117 46.50	Reference	No	No
R57	SC	1977	60	33 10.60	117 25.80	Reference	No	No
R58	SC	1977	60	33 7.60	117 21.30	Reference	No	No
R59	SC	1977	60	33 3.20	117 19.70	Reference	No	No
R60	SC	1977	60	32 58.50	117 18.50	Reference	No	No
R71	SC	1977	60	32 36.00	117 16.25	Reference	No	No
R05	SC	1977	61	34 26.25	120 4.03	Reference	No	No
R07	SC	1977	61	34 22.83	119 46.91	Reference	No	No
R08	SC	1977	61	34 21.17	119 41.25	Reference	No	No
R34	SC	1977	61	33 42.06	118 20.18	Impacted	Yes	Yes
R01	SC	1977	62	34 25.75	120 26.75	Reference	No	No
R61	SC	1977	62	32 53.75	117 16.50	Reference	No	No
R68	SC	1977	62	32 39.83	117 16.85	Intermediate	No	No
R09	SC	1977	64	34 18.25	119 30.00	Reference	No	No
R62	SC	1977	64	32 49.50	117 19.20	Intermediate	No	No
R13	SC	1977	65	34 3.83	119 9.94	Reference	No	No
R06	SC	1977	67	34 24.27	119 56.80	Reference	No	Yes
R28	SC	1977	80	33 50.70	118 26.60	Reference	No	No
R04	SC	1977	81	34 25.67	120 10.00	Reference	No	No
T0-023	LA	1985	23	33 48.13	118 25.02	Intermediate	No	No
T0-023	LA	1985	23	33 48.13	118 25.02	Intermediate	No	No
T5-023	LA	1985	23	33 42.18	118 19.00	Intermediate	No	No
R04	SC	1985	30	34 27.71	120 10.50	Reference	No	No
R05	SC	1985	30	34 27.30	120 4.43	Reference	No	No
R08	SC	1985	30	34 23.22	119 41.31	Reference	No	No
R13	SC	1985	30	34 5.30	119 9.08	Reference	No	No
R50	SC	1985	30	33 30.61	117 46.05	Reference	No	No
R52	SC	1985	30	33 24.29	117 39.26	Reference	No	No
R54	SC	1985	30	33 18.12	117 32.69	Reference	No	No
R57	SC	1985	30	33 6.81	117 20.84	Reference	No	No
R60	SC	1985	30	32 53.68	117 16.13	Reference	No	No
R71	SC	1985	30	32 32.52	117 11.41	Reference	No	No
T11	MEC	1985	55	33 36.04	118 5.32	Reference	No	No
T11	MEC	1985	55	33 36.04	118 5.32	Reference	No	No
R04	SC	1985	60	34 26.99	120 10.35	Reference	No	No
R05	SC	1985	60	34 26.56	120 4.33	Reference	No	No
R08	SC	1985	60	34 21.11	119 41.29	Reference	No	No
R13	SC	1985	60	34 3.77	119 10.20	Reference	No	No
R50	SC	1985	60	33 29.88	117 46.51	Reference	No	No
R52	SC	1985	60	33 23.72	117 39.90	Reference	No	No
R54	SC	1985	60	33 17.42	117 33.53	Reference	No	No
R57	SC	1985	60	33 7.37	117 21.55	Reference	No	No
R60	SC	1985	60	32 53.32	117 16.66	Reference	No	No

## Appendix A5 (Continued)

Station	Agency	Year	Depth (m)	Station Coordinates		Impact Category	Fin Erosion	Tumor
				Lat N (dm)	Long W (dm)			
R61	SC	1985	60	32 49.29	117 19.21	Reference	No	No
R71	SC	1985	60	32 33.12	117 15.82	Reference	No	No
T1-061	LA	1985	61	33 44.18	118 25.18	Impacted	Yes	No
T4-061	LA	1985	61	33 42.18	118 20.43	Impacted	Yes	No
T4-061	LA	1985	61	33 42.18	118 20.43	Impacted	Yes	No
T5-061	LA	1985	61	33 41.33	118 19.23	Impacted	Yes	No
T0-137	LA	1985	137	33 48.47	118 26.21	Intermediate	No	No
T4-137	LA	1985	137	33 41.54	118 21.01	Impacted	Yes	No
T4-137	LA	1985	137	33 41.54	118 21.01	Impacted	Yes	No
T5-137	LA	1985	137	33 41.13	118 19.37	Impacted	Yes	Yes
T5-137	LA	1985	137	33 41.13	118 19.37	Impacted	No	Yes
R04	SC	1985	150	34 25.14	120 10.26	Reference	No	No
R05	SC	1985	150	34 24.12	120 3.93	Reference	No	No
R08	SC	1985	150	34 17.38	119 41.34	Reference	No	No
R13	SC	1985	150	34 3.58	119 10.36	Reference	No	No
R50	SC	1985	150	33 29.43	117 46.84	Reference	No	No
R52	SC	1985	150	33 23.60	117 40.95	Reference	No	No
R54	SC	1985	150	33 15.97	117 34.76	Reference	No	No
R57	SC	1985	150	33 7.61	117 22.83	Reference	No	No
R60	SC	1985	150	32 54.80	117 17.01	Reference	No	No
R61	SC	1985	150	32 49.50	117 21.72	Intermediate	No	No
R71	SC	1985	150	32 34.27	117 19.33	Reference	No	No
T0-023	LA	1990	23	33 48.13	118 25.02	Intermediate	No	No
T0-023	LA	1990	23	33 48.13	118 25.02	Intermediate	No	No
T4-023	LA	1990	23	33 42.48	118 20.26	Intermediate	No	No
T5-023	LA	1990	23	33 42.18	118 19.00	Intermediate	No	No
R13	SC	1990	30	34 5.30	119 9.08	Reference	No	No
R15	SC	1990	30	34 1.47	118 51.11	Reference	No	No
R50	SC	1990	30	33 30.44	117 46.11	Reference	No	No
R52	SC	1990	30	33 24.29	117 39.26	Reference	No	No
R60	SC	1990	30	32 53.68	117 16.13	Reference	No	No
R71	SC	1990	30	32 32.52	117 11.41	Reference	No	No
T11	MEC	1990	55	33 36.04	118 5.32	Reference	No	No
R13	SC	1990	60	34 4.20	119 9.58	Reference	No	No
R15	SC	1990	60	34 1.13	118 51.38	Reference	No	No
R50	SC	1990	60	33 29.64	117 46.63	Reference	No	No
R52	SC	1990	60	33 23.72	117 39.90	Reference	No	No
R60	SC	1990	60	32 53.32	117 16.66	Reference	No	No
R61	SC	1990	60	32 49.29	117 19.21	Reference	No	No
R71	SC	1990	60	32 33.12	117 15.82	Reference	No	No
T0-061	LA	1990	61	33 48.34	118 25.50	Intermediate	No	No
T0-061	LA	1990	61	33 48.34	118 25.50	Intermediate	No	No
T4-061	LA	1990	61	33 42.18	118 20.43	Impacted	Yes	Yes
T5-061	LA	1990	61	33 41.33	118 19.23	Impacted	No	No
T0-137	LA	1990	137	33 48.47	118 26.21	Intermediate	No	Yes
T4-137	LA	1990	137	33 41.54	118 21.01	Impacted	No	Yes

## Appendix A5 (Continued)

Station	Agency	Year	Depth (m)	Station Coordinates		Impact Category	Fin Erosion	Tumor
				Lat N (dm)	Long W (dm)			
T5-137	LA	1990	137	33 41.13	118 19.37	Impacted	No	Yes
R13	SC	1990	150	34 3.58	119 10.36	Reference	No	No
R15	SC	1990	150	33 59.88	118 52.30	Reference	No	No
R50	SC	1990	150	33 29.43	117 46.84	Reference	No	Yes
R52	SC	1990	150	33 23.53	117 40.96	Reference	No	No
R60	SC	1990	150	32 54.80	117 17.01	Reference	No	No
R61	SC	1990	150	32 49.50	117 21.72	Reference	No	No
R71	SC	1990	150	32 34.27	117 19.33	Reference	No	No
0820	SC	1994	9	34 5.15	119 4.35	Reference	No	No
1208	LA	1994	13	33 44.02	118 8.87	Reference	No	No
1046	HY	1994	14	33 56.00	118 27.60	Reference	No	No
1306	OC	1994	14	33 39.95	118 2.82	Reference	No	No
1550	OC	1994	14	33 21.35	117 34.80	Reference	No	No
1287	OC	1994	15	33 40.67	118 3.98	Reference	No	No
1684	OC	1994	15	33 4.05	117 18.92	Reference	No	No
1780	SD	1994	15	32 46.89	117 16.04	Reference	No	No
1222	LA	1994	16	33 43.34	118 12.27	Reference	No	No
1272	OC	1994	16	33 41.20	118 5.37	Reference	No	No
1348	OC	1994	16	33 38.10	118 0.84	Reference	No	No
1650	OC	1994	16	33 10.84	117 23.93	Reference	No	No
1617	OC	1994	17	33 15.10	117 28.03	Reference	No	No
1867	SD	1994	17	32 38.58	117 11.18	Reference	No	No
0161	SC	1994	18	34 24.27	119 107.31	Reference	No	No
1944	SD	1994	18	32 35.29	117 9.65	Reference	No	No
0758	SC	1994	19	34 9.28	119 17.00	Reference	No	No
0902	HY	1994	19	34 1.35	118 42.24	Reference	No	No
1227	LA	1994	19	33 43.07	118 9.79	Reference	No	No
0366	SC	1994	20	34 20.24	119 26.80	Reference	No	No
0759	SC	1994	21	34 9.20	119 18.05	Reference	No	No
1401	OC	1994	21	33 36.32	117 58.24	Intermediate	No	No
1424	OC	1994	22	33 35.66	117 55.18	Reference	No	No
1042	HY	1994	23	33 57.42	118 29.03	Reference	No	No
1256	LA	1994	23	33 41.91	118 11.29	Reference	No	No
0652	SC	1994	24	34 12.54	119 21.04	Reference	No	No
0665	SC	1994	24	34 12.37	119 20.91	Reference	No	No
1300	OC	1994	24	33 39.97	118 6.44	Reference	No	No
1776	SD	1994	24	32 47.21	117 16.88	Reference	No	No
0814	SC	1994	25	34 5.79	119 10.10	Reference	No	No
0016	SC	1994	26	34 27.18	120 1.90	Reference	No	No
1417	OC	1994	30	33 35.88	117 58.08	Intermediate	No	No
1332	LA	1994	32	33 38.78	118 8.89	Reference	No	No
0502	SC	1994	33	34 16.51	119 24.61	Reference	No	No
1355	OC	1994	33	33 37.90	118 5.04	Reference	No	No
1415	OC	1994	33	33 35.87	118 0.80	Intermediate	No	No
1406	OC	1994	35	33 36.18	118 2.79	Intermediate	No	No
0234	SC	1994	38	34 23.13	119 40.75	Reference	No	No



## Appendix A5 (Continued)

Station	Agency	Year	Depth (m)	Station Coordinates				Impact Category	Fin Erosion	Tumor
				Lat N (dm)	Long W (dm)					
0830	SC	1994	41	34	4.94	119	10.35	Reference	No	No
0890	SC	1994	41	34	1.75	118	56.70	Reference	No	No
1839	SD	1994	41	32	40.62	117	16.46	Intermediate	No	No
0252	SC	1994	42	34	23.05	119	38.14	Reference	No	No
0943	HY	1994	42	34	0.41	118	35.59	Intermediate	No	No
0537	SC	1994	43	34	15.24	118	26.11	Reference	No	No
2001	SD	1994	43	32	32.46	117	13.87	Reference	No	No
1267	LA	1994	44	33	41.26	118	17.85	Impacted	No	No
1426	OC	1994	44	33	35.60	118	3.01	Intermediate	No	No
1734	SD	1994	49	32	52.84	117	16.32	Reference	No	No
0228	SC	1994	50	34	23.33	119	47.58	Reference	No	No
0960	HY	1994	50	33	59.92	118	35.58	Intermediate	No	No
0289	SC	1994	51	34	22.16	119	38.84	Reference	No	No
0038	SC	1994	53	34	26.63	120	3.91	Reference	No	No
1049	HY	1994	53	33	56.62	118	32.28	Intermediate	No	No
0398	SC	1994	54	34	19.39	119	31.77	Reference	No	No
1109	HY	1994	57	33	52.75	118	30.98	Intermediate	No	No
0993	HY	1994	58	33	59.32	118	35.45	Intermediate	No	No
1108	HY	1994	58	33	53.03	118	29.68	Intermediate	No	No
0032	SC	1994	62	34	26.83	120	13.58	Reference	No	No
0407	SC	1994	62	34	19.25	119	33.64	Reference	No	No
1173	LA	1994	62	33	49.41	118	25.31	Impacted	No	No
1892	SD	1994	62	32	37.37	117	16.37	Reference	No	No
0846	SC	1994	63	34	3.82	119	7.10	Reference	No	No
1667	OC	1994	65	33	8.50	117	22.54	Reference	No	No
1072	HY	1994	66	33	54.90	118	32.67	Intermediate	No	No
0542	SC	1994	69	34	15.26	119	29.63	Reference	No	No
1769	SD	1994	70	32	48.07	117	19.67	Intermediate	No	No
0115	SC	1994	71	34	24.97	120	20.15	Reference	No	No
0474	SC	1994	71	34	17.25	119	30.72	Reference	No	No
1585	OC	1994	72	33	17.86	117	34.75	Reference	No	No
0059	SC	1994	73	34	26.23	120	14.00	Reference	No	No
0122	SC	1994	74	34	24.71	120	25.09	Reference	No	No
1142	LA	1994	75	33	51.08	118	27.52	Intermediate	No	No
0150	SC	1994	78	34	24.47	120	24.60	Reference	No	No
1126	HY	1994	83	33	51.97	118	29.19	Intermediate	No	No
1767	SD	1994	85	32	48.30	117	20.81	Intermediate	No	No
1797	SD	1994	86	32	45.57	117	20.26	Intermediate	No	No
1871	SD	1994	89	32	38.21	117	18.62	Intermediate	No	No
1833	SD	1994	91	32	41.53	117	19.30	Intermediate	No	No
1574	OC	1994	95	33	19.01	117	36.64	Reference	No	No
1418	OC	1994	97	33	35.69	118	6.48	Reference	No	No
1794	SD	1994	97	32	45.59	117	21.92	Intermediate	No	No
0714	SC	1994	100	34	10.61	119	27.11	Reference	No	No
1148	HY	1994	100	33	50.96	118	30.96	Intermediate	No	No
0480	SC	1994	104	34	17.01	119	38.42	Reference	No	No

## Appendix A5 (Continued)

Station	Agency	Year	Depth (m)	Station Coordinates		Impact Category	Fin Erosion	Tumor
				Lat N (dm)	Long W (dm)			
1774	SD	1994	104	32 47.50	117 22.30	Intermediate	No	No
0577	SC	1994	105	34 14.34	119 35.91	Reference	No	No
0823	SC	1994	107	34 5.20	119 15.04	Reference	No	No
1850	SD	1994	110	32 39.50	117 19.76	Intermediate	No	No
0499	SC	1994	113	34 16.67	119 38.79	Reference	Yes	No
1476	LA	1994	113	33 33.89	118 9.14	Reference	No	No
1159	LA	1994	127	33 50.54	118 26.14	Intermediate	No	No
1028	HY	1994	128	33 57.90	118 35.28	Intermediate	No	No
0245	SC	1994	132	34 22.83	120 25.09	Reference	No	No
1169	LA	1994	135	33 49.90	118 30.39	Intermediate	No	No
0739	SC	1994	150	34 9.78	119 26.64	Reference	No	No
0381	SC	1994	156	34 19.87	119 47.01	Reference	No	No
0753	SC	1994	156	34 9.36	119 25.54	Reference	No	No
0604	SC	1994	160	34 13.62	119 37.12	Reference	No	No
1469	OC	1994	162	33 34.25	118 2.72	Intermediate	No	No
0976	SC	1994	163	33 59.58	119 0.19	Reference	No	No
1152	HY	1994	171	33 50.66	118 35.46	Reference	No	No
1551	OC	1994	174	33 21.13	117 38.83	Reference	No	No
0255	SC	1994	175	34 22.81	120 23.85	Reference	No	No
1662	OC	1994	176	33 9.46	117 25.43	Reference	No	No
0708	SC	1994	185	34 11.05	119 33.92	Reference	No	No
1737	SD	1994	187	32 52.67	117 18.87	Reference	No	No
1571	OC	1994	188	33 19.21	117 37.59	Reference	No	No
0859	SC	1994	192	34 3.31	119 12.59	Reference	No	No
0815	SC	1994	193	34 5.79	119 17.66	Reference	No	No
1655	OC	1994	197	33 10.51	117 27.47	Reference	No	No
0670	SC	1994	203	34 12.14	119 39.77	Reference	No	No
0682	SC	1994	203	34 11.82	119 37.87	Reference	No	No
1175	LA	1994	208	33 49.21	118 32.87	Reference	No	No
1052	HY	1994	215	33 56.32	118 36.36	Reference	No	No

### <sup>a</sup>Agencies

HY = City of Los Angeles, Environmental Monitoring Division  
 LA = County Sanitation Districts of Los Angeles County  
 OC = County Sanitation Districts of Orange County  
 SC = Southern California Coastal Water Research Project  
 SD = City of San Diego, Metropolitan Wastewater Department  
 MEC = MEC Analytical Systems, Inc.

### <sup>b</sup>Station Coordinates

Lat N (dm) = Latitude North (degree minutes)  
 Long W (dm) = Longitude West (degree minutes)