

Appendix M-1: Data Collected by Padre Dam in the San Diego River Watershed. Shaded values exceed water quality objectives.

CONSTITUENT	SAMPLE POINT	UNITS	Water Quality Benchmarks	May-2007	Jun-2007	Jul-2007	Aug-2007	Sep-2007	Oct-2007	Nov-2007	Dec-2007	Jan-2008	Feb-2008	Mar-2008	Apr-2008
FLOW RATE	#1 Carlton Hills Blvd.	mgd		2.61	0.144	2.4	0.03	0.41	0.4	0.5	6.0	0.4	5.0	0.9	2.7
	#2 Forrester Creek			0.776	0.472	0.99	NF	1.20	0.5	1.0	0.7	0.6	3.9	1.2	1.0
	#3 Sycamore Creek leaving Golf Course			1.62	0.12	0.01	N F	0.2	0.0	0.0	4.1	3.5	3.6	2.8	3.5
	#4 Mast Boulevard			3.62	1.37	0.41	0.058	0.00	0.5	1.0	5.0	3.1	3.5	2.1	0.3
	#5 Old Mission Dam			3.31	8.66	0.17	0.081	0.32	0.3	0.4	6.5	3.4	6.6	5.9	3.9
	#6 Mission Ponds			8.67	2.27	0.89	NF	0.00	0.1	0.0	8.7	3.5	46.3	18.6	2.5
pH	#1 Carlton Hills Blvd.	units	Between 6.5 - 9.0	7.25	7.59	7.76	7.68	7.80	7.63	7.60	7.45	7.57	7.39	7.35	7.47
	#2 Forrester Creek			8.12	8.20	8.22	8.21	8.54	8.10	8.16	8.08	8.72	8.21	8.45	8.29
	#3 Sycamore Creek leaving Golf Course			7.83	7.70	8.06	7.39	7.57	7.43	7.33	7.52	7.77	7.38	7.69	7.77
	#4 Mast Boulevard			7.65	7.70	7.69	7.76	7.55	7.60	7.59	7.55	7.67	7.5	7.69	7.72
	#5 Old Mission Dam			7.70	7.80	7.91	7.85	7.57	7.60	7.65	7.42	7.74	7.35	7.7	7.9
	#6 Mission Ponds			7.45	7.50	7.52	7.58	7.55	7.49	7.55	7.21	7.49	7.38	7.57	7.5
SPECIFIC CONDUCTANCE	#1 Carlton Hills Blvd.	umhos		1,783	2,290	2,340	2,440	2,450	2,450	2,430	1,936	2,070	1,102	1,394	1,826
	#2 Forrester Creek			2,930	2,770	2,570	2,960	2,590	2,650	2,640	2,610	2,760	2,890	3,000	2,870
	#3 Sycamore Creek leaving Golf Course			1,706	2,140	2,300	2,510	2,500	2,460	2,780	1,612	2,030	851	1,197	1,542
	#4 Mast Boulevard			2,080	2,600	2,810	2,690	2,560	2,740	2,740	2,080	2,310	1,242	1,722	2,080
	#5 Old Mission Dam			2,060	2,570	2,760	2,870	2,330	2,740	2,790	1,746	2,340	1,154	1,582	1,985
	#6 Mission Ponds			1,923	2,750	3,180	3,590	4,020	4,220	2,568	1,055	2,260	836	1,507	2,285
TEMPERATURE	#1 Carlton Hills Blvd.	deg. C		19.9	20.7	23.1	22.2	25.2	17.8	16.8	12.1	9.7	11	13.6	15.7
	#2 Forrester Creek			17.6	20.2	28.1	22.9	27.5	19.7	16.8	13.6	11.6	9.5	13.2	14.1
	#3 Sycamore Creek leaving Golf Course			20.7	20.4	27.5	23.8	26.3	18.1	16.0	11.5	10.1	10.9	12.7	16.7
	#4 Mast Boulevard			19.5	19.2	23.6	21.2	24.1	18.1	16.7	12.6	10.4	10.4	12.9	14.5
	#5 Old Mission Dam			19.9	21.0	24.2	23.0	25.1	18.4	16.5	12.7	9.9	10.4	13.5	14.7
	#6 Mission Ponds			20.5	21.8	26.2	23.1	26.0	20.7	17.6	15.8	11.9	11.9	15.4	16.9
TURBIDITY	#1 Carlton Hills Blvd.	NTU	20	7.42	7.41	5.26	7.49	9.62	1.59	0.782	1.47	1.65	7.54	3.45	5.82
	#2 Forrester Creek			167	13.7	43.5	7.2	7.73	14	22.6	2.89	1.87	6.53	1.86	1.85
	#3 Sycamore Creek leaving Golf Course			3.37	4.28	5.9	2.83	19.4	3.97	11.4	3.06	4.6	6.12	1.51	2.83
	#4 Mast Boulevard			5.34	5.43	5.03	1.3	7.52	6.05	5.33	3.62	4.23	6.06	3.25	4.51
	#5 Old Mission Dam			5.18	1.66	2.46	1.01	3.92	1.2	1.73	6.01	4.13	8.41	420	3.81
	#6 Mission Ponds			2.13	1.58	1.01	2.62	2.34	2.12	1.78	15.4	5.97	7.54	12.8	3.95
TOTAL DISSOLVED SOLIDS	#1 Carlton Hills Blvd.	mg/l	1,000	1,156	1,360	1,436	1,488	1,476	1,508	1,456	1,136	1,220	624	792	1,100
	#2 Forrester Creek			1,744	1,694	1,632	18,100	1,628	1,660	1,600	1,164	1,668	1,840	1,864	1,808
	#3 Sycamore Creek leaving Golf Course			956	1,232	1,348	1,504	1,528	1,488	1,704	916	1,186	492	676	884
	#4 Mast Boulevard			1,048	1,512	1,732	1,638	1,560	1,684	1,648	1,208	1,368	690	1,012	1,240
	#5 Old Mission Dam			1,228	1,524	1,664	1,772	1,426	1,692	1,712	1,012	1,408	664	1	1,184
	#6 Mission Ponds			1,112	1,612	1,844	2,192	2,484	2,532	2,568	1,015	1,328	460	876	1,376
D.O. % SATURATION	#1 Carlton Hills Blvd.	mg/l		0.3	0.4	0.5	0.5	0.5	0.1	0.4	0.3	0.585	0.605	0.53	0.381
	#2 Forrester Creek			0.9	1.1	1.3	1.4	1.6	1.1	1.0	0.9	1	0.934	1.78	1.334
	#3 Sycamore Creek leaving Golf Course			0.9	0.4	1.3	0.1	0.1	0.2	0.1	0.6	0.81	0.738	0.813	0.778
	#4 Mast Boulevard			0.6	0.5	0.6	0.6	0.3	0.6	0.6	0.6	0.778	0.805	0.804	0.728
	#5 Old Mission Dam			0.7	1.0	1.0	0.9	0.3	0.6	0.6	0.6	0.821	0.78	0.786	0.784
	#6 Mission Ponds			0.3	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.543	0.616	0.467	0.378
DISSOLVED OXYGEN	#1 Carlton Hills Blvd.	µg/L	5	2.74	3.59	3.98	4.17	3.68	5.31	4.27	3.25	6.66	6.73	5.79	3.75
	#2 Forrester Creek			8.62	9.69	10.00	11.46	12.14	9.64	9.74	9.35	22	10.78	18.51	12.6
	#3 Sycamore Creek leaving Golf Course			7.91	3.75	10.06	0.69	0.44	1.83	1.41	6.61	9.34	8.14	8.55	7.5
	#4 Mast Boulevard			4.96	4.99	4.93	5.00	2.77	5.44	5.44	6.55	8.65	8.99	8.44	7.36
	#5 Old Mission Dam			6.38	8.66	8.05	7.55	2.76	5.35	5.78	6.22	9.23	8.71	8.11	7.9
	#6 Mission Ponds			2.40	1.14	1.67	0.73	1.08	1.34	2.14	1.52	5.77	6.7	4.61	3.64
AMMONIA	#1 Carlton Hills Blvd.	mg/l		<0.042	<0.042	<0.030	<0.042	<0.029	0.04	0.03	0.296	<0.029	<0.020	0.021	<0.020
	#2 Forrester Creek			<0.042	0.117	<0.031	<0.042	<0.029	0.138	0.089	0.123	<0.029	0.032	<0.02	<0.020
	#3 Sycamore Creek leaving Golf Course			<0.042	<0.042	<0.032	<0.042	<0.029	<0.029	<0.025	0.059	<0.029	0.029	0.041	<0.020
	#4 Mast Boulevard			<0.042	<0.042	<0.033	<0.042	<0.029	0.047	0.071	0.126	<0.029	0.032	0.035	<0.020
	#5 Old Mission Dam			<0.042	<0.042	<0.034	<0.042	0.176	0.047	<0.025	0.111	<0.029	0.033	0.186	<0.020
	#6 Mission Ponds			<0.042	<0.042	<0.035	<0.015	<0.029	<0.029	<0.025	0.15	<0.029	0.046	<0.02	<0.020

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NITRATE NITROGEN	#1 Carlton Hills Blvd.	mg/l	10, *(1)	<0.022	0.125	0.136	0.117	0.122	0.143	0.18	0.116	0.0678	0.467	0.325	0.0693
	#2 Forrester Creek			5.07	3.95	3.43	1.77	0.20	3.19	4.37	6.17	8.46	8.9	7.71	5.59
	#3 Sycamore Creek leaving Golf Course			<0.022	<0.022	<0.022	<0.022	<0.025	<0.025	<0.025	0.428	0.03	8.99	1.88	0.068
	#4 Mast Boulevard			0.548	1.66	1.6	<0.022	0.08	1.03	1.45	0.61	0.855	5.44	1.78	0.949
	#5 Old Mission Dam			<0.022	0.069	<0.022	<0.022	<0.025	0.06	0.11	0.413	0.107	5.43	1.52	0.393
	#6 Mission Ponds			<0.022	<0.022	<0.022	0.0875	<0.025	<0.025	<0.025	0.72	0.039	1.73	1.16	0.061
NITRITE NITROGEN	#1 Carlton Hills Blvd.	mg/l	1, *(1)	<0.015	<0.015	<0.015	<0.015	<0.014	<0.014	<0.014	<0.014	<0.014	<0.1	<0.1	<0.010
	#2 Forrester Creek			0.761	0.242	0.083	0.15	<0.014	0.114	0.032	<.014	<.014	0.037	0.162	0.23
	#3 Sycamore Creek leaving Golf Course			<0.015	<0.015	<0.015	<0.015	<0.014	<0.014	<0.014	<0.014	<0.014	0.034	0.037	<0.01
	#4 Mast Boulevard			<0.015	<0.015	0.019	<0.015	<0.014	<0.014	<0.014	<0.014	<0.014	0.019	0.032	<0.01
	#5 Old Mission Dam			<0.015	<0.015	<0.015	<0.015	<0.014	<0.014	<0.014	<0.014	<0.014	0.017	<0.01	<0.01
	#6 Mission Ponds			<0.015	<0.015	<0.015	<0.022	<0.014	<0.014	<0.014	<0.014	<0.014	0.031	<0.01	<0.01
ORGANIC NITROGEN	#1 Carlton Hills Blvd.	mg/l		1.11	0.74	0.79	0.84	1.11	0.69	0.59	0.99	0.772	0.723	0.782	0.743
	#2 Forrester Creek			6.88	5.54	1.30	1.88	1.62	1.12	0.93	1.66	1.05	0.914	1.64	0.969
	#3 Sycamore Creek leaving Golf Course			1.23	0.49	0.81	0.61	2.92	0.96	1.01	0.91	1.36	1.56	1.26	0.703
	#4 Mast Boulevard			1.78	0.73	0.79	0.66	1.24	0.70	1.07	0.89	1.57	1.27	1.07	0.826
	#5 Old Mission Dam			0.82	0.74	0.54	0.69	2.27	1.02	0.64	0.98	1.34	1.3	0.76	0.713
	#6 Mission Ponds			0.86	0.63	0.55	0.88	1.07	0.87	0.87	1.09	1.13	0.857	0.905	0.738
TOTAL NITROGEN [AS N]	#1 Carlton Hills Blvd.	mg/l		1.11	0.74	0.92	0.96	2.33	0.87	0.80	1.41	0.839	1.19	1.13	0.812
	#2 Forrester Creek			6.88	9.59	4.81	3.65	1.82	4.45	5.39	7.97	9.51	9.85	9.35	6.56
	#3 Sycamore Creek leaving Golf Course			1.23	0.49	0.85	1.11	2.92	0.96	1.01	1.40	1.37	10.6	3.18	0.771
	#4 Mast Boulevard			1.78	2.39	2.41	0.70	1.56	1.77	2.59	0.41	2.43	6.73	2.88	1.77
	#5 Old Mission Dam			0.82	0.81	0.54	0.69	2.44	1.12	0.76	1.50	1.91	6.76	2.46	1.11
	#6 Mission Ponds			0.86	0.63	0.55	0.88	1.07	0.87	0.88	1.96	1.17	1.73	2.09	0.799
ORTHOPHOSPHATE PHOPHOROUS	#1 Carlton Hills Blvd.	mg/l	2, *(1)	0.050	0.075	0.056	0.052	0.193	0.046	0.495	0.125	0.034	0.075	0.056	0.065
	#2 Forrester Creek			0.044	0.025	0.032	0.012	0.036	0.041	0.036	0.071	0.0148	0.085	0.019	0.016
	#3 Sycamore Creek leaving Golf Course			0.034	0.047	0.025	0.096	0.292	0.101	0.041	0.108	0.205	0.045	0.077	0.016
	#4 Mast Boulevard			0.088	0.124	0.159	0.250	0.329	0.151	0.159	0.136	0.0546	0.081	0.074	0.065
	#5 Old Mission Dam			0.133	0.187	0.153	0.192	0.358	0.178	0.164	0.192	0.0737	0.088	0.086	0.092
	#6 Mission Ponds			0.105	0.144	0.155	0.084	0.002	0.214	0.204	0.099	0.058	0.101	0.0137	0.01
TOTAL PHOSPHOROUS	#1 Carlton Hills Blvd.	mg/l	2, *(1)	0.129	0.110	0.107	0.143	0.087	0.137	0.103	0.187	0.034	<0.1	<0.1	0.124
	#2 Forrester Creek			0.269	0.088	0.110	0.051	0.106	0.147	0.133	0.146	0.0525	<0.1	<0.1	0.031
	#3 Sycamore Creek leaving Golf Course			0.132	0.127	0.075	0.143	0.564	0.217	0.139	0.183	0.097	<0.1	0.104	0.077
	#4 Mast Boulevard			0.147	0.138	0.213	0.326	0.446	0.234	0.233	0.194	0.104	<0.1	0.101	0.109
	#5 Old Mission Dam			0.188	0.212	0.174	0.211	0.475	0.208	0.170	0.268	0.107	<0.1	0.817	0.117
	#6 Mission Ponds			0.178	0.156	0.181	0.234	0.092	0.252	0.245	0.303	0.115	0.103	0.157	<0.1
E-COLI	#1 Carlton Hills Blvd.	MPN/100mL	235	31	31	41	10	75	10	51	98	10	75	<10	ND
	#2 Forrester Creek			878	310	404	1,842	2,382	135	341	598	146	480	738	ND
	#3 Sycamore Creek leaving Golf Course			97	73	20	<10	355	96	384	767	52	84	10	ND
	#4 Mast Boulevard			279	327	331	<10	8,164	228	63	588	84	199	20	ND
	#5 Old Mission Dam			20	<10	<10	20	3,377	10	<10	253	75	228	53	ND
	#6 Mission Ponds			<10	20	<10	20	75	10	30	201	41	75	41	ND
FECAL COLIFORM	#1 Carlton Hills Blvd.	MPN/100mL	400	40	80	40	40	80	70	220	230	<20	40	40	20
	#2 Forrester Creek			2,200	230	700	24,000	3,000	300	1,300	1,100	130	130	1,300	1,700
	#3 Sycamore Creek leaving Golf Course			130	40	<20	<20	1,100	<20	500	500	20	40	<20	70
	#4 Mast Boulevard			1,100	500	170	<20	16,000	230	230	1,400	80	20	20	130
	#5 Old Mission Dam			40	<20	<20	<20	3,000	110	20	300	70	70	40	80
	#6 Mission Ponds			40	<20	20	<20	110	20	<20	300	20	20	20	40
TOTAL COLIFORM	#1 Carlton Hills Blvd.	MPN/100mL		9,000	1,400	2,400	300	500	500	1,300	16,000	230	1,300	170	130
	#2 Forrester Creek			50,000	1,700	5,000	50,000	5,000	3,000	2,400	24,000	800	3,500	2,400	9,000
	#3 Sycamore Creek leaving Golf Course			30,000	5,000	1,700	230	5,000	1,300	90,000	5,000	1,700	2,200	5,000	800
	#4 Mast Boulevard			16,000	9,000	5,000	500	50,000	2,400	2,400	16,000	2,800	2,800	5,000	800
	#5 Old Mission Dam			800	1,330	1,300	800	9,000	1,300	2,400	9,000	9,000	1,100	1,450	300
	#6 Mission Ponds			700	2,200	2,400	1,100	800	300	500	5,000	900	500	300	500

Appendix M-2: Data Collected by Padre Dam in the San Diego River Watershed. Shaded values exceed water quality objectives.

CONSTITUENT	SAMPLE POINT	UNITS	Water Quality Benchmarks	May-2007	Oct-2007
FLOW RATE	#1 Forester Creek Upstream	mgd		585	148
	#2 Forester Creek Downstream			655	234
	#3 San Diego River Upstream			20	15
	#4 San Diego River Downstream			1,123	654
	#5 Sycamore Creek Downstream			156	156
pH	#1 Forester Creek Upstream	units	Between 6.5 - 9.0	8.7	8.1
	#2 Forester Creek Downstream			8.2	7.7
	#3 San Diego River Upstream			8.0	7.6
	#4 San Diego River Downstream			7.8	7.6
	#5 Sycamore Creek Downstream			7.6	7.4
SPECIFIC CONDUCTANCE	#1 Forester Creek Upstream	umhos		2.48	2.65
	#2 Forester Creek Downstream			2.45	2.66
	#3 San Diego River Upstream			1.69	1.94
	#4 San Diego River Downstream			2.31	2.59
	#5 Sycamore Creek Downstream			1.48	2.17
TEMPERATURE	#1 Forester Creek Upstream	deg. C		19.3	16.5
	#2 Forester Creek Downstream			18.1	17.7
	#3 San Diego River Upstream			20.8	20.6
	#4 San Diego River Downstream			18.2	18.8
	#5 Sycamore Creek Downstream			19.7	17.3
TURBIDITY	#1 Forester Creek Upstream	NTU	20	2.6	1.6
	#2 Forester Creek Downstream			25.9	10.2
	#3 San Diego River Upstream			3.9	0.8
	#4 San Diego River Downstream			8.3	2.1
	#5 Sycamore Creek Downstream			9.6	4.1
AMMONIA	#1 Forester Creek Upstream	mg/L		0.1	0.1
	#2 Forester Creek Downstream			0.5	0.3
	#3 San Diego River Upstream			<0.1	0.1
	#4 San Diego River Downstream			0.2	0.2
	#5 Sycamore Creek Downstream			0.1	0.1
NITRATE NITROGEN	#1 Forester Creek Upstream	mg/L	10, *(1)	4.93	4.72
	#2 Forester Creek Downstream			4.57	2.31
	#3 San Diego River Upstream			0.20	0.38
	#4 San Diego River Downstream			1.88	1.20
	#5 Sycamore Creek Downstream			0.70	0.59
ORTHOPHOSPHATE PHOSPHORUS	#1 Forester Creek Upstream	mg/L	2, *(1)	<0.25	0.03
	#2 Forester Creek Downstream			0.10	0.16
	#3 San Diego River Upstream			0.10	0.33
	#4 San Diego River Downstream			0.10	0.26
	#5 Sycamore Creek Downstream			0.07	0.07
CHLORPYRIFOS	#1 Forester Creek Upstream	µg/L	0.02	<0.05	<0.05
	#2 Forester Creek Downstream			<0.05	<0.05
	#3 San Diego River Upstream			<0.05	<0.05
	#4 San Diego River Downstream			<0.05	<0.05
	#5 Sycamore Creek Downstream			<0.05	<0.05
DIAZINON	#1 Forester Creek Upstream	µg/L	0.08	<0.05	<0.05
	#2 Forester Creek Downstream			<0.05	<0.05
	#3 San Diego River Upstream			<0.05	<0.05
	#4 San Diego River Downstream			<0.05	<0.05
	#5 Sycamore Creek Downstream			<0.05	<0.05

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MBAS	#1 Forester Creek Upstream	mg/L	0.5	<0.5	<0.5
	#2 Forester Creek Downstream			<0.5	<0.5
	#3 San Diego River Upstream			<0.5	<0.5
	#4 San Diego River Downstream			<0.5	<0.5
	#5 Sycamore Creek Downstream			<0.5	<0.5
OIL & GREASE	#1 Forester Creek Upstream	mg/L	10	<5	<5
	#2 Forester Creek Downstream			<5	<5
	#3 San Diego River Upstream			<5	<5
	#4 San Diego River Downstream			<5	<5
	#5 Sycamore Creek Downstream			<5	<5
HARDNESS TOTAL AS CaCO3	#1 Forester Creek Upstream	mg/L		715	758
	#2 Forester Creek Downstream			827	664
	#3 San Diego River Upstream			601	567
	#4 San Diego River Downstream			673	626
	#5 Sycamore Creek Downstream			332	448
CADMIUM, DISS	#1 Forester Creek Upstream	µg/L		<5	<5
	#2 Forester Creek Downstream			<5	<5
	#3 San Diego River Upstream			<5	<5
	#4 San Diego River Downstream			<5	<5
	#5 Sycamore Creek Downstream			<5	<5
COPPER, DISS	#1 Forester Creek Upstream	µg/L		<5	<5
	#2 Forester Creek Downstream			<5	<5
	#3 San Diego River Upstream			<5	<5
	#4 San Diego River Downstream			<5	<5
	#5 Sycamore Creek Downstream			<5	<5
LEAD, DISS	#1 Forester Creek Upstream	µg/L		<5	<5
	#2 Forester Creek Downstream			<5	<5
	#3 San Diego River Upstream			<5	<5
	#4 San Diego River Downstream			<5	<5
	#5 Sycamore Creek Downstream			<5	<5
ZINC, DISS	#1 Forester Creek Upstream	µg/L		<20	<20
	#2 Forester Creek Downstream			<20	<20
	#3 San Diego River Upstream			<20	<20
	#4 San Diego River Downstream			<20	<20
	#5 Sycamore Creek Downstream			<20	<20
ENTEROCOCCI	#1 Forester Creek Upstream	MPN/100mL	151	80	3,000
	#2 Forester Creek Downstream			500	800
	#3 San Diego River Upstream			<20	40
	#4 San Diego River Downstream			800	700
	#5 Sycamore Creek Downstream			230	300
FECAL COLIFORM	#1 Forester Creek Upstream	MPN/100mL	400	500	800
	#2 Forester Creek Downstream			800	3,000
	#3 San Diego River Upstream			110	20
	#4 San Diego River Downstream			1,100	220
	#5 Sycamore Creek Downstream			110	800
TOTAL COLIFORM	#1 Forester Creek Upstream	MPN/100mL		8,000	5,000
	#2 Forester Creek Downstream			3,000	11,000
	#3 San Diego River Upstream			1,700	1,300
	#4 San Diego River Downstream			5,000	1,300
	#5 Sycamore Creek Downstream			23,000	5,000