APPENDIX Q: WATER QUALITY DATA

This appendix contains water quality data in support of the hydrology and water quality analysis completed for the Draft Environmental Impact Report (EIR) for the **scwd²** Regional Seawater Desalination Project (see Section 5.1, Hydrology and Water Quality). Specifically, this appendix provides the following tables:

- Table 1, Ocean Source Water Quality Data From Watershed Sanitary Survey
- Table 2, WWTF Effluent Water Quality Data 2005-2010
- Table 3, City and District Potable Drinking Water Quality 2010

Data from Table 1 and Table 2 is used in the evaluation of marine water quality impacts provided in Impact 5.1-3, contained in Section 5.1 of the Draft EIR. Table 3 is provided to document existing drinking water quality for both the City of Santa Cruz and the Soquel Creek Water District.

Table 1. Ocean Source Water Quality Data from Watershed Sanitary Survey

Constituent	Units	Monitoring Data			Ocean Plan
		Number of Samples	Median Concentration	Maximum Concentration Detected	Background Seawater Concentration1
Metals					
Aluminum	mg/L	14	0.023	0.110	--
Antimony	µg/L	14	0.028	0.15	--
Arsenic	µg/L	14	0.89	1.4	3
Barium	mg/L	14	<0.020	0.0091	--
Beryllium	µg/L	14	<0.010	ND	--
Cadmium	µg/L	14	0.047	0.077	0
Chromium	µg/L	14	0.19	0.45	0
Copper	µg/L	14	0.14	0.41	2
Iron	mg/L	14	0.008	0.025	--
Lead	µg/L	14	0.034	0.12	0
Manganese	mg/L	14	0.0011	0.0020	--
Mercury	µg/L	14	0.0041	0.0074	0.0005
Nickel	µg/L	14	0.34	0.65	0
Selenium	µg/L	14	<0.050	0.06	--
Silver	µg/L	14	<0.025	ND	0.16
Thallium	µg/L	14	<0.025	0.015	0

Table 1. Ocean Source Water Quality Data from Watershed Sanitary Survey

Constituent	Units	Monitoring Data			Ocean Plan
		Number of Samples	Median Concentration	Maximum Concentration Detected	Background Seawater Concentration1
Zinc	mg/L	10	0.28	2.7	8
Major Ions					
Bicarbonate Alkalinity	mg/L as $CaCO_3$	61	120	130	--
Calcium	mg/L	14	420	450	--
Carbonate Alkalinity	mg/L as $CaCO_3$	61	<2.5	ND	--
Chloride	mg/L	14	19,000	24,000	--
Fluoride	mg/L	14	1.2	1.2	--
Hydroxide Alkalinity	mg/L as $CaCO_3$	61	<2.5	ND	--
Magnesium	mg/L	14	1,300	1,400	--
Sodium	mg/L	14	11,000	12,000	--
Sulfate	mg/L	14	2,700	4,000	--
General Chemistry					
Asbestos	MFL	14	<0.2	ND	--
Color	color units	14	3	6	--
Cyanide	mg/L	14	<0.05	0.035	0
MBAS	mg/L	14	<0.025	0.013	--
Perchlorate	mg/L	14	<0.040	0.057	--
pH	units	82	7.8	8.1	--
Specific Conductance	µS/cm	14	51,000	57,000	--
Threshold Odor Number	TON units	14	<1	5	--
Total Dissolved Solids	mg/L	82	36,000	41,000	--
Total Hardness	--	14	6,400	7,100	--
Turbidity [2]	NTU	21	1.4	9.6	--
Nutrients					
Nitrate	mg/L as N	14	0.17	0.33	--
Nitrate + Nitrite	mg/L as N	14	0.17	0.33	--
Nitrite	mg/L as N	14	<0.20	0.018	--
Organic Chemicals [3]					
2,3,7,8-TCDD (Dioxin)	µg/L	4	7.8x10-7	1.1x10-6	--

Table 1. Ocean Source Water Quality Data from Watershed Sanitary Survey

Constituent	Units	Monitoring Data			Ocean Plan
		Number of Samples	Median Concentration	Maximum Concentration Detected	Background Seawater Concentration1
Benzo(a)pyrene	µg/L	4	<0.005	0.0027	--
MTBE	mg/L	14	<0.001	<0.001	--
Thiobencarb	mg/L	14	<0.005	ND	--

Source: Appendix E, Proposed scwd² Desalination Project Watershed Sanitary Survey.
Notes:
1. From State Water Resources Control Board, 2009a. Water Quality Control Plan for Ocean Waters of California (Ocean Plan).
2. Turbidity measured in grab samples.
3. No other organic chemicals were detected.

Acronyms:
ND = not detected
'--' = no data
mg/L = milligrams per liter
µg/L = micrograms per liter
µS/cm = microsiemens per centimeter
$CaCO_3$ = calcium carbonate
MBAS = methylene blue active substances (foaming agents)
MFL = million fibers per liter
MTBE = methyl tertiary butyl ether
N = nitrogen
NTU = nephelometric turbidity units
TCDD = 2,3,7,8-tetrachlorodibenzo-p-dioxin
TON = threshold odor number

Table 2. WWTF Effluent Water Quality 2005–2010

Constituent	Unit	Median	Minimum	Maximum [Detected]	NPDES WWTF Discharge Permit Effluent Limits		
Conventional Pollutants					Average Monthly	Average Weekly	Maximum Daily
BOD	lb/day	1,207	222	2,583	--	--	--
	mg/L	20.3	2.8	28.8	--	--	--
TOC	lb/day	980	507	8,759	2,412	3,263	--
	mg/L	12.8	9.4	16.3	17	23	--
TSS	lb/day	331	231	925	4,255	6,384	--
	mg/L	4.49	2.55	8.89	30	45	--
Oil & Grease	lb/day	<419	<50.2	1177	3,546	5,675	10,640
	mg/L	<5	<5	5.2	25	40	75
Settleable Solids	mL/L/hr	<0.05	<0.05	<0.1 [0.07]	1.0	1.5	3.0
Turbidity	NTU	3.1	1.8	5.7	75	100	225
pH	pH units	7.1	6.8	7.3	6.0 – 9.0 at all times		
Toxic Pollutants Limited for Protection of Marine Aquatic Life					6-Month Median[1]	Daily Maximum[2]	Instantaneous Maximum[3]
Arsenic	µg/L	1.7	1.4	2	--	--	--
Cadmium	µg/L	<10	<0.25	<10 [no detections]	140	560	1,400
Chromium[4]	µg/L	24	0.5	50	280	1,100	2,800
Copper	µg/L	<10	2.7	67	--	--	--
Lead	µg/L	<20	<0.5	30	280	1,100	2,800
Mercury	µg/L	0.016	<0.012	0.042	5.0	22	56
Nickel	µg/L	3.1	2.7	<20 [3.1]	--	--	--
Selenium	µg/L	<0.6	<0.5	0.8	2,100	8,400	21,000
Silver	µg/L	<3	<0.19	<4 [no detections]	98	392	980
Zinc	µg/L	24	19.5	74	--	--	--
Cyanide	µg/L	--	--	--	140	560	1,400
Chlorine Residual	µg/L	63.0	0.10	3,720	280	1,100	8,400
Ammonia (as N)	µg/L	28,492	7,750	47,800	--	--	--

Table 2. WWTF Effluent Water Quality 2005–2010

Constituent	Unit	Median	Minimum	Maximum [Detected]	NPDES WWTF Discharge Permit Effluent Limits		
Acute Toxicity	TUa	1.4	<1	3	--	4.5	--
Chronic Toxicity	TUc	8	2	16	--	140	--
Phenols	µg/L	1	1	<1,000 [17]	140 (chlorinated), 4,200 (non-chlorinated)	560 (chlorinated), 16,800 (non-chlorinated)	1,400 (chlorinated), 42,000 (non-chlorinated)
Endosulfan	µg/L	<0.00013	0.000027	0.00013	1.3	2.5	3.8
Endrin	µg/L	<0.000049	<0.00004	<0.000058 [no detections]	0.28	0.56	0.84
HCH	µg/L	0.0008	0.0004	0.0011	0.56	1.1	1.7
Toxic Pollutants Limited for Protection of Human Health (Non-Carcinogens)					30-Day Average		
Acrolein	µg/L	--	--	--	31,000		
Antimony	µg/L	<0.5	<0.5	<0.5 [no detections]	170,000		
Bis(2-Chloroethoxy)Methane	µg/L	--	--	--	620		
Bis(2-Chloroisopropyl)Ether	µg/L	--	--	--	170,000		
Chlorobenzene	µg/L	--	--	--	86,000		
Dichlorobenzenes[5]	µg/L	--	--	--	710,000		
Diethyl Phthalate	µg/L	--	--	--	4,600,000		
Dimethyl Phthalate	µg/L	--	--	--	110,000,000		
Di-n-Butyl Phthalate	µg/L	--	--	--	490,000		
Dinitro-2-Methylphenol, 4,6-	µg/L	--	--	--	31,000		
Dinitrophenol, 2,4-	µg/L	--	--	--	560		
Ethylbenzene	µg/L	--	--	--	570,000		
Fluoranthene	µg/L	0.0025	0.00086	0.0045	--		
Hexachlorocyclopentadiene	µg/L	--	--	--	8,100		
Nitrobenzene	µg/L	--	--	--	690		
Thallium	µg/L	<0.5	<0.5	<0.5 [no detections]	280		
Toluene	µg/L	--	--	--	12,000,000		

Table 2. WWTF Effluent Water Quality 2005–2010

Constituent	Unit	Median	Minimum	Maximum [Detected]	NPDES WWTF Discharge Permit Effluent Limits
Tributylin	µg/L	--	--	--	0.2
1,1,1-Trichloroethane	µg/L	--	--	--	76,000,000
Toxic Pollutants Limited for Protection of Human Health (Carcinogens)					30-Day Average
Acrylonitrate	µg/L	--	--	--	14
Aldrin	µg/L	<0.0001	<0.00005	<0.0002 [no detections]	0.0031
Benzene	µg/L	--	--	--	830
Benzidine	µg/L	--	--	--	0.0097
Beryllium	µg/L	<0.5	<0.5	<0.5 [no detections]	4.6
Bis(2-Chloroethyl) Ether	µg/L	--	--	--	6.3
Bis(2-Ethylhexyl) Phthalate	µg/L	--	--	--	490
Carbon Tetrachloride	µg/L	--	--	--	1,300
Chlordane[6]	µg/L	0.0015	0.000042	0.0030	0.0032
Chlorodibromomethane	µg/L	--	--	--	1,200
Chloroform	µg/L	--	--	--	18,000
DDT[7]	µg/L	0.000079	0.000013	0.00023	0.024
Dichlorobenzene, 1,4-	µg/L	--	--	--	2,500
Dichlorobenzidine, 3,3-	µg/L	--	--	--	1.1
Dichloroethane, 1,2-	µg/L	--	--	--	3,900
Dichloroethylene, 1,1-	µg/L	--	--	--	130
Dichlorobromomethane	µg/L	--	--	--	870
Dichloromethane	µg/L	--	--	--	63,000
Dichloropropene, 1,3-	µg/L	--	--	--	1,300
Dieldrin	µg/L	0.00015	<0.000029	0.00025	0.0056
Dinitrotoluene, 2,4-	µg/L	--	--	--	360
Diphenylhydrazine, 1,2-	µg/L	--	--	--	22
Halomethanes	µg/L	--	--	--	18,000
Heptachlor	µg/L	<0.00015	2.7E-6	<0.00015 [2.7E-6]	0.007
Heptachlor Epoxide	µg/L	0.000033	<0.000016	0.000052	0.0028
Hexachlorobenzene	µg/L	0.000018	<0.000012	0.000077	0.029

Table 2. WWTF Effluent Water Quality 2005–2010

Constituent	Unit	Median	Minimum	Maximum [Detected]	NPDES WWTF Discharge Permit Effluent Limits
Hexachlorobutadiene	µg/L	--	--	--	2,000
Hexachloroethane	µg/L	--	--	--	350
Isophorone	µg/L	--	--	--	100,000
N-nitrosodimethylamine	µg/L	--	--	--	1,000
N-nitrosodi-N-Propylamine	µg/L	--	--	--	53
N-nitrosodiphenylamine	µg/L	--	--	--	350
PAHs[8]	µg/L	0.013	0.0083	0.021	1.2
PCBs[9]	µg/L	0.00024	0.000054	0.00040	0.0027
TCDD Equivalents[10]	µg/L	6.3E-8	3.0E-9	5.0E-6	5.5E-7
Tetrachloroethane, 1,1,2,2-	µg/L	--	--	--	320
Tetrachloroethylene	µg/L	--	--	--	280
Toxaphene	µg/L	--	--	--	0.0000029
Trichloroethylene	µg/L	--	--	--	3,800
Trichloroethane, 1,1,2-	µg/L	--	--	--	1,300
Trichlorophenol, 2,4,6-	µg/L	--	--	--	41
Vinyl Chloride	µg/L	--	--	--	5,000
Constituents without Effluent Limits					
Aluminum	µg/L	<50	<50	<50 [no detections]	No effluent limits
Barium	µg/L	17.7	1.4	34	No effluent limits
Boron	µg/L	328	310	350	No effluent limits
Chlorpyrifos	µg/L	0.000085	0.000016	0.00016	No effluent limits
Cobalt	µg/L	1.3	<0.5	2.1	No effluent limits
Dacthal	µg/L	0.00012	0.000031	0.00021	No effluent limits
Diazinon	µg/L	3.6E-6	3.6E-6	3.6E-6	No effluent limits
Iron	µg/L	132	108	146	No effluent limits
Molybdenum	µg/L	4.8	3.8	7	No effluent limits
Nitrate (as N)	mg/L	1.5	0.0045	11.5	No effluent limits
Orthophosphate	mg/L	7.4	4.7	11.2	No effluent limits
PBDEs	µg/L	0.010	0.009	0.011	No effluent limits
Silicate, Dissolved	mg/L	35	0.2	60	No effluent limits
Temperature	°F	72	64	78	No effluent limits

Table 2. WWTF Effluent Water Quality 2005–2010

Constituent	Unit	Median	Minimum	Maximum [Detected]	NPDES WWTF Discharge Permit Effluent Limits
Vanadium	µg/L	0.95	0.80	1.2	No effluent limits

Sources:
City of Santa Cruz, 2005a. Integrated Water Plan Program Environmental Impact Report.
City of Santa Cruz, 2006. Wastewater Treatment Facility Annual Report 2006.
City of Santa Cruz, 2007b. Water Pollution Control Facility Annual Report 2007.
City of Santa Cruz, 2008b. Wastewater Treatment Facility Annual Report 2008.
City of Santa Cruz, 2010b. Storm Water Management Plan
City of Santa Cruz, 2011e. Wastewater Treatment Facility Annual Report 2010.
Regional Water Quality Control Board (RWQCB), 2010. Waste Discharge Requirements for the City of Santa Cruz Wastewater Treatment Plant.
Notes:
Data for trace organics including PAHs, PCBs, PBDEs, and pesticides, were restricted to data collected in 2009 and 2010 to reflect more recent analytical methodologies.
1. The six-month median shall apply as a moving median of daily values for any 180-day period in which daily values represent flow weighted average concentrations within a 24-hour period. For intermittent discharges, the daily value shall be considered to equal zero for days on which no discharge occurred.
2. The daily maximum applies to flow weighted 24-hour composite samples.
3. The instantaneous maximum applies to grab sample determinations.
4. The discharge limit for hexavalent chromium can be met as total chromium.
5. Dichlorobenzenes is the sum of 1,2- and 1,3-dichlorobenzene.
6. Chlordane is the sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordenegamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.
7. DDT is the sum of 4,4'DDT, 2,4'DDT, 4,4'DDE, 2,4'DDE, 4,4'DDD, and 2,4'DDD.
8. PAHs (polynuclear aromatic hydrocarbons) is sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[ah]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene and pyrene.
9. PCBs (polychlorinated biphenyls) is sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254 and Aroclor-1260.
10. TCDD equivalents shall mean the sum of the concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as specified in the NPDES WWTF Discharge Permit (RWQCB, 2010).

Acronyms:
"<" = less than
BOD = biochemical oxygen demand
HCH = hexachlorocyclohexane
°F = degrees Fahrenheit
lb/day = pound per day
µg/L = micrograms per liter
mg/L =milligrams per liter
mL/L/hr = milliliters per liter per hour
N = nitrogen
NTU = nephelometric turbidity units
PAHs = polynuclear aromatic hydrocarbons
PBDEs = polybrominated diphenyl ethers
PCBs = polychlorinated biphenyls
TOC = total organic carbon
TSS = total suspended solids
TUa = toxicity unit acute
TUc = toxicity unit chronic

Table 3. City and District Potable Drinking Water Quality 2010														
Contaminant	Unit	Primary MCL[1]	Secondary MCL[1]	OEHHA PHG	City			District						Typical Source of Contamination
					Treated Water		Source Water	Pursima Formation Wells		Aromas Red Sands Wells		Central Water District[2]		
					Average	Range	Range	Average	Range	Average	Range	Average	Range	
Inorganic Constituents														
Aluminum	mg/L	1	0.2	0.6	0.04	--	ND	--	--	--	--	--	--	Erosion of natural deposits; residue from some surface water treatment processes
Arsenic	µg/L	10	--	0.004	ND	--	1.2 – 2.8	ND	ND – 3.1	ND	ND	ND	ND	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Total Chromium	µg/L	50	--	--	--	--	--	ND	ND	15	ND – 38	5.0	ND – 10	Erosion of natural deposits
Fluoride	mg/L	2	--	1	0.2	--	ND – 0.3	0.24	ND – 0.37	0.11	ND – 0.16	ND	ND – 0.11	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Nitrate (as NO_3)	mg/L	45[3]	--	45[3]	1.2	--	ND – 3.5	ND	ND	5.0	ND – 25	9.3	ND – 23	Runoff and leaching from fertilizer use; leaching from septic tanks and

Table 3. City and District Potable Drinking Water Quality 2010														
Contaminant	Unit	Primary MCL[1]	Secondary MCL[1]	OEHHA PHG	City			District						Typical Source of Contamination
					Treated Water		Source Water	Pursima Formation Wells		Aromas Red Sands Wells		Central Water District[2]		
					Average	Range	Range	Average	Range	Average	Range	Average	Range	
														sewage; erosion of natural deposits
Disinfectants														
Chlorine Residual	mg/L	4.0[3]	--	--	0.86	0.01 – 2.15	--	0.56[5]	<0.02 – 1.2[4]	0.56[5]	<0.02 – 1.2[5]	0.18	0.10 – 0.20	Drinking water disinfectant added for treatment
Disinfection Byproducts														
TTHM	µg/L	80	--	--	43	3.4 – 61	--	11[5]	ND – 39[4]	11[5]	ND – 39[5]	6.0	0.8 – 9.8	Byproduct of drinking water disinfection
HAA5	µg/L	60	--	--	30	ND – 52	--	1.5[5]	ND – 5.2[5]	1.5[5]	ND – 5.2[5]	21	15 – 30	Byproduct of drinking water disinfection
Organic Constituents														
DEHP	µg/L	4	--	12	--	--	--	ND	ND	ND	ND	ND	ND – 3.1	Discharge from rubber and chemical factories; inert ingredient in pesticides
Microbial Contaminants														
Total Coliform Bacteria	number of positives	<5%	--	--	0	--	--	--	--	--	--	--	--	Coliform bacteria are naturally present in the environment.

Table 3. City and District Potable Drinking Water Quality 2010														
Contaminant	Unit	Primary MCL[1]	Secondary MCL[1]	OEHHA PHG	City			District						Typical Source of Contamination
					Treated Water		Source Water	Pursima Formation Wells		Aromas Red Sands Wells		Central Water District[2]		
					Average	Range	Range	Average	Range	Average	Range	Average	Range	
														They are used as an indicator that other, potentially harmful bacteria may be present.
Radioactive Constituents														
Radium-228	pCi/L	5[6]	--	0.019	--	--	--	ND	ND	ND	ND – 1	ND	ND	Erosion of natural deposits
Inorganic Constituents with Action Levels														
Copper	mg/L	1.3[7]	1	0.3	0.33[8]	--	--	90th percentile value = 0.41; Number of sites in exceedance = 0 out of 30 sites						Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead	µg/L	15[7]	--	0.2	ND[8]	--	--	ND; Number of sites in exceedance = 0 out of 30 sites						Internal corrosion of household water plumbing systems; discharge from industrial manufacturers; erosion of natural deposits

Table 3. City and District Potable Drinking Water Quality 2010														
Contaminant	Unit	Primary MCL[1]	Secondary MCL[1]	OEHHA PHG	City			District						Typical Source of Contamination
					Treated Water		Source Water	Pursima Formation Wells		Aromas Red Sands Wells		Central Water District[2]		
					Average	Range	Range	Average	Range	Average	Range	Average	Range	
Aesthetic Constituents with Secondary Drinking Water Standards														
Color	color units	--	15	--	1	1 – 2	--	3.3	ND – 8.3	ND	ND	ND	ND	Naturally-occurring organic minerals
Iron	µg/L	--	300	--	ND	ND – 230	--	63	ND – 180	ND	ND	560	ND – 1400	Leaching from natural deposits; industrial wastes
Chloride	mg/L	--	250	--	31	26 – 91	--	48	24 – 85	26	15 – 39	23	13 – 30	Runoff/leaching from natural deposits; seawater influence
Manganese	µg/L	--	50	500[8]	ND	ND – 20	--	ND	ND – 35	ND	ND	140	ND – 430	Leaching from natural deposits
MBAS	mg/L	--	0.5	--	--	--	--	ND	ND – 0.033	ND	ND	ND	ND	Municipal and industrial waste discharges
Odor	TON	--	3	--	1	1 – 2	--	ND	ND – 1	ND	ND	ND	ND	Naturally-occurring organic minerals
pH	pH units	--	6.5 – 8.5[10]	--	--	--	--	7.7	7.4 – 8.1	7.6	7.4 – 8.0	7.2	7.0 – 7.5	A measure of the acidity or alkalinity
Specific Conductance	µmhos/ cm	--	900	--	400	260 – 770	--	713	487 – 844	420	231 – 540	460	340 – 530	Substances that form ions when in water; seawater

Table 3. City and District Potable Drinking Water Quality 2010														
Contaminant	Unit	Primary MCL[1]	Secondary MCL[1]	OEHHA PHG	City			District						Typical Source of Contamination
					Treated Water		Source Water	Pursima Formation Wells		Aromas Red Sands Wells		Central Water District[2]		
					Average	Range	Range	Average	Range	Average	Range	Average	Range	
														influence
Turbidity	NTU	1 or 5[11]	5	--	0.07	0.03 – 0.29	--	0.3	0.2 – 0.5	0.2	0.1 – 0.3	0.6	0.4 – 2	Soil runoff
Sulfate	mg/L	--	250	--	74	58 – 302	--	83	37 – 150	26	5.4 – 44	46	29 – 74	Runoff/leaching from natural deposits; industrial wastes
TDS	mg/L	--	500	--	290	270 – 480	--	448	288 – 599	270	180 – 360	300	230 – 340	Runoff/leaching from natural deposits
Unregulated Constituents														
Boron	mg/L	--	--	1[8]	--	--	--	0.20	ND – 0.31	ND	ND	--	--	Naturally-occurring
Hexavalent Chromium (+6)	µg/L	--	--	0.02	--	--	--	ND	ND	15	ND – 39	5.2	ND – 11	Naturally-occurring chromium-bearing minerals
1,2,3-Trichloropropane	ng/L	--	--	0.7	--	--	--	--	--	11	8.0 – 13	--	--	Leaching of obsolete agricultural fumigants
Other Monitoring Results														
Hardness (as $CaCO_3$)	mg/L	--	--	--	164	108 – 268	--	223	140 – 380	173	99 – 230	200	150 – 230	A measure of the major cations, primarily calcium and magnesium

Table 3. City and District Potable Drinking Water Quality 2010

Contaminant	Unit	Primary MCL[1]	Secondary MCL[1]	OEHHA PHG	City			District						Typical Source of Contamination
					Treated Water		Source Water	Pursima Formation Wells		Aromas Red Sands Wells		Central Water District[2]		
					Average	Range	Range	Average	Range	Average	Range	Average	Range	
Sodium	mg/L	--	--	30 – 60[12]	27	25 – 49	--	63	32 – 93	20	11 – 25	22	15 – 29	Runoff/leaching from natural deposits, saltwater influence

Sources: City of Santa Cruz, 2011a. City of Santa Cruz 2010 Urban Water Management Plan; Soquel Creek Water District, 2011a. Soquel Creek Water District Urban Water Management Plan 2010.

Notes:

1. Most stringent MCL between federal (U.S. Environmental Protection Agency) and state (California Department of Public Health) is shown.
2. To assist District during a water main replacement, water was purchased from Central Water District for 5 days in March 2010 and provided to the Aptos neighborhood of Huntington Drive, Wallace Avenue, and Monroe Avenue.
3. Equivalent to 10 mg/L as N.
4. USEPA Primary Maximum Residual Disinfectant Level (MRDL). No CDPH MCL available.
5. Systemwide (i.e., Purisima Formation and Aromas Red Sands combined) results.
6. USEPA Primary MCL. No CDPH MCL available.
7. Action Level (AL). Exceedance of AL in over 10 percent of homes tested triggers treatment for corrosion control.
8. Water from 30 customers' household taps, 90th percentile.
9. CDPH Notification Level (NL) (CDPH, 2010). No MCL or PHG available. NLs have been used to provide information to public water systems and others about certain non-regulated chemicals in drinking water that lack MCLs. When chemicals are found at concentrations greater than NLs, certain requirement and recommendations apply.
10. USEPA Secondary MCL. No CDPH MCL available.
11. For systems that use conventional or direct filtration (e.g., SCWD), at no time can turbidity go higher than 1 NTU, and samples for turbidity must be less than or equal to 0.3 NTU in at least 95 percent of the samples in any month. Systems that use filtration other than the conventional or direct filtration (e.g., SqCWD) must follow state limits, which must include turbidity at no time exceeding 5 NTU (USEPA, 2011b).
12. USEPA Drinking Water Advisory Level for taste and odor threshold (USEPA, 2011a). No PHG available.

Acronyms:

'--' = no information
$CaCO_3$ = calcium carbonate
CDPH = California Department of Public Health
DEHP = diethylhexylphthalate
HAA5 = total haloacetic acids
MBAS = methylene blue active substances (foaming agents)
MCL = maximum contaminant level
mg/L = milligrams per liter
µg/L = micrograms per liter
µmhos/cm = micromhos per centimeter
ND = not detected
NO_3 = nitrate
NTU = nephelometric turbidity units
OEHHA = Office of Environmental Health Hazard Assessment
pCi/L = picocuries per liter
PHG = public health goal
City = Santa Cruz Water Department
District = Soquel Creek Water District
TDS = total dissolved solids
TON = threshold odor number
TTHM = total trihalomethanes