

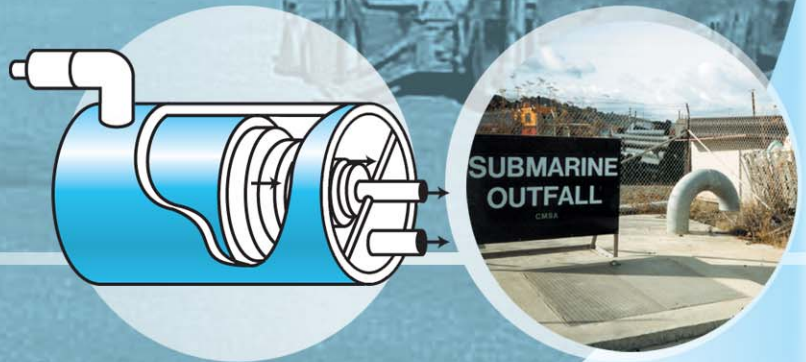
MARIN MUNICIPAL
WATER DISTRICT



Final Environmental Impact Report (EIR)

Marin Municipal Water District Desalination Project

Volume I
Text and Appendices



December 2008

State Clearinghouse No. 2003082037

URS

F I N A L

ENVIRONMENTAL IMPACT REPORT

MARIN MUNICIPAL WATER DISTRICT DESALINATION PROJECT

VOLUME 1: TEXT AND APPENDICES

STATE CLEARINGHOUSE NO. 2003082037

Prepared for
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December 2008

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Acronyms

µg/l	microgram(s) per liter
ABAG	Association of Bay Area Governments
AEL	adult equivalent loss
<u>AFY</u>	<u>acre-feet per year</u>
<u>APN</u>	<u>Assessor's Parcel Number</u>
ANSI	American National Standards Institute
BAAQMD	Bay Area Air Quality Management District
Basin Plan	<i>Water Quality Control Plan for the San Francisco Bay Basin</i> (San Francisco Bay Regional Water Quality Control Board 2006)
Bay Plan	San Francisco Bay Plan (San Francisco Bay Conservation and Development Commission)
Bay-Delta Estuary	San Francisco Bay/Sacramento–San Joaquin River Delta Estuary
BCDC	(San Francisco) Bay Conservation and Development Commission
BMP	best management practice
Cal/OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CAP	Clean Air Plan
CARB	California Air Resources Board
CCR	California Code of Regulations
<u>CCWD</u>	<u>Contra Costa Water District</u>
CDFG	California Department of Fish and Game
CDWR	California Department of Water Resources
CEQA	California Environmental Quality Act
<u>CFR</u>	<u>Code of Federal Regulations</u>
<u>CMSA</u>	<u>Central Marin Sanitary Agency</u>
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CWA	Clean Water Act

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Acronyms, continued

cy	cubic yard(s)
DAF	dissolved air floatation
dB	decibel
dBA	A-weighted decibel
dB re 1 μ Pa	decibels referenced to 1 micropascal
DBH	diameter at breast height
DDT	dichlorodiphenyltrichloroethane
Delta	Sacramento–San Joaquin River Delta
DOC	dissolved organic carbon
DPS	distinct population segment
dS/m	deciSiemen(s) per meter
DTSC	Department of Toxic Substances Control
<u>EBMUD</u>	<u>East Bay Municipal Utility District</u>
EC	electrical conductivity
ECe	electrical conductivity extract
EES	enhanced evaporation system
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
<u>EIS/EIR</u>	<u>Environmental Impact Statement/Environmental Impact Report</u>
EPA	U.S. Environmental Protection Agency
ESA	Federal Endangered Species Act
Estuary	San Francisco Bay–Delta Estuary
<u>ETM</u>	<u>Empirical Transport Model</u>
Fed/OSHA	(Federal) Occupational Safety and Health Administration
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FH	fecundity hindcast
g	acceleration due to gravity
gfd	water throughput per square foot of membrane area per day
GHG	greenhouse gas
<u>gpcd</u>	<u>gallon(s) per capita per day</u>
<u>gpd</u>	<u>gallon(s) per day</u>
gpm	gallon(s) per minute
GWh	gigawatt-hour(s)
GWP	global warming potential
HAA	haloacetic acid
HCP	Habitat Conservation Plan

Acronyms, continued

HD	MIKE 21 hydrodynamic module
HDPE	high-density polyethylene
<u>HPF</u>	<u>Habitat Production Foregone</u>
Hz	hertz (frequency)
IHA	Incidental Harassment Authorization
IPCC	Intergovernmental Panel on Climate Change
JPA	Joint Powers Agreement
kg	kilogram
kg/s	kilogram(s) per second
<u>kg/yr</u>	<u>kilogram(s) per year</u>
km	kilometer(s)
kWh	kilowatt-hour(s)
kWh/yr	kilowatt hour(s) per year
L _{eq}	Equivalent Noise Level
L _{dn}	Day/Night Noise Level
LUST	Leaking Underground Storage Tank
M	moment magnitude
m ²	square meter
MCL	Maximum Contaminant Level
ME	MIKE 21 heavy metals module
MF/UF	Microfiltration/Ultrafiltration
mg/kg	milligram(s) per kilogram
mg/l	milligram(s) per liter
MGD	million gallon(s) per day
MHHW	mean higher high water
ml	milliliter(s)
MLLW	mean lower low water
mm	millimeter(s)
MMWD	Marin Municipal Water District
MMTCO ₂ Eq	million metric tons per year of carbon dioxide equivalents
MOU	Memorandum of Understanding
mph	mile(s) per hour
<u>MSN Project</u>	<u>California Department of Transportation Marin-Sonoma Narrows HOV Widening Project</u>
MW	megawatt(s)
NaOH	sodium hydroxide
NCCP	Natural Community Conservation Plan

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Acronyms, continued

NMWD	North Marin Water District
NOAA	National Oceanic and Atmospheric Administration
NOAA Fisheries	(National Oceanographic and Atmospheric Administration) National Marine Fisheries Service
NOP	Notice of Preparation
NO ₂	nitrogen dioxide
NO _x	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NTU	nephelometric turbidity unit(s)
O ₃	ozone
Order	CPUC General Order 131-D
ORP	oxidation reduction potential
OSHA	Occupational Health and Safety Administration
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PG&E	Pacific Gas and Electric Company
pHp	soil reaction pH of the saturated soil paste
PM ₁₀	particulate matter less than 10 microns in diameter
PM _{2.5}	particulate matter less than 2.5 microns in diameter
ppb	part(s) per billion
ppm	part(s) per million
ppt	part(s) per thousand
PRC	California Public Resources Code
psi	pound(s) per square inch
psu	practical salinity unit(s)
PVC	polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
Restructured Agreement	Restructured Agreement for Water Supply (between Marin Municipal Water District and Sonoma County Water Agency)
RMP	(San Francisco Estuary Institute) Regional Monitoring Program
RMS	root mean squared
RO	reverse osmosis
ROD	Record of Decision
ROG	reactive organic gas
ROW	right-of-way
RWQCB	Regional Water Quality Control Board

Acronyms, continued

<u>SCVWD</u>	<u>Santa Clara Valley Water District</u>
SCWA	Sonoma County Water Agency
SARA	Superfund Amendments and Reauthorization Act
SDI	Silt Density Index
Se	selenium
<u>SFPUC</u>	<u>San Francisco Public Utilities Commission</u>
SIP	State Implementation Plan
SO ₂	sulfur dioxide
SPL	sound pressure levels
<u>SSO</u>	<u>site-specific objective</u>
STLC	Soluble Threshold Limit Concentration
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TCLP	Toxicity Characteristic Leaching Procedures
TDS	total dissolved solids
THM	trihalomethane
TMDL	total maximum daily load
TOC	total organic carbon
TSS	total suspended solids
TTHM	total trihalomethane
TTLC	Total Threshold Limit Concentration
UF	ultrafiltration
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VFD	variable frequency drives
VTEMED	vertical tube evaporator multi-effect desalination
<u>WCMP</u>	<u>Water Conservation Master Plan</u>
WDR	Waste Discharge Requirement
WET	Waste Extraction Test
WQO	water quality objective
WSMP	Water Supply Master Plan