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**BEFORE THE STATE WATER
RESOURCES CONTROL BOARD**

In the Matter of the State Water Resources)
Control Board (State Water Board))
Hearing to Determine whether to Adopt a)
Draft Cease & Desist Order against)
California American Water Regarding its)
Diversion of Water from the Carmel River)
in Monterey County under Order WR 95-10)
_____)

Hearing Date: July 23 - 25, 2008

Carmel River in Monterey County

EXHIBIT MPWMD-AB3

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

FINAL REPORT

Evaluation of Seawater Desalination Projects Proposed for the Monterey Peninsula

Submitted to:
Monterey Peninsula Water Management District

Prepared By:
GEI/Bookman Edmonston
Separation Processes Inc.
Malcolm-Pirnie Inc.

February 20, 2008

cost elements as described in Section 5, the 10 percent represents a very small difference.⁸
The CWP Basic Project's per-acre-ft costs would be expected to be higher than those of the CWP Regional Project alternative due to the diseconomy of small scale.

Table ES-1 – Summary of Desalination Project Capacities and Estimated Costs
2007 Costs for Desalination Projects
with standard overhead and contingency allowance, excluding land and pilot testing
(millions of 2007 dollars)

	Coastal Water Project				Monterey Bay Regional Seawater Desalination Project ¹	Sand City Desalination Project		Seawater Desalination Vessel ²	
	Desal Only		Desal + ASR			Low range	High Range	Subsidized Fuel	Un-Subsidized Fuel
	Proposed Project	Regional Project	Proposed Project	Regional Project					
RO Capacity (mgd)	10	18	10	18	20	7.5	7.5	18	18
<i>(total af/yr)</i>	10,430	18,970	11,730	20,270	22,420	8,410	8,410	20,180	20,180
Desalination Facilities	\$90.29	\$120.29	\$90.29	\$120.29	\$108.47	\$71.05	\$79.95	\$88.38	\$88.38
<i>(\$/mgd)</i>	\$9.03	\$6.68	\$9.03	\$6.68	\$5.42	\$9.47	\$10.66	\$4.91	\$4.91
Seawater feed and brine disposal (incl. SCV ship cost)	\$6.67	\$6.21	\$6.67	\$6.21		\$41.71	\$50.61	\$47.10	\$47.10
Residuals handling and treatment	\$1.30	\$1.39	\$1.30	\$1.39		\$0.00	\$0.00		
Desalination process	\$82.31	\$112.68	\$82.31	\$112.68		\$29.34	\$29.34	\$41.29	\$41.29
Finished water storage & pumping facilities						\$0.00	\$0.00		
Desalinated Water Pipelines	\$24.20	\$35.66	\$24.20	\$35.66	\$28.28	\$13.18	\$13.18	\$31.37	\$31.37
Electrical Transmission Upgrades						\$1.04	\$1.04		
Terminal Reservoir and ASR Pump Station	\$5.76	\$8.92	\$5.76	\$8.92					
Segunda/ ASR System			\$15.06	\$9.54					
Field Office Overhead (8%)						\$6.82	\$7.53		
Contractor Mark-Ups (16.25%)						\$14.96	\$16.53		
Total Construction Costs	\$120.25	\$164.86	\$135.30	\$174.39	\$136.75	\$107.05	\$118.23	\$119.76	\$119.76
Engineering, Overhead, Legal	\$28.86	\$39.57	\$32.47	\$41.85	\$32.82	\$40.14	\$44.34	\$28.74	\$28.74
	24.0%	24.0%	24.0%	24.0%	24.0%	30.0%	30.0%	24.0%	24.0%
Contingency	\$37.28	\$51.11	\$41.94	\$54.06	\$42.39	\$26.76	\$29.56	\$37.12	\$37.12
	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%
Total Capital Costs	\$186.38	\$255.53	\$209.72	\$270.31	\$211.97	\$173.96	\$192.12	\$185.62	\$185.62
Operations and Maintenance	<i>(\$/yr)</i>								
Desalination Facilities/Power	\$6.25	\$10.12	\$6.25	\$10.12		\$5.90	\$5.90		
Desalination Water Conveyance	\$0.42	\$0.95	\$0.42	\$0.95		\$1.54	\$1.89		
Terminal Reservoir/ASR Pump Station	\$0.07	\$0.33	\$0.07	\$0.33					
Segunda/ ASR System	\$0.00	\$0.00	\$0.65	\$0.13					
Subtotal O&M Costs	\$6.74	\$11.40	\$7.39	\$11.53		\$7.44	\$7.79		
Repairs and Replacements	\$1.45	\$0.00	\$1.45	\$0.00		\$1.30	\$1.30		
Total O&M	<i>(\$/yr)</i>	\$8.19	\$11.40	\$8.84	\$11.53	\$16.90	\$8.74	\$9.09	\$16.26
	<i>(\$/af)</i>	\$730	\$560	\$790	\$570	\$750	\$1,040	\$1,080	\$810
Total Annualized Cost (7%, 30 yrs)	<i>(\$/yr)</i>	\$23.21	\$31.99	\$25.74	\$33.31	\$33.98	\$22.76	\$24.57	\$31.22
Unit Cost	<i>(\$/af)</i>	\$2,230	\$1,690	\$2,190	\$1,640	\$1,520	\$2,710	\$2,920	\$1,550
									\$1,770

Notes:

¹ MBRSDP is currently described as a 20 mgd (22,420 af/yr) facility; 20,930 af/yr of demand has been identified, which increases unit cost to \$1,620/af. Cost detail is subject to a confidentiality agreement.

² 20 mgd is proposed for SCV, but proponents provided conveyance for 18 mgd. 24% overhead used -- proponents estimate 16.1%. 25% contingency used -- proponents estimate 24%. Cost detail is subject to a confidentiality agreement.

⁸ Costs for elements of both the MBRSDP and the SDV appear to be underestimated by approximately 10 percent