

POSEIDON RESOURCES DESALINATION UPDATE

ISSUE 14 ♦ SUMMER 2008

Desalination Project Heads to Final Coastal Commission Hearing

THE CARLSBAD DESALINATION PLANT

is heading back to the Coastal Commission for final approval of the Coastal Development Permit conditions. The Commission's public hearing is scheduled for August 6, in Oceanside.

This past November, the Commission approved the Carlsbad Desalination Project's Coastal Development Permit and attached two conditions to the permit with Poseidon's consent. Poseidon has fulfilled its obligation under the project's permit conditions by submitting two plans to the Commission – an Energy Minimization and Greenhouse Gas Reduction Plan, and a Marine Life Mitigation Plan. The Commission must now vote to approve the plans.

Poseidon's Energy Minimization and Greenhouse Gas Reduction Plan is voluntary; the desalination facility does not generate greenhouse gas. The commitments memorialized in the plan represent the first major infrastructure project to commit to eliminate the incremental increase

in CO₂ resulting from electricity purchased from San Diego Gas and Electric. Last year, Forbes Magazine named Poseidon one of the United States' top 100 companies that are "Going Green" after it was announced the Carlsbad Desalination Plant was the first major infrastructure project in the state to voluntarily eliminate its net carbon footprint.

"Poseidon's plan to minimize the Carlsbad Desalination Project's energy consumption and reduce indirect greenhouse gas emissions is unprecedented," said Poseidon

Resources' Senior Vice President Peter MacLaggan. "This voluntary commitment goes above and beyond Coastal Act requirements, and it is just one of the many ways in which we are going the extra mile to ensure the Carlsbad Desalination Project is a model for

water infrastructure development," said MacLaggan.

Poseidon's Marine Life Mitigation Plan fulfills its other outstanding permit condition, and is designed to address anticipated impacts to marine life that could occur once the Encina Power Station is decommissioned. For the foreseeable future, the

desalination plant will operate in conjunction with the Encina Power Station; under this scenario, the project's certified Environmental Impact Report

concluded the operation of the desalination facility would have no significant environmental impacts. Still, Poseidon's proposed wetland restoration would substantially over-mitigate the project's minor impacts to marine life by up to 2.5 times while the Encina Power Station continues to operate.

"The project's Marine Life Mitigation Plan is the culmination of several years of research and study by

Save the Date COASTAL COMMISSION HEARING

City of Oceanside
300 North Coast Hwy.
Oceanside, CA 92054

AUGUST 6, 2008
9:00 AM





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respected scientists - including evaluation from independent Coastal Commission experts - and collaboration and input from a myriad of local, state and federal agencies,” stated MacLaggan. “As a result, the plan exceeds our requirements under the Coastal Act and is consistent with the precedent set by the Coastal Commission for approved wetland mitigation acreage,” stated MacLaggan.

In addition to its plan to immediately restore 37 acres of coastal wetlands, Poseidon has committed to serve as the steward of the Agua Hedionda Lagoon once the Encina Power Station is fully decommissioned. The commitment to dredge and maintain the lagoon will allow for the 388-acre, man-made coastal estuary to continue to provide aquaculture and fishery restoration programs and educational, recreational and research opportunities.

“We are very proud of these plans; we were aided by some of California’s foremost experts in sustainable energy policy and coastal habitat preservation,” said MacLaggan. “We firmly believe the plans reflect the project’s promise to maintain, restore and enhance the environment while providing a desperately needed local, drought-proof water supply,” he said.

A copy of Poseidon’s Energy Minimization and Greenhouse Gas Reduction Plan and its Marine Life Mitigation Plan can be found at http://www.carlsbad-desal.com/environmental_stewardship.asp ■

Marine Life Harmony

THE WATER DESALINATION REPORT (WDR) recently reported that the Perth, Australia reverse osmosis desalination plant is demonstrating some positive environmental impacts. A video of the plant’s concentrate outfall shows a pipeline used to diffuse concentrated seawater after 1-1/2 years of operation covered in a diverse ecosystem that

includes several species of marine life understood to be sensitive to salinity variations.

The benign impact of the concentrated brine discharge from the Perth desalination plant on the marine environment bolsters the scientific studies conducted in Carlsbad over the past half decade. Since 2003, Poseidon has operated an interna-



This photo (left) shows a seahorse near the base of the diffuser.

The three organisms shown growing on the diffuser nozzle in the photo at right are (top to bottom) a sponge, a stinging hydroid and a sea squirt.





tionally-recognized pilot facility that has provided comprehensive research demonstrating the full-scale desalination plant's ability to protect marine life. In 2006, the Carlsbad pilot plant received two distinguished awards – the Global Grand Prize for Applied Research from the International Water Association (IWA), and the Environmental Engineering Award from American Academy of Environmental Engineers. The studies from the Carlsbad pilot plant have been relied upon by state regulatory agencies that have unanimously approved the development of the full-scale desalination plant. ■

**Perth report and photos complements of WDR*

State of Drought

On June 4th, Governor Arnold Schwarzenegger formally declared a statewide drought, citing increasingly dry conditions and court-ordered restrictions on water deliveries. He issued an executive order directing state agencies to take action to respond to the crisis. Soon after, the governor declared a water state of emergency in nine counties in Northern California. The emergency declaration has ominous implications for San Diego, which sits at the end of the state's water supply pipeline.

San Diego depends on imported water from Northern California and from the Colorado River, both of

which are experiencing record-low levels. Water from the Sierra snowpack is exceedingly unreliable. Between April 1 and May 1 2008, the snowpack dropped to 67% of normal levels, and the Colorado River is in its eighth straight year of drought. These drought conditions are prolonging the state's wildfire season. It has been reported that more than 680,000 acres have already burned this year – more than ten times as many acres compared to last year.

The economic impact of the drought cannot be understated. No employment sector has been hit harder in San Diego than the \$1.5 billion agriculture industry, which is suffering through a 30% cut in its water supply from Metropolitan Water District. This has drastically affected many farmers forcing them to reduce crop production, furlough land and take drastic steps to convert to non-agricultural uses. This economic pain is predicted to spread to other

job-producing industries critical to the regional economy.

With no silver bullet in sight, there is enormous urgency in San Diego to step up conservation efforts and develop new local supplies that will reduce our dependence on increasingly less-reliable imported water. In this regard, seawater desalination is an inevitable component of the state's – and San Diego's – future water supply portfolio. The California Department of Water Resources' Water Plan identifies the need for 500,000 acre feet of desalinated water by 2030, and the state has awarded over \$50 million in Prop 50 funds for statewide desalination projects. With seawater desalination gaining enormous momentum, all eyes have turned to the Carlsbad Desalination Project as it leads the way. Once built, the drought-proof supply will provide the San Diego region with 9% of its water. ■



CONGRATULATIONS to *Poseidon's Jessica Jones and husband Bret on the June 5, 2008 birth of their daughter, Skylar Keenan Jones.*



Is water an energy priority?

When it comes to the development of drinking water, one issue that inevitably arises is the related energy consumption. In California, the treatment of water, including desalting seawater, and the transportation of water require a significant amount of energy. Some critics have questioned the merits of using so much energy to treat and move drinking water. Kudos to Tom Pankratz and the Water Desalination Report for putting the energy discussion into

proper context. In its June edition, WDR reported that a 50 MGD seawater desalination plant utilizing reverse osmosis requires approximately 36 MW of power (the Carlsbad facility will require 28.1 MW) and has a starting capital cost of \$300 million. According to WDR, Microsoft's new Chicago data center will reportedly cost \$500 million and need three electrical substations with a total capacity of 198 MW. This growth in new data centers –

which don't appear to suffer the same scrutiny as water infrastructure projects – is being fueled by a demand for more bandwidth required for video and music downloads and the desire to download one nanosecond faster each week. With 198 MW of electricity, computing speeds can be increased by a fraction of a second or we can turn over 264 MGD of seawater into drinking water. Or in other words, in San Diego we could power six Carlsbad-sized desalination plants that would meet half of the County's demand for water. ■

POSEIDON RESOURCES

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