

Desalinization

Engineer Offers Plan For Study Of Desalting Plant

The proposed study of the feasibility of desalinization of sea water to meet future needs of Santa Cruz County was put in perspective in a letter sent to Weston Webber, director of the water department of the City of Santa Cruz, and Ed Hanna, county water projects coordinator, on Oct. 7, by Magnus B. Bennedsen, an Orinda engineer.

An abridged text of that letter follows:

"I am pleased to submit the following proposal to conduct a preliminary feasibility study for determining the general level of interest that the city and county should have in obtaining desalted water from a sea water conversion plant under consideration for construction in the Davenport area.

I. Background

"The State of California Department of Water Resources and the United States Office of Saline Water are investigating the feasibility of constructing a large scale, prototype plant for desalting sea water.

"Seven potential plant sites are under investigation, all along the coast between San Francisco and San Diego. One of the sites under consideration for the plant is near Davenport, and if this site is selected then the water produced will be available to Santa Cruz City and County.

"The primary purpose of the plant will be to develop detailed cost data for manufacturing potable water from sea water by the distillation process, utilizing waste heat from a nuclear-fueled power plant. There must be a readily available market for any water produced.

"The questions that Santa Cruz must now consider are the pricing policies and delivery conditions under which they would agree that there is a potential market for the water in the county.

"Reliable answers to these questions can be quite readily determined because the county had the foresight to prepare their comprehensive 'Master Plan — Water Development,

1968-2020'. This report presents an optimum schedule for developing the surface water resources of the county according to the local growth requirements.

"By preparing an alternative development schedule based on full utilization of desalted water and comparing the related costs for this schedule with the costs for the schedule in the existing plan, the market for desalted water can be measured in general terms.

"The state's present plan is to reduce the number of sites for final investigation to one or two before the end of this year. Therefore, it seems that Santa Cruz should act soon to determine their position on the issue in order that they can appropriately participate in the plant site decision.

"If, in fact, such a plant could offer important economic advantages to the area, the opportunity for obtaining it should not be lost due to ignorance and default, whereas if it is clearly undesirable, the state

deserves to be so notified.

"If the state decides to construct a desalination plant, their current target date for initial production is 1977, or at the latest, 1978.

"They plan to operate the plant on an experimental basis for five to 10 years, collecting comprehensive operating cost data during this period.

"For this purpose they will want to operate the plant continuously at full production as much of the time as possible, but at this stage of their investigation they cannot predict the percentage of time during the year that the plant will operate.

"Assuming that the plant can produce water as economically as the state's present estimates indicate, then the plant will be maintained for many years after the experimental period.

However, since the estimates at this stage are preliminary and therefore not too reliable, it may be that the state will find that the plant is not economical to operate and they will want to shut it down when their

experiments are finished.

"Santa Cruz should determine the minimum term for which they would be willing contract for receiving desalted water. Also they should be protected with a clause guaranteeing a minimum term of operation after receiving notice of intent to discontinue, because it will take several years to develop alternative supplies.

"The state has been using 20,000 acre feet per year as the potential market for desalted water in Santa Cruz County, plus 4,000 acre feet per year to be delivered to the coastal area of San Mateo County.

"The figure for Santa Cruz County represents essentially the full growth requirement for the northern part of the county, between 1970 and 1990, as presented in the county's master plan. Although this is certainly satisfactory as a starting point for the investigation, it should be reviewed and refined to properly account for the areas that cannot be economically served

from the desalting plant.

"Other agencies using distilled water have experienced serious problems due to corrosion in their distribution systems. The general method for controlling this problem is to blend the distilled water with other waters to achieve a non-corrosive mix.

"This study would have to determine the potential sources and quantities of available blending waters, the probable range of satisfactory blends, and a schedule and costs for their development.

"The obvious first candidates for consideration are the City of Santa Cruz' existing developments on Majors and Laguna Creeks and Liddell Springs, plus the undeveloped resources of San Vicente, Scott and Waddell Creeks.

"In order for the state to operate the desalting plant at continuous full production a fairly large storage facility will be needed. Potential storage sites have been located on Baldwin Creek. At this stage it appears

that blending of waters could be accomplished satisfactorily in reservoirs at this location.

II. Proposed Study.

"A preliminary study (would have) the following objectives:

"A. Determine the properties of desalted water and the techniques for making desalted water acceptable for use in a municipal system. Blending with local surface waters and filtration of the blended waters is expected to be satisfactory.

"B. Determine the locations and quantities of local surface waters available for blending, and estimate the range of satisfactory blends for determining the quantity of desalted water that can be utilized within this limitation.

"C. Outline the potential service area for the desalted-surface water blend and project the total requirements schedule for the area until about the year 2000, and compute the amount of the requirements that will be served from existing local sources developed prior to start-up of the desalting plant. The balance of the requirements will constitute the potential market for desalted water.

"D. Prepare a preliminary design of a system for utilizing desalted water, and a development schedule for the system to satisfy the area's requirements.

"The schedule must have three major components:

"1. Facilities to serve the area's total requirements from local sources to about 1980.

"2. Facilities for utilizing desalted water.

"3. Facilities to again serve the area's total requirements from local sources assuming shutdown of the desalting plant at some future time.

"All facilities should be designed and scheduled for most efficient use in all three periods.

"E. Estimate construction, operating and maintenance costs associated with the schedule as presented in the county's master plan for water development. This step should define the price range for desalted water that would justify further consideration of this alternative.

"G. Prepare a brief report summarizing the results of the above analyses, and making appropriate recommendations to the city and the county.

"It is estimated that approximately one month of engineering effort will be required to complete the analyses and write the report. Before starting the analyses a meeting of the county's Water Resources Agency Coordinating Committee is desirable to review the objectives of the study and to agree on the fundamental assumptions on which the study will be based.

"After the analyses are completed and before the final report is written, a second meeting of the committee would be in order, to review the results and conclusions of the study and to make sure all necessary points have been adequately considered.

"About 45 days will be required between authorization to proceed with the study and submittal of the final report. I propose to do all of the work for a fee of \$3,000."



MECHANIC'S BRAND STARTING FLUID
Spray into Air Cleaner. Fast instant starts in seconds. 15 oz.



AMP & OIL GAUGE SET
Accurate readings



TIRE CHAINS
Non-slip traction. Fits most domestic foreign, compact, medium & the new Radial tire sizes! PAIR ...



PERMANENT ANTI-FREEZE WITH ANTI-LEAK
1 Full Year Money Back Guarantee! GALLON



SPORT-GRIP STEERING WHEEL COVER
Looks & Feels like Leather! In assorted custom colors. "LACES ON"



RETRACTABLE PICK-UP TRUCK MIRROR
Swings backward or forward. Heavily Chrome Plated for Protection.