

Water: Where? How much?

"The Water Question in Santa Cruz County and Around the State," will be discussed by state Sen. Henry Mello during a water conservation workshop to be co-sponsored Saturday by Cabrillo College and the Soquel Creek County Water District.

The event will be held from 9 a.m. to 12:30 p.m. at Cabrillo, and the intent will be to inform the public about the present status of the county's water supply, and to describe ways water can be conserved.

Following a welcoming statement by Floyd Younger, the program will open with a talk by Robert Johnson, general manager for the Soquel Creek County Water District. He will discuss "The Water Situation Facing Soquel County Water District." His talk will be followed by the comments by Sen. Mello.

"Simple Plumbing Repairs to Stop Those Wasteful Leaks," will be the topic of LaVerne Fine, plumbing department manager for Orchard Supply Hardware, at 10 a.m. There will be displays set up and refreshments served during a break after this presentation.

Suzanne Butterfield, chief of water conservation in the State Department of Water Resources, and William Lovvorn, community information representative for Soquel Creek County Water District, will talk about "The Importance of Water Conservation." Pamela Naylor, president of the Water Foundation, will present "Water Facts — A California Perspective."

Bill Hansen of County Bank will

serve as master-of-ceremonies for the event.

Included in the discussions will be information on how simple plumbing repairs can stop wasteful leaks; reports on the status of water projects and water supplies throughout the state; and displays of water saving devices, water-sparing landscaping plants and other water conservation methods. These will be presented by the State Department of Water Resources, the U.S. Water and Power Resources Department and the Girl Scouts and Boy Scouts organizations.

The event will be held in the Cabrillo College forum room 450, beginning with check-in registration at 8:30 a.m. The fee is \$2. Persons wishing additional information may call 425-6331 or 688-6466.

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USGS stands behind report on overdraft

By BOB SMITH

Senior officials of the U.S. Geological Survey defended a controversial groundwater report Monday morning, telling county and local water officials that mid-Santa Cruz County does face an overdraft problem.

Richard Bloyd, Chief of the USGS's California District, Charles Boning, subdistrict chief for the Survey's Menlo Park office, and Gilbert Bertoldi, supervisory hydrologist and geologist and chief of the Survey's Central Valley Aquifer Study, met with officials from the Santa Cruz County Administrator's Office, the county Planning Department, the Soquel Creek County Water District and the Santa Cruz City Water Department over the oft-criticized groundwater study written by USGS geologist Ken Muir last year.

Muir's report concludes that approximately 1,000 acre feet more of water is being pumped from the Purisima groundwater basin than can be safely assumed to be put back each year by rainfall.

The three federal officials stressed repeatedly Monday that they believe Muir's report to be essentially accurate in its conclusions.

Their support was summed up in an exchange between Soquel Creek Water District Manager Bob Johnston and Bloyd.

"The USGS report is a valid report and the USGS will stand behind it," Johnston asked Bloyd.

"Yes," Bloyd said. "This was reviewed by a number of people. We will stand behind it."

He and Boning said that the news media had "misinterpreted" remarks made several weeks ago by

USGS representative J.P. Akers before the Santa Cruz County Board of Supervisors, as disputing the validity of the entire Muir report.

"Jay (Akers) was reacting to the claim that the 'Hill' method was invalid (as a way of estimating safe annual yields of groundwater basins)" Boning said.

Boning said the 'Hill' method was used in the Muir report as a cross check to Muir's overdraft conclusions.

"He (Akers) was qualifying the report," Boning said of Akers' criticism of the Hill method, "and it is being twisted to say the whole report was no good."

Asked how large the overdraft was, or when salt water will begin showing up in the deep water wells that serve the Soquel Creek and Santa Cruz water systems, the USGS representative said they did not have enough data.

Boyd said Bertoldi, who is headquartered in the USGS's Sacramento office, was directed to review Muir's report and the supporting data after the USGS began seeing press reports and hearing other reports critical of Muir and the federal document.

Of the criticisms, Bertoldi said hydrology is an inexact science, given to a lot of "guesstimation."

"I suppose anyone could go out and find a number of reports that will dispute this one," Bertoldi said.

The hydrologist said he had reviewed all of Muir's data and the reports used by the USGS geologist in writing the Purisima report.

"It appears there is a saline water intrusion along the coast in shallow wells."

Bertoldi said that is borne

out not only by the chloride content in and around Capitola, but also, as a cross check, in the ratios between the calcium and magnesium levels in the water.

"If the ratios are very close (one to one)," Bertoldi said, "it indicates saline."

"The Muir report is on a very sound basis for saline water intrusion."

But when asked how serious the salt water intrusion problem will become along the Santa Cruz County coastline, and how precise the safe annual yield of 4,400 acre feet is, Bertoldi hedged, telling the water officials there was simply not enough data to make that judgment.

"As a registered geologist," Bertoldi said, "I would say the thing is so complex that it might take a lot of drilling (of new wells along the coast to monitor increases in salt content), examining the E-logs, the gamma logs, to find out."

"This report is the best information available and you have to decide if you want to accept it."

"Using inductive reasoning and the state of the art," Bertoldi said after outlining several different methods of estimating a basin's safe annual water yield, "it is very close."

Bertoldi also told the water officials that the 1968 Hickey report, which has been interpreted to say that the basin's safe annual yield was as high as 10,000 acre feet a year, was also misunderstood.

"Hickey computed 10,000 acre feet as needed to maintain the saline wedge seaward to its normal position," Bertoldi said.

Bertoldi said it wasn't possible to say exactly when an overdraft occurs.

"That is not a question that could be considered in a report of this size (\$40,000 study funded by the USGS and Soquel Creek)."

He said the only way that the federal scientists could start gathering that type of information would be to have very detailed information about each of the hundreds of wells drilled into the Purisima formation.

Not only would the researchers need water quality information, but also information on how deep the wells are drilled, what types of material they went through and where the well was perforated.

That information, in many cases, isn't available.

Boning said those types of data collection and analyses go far beyond the current USGS-Soquel Creek monitoring agreement.

Bloyd told Johnston that the district could spend a million dollars in additional information gathering, but bluntly told the local manager that it wasn't worth it.

Santa Cruz City Water Director Morris Allen wanted to know if the Purisima formation's yield could be increased by moving wells inland.

"If you are talking about reducing the landward wedge of saline water, the answer is no," Bertoldi said.

"If you talk about keeping it out there so you don't see it in your wells, maybe yes."

Bertoldi and Bloyd warned that increased inland pumping might dry up Soquel, Aptos and Branciforte Creeks in the summer.

"If you want the creeks to go dry, you can increase the yield," Bloyd said.