

Midcounty water basin deeper than believed

By BOB SMITH

There may be more water underneath the Midcounty than previously believed, but the Soquel Creek County Water District is going ahead with studies to build one or two dams on Soquel Creek.

The water district Monday night approved a \$67,000 contract with Linsley, Kraeger Associates of Aptos to look at alternatives for water storage and water diversion dams on Soquel Creek, and a \$21,000 contract with D.W. Kelley and Associates to continue its fish study.

The two studies, which will take a year or longer to complete, will be used by the water district as part of a water rights application it must file with the State Water Resources Board before dams can be built on the creek.

Water District General Manager Robert Johnson said the district, as part of its water rights application, must look at all possible dam sites, including sites on the West Branch of Soquel Creek at Glenwood, and on the East Branch above Olive Springs Quarry, the diversion dam proposed on Soquel Creek at Bridge Street, the amount of water needed for fish release in the stream year-around, and the size and yield of the reservoir.

The board also approved an \$87,200 addition to its monitoring well contract with Luhdorff and Scalmanini, asking the Davis-based firm to drill three additional monitoring wells inland in the Cherryvale, Park Wilshire-Vienna Woods and Seascape areas.

The extra wells were proposed by Scalmanini to check information obtained from five test wells completed along the coast, and to find out if geologic conditions change in areas close to the Zayante fault.

Hydrologist Joseph Scalmanini told the water board Monday night that the five test wells drilled along the coast from Capitola down to Aptos Creek ad some surprises for the geologists, who found a "much thicker" water-bearing strata than previously believed.

Scalmanini said the strata are also much deeper in the Aptos area than anyone previously believed.

"The amount of groundwater storage is much higher than thought before," Scalmanini said.

"We now think we are in the position to start the process of estimating (the basin's) yield," he told the board.

The district originally agreed to finance eight monitoring wells along the coastline, but Scalmanini cut the number back to five after examining data from the initial test holes.

Cost will be about the same, he said, because the five wells were drilled much deeper than originally planned for the eight.

Data from the five coastal test wells — which will now be enlarged into permanent, instrumented, monitoring wells — plus information already available from earlier water and oil wells, show a very well defined picture of water-bearing sand and impervious clay layers sandwiched together similar to a layer cake and frosting.

Those layers, Scalmanini said, are tilted downward from west to east.

Embedded within the geologic layers, Scalmanini told the board, is a thick, probably impermeable layer of clay on top of a 200-300 foot thick layer of waterbearing sand which has been previously identified as the Purisima "B" formation.

Several hundred feet lower is another layer of clay on top of sand which forms the Purisima "A" zone. Below that, he said, is solid granite.

Scalmanini and geologist Bill Schlax were able to identify the distinctive formations in "e-logs" made in wells drilled from the Live Oak area down the coast and finally to a well drilled by Texaco in 1950 in the Day Valley area.

The top of the Purisima "B" formation is at sea level in the Opal Cliffs area, Scalmanini said. It dips to 169 feet below sea level (BSL) in a test well drilled near Capitola's El Salto Resort, 397 feet BSL at the east end of New Brighton Beach State Park, 602 feet BSL in Seacliff State Park between the end of Las Olas Drive and the park museum, and 809 feet BSL at the mouth of Aptos Creek.

By the time it gets to the point where Texaco drilled an exploratory oil well north of Freedom Boulevard in the Day Valley area in 1950, the formation is 2,078 feet BSL.

As the formations dip downward, more sand and clay layers appear on the e-logs. Those, collectively, have been identified as the Purisima "C" formation.

Scalmanini is confident enough in the data his firm has gotten from the five coastal test wells plus the other well drilling records to recommend that the district scrap its plans to drill a test hole on district-owned property at the Soquel Creek diversion dam site near Bridge Street.

He told Johnson and the water board members that a production well could be drilled on the site to approximately 600 feet without the added expense of test hole first.