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# Tests suggest seawater invading basin

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Rising chemical levels in an Oceano "sentry well" could indicate seawater intrusion into the groundwater basin, according to a report delivered Monday at the Grover Beach City Council meeting.

In a report on the city's water supply, city engineer Jim Garing told the council the amount of chlorides, sodium and potassium found at the lower levels of the well in May rose dramatically in samples taken in August.

The sentry well is located between the ocean and 16th Street Park, where wells draw much of the groundwater for the city's residents.

"So there is some concern for a localized impact," Garing told the council. "We need to keep an eye on it and deal with it."

However, three other sentry wells in Pismo Beach, Grover Beach and south of the Oceano Airport showed no similar increases, and the wells haven't been monitored consistently since they were drilled as far back as the 1960s.

That makes it difficult to draw any conclusions from the readings.

"These wells have not been monitored since March of '96," Councilman Bill Nicolls said. "Now all of a sudden, two tests show a deterioration in the quality of the water. But we have nothing to compare it to."

Garing said the wells have been monitored since the 1960s but not consistently until it was mandated by the settlement in the Santa Maria Valley Groundwater Basin lawsuit.

"So, in fact, this one particular well that showed higher content could have been doing that for the last 10 years," Nicolls said.

Garing said that is possible.

Councilwoman Debbie Peterson asked if any previous tests showed rising salt levels and if the sampling was done when a lot of irrigation was taking place.

Garing said he did not have that data with him but could bring it to the council at a future meeting.

Although the site is north of the Nipomo Mesa Management Area of the basin, where sentry wells have not detected any saltwater intrusion, the potential for that concerns Nipomo Community Services District.

"This has implications for Nipomo," said NCSD Director Ed Eby, who attended the council meeting. "It hasn't been detected in the (sentry) wells to the south, but (seawater intrusion) has to start somewhere.

"I guess a conservative term would be 'concern.' A less conservative term would be 'alarm,' because these (levels) are worse than we've ever seen," he said. "The real question is, how far past the sentry wells has the salt plume gone in?"

South County water officials are concerned that pumping more groundwater than is being replaced could allow seawater to intrude on the underground basin, making well water undrinkable.

For that reason, the county drilled so-called sentry wells along the coastline some 50 years ago to monitor salt levels.

Experts say chlorides and sodium are good indicators of intrusion because they are the most common ions in seawater.

But testing of the wells has been sporadic until the lawsuit settlement required consistent monitoring in the Northern Cities Management Area, which includes Arroyo Grande, Grover Beach, Pismo Beach and Oceano, and the Nipomo Mesa Management Area.

Garing said the rising levels were found in a well located just north of Pier Avenue near the Oceano Lagoon, where water quality is sampled at three elevations - 15 to 40 feet, 50 to 135 feet and 175 to 255 feet.

From May to August, measured chlorides fell from 180 to 160 milligrams per liter at the top layer but rose from 97 to 190 mg/l at the middle layer and from 175 to 500 mg/l at the deepest layer.

The maximum allowed level of chloride in drinking water, according to Environmental Protection Agency standards, is 500 mg/l.

Measured sodium fell from 175 to 150 mg/l at the top layer but rose from 63 to 150 mg/l at the middle layer and from 129 to 199 at the bottom layer.

Measured potassium fell from 33 to 28 mg/l at the top layer but rose from 4 to 62 mg/l at the middle layer and from 52 to 82 at the deepest layer.

There are no EPA standards for sodium and potassium in drinking water.