



# San Joaquin Geological Society

**\*VIRTUAL MEETING Optional\***

**Date: Tuesday, June 14th, 2022**

**Time: 6:00 PM Social Hour**

**7:00 PM Dinner (Zoom link open)**

**7:30 PM Lecture**

**Place: American Legion Hall (Zoom link to follow)  
2020 H Street, Bakersfield, CA 93302**

**PSAAPG Members**  
\$30 with reservation  
\$35 without reservation

**Non PSAAPG Members**  
\$35 with reservation

**Full-time Students with ID:**  
\$15

**\* RSVP \***

**By: noon Monday,  
June 13th, 2022**

Register online:

<http://www.SanJoaquinGeologicalSociety.org>

Pay online *or* at the door

**Our virtual lecture will  
be held via Zoom.**

**Meeting link and  
access code to follow!**

**SJGS WEBSITE**

<http://www.SanJoaquinGeologicalSociety.org>

[eologicalSociety.org/](http://www.SanJoaquinGeologicalSociety.org)

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## Stratigraphic Controls on Groundwater Salinity in the Tulare Formation,

Elk Hills Area, Kern County, California

Tony Reid, Consulting Geologist

\*Elk Hills, a large anticlinal dome located in the southwestern San Joaquin basin, contains a section of the Plio-Pleistocene Tulare Formation 1,000 to 2,500 feet thick. The Tulare crops out at the irregular topographic surface of the hills, and an unknown amount of the section is presumed eroded following later uplift.

Stratigraphic architecture of the Tulare Formation is complex, and no one area characterizes the Tulare as a whole. Layering, whether stacked channels or interbedded floodplain and braided streams deposits, have corresponding different vertical profiles in salinity and groundwater movement. Whether oil migration or groundwater movement, one needs to define each area's unique stratigraphy to understand fluid movement.

\*Please see the website for a full abstract

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Tony is a native Californian and grew up in the San Fernando Valley. He attended nearby CSU Northridge, earning BS and MS degrees in geology. After graduation, he relocated to Bakersfield and worked for Getty (later Texaco) in production and exploration roles in the San Joaquin and Salinas basins. After he joined Bechtel, he began a long association with the Elk Hills Field, learning about the complex Stevens sandstone and Monterey porcelanite reservoirs. Following Occidental's purchase of the Elk Hills Field from the DOE, he transferred to Houston and worked exploration projects in Nigeria, Libya, Indonesia, Philippines, Papua New Guinea, and Australia. Another transfer took me to Muscat, Oman, where he worked as Chief Geologist for Oxy's carbonate reservoirs.

Returning to Bakersfield, he worked exploration projects in the Ventura and San Joaquin basins. Back at Elk Hills, he was the Chief Geologist when we learned that aquifer exemptions were required for many of Oxy (and later California Resources Corporation) fields. In a new position as aquifer exemption coordinator, he applied lessons from petroleum geology to defining underground sources of drinking water.

He is currently a consulting geologist and reside in Bakersfield with his wife Susan. He is a California Professional Geologist, and Editor for the Pacific Section AAPG.