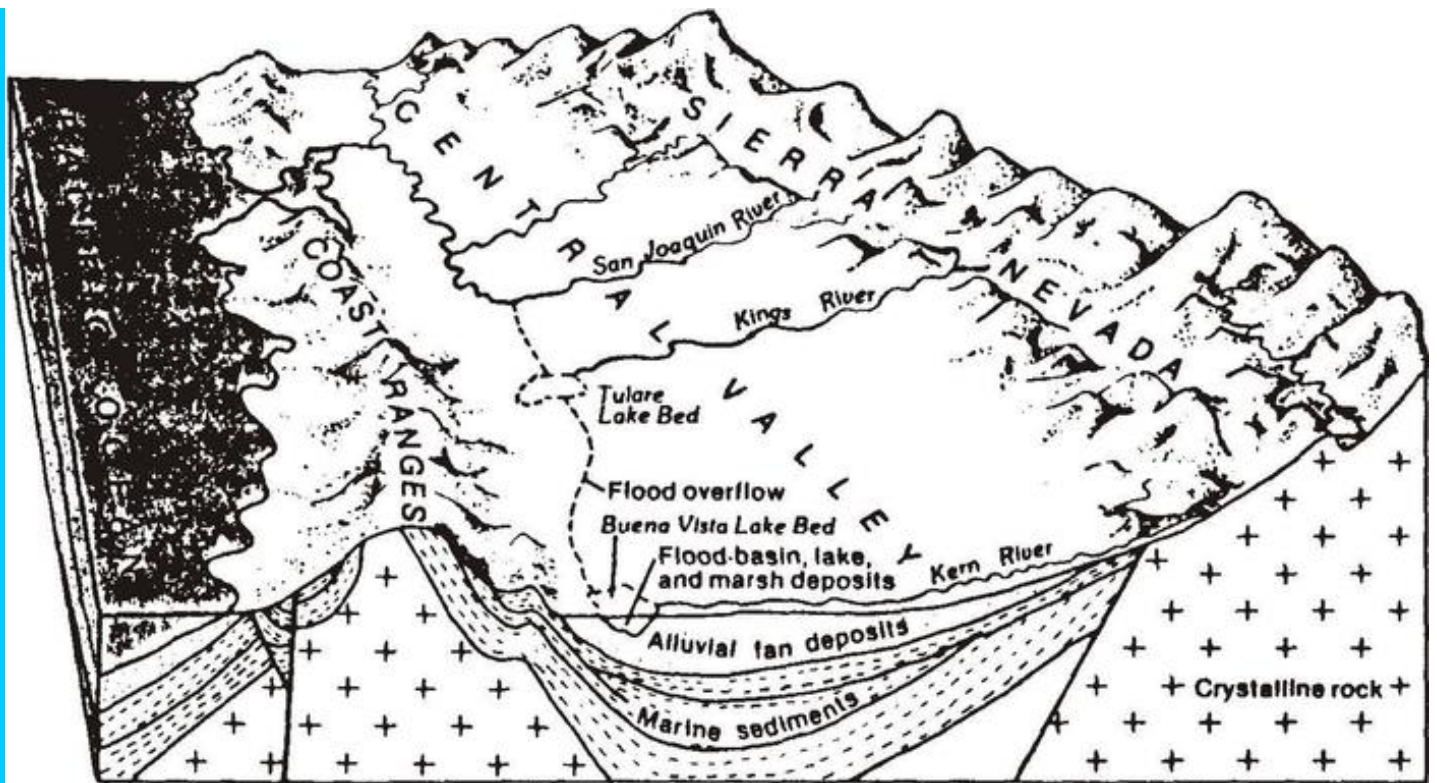


# The San Joaquin Basin



The San Joaquin Basin, is a sediment-filled depression, that is bound to the west by the California Coast Ranges, and to the east by the Sierra Nevadas. It is classified as a **forearc basin**, which basically means that it is a basin that formed in front of a mountain range.

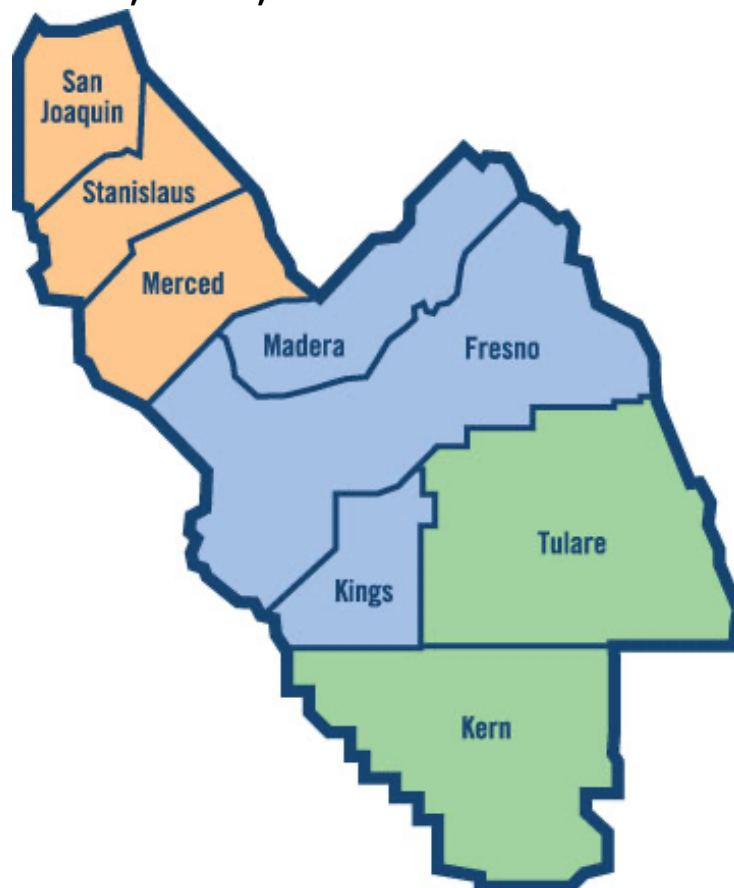


Block diagram by Dale and others (1964, fig. 7)  
Modified by R.W. Pags, 1990

The Basin dates back more than 70 million years ago to the Mesozoic, when subduction was taking place off the coast of California. However, the plate tectonic configuration of western North America changed during the Tertiary, and the ancient trench that once characterized offshore California was transformed into a zone of right-lateral strike-slip motion that we know today as the San Andreas fault. Nonetheless, the Valley still retains many features that characterized it prior to formation of the San Andreas transform. A shallow and ancient ocean once existed here and the only fingerprint that remains is this basin which it left behind. Because of this the San Joaquin Basin is literally saturated with Oil and Gas reserves. The shale zone underneath the basin has been identified as the Monterey Shale. Since the the beginning of production in this basin the shale was inaccessible and unproducibile because of technology at the time; however because of new technology coming out of the drilling fields of Texas in the Barnett Shale this Monterey zone now becomes a slam dunk in natural gas homeruns for the drilling industry.



## Oil, Gas, & Mineral Lease



Do you have mineral rights in these counties?  
Do you have a Mineral Deed or a Warranty Deed?  
Would you like to see if there Oil or Gas under your property?

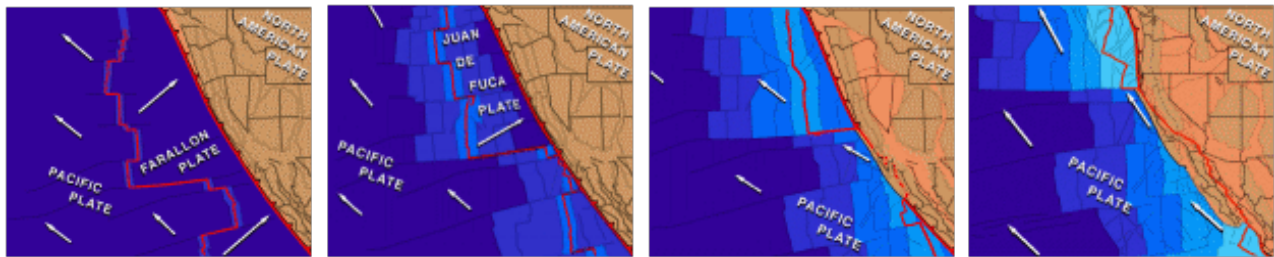
contact: [The County Landman](#)



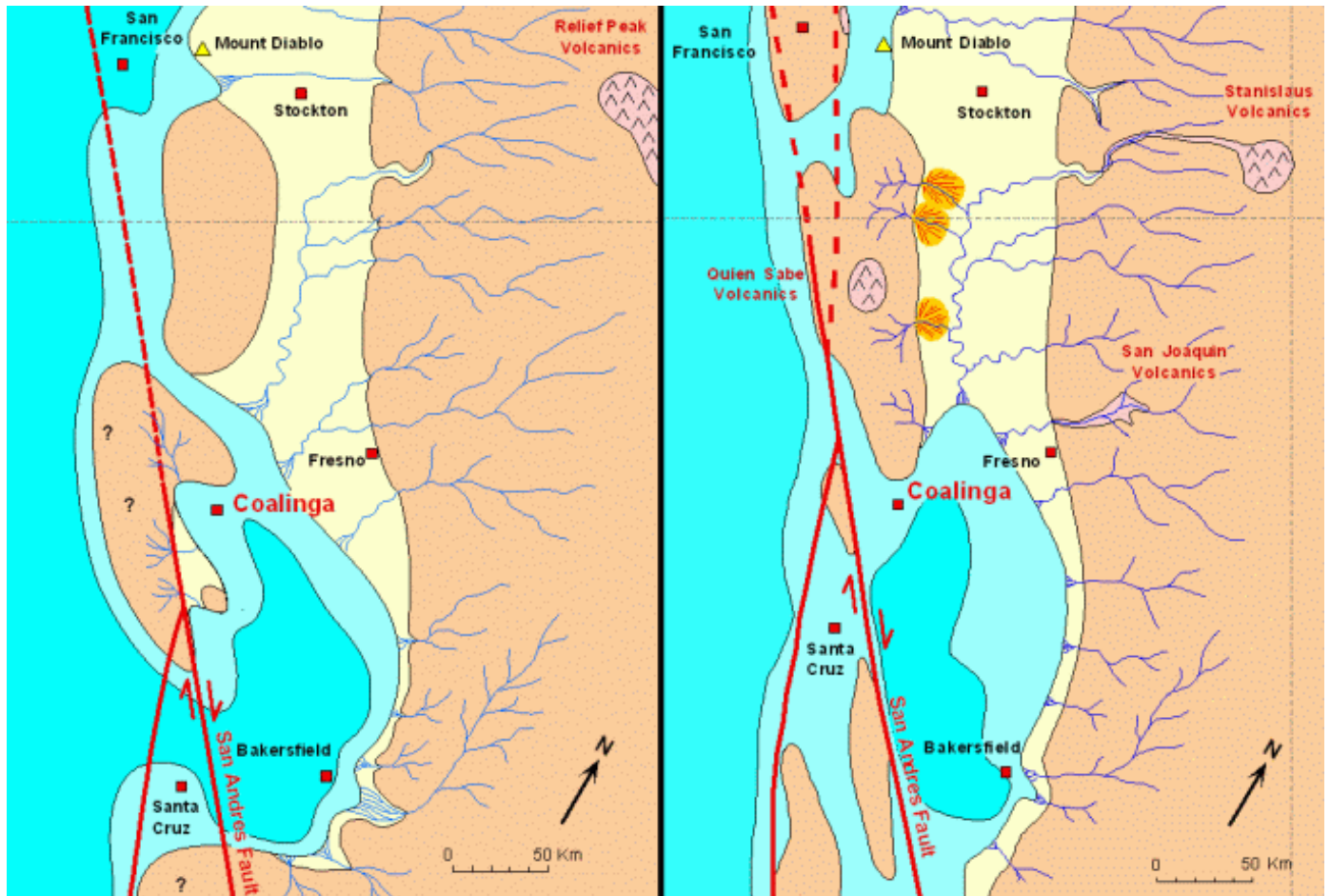
Because the San Joaquin Valley is bound to the west by the California Coast Ranges, which represent a zone of folding and thrusting (i.e., an accretionary prism) associated with the ancient subduction zone, and bound to the east by the Sierra Nevadas, which represent the eroded roots of an ancient volcanic arc that was also associated with the subduction zone, some call the valley a remnant arc-trench gap.



The tectonic processes by which this arc-trench gap formed are complicated, as are the events by which the ancient trench became the San Andreas fault.






When the San Joaquin Valley first formed it was an inland sea between two mountain ranges. This configuration remained even after formation of the San Andreas fault (below). However, as the volcanic cover of the Sierras was eroded off, the resulting sediment was dumped into the Valley below. At the same time, The Coast Ranges were also being worn down and dumped into the valley. Thus, the inland sea was filled to create the continental basin we know today.




The maps above show the San Joaquin basin during the middle Miocene (left) and the late Miocene (right) when the principle source rocks were deposited. From these source rocks most of the oil in the valley is derived.

When the basin was still an inland sea, diatoms and other plankton thrived in it, and when these organisms died they accumulated on the basin floor to create shales which are rich in organics this includes the Eocene Kreyenhagen, and Miocene Monterey Formations. The integrated effects of heat and time then acted on the buried organic matter within these shales to create oil, and the detritus eroded from the Coast Ranges and the Sierra Nevadas provided reservoir rocks where the oil and natural gas could accumulate.

**non-marine**

-  Highlands
-  Lowlands
-  Volcanics

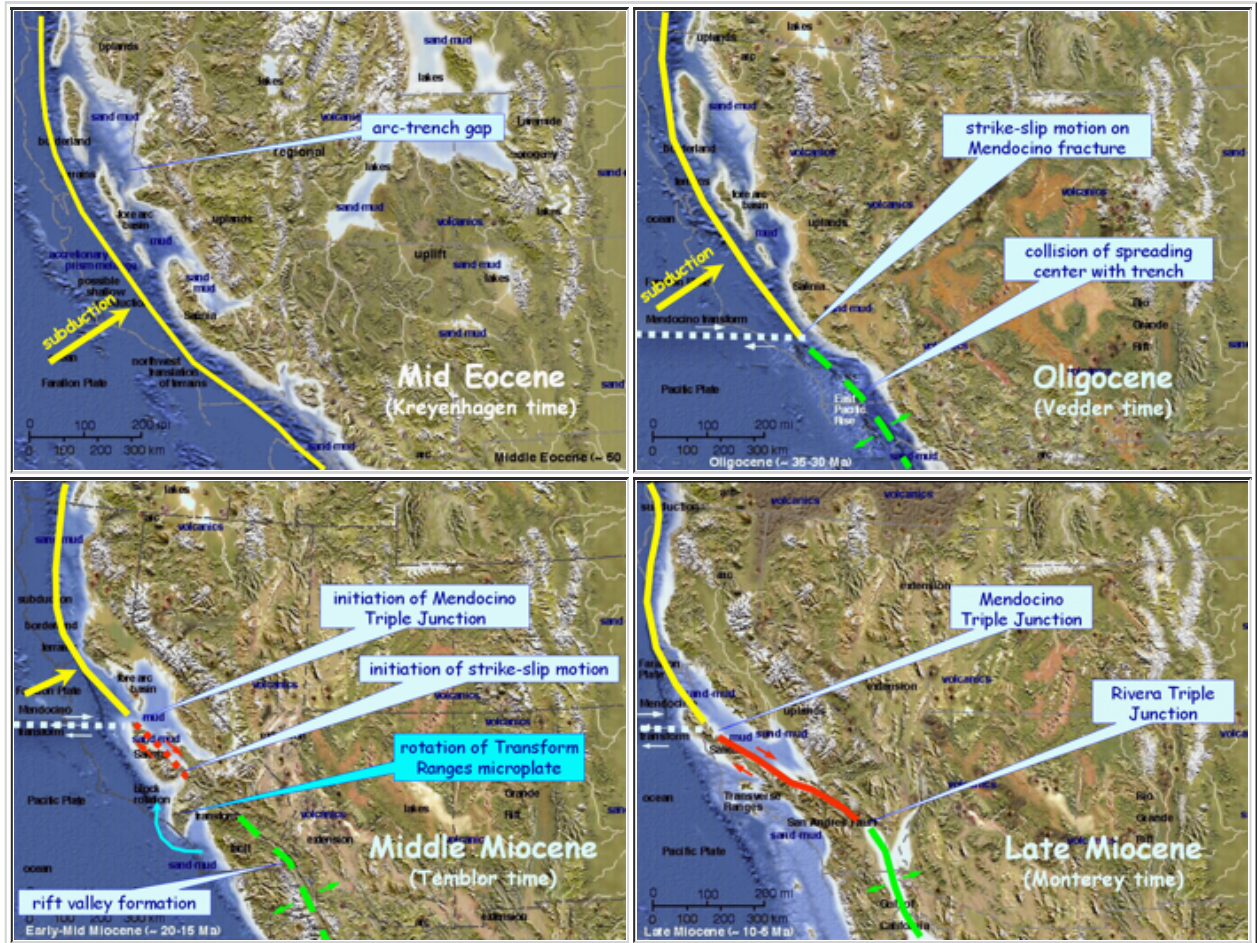
**marine**

-  Shelf
-  Basin

from Bartow, 1991

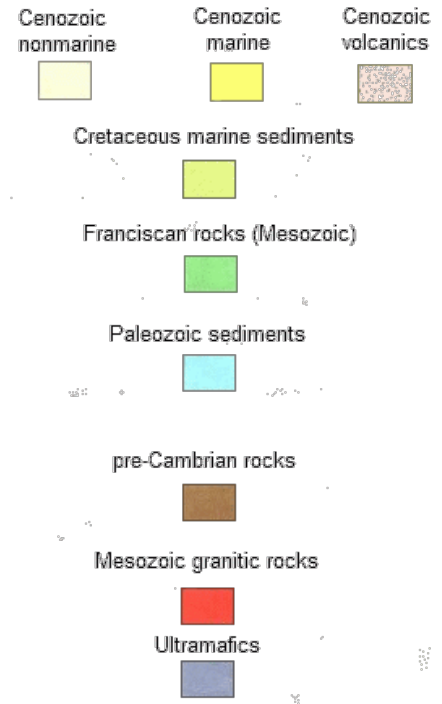
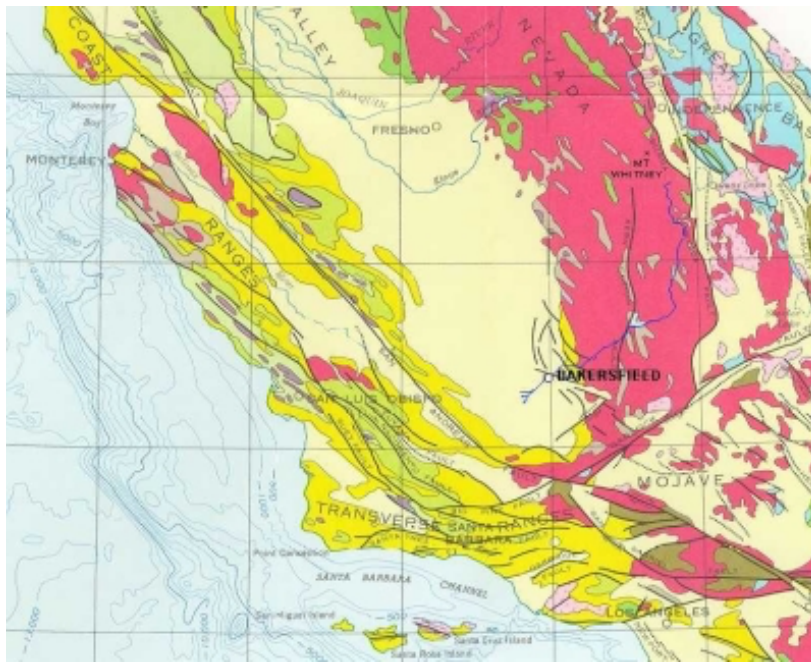
## Paleogeography

The paleogeography of the San Joaquin Valley over geologic times are shown below.



## Geologic Map of the San Joaquin Basin

click on the map to view a more detailed version



## UNITED BASIN



Do you have operations, land, or minerals over the Permian Basin?  
If so [contact Chris Sanders](#).

DRILL YOUR RETIREMENT IN THE NATURAL GAS SHALE BASINS  
OF THE CONTINENTAL UNITED STATES.

[Chevron](#) | [Conoco - Phillips](#) | [Continental](#) | [Devon](#) |  
[EOG resources](#) | [Halliburton](#) | [Nabors](#) | [Schlumberger](#) | [Shell](#)



## **UNITED BASIN**

[ANADARKO BASIN](#) | [APPALACHIAN BASIN](#) | [DENVER BASIN](#) | [FORT WORTH BASIN](#)  
| [ILLINOIS BASIN](#) | [PERMIAN BASIN](#) | [SAN JOAQUIN BASIN](#) | [WILLISTON BASIN](#)

## **SHALE PLAYS**

[BAKKEN SHALE](#) | [BARNETT SHALE](#) | [HURON SHALE](#)  
[MARCELLUS SHALE](#) | [MONTERREY SHALE](#) | [NIOBRARA SHALE](#)



## **THE SAN JOAQUIN BASIN**

this site and its content are not public domain and are protected by  
© COPYRIGHT 2013 unauthorized distribution is a violation of applicable laws