

# **Ganymede Prospect**

## **(Pleito Creek Footwall and the western extension of the Pleito Ranch field)**

*Southern San Joaquin Basin, California*

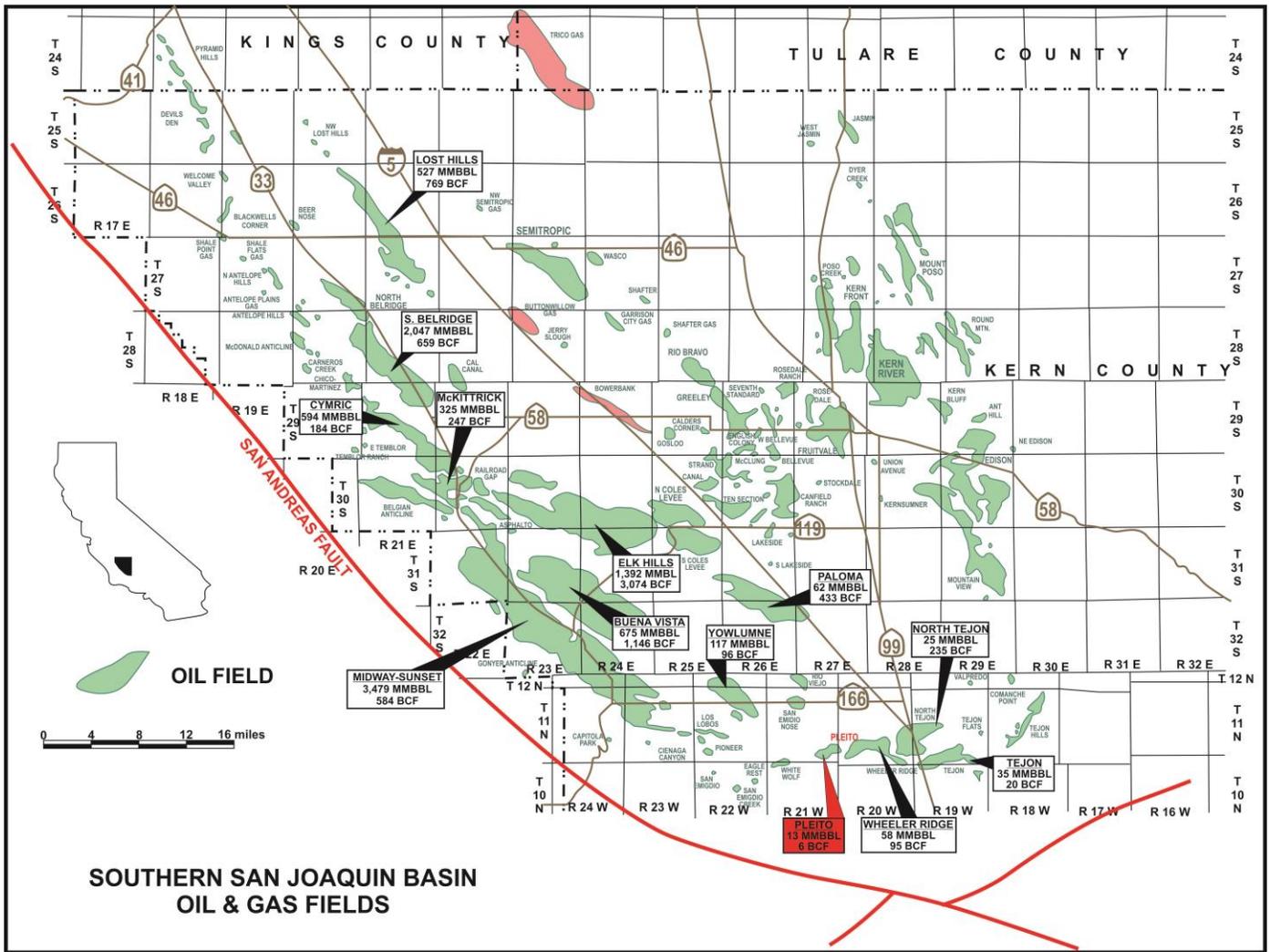
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**Project Location:** *The Ganymede Prospect (GP) is located along the oil prolific southern San Joaquin basin, California (an AAPG Super Basin), and lies within the oil trend of the Wheeler Ridge (59 MMBO, 95 BCF), Pleito Ranch (13 MMBO, 6 BCF), Pleito Creek (2.2 MMBO, 1.2 BCF), and White Wolf (1.3 MMBO) oil fields. The GP, located in Block 2 of the Pleito Creek oil field, is part of a vertical-standing panel of oil-reservoirs trapped by overlying and sealing faults. The GP is surrounded by producing oil pools on three sides: 1) lies beneath the Pleito Creek oil field (Block 1), 2) lies directly above California Resources Corporation's (CRC) new pool discovery in Block 3, and 3) is adjacent to the westward-most wells of the Pleito Ranch oil field. The Pleito Creek and Ranch oil fields were discovered in 1950s and have produced oil from the lower Chanac, Santa Margarita, Stevens, and Olcese sand reservoirs that are structurally trapped.*

**Geologic Description:** *The GP is within the Block 2 oil trap that consists of a steeply-dipping panel of known oil producing reservoirs with a top seal of Monterey Formation shale beds in the hanging wall of the WRT. A number of prolific oil pools with a trapping configuration similar to Block 2 occur along the southern edge of the San Joaquin basin. Cross sections and maps show Block 2 is geologically the westward extension of the upper portion of the Pleito Ranch oil field (13 MMBO) and a GP discovery will extend the field an additional one mile to the west under the Pleito Creek anticline (Block 1). There are three reservoir targets for development drilling in the Block 2, and these targets are all local oil and gas producers: 1) sandstone beds of the lower Chanac Formation, 2) sandstone beds of the Santa Margarita Formation, and 3) sandstone beds of the Stevens and Olcese members of the Monterey Formation. The oil trapping geometry of Block 2 is constrained by well data from the Tenneco 2-35 (OH) and RD1, and the recently drilled CRC 3-35. These data when combined with mapping of the WRT show at least 1,200 feet of untested oil column above the 2-35 RD1 well and beneath the trapping WRT at Block 2. Various cross sections show that the same untested Block 2 oil column is structurally high to the known oil column in the Pleito Ranch oil field (from -7400 to -5300'). From 2007 to 2014, CRC (Vintage/OXY) drilled numerous producing oil wells into Block 3 that show the deeper portion of the Pleito Ranch oil field extends westward under Block 2 and provide some of the constraining data for the untested GP.*

### **Expected Recovery and Costs**

*Wells in the adjacent and analog Pleito Ranch field have had IPs in excess of 500 BOPD and cumulative recoveries ranging from 100 MBO to 2.5 MMBO. The Block 2 trap is estimated to have upside recoverable oil of ~11 MMBO and the estimated recoverable within the GP leased by TLDG is ~6 MMBO. It is expected that the first well, drilled to 9500 ft (MD), will evaluate the Chanac, Santa Margarita, Stevens, and Olcese sands. Estimated costs for the first well are \$1.2 MM-dry hole and \$0.4 MM to test and complete. At this stage, it is expected that 10-15 development wells will be needed. The proposed surface location for the first well is at a very large and flat drilling pad within the designated Pleito Creek-Ranch field area and permitting can be completed in timely manner (Kern County is now the lead agency for drilling permits).*



**Prospect Parameters:**

- Width: 4,000 ft within PRI Leasehold.
- Height: 1,200 ft vertical oil column in Block 2
- Thickness: 250 ft Chanac/Santa Margarita pay horizons
- Porosity: 20%
- Oil Saturation: 60%
- FVF: 1.27 RB/STB

$$(\text{Width} \times \text{Height} \times \text{Thickness} \times \text{Porosity} \times \text{Soi} / 5.61 \text{ ft}^3/\text{BBL}) / \text{FVF}$$

$$(4,000 \times 1,200 \times 250 \times 0.20 \times 0.60 / 5.61) / 1.27 = 20,211,377 \text{ STB}$$

Assuming 30% Recovery = 6,063,413 BO Recoverable.