The General Levalle Basin forms a long, narrow, and deep Lower Cretaceous intracratonic rift in southern Cordoba province, Argentina. It trends approximately north-south for over 150 km, ranges from 5 to 50 km wide, and is over 6,500 m deep. Below a prominent mid-Cretaceous unconformity, steeply dipping normal faults bound tilted graben and half-graben fault blocks.

In 1995-96, the first exploratory well in the basin tested a deep-seated anticline to 5,179 m but encountered just one minor show. Reservoir-quality sandstone occurred only in the upper rift sandstone member, but this lacked adequate seals. Basin-center dark shale below the evaporite member was thin, surprisingly low in TOC, and overmature. Given the narrow, deep depocenter, unfavorable reservoir-seal relationships, and the lack of source facies, an effective petroleum system remains unproven in the basin.

In the late Cretaceous, probably with snow and ice during the winter season.

Van Krevelen Diagram showing kerogen to be Type III/IV

Poor source rock found: Lean Type III/IV.

Lower Cretaceous (Neocomian) rift fill.

Poor source rock found: Lean Type III/IV.

Lower rift shales overmature for oil.

Only 1 minor oil show.

Good evaporite seal in middle rift section.

Reservoirs below seal are tightly cemented.

Poor petroleum system.