Bajo del Toro Este

Introduction

The block is located in the north central area of the Neuquén Basin. It covers an area of 133 km^2. The following map shows its location, wells drilled in the area and access roads.

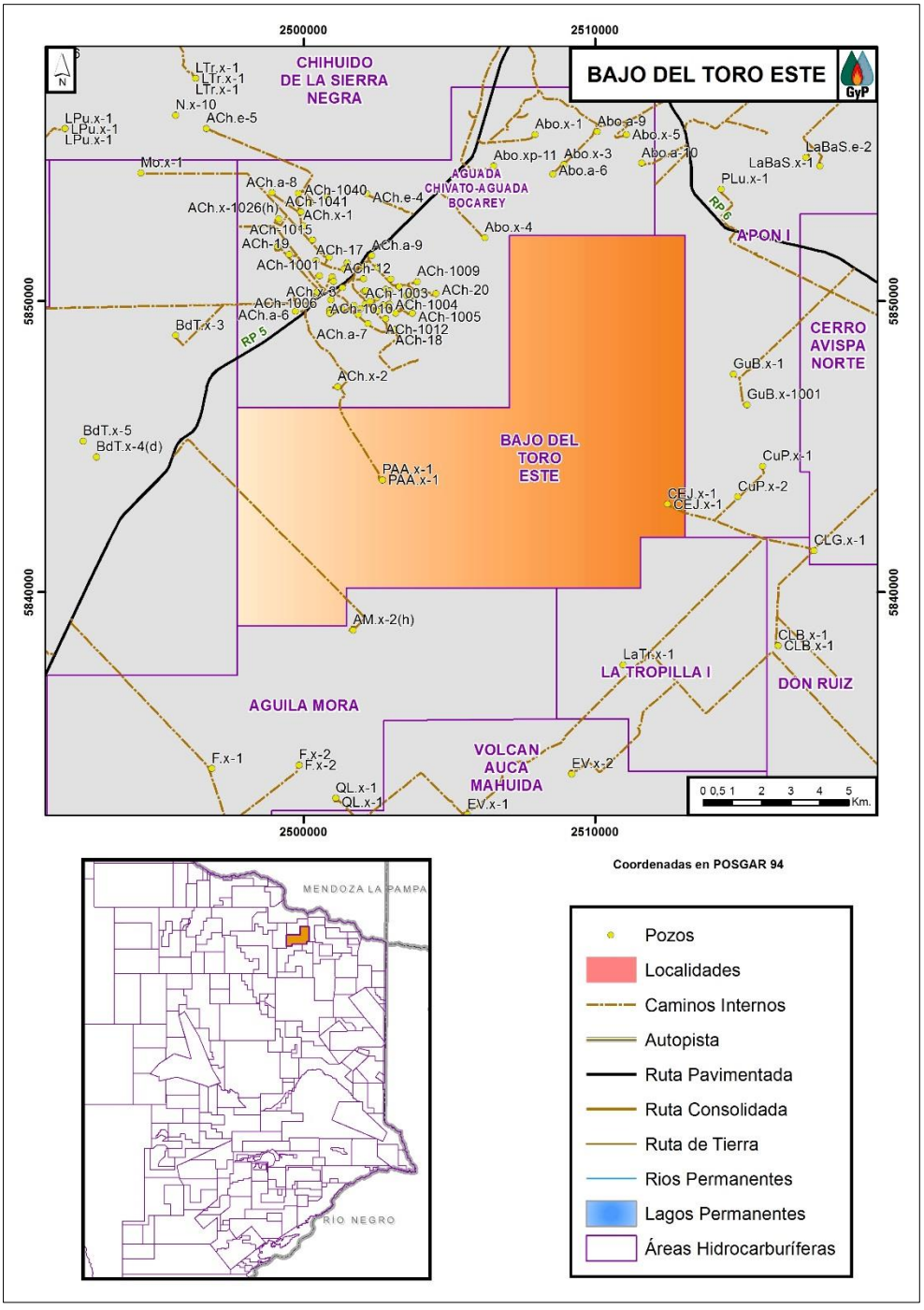

Figure 1.Location

Wells

There are 2 wells in the area.

Well	Name	TD. (m)	Reached Fm.	Prod. Fm.	Year	Current State
YPF.Nq.PAA.x-1	Picada Agua Afuera x-1	3,047	Auquilco	Mulichinco	1973	S/D
YPF.Nq.CEJ.x-1	Cerrito El Jaguel x-1	3,019	Gr. Cuyo	Tordillo-Mulichinco	1984	A

Table 1. Wells in the area

Seismic Coverage

The area has 3D seismic coverage in the eastern sector of the block, the remaining area has 2D seismic as indicated in the following figure.

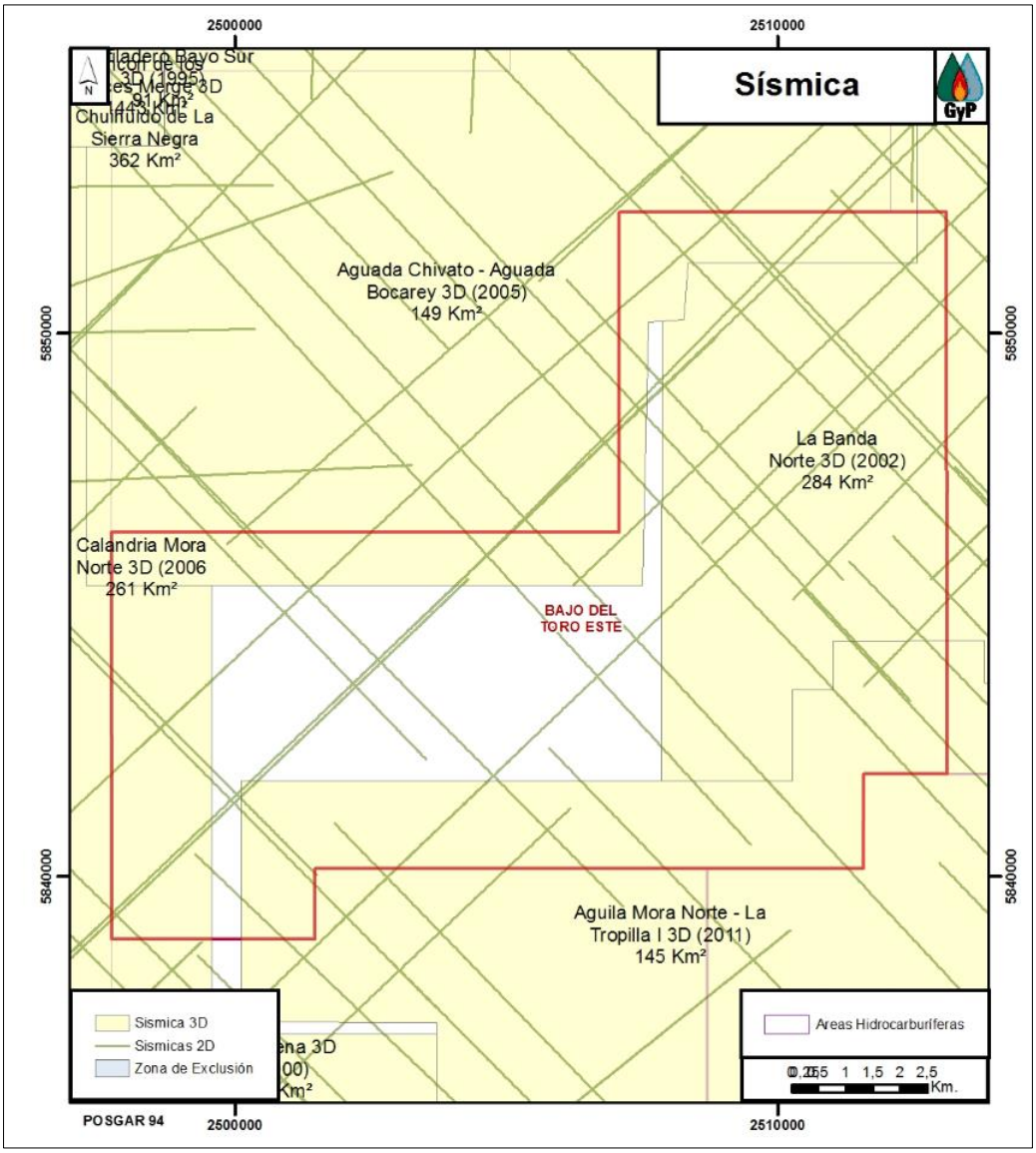

Figure 2. Seismic coverage over the Bajo del Toro area

Information available in GyP

DISPONIBLE EN GyP			
Legajos	**Perfiles**	**Líneas Sísmicas 2D**	**Sísmicas 3D Nombre**
2	2	38	La Banda Norte 3D (2002)_BdTE

Table 2. Information available

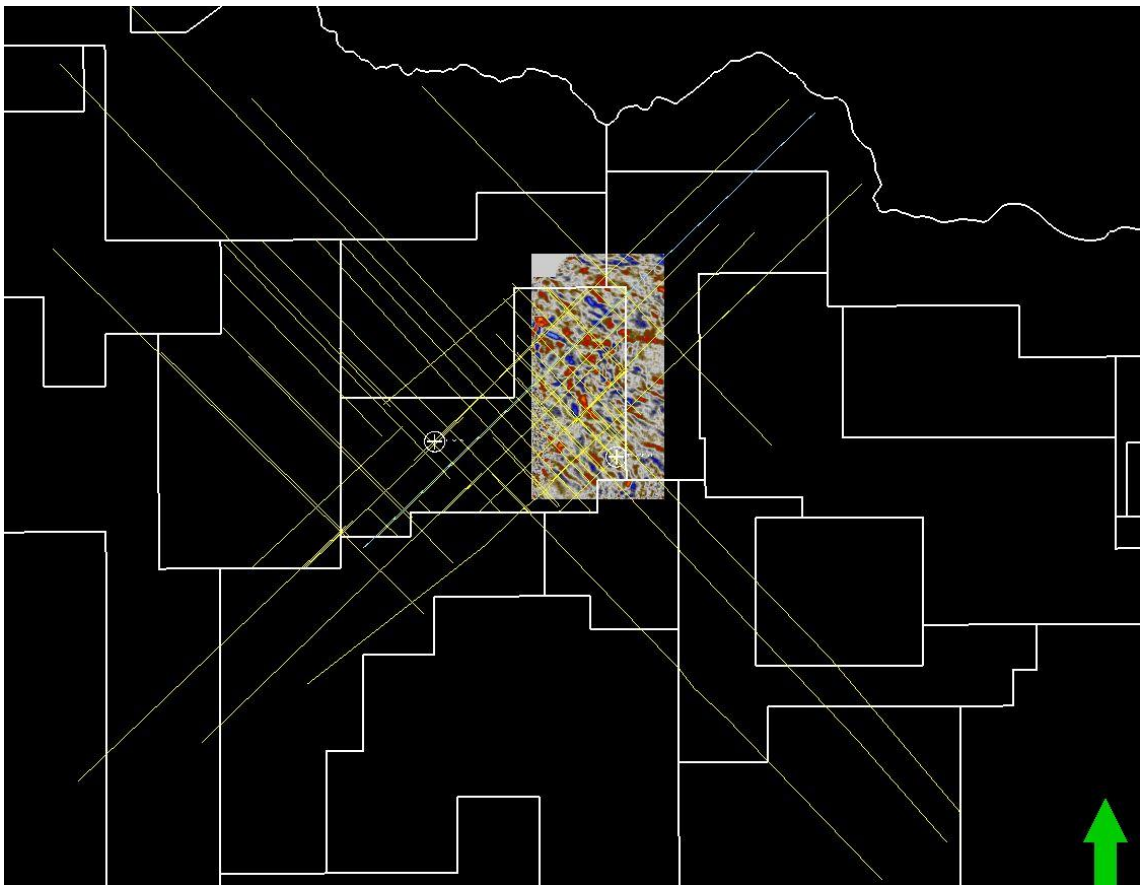

Figure 3. 2D and 3D seismic information

Potential in conventional reservoirs

Petroleum System

The petroleum system in this zone of the basin is conformed by:

Source Rock: Vaca Muerta and Los Molles Fms.

Reservoirs: Rayoso, Huitrín, Centenario, Mulichinco, Tordillo Fms. and Sills.

The potential of deeper reservoirs such as the Lotena and Upper Cuyo Gps.is not ruled out.

The main exploratory risk is associated with trapping. The block is considered of moderate risk for conventional reservoirs.

Background

The area is south of the Aguada del Chivato- Aguada Bocarey field which is a major producer of hydrocarbons, mainly of the Mulichinco Fm., but also the Rayoso, Centenario-Agrio and Tordillo Fms. To the southeast, the Señal Cerro Bayo field supplies hydrocarbons from the Rayoso, Centenario and Mulichinco Fms.

The block has two drilled wells.

YPF.Ng.PAA.x-1: TheTordillo and Mulichinco Fms were targeted for drilling. TheTordillo Fm. had hydrocarbons shows during drilling. The Mulichinco Fm. had poor petrophysical conditions.

YPF.Ng.CEJ.x-1: The objective was to investigate the Centenario, Mulichinco, Quintuco, Tordillo, Bardas Negra Fms. and the Cuyo Gp. The Cuyo Gp..was found in a pelitic- tuffaceous sequence with no hydrocarbon manifestations. The Barda Negra and Tordillo Fms. did not show good reservoir characteristics. The Mulichinco and Agrio Fms. showed good porosity, but with high water saturation,(> 60%).

Potential in unconventional reservoirs

The subsurface parameters used to characterize the Vaca Muerta Fm. are summarized as follows:

TOC (% average total organic content): 4-5%.

Reflectance to vitrinite (Thermal maturity, % Ro average): 0.7 - 1.05%.

Net Thickness (TOC> 2%): 200 - 300 m.

Presence of faults: Yes.

Overpressure: Yes.

Production history: No.

Vaca Muerta Fm. Base depth: 2,700 m

Figure 4 summarizes the aforementioned parameters that allow to visualize the unconventional potential (shale) of the block in a regional context.

Background

The neighboring area, Bajo de Toro, has three wells drilled with target in the Vaca Muerta Fm. (shale.): YPF.Nq.BdT.x-3 and YPF.Nq.BdT.x-4 (d) that showed good oil production. Well YPF.Nq.BdT.x-5 is awaiting completion.

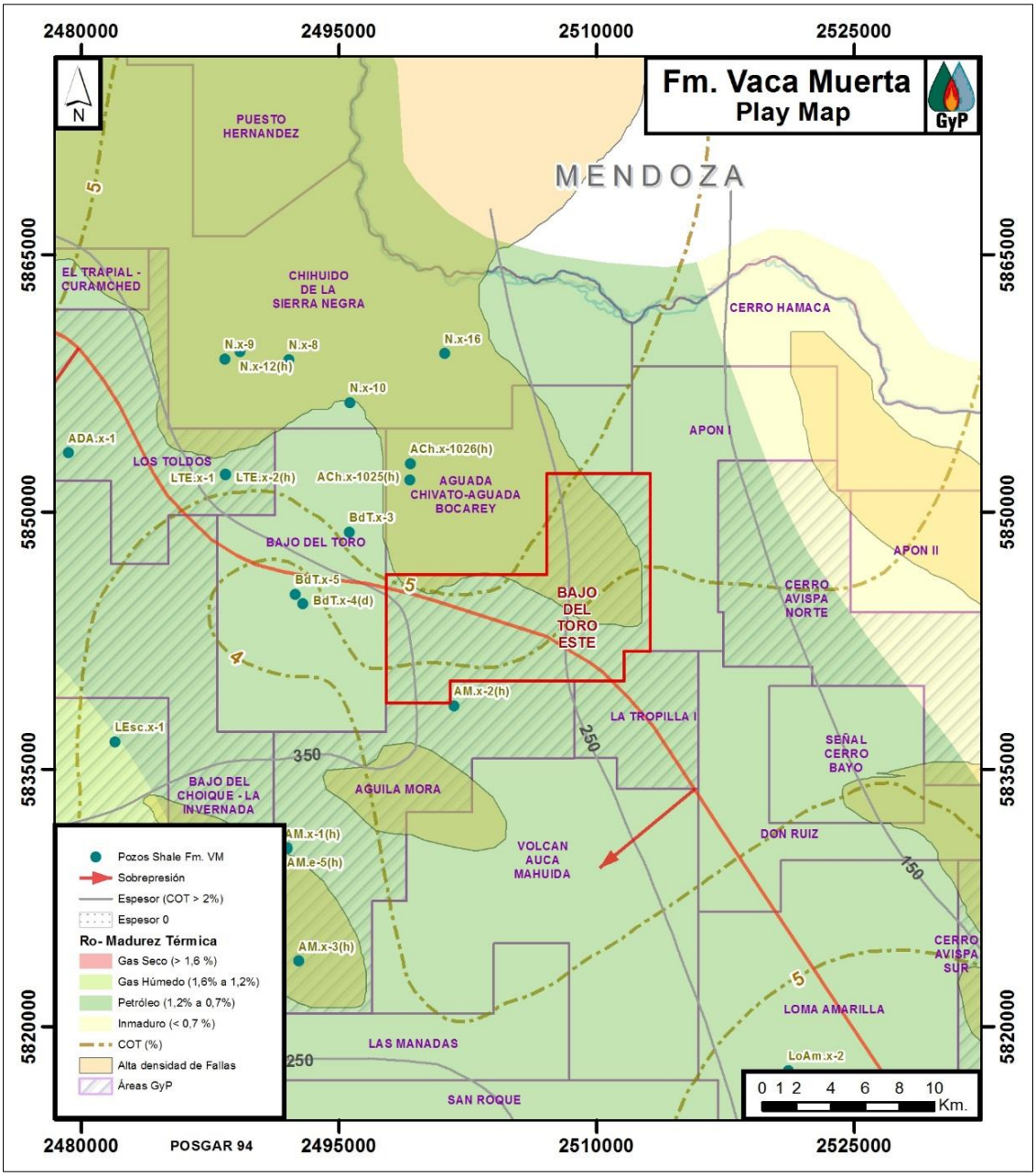

Figure 4. Vaca Muerta Fm.Play Map

Conclusions

The area has potential for the Vaca Muerta Fm. as an unconventional reservoir (shale) in oil window.

For conventional reservoirs it is a block of moderate exploratory risk. The challenge is to explore incorporating subsurface information in order to define new prospective models.