

# Aguada de Castro Oeste Block I

## Introduction

The block Aguada de Castro Oeste I is located on the western flank of the geomorphological area called "Dorso de los Chihuidos". The block has a total area of 120 km<sup>2</sup>. The following map shows its location, wells drilled in the area, access roads and waterways.

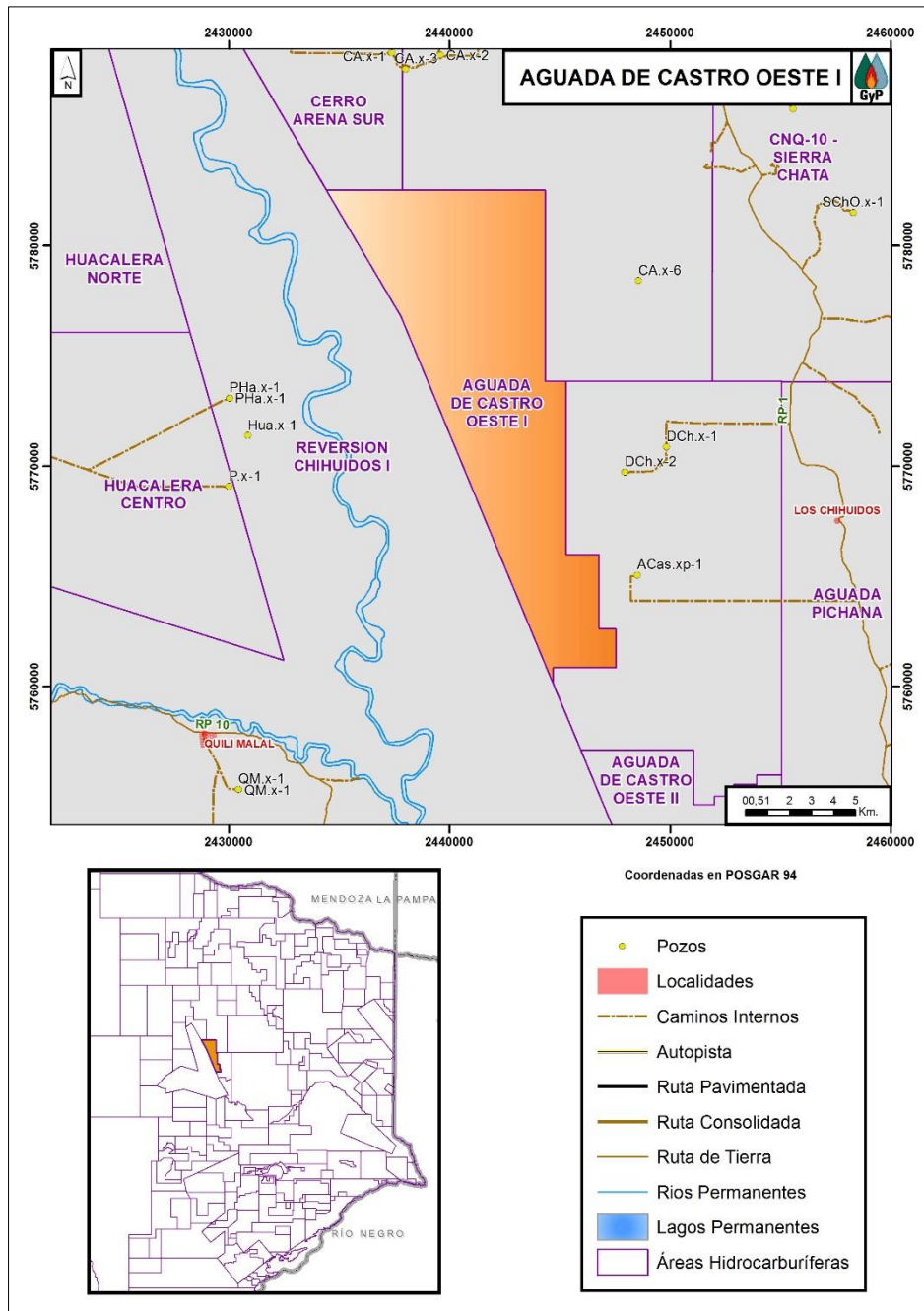


Figure 1. Aguada de Castro Oeste I location.

## Wells

The area has no wells drilled.

## Seismic coverage

Aguada de Castro Oeste I has 3D seismic coverage in the southern sector. In the northern area there is limited 2D coverage, as indicated in the following figure.

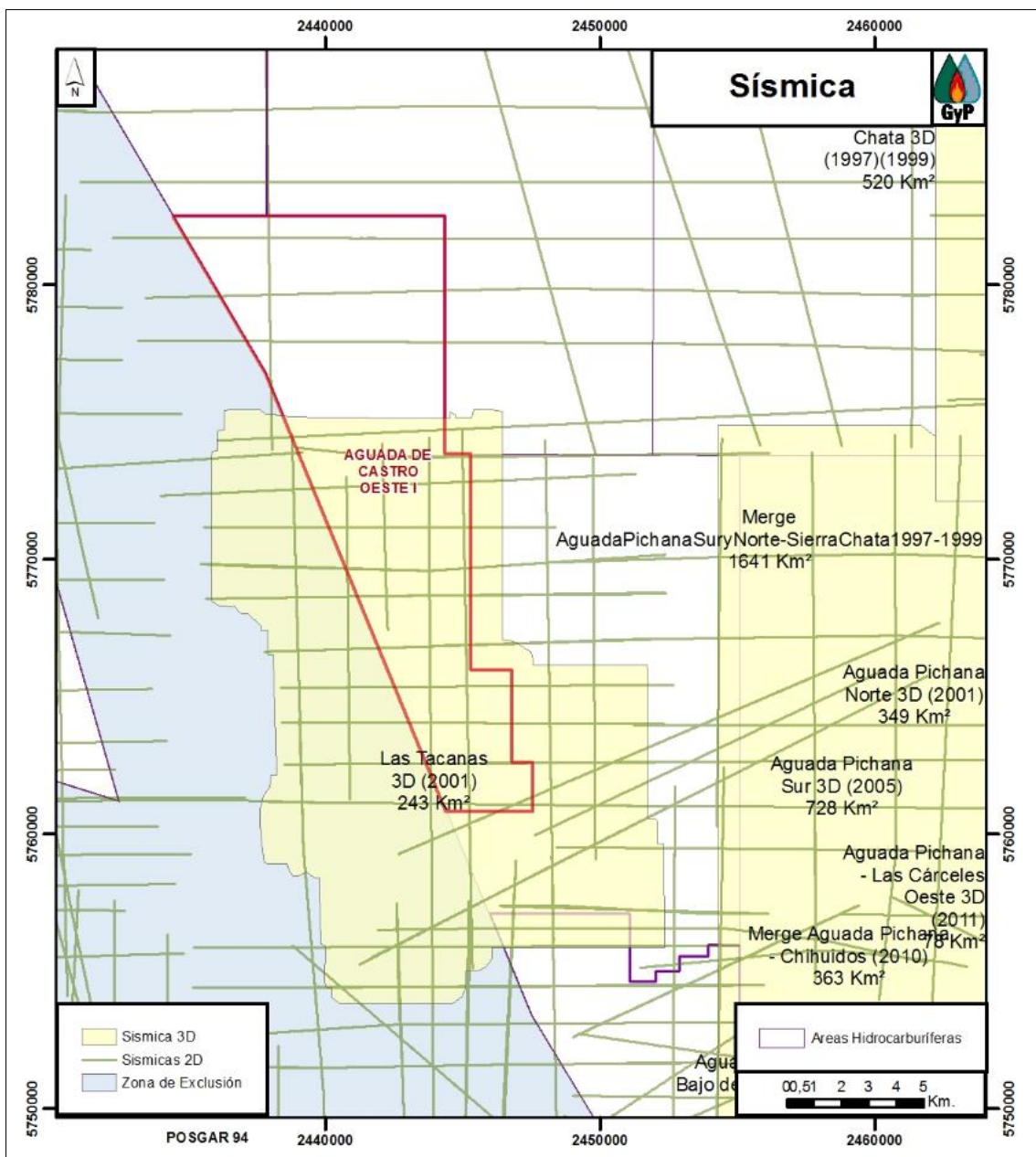


Figure 2. Seismic Coverage

## Information available in GyP

DISPONIBLE EN GyP			
Legajos	Perfiles	Líneas Sísmicas 2D	Sísmicas 3D Nombre
-	-	24	Las Tacanas (2001)

Table 1. Information available in GyP

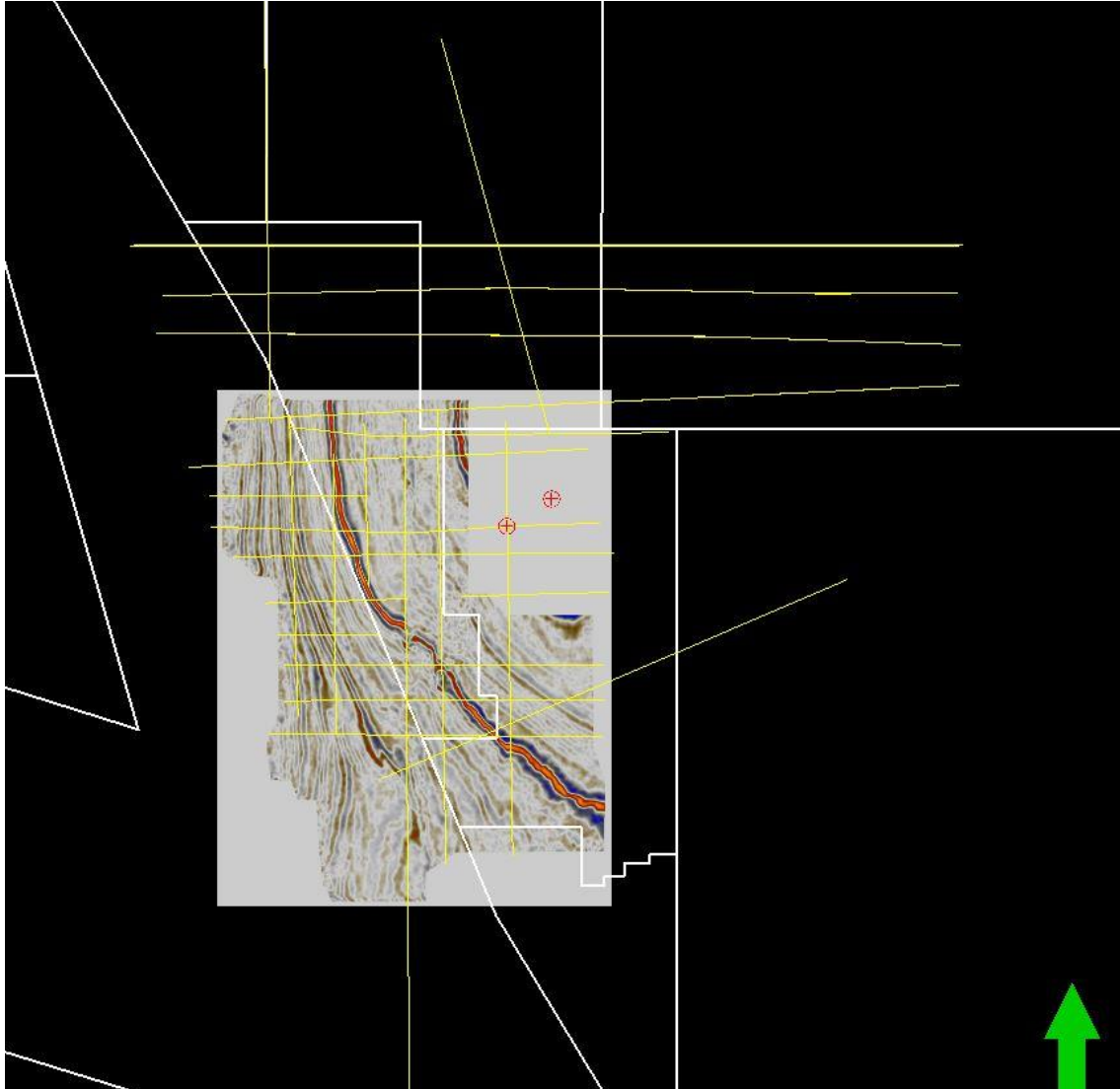


Figure 3. 2D and 3D seismic information

## Potential in conventional reservoirs

### Petroleum System

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

Source Rocks: Vaca Muerta Fm. and Los Molles Fm.

Reservoirs: Lower Agrio, Mulichinco, Tordillo and Lotena Fms.

The main exploratory risk is associated with reservoir quality and trapping.

The block is considered high risk for conventional reservoirs.

## Background

In the Aguada de Castro area, located to the east, 3 wells were drilled, two of them with conventional objectives:

YPF.Nq.DCh.x-1: Main objective: the Mulichinco Fm. reaching a depth of 2,349 m in the Quintuco-Vaca Muerta Fm. There were 3 zones in the Quintucó Vaca Muerta sequence that provided combustible gas without pressure because it is a reservoir of low transmissibility. The Mulichinco and Agrio Fms. were also tested with no entry, both with porosities below 12%.

YPF.Nq.DCh.x-2: Main objective : the Tordillo Fm., reaching a depth of 3,626 m, in the Auquilco Fm. When drilling in the Vaca Muerta Fm., gas showed (17,000 m<sup>3</sup>/d). At completion, this interval was fractured and gas without pressure was recovered.

## Potential in unconventional reservoirs

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

TOC (% average total organic content): 3-4%.

Reflectance to vitrinite (thermal maturity % Ro average) :> 1.6%.

Net Thickness (TOC> 2%): 250 - 350 m.

Presence of faults: Yes (mainly in the eastern sector.)

Overpressure: Yes.

Production history: No.

Vaca Muerta Fm. base depth: 3,200m

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

The TAU.Nq.ACAs.xp-1 well in the neighboring block, showed gas production with high pressure from the Vaca Muerta Fm. (shale.)

The block limits to the east with the gas fields of Aguada Pichana (producer of Mulichinco and Vaca Muerta Fms.) and Sierra Chata (producer of Mulichinco Tight and Vaca Muerta Fms.)

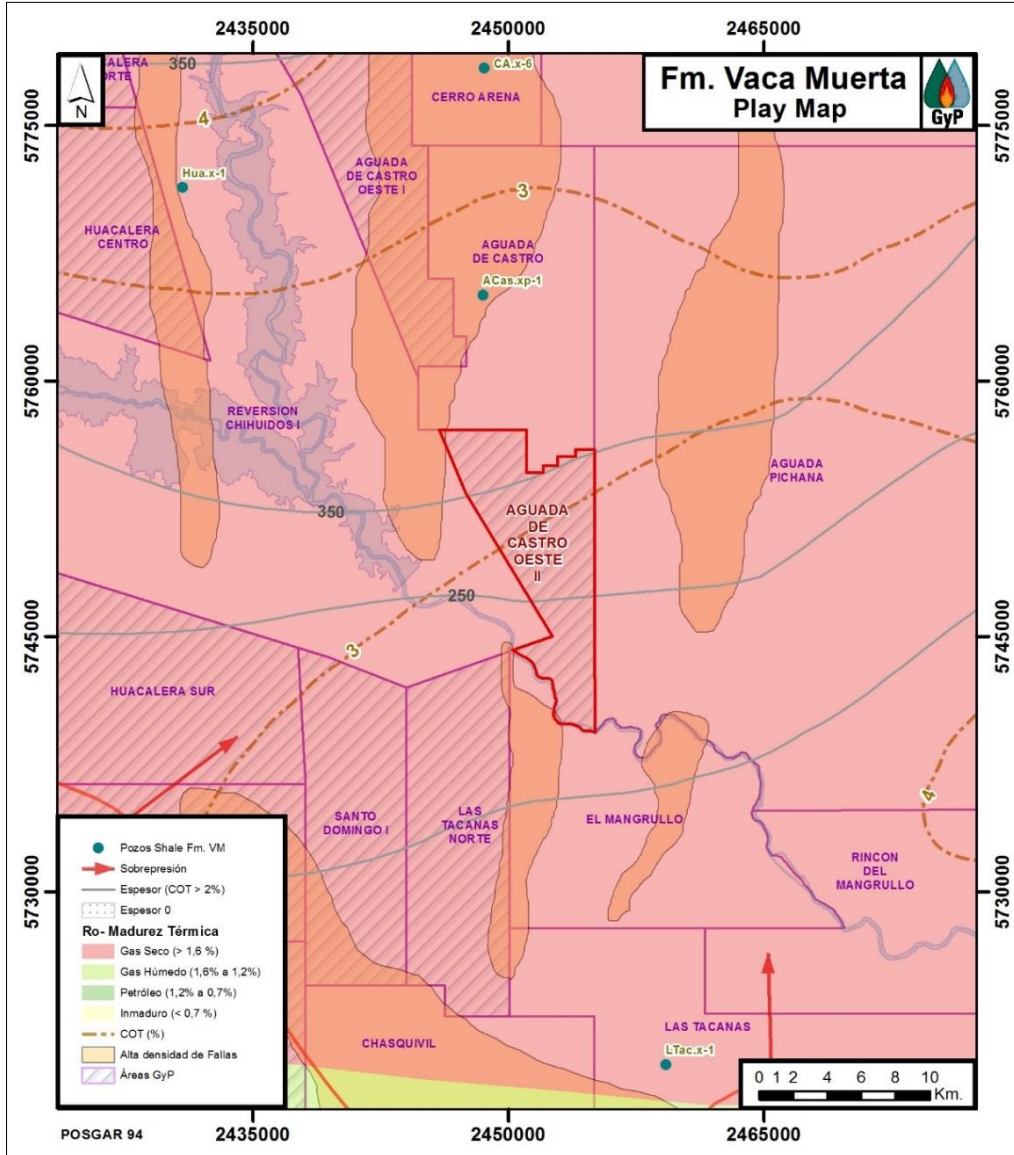


Figure 4. Vaca Muerta Fm. Play Map

## Conclusions

The Aguada de Castro I area maintains high exploratory expectations for the Vaca Muerta Fm. in dry gas window. The possibilities of the Tordillo and Mulichinco Fms. as tight reservoirs, are not ruled out.

For conventional reservoirs it is a high risk exploratory block. The challenge is to explore the potential structural and combined traps with modern techniques and 3D seismic.