
Rospo Mare Field—Italy Apulian Platform, Adriatic Sea

P. ANDRE
Elf Aquitaine
Paris, France

A. DOULCET
Elf Aquitaine
Pau, France

FIELD CLASSIFICATION

BASIN: Adriatic

BASIN TYPE: Intracratonic

RESERVOIR ROCK TYPE: Karstic Limestone

RESERVOIR ENVIRONMENT OF

DEPOSITION: Platform

TRAP DESCRIPTION: Combined unconformity truncation on a tilted fault block and hydrodynamic forces that are enhanced by low gravity oil

RESERVOIR AGE: Cretaceous

PETROLEUM TYPE: Heavy Oil

TRAP TYPE: Mixed Trap (Structural and Hydrodynamic)

LOCATION

The Rospo Mare oil field is located in the Adriatic sea, 20 km (12.5 mi) east of the Italian coast near the 42° parallel, 40 km (25 mi) north of the Gargano Peninsula on the Apennines chain foreland, and 75 km (40 nautical mi) southeast of the city of Pescara (Figure 1). Water depth ranges from 60 to 90 m (200 to 300 ft).

The field is about 10 × 15 km (6 × 9 mi) in size and the reservoir, which lies at a depth of 1310 m (4300 ft), occupies a very large rock volume of 185 × 10⁹ m³ (150 million ac-ft). The estimated ultimate recoverable reserves are 15 × 10⁶ m³ (94 million bbl) of 11°–12° API viscous oil. With three vertical and six horizontal production wells, the proved recoverable reserves are 4.6 × 10⁶ m³ (29 million bbl). Elf Italiana S.p.a. is the operator with AGIP as its only partner.

HISTORY

In 1975, when Elf Italiana, as operator for BP-Sarom, obtained by farm-in the BR-28-BS offshore permit, three exploration wells (Vasto Mare 1 and 2, and Elisabeth 1) were drilled in the vicinity without success (Figure 2). The same year the Rospo Mare 1 well was spudded over the culmination of a structure perceptible at the Messinian evaporites seismic marker. By analogy with the nearby small

gas field of Santo Stefano and the Poggiofiorito discovery, geologists thought that the main drilling objective in the structure would be the lower Pliocene sands. Nevertheless, it was decided to drill and test the top of the Cretaceous as a secondary objective.

The lower Pliocene shales lying beneath a thick sequence of clay and siltstone of Quaternary to middle Pliocene age were encountered without any sands between 1145 m and 1243 m (3757 ft and 4078 ft). Messinian evaporites were reached at 1260 m (4134 ft), lying on argillaceous and glauconic limestones of middle and early Miocene age. At 1316 m (4318 ft), the well penetrated into karstic limestone of Early Cretaceous age and reached its final depth at 1506 m (4940 ft) with lost circulation and total mud losses.

Oil shows during drilling were confirmed by five cores, distributed between 1316 and 1460 m (4318 and 4790 ft). They showed the presence of 140 m (460 ft) of an unusual oil reservoir, where the oil was trapped in vugs and fractures enlarged by a strong karstic dissolution. The oil-water contact (OWC) was found below the expected structural closure at 1440 m (4725 ft). A long duration test could not be performed because of bad weather conditions, and the productivity index (PI) of the formation, therefore, could not be definitively established. The oil recovered was 11° to 12° API.

Following the discovery, three delineation wells were drilled: Naselo Mare 1, and Rospo Mare 2 and 3. All of them found the same oil reservoir, but with an OWC rising westward, and with a productivity index of 0.05 m³/kPa/d (30 BOPD/psi). At the time,