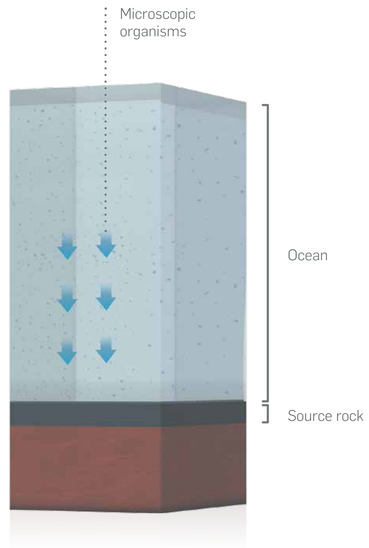
THE ORIGINS OF OIL

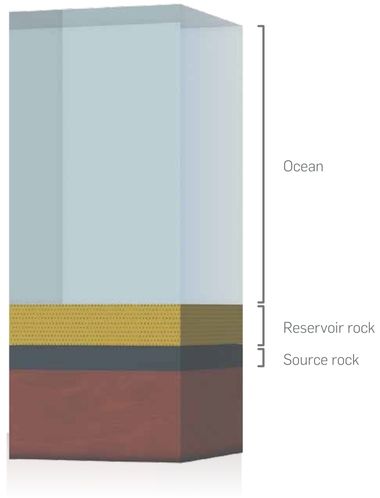
The exploration, development and production of crude oil and natural gas has become one of the main sources of growth for Cepsa. At the start of the 1990s, the Company discovered the RKF and Ourhoud oilfields in Algeria, which provided a great boost to its exploration and production activity. Cepsa currently operates in four continents and has a diverse portfolio of onshore, offshore, and deep offshore assets.

Through this infographic we explain the origins of oil, the main source of energy today.



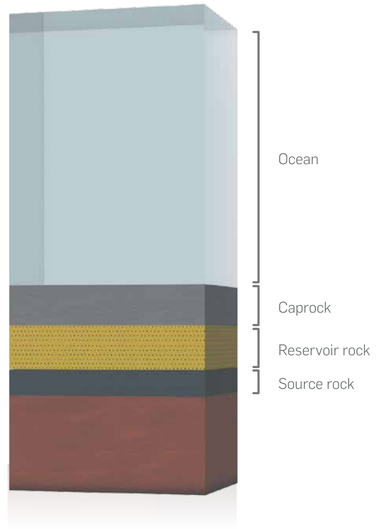
1 SOURCE ROCK

The source rock is a sedimentary rock, usually composed of black clay with a high concentration of organic matter through the remains of living organisms in the rock deposit including algae, fragments of land plants and more. The presence of a source rock is an essential requirement for the formation of hydrocarbons. If there is no source rock, there cannot be hydrocarbons either.



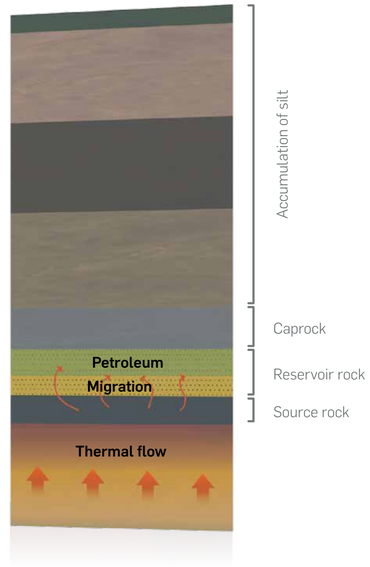
2 RESERVOIR ROCK

Hydrocarbons are found in porous rocks called reservoir rocks, which, like a sponge, absorb and release fluids. The most common types of reservoir rocks are sandstone and carbonate rocks. Reservoir rock is porous (the measure of the holes or pores there are between the grains of a rock), and permeable (liquid can flow through the pores of a rock).



3 CAPROCK

Caprock is an impermeable rock that impedes, like a barrier, any hydrocarbon moving up naturally to the surface.



4 GENERATION AND MIGRATION

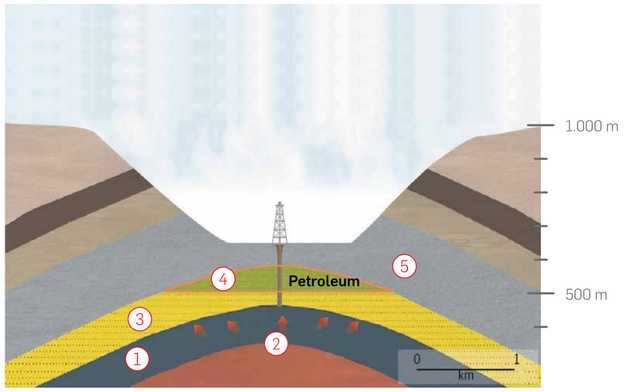
Hydrocarbons are formed by the thermic transformation of the organic matter in the source rock. This organic matter begins to transform into oil and gas when it is subjected to high temperatures and pressure. After being pushed out from the source rock, the oil or gas flows (migrates) through a porous rock (reservoir rock) into a geometric configuration known as a rock trap where it can accumulate. This is covered by the impermeable caprock which stops it from reaching the surface.

5 PETROLEUM SYSTEM

The exploration of hydrocarbons is principally based on geological and geophysical techniques. Geology and geophysics are essential sciences in this industry, and they are fundamental in predicting where potential sources of hydrocarbons may be located.

Using geological principles and sophisticated and costly geophysical techniques, explorers reconstruct the geological history of an area and determine where the elements and processes needed to produce an accumulation of hydrocarbons may be.

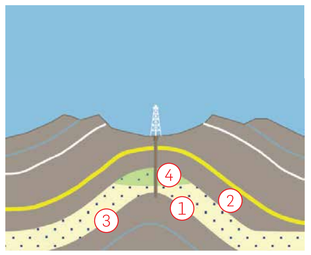
To do this, an explorer must determine the places where over time the five elements and essential geological processes for there to be an accumulation of hydrocarbons may be.



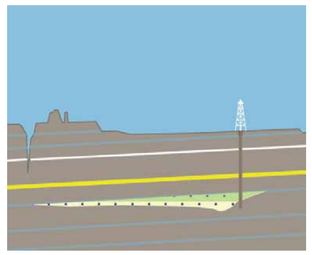
① Source rock ② Generation and migration ③ Reservoir rock ④ Trap ⑤ Caprock

6 TRAPS

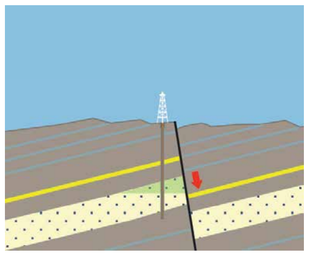
Traps are the geometric space in a porous, permeable rock (reservoir rock) where the hydrocarbons may be trapped. There are different types of trap. The most common are structural traps (anticline fold faults or traps associated with normal faults), and stratigraphic traps.



ANTICLINE



STRATIGRAPHIC



NORMAL FAULT

① Source rock ② Caprock ③ Reservoir rock ④ Trap