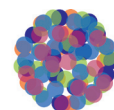


P2 PETROCHEMICALS

CRUDE OIL



**CHEMICAL
INDUSTRIES**
RESOURCE PACK

Introduction

Crude oil, or petroleum, remains an important raw material for many of the products we use daily, ranging from plastics to gasoline.

Where does crude oil come from?

Crude oil is formed from ancient microscopic plants and plankton that lived in the ocean and saltwater seas millions of years ago. The micro-organisms are buried in silt and sand when they die; over time sediment settles over them. As sediment layers build up, the mud is compressed and heated, eventually forming crude oil. The oil flows from its source and accumulates in more porous limestone or sandstone as a reservoir.

How is crude oil used?

Crude oil is a smelly, yellow-to-black liquid and is usually found in underground areas called reservoirs. Scientists and engineers explore a chosen area by studying rock samples from the earth. Measurements are taken and, if the site seems promising, drilling begins. Above the hole, a structure called a 'derrick' is built to house the tools and pipes that go into the well.

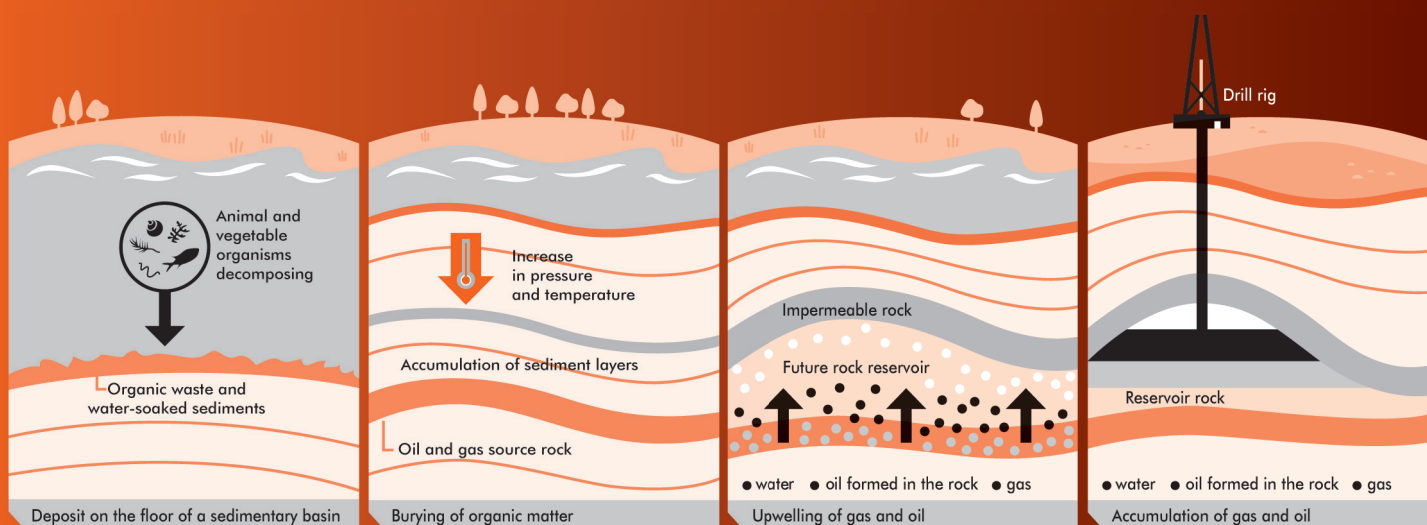
Crude oil



When finished, the drilled well will bring a steady flow of oil to the surface. The world's top five crude oil-producing countries are Saudi Arabia, Russia, the United States, Iran and China.

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How crude oil is formed



Source: www.black-tides.com

DID YOU KNOW?

The word "petroleum" means "rock oil" or "oil from the earth."

Deepwater Horizon oil spill

Location Gulf of Mexico near Mississippi River Delta

Date 20 April 2010 - 15 July 2010, well officially sealed on 19 September 2010

Cause Wellhead blowout

Casualties 17 injured, 11 dead

Spill characteristics

Volume up to 100 000 barrels per day

Area 6 500 to 180 000 km²

The oil slick as seen from space
by NASA's Terra Satellite on May 17, 2010



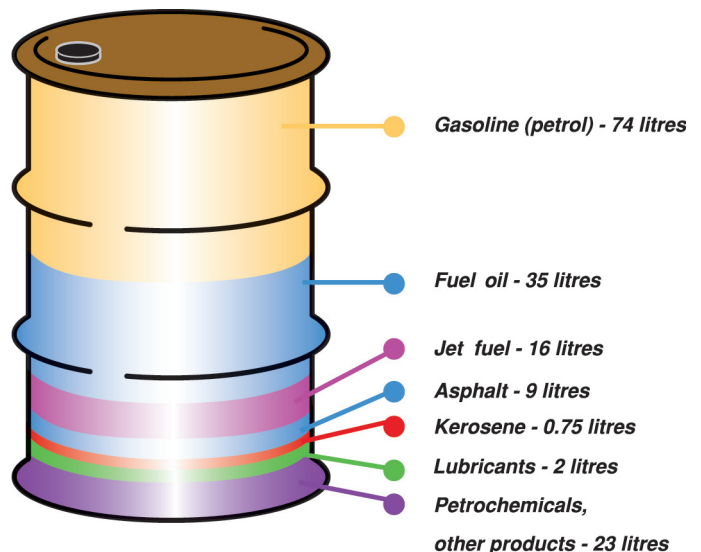
After crude oil is removed from the ground, it is sent to a refinery by pipeline, ship or barge. At the refinery, different parts of the crude oil are separated into useable petroleum products. Some of the products made from petroleum include: ink, crayons, bubblegum, dishwashing liquids, deodorant, eyeglasses, tyres, ammonia, and heart valves.

Oil and the environment

When petroleum products such as gasoline (used in cars), diesel fuel (used in trucks), and heating oil (used to heat homes) are burned as fuel, they give off carbon dioxide. Drilling for oil also has an impact on the environment. Companies use advanced technology and comply with government rules and regulations for safe drilling and petroleum production.

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Products obtained from a typical barrel of oil



Source: www.bp.com

Deepwater Horizon oil spill

The Deepwater Horizon oil spill was an oil spill in the Gulf of Mexico which flowed for three months in 2010. Although the well has been capped, the impact of the spill continues. It is the largest accidental marine oil spill in the history of the petroleum industry. The spill stemmed from a sea-floor oil gusher that resulted from the Deepwater Horizon drilling rig explosion on 20 April 2010. The explosion killed 11 platform workers and injured 17 others. On 15 July, the leak was stopped by capping the gushing wellhead. By this time about 4.9 million barrels (780×10³ m³) of crude oil had been released into the ocean. It was estimated that 53 000 barrels per day (8 400 m³/d) were escaping from the well just before it was capped. It is believed that the daily flow rate diminished over time, starting at about 62 000 barrels per day (9 900 m³/d) and decreasing as the reservoir of hydrocarbons feeding the gusher was gradually depleted. On 19

September the relief well process was successfully completed and the federal government declared the well "effectively dead".

The spill has caused extensive damage to marine and wildlife habitats as well as the Gulf's fishing and tourism industries. Skimmer ships, floating containment booms, anchored barriers, and sand-filled barricades along shorelines were used in an attempt to protect hundreds of miles of beaches, wetlands and estuaries from the spreading oil. Scientists have also reported immense underwater plumes of dissolved oil not visible at the surface. The U.S. Government has named BP as the responsible party, and officials have committed to holding the company accountable for all cleanup costs and other damage. After its own internal probe, BP admitted that it made mistakes which led to the Gulf of Mexico oil spill.

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