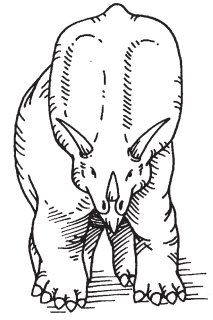


Where Does Oil Come From?



Have you ever heard the term *fossil fuel*? It means a source of energy that comes from once-living things. You know about such fossils as dinosaur bones. Those fossils are bones that over a long period of time turned to stone. Just as those bones turned to stone, other bones turned to oil. Oil is made of bones and tree trunks and shells and all sorts of other parts of organisms that lived thousands and even millions of years ago.

When living things die, they are broken down and covered over by dust, soil, or sand. As they are covered over by other layers of once-living things and by more layers of soil, sand, and rock, they get buried deeper and deeper below Earth's surface. These "sandwiches" of once-living things, sand, and soil are eventually subjected to very high pressure and to very high temperature. When the pressure is great enough, the sand and soil change into rock. And at just the right temperature, the once-living things change into a liquid called *oil* and a gas called *natural gas*.

After oil and gas form, other layers of rock continue to press down from above, causing still more pressure. This pressure causes the rock to go even deeper into the Earth. But this pressure on the oil and gas is like pushing a balloon under water; it just tends to pop back up again. The oil and gas move upward through cracks and holes in the rock. One kind of rock, called *reservoir rock*, contains many small holes, or pores. Oil and gas are often found in this porous rock. Finally, the oil and gas are stopped from moving upward by other, nonporous layers of rock. Then the oil and gas pool in a *trap*, where the oil may remain until it's discovered and the rock is drilled to extract it.

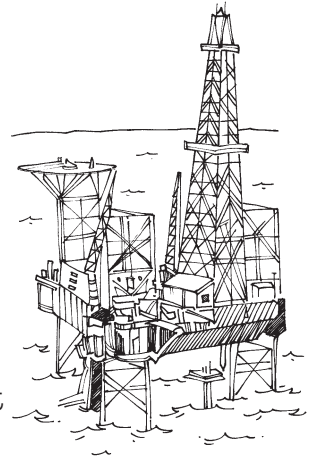
You may wonder how people find oil. In the past, oil was often found accidentally. There were many areas where oil traps lay close to the surface. In these areas, if someone dug a deep hole in the ground, the digger might reach the oil trap. Once a hole was made into the trap, gas and oil would shoot out and up into the air. Many oil wells in Texas were accidentally discovered in this way.

People use oil quickly, and much of the oil found in traps lying close the surface has been used up. Researchers must now find oil that lies deeper in the Earth. These oil and gas reserves are often found by identifying the type of rock in which they might be found. Scientists have discovered that different types of rock reflect sound in different ways. By thumping the Earth and then measuring the echo, they can find rock that might contain oil and gas.

Go on to the next page.

Where Does Oil Come From?, p. 2

As more and more oil is used up, scientists have begun looking beneath the ocean floor for oil traps. Since the ocean is so huge, there might be vast amounts of oil and gas buried under the water. But here it is difficult, expensive, and dangerous to remove the oil. Sometimes the oil is found in somewhat shallow water not far from the coast, and drilling platforms can be anchored to the ocean floor. When the oil is under deeper water, different types of drilling platforms operate while floating in the water. If the trap is below *very* deep ocean waters, it must be reached and removed by vessels called *drill ships*. In contrast, oil under land is reached by much simpler drills and is then pumped out of the ground. Another factor that makes drilling underwater more difficult and more expensive is that all the ocean sites must be reached either by ship or by helicopter.



 Directions

Answer these questions.

1. How do oil and gas form? Why are they called fossil fuels?

2. You have read that some oil traps on land shoot out oil and gas. What do you think might happen if an oil well deep under the ocean suddenly began to shoot out oil? How might it affect people working on the rig? How might it affect ocean life?

3. What do you think—is ocean drilling a good idea? Is it worth the dangers? Explain.

Where Does Oil Come From?

Answer Key

1. They form from once-living things buried deep underground. They are called fossil fuels because they form from things that lived millions of years ago.
2. It would be dangerous to people on the oil rig, and they would have to be rescued. Oil would collect in and on the water, which could cut off light and oxygen, killing many types of living things.
3. Answers will vary but should include a discussion of potential risks versus gains.

