



National
Qualifications
2023

X826/75/11

**Environmental Science
Supplementary source booklet**

TUESDAY, 30 MAY
9:00 AM – 11:30 AM

This booklet contains sources for use with question 9 in Section 2.

Supplementary sources of information

Source 1 is a sketch map showing an oil field in the North Sea.

Source 2 gives information about the air link to the oil platforms.

Source 3 is a diagram of an oil platform.

Source 4 is a diagram showing drilling oil wells into an oilfield.

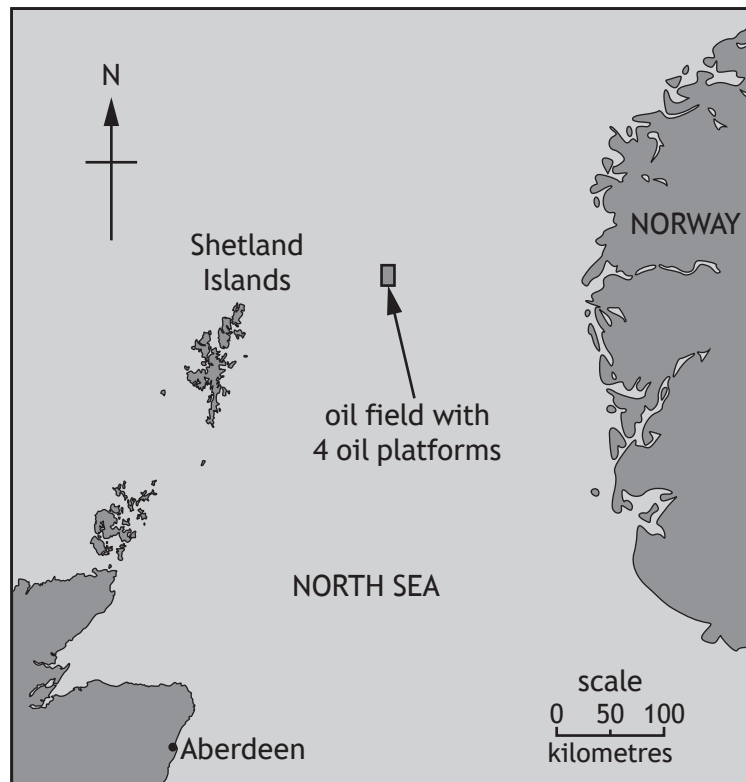
Source 5 describes methods for removing the platform legs.

Source 6 gives opinions about removing the platform legs.



* X 8 2 6 7 5 1 1 *

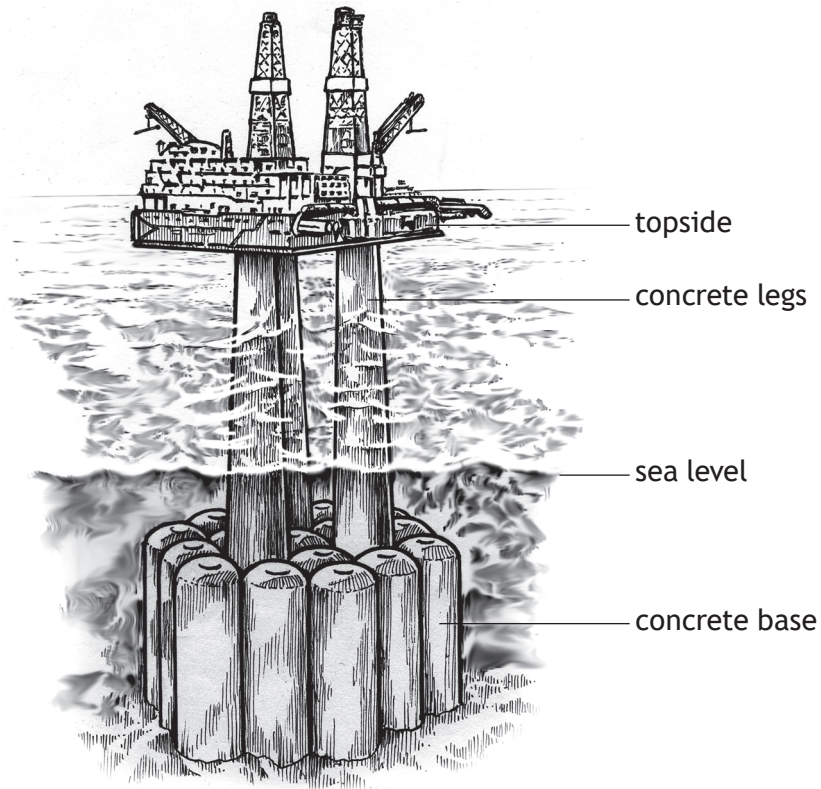
Source 1 Sketch map showing an oil field in the North Sea.



Source 2 Air link to the oil platforms.

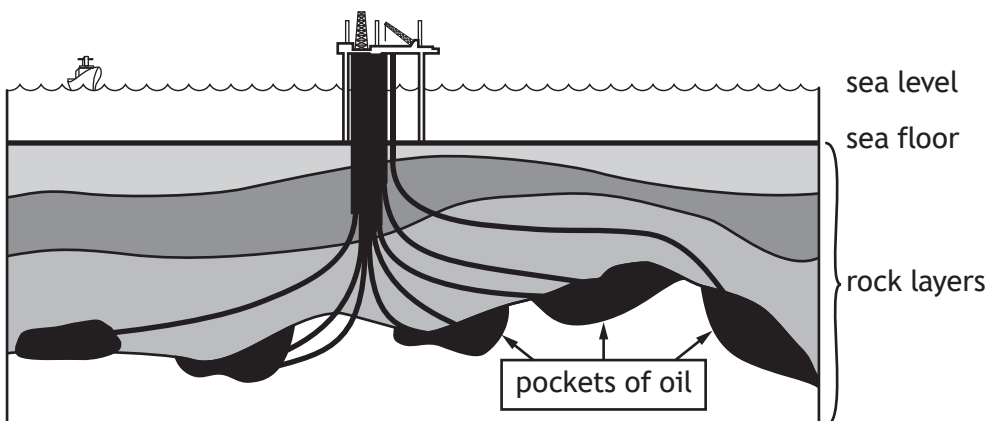
Helicopters operating from Aberdeen are able to fly for 450 km without refuelling.
The cost of a one-way trip in a helicopter is £500 per person for a single flight to the oil platforms.
Helicopters will not fly in bad weather if the conditions are considered unsafe.

Source 3 Oil platform.



Source 4 Drilling oil wells into an oilfield.

Oil platforms are capable of directional drilling. This allows them to drill many wells from the one platform allowing them to access many pockets of oil from an oilfield.



[Turn over

Source 5 Methods for removing the platform legs.

Methods for removing platform legs are costly and the costs will be largely passed on to the British taxpayer. There are two methods being considered:

1. Mechanical — uses abrasive water jets, sand cutters, and diamond saws. This is slow, requires more workers (including divers), may result in more injuries, and has higher costs.
2. Explosive — uses explosives attached to the platform at a depth 5–8 metres below the seabed. Results in shockwaves that may disrupt, damage, or kill marine life living on or around the platform structure.

Source 6 Opinions about removing the platform legs.

Some environmentalists take the approach that oil companies have a responsibility to return the habitat back to its natural state.

One leading UK environmental charity stated: ‘Having made hundreds of millions of pounds in profits over the past few decades, oil companies in the North Sea have a legal, as well as a moral, obligation to clean up their mess.’

However, a team of marine ecologists has studied reef creatures such as cold-water corals, barnacles, mussels, and sea anemones at sixty-six North Sea platforms. They concluded that ‘platforms are creating new ecosystems.’ Some North Sea platforms act like ‘small offshore islands and create new breeding grounds for marine creatures.’ They support marine communities that need hard surfaces and attract predators such as fish, mammals, and seabirds.

[END OF SUPPLEMENTARY SOURCE BOOKLET]