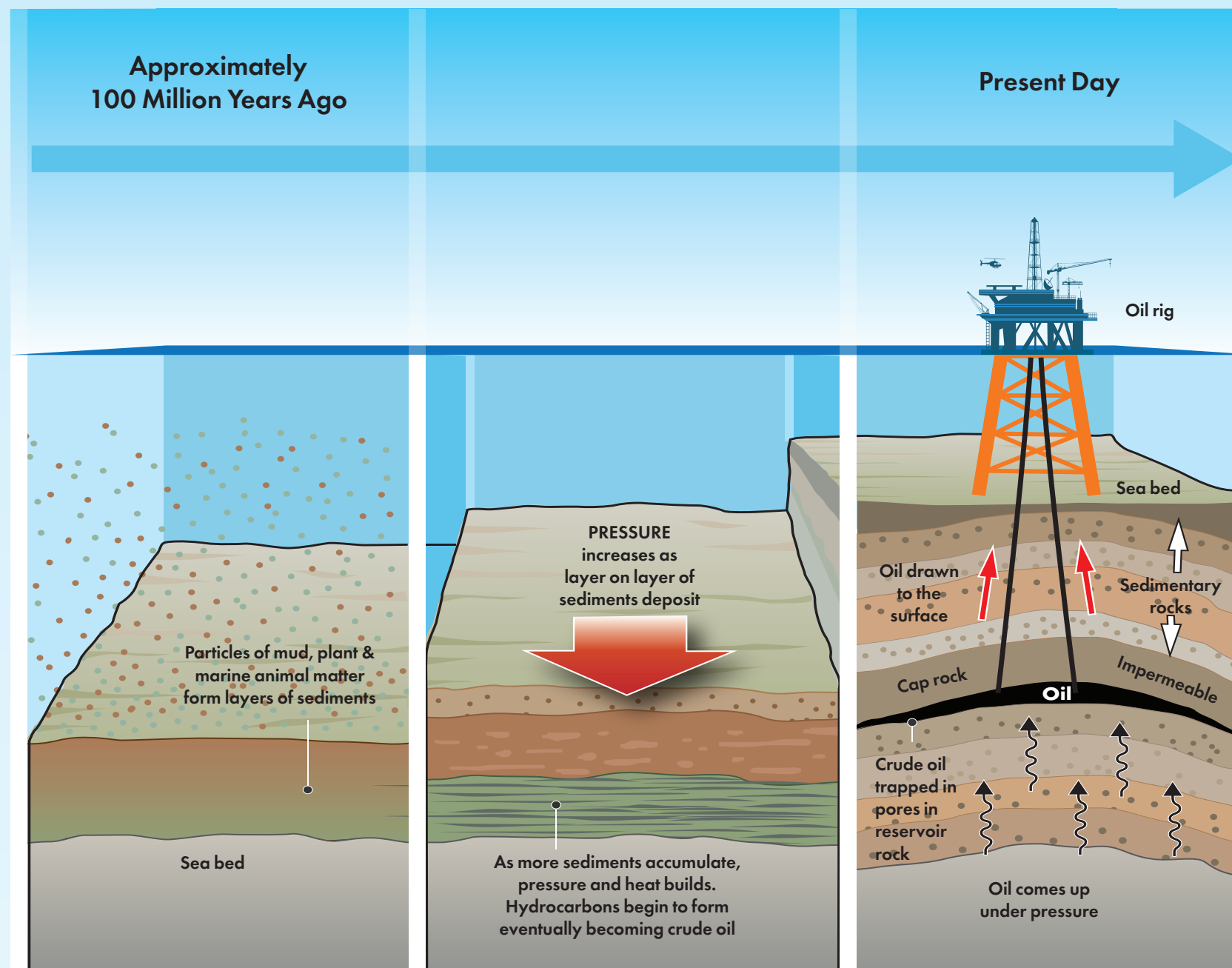


Oil – Formation to Production

What is Oil?

- ▶ Crude oil is a mixture of hydrocarbons that formed from plants and animals that lived millions of years ago.
- ▶ Over the years, the remains were covered by layers of sediment.
- ▶ Heat and pressure from these layers helped the remains turn into crude oil.
- ▶ Crude oil exists in liquid form in underground pools or reservoirs, in tiny spaces within sedimentary rocks.

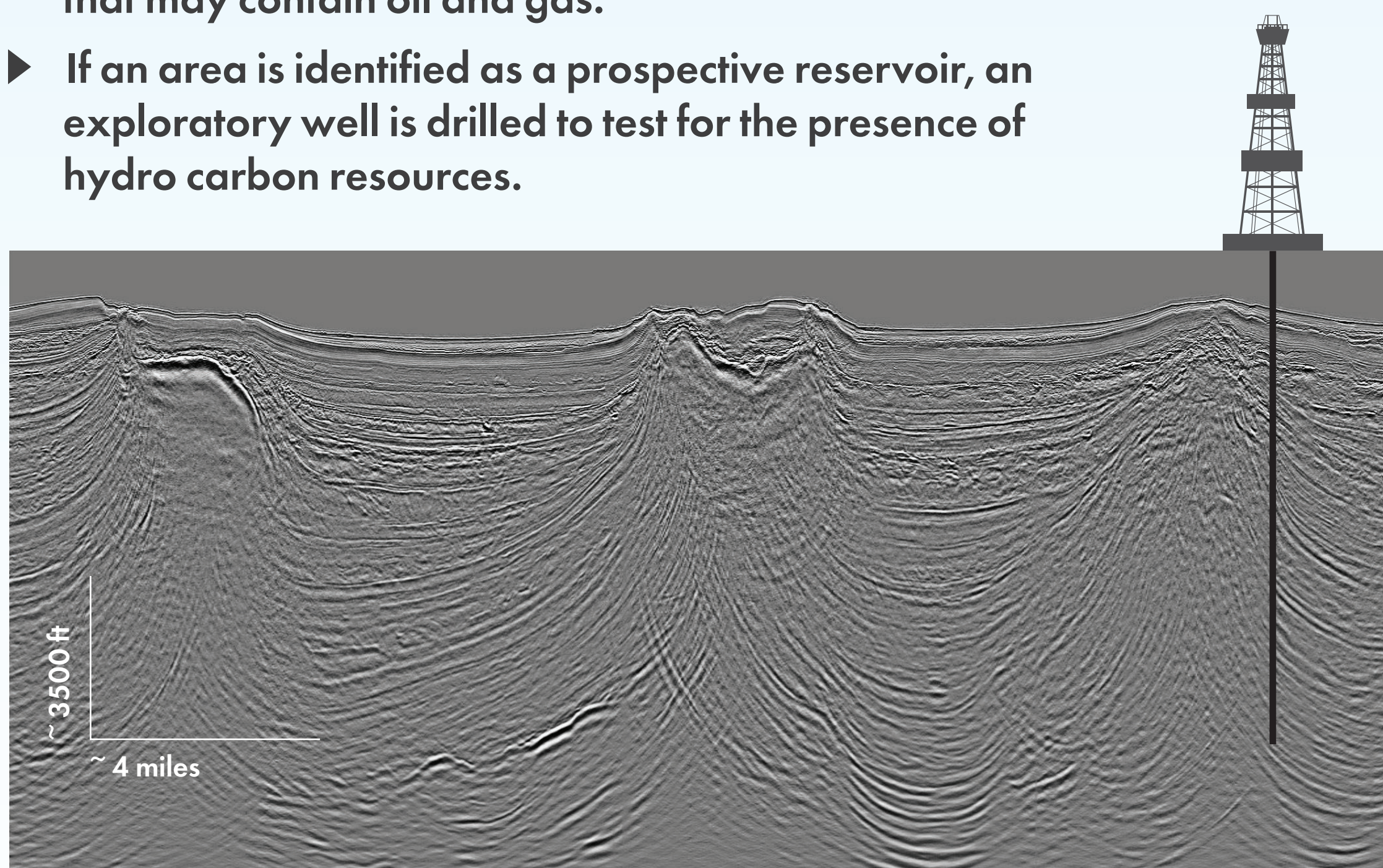


How is it Formed?

- ▶ After the oil forms, it rises from a source rock through fractures in the subsurface due to the relatively low density of oil.
- ▶ The rising oil then migrates to a reservoir rock, that contains tiny spaces called pores.
- ▶ The oil remains in a reservoir rock when there is an overlying cap rock through which oil cannot pass.

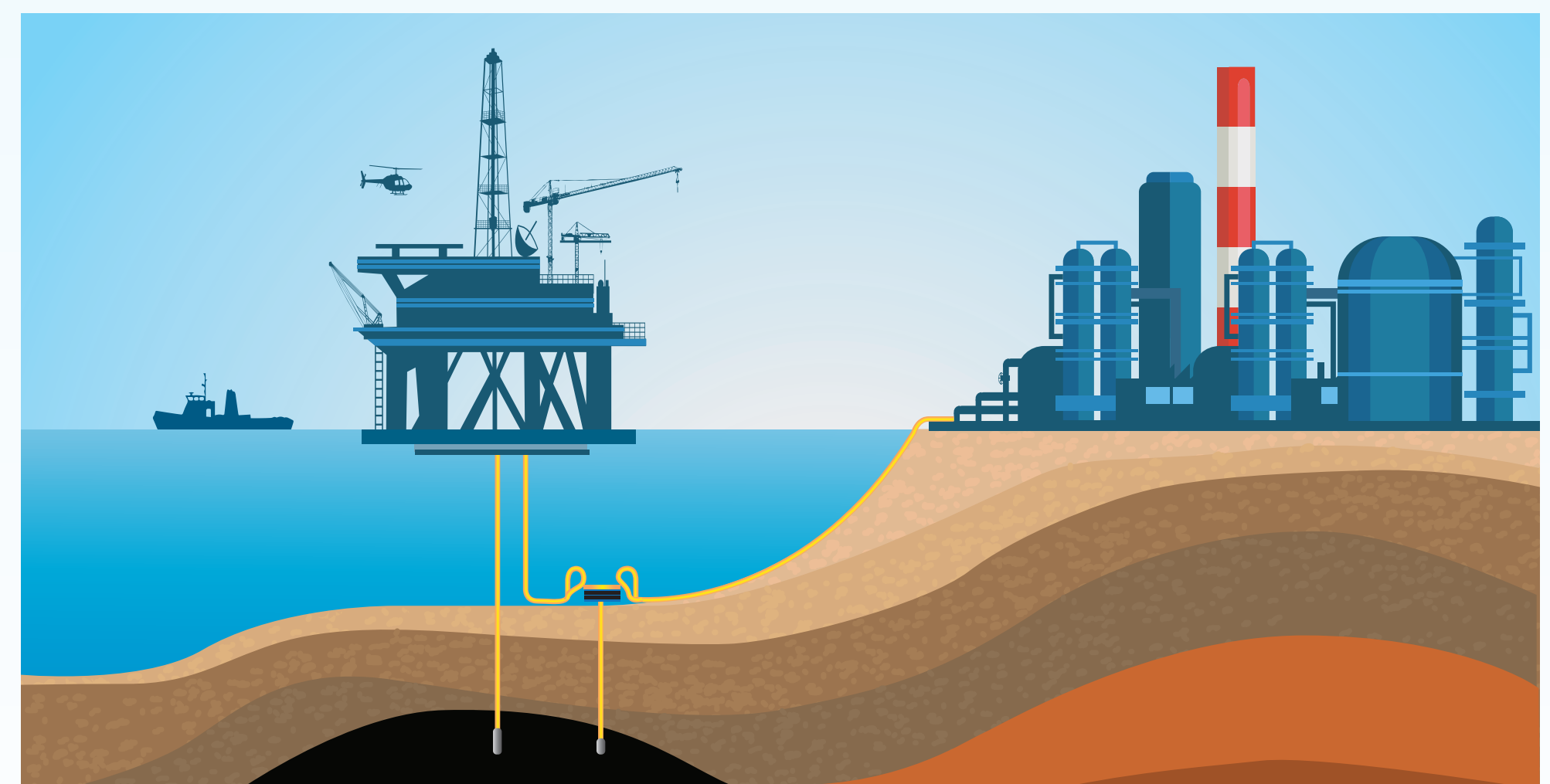
How is Oil Found?

- ▶ Hydrocarbon resources are found using exploration techniques such as seismic imaging.
- ▶ Seismic imaging assists in identifying the potential areas that may contain oil and gas.
- ▶ If an area is identified as a prospective reservoir, an exploratory well is drilled to test for the presence of hydro carbon resources.



How is Oil Produced?

- ▶ Once an oil pool is discovered, delineation wells are drilled to characterize the size of the accumulation.
- ▶ Production facilities are then fabricated and installed to extract the oil.
- ▶ Different types of facilities exist, based on water depths, to safely produce and transport the oil to shore.



Example of Activities and Timeline for a Deepwater Offshore Project

- ▶ The lifecycle of offshore oil and gas activities is a multi-year process consisting of various phases.
- ▶ Once production begins it may continue for several decades.
- ▶ The timing of the activities varies by region.
- ▶ Mature areas like the Gulf of Mexico take relatively shorter time; frontier areas like the Arctic could take a longer time.

