

Greenland Pioneers



13.09.2012 Acquisition of new 2D seismic and drilling of shallow wells for core samples are two of the activities which are being carried out in the Qamut exploration license on West Greenland this summer. There is only a two-month weather window, due to ice and environmental concerns.

In December 2010, ConocoPhillips was granted operatorship of a 10,000 km² block in Baffin Bay on West Greenland. This is the northernmost concession in Baffin Bay, and was a top priority in ConocoPhillips' application. With the award comes an obligation to carry out an exploration program over four years.

"Environmental studies and reprocessing of the 2D seismic have already been carried out," says Roy Leadholm, manager, new ventures exploration, who heads the work on Greenland. New seismic data is being acquired and the plan is to have 3,000 kilometers completed by the end of September. So far the seismic program has proven to be a safe and efficient program with little downtime related to ice.

"We are also working as part of a consortium to drill a series of stratigraphic wells using a scientific drilling vessel, the *Joides Explorer*. After processing the seismic data and integrating age dating and lithologic information from the coring operation, we will update our interpretation. By the end of 2014 we will decide whether we will stop operations, or continue into the next license phase which would involve drilling a firm exploration well."

Ice-free window

Baffin Bay usually becomes ice-free some time in July, but seismic and drilling operations are only possible during an ice-free eight-week window in August and September. This year has been largely ice-free, but there is a steady stream of icebergs drifting southwards. The seismic vessel has been able to steer clear of icebergs. Satellite images, specialized ice-radar and visual inspections have been used to spot the ice. Data can be acquired in a regular grid pattern, but there are daily changes to the operation plan depending on ice conditions.

The *Joides Explorer* drilling vessel has a positioning system and tailored drilling equipment which enables the ship to move 30 meters in any direction. When this proves insufficient, the crew can detach the drill string and move the vessel to avoid impact. The drilling ship is operating further north than the seismic crew and has experienced more ice related interruptions, but is still managing to continue operations.

Encouraging aspects

There is little doubt there is oil on Greenland. The question is rather whether it will be found in good quality reservoirs and in sufficient volumes to be commercially viable. Other players have proved hydrocarbon shows further south, but the reservoir quality and volumes were insufficient.

"One of the most encouraging aspects about West Greenland exploration is that there is abundant natural oil seepage from the subsurface in the area. These seeps have been found onshore and are also recognized offshore through satellite monitoring. Also, the sandstone reservoirs we are exploring for are well developed in outcrops that have been mapped on Disko Island, further south," says Leadholm.

The exploration on Greenland is headed from the company's office in Tananger. The Greenland team also has several global resources at their disposal from the corporate pool of arctic experts.