

Out in the Cold

Shell's summer of setbacks

Introduction

After six years of planning to drill in the Alaskan Arctic, Shell finally moved into the region to begin drilling for oil this summer. Shell has, to date, spent \$4.5 billion on its planned Alaskan Arctic offshore drilling¹, including £2.2 billion securing leases to drill in the Chukchi and Beaufort seas, areas identified by the US Arctic Research Commission as being of “*heightened ecological significance*.”²

Shell planned to enter the Arctic in July to drill 5 wells into hydrocarbon deposits and exit on 24th September (Chukchi) and 31st October (Beaufort)³ to ensure sufficient time for oil spill response, should a spill occur, before the winter sea ice returned. In May, at Shell's AGM, Chairman Jorma Ollila assured investors of Shell's capabilities in Arctic regions, stating that “*In fact Shell has already drilled safely in the Chukchi and Beaufort Seas*,”⁴ although this statement actually referred to test wells drilled in the late 1980s.

Despite this backdrop of confidence, Shell endured a summer of successive setbacks and eventually on 17th September, after vital safety equipment failed during testing, the US government refused to allow the company permission to drill for oil in 2012, only permitting it to complete shallow ‘top-holes’.⁵

This briefing gives an overview of the various setbacks faced by Shell. It also examines the nature of the testing carried out on essential well capping equipment. It suggests some key questions for investors to ask Shell in the light of this year's Arctic experience.

Setbacks

Arctic weather conditions

Sea ice caused major setbacks for the company this drilling season. In early July, ice in the Chukchi sea was still too thick to allow ship traffic⁶, eating into the already narrow operational window for this year.

In September, Shell undertook preparatory drilling after being prohibited from oil-depth drilling due to lack of safety certification for its oil spill containment barge, the Arctic Challenger. However, after only 36 hours drilling operations had to be suspended due to a 30-mile by 12-mile block of ice being blown towards the drill site⁷.

Weather conditions have also delayed the departure of a drilling rig from the region, as reported in November⁸. The offloading of waste water onto another vessel before the rig could unmoor was disrupted by rough seas, as was vessel-to-vessel refueling, with unmooring itself further hampered by cold and ice.

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Emissions permits

On 28th June, Shell asked the Environmental Protection Agency (EPA) for a last minute revision of its air permission permits⁹. It conceded that it had not been able to meet the requirements for nitrogen oxide and ammonia despite having spent at least \$30 million on state-of-the-art technology for the generators in question¹⁰.

Drilling ship slips anchor

On 14th July, the drill ship Noble Discoverer came adrift from its moorings in the sheltered waters of Dutch Harbour, Alaska. News reports varied on how close to the shore it came, with Shell's spokesperson Curtis Smith stating that it *"stopped very near the coast"*¹¹ and the harbour captain Kristjan Laxfoss saying *"There's no question it hit the beach...that ship was not coming any closer. It was on the beach."*¹²

Just a few days ago as the Noble Discoverer re-entered Dutch Harbour, the vessel briefly caught fire.¹³ After *"maintenance issues"*¹⁴ it appears its engine backfired and caused a blaze in the smokestack that was eventually brought under control by the crew.

Inadequate spill response equipment

Arctic Challenger oil spill containment barge: failure to achieve certification

In mid-July it was reported that Shell's oil spill barge the Arctic Challenger was still undergoing modifications in Bellingham, Washington in an effort to get Coast Guard approval for seaworthiness.¹⁵ The barge would capture spilled oil as part of Shell's spill response planning, and without it Shell was only allowed to complete shallow 'top-hole' drilling that stops thousands of feet above oil-bearing zones.

A number of issues beset the barge, including electrical problems¹⁶ and hydraulic fluid discharges¹⁷. By late August, the Coast Guard said about 400 inspection and plan review items remained to be satisfied¹⁸, and Shell was seeking guidance from the Department of the Interior on what site preparation could take place without the Arctic Challenger present¹⁹.

In October, the barge was finally given regulatory approval. However this was too late to allow oil drilling to commence in 2012²⁰ as all operations had to cease in the Beaufort Sea by 31st October and the Chukchi Sea deadline had already passed.

It was originally intended that the Arctic Challenger would be evaluated *"using standards for floating production installations that are anchored in one place for years at a time and must be strong enough to withstand hurricanes and 100-year storms."*²¹ In July it was reported that Shell had successfully requested the Coast Guard to instead evaluate the vessel under standards used for 'mobile offshore drilling units' *"with less-stringent requirements for riding out storms, since the barge would move to escape approaching bad weather or respond to an oil spill."*²² By way of example, under the MODU Standards Shell has to demonstrate the ship is capable of withstanding a 10-year storm, instead of the once-a-century event.

“They have not been able to get it done, if they had gotten it done, they may already be up here today.”

Ken Salazar, US Secretary of the Interior ²³

Concerns over testing of well-capping equipment

On 17th September, it was announced that Shell would be abandoning its attempts to drill for oil (as opposed to exploratory ‘top-holes’) in the Arctic this year due to damage to vital spill equipment.

The spill response system aboard the Arctic Challenger barge includes a ‘containment dome’ or ‘capping stack’²⁴ that, in the event of a spill, would be hovered over a compromised well and funnel oil, natural gas and water to a surface vessel.²⁵ The capping stack is required by US regulators before drilling to full target depths is allowed.²⁶ It was damaged during testing, though the precise cause was unclear, with Shell stating that it would investigate whether the problem involved the dome’s design or the testing process.²⁷ Marvin E. Odum, President of Shell Oil, stated that *“It’s a disappointment that this particular system is not ready yet.”*²⁸

Concern had previously been expressed that Shell had no plans to test the well capping stack in icy water despite Peter Voser’s acknowledgement at the 2012 AGM that the company could not guarantee that ice would not be present at the drilling sites.

However, over the course of the summer and prior to the equipment failing in tests, further concerns were being raised about the adequacy of the testing approved by the Bureau of Safety & Environmental Enforcement (BSEE), an arm of the Department of the Interior.

Following a Freedom of Information Act (FOIA) request made by it, the environmental NGO the Public Employees for Environmental Responsibility (PEER) claimed in September that the capping stack *“underwent only partial and cursory testing with no independent analysis of the results”*.²⁹ In response to a request for all *“records pertaining to results of Shell oil company’s testing of its well-head capping stack that would be used in response to a well-head blowout in its Arctic drilling program”*, the BSEE produced only a single page of notes.³⁰

Inadequate testing of capping stack

- Testing took place over less than two hours in Puget Sound on June 25th and 26th and involved only two BSEE officials and Shell.
- The capping stack was lowered to a depth of 200 feet but was not attached to a simulated wellhead and blowout preventer as would be necessary in a real-world blowout.
- Pressure tests were carried out on dry land, and were run for minutes not hours, despite the fact that any capping system would need to withstand hours, days or weeks of pressure in icy conditions.
- Testing initially lacked a ‘low pressure test’, though Shell stated it would perform this test at a later date.³¹

Political issues

On 20th September, the UK parliamentary Environmental Audit Committee called for a moratorium on oil and gas drilling in the Arctic until:

- a pan-Arctic oil spill response standard is in place
- a stricter financial liability regime for oil and gas operations is introduced that requires companies to prove that they can meet the costs of cleaning up
- an oil and gas industry group is set up to peer-review companies’ spill response plans and operating practices, reporting publicly
- further independent research and testing on oil spill response techniques in Arctic conditions is conducted.³²

Key questions for investors

- Does Shell have any plans to conduct more rigorous testing of its spill response equipment (particularly well containment devices) in Arctic conditions and simulating real-life conditions, and to make detailed disclosure of the conditions and results of these tests?
- Why was the company seemingly unaware that the Arctic Challenger was unfit for certification by the Coast Guard given that such certification was a pre-condition to Shell's plans for 2012?
- What level of oversight did Shell's board of directors exercise over the company's 2012 Alaskan Arctic plans and has this oversight increased in light of this summer's events?
- Will the company carry out an analysis of the environmental and financial worst-case scenario and make it available publicly?
- Has the company carried out a spill response gap analysis of its prospects in the Beaufort and Chukchi seas? If so, will the company make it available publicly? Without such an analysis it is not possible to accurately assess the risk posed to Shell by an oil spill in its Arctic operations.

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The opinions expressed in this publication are based on the documents specified in the end notes. We encourage readers to read those documents.

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