

TGS NOPEC Geophysical Company ASA, Petroleum GeoServices and Multi Klient Invest (TGS/PGS/MKI) Northeastern Canada 2D Seismic Exploration Survey.

-National Energy Board-

Addendum to November/December 2012 Community Engagement Report

After the meeting with the Pond Inlet Hamlet and Hunters and Trappers Organization, a member of the community informed the TGS-NOPEC representative that he had witnessed a large number of whales, seals and fish leaving Baffin Bay, passing Pond Inlet, on their way west in August 2012. This individual asked the TGS-NOPEC representative if he knew what would cause so many marine mammals and fish to leave Baffin Bay.

In response to this question, Zig Doborzynski, TGS-NOPEC representative, researched seismic survey and earthquake activity in Baffin Bay around August 2012 and provided the following information to the Pond Inlet Hamlet to forward on to the individual:

- No seismic survey occurred on the Canadian side of Baffin Bay or Davis Strait in the summer of 2012 (NEB 2012a; NEB 2012b)
- There was a seismic survey in the Beaufort Sea (2000km west of Pond Inlet). As sound intensity decreases with increasing distance, sound produced in the Beaufort Sea from a seismic survey would be virtually undetectable when it reached Pond Inlet. Therefore, the Beaufort Sea seismic survey is not the cause of the observation (NEB 2012a; NEB 2012b).
- On the Greenland side of Baffin Bay, four seismic surveys were completed in the summer of 2012 (Uulex, 2012):
 - Qamut license block: seismic survey started after August 17, 2012. This is after whales, seals and fish were seen leaving Baffin Bay
 - Tooq license block: survey area is closest to Greenland and furthest from Pond Inlet (~600km). Vessel arrived in early August, but surveying was delayed as the size and output of the seismic source was reduced
 - Anu and Napu license blocks: Seismic survey (one in each block) was completed from mid-July to mid-October 2012. These two licenses are between 100km and 180km off the Greenland coast and 500km and 420km from Pond Inlet. The sound pressure that would have reached Pond Inlet would have been equivalent to a whisper¹. If a whisper could affect the behaviour of whales and seals, then there would have been a large migration of whales through Pond Inlet throughout the summer. Since this was not

¹ At a distance of 300km, the sound pressure from a 220dB seismic source would be 110.5dB re 1µPa/Hz in water or 48 dB re 20 µPa/Hz in the air, equal to a whisper. A chart describing the sound pressure in water and air and related conditions and meanings from Ingebret Gausland's (2000) paper "Impact of seismic surveys on marine life" was provided to the individual.

observed, it is likely that the seismic survey off Greenland did not have a significant impact on whales, seals and fish.

- Two earthquakes happened near Pond Inlet in the summer of 2012 (NRCan, 2012):
 - July 23, 2012 on Baffin Island between Clyde River and Pond Inlet
 - August 11, 2012 under Baffin Bay, 136km southeast of Pond Inlet. This earthquake measured 3.0 on the Richter scale. This is the result of an enormous amount of rock moving, which produced a pressure wave that could be felt by marine species which could cause them to flee the area.

References

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