Submission re Western Newfoundland SEA

From: Antony Berger [redacted]

Sent: Monday, December 10, 2012 12:05 PM
To: [redacted] Young, Elizabeth

Subject: Submission re Western Newfoundland SEA

[redacted]

December 10, 2012

TO:

1) C-NLOPB (Elizabeth Young, Environmental Assessment Officer, 5th Floor, TD Place, 140 Water Street, St. John's NL A1C 6H6)

2) AMEC (Steve Bonnell, 133 Crosbie Road, St. John's NL A1B 4A5)

FROM: Dr. Antony R. Berger, Ph.D.

I am responding to the call for comments on the Western Newfoundland SEA and on the general issue of oil and gas exploration in this area. As a retired earth scientist and long-time seasonal resident of Bonne Bay, I have a strong interest in the current exploration activities along the West Coast, and especially in the matter of fracking. In Nova Scotia, where I live when not in Newfoundland, there is much discussion of and opposition to hydraulic fracturing, and the provincial government has decided to take another year or two to consider the matter thoroughly before deciding whether to permit fracking here. I have five points to raise.

1) The most important requirement for any new project involving fracking is that the area to be explored (and potentially developed) should be thoroughly studied in advance of approval being given, and before drilling begins. An obvious concern is that exploration and production activities could contaminate water supplies, surface ponds, rivers and wetlands, and their ecosystems. Only when good background data are available will a temporal and spatial link with exploration be clear. Many of the disputes exposed in the film "Gasland" could have been resolved had good baseline data been available.

2) There are many ways for fracking fluids and released gases to move towards the surface and cause problems for shallow groundwater supplies. Fracking and other fluids can migrate to the surface along fractures, faults and shear zones that extend upwards to the surface from considerable depths. There are numerous onshore and offshore fractures and faults in the rocks along the West

Coast. Because such pathways are commonly far from vertical, migrating fluids may reach the near-surface some distance from the rocks being fracked. For example, a recent study of the gas-bearing Marcellus shale of Pennsylvania showed that methane originating from depths greater than 1000 m contaminated wells tapping shallow aquifers (Osborn et al, 2011, Proc. National Academy of Sciences, volume 108, number 20).

3) It is essential that all existing wells in the area are monitored for water quality. This involves identifying and tracking over at least some months a wide range of metals, non-metals, gases and organic compounds. The monitoring should extend over and beyond the entire area beneath which fracking may occur. To identify possible leakage of fracking fluids into surface and near-surface waters, it is also advisable to identify related changes in nearby rivers, streams and ponds. Changes cannot be identified when earlier background conditions are unknown.

4) There is always the possibility of spills or leakage from containment ponds where waste liquids are stored. Water, sand and other “ingredients” used in fracking be safely recycled or disposed of, for example by re-injecting into the sub-surface. The recent outcry in NS over the dumping of fracking fluids into the Minas Basin, should be a warning to Newfoundland. Chemicals used in the fracking process need to be very closely monitored, and why they are being used explained publicly in clear and succinct terms. Shoal Point Energy is to be commended for offering to make public the chemicals to be used in any fracking activities, but there is also a need to know how harmful these chemicals might be when in contact with fish and other marine and terrestrial organisms.

5) If fracking is to be used, Government must accept the responsibility of identifying any changes to the local and regional hydrology. Requiring the exploration or production company involved to collect the baseline data itself and to monitor any changes occurring after drilling and fracking commence, is likely to raise suspicions among the concerned public. A responsible government should be able to assure a sceptical public that it has done the proper background work and that it will continue to monitor the situation directly, not pass the responsibility to the private sector.

Yours truly

Antony R. Berger, Ph.D.