

Nova Scotia Environment  
Western Region  
136 Exhibition Street  
Kentville, NS B4N 4E5

Attn: Katherine MacLeod

Re: Scotian Materials Limited Proposed Quarry, PID 00505941  
Perrin Drive, Goffs, Halifax County, NS

April 18, 2016

Ms. MacLeod

Today I am writing to you to muster some clarification on the blasting intended at the proposed quarry.

We have spent many hours talking to and researching aspects of the regulatory bodies in the Natural Gas Pipeline industry, and trying to find perspective on the proponent's blasting plans less than 200 m from a 12 inch high pressure natural gas pipeline. In communications with the NSUARB and NEB as well as Natural Resources Canada, it has been made clear that the pipeline in NS is so new that there are gaps, and there are always new issues to consider that have never been in play previously in other proposals. I would suggest this quarry application is one such proposal that exposes new issues.

While we have spoken to the National Energy Board, they have limitations within their Act and within their jurisdiction over a proposed operation outside of the Pipeline itself. The NEB Regulations has only one reference to blasting, requiring a minimum distance of 30 m. However, that is in a construction scenario, a one off blast, a small blast, to move rock for a building, for example. It is by no means referring to the ongoing several years' long massive blasting multiple times per year intended in a quarry. The distances required by the NEB are fairly minimal as the depth and size of the blast would be minimal, with movement of rock being the goal. I would like to add to no homeowner in the area of the pipeline could blast to build their homes. Some were not even allowed to dig. They were left with breaking rock or over filling as their only options. We are talking about homes 128 m or more away from the pipeline. So the proponent's acquaintance manages the pipeline and he is allowing this based on a verbal discussion, while they refused blasting for homes (which would have been well within the distances allowed by the NEB). This is quite consistent in everything we have experienced to date in this quarry situation.

Maritimes and NorthEast has indicated they will have no problem signing a waiver, based on the 30 m clearance. This is not sufficient. Both Maritimes and NorthEast and Spectra Energy have stated they have been given a verbal overview of the blast plan. Verbal is not sufficient.

In researching the normal practices and safety precautions in place for pipelines across Canada, we found the Canada Oil and Gas Operations Act. This would be the most concise regulatory legislation for pipelines. The Canada Oil and Gas Operations Act, Geophysical Operations Regulations refers to distances required:

### **Seismic Energy Sources**

**17 (1)** Every operator who is conducting an onshore geophysical operation shall, when determining the location for a seismic energy source, ensure that the seismic energy source

- **(a)** is located so that, when the energy source is activated, no damage is caused to any wells, mines, pipelines, buried utilities, buildings or dams;
- **(b)** is placed at least 2 m from any driveway, gateway or buried telephone or other communication line;

- **(c)** where the energy source is a charge comprised of explosives, is placed
  - **(i)** where the quantity of explosives being used for the charge is set out in column I of an item of Schedule I, at least the distance set out in column II of that item from any oil or gas well or the centre line of any oil or gas pipeline, and...

I have included Schedule I below for you to review:

**SCHEDULE I**

(Paragraph 17(1)(c))

**MINIMUM DISTANCE BETWEEN A CHARGE AND ANY OIL OR GAS WELL OR THE CENTRE LINE OF ANY OIL OR GAS PIPELINE**

Column I		Column II
Item	Net Weight of Explosive (kg)	Distance (m)
1	not more than 2	32
2	more than 2 but not more than 4	45
3	more than 4 but not more than 6	55
4	more than 6 but not more than 8	64
5	more than 8 but not more than 10	70
6	more than 10 but not more than 20	100
7	more than 20 but not more than 40	142
8	more than 40 but not more than 100	225
9	more than 100	500

A minimum setback for blasting more than 100 kg is 500m.

The blast plan provided by the proponent refers to weights of max weight of 75kg x 121 holes (for smaller blasts in establishing a quarry face), and 213 kgs x 102 holes for production, which is a range of explosive weight totalling 9,075 – 21,726 kgs per blast event. We checked with a member of the mining association and we were told the average use of explosives is 0.35 kgs/ton of aggregate. As per the proponent's blast plan they intend to blast between 20,000 and 50,000 tons per blast. That creates a weight range of 7,000 – 17,500 kgs of explosives using industry standards. Based on the incredibly large volume of explosives the proponent is suggesting will be used compared to industry standards, I would like to point out they must be intending to produce much higher volumes than indicated (The proponent's volume of explosives indicate aggregate production volumes of 25,930 – 62,074 tons per blast). No matter which way we look at their intent, they will use between 7,000 and 21,726 kgs of explosives per blast occurrence. That is quite obviously exponentially more than 100 kgs. While we do realize that the Oil and Gas Operations Regulations are referring to the oil and gas industry rather than quarrying, we have sincere trepidation about the logic of this being unsafe in any other industry and yet being overlooked in this instance. The pipeline, according to the proponent is only 190m away from the quarry site. The furthest they could physically ever blast from the pipeline based on their 315 m distance from the 102 Highway is 452 m.

So, I would ask, if the Oil and Gas Industry is essentially prohibiting this activity, within the industry itself, where the expertise and usual practice would enable clear and consistent judgement, why? Why would a novice quarry proponent, who has never operated a quarry in his life, never blasted in a quarry in his life, never worked in a quarry in his life, nor blasted next to a pipeline in his life, be permitted to do so 190 metres away from a pipeline using these volumes of explosives that are many thousands times greater than those prohibited by the industry? Why would you not assess this situation more thoroughly, to ensure the proposal is even rational? So far it is not sound, it cannot be change in enough ways to make it sound, and to the public it exposes a propensity to be dismissive of common sense, which leads us further toward fearing the worst case scenario.

I have written to you previously about the Pit and Quarry Guidelines:

“According to the Nova Scotia Pit and Quarry Guidelines, VIII. BLASTING (1)(a) No person responsible for the operation of a quarry shall permit any blasting on site to exceed the following limits: Ground Vibration 0.5 in./sec. (12.5 mm/s) Peak Particle Velocity Measured below grade or less than 1 m above grade in any part of the nearest structure not located on the property where blasting occurs, or other locations as directed by the Minister or Administrator. The proponent’s application shows a peak velocity at the MNE Pipeline of 13.3 mm/s minimum for one charge at 213 kgs. One charge. They intend to use 102 charges at that weight. As well, we have provided to you an assessment of the blast plan in Dr. Favreau’s report in January that shows the ground vibrations from only 10 holes could reach 260.77 mm/s. As you know, Paul Miller has asked Dr. Favreau to assess the current blast plan, but I can say confidently, I suspect it will drastically increase the impacts. As well, the maximums, as they were written before any natural gas pipelines ever existed or were even considered in Nova Scotia, would have more than likely, not taken the severity of a 12 inch high pressure gas line exploding into consideration when setting down these limitations.”

When reading the report, initially it looks like another semi convenient close call on the proponent’s expected Ground Vibrations, similar to the “just far enough” distances (that were not true), the “just low enough” fly rock vertical heights (which are not true) and the list continues to grow. But after reading the plan again, and comparing it to other blast plans, I would like to refer to data made available by other proponents. This proponent has just the right everything on paper, but it is not actually right at all.

To date, we have supplied proof to your department that the proponent has been dishonest about several aspects of this proposal, including the wetland destruction, wetland locations, the size and shape of the quarry, the ownership of the quarry, the distances between the quarry and several key stakeholders and landmarks, the blast plan, etc. Based on the lack of due diligence on this file in the past, I would suggest again that third party experts be engaged to review parts of this file thoroughly such as the dust plume created at the crushing and screening plant in the runway approach, blasting impacts on the wildlife, spawning fish, birds, air traffic, Hwy 102 traffic and ground vibration impacts on the wells, the pipeline and the water table. I will refer to the blasting expert hired by Scotian Materials and recommend they are given a vigorous review including each and every member of the staff involved, in particular, Mr. Paul Caza. I would suggest that the Environmental Assessment Group has access to third party consultation and that may be the appropriate answer for dealing with this file after all the infractions, miscalculations and misrepresentations.

I am not sure at this point what it would take for the Department of Environment to finally admit this is not an appropriate proposal for this location, but I will ask that you consider this. Our community has supplied your office with enough valued resources including a world renown blasting expert, a former deputy minister, a mining expert, an economist, a wetlands expert, and several environmental stewards with various areas of expertise. Every one of these expert resources have supplied us, by request with factual and comprehensive analysis to provide your department with unbiased and accurate information not bought and written with the proponent’s success in garnering an approval in mind. If you are not using any of these reports in your assessment of the quarry, how is it possible you would only consider anything provided by the proponent? If these reports and letters of research have not given your department enough cause, think about an explosion on the pipeline, at the quarry site. What would that look like? What impacts will that have on the community, on the businesses at Aerotech and the Airport, on the Wilderness Area and Game Sanctuary, on the Watershed and Water Supply? What would it look like that

we have supplied you with these risks and the industry requirements for safety, if you ignore them and the unimaginable happens?

Thank you again for your time.

Best regards,