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January 10, 2013

Monkton Select Board
John Phillips, Chair
Monkton Town Hall
280 Monkton Road
PO Box 12
Monkton, VT 05469-0012

RE: Proposed high pressure natural gas pipeline

Dear Monkton Select Board:

As a Registered Professional Engineer in Vermont, I have been retained by Jennifer Baker to provide engineering comments on the proposed high pressure natural gas pipeline that is planned to be installed and distributed through Monkton, Vermont.

As a registered professional engineer, I am obligated by the *Engineering Canon of Ethics*:

Engineers shall hold paramount the safety, health and welfare of the public and shall strive to comply with the principles of sustainable development in the performance of their professional duties.

As an engineering professional, I have had extensive experience over the last 25 years in the design and specification of natural gas heating systems and applaud the further utilization and implementation of natural gas for reasons of: efficiency, cost reduction, air quality, and national energy security/sustainability. Having said that, I have severe concerns for the very close proximity of the proposed natural gas pipeline to many of the homes/structures in Monkton. Based on my own direct experience investigating natural gas fires/explosions, when ruptures are experienced for even low pressure natural gas lines (less than 10 psi),

fires/explosions that may ensue are likely to cause severe damage, injury, and/or fatalities to any nearby structures or persons.

There has been considerable concern voiced by the residents of Monkton that the proposed natural gas line is too close to their homes, a concern that I also share. Please see quotation below from a report on pipeline safety and recommended minimum set-back distances by Charles Rhodes, Ph.D., P.E.:

Setback Uncertainty

Due to uncertainty regarding wind conditions and the position of the nearest point of ignition it is impossible to specify a practical safety setback distance that will ensure no damage or personnel injury from concussion or shrapnel related to the delayed ignition explosion. However, the subsequent fire emits a quantifiable amount of thermal radiation for which a reasonable safety setback distance can be calculated.

Based on the distance standard in the Rhodes report, the following minimum setback distances would be required in Monkton:

12" line, 600 psi: **793** feet

12" line, 1,440 psi: **991** feet

With the expected increase of demand for natural gas, larger gas pipelines would require the following set-backs:

18" line, 600 psi: **1,190** feet

18" line, 1,440 psi: **1,486** feet

24" line, 600 psi: **1,586** feet

24" line, 1,440 psi: **1,981** feet

Based on the developer's proposed pipeline set-backs of homes in Monkton of less than **50** feet, and the recommended minimum standard of approximately **1,000** feet or greater, the proposed high pressure natural gas pipeline path should be reevaluated to better protect the Public health and safety.

Please feel free to contact me to discuss this matter further.

Very truly yours,



Curt M. Freedman, PE, CEM, LEED AP
[Vermont P.E. #7295]



cc: Chris Recchia, Commissioner, (Vermont Dept. of Public Service)
Don Gilbert, CEO, (Vermont Gas Systems)
Susan Hudson, clerk, (Vermont Public Service Board)