

Dr. Haresh Kirpalani BM, MSc.; 6103, Cedar Grove, Burlington LP7 0N1
19 August, 2020

Dear Ms. Neilly:

I wish to place on record that my own, and my family household, are adamantly in opposition to the proposal from Nelson Aggregate to start two new open-pit mines in the Burlington Escarpment. I live year round at the above address.

It was only in 1990, that the Niagara Escarpment was declared a World Biosphere Reserve by UNESCO. At establishment it was stated: "There is a backbone of strictly protected lands at and near the cliff face." (1) [See *numbered references at end*]. Yet it will not take long to destroy this. The adverse impacts of open-cast mining are well known the world over. These are summarized briefly, for two of these, as follows under sub-headings:

1) Health Consequences: I will here only mention two main consequences.

i) Noise. No matter what the companies involved say - without any doubt very loud operations are involved in mining. These are going to be continuous through the day, and will be audible to a large areas. Both humans and wildlife will (There is no 'might' - the right word is *will*) be affected as well. It must be stressed that noise at the levels that will come, are *not* simply a matter of a 'nuisance'. For example a 2014 review - in the prestigious journal 'The European Heart Journal' points out: "environmental noise carries a health burden that has medical and economic implications: in the UK, day-time noise levels of ≥ 55 dB have been estimated to cause an additional 542 cases of hypertension-related myocardial infarction, 788 cases of stroke, and 1169 cases of dementia, with a cost valued at around £1.09 billion annually". (2) That is an easy non-medical phrase to understand. But - of course it does not begin to unravel the disease burdens that hits persons and their family.

ii) Particulate Matter (PM) Dust pollution. This includes the so called PM_{10} fraction of inhalable particles (with diameters 10 micrometers and smaller). We usually think of lung health when we think of inhaled particles, and this is important. As one might expect dust pollution with PM affects children with asthma adversely, definitely making it worse. This has long been known. (3)

But there are even broader, rather serious and somewhat un-expected consequences - such as in total mortality statistics. We saw this already above in regard to reviews of effects of noise on health (2), but more general studies also link excess death to OPM dust pollution. In Hamilton in 1991, total PM measures statistically correlated with total deaths where this was measured in census areas (4). Another review states: "Most reviewers, however, generally conclude that the over- all epidemiologic evidence suggests that particulate air pollution... common to many urban and industrial environments is an important risk factor for cardiopulmonary disease and mortality (5).

2) Environmental damage

This second major adverse impact from enabling the Nelson Aggregate proposal to move ahead, can be grasped more immediately. This is on the environment. Many Ontario environmentalists have paid attention to this, and we ignore their warnings at our peril. When the Greenbelt was established in 2005, it quickly garnered international attention: "Established in 2005 Ontario's Greenbelt is recognized internationally for its leadership in fostering agriculture and conserving the environment. At 8.1 million acres of protected land, the Greenbelt is the bedrock that supports a vibrant economy in food and farming, environment and tourism." (6)

Yet the system is fragile, and according to a careful recent study: "It is clear that the oak-maple-beech forest has been affected by human disturbances (including logging) in the

past, however, it still contains many hardwood trees with old-age characteristics as well as old-growth stand characteristics including large trees, logs and snags. Larson et al. ... puts the current stand age at 234 years." (7)

Potential impairment of water quality include harm to the aquifer and the 'Toronto Environment' group points to associated issues:

- "The water quality of residential wells close by could be harmed
- The water level of on-site lakes could be reduced, detrimentally affecting provincially specific wetlands
- Heightened summer water temperature in an on-site lake could have a detrimental impact on the viability of cold water fish in an adjacent stream
- Potential harm to on-site and off-site wetlands
- Loss of habitat for the Jefferson Salamander, which is designated as threatened under the federal Species at Risk Act
- Potential loss and fragmentation of continuous natural environment ". (8).
<https://www.torontoenvironment.org/gravel/impacts>"

There is bound to be rock wastage (rock with no useful or profitable size. (9) Another source states: "The total volume of waste rock generated will depend on the scale of the project but mid-size projects typically generate several hundred million tonnes of waste rock." (10).

In summary, there are extremely grave reasons why enabling the proposal to go forward, will damage both individual human health and environmental health. These will not be reversible. Death - is a very material and irreversible condition.

References

1. *Biosphere Reserve Information*

<http://www.unesco.org/mabdb/br/brdir/directory/biores.asp?mode=all&code=CAN+06>).

2. Thomas Munzel, Tommaso Gori, Wolfgang Babisch, and Mathias Basner, " Cardiovascular effects of environmental noise exposure"; *European Heart Journal*, April 2014, Volume35 (Issue13); 829- 836.

3. H.M. Boezen, SC van der Zee, Postma DS et al: *Effects of ambient air pollution on upper and lower respiratory symptoms and peak expiratory flow in children*"; *The Lancet*,1999, Vol 353 p.874- 878).

4. Michael Jerrett , Michael Buzzelli, Richard T. Burnett, Patrick F. DeLuca, 'Particulate air pollution, social confounders, and mortality in small areas of an industrial city *Social Science & Medicine* 60 (2005) 2845–2863.

5. C. Arden Pope, III *Review: Epidemiological Basis for Particulate Air Pollution Health Standards* *Aerosol Science and Technology* 32:4] 14 (2000).

6. *Ontario's Greenbelt*; at <https://www.giantsrib.ca/ontarios-greenbelt/>)

7. M. Henry and p. A. Quinby, "The old-growth forests of bronte creek provincial park: an urban landscape threatened by invasive species"; *Preliminary Results Bulletin #4*, July 2018; at info@ancientforest.org; www.ancientforest.org)

8. <https://www.torontoenvironment.org/gravel/impacts>"

9. *Ontario Ministry of Northern Development and Mines. Chromite Mineralization and Exploration in Ontario*. 2011).

10. Rike Burkhardt, Peter Rosenbluth and Julee Boan, "Mining in Ontario - A Deeper Look"; *Nature Ontario*; nd.

<https://ontarionature.org/wp-content/uploads/2017/10/mining-in-ontario-web.pdf>

Yours Sincerely,

Haresh Kirpalani - E-signature:

Haresh Kirpalani

Year round resident at the above address.

Emeritus Professor, Paediatrics, McMaster University Medical School; and
Emeritus Professor, The Children's Hospital of Philadelphia", University of Philadelphia,
Pennsylvania.