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RE: Environmental Impacts Assessment (EIA) by SNC-Lavalin

Thank you for the opportunity to comment on the Fraser Surrey Docks (FSD) EIA released by the Port of Vancouver on Nov. 18, 2013. I am a physician-scientist with a research interest in chemically induced diseases of the lung, and I practice occupational and environmental medicine at Vancouver General Hospital.

First, I want to express my complete agreement with the scathing evaluation of the Oct. 24, 2013 draft of this EIA by the Chief Medical Health Officers of Vancouver Coastal and Fraser Health Authorities dated Nov. 13, 2013. In particular I concur with the statement that "the report does not meet even the most basic requirements if a health impact assessment." I will not reiterate the numerous reasons outlined in the Nov. 13 letter, but rather focus on aspects of health consequence that did not receive adequate attention in that response. I will note a fundamental flaw identified by the Health Officers, that permeates the entire EIA, i.e. the conveniently limited scope chosen for the EIA which ignores impacts outside the FSD fence line as if health impacts stopped there. From a population public health standpoint, the population at risk outside the fence is considerably larger and more vulnerable than those workers experiencing exposures inside the fence.

1) The most harmful health impact that the Port has conveniently left out of the scope are the **health impacts of climate change**. Burning coal, particularly low-quality coal like the Powder River product is a major source of harmful greenhouse gases (GHGs). In the introduction the Port immediately absolves themselves of any responsibility for this important health impact. Only last month, at the, World Climate and Coal Summit in Warsaw (ironically running in parallel w/ UN climate conf there) , the Executive Sect. of the UNFCCC, Christiana Figueres told participants that they must "Leave most existing reserves in the ground" to avoid future climatic calamity.

see: http://www.rtcc.org/2013/11/18/figueres-tells-coal-leave-most-existing-reserves-in-the-ground/

It's now an ethical imperative to turn back from this abyss. There is a strong moral case for inter-generational justice since the most severe impacts of our fossil fuel habit will be felt by future generations. Remarkably, BC at this moment in history, has an important role to play in helping society kick our addiction to fossil fuels. Stopping has to start somewhere, and there is no better place to start than with BC industry's co-dependence in this addiction represented in this case by the shipping of some of the most polluting fossil fuels on the planet to China. The Port prohibits many harmful products from passing through. They don't transport opium or even BC bud. The U.S. EPA has determined that greenhouse gases are harmful to health. Coal fired power plants are a major source. Alternative energy sources are available. It's time to stop, it's just hard when you're addicted, but we owe it to future generations.

There is an irony in this request to expand FSD operations to begin exporting coal stemming from the relationship between the increase in GHGs - climate change and extreme weather events. These events are increasing as the globe warms and are likely to increasingly disrupt river barge traffic since they cannot operate safely with wind velocities greater-than 40km/hr. This raises the real possibility of barges being stuck in a major population center with high winds dispersing much more coal than appears to be accounted for in the dispersion modeling. Such 'worst-case' scenarios deserve more attention. They already happen frequently enough to warrant attention, but little consideration is given for current conditions, much less those predicted under climate change. Another weather-related consideration pertains to emissions from FSD under a severe temperature inversion when stagnant air and temperature already increases risk from non-point sources.

2) It is noted in the assessment that for the harmful pollutants PM10 and NO2 "predicted exceedences" are expected. In an already polluted airshed, in a heavily populated area we cannot accommodate additional sources of pollution. There is no mention of the additive effects of these exceedences with the additional truck traffic and the new adjacent South Fraser Perimeter Highway for example. Interestingly, the exceedences are expected "at the fence-line", but as has been noted, pollutants don't stop at fences. Coupled with the wholly inadequate dispersion modeling and the lack of a threshold for at least PM effects, these emissions deserve much greater scrutiny.

3) There is a lot of emphasis placed upon the heavy use of "body and topping agents" used to try to keep coal dust from being blown off of the train cars which can't be covered because the coal would spontaneously combust in a covered car. I have reviewed the Material Safety Data Sheets (MSDSs) for these compounds and they include toxic poly-vinyl chloride polymers that have been implicated in asthma and allergy. As noted in the documents, exposure to these topping agents require medical treatment if the exposures are high. Some of the constituents are proprietary which is very concerning, but even what they do disclose in the MSDSs show compounds that irritate human skin, eyes and airways and in some cases cause allergic sensitization, i.e. exposures at even low levels can cause adverse health effects. We are assured that they will be heavily used and reapplied enroute to reduce dust loss during transport. However, their health impact is not addressed. What are the proprietary ingredients? A potent toxicant has effects well below

the 2% by volume requirement the manufacturers are compelled to use when reporting for the MSDSs that are presented in the appendix of the EIA. What are the health impacts of these undisclosed ingredients?

4) Overall there is are many unreasonable assumptions that nothing will go wrong exemplified by this quote, "The effects on surface and groundwater are not expected to extend beyond the Project footprint, and will not last beyond construction. " or "a spill into the aquatic environment is considered unlikely". In other words, no accidents, no spills "beyond the Project footprint". This is not realistic over the longterm life of the Port expansion. Perhaps the most quantifiable example of this 'can't be any problem' attitude is the erroneous use of protective factors in the risk assessment on coal dust harm itself, “health agencies typically apply a ten-fold uncertainty factor to account for intraspecies variability; this factor is applied to account for potential sensitive subpopulations, such as children and/or the elderly". What they really do is apply a 10-fold safety or uncertainty factor for each of these, i.e 10 for intraspecies variability and another 10 for potential sensitive sub-populations. I can think of several reasons to apply a third factor of 10 e.g. related to the uncertainty in the exposure assessment, impacts on people w. chronic heart of lung disease, etc. Considering just these safety-factors would bring the risk numbers well within the range of risk for the "nearest residential receptor" of 1.4 μg/m3.

Finally the risks from the heavy metals found in coal are ignored in the EIA. Burning coal is probably the largest current source of mercury pollution on the planet because coal contains mercury along with several other toxic metals. Vulnerable humans in the womb and eggs and vulnerable reproductive cycles of other species are also likely to be impacted by any increase in the current burden of these toxicants. To suggest that there will be no exposure from these toxicants is unreasonable.

Coal is a 19th Century fuel. Today with this request for social license from the Port of Vancouver, we have an excellent opportunity as a community concerned about our children’s future to start making the hard choices about our energy supply. We need to leave polluting fuels behind and move on to the sustainable future they deserve. It is imperative that all the health impacts be considered by the Port including those ‘outside the fence’ where people live and breathe. If the true inter-generational costs in health and well-being are considered and compared with alternatives paths we can achieve the future these generations deserve and would demand if they had the power to do so. This is our time to do it for them.

Sincerely,

Tim K. Takaro, MD, MPH, MS.