November 13, 2013

DARRELL DESJARDIN
Director, Environmental Programs
Port Metro Vancouver
100 The Pointe
999 Canada Place
Vancouver, BC V6C 3T4

Dear Mr. Desjardin:

RE: October 24 2013 draft of the Fraser Surrey Docks EIA

We thank you for the opportunity to provide comments on the above document prepared by SNC Lavalin for Fraser Surrey Docks (FSD). We apologize for missing the agency comment deadline. To minimize delay in the review process, we will provide a copy of our comments to the proponent (FSD) directly. Due to the short turnaround time for agencies to provide response, we will provide additional comments as necessary during the public comment period.

Should it proceed as planned, this project will see the transportation of coal on a segment of the BNSF line that did not transport coal before, through urban neighborhoods that never had experience with coal as a commodity on the railway, and into a port facility (FSD) that has never handled coal . Being this is a “first” in a number of fronts, expectations are appropriately high that the proponents will exercise very careful considerations with respect to the project’s impact on the health and safety of the public, as well as its environmental impact.

We were encouraged when Port Metro Vancouver indicated the requirement that Fraser Surrey Docks complete an Environmental Impact Assessment of the project that included an assessment of health impacts of the full project, not limited only to impacts from activity at FSD. After reviewing the report, we provide the following high-level feedback:

1. The SNC-Lavalin report is primarily a repackaging of work previously done by other consultants, primarily Levelton Consultants Inc., with limited additional analyses to address concerns raised by ourselves, the public and local governments.

2. Most of the conclusions in the report about potential environmental and health impacts rely upon modeling work done by Levelton i.e. “Air Quality Assessment”. We are concerned about the underlying assumptions that informed that model, which were not assessed critically by SNC-Lavelin.
3. The assessment of potential health impacts is particularly disappointing, and receives minimal attention in the document. Of note, much greater consideration is given to the potential effects of the project on plants, fish and wildlife than to people. The report does not meet even the most basic requirements of a health impact assessment. SNC-Lavalin has included a 4-page summary describing general air toxins and their known health effects, but no link to this project. The appendix includes a short letter written by a toxicologist, Dr. Leonard Ritter, with his opinion about the potential health impacts of coal dust. The letter is based on the assumption that the Levelton model is accurate, and includes only a single reference pertaining to the potential health impacts of coal dust. No discussion is included of any other potential health impacts. This single toxicologist’s opinion does not meet the standards of a health impact assessment.
4. The report does not deal with the full scope of the project, from the time coal crosses the Canadian border to its transport and loading at Texada Island.

Based on these shortfalls, this report adds little to the information we require to determine the potential health impacts of the project and does not allow us to address legitimate concerns raised by members of the public and local governments.

We would still be very willing to meet with SNC-Lavalin to identify the parameters required to do an appropriate assessment of the potential health effects of the project, and we urge Port Metro Vancouver to ask Fraser Surrey Docks to revisit this report with that recommendation.

In addition to these general comments, we provide the following specific feedback on this draft of the report. Firstly, we ask that the May 27th 2013 letter to Port Metro Vancouver from Dr. Van Buynder Chief Medical Health Officer for Fraser Health, is included as an appendix, and that those concerns outlined in the letter are addressed in the report.

Since the May letter, we understand that a number of revisions has been made to the project with the intention to at least partially address the concerns. It is with this in mind that we provide the following additional comments.

1. The Spatial , Population, and Temporal Scope of the EIA

- **Spatial**

The draft EIA primarily covers the FSD site and the immediate surrounding areas on land and water. While we understand the limited jurisdiction Port Metro Vancouver has and that this EIA is primarily to address Port Metro Vancouver’s requirements, it is still disappointing that the proponent (FSD) chose not to includ the Canadian side of the project supply chain from the border to Texada Island in the EIA. Locations where potential health impacts could be of concern are not limited to the FSD site and its vicinity. For the health and safety of the public, the scope of this EIA should not be limited to the construction and operations that will occur at the FSD site. As Dr. Van Buynder pointed out in his May 27th letter, “the public are particularly intolerant of piecemeal approaches to major projects”. This EIA will not be credible to the public unless it covers the entire geographic area in which this project will operate within British Columbia.

- **Population.**

The draft EIA provided only general descriptions of the population and growth trends for Surrey and Delta. While the document correctly identified children and the elderly as two of the vulnerable populations who could be more sensitive to project impacts such as air quality degradation, the document did not provide much detail on the sizes and locations of potentially sensitive population groups along the rail corridor from White Rock to FSD. The air dispersion modeling in appendix VIII did include sensitive receptors (locations of schools, child care and hospitals) in a 20km x 20km domain. However only the FSD emissions were included in the dispersion model. Indeed the distribution of the sensitive receptors in the model suggests that vulnerable populations are located all along the rail corridor and that modeling emissions from FSD only is not adequate.

As the draft EIA showed, the populations of Surrey and Delta are increasing. Yet the document did not include information on how these population increases may affect the size of the vulnerable population over the proposed life time of the project. Nor did the document include information on other important characteristics of the population such as socioeconomic status. The narrow geographic scope also meant the exclusion of populations near the proposed operations at Texada Island in the assessment. Indeed while the draft EIA rightly included extensive documentation and analyses of sensitive plants, and non-human animal species that may potentially be impacted by the project, the same effort was not given to describing the human population that may potentially be impacted.

Information on potentially vulnerable populations impacted by the project should be included and could be accessed through government sources. This information is essential to determine population health risk based on those exposed.

- **Temporal boundary**

The draft EIA states that this project has a life span of six years. At the same time however, the draft EIA also states that the FSD facility improvements will not be decommissioned after completion of the project. In addition, the planned expansion work at the Port Authority Rail Yard (PARY) is for accommodating two unit trains at a time. The draft EIA states: “the current capacity at the PARY is one unit coal train at a time, based on its capability to receive, stage,and depart trains.” Even at the proposed maximum capacity for this project, there will be only one unit train a day arriving at FSD. The current project should not require tracks to accommodate two unit trains at a time. It is therefore unclear whether continuation and further expansion of the project beyond six years are being contemplated, or whether the capacity for one additional unit train is intended as temporary coal storage in lieu of the original emergency coal storage stockpile that was deleted from the revised proposal. Clarification of intent is critical. It is not appropriate for example to be limiting the EIA to consider only six years of operation and at the stated volume if the ultimate goal is to expand beyond six years and or current volume.

2. Air Quality

- **Coal dust**

We acknowledge that a number of positive changes have been proposed with respect to coal dust mitigation: elimination of the emergency storage stockpile, additional use of sealants during transit on the incoming coal trains, and the addition of sealant during transfer and

loading onto the barges. The proposed dust mitigation strategies will now rely much on the use of sealants, and load profiling. Neither data nor references are given in the draft EIA to support the efficiency claims for these strategies. They could be as efficient as claimed, but as written, it would appear the authors of the draft EIA simply took the values provided by the project proponent / product manufacturer without any effort to seek independent validation.

With respect to the health effects from coal dust, the WHO International Agency for Research on Cancer (IARC) recently announced the inclusion of outdoor air pollution in general as a Group 1 carcinogen. In making its decision IARC included both anthropogenic and natural sources of air pollution. (http://www.thelancet.com/journals/lanonc/article/PIIS1470-2045%2813%2970487-X/fulltext, http://www.iarc.fr/en/media-centre/pr/2013/pdfs/pr221_E.pdf) The Health Effects Institute also recently published its review on particulate (PM) air pollution. While the review found stronger evidence for the health effects from certain types of particulates, "the review panel concluded, however, that the studies do not provide compelling evidence that any specific source, component, or size class of PM may be excluded as a possible contributor to PM toxicity." (http://www.healtheffects.org/Pubs/NPACT-ExecutiveSummary.pdf) In other words, coal dust will contribute to the total toxicity from outdoor air pollution when it is present. Dr Ritter's comments with respect to the 1997 IARC monograph on coal should be considered in light of these recent scientific developments.

We note in the draft EIA mention of the use of a ten fold (10 X) factor for transforming occupational health limits to sensitive populations such as children and the elderly (pages 121, 124). The document goes on to intimate that this is a common and accepted practice. We request the document author to supply references from published literature to support this assumption specifically for coal dust.

A brief summary on the type and composition of the coal to be shipped is provided in the draft EIA. The description, unfortunately, does not contain information regarding mercury, lead, arsenic, and other possible contaminants as requested by Dr. Van Buynder in his May 27 letter. This could be important information for assessing the potential impacts on food grown by residents and farms along the railway track leading to the FSD site

Much was mentioned in the draft EIA and in the appendices on the 1986 ESL study on coal dust at Agassiz BC. This study is more than 25 years old. Air quality instrumentation and measurement protocols have advanced considerably since. It is unknown whether the older instruments and measurement protocols in 1986 would have under or over estimated the actual levels. More recent data do exist and would have been helpful to include them. In addition, averaging the particulate concentration over 24 hours will mask any shorter term concentration levels that may have short term health effects.

The revised plan has deleted the emergency coal storage stockpile. The revised plan however considers the possibility of loaded barges staying at the dockside in the event of high winds (> 40 km/hr) as a way of reducing the risk of blown dust during passage to Texada Island. In effect, during these weather events these barges would be providing a function similar to the original emergency stockpile. Although the dispersion modeling included loaded barges at dockside as a source of emission, it is unclear whether the modeling considered severe wind events when the barges may stay at dockside much longer than during normal operations. It would be important to determine the possible frequency of such events and to

model the impacts to air quality when the loaded barges stay at dockside for extended periods of time.

- **Diesel emissions**

The assessment of health impacts in the report focuses primarily on coal dust, with little consideration of the increase in diesel emissions from trains, barges, trucks and idling vehicles at railway crossings. Given that diesel emissions are associated with many acute and chronic health impacts, and are a known carcinogen, this is a significant deficiency of the report. We find this surprising because Levelton, in 2007, completed the "Air Toxics Emissions Inventory and Health Risk Assessment – Summary Report " on behalf of Metro Vancouver. (http://www.metrovancouver.org/about/publications/Publications/Air_Toxics_Emission.pdf) This report estimated about 350 cancers per one million population over a 70 year lifespan from diesel emissions in the Metro Vancouver region. Levelton could use this model to estimate the cumulative effects from the added diesel emissions from this proposed project for the potentially affected populations.

- **Dispersion modeling**

We defer the detailed review of the dispersion model to Metro Vancouver staff. Much of the EIA conclusions on the health effects from air emissions from this project are dependent on the validity of the dispersion modeling, and the interpretation of the intent of the Ambient Air Quality Objectives (AAQO). The BC Government has this to say regarding the use of the AAQO: "As even low levels of air pollution can affect some individuals, air quality objectives should not be viewed as levels we can "pollute up to," but levels to stay well below." (http://www.bcairquality.ca/regulatory/air-objectives-standards.html) Moreover, in setting the AAQO, the BC Government considers other factors besides health evidence. The final AAQO is an integration of "information from the risk assessment with economic and technical factors as well as ethical, social, legal, ecological and achievability considerations". (http://www.bcairquality.ca/reports/pdfs/aqo-framework-information-sheet.pdf) Furthermore, the AAQO is only meant as a guide for decision making. (http://www.bcairquality.ca/regulatory/air-objectives-standards.html). It is therefore inappropriate for this EIA document to use the AAQO as the definitive criteria to characterize the level of health effects from the air quality predictions.

We have already mentioned above that there is a lack of information in the EIA regarding the efficiency of the dust sealants and other coal dust mitigation strategies, and therefore it is impossible for us to determine whether the emission factors used for the model are correct. We have also noted that the time and spatial domains chosen for the model will influence whether the model will be able to assess any possible short term health effects. While using the 24 hours and annual averages will allow comparison to existing air quality objectives over a wide area, they are not as useful for assessing short term local impacts. In addition, there is no known threshold below which particulate air pollution have no health effects. There are health effects even at the current air quality objectives. Concentration response functions are available to assess health effects at different levels of different air pollutants. It is much more informative to derive estimates of additional health effects directly from a validated model as opposed to simply commenting on whether the existing air quality objectives will be exceeded.

- **South Fraser Health Region 1998 Letter**

The draft EIA included a 1998 letter to the Corporation of Delta from Dr Robert Strang, then Associate Medical Health Officer, South Fraser Health Region. The letter was in response to concerns regarding dust originating from Westshore Terminals affecting the health of Delta residents – in particular Tsawwassen children. The letter presented data on respiratory illness and asthma related hospitalization and deaths, comparing different areas in the former South Fraser Health Region and elsewhere in BC. The spatial unit of analysis used was the Local Health Area (LHA), which is equivalent geographically to the local school district. The letter concluded that the information available did not point to concerns about higher levels of asthma or respiratory disease in Delta compared to other areas in the South Fraser Health Region or the province. LHA 37 is equivalent in size and geographic location as the Delta School District (SD 37). LHA 37 is a large geographic area, and includes three town centers (Tsawwassen, Ladner, and North Delta), with even the closest of them (Tsawwassen) still some distance away from the Westshore Terminals. If there were any health effects associated with dust exposure for the smaller number of people who lived closer to the coal port or along the railway tracks that served the port, the signals would have been drowned out by the health experiences of the large population centers. As well, the analysis did not adjust for socioeconomic status, smoking status or other potential confounders when comparing the different LHAs. The geographic location of Tsawwassen in relation to Westshore Terminals is also different from the geographic relationship between FSD and its neighboring residential areas. Dr. Strang provided no conclusion in his letter about whether or not populations living in close proximity to coal dust transport and handling had suffered undue health effects, nor was the analyses included appropriate to answer that question. It is not appropriate to use the letter as evidence for assessing health effects for the FSD project.

- **Air Quality Monitoring**

Dr Van Buynder in his May 27 letter emphasized the need for adequate air quality monitoring to verify the dispersion modeling results should the project proceed. It is not clear reading the draft EIA whether the entire monitoring proposal in Levelton's May 2013 draft Air Quality Management Plan is to be carried forward. Even if it does, the single air quality monitor station proposed outside of the FSD site is not adequate. Additional air quality monitoring at strategic locations on the rail corridor are needed to resolve issues including coal dust falls, train diesel emissions, and motor vehicle emissions at rail crossings given the increased wait times. Also in the earlier May 2013 draft Air Quality Management Plan barge based monitoring for particulates was proposed. Again, it is unclear in the draft EIA whether this is still the case.

3. Emergency Vehicle Access

The draft EIA suggests that the current arrangements for ensuring timely access across rail crossings for emergency vehicles are adequate. Without additional information, we remain concerned. We recommend that the proponent asks BC Ambulance Service, the Surrey and Delta Fire Departments and other appropriate first responders to review the proposal for adequacy with respect to emergency response access.

4. Recreation, Livability, Amenities

The impact of dust falls from passing coal trains on neighborhood livability is not addressed in the draft EIA. Complaints of coal dust soiling windows, covering outdoor structures have been recorded from residents living close to railway tracks in other locations such as was in Agassiz. (The Canadian Council of Ministers of the Environment. "*A Study of Fugitive Coal*

Dust Emissions In Canada". 2001) The dispersion modeling presented in the EIA is not useful for predicting dust fouling of outdoor living spaces in residential areas and in recreational amenities such as trails that run parallel to segments of the BNSF tracks. There is also no information on the increased potential for injury to the public at rail crossings. Neither baseline injury data nor possible future impacts are presented.

The EIA described some general strategies that the project will be using to mitigate noise impact. In order to ensure that these strategies will work, baseline noise measurements and ongoing noise monitoring during both the construction and operation phases of the project are needed

5. Public Engagement

Information contained in the draft EIA and its appendices do not permit an assessment on the adequacy of the public engagement process. Written public comments were summarized, but no attempt was made to map the public feedback, including feedback at public meetings, to the draft EIA so that reviewers can tell how the concerns were addressed. Importantly, there was no information with respect to actions or decisions by local government following presentations from FSD to the mayors and councils. We remind Port Metro that the Board of Directors of Metro Vancouver has called for a health impact assessment of the project, and that two Lower Mainland municipalities have recently passes motions banning coal from municipal lands. These decisions are important context that was not noted amongst the public feedback. Nor was recent correspondence from the Fraser and Vancouver Coastal Chief Medical Health Officers found in the appendices, even though a letter from an Associate Medical Health Officer written some 15 years ago was included.

A noise complaint response process for the FSD site of the project is described in the draft EIA. An air quality complaint tracking system for the FSD site is included in the May 2013 draft Air Quality Management Plan. There is a need for a coordinated complaint response system for this project that covers concerns arising from both within and without the FSD site. It is unclear whether such is being planned. The absence of coordinated and timely response to complaints will frustrate the public and potentially lead to unnecessary escalation of concerns.

In summary, we were pleased that Port Metro Vancouver requested a more comprehensive impact assessment for this direct transfer coal facility project. Unfortunately, this draft EIA fell well short of adequately addressing the human health impacts of the proposal. We, as the Medical Health Officers responsible for protecting the public health in the regions impacted by the project are being asked by the public and the local governments whether this project will have health impacts. Regrettably we are no closer to answering this question, even having reviewed the draft EIA. In our letter of September 25, 2013 we requested that health authorities be provided with an opportunity to assist in the scoping of the EIA. This offer still stands and we once again urge the project proponents (FSD and its business partners in this project) to conduct a health impact assessment that includes all of the project components from the U.S.-Canada border to Texada Island.

Health Impact Assessments are designed to minimize the negative and maximize the positive impacts of large projects. We believe it is the most appropriate and socially responsible approach for the proponents to address our concerns and those of the public.

Sincerely,

Paul Van Buynder, MBBS, MPH, FAFPHM Chief Medical Health Officer and Program Medical Director, Public Health Fraser Health Authority	Patricia Daly MD, FRCPC Chief Medical Health Officer and Vice-President, Public Health Vancouver Coastal Health

CC: Dr. Perry Kendall, Provincial Health Officer
Roger Quan, Air Quality Policy & Management Division Manager, Metro Vancouver
Jurgen Franke, Director, Engineering and Maintenance, Fraser Surrey Docks – contact for proponent (jurgenf@fsd.bc.ca)

Attachments:
1. May 27 2013 letter from Dr. Van Buynder to PMV
2. September 25 2013 letter from Drs. Van Buynder and Daly to PMV