

Comments on the Draft AIR/EIS Guidelines  
For the Proposed Raven Underground Coal Project

Prepared for the  
Alberni Environmental Coalition

June 15, 2011

Submitted by  
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## INTRODUCTION

Bernadette Wyton has been working on air quality issues in the Port Alberni region for the last 10 years and is chair of the multi-stakeholder Air Quality Council of Port Alberni that “serves to promote health by working to ensure the cleanest possible air for the Alberni Basin and its inhabitants.”

She has been contracted by the Alberni Environmental Coalition to review and comment on Version 7 of the Draft Application Information Requirements/Environmental Impact Statement Guidelines (dAIR) for the Raven Underground Coal Project with regards to air quality considerations for the Port Alberni area.

Following are 16 areas of concern she has identified within the dAIR.

### **1. LACK OF CONSIDERATION GIVEN TO PORT ALBERNI**

#### 1.1 WHAT EXACTLY PERTAINS TO THE COAL PORT

Although the completely separate geography and operations of a coal port on federal land might warrant a separate environmental assessment, instead, what appears to have happened is a confusing and inconsistent address, within the dAIR, of project details for Port Alberni. For all project categories this has resulted in a lack of clarity and confidence about what exactly pertains to the Port Alberni aspect of the project.

#### 1.2 UNDERESTIMATING CONCERN

Even though project affiliations with the Port Alberni Port Authority are described as being one of the main triggers for this environmental assessment under section 5 of the Canadian Environmental Assessment Act, in section 3.5 of the project description, under Human Environment and Local Communities, Port Alberni is lumped together with Parksville, Campbell River, and Nanaimo as other communities outside of the CVRD that “may have an interest” in the proposed Raven Project. A surprising understatement.

Port Alberni is often neglected in various sections of the dAIR and the Alberni Clayoquot Regional District is rarely considered. Both are conspicuously lacking from the list of representatives on the Advisory Group listed in section 3.4.1.

#### 1.3 ON-SITE – OFF-SITE

Under Project Overview, 2.2.8, there are fifteen component areas bulleted for on-site facility and three on the opposing page for off-site, that being Port Alberni. The project being proposed for Port Alberni is on-site in Port Alberni and should be given due consideration as an independent entity. Looking back across the page, many of the listed on-site categories would be appropriate for Port Alberni as well: power supply and distribution, water management, ventilation, solid waste disposal, concrete foundations, containment features, first aid and security, office administration, communication, maintenance, and the extremely important fire protection.

#### 1.4 MINE PLAN

Similarly, many of the bulleted categories for the mine plan in 2.2.6 would be appropriate for the coal port: coal and rejects handling, water management and drainage, effluent generation, air and sound emissions, stockpiles, operations, equipment, services, storage, use, handling of hazardous materials and dangerous goods, emergency response and safety planning, awareness and training.

### 1.5 MINIMAL ADDRESS OF AIR QUALITY ISSUES

The air quality section is also deficient in specifics for the Port Alberni site. A typical example is found in 5.2.1.1. In a fourteen line description of air quality spatial boundaries, one is tacked on at the end for Port Alberni announcing a predetermined study radius of 3km with no mention of what kind of study area this will be (LSA? RSA?).

### 1.6 RECOMMENDATION

It is imperative that all of the project details pertaining to Port Alberni be included in a concise, separate section of the AIR/EIS document so they can be properly understood and reviewed.

## **2. AIR QUALITY SPATIAL BOUNDARY**

### 2.1 CONSTANT IMPROVEMENT/ KEEPING CLEAN AREAS CLEAN

The concept of polluting up to an acceptable standard has no place in local Airshed management planning. The idea of numerical targets have been superseded by the goals of constant improvement, as set out by the Canada Wide Standards Agreement, where air quality is to be “maintained and improved to the extent practicable, to minimize risk to human health and the environment for the benefit of future generations.”

### 2.2 BOUNDARY DEFINITION

In 5.2.1.1, it is stated that the LSA is intended to cover the area that the project may cause exceedances of air quality objectives. In 22.4 it is stated that spatial boundaries are based on the zone of the proposed project’s influence beyond which the effects of the project are expected to be non-detectable. The latter consideration is more appropriate and consistent with Air Quality Council goals.

### 2.3 BOUNDARY RATIONALE

Selecting a study area for the region around Port Alberni should be based on, among other things, seasonal and diurnal wind patterns, and related potential exposures.

A 3 km buffer was chosen for the ‘Raven Project’ and for the Port Alberni Port Facility presuming that would be the extent of pollutants dispersion to acceptable concentration levels. What might those levels be for what pollutants?

There is no mention of climate considerations for the Alberni region.

## **3. LSA DESIGNATION FOR TRANSPORTATION CORRIDORS**

### 3.1 HIGHWAYS 19 and 4

As discussed in concern #6, diesel-exhaust particulate (DEP) is toxic and the most harmful vehicle-related pollutant. Elevated air pollutant concentrations are measurable as far as 750 metres from truck routes. Additional DEP pollution along Highway 19 and 4 is a health concern and that project transportation corridor should be designated as a separate study area. Analysis of DEP, dust, coal dust, noise, and related health effects for residents living along that route should be included in the corridor study.

### 3.2 INNER CITY COAL TRUCK ROUTE AND TERMINAL

The truck route being considered through Port Alberni is another health concern. It, and the extent of its influence under various conditions, should be part of the LSA for the Port Alberni

area with the same considerations given as suggested for the highway corridor. The warehousing site is of particular concern, as idling trucks are particularly polluting. The population proximate and down wind of the port facility will experience negative health impacts from DEP and fugitive coal dust emissions, especially during hot summer periods and winter inversion conditions.

### 3.3 PROXIMITY TO ROADS

The negative health effects from living in close proximity to roads and highways is well documented. Traffic related air pollution, for example, is a contributing risk factor for the development of childhood asthma. From a policy perspective, urban design interventions prescribed to promote health include separating major roadways from people and certainly from schools, hospitals, and long term care facilities. Current and proposed project truck routes pass directly in front of the new hospital in Port Alberni.

### 3.4 CITY TRUCK TRAFFIC – HEALTH HAZARD

The present use of inner city roads for heavy industrial traffic has already been identified by the Air Quality Council as an area of public health concern that needs to be addressed. Although present use and emissions can be quantified, they are not a defensible justification for even greater use.

## **4. DETAILED AIR QUALITY BASELINE**

### 4.1 DETERMINE BASELINE STUDY DURATION

It is stated in 5.2.2.1 that data will be required at a high level of detail to ensure the development of robust and scientifically defensible air quality modelling. In the Port Alberni region, this would require extensive baseline measurements. Data collection over a few months or even a year will not produce robust and scientifically defensible air quality modelling.

Under 5.2.2.2, after listing possible criteria air contaminants, it says, “each of the above will require background on existing baseline concentrations determined in a desktop study. Desktop studies and dispersion modelling have a limited value, the extent of which is determined by the quality of the data being used.

### 4.2 BASELINE MEASUREMENTS

There is no substitute for baseline measurements. The EIS should include a detailed monitoring program for a list of criteria and non-criteria pollutants to be studied, the kind and number of sampling units that will be used to study them, where the equipment will be deployed, and for what length of time. The number, position, and deployment duration for meteorological equipment should also be included.

### 4.3 INACCURATE AIR QUALITY INFORMATION FOR PORT ALBERNI

In 5.2.2.1, the following vague and misleading statement is cause for concern, “All criteria air pollutants identified for the proposed Raven Project are available at referenced stations. Baseline concentration data for Port Alberni have been collected over a period of a few years by the monitoring station which is continuously operating in the mill located to the south of the proposed Port Facility.”

Pollutants are usually not described as being available at a station.

What referenced stations are referred to?

There are no referenced stations for all criteria air pollutants in Port Alberni.

What baseline concentration data in Port Alberni is referred to?...for what pollutants?

What mill ? There is no NAPS monitoring station at the Catalyst mill which is north, not south, of the proposed Port Facility.

#### 4.4 PORT PLAN, EQUIPMENT, AND PROCESSES EFFECT AIR QUALITY

There is very little information in the dAIR regarding the port plan, equipment choices, and coal handling processes. Details for all of these need to be integrated into the AIR/EIS as all three aspects relate directly to potential air quality effects.

### **5. PORT ALBERNI IS A SENSITIVE RECEIVING ENVIRONMENT**

#### 5.1 CURRENT PM 2.5 EXCEEDANCES A CONCERN

As members of the working group have advised, Port Alberni has a very sensitive airshed with complex and localized meteorological conditions. Characteristic thermal inversions trap pollutants and lead to exceedances of the provincial air quality objective for fine particulate matter (PM2.5) up to 40% of the time for some winter months.

#### 5.2 HIGHEST LEVEL OF SCIENTIFIC RIGOR REQUIRED

For these reasons, members of the working group have advised that this area warrants the highest level of rigor in scientific studies. The dAIR does not reflect due consideration for airshed dynamics in Port Alberni. Resistance to advice and ensuing arguments, for example regarding air dispersion modelling choices, are one indication of the need for an independent panel review.

#### 5.3 DEFENSE FOR LEVEL 2 ASSESSMENT UNFOUNDED

Under 5.2.2.2 there is an argument for level 2 air quality assessment stating that coal, dust, and diesel emissions are low risk sources and that there is no complex topography or meteorology. There is no safe level of exposures to either coal dust or diesel exhaust. Both are high risk sources for potentially negative health outcomes. And, as noted above, the topography and meteorology around Port Alberni are unique and complex – so much so, that the Ministry of Environment is considering the development of a separate venting index for this airshed.

Following is a discussion of the three factors in question:

### **6. DIESEL EXHAUST**

Diesel engines emit 100 times more particles than normal gas engines of corresponding performance. Diesel exhaust particulate (DEP) is characterized by ultra fines (.1ug or less in diameter). These extremely tiny carbon atoms act like magnets to which 18,000 other compounds may stick. DEP size and affiliation with hazardous and carcinogenic pollutants wreaks havoc in human tissues. In the United States, it is estimated that between 70 and 89 percent of the total cancer burden due to air pollution is caused by DEP. In Canada it is estimated that as many as 13,600 Canadians will develop cancer over their lifetime from diesel exhaust.

The toxicity of DEP warrants special consideration and detailed studies along the transportation corridors and truck terminals proposed by this project. The AIR/EIS should detail related considerations such as planned fuel grade choice, fleet choice, fleet efficiencies., fleet inspection and maintenance programs. The number and duration of trucks operating en route and idling for on and off loading should be determined with quantitative exhaust and exposure estimates.

In the same way, ship exhaust influences also need to be analysed. The number of ships, fuel grade, port duration, idling exhaust, and potential exposures, especially during summer heat and

inversion conditions should be addressed. Best management practices should be discussed including a consideration for ship electrification while in port.

## **7. COAL AND COAL DUST**

The specific constituents of coal dust, on the ground or in the air, are derived from the coal itself. The EIS should include a complete chemical analysis of the coal being mined, with special consideration for the toxic and carcinogenic elements. A detailed explanation should be provided for the claim, under 2.2.6, that coal from the Raven property is “unique in Western Canada because of its high volatile content and its strong metallurgical properties.” Estimates should be given for potential and worst case scenarios for coal dust exposures from extraction to transport and transfers, to storage and ship loading.

## **8. METEOROLOGY**

Port Alberni is surrounded by mountains that generate a tremendous thermal influence and is open at one end to compounding marine influences. As a result, wind speed and direction are characteristically different in different parts of the city itself. Meteorological data from the airport, 12.5 km away, cannot be considered to be representative of that in and around the Port Alberni project site.

## **9. CLIMATE CHANGE CONSIDERATIONS**

The citizens of this community, prompted by local, provincial, and federal programs are engaged in activities such as planting trees to gain carbon credits, retrofitting plumbing for heat capture, changing out light bulbs to reduce energy consumption, buying smart cars etc., etc.... – all the minutia of behavioural changes in an attempt to stem damage from burning fossil fuels.

These same citizens are now being asked to host a coal port. This is a disturbing disconnect from the direction already established within many different sectors of this community - economic, social, and environmental, including air quality concerns.

One of seven main goals for the Air Quality Council is “to take seriously our responsibility for air quality within a regional, provincial, national, and global context.” There is no way to consider this project in a responsible way without considering the need and purpose of the ‘Raven product’ - a non-renewable fossil fuel to be burned just down the way in our global village with significant negative outcomes for health and climate change.

The concept of “business as usual”, especially in the coal fields, is not appropriate if we are to take our personal, municipal, provincial and national commitments to greenhouse gas reduction seriously. In considering this project, it is very important to include and review the full cost accounting of this enterprise, especially the ultimate emissions and related impacts from various end-use scenarios for the coal.

In 5.2.3, it says, “Studying climate change is important because changes would affect people around the world.” It is critical that these climate change studies inform our actions and decisions, including those pertaining to this project.

## **10. PUBLIC HEALTH SPATIAL BOUNDARIES**

Section 9.2.1.1 is another example of subject consideration with reference to Port Alberni included at the end, in one line, “The potential effects of the proposed Port Facility on human health will be considered in the Application/EIS.”

The spatial boundary for health and exposures should be linked to the Alberni air quality LSA spatial boundary, as discussed in concern #2.

Areas within the Alberni Clayoquot Regional District should be considered in these deliberations.

## **11. COAL PORT WITHIN A CITY NEIGHBOURHOOD**

In terms of health considerations, placing an industrial installation like a coal transport and storage depot within a populated city neighbourhood is poor planning. Residents that object to nearby industrial project proposals are often discounted as being selfish, as implied in the NIMBY acronym, “Not in my backyard.” However, in this case, the industrial facility will literally be in the front yard, not only of many residents but of the city itself. It appears impossible to guarantee that the health and well-being of those citizens will not be negatively effected. Certainly, the inherent stresses caused by noise, traffic, dust, and exhaust will result in a loss of enjoyment of place and property. Consideration for those individuals remains paramount.

## **12. POTENTIAL ACCIDENTS AND MALFUNCTIONS**

The population that surrounds the coal port is also at higher risk in the event of coal port accidents and emergencies. The description of potential accidents and malfunctions at the coal port site should include:

- the likely occurrence of a tidal wave with the additional complicating and cumulative impacts caused by the dissemination of thousands of tonnes of coal throughout the marine waterfront, the Somass River, and its estuary.
- the likely occurrence of fire and smoke damage from all potential sources including spontaneous combustion, bag house fire etc. with protection measures for life and property and measures, including evacuation plans, to protect citizens from toxic smoke inhalation.
- hazardous substance releases.

## **14. POTENTIAL PUBLIC HEALTH EFFECTS**

### **14.1 QUANTIFY**

There is a rich history in scientific literature of quantifying population and health outcomes related to fine particulate pollution. It is now well known, for example, that the relative risk of mortality increases by 1.1 for every 10ug/m<sup>3</sup> increase in PM 2.5. All manner of particulate related disease and associated costs have been statistically quantified providing a base for doing the same within the scope of the AIR/EIS.

In 9.2.2.2 it states that the human health section will qualitatively examine the potential for the proposed Raven Project to cause increased exposure to health hazards...” This section should include quantitative examinations. For example, with regards to diesel emissions there are exhaust calculations and spatial applications that can be linked to deliver estimates of current exhaust pollution and exposures and estimates of the additional project influence under different

scenarios, including the worst case (i.e. poor venting conditions, more trucks than anticipated due to poorer coal quality than anticipated, cheaper fuel choice, lower truck efficiencies...).

Quantified pollution can be linked to quantified receptors. For example, the population living in close proximity to the coal port should be quantified and linked to quantified emissions figures for truck and ship exhaust and for coal dust contamination. It would then be possible to quantify health impacts, for example increased predicted numbers for cardiac and pulmonary complications.

#### 14.2 VIHA

The Vancouver Island Health Authority (VIHA) is conspicuously absent from many of the dAIR tables, including that for Human Health Valued Components. VIHA is an applicable government agent and should be a valued contact for professional judgement regarding environmental and health concerns.

## **15. CUMULATIVE EFFECTS ASSESSMENT**

During the evolution of this dAIR there have been varying levels of information and inclusion of other pending mining operations near the Raven Mine Site which are being considered by the proponent. If there is a potential for these to be developed in the near future and added to the present operation, there should be a full accounting of that within a section of the AIR/EIS including details regarding the likelihood, timeframe, and resulting additional impacts of those additional operations. If there is not a potential for these to be developed during the expected operating life of the Raven Mine, there should be a documented assurance of that within the AIR/EIS.

## **16. PROCESS**

### 16.1 FEASIBILITY FIRST

Mr. Tapics referred to the Raven Coal feasibility study in support of some of his points during the public meeting in Port Alberni. The review process seems flawed when, by the time of public review, the proponent is the only one to hold and meter such information. It also seems flawed that so much time, effort, and money would be poured into a project proposal without demonstrated due diligence regarding its feasibility. Further, this information will not be released until a few days before closure of public comment on the dAIR or, as advertised by the proponent, a few days after.

### 16.2 FINAL DECISION

After so many inputs into the review process, there is a potential weakness when the final decision regarding the project is held by one minister. When there are so many other well-informed participants by that stage, the process would be strengthened, as would the minister's decision, if it was made within the context of a number of individuals within a democratic panel.