

## **Presentation Summary for the Whites Point Quarry and Marine Terminal Joint Review Panel**

### **Health Canada Mandate and Authority**

Health Canada is the Federal department responsible for helping Canadians maintain and improve their health, while respecting individual choices and circumstances.

In partnership with provincial and territorial governments, Health Canada provides national leadership to develop health policy and regulations, promote disease prevention and enhance healthy living for all Canadians. Provincial authorities have the responsibility and power for the provision and regulation of health care which includes public health and the medical system in general.

### **Role of Health Canada**

As an expert Federal authority, Health Canada did not make any decisions in relation to the project however Health Canada provided assistance in the environmental assessment by way of expert knowledge and information on human health effects that could be generated by the projects. The goal of Health Canada's review was to identify any potential human health effects and to ensure adequate mitigating measures were in place. Health Canada's review was based on project information provided by the proponent.

### **Health Canada Expertise/Advice**

In general, Health Canada promotes a holistic definition of human health,<sup>1</sup> and considers the state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity. Examples of the areas of expertise available include:

- air, water and soil quality guidelines/standards;
- toxicology (multimedia - air, water, soil, food);
- drinking water and sewage management;
- contaminated sites;
- impacts of noise on human health;
- community health (First Nations);
- environmental and occupational toxicology;
- health risk assessment and risk management; and,

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<sup>1</sup> The World Health Organization defines human health as "state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity" (World Health Organization, 1984). Therefore, when assessing human health, all aspects of well-being need to be considered, including physical, social, emotional, spiritual and environmental impacts on health. Human health is influenced by a range of factors, such as the physical environment (including environmental contaminants), heredity, lifestyle (smoking, drinking, diet and exercise), occupation, the social and economic environment the person lives in, or combinations of these factors. Exposure to environmental contaminants is one among many factors that contribute to the state of our health (Health Canada, 1997).

- radiation protection (ionizing and non-ionizing).

This list should not be considered an exhaustive one, but rather a sample of Health Canada's areas of expertise. The responsibility for health lies primarily with the province, and therefore, it is assumed that the appropriate provincial authorities will be involved in addressing any related issues and concerns.

A general approach for assessing projects for potential health impacts for each area of technical expertise is outlined in the following sections. Each section includes project specific information related to the area of technical expertise.

## Noise

### General

Health Canada's Consumer and Clinical Radiation Protection Bureau, Acoustics Division has expertise available to evaluate potential health effects of noise including hearing loss, high annoyance, sleep disturbance and speech interference. Experts consider noise sources from all types of machinery, equipment and related processes. As well, the experts look at types of noise such as impulsive (e.g. blasting) and tonal (e.g. backup alarms).

For reference material, HC noise experts refer to the following Canadian Standards Association document:

- *CAN/CSA-ISO 1996-1:05 (ISO 1996-1:2003) Acoustics – Description measurement and assessment of environmental noise – Part 1: Basic quantities and assessment procedures. Canadian Standards Association*

Other guideline reference material include:

- *Information on levels of environmental noise requisite to protect public health and welfare with an adequate margin of safety, U.S. EPA, Washington, D.C., 20460 March 1974*
- *US Federal Transit Authority (FTA) Guidance Manual: Transit Noise and Vibration Impact Assessment (2006) FTA-VA-90-1003-06*
- *Criteria for a Recommended Standard: Occupational Noise Exposure. National Institute of Occupational Safety and Health (NIOSH) Publication No. 98-126. June 1998*

### Project Related

Health Canada commented on the environmental effects of health related noise impacts for construction and operation activities at the proposed White's Point Quarry and Marine Terminal.

Guideline levels of impacts relevant to this assessment were:

- 125 dB (linear) for a single daily sonic boom for little or no annoyance (U.S. EPA). This guideline level was applied to blasting as the two types of noise show similar degrees of annoyance for the same sound level.

- 6.5% increase in percentage highly annoyed (%HA) in an average community for a severe project noise impact (U.S. FTA).
- Daily exposure to 85 dBA for 8 hours per day with a peak limit of 140 dBA to protect from hearing loss (U.S. NIOSH)

The %HA was derived using the CSA/ISO standard. %HA for impulsive or tonal noise is higher than for non-impulsive or non-tonal noise for the same Ldn. Quiet rural areas have a higher %HA for the same intruding i.e., project sound level.

The hour of 6 a.m. to 7 a.m. is considered part of the night time throughout environmental noise guidelines in Canada including the Nova Scotia Pit and Quarry Guideline.

The proponent has responded to Health Canada comments provided as part of the Environmental Impact Statement review and Health Canada has no further comments on this issue. Based on the information provided, noise does not pose a significant risk to human health.

## **Air Quality**

### *General*

Health Canada's Water, Air and Climate Change Bureau, Air Health Division, has expertise to evaluate predicted pollutant concentrations for various human exposure scenarios.

As part of the air quality evaluation, experts consider:

- short and long-term human exposure effects;
- adverse health effects such as respiratory irritation, reduced lung function, cardio-respiratory hospitalization, mortality; and
- Conventional (e.g. carbon monoxide, sulphur dioxide, nitrogen dioxide, ozone, PM10 and PM 2.5) and non conventional (e.g. polycyclic aromatic hydrocarbon, formaldehyde) air pollutants.

Potential air quality impacts to human health are assessed using International (e.g. World Health Organization, US Environmental Protection Association), national and provincial health based evaluation tools.

### *Project Related*

For the Whites Point Quarry and Marine Terminal proposed project, Health Canada commented on air quality related to dust emission potential for various project activities including blasting operations, crushing operations and storage of material.

Based on the information provided, air quality does not pose a significant risk to human health. However, Health Canada requests the proponent clarify emission estimate information in relation to the following:

- quantity of emissions (e.g. dust, exhaust, hydrocarbon) estimates from equipment (e.g. crusher, trucks) and activities (e.g. movement of fine soil);

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- current air quality;
- information regarding any sensitive population in the area (e.g. chronic obstructive pulmonary disease, asthmatic, disabled); and
- potential risk associated with CO exposure after blasting.

## **Drinking Water Quality**

### General

Health Canada's Water, Air and Climate Change Bureau provides expertise on human health risk assessment for chemical and microbiological contaminants that may be present in drinking water and recreational water. Health Canada can also provide expertise relating to treatment requirements and availability of treatment technologies for contaminants in sources of drinking water including how changes in source water quality may affect the drinking water treatment process at a treatment facility.

Experts review project information for all sources of drinking water in a surrounding area that is influenced by the proposed project including water sources that are consumed directly (such as wells) or from source water intakes for drinking water treatment facilities. If a drinking water treatment facility is present in the surrounding area influenced by the project, the environmental assessment is reviewed for information on whether the treatment facility will be informed of any predicted or measured changes in its source water quality and whether the type of treatment used and capacity of the facility is able to address any potential changes in the source water quality such as a change in turbidity in the source water.

To evaluate drinking water quality for a project, experts reference Guidelines for Canadian Drinking Water Quality as well as the provincial standard applicable to the project to assess for potential adverse human health effects.

### Project Related

Health Canada reviewed this project in relation to drinking water quality and groundwater monitoring. The proponent has responded to Health Canada comments provided as part of the Environmental Impact Statement review and Health Canada has no further comments on this issue. Based on the information provided, drinking water quality does not pose a significant risk to human health.

## **Country Foods**

### General

Health Canada's Bureau of Chemical Safety in the Food Directorate provides advice and information on the safety of food. Related to country foods, expertise is provided based on information about harvesting of country foods in the project areas.

Country foods include those harvested by hunting, trapping, fishing or small-scale farming, and produce grown in vegetable gardens and orchards or collected from

naturally occurring sources (e.g. wild berries). Country foods do not include any foods sold commercially.

#### Project Related

For this project, Health Canada recommended monitoring of raspberries and periwinkles to facilitate early detection of any construction or operational impacts to country foods.

#### **Lighting**

Health Canada does not have expertise on operational lighting however a reference was provided to the proponent for information.

#### **Socio-economic**

##### General

Health Canada has adopted a holistic definition of health, defined as such by the World Health Organization (WHO), to be “a state of complete physical, mental and social well-being and not merely the absence of disease”. Social determinants such as personal health practices and coping skills, health services and employment and working conditions play a significant role in determining the overall health of Canadians.

Health Canada has limited expertise on socio-economic impacts, and as a result, advice is limited to expertise and experience of the Health Canada Regional Environmental Assessment Coordinator.

##### Project Related

Socio-economic comments were related to preservation of the environment with indirect effects on income sources and quality of life. Health Canada comments were submitted in a context supporting holistic evaluation of the impact of project activities.

#### **Conclusion**

After reviewing the Environmental Impact Statement, Health Canada finds that there is not a significant risk to human health.

As part of the conclusion, Health Canada requests that the proponent clarify emission estimates (e.g. diesel, fuel oil, particulate matter) from equipment and operational activities.