

# Meeting Minutes

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January 4, 2017

Lakeside Community Centre

**CLC Member Attendees: Valda Walsh, Milt Larsen, Kathy Lea**

**CLC Member Regrets: Murray Power, Mike Marriott**

**Others: Chair Ken Donnelly, Scotian Materials President Rob MacPherson, Rob Batherson - Consultant to Scotian Materials, Shayne Vipond - HRM Observer**

**Others Regrets: Iain Rankin MLA - Observer, Ben Jessome, MLA - Observer**

## **1. Agenda Review**

There were no changes to the agenda.

## **2. Presentation by Golder**

Rob MacPherson introduced the consultants from Golder and Associates who joined by telephone. Natalie Jones of Golder made the presentation (attached) on the results of the modelling they did to assess emissions from the proposed plant and the resulting air quality.

Key points were that the modelling was done using worst-case scenarios, and that all of the parameters analyzed were under the acceptable limits. The modelling looked at different distances from the source, including 2.5 km away, which is the distance of the closest homes in Westwood Hills subdivision.

After the presentation there was some discussion about communications, with some members feeling that there would be some benefit to providing information in terms that the public could understand.

Kathy Lea said that she knew someone from Nova Scotia Environment who could be invited to a meeting if the CLC had further questions on the air quality findings.

### **3. Communications**

Rob Batherson presented on communications. He presented the preliminary results of recent polling (December 9 to 21, 300 area residents), and presented a communications strategy that was in the process of being developed.

Rob Batherson emphasized that the purpose of the communications strategy was to get the facts out about the proposed asphalt plant.

### **4. Charter**

Valda Walsh asked for the draft Charter of the CLC be modified as it speaks to the requirement that CLC members communicate to the stakeholders in the association that they represent, and she is not representing any association. Ken Donnelly agreed to make the change.

### **5. Update on HRM Consultation Plan**

Shayne Vipond said that an Open House was being planned, tentatively for January 25th and 26th at Shining Waters. He described the layout, which would include several stations with information about the project. People would be asked to register for the event and choose one of 2 times for each day, and there would be a guided tour through the presentation materials.

## **6. Ground Water Monitoring**

Rob MacPherson said that, after it was brought up at the last CLC meeting, he had approached a local community group and offered to pay for groundwater monitoring if the group was willing to add it to some monitoring work that was already underway. The offer was refused.,

## **7. Other Business**

Ken Donnelly said that Murray Power had expressed an interest in a visit to see a mobile asphalt plant in action. Others on the CLC said that would help them to understand the project better.

Rob MacPherson said he would try to arrange a visit but noted that it was difficult to do. First, asphalt paving is not done in the winter so all plants would be idle until May. Second, Scotian's plant was currently in New Brunswick and would not be brought to Nova Scotia until there was a local project. Third, it would be very difficult to arrange for a tour of a mobile plant run by a competing asphalt company.

## **8. Meeting Adjourned**

**Appendix - Golder Presentation**

Tote Road Quarry Asphalt Plant Emissions Overview

# Scotian Materials Ltd.





## Tote Road Quarry Asphalt Plant Overview

Scotian Materials Ltd. (Scotian) purposes to operate a mobile asphalt plant on Tote Road in Head of St. Margarets Bay. The plant will operate in Scotians Quarry site located approximately 2.5 km from Westwood Hills Subdivision.

- The purpose of this presentation is to provide:
  - ❖ Information regarding compounds of concern raised during the consultation process
  - ❖ An overview of the plant operation and emission sources
  - ❖ Air dispersion modelling results



## Compounds of Concern - Arsenic

- Arsenic naturally occurs in the aquatic and terrestrial environments from the weathering and erosion of rock and soil.
- In areas of arsenic-enriched bedrock, background concentrations can be significantly elevated. Large amounts of arsenic have been reported in soil, sediment and water in the vicinity of arsenic-bearing precious metal deposits near Halifax (Health Canada, 2007a).
- Other sources include smelting of metals, use of pesticides and fuel combustion.
- Levels of arsenic in inhalable particulates ( $< 10 \mu\text{m}$  diameter) in 11 Canadian cities and a rural site were monitored from 1985 to 1990. Results ranged from  $< 0.0005$  to  $0.017 \mu\text{g}/\text{m}^3$  (24-hour average) (Health Canada, 2007a).



## Compounds of Concern – Benzene and PAHs

- Benzene occurs naturally in crude petroleum products.
- The major source of benzene in Canada is related to vehicle emissions (Env. Canada, 2015).
- Other sources of benzene include industrial processes and service stations.
- Indoor sources include cigarette smoking, storage of gasoline products in a confined area and off gassing from building materials.
- Mean concentrations of benzene in ambient air surveyed in 10 Canadian cities between 1988 and 1990 ranged from 1.2 to 14.6  $\mu\text{g}/\text{m}^3$ , (Health Canada, 2007b).
- Forest fires contribute to naturally occurring PAH concentrations.
- Sources of PAHs to ambient air include emissions from residential wood heating, agricultural burning and open air fires and transportation (Health Canada, 2007c).





# Tote Road Quarry Asphalt Plant and Emission Sources





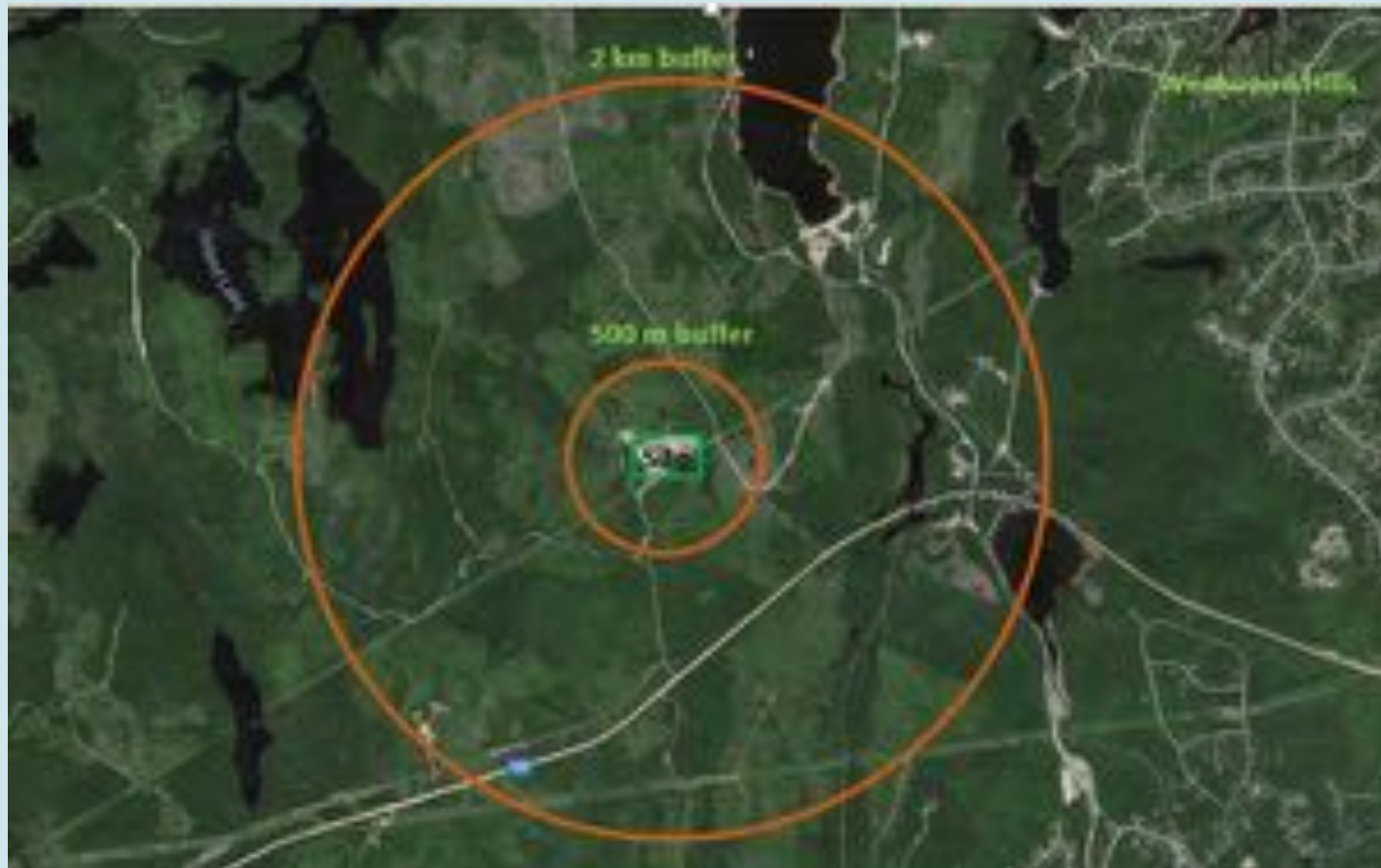
## Tote Road Quarry Asphalt Plan Emission Sources

- Emissions associated with liquid asphalt tank filling activities
- One 1.5 MMBtu/hr hot oil heater for liquid asphalt storage tanks
- Emissions associated with asphalt silo filling activities
- Emissions associated with aggregate handling (cold feed bins, conveyor transfers and screening)
- One Almix model 10844 Uni-flow drum mixer with 80,000 cfm baghouse
- One 125 MMBtu/hr fuel oil dryer burner
- Emissions associated with hot mix asphalt loading into trucks



## Tote Road Quarry Asphalt Plant Location

The plant will be located more than 2.5 kilometers from the nearest residential use in Westwood Hills.





## Tote Road Quarry Asphalt Plant Dispersion Modelling

- Concentrations at setbacks of 500 m and 2 km were assessed
- Modelling considers all wind directions and assumes a flat terrain therefore provides the highest concentration output
- All equipment assumed to be operated simultaneously at maximum throughput
- Results compared to Nova Scotia Air Quality Regulations 28/2005 Schedule A
- Nova Scotia does not have Air Quality Regulations for arsenic, benzene and PAHs
- Results for arsenic, benzene and PAHs compared to Ontario Ambient Air Quality Criteria

### ***Worst Case Scenario Modelled***



## Ground Level Concentrations – Worst Case Scenario

| Compounds  | Air Quality Standard<br>[ $\mu\text{g}/\text{m}^3$ ] | Reference                                    | % of Standard at<br>500 m | % of Standard at<br>2 km |
|--|--|--|---------------------------|--------------------------|
| Carbon Monoxide (1 hr)                           | 34 600   | NS Air Quality<br>Reg. 28/2005<br>Schedule A | 1%                        | <1%                      |
| Carbon Monoxide (8 hr)                           | 12 700   |  | 2%                        | <1%                      |
| Nitrogen Oxides (1 hr)                           | 400  |  | 47%                       | 5%                       |
| Particulate Matter (24 hr)                       | 120  |  | 45%                       | 5%                       |
| Sulphur Dioxide (1 hr)                           | 900  |  | 5%                        | <1%                      |
| Sulphur Dioxide (24 hr)                          | 300  |  | 6%                        | <1%                      |
| Arsenic (24 hr)                                  | 0.3  | OAAQC  | <1%                       | <0.1%                    |
| Benzene (24 hr)                                  | 2.3  |  | 24%                       | 3%                       |
| Benzo(a)pyrene (24 hr)<br>as a surrogate of PAHs | 0.00005  |  | 37%                       | 4%                       |





## Emissions and Human Health

There are two key aspects of the assessment that indicate whether a health effect could be possible:

***The modelled concentrations have to be greater than their health-based air quality standards.***

To see whether this is true, we must be reasonably certain that the modelled concentrations are representative (or overestimate) actual concentrations rather than underestimate concentrations.

We must also confirm that the air quality standards we are using for comparison are protective of human health. We will first examine the air quality standards.



## Air Quality Regulations

The selected air quality standards are taken from NS Air Quality Reg. 28/2005 Schedule A and Ontario Regulation 419/05. The regulations considers the protection of human health, among other effects:

| Compound                         | Basis of Air Quality Standard |
|----------------------------------|-------------------------------|
| Carbon monoxide (1- and 8-hour)  | Health                        |
| Nitrogen oxides (1-hour)         | Health                        |
| Particulate matter (24-hour)     | Visibility*                   |
| Sulphur dioxide (1- and 24-hour) | Health & Vegetation           |
| Arsenic (24-hour)                | Health                        |
| Benzene (24-hour)                | Health                        |
| Benzo(a)pyrene (24-hour)         | Health                        |

\*For particulate matter, this refers to visible dust and its standard is based on aesthetics rather than a health effect. No comment can be made regarding fine dusts as these were not specifically modelled.



## Tote Road Quarry Asphalt Plant and Human Health

- Several levels of conservatism were built into the modelling:
  - Conservative emission rates
  - Conservative dispersion modeling parameters
  - Conservative setback distances, considering the nearest permanent human receptor location is 2.5 km away from the proposed plant location
- Considering all of the conservative assumptions, the maximum predicted ground level concentrations are still less than air quality standards at all setback distances.
- As a result, no health effects are expected at the setback distances considered.





## References

Air Quality Regulations 28/2005 Schedule A. Available at:

<https://www.novascotia.ca/just/regulations/regs/envairqt.htm> [Accessed on 24 August 2016].

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Health Canada. 2007c. Polycyclic Aromatic Hydrocarbons . [ONLINE] Available at: [http://www.hc-sc.gc.ca/ewh-semt/pubs/contaminants/psl1-lsp1/hydrocarb\\_aromat\\_polycycl/index-eng.php#a21](http://www.hc-sc.gc.ca/ewh-semt/pubs/contaminants/psl1-lsp1/hydrocarb_aromat_polycycl/index-eng.php#a21). [Accessed 17 August 2016].

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