

## MEMORANDUM

**TO** Dawn MacNeil, STPA  
**FROM** Dianne Theriault  
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**DATE** 9<sup>th</sup> March, 2009

**FILE NO.** S-1279-03  
**SHIFT:** 0730 to 1730  
**CC:** Shawn Bernon, STPA  
Wilfred Kaiser, STPA  
Terry Smith, ALL-TECH

**STPA NO.** TP2-0119

**SUBJECT: 6<sup>th</sup> March, 2009, Real-time Air Monitoring Results  
Sydney Tar Ponds Agency – Material Processing Facility  
FINAL REPORT**

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Attached is a summary of Real-time particulate (as PM<sub>10</sub>) results for air monitoring performed on the 6<sup>th</sup> of March, 2009. Kelly Morrison and Alison Giovannetti, of ALL-TECH Environmental Services Cape Breton Limited (ALL-TECH), performed all air monitoring activities.

Weather conditions on the day of sampling:  
- Mainly sunny  
- Temperature: approximately -3°C  
- Wind Direction: Southwest

**Comments:** *ALL-TECH was on-Site at 0730 hours and sampling began as soon as there was site activity. Air monitoring was performed during AECOM's construction activities.*

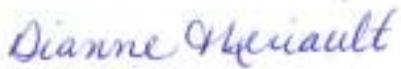
All downwind and upwind measurements of PM<sub>10</sub> were below the established Site Action Level for this parameter of 155 µg/m<sup>3</sup>.

All downwind and upwind measurements of Total Volatile Organic Compounds (TVOC) were below the established Site Action Level for this parameter of 0.66 ppm. Each measurement is the average of a 15 minute sample. A minimum of 2 samples were taken downwind and 1 sample upwind every hour. All measurements were found to be below the detection limit of the instrument. Levels above detection limit will be noted in the table below.

Due to operational criteria, during periods of precipitation (snow and rain) and high humidity, TVOC sampling is halted and resumes after the precipitation has ended.

This report has been prepared by Kelly Morrison and reviewed by Dianne Theriault. If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,



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Dianne Theriault, B.Tech  
Environmental Technologist  
**ALL-TECH Environmental Services Cape Breton Ltd.**

Copied via e-mail:

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**Real-time Airborne PM<sub>10</sub> Concentration Results**  
**Sydney Tar Ponds Agency – Material Processing Facility**  
**6<sup>th</sup> March, 2009**

| <b>Sample No. &amp; Air Monitoring Location</b>        | <b>Time of Day</b> | <b>PM<sub>10</sub> Action Level (µg/m<sup>3</sup>)</b> | <b>Average Result (µg/m<sup>3</sup>)</b> | <b>Wind Direction</b> | <b>Relative Position</b> | <b>Description of Activity</b> | <b>Observations that may affect sample</b>        |
|--|--------------------|--|--|-----------------------|--------------------------|--------------------------------|---|
| 1<br>Railway property,<br>30m North of<br>Ferry Street | 0800               | 155  | 19                                       | Southwest             | Upwind                   | Background                     | No observations seen to affect sampling integrity |
| 2<br>150m North<br>Inglis, Spar Road<br>intersection   | 0800               | 155  | 20                                       | Southwest             | Downwind                 | No activity observed on site   | No observations seen to affect sampling integrity |
| 3<br>150m North<br>Inglis, Spar Road<br>intersection   | 0825               | 155  | 21                                       | Southwest             | Downwind                 | Machine moving material        | No observations seen to affect sampling integrity |
| 4<br>Railway property,<br>30m North of<br>Ferry Street | 0900               | 155  | 11                                       | Southwest             | Upwind                   | Background                     | No observations seen to affect sampling integrity |
| 5<br>150m North<br>Inglis, Spar Road<br>intersection   | 0900               | 155  | 15                                       | Southwest             | Downwind                 | Machine moving material        | No observations seen to affect sampling integrity |
| 6<br>150m North<br>Inglis, Spar Road<br>intersection   | 0930               | 155  | 14                                       | Southwest             | Downwind                 | Machine moving material        | No observations seen to affect sampling integrity |

| <b>Sample No. &amp; Air Monitoring Location</b>         | <b>Time of Day</b> | <b>PM<sub>10</sub> Action Level (µg/m<sup>3</sup>)</b> | <b>Average Result (µg/m<sup>3</sup>)</b> | <b>Wind Direction</b> | <b>Relative Position</b> | <b>Description of Activity</b> | <b>Observations that may affect sample</b>        |
|---|--------------------|--|--|-----------------------|--------------------------|--------------------------------|---|
| 7<br>Railway property,<br>30m North of<br>Ferry Street  | 1000               | 155  | 8  | Southwest             | Upwind                   | Background                     | No observations seen to affect sampling integrity |
| 8<br>150m North<br>Inglis, Spar Road<br>intersection    | 1000               | 155  | 14                                       | Southwest             | Downwind                 | No activity observed on site   | No observations seen to affect sampling integrity |
| 9<br>150m North<br>Inglis, Spar Road<br>intersection    | 1045               | 155  | 10                                       | Southwest             | Downwind                 | Machine moving material        | No observations seen to affect sampling integrity |
| 10<br>Railway property,<br>30m North of<br>Ferry Street | 1100               | 155  | 5  | Southwest             | Upwind                   | Background                     | No observations seen to affect sampling integrity |
| 11<br>150m North<br>Inglis, Spar Road<br>intersection   | 1100               | 155  | 11                                       | Southwest             | Downwind                 | Machine moving material        | No observations seen to affect sampling integrity |
| 12<br>150m North<br>Inglis, Spar Road<br>intersection   | 1130               | 155  | 9  | Southwest             | Downwind                 | Machine moving material        | No observations seen to affect sampling integrity |
| 13<br>Railway property,<br>30m North of<br>Ferry Street | 1200               | 155  | 5  | Southwest             | Upwind                   | Background                     | No observations seen to affect sampling integrity |

| <b>Sample No. &amp; Air Monitoring Location</b>   | <b>Time of Day</b> | <b>PM<sub>10</sub> Action Level (µg/m<sup>3</sup>)</b> | <b>Average Result (µg/m<sup>3</sup>)</b> | <b>Wind Direction</b> | <b>Relative Position</b> | <b>Description of Activity</b> | <b>Observations that may affect sample</b>        |
|---|--------------------|--|--|-----------------------|--------------------------|--------------------------------|---|
| 14<br>150m North Inglis, Spar Road intersection   | 1200               | 155  | 17                                       | Southwest             | Downwind                 | No activity observed on site   | No observations seen to affect sampling integrity |
| 15<br>150m North Inglis, Spar Road intersection   | 1215               | 155  | 13                                       | Southwest             | Downwind                 | Machine moving material        | No observations seen to affect sampling integrity |
| 16<br>Railway property, 30m North of Ferry Street | 1300               | 155  | 5  | Southwest             | Upwind                   | Background                     | No observations seen to affect sampling integrity |
| 17<br>150m North Inglis, Spar Road intersection   | 1300               | 155  | 7  | Southwest             | Downwind                 | Machine moving material        | No observations seen to affect sampling integrity |
| 18<br>150m North Inglis, Spar Road intersection   | 1345               | 155  | 10                                       | Southwest             | Downwind                 | Machine moving material        | No observations seen to affect sampling integrity |
| 19<br>Railway property, 30m North of Ferry Street | 1400               | 155  | 4  | Southwest             | Upwind                   | Background                     | No observations seen to affect sampling integrity |
| 20<br>150m North Inglis, Spar Road intersection   | 1400               | 155  | 10                                       | Southwest             | Downwind                 | Machine moving material        | No observations seen to affect sampling integrity |

| Sample No. & Air Monitoring Location              | Time of Day | PM <sub>10</sub> Action Level (µg/m <sup>3</sup> ) | Average Result (µg/m <sup>3</sup> ) | Wind Direction | Relative Position | Description of Activity | Observations that may affect sample               |
|---|-------------|--|-------------------------------------|----------------|-------------------|-------------------------|---|
| 21<br>150m North Inglis, Spar Road intersection   | 1430        | 155  | 8                                   | Southwest      | Downwind          | Machine moving material | No observations seen to affect sampling integrity |
| 22<br>Railway property, 30m North of Ferry Street | 1500        | 155  | 4                                   | Southwest      | Upwind            | Background              | No observations seen to affect sampling integrity |
| 23<br>150m North Inglis, Spar Road intersection   | 1500        | 155  | 7                                   | Southwest      | Downwind          | Machine moving material | No observations seen to affect sampling integrity |
| 24<br>150m North Inglis, Spar Road intersection   | 1520        | 155  | 12                                  | Southwest      | Downwind          | Machine moving material | No observations seen to affect sampling integrity |
| 25<br>Railway property, 30m North of Ferry Street | 1600        | 155  | 5                                   | Southwest      | Upwind            | Background              | No observations seen to affect sampling integrity |
| 26<br>150m North Inglis, Spar Road intersection   | 1600        | 155  | 15                                  | Southwest      | Downwind          | Machine moving material | No observations seen to affect sampling integrity |
| 27<br>150m North Inglis, Spar Road intersection   | 1645        | 155  | 15                                  | Southwest      | Downwind          | Machine moving material | No observations seen to affect sampling integrity |

**Notes: Air sample duration for each monitoring event was 15 minutes.**

### Comparison of Downwind Daily Results for Dust Budget

| Location  | Duration        | Dust Budget Value<br>( $\mu\text{g}/\text{m}^3$ ) | Dust Budget Exceedance Value ( $\mu\text{g}/\text{m}^3$ ) |
|---|-----------------|---|---|
| 150m North Inglis,<br>Spar Road<br>intersection | 0800 to<br>0859 | 21  | 990   |
| 150m North Inglis,<br>Spar Road<br>intersection | 0900 to<br>0959 | 36  | 990   |
| 150m North Inglis,<br>Spar Road<br>intersection | 1000 to<br>1059 | 48  | 990   |
| 150m North Inglis,<br>Spar Road<br>intersection | 1100 to<br>1159 | 58  | 990   |
| 150m North Inglis,<br>Spar Road<br>intersection | 1200 to<br>1259 | 73  | 990   |
| 150m North Inglis,<br>Spar Road<br>intersection | 1300 to<br>1359 | 82  | 990   |
| 150m North Inglis,<br>Spar Road<br>intersection | 1400 to<br>1459 | 91  | 990   |
| 150m North Inglis,<br>Spar Road<br>intersection | 1500 to<br>1559 | 101   | 990   |
| 150m North Inglis,<br>Spar Road<br>intersection | 1600 to<br>1659 | 116   | 990   |

### VOC Monitoring

| Monitoring Method         | Yes | No |
|---------------------------|-----|----|
| Sustained Odours Observed |     | •  |
| P.I.D. Required           | •   |    |