

MEMORANDUM

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|-------------|------------------------------|-----------------|---|
| TO | Dawn MacNeil, STPA | FILE NO. | S-1293-12 |
| FROM | Dianne Theriault | SHIFT: | 0630 to 1830 |
| TEL | (902) 539-3012 | CC: | Shawn Bernon, STPA Wilfred Kaiser, STPA Terry Smith, ALL-TECH |
| FAX | (902) 539-3381 | | |
| DATE | 16 th April, 2009 | STPA NO. | CO2-0015 |

**SUBJECT: 15th April, 2009 Real-time Air Monitoring Results
Sydney Tar Ponds Agency – Tar Cell
FINAL REPORT**

Attached is a summary of Real-time particulate (as PM₁₀) results for air monitoring performed on the 15th of April, 2009. Nigel MacLean and Shawn Dove 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: Northwest

Comments: *ALL-TECH was on-Site at 0630 and sampling began as soon as there was site activity. Air monitoring was performed during SLR's construction activities.*

All downwind and upwind measurements of PM₁₀ were below the established Site Action Level for this parameter of 155 µg/m³.

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 Nigel MacLean and reviewed by Dianne Theriault. If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,



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

Copied via e-mail:

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Real-time Airborne PM₁₀ Concentration Results
Sydney Tar Ponds Agency – Tar Cell
15th April, 2009

| Sample No. & Air Monitoring Location | Time of Day | PM₁₀ Action Level (µg/m³) | Average Result (µg/m³) | Wind Direction | Relative Position | Description of Activity | Observations that may affect sample |
|--|--------------------|--|--|-----------------------|--------------------------|--------------------------------|---|
| 1 35m North of Spar Rd. and Spar Rd. Ext intersection | 0700 | 155 | 25 | Northwest | Upwind | Background | No observations seen to affect sampling integrity |
| 2 30m Northwest of Coke Ovens main gate | 0700 | 155 | 11 | Northwest | Downwind | Excavators loading haul trucks | No observations seen to affect sampling integrity |
| 3 30m Northwest of Coke Ovens main gate | 0730 | 155 | 17 | Northwest | Downwind | Excavators loading haul trucks | No observations seen to affect sampling integrity |
| 4 35m North of Spar Rd. And Spar Rd. Ext intersection | 0800 | 155 | 28 | Northwest | Upwind | Background | No observations seen to affect sampling integrity |
| 5 30m Northwest of Coke Ovens main gate | 0800 | 155 | 13 | Northwest | Downwind | Excavators loading haul trucks | No observations seen to affect sampling integrity |
| 6 30m Northwest of Coke Ovens main gate | 0820 | 155 | 12 | Northwest | Downwind | Excavators loading haul trucks | No observations seen to affect sampling integrity |

| Sample No. & Air Monitoring Location | Time of Day | PM₁₀ Action Level (µg/m³) | Average Result (µg/m³) | Wind Direction | Relative Position | Description of Activity | Observations that may affect sample |
|---|--------------------|--|--|-----------------------|--------------------------|--------------------------------|---|
| 7 40m West of Laurier St. Ext and Victoria Rd. intersection | 0900 | 155 | 13 | Northwest | Upwind | Background | No observations seen to affect sampling integrity |
| 8 30m Northwest of Coke Ovens main gate | 0900 | 155 | 12 | Northwest | Downwind | Excavators loading haul trucks | No observations seen to affect sampling integrity |
| 9 30m Northwest of Coke Ovens main gate | 0930 | 155 | 11 | Northwest | Downwind | Excavators loading haul trucks | No observations seen to affect sampling integrity |
| 10 40m West of Laurier St. Ext and Victoria Rd. intersection | 1000 | 155 | 11 | Northwest | Upwind | Background | No observations seen to affect sampling integrity |
| 11 30m Northwest of Coke Ovens main gate | 1000 | 155 | 10 | Northwest | Downwind | No activity | No observations seen to affect sampling integrity |
| 12 30m Northwest of Coke Ovens main gate | 1035 | 155 | 11 | Northwest | Downwind | Excavators loading haul trucks | No observations seen to affect sampling integrity |
| 13 40m West of Laurier St. Ext and Victoria Rd. intersection | 1100 | 155 | 10 | Northwest | Upwind | Background | No observations seen to affect sampling integrity |

| Sample No. & Air Monitoring Location | Time of Day | PM ₁₀ Action Level (µg/m ³) | Average Result (µg/m ³) | Wind Direction | Relative Position | Description of Activity | Observations that may affect sample |
|---|-------------|--|-------------------------------------|----------------|-------------------|--------------------------------|---|
| 14 30m Northwest of Coke Ovens main gate | 1100 | 155 | 10 | Northwest | Downwind | Excavators loading haul trucks | No observations seen to affect sampling integrity |
| 15 30m Northwest of Coke Ovens main gate | 1125 | 155 | 12 | Northwest | Downwind | Excavators loading haul trucks | No observations seen to affect sampling integrity |
| 16 40m West of Laurier St. Ext and Victoria Rd. intersection | 1200 | 155 | 14 | Northwest | Upwind | Background | No observations seen to affect sampling integrity |
| 17 30m Northwest of Coke Ovens main gate | 1200 | 155 | 12 | Northwest | Downwind | Excavators loading haul trucks | No observations seen to affect sampling integrity |
| 18 30m Northwest of Coke Ovens main gate | 1215 | 155 | 10 | Northwest | Downwind | Excavators loading haul trucks | No observations seen to affect sampling integrity |
| 19 40m West of Laurier St. Ext and Victoria Rd. intersection | 1300 | 155 | 16 | Northwest | Upwind | Background | No observations seen to affect sampling integrity |
| 20 30m Northwest of Coke Ovens main gate | 1300 | 155 | 11 | Northwest | Downwind | No activity observed on site | No observations seen to affect sampling integrity |

| Sample No. & Air Monitoring Location | Time of Day | PM ₁₀ Action Level (µg/m ³) | Average Result (µg/m ³) | Wind Direction | Relative Position | Description of Activity | Observations that may affect sample |
|---|-------------|--|-------------------------------------|----------------|-------------------|--------------------------------|---|
| 21 30m Northwest of Coke Ovens main gate | 1330 | 155 | 11 | Northwest | Downwind | Excavators loading haul trucks | No observations seen to affect sampling integrity |
| 22 40m West of Laurier St. Ext and Victoria Rd. intersection | 1400 | 155 | 15 | Northwest | Upwind | Background | No observations seen to affect sampling integrity |
| 23 30m Northwest of Coke Ovens main gate | 1400 | 155 | 12 | Northwest | Downwind | Excavators loading haul trucks | No observations seen to affect sampling integrity |
| 24 30m Northwest of Coke Ovens main gate | 1420 | 155 | 11 | Northwest | Downwind | Excavators loading haul trucks | No observations seen to affect sampling integrity |
| 25 40m West of Laurier St. Ext and Victoria Rd. intersection | 1500 | 155 | 15 | Northwest | Upwind | Background | No observations seen to affect sampling integrity |
| 26 30m Northwest of Coke Ovens main gate | 1500 | 155 | 12 | Northwest | Downwind | No activity | No observations seen to affect sampling integrity |
| 27 30m Northwest of Coke Ovens main gate | 1525 | 155 | 11 | Northwest | Downwind | Excavators loading haul trucks | No observations seen to affect sampling integrity |

| Sample No. & Air Monitoring Location | Time of Day | PM ₁₀ Action Level (µg/m ³) | Average Result (µg/m ³) | Wind Direction | Relative Position | Description of Activity | Observations that may affect sample |
|---|-------------|--|-------------------------------------|----------------|-------------------|--------------------------------|---|
| 28 40m West of Laurier St. Ext and Victoria Rd. intersection | 1600 | 155 | 14 | Northwest | Upwind | Background | No observations seen to affect sampling integrity |
| 29 30m Northwest of Coke Ovens main gate | 1600 | 155 | 13 | Northwest | Downwind | Excavators loading haul trucks | No observations seen to affect sampling integrity |
| 30 30m Northwest of Coke Ovens main gate | 1635 | 155 | 14 | Northwest | Downwind | Excavators loading haul trucks | No observations seen to affect sampling integrity |
| 31 40m West of Laurier St. Ext and Victoria Rd. intersection | 1700 | 155 | 12 | Northwest | Upwind | Background | No observations seen to affect sampling integrity |
| 32 30m Northwest of Coke Ovens main gate | 1700 | 155 | 13 | Northwest | Downwind | Excavators loading haul trucks | No observations seen to affect sampling integrity |
| 33 30m Northwest of Coke Ovens main gate | 1745 | 155 | 11 | Northwest | Downwind | No activity observed on site | 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 ($\mu\text{g}/\text{m}^3$) | Dust Budget Exceedance Value ($\mu\text{g}/\text{m}^3$) |
|---|-----------------|---|---|
| 30m Northwest of Coke Ovens main gate | 0700 to 0759 | 14 | 990 |
| 30m Northwest of Coke Ovens main gate | 0800 to 0859 | 27 | 990 |
| 30m Northwest of Coke Ovens main gate | 0900 to 0959 | 39 | 990 |
| 30m Northwest of Coke Ovens main gate | 1000 to 1059 | 50 | 990 |
| 30m Northwest of Coke Ovens main gate | 1100 to 1159 | 61 | 990 |
| 30m Northwest of Coke Ovens main gate | 1200 to 1259 | 72 | 990 |
| 30m Northwest of Coke Ovens main gate | 1300 to 1359 | 83 | 990 |
| 30m Northwest of Coke Ovens main gate | 1400 to 1459 | 95 | 990 |
| 30m Northwest of Coke Ovens main gate | 1500 to 1559 | 107 | 990 |
| 30m Northwest of Coke Ovens main gate | 1600 to 1659 | 121 | 990 |
| 30m Northwest of Coke Ovens main gate | 1700 to 1759 | 133 | 990 |

VOC Monitoring

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