

MEMORANDUM

TO Dawn MacNeil, STPA
FROM Dianne Theriault
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DATE 7th July, 2009

FILE NO. S-1353-04
SHIFT: 0630 to 1830
CC: Shawn Bernon, STPA
Wilfred Kaiser, STPA
Terry Smith, ALL-TECH
STPA NO. TP6D-CP-0111

**SUBJECT: 6th July, 2009 Real-time Air Monitoring Results
Sydney Tar Ponds Agency – Access Roads, Cooling Pond
FINAL REPORT**

Attached is a summary of Real-time particulate (as PM₁₀) results for air monitoring performed on the 6th of July, 2009. Jennifer Andrews and Dwayne Timmons of ALL-TECH Environmental Services Cape Breton Limited (ALL-TECH) performed all air monitoring activities.

Weather conditions on the day of sampling:
- Mainly cloudy
- Temperature: approximately 16°C
- Wind Direction: West to Northwest

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

One exceedance of the 15-minute Site Action Level of 180 µg/m³ was measured at the downwind location at 1325 hours with an average of 205 µg/m³ (see sample no. 21). It was attributed to heavy dust from the site activity. AECOM was immediately informed of the exceedance.

All upwind measurements of PM₁₀ were below the established Site Action Level for this parameter of 180 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 Jennifer Andrews 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 – Access Roads, Cooling Pond
6th July, 2009

| 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 |
|---|-------------|--|-------------------------------------|----------------|-------------------|------------------------------|---|
| 1 30m Northwest of fixed station on Intercolonial St. (N46°08.595' W060°11.406') | 0700 | 180 | 5 | West | Upwind | Background | No observations seen to affect sampling integrity |
| 2 30m West of STPA building (N46°08.725' W060°11.035') | 0700 | 180 | 7 | West | Downwind | Excavator moving | No observations seen to affect sampling integrity |
| 3 30m West of STPA building (N46°08.725' W060°11.035') | 0745 | 180 | 21 | West | Downwind | Dump truck in operation | No observations seen to affect sampling integrity |
| 4 30m Northwest of fixed station on Intercolonial St. (N46°08.595' W060°11.406') | 0800 | 180 | 4 | West | Upwind | Background | No observations seen to affect sampling integrity |
| 5 25m West of STPA building (N46°08.716' W060°11.024') | 0800 | 180 | 15 | West | Downwind | Loader in operation | No observations seen to affect sampling integrity |
| 6 25m West of STPA building (N46°08.716' W060°11.024') | 0835 | 180 | 9 | West | 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 |
|---|-------------|--|-------------------------------------|----------------|-------------------|---|---|
| 7 5m Northwest of Ferry St. and Railway Rd. intersection (N46°08.508' W060°11.394') | 0900 | 180 | 2 | Northwest | Upwind | Background | No observations seen to affect sampling integrity |
| 8 30m Southwest of Cape Breton St., Inglis St. intersection (N46°08.601' W060°11.004') | 0900 | 180 | 10 | Northwest | Downwind | Dozer, dump truck and loader in operation | No observations seen to affect sampling integrity |
| 9 30m Southwest of Cape Breton St., Inglis St. intersection (N46°08.601' W060°11.004') | 0920 | 180 | 9 | Northwest | Downwind | Dozer, dump truck and loader in operation | No observations seen to affect sampling integrity |
| 10 5m Northwest of Ferry St. and Railway Rd. intersection (N46°08.508' W060°11.394') | 1000 | 180 | 1 | Northwest | Upwind | Background | No observations seen to affect sampling integrity |
| 11 30m Southwest of Cape Breton St., Inglis St. intersection (N46°08.601' W060°11.004') | 1000 | 180 | 4 | Northwest | Downwind | No activity observed on site | No observations seen to affect sampling integrity |
| 12 30m Southwest of Cape Breton St., Inglis St. intersection (N46°08.601' W060°11.004') | 1025 | 180 | 7 | Northwest | Downwind | Loader and dozer in operation | 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 |
|--|-------------|--|-------------------------------------|----------------|-------------------|------------------------------------|---|
| 13 5m Northwest of Ferry St. and Railway Rd. intersection (N46°08.508' W060°11.394') | 1100 | 180 | 2 | Northwest | Upwind | Background | No observations seen to affect sampling integrity |
| 14 30m Southwest of Cape Breton St., Inglis St. intersection (N46°08.601' W060°11.004') | 1100 | 180 | 5 | Northwest | Downwind | Loader and dump truck in operation | No observations seen to affect sampling integrity |
| 15 30m Southwest of Cape Breton St., Inglis St. intersection (N46°08.601' W060°11.004') | 1135 | 180 | 4 | Northwest | Downwind | Loader and dump truck in operation | No observations seen to affect sampling integrity |
| 16 5m Northwest of Ferry St. and Railway Rd. intersection (N46°08.508' W060°11.394') | 1200 | 180 | 3 | Northwest | Upwind | Background | No observations seen to affect sampling integrity |
| 17 30m Southwest of Cape Breton St., Inglis St. intersection (N46°08.601' W060°11.004') | 1200 | 180 | 3 | Northwest | Downwind | No activity observed on site | No observations seen to affect sampling integrity |
| 18 30m Southwest of Cape Breton St., Inglis St. intersection (N46°08.601' W060°11.004') | 1220 | 180 | 3 | 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 |
|---|-------------|--|-------------------------------------|----------------|-------------------|--|---|
| 19 5m Northwest of Ferry St. and Railway Rd. intersection (N46°08.508' W060°11.394') | 1300 | 180 | 3 | Northwest | Upwind | Background | No observations seen to affect sampling integrity |
| 20 30m West of STPA building (N46°08.725' W060°11.035') | 1300 | 180 | 106 | Northwest | Downwind | Excavator and dump trucks in operation | Excavator and dump truck causing high reading |
| 21 30m West of STPA building (N46°08.725' W060°11.035') | 1325 | 180 | 205 | Northwest | Downwind | Excavator and dump trucks in operation | Excavator and dump truck causing high reading |
| 22 30m West of STPA building (N46°08.725' W060°11.035') | 1340 | 180 | 105 | Northwest | Downwind | Dump truck in operation | Dump truck causing high reading |
| 23 5m Northwest of Ferry St. and Railway Rd. intersection (N46°08.508' W060°11.394') | 1345 | 180 | 4 | Northwest | Upwind | Background | No observations seen to affect sampling integrity |
| 24 5m Northwest of Ferry St. and Railway Rd. intersection (N46°08.508' W060°11.394') | 1400 | 180 | 4 | 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 |
|---|-------------|--|-------------------------------------|----------------|-------------------|--|---|
| 25 30m West of STPA building (N46°08.725' W060°11.035') | 1400 | 180 | 22 | Northwest | Downwind | Excavator and dump trucks in operation | No observations seen to affect sampling integrity |
| 26 30m West of STPA building (N46°08.725' W060°11.035') | 1440 | 180 | 31 | Northwest | Downwind | Excavator and dump trucks in operation | No observations seen to affect sampling integrity |
| 27 5m Northwest of Ferry St. and Railway Rd. intersection (N46°08.508' W060°11.394') | 1500 | 180 | 4 | Northwest | Upwind | Background | No observations seen to affect sampling integrity |
| 28 30m West of STPA building (N46°08.725' W060°11.035') | 1500 | 180 | 19 | Northwest | Downwind | No activity observed on site | No observations seen to affect sampling integrity |
| 29 30m West of STPA building (N46°08.725' W060°11.035') | 1545 | 180 | 5 | Northwest | Downwind | Excavator and dump trucks in operation | No observations seen to affect sampling integrity |
| 30 5m Northwest of Ferry St. and Railway Rd. intersection (N46°08.508' W060°11.394') | 1600 | 180 | 5 | 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 |
|---|-------------|--|-------------------------------------|----------------|-------------------|--|---|
| 31 30m West of STPA building (N46°08.725' W060°11.035') | 1600 | 180 | 5 | Northwest | Downwind | Excavator and dump trucks in operation | No observations seen to affect sampling integrity |
| 32 30m West of STPA building (N46°08.725' W060°11.035') | 1625 | 180 | 7 | Northwest | Downwind | Excavator and dump trucks in operation | No observations seen to affect sampling integrity |
| 33 5m Northwest of Ferry St. and Railway Rd. intersection (N46°08.508' W060°11.394') | 1700 | 180 | 7 | Northwest | Upwind | Background | No observations seen to affect sampling integrity |
| 34 30m West of STPA building (N46°08.725' W060°11.035') | 1700 | 180 | 8 | Northwest | Downwind | No activity observed on site | No observations seen to affect sampling integrity |
| 35 30m West of STPA building (N46°08.725' W060°11.035') | 1745 | 180 | 6 | 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.

Summary of Downwind PM₁₀ Action Levels

| Average PM ₁₀ Concentration (µg/m ³) | Averaging Period (Hours) | Downwind Action Level (µg/m ³) |
|---|--------------------------|--|
| 14 | 1 | 125 |
| 11 | 4 | 85 |
| 27 | 8 | 70 |

VOC Monitoring

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