

MEMORANDUM

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|-------------|----------------------------|-----------------|-----------------------|
| TO | Dawn MacNeil, STPA | FILE NO. | S-1138-07 |
| FROM | Grant Harrigan | SHIFT: | 0630 to 1730 |
| TEL | (902) 539-3012 | CC: | Shawn Bernon, STPA |
| FAX | (902) 539-3381 | | Wilfred Kaiser, STPA |
| DATE | 2 nd June, 2008 | | Terry Smith, ALL-TECH |
| | | STPA NO. | CP-0139 |

**SUBJECT: 31st May 2008, Real-time Air Monitoring Results
Sydney Tar Ponds Agency – Cooling Pond
FINAL REPORT**

Attached is a summary of Real-time particulate (as PM₁₀) results for air monitoring performed on the 31st of May, 2008. Alex Tchiguirev and Donald MacIsaac 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 18°C
- Wind Direction: Southwest

Comments: *ALL-TECH was on-Site at 0630 and sampling began as soon as there was site activity. Air monitoring was performed during EarthTech'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 Donald MacIsaac and reviewed by Peter Ibrahim. If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,



Grant Harrigan, 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 – Cooling Pond
31st May, 2008

| 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 20m South of Intercolonial Street fixed station | 0740 | 155 | 4 | Southwest | Upwind | Background | No observations seen to effect sampling integrity |
| 2 20m West of STPA building | 0700 | 155 | 5 | Southwest | Downwind | Dump Trucks Dumping | No observations seen to effect sampling integrity |
| 3 20m West of STPA building | 0740 | 155 | 5 | Southwest | Downwind | Bulldozer Operating | Light Traffic |
| 4 20m South of Intercolonial Street fixed station | 0830 | 155 | 6 | Southwest | Upwind | Background | No observations seen to effect sampling integrity |
| 5 20m West of STPA building | 0800 | 155 | 5 | Southwest | Downwind | Dump Trucks Dumping | No observations seen to effect sampling integrity |
| 6 30m Northwest of STPA building | 0830 | 155 | 11 | Southwest | Downwind | Bulldozer operating | No observations seen to effect sampling integrity |
| 7 20m South of Intercolonial Street fixed station | 0925 | 155 | 5 | Southwest | Upwind | Background | No observations seen to effect 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 |
|---|-------------|--|-------------------------------------|----------------|-------------------|---|---|
| 8 30m Northwest of STPA building | 0900 | 155 | 5 | Southwest | Downwind | No activity | No observations seen to effect sampling integrity |
| 9 30m Northwest of STPA building | 0935 | 155 | 17 | Southwest | Downwind | Bulldozer operating & Dump Trucks Dumping | No observations seen to effect sampling integrity |
| 10 20m South of Intercolonial Street fixed station | 1015 | 155 | 5 | Southwest | Upwind | Background | No observations seen to effect sampling integrity |
| 11 30m Northwest of STPA building | 1000 | 155 | 46 | Southwest | Downwind | Bulldozer operating | No observations seen to effect sampling integrity |
| 12 30m Northwest of STPA building | 1020 | 155 | 45 | Southwest | Downwind | No activity | No observations seen to effect sampling integrity |
| 13 20m South of Intercolonial Street fixed station | 1100 | 155 | 7 | Southwest | Upwind | Background | No observations seen to effect sampling integrity |
| 14 30m Northwest of STPA building | 1100 | 155 | 22 | Southwest | Downwind | Bulldozer Operating | Train Passing |

| 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 |
|---|-------------|--|-------------------------------------|----------------|-------------------|---|---|
| 15 30m Northwest of STPA building | 1140 | 155 | 46 | Southwest | Downwind | No activity | No observations seen to effect sampling integrity |
| 16 20m South of Intercolonial Street fixed station | 1200 | 155 | 7 | Southwest | Upwind | Background | No observations seen to effect sampling integrity |
| 17 30m Northwest of STPA building | 1200 | 155 | 106 | Southwest | Downwind | Dump Trucks Dumping | No observations seen to effect sampling integrity |
| 18 30m Northwest of STPA building | 1245 | 155 | 10 | Southwest | Downwind | Bulldozer Operating | No observations seen to effect sampling integrity |
| 19 20m South of Intercolonial Street fixed station | 1300 | 155 | 9 | Southwest | Upwind | Background | No observations seen to effect sampling integrity |
| 20 30m Northwest of STPA building | 1300 | 155 | 54 | Southwest | Downwind | Bulldozer Operating & Dump Trucks Dumping | No observations seen to effect sampling integrity |
| 21 30m Northwest of STPA building | 1330 | 155 | 51 | Southwest | Downwind | Bulldozer Operating & Dump Trucks Dumping | No observations seen to effect 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 |
|---|-------------|--|-------------------------------------|----------------|-------------------|---|---|
| 22 20m South of Intercolonial Street fixed station | 1400 | 155 | 10 | Southwest | Upwind | Background | No observations seen to effect sampling integrity |
| 23 30m Northwest of STPA building | 1400 | 155 | 51 | Southwest | Downwind | Bulldozer Operating & Dump Trucks Dumping | No observations seen to effect sampling integrity |
| 24 30m Northwest of STPA building | 1430 | 155 | 16 | Southwest | Downwind | Bulldozer Operating & Dump Trucks Dumping | No observations seen to effect sampling integrity |
| 25 20m South of Intercolonial Street fixed station | 1500 | 155 | 9 | Southwest | Upwind | Background | No observations seen to effect sampling integrity |
| 26 30m Northwest of STPA building | 1500 | 155 | 25 | Southwest | Downwind | Bulldozer Operating & Dump Trucks Dumping | No observations seen to effect sampling integrity |
| 27 30m Northwest of STPA building Street | 1540 | 155 | 59 | Southwest | Downwind | Bulldozer Operating & Dump Trucks Dumping | No observations seen to effect sampling integrity |
| 28 20m South of Intercolonial Street fixed station | 1600 | 155 | 8 | Southwest | Upwind | Background | No observations seen to effect 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 |
|---|-------------|--|-------------------------------------|----------------|-------------------|---|---|
| 29 30m Northwest of STPA building Street | 1600 | 155 | 44 | Northwest | Downwind | Bulldozer Operating & Dump Trucks Dumping | No observations seen to effect sampling integrity |
| 30 30m Northwest of STPA building Street | 1645 | 155 | 7 | Northwest | Downwind | Bulldozer Operating & Dump Trucks Dumping | No observations seen to effect 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 ($\mu\text{g}/\text{m}^3$) |
|--|--------------|---|---|
| 20m West of STPA Building | 0700 to 0759 | 5 | 990 |
| 20m West of STPA building/30m Northwest of STPA Building | 0800 to 0859 | 13 | 990 |
| 30m Northwest of STPA Building | 0900 to 0959 | 24 | 990 |
| 30m Northwest of STPA Building | 1000 to 1059 | 70 | 990 |
| 30m Northwest of STPA Building | 1100 to 1159 | 102 | 990 |
| 30m Northwest of STPA Building | 1200 to 1259 | 156 | 990 |
| 30m Northwest of STPA Building | 1300 to 1359 | 209 | 990 |
| 30m Northwest of STPA Building | 1400 to 1459 | 243 | 990 |
| 30m Northwest of STPA Building | 1500 to 1559 | 285 | 990 |
| 30m Northwest of STPA Building | 1600 to 1659 | 311 | 990 |

VOC Monitoring

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