

## MEMORANDUM

**TO** Dawn MacNeil, STPA  
**FROM** Dianne Theriault  
**TEL** (902) 539-3012  
**FAX** (902) 539-3381  
**DATE** 29<sup>th</sup> April, 2009

**FILE NO.** S-1293-23  
**SHIFT:** 0630 to 1830  
**CC:** Shawn Bernon, STPA  
Wilfred Kaiser, STPA  
Terry Smith, ALL-TECH  
**STPA NO.** CO2-STPA-0026

**SUBJECT: 28<sup>th</sup> April, 2009 Real-time Air Monitoring Results  
Sydney Tar Ponds Agency – Tar Cell  
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 28<sup>th</sup> of April, 2009. Trevor Rowe 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 sunny
- Temperature: approximately 23°C
- Wind Direction: Southwest to West

**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 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 Trevor Rowe 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:

Shawn Bernon [shawn@tarpondscleanup.ca](mailto:shawn@tarpondscleanup.ca), Wilfred Kaiser [wilfred@tarpondscleanup.ca](mailto:wilfred@tarpondscleanup.ca), Nancy LeDrew [nancy@tarpondscleanup.ca](mailto:nancy@tarpondscleanup.ca), Trish Magliaro [trish@tarpondscleanup.ca](mailto:trish@tarpondscleanup.ca), Terry Smith [tsmith@toalltech.com](mailto:tsmith@toalltech.com), Phyllis Low [pilow@toalltech.com](mailto:pilow@toalltech.com), Dianne Theriault [dtheriault@toalltech.com](mailto:dtheriault@toalltech.com), Darren Gardiner [dgardiner@croworld.com](mailto:dgardiner@croworld.com), Darren Lawless [dlawless@toalltech.com](mailto:dlawless@toalltech.com), Kevin Mac Pherson [kevinmacp@cbcl.ca](mailto:kevinmacp@cbcl.ca), Kathy Harquail [kharquail@toalltech.com](mailto:kharquail@toalltech.com)

**Real-time Airborne PM<sub>10</sub> Concentration Results**  
**Sydney Tar Ponds Agency – Tar Cell**  
**28<sup>th</sup> April, 2009**

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
1 100m South of Spar Rd. and Spar Rd. Extension.	0700	155	14	Southwest	Upwind	Background	No observations seen to affect sampling integrity
2 200m East of CO2 main gate	0700	155	14	Southwest	Downwind	No activity observed on site	No observations seen to affect sampling integrity
3 200m East of CO2 main gate	0730	155	15	Southwest	Downwind	Excavators moving material	No observations seen to affect sampling integrity
4 100m South of Spar Rd. and Spar Rd. Extension.	0800	155	19	Southwest	Upwind	Background	No observations seen to affect sampling integrity
5 200m East of CO2 main gate	0800	155	21	Southwest	Downwind	Excavators moving material	No observations seen to affect sampling integrity
6 200m East of CO2 main gate	0845	155	77	Southwest	Downwind	Excavators 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 100m South of Spar Rd. and Spar Rd. Extension.	0900	155	24	Southwest	Upwind	Background	No observations seen to affect sampling integrity
8 200m East of CO2 main gate	0900	155	31	Southwest	Downwind	Excavators moving material	No observations seen to affect sampling integrity
9 200m East of CO2 main gate	0940	155	50	Southwest	Downwind	Excavators moving material	No observations seen to affect sampling integrity
10 100m South of Spar Rd. and Spar Rd. Extension.	1000	155	22	Southwest	Upwind	Background	No observations seen to affect sampling integrity
11 200m East of CO2 main gate	1000	155	27	Southwest	Downwind	No activity observed on site	No observations seen to affect sampling integrity
12 200m East of CO2 main gate	1015	155	25	Southwest	Downwind	Excavators 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
13 100m South of Spar Rd. and Spar Rd. Extension.	1100	155	23	Southwest	Upwind	Background	No observations seen to affect sampling integrity
14 200m East of CO2 main gate	1100	155	41	Southwest	Downwind	Excavators moving material	No observations seen to affect sampling integrity
15 200m East of CO2 main gate	1120	155	54	Southwest	Downwind	Excavators moving material	No observations seen to affect sampling integrity
16 100m South of Spar Rd. and Spar Rd. Extension.	1200	155	22	Southwest	Upwind	Background	No observations seen to affect sampling integrity
17 200m East of CO2 main gate	1200	155	25	Southwest	Downwind	Excavators moving material	No observations seen to affect sampling integrity
18 200m East of CO2 main gate	1240	155	22	Southwest	Downwind	No activity observed on site	No observations seen to affect sampling integrity
19 100m South of Spar Rd. and Spar Rd. Extension.	1300	155	25	Southwest	Upwind	Background	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
20 200m East of CO2 main gate	1300	155	21	Southwest	Downwind	No activity observed on site	No observations seen to affect sampling integrity
21 200m East of CO2 main gate	1330	155	39	Southwest	Downwind	No activity observed on site	No observations seen to affect sampling integrity
22 100m South of Spar Rd. and Spar Rd. Extension.	1400	155	38	Southwest	Upwind	Background	No observations seen to affect sampling integrity
23 200m East of CO2 main gate	1400	155	41	Southwest	Downwind	Excavators moving material	No observations seen to affect sampling integrity
24 20m Southwest of Spar Rd., Lingan Rd. intersection	1440	155	30	West	Downwind	Excavators moving material	No observations seen to affect sampling integrity
25 50m Southwest of Spar Rd. and Spar Rd. Extension	1500	155	31	West	Upwind	Background	No observations seen to affect sampling integrity
26 20m Southwest of Spar Rd., Lingan Rd. intersection	1500	155	31	West	Downwind	Excavators 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
27 20m Southwest of Spar Rd., Lingan Rd. intersection	1520	155	26	West	Downwind	Excavators moving material	No observations seen to affect sampling integrity
28 50m Southwest of Spar Rd. and Spar Rd. Extension	1600	155	29	West	Upwind	Background	No observations seen to affect sampling integrity
29 20m Southwest of Spar Rd., Lingan Rd. intersection	1600	155	28	West	Downwind	Excavators moving material	No observations seen to affect sampling integrity
30 20m Southwest of Spar Rd., Lingan Rd. intersection	1615	155	23	West	Downwind	Excavators moving material	No observations seen to affect sampling integrity
31 50m Southwest of Spar Rd. and Spar Rd. Extension	1700	155	30	West	Upwind	Background	No observations seen to affect sampling integrity
32 20m Southwest of Spar Rd., Lingan Rd. intersection	1700	155	22	West	Downwind	Excavators moving material	No observations seen to affect sampling integrity
33 20m Southwest of Spar Rd., Lingan Rd. intersection	1745	155	18	West	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 ( $\mu\text{g}/\text{m}^3$ )
200m East of CO2 main gate	0700 to 0759	15	990
200m East of CO2 main gate	0800 to 0859	64	990
200m East of CO2 main gate	0900 to 0959	105	990
200m East of CO2 main gate	1000 to 1059	131	990
200m East of CO2 main gate	1100 to 1159	179	990
200m East of CO2 main gate	1200 to 1259	203	990
200m East of CO2 main gate	1300 to 1359	233	990
200m East of CO2 main gate / 20m Southwest of Spar Rd., Lingan Rd. intersection	1400 to 1459	269	990
20m Southwest of Spar Rd., Lingan Rd. intersection	1500 to 1559	298	990
20m Southwest of Spar Rd., Lingan Rd. intersection	1600 to 1659	324	990
20m Southwest of Spar Rd., Lingan Rd. intersection	1600 to 1659	344	990



### VOC Monitoring

Monitoring Method	Yes	No
Sustained Odours Observed	●	
P.I.D. Required	●	