

Date: April 20, 2018
Client Name: PEI Department of Transportation, Infrastructure & Energy
Client Contact: Tyler Richardson
Project No: PE8097
Project Description: Indoor Air Quality Testing
Site Name: Three Oaks Senior High School
Site Address: Summerside, Prince Edward Island
Report No. 02

1. Details to be noted:

On April 18, 2018 ALL-TECH Environmental Services conducted follow-up indoor air quality monitoring within construction zone 2A1 at Three Oaks Senior High School in Summerside, PEI.

Additional monitoring was completed after higher airborne particulate levels were reported in this area on April 17, 2018 while staff and students were off due to weather conditions.

For the purposes of the project, various target values established by Health Canada and the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standard 69 have been used as a guide for comparing results and are referenced below in table 1. Sample results for each test location are presented in section 2.

Table 1 Indoor Air Quality Guidelines	
Parameters	Guidelines
Carbon Dioxide	< 1000 ppm (ASHRAE)
Carbon Monoxide	< 5 ppm (Health Canada)
Airborne Particulates	0.05 mg/m ³ (annual) 0.15 mg/m ³ (24-hr)
Total Volatile Organic Compounds	Target Level 1 mg/m ³ (Health Canada) Action Level 5 mg/m ³ (Health Canada)

ppm – parts per million
mg/m³ – milligrams per cubic metre

2. Indoor Air Quality Monitoring Results

Sample Location (Construction Phase)	Sample Date (m/d/y)	Sample Duration (min)	CO ₂ (ppm)	CO (ppm)	TVOC's (mg/m ³)	Particulates (mg/m ³)
2A1	04/18/18	30	587	0.2	0.1	0.040
Health Canada / ASHRAE Guidelines			1000	5	1	0.05 (annual) 0.15 (24-hr)

3. Interpretation of Results

Follow up testing in construction zone 2A1 on April 18, 2018 indicated that all air quality parameters were acceptable at the time of testing including the previously elevated airborne particulate levels.

Should you have any questions regarding this report, please do not hesitate to contact our office at (902) 569-0172.



Larry Koughan, CET, CRSP
Senior Environmental Consultant
ALL-TECH Environmental Services Limited

*Incl. IAQ data summary report
Particulate data summary report
Site Drawing with sample locations*



Date:	April 18, 2018
Client Name:	PEI Department of Transportation, Infrastructure & Energy
Client Contact:	Tyler Richardson
Project No:	PE8097
Project Description	Indoor Air Quality Testing
Site Name:	Three Oaks Senior High School
Site Address:	Summerside, Prince Edward Island
Report No.	01

1. Details to be noted:

On April 16 & 17, 2018 ALL-TECH Environmental Services conducted indoor air quality (IAQ) testing in various areas within Three Oaks Senior High School in Summerside, PEI.

The testing was completed to establish ambient baseline conditions and to compare to the on-going construction within the school.

The air quality parameters tested for assessing conditions included the following:

- Carbon Dioxide (CO₂)
- Carbon Monoxide (CO)
- Total Volatile Organic Compounds (TVOCs)
- Airborne Particulates

On April 16, 2018 three areas on the main floor were tested and are noted as the following construction phase areas and are noted on the included site drawing at the end of this report:

- 1A5
- 1B2
- 1C1
- Exterior (comparison)

On April 17, 2018 two areas on the main floor were tested and are noted as the following construction phase areas:

- 2A1

- 2B1

For the purposes of the project, various target values established by Health Canada and the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standard 69 have been used as a guide for comparing results and are referenced below in table 1. Sample results for each test location are presented in section 2.

Table 1 Indoor Air Quality Guidelines	
Parameters	Guidelines
Carbon Dioxide	< 1000 ppm (ASHRAE)
Carbon Monoxide	< 5 ppm (Health Canada)
Airborne Particulates	0.05 mg/m ³ (annual) 0.15 mg/m ³ (24-hr)
Total Volatile Organic Compounds	Target Level 1 mg/m ³ (Health Canada) Action Level 5 mg/m ³ (Health Canada)

ppm – parts per million
mg/m³ – milligrams per cubic metre

2. Indoor Air Quality Monitoring Results

Sample Location (Construction Phase)	Sample Date (m/d/y)	Sample Duration (min)	CO ₂ (ppm)	CO (ppm)	TVOC's (mg/m ³)	Particulates (mg/m ³)
Exterior	04/16/18	54	397	0.3	0.2	0.021
1A5	04/16/18	46	407	0.2	0.1	0.028
1B2	04/16/18	44	587	0.2	0	0.039
1C1	04/16/18	46	665	0.2	0.1	0.020
2A1	04/17/18	58	400	1.7	0.2	* 0.230
2C2	04/17/18	56	374	0.3	0	0.003
Health Canada / **ASHRAE Guidelines			**1000	5	1	0.05 (annual) 0.15 (24-hr)

*Bold values note areas exceeding recommended guideline

3. Interpretation of Results


Particulate monitoring results within four of the five areas tested were found to be below Health Canada guidelines for airborne particulates for indoor (non-industrial) sites. One area, 2A1, was noted to be above typical indoor environments for both annual and 24-hour recommended exposure guidelines. Particulate levels were noted to be consistently above the guidelines during the test period as indicated on the attached particulate data summary report for the area.

During testing on April 17, 2018 school was closed for students and staff due to weather conditions. On this day it was noted that the contractor was cutting steel beams inside construction zone 2B1.

Upon speaking with the contractor, it was recommended to install additional negative air units within the work area. It was also noted that the ventilation system for construction zone 1A1 be checked to ensure it has been totally isolated from the adjacent area (2A1) directly above the work area.

All other air quality parameters were acceptable at the time of testing.

Should you have any questions regarding this report, please do not hesitate to contact our office at (902) 569-0172.



Larry Koughan, CET, CRSP
Senior Environmental Consultant

ALL-TECH Environmental Services Limited

Incl. IAQ data summary report
Particulate data summary report
Site Drawing with sample locations

