

Report Date:	September 24, 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.	05

1. Details to be noted:

On September 20 & 21, 2018 ALL-TECH Environmental Services conducted additional indoor air quality (IAQ) testing in various areas within Three Oaks Senior High School in Summerside, PEI. Test locations were predetermined by ALL-TECH in consultation the school boards safety consultant, the school safety committee and with the construction superintendent. Three construction perimeter areas were tested evaluate the effectiveness of the construction barriers within the school. In addition, three newly renovated classrooms which have had air balancing completed on the system were also tested.

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

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

Areas tested are noted as the following construction phase areas and are noted on the included site drawing at the end of this report. In addition, an exterior comparison sample was also collected.

- Sample 01 - 1B3 (construction area 1B5 perimeter)
- Sample 02 - 2B1 (construction area 2A1 perimeter)
- Sample 03 - 2B2 (construction area 2B2 perimeter)
- Sample 04 - 2C2 (new classroom)
- Sample 05 - 2C1 (new classroom)

- Sample 06 - 1C1 (new classroom)
- Exterior (comparison)

For the purposes of the project, various target values established by Health Canada 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. Downloaded data summary reports are added as an inclusion at the end of this report.

Table 1 Indoor Air Quality Guidelines	
Parameters	Guidelines
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

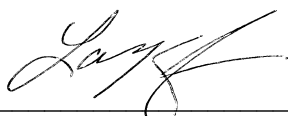
Sample Location (Construction Phase)	Sample Date (m/d/y)	Sample Time / Duration (min)	CO (ppm)	TVOC's (mg/m ³)	Particulates (mg/m ³)
Exterior	09/20/18	2:58 pm 26 min.	0.1	0.0	0.010
SA-01 Construction perimeter 1B3	09/20/18	12:27 pm 65 min.	0.2	0.0	0.077
SA-02 Construction perimeter 2B1	09/20/18	12:33 pm 54 min.	0.1	0.0	0.033
SA-03 Construction perimeter 2B2	09/20/18	1:41 pm 60 min.	0.2	0.0	0.036
SA-04 completed classroom air balanced 2C2	09/20/18	1:49 pm 55 min.	0.1	0.0	0.007
SA-05 completed classroom air balanced 2C1	09/21/18	8:34 am 3 hrs 46 min.	0.3	0.0	0.011
SA-06 completed classroom air balanced 1C1	09/21/18	8:31 am 3 hrs 48 min.	0.1	0.0	0.010

Health Canada Guidelines	5	1	0.05 (annual)
			0.15 (24-hr)

3. Interpretation of Results

Follow up testing outside of the active construction zones 2A1 & 1B5 on September 20, 2018 indicated that all air quality parameters tested were acceptable at the time of monitoring. In addition, monitoring conducted in the new classroom areas indicate that the parameters measured were acceptable and no impacts are associated from the construction activity in these areas.

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*



SA-01

TOSH SA-01

Instrument		Data Properties	
Model	VelociCalc/Q-Trak 7575	Start Date	2018-09-20
Meter S/N	7575X1806005	Start Time	12:26:21
Probe Model	982	Stop Date	2018-09-20
Probe S/N	P18040063	Stop Time	13:31:21
Meter Cal Date	2018-02-07	Total Time	0:01:05:00
		Logging Interval	300 seconds

Statistics				
	CO2	T	H	CO
Avg	487 ppm	20.7 deg C	46.7 %rh	0.2 ppm
Max	598 ppm	21.4 deg C	49.7 %rh	0.4 ppm
Max Date	2018-09-20	2018-09-20	2018-09-20	2018-09-20
Max Time	12:36:21	12:31:21	12:46:21	12:31:21
Min	420 ppm	20.4 deg C	44.8 %rh	0.2 ppm
Min Date	2018-09-20	2018-09-20	2018-09-20	2018-09-20
Min Time	13:26:21	13:31:21	13:31:21	13:31:21
TWA (8 hr)	66			0.0
TWA Start Date	2018-09-20			2018-09-20
TWA Start Time	12:26:21			12:26:21
TWA End Time	13:31:21			13:31:21

SA-02

TOSH SA-02

Instrument		Data Properties	
Model	VelociCalc/Q-Trak 7575	Start Date	2018-09-20
Meter S/N	7575X1146010	Start Time	12:42:19
Probe Model	982	Stop Date	2018-09-20
Probe S/N	P11450036	Stop Time	13:34:19
Meter Cal Date	2017-05-08	Total Time	0:00:52:00
		Logging Interval	60 seconds

Statistics				
	CO2	T	H	CO
Avg	776 ppm	21.2 deg C	46.3 %rh	0.1 ppm
Max	960 ppm	21.7 deg C	47.8 %rh	0.1 ppm
Max Date	2018-09-20	2018-09-20	2018-09-20	2018-09-20
Max Time	12:43:19	12:44:19	12:45:19	13:31:19
Min	659 ppm	20.7 deg C	44.9 %rh	0.1 ppm
Min Date	2018-09-20	2018-09-20	2018-09-20	2018-09-20
Min Time	13:34:19	13:29:19	13:34:19	13:22:19
TWA (8 hr)	84			0.0
TWA Start Date	2018-09-20			2018-09-20
TWA Start Time	12:42:19			12:42:19
TWA End Time	13:34:19			13:34:19

SA-03

TOSH SA-03

Instrument		Data Properties	
Model	VelociCalc/Q-Trak 7575	Start Date	2018-09-20
Meter S/N	7575X1806005	Start Time	13:46:57
Probe Model	982	Stop Date	2018-09-20
Probe S/N	P18040063	Stop Time	14:46:57
Meter Cal Date	2018-02-07	Total Time	0:01:00:00
		Logging Interval	300 seconds

Statistics				
	CO2	T	H	CO
Avg	615 ppm	21.8 deg C	43.6 %rh	0.2 ppm
Max	825 ppm	22.3 deg C	45.2 %rh	0.2 ppm
Max Date	2018-09-20	2018-09-20	2018-09-20	2018-09-20
Max Time	14:06:57	14:06:57	14:01:57	13:51:57
Min	512 ppm	21.4 deg C	43.1 %rh	0.2 ppm
Min Date	2018-09-20	2018-09-20	2018-09-20	2018-09-20
Min Time	14:46:57	13:51:57	14:16:57	14:26:57
TWA (8 hr)	77			0.0
TWA Start Date	2018-09-20			2018-09-20
TWA Start Time	13:46:57			13:46:57
TWA End Time	14:46:57			14:46:57

SA-04

TOSH SA-04

Instrument		Data Properties	
Model	VelociCalc/Q-Trak 7575	Start Date	2018-09-20
Meter S/N	7575X1146010	Start Time	13:55:13
Probe Model	982	Stop Date	2018-09-20
Probe S/N	P11450036	Stop Time	14:49:13
Meter Cal Date	2017-05-08	Total Time	0:00:54:00
		Logging Interval	60 seconds

Statistics				
	CO2	T	H	CO
Avg	657 ppm	22.0 deg C	43.6 %rh	0.1 ppm
Max	808 ppm	22.2 deg C	45.9 %rh	0.1 ppm
Max Date	2018-09-20	2018-09-20	2018-09-20	2018-09-20
Max Time	14:00:13	14:03:13	13:56:13	14:07:13
Min	601 ppm	21.8 deg C	42.9 %rh	0.1 ppm
Min Date	2018-09-20	2018-09-20	2018-09-20	2018-09-20
Min Time	14:49:13	13:56:13	14:09:13	14:47:13
TWA (8 hr)	74			0.0
TWA Start Date	2018-09-20			2018-09-20
TWA Start Time	13:55:13			13:55:13
TWA End Time	14:49:13			14:49:13

SA-05

TOSH SA-05

Instrument		Data Properties	
Model	VelociCalc/Q-Trak 7575	Start Date	2018-09-21
Meter S/N	7575X1806005	Start Time	08:36:18
Probe Model	982	Stop Date	2018-09-21
Probe S/N	P18040063	Stop Time	12:21:18
Meter Cal Date	2018-02-07	Total Time	0:03:45:00
		Logging Interval	300 seconds

Statistics				
	CO2	T	H	CO
Avg	569 ppm	20.0 deg C	46.8 %rh	0.3 ppm
Max	768 ppm	21.4 deg C	60.1 %rh	1.0 ppm
Max Date	2018-09-21	2018-09-21	2018-09-21	2018-09-21
Max Time	11:16:18	11:51:18	08:41:18	08:41:18
Min	393 ppm	17.0 deg C	44.4 %rh	0.2 ppm
Min Date	2018-09-21	2018-09-21	2018-09-21	2018-09-21
Min Time	08:46:18	08:41:18	12:11:18	12:06:18
TWA (8 hr)	267			0.1
TWA Start Date	2018-09-21			2018-09-21
TWA Start Time	08:36:18			08:36:18
TWA End Time	12:21:18			12:21:18

SA-06

TOSH SA-06

Instrument		Data Properties	
Model	VelociCalc/Q-Trak 7575	Start Date	2018-09-21
Meter S/N	7575X1146010	Start Time	08:31:43
Probe Model	982	Stop Date	2018-09-21
Probe S/N	P11450036	Stop Time	12:20:42
Meter Cal Date	2017-05-08	Total Time	0:03:48:59
		Logging Interval	60 seconds

Statistics				
	CO2	T	H	CO
Avg	735 ppm	21.0 deg C	45.0 %rh	0.1 ppm
Max	926 ppm	22.0 deg C	61.8 %rh	0.2 ppm
Max Date	2018-09-21	2018-09-21	2018-09-21	2018-09-21
Max Time	10:22:42	11:51:42	08:32:43	09:32:42
Min	494 ppm	16.2 deg C	41.8 %rh	0.1 ppm
Min Date	2018-09-21	2018-09-21	2018-09-21	2018-09-21
Min Time	08:42:43	08:32:43	12:20:42	11:47:42
TWA (8 hr)	351			0.1
TWA Start Date	2018-09-21			2018-09-21
TWA Start Time	08:31:43			08:31:43
TWA End Time	12:20:42			12:20:42

Exterior

TOSH Exterior

Instrument		Data Properties	
Model	VelociCalc/Q-Trak 7575	Start Date	2018-09-20
Meter S/N	7575X1146010	Start Time	15:05:30
Probe Model	982	Stop Date	2018-09-20
Probe S/N	P11450036	Stop Time	15:33:30
Meter Cal Date	2017-05-08	Total Time	0:00:28:00
		Logging Interval	60 seconds

Statistics				
	CO2	T	H	CO
Avg	403 ppm	16.3 deg C	53.2 %rh	0.1 ppm
Max	406 ppm	17.5 deg C	55.3 %rh	0.5 ppm
Max Date	2018-09-20	2018-09-20	2018-09-20	2018-09-20
Max Time	15:18:30	15:30:30	15:16:30	15:15:30
Min	400 ppm	15.3 deg C	49.1 %rh	0.1 ppm
Min Date	2018-09-20	2018-09-20	2018-09-20	2018-09-20
Min Time	15:06:30	15:17:30	15:06:30	15:21:30
TWA (8 hr)	24			0.0
TWA Start Date	2018-09-20			2018-09-20
TWA Start Time	15:05:30			15:05:30
TWA End Time	15:33:30			15:33:30

SA-01

TOSH SA-01

Instrument		Data Properties	
Model	Dust Trak	Start Date	2018-09-20
Meter S/N	85200519	Start Time	12:27:18
		Stop Date	2018-09-20
		Stop Time	13:32:18
		Total Time	0:01:05:00
		Logging Interval	60 seconds

Statistics	
	Aerosol
Avg	0.077 mg/m ³
Max	0.171 mg/m ³
Max Date	2018-09-20
Max Time	13:29:18
Min	0.045 mg/m ³
Min Date	2018-09-20
Min Time	13:01:18
TWA (8 hr)	0.010
TWA Start Date	2018-09-20
TWA Start Time	12:27:18
TWA End Time	13:32:18

SA-02

TOSH SA-02

Instrument		Data Properties	
Model	DustTrak II	Start Date	2018-09-20
Instrument S/N	8530103608	Start Time	12:33:13
		Stop Date	2018-09-20
		Stop Time	13:27:13
		Total Time	0:00:54:00
		Logging Interval	60 seconds

Statistics	
	AEROSOL
Avg	0.033 mg/m ³
Max	0.065 mg/m ³
Max Date	2018-09-20
Max Time	13:08:13
Min	0.024 mg/m ³
Min Date	2018-09-20
Min Time	12:41:13
TWA (8 hr)	0.004
TWA Start Date	2018-09-20
TWA Start Time	12:33:13
TWA End Time	13:27:13

SA-03

TOSH SA-03

Instrument		Data Properties	
Model	DustTrak II	Start Date	2018-09-20
Instrument S/N	8530103608	Start Time	13:41:01
		Stop Date	2018-09-20
		Stop Time	14:41:01
		Total Time	0:01:00:00
		Logging Interval	60 seconds

Statistics	
	AEROSOL
Avg	0.036 mg/m ³
Max	0.072 mg/m ³
Max Date	2018-09-20
Max Time	14:00:01
Min	0.019 mg/m ³
Min Date	2018-09-20
Min Time	14:27:01
TWA (8 hr)	0.004
TWA Start Date	2018-09-20
TWA Start Time	13:41:01
TWA End Time	14:41:01

SA-04

TOSH SA-04

Instrument		Data Properties	
Model	Dust Trak	Start Date	2018-09-20
Meter S/N	85200519	Start Time	13:49:35
		Stop Date	2018-09-20
		Stop Time	14:44:35
		Total Time	0:00:55:00
		Logging Interval	60 seconds

Statistics	
	Aerosol
Avg	0.007 mg/m ³
Max	0.021 mg/m ³
Max Date	2018-09-20
Max Time	13:50:35
Min	0.005 mg/m ³
Min Date	2018-09-20
Min Time	13:55:35
TWA (8 hr)	0.001
TWA Start Date	2018-09-20
TWA Start Time	13:49:35
TWA End Time	14:44:35

SA-05

TOSH SA-05

Instrument		Data Properties	
Model	Dust Trak	Start Date	2018-09-21
Meter S/N	85200519	Start Time	08:34:21
		Stop Date	2018-09-21
		Stop Time	12:20:21
		Total Time	0:03:46:00
		Logging Interval	60 seconds

Statistics	
	Aerosol
Avg	0.011 mg/m ³
Max	0.040 mg/m ³
Max Date	2018-09-21
Max Time	10:26:21
Min	0.001 mg/m ³
Min Date	2018-09-21
Min Time	08:35:21
TWA (8 hr)	0.005
TWA Start Date	2018-09-21
TWA Start Time	08:34:21
TWA End Time	12:20:21

Exterior

TOSH Exterior

Instrument		Data Properties	
Model	DustTrak II	Start Date	2018-09-21
Instrument S/N	8530103608	Start Time	08:22:24
		Stop Date	2018-09-21
		Stop Time	09:22:24
		Total Time	0:01:00:00
		Logging Interval	60 seconds

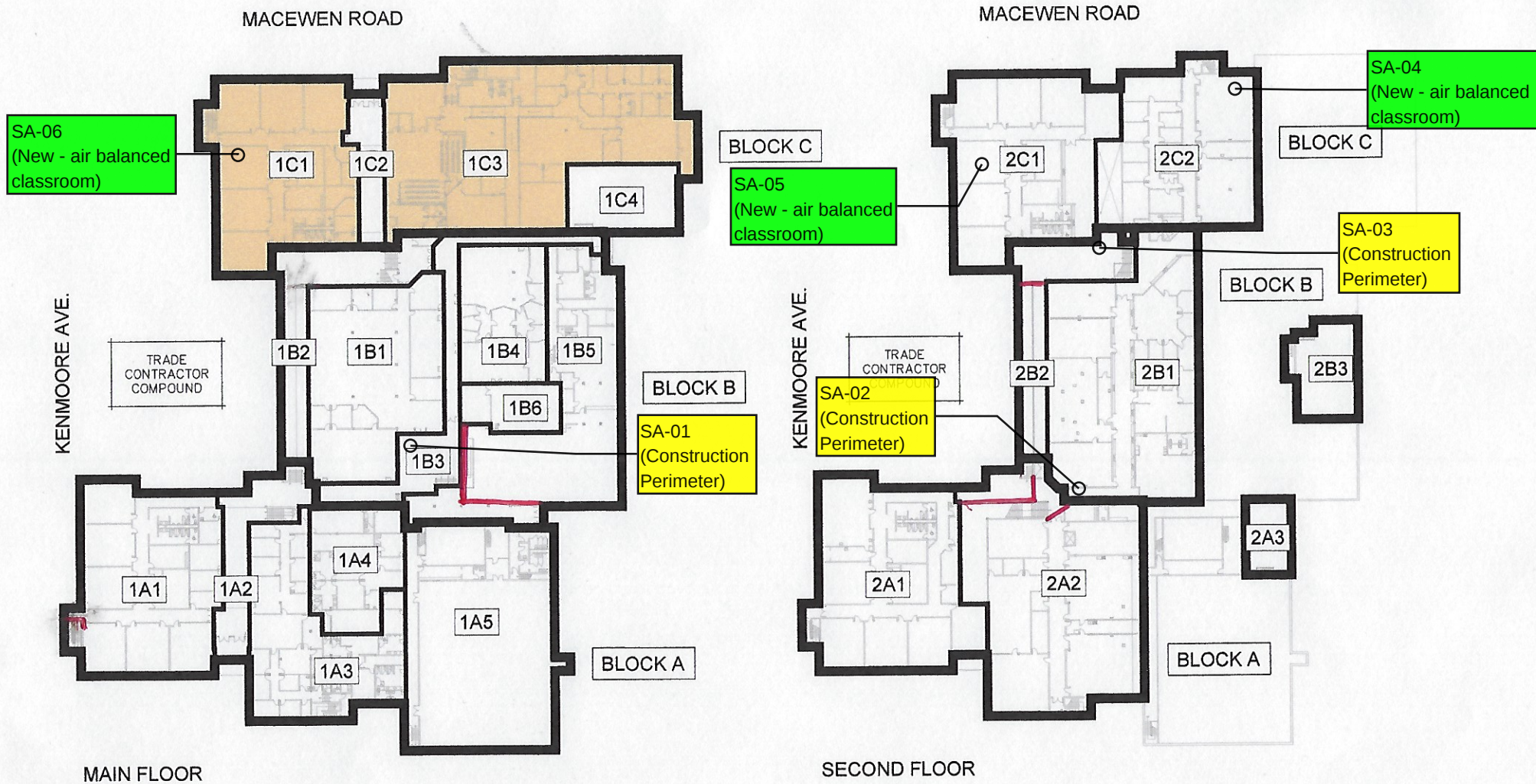
Statistics	
	AEROSOL
Avg	0.014 mg/m ³
Max	0.025 mg/m ³
Max Date	2018-09-21
Max Time	09:17:24
Min	0.010 mg/m ³
Min Date	2018-09-21
Min Time	08:32:24
TWA (8 hr)	0.002
TWA Start Date	2018-09-21
TWA Start Time	08:22:24
TWA End Time	09:22:24

Exterior

TOSH Exterior

Instrument		Data Properties	
Model	DustTrak II	Start Date	2018-09-20
Instrument S/N	8530103608	Start Time	14:58:41
		Stop Date	2018-09-20
		Stop Time	15:24:41
		Total Time	0:00:26:00
		Logging Interval	60 seconds

Statistics	
	AEROSOL
Avg	0.010 mg/m ³
Max	0.016 mg/m ³
Max Date	2018-09-20
Max Time	15:14:41
Min	0.008 mg/m ³
Min Date	2018-09-20
Min Time	15:00:41
TWA (8 hr)	0.001
TWA Start Date	2018-09-20
TWA Start Time	14:58:41
TWA End Time	15:24:41



Indoor Air Quality Sample Locations

TOSH Renovation

ISSUED ON MAY 11, 2017