



## INDOOR AIR QUALITY ASSESSMENT DURING CONSTRUCTION

January 2022

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**Arlington High School  
869 Massachusetts Ave, Arlington, MA**

**Prepared For:**

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## 1. INTRODUCTION

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Cashins & Associates, Inc. was retained by Consigli Construction to provide professional Industrial Hygiene consulting services. Our scope of work consisted of measuring various basic indoor air quality parameters during renovation activities in certain locations throughout the Arlington High School located at 869 Massachusetts Ave. in Arlington, Massachusetts.

The air sampling was performed on January 5<sup>th</sup>, 2022. At the time of this sampling, no construction activities were occurring inside the school. Sampling was conducted in the occupied non-work areas throughout the school.

## 2. METHODOLOGIES

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A Particles Plus™ part per billion photoionization detector (PID) was utilized to screen for the presence of total volatile organic compounds (TVOCs). The PID is a screening tool that provides information as to TVOC loading in the space. The instrument does not provide information pertaining to which specific compounds are present in the air.

Dust concentrations were also measured using the Particles Plus meter. This real-time aerosol monitor measures dust between 0.3 microns and 10 microns.

Carbon monoxide was measured using a BW Gas Alert Max XTII four gas meter.

## 3. FINDINGS

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### 3.1 Findings: Basic IAQ Parameters

We have listed in Tables 1 through 3 the results of the real-time air sampling. These tables can be found in Appendix A to this report.

#### IAQ Criteria

No specific IAQ Plan has been developed for this site; thus, no official upper guideline limits have been established. However, it is typical to use the following values as upper limits in both the occupied and work zone areas:

Contaminant	Inside Construction Area	Occupied Area
Dust	1 mg/m <sup>3</sup>	150 µg/m <sup>3</sup>
Volatile Organic Compounds	10 ppm (10,000 ppb)	1 ppm (1,000 ppb)
Carbon Monoxide	15 ppm	9 ppm

#### 4. DISCUSSION

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Concentrations of carbon monoxide, VOCs, and Dust were found to be below the upper limits throughout the occupied areas of the school.

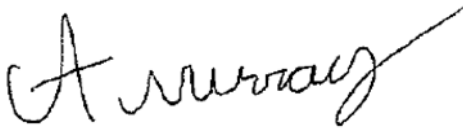
Attached, please find tables detailing IAQ measurements obtained during the assessment.

Indoor air quality should continue to be monitored on a regular basis throughout this project in order to ensure that concentrations of various airborne contaminants remain at acceptable levels.

Please call if you have any questions or if we can be of further assistance.

Sincerely,  
Cashins & Associates, Inc.

Reviewed by,



Andrew E. Murray  
Industrial Hygiene & Safety Specialist



Michael R. Cashins, CIH  
Director of Consulting Services

## APPENDIX A

### RESULTS OF REAL-TIME AIR SAMPLING

**Table 1: Real-time Air Quality Readings, Round 1**

<i>Location</i>	<i>CO (ppm)</i>	<i>TVOC (ppb)</i>	<i>Dust (<math>\mu\text{g}/\text{m}^3</math>)</i>
<b>Downs Building</b>			
@Main Office Entrance	<1	243	56.6
Hall Outside Girls Locker Room	<1	235	34.2
@Outside Coaches Office	<1	176	20.7
@Outside Fitness Room	<1	189	33.6
@ Stairwell M next to link mechanical room	<1	89	23.3
<b>Auditorium Building</b>			
@ Outside Classroom 210	<1	23	52.2
@ Outside Classroom 211	<1	16	26.6
@ Girl's Bathroom B135	<1	33	18.7
@ Outside Preschool 108	<1	39	27.7
@ Hallway Outside 153A	<1	36	26.5
@ Teachers' Workroom	<1	27	35.4
@ Classroom T119	<1	23	25.4
Inside Maintenance Tunnel	<1	31	43.2
@Cafeteria outside right entrance to serving room	<1	67	45.7
@Cafeteria Serving Area	<1	55	36.6
Outside Teachers Café	<1	39	34.3
@South Hallway outside Principals office rear door	<1	149	44.6

**Table 1: Real-time Air Quality Readings, Round 1**

<i>Location</i>	<i>CO (ppm)</i>	<i>TVOC (ppb)</i>	<i>Dust (<math>\mu\text{g}/\text{m}^3</math>)</i>
@ Entrance to Building Outside Principal Office	<1	125	45.2
@North Hallway next to Counseling Office B322	<1	95	43.7

**Table 2: Real-time Air Quality Readings, Round 2**

<i>Location</i>	<i>CO (ppm)</i>	<i>TVOC (ppb)</i>	<i>Dust (<math>\mu\text{g}/\text{m}^3</math>)</i>
<b>Downs Building</b>			
@Main Office Entrance	<1	166	51.3
Hall Outside Girls Locker Room	<1	43	54.2
@Outside Coaches Office	<1	45	47.9
@Outside Fitness Room	<1	36	44.9
@ Stairwell M next to link mechanical room	<1	48	44.6
<b>Auditorium Building</b>			
@ Outside Classroom 210	<1	69	46.9
@ Outside Classroom 211	<1	60	45.9
@ Girl's Bathroom B135	<1	53	34.6
@ Outside Preschool 108	<1	56	36.6
@ Hallway Outside 153A	<1	41	39.8
@ Teachers' Workroom	<1	55	32.6
@ Classroom T119	<1	21	34.8
Inside Maintenance Tunnel	<1	43	26.4
@Cafeteria outside right entrance to serving room	<1	39	36.6
@Cafeteria Serving Area	<1	44	49.2
Outside Teachers Café	<1	29	19.8



**Table 2: Real-time Air Quality Readings, Round 2**

<i>Location</i>	<i>CO (ppm)</i>	<i>TVOC (ppb)</i>	<i>Dust (<math>\mu\text{g}/\text{m}^3</math>)</i>
@South Hallway outside Principals office rear door	<1	27	33.1
@ Entrance to Building Outside Principal Office	<1	36	39.2
@North Hallway next to Counseling Office B322	<1	55	39.9

**Table 3: Real-time Air Quality Readings, Round 3**

<i>Location</i>	<i>CO (ppm)</i>	<i>TVOC (ppb)</i>	<i>Dust (<math>\mu\text{g}/\text{m}^3</math>)</i>
<b>Downs Building</b>			
@Main Office Entrance	<1	89	59.2
Hall Outside Girls Locker Room	<1	170	40.2
@Outside Coaches Office	<1	72	51.3
@Outside Fitness Room	<1	85	53.8
@ Stairwell M next to link mechanical room	<1	82	36.7
<b>Auditorium Building</b>			
@ Outside Classroom 210	<1	79	31.6
@ Outside Classroom 211	<1	113	42.6
@ Girl's Bathroom B135	<1	38	37.7
@ Outside Preschool 108	<1	36	28.3
@ Hallway Outside 153A	<1	51	25.1
@ Teachers' Workroom	<1	22	45.1
@ Classroom T119	<1	34	21.9
Inside Maintenance Tunnel	<1	32	24.9
@Cafeteria outside right entrance to serving room	<1	1	35.9
@Cafeteria Serving Area	<1	3	28.0
Outside Teachers Café	<1	1	28.5

**Table 3: Real-time Air Quality Readings, Round 3**

<i>Location</i>	<i>CO (ppm)</i>	<i>TVOC (ppb)</i>	<i>Dust (<math>\mu\text{g}/\text{m}^3</math>)</i>
@South Hallway outside Principals office rear door	<1	2	40.8
@ Entrance to Building Outside Principal Office	<1	0	41.1
@North Hallway next to Counseling Office B322	<1	31	42.3