

City of Newton Health Department

Report: Newton North High School Indoor Air Quality Testing

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April 28, 2003

Indoor air quality testing at Newton North High School (Newton, Massachusetts) was completed from March 26, 2003 to April 9, 2003. The primary focus of the testing was classrooms, although teacher offices, stairwells, hallways, and other large common areas such as the library, cafeteria, and gymnasiums were also tested. During the course of the sampling period an attempt was made to test classrooms at least once with students and once without students; however, some rooms were tested multiple times with students while others only once due to limited accessibility. In addition, classrooms were tested at different times during the school day to account for expected temporal variations in air quality. Given regular student activities throughout the day, CO<sub>2</sub> levels were expected to be lowest in the morning, peak in the mid afternoon, and then return to a baseline level.

Basic indicators of indoor air quality tested at Newton North included: carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), percent relative humidity, and temperature. All tests were conducted with a Metrosonics® AQ-5000 air sampling device acquired from the U.S. Environmental Rental Corporation (Waltham, Massachusetts). The equipment was calibrated by U.S. Environmental Rental Corp. on March 25, 2003, with 1000 parts per million (ppm) of CO<sub>2</sub> (detection limits 0-5000 ±50 ppm), 50 ppm CO, and zeroed with nitrogen (N<sub>2</sub>).

Newton North High School Air Quality Testing 2003  
Table 1a Indoor Air Quality Samples

Page 1					Sample 1					Sample 2					Comments
Room Number	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %	Temp. F	Date / Time	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %	Temp. F	Date / Time	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %	Temp. F	
101	3	661	20.9	74.6	3-31, 1:33	6	712	24.9	72.6	4-8, 12:00	ceiling diffusers				
102	25	1400	38.5	77.7	3-26, 10:19	21	974	26.5	74.0	3-31, 1:40	Paper projects on univent, Daycare				
	18	980	28.5	72.2	4-8, 12:03										
103	8	564	29.3	77.0	3-26, 9:58	5	645	20.0	76.1	3-31, 1:30	ceiling diffusers, air quality worst on Fridays when cleaning equipment (teacher)				
105	16	1163	36.1	74.9	3-26, 10:24	14	841	23.8	75.1	3-31, 1:45	Daycare				
107	10	828	33.7	75.7	3-26, 10:27	-	-	-	-	-	Exhaust blocked by door				
108	20	668	21.5	73.9	3-31, 1:49	11	758	26.0	70.2	4-8, 11:31	ceiling diffusers				
110	12	1021	23.3	71.7	3-31, 1:51	10	755	25.4	69.5	4-8, 11:30	ceiling diffusers				
111	3	746	24.5	74.0	3-31, 1:53	0	1020	27.4	73.3	4-8, 12:05	ceiling diffusers, students just left (s2)				
113	0	572	20.2	69.4	3-31, 12:43	7	1074	31.7	67.7	4-8, 11:25	ceiling diffusers, exhaust blocked by desk				
114	2	682	30.9	76.8	3-26, 9:55	0	730	24.8	74.9	3-31, 1:22					
	0	871	26.8	73.0	4-8, 11:58										
115	3	590	31.5	75.3	3-26, 9:53	3	623	22.8	72.0	3-31, 1:20	ceiling diffusers				
	15	775	27.4	71.8	4-8, 11:56										
116	0	692	25.7	70.0	4-8, 11:35	-	-	-	-	-	ceiling diffusers				
118	1	998	32.2	75.5	3-26, 10:45	22	846	31.2	69.4	3-31, 12:30	Electrical shop				
119	24	1120	39.3	74.8	3-26, 10:40	22	951	28.2	72.6	3-31, 12:40					
120	0	615	36.1	72.7	3-26, 10:37	20	862	25.3	68.4	3-31, 12:38	ceiling diffusers, exhaust blocked by bookcase				
121	28	905	37.2	73.2	3-26, 10:35	21	890	25.1	68.6	3-31, 12:35	ceiling diffusers, exhaust blocked by door (s1)				
122	1	544	33.8	72.8	3-26, 9:48	-	-	-	-	-	ceiling diffusers				
124	14	534	23.8	66.1	3-31, 12:15	2	563	27.9	66.3	4-8, 11:21	0 ppm CO <sub>2</sub> loading door open				
126	5	896	37.0	75.2	3-26, 11:06	-	-	-	-	-	ceiling diffusers, Pilot Program				
127	43	872	36.6	73.3	3-26, 10:12	0	683	29.8	69.5	3-31, 12:57	ceiling diffusers, music rehearsal (s3 avg of 2 samples)				
	48	897	30.7	68.0	4-8, 11:42	-	-	-	-	-					
128	65	932	25.8	69.5	3-31, 12:49	0	586	25.5	68.6	4-8, 11:40	ceiling diffusers, music rehearsal (s1 avg of 2 samples from 2 sides of room)				
130	0	552	33.6	72.2	3-26, 10:07	0	575	22.3	68.5	3-31, 1:10	ceiling diffusers				
140	5	682	30.9	68.3	4-8, 11:06	-	-	-	-	-					
Page 2					Sample 1					Sample 2					Comments
Room Number	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %	Temp. F	Date / Time	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %	Temp. F	Date / Time	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %	Temp. F	
201	17	637	32.5	78.2	3-26, 11:15	24	698	25.9	74.7	4-2, 9:00	Fume hood ON, ceiling diffusers				
	24	833	26.4	74.4	4-2, 9:08										
202	17	810	34.7	76.3	3-26, 11:27	17	849	26.8	74.2	4-2, 9:10	Plants and pots blocking univent				
203	13	896	34.1	76.5	3-26, 11:26	0	904	27.9	73.9	4-2, 9:12					
204	1	825	31.4	79.3	3-26, 11:20	18	1011	28.7	75.0	4-2, 9:05	ceiling diffusers, CO 1 ppm (s1)				
205	20	910	33.6	79.5	3-26, 11:18	8	721	26.5	76.7	4-2, 1:00	ceiling diffusers				
206	5	860	32.7	76.7	3-26, 11:24	12	853	28.7	72.3	4-2, 9:14	exhaust Blocked, ceiling diffusers				
	12	823	28.2	72.4	4-2, 9:15										
207	0	882	34.6	76.6	3-26, 11:29	6	846	28.0	72.6	4-2, 9:17					
209	20	825	35.5	76.1	3-26, 11:38	6	728	27.4	71.3	4-2, 9:20	window open (s1 and s2)				
210	28	981	31.3	73.4	4-2, 9:22	-	-	-	-	-	ceiling diffusers				
211	27	795	33.7	76.2	3-26, 12:14	27	696	28.7	70.3	4-2, 9:36					
212	1	629	25.6	74.1	4-2, 9:25	-	-	-	-	-					
213	22	670	35.1	77.6	3-26, 12:20	13	667	28.7	72.9	4-2, 11:00	ceiling diffusers, exhaust blocked by door (s2)				
215	2	498	31.8	77.6	3-26, 11:40	0	652	26.3	72.7	4-2, 9:33	ceiling diffusers				
216	0	564	29.6	69.5	4-2, 9:41	-	-	-	-	-					
217	14	1024	37.0	78.7	3-26, 12:13	20	1148	33.9	74.0	4-2, 9:42	ceiling diffusers				
218	10	810	33.6	77.0	3-26, 12:12	16	1305	32.5	72.4	4-2, 9:44					
220	27	820	34.8	79.0	3-26, 12:10	25	1292	31.9	75.1	4-2, 9:46	windows open (s1)				
221	0	931	27.5	74.6	4-2, 9:48	-	-	-	-	-	ceiling diffusers				
222	18	915	37.3	76.8	3-26, 12:04	14	975	29.4	71.6	4-2, 9:50	window open (s2)				
224	0	776	28.0	73.5	4-2, 9:55	-	-	-	-	-					
225	21	848	29.7	73.2	4-2, 9:53	-	-	-	-	-					
226	17	702	37.1	78.2	3-26, 12:07	23	825	28.5	72.9	4-2, 10:02	ceiling diffusers				
227	0	713	27.4	73.2	4-2, 10:04	-	-	-	-	-					
228	0	490	25.5	73.4	4-2, 10:05	-	-	-	-	-					
229	32	810	35.0	75.5	3-26, 12:02	15	1375	33.1	72.3	4-2, 10:08	univents on low (s1), exhaust blocked by cabinet				
232	18	865	28.4	75.2	4-2, 10:13	-	-	-	-	-	exhaust blocked by poster				
233	30	833	33.7	77.6	3-26, 12:00	24	1506	35.1	73.9	4-2, 10:11	window open, exhaust blocked by door				
Page 3					Sample 1					Sample 2					Comments
Room Number	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %	Temp. F	Date / Time	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %	Temp. F	Date / Time	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %	Temp. F	

Newton North High School Air Quality Testing 2003

Table 1a and 1b: The test results for all rooms and exterior sites tested between 3/26/03 and 4/9/03

Legend	
Ceiling diffusers:	Ceiling air ventilation system for horizontal airflow with a flat ceiling; rooms without univent systems
CO (ppm):	Part per million of Carbon Monoxide
CO <sub>2</sub> (ppm):	Parts per million of Carbon Dioxide
Exhaust:	Exhaust vent used to remove air from the room
Fume Hood:	Ceiling or wall mounted air exhaust system found in science classrooms
L:	Lunch time, student in the cafeteria
np:	Not passing time, no students in the hallway
p:	Passing time, students in the hallway
Rel. Hum.:	Percent Relative Humidity
s1, s2, s3 etc.:	previous comment only relevant to sample 1, sample 2, sample 3 respectively
Temp:	Temperature in degrees Fahrenheit
Univent:	Wall mounted air ventilation system

Note: When more than two samples were collected the first line of samples are s1 and s2, the second line are s3 and s4, and so forth.

Room Number	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %	Temp. F	Date / Time	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %	Temp. F	Date / Time	Comments
234	3	645	26.4	74.9	4-2, 10:18	-	-	-	-	-	
235	0	816	27.4	75.2	4-2, 10:17	-	-	-	-	-	
236	5	945	37.2	78.8	3-26, 11:53	17	1037	28.7	76.1	4-2, 10:22	ceiling diffusers
237	0	761	33.2	78.8	3-26, 11:55	10	955	29.6	74.6	4-2, 10:26	Exhaust half blocked by door
238	15	950	34.4	80.3	3-26, 11:56	18	1182	31.2	76.4	4-2, 10:28	
239	7	725	25.8	76.2	4-2, 10:31	-	-	-	-	-	ceiling diffusers
301	15	918	37.4	76.4	3-26, 1:34	6	757	26.2	77.0	3-27, 11:51	window open (s1 and s2)
	25	1341	29.6	74.1	3-31, 9:59						
302	16	724	36.9	75.6	3-26, 1:26	4	910	26.0	74.0	3-31, 10:04	univent blocked
	6	960	30.1	72.5	4-9, 2:16						
303	6	770	37.3	73.3	3-26, 1:29	1	944	27.1	73.9	3-31, 10:06	Photograph Black room
304	10	797	25.1	77.6	3-27, 11:52	10	975	25.7	73.0	3-31, 10:09	window open (s1), exhaust blocked by door (s1)
305	5	775	24.1	76.1	3-27, 12:00	17	1084	27.9	72.3	3-31, 10:07	
	18	1313	34.3	72.0	4-9, 2:20						
306	1	675	22.8	73.4	3-27, 11:54	-	-	-	-	-	
307	18	655	38.0	74.2	3-26, 1:24	22	1160	30.3	76.1	3-27, 11:56	exhaust blocked (s1), window open (s1), includes 4 samples
	24	1370	30.5	72.8	3-31, 10:12	7	981	30.4	71.0	4-9, 2:24	
308	16	1032	26.3	73.7	3-31, 10:14	13	890	30.8	71.4	4-9, 2:25	
312	12	624	37.5	74.8	3-26, 1:20	15	1058	27.8	73.4	3-31, 10:21	exhaust blocked, window open (s1)
	17	1113	35.5	72.2	4-9, 2:37						
313	21	893	25.6	74.2	3-31, 10:19	11	1127	33.6	72.9	4-9, 2:39	
316	7	1398	31.8	74.9	3-31, 10:25	-	-	-	-	-	
317	24	842	37.8	78.2	3-26, 1:17	20	910	24.4	74.3	3-31, 10:26	window open (s1)
318	17	1355	28.4	71.9	3-31, 10:27	13	1202	33.8	71.9	4-9, 2:29	
319	1	606	24.4	69.9	3-31, 9:36	-	-	-	-	-	ceiling diffusers
321	8	561	33.8	77.0	3-26, 1:15	8	637	26.5	74.0	3-27, 11:28	exhaust blocked (s1), window open (s1 and s2)
	7	660	23.2	71.5	3-31, 9:44						
322	1	680	25.1	71.1	3-31, 9:47	-	-	-	-	-	
323	14	665	35.8	76.6	3-26, 1:41	15	810	25.6	73.6	3-27, 11:33	exhaust blocked by cabinet, window open (s2)
	15	1189	28.4	72.4	3-31, 9:50	14	1109	32.7	71.6	4-9, 2:27	includes 4 samples
324	4	1020	31.3	76.3	3-27, 11:42	3	1046	30.8	72.7	4-9, 2:19	ceiling diffusers, can be up to 15 students
325	1	1088	30.1	76.0	3-27, 11:46	-	-	-	-	-	Filming studio
Page 4											
Sample 1					Sample 2						
Room Number	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %	Temp. F	Date / Time	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %	Temp. F	Date / Time	Comments
326	1	845	24.7	74.4	3-31, 10:02	-	-	-	-	-	ceiling diffusers
328	12	820	36.7	78.3	3-26, 1:36	21	909	27.6	78.3	3-27, 11:49	
	19	1142	28.9	75.7	3-31, 9:55	16	1166	33.0	72.9	4-9, 2:18	ceiling diffusers, includes 4 samples
331	14	1293	39.3	78.3	3-26, 1:44	-	-	-	-	-	
334	19	842	27.4	74.9	3-27, 11:39	15	1113	29.2	72.7	3-31, 9:49	window open (s1), Exhaust blocked by door (s3)
	19	1330	34.2	72.5	4-9, 2:15						
335	2	781	26.9	75.5	3-27, 11:30	-	-	-	-	-	window open, univent blocked
336	0	618	25.3	75.8	3-27, 11:31	-	-	-	-	-	Faculty lounge
337	2	589	24.1	71.7	3-31, 9:41	-	-	-	-	-	
338	11	702	22.6	72.2	3-27, 11:25	20	1364	30.0	69.8	3-31, 9:34	window open (s1), exhaust blocked by door (s1)
	20	1632	36.2	71.9	4-9, 2:09	-	-	-	-	-	
339	1	638	24.5	75.7	3-27, 11:21	0	584	20.9	73.5	3-31, 9:32	ceiling diffusers
340	4	681	25.5	75.3	3-27, 11:17	5	723	20.6	73.4	3-31, 9:31	window open (s1)
343	22	1462	33.5	73.8	3-31, 9:27	11	1694	37.1	71.7	4-9, 2:06	Exhaust blocked by cabinet
344	25	1659	30.4	74.4	3-31, 9:28	23	1759	37.0	72.5	4-9, 2:07	
345	3	724	27.1	75.0	3-27, 11:14	1	960	31.1	71.9	4-9, 2:05	ceiling diffusers
346	4	671	23.2	72.0	3-31, 9:10	-	-	-	-	-	
348	12	650	23.7	73.1	3-27, 11:06	12	1034	26.0	72.2	3-31, 9:23	window open (s1)
	19	887	31.0	72.5	4-9, 2:04						
353	19	890	35.8	77.7	3-26, 1:06	24	588	22.9	74.9	3-27, 11:05	plants on univent window open (s1 and s2), includes 4 samples
	0	681	23.0	72.7	3-31, 9:21	19	1131	31.7	73.4	4-9, 1:10	
355	9	641	34.1	77.0	3-26, 1:05	0	619	25.2	74.5	3-27, 11:08	window open (s1 and s2), exhaust blocked by door (s2 and s4), univent blocked (s3)
	20	1079	27.6	72.5	3-31, 9:13	21	1485	33.9	73.1	4-9, 1:08	
357	15	843	35.0	76.2	3-26, 12:55	8	1404	30.9	70.6	3-31, 9:08	window open (s1)
	15	1095	31.9	72.3	4-9, 1:12						
358	20	965	37.3	76.2	3-26, 1:00	2	677	25.7	74.6	3-27, 11:15	window open (s1 and s2)
	0	901	26.2	70.9	3-31, 9:06						
361	3	746	34.8	76.8	3-26, 12:51	4	921	31.4	72.4	4-9, 12:43	ceiling diffusers
362	23	1001	37.1	76.7	3-26, 12:47	16	950	36.8	78.0	3-26, 2:15	window open (s1, s2, and s3) includes 4 samples
	2	1332	31.0	71.3	3-31, 9:02	18	959	33.6	69.7	4-9, 12:41	
363	22	681	34.6	77.1	3-26, 2:12	23	1505	30.8	71.5	3-31, 9:04	exhaust blocked (s1), window open (s1)
	13	973	32.9	73.2	4-9, 12:42						
Page 5											
Sample 1					Sample 2						
Room Number	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %	Temp. F	Date / Time	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %	Temp. F	Date / Time	Comments

365	2	746	24.3	71.3	3-31, 8:59	-	-	-	-	-	ceiling diffusers
366	2	991	27.5	72.3	3-31, 8:58	-	-	-	-	-	univent blocked
367	10	916	35.7	77.9	3-26, 2:10	19	920	28.6	74.6	3-27, 10:58	window open (s1 and s3) includes 4 samples
	14	1571	31.0	73.6	3-31, 8:52	0	658	28.6	70.8	4-9, 12:51	
368	19	1104	37.3	78.2	3-26, 2:06	11	974	31.7	74.1	3-27, 10:56	exhaust blocked by poster, window open (s1)
	0	1284	28.8	72.0	3-31, 8:54	0	792	30.2	71.4	4-9, 12:52	includes 4 samples
370	10	691	39.0	78.5	3-26, 1:51	22	1126	29.6	73.0	3-31, 8:44	window open (s1)
	19	1254	35.1	72.7	4-9, 12:55						
371	1	550	32.6	78.3	3-26, 1:52	13	1427	32.0	73.8	3-31, 8:50	Exhaust blocked by recycling bin, window open (s1)
	1	551	27.6	71.9	4-9, 12:54						
372	1	865	26.4	72.4	3-31, 8:45	-	-	-	-	-	ceiling diffusers
373	1	734	26.5	72.1	3-31, 8:47	-	-	-	-	-	ceiling diffusers
374	12	597	33.3	77.2	3-26, 2:04	13	993	29.5	71.7	3-31, 8:42	window open (s1)
375	16	868	35.8	80.3	3-26, 2:00	1	693	27.5	72.4	4-9, 12:56	Home economic cooking room, CO 3 ppm (s1), 2 ppm CO (s2)
377	0	636	24.9	69.4	3-31, 8:35	0	532	27.7	70.7	4-9, 12:58	usually 13 students
378	13	711	27.2	70.2	3-31, 8:36	0	541	27.5	72.0	4-9, 1:01	ceiling diffusers
379	23	1065	37.3	78.4	3-26, 1:59	20	981	30.4	70.5	3-31, 8:38	ceiling diffusers
	17	667	31.4	71.1	4-9, 1:05						
380	9	1100	39.0	78.6	3-26, 1:56	3	685	29.9	72.4	4-9, 1:00	ceiling diffusers
401	22	1405	38.0	72.6	3-27, 9:52	27	985	22.4	71.8	4-1, 11:28	
	0	811	32.2	67.6	4-9, 11:52						
402	25	1130	34.5	73.5	3-27, 9:54	13	792	18.5	70.2	4-1, 11:26	Exhaust blocked by poster
	19	1031	34.4	68.4	4-9, 11:51						
403	25	1140	33.9	73.0	3-27, 9:50	28	1368	24.4	70.2	4-1, 11:23	Exhaust blocked, window open (s1)
	22	1065	35.4	68.6	4-9, 11:49						
404	0	605	26.0	73.5	3-27, 9:48	22	786	18.2	69.5	4-1, 11:21	window open (s2)
407	16	786	29.9	75.3	3-27, 9:47	3	886	20.8	70.9	4-1, 11:15	
408	0	738	28.9	75.5	3-27, 9:45	6	916	21.4	71.2	4-1, 11:18	
	0	744	29.8	68.5	4-9, 11:41						
409	10	899	21.7	72.2	4-1, 11:05	20	916	23.1	71.1	4-1, 11:34	
410	12	838	30.3	74.9	3-27, 9:43	4	868	20.3	72.0	4-1, 11:10	
Page 6											
Sample 1											
Room Number	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %	Temp. F	Date / Time	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %	Temp. F	Date / Time	Comments
411	20	891	31.2	74.0	3-27, 9:40	2	755	18.1	69.5	4-1, 10:48	
413	15	1188	34.9	71.5	3-27, 9:57	18	1519	24.9	71.1	4-1, 10:53	
	20	1283	37.2	68.8	4-9, 11:56						
415	20	1416	36.8	71.3	3-27, 10:07	18	1082	21.6	70.3	4-1, 11:00	teacher said room usually bad (stuffy)
	16	1092	35.5	70.5	4-9, 12:02						
416	24	722	27.7	71.0	3-27, 10:02	25	1155	22.1	70.2	4-1, 10:57	window open (s1)
	12	816	31.5	68.5	4-9, 12:00						
417	21	920	31.1	72.8	3-27, 9:59	10	843	18.0	70.9	4-1, 10:55	exhaust blocked by poster
	12	1028	33.9	68.5	4-9, 11:58						
418	1	820	18.4	72.4	4-1, 10:45	0	717	29.1	70.7	4-9, 11:40	Exhaust blocked by door
419	1	665	28.3	74.6	3-27, 9:38	0	738	17.3	70.3	4-1, 10:38	
	1	823	31.0	68.5	4-9, 11:37						
420	2	723	26.7	74.2	3-27, 9:37	18	971	20.4	70.7	4-1, 10:42	
423	8	670	26.8	74.2	3-27, 9:32	9	862	18.8	69.9	4-1, 10:35	Half students absent (s1), Exhaust blocked by door (s2)
	1	798	30.1	68.4	4-9, 11:35						
424	12	941	32.2	72.6	3-27, 9:28	14	915	19.5	70.5	4-1, 10:33	exhaust blocked by door (s1 and s2)
425	9	430	31.4	72.8	3-27, 9:26	13	973	21.8	74.8	4-1, 10:50	Floor plan called this room "Business"
426	0	717	29.9	71.1	3-27, 9:15	4	895	18.9	71.5	4-1, 10:30	
427	0	894	19.1	71.9	4-1, 10:18	25	1278	36.6	70.5	4-9, 11:30	Exhaust blocked by door (s1)
428	14	982	19.9	72.1	4-1, 10:10	20	1063	31.9	70.8	4-9, 11:32	
429	28	1307	23.5	70.5	4-1, 10:08	15	1306	33.7	69.3	4-9, 11:34	
430	19	1295	38.2	73.7	3-27, 9:24	12	915	20.2	70.7	4-1, 10:05	exhaust blocked by door (s1)
	19	986	35.8	69.2	4-9, 12:22						
431	21	1032	32.3	72.8	3-27, 9:21	0	926	19.1	71.4	4-1, 10:15	
	0	644	30.8	67.5	4-9, 12:03						
433	18	860	29.8	72.8	3-27, 9:16	8	958	20.3	73.1	4-1, 10:22	exhaust blocked by door (s1)
434	5	832	30.5	72.5	3-27, 9:14	5	923	18.4	74.1	4-1, 10:25	window open (s1)
435	5	960	31.8	70.9	3-27, 9:11	3	740	19.7	68.3	4-1, 11:40	Tiger Loft, includes 4 samples
	3	859	35.1	66.0	4-9, 11:28	15	1002	37.0	66.7	4-9, 12:06	
436	8	890	34.4	71.9	3-27, 9:12	5	692	21.1	68.0	4-1, 11:42	Tiger Loft Kitchen, window open (s1)
437	7	875	33.5	66.6	4-9, 11:27	-	-	-	-	-	
438	16	767	22.5	68.3	4-1, 11:45	16	796	26.9	69.1	4-1, 11:46	
Page 7											
Sample 1											
Room Number	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %	Temp. F	Date / Time	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %	Temp. F	Date / Time	Comments
439	48	1442	40.5	71.0	3-27, 8:45	26	948	22.4	71.6	4-1, 11:47	Exhaust blocked by large trash can (s3)
	16	970	35.8	68.6	4-9, 12:07						
440	5	801	20.0	69.3	4-1, 11:50	1	805	33.7	69.7	4-9, 11:23	
441	0	749	32.4	71.1	3-27, 8:53	0	765	22.1	69.5	4-1, 11:52	Plants on univent
	6	847	32.7	68.3	4-9, 11:25						

442	16	1211	38.2	72.0	3-27, 8:47	0	683	22.7	68.1	4-1, 12:00	
	6	900	37.5	67.1	4-9, 12:14						
443	19	1047	36.1	69.7	3-27, 8:40	0	911	23.5	67.8	4-1, 11:58	Exhaust blocked
	20	1279	40.8	64.0	4-9, 12:12						
444	22	1220	38.0	69.3	3-27, 8:44	10	848	21.6	69.0	4-1, 11:54	Books on univent, Exhaust blocked, Normally 14 students (s2)
	0	695	33.6	63.0	4-9, 12:11						
445	9	794	22.3	68.1	4-1, 12:01	9	776	32.0	66.0	4-9, 12:10	Exhaust blocked by door (s2)
1104	0	1153	36.4	74.5	3-26, 10:22	-	-	-	-	-	daycare clothing storage and toilet area
1449	2	886	29.1	69.9	4-8, 11:50	-	-	-	-	-	
1691	10	735	23.3	69.7	3-31, 1:04	-	-	-	-	-	exhaust blocked by desk
1725	50	642	30.9	72.4	3-31, 11:30	9	676	45.9	62.5	4-8, 11:12	Gymnasium
	9	877	41.9	63.7	4-8, 11:13						
100 (light room)	3	645	29.9	68.4	3-31, 1:16	-	-	-	-	-	ceiling diffusers
100A	0	588	28.7	69.9	3-31, 1:14	-	-	-	-	-	
100B	0	662	26.1	70.2	3-31, 1:12	-	-	-	-	-	
101 (inset rm)	13	757	20.9	74.6	3-31, 1:35	0	631	24.7	71.5	4-8, 12:01	ceiling diffusers
103 (office)	2	620	29.7	77.5	3-26, 9:59	-	-	-	-	-	
106 (office)	2	880	33.0	74.8	3-26, 10:29	-	-	-	-	-	ceiling diffuser blocked off because it brings odor into room
107 Corr.	0	990	33.9	75.6	3-26, 10:28	-	-	-	-	-	
111 comp rm	2	756	25.8	74.9	3-31, 2:00	8	1174	30.2	72.9	4-8, 11:29	
111A	1	645	22.1	73.2	3-31, 1:55	-	-	-	-	-	
114 (office)	1	560	30.3	77.5	3-26, 10:00	-	-	-	-	-	ceiling diffusers
114A comp. lab	9	741	31.6	78.5	3-26, 9:56	16	772	23.3	77.0	3-31, 1:25	ceiling diffusers
117 Corr.	6	765	34.5	74.1	3-26, 9:53	-	-	-	-	-	
119 Corr.	2	760	36.6	73.8	3-26, 10:39	-	-	-	-	-	
120 (office)	2	826	26.4	68.3	3-31, 12:36	-	-	-	-	-	
Page 8		Sample 1					Sample 2				
Room Number	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %	Temp. F	Date / Time	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %	Temp. F	Date / Time	Comments
121 Corr.	0	777	34.5	73.9	3-26, 10:34	-	-	-	-	-	
124A	0	522	24.1	64.5	3-31, 12:25	0	569	28.2	64.7	4-8, 11:22	
125 Corr.	0	540	32.0	72.0	3-26, 9:46	0	500	29.5	55.2	3-27, 8:57	
126A	0	619	27.7	68.6	4-8, 11:46	-	-	-	-	-	ceiling diffusers, 126 is divided now
126B	8	931	31.6	69.7	4-8, 11:49	-	-	-	-	-	ceiling diffusers, 126 is divided now
130 Corr.	3	576	32.5	71.4	3-26, 10:06	-	-	-	-	-	
132 (office)	0	560	30.6	74.7	3-26, 10:05	-	-	-	-	-	ceiling diffusers
1691 Kitchen	6	689	31.7	70.7	4-8, 10:55	-	-	-	-	-	ceiling diffusers
1691A	L	1052	35.4	72.2	4-2, 12:33	L	1140	35.8	72.4	4-2, 12:34	
	L	1170	35.2	72.7	4-2, 12:35	L	1230	35.4	73.1	4-2, 12:36	
	L	1296	35.3	73.5	4-2, 12:37	L	1331	34.6	74.0	4-2, 12:38	
	L	1366	34.7	74.3	4-2, 12:39	L	1444	35.3	75.1	4-2, 12:40	
	L	873	30.6	68.8	4-8, 11:52	L	934	31.4	68.2	4-8, 11:52	
	L	932	31.5	67.2	4-8, 11:53	L	923	31.7	67.0	4-8, 11:54	
	L	911	31.5	65.5	4-8, 11:54						
1691A	6	553	36.6	73.3	3-26, 10:13	3	580	26.5	67.7	4-8, 11:00	Doors to Outside Open (s2)
1691A Kitchen	4	566	24.2	72.7	4-2, 10:55	-	-	-	-	-	
201 Corr.	0	522	32.0	77.4	3-26, 11:14	-	-	-	-	-	
206 Corr.	10	770	31.5	78.3	3-26, 11:23	-	-	-	-	-	
208 (office)	2	718	26.7	73.1	4-2, 9:19	-	-	-	-	-	
208-1 (office)	0	943	34.7	77.2	3-26, 11:30	-	-	-	-	-	
208D (office)	0	935	34.9	77.5	3-26, 11:31	-	-	-	-	-	ceiling diffusers
210B (office)	0	937	34.5	78.1	3-26, 11:34	-	-	-	-	-	ceiling mounted exhaust
210D	2	703	27.4	75.8	4-2, 12:45	-	-	-	-	-	
211A	0	525	34.0	74.0	3-26, 12:16	1	646	28.7	70.3	4-2, 9:40	ceiling diffusers, Chem storage and prep room
213A	0	485	34.0	77.0	3-26, 12:21	19	768	28.8	74.0	4-2, 9:35	ceiling diffusers
214E (office)	1	868	34.6	77.5	3-26, 11:38	-	-	-	-	-	
216 Corr.	3	603	32.8	78.0	3-26, 11:41	-	-	-	-	-	ceiling exhaust
216C (office)	4	571	32.3	78.5	3-26, 11:42	-	-	-	-	-	ceiling diffusers
223 (office)	1	840	35.5	77.2	3-26, 12:05	-	-	-	-	-	
226 Corr.	10	750	34.7	77.3	3-26, 12:06	-	-	-	-	-	
Page 9		Sample 1					Sample 2				
Room Number	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %	Temp. F	Date / Time	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %	Temp. F	Date / Time	Comments
230A (office)	0	746	27.8	72.4	4-2, 10:10	-	-	-	-	-	
236-5	0	640	36.8	66.4	3-27, 8:15	1	487	24.4	73.5	3-27, 10:50	
	0	605	27.3	67.0	3-31, 8:30	0	586	17.2	66.8	4-1, 10:00	
	0	648	26.8	72.9	4-2, 11:15	5	762	28.9	68.3	4-8, 10:00	CO 1 ppm (s7), includes 7 samples
	0	594	31.6	73.9	3-26, 9:41						
236B	5	667	26.1	76.6	4-2, 10:34	-	-	-	-	-	ceiling diffusers
303B	1	727	37.4	79.0	3-26, 1:32	-	-	-	-	-	Adjacent small black room
309 (office)	2	630	20.8	73.3	3-31, 10:16	-	-	-	-	-	



Table 1b Outdoor Air Quality Samples

Room Number	Sample 1				Sample 2				Comments	
	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %	Temp. F	Date / Time	# Occ	CO <sub>2</sub> (ppm)	Rel. Hum. %		Temp. F
1691A Outside	0	460	33.4	67.0	3-26, 10:14	0	477	26.5	64.9	4-2, 10:56
	0	581	36.7	52.5	4-8, 11:10					
Loading Dock	1	477	33.2	71.3	3-26, 9:42	0	406	19.6	66.5	3-27, 12:15
	0	472	21.2	54.9	3-31, 11:35	0	447	15.7	56.6	3-31, 2:05
	0	506	32.9	53.5	4-2, 8:30	0	506	23.8	61.7	4-2, 12:30
	0	505	35.5	49.5	4-9, 11:00					

includes 7 samples

**Newton North High School Air Quality Testing 2003**

**Tables 2 and 3 - Priority Rooms and Corridors**

102	325	434
105	326	435
107	328	437
110	331	439
111	334	440
113	338	442
118	343	443
119	344	444
121	345	1104
126	348	1449
127	353	106 (office)
202	355	107 corridor
203	357	111 comp room
204	358	120 (office)
205	361	126B
206	362	1691A (lunch time)
207	363	208-1 (office)
210	366	208D (office)
217	367	210B (office)
218	368	214E (office)
220	370	223 (office)
221	371	330 corridor. (passing)
222	372	334A (office)
225	379	337A (office)
229	380	346 corridor (passing)
232	401	347-2
233	402	351 Main Office
235	403	354A (office)
236	407	363 corridor.
237	409	371 corridor (passing)
238	410	417 corridor (passing)
301	411	423 corridor
302	413	L204
303	415	L212
304	416	L218
305	417	L232
307	420	M13
308	424	M20
312	426	M23
313	427	M7
316	428	M-9
317	429	Main St. Barry (passing)
318	430	Main st. Beals (passing)
323	431	Main St. Riley (passing)
324	433	

102	307	344	427
105	313	357	428
119	316	362	429
217	318	363	430
218	324	367	439
220	325	368	443
229	328	370	1104
233	331	401	1691A
238	334	403	346 corridor (passing)
301	338	413	Main st. Beals (passing)
305	343	415	

**43 Rooms and corridors with CO<sub>2</sub> >1000 ppm**

134 Rooms and corridors with CO<sub>2</sub> > 800 ppm