Lockheed Martin Corporation
6801 Rockledge Drive
MP CCT 246
Bethesda, MD 20817

July 16, 2020

Mr. Peter McClean
KeyPoint Partners
1111 Marcus Avenue
Lake Success, NY 11042

RE: Vapor Intrusion (VI) Sampling Test Results

Dear Mr. McClean:

Indoor air (IA) vapor samples were collected from the LA Fitness building located at 1111 Marcus Avenue (Unisys Site No.130045). Samples were collected on March 17, 2020 within the heating season. This correspondence is written to provide you with the sampling results.

The indoor air results are presented in Table 1 along with the ambient air data. All sample locations are shown on Figure 1. Lockheed Martin has provided these results to the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH). As KeyPoint Partners and Lockheed Martin have agreed, Lockheed Martin has included an individual letter, table, and figure addressed to LA Fitness for your distribution.

The primary chemicals of concern potentially related to historical activities at the former Unisys Facility are the solvents trichloroethene (TCE), tetrachloroethene (PCE), cis-1,2-dichloroethene (DCE), and Freon 113 (1,1,2-Trichloro-1,2,2-trifluoroethane), although there were other chemicals used at the site.

Lockheed Martin, in consultation with NYSDEC and NYSDOH, has reviewed the results per NYSDOH's October 2006 Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH VI Guidance). A copy of this guidance is available on NYSDOH's website at http://www.health.state.ny.us/environmental/indoors/vapor_intrusion/. Note that certain aspects of the guidance have been updated subsequent to October 2006.

Based upon an evaluation of the results of the sample analysis from 2018 and a comparison of those data to the current NYSDOH Soil Vapor Intrusion guidance (updated in May 2017), a sub-slab depressurization system (SSDS) was installed in the northwestern portion of the LA Fitness building. Lockheed Martin arranged for the design and installation of the NYSDEC and NYSDOH approved SSDS. Construction of the LA Fitness SSDS was initiated in December 2018 and completed in February 2019. The system consists

of two sub slab extraction points, each with riser pipes and roof-top mounted vapor extraction blowers. The approximate radius of influence of the two points is shown on Figure 1.

The March 17th indoor air sample results collected this year indicate that all indoor air concentrations of TCE and PCE continue to be below the NYSDOH VI Guidance indoor air guidelines of 2 micrograms per cubic meter ($\mu g/m^3$) and 30 $\mu g/m^3$, respectively. The vapor sample collected during this event inside the crawlspace was compromised. A construction crew was working in the building while the samples were being collected. While the sample from the crawlspace was in the process of being collected, a construction worker moved the sample canister causing the sample tube to temporarily rise out of the basement. As such the results of these samples are flagged with an "R" and are considered rejected. Because the crawlspace is kept sealed and is not accessible, this does not represent a current exposure pathway. The sample locations and summary of analytical results are presented in Figure 1. All sample results are presented in Table 1.

The indoor air quality in the LA Fitness building is comparable to that of buildings not affected by environmental contamination. The majority of the volatile organic chemicals detected in the indoor air are at levels typically found in most homes and businesses in an urban area and do not present a concern. However, chloroform was detected slightly above typical indoor air background levels suggesting that the results are likely associated with the chlorinated pool, pool products and/or rubber floor mats (e.g. background sources). Other compounds including methylene chloride, acetone, ethylbenzene, isopropyl alcohol, methyl ethyl ketone (MEK), toluene, xylenes, were detected in this year's samples. Lockheed Martin believes these detections are likely related to the adhesives, finishes, and paints used in the recent renovations at the LA Fitness facility. The enclosed NYSDOH Fact Sheet provides some information on reducing exposures to volatile chemicals found in household products.

Please feel free to contact Renata Ockerby of the NYSDOH at 1-518-402-7860 (Renata.Ockerby@health.ny.gov) or Girish Desai of the NYSDEC at 1-631-444-0243 (girish.desai@dec.ny.gov) regarding the indoor air results. If you are interested, you can obtain a copy of the NYSDOH October 2006 Final Guidance for Soil Vapor Intrusion from their website at http://www.health.state.ny.us/environmental/investigations/soil_gas/svi_guidance/. If you have questions about these sample results or the on-going environmental investigations and cleanup at 1111 Marcus Avenue, please contact me at 1-817-901-9933 or via e-mail at Glenda.b.clark@lmco.com .

Sincerely,

Glenda B Clark

Glenda B. Clark

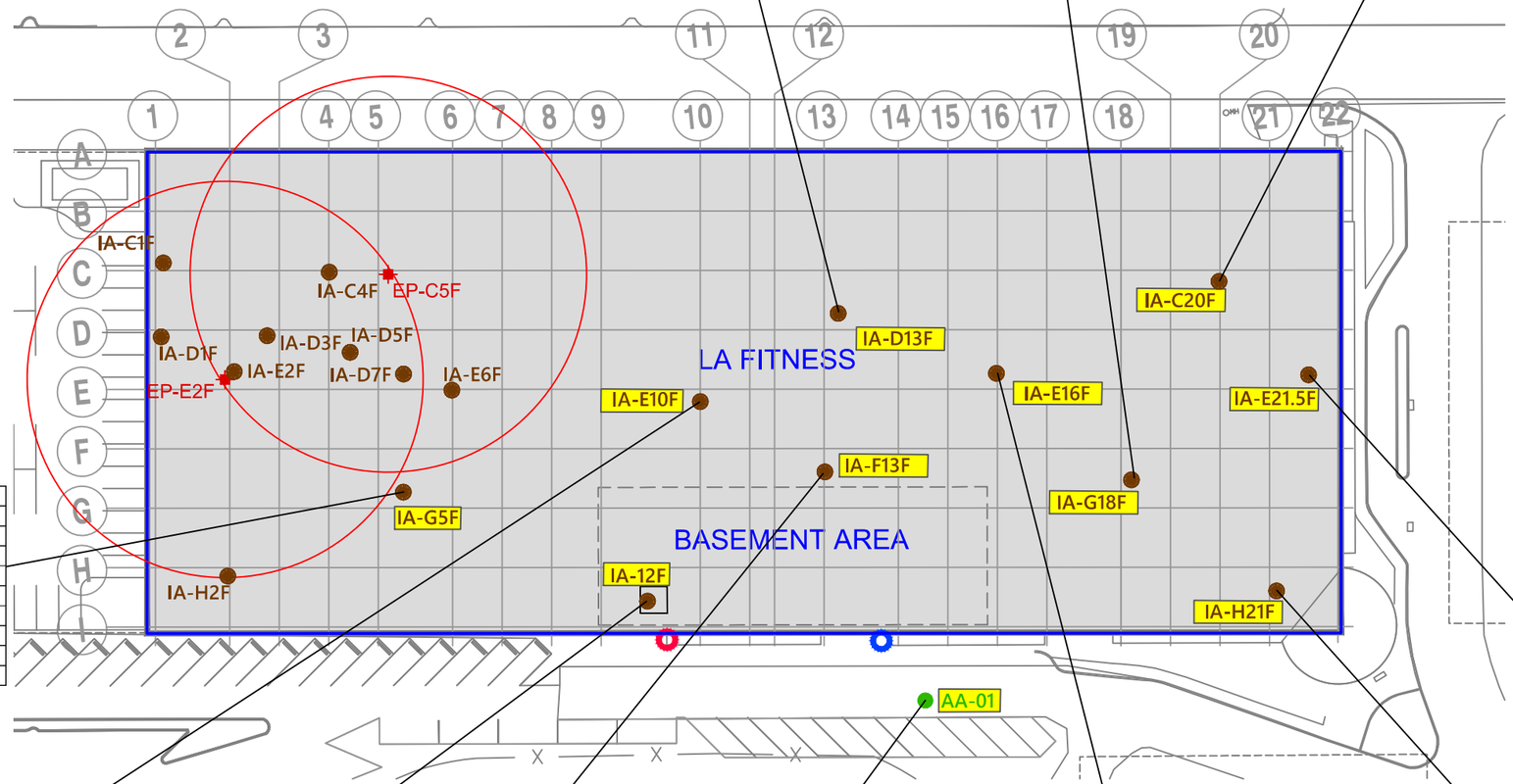
cc: Renata Ockerby/NYSDOH
Girish Desai/NYSDEC
Stuart Pearson/AMEC E&E, PC

Eric Weinstock/AMEC E&E, PC

Analyte	Result (ug/m3) IA-D13F
1,1,1-Trichloroethane	0.92 U
1,1-Dichloroethene	0.19 U
Carbon tetrachloride	0.38
cis-1,2-Dichloroethene	0.19 U
Methylene chloride	1.4
Tetrachloroethene	0.2 J
Trichloroethene	0.19 U
Vinyl chloride	0.19 U

Analyte	Result (ug/m3) IA-G18F
1,1,1-Trichloroethane	0.96 U
1,1-Dichloroethene	0.19 U
Carbon tetrachloride	0.39
cis-1,2-Dichloroethene	0.19 U
Methylene chloride	2.5
Tetrachloroethene	0.53 J
Trichloroethene	0.44
Vinyl chloride	0.19 U

Analyte	Result (ug/m3) IA-C20F
1,1,1-Trichloroethane	0.99 U
1,1-Dichloroethene	0.2 U
Carbon tetrachloride	0.38
cis-1,2-Dichloroethene	0.2 U
Methylene chloride	1.5
Tetrachloroethene	0.24 J
Trichloroethene	0.2 U
Vinyl chloride	0.2 U



LEGEND

- IA-H21F — INDOOR AIR SAMPLE LOCATION
- EP-C5F — ACTIVE EXTRACTION POINT
- 80 - FOOT RADIUS OF INFLUENCE
- PASSIVE VENT EXHAUST
- PASSIVE VENT INLET
- AA-01 — AMBIENT AIR SAMPLE LOCATION
- DENOTES LOCATIONS SAMPLED IN 2020

Analyte	Result (ug/m3) IA-G5F
1,1,1-Trichloroethane	0.99 U
1,1-Dichloroethene	0.2 U
Carbon tetrachloride	0.34
cis-1,2-Dichloroethene	0.2 U
Methylene chloride	2.1
Tetrachloroethene	0.22 J
Trichloroethene	0.2 U
Vinyl chloride	0.2 U

Analyte	Result (ug/m3) IA-E21.5F
1,1,1-Trichloroethane	0.99 U
1,1-Dichloroethene	0.2 U
Carbon tetrachloride	0.38
cis-1,2-Dichloroethene	0.2 U
Methylene chloride	1.2
Tetrachloroethene	0.17 J
Trichloroethene	0.2 U
Vinyl chloride	0.2 U

Analyte	Result (ug/m3) IA-H21F
1,1,1-Trichloroethane	0.97 U
1,1-Dichloroethene	0.2 U
Carbon tetrachloride	0.39
cis-1,2-Dichloroethene	0.2 U
Methylene chloride	1.4
Tetrachloroethene	0.23 J
Trichloroethene	0.2 U
Vinyl chloride	0.2 U

Analyte	Result (ug/m3) IA-E10F
1,1,1-Trichloroethane	0.98 U
1,1-Dichloroethene	0.2 U
Carbon tetrachloride	0.37
cis-1,2-Dichloroethene	0.2 U
Methylene chloride	2.7
Tetrachloroethene	0.35 J
Trichloroethene	0.3
Vinyl chloride	0.2 U

Analyte	Result (ug/m3) IA-12F
1,1,1-Trichloroethane	0.97 UR
1,1-Dichloroethene	0.2 UR
Carbon tetrachloride	0.4R
cis-1,2-Dichloroethene	0.2 UR
Methylene chloride	1R
Tetrachloroethene	6.6R
Trichloroethene	0.58R
Vinyl chloride	0.2 UR

Analyte	Result (ug/m3) IA-F13F
1,1,1-Trichloroethane	1 U
1,1-Dichloroethene	0.21 U
Carbon tetrachloride	0.37
cis-1,2-Dichloroethene	0.21 U
Methylene chloride	3.2
Tetrachloroethene	0.21 J
Trichloroethene	0.21 U
Vinyl chloride	0.21 U

Analyte	Result (ug/m3) AA-01
1,1,1-Trichloroethane	1 U
1,1-Dichloroethene	0.21 U
Carbon tetrachloride	0.38
cis-1,2-Dichloroethene	0.21 U
Methylene chloride	0.49 J
Tetrachloroethene	0.34 J
Trichloroethene	0.26
Vinyl chloride	0.21 U

Analyte	Result (ug/m3) IA-E16F
1,1,1-Trichloroethane	0.99 U
1,1-Dichloroethene	0.2 U
Carbon tetrachloride	0.38
cis-1,2-Dichloroethene	0.2 U
Methylene chloride	1.6
Tetrachloroethene	0.22 J
Trichloroethene	0.2 U
Vinyl chloride	0.2 U

NOTES:

1. U = NOT DETECTED AT THE REPORTED DETECTION LIMIT.
   J = ESTIMATED VALUE.
   R= DATA IS REJECTED.
2. SAMPLE LOCATION IA-12F IS WITHIN THE SEALED AND UNOCCUPIED BASEMENT AREA.

0 60 120
SCALE IN FEET

TITLE: **2020 INDOOR AND AMBIENT AIR VI SAMPLING RESULTS LA FITNESS**

LOCATION: **Former UNISYS Facility Lake Success, New York**

amec

APPROVED	EAW	FIGURE
DRAFTED	BRT	1
PROJECT#	117-0507644	
DATE	06/22/20	

FILE NAME: T:\LOCKHEED\GREAT NECK\LA Fitness SSDS\SV Monitoring Work Plan\Figure 1 - 2020 VI SAMPLING RESULTS LA Fitness.dwg PLOT DATE: Mon, 22 Jun 2020 PLOT TIME: 11:35 AM

TABLE 1

March 2020 - LA Fitness Indoor Air Sampling Results

Former Unisys Facility, Lake Success, New York

Sample ID	**AA-01**				**IA-12**				**IA-C20**				**IA-D13**				**IA-E10**				**IA-E16**				**IA-E21.5**			
Lab Sample ID	P2001566-011				P2001566-010				P2001566-007				P2001566-003				P2001566-002				P2001566-005				P2001566-008			
Sampling Date	3/17/2020				3/17/2020				3/17/2020				3/17/2020				3/17/2020				3/17/2020				3/17/2020			
Matrix	AIR				AIR				AIR				AIR				AIR				AIR				AIR			
Dilution Factor	1.89				1.79				1.84				1.71				1.82				1.83				1.84			
Unit	UG/M3				UG/M3				UG/M3				UG/M3				UG/M3				UG/M3				UG/M3			
AIR - GC/MS VOA-TO-15-UG/M3	Result	Q	MDL	MRL	Result	Q	MDL	MRL	Result	Q	MDL	MRL	Result	Q	MDL	MRL	Result	Q	MDL	MRL	Result	Q	MDL	MRL	Result	Q	MDL	MRL
AIR BY TO-15																												
1,1,1-Trichloroethane	1	U	0.12	1	0.97	UR	0.12	0.97	0.99	U	0.12	0.99	0.92	U	0.11	0.92	0.98	U	0.12	0.98	0.99	U	0.12	0.99	0.99	U	0.12	0.99
1,1,2,2-Tetrachloroethane	1	U	0.14	1	0.97	UR	0.13	0.97	0.99	U	0.14	0.99	0.92	U	0.13	0.92	0.98	U	0.13	0.98	0.99	U	0.14	0.99	0.99	U	0.14	0.99
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.49	J	0.14	1	0.47	JR	0.14	0.97	0.47	J	0.14	0.99	0.45	J	0.13	0.92	0.49	J	0.14	0.98	0.48	J	0.14	0.99	0.53	J	0.14	0.99
1,1,2-Trichloroethane	1	U	0.1	1	0.97	UR	0.097	0.97	0.99	U	0.099	0.99	0.92	U	0.092	0.92	0.98	U	0.098	0.98	0.99	U	0.099	0.99	0.99	U	0.099	0.99
1,1-Dichloroethane	1	U	0.15	1	0.98	UR	0.14	0.98	1	U	0.14	1	0.94	U	0.13	0.94	1	U	0.14	1	1	U	0.14	1	1	U	0.14	1
1,1-Dichloroethene	0.21	U	0.14	0.21	0.2	UR	0.13	0.2	0.2	U	0.14	0.2	0.19	U	0.13	0.19	0.2	U	0.13	0.2	0.2	U	0.14	0.2	0.2	U	0.14	0.2
1,2,4-Trichlorobenzene	1	U	0.25	1	0.97	UR	0.23	0.97	0.99	U	0.24	0.99	0.92	U	0.22	0.92	0.98	U	0.24	0.98	0.99	U	0.24	0.99	0.99	U	0.24	0.99
1,2,4-Trimethylbenzene	0.24	J	0.14	1	0.56	JR	0.13	0.97	1.9		0.14	0.99	1.7		0.13	0.92	1.3		0.13	0.98	1.2		0.14	0.99	2.2		0.14	0.99
1,2-Dibromo-3-chloropropane	1	U	0.19	1	0.95	UR	0.18	0.95	0.98	U	0.18	0.98	0.91	U	0.17	0.91	0.96	U	0.18	0.96	0.97	U	0.18	0.97	0.98	U	0.18	0.98
1,2-Dibromoethane	1	U	0.12	1	0.97	UR	0.11	0.97	0.99	U	0.11	0.99	0.92	U	0.11	0.92	0.98	U	0.11	0.98	0.99	U	0.11	0.99	0.99	U	0.11	0.99
1,2-Dichloro-1,1,2,2-tetrafluoroethane	1	U	0.16	1	0.95	UR	0.15	0.95	0.98	U	0.15	0.98	0.91	U	0.14	0.91	0.96	U	0.15	0.96	0.97	U	0.15	0.97	0.98	U	0.15	0.98
1,2-Dichlorobenzene	1	U	0.15	1	0.97	UR	0.14	0.97	0.99	U	0.15	0.99	0.92	U	0.14	0.92	0.98	U	0.14	0.98	0.99	U	0.14	0.99	0.99	U	0.15	0.99
1,2-Dichloroethane	1	U	0.11	1	0.97	UR	0.11	0.97	0.99	U	0.11	0.99	0.92	U	0.1	0.92	0.98	U	0.11	0.98	0.99	U	0.11	0.99	0.99	U	0.11	0.99
1,2-Dichloroethene (total)	1	U	0.14	1	0.97	UR	0.13	0.97	0.99	U	0.14	0.99	0.92	U	0.13	0.92	0.98	U	0.14	0.98	0.99	U	0.14	0.99	0.99	U	0.14	0.99
1,2-Dichloropropane	1	U	0.12	1	0.97	UR	0.12	0.97	0.99	U	0.12	0.99	0.92	U	0.11	0.92	0.98	U	0.12	0.98	0.99	U	0.12	0.99	0.99	U	0.12	0.99
1,3,5-Trimethylbenzene	1	U	0.15	1	0.16	JR	0.14	0.95	0.61	J	0.14	0.98	0.56	J	0.13	0.91	0.41	J	0.14	0.96	0.4	J	0.14	0.97	0.78	J	0.14	0.98
1,3-Butadiene	1	U	0.17	1	0.9	JR	0.16	0.95	0.98	U	0.16	0.98	0.91	U	0.15	0.91	0.96	U	0.16	0.96	0.97	U	0.16	0.97	0.98	U	0.16	0.98
1,3-Dichlorobenzene	1	U	0.15	1	0.97	UR	0.14	0.97	0.99	U	0.15	0.99	0.92	U	0.14	0.92	0.98	U	0.15	0.98	0.99	U	0.15	0.99	0.99	U	0.15	0.99
1,4-Dichlorobenzene	1	U	0.15	1	0.97	UR	0.15	0.97	0.99	U	0.15	0.99	0.92	U	0.14	0.92	0.98	U	0.15	0.98	0.99	U	0.15	0.99	0.99	U	0.15	0.99
1,4-Dioxane	1	U	0.12	1	0.15	JR	0.11	0.97	0.99	U	0.12	0.99	0.92	U	0.11	0.92	0.98	U	0.11	0.98	0.99	U	0.12	0.99	0.99	U	0.12	0.99
2-Butanone	0.66	J	0.21	2.1	9.4	R	0.2	2	4.2		0.2	2	4.5		0.19	1.9	3.1		0.2	2	3.3		0.2	2	11		0.2	2
2-Hexanone	1	U	0.12	1	1.9	R	0.12	0.97	0.99	U	0.12	0.99	0.37	J	0.11	0.92	0.98	U	0.12	0.98	0.99	U	0.12	0.99	0.99	U	0.12	0.99
2-Propanol	2	J	0.42	4	24	R	0.39	3.8	20		0.4	3.9	20		0.38	3.6	18		0.4	3.8	19		0.4	3.8	32		0.4	3.9
4-Ethyltoluene	1	U	0.16	1	0.18	JR	0.15	0.97	0.41	J	0.16	0.99	0.28	J	0.15	0.92	0.27	J	0.15	0.98	0.24	J	0.16	0.99	0.66	J	0.16	0.99
4-Methyl-2-pentanone	1	U	0.14	1	0.16	JR	0.13	0.95	0.45	J	0.13	0.98	0.48	J	0.12	0.91	0.35	J	0.13	0.96	0.34	J	0.13	0.97	0.95	J	0.13	0.98
Acetic acid, methyl ester	0.95	U	0.45	0.95	1.7	R	0.43	0.9	4.6		0.44	0.92	4.2		0.41	0.86	4		0.44	0.91	4.2		0.44	0.92	4.9		0.44	0.92
Acetone	5.9	J	2.3	10	720	R	21	95	97		2.2	9.8	89		2.1	9.1	74		2.2	9.6	88		2.2	9.7	56		2.2	9.8
Allyl chloride	1	U	0.14	1	0.97	UR	0.13	0.97	0.99	U	0.13	0.99	0.92	U	0.12	0.92	0.98	U	0.13	0.98	0.99	U	0.13	0.99	0.99	U	0.13	0.99
Benzene	0.54	J	0.15	1	0.39	JR	0.14	0.95	0.69	J	0.14	0.98	0.64	J	0.13	0.91	0.64	J	0.14	0.96	0.85	J	0.14	0.97	2.8		0.14	0.98
Bromodichloromethane	1	U	0.15	1	0.44	JR	0.14	0.97	0.99	U	0.14	0.99	0.92	U	0.13	0.92	0.98	U	0.14	0.98	0.99	U	0.14	0.99	0.99	U	0.14	0.99
Bromoform	1	U	0.21	1	0.97	UR	0.2	0.97	0.99	U	0.2	0.99	0.92	U	0.19	0.92	0.98	U	0.2	0.98	0.99	U	0.2	0.99	0.99	U	0.2	0.99
Bromomethane	1	U	0.14	1	0.97	UR	0.13	0.97	0.99	U	0.14	0.99	0.92	U	0.13	0.92	0.98	U	0.13	0.98	0.99	U	0.14	0.99	0.99	U	0.14	0.99
Carbon disulfide	2.1	U	0.3	2.1	2	UR	0.29	2	2	U	0.29	2	0.88	J	0.27	1.9	2	U	0.29	2	2	U	0.29	2	0.36	J	0.29	2
Carbon tetrachloride	0.38		0.14	0.19	0.4	R	0.13	0.18	0.38		0.14	0.18	0.38		0.13	0.17	0.37		0.13	0.18	0.38		0.14	0.18	0.38		0.14	0.18
Chlorobenzene	1	U	0.13	1	0.97	UR	0.13	0.97	0.99	U	0.13	0.99	0.92	U	0.12	0.92	0.98	U	0.13	0.98	0.99	U	0.13	0.99	0.99	U	0.13	0.99
Chlorodifluoromethane	0.75	J	0.47	0.95	0.74	JR	0.45	0.9	2.1		0.46	0.92	1.8		0.43	0.86	1.7		0.46	0.91	1.9		0.46	0.92	1.6		0.46	0.92
Chloroethane	1	U	0.12	1	0.97	UR	0.12	0.97	0.99	U	0.12	0.99	0.92	U	0.11	0.92	0.98	U	0.12	0.98	0.99	U	0.12	0.99	0.99	U	0.12	0.99
Chloroform	1	U	0.13	1	43	R	0.13	0.97	0.44	J	0.13	0.99	0.4	J	0.12	0.92	0.41	J	0.13	0.98	0.39	J	0.13	0.99	0.79	J	0.13	0.99
Chloromethane	0.34	J	0.16	1	0.19	JR	0.15	0.95	0.31	J	0.16	0.98	0.31	J	0.15	0.91	0.3	J	0.16	0.96	0.28	J	0.16	0.97	0.3	J	0.16	0.98
cis-1,2-Dichloroethene	0.21	U	0.14	0.21	0.2	UR	0.13	0.2	0.2	U	0.14	0.2	0.19	U	0.13	0.19	0.2	U	0.14	0.2	0.2	U	0.14	0.2	0.2	U	0.14	0.2
cis-1,3-Dichloropropene	0.98	U	0.16	0.98	0.93	UR	0.15	0.93	0.96	U	0.15	0.96	0.89	U	0.14	0.89	0.95	U	0.15	0.95	0.95	U	0.15	0.95	0.96	U	0.15	0.96
Cyclohexane	2.1	U	0.28	2.1	2	UR	0.27	2	0.43	J	0.28	2	0.4	J	0.26	1.9	0.41	J	0.27	2	0.36	J	0.27	2	3.9		0.28	2
Dibromochloromethane	1	U	0.13	1	0.97	UR	0.13	0.97	0.99	U	0.13	0.99	0.92	U	0.12	0.92	0.98	U	0.13	0.98	0.99	U	0.13	0.99	0.99	U	0.13	0.99
Dichlorodifluoromethane	2.8		0.16	1	2.5	R	0.16	0.95	2.8		0.16	0.98	2.6		0.15	0.91	2.6		0.16	0.96	2.6		0.16	0.97	2.5		0.16	0.98
Difluoroethane	0.95	U	0.49	0.95	0.51	JR	0.47	0.9	0.92	U	0.48	0.92	0.86	U	0.44	0.86	0.91	U	0.47	0.91	0.92	U	0.48	0.92	0.92	U	0.48	0.92
Ethylbenzene	0.23	J	0.14	1	0.36	JR	0.13	0.97	5.9		0.14	0.99	5		0.13	0.92	4.2		0.14	0.98	5.4		0.14	0.99	3.6		0.14	0.99
Freon 115	0.95	U	0.43	0.95	0.9	UR	0.41	0.9	0.92	U	0.42	0.92	0.86	U	0.39	0.86	0.91	U	0.42	0.91	0.92	U	0.42	0.92	0.92	U	0.42	0.92
Freon 123	0.95	U	0.45	0.95	0.9	UR	0.43	0.9	0.92	U	0.44	0.92	0.86	U	0.41	0.86	0.91	U	0.44	0.91	0.92	U	0.44	0.92	0.92	U	0.44	0.92
Hexachlorobutadiene	1	U	0.21	1	0.95	UR	0.2	0.95	0.98	U	0.2	0.98	0.91	U	0.19	0.91	0.96	U	0.2	0.96	0.97	U	0.2	0.97	0.98	U	0.2	0.98
Hexane	0.35	J	0.21	1	0.97	UR	0.2	0.97	1.2		0.2	0.99	1		0.19	0.92	1.1		0.2	0.98	0.99		0.2	0.99	14		0.2	0.99
Isopropylbenzene	1	U	0.15	1	0.97	UR	0.14	0.97	0.25	J	0.14	0.99	0.16	J	0.13	0.92	0.98	U	0.14	0.98	0.15	J	0.14	0.99	0.22	J	0.14	0.99
Methyl cyclohexane	0.95	U	0.49	0.95	0.9	UR	0.47	0.9	0.92	U	0.48	0.92	0.86	U	0.44	0.86	0.91	U	0.47	0.91	0.92	U	0.48	0.92	3.6		0.48	0.92
Methyl Tertbutyl Ether	1	U	0.12	1	0.97	UR	0.11	0.97	0.99	U	0.12	0.99	0.92	U	0.11	0.92	0.98	U	0.11	0.98	0.99	U	0.12	0.99	0.99	U	0.12	0.99
Methylene chloride	0.49	J	0.28	1	1	R	0.27	0.95	1.5		0.28	0.98	1.4		0.26	0.91	2.7		0.27	0.96	1.6		0.27	0.97	1.2		0.28	0.98
Styrene	1	U	0.16	1	0.95	UR	0.15	0.95	0.83	J	0.16	0.98	0.32	J	0.15	0.91	0.45	J	0.16	0.96	0.73	J	0.16	0.97	1.6		0.16	0.98
Tetrachloroethene	0.34	J	0.13	0.98	6.6	R	0.12	0.93	0.24	J	0.13	0.96	0.2	J	0.12	0.89	0.35	J	0.13	0.95	0.22	J	0.13	0.95	0.17	J	0.13	0.96
Toluene	1.4		0.12	1	1.1	R	0.12	0.97	4.4		0.12	0.99	2.7		0.11	0.92	2.8		0.12	0.98	2.7		0.12	0.99	8.6		0.12	0.99

TABLE 1

March 2020 - LA Fitness Indoor Air Sampling Results

Former Unisys Facility, Lake Success, New York

Sample ID				**AA-01**				**IA-12**				**IA-C20**				**IA-D13**				**IA-E10**				**IA-E16**				**IA-E21.5**			
Lab Sample ID				P2001566-011				P2001566-010				P2001566-007				P2001566-003				P2001566-002				P2001566-005				P2001566-008			
Sampling Date				3/17/2020				3/17/2020				3/17/2020				3/17/2020				3/17/2020				3/17/2020				3/17/2020			
Matrix				AIR				AIR				AIR				AIR				AIR				AIR				AIR			
Dilution Factor				1.89				1.79				1.84				1.71				1.82				1.83				1.84			
Unit				UG/M3				UG/M3				UG/M3				UG/M3				UG/M3				UG/M3				UG/M3			
AIR - GC/MS VOA-TO-15-UG/M3	Result	Q	MDL	MRL	Result	Q	MDL	MRL	Result	Q	MDL	MRL	Result	Q	MDL	MRL	Result	Q	MDL	MRL	Result	Q	MDL	MRL	Result	Q	MDL	MRL	Result	Q	MDL	MRL
AIR BY TO-15																																
trans-1,2-Dichloroethene	1	U	0.14	1	0.97	UR	0.13	0.97	0.99	U	0.14	0.99	0.92	U	0.13	0.92	0.98	U	0.13	0.98	0.99	U	0.14	0.99	0.99	U	0.14	0.99				
trans-1,3-Dichloropropene	1	U	0.21	1	0.95	UR	0.2	0.95	0.98	U	0.2	0.98	0.91	U	0.19	0.91	0.96	U	0.2	0.96	0.97	U	0.2	0.97	0.98	U	0.2	0.98				
Trichloroethene	0.26		0.14	0.21	0.58	R	0.13	0.2	0.2	U	0.13	0.2	0.19	U	0.12	0.19	0.3		0.13	0.2	0.2	U	0.13	0.2	0.2	U	0.13	0.2				
Trichlorofluoromethane	1.3		0.15	1	1.3	R	0.14	0.95	1.3		0.15	0.98	1.3		0.14	0.91	1.3		0.15	0.96	1.3		0.15	0.97	1.2		0.15	0.98				
Vinyl chloride	0.21	U	0.11	0.21	0.2	UR	0.1	0.2	0.2	U	0.1	0.2	0.19	U	0.097	0.19	0.2	U	0.1	0.2	0.2	U	0.1	0.2	0.2	U	0.1	0.2				
Xylene, o	0.29	J	0.15	1	0.52	JR	0.14	0.97	7.1		0.14	0.99	5.9		0.13	0.92	5		0.14	0.98	6.4		0.14	0.99	4.3		0.14	0.99				
Xylenes (m&p)	0.69	J	0.26	2.1	1.3	JR	0.25	2	24		0.26	2	21		0.24	1.9	17		0.25	2	22		0.26	2	13		0.26	2				

R: Data is rejected

J: Estimated value

U : Analyte was analyzed for but not detected.

Q: Qualifier

MDL: Method Detection Limit

MRL: Method Reporting Limit

TABLE 1

March 2020 - LA Fitness Indoor Air Sampling Results

Former Unisys Facility, Lake Success, New York

Sample ID					**IA-F13**				**IA-DUP-2**				**IA-G18**				**IA-G5**				**IA-DUP-1**				**IA-H21**			
Lab Sample ID					P2001566-004				P2001566-013				P2001566-006				P2001566-001				P2001566-012				P2001566-009			
Sampling Date					3/17/2020				3/17/2020				3/17/2020				3/17/2020				3/17/2020				3/17/2020			
Matrix					AIR				AIR				AIR				AIR				AIR				AIR			
Dilution Factor					1.87				1.69				1.77				1.84				1.81				1.8			
Unit					UG/M3				UG/M3				UG/M3				UG/M3				UG/M3				UG/M3			
AIR - GC/MS VOA-TO-15-UG/M3	Result	Q	MDL	MRL	Result	Q	MDL	MRL	Result	Q	MDL	MRL	Result	Q	MDL	MRL	Result	Q	MDL	MRL	Result	Q	MDL	MRL	Result	Q	MDL	MRL
AIR BY TO-15																												
1,1,1-Trichloroethane	1	U	0.12	1	0.91	U	0.11	0.91	0.96	U	0.12	0.96	0.99	U	0.12	0.99	0.98	U	0.12	0.98	0.97	U	0.12	0.97				
1,1,2,2-Tetrachloroethane	1	U	0.14	1	0.91	U	0.13	0.91	0.96	U	0.13	0.96	0.99	U	0.14	0.99	0.98	U	0.13	0.98	0.97	U	0.13	0.97				
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.48	J	0.14	1	0.48	J	0.13	0.91	0.47	J	0.13	0.96	0.45	J	0.14	0.99	0.48	J	0.14	0.98	0.47	J	0.14	0.97				
1,1,2-Trichloroethane	1	U	0.1	1	0.91	U	0.091	0.91	0.96	U	0.096	0.96	0.99	U	0.099	0.99	0.98	U	0.098	0.98	0.97	U	0.097	0.97				
1,1-Dichloroethane	1	U	0.15	1	0.93	U	0.13	0.93	0.97	U	0.14	0.97	1	U	0.14	1	1	U	0.14	1	0.99	U	0.14	0.99				
1,1-Dichloroethene	0.21	U	0.14	0.21	0.19	U	0.13	0.19	0.19	U	0.13	0.19	0.2	U	0.14	0.2	0.2	U	0.13	0.2	0.2	U	0.13	0.2				
1,2,4-Trichlorobenzene	1	U	0.24	1	0.91	U	0.22	0.91	0.96	U	0.23	0.96	0.99	U	0.24	0.99	0.98	U	0.24	0.98	0.97	U	0.23	0.97				
1,2,4-Trimethylbenzene	1.3		0.14	1	1.3		0.13	0.91	1.1		0.13	0.96	1.3		0.14	0.99	1.3		0.13	0.98	1.1		0.13	0.97				
1,2-Dibromo-3-chloropropane	0.99	U	0.19	0.99	0.9	U	0.17	0.9	0.94	U	0.18	0.94	0.98	U	0.18	0.98	0.96	U	0.18	0.96	0.95	U	0.18	0.95				
1,2-Dibromoethane	1	U	0.12	1	0.1	J	0.1	0.91	0.96	U	0.11	0.96	0.99	U	0.11	0.99	0.98	U	0.11	0.98	0.97	U	0.11	0.97				
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.99	U	0.16	0.99	0.9	U	0.14	0.9	0.94	U	0.15	0.94	0.98	U	0.15	0.98	0.96	U	0.15	0.96	0.95	U	0.15	0.95				
1,2-Dichlorobenzene	1	U	0.15	1	0.91	U	0.13	0.91	0.96	U	0.14	0.96	0.99	U	0.15	0.99	0.98	U	0.14	0.98	0.97	U	0.14	0.97				
1,2-Dichloroethane	1	U	0.11	1	0.91	U	0.1	0.91	0.96	U	0.1	0.96	0.99	U	0.11	0.99	0.98	U	0.11	0.98	0.97	U	0.11	0.97				
1,2-Dichloroethene (total)	1	U	0.14	1	0.91	U	0.13	0.91	0.96	U	0.13	0.96	0.99	U	0.14	0.99	0.98	U	0.14	0.98	0.97	U	0.14	0.97				
1,2-Dichloropropane	1	U	0.12	1	0.91	U	0.11	0.91	0.96	U	0.12	0.96	0.99	U	0.12	0.99	0.98	U	0.12	0.98	0.97	U	0.12	0.97				
1,3,5-Trimethylbenzene	0.45	J	0.14	0.99	0.41	J	0.13	0.9	0.37	J	0.14	0.94	0.45	J	0.14	0.98	0.44	J	0.14	0.96	0.38	J	0.14	0.95				
1,3-Butadiene	0.99	U	0.16	0.99	0.9	U	0.15	0.9	0.94	U	0.16	0.94	0.98	U	0.16	0.98	0.96	U	0.16	0.96	0.95	U	0.16	0.95				
1,3-Dichlorobenzene	1	U	0.15	1	0.91	U	0.14	0.91	0.96	U	0.14	0.96	0.99	U	0.15	0.99	0.98	U	0.14	0.98	0.97	U	0.14	0.97				
1,4-Dichlorobenzene	1	U	0.15	1	0.91	U	0.14	0.91	0.96	U	0.15	0.96	0.99	U	0.15	0.99	0.98	U	0.15	0.98	0.97	U	0.15	0.97				
1,4-Dioxane	1	U	0.12	1	0.91	U	0.11	0.91	0.96	U	0.11	0.96	0.99	U	0.12	0.99	0.98	U	0.11	0.98	0.97	U	0.11	0.97				
2-Butanone	4.3		0.21	2.1	3.2		0.19	1.9	3.3		0.19	1.9	3.7		0.2	2	3.4		0.2	2	3.4		0.2	2				
2-Hexanone	0.37	J	0.12	1	0.91	U	0.11	0.91	0.22	J	0.12	0.96	0.25	J	0.12	0.99	0.98	U	0.12	0.98	0.97	U	0.12	0.97				
2-Propanol	19		0.41	3.9	17		0.37	3.5	23		0.39	3.7	17		0.4	3.9	20		0.4	3.8	19		0.4	3.8				
4-Ethyltoluene	0.26	J	0.16	1	0.28	J	0.14	0.91	0.22	J	0.15	0.96	0.24	J	0.16	0.99	0.25	J	0.15	0.98	0.26	J	0.15	0.97				
4-Methyl-2-pentanone	0.42	J	0.14	0.99	0.36	J	0.12	0.9	0.36	J	0.13	0.94	0.4	J	0.13	0.98	0.38	J	0.13	0.96	0.33	J	0.13	0.95				
Acetic acid, methyl ester	4.2		0.45	0.94	4		0.41	0.85	4		0.42	0.89	4.5		0.44	0.92	4.6		0.43	0.91	4.6		0.43	0.9				
Acetone	90		2.2	9.9	83		2	9	85		2.1	9.4	78		2.2	9.8	79		2.2	9.6	89		2.2	9.5				
Allyl chloride	1	U	0.13	1	0.91	U	0.12	0.91	0.96	U	0.13	0.96	0.99	U	0.13	0.99	0.98	U	0.13	0.98	0.97	U	0.13	0.97				
Benzene	0.65	J	0.14	0.99	0.66	J	0.13	0.9	0.65	J	0.14	0.94	0.64	J	0.14	0.98	0.63	J	0.14	0.96	0.62	J	0.14	0.95				
Bromodichloromethane	1	U	0.14	1	0.91	U	0.13	0.91	0.96	U	0.14	0.96	0.99	U	0.14	0.99	0.98	U	0.14	0.98	0.97	U	0.14	0.97				
Bromoform	1	U	0.21	1	0.91	U	0.19	0.91	0.96	U	0.19	0.96	0.99	U	0.2	0.99	0.98	U	0.2	0.98	0.97	U	0.2	0.97				
Bromomethane	1	U	0.14	1	0.91	U	0.13	0.91	0.96	U	0.13	0.96	0.99	U	0.14	0.99	0.98	U	0.13	0.98	0.97	U	0.13	0.97				
Carbon disulfide	2.1	U	0.3	2.1	1.9	U	0.27	1.9	0.32	J	0.28	1.9	0.61	J	0.29	2	2	U	0.29	2	2	U	0.29	2				
Carbon tetrachloride	0.37		0.14	0.19	0.41		0.13	0.17	0.39		0.13	0.18	0.34		0.14	0.18	0.39		0.13	0.18	0.39		0.13	0.18				
Chlorobenzene	1	U	0.13	1	0.91	U	0.12	0.91	0.96	U	0.13	0.96	0.99	U	0.13	0.99	0.98	U	0.13	0.98	0.97	U	0.13	0.97				
Chlorodifluoromethane	1.8		0.47	0.94	1.7		0.42	0.85	1.6		0.44	0.89	1.9		0.46	0.92	1.9		0.45	0.91	1.9		0.45	0.9				
Chloroethane	1	U	0.12	1	0.91	U	0.11	0.91	0.96	U	0.12	0.96	0.99	U	0.12	0.99	0.98	U	0.12	0.98	0.97	U	0.12	0.97				
Chloroform	0.36	J	0.13	1	0.38	J	0.12	0.91	0.42	J	0.13	0.96	0.39	J	0.13	0.99	0.4	J	0.13	0.98	0.42	J	0.13	0.97				
Chloromethane	0.31	J	0.16	0.99	0.3	J	0.15	0.9	0.25	J	0.15	0.94	0.29	J	0.16	0.98	0.32	J	0.16	0.96	0.29	J	0.15	0.95				
cis-1,2-Dichloroethene	0.21	U	0.14	0.21	0.19	U	0.13	0.19	0.19	U	0.13	0.19	0.2	U	0.14	0.2	0.2	U	0.14	0.2	0.2	U	0.14	0.2				
cis-1,3-Dichloropropene	0.97	U	0.16	0.97	0.88	U	0.14	0.88	0.92	U	0.15	0.92	0.96	U	0.15	0.96	0.94	U	0.15	0.94	0.94	U	0.15	0.94				
Cyclohexane	0.4	J	0.28	2.1	0.39	J	0.25	1.9	0.36	J	0.27	1.9	0.39	J	0.28	2	0.39	J	0.27	2	0.33	J	0.27	2				
Dibromochloromethane	1	U	0.13	1	0.91	U	0.12	0.91	0.96	U	0.12	0.96	0.99	U	0.13	0.99	0.98	U	0.13	0.98	0.97	U	0.13	0.97				
Dichlorodifluoromethane	2.7		0.16	0.99	2.7		0.15	0.9	2.6		0.15	0.94	2.5		0.16	0.98	2.6		0.16	0.96	2.6		0.16	0.95				
Difluoroethane	0.94	U	0.49	0.94	0.85	U	0.44	0.85	0.89	U	0.46	0.89	0.92	U	0.48	0.92	0.91	U	0.47	0.91	0.9	U	0.47	0.9				
Ethylbenzene	5		0.14	1	4.9		0.13	0.91	4.9		0.13	0.96	4.4		0.14	0.99	4.6		0.14	0.98	5.3		0.14	0.97				
Freon 115	0.94	U	0.43	0.94	0.85	U	0.39	0.85	0.89	U	0.41	0.89	0.92	U	0.42	0.92	0.91	U	0.42	0.91	0.9	U	0.41	0.9				
Freon 123	0.94	U	0.45	0.94	0.85	U	0.41	0.85	0.89	U	0.42	0.89	0.92	U	0.44	0.92	0.91	U	0.43	0.91	0.9	U	0.43	0.9				
Hexachlorobutadiene	0.99	U	0.21	0.99	0.9	U	0.19	0.9	0.94	U	0.19	0.94	0.98	U	0.2	0.98	0.96	U	0.2	0.96	0.95	U	0.2	0.95				
Hexane	0.94	J	0.21	1	0.94		0.19	0.91	0.99		0.19	0.96	0.97	J	0.2	0.99	1		0.2	0.98	1		0.2	0.97				
Isopropylbenzene	0.15	J	0.14	1	0.14	J	0.13	0.91	0.14	J	0.14	0.96	0.99	U	0.14	0.99	0.98	U	0.14	0.98	0.15	J	0.14	0.97				
Methyl cyclohexane	0.94	U	0.49	0.94	0.44	J	0.44	0.85	0.46	J	0.46	0.89	0.92	U	0.48	0.92	0.91	U	0.47	0.91	0.9	U	0.47	0.9				
Methyl Tertbutyl Ether	1	U	0.12	1	0.91	U	0.11	0.91	0.96	U	0.11	0.96	0.99	U	0.12	0.99	0.98	U	0.11	0.98	0.97	U	0.11	0.97				
Methylene chloride	3.2		0.28	0.99	3.3		0.25	0.9	2.5		0.27	0.94	2.1		0.28	0.98	2.1		0.27	0.96	1.4		0.27	0.95				
Styrene	0.41	J	0.16	0.99	0.4	J	0.15	0.9	0.4	J	0.15	0.94	0.36	J	0.16	0.98	0.39	J	0.16	0.96	0.39	J	0.15	0.95				
Tetrachloroethene	0.21	J	0.13	0.97	0.26	J	0.12	0.88	0.53	J	0.12	0.92	0.22	J	0.13	0.96	0.21	J	0.12	0.94	0.23	J	0.12	0.94				
Toluene	2.8		0.12	1	2.4		0.11	0.91	2.5		0.12	0.96	2.7		0.12	0.99	2.4		0.12	0.98	2.5		0.12	0.97				

TABLE 1

March 2020 - LA Fitness Indoor Air Sampling Results

Former Unisys Facility, Lake Success, New York

Sample ID				**IA-F13**				**IA-DUP-2**				**IA-G18**				**IA-G5**				**IA-DUP-1**				**IA-H21**			
Lab Sample ID				P2001566-004				P2001566-013				P2001566-006				P2001566-001				P2001566-012				P2001566-009			
Sampling Date				3/17/2020				3/17/2020				3/17/2020				3/17/2020				3/17/2020				3/17/2020			
Matrix				AIR				AIR				AIR				AIR				AIR				AIR			
Dilution Factor				1.87				1.69				1.77				1.84				1.81				1.8			
Unit				UG/M3				UG/M3				UG/M3				UG/M3				UG/M3				UG/M3			
AIR - GC/MS VOA-TO-15-UG/M3	Result	Q	MDL	MRL	Result	Q	MDL	MRL	Result	Q	MDL	MRL	Result	Q	MDL	MRL	Result	Q	MDL	MRL	Result	Q	MDL	MRL	Result	Q	MDL	MRL
AIR BY TO-15																												
trans-1,2-Dichloroethene	1	U	0.14	1	0.91	U	0.13	0.91	0.96	U	0.13	0.96	0.99	U	0.14	0.99	0.98	U	0.13	0.98	0.97	U	0.13	0.97				
trans-1,3-Dichloropropene	0.99	U	0.21	0.99	0.9	U	0.19	0.9	0.94	U	0.19	0.94	0.98	U	0.2	0.98	0.96	U	0.2	0.96	0.95	U	0.2	0.95				
Trichloroethene	0.21	U	0.13	0.21	0.19	U	0.12	0.19	0.44		0.13	0.19	0.2	U	0.13	0.2	0.2	U	0.13	0.2	0.2	U	0.13	0.2				
Trichlorofluoromethane	1.3		0.15	0.99	1.3		0.14	0.9	1.3		0.14	0.94	1.2		0.15	0.98	1.3		0.15	0.96	1.3		0.15	0.95				
Vinyl chloride	0.21	U	0.11	0.21	0.19	U	0.096	0.19	0.19	U	0.1	0.19	0.2	U	0.1	0.2	0.2	U	0.1	0.2	0.2	U	0.1	0.2				
Xylene, o	6.1		0.14	1	5.8		0.13	0.91	5.8		0.14	0.96	5.2		0.14	0.99	5.5		0.14	0.98	6.3		0.14	0.97				
Xylenes (m&p)	21		0.26	2.1	20		0.24	1.9	20		0.25	1.9	18		0.26	2	19		0.25	2	22		0.25	2				

R: Data is rejected

J: Estimated value

U : Analyte was analyzed for but not detected.

Q: Qualifier

MDL: Method Detection Limit

MRL: Method Reporting Limit

Volatile Organic Compounds (VOCs) in Commonly Used Products

People spend most of their time indoors – at home, school and work. This makes the quality of the indoor air you breathe important. This fact sheet focuses on certain kinds of chemicals called *volatile organic compounds* or *VOCs* that are found in many products that we commonly use. It is designed to help you think about what VOCs may be present in your indoor air and steps you can take to reduce them.

What are VOCs?

VOCs are chemicals that easily enter the air as gases from some solids or liquids. They are ingredients in many commonly used products and are in the air of just about every indoor setting. The table to the right shows some examples of products that contain VOCs.

How do VOCs get into indoor air?

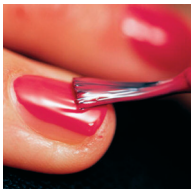
Products containing VOCs can release these chemicals when they are used and when they are stored. Many times you'll notice an odor when using these products. Product labels often list VOC ingredients and recommend that they should be used in well ventilated areas. *Ventilation* means bringing in fresh, outdoor air to mix with indoor air.

When you use a product containing VOCs indoors, the levels of these chemicals in the air increase, then decrease over time after you stop using them. The amount of time the chemical stays in the air depends on how quickly fresh air enters the room and the amount of the chemical used. Levels of VOCs will decrease faster if you open windows or doors, or use exhaust fans.

Building materials and furnishings, such as new carpets or furniture, slowly release VOCs over time. It may be necessary to ventilate areas with new carpeting or furniture for longer time periods because VOC levels can build up again after the windows are closed. If possible, unroll new carpets or store furniture outside your home (in a shed or detached garage) to minimize odors before bringing them in the home. If that's not possible, open windows, close doors and try to stay out of rooms until odors are reduced.

If VOC containing products are used outdoors near your home, you may want to close windows and nearby vents to prevent chemicals from coming inside.

Products used at home or work can release VOCs into the air when used and stored.



Examples of Household Products	Possible VOC Ingredients
Fuel containers or devices using gasoline, kerosene, fuel oil and products with petroleum distillates: paint thinner, oil-based stains and paint, aerosol or liquid insect pest products, mineral spirits, furniture polishes	BTEX (benzene, toluene, ethylbenzene, xylene), hexane, cyclohexane, 1,2,4-trimethylbenzene
Personal care products: nail polish, nail polish remover, colognes, perfumes, rubbing alcohol, hair spray	Acetone, ethyl alcohol, isopropyl alcohol, methacrylates (methyl or ethyl), ethyl acetate
Dry cleaned clothes, spot removers, fabric/ leather cleaners	Tetrachloroethene (perchloroethene (PERC), trichloroethene (TCE))
Citrus (orange) oil or pine oil cleaners, solvents and some odor masking products	d-limonene (citrus odor), a-pinene (pine odor), isoprene
PVC cement and primer, various adhesives, contact cement, model cement	Tetrahydrofuran, cyclohexane, methyl ethyl ketone (MEK), toluene, acetone, hexane, 1,1,1-trichloroethane, methyl-iso-butyl ketone (MIBK)
Paint stripper, adhesive (glue) removers	Methylene chloride, toluene, older products may contain carbon tetrachloride
Degreasers, aerosol penetrating oils, brake cleaner, carburetor cleaner, commercial solvents, electronics cleaners, spray lubricants	Methylene chloride, PERC, TCE, toluene, xylenes, methyl ethyl ketone, 1,1,1-trichloroethane
Moth balls, moth flakes, deodorizers, air fresheners	1,4-dichlorobenzene, naphthalene
Refrigerant from air conditioners, freezers, refrigerators, dehumidifiers	Freons (trichlorofluoromethane, dichlorodifluoromethane)
Aerosol spray products for some paints, cosmetics, automotive products, leather treatments, pesticides	Heptane, butane, pentane
Upholstered furniture, carpets, plywood, pressed wood products	Formaldehyde

VOCs can also get into indoor air from contaminated soils and groundwater under buildings. The chemicals enter buildings through cracks and openings in basements or slabs. When nearby soil or groundwater is contaminated, you might be asked for permission to investigate indoor air at your property. More information can be found at *www.nyhealth.gov/environmental/indoors/vapor_intrusion/*.

Should I be surprised if VOCs are in the air I breathe?

No. Because they are commonly used, some VOCs are almost always found in indoor air. The New York State Department of Health (DOH) and other agencies have studied typical levels of VOCs that may be present in indoor and outdoor air. Sometimes these levels are called "*background levels*".

The term "background levels" can be confusing because they can vary depending on where an air sample was collected and whether VOCs were used or stored. For example, a study of VOCs in urban areas might find higher levels than another study in rural areas. Some studies look at office environments, others examine residences. Please keep in mind study findings may or may not make sense for your setting.

More information about levels of VOCs collected by DOH is available in Appendix C of the guidance for evaluating vapor intrusion at *www.nyhealth.gov/environmental/investigations/soil_gas/svi_guidance.*

How can VOCs affect human health?

Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure*. No matter how dangerous a substance or activity is, it cannot harm you without exposure.

Whether or not a person will have health effects after breathing in VOCs depends on:

The *toxicity* of the chemical (the amount of harm that can be caused by contact with the chemical).
How much of the chemical is in the air.
How long and how often the air is breathed.

Differences in age, health condition, gender and exposure to other chemicals also can affect whether or not a person will have health effects.

Short-term exposure to high levels of some VOCs can cause headaches, dizziness, light-headedness, drowsiness, nausea, and eye and respiratory irritation. These effects usually go away after the exposure stops. In laboratory animals, long-term exposure to high levels of some VOCs has caused cancer and affected the liver, kidney and nervous system. In general, we recommend minimizing exposure to chemicals, if possible.

How can I reduce the levels of VOCs indoors?

Find out if products used or stored in your home contain VOCs. Information about the chemicals in many household products are listed on the front of this fact sheet and a larger list is on the National Institute of Health's website at *hpd.nlm.nih.gov/products.htm*.

If you must store products containing VOCs, do so in tightly sealed, original containers in a secure and well-ventilated area. If possible store products in places where people do not spend much time, such as a garage or outdoor shed. Better yet, buy these products in amounts that are used quickly.

Dispose of unneeded products containing VOCs. Many of these products are considered *household hazardous wastes* and should be disposed of at special facilities or during special household hazardous waste collection programs in your area. Contact your town or visit the New York State Department of Environmental Conservation's website at *www.dec.ny.gov/chemical/8485.html* for more information about disposing of these products.

Use products containing VOCs in well-ventilated areas or outdoors. Open windows and doors or use an exhaust fan to increase ventilation. Repeated or prolonged ventilation may be necessary for reducing levels from building materials (new carpeting or furniture) that release VOCs slowly over time.

Carefully read labels and follow directions for use.

Where can I find out more?

- **New York State Department of Health**
  www.health.ny.gov/environmental
- **New York State Department of Environmental Conservation**
  www.dec.ny.gov/chemical/8485.html
- **NYSERDA's Indoor Air Quality and Your Home**
  www.nyserda.ny.gov/-/media/Files/Publications/Research/Other-Technical-Reports/indoor-air-quality.pdf
  USEPA information on Indoor Air Quality
  www.epa.gov/iaq/pubs/index.html
- **New York State Department of Environmental Conservation**
  www.dec.ny.gov/chemical/8485.html
- **National Institute of Health**
  http://hpd.nlm.nih.gov/products.htm

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