



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

May 28, 2019

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) and Sub-slab (SS) vapor samples were collected from the LA Fitness building located at 1111 Marcus Avenue (Unisys Site No.130045). Samples were collected on March 14, 2019 within the heating season. This correspondence presents you with the sampling results.

The indoor air and sub-slab sample results are presented in Table 1 along with the ambient air data. All sample locations are shown on Figure 1. We have 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, we have 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 from your leasehold 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 last year's sample analysis and a comparison of that 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 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 14th 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 ($\mu\text{g}/\text{m}^3$) and $30 \mu\text{g}/\text{m}^3$, respectively. The sample collected inside the crawlspace had a TCE concentration of $1.2 \mu\text{g}/\text{m}^3$. 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 of your leasehold 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). The enclosed NYSDOH Fact Sheet provides some information on reducing exposures to volatile chemicals found in household products.

Volatile organic compounds including chloroform, PCE, toluene, TCE, and Freon 113 (1,1,2-Trichloro-1,2,2-trifluoroethane) were detected in selected sub-slab soil vapor samples underneath portions of the LA Fitness building. PCE was detected at concentration range of non-detect to $240 \mu\text{g}/\text{m}^3$, and TCE concentrations ranged from non-detect to $7.9 \mu\text{g}/\text{m}^3$ in sub-slab soil vapor samples. Figure 1 shows the location of all sub-slab points and summarizes the analytical results for each sample collected.

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

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questions about these sample results or the on-going environmental investigations and cleanup at 1111 Marcus Avenue, please contact me at 1-817-378-2573 or via e-mail at Glenda.b.clark@lmco.com.

Sincerely,

A handwritten signature in cursive script that reads "Glenda B. Clark".

Glenda Clark

cc: Renata Ockerby/NYSDOH
Girish Desai/NYSDEC
William Weber/AMEC E&E, PC
Eric Weinstock/AMEC E&E, PC

Table 1
March 2019 - LA Fitness Sampling Results
 Former Unisys Facility, Lake Success, New York

Sample ID	AA-01			IA-C20			IA-C7			IA-D13			IA-E10			IA-DUP*			IA-E16			IA-E21.5		
Lab Sample ID	P1901438-001			P1901438-010			P1901438-003			P1901438-006			P1901438-005			P1901438-014			P1901438-008			P1901438-011		
Sampling Date	3/14/19			3/14/19			3/14/19			3/14/19			3/14/19			3/14/19			3/14/19			3/14/19		
Matrix	Air			Air			Air			Air			Air			Air			Air			Air		
Dilution Factor	1.57			1.67			1.67			1.67			1.36			1.5			1.59			1.75		
Unit	ug/m3			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	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
AIR BY TO-15																								
1,1,1-Trichloroethane	0.85	U	0.1	0.9	U	0.11	0.9	U	0.11	0.9	U	0.11	0.73	U	0.09	0.81	U	0.099	0.86	U	0.1	0.95	U	0.12
1,1,2,2-Tetrachloroethane	0.83	U	0.12	0.89	U	0.12	0.89	U	0.12	0.89	U	0.12	0.72	U	0.1	0.8	U	0.11	0.84	U	0.12	0.93	U	0.13
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.48	J	0.12	0.48	J	0.13	0.51	J	0.13	0.46	J	0.13	0.45	J	0.1	0.49	J	0.11	0.49	J	0.12	0.47	J	0.13
1,1,2-Trichloroethane	0.85	U	0.085	0.9	U	0.09	0.9	U	0.09	0.9	U	0.09	0.73	U	0.073	0.81	U	0.081	0.86	U	0.086	0.95	U	0.095
1,1-Dichloroethane	0.82	U	0.12	0.87	U	0.13	0.87	U	0.13	0.87	U	0.13	0.71	U	0.11	0.78	U	0.12	0.83	U	0.12	0.91	U	0.14
1,1-Dichloroethene	0.85	U	0.12	0.9	U	0.12	0.9	U	0.12	0.9	U	0.12	0.73	U	0.1	0.81	U	0.11	0.86	U	0.12	0.95	U	0.13
1,2,4-Trichlorobenzene	0.83	U	0.2	0.89	U	0.22	0.89	U	0.22	0.89	U	0.22	0.72	U	0.18	0.8	U	0.2	0.84	U	0.21	0.93	U	0.23
1,2,4-Trimethylbenzene	0.23	J	0.12	0.16	J	0.12	0.89	U	0.12	0.19	J	0.12	1		0.1	0.36	J	0.11	0.23	J	0.12	0.23	J	0.13
1,2-Dibromo-3-chloropropane	0.82	U	0.16	0.87	U	0.17	0.87	U	0.17	0.87	U	0.17	0.71	U	0.14	0.78	U	0.15	0.83	U	0.16	0.91	U	0.18
1,2-Dibromoethane	0.85	U	0.097	0.9	U	0.1	0.9	U	0.1	0.9	U	0.1	0.73	U	0.084	0.81	U	0.093	0.86	U	0.099	0.95	U	0.11
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.8	U	0.13	0.85	U	0.14	0.85	U	0.14	0.85	U	0.14	0.69	U	0.11	0.77	U	0.13	0.81	U	0.13	0.89	U	0.15
1,2-Dichlorobenzene	0.85	U	0.12	0.9	U	0.13	0.9	U	0.13	0.9	U	0.13	0.73	U	0.11	0.81	U	0.12	0.86	U	0.13	0.95	U	0.14
1,2-Dichloroethane	0.83	U	0.093	0.89	U	0.099	0.89	U	0.099	0.89	U	0.099	0.72	U	0.08	0.8	U	0.089	0.84	U	0.094	0.93	U	0.1
1,2-Dichloroethene (total)	0.83	U	0.12	0.89	U	0.13	0.89	U	0.13	0.89	U	0.13	0.72	U	0.1	0.8	U	0.11	0.84	U	0.12	0.93	U	0.13
1,2-Dichloropropane	0.85	U	0.1	0.9	U	0.11	0.43	J	0.11	0.9	U	0.11	0.47	J	0.09	0.81	U	0.099	0.86	U	0.1	0.95	U	0.12
1,3,5-Trimethylbenzene	0.83	U	0.12	0.89	U	0.13	0.89	U	0.13	0.89	U	0.13	0.27	J	0.1	0.8	U	0.12	0.84	U	0.12	0.93	U	0.13
1,3-Butadiene	0.82	U	0.14	0.87	U	0.15	0.87	U	0.15	0.87	U	0.15	0.71	U	0.12	0.78	U	0.13	0.83	U	0.14	0.91	U	0.15
1,3-Dichlorobenzene	0.85	U	0.13	0.9	U	0.13	0.9	U	0.13	0.9	U	0.13	0.73	U	0.11	0.81	U	0.12	0.86	U	0.13	0.95	U	0.14
1,4-Dichlorobenzene	0.85	U	0.13	3.2		0.14	4.6		0.14	2.7		0.14	11		0.11	3.6		0.12	3.1		0.13	2.9		0.14
1,4-Dioxane	0.83	U	0.099	0.44	J	0.11	0.11	J	0.11	0.13	J	0.11	0.72	U	0.086	0.14	J	0.095	0.84	U	0.1	0.93	U	0.11
2-Butanone	0.82	J	0.17	2.5		0.18	4.1		0.18	5.9		0.18	1.5		0.15	2.1		0.17	1.6	J	0.17	1.1	J	0.19
2-Hexanone	0.11	J	0.1	0.33	J	0.11	0.68	J	0.11	0.3	J	0.11	0.14	J	0.09	0.29	J	0.099	0.1	J	0.1	0.95	U	0.12
2-Propanol	0.43	J	0.35	67		0.37	81		0.37	88		0.37	81		0.3	79		0.33	77		0.35	83		0.39
4-Ethyltoluene	0.83	U	0.13	0.89	U	0.14	0.89	U	0.14	0.89	U	0.14	0.16	J	0.12	0.8	U	0.13	0.84	U	0.14	0.93	U	0.15
4-Methyl-2-pentanone	0.83	U	0.11	0.17	J	0.12	0.37	J	0.12	0.27	J	0.12	0.18	J	0.099	0.18	J	0.11	0.14	J	0.12	0.93	U	0.13
Acetic acid, methyl ester	0.79	U	0.38	0.84	U	0.4	0.61	J	0.4	0.84	U	0.4	0.48	J	0.33	0.75	U	0.36	0.8	U	0.38	0.88	U	0.42
Acetone	5	J	1.9	39		2	58		2	47		2	46		1.6	39		1.8	35		1.9	34		2.1
Allyl chloride	0.83	U	0.11	0.89	U	0.12	0.89	U	0.12	0.89	U	0.12	0.72	U	0.098	0.8	U	0.11	0.84	U	0.11	0.93	U	0.13
Benzene	0.53	J	0.12	0.5	J	0.13	0.53	J	0.13	0.53	J	0.13	0.49	J	0.1	0.68	J	0.12	0.49	J	0.12	0.49	J	0.13
Bromodichloromethane	0.83	U	0.12	0.16	J	0.13	0.25	J	0.13	0.26	J	0.13	0.22	J	0.1	0.21	J	0.12	0.19	J	0.12	0.18	J	0.13
Bromoform	0.83	U	0.17	0.89	U	0.18	0.89	U	0.18	0.89	U	0.18	0.72	U	0.15	0.8	U	0.17	0.84	U	0.17	0.93	U	0.19
Bromomethane	0.79	U	0.12	0.84	U	0.12	0.84	U	0.12	0.84	U	0.12	0.68	U	0.1	0.75	U	0.11	0.8	U	0.12	0.88	U	0.13
Carbon disulfide	1.7	U	0.25	2.3		0.27	1.8	U	0.27	4.1		0.27	1.5	U	0.22	2.3	J	0.24	1.7	U	0.25	1.9	U	0.28
Carbon tetrachloride	0.4		0.12	0.4		0.12	0.36		0.12	0.44		0.12	0.4		0.1	0.44		0.11	0.42		0.12	0.43		0.13
Chlorobenzene	0.83	U	0.11	0.89	U	0.12	0.89	U	0.12	0.89	U	0.12	0.72	U	0.097	0.8	U	0.11	0.84	U	0.11	0.93	U	0.12
Chlorodifluoromethane	0.61	J	0.39	1.6		0.42	1.3		0.42	1.5		0.42	0.99		0.34	1.5		0.38	1.6		0.4	1.7		0.44
Chloroethane	0.8	U	0.1	0.85	U	0.11	0.12	J	0.11	0.85	U	0.11	0.69	U	0.09	0.77	U	0.099	0.81	U	0.1	0.89	U	0.12
Chloroform	0.85	U	0.11	3.6		0.12	4.7		0.12	5		0.12	4.4		0.097	4.6		0.11	4.4		0.11	4.4		0.12
Chloromethane	0.34	J	0.14	0.44	J	0.14	0.41	J	0.14	0.56	J	0.14	0.29	J	0.12	0.32	J	0.13	0.39	J	0.14	0.43	J	0.15
cis-1,2-Dichloroethene	0.83	U	0.12	0.89	U	0.13	0.89	U	0.13	0.89	U	0.13	0.72	U	0.1	0.8	U	0.11	0.84	U	0.12	0.93	U	0.13
cis-1,3-Dichloropropene	0.88	U	0.13	0.94	U	0.14	0.94	U	0.14	0.94	U	0.14	0.76	U	0.11	0.84	U	0.12	0.89	U	0.13	0.98	U	0.15
Cyclohexane	1.6	U	0.24	1.7	U	0.25	0.36	J	0.25	1.7	U	0.25	1.4	U	0.2	0.28	J	0.23	1.6	U	0.24	1.8	U	0.26
Dibromochloromethane	0.85	U	0.11	0.9	U	0.12	0.9	U	0.12	0.9	U	0.12	0.73	U	0.095	0.81	U	0.11	0.86	U	0.11	0.95	U	0.12
Dichlorodifluoromethane	2.3		0.14	2.4		0.15	2.4		0.15	2.4		0.15	2.2		0.12	2.3		0.13	2.4		0.14	2.4		0.15
Difluoroethane	0.79	U	0.41	6.3		0.43	12		0.43	11		0.43	9.5		0.35	7.9		0.39	8.1		0.41	6.8		0.46
Ethylbenzene	0.26	J	0.12	0.15	J	0.13	0.15	J	0.13	0.15	J	0.13	0.2	J	0.1	0.25	J	0.11	0.17	J	0.12	0.15	J	0.13
Freon 115	0.79	U	0.38	0.84	U	0.38	0.84	U	0.38	0.84	U	0.38	0.68	U	0.31	0.75	U	0.35	0.8	U	0.37	0.88	U	0.4
Freon 123	0.79	U	0.38	0.84	U	0.4	0.84	U	0.4	0.84	U	0.4	0.68	U	0.33	0.75	U	0.36	0.8	U	0.38	0.88	U	0.42
Hexachlorobutadiene	0.83	U	0.17	0.89	U	0.18	0.89	U	0.18	0.89	U	0.18	0.72	U	0.15	0.8	U	0.17	0.84	U	0.17	0.93	U	0.19
Hexane	0.3	J	0.17	0.3	J	0.18	0.37	J	0.18	0.27	J	0.18	0.24	J	0.15	0.45	J	0.17	0.25	J	0.17	0.25	J	0.19
Isopropylbenzene	0.83	U	0.12	0.89	U	0.13	0.89	U	0.13	0.89	U	0.13	0.72	U	0.1	0.8	U	0.12	0.84	U	0.12	0.93	U	0.13
Methyl cyclohexane	0.79	U	0.41	0.84	U	0.43	0.84	U	0.43	0.84	U	0.43	0.68	U	0.35	0.51	J	0.39	0.8	U	0.41	0.88	U	0.46
Methyl Tertbutyl Ether	0.85	U	0.099	0.9	U	0.11	0.9	U	0.11	0.9	U	0.11	0.73	U	0.086	0.81	U	0.095	0.86	U	0.1	0.95	U	0.11
Methylene chloride	0.32	J	0.24	0.38	J	0.25	0.52	J	0.25	0.38	J	0.25	0.48	J	0.2	0.42	J	0.23	0.37	J	0.24	0.34	J	0.26
Styrene	0.83	U	0.14	0.89	U	0.14	0.89	U	0.14	0.89	U	0.14	0.39	J	0.12	0.8	U	0.13	0.16	J	0.14	0.93	U	0.15
Tetrachloroethene	0.25	J	0.11	0.29	J	0.12	0.32	J	0.12	0.3	J	0.12	0.28	J	0.094	0.3	J	0.1</						

Table 1
March 2019 - LA Fitness Sampling Results
 Former Unisys Facility, Lake Success, New York

Sample ID	IA-E2			IA-F13			IA-G18			IA-G5			IA-H21			IA-H2			SS-C20			SS-D13		
Lab Sample ID	P1901438-002			P1901438-007			P1901438-009			P1901438-004			P1901438-012			P1901438-013			P1901438-021			P1901438-017		
Sampling Date	3/14/19			3/14/19			3/15/19			3/14/19			3/14/19			3/14/19			3/14/19			3/14/19		
Matrix	Air			Air			Air			Air			Air			Air			Air			Air		
Dilution Factor	1.78			1.67			1.48			1.63			1.73			1.68			30			27.38		
Unit	ug/m3			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	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
AIR BY TO-15																								
1,1,1-Trichloroethane	0.96	U	0.12	0.9	U	0.11	0.8	U	0.098	0.88	U	0.11	0.93	U	0.11	0.91	U	0.11	16	U	2	15	U	1.8
1,1,2,2-Tetrachloroethane	0.94	U	0.13	0.89	U	0.12	0.78	U	0.11	0.86	U	0.12	0.92	U	0.13	0.89	U	0.12	16	U	2.2	15	U	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.46	J	0.14	0.5	J	0.13	0.49	J	0.11	0.5	J	0.12	0.49	J	0.13	0.5	J	0.13	27		2.3	15	U	2.1
1,1,2-Trichloroethane	0.96	U	0.096	0.9	U	0.09	0.8	U	0.08	0.88	U	0.088	0.93	U	0.093	0.91	U	0.091	16	U	1.6	15	U	1.5
1,1-Dichloroethane	0.93	U	0.14	0.87	U	0.13	0.77	U	0.12	0.85	U	0.13	0.9	U	0.13	0.87	U	0.13	16	U	2.3	14	U	2.1
1,1-Dichloroethene	0.96	U	0.13	0.9	U	0.12	0.8	U	0.11	0.88	U	0.12	0.93	U	0.13	0.91	U	0.12	16	U	2.2	15	U	2
1,2,4-Trichlorobenzene	0.94	U	0.23	0.89	U	0.22	0.78	U	0.19	0.86	U	0.21	0.92	U	0.22	0.89	U	0.22	16	U	3.9	15	U	3.6
1,2,4-Trimethylbenzene	0.29	J	0.13	0.28	J	0.12	0.28	J	0.11	0.29	J	0.12	0.26	J	0.13	1.7		0.12	2.7	J	2.2	2.5	J	2
1,2-Dibromo-3-chloropropane	0.93	U	0.18	0.87	U	0.17	0.77	U	0.15	0.85	U	0.16	0.9	U	0.17	0.87	U	0.17	16	U	3	14	U	2.7
1,2-Dibromoethane	0.96	U	0.11	0.9	U	0.1	0.8	U	0.092	0.88	U	0.1	0.93	U	0.11	0.91	U	0.1	16	U	1.9	15	U	1.7
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.91	U	0.15	0.85	U	0.14	0.75	U	0.12	0.83	U	0.14	0.88	U	0.15	0.86	U	0.14	15	U	2.5	14	U	2.3
1,2-Dichlorobenzene	0.96	U	0.14	0.9	U	0.13	0.8	U	0.12	0.88	U	0.13	0.93	U	0.14	0.91	U	0.13	16	U	2.4	15	U	2.2
1,2-Dichloroethane	0.94	U	0.11	0.89	U	0.099	0.78	U	0.087	0.86	U	0.096	0.92	U	0.1	0.89	U	0.099	16	U	1.8	15	U	1.6
1,2-Dichloroethene (total)	0.94	U	0.13	0.89	U	0.13	0.78	U	0.11	0.86	U	0.12	0.92	U	0.13	0.89	U	0.13	16	U	2.3	15	U	2.1
1,2-Dichloropropane	0.96	U	0.12	0.9	U	0.11	0.8	U	0.098	0.15	J	0.11	0.93	U	0.11	0.91	U	0.11	16	U	2	15	U	1.8
1,3,5-Trimethylbenzene	0.94	U	0.14	0.89	U	0.13	0.78	U	0.11	0.86	U	0.13	0.92	U	0.13	0.51	J	0.13	16	U	2.3	15	U	2.1
1,3-Butadiene	0.93	U	0.16	0.87	U	0.15	0.77	U	0.13	0.85	U	0.14	0.9	U	0.15	0.87	U	0.15	16	U	2.6	14	U	2.4
1,3-Dichlorobenzene	0.96	U	0.14	0.9	U	0.13	0.8	U	0.12	0.88	U	0.13	0.93	U	0.14	0.91	U	0.13	16	U	2.4	15	U	2.2
1,4-Dichlorobenzene	10		0.15	8.4		0.14	2.3		0.12	9.5		0.13	2.4		0.14	0.61	J	0.14	16	U	2.5	15	U	2.2
1,4-Dioxane	0.2	J	0.11	0.89	U	0.11	0.78	U	0.093	0.22	J	0.11	0.27	J	0.11	0.29	J	0.11	16	U	1.9	15	U	1.7
2-Butanone	3.1		0.2	1.6	J	0.18	1.4	J	0.16	4.5		0.18	1.4	J	0.19	1.7	J	0.18	30	U	3.3	27	U	3
2-Hexanone	0.51	J	0.12	0.17	J	0.11	0.11	J	0.098	0.32	J	0.11	0.14	J	0.11	0.26	J	0.11	16	U	2	15	U	1.8
2-Propanol	87		0.39	83		0.37	88		0.33	86		0.36	81		0.38	11		0.37	63	U	6.6	7.4	J	6
4-Ethyltoluene	0.94	U	0.15	0.89	U	0.14	0.78	U	0.13	0.86	U	0.14	0.92	U	0.15	0.36	J	0.14	16	U	2.6	15	U	2.3
4-Methyl-2-pentanone	0.37	J	0.13	0.18	J	0.12	0.16	J	0.11	0.27	J	0.12	0.13	J	0.13	0.14	J	0.12	16	U	2.2	15	U	2
Acetic acid, methyl ester	0.89	U	0.43	0.84	U	0.4	0.74	U	0.36	0.82	U	0.39	0.87	U	0.42	0.84	U	0.4	15	U	7.2	14	U	6.6
Acetone	58		2.1	44		2	34		1.8	55		2	34		2.1	45		2	160	U	36	150	U	33
Allyl chloride	0.94	U	0.13	0.89	U	0.12	0.78	U	0.11	0.86	U	0.12	0.92	U	0.12	0.89	U	0.12	16	U	2.2	15	U	2
Benzene	0.49	J	0.14	0.51	J	0.13	0.57	J	0.11	0.5	J	0.13	0.54	J	0.13	0.32	J	0.13	16	U	2.3	14	U	2.1
Bromodichloromethane	0.24	J	0.14	0.27	J	0.13	0.15	J	0.11	0.26	J	0.13	0.18	J	0.13	0.46	J	0.13	16	U	2.3	15	U	2.1
Bromoform	0.94	U	0.2	0.89	U	0.18	0.78	U	0.16	0.86	U	0.18	0.92	U	0.19	0.89	U	0.18	16	U	3.3	15	U	3
Bromomethane	0.89	U	0.13	0.84	U	0.12	0.74	U	0.11	0.82	U	0.12	0.87	U	0.13	0.84	U	0.12	15	U	2.2	14	U	2
Carbon disulfide	2	U	0.28	1.8	U	0.27	1.6	U	0.24	8		0.26	1.7	J	0.28	1.8	U	0.27	33	U	4.8	30	U	4.4
Carbon tetrachloride	0.38		0.13	0.44		0.12	0.42		0.11	0.45		0.12	0.44		0.13	0.42		0.12	3	U	2.2	2.7	U	2
Chlorobenzene	0.94	U	0.13	0.89	U	0.12	0.78	U	0.11	0.86	U	0.12	0.92	U	0.12	0.89	U	0.12	16	U	2.1	15	U	1.9
Chlorodifluoromethane	1.3		0.45	1.5		0.42	1.1		0.37	1.4		0.41	1.8		0.43	0.79	J	0.42	15	U	7.5	14	U	6.8
Chloroethane	0.91	U	0.12	0.85	U	0.11	0.75	U	0.098	0.83	U	0.11	0.88	U	0.11	0.86	U	0.11	15	U	2	14	U	1.8
Chloroform	4.6		0.13	5.4		0.12	3.8		0.11	4.9		0.12	5.5		0.12	15		0.12	16	U	2.1	7	J	1.9
Chloromethane	0.38	J	0.15	0.42	J	0.14	0.41	J	0.13	0.44	J	0.14	0.44	J	0.15	0.17	J	0.14	15	U	2.6	14	U	2.4
cis-1,2-Dichloroethene	0.94	U	0.13	0.89	U	0.13	0.78	U	0.11	0.86	U	0.12	0.92	U	0.13	0.89	U	0.13	16	U	2.3	15	U	2.1
cis-1,3-Dichloropropene	1	U	0.15	0.94	U	0.14	0.83	U	0.12	0.91	U	0.14	0.97	U	0.14	0.94	U	0.14	17	U	2.5	15	U	2.3
Cyclohexane	1.8	U	0.27	1.7	U	0.25	1.5	U	0.22	1.6	U	0.24	1.7	U	0.26	1.7	U	0.25	30	U	4.5	27	U	4.1
Dibromochloromethane	0.96	U	0.12	0.9	U	0.12	0.8	U	0.1	0.88	U	0.11	0.93	U	0.12	0.91	U	0.12	16	U	2.1	15	U	1.9
Dichlorodifluoromethane	2.4		0.15	2.4		0.15	2.4		0.13	2.5		0.14	2.4		0.15	2.4		0.15	16	U	2.6	14	U	2.4
Difluoroethane	12		0.46	13		0.43	7.1		0.38	13		0.42	6.8		0.45	3.4		0.44	15	U	7.8	14	U	7.1
Ethylbenzene	0.18	J	0.13	0.18	J	0.13	0.16	J	0.11	0.18	J	0.12	0.17	J	0.13	0.45	J	0.13	16	U	2.3	14	U	2.1
Freon 115	0.89	U	0.41	0.84	U	0.38	0.74	U	0.34	0.82	U	0.37	0.87	U	0.4	0.84	U	0.39	15	U	6.9	14	U	6.3
Freon 123	0.89	U	0.43	0.84	U	0.4	0.74	U	0.36	0.82	U	0.39	0.87	U	0.42	0.84	U	0.4	15	U	7.2	14	U	6.6
Hexachlorobutadiene	0.94	U	0.2	0.89	U	0.18	0.78	U	0.16	0.86	U	0.18	0.92	U	0.19	0.89	U	0.18	16	U	3.3	15	U	3
Hexane	0.25	J	0.2	0.28	J	0.18	0.28	J	0.16	0.25	J	0.18	0.26	J	0.19	0.91	U	0.18	16	U	3.3	15	U	3
Isopropylbenzene	0.94	U	0.14	0.89	U	0.13	0.78	U	0.11	0.86	U	0.13	0.92	U	0.13	0.89	U	0.13	16	U	2.3	15	U	2.1
Methyl cyclohexane	0.89	U	0.46	0.84	U	0.43	0.74	U	0.38	0.82	U	0.42	0.87	U	0.45	0.84	U	0.44	15	U	7.8	14	U	7.1
Methyl Tertbutyl Ether	0.96	U	0.11	0.9	U	0.11	0.8	U	0.093	0.88	U	0.1	0.93	U	0.11	0.91	U	0.11	16	U	1.9	15	U	1.7
Methylene chloride	0.35	J	0.27	0.38	J	0.25	0.4	J	0.22	0.38	J	0.24	0.37	J	0.26	0.38	J	0.25	16	U	4.5	15	U	4.1
Styrene	0.94	U	0.15	0.16	J	0.14	0.14	J	0.13	0.86	U	0.14	0.92	U	0.15	0.27	J	0.14	16	U	2.6	15	U	2.4
Tetrachloroethene	0.32	J	0.12	0.32	J	0.12	0.22	J	0.1	0.33	J	0.11	0.29	J	0.12	1		0.12	240		2.1	120		1.9
Toluene	1.5		0.12	2		0.11	2.4		0.096	2.3		0.11	1.4		0.11	2.9		0.11	6.6	J	2	8.7	J	1.8
trans-1,2-Dichloroethene	0.94	U	0.13	0.89																				

Table 1
March 2019 - LA Fitness Sampling Results
 Former Unisys Facility, Lake Success, New York

Sample ID	SS-E10			SS-E16			SS-E21.5			SS-F13			SS-G18			SS-DUP*			SS-G5			SS-H21		
Lab Sample ID	P1901438-016			P1901438-019			P1901438-022			P1901438-018			P1901438-020			P1901438-024			P1901438-015			P1901438-023		
Sampling Date	3/14/19			3/14/19			3/14/19			3/14/19			3/14/19			3/14/19			3/14/19			3/14/19		
Matrix	Air			Air			Air			Air			Air			Air			Air			Air		
Dilution Factor	46.25			24.43			27.29			23.29			33.2			23.71			36			27		
Unit	ug/m3			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	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
AIR BY TO-15																								
1,1,1-Trichloroethane	25	U	3.1	13	U	1.6	15	U	1.8	13	U	1.5	18	U	2.2	13	U	1.6	19	U	2.4	15	U	1.8
1,1,2,2-Tetrachloroethane	25	U	3.4	13	U	1.8	14	U	2	12	U	1.7	18	U	2.5	13	U	1.8	19	U	2.7	14	U	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	25	U	3.5	13	U	1.9	14	U	2.1	12	U	1.8	9.8	J	2.5	13	U	1.8	19	U	2.7	24		2.1
1,1,2-Trichloroethane	25	U	2.5	13	U	1.3	15	U	1.5	13	U	1.3	18	U	1.8	13	U	1.3	19	U	1.9	15	U	1.5
1,1-Dichloroethane	24	U	3.6	13	U	1.9	14	U	2.1	12	U	1.8	17	U	2.6	12	U	1.8	19	U	2.8	14	U	2.1
1,1-Dichloroethene	25	U	3.4	13	U	1.8	15	U	2	13	U	1.7	18	U	2.5	13	U	1.8	19	U	2.7	15	U	2
1,2,4-Trichlorobenzene	25	U	6	13	U	3.2	14	U	3.5	12	U	3	18	U	4.3	13	U	3.1	19	U	4.7	14	U	3.5
1,2,4-Trimethylbenzene	25	U	3.4	2.8	J	1.8	14	U	2	5.6	J	1.7	2.7	J	2.5	13	U	1.8	19	U	2.7	2.3	J	2
1,2-Dibromo-3-chloropropane	24	U	4.6	13	U	2.4	14	U	2.7	12	U	2.3	17	U	3.3	12	U	2.4	19	U	3.6	14	U	2.7
1,2-Dibromoethane	25	U	2.9	13	U	1.5	15	U	1.7	13	U	1.4	18	U	2.1	13	U	1.5	19	U	2.2	15	U	1.7
1,2-Dichloro-1,1,2,2-tetrafluoroethane	24	U	3.9	12	U	2.1	14	U	2.3	12	U	2	17	U	2.8	12	U	2	18	U	3	14	U	2.3
1,2-Dichlorobenzene	25	U	3.7	13	U	1.9	15	U	2.2	13	U	1.8	18	U	2.6	13	U	1.9	19	U	2.8	15	U	2.1
1,2-Dichloroethane	25	U	2.7	13	U	1.4	14	U	1.6	12	U	1.4	18	U	2	13	U	1.4	19	U	2.1	14	U	1.6
1,2-Dichloroethene (total)	25	U	3.5	13	U	1.8	14	U	2	12	U	1.7	18	U	2.5	13	U	1.8	19	U	2.7	14	U	2
1,2-Dichloropropane	25	U	3.1	13	U	1.6	15	U	1.8	13	U	1.5	18	U	2.2	13	U	1.6	19	U	2.4	15	U	1.8
1,3,5-Trimethylbenzene	25	U	3.6	13	U	1.9	14	U	2.1	2.1	J	1.8	18	U	2.6	13	U	1.8	19	U	2.8	14	U	2.1
1,3-Butadiene	24	U	4.1	13	U	2.1	14	U	2.4	12	U	2	17	U	2.9	12	U	2.1	19	U	3.2	14	U	2.4
1,3-Dichlorobenzene	25	U	3.7	13	U	2	15	U	2.2	13	U	1.9	18	U	2.7	13	U	1.9	19	U	2.9	15	U	2.2
1,4-Dichlorobenzene	25	U	3.8	13	U	2	15	U	2.2	13	U	1.9	18	U	2.7	13	U	1.9	19	U	3	15	U	2.2
1,4-Dioxane	25	U	2.9	13	U	1.5	14	U	1.7	12	U	1.5	18	U	2.1	13	U	1.5	19	U	2.3	14	U	1.7
2-Butanone	46	U	5.1	24	U	2.7	27	U	3	4.2	J	2.6	33	U	3.7	3.9	J	2.6	4.1	J	4	3.6	J	3
2-Hexanone	25	U	3.1	13	U	1.6	15	U	1.8	13	U	1.5	18	U	2.2	13	U	1.6	19	U	2.4	15	U	1.8
2-Propanol	97	U	10	51	U	5.4	120		6	7.6	J	5.1	70	U	7.3	80		5.2	93		7.9	57	U	5.9
4-Ethyltoluene	25	U	3.9	13	U	2.1	14	U	2.3	12	U	2	18	U	2.8	13	U	2	19	U	3.1	14	U	2.3
4-Methyl-2-pentanone	25	U	3.4	13	U	1.8	14	U	2	12	U	1.7	18	U	2.4	13	U	1.7	19	U	2.6	14	U	2
Acetic acid, methyl ester	23	U	11	12	U	5.9	14	U	6.5	12	U	5.6	17	U	8	12	U	5.7	18	U	8.6	14	U	6.5
Acetone	250	U	56	130	U	29	34	J	33	30	J	28	180	U	40	53	J	28	68	J	43	150	U	32
Allyl chloride	25	U	3.3	13	U	1.8	14	U	2	12	U	1.7	18	U	2.4	13	U	1.7	19	U	2.6	14	U	1.9
Benzene	24	U	3.6	13	U	1.9	14	U	2.1	12	U	1.8	17	U	2.6	12	U	1.8	19	U	2.8	14	U	2.1
Bromodichloromethane	25	U	3.6	13	U	1.9	14	U	2.1	12	U	1.8	18	U	2.6	13	U	1.8	19	U	2.8	14	U	2.1
Bromoform	25	U	5.1	13	U	2.7	14	U	3	12	U	2.6	18	U	3.7	13	U	2.6	19	U	4	14	U	3
Bromomethane	23	U	3.4	12	U	1.8	14	U	2	12	U	1.7	17	U	2.5	12	U	1.8	18	U	2.7	14	U	2
Carbon disulfide	51	U	7.4	27	U	3.9	30	U	4.4	16	J	3.7	11	J	5.3	26	U	3.8	40	U	5.8	30	U	4.3
Carbon tetrachloride	4.6	U	3.4	2.4	U	1.8	2.7	U	2	2.3	U	1.7	3.3	U	2.5	2.4	U	1.8	3.6	U	2.7	2.7	U	2
Chlorobenzene	25	U	3.3	13	U	1.7	14	U	1.9	12	U	1.7	18	U	2.4	13	U	1.7	19	U	2.6	14	U	1.9
Chlorodifluoromethane	23	U	12	12	U	6.1	14	U	6.8	12	U	5.8	17	U	8.3	12	U	5.9	18	U	9	14	U	6.8
Chloroethane	24	U	3.1	12	U	1.6	14	U	1.8	12	U	1.5	17	U	2.2	12	U	1.6	18	U	2.4	14	U	1.8
Chloroform	8.2	J	3.3	3.1	J	1.7	3.1	J	1.9	2.7	J	1.7	170		2.4	2.7	J	1.7	2.7	J	2.6	6.5	J	1.9
Chloromethane	23	U	4	12	U	2.1	14	U	2.3	12	U	2	17	U	2.9	12	U	2	18	U	3.1	14	U	2.3
cis-1,2-Dichloroethene	25	U	3.5	13	U	1.8	14	U	2	12	U	1.7	18	U	2.5	13	U	1.8	19	U	2.7	14	U	2
cis-1,3-Dichloropropene	26	U	3.8	14	U	2	15	U	2.3	13	U	1.9	19	U	2.8	13	U	2	20	U	3	15	U	2.2
Cyclohexane	46	U	6.9	24	U	3.7	27	U	4.1	4	J	3.5	33	U	5	24	U	3.6	36	U	5.4	27	U	4.1
Dibromochloromethane	25	U	3.2	13	U	1.7	15	U	1.9	13	U	1.6	18	U	2.3	13	U	1.7	19	U	2.5	15	U	1.9
Dichlorodifluoromethane	24	U	4	13	U	2.1	14	U	2.4	12	U	2	17	U	2.9	12	U	2.1	19	U	3.1	14	U	2.3
Difluoroethane	20	J	12	9.8	J	6.4	11	J	7.1	12	U	6.1	17	U	8.6	30		6.2	36		9.4	14	U	7
Ethylbenzene	24	U	3.5	13	U	1.8	14	U	2	4.3	J	1.7	17	U	2.5	12	U	1.8	19	U	2.7	14	U	2
Freon 115	23	U	11	12	U	5.6	14	U	6.3	12	U	5.4	17	U	7.6	12	U	5.5	18	U	8.3	14	U	6.2
Freon 123	23	U	11	12	U	5.9	14	U	6.5	12	U	5.6	17	U	8	12	U	5.7	18	U	8.6	14	U	6.5
Hexachlorobutadiene	25	U	5.1	13	U	2.7	14	U	3	12	U	2.6	18	U	3.7	13	U	2.6	19	U	4	14	U	3
Hexane	25	U	5.1	13	U	2.7	15	U	3	13	U	2.6	18	U	3.7	13	U	2.6	19	U	4	15	U	3
Isopropylbenzene	25	U	3.6	13	U	1.9	14	U	2.1	12	U	1.8	18	U	2.6	13	U	1.8	19	U	2.8	14	U	2.1
Methyl cyclohexane	23	U	12	12	U	6.4	14	U	7.1	10	J	6.1	17	U	8.6	12	U	6.2	18	U	9.4	14	U	7
Methyl Tertbutyl Ether	25	U	2.9	13	U	1.5	15	U	1.7	13	U	1.5	18	U	2.1	13	U	1.5	19	U	2.3	15	U	1.7
Methylene chloride	25	U	6.9	13	U	3.7	15	U	4.1	13	U	3.5	18	U	5	13	U	3.6	19	U	5.4	15	U	4.1
Styrene	25	U	4	13	U	2.1	14	U	2.3	12	U	2	18	U	2.9	13	U	2	19	U	3.1	14	U	2.3
Tetrachloroethene	25	U	3.2	40		1.7	14	U	1.9	7.2	J	1.6	34		2.3	13	U	1.6	19	U	2.5	39		1.9
Toluene	5.8	J	3	8.6	J	1.6	2.7	J	1.8	41		1.5	3	J	2.2	15		1.5	13	J	2.3	15		1.8
trans-1,2-Dichloroethene	25	U	3.4	13	U	1.8	14	U	2	12	U	1.7	18	U	2.5	13	U	1.8	19	U	2.7	14	U	2
trans-1,3-Dichloropropene	25	U	5.1	13	U	2.7	14	U	3	12	U	2.6	18	U	3.7	13	U	2.6	19	U	4	14	U	3
Trichloroethene	5.1	U	3.3	2.7	U	1.8	3	U	2	4.6		1.7	4.1		2.4	2.1	J	1.7	4	U	2.6	3	U	1.9
Trichlorofluoromethane	25	U	3.7	13	U	2	14	U	2.2	12	U	1.9	18	U	2.7	13	U	1.9	19	U	2.9	14	U	2.2
Vinyl chloride	5.1	U	2.6	2.7	U	1.4	3	U	1.6	2.6	U	1.3	3.7	U	1.9	2.6	U	1.4</						

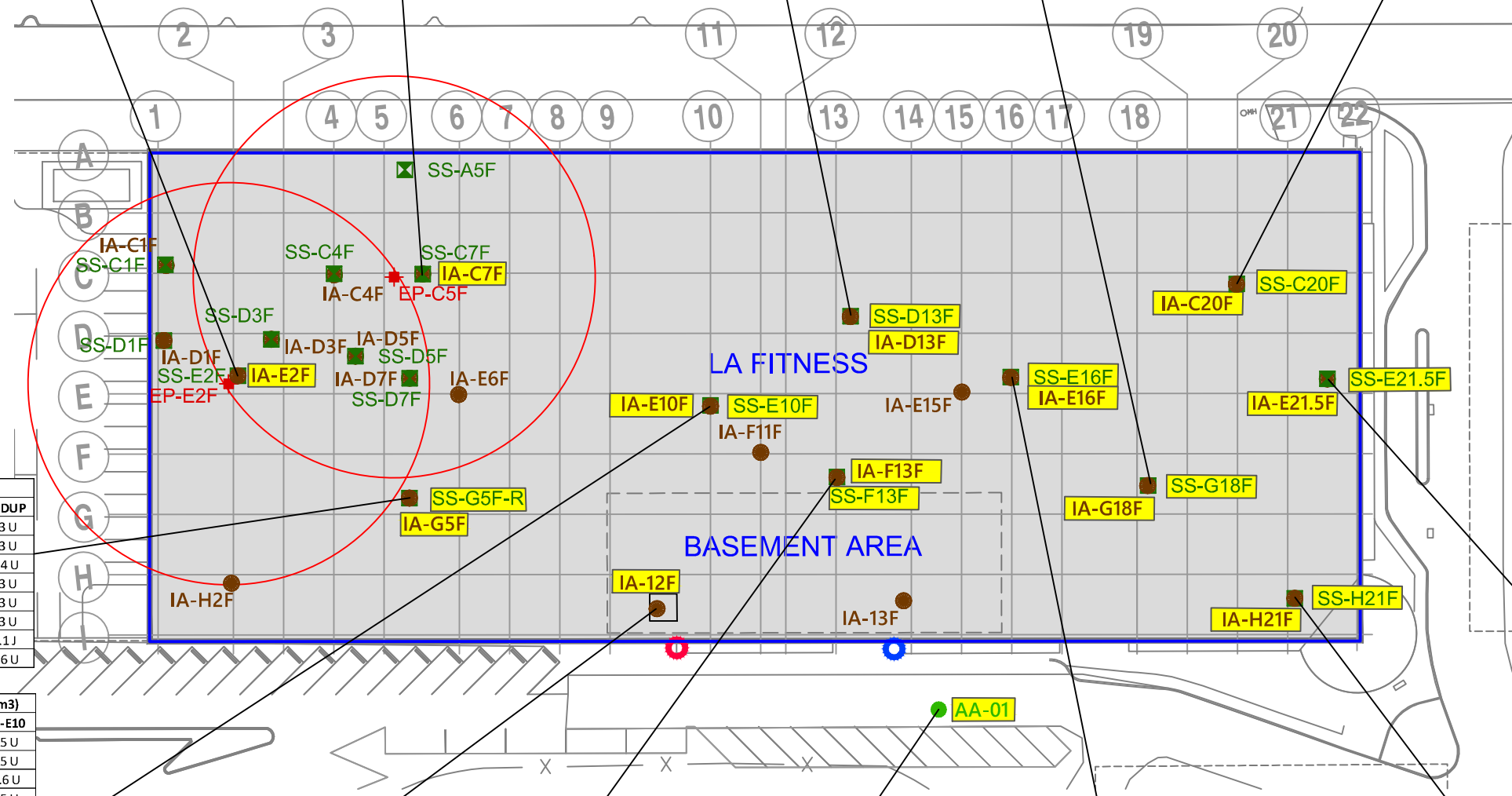
Analyte	Result (ug/m3)
1,1,1-Trichloroethane	0.96 U
1,1-Dichloroethene	0.96 U
Carbon tetrachloride	0.38
cis-1,2-Dichloroethene	0.94 U
Methylene chloride	0.35 J
Tetrachloroethene	0.32 J
Trichloroethene	0.2 U
Vinyl chloride	0.2 U

Analyte	Result (ug/m3)
1,1,1-Trichloroethane	0.9 U
1,1-Dichloroethene	0.9 U
Carbon tetrachloride	0.36
cis-1,2-Dichloroethene	0.89 U
Methylene chloride	0.52 J
Tetrachloroethene	0.32 J
Trichloroethene	0.18 U
Vinyl chloride	0.18 U

Analyte	Result (ug/m3)
1,1,1-Trichloroethane	0.9 U
1,1-Dichloroethene	0.9 U
Carbon tetrachloride	0.44
cis-1,2-Dichloroethene	0.89 U
Methylene chloride	0.38 J
Tetrachloroethene	0.3 J
Trichloroethene	0.18 U
Vinyl chloride	0.18 U

Analyte	Result (ug/m3)
1,1,1-Trichloroethane	0.8 U
1,1-Dichloroethene	0.8 U
Carbon tetrachloride	0.42
cis-1,2-Dichloroethene	0.78 U
Methylene chloride	0.4 J
Tetrachloroethene	0.22 J
Trichloroethene	0.16 U
Vinyl chloride	0.16 U

Analyte	Result (ug/m3)
1,1,1-Trichloroethane	0.9 U
1,1-Dichloroethene	0.9 U
Carbon tetrachloride	0.4
cis-1,2-Dichloroethene	0.89 U
Methylene chloride	0.38 J
Tetrachloroethene	0.29 J
Trichloroethene	0.18 U
Vinyl chloride	0.18 U



LEGEND

- IA-H21F INDOOR AIR SAMPLE LOCATION
- SS-A5F SUB-SLAB MONITORING POINT
- + 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 2019

Analyte	Result (ug/m3)
1,1,1-Trichloroethane	0.88 U
1,1-Dichloroethene	0.88 U
Carbon tetrachloride	0.45
cis-1,2-Dichloroethene	0.86 U
Methylene chloride	0.38 J
Tetrachloroethene	0.33 J
Trichloroethene	0.18 U
Vinyl chloride	0.18 U

Analyte	Result (ug/m3)
1,1,1-Trichloroethane	0.73 U
1,1-Dichloroethene	0.73 U
Carbon tetrachloride	0.4
cis-1,2-Dichloroethene	0.72 U
Methylene chloride	0.48 J
Tetrachloroethene	0.28 J
Trichloroethene	0.15 U
Vinyl chloride	0.15 U

Analyte	Result (ug/m3)
1,1,1-Trichloroethane	0.91 U
1,1-Dichloroethene	0.91 U
Carbon tetrachloride	0.42
cis-1,2-Dichloroethene	0.89 U
Methylene chloride	0.38 J
Tetrachloroethene	1
Trichloroethene	1.2
Vinyl chloride	0.18 U

Analyte	Result (ug/m3)
1,1,1-Trichloroethane	0.9 U
1,1-Dichloroethene	0.9 U
Carbon tetrachloride	0.44
cis-1,2-Dichloroethene	0.89 U
Methylene chloride	0.38 J
Tetrachloroethene	0.32 J
Trichloroethene	0.18 U
Vinyl chloride	0.18 U

Analyte	Result (ug/m3)
1,1,1-Trichloroethane	0.85 U
1,1-Dichloroethene	0.85 U
Carbon tetrachloride	0.4
cis-1,2-Dichloroethene	0.83 U
Methylene chloride	0.32 J
Tetrachloroethene	0.25 J
Trichloroethene	0.17 U
Vinyl chloride	0.17 U

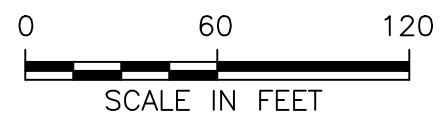
Analyte	Result (ug/m3)
1,1,1-Trichloroethane	0.86 U
1,1-Dichloroethene	0.86 U
Carbon tetrachloride	0.42
cis-1,2-Dichloroethene	0.84 U
Methylene chloride	0.37 J
Tetrachloroethene	0.29 J
Trichloroethene	0.17 U
Vinyl chloride	0.17 U

Analyte	Result (ug/m3)
1,1,1-Trichloroethane	0.93 U
1,1-Dichloroethene	0.93 U
Carbon tetrachloride	0.44
cis-1,2-Dichloroethene	0.92 U
Methylene chloride	0.37 J
Tetrachloroethene	0.29 J
Trichloroethene	0.19 U
Vinyl chloride	0.19 U

Analyte	Result (ug/m3)
1,1,1-Trichloroethane	0.95 U
1,1-Dichloroethene	0.95 U
Carbon tetrachloride	0.43
cis-1,2-Dichloroethene	0.93 U
Methylene chloride	0.34 J
Tetrachloroethene	0.29 J
Trichloroethene	0.19 U
Vinyl chloride	0.19 U

NOTES:

- SUB-SLAB MONITORING POINTS SS-A5F AND SS-G5F-R WERE INSTALLED MARCH 8, 2019. SS-G5F-R REPLACES FORMER SS-G5F WHICH IS CLOSED. SAMPLE SS-G5 WAS COLLECTED FROM LOCATION SS-G5F-R.
- U = NOT DETECTED AT THE REPORTED DETECTION LIMIT.
J = ESTIMATED VALUE.



TITLE: 2019 VI SAMPLING RESULTS LA FITNESS

LOCATION: Former UNISYS Facility
Lake Success, New York



APPROVED	RTB	FIGURE 1
DRAFTED	BRT	
PROJECT#	117-0507644	
DATE	05/24/19	

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?

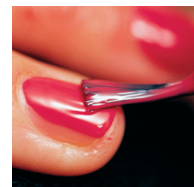
Products containing VOCs can release these chemicals when they are used and when they are stored. Many times you'll notice an odor when using these products. Product labels often list VOC ingredients and recommend that they should be used in well ventilated areas. *Ventilation* means bringing in fresh,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