

LETTER OF TRANSMITTAL

DATE	:	September 5, 2023	RECEIVED				
ТО	:	Ms. Jennifer Meyer Wisconsin Department of Natural Resources Southeast Region – Milwaukee Service Center 1027 West St. Paul Avenue Milwaukee, WI 53233	SEP 0 7 2023 BY:				
FROM	:	Pratap Singh/ Principal Engineer					
SUBJECT	:	Technical Review Fee for CWC -West Block 3212 W. Center St, 2727 N32nd St, 2758 N33rd St., Milwaukee BRRTS # 02-41-587376					
COPY TO	:	Shane LaFave/CWC, Project #40443A					
We are:							
⊠ Attaching		⊠ Submitting As Requested					

Copies	Date	Description
1	8/23/2023	Commissioning report for Buildings 4 and 5 sent electronically
1	7/10/2023	Commissioning Report for Buildings 6, 7,8A and 8B
	9/5/2023	Review Fee of \$700

Transmitted For Your:

Action
ACTOL

ReviewRevision/Resubmittal

☑ Approval☑ Distribution

Remarks:

As indicated today, a review fee is attached.

Should you have any questions regarding this submittal or require any additional information, please feel free to contact me via email at rreineke@ksinghengineering.com or telephone at (262) 821-1171, ext. 111.

Project # 40443A



August 23, 2023

Ms. Jennifer Meyer Remediation and Redevelopment Program Wisconsin Department of Natural Resources 1027 West St. Paul Ave. Milwaukee, WI 53233

Subject: Second Round of Commissioning for Community Within the Corridor – West Block – Buildings 4 and 5 3212 W. Center St., 2727 N. 32nd St., and 2758 N. 33rd St., Milwaukee, WI 53210 BRRTS #: 02-41-587376, FID #: 341333190

Dear Ms. Meyer:

On behalf of the Community Within the Corridor Limited Partnership, K. Singh & Associates, Inc. (KSingh) is pleased to submit the results of second round of Commissioning of the Vapor Mitigation System for Buildings 4 and 5 for the Community Within the Corridor – West Block project. The first round of Commissioning for Buildings 4 and 5 was performed in January / February 2023.

Commissioning was performed in accordance with the Commissioning Plan that was approved by WDNR on May 23, 2022. This was intended to be performed concurrent with the Fifth Round of Commissioning of Buildings 6, 7, 8A and 8B but it was discovered that the exhaust vents on Building 5 were too close to air intakes and dryer vents for the laundromat in Building 5 that were installed after Commissioning Round 1 and prior to Commissioning Round 2. Commissioning Round 2 was delayed while the exhaust vents were relocated atop Building 5. The relocated exhaust vents are shown in Attachment A.

Sub-slab Depressurization System Vacuum Measurements

The sub-slab depressurization system installed in Buildings 4 and 5 was tested on 07/19/2023 and 07/20/2023. A handheld hammer drill was used to install vapor pins beneath the slab of the structure. A digital manometer was utilized to take measurements of vacuum below the slab after the vapor points passed a water dam test. Seventeen locations, which are identified as SVP-17 to SVP-33, were chosen to take measurements to get an accurate model of sub-slab depressurization from each suction point.

In accordance with a vapor mitigation system commissioning plan submitted by KSingh on April 21, 2022, a reading of -0.004 inches water was utilized to determine whether the system was adequately operating. Recorded measurements range from -0.008 to -0.506 inches of water, all of which are greater than the required vacuum.

The locations and results of July 2023 sub-slab depressurization measurements are depicted in Figure 1 and summarized in Table 1. The greatest vacuum measurement was observed in the southeastern portion of building 5. The vapor pins near 32^{nd} street (SVP – 23 and SVP – 26) demonstrated the least vacuum readings. All the readings were significantly higher than the readings from the 1st Round of

Commissioning. Based on the buildings extents and the measured vacuum readings, the sub-slab depressurization system has met its depressurization requirements to date.

Sub-slab TCE Measurements

The vapor pins installed for the measurement of vacuum were utilized to obtain sub-slab soil vapor samples from the seventeen locations shown on Figure 1. The air samples were analyzed using a portable Gas Chromatograph (GC) System provided by Hartman Environmental Geoscience. The results of the GC analysis are shown alongside the vacuum measurements in Table 1. The greatest TCE reading at 64.8 ug/m³ was observed at SVP – 28 located in the southwest corner of Building 4. All the readings were less than the Vapor Risk Screening Level (VRSL) of 70 μ g/m³.

Passive Indoor Air Sampling

Following documentation of adequate sub-slab depressurization, passive air sampling was performed in accordance with the approved Commissioning Plan. A total of 10 passive air samplers were set up and sampled over a 1-week period from July 19, 2023, until July 27, 2023. The locations of the passive air samplers are included in Attachment C. A passive sampler was also placed at the children's breathing zone in the Play Area. Two additional passive air samplers (IA-6-BS and IA-8-1D) from the basement of Building 6 and the Stairwell in Building 8A, that were not located during the Fifth Round of Commissioning were also set up and the results are included in the analyses.

On July 27, 2023, the passive air samplers were submitted to Eurofins Air Toxics, LLC Folsom, CA for analysis for chlorinated solvents including Trichloroethylene (TCE), Tetrachloroethylene (PCE), cis-1,2-Dichloroethylene (cis-DCE), and trans-1,2-Dichloroethylene (trans-DCE). The results are included in Attachment D and summarized in Table 2.

No samples reported any exceedances of chlorinated solvents based on the most recent guidelines published by WDNR in August 2023.

Indoor Air Gas Chromatograph Sampling

Indoor Air samples were collected similar to the exhaust samples and analyzed using the portable GC. The values were then compared to the VALs of 2.1 μ g/m³. The locations of the samples are shown in Attachment C (eg. GC-5-01A) and the results of the sampling are documented in Table 3. No samples exceeded the TCE detection limit of 0.6 ug/m³. and thus meet the VAL criteria.

Exhaust Sampling

Eleven Radonaway RP 265 fans were installed on the roof of buildings 4 and 5 as part of the vapor mitigation system. As part of commissioning, glass syringes were utilized to gather air quality samples from exhaust of the roof fans on July 25, 2023, and analyzed using the portable GC.

The results of the July 2023 exhaust fan air quality sampling are summarized in Table 4 and the locations of sampled fans are included in Figure 1. Results from the GC document concentrations of TCE in exhaust samples greater than their respective Vapor Action Levels (VAL). Based on the concentrations of TCE in the exhaust, it is concluded that TCE is being removed from the soil at a minimal rate.



Conclusions and Recommendations

The following conclusions were reached based on the commissioning:

- Based on the results of sub-slab vacuum measurements, the vapor mitigation system installed on the subject site adequately creates vacuum beneath the building slab for buildings 4 and 5.
- The sub-slab TCE results demonstrate compliance with the VRSL levels.
- Passive indoor air results show that there are no Residential Indoor Air VALs exceeded in buildings 4 and 5.
- Exhaust Fan emission sampling indicates that TCE is still present in the sub-slab and that minimal mass reduction is taking place.
- The indoor air samples, collected via passive samplers and syringe sampling, contain no detections of TCE in all the areas throughout Buildings 4 and 5.
- Based on the results from the second round of commissioning, the system is operating as intended.

We have the following recommendations:

- We recommend that the third round of commissioning be scheduled for September 2023.
- Regular inspection and maintenance of the exhaust system is recommended.

Please contact us if you have any questions or seek clarification regarding this information.

Sincerely,

K. SINGH & ASSOCIATES, INC.

Sameer Neve, Ph.D. ENV SP Staff Environmental Engineer

Cup Nr lub

Pratap N. Singh, Ph.D., P.E. Principal Engineer

cc: Shane LaFave / Roers Companies Que El-Amin / Scott Crawford, Inc.

Robert I Reineke

Robert T. Reineke, P.E Project Manager

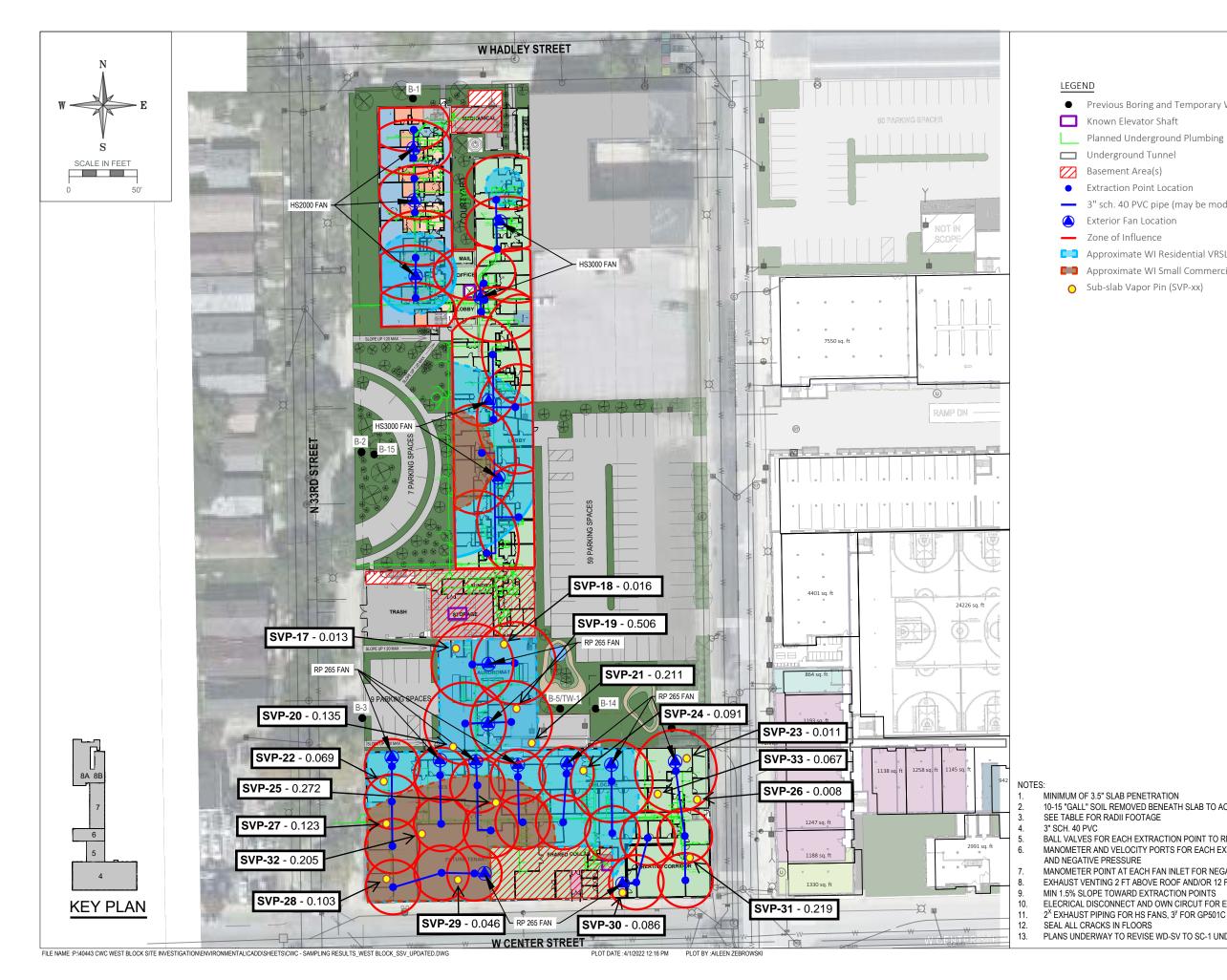


Attachments: Figure 1 Figure 2 Figure 3	Repositioned Exhaust Fan Outlets Sub-Slab Depressurization Locations and Results Exhaust Fan Locations
Table 1	Vacuum Measurement and Sub-slab TCE Results
Table 2	Passive Air Sampling Results
Table 3	Indoor Air Sampling Results
Table 4	Exhaust Fan Sampling Results
Attachment A	Building 5 Exhaust Vents Relocation Figure
Attachment B	Pictures
Attachment C	Passive Air and Indoor Air Sampling Locations
Attachment D	Passive Air Sampling Test Results



FIGURES





• Previous Boring and Temporary Well Locations

- Planned Underground Plumbing
- 3" sch. 40 PVC pipe (may be modified)
- Approximate WI Residential VRSL Exceedance Extents
- Approximate WI Small Commercial VRSL Exceedance Extents

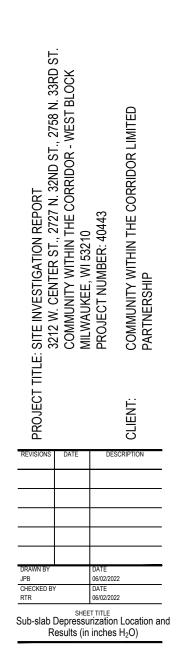
10-15 "GALL" SOIL REMOVED BENEATH SLAB TO ACT AS SUCTION PIT

BALL VALVES FOR EACH EXTRACTION POINT TO REGULATE FLOW MANOMETER AND VELOCITY PORTS FOR EACH EXTRACTION POINT TO MEASURE FLOW

MANOMETER POINT AT EACH FAN INLET FOR NEGATIVE PRESSURE EXHAUST VENTING 2 FT ABOVE ROOF AND/OR 12 FT FROM WINDOWS ELECRICAL DISCONNECT AND OWN CIRCUT FOR EACH FAN PLANS UNDERWAY TO REVISE WD-SV TO SC-1 UNDERLAIN BY 50-MIL SUB-MEMBRANE.

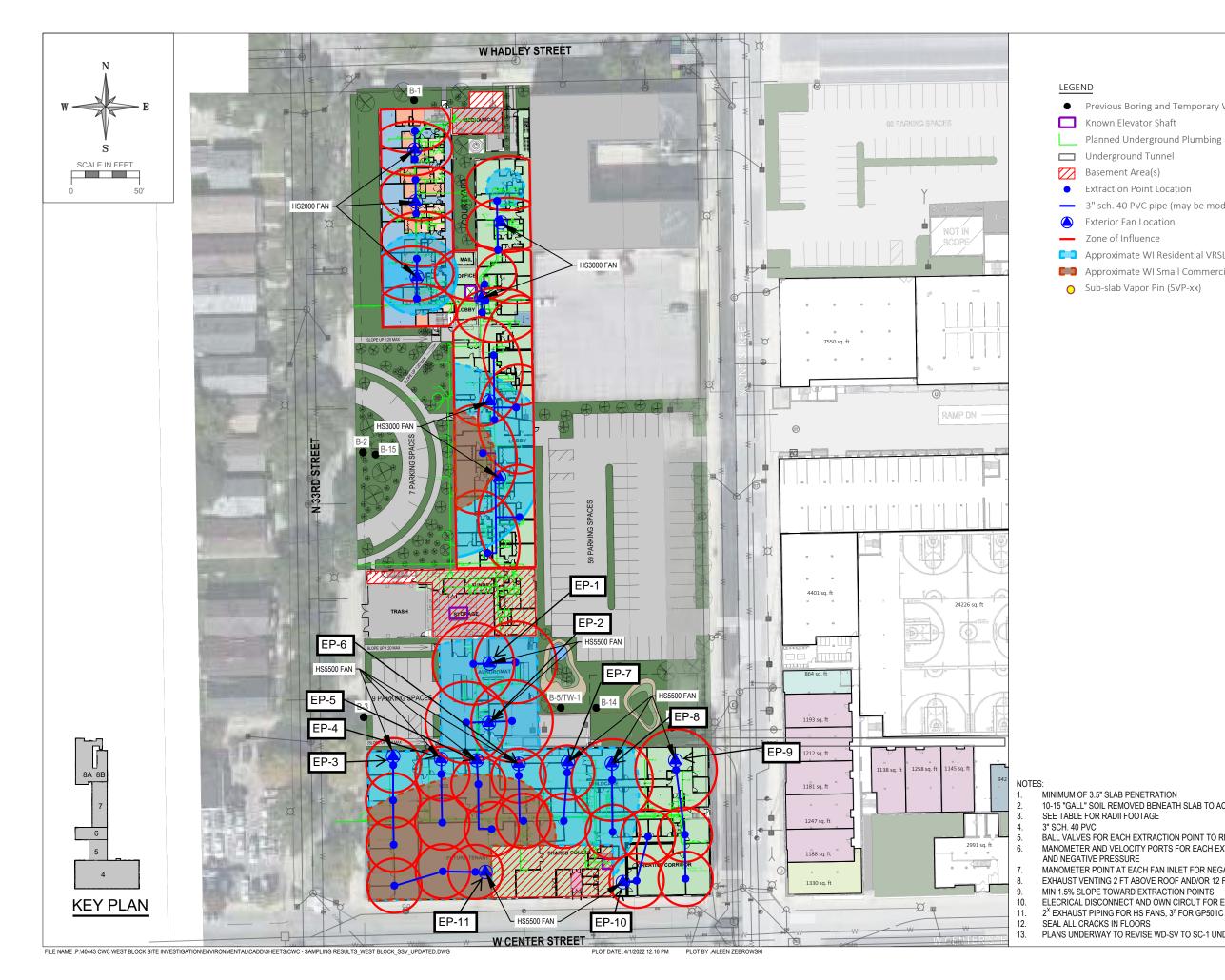
KSingh 3636 North 124th Street Wauwatosa, WI 53222 262-821-1171 CONSULTANT

CONSULTAN





SHEET 6



• Previous Boring and Temporary Well Locations

- Planned Underground Plumbing
- 3" sch. 40 PVC pipe (may be modified)
- Approximate WI Residential VRSL Exceedance Extents
- Approximate WI Small Commercial VRSL Exceedance Extents

10-15 "GALL" SOIL REMOVED BENEATH SLAB TO ACT AS SUCTION PIT

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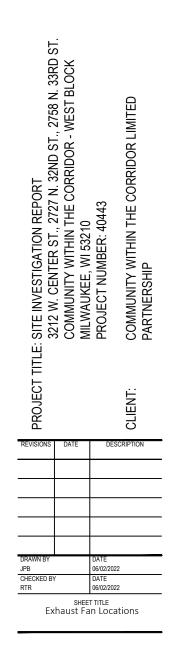
MANOMETER POINT AT EACH FAN INLET FOR NEGATIVE PRESSURE EXHAUST VENTING 2 FT ABOVE ROOF AND/OR 12 FT FROM WINDOWS ELECRICAL DISCONNECT AND OWN CIRCUT FOR EACH FAN PLANS UNDERWAY TO REVISE WD-SV TO SC-1 UNDERLAIN BY 50-MIL SUB-MEMBRANE. KSingh Engineers Scientists Consultants



3636 North 124th Street Wauwatosa, WI 53222 262-821-1171

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SHEET 6



TABLES

Table 1

Vacuum Measurement and Sub-Slab TCE Results

Sample Location	Date	Reading (inches H ₂ O)	Sub-Slab TCE Readings (µg/m³)		
SVP-17	7/20/2023	-0.013	0		
SVP-18	7/20/2023	-0.016	11.2		
SVP-19	7/19/2023	-0.506	0		
SVP-20	7/19/2023	-0.135	0		
SVP-21	7/19/2023	-0.211	1.04		
SVP-22	7/19/2023	-0.069	8.49		
SVP-23	7/19/2023	-0.011	0		
SVP-24	7/19/2023	-0.091	0		
SVP-25	7/19/2023	-0.272	2.22		
SVP-26	7/19/2023	-0.008	0		
SVP-27	7/19/2023	-0.123	8.79		
SVP-28	7/19/2023	-0.103	64.8		
SVP-29	7/19/2023	-0.046	11		
SVP-30	7/19/2023	-0.086	0		
SVP-31	7/19/2023	-0.219	0		
SVP-32	7/19/2023	-0.205	11		
SVP-33	7/19/2023	-0.067	0		
*Readings were compared to a threshold value of					

*Readings were compared to a threshold value of 0.004 inches H_2O and VRSL levels of 70 $\mu g/m^3$

TABLE 4 Passive Air Sampling Results Community Within the Corridor - West Block - Buildings 4 and 5 **Residential Indoor** IA-4-1A IA-4-1B IA-4-1C IA-4-1E IA-4-1F OA-4/5 IA-4-1D IA-4-BS IA-5-1A IA-5-1B Air VAL* Units 7/28/2023 7/28/2023 7/28/2023 7/28/2023 7/28/2023 7/28/2023 7/28/2023 7/28/2023 7/28/2023 7/28/2023 7/28/2023 ------μg/m³ 2.1 <0.11 <0.11 <0.11 <0.11 <0.11 <0.11 <0.11 <0.11 <0.11 <0.11

<0.13

<0.14

0.48

<0.13

<0.14

0.57

<0.13

<0.14

0.35

0.17

<0.14

0.43

0.23

<0.14

0.66

0.30

<0.14

0.47

<0.13

<0.14

0.53

*Based on WDNR Quick Look-Up Table dated May 2023

μg/m³

μg/m³

μg/m³

42

42

42

<0.13

<0.14

0.58

<0.13

<0.14

<0.26

<0.13

<0.14

0.62

Sample ID

Trichloroethene

Tetrachloroethene

cis-1,2-Dichloroethene

trans-1,2-Dichloroethene

Date



Sheet 1 of 1

IA-6- Basement	IA-8-1D
7/28/2023	7/28/2023
<0.11	<0.11
<0.13	<0.13
<0.14	<0.14
0.23	0.51

Table 3

Indoor Air Sampling Results

ID	Unit	Date	Time	PCE (µg/m ³)	TCE (µg/m ³)
GC-4-01A	423	20-Jul	15:36	< 0.6	< 0.6
GC-4-01B	419	20-Jul	14:45	< 0.6	< 0.6
GC-4-01C	410	20-Jul	14:18	< 0.6	< 0.6
GC-4-01D	406	20-Jul	14:01	< 0.6	< 0.6
GC-4-01E	408	20-Jul	14:09	< 0.6	< 0.6
GC-4-01F	413	20-Jul	14:26	< 0.6	< 0.6
GC-4-01G	415	20-Jul	14:54	< 0.6	< 0.6
GC-4-01H	416	20-Jul	15:02	< 0.6	< 0.6
GC-4-01I	418	20-Jul	15:11	< 0.6	< 0.6
GC-4-01J	313	20-Jul	16:14	< 0.6	< 0.6
GC-4-01K	314	20-Jul	16:23	< 0.6	< 0.6
GC-4-01L	109	20-Jul	17:20	< 0.6	< 0.6
GC-4-01M	10	20-Jul	16:04	< 0.6	< 0.6
GC-4-01N	9	20-Jul	15:57	< 0.6	< 0.6
GC-4-010	oppo 318	20-Jul	16:35	< 0.6	< 0.6
GC-5-01A	432	20-Jul	15:45	< 0.6	< 0.6
GC-5-01B	open area	20-Jul	17:03	< 0.6	< 0.6
GC-5-01C	504	20-Jul	16:52	< 0.6	< 0.6
GC-5-01D	ent	20-Jul	17:10	< 0.6	< 0.6
Reporting Limit (µg		(µg/m³)		< 0.6	< 0.6

Table 4

Exhaust Fan Sampling Results

Exhaust Fan	Effluent TCE Concentration	Flow Rate	TCE Removal Rate	TCE Removal Rate
	(µg/m³)	(cfm)	(lbs/day)	(lbs/year)
EP - 1	3.93	91.02	0.00003	0.0117
EP -2	3.88	82.47	0.00003	0.0105
EP - 3	2.44	45.41	0.00001	0.0036
EP - 4	10.3	20.27	0.00002	0.0069
EP - 5	3.36	56.06	0.00002	0.0062
EP - 6	0.49	58.95	0.00000	0.0009
EP - 7	4.17	20.32	0.00001	0.0028
EP - 8	2.02	55.08	0.00001	0.0037
EP - 9	0.34	14.48	0.00000	0.0002
EP - 10	4.05	19.34	0.00001	0.0026
EP - 11	3.05	84.09	0.00002	0.0084
		Total	0.00016	0.05743

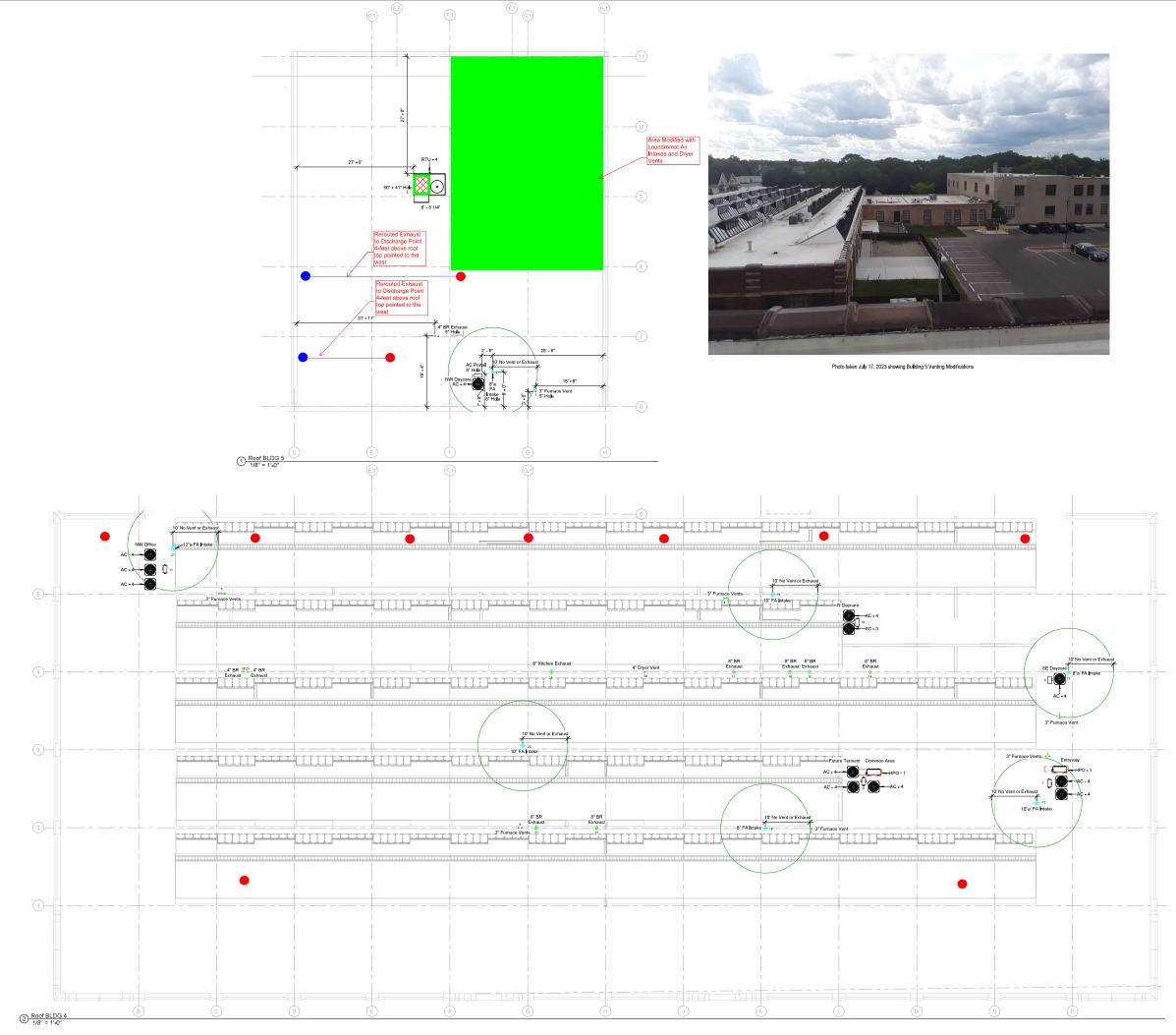
ATTACHMENTS



ATTACHMENT A

Building 5 Exhaust Vents Relocation Figure







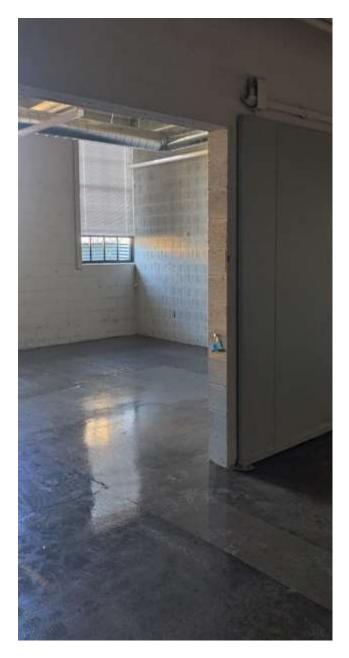


The West Block **Community Within** Cooridor SHEET NAME: Roof BLDG 4 & 5 DRAWN BY: DA / JC DATE: 5/11/2021 2:21:25 PM SCALE: 1/8" = 1'-0" M-401

ATTACHMENT B

Pictures





Picture1 – Location of the Passive sampler at children's level in Play area





Picture 2 – Passive Sampler Location in Building 5





Picture 3 – Exhaust Fan Outlets on Building 4



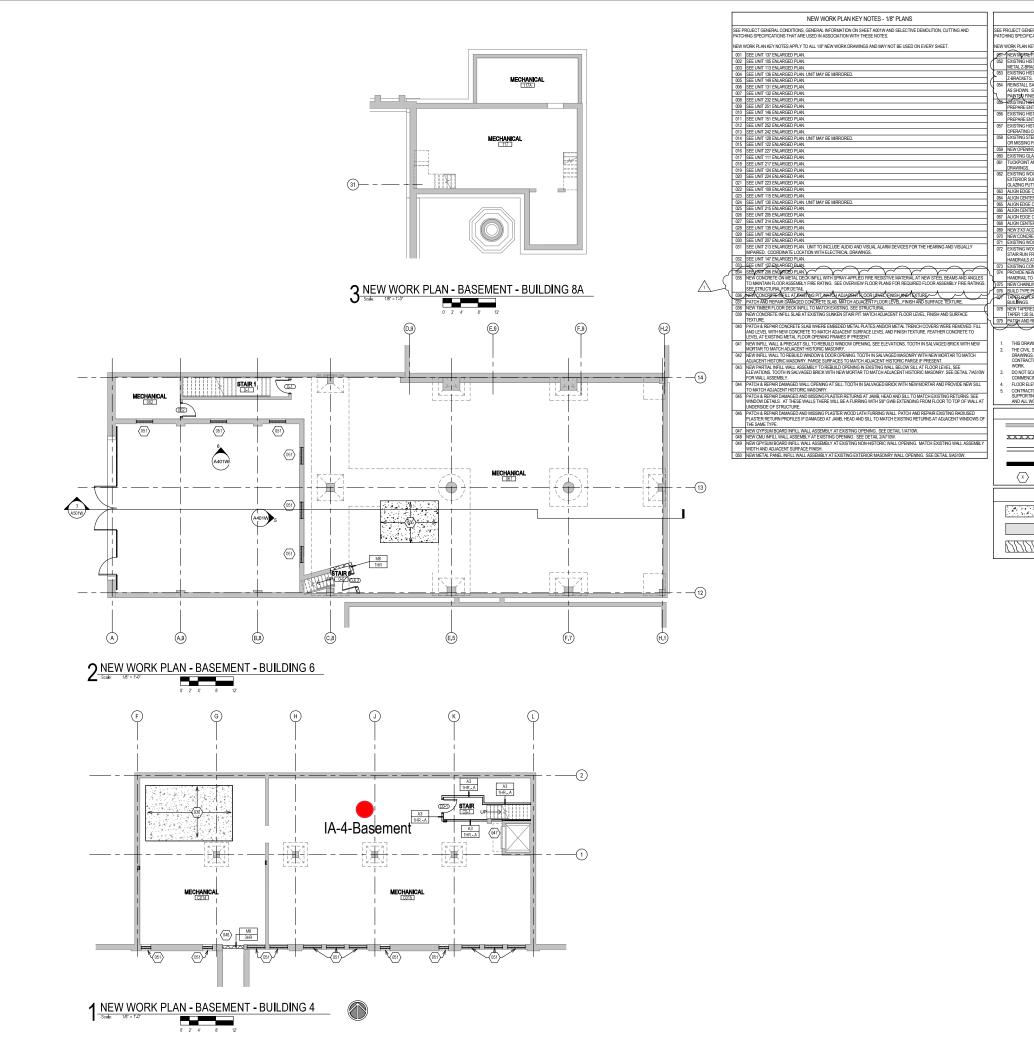
Picture 4 – Exhaust Fan Outlets on Building 4



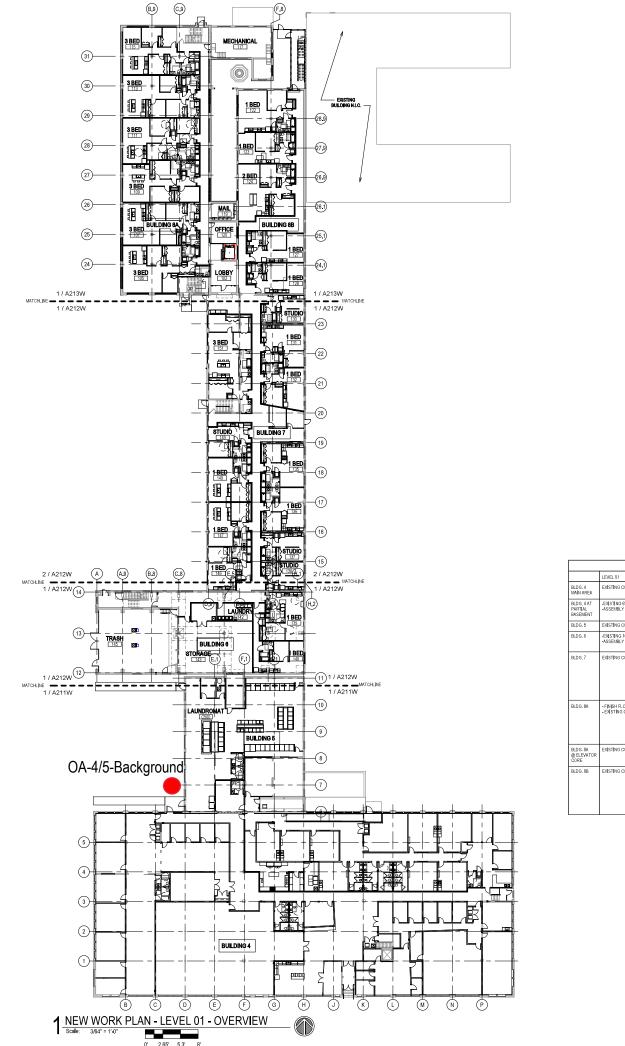
ATTACHMENT C

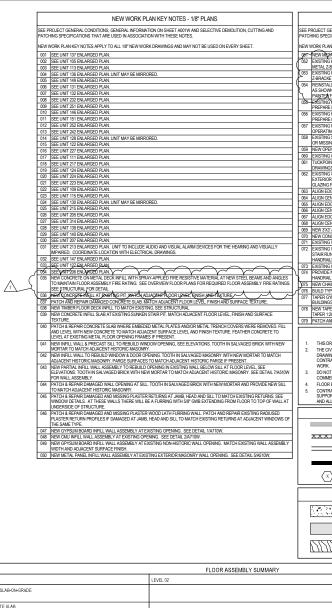
Passive Air and Indoor Air Sampling Locations





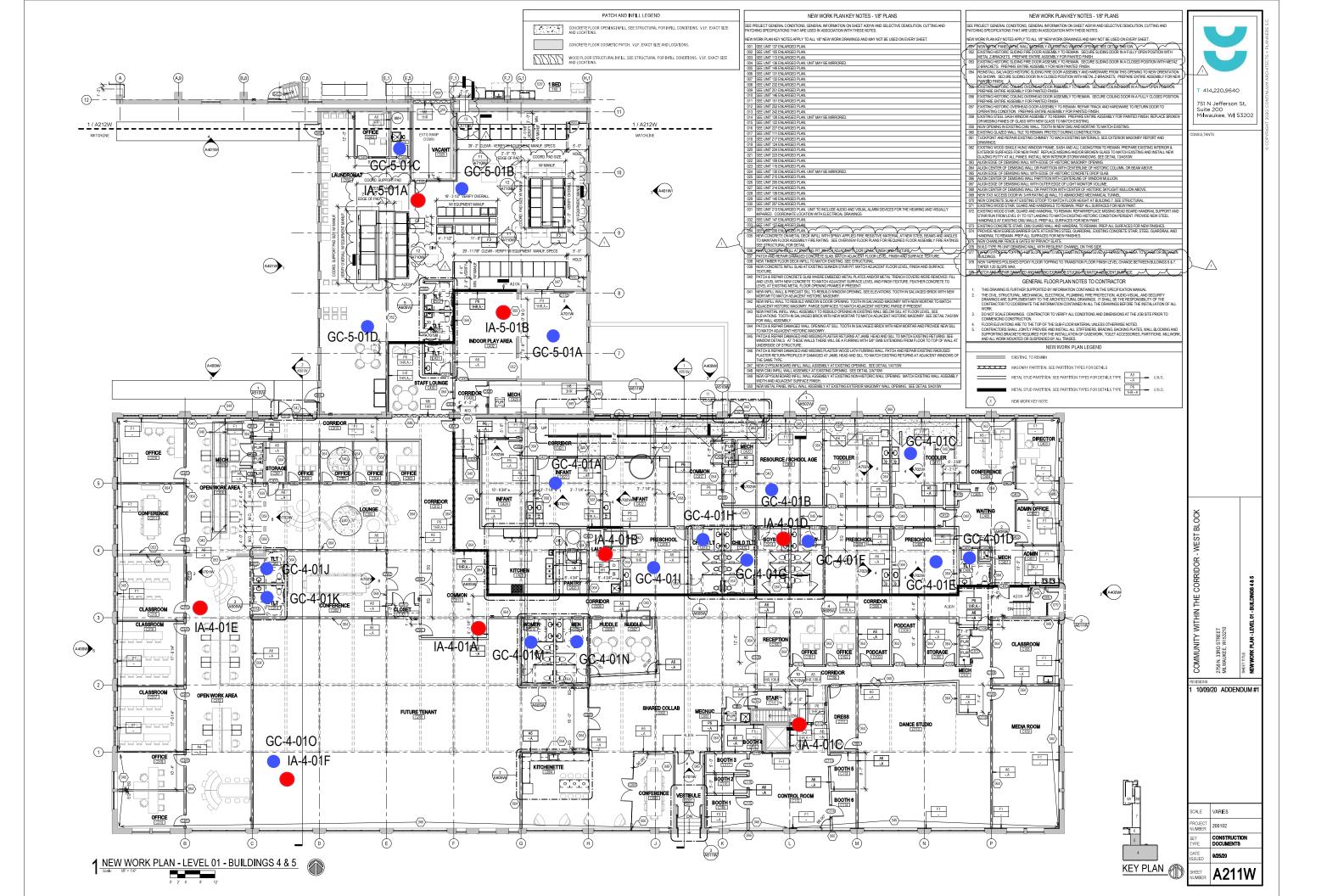
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PATCH	ING SPECIFICATION	IS THAT ARE USED IN ASSI	OCIATION WITH THESE NOTES.	IOT BE USED ON EVERY SHEET.						COPYRIGHT 2020, CONTINUUM ARCHITECTS + PLANNERS S.C
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	PREPARE ENTIRE A EXISTING HISTORIC	SSEMBLY FOR PAINTED F	INISH.	K AND HARDWARE TO RETURN DO			51 N Jeffe uite 200	erson Si	t.	D, CON
	EXISTING STEEL SA OR MISSING PANES	ASH WINDOW ASSEMBLY T S OF GLASS WITH NEW GLA	TO REMAIN. PREPARE ENTIRE A ASS TO MATCH EXISTING.	SSEMBLY FOR PAINTED FINISH. RI	PLACE BROKEN		11 waukee	, W I 53	202	HT 202(
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		FLOOR ASSEMBLY SUMMARY
	LEVEL 01	LEVEL 02
BLD.G. 4 MAIN AREA	EXISTING CONCRETE SLAB-ON-GRADE	
BLDG, 4 AT PARTIAL BASEMENT	-EXISTING 6° CONCRETE SLAB -ASSEMBLY FIRE RATING: 1 HOURS	
BLDG.5	EXISTING CONCRETE SLAB-ON-GRADE	
BLDG, 6	-EXISTING 10.1/2' CONCRETE SLAB -ASSEMBLY FIRE RATING: 1 HOURS	-EXISTING 10 1/2' CONCRETE SLAB -ASSEMELY FIRE RATING: 1 HOURS -STC-IIC RATING:
BLDG.7	EXISTING CONCRETE SLAB-OINGRADE	FINGENT COGNIC (SEE TINON FLANS FOR INTERNLS AND LOCATIONS OF FINGENMETRIALS HIGH FLOC (STORE) DECREMENT UNDERLY AND THE ADDRESS ONLY) ENDERLY ADDRESS AND EXCENT UNDERLY EXISTING 27 TIMEER FLOOR JOINTS (NOS CH. 16 CALCULATED CHAR RATE MEETS 1/2HOUR EXISTING X13 TIMEER FLOOR JOINTS (NOS CH. 16 CALCULATED CHAR RATE MEETS 1/2HOUR EXISTING X13 TIMEER FLOOR JOINTS (NOS CH. 16 CALCULATED CHAR RATE MEETS 1/2HOUR EXISTING X13 TIMEER FLOOR JOINTS (NOS CH. 16 CALCULATED CHAR RATE MEETS 1/2HOUR EXISTING X13 TIMEER FLOOR JOINTS (NOS CH. 16 CALCULATED CHAR RATE MEETS 1/2HOUR EXISTING X13 TIMEER FLOOR JOINTS (NOS CH. 16 CALCULATED CHAR RATE MEETS 1/2HOUR EXISTING X14 TIMEER FLOOR JOINTS (NOS CH. 16 CALCULATED CHAR RATE MEETS 1/2HOUR EXISTING X15 TIMEER FLOOR JOINTS (NOS CH. 16 CALCULATED CHAR RATE MEETS 1/2HOUR EXISTING X15 TIMEER FLOOR JOINTS (NOS CH. 16 CALCULATED CHAR RATE MEETS 1/2HOUR EXISTING X15 TIMEER FLOOR JOINTS (NOS CH. 16 CALCULATED CHAR RATE MEETS 1/2HOUR EXISTING X15 TIMEER FLOOR JOINTS (NOS CH. 16 CALCULATED CHAR RATE MEETS 1/2HOUR EXISTING X15 TIMEER FLOOR JOINTS (NOS CH. 16 CALCULATED CHAR RATE MEETS 1/2HOUR EXISTING X16 CALCULATED CONTROL TO RECEIVE NEW INTUNESCENT COATING. EXISTING X16 CALCULATED CHAR TIME X16 CALCULATED CHAR RATE MEETS 1/2HOUR EXISTING X16 CALCULATED CALCULAT
BLD G. 8A	- FRIGH FLOORING (SEE FINISH PLANS FOR MATERIALS AND LOCATIONS OF FINISH MATERIALS) - EXISTING CONCRETE SLAB ON GRADE	- FINISH R. DORINO (SEE FINISH PLANS FOR MATERIALS AND LOCATIONS OF FINISH MATERIALS - NEW 1-12 GYPSUM CELEBY UNDERLYMENT - NEW ACULSTC SOUDO MAI (AT NOL-CARPETED AREAS GILLY) - EXISTING ST LINEER SURF COORING (DOS OL 16 OLLCULATED OHAR RATE MEETS 1/2-HOUR R - ASSEMBLY FIRE MATING: IZA HOUR - ASSEMBLY FIRE MATING: IZA HOUR - TSTC: 44-19 - MC: 44-17
BLDG. 8A @ ELEVATOR CORE	EXISTING CONCRETE SLAB-ON-GRADE	- EXISTING 3" CONCRETE SLAB - EXISTING 10" CLAY TILE INFILL - ASSEMELY FIRE RATING: 1 HOUR
BLDG.8B	EXISTING CONCRETE SLAB-OIN-GRADE	FINGENT, CORENCIGET FINANCE PLANS FOR MATSENLS AND LOCATIONS OF FINGEN MATERIALS. HOW IN LCC OPERATION DECREMENT UNDERLY AVAILUTE NEW ACOUSTICS SOUND MM. (11 NOR-CARPETED AREAS ON Y) -EXISTING 3T MERER SUBJECCIONE (005 GK 16 GALCULATED CHAR RATE MEETS 1/2-HOUR R -EXISTING 3T MERER FILOR ON JOBT NOS GK 16 GALCULATED CHAR RATE MEETS 1/2-HOUR R -EXISTING 3T MERER FILOR JOB CH 105 GK 16 GALCULATED CHAR RATE MEETS 1/2-HOUR R -EXISTING 3T MERER FILOR JOB CH 105 GK 16 GALCULATED CHAR RATE MEETS 1/2-HOUR I -FSTC. 46-19 FILC 45-47

	NEW WORK PLAN KEY NOTES - 1/8" PLANS					ci .
ENERAL CO	NDITIONS, GENERAL INFORMATION ON SHEET A001W AND SELECTIVE DEMOLITION, CUTTING AND THAT ARE USED IN ASSOCIATION WITH THESE NOTES.					ERS S.O
	S APPLY TO ALL 1/8" NEW WORK DRAWINGS AND MAY NOT BE USED ON EVERY SHEET.					ANNE
HISTORIC S BRACKETS	LIDING FIRE DOOR ASSEMBLY TO REMAIN. SECURE SUDING DOOR IN A FULLY OPEN POSITION WITH PREPARE ENTIRE ASSEMBLY FOR PAINTED FINISH.	k				Id + S.
HISTORIC S	SLIDING FIRE DOOR ASSEMBLY TO REMAIN. SECURE SLIDING DOOR IN A CLOSED POSITION WITH METAZ IRE ENTIRE ASSEMBLY FOR NEW PAINTED FINISH.	K				HITECT
N. SECURE	D HISTORIC SLIDING FIRE DOOR ASSEMILY AND HARDWARE FROM THIS OPENING TO NEW ORIENTATION SLIDING DOOR IN A CLOSED POSITION WITH METAL ZBRACKETS, PREPARE ENTIRE ASSEMILLY FOR NEW A A A A A A A A A A A A A A A A A A A	Y	1			1 ARCH
HISTORIC (DISHRAFULERINERADBOOR ASSEMBLY TO REMARK. SECORE COLLING DEGRY IN A FULLY OPEN POSIFICIT. SEMBLY FOR PAINTED FINISH.		T 41	4.220.964	0	COPYRIGHT 2020, CONTINUUM ARCHITECTS + PLANNERS
ENTIRE AS	CILING OVERHEAD DOOR ASSEMBLY TO REMAIN. SECURE COILING DOOR IN A FULLY CLOSED POSITION. SEMBLY FOR PAINTED FINISH. YURRHEAD DOOR ASSEMBLY TO REMAIN. REPAIR TRACK AND HARDWARE TO RETURN DOOR TO			۷ Jefferso	n St.	CONT
STEEL SAS	ON. PREPARE ENTIRE ASSEMBLY FOR PAINTED FINISH. H WINDOW ASSEMBLY TO REMAIN. PREPARE ENTIRE ASSEMBLY FOR PAINTED FINISH. REPLACE BROKEN			e 200 /aukee, W	53202	2020.
NING IN EX	F GLASS WITH NEW GLASS TO MATCH EXISTING. STING CMU WALL TOOTH IN NEW CMU AND MORTAR TO MATCH EXISTING.					RGHT
NT AND REF	ALL TILE TO REMAIN. PROTECT DURING CONSTRUCTION. AIR EXISTING CHIMNEY TO MACH EXISTING MATERIALS. SEE EXTERIOR MASONRY REPORT AND		CONSULTA	NTS:		COPYF
R SURFACE	3LE HUNG WINDOW FRAME, SASH AND ALL CASING TIMI TO REMAIN PREPARE EXISTING INTERIOR & 5 FOR NEW PAINT. REPLACE MISSING AND/OR BROKEN GLASS TO MATCH EXISTING AND INSTALL NEW LL PANES. INSTALL NEW INTERIOR STORM WINDOWS. SEE DETAIL 13/A510W.					0
GE OF DEM	LL PARES INSTALLINEW IN LENORS TO RIN WINDOWS SEE DE FAIL TARGINU. ISING WALL WITH EDGE OF HISTORIC MASONRY OPENING. MISING WALL OR PARTITION WITH CENTERLINE OF HISTORIC COLUMN, OR BEAM ABOVE.					
GE OF DEM	ISING WALL WITH EDGE OF HISTORIC CONCRETE DROP SLAB. EMISING WALL PARTITION WITH CENTERLINE OF WINDOW MULLION.					
NTER OF D	ISING WALL WITH OUTER EDGE OF LIGHT MONITOR VOLUME. MISING WALL OR PARTITION WITH CENTER OF HISTORIC SKYLIGHT MULLION ABOVE.					
WOOD STA	DOR WI 3-HR RATING @ WALL TO ABANDONED MECHANICAL TUNNEL B AT EXISTING STOOP TO MATCH FLOOR HEIGHT AT BUILDING 7. SEE STRUCTURAL. II. GUARD AND HANDRAILS TO REMINI, PREVAL SURFACES FOR NEW PAINT.					
WOOD STA	IR, GUARD AND HANDRAIL TO REMAIN REPAIR REPLACE MISSING BEAD BOARD HANDRAIL SUPPORT AND AEL 01 TO 1ST LANDING TO MATCH EXISTING HISTORIC CONDITION PERSENT. PROVIDE NEW STEEL					
CONCRETE	ING CMJ WALLS. PREP ALL SURFACES FOR NEW PAINT. STAIR, CMU GUARD WALL AND HANDRAIL TO REMAIN. PREP ALL SURFACES FOR NEW FINISHES. SS BARRIER GATE AT EXISTING STELE. GUARDRAIL EXISTING CONCRETE STAIR, STEEL GUARDRAIL AND					
. TO REMAI INLINK FEN	N. PREP ALL SURFACES FOR NEW FINISHES. CE & GATES W/ PRIVACY SLATS.					
	DEMISING WALL WITH RESILIENT CHANNEL ON THIS SIDE. OPPING 1:20 SLOPE MAX TO MEET EXISTING FINISH LEVEL AT TRANSITION AREA TO STAIRS OR BETWEEN					
S. ERED POLIS 20 SLOPE M	HED EPOXY FLOOR TOPPING TO TRANSITION FLOOR FINISH LEVEL CHANGE BETWEEN BULDINGS 6 & 7. AX.					
ID REPAIR	DAMAGED AND MISSING EXTERIOR STUCCO TO MATCH ADJACENT SURFACE.					
RAWING IS	GENERAL FLOOR PLAN NOTES TO CONTRACTOR FURTHER SUPPORTED BY INFORMATION CONTAINED IN THE SPECIFICATION MANUAL.					
/IL STRUCT	URAL MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, AUDIO-VISUAL, AND SECURITY IPPLEMENTARY TO THE ARCHITECTURAL DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE DOORDINATE THE INFORMATION CONTAINED IN ALL THE DRAWINGS BEFORE THE INSTALLATION OF ALL					
I SCALE DR	AWINGS. CONTRACTOR TO VERIFY ALL CONDITIONS AND DIMENSIONS AT THE JOB SITE PRIOR TO					
NCING CON	ISTRUCTION. IS ARE TO THE TOP OF THE SUB-FLOOR MATERIAL UNLESS OTHERWISE NOTED.					
ACTORS SH RTING BRA L WORK MC	HAL JOINTLY PROVIDE AND INSTALL ALL STIFFENERS, BRACING, BACKING PLATES, WALL BLOCKING AND DIVERTS REQUIRED FOR THE INSTALLATION OF CASEWORK, TOILET ACCESSORIES, PARTITIONS. MILLWORK, UNITED OR SUSPENDED BY ALL TRADES.					
	NEW WORK PLAN LEGEND					
	EXISTING, TO REMAIN					
	MASONRY PARTITION, SEE PARTITION TYPES FOR DETAILS					
	METAL STUD PARTITION, SEE PARTITION TYPES FOR DETAILS TYPE					
、 、	METAL STUD PARTITION, SEE PARTITION TYPES FOR DETAILS TYPE U.N.O.					
/	NEW WORK RETINOTE					
	PATCH AND INFILL LEGEND					
	CONCRETE FLOOR OPENING INFILL, SEE STRUCTURAL FOR INFILL CONDITIONS. V.I.F. EXACT SIZE AND LOCATIONS.					
	CONCRETE FLOOR COSMET[C PATCH. V,I,F. EXACT SIZE AND LOCATIONS.					
777	WOOD FLOOR STRUCTURAL INFILL, SEE STRUCTURAL FOR INFILL CONDITIONS. V.I.F. EXACT SIZE AND LOCATIONS.					
	LEVEL 03					
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			STE			
			ME			
.S)			OR.		OINGS	
R RATING)			RID		BUL	
,			COF		MALI	
.S)	- FINISH FLOORING (SEE FINISH PLANS FOR MATERIALS AND LOCATIONS OF FINISH MATERIALS)		뿟		ERVIE	
RATING)	- NEW 1-1/2' CYPSUM CEMENT UNDERLAYMENT - NEW ACOUSTIC SOUND MAT (AT NON-CARPETED AREAS ONLY) - EXISTING 3' TIMBER SUBFLOORING (NDS CH. 16 CALCULATED CHAR RATE MEETS 1/2-HOUR RATING)		L N		N-H	
RATING)	- EXISTING 6X14 TIMBER FLOOR JOIST (NDS CH. 16 CALCULATED CHAR RATE MEETS 1/2-HOUR RATING) - ASSEMELY FIRE RATING: 1/2 HOUR - FSTC. 46-49 FIIC. 45-47		VITH-	L 0	NELO	
	- EXISTING 3" CONCRETE SLAB		COMMUNITY WITHIN THE CORRIDOR - WEST BLO	2758 N. 33RD STREET MILWAUKEE, WI 53210	sfett mile. New Work Plan - Level 01 - Overniew all Buildings	
	- EXISTING 10" QAY TILE INFILL - ASSEMELY FIRE RATING: 1 HOUR		INNI	3RD S (EE, W	ж FL	
.S)			NWC	8 N. 3 WAUP	SHEET TITLE: NEW WOR	
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RATING)	A 88		1 10/05 SCALE PROJECT	9/20 ADDE	ENDUM #1	
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ATTACHMENT D

Passive Air Sampling Test Results





8/16/2023 Mr. Robert Reineke K Singh & Associates 3636 N 124th St

Wauwatosa WI 53222

Project Name: CWC - West Block SR Project #: 40443A Workorder #: 2308061

Dear Mr. Robert Reineke

The following report includes the data for the above referenced project for sample(s) received on 8/3/2023 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by Passive S.E. RAD130/SKC are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Jade White at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Jade White Project Manager

180 Blue Ravine Road, Suite B Folsom, CA 95630



WORK ORDER #: 2308061

Work Order Summary

CLIENT:	Mr. Robert Reineke K Singh & Associates 3636 N 124th St Wauwatosa, WI 53222	BILL TO: Mr. Robert Reineke K Singh & Associates 3636 N 124th St Wauwatosa, WI 53222	K Singh & Associates 3636 N 124th St
PHONE:		P.O. #	P.O. #
FAX:		PROJECT # 40443A CWC - West Block SF	JECT # 40443A CWC - West Block SR
DATE RECEIVED:	08/03/2023		
DATE COMPLETEI	D: 08/16/2023	CONTACT: Jade White	TACI: Jade white
FRACTION #	NAME	TEST	
01A	IA-4-1A	Passive S.E. RAD130/SKC	ve S.E. RAD130/SKC
02A	IA-4-1B	Passive S.E. RAD130/SKC	ve S.E. RAD130/SKC
03A	IA-4-1C	Passive S.E. RAD130/SKC	ve S.E. RAD130/SKC
04A	IA-4-1D	Passive S.E. RAD130/SKC	ve S.E. RAD130/SKC
05A	IA-4-1E	Passive S.E. RAD130/SKC	ve S.E. RAD130/SKC
06A	IA-4-1F	Passive S.E. RAD130/SKC	ve S.E. RAD130/SKC
07A	IA-4-BS	Passive S.E. RAD130/SKC	ve S.E. RAD130/SKC
08A	IA-5-1A	Passive S.E. RAD130/SKC	ve S.E. RAD130/SKC
09A	IA-5-1B	Passive S.E. RAD130/SKC	ve S.E. RAD130/SKC
10A	OA-4/5	Passive S.E. RAD130/SKC	ve S.E. RAD130/SKC
11A	IA-6-BS	Passive S.E. RAD130/SKC	ve S.E. RAD130/SKC
12A	IA-8-1D	Passive S.E. RAD130/SKC	ve S.E. RAD130/SKC
13A	Lab Blank	Passive S.E. RAD130/SKC	ve S.E. RAD130/SKC
14A	CCV	Passive S.E. RAD130/SKC	ve S.E. RAD130/SKC
15A	LCS	Passive S.E. RAD130/SKC	ve S.E. RAD130/SKC
15AA	LCSD	Passive S.E. RAD130/SKC	ve S.E. RAD130/SKC

CERTIFIED BY:

layes

DATE: 08/16/23

Technical Director

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP – 209222, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP – T104704434-22-18, UT NELAP – CA009332022-14, VA NELAP - 12240, WA ELAP - C935 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-017 Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

> This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, LLC. 180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630 (916) 985-1000. (800) 985-5955. FAX (916) 351-8279

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LABORATORY NARRATIVE RAD130 Passive SE by Mod EPA TO-17 K Singh & Associates Workorder# 2308061

Twelve Radiello 130 (Solvent) samples were received on August 03, 2023. The laboratory analyzed the charcoal sorbent bed of the passive sampler following modified method EPA TO-17. The VOCs were chemically extracted using carbon disulfide and an aliquot of the extract was injected into a GC/MS for identification and quantification of volatile organic compounds (VOCs).

The mass of each target compound adsorbed by the sampler was converted to units of concentration using the sample deployment time and the sampling rate for each VOC. If sampling rates were calculated by the lab or the manufacturer, the concentration result has been flagged as an estimated value. Results are not corrected for desorption efficiency.

The reference method used for this procedure is EPA TO-17, which describes the collection of VOCs in ambient air using sorbents and analysis by GC/MS. Because TO-17 describes active sample collection using a pump and thermal desorption as the preparation step, several modifications are required. Modifications to TO-17 are listed in the table below:

Requirement	TO-17	ATL Modifications
Sample Collection	Pump pulls measured air volume through sorbent tube	VOCs in air adsorbed onto sorbent bed passively through diffusion
Sample Preparation	Thermal extraction	Solvent extraction
Sorbent tube conditioning	Condition newly packed tubes prior to use	Charcoal-based sorbent is a single use media and conditioning is conducted by vendor.
Instrumentation	Thermal desorption introduction system	Liquid injection introduction system
Internal Standard	Gas-phase internal standard introduced on the tube or focusing trap during analysis	Liquid-phase internal standard introduced on the tube at the time of extraction
Media and sample storage	<4 deg C, 30 days	Media shelf life is determined by vendor; sample hold-time is 6 months for the RAD130 and WMS. Sample preservation requirements are storage in a cool, solvent-free refrigerator and optional use of ice during shipping.
Internal Standard Recovery	+/-40% of daily CCV area	-50% to +100% of daily CCV area

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The uptake rates were corrected based on average field temperatures if provided. In the absence of field temperatures, the uptake rates determined at 25 deg C were used.

If validated uptake rates were not available, rates were estimated using the chemical's diffusion coefficient in air and the geometric constant of the sampler. Chemicals that are poorly retained by the sorbent over the sampling duration may exhibit a low bias. All concentrations calculated using estimated rates are qualified with a "C" flag.

To calculate ug/m3 concentrations in the Lab Blank, a sampling duration of 15814 minutes was applied. The assumed temperature used for the uptake rate is listed on the data page. If the field temperatures were provided, the rate was adjusted in the same manner as the field samples.

Definition of Data Qualifying Flags

Ten qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

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- E Exceeds instrument calibration range.
- S Saturated peak.
- Q Exceeds quality control limits.
- U Compound analyzed for but not detected above the reporting limit.
- UJ- Non-detected compound associated with low bias in the CCV
- N The identification is based on presumptive evidence.
- C Estimated concentration due to calculated sampling rate
- CN See case narrative explanation.

File extensions may have been used on the data analysis sheets and indicates as follows:

- a-File was requantified
- b-File was quantified by a second column and detector
- r1-File was requantified for the purpose of reissue



Summary of Detected Compounds VOCS BY PASSIVE SAMPLER - GC/MS

Client Sample ID: IA-4-1A

Lab ID#: 2308061-01A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
trans-1,2-Dichloroethene	0.20	0.26	0.45 C	0.58 C
Client Sample ID: IA-4-1B				
Lab ID#: 2308061-02A				
No Detections Were Found.				
Client Sample ID: IA-4-1C				
Lab ID#: 2308061-03A				
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
trans-1,2-Dichloroethene	0.20	0.26	0.48 C	0.62 C
Client Sample ID: IA-4-1D				
Lab ID#: 2308061-04A				
0	Rpt. Limit	Rpt. Limit	Amount	Amount
Compound	(ug)	(ug/m3)	(ug)	(ug/m3)
trans-1,2-Dichloroethene	0.20	0.26	0.37 C	0.48 C
Client Sample ID: IA-4-1E				
Lab ID#: 2308061-05A				
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
trans-1,2-Dichloroethene	0.20	0.26	0.41 C	0.53 C
Client Sample ID: IA-4-1F				
Lab ID#: 2308061-06A				
	Rpt. Limit	Rpt. Limit	Amount	Amount
Compound	(ug)	(ug/m3)	(ug)	(ug/m3)
trans-1,2-Dichloroethene	0.20	0.26	0.44 C	0.57 C



Summary of Detected Compounds VOCS BY PASSIVE SAMPLER - GC/MS

Client Sample ID: IA-4-BS

T 1 TD //	0000C1 0EA
Lab ID#:	2308061-07A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
trans-1,2-Dichloroethene	0.20	0.26	0.27 C	0.35 C
Client Sample ID: IA-5-1A				
Lab ID#: 2308061-08A				
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Tetrachloroethene	0.10	0.13	0.13	0.17
trans-1,2-Dichloroethene	0.20	0.26	0.33 C	0.43 C
Client Sample ID: IA-5-1B				
Lab ID#: 2308061-09A				
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Tetrachloroethene	0.10	0.13	0.17	0.23
trans-1,2-Dichloroethene	0.20	0.26	0.50 C	0.66 C
Client Sample ID: OA-4/5				
Lab ID#: 2308061-10A				
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Tetrachloroethene	0.10	0.14	0.21	0.30
trans-1,2-Dichloroethene	0.20	0.29	0.33 C	0.47 C
Client Sample ID: IA-6-BS				
Lab ID#: 2308061-11A				
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
trans-1,2-Dichloroethene	0.20	0.21	0.22 C	0.23 C

Client Sample ID: IA-8-1D

Lab ID#: 2308061-12A



Summary of Detected Compounds VOCS BY PASSIVE SAMPLER - GC/MS

Client Sample ID: IA-8-1D

Lab ID#: 2308061-12A

Compound	Rpt. Limit	Rpt. Limit	Amount	Amount
	(ug)	(uq/m3)	(ug)	(ug/m3)
trans-1,2-Dichloroethene	0.20	0.28	0.36 C	0.51 C



Client Sample ID: IA-4-1A Lab ID#: 2308061-01A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18080711sim 1.00	Date of Collection: 7/28/23 1:2 Date of Analysis: 8/7/23 12:21 Date of Extraction: 8/7/23		3 12:21 PM
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount Amount (ug) (ug/m3)	
Trichloroethene	0.10	0.11	Not Detected	Not Detected
Tetrachloroethene	0.10	0.13	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.10	0.12	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	0.26	0.45 C	0.58 C

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 12873 minutes. Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130



Client Sample ID: IA-4-1B Lab ID#: 2308061-02A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:			te of Collection: 7/28/23 1:33:00 PM te of Analysis: 8/7/23 12:48 PM		
		Date of Extraction: 8/7/23			
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount Amoun (ug) (ug/m3		
Trichloroethene	0.10	0.11	Not Detected	Not Detected	
Tetrachloroethene	0.10	0.13	Not Detected	Not Detected	
cis-1,2-Dichloroethene	0.10	0.12	Not Detected C	Not Detected C	
trans-1,2-Dichloroethene	0.20	0.26	Not Detected C	Not Detected C	

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 12863 minutes. Container Type: Radiello 130 (Solvent)

Sumanataa	9/ Весенени	Method
Surrogates	%Recovery	Limits
Toluene-d8	95	70-130



Client Sample ID: IA-4-1C Lab ID#: 2308061-03A VOCS BY PASSIVE SAMPLER - GC/MS

Dil. Factor: 1.00 Date		Date of Collection: 7/28/23 1:16:00 PM Date of Analysis: 8/7/23 01:15 PM Date of Extraction: 8/7/23		
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.11	Not Detected	Not Detected
Tetrachloroethene	0.10	0.13	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.10	0.12	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	0.26	0.48 C	0.62 C

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 12857 minutes. Container Type: Radiello 130 (Solvent)

	· · ·	Method
Surrogates	%Recov	ery Limits
Toluene-d8	95	70-130



Client Sample ID: IA-4-1D Lab ID#: 2308061-04A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18080714sim 1.00	Date of Collection: 7/28/23 1:35:00 PM Date of Analysis: 8/7/23 01:42 PM Date of Extraction: 8/7/23		
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.11	Not Detected	Not Detected
Tetrachloroethene	0.10	0.13	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.10	0.12	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	0.26	0.37 C	0.48 C

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 12868 minutes. Container Type: Radiello 130 (Solvent)

		Method
Surrogates	%Recov	very Limits
Toluene-d8	96	70-130



Client Sample ID: IA-4-1E Lab ID#: 2308061-05A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18080715sim 1.00	Da	Date of Collection: 7/28/23 1:22:00 PM Date of Analysis: 8/7/23 02:09 PM Date of Extraction: 8/7/23	
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.11	Not Detected	Not Detected
Tetrachloroethene	0.10	0.13	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.10	0.12	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	0.26	0.41 C	0.53 C

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 12892 minutes. Container Type: Radiello 130 (Solvent)

		Method
Surrogates	%Recov	very Limits
Toluene-d8	96	70-130



Client Sample ID: IA-4-1F Lab ID#: 2308061-06A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18080716sim 1.00	Date of Collection: 7/28/23 1:1 Date of Analysis: 8/7/23 02:37 Date of Extraction: 8/7/23		3 02:37 PM
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.11	Not Detected	Not Detected
Tetrachloroethene	0.10	0.13	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.10	0.12	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	0.26	0.44 C	0.57 C

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 12865 minutes. Container Type: Radiello 130 (Solvent)

	· · ·	Method
Surrogates	%Recov	ery Limits
Toluene-d8	95	70-130



Client Sample ID: IA-4-BS Lab ID#: 2308061-07A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18080717sim 1.00			7/23 03:04 PM	
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)	
Trichloroethene	0.10	0.11	Not Detected	Not Detected	
Tetrachloroethene	0.10	0.13	Not Detected	Not Detected	
cis-1,2-Dichloroethene	0.10	0.12	Not Detected C	Not Detected C	
trans-1,2-Dichloroethene	0.20	0.26	0.27 C	0.35 C	

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 12905 minutes. Container Type: Radiello 130 (Solvent)

		Method
Surrogates	%Recov	very Limits
Toluene-d8	96	70-130



Client Sample ID: IA-5-1A Lab ID#: 2308061-08A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18080718sim 1.00	Date of Collection: 7/28/23 Date of Analysis: 8/7/23 03 Date of Extraction: 8/7/23		03:31 PM	
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)	
Trichloroethene	0.10	0.11	Not Detected	Not Detected	
Tetrachloroethene	0.10	0.13	0.13	0.17	
cis-1,2-Dichloroethene	0.10	0.12	Not Detected C	Not Detected C	
trans-1,2-Dichloroethene	0.20	0.26	0.33 C	0.43 C	

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 12825 minutes. Container Type: Radiello 130 (Solvent)

		Method
Surrogates	%Recov	very Limits
Toluene-d8	96	70-130



Client Sample ID: IA-5-1B Lab ID#: 2308061-09A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18080719sim 1.00	Date of Collection: 7/28/23 1: Date of Analysis: 8/7/23 03:58 Date of Extraction: 8/7/23		3 03:58 PM
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.11	Not Detected	Not Detected
Tetrachloroethene	0.10	0.13	0.17	0.23
cis-1,2-Dichloroethene	0.10	0.12	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	0.26	0.50 C	0.66 C

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 12834 minutes. Container Type: Radiello 130 (Solvent)

		Method
Surrogates	%Recov	very Limits
Toluene-d8	96	70-130



Client Sample ID: OA-4/5 Lab ID#: 2308061-10A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18080720sim 1.00	Date of Collection: 7/28/23 1 Date of Analysis: 8/7/23 04:2 Date of Extraction: 8/7/23		3 04:26 PM
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.12	Not Detected	Not Detected
Tetrachloroethene	0.10	0.14	0.21	0.30
cis-1,2-Dichloroethene	0.10	0.14	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	0.29	0.33 C	0.47 C

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 11655 minutes. Container Type: Radiello 130 (Solvent)

		Method
Surrogates	%Recovery	Limits
Toluene-d8	97	70-130



Client Sample ID: IA-6-BS Lab ID#: 2308061-11A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18080721sim 1.00	Date of Collection: 7/31/23 10:00 Date of Analysis: 8/7/23 04:53 PM			
		Da	te of Extraction: 8/7/	23	
	Rpt. Limit	Rpt. Limit	Amount	Amount	
Compound	(ug)	(ug/m3) (ug)		(ug/m3)	
Trichloroethene	0.10	0.092	Not Detected	Not Detected	
Tetrachloroethene	0.10	0.11	Not Detected	Not Detected	
cis-1,2-Dichloroethene	0.10	0.10	Not Detected C	Not Detected C	
trans-1,2-Dichloroethene	0.20	0.21	0.22 C	0.23 C	

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 15814 minutes. Container Type: Radiello 130 (Solvent)

	· · ·	Method
Surrogates	%Recov	ery Limits
Toluene-d8	95	70-130



Client Sample ID: IA-8-1D Lab ID#: 2308061-12A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18080722sim 1.00	Date of Collection: 7/28/23 12:58:00 PM Date of Analysis: 8/7/23 05:20 PM Date of Extraction: 8/7/23		
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.12	Not Detected	Not Detected
Tetrachloroethene	0.10	0.14	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.10	0.14	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	0.28	0.36 C	0.51 C

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 11666 minutes. Container Type: Radiello 130 (Solvent)

Sumanataa	9/ Весенени	Method
Surrogates	%Recovery	Limits
Toluene-d8	95	70-130



Client Sample ID: Lab Blank Lab ID#: 2308061-13A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18080705sim 1.00	Date of Collection: NA Date of Analysis: 8/7/23 08:59 AM Date of Extraction: 8/7/23		
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.092	Not Detected	Not Detected
Tetrachloroethene	0.10	0.11	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.10	0.10	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	0.21	Not Detected C	Not Detected C

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 15814 minutes. Container Type: Radiello 130 (Solvent)

		Method
Surrogates	%Recovery	Limits
Toluene-d8	94	70-130



Г

Air Toxics

Client Sample ID: CCV Lab ID#: 2308061-14A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18080702sim 1.00	Date of Collec Date of Analy	ction: NA sis: 8/7/23 07:39 AM
		Date of Extrac	ction: NA
Compound		%Recovery	
Trichloroethene		106	
Tetrachloroethene		104	
cis-1,2-Dichloroethene		94	
trans-1,2-Dichloroethene		95	

Surrogates	%Recovery	Limits
Toluene-d8	107	70-130



Client Sample ID: LCS Lab ID#: 2308061-15A VOCS BY PASSIVE SAMPLER - GC/MS

Т

File Name: Dil. Factor:	18080703sim 1.00	Date of Collect Date of Analys Date of Extract	is: 8/7/23 08:06 AM
Compound		%Recovery	Method Limits
Trichloroethene		105	70-130
Tetrachloroethene		97	70-130
cis-1,2-Dichloroethene		90	70-130
trans-1,2-Dichloroethene		96	70-130
Container Type: NA - Not App	licable		
			Method
Surrogates		%Recovery	Limits
Toluene-d8		99	70-130



Client Sample ID: LCSD Lab ID#: 2308061-15AA VOCS BY PASSIVE SAMPLER - GC/MS

Т

File Name: Dil. Factor:	18080704sim 1.00	Date of Collect Date of Analys Date of Extract	is: 8/7/23 08:33 AM
Compound		%Recovery	Method Limits
Trichloroethene		107	70-130
Tetrachloroethene		97	70-130
cis-1,2-Dichloroethene		95	70-130
trans-1,2-Dichloroethene		101	70-130
Container Type: NA - Not Ap	plicable		
			Method
Surrogates		%Recovery	Limits
Toluene-d8		98	70-130

Project # 40443A



July 10, 2023

Ms. Jennifer Dorman Remediation and Redevelopment Program Wisconsin Department of Natural Resources 1027 West St. Paul Ave. Milwaukee, WI 53233

Subject: Fifth Round of Commissioning for Community Within the Corridor – West Block – Buildings 6, 7, 8A, and 8B 3212 W. Center St., 2727 N. 32nd St., and 2758 N. 33rd St., Milwaukee, WI 53210 BRRTS #: 02-41-587376, FID #: 341333190

Dear Ms. Dorman:

On behalf of the Community Within the Corridor Limited Partnership, K. Singh & Associates, Inc. (KSingh) is pleased to submit the results of the fifth round of Commissioning of the Vapor Mitigation System for Buildings 6, 7, 8A, and 8B for the Community Within the Corridor – West Block project. Commissioning was performed in accordance with the Commissioning Plan that was approved by WDNR on May 30th, 2023, with the exception that Commissioning was not performed in conjunction with Buildings 4 and 5.

Sub-slab Depressurization System Vacuum Measurements

The sub-slab depressurization system installed for Buildings 6, 7, 8A and 8B was tested on June 5-7, 2023. The locations of the relevant buildings in relation to the project area are shown in Figure 1. A handheld hammer drill was used to install vapor pins beneath the slab of the structure. A digital manometer was utilized to take measurements of vacuum below the slab after the vapor points passed a water dam test. Seventeen locations were chosen to take measurements to get an accurate model of sub-slab depressurization beneath the structure.

In accordance with a vapor mitigation system commissioning plan submitted by KSingh on April 17, 2023, a reading of -0.004 inches water was utilized to determine whether the system was adequately operating. Recorded measurements ranged from 0 to -0.209 inches of water, all except 3 were above the minimum measurement. The three locations where no vacuum was observed were SVP-2, SVP-10A, and SVP-11 which are located in the Hallway of Building 8A within a few feet of outer walls, in the Mail Room of Building 8A, and in the package vestibule of Building 8A within 10 feet of outer walls.

The locations and results of June 2023 sub-slab depressurization measurements are depicted in Figure 1 and summarized in Table 1. The greatest vacuum measurements are observed in the vicinity of the highest exceedances of vapor risk screening levels (VRSLs).

To address the issue of the lack of sub-slab depressurization in the Mail Room of Building 8A, an additional vapor extraction point was installed in the elevator lobby of Building 8A and connected to an Obar HA 89 Fan on the roof of Building 8A. This fan became operational on June 29, 2023, and resulted in vacuum in the adjoining areas which is demonstrated in Table 1. The additional fan induced a differential pressure of -0.019 inches of water in the Mail Room of building 8A indicating that adequate

depressurization had been achieved. The package vestibule point SVP-11 and the hallway point SVP-2 were not affected by the additional vapor extraction point, but the lack of depressurization is believed to be related to their location in relation to outer walls and no impact on indoor air quality was observed.

The vapor pins were removed post-measurement and the holes patched with concrete to avoid potential tampering by residents. Photographs of the vapor pins installation, measurement, and abandonment are included in Attachment A.

Discrete Indoor Air Sampling with Portable GC

A total of 45 individual discrete samples of indoor air were collected using a glass syringe from individual units and common areas and analyzed using a Portable Gas Chromatograph (GC). All the samples reported a reading of under 2.1 ug/m³. The highest concentration of TCE (1.8 ug/m³) was recorded in the Stairwell of Building 6 while 36 of the 45 samples had a reading of less than 1 ug/m³. The Elevator lobby in Building 8A had a false positive reading of 5.3 ug/m³ which resulted in taking multiple reading at several time points leading to values well below the VAL of 2.1 ug/m³. The results of the Discrete air samples are provided in Table 2.

Based on the false positive Discrete Air Sample collected at the 1st Floor Elevator Lobby of Building 8A, a passive sampler, IA-8A-EL, was added to the Commissioning Passive Air Sampling Program as an added measure. The Passive Air Sample IA-8A-EL demonstrated that TCE in the 1st Floor Elevator Lobby of Building 8A was in compliance with indoor air standards. The QA/QC protocol provided by Hartman Environmental Geosciences and the result of the calibration are included in Attachment D.

Passive Indoor Air Sampling

Following documentation of sub-slab depressurization, passive air sampling was performed in accordance with the approved Commissioning Plan. A total of 16 passive air samplers were set up and sampled over a 1-week period from June 6, 2023, until June 16, 2023. On special instructions from the WDNR, an additional passive sampler was added to Unit 109 (IA-8A-01B). Please note the exception that a sampler couldn't be set up in Unit 107 due to non-compliance with the existing tenant. The passive samplers were placed in compliance with the directions from WDNR:

i. Samplers were placed at a minimum of 6 inches from the walls.

ii. Samplers were placed in areas of adequate air flow.

iii. Samplers were placed near the breathing zone, three to five feet above the ground, ensuring that they were not disturbed.

iv. The locations of the passive air samplers are included in Figure 2A through Figure 2H. The photographs of the location of selective samples are included in Attachment A.

On June 17, 2023, the passive air samplers were submitted to Eurofins Air Toxics, LLC Folsom, CA for analysis for chlorinated solvents including Trichloroethylene (TCE), Tetrachloroethylene (PCE), cis-1,2-Dichloroethylene (cis-DCE), and trans-1,2-Dichloroethylene (trans-DCE). The results are included in Attachment C and summarized in Table 3.

The maximum concentration of TCE detected in indoor air was 0.26 ug/m³. The maximum concentration of PCE detected was 0.53 ug/m³. Based on these results, no air samples were in exceedance of the Residential Indoor Air Vapor Action Levels (VALs) based on the February 2022 Quick Look-Up Table from WDNR.



Exhaust Sampling

Seven fans were installed on the roof of buildings 6, 7, 8A, and 8B as part of the vapor mitigation system. As part of the exhaust sampling, air samples were collected in glass syringes to be analyzed using the portable GC on June 21, 2023.

PCE and TCE concentrations in all exhaust samples are less than the Residential Indoor Air VAL except for EP2 which is in the center of Building 8A. Based on the concentrations of PCE and TCE in the exhaust, some mass reduction is taking place in the sub-slab. The concentrations and trend of PCE and TCE concentrations in the exhaust samples are shown in Figure 3 in Attachment B and demonstrate a declining trend. The amount of TCE exhausted from the exhaust fans can be seen in Table 4. The total TCE exhaust was about 2 lbs/yr.

The results of the June 2023 exhaust fan air quality sampling are summarized in Table 3 and 4 (Attachment B) and the locations of sampled fans are included in Figure 1. Based on the Recommendations by the WDNR, the details of GC Sampling and QA/QC Calibration are attached in Attachment D.

Remedial Actions Taken

On June 6, 2023, at around 5 PM exceedances of the VAL of 2.1 ug/m³ for TCE were observed in the Elevator Lobby with a reading of 5.4 ug/m³, but in subsequent readings, it was observed to be under the VAL. In order to ensure that the value remains under the VAL, a new Obar HA 89 Exhaust Fan was installed on the roof of Building 8A next to the Elevator shaft (Figure 4). This fan became operational on June 29, 2023, and resulted in vacuum in the adjoining areas which is demonstrated in Table 1.

Conclusions and Recommendations

The following conclusions were reached based on the sampling.

- Based on the results of sub-slab vacuum measurements, the vapor mitigation system installed on the subject site, and modified with an additional vapor extraction point, adequately creates vacuum beneath the building slab for buildings 6, 7, 8A, and 8B except in locations close to outer walls.
- Discrete air samples suggest that all the units and the common areas are in compliance with the VALs of 2.1 ug/m³.
- Passive indoor air results demonstrate that TCE met their VALs of 2.1 ug/m³ at all sample locations.
- Fan emissions sampling indicates that PCE and TCE are still present in the sub-slab and that mass reduction is taking place with a declining trend in exhaust concentrations noted.
- Based on the results from the five rounds of commissioning, the sub slab depressurization system is operating as intended.
- No exceedances of VALs have been shown to be present in the last three rounds of commissioning performed from December 2022 to June 2023 covering seasonal variations.



Please contact us if you have any questions or seek clarification regarding this information.

Sincerely, K. SINGH & ASSOCIATES, INC.

Lower

Sameer Neve, Ph.D. ENV SP Staff Environmental Engineer

Robert I Reineke

Robert T. Reineke, PE Senior Engineer

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Pratap N. Singh, Ph.D., PE Principal Engineer

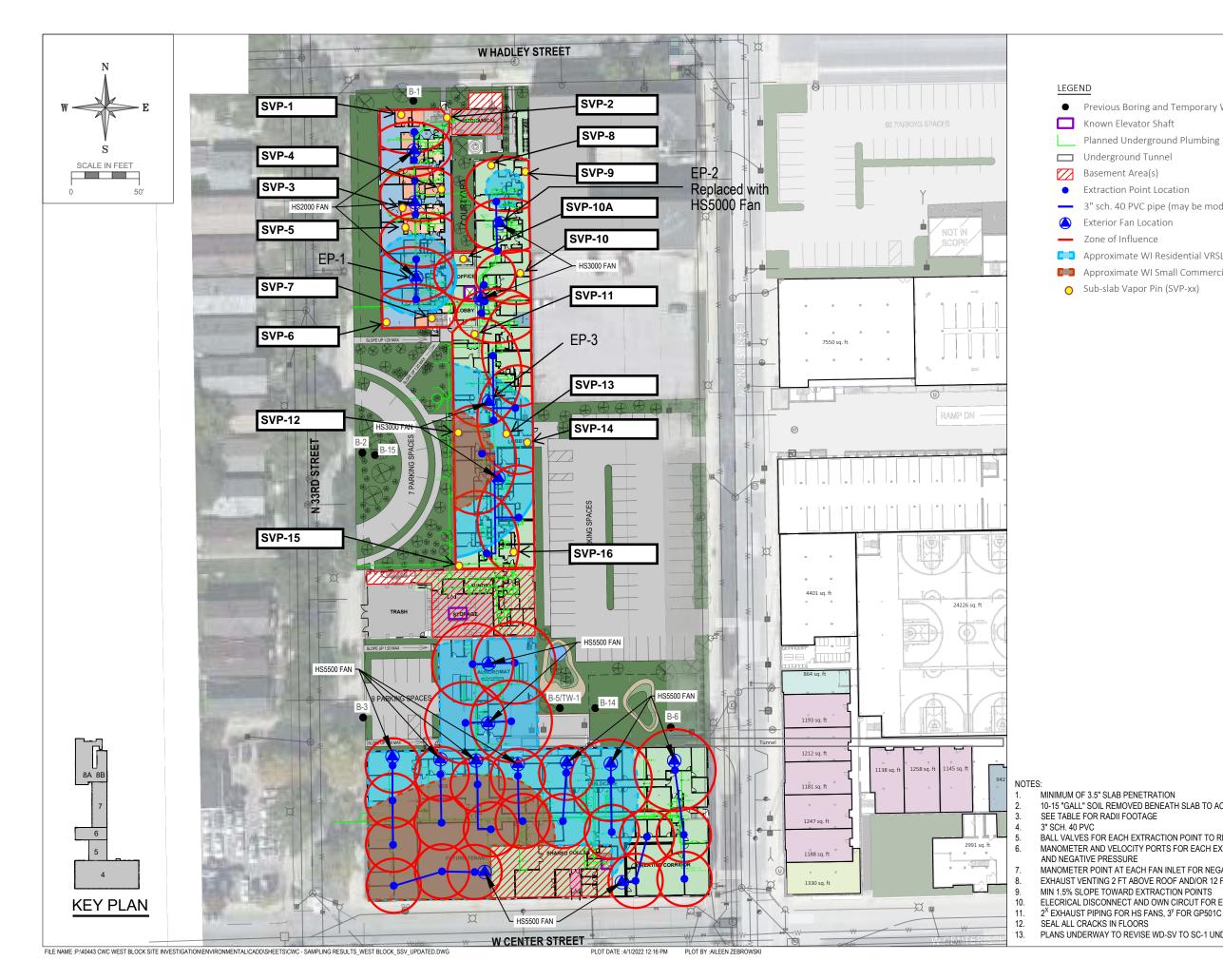
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Attachments:	
Figure 1	Sub-slab Depressurization Locations
Figure 2A - Figure 2H	Indoor Air Sampling Locations
Figure 3	Exhaust Fan Trends
Figure 4	Additional Extraction Point
Table 1	Vacuum Measurement Results
Table 2	Summary of Portable GC Results
Table 3	Passive Air Sampling Results for
Table 4	Commissioning Exhaust Fan Sampling Results
Attachment A	Photographs of Commissioning in June 2023
Attachment B	Exhaust Fan Trends
Attachment C	Passive Air Sampling Test Results
Attachment D	QA-QC Protocol for Portable GC



FIGURES





• Previous Boring and Temporary Well Locations

- Planned Underground Plumbing
- 3" sch. 40 PVC pipe (may be modified)
- Approximate WI Residential VRSL Exceedance Extents
- Approximate WI Small Commercial VRSL Exceedance Extents

10-15 "GALL" SOIL REMOVED BENEATH SLAB TO ACT AS SUCTION PIT

BALL VALVES FOR EACH EXTRACTION POINT TO REGULATE FLOW MANOMETER AND VELOCITY PORTS FOR EACH EXTRACTION POINT TO MEASURE FLOW

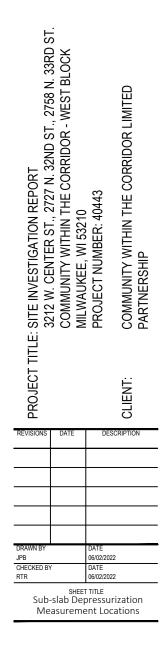
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3636 North 124th Street Wauwatosa, WI 53222 262-821-1171

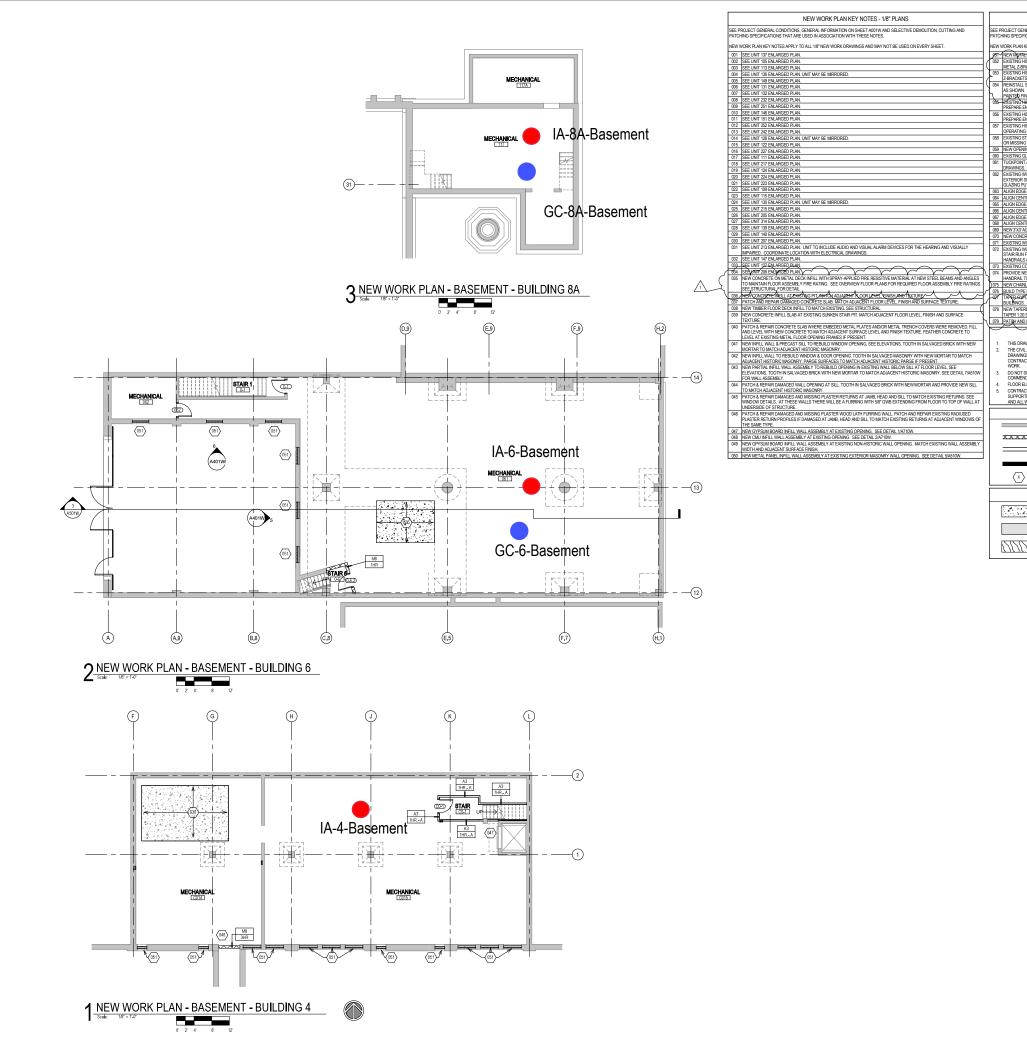
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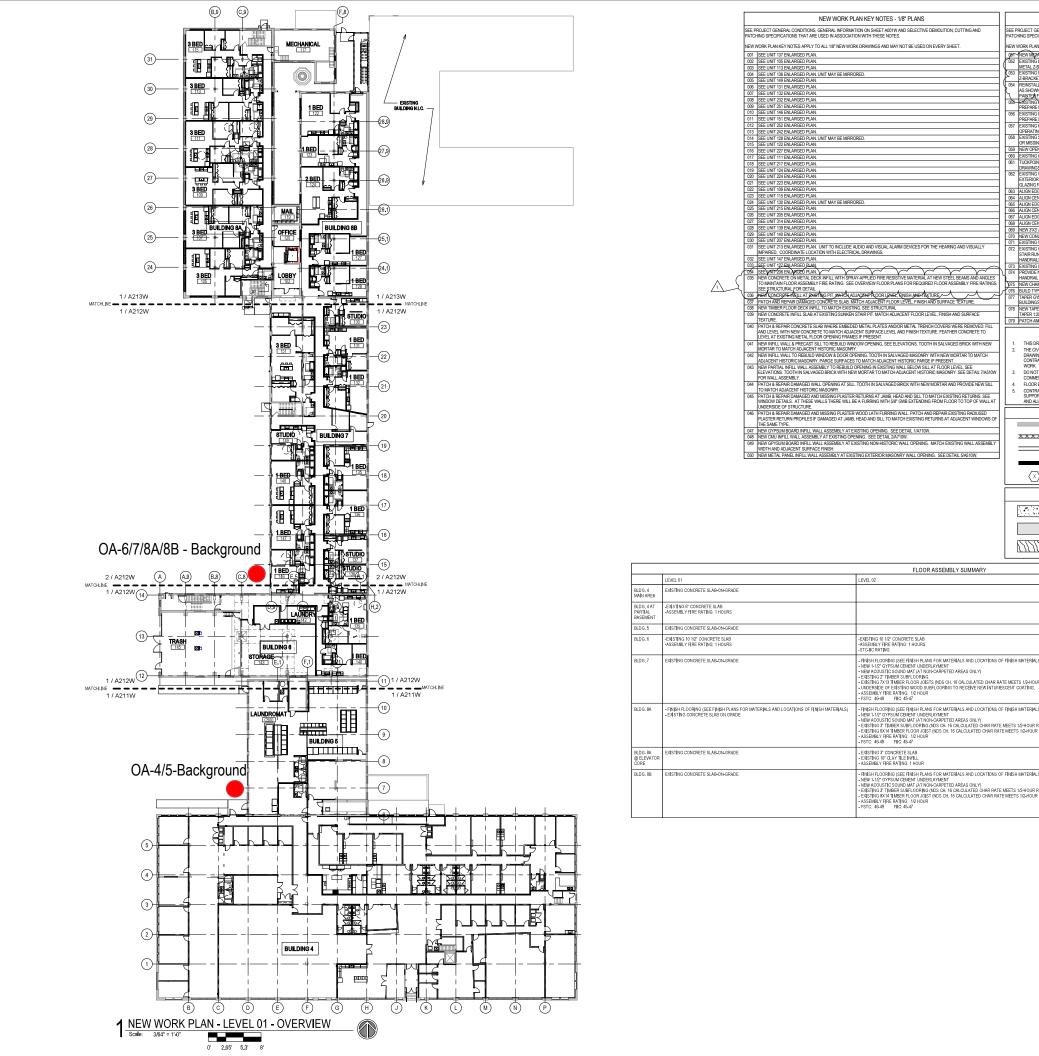




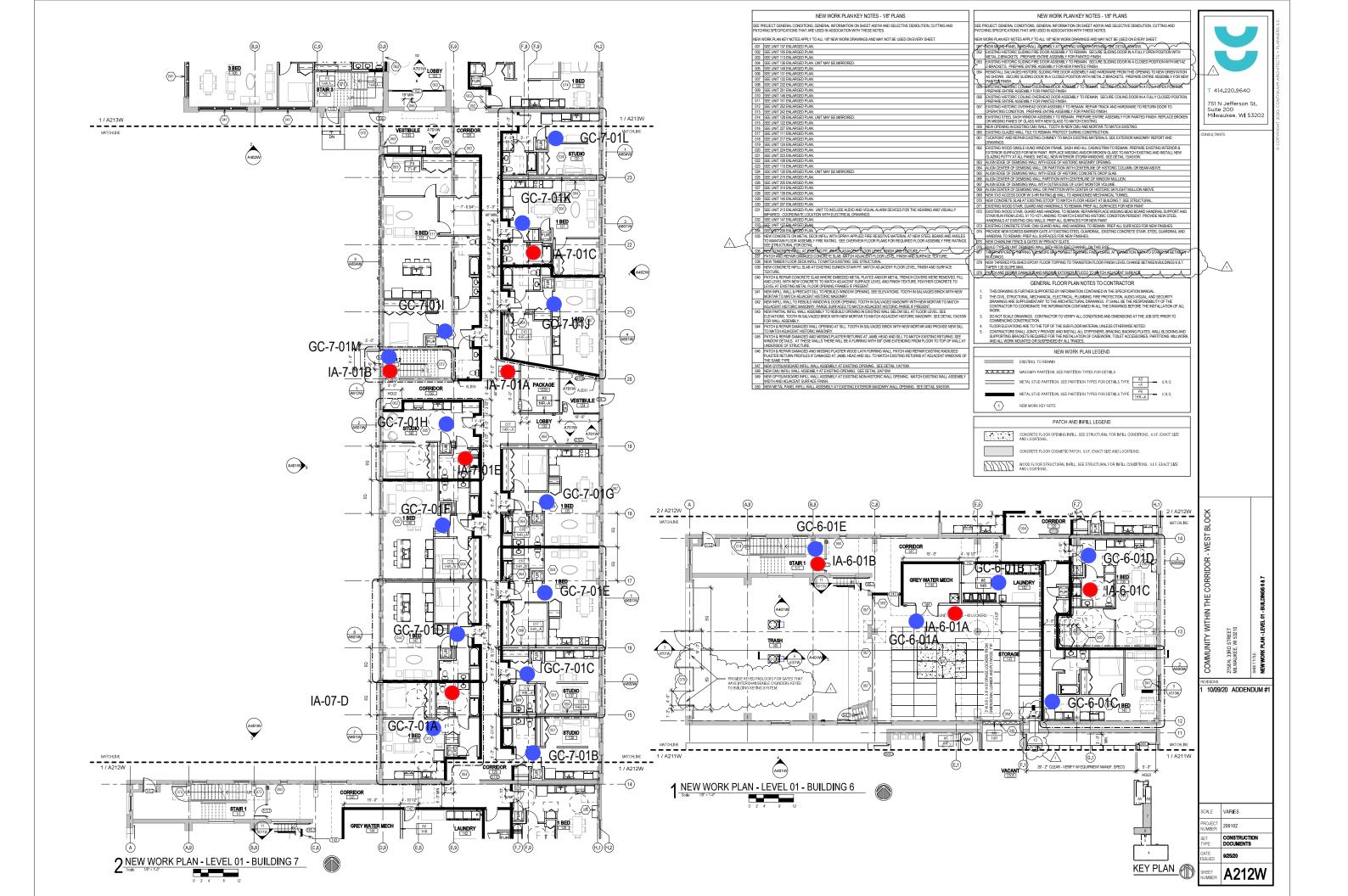
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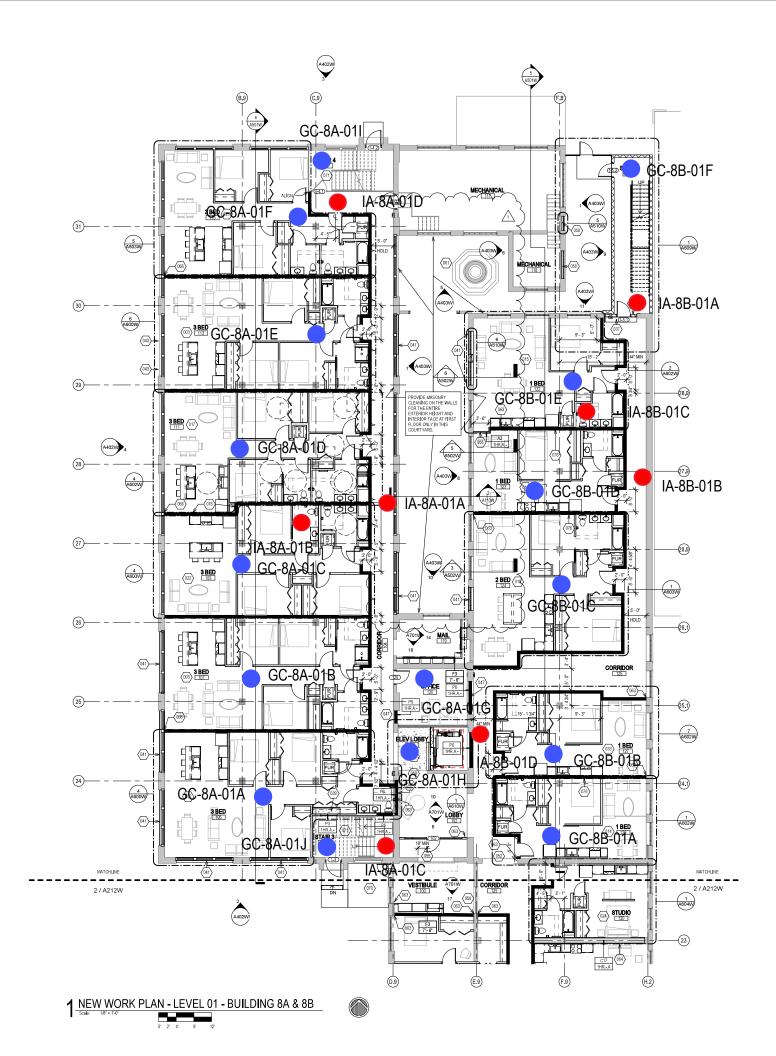


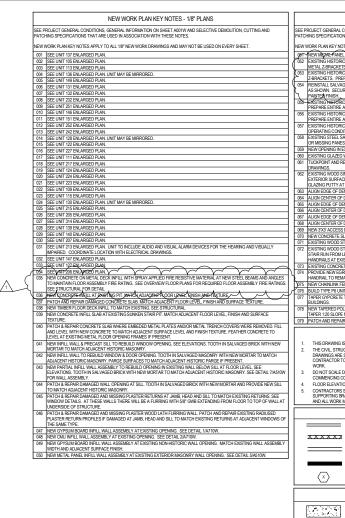
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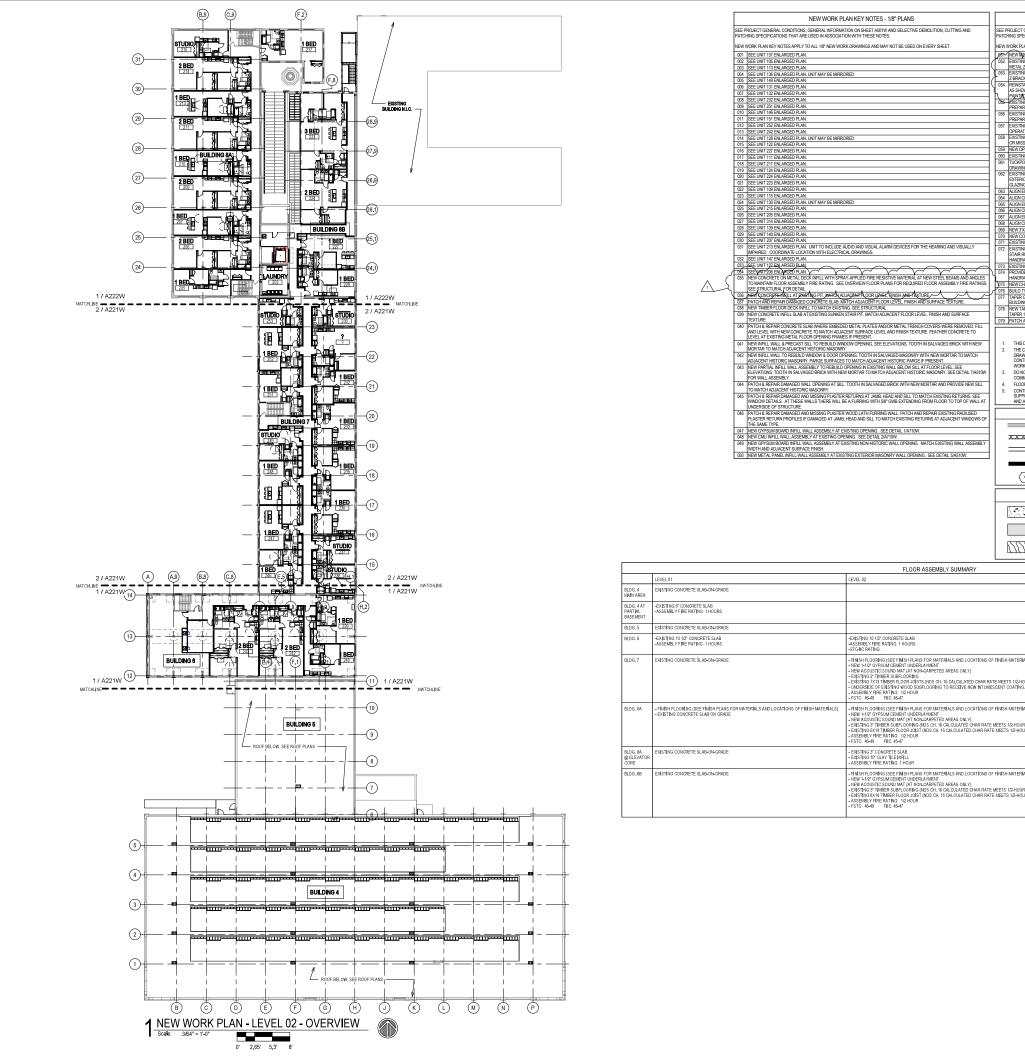
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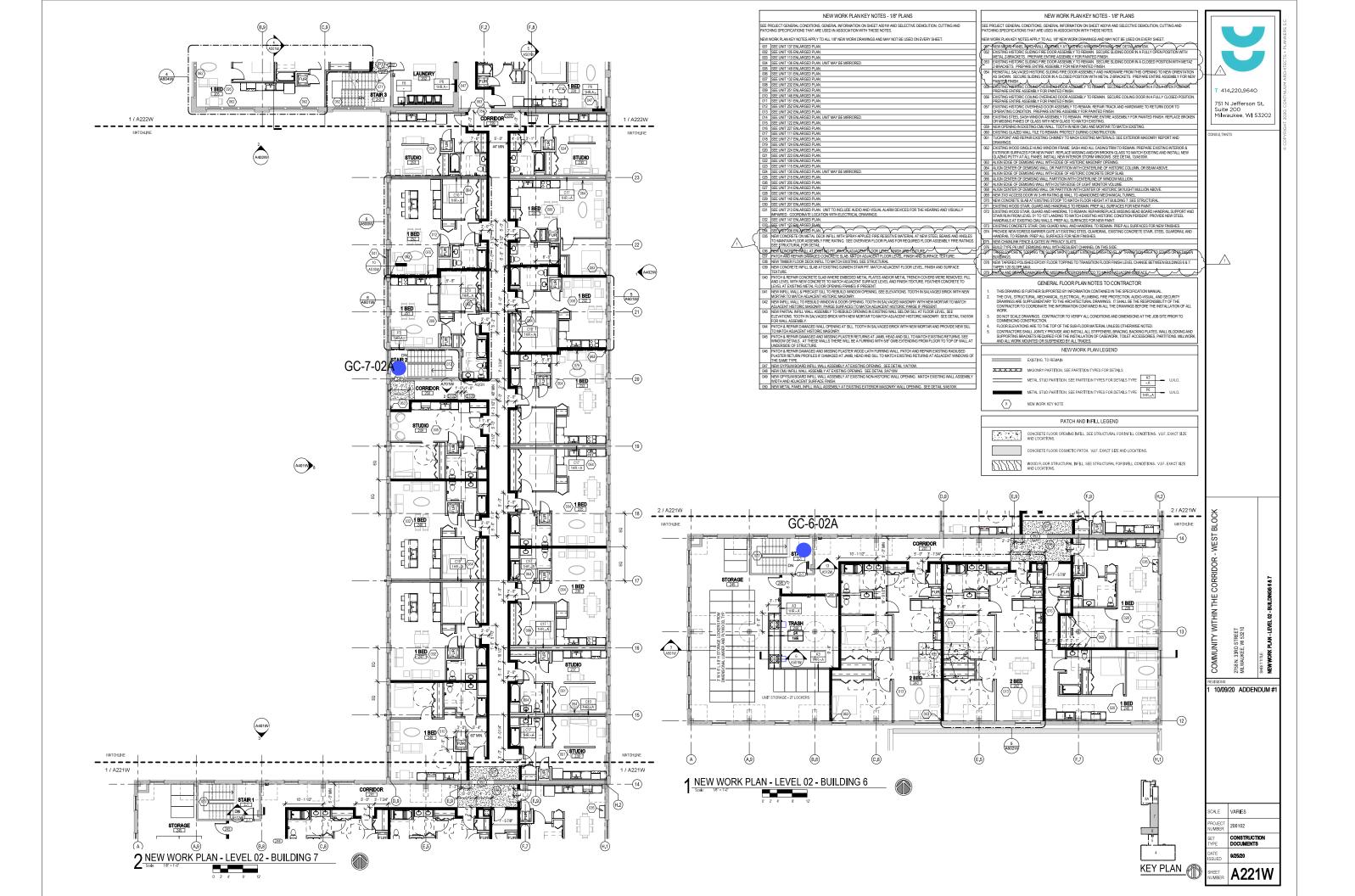


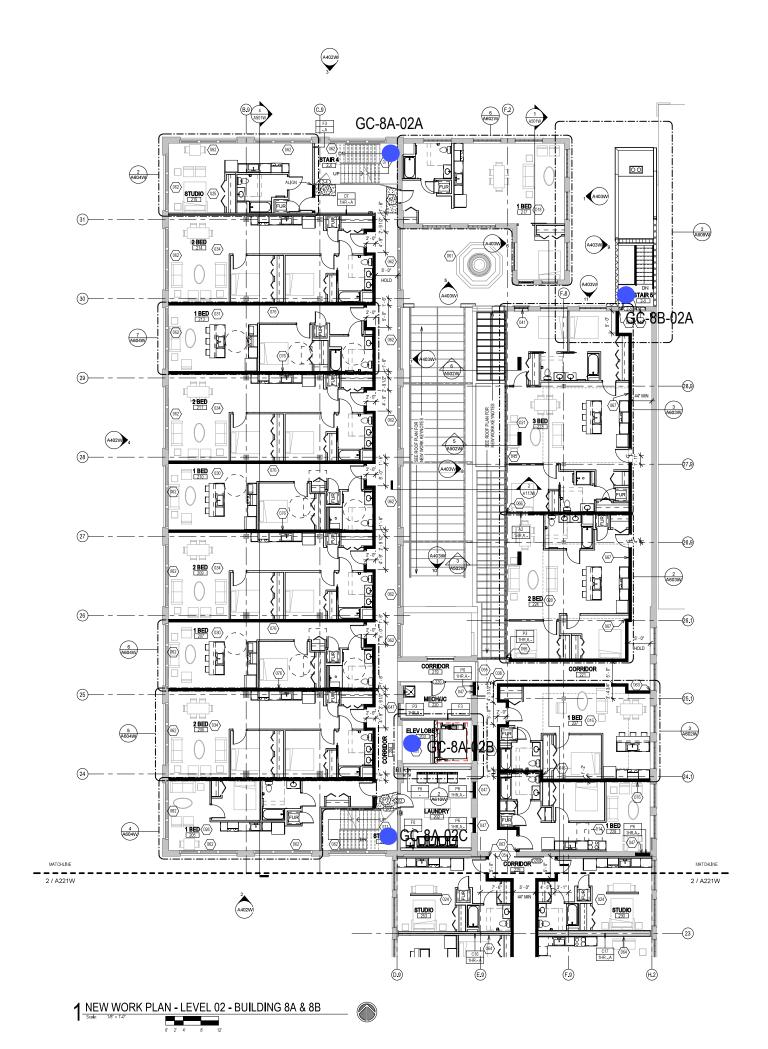
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2 E	EXISTING HISTORIC METAL Z-BRACKETS	SLIDING FIRE DOOR ASSEMBLY TO REMAIN. SECURE SLIDING DOOR I PREPARE ENTIRE ASSEMBLY FOR PAINTED FINISH.	N A FULLY OPEN POSITION WITH	R				TS + F
3 E	EXISTING HISTORIC Z-BRACKETS. PREF	SLIDING FIRE DOOR ASSEMBLY TO REMAIN. SECURE SLIDING DOOR I ARE ENTIRE ASSEMBLY FOR NEW PAINTED FINISH.		K				HITEC'
A		ED HISTORIC SLIDING FIRE DOOR ASSEMBLY AND HARDWARE FROM T E SLIDING DOOR IN A CLOSED POSITION WITH METAL Z-BRACKETS. PI A A A A A A A A		μł	+ <u>/</u> 1\			COPYRIGHT 2020, CONTINUUM ARCHITECTS + PLANNERS
5-1	EXISTING HISTORIC PREPARE ENTIRE A	CONNER OVERHEAD BOOR ASSEMELY TO REMAIN. SECORE COLLING SSEMBLY FOR PAINTED FINISH.			T 41	4.220.964	10	MUUM
6 E F	EXISTING HISTORIC PREPARE ENTIRE A	COILING OVERHEAD DOOR ASSEMBLY TO REMAIN. SECURE COILING SSEMBLY FOR PAINTED FINISH.				۰.220.00		ONTIN
7 E	EXISTING HISTORIC OPERATING CONDI	OVERHEAD DOOR ASSEMBLY TO REMAIN. REPAIR TRACK AND HARDV TION. PREPARE ENTIRE ASSEMBLY FOR PAINTED FINISH.			Suite	a Jefferso 200 aukee, W		20, C(
0	OR MISSING PANES	SH WINDOW ASSEMBLY TO REMAIN. PREPARE ENTIRE ASSEMBLY FOR OF GLASS WITH NEW GLASS TO MATCH EXISTING. KISTING CMU WALL TOOTH IN NEW CMU AND MORTAR TO MATCH EXIS				GUNCE, W	33202	HT 20
D E 1 1	EXISTING GLAZED V TUCKPOINT AND RE	NALL TILE TO REMAIN. PROTECT DURING CONSTRUCTION. VALL TILE TO REMAIN. PROTECT DURING CONSTRUCTION. PAIR EXISTING CHIMNEY TO MACH EXISTING MATERIALS. SEE EXTERI			CONSULTAI	VTS:		PYRIG
2 E	DRAWINGS. EXISTING WOOD SI	IGLE HUNG WINDOW FRAME, SASH AND ALL CASING/TRIM TO REMAIN.	PREPARE EXISTING INTERIOR &					© COF
E	EXTERIOR SURFACI GLAZING PUTTY AT	ES FOR NEW PAINT. REPLACE MISSING AND/OR BROKEN GLASS TO MA ALL PANES. INSTALL NEW INTERIOR STORM WINDOWS. SEE DETAIL 13	TCH EXISTING AND INSTALL NEW					1
4 <i>A</i>	ALIGN CENTER OF D	VISING WALL WITH EDGE OF HISTORIC MASONRY OPENING. DEMISING WALL OR PARTITION WITH CENTERLINE OF HISTORIC COLUN VISING WALL WITH EDGE OF HISTORIC CONCRETE DROP SLAB.	IN, OR BEAM ABOVE.					1
6 A	ALIGN CENTER OF D	MISING WALL WITH EDGE OF HISTORIC CONCRETE DROP SLAB. DEMISING WALL PARTITION WITH CENTERLINE OF WINDOW MULLION. MISING WALL WITH OUTER EDGE OF LIGHT MONITOR VOLUME.						1
8 A	ALIGN CENTER OF D	MISING WALL WITH OUTER EDGE OF LIGHT MONITOR VOLUME. DEMISING WALL OR PARTITION WITH CENTER OF HISTORIC SKYLIGHT I DOOR W/3-HR RATING @ WALL TO ABANDONED MECHANICAL TUNNEL	/ULLION ABOVE.					1
1 0	NEW CONCRETE SL	JOOR WI SHR RATING (2) WALL TO ABADDONED MECHANICAL TOWNEL AB AT EXISTING STOOP TO MATCH FLOOR HEIGHT AT BUILDING 7. SEE AIR, GUARD AND HANDRAILS TO REMAIN. PREP ALL SURFACES FOR NI	STRUCTURAL.					1
2 8	EXISTING WOOD ST STAIR RUN FROM LE	AIR, GUARD AND HANDRAIL TO REMAIN. REPAIR/REPLACE MISSING BE EVEL 01 TO 1ST LANDING TO MATCH EXISITNG HISTORIC CONDITION PI	AD BOARD HANDRAIL SUPPORT AND					1
1 3 E	HANDRAILS AT EXIS EXISTING CONCRET	ITNG CMU WALLS. PREP ALL SURFACES FOR NEW PAINT. TE STAIR, CMU GUARD WALL AND HANDRAIL TO REMAIN. PREP ALL SUF	FACES FOR NEW FINISHES.					1
4 F	PROVIDE NEW EGRI HANDRAIL TO REMA	ESS BARRIER GATE AT EXISTING STEEL GUARDRAIL. EXISTING CONCR IN. PREP ALL SURFACES FOR NEW FINISHES.	ETE STAIR, STEEL GUARDRAIL AND					1
5 E	BUILD TYPE P6 UNIT	NCE & GATES W/ PRIVACY SLATS. DEMISING WALL WITH RESILIENT CHANNEL ON THIS SIDE. CODINIC 1/20 SI ODE MAY TO MEET EVISTING EINISULEVEL AT TRANSI						1
E	BUILDINGS.	FOPPING 1:20 SLOPE MAX TO MEET EXISTING FINISH LEVEL AT TRANSF ISHED EPOXY FLOOR TOPPING TO TRANSITION FLOOR FINISH LEVEL C						1
1	TAPER 1:20 SLOPE I	ISHED EPOXY FLUOR TOPPING TO TRANSITION FLOOR FINISH LEVEL C MAX. I DAMAGED AND MISSING EXTERIOR STUCCO TO MATCH ADJACENT SL						1
-1'		GENERAL FLOOR PLAN NOTES TO CONTRACT		i I				1
1.		FURTHER SUPPORTED BY INFORMATION CONTAINED IN THE SPECIFIC TURAL, MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, AU	ATION MANUAL.					1
-	DRAWINGS ARE S CONTRACTOR TO	TURAL, MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, AU SUPPLEMENTARY TO THE ARCHITECTURAL DRAWINGS. IT SHALL BE TI O COORDINATE THE INFORMATION CONTAINED IN ALL THE DRAWINGS I	HE RESPONSIBILITY OF THE BEFORE THE INSTALLATION OF ALL					1
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l.	COMMENCING CO FLOOR ELEVATIO	INSTRUCTION. NS ARE TO THE TOP OF THE SUB-FLOOR MATERIAL UNLESS OTHERWI	SE NOTED.					1
).	SUPPORTING BR	HALL JOINTLY PROVIDE AND INSTALL ALL STIFFENERS, BRACING, BAC ACKETS REQUIRED FOR THE INSTALLATION OF CASEWORK, TOILET AC IOUNTED OR SUSPENDED BY ALL TRADES.	KING PLATES, WALL BLOCKING AND CESSORIES, PARTITIONS. MILLWORK,					1
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5		METAL STUD PARTITION, SEE PARTITION TYPES FOR DETAILS TYPE	A3 U.N.O.					1
		METAL STUD PARTITION, SEE PARTITION TYPES FOR DETAILS TYPE	D6					1
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					OMMUNITY WITHIN THE CORRIDOR -	58 N. 33RD STREET LWAUKEE, WI 53210	EET TITLE: 3W WORK PLAN - LEVEL 01 - BUILDING 8A & 8B	
					COMMUNITY WITHIN THE CORRIDOR - WEST BL	2758 N. 33RD STREET MILWAUKEE, WI 53210	SHEET TITLE: New Work Plan - Level of - Building 8A & 8B	
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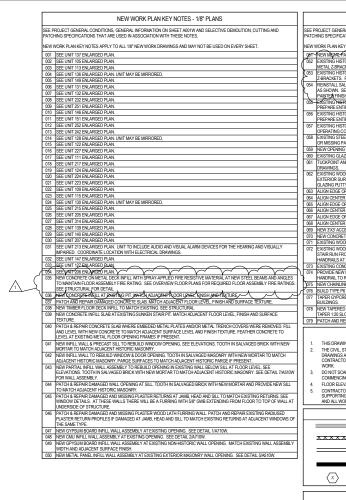


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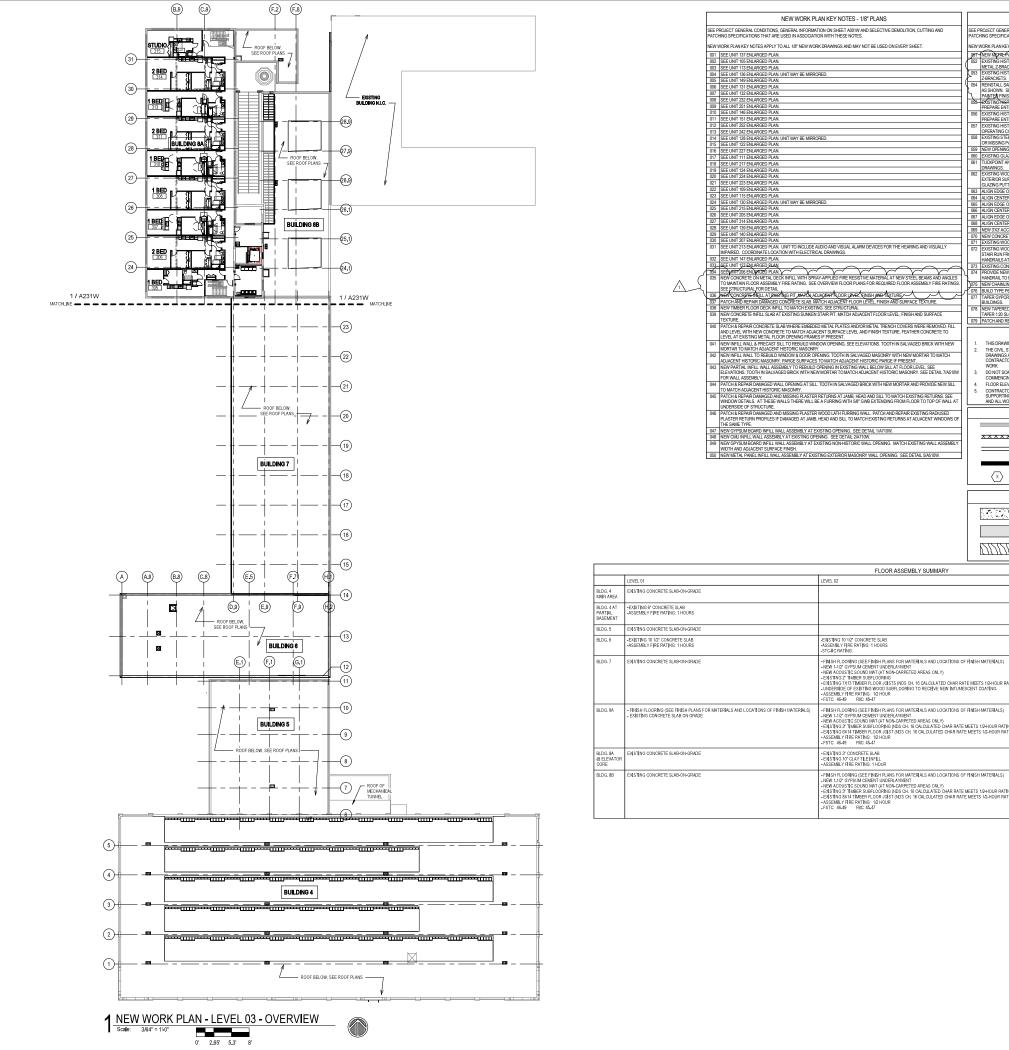
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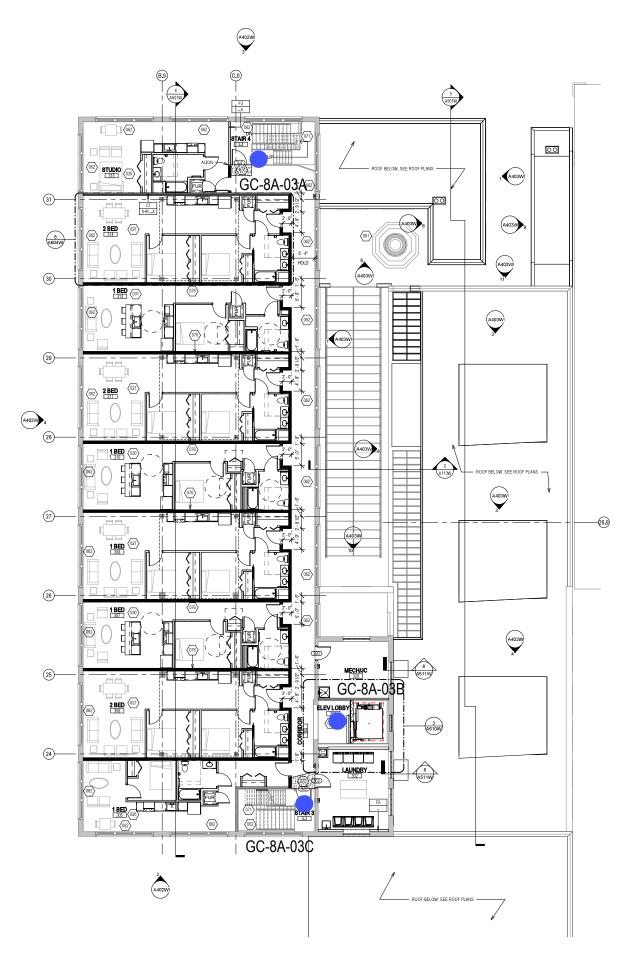


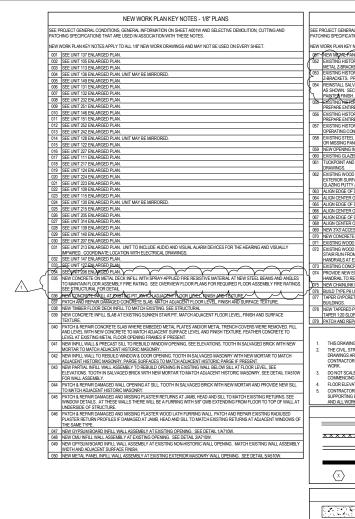


	NEW WORK PLAN KEY NOTES - 1/8" PLANS					
	RCJECT GENERAL CONDITIONS, GENERAL INFORMATION ON SHEET A001W AND SELECTIVE DEMOLITION, CUTTING AND ING SPECIFICATIONS THAT ARE USED IN ASSOCIATION WITH THESE NOTES.					RS S.O
	NORK PLAN KEY NOTES APPLY TO ALL 1/8" NEW WORK DRAWINGS AND MAY NOT BE USED ON EVERY SHEET.					ANNE
12	KIEW MAZAE PANEL INPELVIALI. ASBEMIELY AT EXISTING WINDOW OPENING SEE DETAL ARAFOW. EXISTING HISTORICS LIDING FIRE DOOR ASSEMIELY TO REMAIN. SECURE SLIDING DOOR IN A FULLY OPEN POSITION WITH MICTLA. 28RAACKETS. REPARKE EMITE ASSEMIELY FOR PAINTED FINISH.	h				CONTINUUM ARCHITECTS + PLANNERS
3	INCIDE ENVIRONMENT IN THE PARE LINITIE ASSEMBLY TO REMAIN. SECURE SLIDING DOOR IN A CLOSED POSITION WITH METAZ ZBRACKETS. PREPARE ENTIRE ASSEMBLY FOR NEW PAINTED FINISH.	K				ITECT
4	REINSTALL SALVAGED HISTORIC SLIDING FIRE DOOR ASSEMILY AND HARDWARE FROM THIS OPENING TO NEW ORIENTATION AS SHOWN. SECURE SLIDING DOOR N A CLOSED POSITION WITH METAL Z-BRACKETS. PREPARE ENTIRE ASSEMBLY FOR NEW PANTERFINISH. 人 人 人 人 人 人 人	Þ	1			ARCH
	EXISTING HIGFORIC CONTING OVER HEAD BOOR ASSEMBLY TO REMARK. SECORE COLLING DOOR IN A FULLY OPEN POSITION. PREPARE ENTIRE ASSEMBLY FOR PAINTED FINISH.		T 4	14.220.964	с	MUUM
6	EXISTING HISTORIC COLINIC OVERHEAD DOOR ASSEMELY TO REMAIN. SECURE COLING DOOR IN A FULLY CLOSED POSITION. PREPARE ENTIRE ASSEMBLY FOR PAINTED FINISH. EXISTING HISTORIC OVERHEAD DOOR ASSEMELY TO REMAIN. REPAIR TRACK AND HARDWARE TO RETURN DOOR TO		751	N Jeffersor	st.	ENOS
17	OPERATING CONDITION. PREPARE ENTIRE ASSEMBLY FOR PAINTED FINISH. EXISTING STEEL SASH WINDOW ASSEMBLY TO REMAIN. PREPARE ENTIRE ASSEMBLY FOR PAINTED FINISH. REPLACE BROKEN			e 200 vaukee, W	53202	2020, (
i9 i0	OR MISSING PARES OF GLASS WITH NEW GLASS TO MATCH EXISTING. NEW OPENING IN EXISTING CMU WALL TOOTH IN NEW CMU AND MORTAR TO MATCH EXISTING. EXISTING GLAZE VMUL. THE TO REMAIN PROTECT DURING CONSTRUCTION.					COPYRIGHT 2020.
1	TUCKPOINT AND REPAIR EXISTING CHIMNEY TO MACH EXISTING MATERIALS. SEE EXTERIOR MASONRY REPORT AND DRAWINGS.		CONSULTA	NTS:		COPYF
2	EXISTING WOOD SINGLE HUNG WINDOW FRAME, SASH AND ALL CASINGTIMI TO REMAIN, PREPARE EXISTING INTERIOR & EXTERIOR SURFACES FOR NEW PAINT. REPLACE MISSING AND/OR BROKEN GLASS TO MATCH EXISTING AND INSTALL NEW GLAZING FUTTY AT ALL PANES. INSTALL NEW INTERIOR STORM WINDOWS, SEE DEFAIL 13/AS10W.					ē
i3 i4	ALIGN EDGE OF DEMISING WALL WITH EDGE OF HISTORIC MASONRY OPENING. ALIGN CENTER OF DEMISING WALL OR PARTITION WITH CENTERLINE OF HISTORIC COLUMN, OR BEAM ABOVE.					
	ALIGN EDGE OF DEMISING WALL WITH EDGE OF HISTORIC CONCRETE DROP SLAB. ALIGN EENTER OF DEMISING WALL PARTITION WITH CENTERLINE OF WINDOW MULLION.					
7 8 9	ALIGN EDEC OF DEMISING WALL WITH OUTEREDGE OF LIGHT MONITOR VOLUME. ALIGN CENTER OF DEMISING WALL OR PARTITION WITH CENTER OF HISTORIC SKYLIGHT MULLION ABOVE. INEN 3XX ACCESS DOOR W 34TR RATING @ WALL TO ABANDONED MECHANICAL TUNKEL					
'0 '1	NEW CONCRETE SLAB AT EXISTING STOOP TO MATCH FLOOR HEIGHT AT BUILDING 7. SEE STRUCTURAL. EXISTING WOOD STAIR, GUARD AND HANDRAILS TO REMAIN. PREP ALL SURFACES FOR NEW PAINT.					
2	EXISTING WOOD STAIR, GUARD AND HANDRAIL TO REMAIN. REPAIRREPLACE MISSING BEAD BOARD HANDRAIL SUPPORT AND STAIR RUN FROM LEVEL OI TO IST LANDING TO MATCH EXISITING HISTORIC CONDITION PERSENT. PROVIDE NEW STEEL HANDRAILS AT EXISTING GNU WALLS, PREP ALL SURFACES FOR NEW PAINT.					
'3 '4	EXISTING CONCRETE STAIR, CMU GUARD WALL AND HANDRAIL TO REMAIN. PREP ALL SURFACES FOR NEW FINISHES. PROVIDE NEW EGRESS BARRIER GATE AT EXISTING STEEL GUARDRAIL. EXISTING CONCRETE STAIR, STEEL GUARDRAIL AND					
'5 '6	HANDRALTO REMAIN. PREP ALL SURFACES FOR NEW FINISHES. NEW CHANLINK FENCE & GATES WI PRIVACY SLATS. BUILD TYPE FOR UNT DEWISING VALU. WITH RESILIENT CHANNEL ON THIS SIDE.					
7	TAPER GYPCRETE TOPPING 1:20 SLOPE MAX TO MEET EXISTING FINISH LEVEL AT TRANSITION AREA TO STAIRS OR BETWEEN BUILDINGS.					
'8 '9	NEW TAPERED POLISHED EPOXY FLOOR TOPPING TO TRANSITION FLOOR FINISH LEVEL CHANGE BETWEEN BULDINGS 6 & 7. TAPER 120 SLOPE MAX. PATCH AND REPAIR DAMAGED AND MISSING EXTERIOR STUCCO TO MATCH ADJACENT SURFACE.					
5	GENERAL FLOOR PLAN NOTES TO CONTRACTOR					
1. 2.	THIS DRAWING IS FURTHER SUPPORTED BY INFORMATION CONTAINED IN THE SPECIFICATION MANUAL. THE CIVIL, STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, AUDIO-VISUAL, AND SECURITY					
-	DRAWINGS ARE SUPPLEMENTARY TO THE ARCHITECTURAL DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE INFORMATION CONTAINED IN ALL THE DRAWINGS BEFORE THE INSTALLATION OF ALL					
3.	WORK. DO NOT SCALE DRAWINGS. CONTRACTOR TO VERIFY ALL CONDITIONS AND DIMENSIONS AT THE JOB SITE PRIOR TO COMMENCING CONSTRUCTION.					
4. 5.	FLOOR ELEVATIONS ARE TO THE TOP OF THE SUB-FLOOR MATERIAL UNLESS OTHERWISE NOTED. CONTRACTORS SHALL JOINTLY PROVIDE AND INSTALL ALL STIFFENERS, BRACKINS, BACING FLATES, WALL BLOCKING AND SUPPORTING BRACKETS REQUIRED FOR THE INSTALLATION OF CASHOVICK, TOLET ACCESSORIES, PARTITIONS. MILLWORK,					
	AND ALL WORK MOUNTED OR SUSPENDED BY ALL TRADES.					
	NEW WORK PLAN LEGEND					
	AMASONRY PARTITION, SEE PARTITION TYPES FOR DETAILS					
	METAL STUD PARTITION, SEE PARTITION TYPES FOR DETAILS TYPE A3					
	METAL STUD PARTITION, SEE PARTITION TYPES FOR DETAILS TYPE P6 U.N.O.					
	X NEW WORK KEY NOTE					
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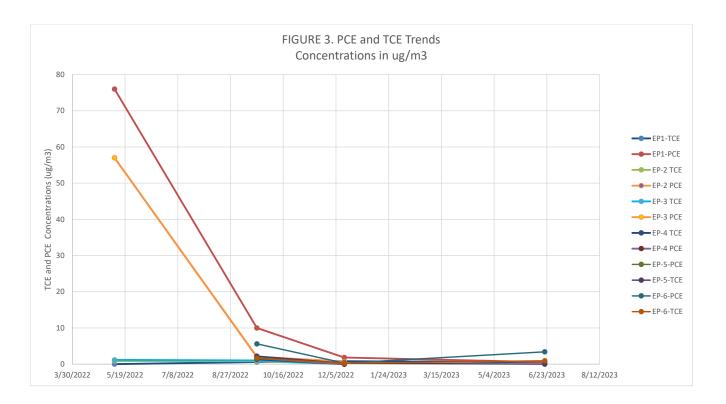
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EY NOTES APPLY TO ALL 1/8" NEW WORK DRAWINGS AND MAY NOT BE USED ON EVERY SHEET. FANEL NYPEL WALL ASBEMBLY AT EXEMPTING WINDOW OPENING-SEE DETAIL ARMS10W.					PLANN
STORIC SILDING FIRE DOOR ASSEMILY TO REMAIN. SECURE SLIDING DOOR IN A FULLY OPEN POSITION WITH KOKETS. PREPARE ENTIRE ASSEMILY FOR PAINTED FINISH. TORIC SLIDING FIRE DOOR ASSEMILY TO REMAIN. SECURE SLIDING DOOR IN A CLOSED POSITION WITH METAZ	3				L+ SLC
. PREPARE ENTIRE ASSEMBLY FOR NEW PAINTED FINISH. ALVAGED HISTORIC SLIDING FIRE DOOR ASSEMBLY AND HARDWARE FROM THIS OPENING TO NEW ORIENTATION	ξ	Λ			CHITE
SECURE SLIDING DOOR IN A CLOSED POSITION WITH METAL 2-BRACKETS. PREPARE ENTIRE ASSEMBLY FOR NEW ISH. JORIC CONNINGTORENHEAD BOOR ASSEMBLY TO REMARK SECORE COLLING DOOR IN A FULLY BEEN POSITION.					CONTINUUM ARCHITECTS + PLANNERS
TITHE ASSEMBLY FOR PAINTED FINISH. STORIC COLUNG OVERABLED DOOR ASSEMBLY TO REMAIN. SECURE COLLING DOOR IN A FULLY CLOSED POSITION. TIRE ASSEMBLY FOR PAINTED FINISH.			4.220.964		NTINU
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A OF DEMISSION WALL WITH OUTER EDGE OF LIGHT MONTOR VOLUME. OF DEMISSION WALL WITH OUTER EDGE OF LIGHT MONTOR VOLUME.					
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JOU STARL GUARD AND HANGKALS TO KEMMIN. HEP AT LL SUMHADES FOR NEW PAINT. BOO STARL GUARD AND HANGKALT DE GAMMIN REPARITERENCE MISSING ERB AGAD HANGRAIL SUPPORT AND ROM LEVEL UI TO IST LANDING TO MATCH EXISTING HISTORIC CONDITION PERSENT. PROVIDE NEW STEEL AT EXISTING CAUL WALLS, PREP ALL SUPPORTS FOR NEW PAINT. INCERTE STARL CAUL GUARD WALL AND HANDRAIL TO REMAIN PREP ALL SURFACES FOR NEW FINISHES.					
W EGRESS BARRIER GATE AT EXISTING STEEL GUARDRAIL. EXISTING CONCRETE STAIR, STEEL GUARDRAIL AND D REMAIN. PREP ALL SURFACES FOR NEW FINISHES.					
INK FENCE & GATES WI FRANACY SLATS. 96 UNIT DEMISSING WALL WITH RESILIENT CHANNEL ON THIS SIDE. RETE TOPPING 120 SLOPE MAX TO MEET EXISTING FINISH LEVEL AT TRANSITION AREA TO STAIRS OR BETWEEN					
ED POLISHED EPOXY FLOOR TOPPING TO TRANSITION FLOOR FINISH LEVEL CHANGE BETWEEN BULDINGS 6 & 7.					
ILOPE MAX. REPAIR DAMAGED AND MISSING EXTERIOR STUCCO TO MATCH ADJACENT SURFACE.					
GENERAL FLOOR PLAN NOTES TO CONTRACTOR					
INIG IS FURTHER SUPPORTED BY INFORMATION CONTAINED IN THE SPECIFICATION MANUAL STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, AUDIO-VISUAL, AND SECURITY SABE SUPPI DENTARY TO THE ARCHTECTURAL DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE					
A RE SUPPLEMENTARY TO THE ARCHITECTURAL DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE TOR TO COORDINATE THE INFORMATION CONTAINED IN ALL THE DRAWINGS BEFORE THE INSTALLATION OF ALL IN COMMINGS ON THE OWNER OF THE INFORMATION CONTAINED IN ALL THE DRAWINGS BEFORE THE INSTALLATION OF ALL INFORMATION CONTAINED TO THE INFORMATION CONTAINED IN ALL THE DRAWINGS BEFORE THE INSTALLATION OF ALL INFORMATION CONTAINED TO THE INFORMATION CONTAINED IN ALL THE DRAWINGS BEFORE THE INSTALLATION OF ALL INFORMATION CONTAINED TO THE INFORMATION CONTAINED IN ALL THE DRAWINGS BEFORE THE INSTALLATION OF ALL INFORMATION CONTAINED TO THE INFORMATION CONTAINED IN ALL THE DRAWINGS BEFORE THE INSTALLATION OF ALL INFORMATION CONTAINED TO THE INFORMATION CONTAINED IN ALL THE INFORMATION CONTAINED INFOR					
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METAL STUD PARTITION, SEE PARTITION TYPES FOR DETAILS TYPE					
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CONCRETE FLOOR COSMETIC PATCH, V.I.F. EXACT SIZE AND LOCATIONS.					
WOOD FLOOR STRUCTURAL INFILL, SEE STRUCTURAL FOR INFILL CONDITIONS. V.I.F. EXACT SIZE					
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- FINISH FLOORING (SEE FINISH PLANS FOR MATERIALS AND LOCATIONS OF FINISH MATERIALS) - NEW 1-1/2" SYPSUM CEMENT UNDERLAYMENT		COMMUNITY WITHIN THE CORRIDOR - WEST BLO		SFET TITE. New WORK PLAN - LEVEL 03 - OVERVIEW ALL BUILDINGS	
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- ASSEMBLY FIRE RATING: 1/2 HOUR - FSTC: 46-49 FIIC: 45-47		M	EET 3210	- FEA	
- EXISTING 3" CONCRETE SLAB - EXISTING 10" CLAY TILE INFILL - ASSEMICY FIRE RATING: 1 HOUR		Ê	2758 N. 33RD STREET MILWAUKEE, WI 53210	PLAN	
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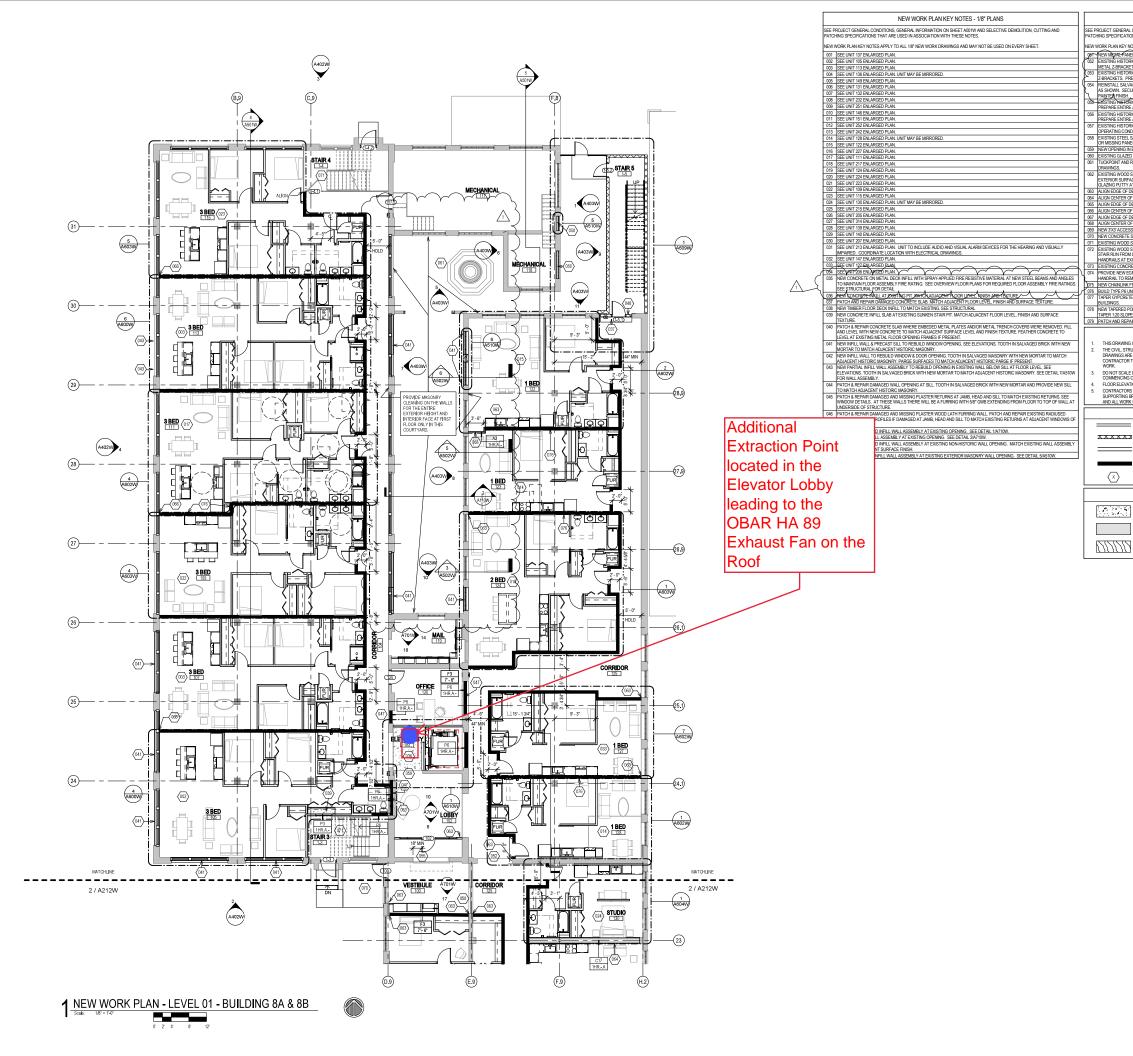






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	K PLAN KEY NOTES - 1/8" PLANS					
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F DEMISING WALL PARTITION EMISING WALL WITH OUTER	WITH CENTERLINE OF WINDOW MULLION. EDGE OF LIGHT MONITOR VOLUME.					
S DOOR W/ 3-HR RATING @ V	10N WITH CENTER OF HISTORIC SKYLIGHT M /ALL TO ABANDONED MECHANICAL TUNNEL.					
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ENCE & GATES W/ PRIVACY	STING STEEL GUARDRAIL. EXISTING CONCRE OR NEW FINISHES. SLATS.					
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TABLES



		Table 1.	
C		lock Commissioning Buildings 6, 7, 8	A, and 8B
]	Differential Pressure Measurements	
Date:		Measurerer:	Samuel Ramirez
Point	Date	Differential Pressure (inches H2O)	Notes:
SVP-1	6/5/2023		
SVP-2	6/5/2023		Near Outer Wall
SVP-3	6/7/2023	-0.12	
SVP-4	6/7/2023	-0.115	
SVP-5	6/7/2023	-0.205	
SVP-6	6/7/2023	-0.209	
SVP-7	6/6/2023	-0.046	
SVP-8	6/6/2023	-0.015	
SVP-9	6/5/2023	-0.012	
SVP-10	6/5/2023	-0.033	
SVP-10A	6/5/2023	0	Near Outer Wall
SVP-11	6/5/2023	0	Near Outer Wall
SVP-12	6/6/2023	-0.097	
SVP-13	6/6/2023	-0.033	
SVP-14	6/5/2023	-0.057	
SVP-15	6/6/2023	-0.033	
SVP-16	6/5/2023	-0.053	
SVP-2	6/29/2023	0	Near Outer Wall
SVP-10A	6/29/2023	-0.019	Near Outer Wall
SVP-11	6/29/2023	0	Near Outer Wall

Table 2. CWC West Block Commissioning - Buildings 6, 7, 8A, and 8B GC Testing Results of Discrete Indoor Air Samples

ID	Unit	File No.	Date	Time	PCE (ug/m^3)	TCE (ug/m^3)	Notes:
GC-6-Basement	Basement	193	6/5/2023	16:17		1.40	
GC-6-01A	Storage	190	6/5/2023	15:52	ND	0.00	
GC-6-01B	Stair	191	6/5/2023	16:01	ND	1.80	
GC-6-01C	140	235	6/6/2023	14:19	ND	1.10	
GC-6-01D	139	234	6/6/2023	14:11	ND	0.60	
GC-6-01E	Stair	192	6/5/2023	16:09	ND	1.50	
GC-7-01A	146	231	6/6/2023	13:40	ND	0.50	
GC-7-01B	138	224	6/6/2023	11:04	ND	0.50	
GC-7-01C	137	223	6/6/2023	10:54	ND	0.40	
GC-7-01D	147	227	6/6/2023	12:08	ND	1.40	
GC-7-01E	136	222	6/6/2023	10:45	ND	0.50	
GC-7-01F	148	228	6/6/2023	12:17	ND	1.00	
GC-7-01G	135	221	6/6/2023	10:37	ND	0.40	
GC-7-01H	149	232	6/6/2023			0.45	
GC-7-01I	151	233	6/6/2023			1.00	
GC-7-01J	132	220	6/6/2023			0.40	
GC-7-01K	131	219	6/6/2023	10:21	ND	0.30	
GC-7-01L	130	218	6/6/2023	10:13	ND	0.40	
GC-7-01M	Stair	194	6/5/2023	16:37	ND	1.10	
GC-7-01M	Stair	198	6/5/2023	16:37	ND	0.00	
GC-8A-Basement	Basement	212	6/6/2023	9:12	ND	0.70	
GC-8A-01A	105	197	6/5/2023	17:01	ND	0.90	
GC-8A-01B	107	261	6/7/2023	14:54	ND	1.00	
GC-8A-01C	115	262	6/7/2023	15:36	ND	0.90	
GC-8A-01D	111	229	6/6/2023	13:54	ND	0.70	
GC-8A-01E	113	213	6/6/2023	9:33	1.5	0.80	
GC-8A-01G	120	236	6/6/2023	16:06	ND	0.90	
GC-8A-01H	Elevator Lobby		6/6/2023	12:25	ND	0.46	
GC-8A-01I	Stair	207	6/6/2023	8:08	ND	0.52	
GC-8A-01J	Stair	208	6/6/2023	8:18	ND	0.60	
GC-8B-01A	128	217	6/6/2023	10:05	ND	0.70	
GC-8B-01B	127	214	6/6/2023	9:41		0.40	
GC-8B-01C	124	215	6/6/2023	9:49		0.70	
GC-8B-01D	123	216	6/6/2023			0.50	
GC-8B-01E	122	237	6/6/2023	16:15		0.60	
GC-8B-01F	Stair	211	6/6/2023		ND	0.80	
GC-6-02A	Stair	209	6/6/2023			0.40	
GC-7-02A	Stair	210	6/6/2023			0.80	
GC-8A-02A	Stair	204	6/5/2023			0.40	
GC-8A-02B	Elevator Lobby	199	6/5/2023			0.00	
GC-8A-02C	Stair	200	6/5/2023			0.00	
GC-8B-02A	Stair	195	6/5/2023			0.90	
GC-8A-03A	Stair	203	6/5/2023			0.70	
GC-8A-03B	Elevator Lobby	201	6/5/2023			0.00	
GC-8A-03C	Stair	202	6/5/2023	17:46	ND	0.00	

Collector / Analyzer: Sameer Neve, Ph.D., ENV SP

ID	Unit	Date	Time	PCE (ug/m^3)	TCE (ug/m^3)
GC-8A-01H	Elevator Lobby*	6/5/2023	16:53	ND	5.3
GC-8A-01H	Elevator Lobby*	6/6/2023	3 7:44	ND	0.0
GC-8A-01H	Elevator Lobby*	6/6/2023	3 12:25	ND	0.46

*Additional passive sampler installed.

TABLE 3Passive Air Sampling Results for CommissioningCommunity Within the Corridor - West Block - Building 6, 7, 8A, and 8B

		Residential Indoor																
Sample ID	Units	Air VAL*	IA-6-01A	IA-6-01A	IA-6-01A	IA-6-01A	IA-6-01A	IA-6-01B	IA-6-01B	IA-6-01B	IA-6-01B	IA-6-01C	IA-6-01C	IA-6-01C	IA-6-01C	IA-6-02A	IA-6-02A	IA-6-02A
Date			6/8/2022	9/12/2022	12/7/2022	2/15/2023	6/14/2023	6/8/2022	9/12/2022	12/7/2022	6/14/2023	6/8/2022	9/12/2022	12/7/2022	6/16/2023	6/8/2022	9/12/2022	12/7/2022
Trichloroethene	ug/m^3	2.1	<0.14	2.7	<0.14	<0.14	<0.12	<0.14	0.59	<0.14	<0.12	0.10	0.37	<0.14	<0.10	<0.14	0.53	<0.14
Tetrachloroethene	ug/m^3	42	<0.17	<0.17	<0.16	<0.17	<0.14	<0.17	<0.17	<0.17	0.20	0.44	<0.16	<0.17	0.18	0.23	<0.17	<0.17
cis-1,2-Dichloroethene	ug/m^3		<0.16	<0.16	<0.16	<0.16	<0.14	<0.16	<0.16	<0.16	<0.14	<0.16	<0.16	<0.16	<0.11	<0.16	<0.16	<0.16
trans-1,2-Dichloroethene	ug/m^3	42	0.31	0.95	<0.32	0.34	<0.28	2.4	13	<0.33	0.95	0.78	<0.32	<0.34	0.49	1.9	1.2	<0.33



TABLE 3Passive Air Sampling Results for CommissioningCommunity Within the Corridor - West Block - Building 6, 7, 8A, and 8B

		Residential Indoor													
Sample ID	Units	Air VAL*	IA-6-02B	IA-6-02B	IA-6-02B	IA-6-02C	IA-6-02C	IA-6-02C	IA-6-Basement	IA-6-Basement	IA-6-Basement	IA-6-Basement	IA-7-01A	IA-7-01A	IA-7-01A
Date			6/8/2022	9/12/2022	12/7/2022	6/8/2022	9/12/2022	12/7/2022	6/8/2022	9/12/2022	12/7/2022	6/14/2023	6/8/2022	9/12/2022	12/7/2022
Trichloroethene	ug/m^3	2.1	<0.14	0.47	<0.14	0.14	0.48	<0.14	<0.14	1.2	0.17	Missing	<0.14	2.1	<0.14
Tetrachloroethene	ug/m^3	42	0.14	<0.17	<0.17	0.25	0.18	<0.17	<0.17	<0.17	<0.17	Missing	0.11	<0.17	<0.17
cis-1,2-Dichloroethene	ug/m^3		<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	Missing	<0.16	<0.16	<0.16
trans-1,2-Dichloroethene	ug/m^3	42	2.2	10	<0.33	1.4	0.36	<0.33	0.62	1.8	0.33	Missing	1.4	2.0	<0.33



TABLE 3Passive Air Sampling Results for CommissioningCommunity Within the Corridor - West Block - Building 6, 7, 8A, and 8B

		Residential Indoor															
Sample ID	Units	Air VAL*	IA-7-01A	IA-7-01A	IA-7-01B	IA-7-01B	IA-7-01B	IA-7-01B	IA-7-01C	IA-7-01C	IA-7-01C	IA-7-01C	IA-7-01D	IA-7-01D	IA-7-01D	IA-7-01D	IA-7-01E
Date			2/15/2023	6/14/2023	6/8/2022	9/12/2022	12/7/2022	6/14/2023	6/8/2022	9/12/2022	12/7/2022	6/16/2023	6/8/2022	9/12/2022	12/7/2022	6/16/2023	6/16/2023
Trichloroethene	ug/m^3	2.1	<0.14	<0.12	<0.14	Missing	<0.14	<0.12	<0.14	<0.14	0.17	<0.10	<0.14	0.24	<0.14	<0.10	<0.10
Tetrachloroethene	ug/m^3	42	<0.17	0.42	0.10	Missing	<0.17	0.53	0.27	<0.16	<0.17	0.18	0.40	<0.17	<0.17	0.15	0.21
cis-1,2-Dichloroethene	ug/m^3		<0.16	<0.14	<0.16	Missing	<0.16	<0.14	<0.16	<0.16	<0.16	<0.11	<0.16	<0.16	<0.16	<0.11	<0.11
trans-1,2-Dichloroethene	ug/m^3	42	0.99	0.82	1.1	Missing	<0.33	0.38	1.1	<0.32	<0.33	0.42	0.74	<0.33	<0.33	0.34	0.32



TABLE 3Passive Air Sampling Results for CommissioningCommunity Within the Corridor - West Block - Building 6, 7, 8A, and 8B

		Residential Indoor															
Sample ID	Units	Air VAL*	IA-7-02A	IA-7-02A	IA-7-02A	IA-7-02B	IA-7-02B	IA-7-02B	IA-7-02C	IA-7-02C	IA-7-02C	IA-8A-01A	IA-8A-01A	IA-8A-01A	IA-8A-01A	IA-8A-01B	IA-8A-01B
Date			6/8/2022	9/12/2022	12/7/2022	6/8/2022	9/12/2022	12/7/2022	6/8/2022	9/12/2022	12/7/2022	6/8/2022	9/12/2022	12/7/2022	6/14/2023	6/8/2022	9/12/2022
Trichloroethene	ug/m^3	2.1	<0.14	0.64	<0.14	<0.14	0.76	<0.14	<0.14	<0.14	<0.14	<0.14	1.8	<0.14	<0.12	<0.14	1.2
Tetrachloroethene	ug/m^3	42	0.13	<0.17	<0.17	0.12	<0.17	<0.17	1.1	<0.17	<0.17	3.4	<0.17	<0.17	0.48	42	<0.17
cis-1,2-Dichloroethene	ug/m^3		<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.14	<0.16	<0.16
trans-1,2-Dichloroethene	ug/m^3	42	1.7	1.0	0.33	1.7	1.1	0.38	1.1	<0.33	<0.33	6.2	2.8	0.70	1.4	4.3	2.7



TABLE 3Passive Air Sampling Results for CommissioningCommunity Within the Corridor - West Block - Building 6, 7, 8A, and 8B

														IA-8A-EL			
														(1st Floor			
		Residential Indoor												Elevator			
Sample ID	Units	Air VAL*	IA-8A-01B	IA-8A-01B	IA-8A-01B	IA-8A-01C	IA-8A-01C	IA-8A-01C	IA-8A-01C	IA-8A-01D	IA-8A-01D	IA-8A-01D	IA-8A-01D	Lobby)	IA-8A-02A	IA-8A-02A	IA-8A-02A
Date			12/7/2022	2/15/2023	6/14/2023	6/8/2022	9/12/2022	12/7/2022	6/14/2023	6/8/2022	9/12/2022	12/7/2022	6/14/2023	6/14/2023	6/8/2022	9/12/2022	12/7/2022
Trichloroethene	ug/m^3	2.1	<0.14	0.21	<0.12	<0.14	<0.14	<0.14	Missing	<0.14	1.2	<0.14	Missing	<0.14	<0.14	0.65	<0.14
Tetrachloroethene	ug/m^3	42	<0.17	0.33	0.36	0.42	<0.17	<0.17	Missing	2.5	<0.17	<0.17	Missing	0.41	0.44	<0.17	0.18
cis-1,2-Dichloroethene	ug/m^3		<0.16	<0.16	<0.14	<0.16	<0.16	<0.16	Missing	<0.16	<0.16	<0.16	Missing	<0.16	<0.16	<0.16	<0.16
trans-1,2-Dichloroethene	ug/m^3	42	<0.33	0.51	0.51	3.7	0.6	<0.33	Missing	8.1	2.8	0.51	Missing	0.81	1.9	1.6	<0.33



TABLE 3Passive Air Sampling Results for CommissioningCommunity Within the Corridor - West Block - Building 6, 7, 8A, and 8B

		Residential Indoor															
Sample ID	Units	Air VAL*	IA-8A-02B	IA-8A-02B	IA-8A-02B	IA-8A-02C	IA-8A-02C	IA-8A-02C	IA-8A-02D	IA-8A-02D	IA-8A-02D	IA-8A-03A	IA-8A-03A	IA-8A-03A	IA-8A-03B	IA-8A-03B	IA-8A-03B
Date			6/8/2022	9/12/2022	12/7/2022	6/8/2022	9/12/2022	12/7/2022	6/8/2022	9/12/2022	12/7/2022	6/8/2022	9/12/2022	12/7/2022	6/8/2022	9/12/2022	12/7/2022
Trichloroethene	ug/m^3	2.1	<0.14	2	<0.14	<0.14	0.17	<0.14	<0.14	0.21	<0.14	<0.14	0.4	<0.14	<0.14	0.9	<0.14
Tetrachloroethene	ug/m^3	42	1.8	<0.17	0.19	4.4	<0.17	<0.17	0.28	<0.17	<0.17	0.66	<0.17	<0.17	0.85	<0.17	<0.17
cis-1,2-Dichloroethene	ug/m^3		<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
trans-1,2-Dichloroethene	ug/m^3	42	6.2	1.9	<0.33	1.7	0.5	<0.33	2.6	3.7	<0.33	6.6	2.6	0.52	4.4	2.4	0.42



TABLE 3Passive Air Sampling Results for CommissioningCommunity Within the Corridor - West Block - Building 6, 7, 8A, and 8B

		Residential Indoor														
Sample ID	Units	Air VAL*	IA-8A-03C	IA-8A-03C	IA-8A-03C	IA-8A-03D	IA-8A-03D	IA-8A-03D	IA-8A-03E	IA-8A-03E	IA-8A-03E	IA-8A-03F	IA-8A-03F	IA-8A-03F	IA-8A-BASEMENT	IA-8A-BASEMENT
Date			6/8/2022	9/12/2022	12/7/2022	6/8/2022	9/12/2022	12/7/2022	6/8/2022	9/12/2022	12/7/2022	6/8/2022	9/12/2022	12/7/2022	6/8/2022	9/12/2022
Trichloroethene	ug/m^3	2.1	<0.14	<0.14	<0.14	<0.14	0.46	<0.14	<0.14	0.18	<0.14	<0.14	0.41	<0.14	<0.14	0.36
Tetrachloroethene	ug/m^3	42	2.1	<0.17	<0.17	0.53	<0.17	<0.17	0.31	<0.17	<0.17	0.48	<0.17	<0.17	2.9	0.3
cis-1,2-Dichloroethene	ug/m^3		<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
trans-1,2-Dichloroethene	ug/m^3	42	4.4	0.66	<0.33	6.0	3.2	0.60	5.0	4.3	<0.33	23	2.9	0.58	9.9	6.2



TABLE 3Passive Air Sampling Results for CommissioningCommunity Within the Corridor - West Block - Building 6, 7, 8A, and 8B

		Residential Indoor														
Sample ID	Units	Air VAL*	IA-8A-BASEMENT	IA-8A-BASEMENT	IA-8B-01A	IA-8B-01A	IA-8B-01A	IA-8B-01A	IA-8B-01B	IA-8B-01B	IA-8B-01B	IA-8B-01B	IA-8B-01B	IA-8B-01C	IA-8B-01C	IA-8B-01C
Date			12/7/2022	6/14/2023	6/8/2022	9/12/2022	12/7/2022	6/14/2023	6/8/2022	9/12/2022	12/7/2022	2/15/2023	6/16/2023	6/8/2022	9/12/2022	12/7/2022
Trichloroethene	ug/m^3	2.1	0.34	0.20	<0.14	0.21	<0.14	<0.12	<0.14	2.1	<0.14	0.24	<0.10	<0.14	<0.14	<0.14
Tetrachloroethene	ug/m^3	42	0.38	0.50	0.25	<0.17	<0.17	<0.14	0.30	<0.17	<0.17	<0.17	0.24	0.31	<0.17	<0.17
cis-1,2-Dichloroethene	ug/m^3		<0.16	<0.14	<0.16	<0.16	<0.16	<0.14	<0.16	<0.16	<0.16	<0.16	<0.11	<0.16	<0.16	<0.16
trans-1,2-Dichloroethene	ug/m^3	42	<0.33	0.43	2.0	<0.34	<0.33	<0.28	2.1	2.2	0.53	0.65	0.57	0.40	<0.33	<0.33



TABLE 3Passive Air Sampling Results for CommissioningCommunity Within the Corridor - West Block - Building 6, 7, 8A, and 8B

		Residential Indoor															
Sample ID	Units	Air VAL*	IA-8B-01C	IA-8B-01D	IA-8B-01D	IA-8B-01D	IA-8B-01D	IA-8B-02A	IA-8B-02A	IA-8B-02A	IA-8B-02B	IA-8B-02B	IA-8B-02B	IA-8B-02C	IA-8B-02C	IA-8B-02C	IA-8B-02D
Date			6/14/2023	6/8/2022	9/12/2022	12/7/2022	6/14/2023	6/8/2022	9/12/2022	12/7/2022	6/8/2022	9/12/2022	12/7/2022	6/8/2022	9/12/2022	12/7/2022	6/8/2022
Trichloroethene	ug/m^3	2.1	<0.13	<0.14	1.9	<0.14	<0.12	<0.14	0.67	<0.14	<0.14	0.28	<0.14	0.25	Missing	<0.14	<0.14
Tetrachloroethene	ug/m^3	42	0.13	0.41	<0.17	<0.17	0.38	0.26	<0.17	0.29	0.28	<0.17	<0.17	1.1	Missing	7.0	0.32
cis-1,2-Dichloroethene	ug/m^3		<0.14	<0.16	<0.16	<0.16	<0.14	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	Missing	<0.16	<0.16
trans-1,2-Dichloroethene	ug/m^3	42	<0.30	2.4	1.9	0.46	0.68	2.8	1.2	<0.33	2.4	<0.33	<0.33	1.5	Missing	<0.33	3.0



TABLE 3Passive Air Sampling Results for CommissioningCommunity Within the Corridor - West Block - Building 6, 7, 8A, and 8B

					···· ·				
Comula ID	Linita	Residential Indoor							
Sample ID	Units	Air VAL*	IA-88-02D	IA-8B-02D	OA-6/7/8A/8B Background	OA-6/7/8A/8B Background	OA-6/7/8A/8B Background	OA-6/7/8A/8B Background	OA Background
Date			9/12/2022	12/7/2022	6/8/2022	9/12/2022	12/7/2022	2/15/2023	6/14/2023
Trichloroethene	ug/m^3	2.1	0.7	<0.14	<0.14	0.27	<0.14	<0.14	Missing
Tetrachloroethene	ug/m^3	42	<0.17	<0.17	<0.17	<0.17	<0.16	<0.17	Missing
cis-1,2-Dichloroethene	ug/m^3		<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	Missing
trans-1,2-Dichloroethene	ug/m^3	42	1.2	<0.33	<0.33	<0.33	<0.32	<0.33	Missing



	Table 4									
GC TC	E Measurer	nents of Bl	ower Efflue	ent and Es	timated Re	emoval Rates				
		Da	ite: June 2	2, 2023						
				TCE	TCE					
Exhaust	Pipe	Exhaust	Flow	Concentr	Removal	TCE Removal				
Fan No.	Diameter	Velocity	Rate	ation	Rate	Rate				
	inches	fpm	cfm	ug/m3	lbs/day	lbs/yr				
EP - 1	4	1476	129	19.8	0.00023	0.083682194				
EP - 2	2	2579	56	16.3	8.2E-05	0.030092652				
EP - 3	4	1417	124	14.9	0.00017	0.060455752				
EP - 4	4	1516	132	15.9	0.00019	0.069020458				
EP - 5	4	1535	134	405	0.00488	1.780102106				
EP - 6	4	1319	115	28.8	0.0003	0.108772421				
EP - 7	4	1437	125	7	7.9E-05	0.028802907				
					Total	2.16092849				

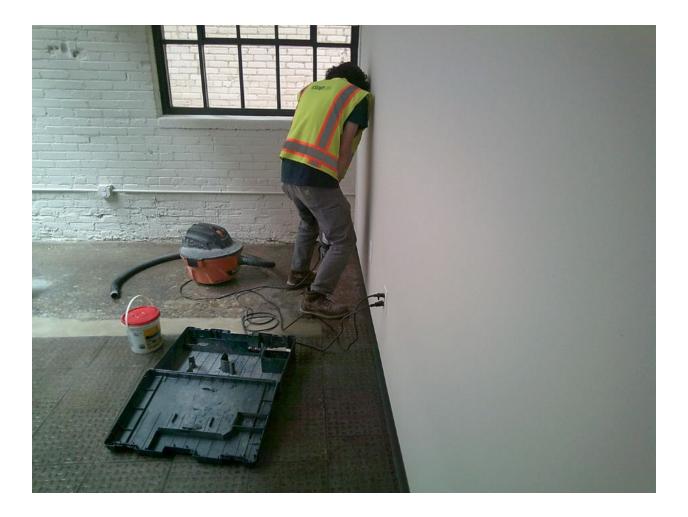
ATTACHMENTS



ATTACHMENT A

Photographs of Commissioning in June 2023





Picture 1. Vapor Pin Installation



Picture 2. Vacuum Measurement at Mail Room



Picture 3. Passive Sampler installed near Elevator



Picture 4. Passive Sampler installed in the hallway

ATTACHMENT B

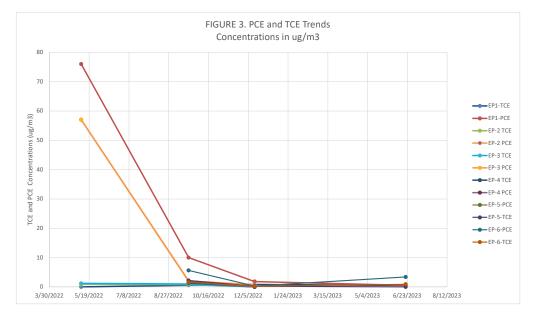
Exhaust Fan TCE Results and Trends



TABLE 3 - EXHAUST FAN SAMPLING RESULTS COMMUNITY WITHIN THE CORRIDOR - WEST BLOCK MILWAUKEE, WI PROJECT NUMBER: 40443

CHEMICAL (ug/m ³)	EP-1			EP-2					E	P-3			EP-4		
	5/9/2022	9/21/2022	12/13/2022	6/21/2023	5/9/2022	9/21/2022	12/13/2022	6/21/2023	5/9/2022	9/21/2022	12/13/2022	6/21/2023	9/21/2022	12/13/2022	6/21/2023
Tetrachloroethene (PCE)	76	10	1.83	0.55	57	2.04	0.75	14.65	57	1.9	<0.278	29.2	1.63	<0.278	0.48
Trichloroethene (TCE)	<0.237	0.59	0.8	0.52	0.86	0.8	<0.237	4.14	1.18	1.02	<0.237	<0.237	1.34	<0.237	0.28

CHEMICAL (ug/m ³)		EP-5			EF	P-6			EP-7		
	9/21/2022	12/13/2022	6/21/2023	9/21/2022	9/21/2022	12/13/2022	6/21/2023	9/21/2022		12/13/2022	6/21/2023
Tetrachloroethene (PCE)	1.83	0.278	<0.278		5.6	0.278	3.4			0.54	1.2
Trichloroethene (TCE)	2.2	0.237	<0.237		1.61	0.237	0.91		<	0.237	0.84



Sheet 1 of 1

ATTACHMENT C

Passive Air Sampling Results for Commissioning





6/29/2023 Mr. Robert Reineke K Singh & Associates 3636 N 124th St

Wauwatosa WI 53222

Project Name: CWC-West Block Project #: 40443A Workorder #: 2306390

Dear Mr. Robert Reineke

The following report includes the data for the above referenced project for sample(s) received on 6/19/2023 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by Passive S.E. RAD130/SKC are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Jade White at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Jade White Project Manager

180 Blue Ravine Road, Suite B Folsom, CA 95630



WORK ORDER #: 2306390

Work Order Summary

CLIENT:	Mr. Robert Reineke K Singh & Associates 3636 N 124th St Wauwatosa, WI 53222	BILL TO:	Mr. Robert Reineke K Singh & Associates 3636 N 124th St Wauwatosa, WI 53222
PHONE:		P.O. #	
FAX:		PROJECT #	40443A CWC-West Block
DATE RECEIVED:	06/19/2023		
DATE COMPLETE	D: 06/29/2023	CONTACT:	Jade White
FRACTION #	NAME	<u>TEST</u>	
01A	IA-6-01A	Passive S.E. R	
02A	IA-6-01B	Passive S.E. R	
03A	IA-6-01C	Passive S.E. R	
04A	IA-7-01A	Passive S.E. R	
05A	IA-7-01B	Passive S.E. R	
06A	IA-7-01C	Passive S.E. R	
07A	IA-7-01D	Passive S.E. R	
08A	IA-7-01E	Passive S.E. R	
09A	IA-8A-01A	Passive S.E. R	
10A	IA-8A-01B	Passive S.E. R	
11A	IA-8A-EL	Passive S.E. R	
12A	IA-8A-Basement	Passive S.E. R	
13A	IA-8B-01A	Passive S.E. R	
14A	IA-8B-01B	Passive S.E. R	
15A	IA-8B-01C	Passive S.E. R	
16A	IA-8B-01D	Passive S.E. R	
17A	Lab Blank	Passive S.E. R	
17B	Lab Blank	Passive S.E. R	
18A	CCV	Passive S.E. R	
18B	CCV	Passive S.E. R	
19A	LCS	Passive S.E. R	
19AA	LCSD	Passive S.E. R	
19B	LCS	Passive S.E. R	AD130/SKC

Continued on next page

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630 (916) 985-1000 . (800) 985-5955 . FAX (916) 351-8279



WORK ORDER #: 2306390

Work Order Summary

CLIENT:	Mr. Robert Reineke K Singh & Associates 3636 N 124th St Wauwatosa, WI 53222	BILL TO:	Mr. Robert Reineke K Singh & Associates 3636 N 124th St Wauwatosa, WI 53222
PHONE:		P.O. #	
FAX:		PROJECT #	40443A CWC-West Block
DATE RECEIVED:	06/19/2023	CONTACT:	Jade White
DATE COMPLETED:	06/29/2023	- 01/11/01/	

FRACTION #NAMETEST19BBLCSDPassive S.E. RAD130/SKC

CERTIFIED BY:

Layes

DATE: <u>06/29/23</u>

Technical Director

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP – 209222, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP – T104704434-22-18, UT NELAP – CA009332022-14, VA NELAP - 12240, WA ELAP - C935 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-017 Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

> This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, LLC. 180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630 (916) 985-1000. (800) 985-5955. FAX (916) 351-8279

🛟 eurofins

LABORATORY NARRATIVE RAD130 Passive SE by Mod EPA TO-17 K Singh & Associates Workorder# 2306390

Fifteen Radiello 130 (Solvent) samples were received on June 19, 2023 and one Radiello 130 (Solvent) sample was received on June 22, 2023. The laboratory analyzed the charcoal sorbent bed of the passive sampler following modified method EPA TO-17. The VOCs were chemically extracted using carbon disulfide and an aliquot of the extract was injected into a GC/MS for identification and quantification of volatile organic compounds (VOCs).

The mass of each target compound adsorbed by the sampler was converted to units of concentration using the sample deployment time and the sampling rate for each VOC. If sampling rates were calculated by the lab or the manufacturer, the concentration result has been flagged as an estimated value. Results are not corrected for desorption efficiency.

The reference method used for this procedure is EPA TO-17, which describes the collection of VOCs in ambient air using sorbents and analysis by GC/MS. Because TO-17 describes active sample collection using a pump and thermal desorption as the preparation step, several modifications are required. Modifications to TO-17 are listed in the table below:

Requirement	TO-17	ATL Modifications
Sample Collection	Pump pulls measured air volume through sorbent tube	VOCs in air adsorbed onto sorbent bed passively through diffusion
Sample Preparation	Thermal extraction	Solvent extraction
Sorbent tube conditioning	Condition newly packed tubes prior to use	Charcoal-based sorbent is a single use media and conditioning is conducted by vendor.
Instrumentation	Thermal desorption introduction system	Liquid injection introduction system
Internal Standard	Gas-phase internal standard introduced on the tube or focusing trap during analysis	Liquid-phase internal standard introduced on the tube at the time of extraction
Media and sample storage	<4 deg C, 30 days	Media shelf life is determined by vendor; sample hold-time is 6 months for the RAD130 and WMS. Sample preservation requirements are storage in a cool, solvent-free refrigerator and optional use of ice during shipping.
Internal Standard Recovery	+/-40% of daily CCV area	-50% to +100% of daily CCV area

Receiving Notes

Sample IA-7-01C was not received at Eurofin Air Toxics, LLC on 6/19/2023 despite notation on the Chain of Custody (COC). The sample was subsequently received on 6/22/2023 and was added to the analytical request.



Analytical Notes

The uptake rates were corrected based on average field temperatures if provided. In the absence of field temperatures, the uptake rates determined at 25 deg C were used.

If validated uptake rates were not available, rates were estimated using the chemical's diffusion coefficient in air and the geometric constant of the sampler. Chemicals that are poorly retained by the sorbent over the sampling duration may exhibit a low bias. All concentrations calculated using estimated rates are qualified with a "C" flag.

To calculate ug/m3 concentrations in the Lab Blanks, a sampling duration of 14528 minutes was applied. The assumed temperature used for the uptake rate is listed on the data page. If the field temperatures were provided, the rate was adjusted in the same manner as the field samples.

Definition of Data Qualifying Flags

Ten qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

- J Estimated value.
- E Exceeds instrument calibration range.
- S Saturated peak.
- Q Exceeds quality control limits.
- U Compound analyzed for but not detected above the reporting limit.
- UJ- Non-detected compound associated with low bias in the CCV
- N The identification is based on presumptive evidence.
- C Estimated concentration due to calculated sampling rate
- CN See case narrative explanation.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue



Summary of Detected Compounds VOCS BY PASSIVE SAMPLER - GC/MS

Client Sample ID: IA-6-01A

Lab ID#: 2306390-01A

No Detections Were Found.

Client Sample ID: IA-6-01B

Lab ID#: 2306390-02A

	Rpt. Limit	Rpt. Limit	Amount	Amount
Compound	(ug)	(ug/m3)	(ug)	(ug/m3)
Tetrachloroethene	0.10	0.14	0.20	0.28
trans-1,2-Dichloroethene	0.20	0.28	0.95 C	1.3 C

Client Sample ID: IA-6-01C

Lab ID#: 2306390-03A

	Rpt. Limit	Rpt. Limit	Amount	Amount
Compound	(ug)	(ug/m3)	(ug)	(ug/m3)
Tetrachloroethene	0.10	0.12	0.18	0.22
trans-1,2-Dichloroethene	0.20	0.23	0.49 C	0.58 C

Client Sample ID: IA-7-01A

Lab ID#: 2306390-04A

	Rpt. Limit	Rpt. Limit	Amount	Amount
Compound	(ug)	(ug/m3)	(ug)	(ug/m3)
Tetrachloroethene	0.10	0.14	0.42	0.61
trans-1,2-Dichloroethene	0.20	0.28	0.82 C	1.2 C

Client Sample ID: IA-7-01B

Lab ID#: 2306390-05A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Tetrachloroethene	0.10	0.14	0.53	0.76
trans-1,2-Dichloroethene	0.20	0.28	0.38 C	0.54 C

Client Sample ID: IA-7-01C

Lab ID#: 2306390-06A

	Rpt. Limit	Rpt. Limit	Amount	Amount
Compound	(ug)	(ug/m3)	(ug)	(ug/m3)



Summary of Detected Compounds VOCS BY PASSIVE SAMPLER - GC/MS

Client Sample ID: IA-7-01C

Lab ID#: 2306390-06A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Tetrachloroethene	0.10	0.12	0.18	0.21
trans-1,2-Dichloroethene	0.20	0.23	0.42 C	0.48 C
Client Sample ID: IA-7-01D				
Lab ID#: 2306390-07A				
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Tetrachloroethene	0.10	0.12	0.15	0.17
trans-1,2-Dichloroethene	0.20	0.23	0.34 C	0.40 C
Client Sample ID: IA-7-01E				
Lab ID#: 2306390-08A				
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Tetrachloroethene	0.10	0.12	0.21	0.25
trans-1,2-Dichloroethene	0.20	0.23	0.32 C	0.37 C
Client Sample ID: IA-8A-01A				
Lab ID#: 2306390-09A				
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Tetrachloroethene	0.10	0.14	0.48	0.70
	0.20	0.28	1.4 C	2.0 C

Lab ID#: 2306390-10A

	Rpt. Limit	Rpt. Limit	Amount	Amount
Compound	(ug)	(ug/m3)	(ug)	(ug/m3)
Tetrachloroethene	0.10	0.14	0.36	0.51
trans-1,2-Dichloroethene	0.20	0.28	0.51 C	0.72 C



Summary of Detected Compounds VOCS BY PASSIVE SAMPLER - GC/MS

Client Sample ID: IA-8A-EL

Lab ID#: 2306390-11A

	Rpt. Limit	Rpt. Limit	Amount Amou	Amount
Compound	(ug)	(ug/m3)	(ug)	(ug/m3)
Tetrachloroethene	0.10	0.17	0.41	0.69
trans-1,2-Dichloroethene	0.20	0.33	0.81 C	1.3 C

Client Sample ID: IA-8A-Basement

Lab ID#: 2306390-12A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.13	0.20	0.26
Tetrachloroethene	0.10	0.15	0.50	0.74
trans-1,2-Dichloroethene	0.20	0.29	0.43 C	0.63 C

Client Sample ID: IA-8B-01A

Lab ID#: 2306390-13A

No Detections Were Found.

Client Sample ID: IA-8B-01B

Lab ID#: 2306390-14A

	Rpt. Limit	Rpt. Limit	Amount	Amount
Compound	(ug)	(ug/m3)	(ug)	(ug/m3)
Tetrachloroethene	0.10	0.12	0.24	0.28
trans-1,2-Dichloroethene	0.20	0.23	0.57 C	0.66 C

Client Sample ID: IA-8B-01C

Lab ID#: 2306390-15A

Compound

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Tetrachloroethene	0.10	0.15	0.13	0.20
Client Sample ID: IA-8B-01D				
Lab ID#: 2306390-16A				
	Rpt. Limit	Rpt. Limit	Amount	Amount

(ug)

(ug/m3)

(ug)

(ug/m3)



Summary of Detected Compounds VOCS BY PASSIVE SAMPLER - GC/MS

Client Sample ID: IA-8B-01D

Lab ID#: 2306390-16A

	Rpt. Limit	Rpt. Limit	Amount	Amount
Compound	(ug)	(ug/m3)	(ug)	(ug/m3)
Tetrachloroethene	0.10	0.14	0.38	0.54
trans-1,2-Dichloroethene	0.20	0.28	0.68 C	0.96 C



Client Sample ID: IA-6-01A Lab ID#: 2306390-01A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18062124sim 1.00	Date of Collection: 6/14/23 1:20 Date of Analysis: 6/21/23 04:25 Date of Extraction: 6/21/23		23 04:25 PM
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.12	Not Detected	Not Detected
Tetrachloroethene	0.10	0.14	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.10	0.14	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	0.28	Not Detected C	Not Detected C

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 11770 minutes. Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	88	70-130



Client Sample ID: IA-6-01B Lab ID#: 2306390-02A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18062125sim 1.00	Date of Collection: 6/14/23 1:25: Date of Analysis: 6/21/23 04:51 F Date of Extraction: 6/21/23		23 04:51 PM
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.12	Not Detected	Not Detected
Tetrachloroethene	0.10	0.14	0.20	0.28
cis-1,2-Dichloroethene	0.10	0.14	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	0.28	0.95 C	1.3 C

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 11770 minutes. Container Type: Radiello 130 (Solvent)

		Method
Surrogates	%Recov	very Limits
Toluene-d8	89	70-130



Client Sample ID: IA-6-01C Lab ID#: 2306390-03A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18062126sim 1.00	Date of Collection: 6/16/23 11:5 Date of Analysis: 6/21/23 05:18 Date of Extraction: 6/21/23		23 05:18 PM
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.10	Not Detected	Not Detected
Tetrachloroethene	0.10	0.12	0.18	0.22
cis-1,2-Dichloroethene	0.10	0.11	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	0.23	0.49 C	0.58 C

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 14252 minutes. Container Type: Radiello 130 (Solvent)

		Method
Surrogates	%Recovery	Limits
Toluene-d8	91	70-130



Client Sample ID: IA-7-01A Lab ID#: 2306390-04A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18062127sim 1.00	Date of Collection: 6/14/23 2:10 Date of Analysis: 6/21/23 05:45 Date of Extraction: 6/21/23		23 05:45 PM
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.12	Not Detected	Not Detected
Tetrachloroethene	0.10	0.14	0.42	0.61
cis-1,2-Dichloroethene	0.10	0.14	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	0.28	0.82 C	1.2 C

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 11765 minutes. Container Type: Radiello 130 (Solvent)

		Method
Surrogates	%Recovery	Limits
Toluene-d8	90	70-130



Client Sample ID: IA-7-01B Lab ID#: 2306390-05A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18062128sim 1.00	Date of Collection: 6/14/23 2:09 Date of Analysis: 6/21/23 06:11 Date of Extraction: 6/21/23		23 06:11 PM
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.12	Not Detected	Not Detected
Tetrachloroethene	0.10	0.14	0.53	0.76
cis-1,2-Dichloroethene	0.10	0.14	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	0.28	0.38 C	0.54 C

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 11750 minutes. Container Type: Radiello 130 (Solvent)

		Method
Surrogates	%Recovery	Limits
Toluene-d8	90	70-130



Client Sample ID: IA-7-01C Lab ID#: 2306390-06A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18062216sim 1.00	Date of Collection: 6/16/23 Date of Analysis: 6/22/23 (23 01:39 PM
	Rpt. Limit	Rpt. Limit	te of Extraction: 6/22 Amount	Amount
Compound	(ug)	(ug/m3)	(ug)	(ug/m3)
Trichloroethene	0.10	0.10	Not Detected	Not Detected
Tetrachloroethene	0.10	0.12	0.18	0.21
cis-1,2-Dichloroethene	0.10	0.11	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	0.23	0.42 C	0.48 C

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 14510 minutes. Container Type: Radiello 130 (Solvent)

		Method
Surrogates	%Recov	very Limits
Toluene-d8	89	70-130



Client Sample ID: IA-7-01D Lab ID#: 2306390-07A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18062129sim 1.00	Date of Collection: 6/16/2 Date of Analysis: 6/21/23		3 06:38 PM	
	Rpt. Limit	Rpt. Limit	te of Extraction: 6/2 ² Amount	Amount	
Compound	(ug)	(ug/m3)	(ug)	(ug/m3)	
Trichloroethene	0.10	0.10	Not Detected	Not Detected	
Tetrachloroethene	0.10	0.12	0.15	0.17	
cis-1,2-Dichloroethene	0.10	0.11	Not Detected C	Not Detected C	
trans-1,2-Dichloroethene	0.20	0.23	0.34 C	0.40 C	

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 14290 minutes. Container Type: Radiello 130 (Solvent)

		Method
Surrogates	%Recov	very Limits
Toluene-d8	89	70-130



Client Sample ID: IA-7-01E Lab ID#: 2306390-08A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor: Compound	18062130sim 1.00	Date of Collection: 6 Date of Analysis: 6/2 Date of Extraction: 6		1/23 07:05 PM	
	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)	
Trichloroethene	0.10	0.10	Not Detected	Not Detected	
Tetrachloroethene	0.10	0.12	0.21	0.25	
cis-1,2-Dichloroethene	0.10	0.11	Not Detected C	Not Detected C	
trans-1,2-Dichloroethene	0.20	0.23	0.32 C	0.37 C	

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 14286 minutes. Container Type: Radiello 130 (Solvent)

		Method
Surrogates	%Recov	very Limits
Toluene-d8	89	70-130



Client Sample ID: IA-8A-01A Lab ID#: 2306390-09A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18062131sim 1.00	Date of Collection: 6/14/23 2 Date of Analysis: 6/21/23 07: Date of Extraction: 6/21/23		23 07:32 PM
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.12	Not Detected	Not Detected
Tetrachloroethene	0.10	0.14	0.48	0.70
cis-1,2-Dichloroethene	0.10	0.14	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	0.28	1.4 C	2.0 C

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 11805 minutes. Container Type: Radiello 130 (Solvent)

		Method
Surrogates	%Recovery	Limits
Toluene-d8	90	70-130



Client Sample ID: IA-8A-01B Lab ID#: 2306390-10A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor: Compound	18062132sim 1.00	Date of Collection: 6/14/23 Date of Analysis: 6/21/23 0 Date of Extraction: 6/21/23		23 07:58 PM
	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.12	Not Detected	Not Detected
Tetrachloroethene	0.10	0.14	0.36	0.51
cis-1,2-Dichloroethene	0.10	0.14	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	0.28	0.51 C	0.72 C

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 11825 minutes. Container Type: Radiello 130 (Solvent)

		Method
Surrogates	%Recov	very Limits
Toluene-d8	89	70-130



Client Sample ID: IA-8A-EL Lab ID#: 2306390-11A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18062133sim 1.00			/23 08:25 PM	
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)	
Trichloroethene	0.10	0.14	Not Detected	Not Detected	
Tetrachloroethene	0.10	0.17	0.41	0.69	
cis-1,2-Dichloroethene	0.10	0.16	Not Detected C	Not Detected C	
trans-1,2-Dichloroethene	0.20	0.33	0.81 C	1.3 C	

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 10110 minutes. Container Type: Radiello 130 (Solvent)

		Method
Surrogates	%Recovery	Limits
Toluene-d8	89	70-130



Client Sample ID: IA-8A-Basement Lab ID#: 2306390-12A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor: Compound	18062134sim 1.00			/23 08:52 PM	
	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)	
Trichloroethene	0.10	0.13	0.20	0.26	
Tetrachloroethene	0.10	0.15	0.50	0.74	
cis-1,2-Dichloroethene	0.10	0.14	Not Detected C	Not Detected C	
trans-1,2-Dichloroethene	0.20	0.29	0.43 C	0.63 C	

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 11325 minutes. Container Type: Radiello 130 (Solvent)

		Method
Surrogates	%Recovery	Limits
Toluene-d8	92	70-130



Client Sample ID: IA-8B-01A Lab ID#: 2306390-13A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18062135sim 1.00	Date of Collection: 6/14/23 2:2 Date of Analysis: 6/21/23 09:1 Date of Extraction: 6/21/23		23 09:19 PM
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.12	Not Detected	Not Detected
Tetrachloroethene	0.10	0.14	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.10	0.14	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	0.28	Not Detected C	Not Detected C

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 11805 minutes. Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	89	70-130



Client Sample ID: IA-8B-01B Lab ID#: 2306390-14A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18062136sim 1.00	1.00 Date of Analysis: 6/21/23 09:45 PM Date of Extraction: 6/21/23		23 09:45 PM
	Dut Limit			
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.10	Not Detected	Not Detected
Tetrachloroethene	0.10	0.12	0.24	0.28
cis-1,2-Dichloroethene	0.10	0.11	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	0.23	0.57 C	0.66 C

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 14528 minutes. Container Type: Radiello 130 (Solvent)

		Method
Surrogates	%Recovery	Limits
Toluene-d8	92	70-130



Client Sample ID: IA-8B-01C Lab ID#: 2306390-15A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18062137sim 1.00	Date of Collection: 6/14/23 1 Date of Analysis: 6/21/23 10: Date of Extraction: 6/21/23		23 10:12 PM
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.13	Not Detected	Not Detected
Tetrachloroethene	0.10	0.15	0.13	0.20
cis-1,2-Dichloroethene	0.10	0.14	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	0.30	Not Detected C	Not Detected C

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 11258 minutes. Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	90	70-130



Client Sample ID: IA-8B-01D Lab ID#: 2306390-16A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18062138sim 1.00	1.00Date of Analysis: 6/21/23 10:39 PMDate of Extraction: 6/21/23		23 10:39 PM
	Dut Limit			
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.12	Not Detected	Not Detected
Tetrachloroethene	0.10	0.14	0.38	0.54
cis-1,2-Dichloroethene	0.10	0.14	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	0.28	0.68 C	0.96 C

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 11805 minutes. Container Type: Radiello 130 (Solvent)

		Method
Surrogates	%Recovery	Limits
Toluene-d8	90	70-130



Client Sample ID: Lab Blank Lab ID#: 2306390-17A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18062120sim 1.00	Date of Collection: NA Date of Analysis: 6/21/23 02:36 PI Date of Extraction: 6/21/23		
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.10	Not Detected	Not Detected
Tetrachloroethene	0.10	0.12	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.10	0.11	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	0.23	Not Detected C	Not Detected C

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 14528 minutes. Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	88	70-130



Client Sample ID: Lab Blank Lab ID#: 2306390-17B VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18062205sim 1.00	Date of Collection: NA Date of Analysis: 6/22/23 08:10 / Date of Extraction: 6/22/23		
Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Trichloroethene	0.10	0.10	Not Detected	Not Detected
Tetrachloroethene	0.10	0.12	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.10	0.11	Not Detected C	Not Detected C
trans-1,2-Dichloroethene	0.20	0.23	Not Detected C	Not Detected C

T

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 14528 minutes. Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	88	70-130



Client Sample ID: CCV Lab ID#: 2306390-18A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18062117sim 1.00	Date of Collect Date of Analys	tion: NA is: 6/21/23 01:11 PM
		Date of Extrac	tion: NA
Compound		%Recovery	
Trichloroethene		100	
Tetrachloroethene		98	
cis-1,2-Dichloroethene		100	
trans-1,2-Dichloroethene		101	

Surrogates	%Recovery	Limits
Toluene-d8	100	70-130



Air Toxics

Client Sample ID: CCV Lab ID#: 2306390-18B VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18062202sim 1.00		
Compound		%Recovery	
Trichloroethene		102	
Tetrachloroethene		98	
cis-1,2-Dichloroethene		105	
trans-1,2-Dichloroethene		108	

Surrogates	%Recovery	Limits
Toluene-d8	102	70-130



Client Sample ID: LCS Lab ID#: 2306390-19A VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18062118sim 1.00	Date of Collection: NA Date of Analysis: 6/21/23 01:3 Date of Extraction: 6/21/23		
Compound		%Recovery	Method Limits	
Trichloroethene		84	70-130	
Tetrachloroethene		84	70-130	
cis-1,2-Dichloroethene		82	70-130	
trans-1,2-Dichloroethene		83 70-1		
Container Type: NA - Not Applie	cable			
			Method	
Surrogates		%Recovery	Limits	
Toluene-d8		89	70-130	



Client Sample ID: LCSD Lab ID#: 2306390-19AA VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18062119sim 1.00	Date of Collection: NA Date of Analysis: 6/21/23 02:0 Date of Extraction: 6/21/23		
Compound		%Recovery	Method Limits	
Trichloroethene		84	70-130	
Tetrachloroethene		83	70-130	
cis-1,2-Dichloroethene		82	70-130	
trans-1,2-Dichloroethene		83 70-13		
Container Type: NA - Not Appl	icable			
			Method	
Surrogates		%Recovery	Limits	
Toluene-d8		88	70-130	



Client Sample ID: LCS Lab ID#: 2306390-19B VOCS BY PASSIVE SAMPLER - GC/MS

File Name: 18062203sin Dil. Factor: 1.0		is: 6/22/23 07:13 AM
Compound	%Recovery	Method Limits
Trichloroethene	86	70-130
Tetrachloroethene	83	70-130
cis-1,2-Dichloroethene	91	70-130
trans-1,2-Dichloroethene	94	70-130
Container Type: NA - Not Applicable		
		Method
Surrogates	%Recovery	Limits
Toluene-d8	88	70-130



Client Sample ID: LCSD Lab ID#: 2306390-19BB VOCS BY PASSIVE SAMPLER - GC/MS

File Name: Dil. Factor:	18062204sim 1.00	Date of Collection: NA Date of Analysis: 6/22/23 07:40 AM Date of Extraction: 6/22/23		
Compound		%Recovery	Method Limits	
Trichloroethene		86	70-130	
Tetrachloroethene		84	70-130	
cis-1,2-Dichloroethene		87	70-130	
trans-1,2-Dichloroethene		90	70-130	
Container Type: NA - Not Ap	plicable			
	-		Method	
Surrogates		%Recovery	Limits	
Toluene-d8		88	70-130	

ATTACHMENT D

QA-QC Protocol for Portable GC





STANDARD OPERATING PROCEDURES (SOPs)

Continuous Monitoring of VOCs by Modified Method TO-14

1.0 <u>Scope and Applications</u>

This SOP has been prepared by Hartman Environmental Geoscience (HEG) to help insure consistent analytical protocol. The scope of topics discussed in this SOP includes the following:

- Method Summary
- Personnel Qualifications
- Instrumentation and Equipment
- Reagents & Standards
- Detection and Reporting Limits
- Interferences
- Precision, Bias and Working Range (Method Performance)
- Sample Collection and Holding Times
- Procedures, Calibration, QAQC and sample Analysis
- QA/QC Requirements
- Data and Records Management and Reporting
- Troubleshooting Problems and Preventative Maintenance
- Safety

2.0 <u>Method Summary</u>

The automated continuous monitoring system measures a select group of volatile organic compounds (VOCs) in an air matrix (indoor air, outdoor air or soil gas). The primary VOCs are chlorinated compounds (TCE, CCl4, CHCl3 and PCE), but it can also analyze for hydrocarbons such as benzene and ethylbenzene. The system can be configure to sample from as many as 16 locations. The system can be controlled remotely and data downloaded via the internet in real time.

3.0 <u>Personnel Qualifications</u>

This method is to be performed by a trained analyst in gas chromatographic methods. A bachelor's degree in science or equivalent training is the minimum requirement for performance of this method. An analyst performing this method without on-site supervision must have a minimum of 3 months of GC experience with this method or equivalent.



4.0 <u>Instrumentation and Equipment</u>

4.1 Gas Chromatograph and Peripherals:

The system consists of the following elements:

- Gas chromatograph (SRI 8610) with an electron capture detector (ECD) and optional Photoionization detector (PID);
- Sixteen-port stream selection valve (Valco Instruments);
- Sample injection valve with 2 cc sample loop
- Computerized data acquisition system (Peaksimple by SRI Instruments)
- Remote connection via Wireless connection (ethernet cable, cell or wifi).

Small diameter tubing from each sample location is connected to a stream selector valve. A low-flow vacuum pump draws the indoor air sample through the tubing and through the sample loop from the selected sample location. When purging is complete (approximately 30 seconds), the sample injection valve rotates and injects the sample into the GC for analysis. Analysis time is approximately nine (9) minutes. When the analysis is complete, the stream selector advances to the next position (next sample location) and the process repeats. This sequence continues uninterrupted until stopped.

The above-mentioned equipment requires 115 VAC as a power source to operate. This power can be applied by external power sources available at the site, or by an internal, gasoline operated generator located on the site itself.

The data acquisition software (Peaksimple) acquires the chromatographic data and also controls the stream-selector valve, sample injection, GC analysis and stores the data to a summary file on a laptop. Remote access to the laptop and the data is enabled by a wireless connection.

- 4.2 Small diameter tubing, either stainless steel or nylon.
- 4.3 Low flow vacuum pump.
- 4.4 Computer running Windows 10.

5.0 <u>Reagents and Standards</u>

- 5.1 High purity Nitrogen compressed gas
- 5.2. Primary (stock) standards:



Vapor standards purchased from certified supplier at 1000 ppbv. Certificates and preparations of all secondary standards are recorded on a log sheet.

5.3 Secondary (working) Standards:

Made by diluting primary standard with ultra-pure air or nitrogen. Typical concentration range from 1 ppbv to 100 ppbv. It is preferable to prepare these standards in summa canisters as they are stable for longer time period. Tedlar bags may be used in lieu of summa canisters if prepared fresh daily.

5.3.1 Using a gas-tight syringe introduce the following amounts of 1 ppmv primary stock vapor standard into 1000 cc of air:.

Target Concentration (ppbv)	Volume of Stock (cc)		
1	1		
10	10		
50	50		
100	100		

Standards may be prepared at other concentrations if a different analytical range is possible and desired. (See section 6.2 for more information)

6.0 Detection Limits and Reporting Limits

6.1 Method Detection Limit

The method detection limit (MDL) is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero. MDLs for each target analyte is established prior to a project. The laboratory shall maintain proof of the MDL demonstrations (i.e., before project samples are analyzed) and upon request in the format specified.

MDLs will be demonstrated using the following instructions:

(1) Estimate the MDL using one of the following methods:

- a) The concentration value that corresponds to an instrument signal/noise ratio in the range of 2.5 to 5, or
- b) The concentration equivalent of 3 times the standard deviation of at least seven replicate measurement of the target analyte or
- c) The region of the standard curve where there is a significant change in sensitivity (i.e., a break in the slope of the standard curve).
- (2) Prepare and analyze seven samples containing the analyte of interest at a concentration five to ten times the estimated MDL.
- (3) Determine the variance (S2) for each analyte as follows:



$$S2 = \frac{1}{n-1} \left[\sum_{i=1}^{n} \left(x_i - \overline{x} \right)^2 \right]$$

where xi = is the measurement of the variable x and \overline{x} = the average value of x

$$\overline{X} = \frac{1}{n} \sum_{i=1}^{n} x_i$$

(4) Determine the standard deviation (s) for each analyte as follows:

$$s = (S2)1/2$$

(5) Determine the MDL for each analyte as follows:

MDL = 3.14(s)(note: 3.14 is the one-sided t-statistic at the 99 percent confidence level appropriate for determining the MDL using 7 samples)

(6) If the spike level used in step 2 is more than 10 times the calculated MDL, repeat the process using a smaller spiking level. If the calculated MDL is more than the spike level concentration, repeat the process using a higher spiking level. If the calculated MDL is less than 10% of the spikes level concentration, repeat the process using a lower spiking level.

Where multiple instruments are used, the MDL used for reporting purposes shall represent the least sensitive instrument.

6.2 Reporting Limits

The reporting limits (RLs) will be dependent upon the sample matrix, indoor air or soil vapor, and the calibration range. The ECD detector has a lower sensitivity than the PID and therefore can be used to achieve lower RLs than the PID. At mid-range concentrations, the results from the PID and ECD can be compared as verifications. At higher concentrations, the ECD will be over-range and will not provide accurate results.

The normal reporting limits are nominally 0.1 ppbv - 20 ppbv of each compound. These limits should be compared annually to the MDL's to make certain that they are appropriate. Depending upon client data quality objectives (DQO's), the reporting limits may change. The reporting limits, however, are still dependent upon the calibration curve... However, the lowest point in the calibration curve cannot be greater than 5 times the reporting limit. Some projects may require that the lowest point on the calibration curve be set at the RLs and these will be project specific.



When samples are diluted, the reporting limits are raised proportionately. All multipliers must also be applied to the reporting limits as well. Dilutions are recorded on the daily extraction/run logs and are entered into the Peaksimple software for the particular analysis.

7.0 <u>Interferences</u>

When analyzing for volatile organics, samples can contain high concentrations of target and nontarget analytes. These analytes may interfere with the ECD and PID detectors. The analyst should attempt to analyze these samples at the lowest dilution factor to obtain the lowest achievable reporting limits but at the same time meeting QAQC requirements. In addition, the sample loops may be prone to carry over . The sample loop should be flushed well after a high concentration sample is analyzed (>50 times the RL). In addition, a blank should be analyzed after any high level sample (>50 times the RL) to ensure that carry over is eliminated.

8.0 <u>Precision, Bias and Working Range</u>

The working range of the instrument is between the method detection limit for the analyte and the concentration of the high standard used for system calibration. In the event that sample results are greater than the amount used for the high standard, then sample dilution is necessary. Results reported that are between the MDL and RL should be flagged with the "J" flag as a quantitative estimate.

The required precision of this method is 30%. Precision is determined prior to each sampling program by performing replicate analysis of a mid-range standard.

The required bias of this method is +/-30% which can be determined by analyzing a mid-point standard, mid-point second source standard, or a performance test sample.

9.0 <u>Sample Collection and Holding Times</u>

In automated mode, samples are not collected in containers. The sample is pulled through the tubing and flushed through the sample loop by a low-flow vacuum pump. If confirmation samples are to be collected for off-site analysis, the chemist is to refer to the project confirmation sheet to determine the details of the sampling. Samples should be collected in passivated canisters designed to prevent the loss of volatile compounds. Holding times for the various sample vessels should be observed, typically no more than 30 days for summa canisters.

10.0 Procedures, Calibration, QAQC Analysis and Sample Analysis

10.1 System Set-Up

A flat surface approximately 3 feet by 3 feet is necessary to set-up the gas chromatograph and supporting equipment. The nitrogen cylinder should be secured in an upright or horizontal position ot in a mobile tank rack. Connect the nitrogen to the instrument using clean copper tubing.

5



10.2 <u>System Start-Up – Instrument</u>

Open the valve on the nitrogen carrier gas and insure that no leaks are detected. Let the nitrogen run for approximately 5 minutes to flush all air out of the columns and detector bodies. Load the Peaksimple program into the compute. Turn on the GC and check to make sure the carrier flow is within acceptable range.

The recommended GC conditions are:

Initial temp: 60 to 90 C Program rate: Isothermal Injection temp: 125 C ECD Detector temp: 250 C PID Detector temp: 120 C

Turn on the PID lamp and allow the PID and ECD to stabilize. Determine when stable by monitoring the baseline detector voltages on the Peaksimple software. PID voltage should be less than 20 mV and stable. ECD voltage should be less than 500 mV and stable. This may take up to 1 hour. The system is now ready for operation.

10.3 System Calibration

Prior to performing analyses, the GC must be calibrated to ensure system accuracy. To calibrate the GC, standards that were prepared in section 5.3 are injected into the GC and analyzed. A minimum of 3 concentration levels are to be used to generate the calibration curve for each analyte. The end result is a calibration curve for each analyte on each detector. The linearity of the calibration curve is to be evaluated per section 11.1

10.4 Daily Continuing Calibration Verification (CCV)

Once an acceptable calibration curve is generated for all analytes to be reported, this curve can be used to analyze client samples as long as it is still valid. To determine if a curve is still valid, a mid-point standard is analyzed at a regular interval and the percent difference (drift) of each analyte is calculated using the following equation:

%
$$D = C_E - C_C / C_E * 100$$

Where: $C_E = E_{xpected}$ Analyte Concentration of CCV $C_C = Determined$ Analyte Concentration of CCV

See section 11.2 for CCV criteria and corrective actions.



10.5 <u>Blanks</u>

Once the calibration is verified as valid, a method blank is to be analyzed. This is performed by injecting clean air into the sample loop and analyzing per the method. The blank must meet criteria set in section 11.3.

10.6 Samples

Once an acceptable blank is analyzed, sample analysis can proceed. All samples are to be analyzed under the same analytical conditions as the standards and blanks. Samples are to be evaluated according to criteria set forth in section 11.4.

11.0 **Quality Assurance and Quality Control**

Quality Assurance (QA) and Quality Control (QC) are a set of procedures and conditions implemented to assure data produced are of known and proven quality. The procedures are also designed to maximize the precision and accuracy of the analytical process. QA/QC is a continuous process requiring verification by inspection and, if necessary, appropriate corrective action. Listed below are key items used to insure proper QA/QC.

11.1 <u>Initial Calibration (ICAL</u>)

The computer will construct the calibration "curve" according to one of several methods. Among these are (a) straight line, (b) straight line through origin, (c) point to point, (d) quadratic. For the PID detector, the recommended curve is either method (a) or (b). For the ECD, method (c) is used due to the small linear range of the ECD detector.

Area counts from each calibration standard are inputted into an Excel spreadsheet template (svfixed.xls) which is in the laboratory. The spreadsheet computes the response factor (RF) for each standard, the average response factor for all the standards, the standard deviation (SD) of the response factors, and the % RSD as:

%RSD = SD/ave RF*100

If the %RSD is less than or equal to 30%, the values are inputted into the Peaksimple software and used for quantitation. If the %RSD is greater than 30%, a new ICAL is performed.

All calibrations are to be reviewed and approved by the laboratory director or QAO before use on client samples.

Hardcopy outputs of the chromatograms are to be saved and kept with the instrument throughout the lifetime of the ICAL. The hardcopy output should list the method used to



generate the ICAL curve. The ICAL is considered valid until the continuing calibration fails or a major change in the instrument operating condition occurs.

11.2 <u>Continuing Calibration (CCAL)</u>

The calibration of the instrument is checked prior to running samples weekly. The continuing calibration (CCAL) or continuing calibration verification (CCV) checks the validity of the ICAL. Normally a standard corresponding to the midpoint of the calibration curve is chosen. Response of the compounds of interest must be within 35% of the calibrated amount for the curve to be valid.

Corrective Action: Reprepare and/or reanalyze the CCV standard. If failure is confirmed, perform a new ICAL.

11.3 <u>Blanks</u>

Method blanks are performed at least daily, and typically every sequence, by drawing clean air through the sampling equipment and analyzing. These blanks verify all components of the sampling and analytical system are free of contamination. Additional blanks are recommended immediately after any high concentration samples. The results of all blank analyses are recorded in the data tables. If a contaminant is found, the source of contamination must be investigated and measures taken to correct, minimize or eliminate the blank if above the reporting limit.

11.4 <u>Sample Duplicates and Replicates</u>

A sample replicate is a sample that is collected as soon as possible after the original sample was collected from that same location. A sample duplicate is a repeat analysis of the same sample. Sample replicates can be performed with the system by repeating the analysis of the same sample location. Sample duplicates can not be performed with the system. Replicate results are evaluated against the original sample results by calculating the Relative Percent Difference (RPD). The RPD can be calculated using the following general equation:

 $RPD = \frac{C_{\rm S} - C_{\rm D}}{(C_{\rm S} + C_{\rm D})/2} \times 100$

Where.. C_S = Concentration of analyte in sample C_D = Concentration of analyte in replicate or duplicate

This RPD criterion is 30% or less.

Corrective Action: Recollect and reanalyze one more replicate.



12.0 Data and Records Management and Reports

Document control is the process by which the documentation associated with samples and sample data are tracked and monitored.

12.1 <u>Reporting</u>

The Data Package

For the continuous monitoring system, the data package will consist of the following in the order listed or as near as possible to that order:

- a) Daily summary files.
- b) An Excel file with data for all the sampling locations..

Final Report

The following information should be included in the lab report:

- Locations of the samples;
- Summary of the results;
- Description of the system as configured;
- Any deviations from the QA/QC requirements listed in this SOP.

After the final laboratory report is issued, the report will remain unchanged. Any amendments to the report will be made as separate reports and will include a statement of amendment or supplement to the original report. The Laboratory will notify the client promptly in writing of any defective measuring or validity problems with data.

The necessary steps to ensure the confidentiality of its report, by providing data only to the client by phone, e-mail or mail.

The Laboratory shall certify that the test results meet all the requirements of this SOP or shall provide a reasonable explanation as to why they do not.



If there are problems with instrumentation refer to the appropriate manual for troubleshooting options.

13.1 <u>Preventive Maintenance</u>

Preventive Maintenance (PM) is that set of procedures taken in an effort to assure that sample throughput is continued and that data quality is not degraded by system malfunctions. Although failure to perform preventive maintenance does not of itself produce poor quality data, the lack of such procedures may lead to earlier degradation of data and slower processing of samples.

This section treats PM in two sections: preparation and instrument PM.

13.1.1 Preparation PM

The primary area where preventable errors can enter throughout the preparation steps is the introduction of contamination. Preventive maintenance in the preparation steps primarily consists of baking and/or nitrogen flushing of the glass syringes before use.

If samples are suspected to be hot, the sample is to be diluted before it is to be analyzed to prevent contamination of the GC system

13.1.2 Instrument PM

There are five pieces of instrumentation involved in the analysis of volatile organics by GC/ECD/PID. They are the following:

- (1) The Gas Chromatograph and detectors
- (2) Sample Loop
- (3) The computer system

The Laboratory follows the manufacturer's recommendations on the Gas Chromatograph. Gas Chromatograph PM consists primarily of maintaining a full stock of consumable parts. Swagelok nuts, ferrules, septa, etc. allow the operator to repair, change worn parts quickly and to continue operation without loss of time. Tubing should be periodically inspected for cracks and possible leaks. Monitoring of the gas levels and rate of pressure loss may help discover problems.

The Computer system PM consists of keeping dust and dirt out of the components and backing up the data and methods as often as possible.



13.2 <u>Troubleshooting</u>

There are many problems that may occur during analyses. The following are the most frequent along with the suggested investigative steps:

13.2.1 Low sensitivity

Possible causes: Leaks or dirty PID lamp

Leaks can occur at the septa and at the analytical column connections. These are to be inspected and the septa and/or ferrules replaced if necessary. Remove and clean PID lamp. Replace and retest.

13.2.3 Poor peak shapes and tailing

Possible causes: Poor column installation or poor carrier flow

Reinstall column, check and adjust carrier flow and retest

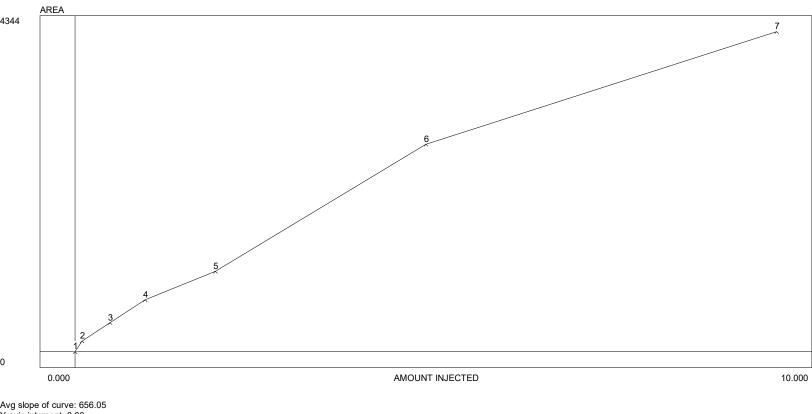
13.2.4 Noise in one or both detector

Noise in the PID detector could suggest a leak or a loose wire to the PID detector. A leak detector can be used to find the source so that it can be corrected. If the noise is in both detectors, the ECD and the PID, the leak will be outside the gas chromatograph.

14.0 <u>References</u>

EPA TO-14ACompendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air Second Edition

Calibration file: C:\Peak489Win10\TCE ECD2 3-1-2023.cal



Avg slope of curve: 656.05 Y-axis intercept: 0.00 Linearity: 0.46 Number of levels: 7 SD/rel SD of CF's: 428.3/67.3 Y=<multi-line> r2: 1.0000 Last calibrated: Tue May 16 14:01:44 2023

Area/ht.	Amount	CF	Current	Previous #1	Previous #2
0.000	0.000	0.000	0.000	N/A	N/A
142.000	0.100	1420.000	142.000	N/A	N/A
393.000	0.500	786.000	393.000	N/A	N/A
704.000	1.000	704.000	704.000	N/A	N/A
1090.000	2.000	545.000	1090.000	N/A	N/A
2815.000	5.000	563.000	2815.000	N/A	N/A
4344.000	10.000	434.400	4344.000	N/A	N/A
	0.000 142.000 393.000 704.000 1090.000 2815.000	0.0000.000142.0000.100393.0000.500704.0001.0001090.0002.0002815.0005.000	0.000 0.000 0.000 142.000 0.100 1420.000 393.000 0.500 786.000 704.000 1.000 704.000 1090.000 2.000 545.000 2815.000 5.000 563.000	0.000 0.000 0.000 0.000 142.000 0.100 1420.000 142.000 393.000 0.500 786.000 393.000 704.000 1.000 704.000 1090.000 1090.000 2.000 545.000 1090.000 2815.000 5.000 563.000 2815.000	0.000 0.000 0.000 0.000 N/A 142.000 0.100 1420.000 142.000 N/A 393.000 0.500 786.000 393.000 N/A 704.000 1.000 704.000 704.000 N/A 1090.000 2.000 545.000 1090.000 N/A 2815.000 5.000 563.000 2815.000 N/A