Pfeiffer, Jane K - DNR

From: Sameer Neve <sneve@ksinghengineering.com>

Sent: Wednesday, October 11, 2023 1:13 PM

To: Pfeiffer, Jane K - DNR

Cc:Shane LaFave; Que El-Amin; Pratap Singh; Robert Reineke; Angy SinghSubject:20231011 - CWC WB 3rd Round of Commissioning Preliminary ReportAttachments:CWC West Block - Bldg 4 and 5- 3rd Round Commissioning Results .pdf

Follow Up Flag: Follow up Flag Status: Completed

CAUTION: This email originated from outside the organization.

Do not click links or open attachments unless you recognize the sender and know the content is safe.

Jane,

Attached please find the preliminary results of the 3rd Round of Commissioning for Buildings 4 and 5 at the Community Within the Corridor Limited Partnership (CWC) – West Block. We have incorporated your recommendations from the letter dated October 6, 2023. A complete report with the technical assistance fee will be sent later upon the receipt of the results from the passive samplers.

Should you have any questions or require any additional information, please feel free to contact us at 262-821-1171. We appreciate your cooperation and support in moving this project forward.

Thank you,

Sameer Neve, Ph.D., ENV SP

Staff Engineer | sneve@ksinghengineering.com 262.821.1171 (p) | 551.262.9210 (cell) www.ksinghengineering.com







October 10, 2023

Ms. Jennifer Meyer Remediation and Redevelopment Program Wisconsin Department of Natural Resources 1027 West St. Paul Ave. Milwaukee, WI 53233 **Project # 40443A**

Subject: Third

Third Round of Commissioning for Community Within the Corridor – West Block –

Buildings 4 and 5 – Preliminary Findings

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 preliminary results of third 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 while the second round was performed in July/August 2023. The third round of Commissioning was performed in accordance with the Commissioning Plan that was approved by WDNR on October 6, 2023, incorporating the suggestions to add more indoor air sampling locations and modifying the placement of the passive samplers.

Sub-slab Depressurization System Vacuum Measurements

The sub-slab depressurization system installed in Buildings 4 and 5 was tested on 10/09/2023. The outdoor air temperature was about 54 degrees F while readings were performed. A digital manometer was utilized to take measurements of vacuum below the slab after the previously installed 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 -0.019 to -0.331 inches of water, all of which are greater than the required vacuum.

The locations and results of October 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 (SVP – 19). The vapor pins near 32nd 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 while the many of them being higher than the readings from the 2nd 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 (HEG). The sample analysis was performed by Sameer Neve, Ph.D. ENV SP and Samuel Ramirez who have been trained to operate the instrument by Dr. Blayne Hartman and Clint Hartman of HEG. The results of the GC analysis are shown alongside the vacuum measurements in Table 2. The greatest TCE reading at 20.8 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 µg/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 will be sampled over a 1-week period from October 10, 2023, until October 16, 2023. The locations of the passive air samplers are included in Attachment A with red circles. Out of the ten (10) passive samplers that were installed, one was placed outside building 5 to represent background outdoor concentration while one was placed in the basement to represent a sample from confined space. A passive sampler was placed at the children's breathing zone in the Play Area while the others were placed in adult breathing zones by suspending them using string to keep at least 6 inches away from walls per WDNR comments.

On October 16, 2023, the passive air samplers will be 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). Results from these tests will be provided to WDNR within 10 days of the receipt of the test results.

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 µg/m³. The locations of the samples are shown in Attachment A in blue circles (eg. GC-5-01A) and the results of the sampling are documented in Table 3. Thirteen (13) sample locations were added throughout Building 4 on the recommendation of WDNR in and around the area where historically, high sub-slab vapor concentrations were detected. No samples exceeded VAL with almost all the samples were below the TCE reporting limit of 0.6 µg/m³.

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 October 10, 2023, and analyzed using the portable GC.

The results of the October 2023 exhaust fan air quality sampling are summarized in Table 4 and the locations of sampled fans are included in Figure 2. 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 improvement from the previous rounds of commissioning and compliance with the VRSL levels.
- The indoor air samples, collected via syringe sampling and analyzed using the portable GC, are
 in compliance with the VALs. The additional sampling locations on the recommendation of WDNR
 also demonstrated TCE readings under VAL.
- Exhaust Fan emission sampling indicates that TCE is still present in the sub-slab and that minimal mass reduction is taking place.
- Based on the results from the third round of commissioning, the system is operating as intended.

We have the following recommendations:

 A report will be completed documenting the third round of commissioning once passive air sampler results are received.

Robert I Reineke

Robert T. Reineke, P.E.

Senior Engineer

- We recommend that there is no further requirement of commissioning and hence an O&M plan should be devised, and an initial O&M monitoring should be performed.
- 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

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

Principal Engineer

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



Attachments:

Figure 1 Sub-Slab Depressurization Locations and Results

Figure 2 Exhaust Fan Locations

Table 1 Differential Pressure Measurements
 Table 2 Sub-Slab TCE Measurements
 Table 3 Indoor Air TCE Measurements
 Table 4 Exhaust TCE Measurements
 Table 5 Passive Sampler Record

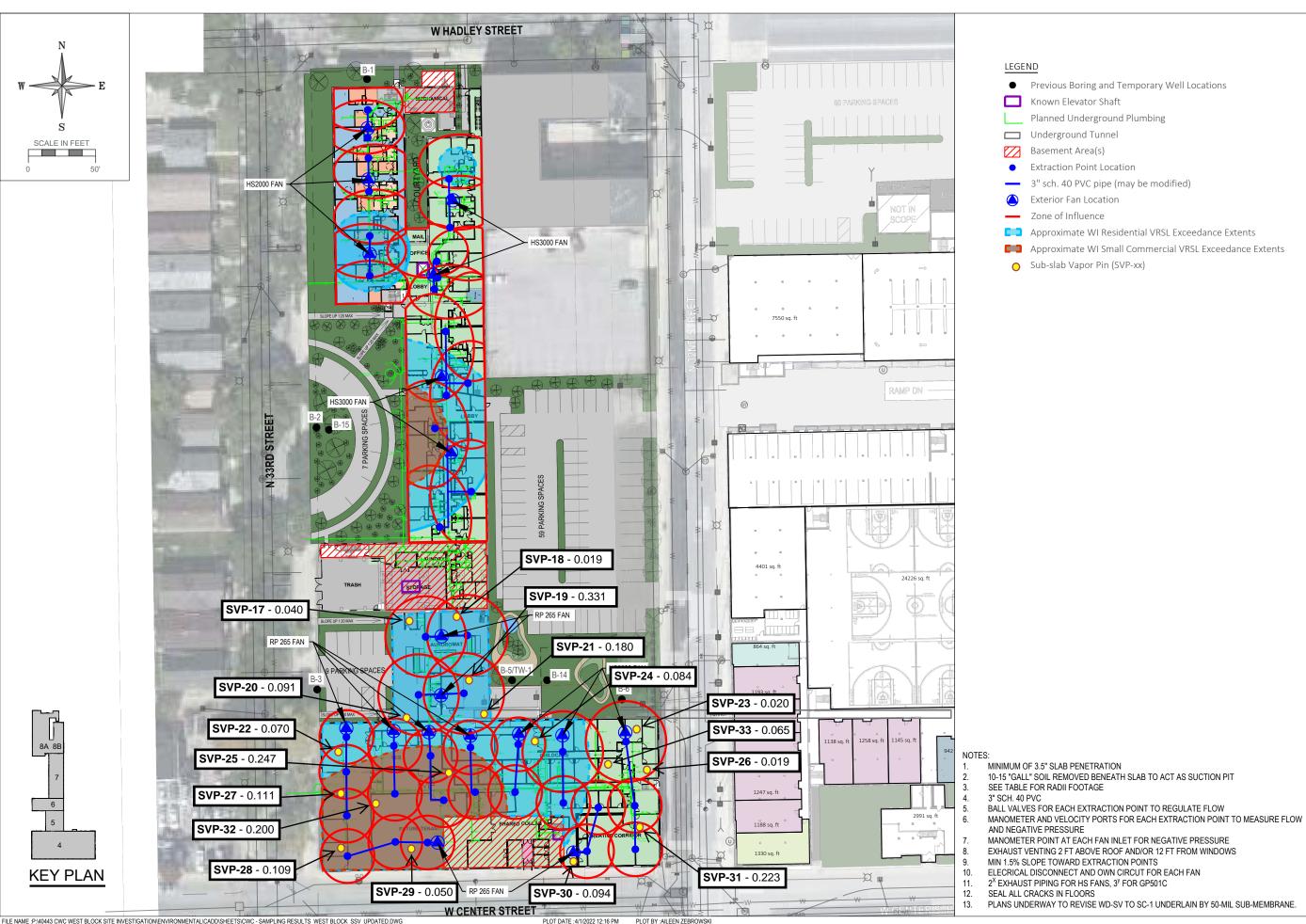
Attachment A Passive Air and Indoor Air Sampling Locations

Attachment B Pictures



FIGURES







Previous Boring and Temporary Well Locations

Known Elevator Shaft

Planned Underground Plumbing

Underground Tunnel

Basement Area(s)

Extraction Point Location

3" sch. 40 PVC pipe (may be modified)

Exterior Fan Location

Zone of Influence

Approximate WI Residential VRSL Exceedance Extents

Approximate WI Small Commercial VRSL Exceedance Extents

Sub-slab Vapor Pin (SVP-xx)

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

CONSULTANT

SITE INVESTIGATION REPORT
3212 W. CENTER ST., 2727 N. 32ND ST., 2758 N. 33RD ST.
COMMUNITY WITHIN THE CORRIDOR - WEST BLOCK
MILWAUKEE, WI 53210
PROJECT NUMBER: 40443

COMMUNITY WITHIN THE CORRIDOR LIMITED PARTNERSHIP

CLIENT:

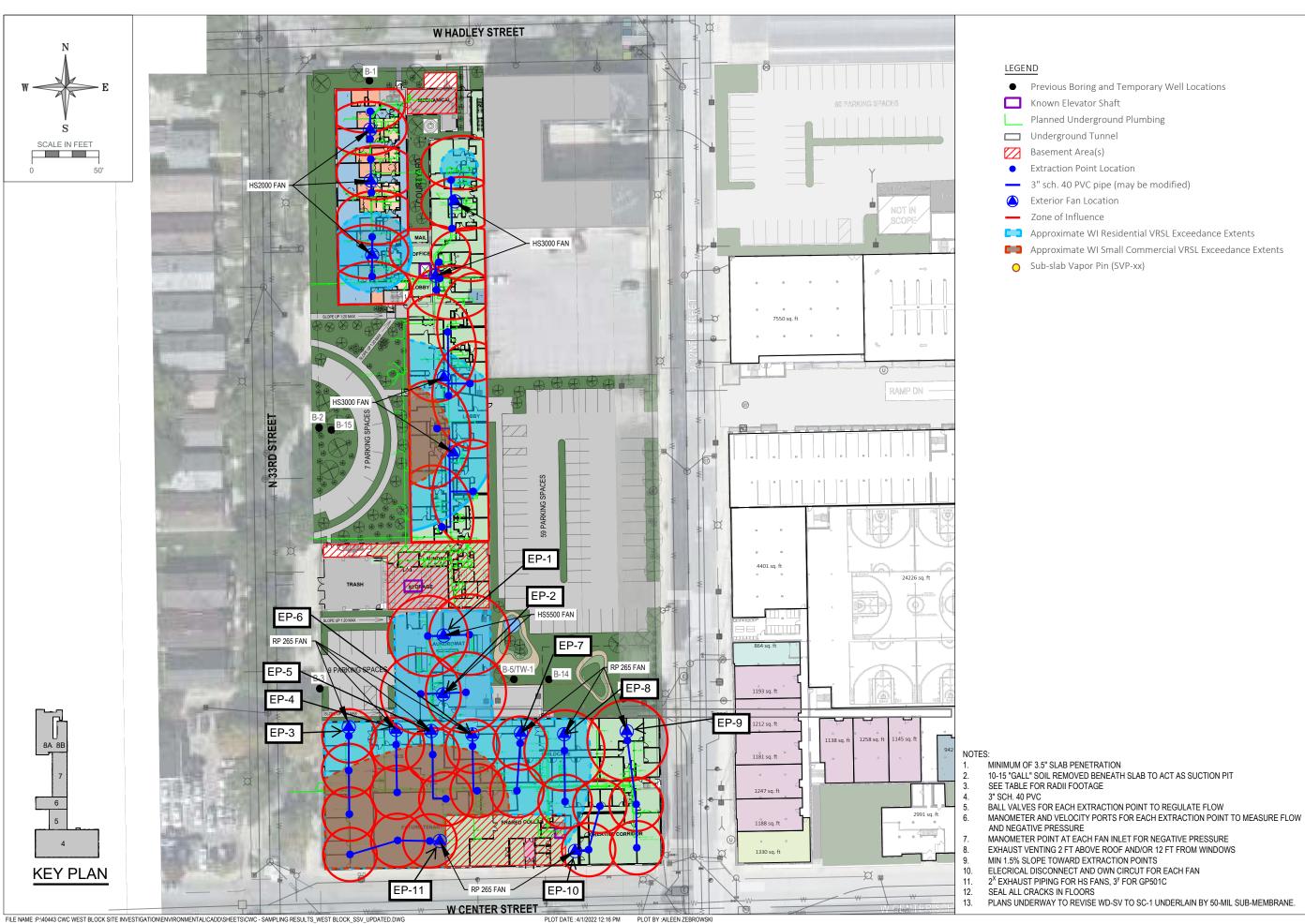
PROJECT

SHEET TITLE
Sub-slab Depressurization Location and Results

06/02/2022

FIGURE 1

PLANS UNDERWAY TO REVISE WD-SV TO SC-1 UNDERLAIN BY 50-MIL SUB-MEMBRANE.



LEGEND

Previous Boring and Temporary Well Locations

Known Elevator Shaft

Planned Underground Plumbing

Underground Tunnel

Basement Area(s)

Extraction Point Location

3" sch. 40 PVC pipe (may be modified)

Exterior Fan Location

Zone of Influence

Approximate WI Residential VRSL Exceedance Extents

Approximate WI Small Commercial VRSL Exceedance Extents

Sub-slab Vapor Pin (SVP-xx)

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

CONSULTANT

COMMUNITY WITHIN THE CORRIDOR LIMITED PARTNERSHIP

SITE INVESTIGATION REPORT
3212 W. CENTER ST., 2727 N. 32ND ST., 2758 N. 33RD ST.
COMMUNITY WITHIN THE CORRIDOR - WEST BLOCK
MILWAUKEE, WI 53210
PROJECT NUMBER: 40443

CLIENT:

06/02/2022

SHEET TITLE Exhaust Fan Locations

FIGURE 2

TABLES



Table 1 - Differential Pressure Measurements

DATE: 10/09/2023 Measurer: Sameer Neve, Ph.D., ENV SP

	Vacuum (inches H₂O)					
Vapor Pin	1st Round	2 nd Round	3 rd Round			
SVP - 17	-0.005	-0.013	-0.040			
SVP – 18	-0.009	-0.016	-0.019			
SVP - 19	-0.009	-0.506	-0.331			
SVP - 20	-0.028	-0.135	-0.091			
SVP – 21	-0.117	-0.211	-0.180			
SVP - 22	-0.299	-0.069	-0.070			
SVP – 23	-0.006	-0.011	-0.020			
SVP – 24	-0.026	-0.091	-0.084			
SVP - 25	-0.031	-0.272	-0.247			
SVP - 26	NA	-0.008	-0.019			
SVP – 27	-0.038	-0.123	-0.111			
SVP – 28	-0.048	-0.103	-0.109			
SVP - 29	-0.039	-0.046	-0.050			
SVP - 30	-0.061	-0.086	-0.094			
SVP - 31	-0.184	-0.219	-0.223			
SVP - 32	-0.143	-0.205	-0.200			
SVP - 33	-0.004	-0.067	-0.065			

Table 2 - Sub-Slab TCE Measurements

DATE: <u>10/10/2023</u> Measurer: <u>Samuel Ramirez</u>

	Sub slab Vapor TCE (µg/m³)				
Vapor Pin	2 nd Round	3 rd Round			
Calibration		14.6 ppbv (Std. 15 ppbv)			
SVP – 17	< 0.6	< 0.6			
SVP – 18	11.2	< 0.6			
SVP – 19	< 0.6	< 0.6			
SVP - 20	< 0.6	< 0.6			
SVP – 21	1.04	7.61			
SVP – 22	8.49	< 0.6			
SVP – 23	< 0.6	< 0.6			
SVP – 24	< 0.6	< 0.6			
SVP – 25	2.22	3.22			
SVP - 26	< 0.6	< 0.6			
SVP – 27	8.79	5.05			
SVP – 28	64.8	20.8			
SVP - 29	11	0.91			
SVP - 30	< 0.6	< 0.6			
SVP - 31	< 0.6	< 0.6			
SVP - 32	11	5.25			
SVP - 33	< 0.6	3.83			

Table 3 - Indoor Air TCE Measurements

DATE: <u>10/09/2023 & 10/10/2023</u> Measurer: <u>Sameer Neve, Ph.D., ENV SP</u>

Location	Date	Time	TCE (µg/m³)
Calibration	10/09/2023	11:55	11.75 ppbv (Std: 10 ppbv)
GC-4-01A	10/09/2023	12:13	1.26
GC-4-01B	10/09/2023	12:24	< 0.6
GC-4-01C	10/09/2023	12:29	< 0.6
GC-4-01D	10/09/2023	12:34	< 0.6
GC-4-01E	10/09/2023	13:29	< 0.6
GC-4-01F	10/09/2023	13:33	< 0.6
GC-4-01G	10/09/2023	13:55	< 0.6
GC-4-01H	10/09/2023	14:02	< 0.6
GC-4-01I	10/09/2023	16:38	< 0.6
GC-4-01J	10/09/2023	15:34	< 0.6
GC-4-01K	10/09/2023	15:29	< 0.6
GC-4-01L	10/09/2023	16:06	< 0.6
GC-4-01M	10/09/2023	16:49	0.76
GC-4-01N	10/09/2023	16:54	0.71
GC-4-010	10/09/2023	15:20	< 0.6
GC-4-01P	10/10/2023	8:06	< 0.6
GC-4-01Q	10/09/2023	15:40	< 0.6
GC-4-01R	10/10/2023	8:15	< 0.6
GC-4-01S	10/10/2023	8:25	< 0.6
GC-4-01T	10/10/2023	8:44	< 0.6
GC-4-01U	10/10/2023	8:30	< 0.6
GC-4-01V	10/10/2023	8:50	< 0.6
GC-4-01W	10/10/2023	8:58	< 0.6
GC-4-01X	10/10/2023	9:04	< 0.6
GC-4-01Y	10/09/2023	16:23	< 0.6
GC-4-01Z	10/09/2023	16:18	< 0.6
GC-4-02A	10/09/2023	16:11	< 0.6
GC-4-02B	10/09/2023	16:44	< 0.6
GC-5-01A	10/10/2023	9:19	< 0.6
GC-5-01B	10/09/2023	14:06	< 0.6
GC-5-01C	10/09/2023	14:10	< 0.6
GC-5-01D	10/10/2023	9.24	< 0.6
GC-4-01A	10/10/2023	9:29	< 0.6
GC-4-01M	10/10/2023	9:34	< 0.6

Table 4 - Exhaust TCE Measurements

DATE: 10/10/2023 Measurer: Sameer Neve, Ph.D., ENV SP

GC TCE Measurements of Blower Effluent and Removal Quantities						
Blower No.	Pipe Diameter	Exhaust Velocity	Flow Rate	TCE Concentration	TCE Removal Rate	TCE Removal (07/23 – 10/23)
	inches	fpm	cfm	ug/m3	lbs/day	lbs
EP-1	3	886	43	3	0.000012	0.000927
EP-2	3	906	44	2.82	0.000011	0.000891
EP-3	3	965	47	2.26	0.000010	0.000760
EP-4	3	472	23	11.25	0.000023	0.001851
EP-5	3	1220	60	4.12	0.000022	0.001752
EP-6	3	1280	63	3.07	0.000017	0.001370
EP-7	3	236	12	2.76	0.000003	0.000227
EP-8	3	1142	56	1.89	0.000010	0.000752
EP-9	3	217	11	5.65	0.000005	0.000427
EP-10	3	453	22	13.3	0.000027	0.002100
EP-11	3	1634	80	10.8	0.000078	0.006152
			462		Total	0.02

Table 5 - Passive Sampler Record

Location	Sample ID	Date Deployed	Time Deployed	Date Retrieved	Time Retrieved
IA-4-01-A		10/10/2023	10:00		
IA-4-01-B		10/10/2023	10:20		
IA-4-01-C		10/10/2023	9:50		
IA-4-01-D		10/10/2023	10:30		
IA-4-01-E		10/10/2023	10:05		
IA-4-01-F		10/10/2023	9:55		
IA-5-01-A		10/10/2023	10:15		
IA-5-01-B		10/10/2023	10:10		
IA-4-BSMT		10/10/2023	9:45		
OA-4/5		10/10/2023	10:18		

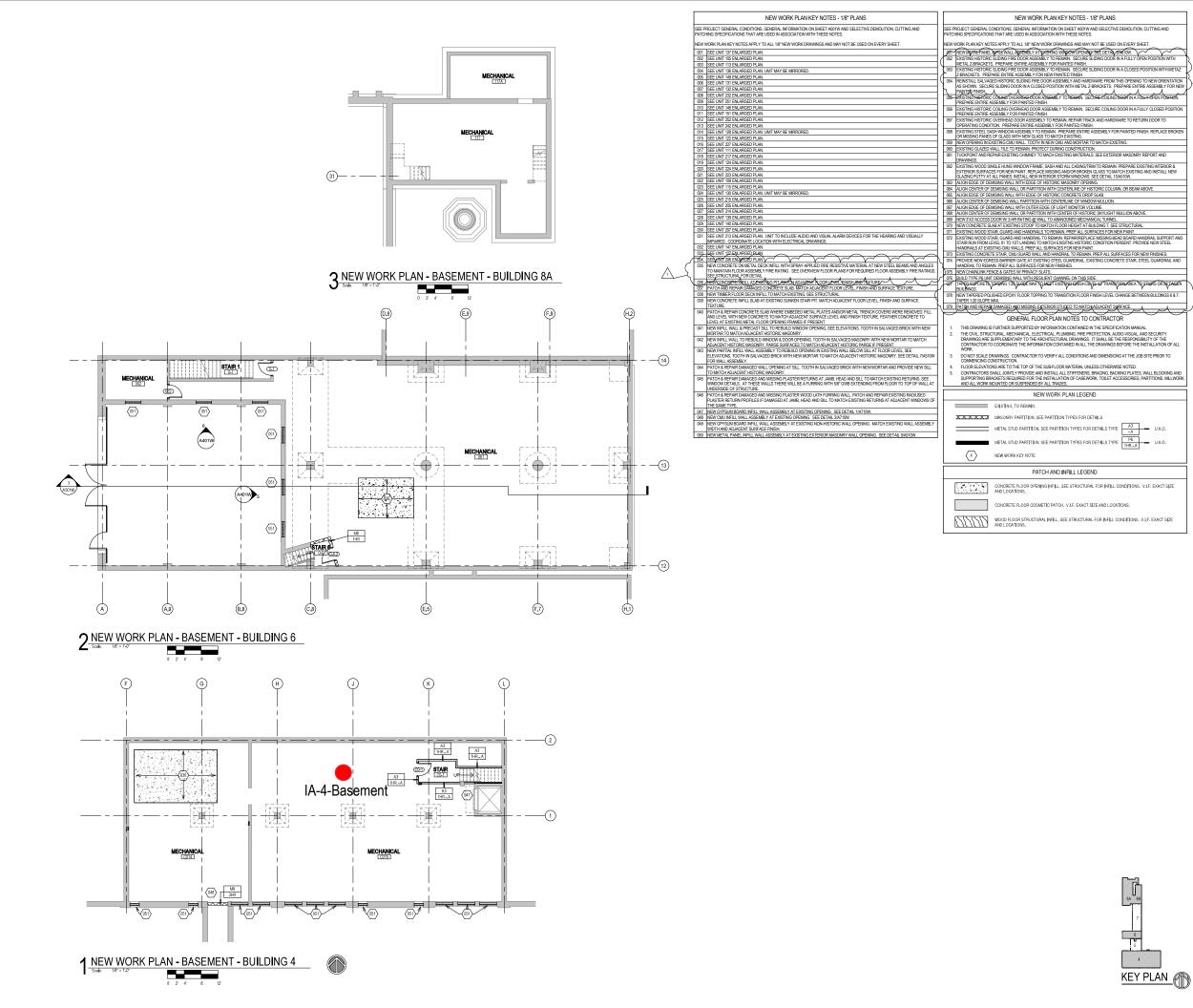
ATTACHMENTS



ATTACHMENT A

Passive Air and Indoor Air Sampling Locations





T 414.220.9640

751 N Jefferson St.
Suite 200
Milwaukee, WI 53202

2758 N. 33RD STREET MILWAUKEE, WI 53210

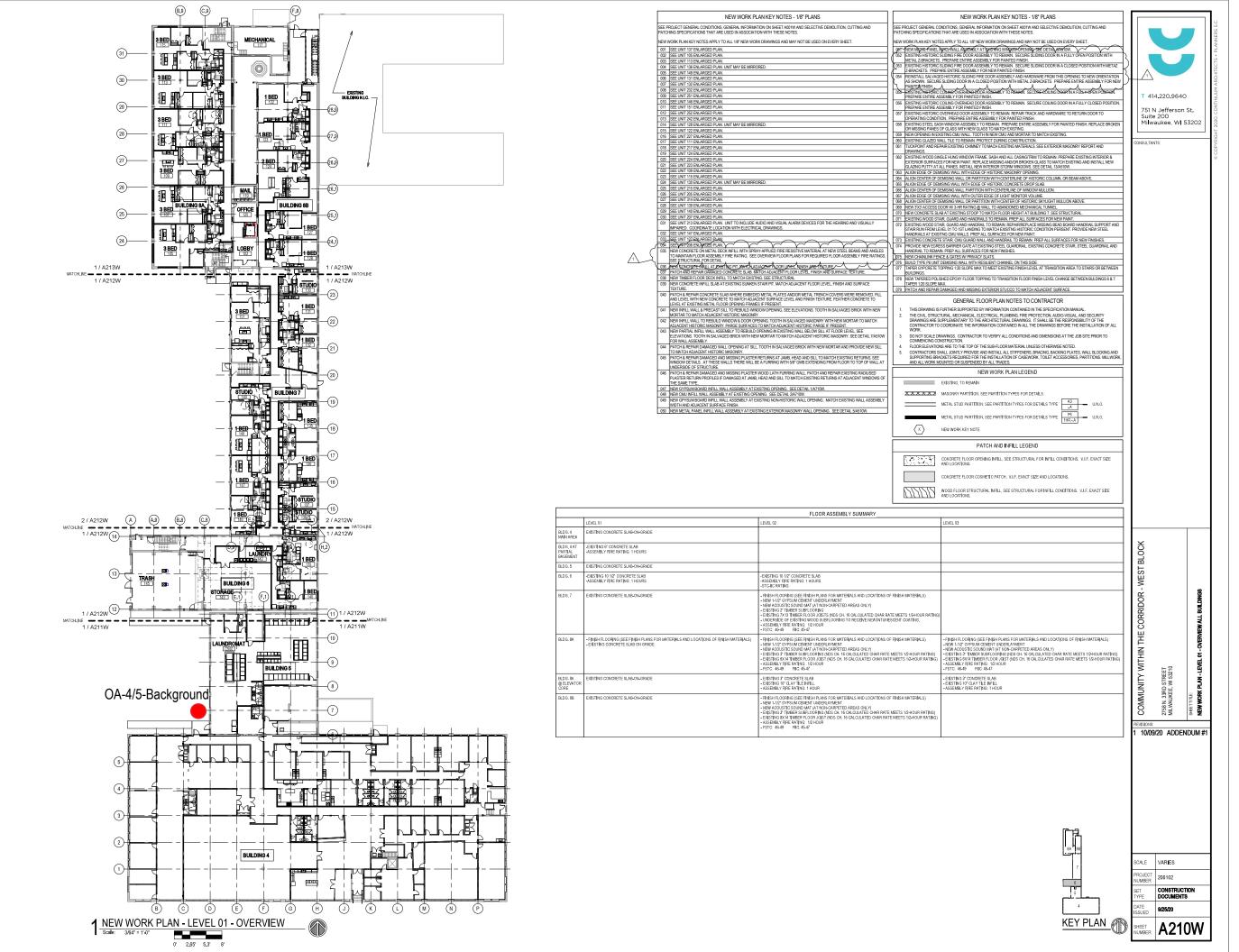
10/09/20 ADDENDUM#

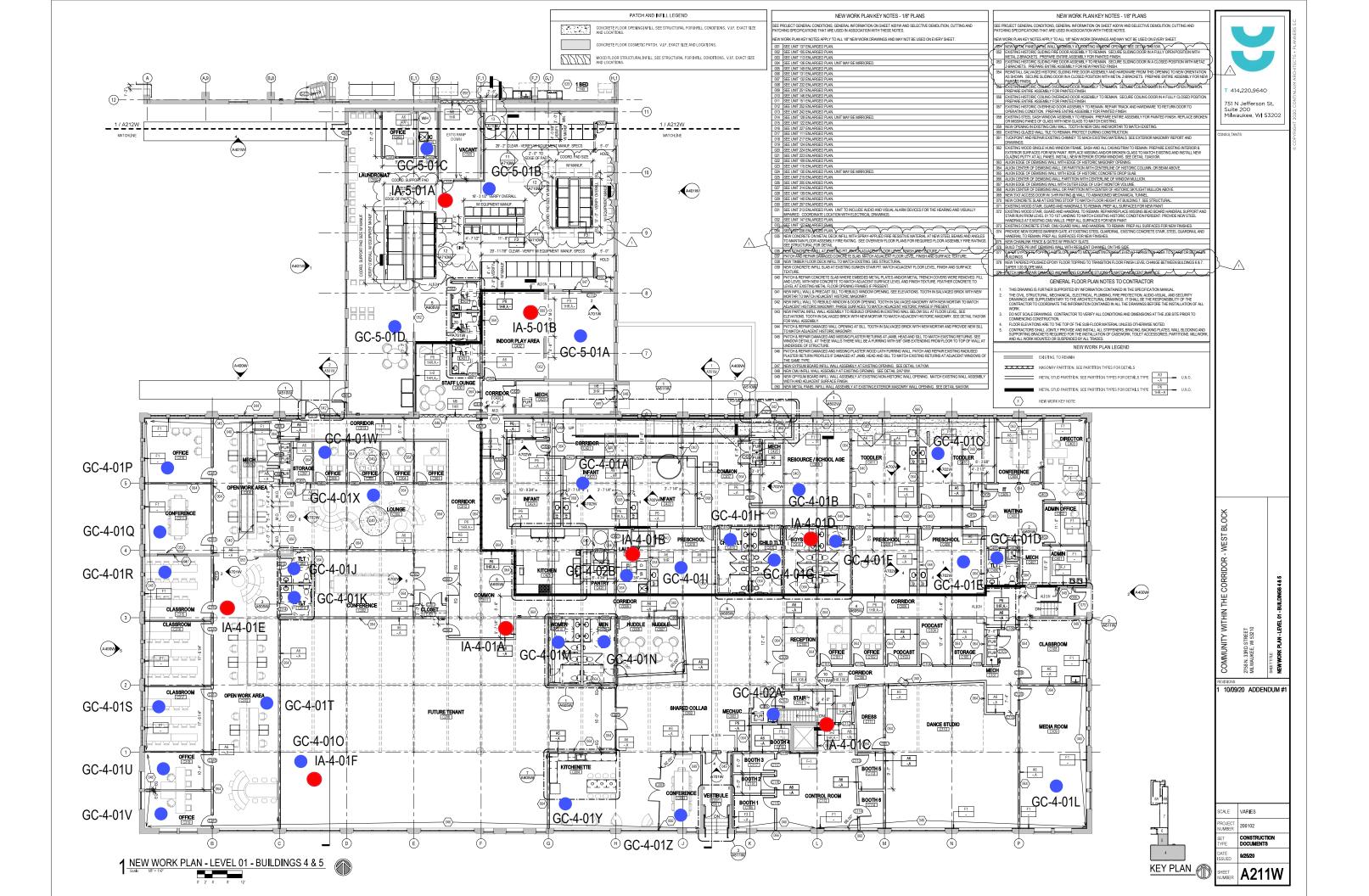
200102

CONSTRUCTION DOCUMENTS

9/25/20

A201W





ATTACHMENT B

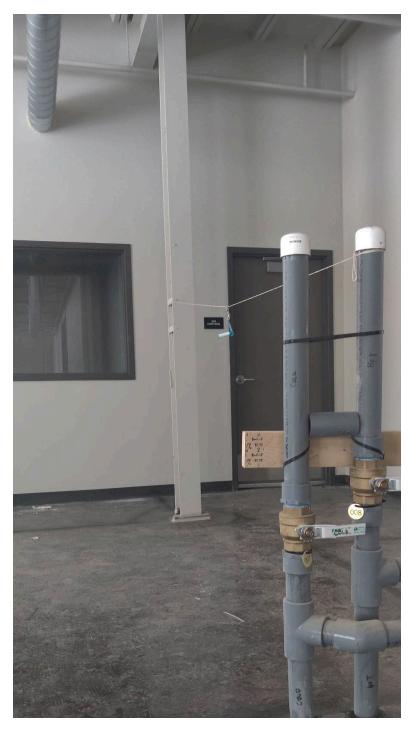
Pictures





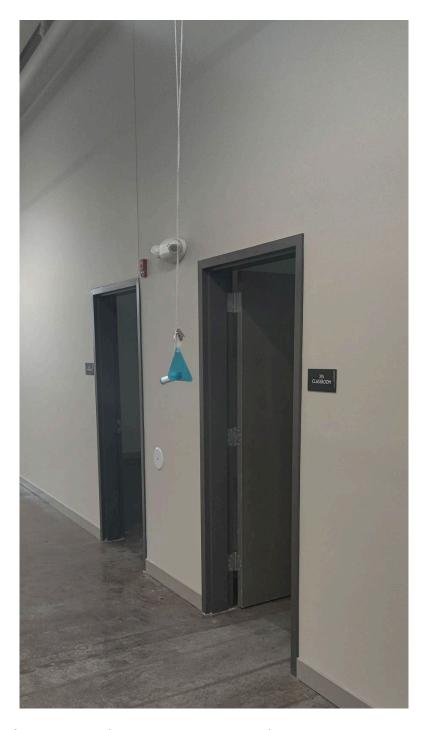
Picture1 – Location of the Passive sampler at children's level in Play area





Picture 2 – Passive Sampler Location in Building 5





Picture 3 – Placement of sampler suspended away from the wall at breathable height

