

MEMORANDUM

DATE : April 2, 2023,
TO : Shane LaFave/ CWC Development
FROM : Pratap Singh and Robert Reineke PE / KSingh
SUBJECT : GC Testing for Community Within the Corridor – East Block
March 31 to April 1, 2023
COPY TO : Project #40441B

The purpose of this memorandum is to summarize the test results of gas chromatograph (GC) Testing conducted by Hartman Environmental Geoscience in association with KSingh staff.

A testing program was implemented using a portable GC to detect the magnitude and variation of TCE detection on 1st floor to 3rd floor at the referenced facility. The testing program was implemented in accordance with the sampling plan submitted to WDNR earlier. Additional comments on conditions are included in the daily issues log.

The testing program began on March 30, 2023, and is continuing. As of April 1, 2023, One hundred one samples were tested for TCE and PCE. The test results of discrete sampling are summarized in Table 1 to 3. The test results are depicted for each floor in Figures 1 to 3. Data for continuous monitoring are being processed and is not reported in this submittal.

The following observations are made because of the testing conducted to date.

- The first floor is impacted the most. The units 1045 and 1050 are the most impacted. The levels ranged from 350 ug/m³ to 8,000 ug/m³. The south wall of unit 1050 had a hole which detected TCE at 8,000 ug/m³.
- Three samples were tested from Unit 1045. The concentrations at 1045 North wall, 1045 Wood column, and 1045 Entry floor hole were noted to have TCE concentrations ranging from 360 to 1,500 ug/m³.
- Test results from unit 1045 and 1050 indicate preferential pathways for vapors to move through the gap between the floor and wall, holes in the floor, and minor cracks in the wood columns.
- The second floor and third floor also exhibit low levels. However, the levels of TCE on 2nd and 3rd floor appear to be related to 1st floor units 1045 and 1050 respectively.
- It was also noted that elevated levels were associated with utility rooms and connections along the west portion of the east block.
- The test results of exhaust samples from two blowers detected TCE concentrations between 13 and 26 ug/m³ which demonstrates low emission but subpar performance of the blowers.

- The presence of water in the blower and in the backfill of the vapor mitigation system resulting from wet weather appears to be the most probable cause of subpar performance of the vapor mitigation system.

Conclusions

- The main cause of the problem has been identified. Preferential pathways for vapors to move upward through the void space, holes in the floor, and minor cracks in the column are identified.
- Vapor mitigation system is not very effective because of the presence of water in the knockout drums for the blowers and because of the water in the piping system of the vapor mitigation system.

Corrective Action

The recommended corrective action are as follows:

- Dewater the trench for vapor mitigation system. Northshore Environmental is contacted to dewater the water in the piping for the vapor mitigation system on Monday.
- Arrangements are made to conduct a TV inspection of the vapor mitigation pipes.
- Fliteway technology needs to continuously remove water from the blowers as soon as possible. Also, KSingh should get an alarm if the blower is off for us to act.
- Arrangements need to be made by a contractor to seal the preferential pathways for vapors to move into the units.
- Once the root cause of the problem is fixed, portable GC testing should be continued.
- Additional corrective measures are included in the daily report for April 1, 2023.

Table 1. Portable GC Data for March 30, 2023



Client: Ksingh

Site: CWC

On-site EPA Method TO-14 Data from Indoor Air Samples

Instrument: SRI 8610 Gas Chromatograph with ECD

Operator: Clint Hartman

Date: 3/30/2023

Sample ID	Sample Location	Sample Time	TCE (ug/m3)	PCE (ug/m3)	Comments
IA-1	Sales Office at Machine	10:00	0.3	ND	
IA-2	Unit 1035	10:09	0.3	0.4	
IA-3	Unit 1025	10:25	ND	ND	
IA-4	Unit 1026	10:34	0.3	ND	
IA-5	Unit 1036	10:42	0.5	0.6	
IA-6	Unit 1037	10:54	2.0	2.0	
IA-7	Unit 1039	11:06	4.7	0.2	
IA-8	Unit 1040	11:15	10.3	0.5	
IA-9	Unit 1041	11:24	11.6	0.9	
IA-10	Unit 1042	11:33	11.4	1.2	
IA-11	Unit 1043	11:43	17.6	1.5	
IA-12	Unit 1044	11:53	56	1.5	
IA-13	Unit 1045	12:07	350	1.0	
IA-14	Unit 1050	12:17	160	0.5	
IA-15	Unit 1051	12:26	19	0.3	
IA-16	Stairwell 4	12:34	1.6	0.3	
IA-17	Basket Ball Court	12:46	0.3	ND	
IA-18	Garage	12:58	0.6	1.1	
IA-19	Elevator	13:08	ND	0.3	
IA-20	Stairwell 6	13:16	ND	0.3	
IA-21	Basket Ball Court 2	13:28	ND	ND	
IA-22	Garage 2	13:38	ND	ND	
IA-23	Garage Tunnel	13:47	0.8	0.5	
IA-24	Mechanical Room	13:56	2.7	8.8	
IA-25	Men's Locker Room	14:06	70	0.6	
IA-26	1st Floor Hallway South	14:25	5.2	0.3	
IA-27	1st Floor Hallway Center	14:33	15	0.3	
IA-28	1st Floor Hallway North	14:42	10	0.5	
IA-29	2nd Floor Hallway South	15:27	0.8	0.3	
IA-30	2nd Floor Hallway Center	15:35	0.7	0.2	
IA-31	2nd Floor Hallway North	15:45	0.8	0.3	
IA-32	2nd Floor Stairwell 2	15:54	3.2	0.2	
IA-33	Unit 2043	16:12	0.4	0.2	
IA-34	Unit 2058	16:20	3.8	ND	
IA-35	Unit 2064	16:29	ND	ND	
IA-36	Unit 2077	16:37	ND	ND	
IA-37	Unit 2056	16:50	60	0.3	
IA-38	Unit 2059	17:00	0.3	ND	
IA-39	3rd Floor Stairwell 2	17:20	3.4	ND	
IA-40	3rd Floor Hallway South	17:28	ND	ND	
IA-41	Unit 2045	17:36	23	ND	
IA-42	Unit 3056	17:44	6.0	ND	

Table 1. Portable GC Data for March 30, 2023

Reporting Limit: (ug/m3)			0.3	0.2	

ND Indicates Not Detected at listed reporting level

Table 2. Portable GC Data for March 31, 2023



Client: Ksingh
 Site: CWC
 On-site EPA Method TO-14 Data from Indoor Air Samples
 Instrument: SRI 8610 Gas Chromatograph with ECD
 Operator: Clint Hartman
 Date: 3/31/2023

Sample ID	Sample Location	Sample Time	TCE (ug/m3)	PCE (ug/m3)	Comments
IA-43	Sales Office at Machine	9:40	ND	ND	
IA-44	2nd Floor Stairwell 2	10:00	2.0	ND	
IA-45	Unit 2058	10:08	4.2	ND	
IA-46	Unit 2056	10:15	52	ND	
IA-47	Unit 2045	10:26	18	ND	
IA-48	Unit 2039	10:38	ND	ND	
IA-49	Unit 2040	10:46	ND	ND	
IA-50	Unit 2042	10:54	ND	ND	
IA-51	Unit 2043	11:02	ND	ND	
IA-52	2nd Floor Stairwell 4	11:14	ND	ND	
IA-53	Unit 2044	11:23	ND	ND	
IA-54	Unit 2059	11:36	ND	ND	
IA-55	Unit 2045	11:52	17	ND	
IA-56	2nd Floor Corridor North	14:50	ND	ND	
IA-57	Unit 2061	14:55	ND	ND	
IA-58	Unit 2062	15:03	ND	ND	
IA-59	Unit 2057	15:12	4.7	ND	
IA-60	Unit 3044	15:30	ND	ND	
IA-61	Unit 3045	15:39	6.6	ND	
IA-62	Unit 3056	15:47	9.6	ND	
IA-63	Unit 3057	15:56	ND	ND	
IA-64	Unit 2016	16:17	ND	ND	
IA-65	Unit 2017	16:24	ND	ND	
IA-66	Unit 2022	16:33	ND	ND	
IA-67	2nd Floor East Hall	16:45	ND	ND	
IA-68	2081 Hallway	17:00	ND	ND	
IA-69	Unit 2111	17:07	ND	ND	
IA-70	Front Lobby	17:15	ND	ND	
IA-71	2nd Floor Stairwell 8	17:23	ND	ND	
IA-72	Unit 2025	17:37	ND	ND	
IA-73	2nd Floor Corridor South	17:46	ND	ND	
IA-74	Unit 2036	17:53	ND	ND	
IA-75	Unit 2037	18:00	ND	ND	
Reporting Limit: (ug/m3)			0.6	0.6	

ND Indicates Not Detected at listed reporting level

Table 3. Portable GC Data for April 1, 2023



Client: Ksingh

Site: CWC

On-site EPA Method TO-14 Data from Indoor Air Samples

Instrument: SRI 8610 Gas Chromatograph with ECD

Operator: Clint Hartman

Date: 4/1/2023

Sample ID	Sample Location	Sample Time	TCE (ug/m3)	PCE (ug/m3)	Comments
IA-76	Unit 3058	10:50	ND	ND	
IA-77	3rd Floor Hallway Center	11:03	ND	ND	
IA-78	3rd Floor Stairwell 4	11:13	0.7	ND	
IA-79	3rd Floor Stairwell 3	11:23	0.6	ND	
IA-80	Hallway Outside 3021	11:50	ND	ND	
IA-81	Unit 3015	12:00	ND	ND	
IA-82	Hallway Outside 3035	12:10	ND	ND	
IA-83	Unit 3037	12:20	1.1	ND	
IA-84	Unit 3040	12:38	ND	ND	
IA-85	Unit 3041	12:49	ND	ND	
IA-86	Unit 3042	13:00	ND	ND	
IA-87	Unit 3043	13:07	ND	ND	
IA-88	Unit 3059	13:37	ND	ND	
IA-89	Unit 3039	13:46	ND	ND	
IA-90	Unit 3036	13:54	ND	ND	
IA-91	Unit 3035	14:03	ND	ND	
IA-92	Unit 3061	14:33	ND	ND	
IA-93	Unit 3062	14:42	ND	ND	
IA-94	3rd Floor Corridor	14:54	ND	ND	
IA-95	Hallway Outside 3065	15:04	0.7	ND	
IA-96	SSD Vent Pipe	15:31	13	ND	
IA-97	SSD Vent Pipe #2	15:39	26	ND	
IA-98	1045 Entry Floor Hole	16:00	400	ND	
IA-99	1050 South Wall Hole	16:10	8000	ND	
IA-100	1045 Wood Column	16:34	1500	ND	
IA-101	1045 North Wall	16:52	360	ND	
Reporting Limit: (ug/m3)			0.6	0.6	

ND Indicates Not Detected at listed reporting level

PROJECT TITLE: COMMUNITY WITHIN THE CORRIDOR

2748 N 32ND STREET
MILWAUKEE, WI 53210
PROJECT NUMBER: 40441

CLIENT: COMMUNITY WITHIN THE CORRIDOR LIMITED PARTNERSHIP

REVISIONS	DATE	DESCRIPTION

DRAWN BY JDS	DATE 04/02/2023
CHECKED BY RR	DATE 04/02/2023
SHEET TITLE	

TCE CONCENTRATIONS 3RD FLOOR

FIGURE 3

LEGEND: TCE CONCENTRATION (UG/M3)

- 0-2.1
- 2.1-20
- 20-100
- 100+

NOTES:

1. CIRCLES REPRESENT APPROXIMATE LOCATION OF TCE SAMPLE POINT

IA-93 Unit 3062 4/1/2023	ND
IA-92 Unit 3061 4/1/2023	ND
IA-88 Unit 3059 4/1/2023	ND
IA-76 Unit 3058 4/1/2023	ND
IA-63 Unit 3057 3/31/2023	ND
IA-62 Unit 3056 3/31/2023	9.6
IA-61 Unit 3045 3/31/2023	6.6
IA-60 Unit 3044 3/31/2023	ND
IA-87 Unit 3043 4/1/2023	ND
IA-86 Unit 3042 4/1/2023	ND
IA-85 Unit 3041 4/1/2023	ND
IA-84 Unit 3040 4/1/2023	ND
IA-89 Unit 3039 4/1/2023	ND
IA-39 3rd Floor Stairwell 2 3/30/2023	3.4
IA-83 Unit 3037 4/1/2023	1.1
IA-90 Unit 3036 4/1/2023	ND
IA-91 Unit 3035 4/1/2023	ND
IA-81 Unit 3015 4/1/2023	ND
IA-94 3rd Floor Corridor 4/1/2023	ND
IA-95 Hallway Outside 3065 4/1/2023	0.7
IA-78 3rd Floor Stairwell 4 4/1/2023	0.7
IA-77 3rd Floor Hallway Center 4/1/2023	ND
IA-79 3rd Floor Stairwell 3 4/1/2023	0.6
IA-82 Hallway Outside 3035 4/1/2023	ND
IA-80 Hallway Outside 3021 4/1/2023	ND

