

MEMORANDUM

DATE : April 29, 2023

TO : Shane LaFave / Roers Companies, LLC

FROM : Pratap Singh, Ph.D., PE / KSingh

SUBJECT : Weekly Progress Report for Week Ending 4/29/2023
Community Within the Corridor - East Block

COPY TO : Que El-Amin / Scott Crawford, Inc., Robert Reineke, PE, Robert Fedorchak, PE,
Project #40441B

The purpose of this memorandum is to summarize the work performed as a part of the emergency response for the referenced project for the week ending 4/29/2023. This document is intended to serve three purposes:

1. Summarizing the tasks performed during the past week, and
2. The action items for the following week.
3. Detailed overview of Indoor Air Monitoring Data for TCE

The following tasks were performed this week which are summarized below:

1. Task #1 – GC Testing by KSingh & Hartman

KSingh continues to work on conducting gas chromatograph (GC) testing for measurement of TCE in various units of the East Block focused on the first floor. The focus of testing for TCE is concentrated in units that have detected elevated levels of TCE. The test results of TCE are shown in Tables 1 to 5 in Attachment A. Comprehensive data tables of Indoor Air Monitoring Data for TCE is provided in Attachment C. The findings of portable discrete testing for TCE are as follows:

- TCE detections ranged from 27 ug/m³ to 221 ug/m³ in unit 1045.
- TCE detections ranged from 72 ug/m³ to 199 ug/m³ in Unit 1050.
- Higher than expected concentrations of TCE were detected at 6.3 µg/m³ and 12 µg/m³ in the Basketball court (Gym) area.
- Unit 1052 detected a TCE concentration of 20 ug/m³ after taking cosmetic remedial action on sealing the cracks and capping the open pipe.
- The North Mechanical Room concentrations ranged from 4.5 µg/m³ to 10 µg/m³. Visible cracks in the brick masonry wall and along the pipes were temporarily sealed.
- The two south blowers are showing detections of TCE ranging from 21 ug/m³ to 32 ug/m³ which indicates source removal is taking place.
- The two north blowers detections of TCE ranged from 6 ug/m³ to 46 ug/m³.

2. Task #2 – Site Visit to CWC by Patriot Engineering
KSingh facilitated a site visit to CWC East Block for Patriot Engineering to assess the overall remedial measures in place and prospective corrective actions that could be undertaken to expedite the remediation process. Robert Fedorchak, PE, from Patriot Engineering conducted a walkthrough inspection of the facility guided by Robert Reineke, PE and Sameer Neve, Ph.D. of KSingh to identify the potential action items. As indicated in the Emergency Correction Action Plan submitted to WDNR, it was discussed that the immediate corrective action needed is to drain out the excess water in the sub-slab region and prevention of stormwater from entering the building or the sub-slab region especially from the area around the intake of the South blowers.
3. Task #3 – Meeting with Project Team to Discuss Storm Water Infiltration into SSDS System
KSingh and the CWC Project Team met to discuss the storm water infiltration issue. As noted in previous submittals to WDNR, storm water is entering the SSDS system and impacting the performance of the Vapor Mitigation System. A walk through will be conducted to assess the areas of storm water entry.
4. Task #4 – Meeting with Project Team to Develop Schedule for Emergency Correction Action Plan
KSingh and the Project Team met to develop a schedule for the tasks listed in the Emergency Corrective Action Plan and assigned roles and responsibilities for corrective action.
5. Task #5 – Site Visit with Horner Plumbing, Patriot Engineering and KSingh
KSingh, Horner Plumbing and Patriot Engineering conducted a site visit to assess the status of the underground tunnel, sumps inside the building, and the piping network in order to televise the pipes and determine strategic locations for extracting water from the trench system.
6. Task #6 – VMS Operations and Troubleshooting
The following tasks were performed:
 - Discrete sampling using portable GC was performed this week to monitor TCE concentrations in strategic units in the complex.
 - All four blowers are functioning. Fliteway Technologies and KSingh are monitoring the operations of the VMS.
 - Water extraction from the blowers has reduced significantly and only 50 – 60 gallons have been extracted throughout the week as compared to over 200 gallons in previous weeks.
 - The 55-gallon drums were labeled with ‘Non-Hazardous’ material stickers and stored per local and state regulations.
 - The vacuum measurements in the 1st floor hallway continue to be 0 inches of water, while those in the Gym have consistent negative values between –0.011 to –0.102 in H₂O. The vacuum measurement near the exit of 3100 W. Center Street was between –0.725 to -0.845 in H₂O.
 - A new vapor pin was installed in the North Mechanical room, but no vacuum was detected. Vacuum measurements from all the blowers were also noted to be between –9 and –15 inches of H₂O. The results of vacuum measurements are shown in Attachment B.
 - KSingh staff continued to document the impacted areas for visible potential pathways for vapor to migrate into the various units. These visual observations included gaps between

masonry walls and flooring, cracks and holes in the flooring and walls, open pipes and cracked wood columns. These areas of concern were provided to CWC to continue implementing sealing of the cracks.

Action Items for Week of April 30 – May 6, 2023

KSingh plans to perform the following tasks in the upcoming week:

1. Develop scope of work for Horner Plumbing to extract water from SSDS system.
2. Develop scope of work for Fliteway Technologies to install additional blowers.
3. Continue discrete sampling in the various impacted units and add results to comprehensive table.
4. Dispose stored water into MMSD sewer system under existing NOI.
5. Continue working with CWC to address issues documented in the issues log.
6. Conduct vacuum measurements at strategic locations within the buildings.
7. Test 2 water samples from drums for chloride and fluoride to assess leakage of water supply lines.
8. Continue to identify and line up contractors to perform construction services while WDNR is reviewing the proposed corrective action plan.
9. Prepare comprehensive figures to supplement comprehensive tables showing floor plan and location of units.

Attachment A
Summary of Monitoring Results by Date

Attachment A
Monitoring Results by Date
On-site EPA Method TO-14 Data from Indoor Air Samples

Instrument: SRI 8610 Gas Chromatograph with ECD

Operator: KSingh

Table 1: Monitoring Results from 4/24/2023

Sample ID	Sample Location	Sample Time	TCE ($\mu\text{g}/\text{m}^3$)	PCE ($\mu\text{g}/\text{m}^3$)	Comments
10 ppbv		10:43	1.7	ND	
IA – 327	Unit 1044	10:52	53.3	ND	
IA – 328	Unit 1045	11:00	116	ND	
IA – 329	Unit 1050	11:08	138	ND	
IA – 330	Unit 1052	11:16	70.3	ND	
IA – 331	Men's Locker Room	11:24	38.3	ND	
IA – 332	Fitness Center	11:32	29.3	ND	
IA – 333	SSD 1 – South 7.5 HP	11:40	32	1.7	
IA – 334	SSD 2 – South 10 HP	11:48	20.7	2	
IA – 335	SSD 3 – North 7.5 HP	12:02	7.2	ND	
IA – 336	SSD 4 – North 10 HP	12:10	46.3	ND	
IA – 337	N Mech Room	12:18	10	ND	
IA – 338	Unit 1006	12:26	1.4	ND	
IA – 339	Stairwell 2 - 1st Floor	12:34	4.5	ND	
IA – 340	1st Floor Hallway	12:42	7.8	ND	
Reporting Limit ($\mu\text{g}/\text{m}^3$)			0.6	0.6	
ND Indicates Not Detected at listed reporting level					

Table 2: Monitoring Results from 4/25/2023

Sample	Sample	Sample	TCE	PCE
ID	Location	Time	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)
10 ppbv		8:26	1.5 ppbv	ND
IA – 341	Unit 1039	8:34	3.4	ND
IA – 342	Basketball Court	8:42	12	ND
IA – 343	Unit 2036	8:50	0	ND
IA – 344	Unit 2056	8:58	1.5	ND
IA – 345	Unit 2040	9:06	0	ND
IA – 346	Stairwell 4 2nd Floor	9:14	12.4	ND
IA – 347	Unit 3025	9:22	0	ND
IA – 348	Unit 3040	9:30	0	ND
IA – 349	Unit 3056	9:38	0	ND
IA – 350	Stairwell 4 3rd Floor	9:46	11.2	ND
IA – 351	N Mech Room	9:54	7	ND
IA – 352	Front Lobby	10:02	4	ND
IA – 353	Unit 1045	10:14	112	ND
IA – 354	Unit 1050	10:22	152	ND
Reporting Limit ($\mu\text{g}/\text{m}^3$)			0.6	0.6

Table 3: Monitoring Results from 4/26/2023

Sample ID	Sample Location	Sample Time	TCE ($\mu\text{g}/\text{m}^3$)	PCE ($\mu\text{g}/\text{m}^3$)
10 ppbv		11:28	0.8	ND
IA – 355	1st Floor Hallway	11:36	4.7	ND
IA – 356	Unit 1042	11:44	12.6	ND
IA – 357	Unit 1045	11:52	221	ND
IA – 358	Unit 1050	12:00	113	ND
IA – 359	Unit 1052	12:08	72	ND
IA – 360	Unit 1056	12:16	44	ND
IA – 361	Basketball Court	12:24	7.5	ND
IA – 362	N Mech room	12:32	7.2	ND
IA – 363	Powerhouse	12:44	0.7	ND
IA – 364	North Blowers	12:52	0	ND
IA – 365	SSD 1 – South 7.5 HP	13:00	31.4	1.7
IA – 366	SSD 2 – South 10 HP	13:08	20.6	2
IA – 367	SSD 3 – North 7.5 HP	13:19	43.5	ND
IA – 368	SSD 4 – North 10 HP	13:28	5.7	ND
Reporting Limit ($\mu\text{g}/\text{m}^3$)			0.6	0.6

Table 4: Monitoring Results from 4/27/2023

Sample ID	Sample Location	Sample Time	TCE ($\mu\text{g}/\text{m}^3$)	PCE ($\mu\text{g}/\text{m}^3$)
100 ppbv		11:28	100 ppbv	84
IA – 369	SSD 1 – South 7.5 HP	13:35	28.6	1.6
IA – 370	SSD 2 – South 10 HP	13:43	28.5	1.7
IA – 371	Unit 1045	14:20	51.3	22
IA – 372	Unit 1050	14:28	71.7	17.6
IA – 373	1st Floor Hallway	14:36	17.7	10.5
IA – 374	S Garage	14:46	20.3	15.5
IA – 375	BasketBall Court 2	14:54	6.3	6.3
IA – 376	Unit 1025	15:02	4.8	5
IA – 377	Powerhouse	15:19	3.2	4
IA – 378	N Mech room	15:27	7.8	4.8
IA – 379	SSD 3 – North 7.5 HP	15:43	6.1	3.8
IA – 380	SSD 4 – North 10 HP	15:51	44.4	4.9
Reporting Limit ($\mu\text{g}/\text{m}^3$)			0.6	0.6

Table 5: Monitoring Results from 4/28/2023

Sample ID	Sample Location	Sample Time	TCE ($\mu\text{g}/\text{m}^3$)	PCE ($\mu\text{g}/\text{m}^3$)	Comments
IA - 380	Unit 1045	13:35	26.6	10.1	Hole in the Brick wall
IA - 381	Unit 1050	13:43	199	9.8	Bathroom
IA - 382	1st Floor Hallway	14:20	2.7	1.8	
IA - 383	Stairwell 2	14:28	2.9	1.7	Under the stairs
IA - 384	Unit 1042	14:36	9.3	2.5	
IA - 385	Unit 1052	14:46	20.2	ND	Near closed pipe
IA - 386	Garage Tunnel	14:54	7.7	ND	Between Gym and N Mech Room
IA - 387	N Mech room	15:27	4.5	ND	After sealing with foam
Reporting Limit ($\mu\text{g}/\text{m}^3$)			0.6	0.6	
ND Indicates Not Detected at listed reporting level					

Attachment B
Table 6 - Vacuum Measurements

Location	24-Apr	25-Apr	26-Apr	27-Apr	28-Apr
Unit 1040	0	0	0	0	0
Unit 1044	0	0	0	0	0
Unit 1050	0	0	0	0	0
Stairwell 4	0	0	0	0	0
Baseball Court - 1	-0.048	-0.044	-0.055	-0.052	-0.039
Baseball Court - 2	-0.026	-0.011	-0.016	-0.022	-0.017
Baseball Court - 3	-0.099	-0.102	-0.1	-0.097	-0.088
Exit 3100 W Center St	-0.845	-0.825	-0.835	-0.725	-0.731
SSD 1 – South 7.5 HP			-17	-15	-15
SSD 2 – South 10 HP			-15	-10	-11
SSD 3 – North 7.5 HP			-9	-9	-9
SSD 4 – North 10 HP			-13	-13	-12
N Mech Room					0

Attachment C
Comprehensive Data Tables

Table 7 - Discrete Sampling Test Results

Sample Location	30-Mar	31-Mar	1-Apr	3-Apr	4-Apr	5-Apr	6-Apr	7-Apr	10-Apr	11-Apr	12-Apr	13-Apr	14-Apr	15-Apr	17-Apr	18-Apr	19-Apr	20-Apr	21-Apr	24-Apr	25-Apr	26-Apr	27-Apr	28-Apr
1045 Entry Floor Hole			400																					
1045 North Wall			360																					
1045 Wood Column			1500								352													
1050 South Wall Hole			8000																					
1st Floor Hallway Center	15					17.7	64	25	81.1	35		42.7	63.3	106	181	147	8.5	22.4	7.4	7.8		4.7	17.7	2.7
1st Floor Hallway North	10																							
1st Floor Hallway South	5.2																							
2081 Hallway		0																						
2nd Floor Corridor North		0																						
2nd Floor Corridor South		0																						
2nd Floor Hallway Center	0.7											3	3.6											
2nd Floor Hallway North	0.8	0																						
2nd Floor Hallway South	0.8																							
Stairwell 2	3.2	2																		4.5				2.9
2nd Floor Stairwell 4		0																			12.4			
2nd Floor Stairwell 8		0																						
3rd Floor Corridor			0																					
3rd Floor Hallway Center			0									3.3	2											
3rd Floor Hallway South	0																							
3rd Floor Stairwell 2	3.4					2.1																		
3rd Floor Stairwell 3			0.6																					
3rd Floor Stairwell 4			0.7																					11.2
Basket Ball Court	0.3																							12
Basket Ball Court 2	0																							7.5
Elevator	0																							6.3
Fitness Center										49.6	43.7		28.1											29.3
Front Lobby		0																						4
Garage	0.6																							
N Garage	0																							0
Garage Tunnel	0.8																							7.7
Hallway Outside 3021			0																					
Hallway Outside 3035			0																					
Hallway Outside 3065			0.7																					
N Mechanical Room										6.26	2.4	5.9	14.8	7	7.3	7.2	5.3	7.9		10	7	7.2	7.8	4.5
Men's Locker Room						60.7	123		122		428	82.9				161	131		23.7	28.3				
Powerhouse																						0.7	3.2	
Sales Office at Machine	0.3	0															4.3				1.4			
SSD Vent Pipe #1 - S - 7.5 HP			13	22	24.5	22	24.8	24	26.7	26.2	28	28	30.3	31.4	34.6	28.2	36.4	33.1	35.2	32		31.4	28.6	
SSD Vent Pipe #2 - S - 10 HP			26	30	21.9	16.4	18.7	17.2	44.4	19.5	19	47.7	29.3	57.8	20.5	21.1	19.8	21.4	20.9	20.7		20.6	28.5	
SSD Vent Pipe #3 - N - 7.5 HP					17.6	2.2	3	5	3.3	3	4.3	11.9	7.17	16.7	11.3	9.4	8.1	5.3	6.1	7.2		43.5	6.1	

SSD Vent Pipe #4 - N - 10 HP					41.2	29.5	33	39	37	38.7	39.1	29.3	44	41.9	36.8	38.2	35	42.8	43.1	46.3		5.7	44.4	
SSD Vent Pipe #5 - Prospective																	11.3	21					20.3	
Stairwell 4	1.6					2.2			2.7	2.6				14.4			7							
Stairwell 6																								
Unit 1014										0														
Unit 1025	0							0.96									3.6						4.8	
Unit 1026	0.3									0														
Unit 1035	0.3																							
Unit 1036	0.5																							
Unit 1037	2									0.9														
Unit 1039	4.7									11.4	8											3.4		
Unit 1040	10.3			12.7							14.5						21.2	22.6						
Unit 1041	11.6							19.9		16.8	14.4													
Unit 1042	11.4									16.2	15.2											12.6	9.3	
Unit 1043	17.6					21.6	31.3				24													
Unit 1044	56					77	95			69.7	84.5						85.8	45.6			53.3			
Unit 1045	350		293	298	287	272	267	279	28.9	230	352	236	151.5	124	336	115	283	61	127	116	112	221	51.3	26.6
Unit 1050	160		137	143	110	348	280	108	135	114	706	145	60	118	142	149	110	77.8	131	138	152	113	71.7	199
Unit 1051	19					23		25.4			45.3													
Unit 1052					72.5	88.7	96.6	95.7	128	103	88.6	51.4	38.4			70.5			57.2	70.3		72	20.2	
Unit 1056					24.8																	44		
Unit 2016		0																						
Unit 2017		0																						
Unit 2022		0																						
Unit 2025		0																						
Unit 2036		0																				0		
Unit 2037		0																						
Unit 2039		0											2.5	2.5										
Unit 2040		0						0														0		
Unit 2042		0																						
Unit 2043	0.4	0																						
Unit 2044		0																						
Unit 2045	23	18				8	9	2.9				3.7	5.2											
Unit 2056	60	52				42.2	24.7	49.2	9.6			3.4	6.6									1.5		
Unit 2057		4.7																						
Unit 2058	3.8	4.2				8.5			3.8															
Unit 2059	0.3	0																						
Unit 2061		0																						
Unit 2062		0																						
Unit 2064	0					1																		
Unit 2077	0					1.6																		
Unit 2111		0																						

Unit 3015			0					0															
Unit 3025																					0		
Unit 3035			0																				
Unit 3036			0																				
Unit 3037			0					2	ND														
Unit 3039			0										1.8										
Unit 3040			0																		0		
Unit 3041			0																				
Unit 3042			0																				
Unit 3043			0																				
Unit 3044			0																				
Unit 3045			6.6									2.7	2.7										
Unit 3056	6		9.6			2.4		5.13	0.9			2.4	2.4								0		
Unit 3057			0																				
Unit 3058			0																				
Unit 3059			0																				
Unit 3061			0																				
Unit 3062			0																				

Table 8 - Comparative Blower Emissions

Sample Location	1-Apr	3-Apr	4-Apr	5-Apr	6-Apr	7-Apr	10-Apr	11-Apr	12-Apr	13-Apr	14-Apr	15-Apr	17-Apr	18-Apr	19-Apr	20-Apr	21-Apr
SSD Vent Pipe #1 - S - 7.5 HP	13	22	24.5	22	24.8	24	26.7	26.2	28	28	30.3	31.4	34.6	28.2	36.4	33.1	35.2
SSD Vent Pipe #2 - S - 10 HP	26	30	21.9	16.4	18.7	17.2	44.4	19.5	19	47.7	29.3	57.8	20.5	21.1	19.8	21.4	20.9
SSD Vent Pipe #3 - N - 7.5 HP			17.6	2.2	3	5	3.3	3	4.3	11.9	7.17	16.7	11.3	9.4	8.1	5.3	6.1
SSD Vent Pipe #4 - N - 10 HP			41.2	29.5	33	39	19.2	38.7	39.1	29.3	44	41.9	36.8	38.2	35	42.8	43.1

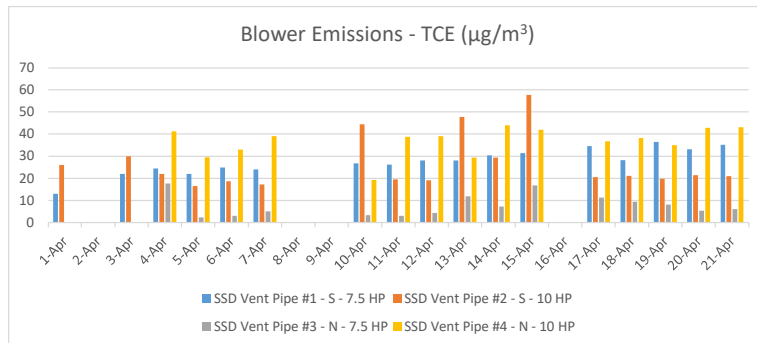
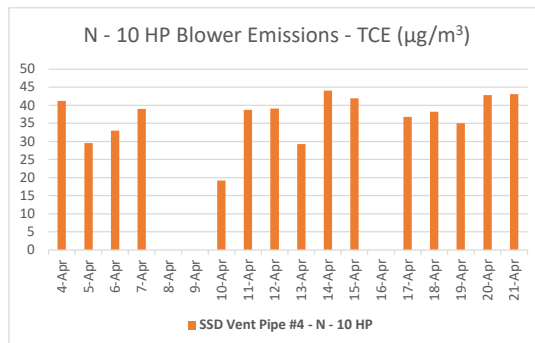
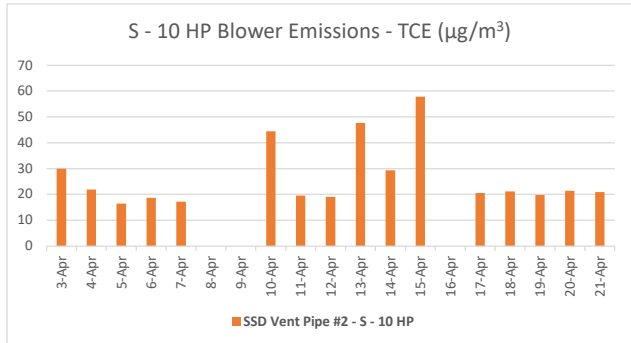
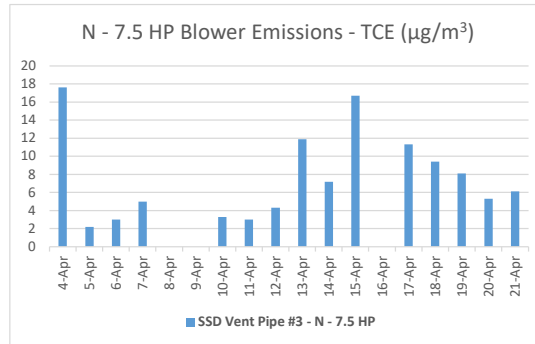
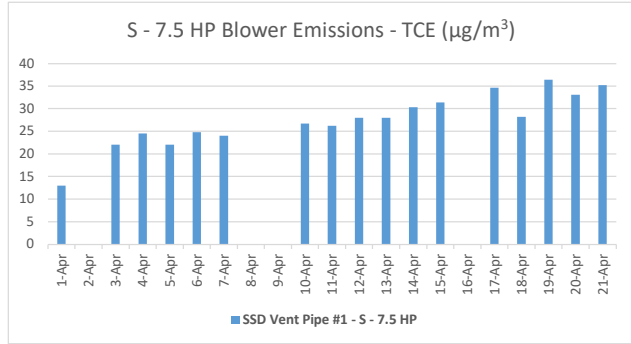


Table 9 - Comparative TCE Concentrations in Impacted Units

Sample Location	30-Mar	31-Mar	1-Apr	3-Apr	4-Apr	5-Apr	6-Apr	7-Apr	10-Apr	11-Apr	12-Apr	13-Apr	14-Apr	15-Apr	17-Apr	18-Apr	19-Apr	20-Apr	21-Apr	24-Apr	25-Apr	26-Apr	27-Apr	28-Apr
Unit 1045	350		293	298	287	272	267	279	28.9	230	352	236	151.5	124	336	115	283	61	127	116	112	221	51.3	26.6
Unit 1050	160		137	143	110	348	280	108	135	114	706	145	60	118	142	149	110	77.8	131	138	152	113	71.7	199
Unit 1052					72.5	88.7	96.6	95.7	128	103	88.6	51.4	38.4			70.5			57.2	70.3		72		20.2
1st Floor Hallway Center						17.7	64	25	81.1	35		42.7	63.3	106	181	147	8.5	22.4	7.4	7.8		4.7	17.7	2.7
Men's Locker Room						60.7	123		122		428	82.9				161	131		23.7	28.3				

