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21 February 2024

Shawn Holdridge, CCM
Cook Inlet Housing Authority
3510 Spenard Road, Suite 100
Anchorage, AK 99503
sholdridge@cookinlethousing.org

Subject: 2024 Annual Report for Long-Term Performance Monitoring of Vapor Intrusion Mitigation
Ridgeline Terrace Apartments
Anchorage, Alaska
ADEC File Number: 2100.38.569

Dear Mr. Holdridge:

Geosyntec Consultants (Geosyntec) has prepared this report to document performance of the vapor intrusion mitigation systems (VIMS) at the Ridgeline Terrace Apartments located at 185 Ridgeline Loop in Anchorage, Alaska (Figure 1). This report has been prepared in accordance with the long-term performance monitoring requirements contained in Geosyntec's Vapor Intrusion Summary Report (February 2022). Performance monitoring of the VIMS includes:

- Documentation and resolution of alarms and notifications;
- Periodic checks;
- Verification sampling; and
- Contingency plans and actions should the objectives of the performance monitoring not be met.

This report covers the time from February 2023 through February 2024.

ALARMS AND NOTIFICATIONS

No VIMS-related alarms were triggered and Cook Inlet Housing Authority (CIHA) personnel received no notifications of VIMS performance issues during the reporting period of February 2023 through February 2024.

PERIODIC CHECKS

CIHA personnel conducted weekly checks of the VIMS in Buildings 106, 138, 146, and 152 during 2023 and into early 2024. Vacuum readings were noted each time. No operational issues were identified during the weekly checks. Attachment A contains the weekly vacuum readings for each VIMS.

During other routine building maintenance and inspections, CIHA personnel have not reported issues or abnormalities regarding the structural integrity (e.g., new foundation cracks, damage to utilities) of the buildings or individual apartments. No natural disasters or significant events have occurred to prompt further inspection of the VIMS.

VERIFICATION SAMPLING

2024 Plan

On 24 January 2024, Geosyntec deployed nine passive air samplers in four apartment units and two outdoor locations. Additionally, two VIMS effluent samples were collected on 24 January 2024. Sampling locations were as follows:

1. Unit 138A – fresh air vent (outdoor sample)
2. Unit 138C – kitchen (main floor)
3. Unit 138E – kitchen and kitchen duplicate (main floor)
4. Unit 146C – kitchen (main floor); garage (first floor); fresh air vent (outdoor sample)
5. Unit 146E – kitchen (main floor); garage (first floor)
6. Effluent sample from Building 138 VIMS
7. Effluent sample from Building 146 VIMS

The quantity and location of these samples were in accordance with the long-term performance monitoring requirements contained in the Vapor Intrusion Summary Report (February 2022). Unit 146E was occupied, while units 146C, 138E, and 138 C were unoccupied.

The passive air samplers deployed on 24 January were retrieved 48 hours later on 26 January. The samplers were shipped to Eurofins Air Toxics LLC for analysis of trichloroethene (TCE), tetrachloroethene (PCE), 1,1-dichorothene (DCE), cis-1,2-DCE (cDCE), and trans-1,1,-DCE (tDCE) by modified method TO-17. The VIMS effluent samples also were analyzed by Eurofins Air Toxics LLC for the same compounds by method TO-15.

TCE was not detected in any of the indoor or outdoor air samples, and laboratory reporting limits were 0.50 micrograms per cubic meter ($\mu g/m^3$) or less compared to the residential indoor air target level of 2.0 $\mu g/m^3$.

PCE was detected in samples from the garage and kitchen of 146E with concentrations of 1.1 µg/m^3 and 0.79 µg/m^3, respectively. Both detections are an order of magnitude below the ADEC residential target level of 41 µg/m^3. Apartment 146E was sampled on seven previous occasions between April 2021 to September 2021, and PCE was not detected in any of the previous sampling events. During the January 2024 sampling event, the garage of 146E contained industrial cleaners, mechanical equipment, aerosols cans, a removed car engine, and miscellaneous chemicals (photos of the garage of 146E are presented in Attachment C Photolog). These contents were not present during previous sampling events. The multiple lines of evidence (previous sampling results versus current sampling results, previous materials inventory versus current materials inventory) suggest that an indoor source is the cause of the current low-level detections of PCE in 146E.

None of the other analyzed compounds were detected in the passive air samples from the apartment buildings or outdoor locations. Laboratory reporting limits for each compound were less than indoor air residential target levels. Table 1 presents the analytical results for the indoor and outdoor air samples. Figure 2 displays the results and includes comprehensive data for the apartments sampled in 2024 from pre-mitigation investigation and post-mitigation confirmation.

Table 1 – Passive Sampling Analytical Results

Unit	Apartment	Location	Sampling Date	PCE µg/m^3	TCE µg/m^3	1,1-DCE µg/m^3	cDCE µg/m^3	tDCE µg/m^3
146	C	2nd Floor (Main)	Jan-2024	ND (0.58)	ND (0.49)	ND (1.8)	ND (0.54)	ND (1.1)
		1st Floor (Garage)	Jan-2024	ND (0.58)	ND (0.49)	ND (1.8)	ND (0.54)	ND (1.1)
		Outdoor Fresh 80 Vent	Jan-2024	ND (0.58)	ND (0.49)	ND (1.8)	ND (0.54)	ND (1.1)
	E	1st Floor (Garage)	Jan-2024	1.1	ND (0.50)	ND (1.8)	ND (0.55)	ND (1.1)
		2nd Floor (Main)	Jan-2024	0.79	ND (0.50)	ND (1.8)	ND (0.55)	ND (1.1)
138	A	Outdoor Fresh 80 Vent	Jan-2024	ND (0.58)	ND (0.50)	ND (1.8)	ND (0.55)	ND (1.1)
	C	Main Floor	Jan-2024	ND (0.58)	ND (0.49)	ND (1.8)	ND (0.54)	ND (1.1)
	E	Main Floor	Jan-2024	ND (0.58)	ND (0.49)	ND (1.8)	ND (0.54)	ND (1.1)
		Main Floor - Duplicate	Jan-2024	ND (0.58)	ND (0.49)	ND (1.8)	ND (0.54)	ND (1.1)
Indoor Air Target Levels				**41**	**2.0**	**79**	**NA**	**790**

Key:
1,1-DCE - 1,1-Dichloroethene
cDCE - cis-1,2-dichloroethylene
µg/m^3 - micrograms per cubic meter
NA - not available
ND - not detected (reporting limit)
PCE - tetrachloroethene
TCE - trichloroethene
tDCE - trans-1,2-dichloroethylene

The TCE concentrations of the VIMS effluent samples from Building 138 and 146 were 2,600 µg/m^3 and 1,500 µg/m^3, respectively. In the 2.5 years since VIMS installation, TCE effluent has decreased 80 percent at Building 138 and 90 percent at Building 146. Table 2 presents the comprehensive analytical results for the VIMS effluent samples.

Table 2 – Effluent Sampling Analytical Results

Unit	Location	Date	PCE µg/m^3	TCE µg/m^3	1,1-DCE µg/m^3	cDCE µg/m^3	tDCE µg/m^3
138	VIMS Effluent sample	Jul-21	ND (74)	13000	ND (43)	ND (43)	ND (43)
	VIMS Effluent sample	Feb-22	48	6700	ND (18)	35	ND (18)
	VIMS Effluent sample	Feb-23	ND (10)	2500	ND (5.9)	10	ND (5.9)
	VIMS Effluent sample	Jan-24	ND (8.3)	2600	ND (4.8)	11	ND (4.8)
146	VIMS Effluent sample	Jul-21	ND (67)	15000	ND (39)	48	ND (38)
	VIMS Effluent sample	Feb-22	ND (21)	4100	ND (12)	ND (12)	ND (12)
	VIMS Effluent sample	Feb-23	ND (14)	3700	ND (8.3)	ND (8.3)	ND (8.3)
	VIMS Effluent sample	Jan-24	ND (8.2)	1500	ND (4.8)	ND (4.8)	ND (4.8)

Key:
1,1-DCE - 1,1-Dichloroethene
cDCE - cis-1,2-dichloroethylene
µg/m^3 - micrograms per cubic meter
PCE - tetrachloroethene
TCE - trichloroethene
tDCE - trans-1,2-dichloroethylene
VIMS - vapor intrusion mitigation systems

CONTINGENCY ACTIVITIES

No contingency activities are necessary since no alarms or notifications for the VIMS occurred during the past year, the weekly inspections of the VIMS and periodic checks of the buildings did not identify operational issues, and TCE was not detected during annual verification sampling.

RECOMMENDATIONS

Three years of performance monitoring has occurred since VIMS installation in June 2021 following the ADEC-approved long-term plan in the Vapor Intrusion Summary Report (February 2022). The approved plan indicated that modifications to verification sampling may occur after three years. Based on the findings that all the units in Buildings 138 and 146 have been sampled at least once during verification sampling and all the indoor and outdoor TCE concentrations are below the TCE indoor air target level, no further verification sampling is recommended at this time. Figure 3 provides a comprehensive summary of analytical results for Buildings 138 and 146 and unit 106A during the past three years of verification sampling and demonstrates the successful operations of the VIMS.

Long-term performance monitoring should continue to include monitoring of VIMS alarms and notifications and periodic checks of the VIMS and buildings in accordance with the procedures contained in the Vapor Intrusion Summary Report (February 2022); however, annual reporting to ADEC is no longer necessary. Should a VIMS alarm or notification occur, a weekly check of the VIMS indicate abnormal operations, or a periodic check of the buildings indicate structural damage that could affect VIMS performance, CIHA will notify ADEC and contingency actions will be decided on a case by case basis. Contingency actions could include additional verification sampling and resuming annual reporting to ADEC.

CLOSURE

The execution and reporting of the long-term performance monitoring of the VIMS at Ridgeline Terrace Apartments was performed by the undersigned qualified environmental professionals, as defined in 18 AAC 75.333.

Sincerely,

Cole Richards
Project Manager

Ben Martich
Principal

cc: Mark Fineman, CIHA
Chelsea Smith, ACAH
Michael Singleton, AHFC

Attachments
Figures
A – VIMS Exhaust Fan Checklist
B – Field Notes
C – Photo Log
D – Laboratory Analytical Reports
E – Data Quality Checklists

Figures

N

Site Location

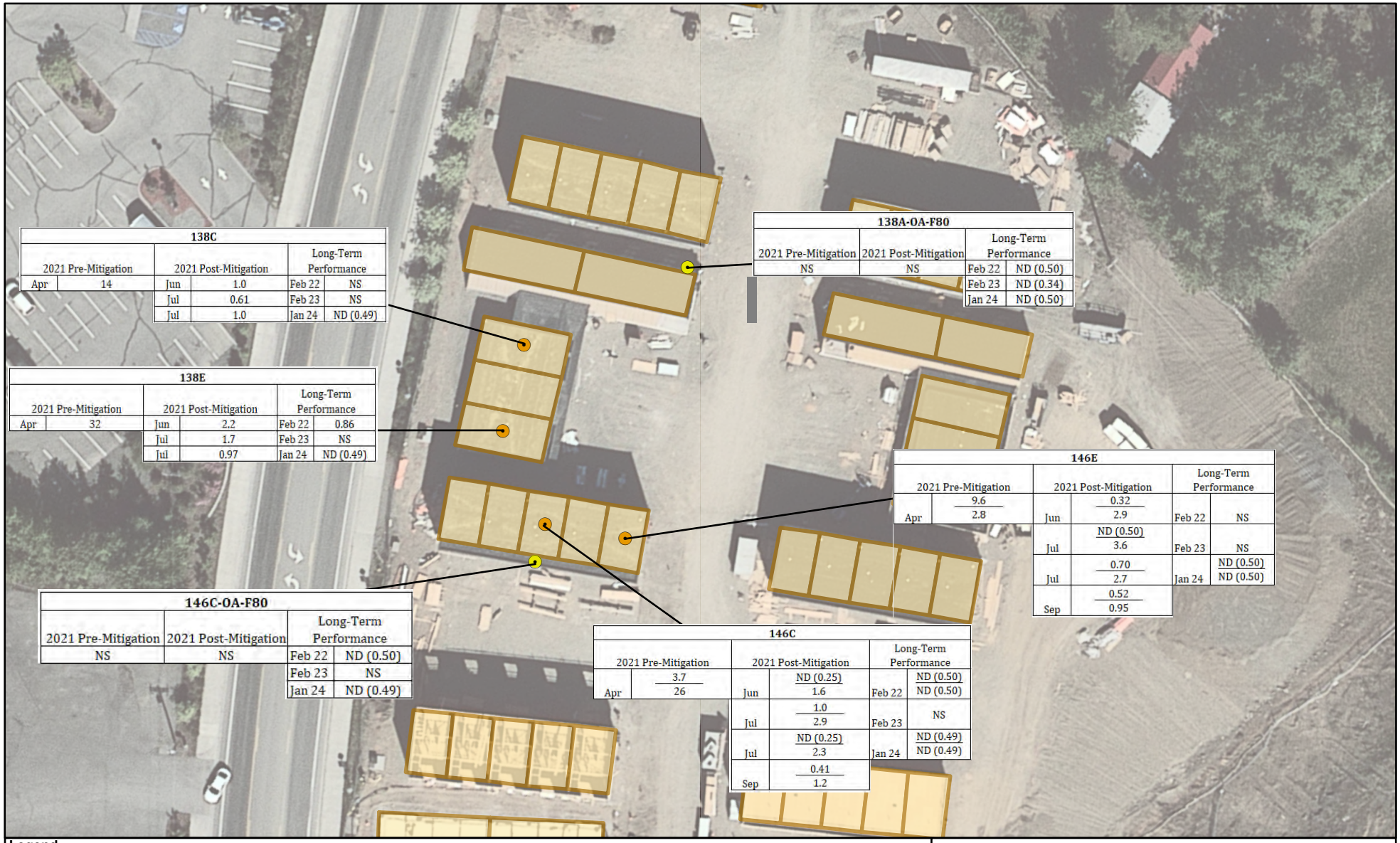
Ridgeline Terrace
Anchorage, Alaska

Geosyntec consultants

PNG0946 | February 2024

Figure 1

P:\Clients\Cook_Inlet_Housing_Authority\PNG0937_Ridgeline Terrace\06_DataManagement_Visualization\GIS\Projects\LTMP_Figs\LTMP_Figs.aprx 2/14/2024 9:02 AM



Legend

- Indoor Air Sample
- Outdoor Air Sample
- Building Outline

Apartment Number
Sample collection time relative to mitigation system installation
Month | $\frac{\text{Second floor TCE concentration } (\frac{\mu g}{m^3})}{\text{First floor TCE concentration } (\frac{\mu g}{m^3})}$

Notes:
ND - Not Detected
NS - Not Sampled
TCE - Trichloroethene
Results in micrograms per cubic meter (µg/m³).
The 138 units are single story structures. The 146 and 152 units are triple story structures with the first floor being a garage and the second floor consisting of a kitchen and living area.
"F-80" samples were collect at a fresh 80 air intake of the building.

N

0 50 Feet

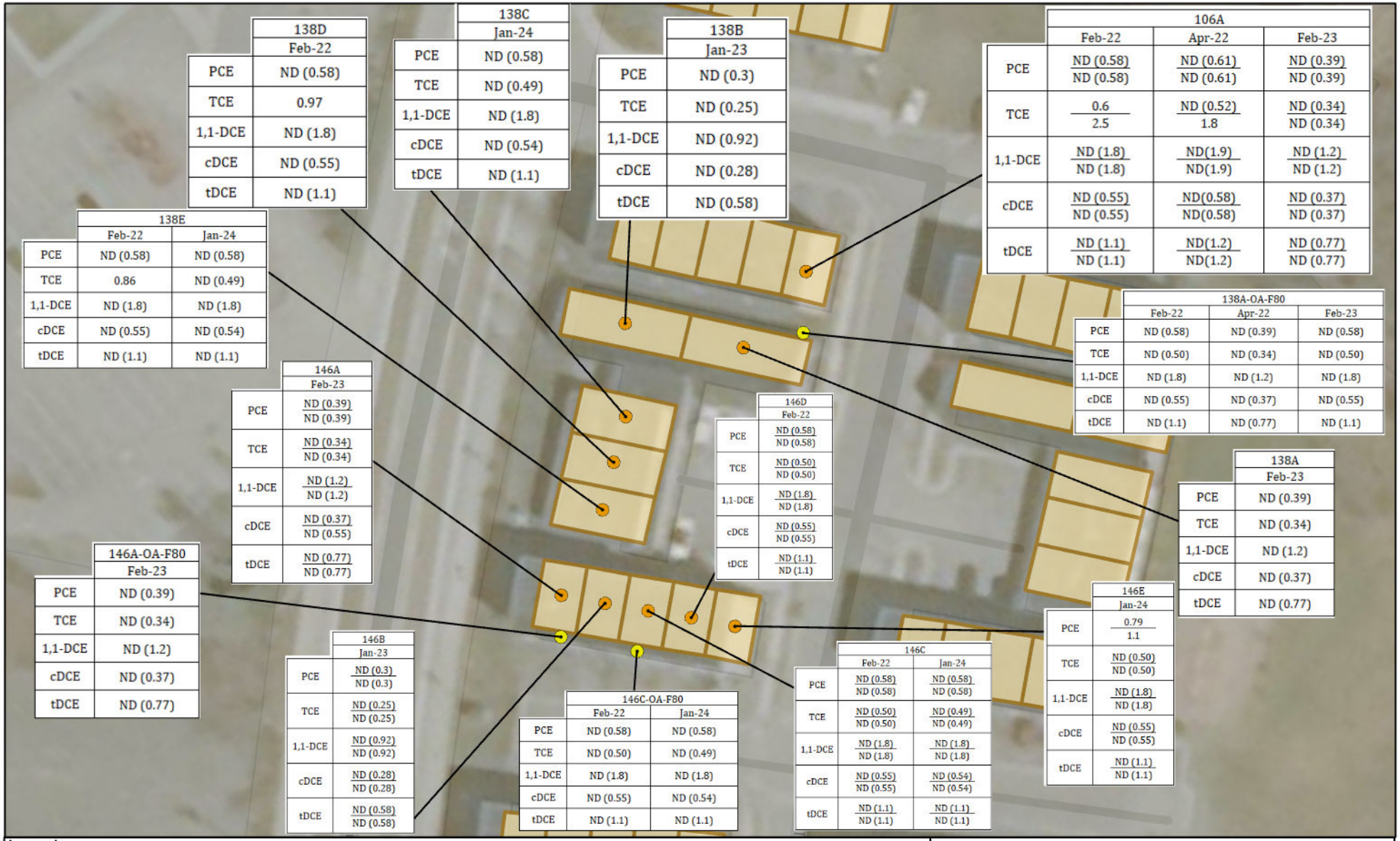
2024 Long-Term Performance Monitoring
TCE Concentrations

Ridgeline Terrace
Anchorage, Alaska

Geosyntec consultants

Anchorage | February 2024

Figure 2



Legend

Notes:
1,1-DCE - 1,1-Dichloroethene
cDCE - cis-1,2-dichloroethylene
ND - Not Detected
NS - Not Sampled PCE
PCE - Tetrachloroethene
TCE - Trichloroethene
tDCE - trans-1,2-dichloroethylene
Results in micrograms per cubic meter (µg/m³).
The 138 units are single story structures. The 146 and 152 units are triple story structures with the first floor being a garage and the second floor consisting of a kitchen and living area.
"F-80" samples were collect at a fresh 80 air intake of the building.

Apartment Number	
Month-Year	
Contaminant	Second floor concentration ($\frac{\mu g}{m^3}$) / First floor concentration ($\frac{\mu g}{m^3}$)

N

0 100 Feet

2022 - 2024 Long-Term Performance Monitoring Analytical Results

Ridgeline Terrace
Anchorage, Alaska

Geosyntec consultants

Anchorage | February 2024

Figure 3

Attachment A

VIMS Exhaust Fan Checklist

106

(1)

Exhaust Fan Checklist

Date (From - To) 1/6/23 - 3/23/23	Bldg: 106

Directions: Note the date (e.g. 6/23/21) and time of service, initial who is doing the service, pressure of the magnehelic gauge and write out any notes for this particular fan (e.g. was the fan off, how much water was drained, was the alarm activated, is the magnehelic gauge working, etc.). **** These forms are required to be submitted to the Maintenance Supervisor once completed.**

Date	Time	Initials	Pressure	Notes
1-6	3:15	DM	.70	
1-12	5:20	DM	.75	
1-19	11:15	DM	.75	
1-27	12:20	DM	.75	
2-10	4:20	DM	.74	
2-16	11:20	DM	.74	
2-23	1:20	DM	.75	
2-28	4:20	DM	.75	
3-7	2:45	DM	.75	
3-16	4:50	DM	.75	
3-23	10:50	DM	.75	
3-27	11:50	DM	.75	

2

Exhaust Fan Checklist

Date (From - To) 4/4/23 - 6/27/23	Bldg: 106

Directions: Note the date (e.g. 6/23/21) and time of service, initial who is doing the service, pressure of the magnehelic gauge and write out any notes for this particular fan (e.g. was the fan off, how much water was drained, was the alarm activated, is the magnehelic gauge working, etc.). **** These forms are required to be submitted to the Maintenance Supervisor once completed.**

Date	Time	Initials	Pressure	Notes
4-4	9:00	DM	.75	
4-11	8:30	DM	.75	
4-19	10:20	DM	.73	
4-27	9:00	DM	.73	
5-4	11:25	DM	.75	
5-10	10:30	DM	.75	
5-17	8:40	DM	.75	
5-26	11:20	DM	.75	
6-6	11:10	DM	.75	
6-13	12:20	DM	.75	
6-21	9:30	DM	.75	
6-27	9:35	DM	.75	

3

Exhaust Fan Checklist

Date (From - To) 7/6/23 - 9/29/23	Bldg: 106

Directions: Note the date (e.g. 6/23/21) and time of service, initial who is doing the service, pressure of the magnehelic gauge and write out any notes for this particular fan (e.g. was the fan off, how much water was drained, was the alarm activated, is the magnehelic gauge working, etc.). **** These forms are required to be submitted to the Maintenance Supervisor once completed.**

Date	Time	Initials	Pressure	Notes
7-6	3:15	DM	.75	
7-11	1:40	DM	.75	
7-20	3:20	DM	.75	
7-26	9:45	DM	.75	
8-3	2:30	DM	.75	
8-9	10:25	DM	.75	
8-15	10:30	DM	.75	
8-29	9:25	DM	.70	
9-8	9:20	JJ	.75	
9-15	4:40	JJ	.75	
9-22	9:35	CM	.75	
9-29	11:15	CM	.75	

(4)

Exhaust Fan Checklist

Date (From - To) 10/6/23- 12/	Bldg: 106

Directions: Note the date (e.g. 6/23/21) and time of service, initial who is doing the service, pressure of the magnehelic gauge and write out any notes for this particular fan (e.g. was the fan off, how much water was drained, was the alarm activated, is the magnehelic gauge working, etc.). **** These forms are required to be submitted to the Maintenance Supervisor once completed.**

Date	Time	Initials	Pressure	Notes
10-6	3:15	CM	.75	
10-12	5:20	CM	.75	
10-20	11:15	CM	.75	
10-27	12:20	CM	.75	
11-9	9:20	LD	.75	
11-21	11:20	LD	.70	
11-29	12:20	LD	.73	
12-7	12:20	LD	.75	
12-14	12:20	LD	.75	
12-27	12:40	LD	.74	
1-4-24	1:50	LD	.75	
1-11-24	1:20	LD	.75	

138

(1)

Exhaust Fan Checklist

Date (From - To) 1/6/23 - 3/23/23	Bldg: 138

Directions: Note the date (e.g. 6/23/21) and time of service, initial who is doing the service, pressure of the magnehelic gauge and write out any notes for this particular fan (e.g. was the fan off, how much water was drained, was the alarm activated, is the magnehelic gauge working, etc.). **** These forms are required to be submitted to the Maintenance Supervisor once completed.**

Date	Time	Initials	Pressure	Notes
1-6	3:45	DM	4.5	
1-12	5:30	DM	4.5	
1-19	11:45	DM	4.5	
1-27	12:30	DM	4.5	
2-10	4:30	DM	4.3	
2-16	11:30	DM	4.5	
2-28	1:30	DM	4.5	
2-28	4:00	DM	4.5	
3-7	2:55	DM	4.5	
3-16	4:40	DM	4.4	
3-23	10:40	DM	4.5	
3-27	11:45	DM	4.4	

(2)

Exhaust Fan Checklist

Date (From - To)	Bldg: 138

Directions: Note the date (e.g. 6/23/21) and time of service, initial who is doing the service, pressure of the magnehelic gauge and write out any notes for this particular fan (e.g. was the fan off, how much water was drained, was the alarm activated, is the magnehelic gauge working, etc.). **** These forms are required to be submitted to the Maintenance Supervisor once completed.**

Date	Time	Initials	Pressure	Notes
4-4	9:30	DM	4.5	
4-11	9:00	DM	4.5	
4-19	10:40	DM	4.5	
4-27	9:30	DM	4.5	
5-4	11:45	DM	4.5	
5-10	10:45	DM	4.5	
5-17	8:50	DM	4.5	
5-26	11:30	DM	4.5	
6-6	11:20	DM	4.5	
6-13	12:30	DM	4.5	
6-21	3:15	DM	4.6	
6-27	9:55	DM	4.6	

3

Exhaust Fan Checklist

Date (From - To) 7/6/23 - 9/29/23	Bldg: 138

Directions: Note the date (e.g. 6/23/21) and time of service, initial who is doing the service, pressure of the magnehelic gauge and write out any notes for this particular fan (e.g. was the fan off, how much water was drained, was the alarm activated, is the magnehelic gauge working, etc.). ** **These forms are required to be submitted to the Maintenance Supervisor once completed.**

Date	Time	Initials	Pressure	Notes
7-7	3:30	DM	4.5	
7-11	2:00	DM	4.5	
7-20	3:30	DM	4.5	
7-26	9:25	DM	4.5	
8-3	12:00	DM	4.5	
8-9	10:40	DM	4.5	
8-15	10:45	DM	4.5	
8-29	9:40	DM	4.4	
9-8	9:35	JJ	4.5	
9-15	4:30	JJ	4.5	
9-22	9:45	CM	4.6	
9-29	11:30	CM	4.5	

(4)

Exhaust Fan Checklist

Date (From - To) 10/6/23 - 12/	Bldg: 138

Directions: Note the date (e.g. 6/23/21) and time of service, initial who is doing the service, pressure of the magnehelic gauge and write out any notes for this particular fan (e.g. was the fan off, how much water was drained, was the alarm activated, is the magnehelic gauge working, etc.). **** These forms are required to be submitted to the Maintenance Supervisor once completed.**

Date	Time	Initials	Pressure	Notes
10-6	3 pm	CM	4.5	
10-12	4:45	CM	4.7	
10-20	2:30	CM	4.7	
10-27	9:30	CM	4.7	
11-9	9:30	LD	4.7	
11-21	9:30	LD	4.5	
11-29	12:30	LD	4.7	
12-7	12:30	LD	4.5	
12-14	12:30	LD	4.5	
12-27	12:50	LD	4.6	
1-4-24	2:00	LD	4.5	
1-11-24	1:30	LD	4.5	

146

(1)

Exhaust Fan Checklist

Date (From - To) 1/6/23 - 3/23/23	Bldg: 146

Directions: Note the date (e.g. 6/23/21) and time of service, initial who is doing the service, pressure of the magnehelic gauge and write out any notes for this particular fan (e.g. was the fan off, how much water was drained, was the alarm activated, is the magnehelic gauge working, etc.). **** These forms are required to be submitted to the Maintenance Supervisor once completed.**

Date	Time	Initials	Pressure	Notes
1-6	3:30	DM	4.9	
1-12	5:10	DM	4.9	
1-19	11:30	DM	4.8	
1-27	12:10	DM	4.8	
2-10	4:10	DM	4.75	
2-16	11:10	DM	4.8	
2-23	1:10	DM	4.5	
2-28	4:40	DM	4.5	
3-7	2:35	DM	5.0	
3-16	5:10	DM	5.0	
3-23	11:10	DM	5.0	
3-27	12:10	DM	5.0	

Exhaust Fan Checklist

(2)

Date (From - To) 4/4/23 - 6/27/23	Bldg: 146

Directions: Note the date (e.g. 6/23/21) and time of service, initial who is doing the service, pressure of the magnehelic gauge and write out any notes for this particular fan (e.g. was the fan off, how much water was drained, was the alarm activated, is the magnehelic gauge working, etc.). **** These forms are required to be submitted to the Maintenance Supervisor once completed.**

Date	Time	Initials	Pressure	Notes
4-4	10:00	DM	5.0	
4-11	9:30	DM	4.9	
4-19	10:00	DM	5.0	
4-27	9:45	DM	5.0	
5-4	11:00	DM	5.1	
5-10	10:00	DM	5.0	
5-17	9:00	DM	5.0	
5-26	11:00	DM	5.0	
6-6	11:00	DM	5.0	
6-13	12:00	DM	5.0	
6-21	9:15	DM	5.1	
6-27	9:25	DM	5.1	

(3)

Exhaust Fan Checklist

Date (From - To) 7/6/23 - 9/29/23	Bldg: 146

Directions: Note the date (e.g. 6/23/21) and time of service, initial who is doing the service, pressure of the magnehelic gauge and write out any notes for this particular fan (e.g. was the fan off, how much water was drained, was the alarm activated, is the magnehelic gauge working, etc.). **** These forms are required to be submitted to the Maintenance Supervisor once completed.**

Date	Time	Initials	Pressure	Notes
7-6	2:45	DM	5.1	
7-11	1:20	DM	5.1	
7-20	3:00	DM	5.0	
8-3	9:05	DM	5.0	
8-9	2:00	DM	5.0	
8-15	10:15	DM	5.5	
8-29	10:00	DM	5.0	
9-8	9:00	JJ	5.0	
9-15	4:50	JJ	5.0	
9-22	9:10	CM	5.0	
9-29	10:40	CM	5.0	

Exhaust Fan Checklist

(4)

Date (From - To) 10/6/23 - 12/	Bldg: 146

Directions: Note the date (e.g. 6/23/21) and time of service, initial who is doing the service, pressure of the magnehelic gauge and write out any notes for this particular fan (e.g. was the fan off, how much water was drained, was the alarm activated, is the magnehelic gauge working, etc.). **** These forms are required to be submitted to the Maintenance Supervisor once completed.**

Date	Time	Initials	Pressure	Notes
10-6	2:15	CM	5.0	
10-12	2:45	CM	4.9	
10-20	3:45	CM	5.0	
10-27	8:45	CM	5.0	
11-9	9:00	LD	4.9	
11-21	9:00	LD	5.0	
11-29	12:00	LD	4.8	
12-7	1:00	LD	4.7	
12-14	12:00	LD	4.9	
12-27	12:00	LD	4.9	
1-4-24	1:30	LD	4.9	
1-11-24	1:00	LD	5.0	

152

(1)

Exhaust Fan Checklist

Date (From - To) 1/6/23 - 3/23/23	Bldg: 152

Directions: Note the date (e.g. 6/23/21) and time of service, initial who is doing the service, pressure of the magnehelic gauge and write out any notes for this particular fan (e.g. was the fan off, how much water was drained, was the alarm activated, is the magnehelic gauge working, etc.). **** These forms are required to be submitted to the Maintenance Supervisor once completed.**

Date	Time	Initials	Pressure	Notes
1-6	3:00p	DM	.90	
1-12	5:00p	DM	.90	
1-19	11:00a	DM	.90	
1-27	12pm	DM	.95	
2-10	4pm	DM	.95	
2-16	11am	DM	.95	
2-23	1pm	DM	.92	
2-28	4:30p	DM	.92	
3-7	2:30p	DM	.95	
3-16	5pm	DM	.92	
3-23	11am	DM	.92	
3-27	12pm	DM	.98	WINDY X

(2)

Exhaust Fan Checklist

Date (From - To) 4/4/23 - 6/27/23 | Bldg: 152

Directions: Note the date (e.g. 6/23/21) and time of service, initial who is doing the service, pressure of the magnehelic gauge and write out any notes for this particular fan (e.g. was the fan off, how much water was drained, was the alarm activated, is the magnehelic gauge working, etc.). **** These forms are required to be submitted to the Maintenance Supervisor once completed.**

Date	Time	Initials	Pressure	Notes
4-4	8 am	DM	.92	
4-11	8 am	DM	.92	
4-19	9:30a	DM	.92	
4-27	8:30a	DM	.90	
5-4	12p	DM	.92	
5-10	11a	DM	.92	
5-17	8:30	DM	.96	
5-26	11am	DM	.91	
6-6	11:30	DM	.92	
6-13	12pm	DM	.93	
6-21	3:30p	DM	.92	
6-27	11am	DM	.92	

(3)

Exhaust Fan Checklist

Date (From - To) 7/6/23 - 9/29/23	Bldg: 152

Directions: Note the date (e.g. 6/23/21) and time of service, initial who is doing the service, pressure of the magnehelic gauge and write out any notes for this particular fan (e.g. was the fan off, how much water was drained, was the alarm activated, is the magnehelic gauge working, etc.). **** These forms are required to be submitted to the Maintenance Supervisor once completed.**

Date	Time	Initials	Pressure	Notes
7-6	3:00	DM	.92	
7-11	1:30	DM	.92	
7-20	3:10	DM	.92	
7-26	9:15	DM	.93	
8-3	2:10	DM	.93	
8-9	10:30	DM	.92	
8-15	10:10	DM	.92	
8-29	9:10	DM	.92	
9-8	9:00	JJ	.93	
9-15	5:00	JJ	.92	
9-22	9:20	CM	.92	
9-29	11:00	CM	.92	

(4)

Exhaust Fan Checklist

Date (From - To) 10/6/23 – 12/	Bldg: 152

Directions: Note the date (e.g. 6/23/21) and time of service, initial who is doing the service, pressure of the magnehelic gauge and write out any notes for this particular fan (e.g. was the fan off, how much water was drained, was the alarm activated, is the magnehelic gauge working, etc.). **** These forms are required to be submitted to the Maintenance Supervisor once completed.**

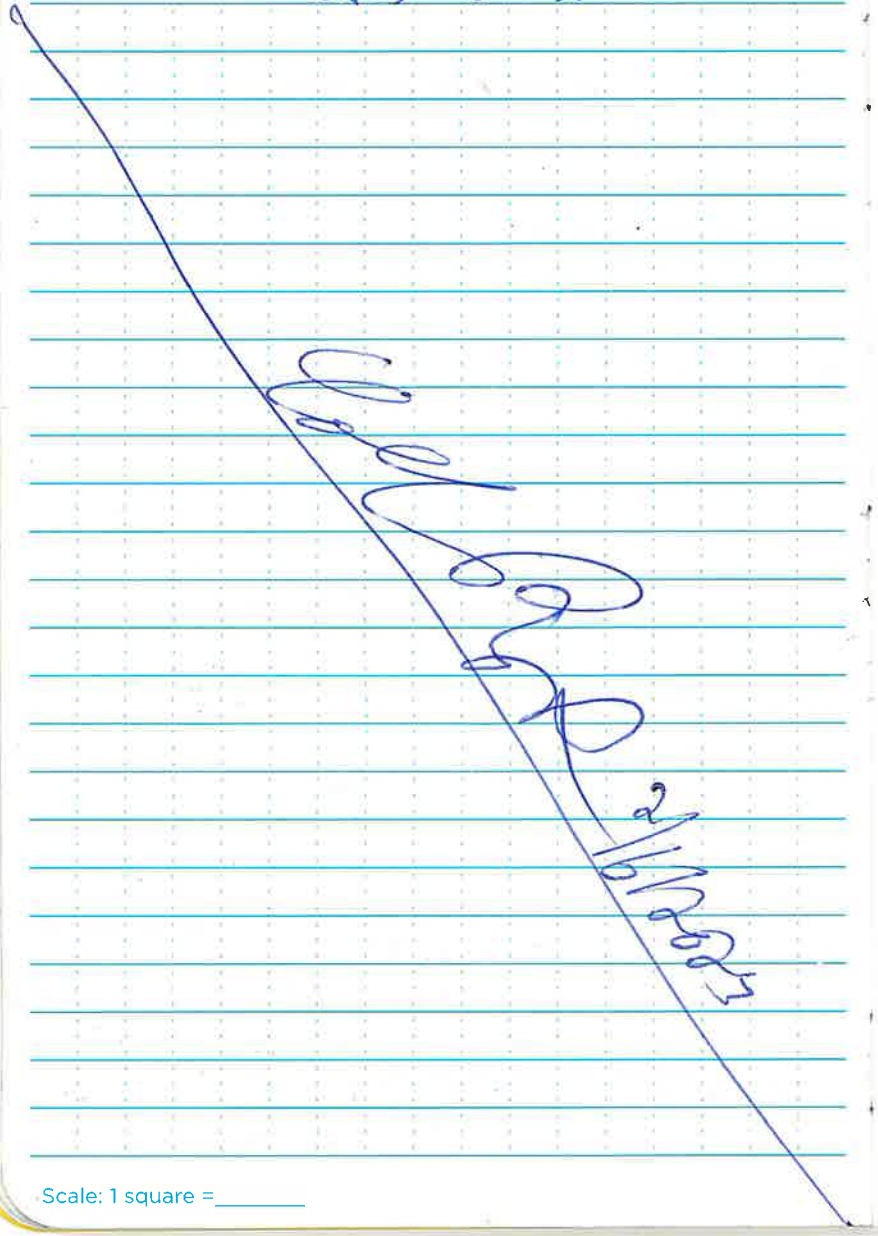
Date	Time	Initials	Pressure	Notes
10-6	2:30	CM	.92	
10-12	3:00	CM	.93	
10-20	4:00	CM	.93	
10-27	9:00	CM	.92	
11-9	9:15	LD	.92	
11-21	3:15	LD	.93	
11-29	12:10	LD	.93	
12-7	1:15	LD	.93	
12-14	12:10	LD	.92	
12-27	12:15	LD	.93	
1-4-24	1:40	LD	.92	
1-11-24	1:10	LD	.92	

Attachment B

Field Notes

PNG-0937 RTA 2/6/2023

1125 Richards offsite



Scale: 1 square = _____

PNG0937 RTA 1/24/24

0845 Emma and cole onsite. Plan for the day!

Passive Samplers Radiellos

		Loc - FP - ID
138C	-	10 -01
138E	-	10 -01
138 FBO		79
146C kitchen	-	03-01
146C garage		03-02
146F kitchen	-	05-01
146E garage	-	05-02
146 FBO		
138 VIMS		
146 VIMS		
dup (blind)		
trip blank.		

0900 Meet up w/ Sean + Brad of Cook Inlet Housing Auth.

0910 Set up for 146C FBO

0910 Put out QY262 [24-RTA-02-01-1A]

0912 enter 146C garage, put out QY263 at 146C garage (ID 03-02) 24-RTA-03-02-01-1A

0913 ~~set~~ move to 146C Kitchen.

0915 Place VH264 at 146C

Scale: 1 square = _____

Rite in the Rain

28 PNG0937 RTA 1/24/24

0915 Kitchen. (ID 03-01)
[24-RTA-03-01-01-IA]
0920 Move to 138E
0925 Place VH2102 and
dupe VH2103 in Kitchen
of 138E. will give
dupe time of 0955
sample VH2102 at [24-RTA-10-01-01-IA]
VH2103 [24-RTA-95-01-01-1A]
0930 Place VH265 in kitchen
on blinds [24-RTA-12-01-01-IA]
in 138C
0931 Walk inside 138 mech
to look at system.
0935 ~~138E~~ EB enter ~~138E~~ 146E garage.
Note cleaners, mech equipment,
aerosols and other. Appr to
be car garage/mechanical
Smells "Chemical".
Also note break ~~CHG~~ cleaner
0940 Place VH2106 in garage
of 146E. [24RTA-05-02-01-IA]
0945 Place VH2107 in kitchen
of 146E. [24-RTA-05-01-01-1A]
Emily 1/24/24

Scale: 1 square =_____

PNG0937 RTA 1/24/29

0948 Move to 138 FBO
0953 Place VH2108 at
138 FBO [24-RTA-79-01-01-AA]
0954 move to 146 VIMS
to sample
For 146 VIMS
Can: L2024
FlowC: ~~2242~~ 24911
↳Serial F1949
0956 Initial Vac 27 inHg
10:00 EB begin to sample [24-RTA-146-01-SG]
10:01
10:06 Stop sample.
Final Vacuum: 10 inHg
10:10 set up for 138 VIMS
FlowC: 24912
Can: IL3497
↳Serial: NL6723
Initial vacuum: 26.5 inHg
1016 Begin Sampling [24-RTA-138-01-SG]
1021 Stop Sampling
Final Vacuum 11 in Hg
10:27 Pack up. Weather
partly cloudy 2°F below zero
ice fog in AM. No wind. leave site.
Emily 1/24/24 Rain

Scale: 1 square =_____

PNG093F RTA 1/26/24

0947 C Richards on site to meet S. Holbridge to pick up passive samplers.

1005 Pick up QY262 from fresh air outside of 146C

1008 Pick up QY263 from 146C garage

1012 Pick up VH264 from 146C kitchen

1017 Pick up VH266 from 146E garage

1020 Pick up VH267 from 146E kitchen

1023 Pick up VH262 from 138E kitchen

1026 Pick up Dup in kitchen 138E → VH263 mark time 1035

1032 Pick up VH265 from 138C kitchen

1037 Pick up VH268 from 138 fresh air outside

1043 C Richards off site

1/26/24

Scale: 1 square =_____

Scale: 1 square =_____

Rite in the Rain

Attachment C

Photo Log

GEOSYNTEC CONSULTANTS
Photographic Record

Ridgeline Terrace Apartments Long Term Monitoring Plan Report, Attachment C: Photolog

Location: Anchorage, Alaska

Client: Cook Inlet Housing Authority | **Project Number:**PNG0937

Photograph 1

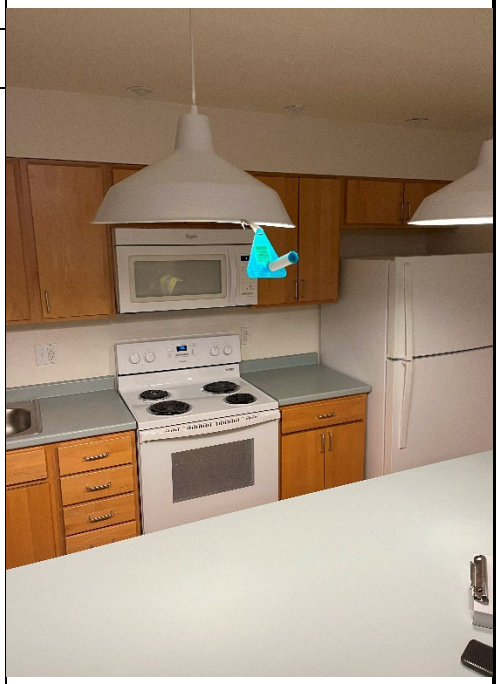
Date: 1/24/2024

Comments: Outdoor air sample taken in vicinity of Fresh 80 vent on unit 146A

Photograph 2

Date: 1/24/2024

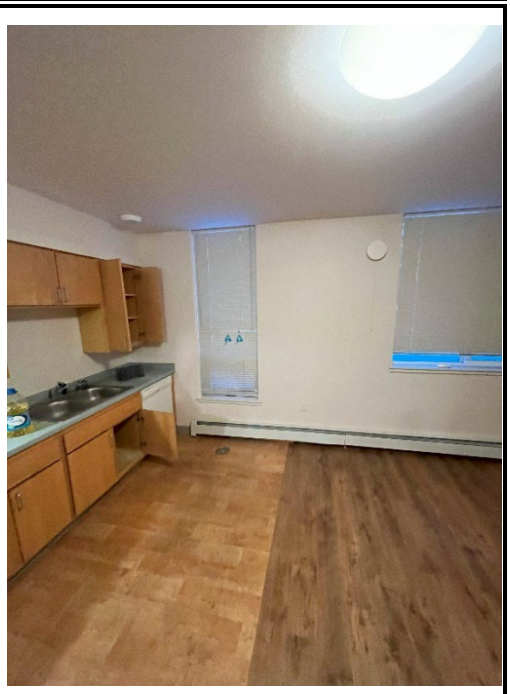
Comments: Indoor air sample in kitchen (main floor) of unit 146C



Photograph 3

Date: 1/24/2024

Comments: Indoor air sample and duplicate in kitchen (main floor) of unit 138E



Photograph 4

Date: 1/24/2024

Comments: Fresh 80 air sample at Building 138.

GEOSYNTEC CONSULTANTS
Photographic Record

Ridgeline Terrace Apartments Long Term Monitoring Plan Report, Attachment C: Photolog

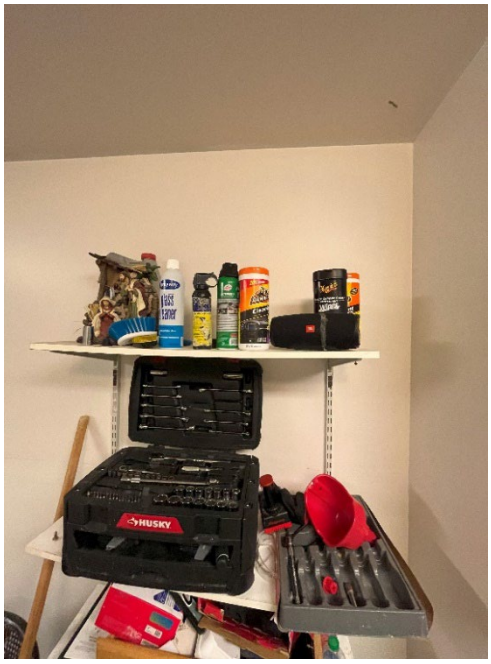
Location: Anchorage, Alaska

Client: Cook Inlet Housing Authority | **Project Number:**PNG0937

Photograph 5

Date: 1/24/2024

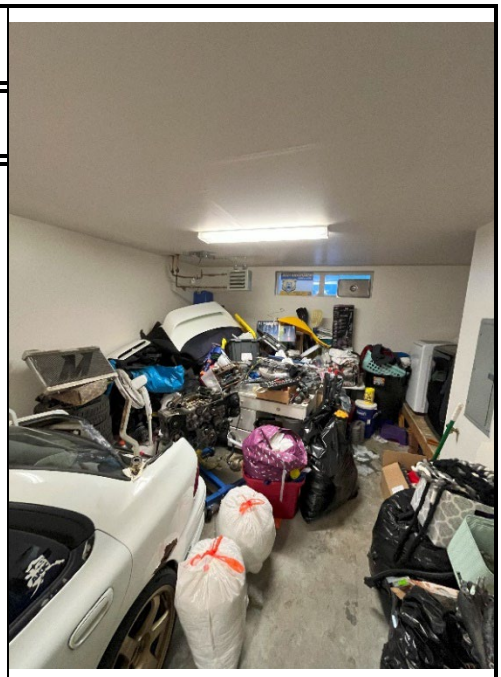
Comments: Aerosol cans in garage(first floor) of unit 146E



Photograph 6

Date: 1/24/2024

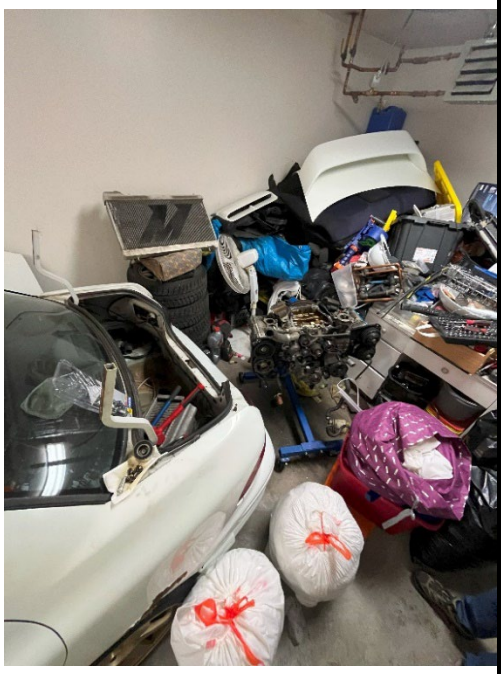
Comments: Garage contents of unit 146E



Photograph 7

Date: 1/24/2024

Comments: Vehicle maintenance in garage of unit 146E



Photograph 8

Date: 1/24/2024

Comments: VIMS effluent sample at Building 138

Attachment D

Laboratory Analytical Reports

eurofins | Air Toxics

2/8/2024
Mr. Shawn Holdridge
Cook Inlet Housing Authority
3510 Spenard Road
Suite 100
Anchorage AK 99503

Project Name: Ridgeline Terrace
Project #:
Workorder #: 2401553

Dear Mr. Shawn Holdridge

The following report includes the data for the above referenced project for sample(s) received on 1/26/2024 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by TO-15 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: Monica Tran at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Monica Tran

Project Manager

eurofins | Air Toxics

WORK ORDER #: 2401553

Work Order Summary

CLIENT:	Mr. Shawn Holdridge Cook Inlet Housing Authority 3510 Spenard Road Suite 100 Anchorage, AK 99503	**BILL TO:**	Accounts Payable Cook Inlet Housing Authority 3510 Spenard Road Suite 100 Anchorage, AK 99503
PHONE:	907-793-3036	**P.O. #**	124758
FAX:		**PROJECT #**	Ridgeline Terrace
DATE RECEIVED:	01/26/2024	**CONTACT:**	Monica Tran
DATE COMPLETED:	02/08/2024		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	24-RTA-146-01-SG	TO-15	9.4 "Hg	9.8 psi
02A	24-RTA-138-01-SG	TO-15	9.4 "Hg	9.9 psi
03A	Lab Blank	TO-15	NA	NA
04A	CCV	TO-15	NA	NA
05A	LCS	TO-15	NA	NA
05AA	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 02/08/24

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.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000

LABORATORY NARRATIVE
EPA Method TO-15
Cook Inlet Housing Authority
Workorder# 2401553

Two 1 Liter Summa Canister samples were received on January 26, 2024. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Ten qualifiers may have been used on the data analysis sheets and indicates 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, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

M - Reported value may be biased due to apparent matrix interferences.

CN - See Case Narrative.

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

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: 24-RTA-146-01-SG

Lab ID#: 2401553-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	1.2	280	6.5	1500

Client Sample ID: 24-RTA-138-01-SG

Lab ID#: 2401553-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	1.2	2.7	4.8	11
Trichloroethene	1.2	490	6.6	2600

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Client Sample ID: 24-RTA-146-01-SG

Lab ID#: 2401553-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a020116**	**Date of Collection:**	**1/24/24 10:06:00 AM**
Dil. Factor:	**2.43**	**Date of Analysis:**	**2/1/24 09:34 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	1.2	Not Detected	4.8	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.8	Not Detected
cis-1,2-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Trichloroethene	1.2	280	6.5	1500
Tetrachloroethene	1.2	Not Detected	8.2	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	91	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: 24-RTA-138-01-SG

Lab ID#: 2401553-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a020117**	**Date of Collection: 1/24/24 10:21:00 AM**	
Dil. Factor:	**2.44**	**Date of Analysis: 2/1/24 10:11 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	1.2	Not Detected	4.8	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.8	Not Detected
cis-1,2-Dichloroethene	1.2	2.7	4.8	11
Trichloroethene	1.2	490	6.6	2600
Tetrachloroethene	1.2	Not Detected	8.3	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	108	70-130
1,2-Dichloroethane-d4	91	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: Lab Blank

Lab ID#: 2401553-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a020106d**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/1/24 12:46 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	89	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: CCV

Lab ID#: 2401553-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a020103**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/1/24 11:02 AM**	

Compound	%Recovery
1,1-Dichloroethene	92
trans-1,2-Dichloroethene	94
cis-1,2-Dichloroethene	93
Trichloroethene	97
Tetrachloroethene	95

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	91	70-130
4-Bromofluorobenzene	106	70-130

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Client Sample ID: LCS

Lab ID#: 2401553-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a020104**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/1/24 11:36 AM**	

Compound	%Recovery	Method Limits
1,1-Dichloroethene	95	70-130
trans-1,2-Dichloroethene	96	70-130
cis-1,2-Dichloroethene	95	70-130
Trichloroethene	99	70-130
Tetrachloroethene	99	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	88	70-130
4-Bromofluorobenzene	106	70-130

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Client Sample ID: LCSD

Lab ID#: 2401553-05AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a020105**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/1/24 12:10 PM**	

Compound	%Recovery	Method Limits
1,1-Dichloroethene	91	70-130
trans-1,2-Dichloroethene	94	70-130
cis-1,2-Dichloroethene	90	70-130
Trichloroethene	100	70-130
Tetrachloroethene	99	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	91	70-130
4-Bromofluorobenzene	105	70-130

eurofins | Air Toxics

2/9/2024
Mr. Shawn Holdridge
Cook Inlet Housing Authority
3510 Spenard Road
Suite 100
Anchorage AK 99503

Project Name: Ridgeline Terrace
Project #:
Workorder #: 2401631

Dear Mr. Shawn Holdridge

The following report includes the data for the above referenced project for sample(s) received on 1/29/2024 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: Monica Tran at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Monica Tran

Project Manager

eurofins | Air Toxics

WORK ORDER #: 2401631

Work Order Summary

CLIENT:	Mr. Shawn Holdridge Cook Inlet Housing Authority 3510 Spenard Road Suite 100 Anchorage, AK 99503	**BILL TO:**	Accounts Payable Cook Inlet Housing Authority 3510 Spenard Road Suite 100 Anchorage, AK 99503
PHONE:	907-793-3036	**P.O. #**	124758
FAX:		**PROJECT #**	Ridgeline Terrace
DATE RECEIVED:	01/29/2024	**CONTACT:**	Monica Tran
DATE COMPLETED:	02/09/2024		

FRACTION #	NAME	TEST
01A	24-RTA-82-01-01-AA	Passive S.E. RAD130/SKC
02A	24-RTA-03-02-01-IA	Passive S.E. RAD130/SKC
03A	24-RTA-03-01-01-IA	Passive S.E. RAD130/SKC
04A	24-RTA-10-01-01-IA	Passive S.E. RAD130/SKC
05A	24-RTA-95-01-01-IA	Passive S.E. RAD130/SKC
06A	24-RTA-12-01-01-IA	Passive S.E. RAD130/SKC
07A	24-RTA-05-02-01-IA	Passive S.E. RAD130/SKC
08A	24-RTA-05-01-01-IA	Passive S.E. RAD130/SKC
09A	24-RTA-79-01-01-AA	Passive S.E. RAD130/SKC
10A	24-RTA-01-TB	Passive S.E. RAD130/SKC
11A	Lab Blank	Passive S.E. RAD130/SKC
12A	CCV	Passive S.E. RAD130/SKC
13A	LCS	Passive S.E. RAD130/SKC
13AA	LCSD	Passive S.E. RAD130/SKC

CERTIFIED BY: Heidi Hayes DATE: 02/09/24

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.

LABORATORY NARRATIVE
RAD130 Passive SE by Mod EPA TO-17
Cook Inlet Housing Authority
Workorder# 2401631

Ten Radiello 130 (Solvent) samples were received on January 29, 2024. 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

The Chain of Custody was missing method information. The laboratory proceeded with the analysis as per the original contract or verbal agreement.

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 2941 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

eurofins | Air Toxics

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

Client Sample ID: 24-RTA-82-01-01-AA

Lab ID#: 2401631-01A

No Detections Were Found.

Client Sample ID: 24-RTA-03-02-01-IA

Lab ID#: 2401631-02A

No Detections Were Found.

Client Sample ID: 24-RTA-03-01-01-IA

Lab ID#: 2401631-03A

No Detections Were Found.

Client Sample ID: 24-RTA-10-01-01-IA

Lab ID#: 2401631-04A

No Detections Were Found.

Client Sample ID: 24-RTA-95-01-01-IA

Lab ID#: 2401631-05A

No Detections Were Found.

Client Sample ID: 24-RTA-12-01-01-IA

Lab ID#: 2401631-06A

No Detections Were Found.

Client Sample ID: 24-RTA-05-02-01-IA

Lab ID#: 2401631-07A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Tetrachloroethene	0.10	0.58	0.18	1.1

Client Sample ID: 24-RTA-05-01-01-IA

Lab ID#: 2401631-08A

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

eurofins | Air Toxics

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

Client Sample ID: 24-RTA-05-01-01-IA

Lab ID#: 2401631-08A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Tetrachloroethene	0.10	0.58	0.14	0.79

Client Sample ID: 24-RTA-79-01-01-AA

Lab ID#: 2401631-09A

No Detections Were Found.

Client Sample ID: 24-RTA-01-TB

Lab ID#: 2401631-10A

No Detections Were Found.

eurofins | Air Toxics

Client Sample ID: 24-RTA-82-01-01-AA

Lab ID#: 2401631-01A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18020513sim**	**Date of Collection: 1/26/24 10:05:00 AM**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/5/24 03:58 PM**	
		Date of Extraction: 2/5/24	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
1,1-Dichloroethene	0.40	1.8	Not Detected C	Not Detected C
Trichloroethene	0.10	0.49	Not Detected	Not Detected
trans-1,2-Dichloroethene	0.20	1.1	Not Detected C	Not Detected C
cis-1,2-Dichloroethene	0.10	0.54	Not Detected C	Not Detected C
Tetrachloroethene	0.10	0.58	Not Detected	Not Detected

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 2935 minutes.
Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130

eurofins | Air Toxics

Client Sample ID: 24-RTA-03-02-01-IA

Lab ID#: 2401631-02A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18020514sim**	**Date of Collection: 1/26/24 10:08:00 AM**
Dil. Factor:	**1.00**	**Date of Analysis: 2/5/24 04:26 PM**
		Date of Extraction: 2/5/24

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
1,1-Dichloroethene	0.40	1.8	Not Detected C	Not Detected C
Trichloroethene	0.10	0.49	Not Detected	Not Detected
trans-1,2-Dichloroethene	0.20	1.1	Not Detected C	Not Detected C
cis-1,2-Dichloroethene	0.10	0.54	Not Detected C	Not Detected C
Tetrachloroethene	0.10	0.58	Not Detected	Not Detected

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 2936 minutes.
Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130

eurofins | Air Toxics

Client Sample ID: 24-RTA-03-01-01-IA

Lab ID#: 2401631-03A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18020515sim**	**Date of Collection: 1/26/24 10:12:00 AM**
Dil. Factor:	**1.00**	**Date of Analysis: 2/5/24 04:53 PM**
		Date of Extraction: 2/5/24

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
1,1-Dichloroethene	0.40	1.8	Not Detected C	Not Detected C
Trichloroethene	0.10	0.49	Not Detected	Not Detected
trans-1,2-Dichloroethene	0.20	1.1	Not Detected C	Not Detected C
cis-1,2-Dichloroethene	0.10	0.54	Not Detected C	Not Detected C
Tetrachloroethene	0.10	0.58	Not Detected	Not Detected

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 2937 minutes.
Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130

eurofins | Air Toxics

Client Sample ID: 24-RTA-10-01-01-IA

Lab ID#: 2401631-04A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18020516sim**	**Date of Collection: 1/26/24 10:23:00 AM**
Dil. Factor:	**1.00**	**Date of Analysis: 2/5/24 05:21 PM**
		Date of Extraction: 2/5/24

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
1,1-Dichloroethene	0.40	1.8	Not Detected C	Not Detected C
Trichloroethene	0.10	0.49	Not Detected	Not Detected
trans-1,2-Dichloroethene	0.20	1.1	Not Detected C	Not Detected C
cis-1,2-Dichloroethene	0.10	0.54	Not Detected C	Not Detected C
Tetrachloroethene	0.10	0.58	Not Detected	Not Detected

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 2938 minutes.
Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130

eurofins | Air Toxics

Client Sample ID: 24-RTA-95-01-01-IA

Lab ID#: 2401631-05A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18020517sim**	**Date of Collection: 1/26/24 10:56:00 AM**
Dil. Factor:	**1.00**	**Date of Analysis: 2/5/24 05:49 PM**
		Date of Extraction: 2/5/24

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
1,1-Dichloroethene	0.40	1.8	Not Detected C	Not Detected C
Trichloroethene	0.10	0.49	Not Detected	Not Detected
trans-1,2-Dichloroethene	0.20	1.1	Not Detected C	Not Detected C
cis-1,2-Dichloroethene	0.10	0.54	Not Detected C	Not Detected C
Tetrachloroethene	0.10	0.58	Not Detected	Not Detected

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 2941 minutes.
Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130

eurofins | Air Toxics

Client Sample ID: 24-RTA-12-01-01-IA

Lab ID#: 2401631-06A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18020518sim**	**Date of Collection: 1/26/24 10:30:00 AM**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/5/24 06:16 PM**	
		Date of Extraction: 2/5/24	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
1,1-Dichloroethene	0.40	1.8	Not Detected C	Not Detected C
Trichloroethene	0.10	0.49	Not Detected	Not Detected
trans-1,2-Dichloroethene	0.20	1.1	Not Detected C	Not Detected C
cis-1,2-Dichloroethene	0.10	0.54	Not Detected C	Not Detected C
Tetrachloroethene	0.10	0.58	Not Detected	Not Detected

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 2940 minutes.
Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130

eurofins | Air Toxics

Client Sample ID: 24-RTA-05-02-01-IA

Lab ID#: 2401631-07A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18020519sim**	**Date of Collection: 1/26/24 10:17:00 AM**
Dil. Factor:	**1.00**	**Date of Analysis: 2/5/24 06:44 PM**
		Date of Extraction: 2/5/24

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
1,1-Dichloroethene	0.40	1.8	Not Detected C	Not Detected C
Trichloroethene	0.10	0.50	Not Detected	Not Detected
trans-1,2-Dichloroethene	0.20	1.1	Not Detected C	Not Detected C
cis-1,2-Dichloroethene	0.10	0.55	Not Detected C	Not Detected C
Tetrachloroethene	0.10	0.58	0.18	1.1

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 2922 minutes.
Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130

eurofins | Air Toxics

Client Sample ID: 24-RTA-05-01-01-IA

Lab ID#: 2401631-08A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18020520sim**	**Date of Collection: 1/26/24 10:20:00 AM**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/5/24 07:11 PM**	
		Date of Extraction: 2/5/24	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
1,1-Dichloroethene	0.40	1.8	Not Detected C	Not Detected C
Trichloroethene	0.10	0.50	Not Detected	Not Detected
trans-1,2-Dichloroethene	0.20	1.1	Not Detected C	Not Detected C
cis-1,2-Dichloroethene	0.10	0.55	Not Detected C	Not Detected C
Tetrachloroethene	0.10	0.58	0.14	0.79

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 2915 minutes.
Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130

eurofins | Air Toxics

Client Sample ID: 24-RTA-79-01-01-AA

Lab ID#: 2401631-09A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18020521sim**	**Date of Collection: 1/26/24 10:37:00 AM**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/5/24 07:39 PM**	
		Date of Extraction: 2/5/24	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
1,1-Dichloroethene	0.40	1.8	Not Detected C	Not Detected C
Trichloroethene	0.10	0.50	Not Detected	Not Detected
trans-1,2-Dichloroethene	0.20	1.1	Not Detected C	Not Detected C
cis-1,2-Dichloroethene	0.10	0.55	Not Detected C	Not Detected C
Tetrachloroethene	0.10	0.58	Not Detected	Not Detected

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 2924 minutes.
Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130

eurofins | Air Toxics

Client Sample ID: 24-RTA-01-TB

Lab ID#: 2401631-10A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18020522sim**	**Date of Collection: 1/26/24 10:00:00 AM**
Dil. Factor:	**1.00**	**Date of Analysis: 2/5/24 08:07 PM**
		Date of Extraction: 2/5/24

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
1,1-Dichloroethene	0.40	1.8	Not Detected C	Not Detected C
Trichloroethene	0.10	0.49	Not Detected	Not Detected
trans-1,2-Dichloroethene	0.20	1.1	Not Detected C	Not Detected C
cis-1,2-Dichloroethene	0.10	0.54	Not Detected C	Not Detected C
Tetrachloroethene	0.10	0.58	Not Detected	Not Detected

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 2940 minutes.
Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 2401631-11A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18020510sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/5/24 02:35 PM**	
		Date of Extraction: 2/5/24	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
1,1-Dichloroethene	0.40	1.8	Not Detected C	Not Detected C
Trichloroethene	0.10	0.49	Not Detected	Not Detected
trans-1,2-Dichloroethene	0.20	1.1	Not Detected C	Not Detected C
cis-1,2-Dichloroethene	0.10	0.54	Not Detected C	Not Detected C
Tetrachloroethene	0.10	0.58	Not Detected	Not Detected

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 2941 minutes.
Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 2401631-12A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18020502sim**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 2/5/24 10:39 AM**
		Date of Extraction: NA

Compound	%Recovery
1,1-Dichloroethene	112
Trichloroethene	98
trans-1,2-Dichloroethene	103
cis-1,2-Dichloroethene	104
Tetrachloroethene	97

Container Type: NA - Not Applicable

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

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 2401631-13A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18020508sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/5/24 01:40 PM**	
		Date of Extraction: 2/5/24	

Compound	%Recovery	Method Limits
1,1-Dichloroethene	112	70-130
Trichloroethene	104	70-130
trans-1,2-Dichloroethene	105	70-130
cis-1,2-Dichloroethene	102	70-130
Tetrachloroethene	101	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 2401631-13AA

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18020509sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/5/24 02:08 PM**	
		Date of Extraction: 2/5/24	

Compound	%Recovery	Method Limits
1,1-Dichloroethene	110	70-130
Trichloroethene	104	70-130
trans-1,2-Dichloroethene	103	70-130
cis-1,2-Dichloroethene	101	70-130
Tetrachloroethene	100	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130

Attachment E

Data Quality Checklists

Laboratory Data Review Checklist for Air Samples

Completed By:

Molly Becia

Title:

Staff Scientist

Date:

2/14/2024

Consultant Firm:

Geosyntec Consultants

Laboratory Name:

Eurofins Air Toxics, LLC. Folsom, CA

Laboratory Report Number:

2401631

Laboratory Report Date:

2/9/2024

CS Site Name:

Ridgeline Terrace

ADEC File Number:

2100.38.569

Hazard Identification Number:

4145

2401631

Laboratory Report Date:

2/9/2024

CS Site Name:

Ridgeline Terrace

Note: Any N/A or No box checked must have an explanation in the comments box.

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

   Yes☒ No☐ N/A☐ Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

   Yes☐ No☐ N/A☒ Comments:

   The samples were not transferred to another laboratory for analysis.

2. Chain of Custody (CoC)

   a. CoC information completed, signed, and dated (including released/received by)?

   Yes☒ No☐ N/A☐ Comments:

   Incorrect error corrections were observed on the COC forms, instead of the proper procedure of a single strike through, correction, and initials and date of person making the corrections.

   b. Correct analyses requested?

   Yes☒ No☐ N/A☐ Comments:

   The COC was missing analysis request information. Laboratory proceeded with analysis per contract agreement/verbal agreement.

3. Laboratory Sample Receipt Documentation

   a. Sample condition documented - Samples collected in gas tight, opaque/dark Summa canisters or other ADEC approved container? Canister vacuum/pressure checked, recorded upon receipt and contained no open valves?

   Yes☒ No☐ N/A☐ Comments:

   b. If there were discrepancies, were they documented? For example, incorrect sample containers, insufficient or missing samples, canister not holding a vacuum etc.?

   Yes☐ No☐ N/A☒ Comments:

   No discrepancies were documented.

2401631

Laboratory Report Date:

2/9/2024

CS Site Name:

Ridgeline Terrace

c. Data quality or usability affected?

Comments:

Data quality and usability were not affected.

4. Case Narrative

a. Present and understandable?

Yes☒ No☐ N/A☐ Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

Yes☐ No☒ N/A☐ Comments:

No discrepancies, errors, or QC failures were identified by the laboratory

c. Were all corrective actions documented?

Yes☐ No☐ N/A☒ Comments:

No corrective actions were documented.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

The case narrative did not indicate that data quality/usability were affected.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes☒ No☐ N/A☐ Comments:

b. All applicable holding times met?

Yes☒ No☐ N/A☐ Comments:

2401631

Laboratory Report Date:

2/9/2024

CS Site Name:

Ridgeline Terrace

c. Are the reported LOQs less than the target level or screening level for the project, as defined in the approved work plan?

Yes☒ No☐ N/A☐ Comments:

Approved work plan not applicable. The reporting limits were less than ADEC indoor air target levels.

d. Data quality or usability affected?

Data quality and usability were not affected.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes☒ No☐ N/A☐ Comments:

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes☒ No☐ N/A☐ Comments:

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

The samples were not affected by the method blank results.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes☐ No☐ N/A☒ Comments:

Laboratory flags were not applied to the data based on the method blank results.

v. Data quality or usability affected?

Comments:

Data quality and usability were not affected.

2401631

Laboratory Report Date:

2/9/2024

CS Site Name:

Ridgeline Terrace

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples?

Yes☒ No☐ N/A☐ Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes☒ No☐ N/A☐ Comments:

iii. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable?

Yes☐ No☒ N/A☐ Comments:

RPDs were not reported in the laboratory report for the LCS/LCSD pair. RPDs were calculated by the validator. Calculated RPDs were less than the method specific limits.

iv. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

The samples were not affected by the LCS/LCSD results.

v. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes☐ No☐ N/A☒ Comments:

Laboratory flags were not applied to the data based on the LCS/LCSD results.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and usability were not affected.

c. Surrogates – VOCs only

i. Are surrogate recoveries reported for VOC analyses – field, QC and laboratory samples?

Yes☒ No☐ N/A☐ Comments:

2401631

Laboratory Report Date:

2/9/2024

CS Site Name:

Ridgeline Terrace

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes☒ No☐ N/A☐ Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

Yes☐ No☐ N/A☒ Comments:

Laboratory flags were not applied to the data based on the surrogate results.

iv. Data quality or usability affected?

Comments:

Data quality and usability were not affected.

d. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes☒ No☐ N/A☐ Comments:

One field duplicate pair was submitted with the sample set:

- 24-RTA-10-01-01-IA/24-RTA-95-01-01-IA

ii. Submitted blind to lab?

Yes☒ No☐ N/A☐ Comments:

iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% air)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

Yes☒ No☐ N/A☐ Comments:

2401631

Laboratory Report Date:

2/9/2024

CS Site Name:

Ridgeline Terrace

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data quality and usability were not affected.

e. Field Blank (If not applicable, a comment stating why must be entered below)?

Yes☒ No☐ N/A☐ Comments:

Trip blank 24-RTA-01-TB was submitted with the sample set.

i. All results less than LOQ and project specified objectives?

Yes☒ No☐ N/A☐ Comments:

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

The samples were not affected by the trip blank results.

iii. Data quality or usability affected?

Comments:

Data quality and usability were not affected.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes☒ No☐ N/A☐ Comments:

The laboratory applied C flags to indicate the results were estimated due to the calculated sampling rate. Based on professional and technical judgement, no qualifications were applied to the data.

Additionally, the laboratory applied ND flags in the laboratory report to indicate the results were not detected at the RLs. The ND flags were updated to U flags in the electronic data deliverable (EDD) for consistency with validation qualifier standards.