

REPORT

July 2024, Benzene Monitoring Result Above Upper Risk Threshold Report

Rain Carbon Canada Inc.

Submitted by:

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Distribution List

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1.0 INTRODUCTION

The ambient air monitoring measurements for July 5, 17, and 29, 2024, follow the November 12, 2019, Monitoring Plan for Benzene (the Plan) approved by the Ontario Ministry of the Environment, Conservation and Parks (MECP) on November 20, 2019.

As required by the Plan, Rain completed three monitoring events in the month of July 2024 (July 5, 17, and 29) and a monthly summary report was then submitted to the MECP entitled “July 2024 Ambient Air Monitoring Report” (the July 2024 AAMR).

As presented in the July 2024 AAMR, there were three benzene concentrations recorded above the 100 µg/m³ benzene Upper Risk Threshold (URT) on the July 5 and July 17, 2024, and July 29, 2024, MECP monitoring events.

- A Section 30 Notification for the July 5, 2024, URT exceedance was submitted to the MECP on July 24, 2024.
- A Section 30 Notification for the July 17, 2024, URT exceedance was submitted to the MECP on August 7, 2024.
- A Section 30 Notification for the July 29, 2024, URT exceedance was submitted to the MECP on August 17, 2024.

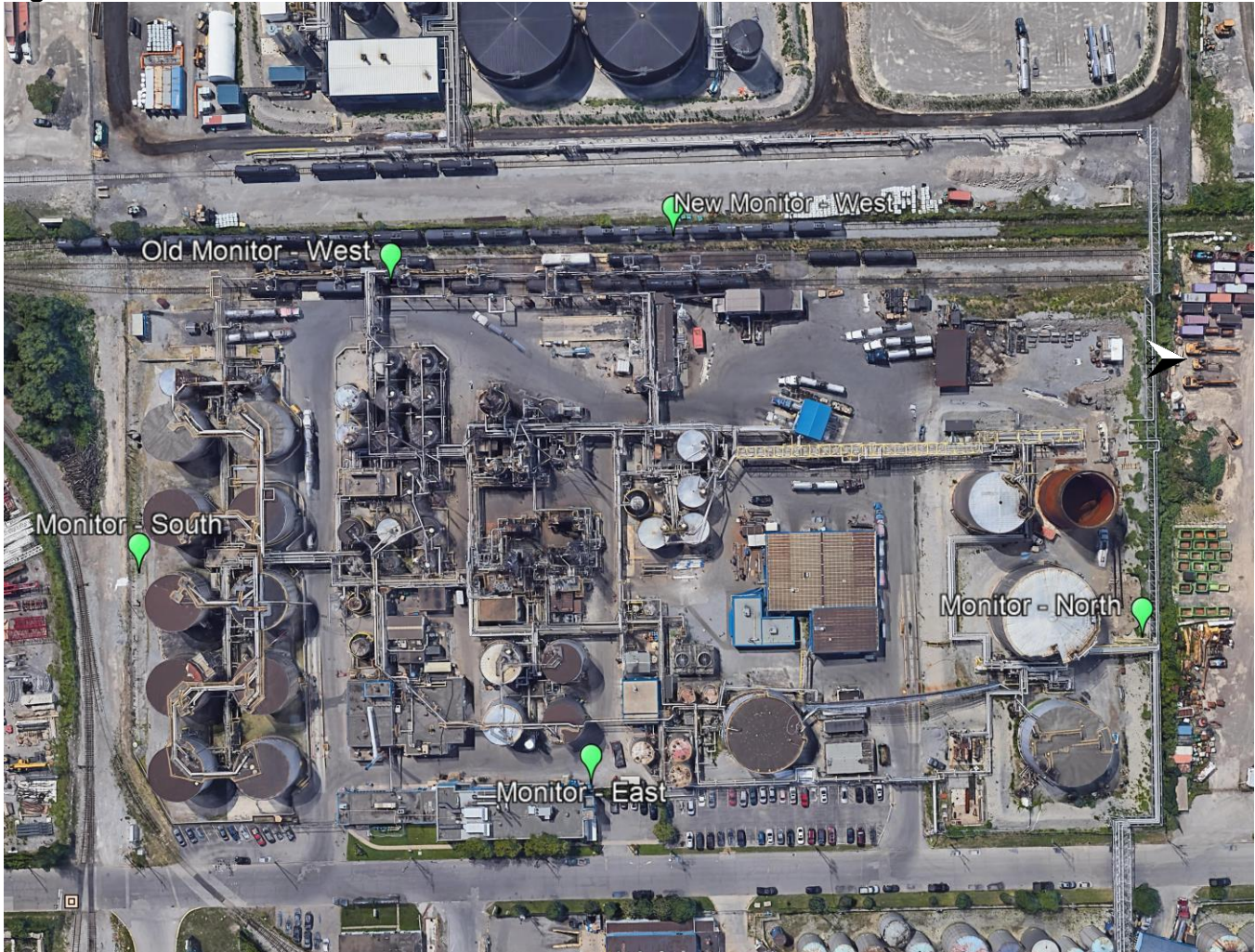
This report is a follow up to the Section 30 Notification and includes information on the following:

- An analysis of what may have caused the benzene concentrations to be above the Upper Risk Threshold.
- Production rate(s) at the time measuring benzene concentrations to be above the Upper Risk Threshold.
- An assessment of additional equipment, technically feasible methods and operational measures that are available to further minimize the likelihood of benzene measurements above the Upper Risk Threshold; and
- A proposed schedule to implement any actions that would minimize the likelihood of benzene measurements above the Upper Risk Threshold.

2.0 BENZENE MONITORING

The benzene monitoring program consists of setting up a SUMMA volatile organic carbon (VOC) canister sampling system for benzene at five locations at the Facility, as presented in Figure 1. Samples were collected over a 24-hour period. Air quality data acquisition and instrument performance were conducted by Rain Carbon Canada Inc. personnel and the laboratory analysis was conducted by Bureau Veritas Laboratories, which is ISO1702 compliant and accredited.

Figure 1: Monitor and Source Locations



The July 5, 17, and 29, 2024 MECP monitoring day benzene measurements ranged from **< 0.319 µg/m³ to 287.0 µg/m³ benzene.**

The benzene concentration measurement of **287.0 µg/m³** at the south monitor on July 5, 2024, the benzene concentration measurement of **120.0 µg/m³** at the east monitor on July 17, 2024, and the benzene concentration measurement of **145.0 µg/m³** at the south monitor on July 29, 2024, were all above the 100 µg/m³ benzene Upper Risk Threshold (URT).

Table 1: Summary of July 5, 17, and 29, 2024, Benzene Measurements.

Monitoring Event Date	Measured Concentration [µg/m³]					HAMN STN 29164
	East	North	Old West	South	New West	
July 5	44.5	1.79	10.5	287	3.24	0.929
July 17	120	6.56	3.68	67.3	-	< 0.319
July 19	-	-	-	-	1.94	-
July 29	21.1	3.51	30.7	145	5.43	1.40

Samples were all within the MECP recommended pressure on receipt range of -5 to -10 inches Hg.

2.1 Facility Conditions During Monitoring

The Facility was undergoing normal operations during the July 5 and July 17 and July 29, 2024, monitoring events. Table 2 summarizes the relevant loading activity at the Facility on July 5 and July 17 and July 29, 2024, which shows that there was Spot 5 Light Oil Truck/Trailer loading taking place on July 5, 2024, but not on July 17, and July 29, 2024.

Table 2: Summary of Facility Loading Activities on July 5, July 17, and July 29, 2024.

MECP Monitoring Day Events	Area	Modelling Source ID	Light Oil US gal
July 5, 2024	Spot 5 Light Oil Truck Loading	LS5	10,509 US gal
July 17, 2024	Spot 5 Light Oil Truck Loading	LS5	0 US gal
July 29, 2024	Spot 5 Light Oil Truck Loading	LS5	0 US gal

The loading data is based on information derived from the Systems, Application and Products (SAP) Enterprise Resource Planning software system which tracks the amount of material loaded into trailers and rail cars in kilograms. This data was converted to US gallons, representing the amount of material loaded during the monitoring event (i.e., daily amount loaded). This daily loading data allows for a better representation of Facility conditions during the 24-hour monitoring events.

The monitoring and control of loading volumes is part of Standard Operation Procedures (SOPS) for material loading.

3.0 MONITORING RESULTS AND ANALYSIS

The site monitors are located at the facility property fence line and their measurements are likely impacted by emissions from other industrial facilities and transportation sources in the vicinity.

Table 3 summarizes the July 5, 2024, benzene monitoring results, wind conditions and relevant facility loading operations. Also reviewed were the south berm tank farm tank PVRV VOC test results for July 5, 2024. The analysis of the results is presented below Table 5.

Table 4 summarizes the July 17, 2024, benzene monitoring results, wind conditions and relevant facility loading operations. Also reviewed were the south berm tank farm tank PVRV VOC test results for July 17, 2024. The analysis of the results is presented below Table 5.

Table 5 summarizes the July 29, 2024, benzene monitoring results, wind conditions and relevant facility loading operations. Also reviewed were the south berm tank farm tank PVRV VOC test results for July 29, 2024. The analysis of the results is presented below Table 5.

Table 3: Summary of Wind Conditions, Facility Operations and Measured Benzene Concentrations during July 5, 2024

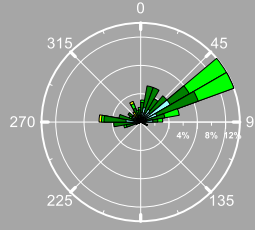
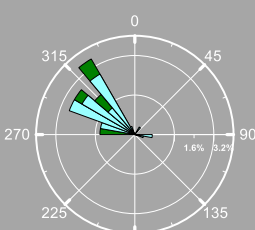
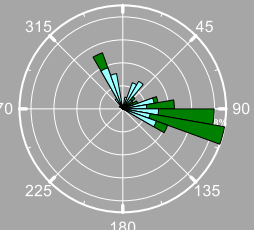
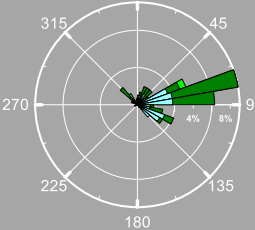
	HAMN Station	Wind Direction & Strength	Overall				
	29102	ENE (Moderate, Strong)	 29171		 29102		
	29171	NW (Moderate)					
	29180	E, ESE (Moderate)	 29180		 29565		
	29565	E, ENE (Moderate)					
Facility Operations	Facility Area	Modelling Source ID	Daily Total Amount Loaded [US gal]				
	Spot 5 Light Oil Truck Loading	Close to South Monitor	Light Oil				
			10,509				
Measured Concentrations [µg/m³]		East Monitor	North Monitor	Old West Monitor / New West Monitor		South Monitor/STN29164	
		44.5	1.79	10.5 / 3.24		287 / 0.929	

Table 4: Summary of Wind Conditions, Facility Operations and Measured Benzene Concentrations during July 17, 2024

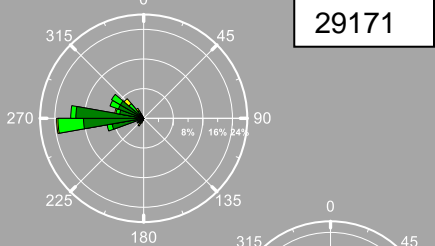
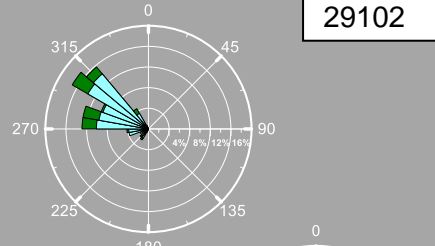
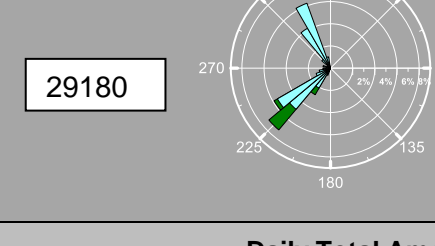
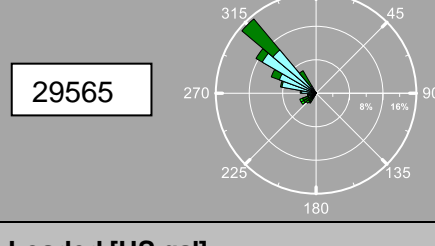
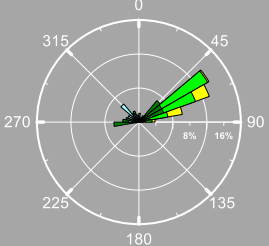
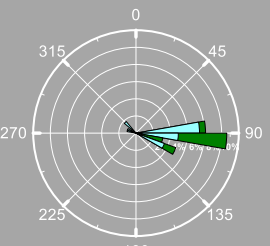
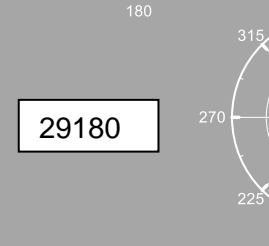
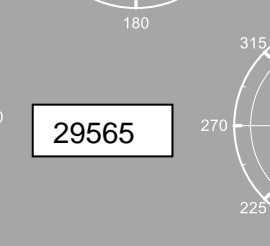
	HAMN Station	Wind Direction & Strength	Overall			
	29102	W (Moderate, Strong)				
	29171	WNW (Moderate)				
	29180	NNW, SW (Moderate)				
	29565	NW, WNW (Moderate)				
Facility Operations	Facility Area	Modelling Source ID	Daily Total Amount Loaded [US gal]			
	Spot 5 Light Oil Truck Loading	Close to South Monitor	Light Oil			
Measured Concentrations [µg/m ³]			East Monitor	North Monitor	Old West Monitor / New West Monitor	South Monitor/STN29164
			120	6.56	3.68/1.94	67.3/<0.319

Table 5: Summary of Wind Conditions, Facility Operations and Measured Benzene Concentrations during July 29, 2024

	HAMN Station	Wind Direction & Strength	Overall			
	29102	NE, ENE (Strong)	 <div style="border: 1px solid black; padding: 2px; display: inline-block;">29171</div>		 <div style="border: 1px solid black; padding: 2px; display: inline-block;">29102</div>	
	29171	E (Moderate)				
	29180	E, ENE (Moderate)	 <div style="border: 1px solid black; padding: 2px; display: inline-block;">29180</div>		 <div style="border: 1px solid black; padding: 2px; display: inline-block;">29565</div>	
	29565	E, ENE (Moderate)				
Facility Operations	Facility Area	Modelling Source ID	Daily Total Amount Loaded [US gal]			
	Spot 5 Light Oil Truck Loading	Close to South Monitor	Light Oil			
Measured Concentrations [µg/m ³]		East Monitor	North Monitor	Old West Monitor / New West Monitor		South Monitor/STN29164
		21.1	3.51	30.7/5.43		145/1.40

July 5, 2024, monitoring event:

Wind conditions during the July 5, 2024, monitoring event were generally blowing from a north easterly direction with moderate to strong winds. This information is summarized in the table below.

Monitoring Event	July 5, 2024
Wind Strength	Moderate
Main Wind Direction	NE

The loading activities during the July 5, 2024, monitoring event are summarized in the table below.

Monitoring Event	July 5, 2024
Total Volume Light Oil Loaded at Spot 5 Truck Loading [US gal]	10,509 US gal

July 17, 2024, monitoring event:

Wind conditions during the July 17, 2024, monitoring event were generally blowing from a north westerly direction with moderate to strong winds. This information is summarized in the table below.

Monitoring Event	July 17, 2024
Wind Strength	Moderate
Main Wind Direction	NW

The loading activities during the July 17, 2024, monitoring event are summarized in the table below.

Monitoring Event	July 17, 2024
Total Volume Light Oil Loaded at Spot 5 Truck Loading [US gal]	0 US gal

July 29, 2024, monitoring event:

Wind conditions during the July 29, 2024, monitoring event were generally blowing from an easterly direction with moderate to strong winds. This information is summarized in the table below.

Monitoring Event	July 29, 2024
Wind Strength	Moderate to Strong
Main Wind Direction	E

The loading activities during the July 29, 2024, monitoring event are summarized in the table below.

Monitoring Event	July 29, 2024
Total Volume Light Oil Loaded at Spot 5 Truck Loading [US gal]	0 US gal

Tank PVRV VOC emission measurements on July 5, 2024 MECP Monitoring Event

The following Tank PVRV (pressure vacuum relief valve) VOC ppm measurements were taken using a Mini Rae 3000 by the Operations during the Friday July 5, 2024, MECP Monitoring Event.

A specified number (3 or 4) of Tank PVRV ppm VOC measurements are recorded by the Environmental Engineering and/or Operations daily and on the July 5, 2024, MECP monitoring event ppm VOC measurements at Tanks 3, 4, 5 and 7 PVRVs and associated nozzle and flange components were scheduled.

Tank 3 PVRV Measurement on July 5, 2024, MECP Monitoring Event ppm VOC.

Tank 3	Measurement on July 5, 2024, MECP Monitoring Event ppm VOC	Measurement Instrument
Tank 3 PVRV (Pressure Port) 1 A	66.40	Mini Rae 3000
Tank 3 PVRV (Vacuum Port) 1 B	10.60	Mini Rae 3000
Tank 3 PVRV Flange 2	146.40	Mini Rae 3000
Tank 3 PVRV Connector 3	151.40	Mini Rae 3000
Tank 3 Cleanout Port 4	7.80	Mini Rae 3000
Tank 3 PVRV Flange 5	69.40	Mini Rae 3000
Tank 3 Nozzle Flange 6	30.90	Mini Rae 3000
Tank 3 Nozzle Flange 7	39.50	Mini Rae 3000
Tank 3 Nozzle Connector 8	37.40	Mini Rae 3000
Tank 3 Nozzle Flange 9	36.40	Mini Rae 3000
Tank 3 Nozzle Flange 11	114.50	Mini Rae 3000
Tank 3 Connector 14	2,245.60	Mini Rae 3000
Tank 3 Nozzle 15	14.00	Mini Rae 3000

Tank 4 PVRV Measurement on July 5, 2024, MECP Monitoring Event ppm VOC.

Tank 4	Measurement on July 5, 2024, MECP Monitoring Event ppm VOC	Measurement Instrument
Tank 4 PVRV Pressure Port	14.40	Mini Rae 3000
Tank 4 PVRV Vacuum Port	8.20	Mini Rae 3000
Tank 4 PVRV Flange 2	122.60	Mini Rae 3000
Tank 4 PVRV Flange 3	463.40	Mini Rae 3000
Tank 4 Cleanout Port 4	103.60	Mini Rae 3000
Tank 4 PVRV Flange 5	554.30	Mini Rae 3000
Tank 4 PVRV Flange 6	256.40	Mini Rae 3000
Tank 4 PVRV Flange 7	254.20	Mini Rae 3000
Tank 4 PVRV Connector 8	75.60	Mini Rae 3000
Tank 4 PVRV Flange 9	154.30	Mini Rae 3000
Tank 4 PVRV Flange 10	32.40	Mini Rae 3000
Tank 4 PVRV Connector 11	89.40	Mini Rae 3000
Tank 4 PVRV Nozzle Flange 12	88.50	Mini Rae 3000

Tank 5 PVRV Measurement on July 5, 2024, MECP Monitoring Event ppm VOC.

Tank 5	Measurement on July 5, 2024, MECP Monitoring Event ppm VOC	Measurement Instrument
Tank 5 PVRV Pressure Port	38.40	Mini Rae 3000
Tank 5 PVRV Vacuum Port	3.40	Mini Rae 3000
Tank 5 PVRV Flange 2	0.00	Mini Rae 3000
Tank 5 PVRV Flange 3	0.00	Mini Rae 3000
Tank 5 Cleanout Port 4	0.00	Mini Rae 3000
Tank 5 PVRV Flange 5	0.00	Mini Rae 3000
Tank 5 PVRV Flange 6	0.00	Mini Rae 3000
Tank 5 PVRV Flange 7	0.00	Mini Rae 3000
Tank 5 PVRV Connector 8	0.00	Mini Rae 3000
Tank 5 PVRV Flange 9	0.00	Mini Rae 3000
Tank 5 PVRV Flange 10	0.00	Mini Rae 3000
Tank 5 PVRV Connector 11	0.00	Mini Rae 3000
Tank 5 PVRV Nozzle Flange 12	0.00	Mini Rae 3000

Tank 7 PVRV Measurement on July 5, 2024, MECP Monitoring Event ppm VOC.

Tank 7	Measurement on July 5, 2024, MECP Monitoring Event ppm VOC	Measurement Instrument
Tank 7 PVRV Pressure Port	0.90	Mini Rae 3000
Tank 7 PVRV Vacuum Port	3.60	Mini Rae 3000
Tank 7 PVRV Flange 2	2.90	Mini Rae 3000
Tank 7 PVRV Flange 3	10.40	Mini Rae 3000
Tank 7 Cleanout Port 4	90.30	Mini Rae 3000
Tank 7 PVRV Flange 5	5.50	Mini Rae 3000
Tank 7 PVRV Flange 6	0.00	Mini Rae 3000
Tank 7 PVRV Flange 7	0.00	Mini Rae 3000
Tank 7 PVRV Connector 8	0.00	Mini Rae 3000
Tank 7 PVRV Flange 9	2.10	Mini Rae 3000
Tank 7 PVRV Flange 10	2.40	Mini Rae 3000
Tank 7 PVRV Connector 11	0.00	Mini Rae 3000
Tank 7 PVRV Nozzle Flange 12	3.90	Mini Rae 3000
Tank 7 PVRV Nozzle Flange 13	0.00	Mini Rae 3000
Tank 7 PVRV Nozzle Flange 14	0.00	Mini Rae 3000
Tank 7 PVRV Nozzle Flange 15	0.00	Mini Rae 3000
Tank 7 PVRV Nozzle Flange 16	0.00	Mini Rae 3000

July 5, 2024, MECP Monitoring Event – South Monitor

The **287.0 µg/m³ benzene measurement at the south monitor on the July 5, 2024, monitoring event** was above the 24-hour upper risk threshold (URT) of 100 µg/m³ benzene which was determined, statistically, to be due to a special cause variation event.

On the July 5, 2024, MECP monitoring event, at the Tank 4 PVRV Flange 554.3 ppm VOC fugitive emissions and at the Tank 3 Connector 2,245.6 ppm VOC fugitive emissions measurements were conducted by Operations using a Mini Rae 3000.

Therefore, both the VOC results measured for Tank 3 PVRV and Tank 4 PVRV components may have been the source of the south monitor exceedance of **287 ug/m3 benzene on July 5, 2024**, given the general north easterly wind direction with moderate winds.

The 10,509 US gal of light oil loaded at Spot 7 on the July 5, 2024, monitoring event is considered an unlikely source given the general north easterly wind direction.

Tank PVRV VOC emission measurements on July 17, 2024 MECP Monitoring Event

The following Tank PVRV (pressure vacuum relief valve) VOC ppm measurements were taken using a Mini Rae 3000 by the Operations during the Wednesday July 17, 2024, MECP Monitoring Event.

A specified number (3 or 4) of Tank PVRV ppm VOC measurements are recorded by the Environmental Engineering and/or Operations daily and on the July 17, 2024, MECP monitoring event ppm VOC measurements at Tanks 4, 5 and 7 PVRVs and associated nozzle and flange components were scheduled.

Tank 4 PVRV Measurement on July 17, 2024, MECP Monitoring Event ppm VOC.

Tank 4	Measurement on July 17, 2024, MECP Monitoring Event ppm VOC	Measurement Instrument
Tank 4 PVRV Pressure Port	22.20	Mini Rae 3000
Tank 4 PVRV Vacuum Port	19.30	Mini Rae 3000
Tank 4 PVRV Flange 2	4.00	Mini Rae 3000
Tank 4 PVRV Flange 3	1.10	Mini Rae 3000
Tank 4 Cleanout Port 4	2.00	Mini Rae 3000
Tank 4 PVRV Flange 5	0.00	Mini Rae 3000
Tank 4 PVRV Flange 6	0.00	Mini Rae 3000
Tank 4 PVRV Flange 7	0.10	Mini Rae 3000
Tank 4 PVRV Connector 8	9.20	Mini Rae 3000
Tank 4 PVRV Flange 9	2.60	Mini Rae 3000
Tank 4 PVRV Flange 10	0.00	Mini Rae 3000
Tank 4 PVRV Connector 11	0.20	Mini Rae 3000
Tank 4 PVRV Nozzle Flange 12	0.00	Mini Rae 3000

Tank 5 PVRV Measurement on July 17, 2024, MECP Monitoring Event ppm VOC.

Tank 5	Measurement on July 17, 2024, MECP Monitoring Event ppm VOC	Measurement Instrument
Tank 5 PVRV Pressure Port	12.80	Mini Rae 3000
Tank 5 PVRV Vacuum Port	8.20	Mini Rae 3000
Tank 5 PVRV Flange 2	3.40	Mini Rae 3000
Tank 5 PVRV Flange 3	5.50	Mini Rae 3000
Tank 5 Cleanout Port 4	0.00	Mini Rae 3000
Tank 5 PVRV Flange 5	1.00	Mini Rae 3000
Tank 5 PVRV Flange 6	0.00	Mini Rae 3000
Tank 5 PVRV Flange 7	0.00	Mini Rae 3000
Tank 5 PVRV Connector 8	0.20	Mini Rae 3000
Tank 5 PVRV Flange 9	0.90	Mini Rae 3000
Tank 5 PVRV Flange 10	0.30	Mini Rae 3000
Tank 5 PVRV Connector 11	1.00	Mini Rae 3000
Tank 5 PVRV Nozzle Flange 12	0.00	Mini Rae 3000

Tank 7 PVRV Measurement on July 17, 2024, MECP Monitoring Event ppm VOC.

Tank 7	Measurement on July 17, 2024, MECP Monitoring Event ppm VOC	Measurement Instrument
Tank 7 PVRV Pressure Port	6.60	Mini Rae 3000
Tank 7 PVRV Vacuum Port	3.20	Mini Rae 3000
Tank 7 PVRV Flange 2	1.10	Mini Rae 3000
Tank 7 PVRV Flange 3	18.40	Mini Rae 3000
Tank 7 Cleanout Port 4	0.00	Mini Rae 3000
Tank 7 PVRV Flange 5	2.00	Mini Rae 3000
Tank 7 PVRV Flange 6	0.00	Mini Rae 3000
Tank 7 PVRV Flange 7	0.10	Mini Rae 3000
Tank 7 PVRV Connector 8	0.10	Mini Rae 3000
Tank 7 PVRV Flange 9	3.10	Mini Rae 3000
Tank 7 PVRV Flange 10	1.10	Mini Rae 3000
Tank 7 PVRV Connector 11	0.00	Mini Rae 3000
Tank 7 PVRV Nozzle Flange 12	0.00	Mini Rae 3000
Tank 7 PVRV Nozzle Flange 13	0.00	Mini Rae 3000
Tank 7 PVRV Nozzle Flange 14	0.00	Mini Rae 3000
Tank 7 PVRV Nozzle Flange 15	0.00	Mini Rae 3000
Tank 7 PVRV Nozzle Flange 16	0.00	Mini Rae 3000

July 17, 2024, MECP Monitoring Event – East Monitor

The **120.0 µg/m³ benzene measurement at the east monitor on the July 17, 2024, monitoring event** was above the 24-hour upper risk threshold (URT) of 100 µg/m³ benzene which was determined, statistically, to be due to a common cause variation event with no one specific assignable cause,

However, we did investigate the **120.0 µg/m³ benzene measurement at the east monitor on the July 17, 2024, monitoring event** and we have been unable to determine a likely assignable cause given the general north westerly wind direction with moderate winds.

Tank PVRV VOC emission measurements on July 29, 2024, MECP Monitoring Event

The following Tank PVRV (pressure vacuum relief valve) VOC ppm measurements were taken using a Mini Rae 3000 by the Environmental Engineer during the Monday July 29, 2024, MECP Monitoring Event.

A specified number (3 or 4) of Tank PVRV ppm VOC measurements are recorded by the Environmental Engineering and/or Operations daily and on the July 29, 2024, MECP monitoring event ppm VOC measurements at Tanks 4, 5 and 7 PVRVs and associated nozzle and flange components were scheduled.

Tank 4 PVRV Measurement on July 29, 2024, MECP Monitoring Event ppm VOC.

Tank 4	Measurement on July 29, 2024, MECP Monitoring Event ppm VOC	Measurement Instrument
Tank 4 PVRV Pressure Port	1.00	Mini Rae 3000
Tank 4 PVRV Vacuum Port	5.00	Mini Rae 3000
Tank 4 PVRV Flange 2	0.00	Mini Rae 3000
Tank 4 PVRV Flange 3	0.00	Mini Rae 3000
Tank 4 Cleanout Port 4	1.20	Mini Rae 3000
Tank 4 PVRV Flange 5	0.00	Mini Rae 3000
Tank 4 PVRV Flange 6	0.00	Mini Rae 3000
Tank 4 PVRV Flange 7	0.00	Mini Rae 3000
Tank 4 PVRV Connector 8	0.00	Mini Rae 3000
Tank 4 PVRV Flange 9	0.00	Mini Rae 3000
Tank 4 PVRV Flange 10	0.00	Mini Rae 3000
Tank 4 PVRV Connector 11	0.00	Mini Rae 3000
Tank 4 PVRV Nozzle Flange 12	0.00	Mini Rae 3000

Tank 5 PVRV Measurement on July 29, 2024, MECP Monitoring Event ppm VOC.

Tank 5	Measurement on July 29, 2024, MECP Monitoring Event ppm VOC	Measurement Instrument
Tank 5 PVRV Pressure Port	0.00	Mini Rae 3000
Tank 5 PVRV Vacuum Port	1.40	Mini Rae 3000
Tank 5 PVRV Flange 2	0.00	Mini Rae 3000
Tank 5 PVRV Flange 3	0.00	Mini Rae 3000
Tank 5 Cleanout Port 4	0.00	Mini Rae 3000
Tank 5 PVRV Flange 5	0.00	Mini Rae 3000
Tank 5 PVRV Flange 6	0.00	Mini Rae 3000
Tank 5 PVRV Flange 7	0.00	Mini Rae 3000
Tank 5 PVRV Connector 8	0.00	Mini Rae 3000
Tank 5 PVRV Flange 9	0.00	Mini Rae 3000
Tank 5 PVRV Flange 10	0.00	Mini Rae 3000
Tank 5 PVRV Connector 11	0.00	Mini Rae 3000
Tank 5 PVRV Nozzle Flange 12	0.00	Mini Rae 3000

Tank 7 PVRV Measurement on July 29, 2024, MECP Monitoring Event ppm VOC.

Tank 7	Measurement on July 29, 2024, MECP Monitoring Event ppm VOC	Measurement Instrument
Tank 7 PVRV Pressure Port	2.80	Mini Rae 3000
Tank 7 PVRV Vacuum Port	4.20	Mini Rae 3000
Tank 7 PVRV Flange 2	0.00	Mini Rae 3000
Tank 7 PVRV Flange 3	0.00	Mini Rae 3000
Tank 7 Cleanout Port 4	0.00	Mini Rae 3000
Tank 7 PVRV Flange 5	0.00	Mini Rae 3000
Tank 7 PVRV Flange 6	0.00	Mini Rae 3000
Tank 7 PVRV Flange 7	0.00	Mini Rae 3000
Tank 7 PVRV Connector 8	0.00	Mini Rae 3000
Tank 7 PVRV Flange 9	0.00	Mini Rae 3000
Tank 7 PVRV Flange 10	0.00	Mini Rae 3000
Tank 7 PVRV Connector 11	1.80	Mini Rae 3000
Tank 7 PVRV Nozzle Flange 12	0.00	Mini Rae 3000
Tank 7 PVRV Nozzle Flange 13	0.00	Mini Rae 3000
Tank 7 PVRV Nozzle Flange 14	0.00	Mini Rae 3000
Tank 7 PVRV Nozzle Flange 15	1.00	Mini Rae 3000
Tank 7 PVRV Nozzle Flange 16	0.00	Mini Rae 3000

July 29, 2024, MECP Monitoring Event – South Monitor

The **145.0 µg/m³ benzene measurement at the south monitor on the July 29, 2024, monitoring event** was above the 24-hour upper risk threshold (URT) of 100 µg/m³ benzene which was determined, statistically, to be due to a common cause variation event with no one specific assignable cause,

However, we did investigate the **145.0 µg/m³ benzene measurement at the south monitor on the July 29, 2024, monitoring event** and we have been unable to determine a likely assignable cause given the general easterly wind direction with moderate winds.

4. CONCLUSION

Table 6: Conclusions

<p>Analysis of what may have caused the benzene concentration to be above the Upper Risk Threshold (URT).</p>	<p><u>July 5, 2024, MECP Monitoring Event – South Monitor</u></p> <p>The 287.0 µg/m³ benzene measurement at the south monitor on the July 5, 2024, monitoring event was above the 24-hour upper risk threshold (URT) of 100 µg/m³ benzene which was determined, statistically, to be due to a special cause variation event.</p> <p>On the July 5, 2024, MECP monitoring event, at the Tank 4 PVRV Flange 554.3 ppm VOC fugitive emissions and at the Tank 3 Connector 2,245.6 ppm VOC fugitive emissions measurements were conducted by Operations using a Mini Rae 3000.</p> <p>Therefore, both the VOC results measured for Tank 3 PVRV and Tank 4 PVRV components may have been the source of the south monitor exceedance of 287 ug/m³ benzene on July 5, 2024, given the general north easterly wind direction with moderate winds.</p> <p>The 10,509 US gal of light oil loaded at Spot 7 on the July 5, 2024, monitoring event is considered an unlikely source given the general north easterly wind direction</p> <p><u>July 17, 2024, MECP Monitoring Event – East Monitor</u></p> <p>The 120.0 µg/m³ benzene measurement at the east monitor on the July 17, 2024, monitoring event was above the 24-hour upper risk threshold (URT) of 100 µg/m³ benzene which was determined, statistically, to be due to a common cause variation event with no one specific assignable cause,</p> <p>However, we did investigate the 120.0 µg/m³ benzene measurement at the east monitor on the July 17, 2024, monitoring event and we have been unable to determine a likely assignable cause given the general north westerly wind direction with moderate winds.</p> <p><u>July 29, 2024, MECP Monitoring Event – South Monitor</u></p> <p>The 145.0 µg/m³ benzene measurement at the south monitor on the July 29, 2024, monitoring event was above the 24-hour upper risk threshold (URT) of 100 µg/m³ benzene which was determined, statistically, to be due to a common cause variation event with no one specific assignable cause,</p> <p>However, we did investigate the 145.0 µg/m³ benzene measurement at the south monitor on the July 29, 2024, monitoring event and we have been unable to determine a likely assignable cause given the general easterly wind direction with moderate winds.</p>
<p>Loading volumes(s) in US gal at the time measuring benzene concentrations to be above the</p>	<p>Details on loading volumes (US gal) are presented in Section 2.0 of this report.</p>

benzene URT.	
An assessment of additional equipment, technically feasible methods and operational measures that are available to further minimize the likelihood of measurements above the Upper Risk Threshold; and	<p>Rain Carbon Canada Inc. continues to conduct daily VOC monitoring of the south berm tank farm tank PVRVs and has a maintenance program in place to address PVRVs with fugitive VOC emissions towards minimizing VOC leakage.</p> <p>Rain Carbon Canada Inc. has made improvements to its LDAR Program based on the recommendations of the LDAR Program Audit report of April 2023. Both the Operator Daily Tank PVRV VOC Monitoring Plan and the scheduled full LDAR Survey have been improved in 2024.</p>
A proposed schedule to implement any actions that would minimize the likelihood of measurements above the Upper Risk Threshold	See above.

Signature Page

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