



DEPARTMENT ORDER

**Katahdin Railcar Services LLC  
Piscataquis County  
Milo, Maine  
A-1131-71-D-M**

**Departmental  
Findings of Fact and Order  
Air Emission License  
Amendment #2**

**FINDINGS OF FACT**

After review of the air emission license amendment application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes (M.R.S.) § 344 and § 590, the Maine Department of Environmental Protection (Department) finds the following facts:

**I. REGISTRATION**

A. Introduction

Central Maine & Quebec Railway US Inc. (CMQR) was issued Air Emission License A-1131-71-A-N on May 17, 2018, for the operation of emission sources associated with their railcar maintenance facility. The license was subsequently amended on November 4, 2019 (A-1131-71-B-A). The license was transferred from CMQR to Katahdin Railcar Services LLC (KRS) on September 2, 2020 (A-1131-71-C-T).

KRS has requested a minor revision to their license in order to address performing work on railcars which previously carried molten sulfur.

In addition, the Department clarifies in this amendment the requirements for all railcars which are degassed or purged at the facility.

The equipment addressed in this license amendment is located at 18 B&A Avenue, Milo, Maine.

B. Revision Description

1. Applicability Clarification

KRS performs maintenance work and cleaning operations on railcars. As part of the car cleaning operation, KRS often needs to open the railcar's vapor space and sometimes degas or purge railcars. This revision clarifies that the opening of the railcar vapor space and degassing or purging of railcars is covered by the Best Available Control Technology (BACT) analysis performed for Car Cleaning Lines #1 - #4 regardless of whether the railcar continues on to be cleaned or is only opened to perform mechanical work. In other words, all railcars that are opened, degassed, or purged at the facility must be included in either List 1 (Commodities Subject to Work Practice

Standards Only) or List 2 (Flammable Liquids and Gases) contained in the license appendix, and KRS shall follow the BACT guidelines established for each list.

The Conditions specific to the Car Cleaning Lines will be revised to be inclusive of other work performed that may require the opening, venting, or purging of a railcar.

## 2. Molten Sulfur Cars

KRS has an opportunity to perform maintenance work on railcars which previously carried molten sulfur. This maintenance work would require opening, and potentially purging, the vapor space inside the railcar.

When transported via rail, sulfur is often heated to 250 – 290 °F such that it becomes a flowable liquid allowing for easier transfer from storage tank to railcar and vice versa. At ambient temperatures, sulfur is a yellow solid or powder. Sulfur gases, primarily hydrogen sulfide (H<sub>2</sub>S), may be generated during the phase change.

It is anticipated that some amount of H<sub>2</sub>S may be present in the railcars arriving at KRS for maintenance work. H<sub>2</sub>S is a poisonous gas that can be an irritant at low levels but can cause severe health effects or even death at high concentrations. KRS plans to measure the H<sub>2</sub>S concentration inside each railcar using a calibrated gas meter. If the concentration inside the railcar is equal to or less than Occupational Safety and Health Administration's (OSHA's) Permissible Exposure Limit (PEL) of 10 parts per million (ppm), the railcar will be considered to carry a List 1 commodity subject to work practice standards only. If the concentration of H<sub>2</sub>S inside the railcar is above 10 ppm, the railcar will be considered to carry a List 2 commodity requiring control by venting to the facility's flare. The H<sub>2</sub>S will be converted to sulfur dioxide (SO<sub>2</sub>) when burned.

Regardless of whether the railcar is assigned a List 1 or List 2 classification, emissions of SO<sub>2</sub> must be accounted for in the facility's annual emission statement required by *Emission Statements*, 06-096 C.M.R. ch. 137. If emissions of H<sub>2</sub>S exceed 200 lb/year, those emissions must also be included in the facility's annual emission statement. KRS is subject to a facility-wide emission limit of 10 tons per year (tpy) of SO<sub>2</sub>. KRS expects emissions from this process to be accommodated within the current limit and has not requested any increase in emission limits.

### C. Application Classification

All rules, regulations, or statutes referenced in this air emission license refer to the amended version in effect as of the date this license was issued.

This amendment will not increase licensed emissions of any pollutant. Therefore, this amendment is determined to be a minor revision and has been processed as such.

D. Facility Classification

With the facility-wide SO<sub>2</sub>, VOC, and HAP emission limits, the facility is licensed as follows:

- As a synthetic minor source of air emissions, because KRS is subject to license restrictions that keep facility emissions below major source thresholds for criteria pollutants; and
- As an area source of hazardous air pollutants (HAP), because the licensed emissions are below the major source thresholds for HAP.

E. Annual Emissions

This license amendment will not change the facility's licensed annual emissions.

**ORDER**

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards, and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License Amendment A-1131-71-D-M subject to the conditions found in Air Emission License A-1131-71-A-N, in amendment A-1131-71-B-A, in transfer A-1131-71-C-T, and the following conditions.

Severability. The invalidity or unenforceability of any provision of this License Amendment or part thereof shall not affect the remainder of the provision or any other provisions. This License Amendment shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

**SPECIFIC CONDITIONS**

**The following shall replace Condition (17) of Air Emission License A-1131-71-C-T:**

**(17) Opening of Railcars and Car Cleaning Lines #1 - #4**

- A. Before opening the vapor space, venting, or purging any railcar, KRS shall determine the commodity most recently carried by the railcar. [06-096 C.M.R. ch. 115, BPT]

- B. KRS shall not open the vapor space, vent, or purge railcars which most recently carried commodities not included in Appendix Lists 1 or 2 without prior written approval by the Department. The Department may require KRS to apply for a license modification, including a detailed BACT analysis, to add commodities to a list.  
[06-096 C.M.R. ch. 115, BPT]
- C. KRS shall not open the vapor space of, vent, or purge railcars which most recently carried a material with a Reportable Quantity (RQ) less than or equal to 10 pounds pursuant to *Designation, Reportable Quantities, and Notification*, 40 C.F.R. Part 302.4 or *Emergency Planning and Notification*, 40 C.F.R. Part 355, Appendix A.  
[06-096 C.M.R. ch. 115, BPT]
- D. KRS shall comply with the following work practice standards for all railcars (i.e., both List 1 and List 2) which are opened, vented, or purged, as applicable.
1. Prior to the opening the vapor space of, venting, or purging a railcar, the manways and other appurtenances shall remain closed and sealed.
  2. To the amount practicable, each railcar shall be thoroughly drained of liquids prior to vapor space opening, venting, or purging.
  3. All VOC/HAP containing liquids drained from the railcar prior to vapor space opening, venting, or purging shall be collected and stored in closed, air-tight containers.
  4. The solutions used in the Cleaning Operations shall consist of steam, hot or cold water, and low-VOC (<5% by weight) containing detergents.
  5. During the Cleaning Operations, exhaust from railcars shall be vented through the Vapor Reduction System.
  6. The Vapor Reduction System shall be maintained in good working order per the manufacturer's written specifications.
  7. KRS shall perform monthly inspections of Flare #1 and the Vapor Reduction System to check for leaks, carbon breakthrough, or other malfunctions.  
[06-096 C.M.R. ch. 115, BPT]
- E. List 2 Commodities
1. Except as provided for below, when processing railcars whose most recent commodity carried is included on Appendix List 2, KRS shall purge the railcar with nitrogen and direct all vapors from the purge to Flare #1 until the atmosphere inside the railcar measures 0% LEL. [06-096 C.M.R. ch. 115, BPT]
  2. When purging railcars whose most recent commodity was molten sulfur, and the railcar vapor space has an H<sub>2</sub>S concentration greater than 10 ppm, KRS shall purge the railcar with air and direct all vapors from the purge to Flare #1 until the vapor space inside the railcar measures 10 ppm or less of H<sub>2</sub>S.  
[06-096 C.M.R. ch. 115, BPT]

3. The pilot for Flare #1 shall be lit prior to commencing purging of any railcar being vented to it. [06-096 C.M.R. ch. 115, BPT]
4. During all operation of Flare #1, the presence of the pilot flame shall be monitored using a thermocouple or equivalent device. An infrared monitor is considered equivalent to a thermocouple for pilot flame monitoring purposes. [06-096 C.M.R. ch. 115, BPT]
5. Emissions shall not exceed the following:

<b>Emission Unit</b>	<b>Pollutant</b>	<b>lb/MMBtu</b>	<b>Origin and Authority</b>
Flare #1	PM	0.05	06-096 C.M.R. ch. 115, BPT

6. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BPT]:

<b>Emission Unit</b>	<b>PM (lb/hr)</b>	<b>PM<sub>10</sub> (lb/hr)</b>	<b>NO<sub>x</sub> (lb/hr)</b>	<b>CO (lb/hr)</b>
Flare #1	1.23	1.23	1.67	7.61

7. Visible emissions from Flare #1 shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]
- F. Compliance with the requirements for opening the vapor space, venting, or purging of railcars and for Car Cleaning Lines #1 - #4 shall be demonstrated by the following recordkeeping [06-096 C.M.R. ch. 115, BPT]:
1. Logs of each railcar opened, vented, purged, or cleaned including:
    - a. Date and time the purging began and ended;
    - b. Last material the railcar carried and whether it is a List 1 or List 2 commodity;
    - c. Whether or not the railcar purge was controlled by Flare #1;
    - d. If controlled by Flare #1, logs indicating staff checked that the flare pilot was lit prior to commencing purging of the railcar;
    - e. Whether the last material the railcar carried contained sulfur compounds (only for railcars sent to Flare #1);
    - f. Volume of the railcar vapor space;
    - g. Final LEL (or H<sub>2</sub>S ppm for molten sulfur railcars) reading when purging ended (List 2 materials only);
    - h. Whether or not the Vapor Reduction System was utilized during cleaning.
  2. Records of the liquid collected and final disposition of the material (e.g. shipped off-site) including dates and the amount of each material.
  3. Amount of propane (gallons) fired in Flare #1 on a monthly basis. The amount of propane purchased may be used in lieu of propane fired.
  4. Hours of operation for Flare #1 on a monthly basis.

5. Records of monthly inspections and any maintenance activities (planned or unplanned) performed on Flare #1 and the Vapor Reduction System including the dates the carbon is replaced.
6. Records of any calibration and maintenance activities performed on the explosimeter and H<sub>2</sub>S monitor.
7. Monthly calculations of the VOC and HAP emissions from the railcar cleaning process and opening the vapor space, venting, or purging of railcars. Emissions for all railcars (Lists 1 and 2) opened, vented, or purged per month shall be summed to provide the monthly total. Emissions shall be based on calculated working losses from the railcar through use of EPA's TANKS program and the assumed combined capture and control efficiency (e.g., 0% for List 1 commodities, 98% for List 2 commodities).
8. Monthly calculations of the SO<sub>2</sub> emissions from the opening the vapor space, venting, or purging of railcars. Emissions of all railcars containing sulfur compounds which were sent to Flare #1 shall be summed to provide the monthly total.

**The following shall replace Condition (23) of Air Emission License A-1131-71-C-T:**

**(23) Annual Emission Statement**

- A. In accordance with *Emission Statements*, 06-096 C.M.R. ch. 137, KRS shall annually report to the Department, in a format prescribed by the Department, the information necessary to accurately update the State's emission inventory. The emission statement shall be submitted as specified by the date in 06-096 C.M.R. ch. 137.
- B. KRS shall keep the following records in order to comply with 06-096 C.M.R. ch. 137:
  1. The amount of propane fired in Boiler #1 on a calendar year basis. The amount of propane purchased may be used in lieu of propane fired.;
  2. The amount of propane pilot fuel fired in Flare #1 on a monthly and calendar year basis. The amount of propane purchased may be used in lieu of propane fired.;
  3. Hours of operation of Flare #1 on a monthly and calendar year basis; (for calculation of emissions of products of combustion);
  4. Monthly calculations of the SO<sub>2</sub>, VOC, and HAP emissions from opening the vapor space, venting, or purging of railcars and the railcar cleaning process;
  5. Monthly calculations of the VOC and HAP emissions from the paint booths; and
  6. Annual hours of operation for each emission unit on a calendar year basis.

[06-096 C.M.R. ch. 137]

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7

**Departmental  
Findings of Fact and Order  
Air Emission License  
Amendment #2**

- C. Beginning with reporting year 2020 and every third year thereafter, KRS shall report to the Department emissions of hazardous air pollutants as required by 06-096 C.M.R. ch. 137, § (3)(C). KRS shall pay the annual air quality surcharge, calculated by the Department based on these reported emissions of hazardous air pollutants, by the date required in Title 38 M.R.S. § 353-A(3). [38 M.R.S. § 353-A(1-A)]

DONE AND DATED IN AUGUSTA, MAINE THIS 14<sup>th</sup> DAY OF OCTOBER, 2020.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:  for  
MELANIE LOYZIM, ACTING COMMISSIONER

**The term of this amendment shall be concurrent with the term of Air Emission License A-1131-71-A-N.**

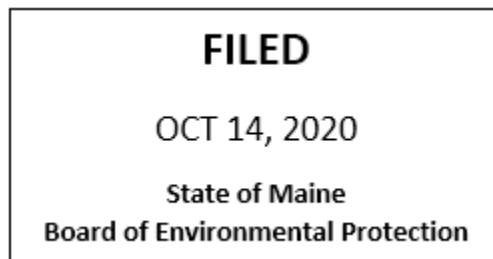
PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 9/24/2020

Date of application acceptance: 9/25/2020

Date filed with the Board of Environmental Protection:

This Order prepared by Lynn Muzzey, Bureau of Air Quality.



## Appendix

A-1131-71-D-M

### LIST 1 – COMMODITIES SUBJECT TO WORK PRACTICE STANDARDS ONLY

Page 1 of 2

STCC <sup>1</sup> (If Known)	Commodity	Common Name or Type of Chemical Product	CAS No.	RQ (lbs)
4912269 4912336 4914146 4914170	Fuel Oil	#2 through #6 fuel oil and diesel fuel	various	None
2821245	Latex (liquid rubber) synthetic	Latex	None	None
2899834	Polyacrylamide-water solution	Polymer	None	None
2899885	Additives Fuel Oil Gasoline or Lubricating Oil	Fuel or lubricating oil additives	Various	None
3295230	Kaolin & Water Slurry	Kaolin	1332-58-7	None
	Kaolin		1318-74-7	
4918723	Sodium Chlorate	Sodium Chlorate (solid powder)	7775-09-9	None
4961605	Heated Asphalt	Asphalt Roofing Flux	8052-42-4	None
1311110 1441314 4910164 4910165 4910187 4910191 4910599	Petroleum Oil Crude Oil or Shale Oil Crude Sand Industrial Oil or Gas Well Fracture Petroleum Crude Petroleum Sour	Crude Oil with a vapor pressure <0.5 psi	None	None
1441310	Industrial Sand Ungrounded and Unbonded	Sand	Various	None
1471510	Rock Salt	Rock Salt	14762-51-7	None
1491970	Perlite Rock	Perlite Rock (solid)	None	None
2046115	Corn Syrup (Glucose)	Corn Syrup	Various	None
2093342	Rapeseed Oil	Rapeseed Oil	None	None
2812355	Sodium Sulfate (Salt Cake)	Sodium Sulfate (solid)	Various	None
2812534	Potassium Chloride	Potassium Chloride	7447-40-7	None
2911990	Paraffin Wax or Petroleum Wax	Wax	Various	None
3241110	Cement Clinker	Cement (solid)	Various	None
3241115	Cement Hydraulic Portland			
3295956	Limestone Slurry Consisting of Ground Limestone	Lime	Various	None
4918311	Ammonium Nitrate	Ammonium Nitrate	6484-52-2	None
	Hydrochloric Acid	Hydrochloric Acid	7647-01-0	5,000
4930040	Sulfuric Acid	Sulfuric Acid	7664-93-9	1,000
4935240	Sodium Hydroxide (Caustic Soda)	Sodium Hydroxide (solid)	1310-73-2	1,000
	Axperse	Water-based processing aid for industrial operations, no hazardous substances, no flash point	None	None
	Crystalline Silica	Silica	None	None



## Appendix

A-1131-71-D-M

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Page 2 of 2

STCC <sup>1</sup> (If Known)	Commodity	Common Name or Type of Chemical Product	CAS No.	RQ (lbs)
	Diammonium Sulfate (Trinseo for RAP 740NA Latex)	Styrene-butadiene based polymer (45-55%)	Trade Secret	None
		Diammonium sulfate (<1.5%)	7783-20-2	None
		Water (45-55%)	7732-18-15	None
	Latex LXC 803F NA – Trinseo	Styrene-butadiene based polymer (45-55%) Water (45-55%)	Trade Secret 7732-18-15	None
	CP 615 NA Latex – Trinseo			
	XU 31719.00 Experimental Latex – Trinseo			
	XU 31032.50 Experimental Latex – Trinseo			
	Floperse	Processing aid for industrial operations, no hazardous substances, water-based, no flash point	None	None
	Quartz	Quartz	14808-60-7	None
	Tetrasodium Salt	Acetic acid	64-02-8	None
	Amres 1110-E Wet Strength Resin (water-based, no flash point)		Various	None
	NovaCote 1936HS Surface Sizeing Agent (water-based, no flash point)		Various	None
	Precipitated Calcium Carbonate		471-34-1	None
	Digitall 9708.1 (paper coating solution)	Water (55-75%) Polymers (25-45%)	Trade Secret	None
	Taflonol UMS Series Liquid	Brightener (10-30%) Water (70-90%)	16470-24-9 7732-18-5	None
	Formaldehyde Solutions with vapor pressure <0.05 psi		50-00-0	100
	YaraVera Urea 46-0-0	Urea	57-13-6	None
	Molten Sulfur	≤10 ppm H <sub>2</sub> S	7783-06-4	100

<sup>1</sup> Standard Transportation Commodity Code

## Appendix

A-1131-71-D-M

### LIST 2 – FLAMMABLE LIQUIDS AND GASES

Page 1 of 2

STCC <sup>1</sup> (If Known)	Commodity	Common Name or Type of Chemical Product	CAS No.	RQ (lbs)
2818414 2818417 2818445 2818446 4908170 4908179 4908180 4909117 4909152 4909159 4909363 4910240 4914105 2085120	Ethanol – Ethyl Alcohol Anhydrous  Denatured – Alcohol Beverage  Ethanol Gas  Denatured Alcohol	Ethanol	64-17-5	None
2899415 4909230	Fatty Acid Esters of Vegetable Fish or Animal  Methanol	Methanol	67-56-1	5,000
2899416	Methyl Esters (Methyl Soyate) Diesel from Vegetable oil	Methyl Esters	Various	1,000
2911976	Petroleum Condensate	Natural Gas Condensate	Various	None
2991240	Motor Fuel NEC Liquid (Blends of Alcohol and Motor Fuel)	Gasoline	Various	None
4905419 4905421 4905423 4905424 4905752 4905784 4907603 4909105 4910236	Liquefied Petroleum Gas	Propane / Odorized Propane Butane Ethane	74-98-6 106-97-8 74-84-0	None
4906620	Propylene Oxide	Propylene Oxide	75-56-9	100
4907250	Methyl Methacrylate	Methyl Methacrylate	80-62-6	1,000
4907265	Styrene Monomer	Styrene Monomer	100-42-5	1,000
4912215	Butyl Acrylate	Butyl Acrylate	Various	None

## Appendix

A-1131-71-D-M

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Page 2 of 2

STCC <sup>1</sup> (If Known)	Commodity	Common Name or Type of Chemical Product	CAS No.	RQ (lbs)			
	Natural Gas	Natural Gas / Methane	74-82-8	None			
	Isobutane	Isobutane	75-28-5	None			
	P-P Mix	Propylene (75-80%)	115-07-1	None			
		Propane (0-3%)	74-98-6	None			
	Formaldehyde Solutions with vapor pressure $\geq 0.05$ psi		50-00-0	100			
1311110 1441314 4910164 4910165 4910187 4910191 4910599	Petroleum Oil Crude Oil or Shale Oil Crude Sand Industrial Oil or Gas Well Fracture Petroleum Crude Petroleum Sour	Crude Oil with a vapor pressure $\geq 0.5$ psi	None	None			
	Molten Sulfur				>10 ppm H <sub>2</sub> S	7783-06-4	100

<sup>1</sup> Standard Transportation Commodity Code