



**Kinder Morgan
Utopia LLC**
a Kinder Morgan operated company



January 11, 2018

Mr. Mike Kovalchick
Senior Environmental Engineer, Air Quality Division
Michigan Department of Environmental Quality
301 East Louis Glick Highway
Jackson, Michigan 49201-1556

Re: Kinder Morgan Utopia LLC, Riga Pump Station (SRN: N5916, Monroe County)
Response to Michigan DEQ Violation Notice Dated December 6, 2017

Dear Mr. Kovalchick:

Kinder Morgan Utopia LLC (Kinder Morgan) provides herein a response to a Violation Notice (Notice) from the Michigan Department of Environmental Quality (Department). The Notice describes alleged violations of Michigan Rule 201 (R 336.1201 Permits to Install) during an emergency pipeline venting and flaring event that occurred in November 2017 at Kinder Morgan's Riga Pump Station. Kinder Morgan disputes that there were alleged violations of Rule 201 and instead contends that the installation and operation of the temporary flare was exempt from permitting according to Rule 291 as an emission unit with "de minimis" air contaminant source. The installation and operation of the temporary flare was critical to Kinder Morgan's response to an emergency situation involving the 12- inch Utopia ethane pipeline that posed an immediate risk to public health and safety.

During pipeline startup from November 18, 2017 through November 20, 2017, Kinder Morgan personnel observed three faulty block valves along the pipeline that were leaking ethane gas. The releases to atmosphere were reported to the National Response Center (NRC) on November 18, 2017 at 18:07 CST (Incident No. 1197651) and follow up reports to the NRC were also made.

Kinder Morgan personnel determined the proper course of action was to shut down the pipeline and blowdown the line to allow repair of the leaking valves and alleviate any potential risk posed by the leaks of ethane gas. A temporary flare was brought on site on Monday, November 20, 2017 by our third-party contractor Total Safety and used as an emission control device during pipeline venting. The emergency pipeline venting event began on November 20, 2017 and was completed on November 22, 2017. Approximately 760,812 pounds of gas (99.7 percent ethane) were vented and flared during that period of time.

Kinder Morgan verbally notified the Department of the emergency blowdown and the requirement to operate a temporary flare, on November 20, 2017.

It is Kinder Morgan's position that the installation and operation of the temporary flare was exempt from Rule 201 permitting as a de minimis air contaminant source pursuant to Rule 291 (R 336.1291). While we initially anticipated that the Permit to Install Exemption Rule 285 (2) applied in this situation, we now contend that the "de minimis" exemption provision in Rule 291 applies here.

Attached are calculations that provide an estimate of emissions that occurred during the emergency venting and flaring event. The following further explain these emissions estimates.

The gases vented/flared during the November, 2017 event were comprised of ethane (99.6691 pct.), methane (0.2685 pct.), and nitrogen (0.0624 pct.). Ethane and methane are specifically exempt from the definition(s) of a regulated 'organic compound (OC)', a regulated 'volatile organic compound (VOC)', and a regulated 'toxic air contaminant (TAC)'. Ethane and methane are considered non-specific 'air contaminant(s)' per R 336.1101(f) meaning any general dust, fume, gas, mist, odor, smoke, vapor, or combination thereof.

Emissions of ethane and methane are based on a gaseous hydrocarbon destruction and removal efficiency (DRE) of 98.5 percent as reported by Total Safety. A copy of the Total Safety flare specification sheet is attached for reference.

In its Notice, the Department stated that there was a complaint about black smoke/odors and questions whether the flare was achieving 98.5 percent DRE given the alleged presence of smoke from the flare. Kinder Morgan maintains that the flare was achieving its design DRE of 98.5 percent and may have been operating at an even higher DRE.

There have been a number of studies conducted by U.S. EPA and State agencies that conclude that smoking flares can achieve high combustion efficiencies (CE) and DRE. Two of the more noted studies on the subject concluded that smoking flares do achieve high gaseous hydrocarbon DRE and often times, above the default DRE of 98 percent as prescribed when meeting the flare design and operating criteria at 40 CFR 60.18.

- Flare Efficiency Study, U.S. EPA (McDaniel), EPA-600/2-83-052, July 1983
- Texas Commission on Environmental Quality, TCEQ 2010 Flare Study, August 2011.

In the TCEQ study, the most efficient flare operation as measured by CE and DRE were at or near the incipient smoke point (ISP); i.e., condition where the flare just begins to smoke. According to the results of the study, TCEQ projected that even higher efficiencies were achievable with steam or air assist levels even less than the ISP resulting in a smoking flare.

In its Notice, the Department raises the concern that formaldehyde emissions were generated as a product of incomplete combustion of ethane as indicated by the alleged presence of smoke from the flare. Kinder Morgan cannot substantiate that formaldehyde was being generated

during the event. Yet, when using available emission factors, Kinder Morgan estimates approximately 7.4 pounds of formaldehyde may have been emitted.

In summary, Kinder Morgan contends the emissions resulting from flaring ethane during the emergency pipeline venting event were less than the de minimis emission thresholds provided in Rule 291 and therefore, meet the requirements of R 336.1291(2) and the emergency flaring event was exempt from Rule 201 permitting. Specifically, we met the conditions of R 336.1291(2), subdivisions (a) to (d), and Table 23.

Further, regarding the calculated potential formaldehyde emissions, we again meet the requirements of R 336.1291(2)(a). For TAC with screening levels greater than or equal to 0.04 $\mu\text{g}/\text{m}^3$ and less than 2 $\mu\text{g}/\text{m}^3$ (formaldehyde has an initial risk screening level or IRSL, of 0.08 $\mu\text{g}/\text{m}^3$), emissions shall not exceed 0.12 tons per year. Projected formaldehyde emissions are 7.4 lbs (0.004 tons).

The following table compares the emission levels estimated for other air contaminants to their respective Rule 291, Table 23 emission thresholds.

Air Contaminant	Emissions from Flaring Event, tons	Rule 291 Table 23 Threshold, tpy
CO ₂ equivalent (CO ₂ e)	1,113	75,000
CO	2.62	10
NOX	0.57	10
SO ₂	0	10
VOC	0	5
PM	0.32	10
PM-10	0.32	5
PM-2.5	0.32	3
Lead	0	0.1
Fluorides	0	1
Sulfuric acid mist	0	0.12
Hydrogen sulfide	0	2
Total reduced sulfur	0	2
Reduced sulfur compounds	0	2
Total mercury	0	0.12 (pounds)
Total toxic air contaminants not listed in Table 23 with any screening level	0	5

Total air contaminants not listed in Table 23 that are non-carcinogenic and do not have a screening level	5.7	6
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Therefore, a violation of Rule 201 did not occur during the installation and operation of the temporary flare during our emergency response to leaks in the pipeline.

Environmental stewardship is one of Kinder Morgan's core principles. We strive for full compliance. We look forward to working with the Department to resolve this matter. Kinder Morgan is willing to meet with the Department to further discuss the facts surrounding this flaring event. If you have any questions or need more information, please contact Cliff McCowan at (336) 601-2207 or cliff_mccowan@kindermorgan.com.

Sincerely,

Kinder Morgan Utopia LLC



Dwight Van Dolah
Director of Operations

cc: Cliff McCowan, Kinder Morgan
Stephanie Clemons, Kinder Morgan
Dan Cochran, Kinder Morgan

Attachments: Air Emission Estimates for Emergency Pipeline Venting/Flaring Event
Total Safety 12" Rental Flare Specification Sheet