



U.S. Department
of Transportation

**Pipeline and
Hazardous Materials
Safety Administration**

840 Bear Tavern Road, Suite 300
West Trenton, NJ 08628
609.771.7800

VIA ELECTRONIC MAIL TO: cbaker@equitransmidstream.com

December 29, 2022

Clifford Baker
Senior Vice President, Commercial Development & Operations
Equitrans Midstream Corporation
2200 Energy Drive
Canonsburg, PA 15317

CPF 1-2022-080-NOPSO

Dear Mr. Baker:

Enclosed is a Notice of Proposed Safety Order (Notice) issued in the above-referenced case. The Notice proposes that you take certain measures with respect to your Rager Mountain underground natural gas storage facility and wells to ensure safety. Your options for responding are set forth in the Notice. Your receipt of the Notice constitutes service of that document under 49 C.F.R. § 190.5.

We look forward to a successful resolution to ensure pipeline safety. Please direct any questions on this matter to me at 609-771-7809.

Sincerely,

ROBERT THOMAS
BURROUGH

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Robert Burrough, Director, Eastern Region
Pipeline and Hazardous Materials Safety Administration

Enclosures: Notice of Proposed Safety Order
49 C.F.R. § 190.239

Cc: Ms. Linda Daugherty, Deputy Associate Administrator for Field Operations, Office of
Pipeline Safety <linda.daugherty@dot.gov>
Mr. Jake Lyons, Manager Pipeline Safety and Compliance, Equitrans Midstream
Corporation <jl Lyons@equitransmidstream.com>

CONFIRMATION OF RECEIPT REQUESTED

**DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION
OFFICE OF PIPELINE SAFETY
EASTERN REGION
WEST TRENTON, NJ 08628**

In the Matter of

Equitrans Midstream Corporation,

Respondent.

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CPF No. 1-2022-080-NOPSO

NOTICE OF PROPOSED SAFETY ORDER

Background and Purpose

Pursuant to Chapter 601 of title 49, United States Code, the Pipeline and Hazardous Materials Safety Administration (PHMSA) has initiated an investigation and review of the safety of Equitrans Midstream Corporation's (ETRN) Rager Mountain Storage (RMS) Facility after November 2022 failure incidents resulting in the leak of a large amount of natural gas.

As a result of PHMSA's preliminary investigation, it appears that a condition or conditions exist at your RMS Facility that poses a pipeline integrity risk to public safety, property, or the environment.

Pursuant to 49 U.S.C. § 60117(m), PHMSA issues this Notice of Proposed Safety Order (Notice) notifying you of the preliminary findings of the investigation, and proposing that you take measures to ensure that the public, property, and the environment are protected from the potential risk.

Preliminary Findings

- ETRN owns and operates an interstate natural gas transportation system spanning several states. ETRN's system includes the RMS Facility located in Cambria County, Pennsylvania. The RMS Facility is an underground natural gas storage facility (UNGSTF; *see* 49 C.F.R. § 192.3) which includes ten operating storage wells and two observation wells, and is connected via pipeline segments to interstate gas transmission pipelines. The RMS Facility is an interstate gas pipeline facility subject to the Federal

Pipeline Safety Regulations.¹ This facility is located within a Pennsylvania state park, in a remote area.

- On November 6, 2022, ETRN was notified that Well 2244² (also known as the George L. Reade No. 1 Well) at the RMS Facility was unintentionally venting natural gas (the Incident) to the atmosphere through a 1 5/8-inch vent located on the annulus of the well at a pressure of approximately 1,300 pounds per square inch gauge (psig).
- ETRN reported the Incident to the National Response Center (NRC) on November 6, 2022.³ ETRN's contractor, Wild Well Control, indicated it would be unable to arrive at the RMS Facility until Tuesday, November 8, 2022. Another contractor, CUDD Well Services (CUDD), was in the area and responded to the Incident on Monday, November 7, 2022. Beginning on November 10, 2022, CUDD made multiple attempts to stop the leak by flooding the well with either fresh water or varying salinities of brine water. These attempts to stop the leak were unsuccessful.
- On November 19, 2022, CUDD temporarily stopped the leak of gas out of the vent of Well 2244 by successfully setting a temporary bridge plug in the well bore. This was CUDD's second attempt to set a plug to stop the leak. The first attempt failed due to a mechanical failure. This secondary plug was set at a depth of 5,875 feet and a tertiary plug was set at 5,830 feet. On November 20, 2022, ETRN had cement pumped into the well bore.
- ETRN estimates that Well 2244 vented over one billion cubic feet (BCF) of natural gas to the atmosphere before the leak was halted on November 19, 2022.
- During the Incident, based on PHMSA's observations at the site, it appears that ETRN did not review its up-to-date schematics of Well 2244 before attempting to stop the leak. ETRN and Cudd also did not follow all of the procedures in the facility's "Storage Well Emergency Response Plan". The failure to follow all of the "Storage Well Emergency Response Plan" procedures may have been a factor contributing to the delay in stopping the leak. The initial attempt to temporarily plug the well failed due to the plug being stuck on an obstruction not previously identified by ETRN prior to initiating repairs.

¹ ETRN Underground Natural Gas Storage Facility Annual Report for Calendar Year 2021 (OMB No. 2137-0522) (submitted Mar. 14, 2022).

² The production string well tubulars for Well 2244 were constructed in 1965 (1,875 feet) and 1993 (5,950 feet), respectively. The tubulars from both years were 7-inch, N-80, 26 pounds per square foot, and cemented partially. The cement is present from the bottom of the well to a depth of 2,940 feet. From the depth of approximately 10 feet to 2,940 feet, a gel was installed to fill the void. The maximum allowable operating pressure (MAOP) of the underground natural gas storage facility is 3,200 psig. Gas is stored in well composed of Oriskany sandstone located at a minimum depth of 7,601 feet to a maximum depth of 8,060 feet, per ETRN's annual report.

³ NRC Report No. 1351880.

- On November 22, 2022, it was discovered another well in the RMS Facility, Well 2251 (also known as the Peoples Natural Gas No. 1 Well), which previously did not have any flow out of its annulus, was flowing gas at a rate of seven percent gas in air, which is above the Lower Explosive Limit (LEL) for natural gas. Well 2251 was temporarily plugged on December 7, and later an additional well, Well 2248, was also temporarily plugged after a leak was discovered. These additional events may be an indication that some of the escaping natural gas that was exposed to the annulus in Well 2244 and vented to the atmosphere may have leaked to additional formations. This may also indicate there is an additional casing integrity issue.
- To date, the exact causes of the casing failure in Well 2244 and leaks during the Incident and at Wells 2251 and 2248, are unknown. It is also presently unknown if the natural gas leak from Well 2244 has affected other portions of the RMS Facility, including Wells 2251 and 2248. At present, PHMSA is gathering additional data regarding the Incident and the leaks at the additional wells and is continuing its investigation. ETRN has reported that it is not presently injecting natural gas into the RMS Facility. Further, the Commonwealth of Pennsylvania's Department of Environmental Protection has alerted PHMSA to other alleged natural gas leaks and potential integrity issues within the RMS Facility at present.⁴

Proposed Issuance of Safety Order

Section 60117(m) of Title 49, United States Code, provides for the issuance of a safety order, after reasonable notice and the opportunity for a hearing, requiring corrective measures, which may include physical inspection, testing, repair, or other action, as appropriate. The basis for making the determination that a pipeline facility, including an underground natural gas storage facility, has a condition or conditions that pose a pipeline integrity risk to public safety, property, or the environment is set forth both in the above-referenced statute and 49 C.F.R. § 190.239, a copy of which is enclosed.

After evaluating the foregoing preliminary findings of fact, and based on: (1) The amount of natural gas stored in the RMS Facility; (2) The amount of natural gas vented to the atmosphere during the Incident that was discovered beginning on November 6, 2022; (3) The failed well casing involved; (4) The hazardous nature to persons and the environment of the product stored and transported; (5) The operating pressures at this UNGSF; and, (6) The presently unknown aspects regarding the cause of the three leaks, including whether other leaks are present and if unknown additional impacts are occurring to the RMS Facility, any injection into affected Well 2244 and the other wells at the RMS Facility, without a root cause analysis and corresponding corrective measures, would pose a risk to public safety, property, and the environment.

Accordingly, PHMSA issues this Notice to notify Respondent of the proposed issuance of a safety order and to propose that Respondent take measures specified herein to address the potential risks.

⁴ See <https://www.ahs.dep.pa.gov/NewsRoomPublic/articleviewer.aspx?id=22235&typeid=1>.

Proposed Corrective Measures

Pursuant to 49 U.S.C. § 60117(m) and 49 C.F.R. § 190.239, PHMSA proposes to issue to ETRN a safety order incorporating the following remedial requirements with respect to the affected pipeline:

1. **Definitions.** For the purpose of this Notice the following terms are defined as:
 - (A) “Director” is the Director, Eastern Region, Office of Pipeline Safety (OPS), Pipeline and Hazardous Materials Safety Administration (PHMSA)
 - (B) “Effective Date” is the date a safety order is issued.
2. **Root Cause Failure Analysis.** Within 90 days after the Effective Date, ETRN must complete a root cause failure analysis (RCFA) regarding the cause of the leaks that were discovered beginning on November 6, 2022 (applicable to the Incident and the two additional leaks) and submit a final RCFA to the Director.
 - (A) The RCFA must be facilitated by an independent third-party acceptable to the Director and must document the decision-making process and all factors contributing to the failures. ETRN shall submit a proposed third-party for the Director’s approval within 30 days of the Effective Date.
 - (B) The final RCFA must include findings and any lessons learned. The RCFA must also analyze and document whether the findings and any lessons learned are applicable to other locations within ETRN’s RMS Facility.
3. **Remedial Work Plan.** Within 60 days after submitting the RCFA, ETRN must develop and submit to the Director for approval a written Remedial Work Plan (RWP) that includes corrective measures. The Director may approve the RWP elements incrementally. Once approved, the RWP shall become incorporated into the safety order, including any revisions to the RWP. The RWP must include:
 - (A) A plan for completing inspections of Wells 2244, 2251, and 2248 within 60 days of the RWP. The results of all inspections, field reviews, and evaluations must be provided to the Director within 30 days of the inspections.
 - (B) A plan to inspect all other wells at the UNGSF for similar conditions and to address any additional findings/leaks and the repairs.
 - (C) A plan to address the final disposition of the temporary plugs in Wells 2244 2251, and 2248. The plan must consider the cause of the leaks and describe whether ETRN will Plug and Abandon (P&A) or reactivate

the wells for future use. The RWP must include a list of all plugs and their locations and ETRN's plan as to their disposition.

- (D) A plan for the performance of repairs or other corrective measures that fully remediate the identified risk condition(s) within 30 days of corrective action. The plan must include provisions for continuing long-term, periodic testing and integrity verification measures to ensure the ongoing safe operation of the pipeline considering the results of the analyses, inspections, and corrective measures undertaken pursuant to the safety order;
- (E) A proposed schedule for completion of the actions required by paragraphs (A), (B), (C), and (D) of this Item.

4. Review of Records and Procedures. Within 30 days of the Effective Date, ETRN must:

- (A) Conduct a review of construction, operating and maintenance (O&M) and integrity management records, such as Magnetic Flux Leakage (MFL) logs, Gamma Ray Neutron (GRN) logs, Mechanical Integrity (MIT), root cause failure analysis of prior failures, and aerial and ground patrols for the RMS Facility.
- (B) Submit the analysis and findings from that review to the Director and address any findings that require remedial measures to be implemented prior to restarting injection. ETRN must also amend procedures as necessary. All procedural modifications must be incorporated into ETRN's operations and maintenance procedures manual and submitted to the Director for approval.

5. Injection Plan. Prior to injecting any gas into the RMS Facility and/or resuming normal operations, ETRN must first develop and submit a written Injection Plan to the Director for approval. The Director may approve the Injection Plan incrementally without approving the entire plan, but ETRN cannot begin injecting until the Injection Plan is approved in its entirety. Once approved by the Director, the Injection Plan will be incorporated by reference into the safety order. The Injection Plan must include:

- (A) The day-light hour schedule to begin the injection into the RMS Facility, including a plan for providing advance communications to local emergency response officials and the Director before beginning any injection.
- (B) Documentation that verifies the completion of all mandated actions (to include those in the RWP).

6. **Return to Full Operations.** After the Director approves the Injection Plan ETRN may inject gas into the RMS Facility, but the operating pressure must not initially exceed eighty percent (80%) of the actual operating pressure in effect immediately prior to the failure on November 6, 2022. After reaching 80% of the actual operating pressure in effect immediately prior to the failure on November 6, 2022, ETRN shall complete a 7-day shut-in test to determine no storage wells are leaking and are otherwise safe to operate. ETRN must submit the results of the shut-in test to the Director for approval prior to resuming operation at the MAOP.
7. **Assessment of Personnel Training.** Within 30 days of the Effective Date, ETRN must submit to the Director for review and approval an assessment of the training of operations, maintenance, and supervisory personnel (to include for ETRN contractors) who perform work at the RMS Facility. This assessment must be performed by the approved third party. The assessment must include a review of the training of employees regarding ETRN's "Storage Well Emergency Response Plan," including during well control emergencies.
8. **Quarterly Reports.** ETRN must submit quarterly reports to the Director that: (1) include available data and results of the testing and evaluations required by the safety order; (2) describe the progress of the repairs and other remedial actions being undertaken; and (3) document all mandated actions in the safety order. The first report will be due 30 days from the Effective Date.
9. **Approvals.** With respect to each submission under the safety order that requires the approval of the Director, the Director may: (a) approve, in whole or part, the submission; (b) approve the submission on specified conditions; (c) modify the submission to cure any deficiencies; (d) disapprove in whole or in part, the submission, directing that Respondent modify the submission, or (e) any combination of the above. In the event of approval, approval upon conditions, or modification by the Director, Respondent shall proceed to take all action required by the submission as approved or modified by the Director. If the Director disapproves all or any portion of the submission, Respondent must correct all deficiencies within the time specified by the Director and resubmit it for approval.
10. **Extensions of Time.** The Director may grant an extension of time for compliance with any of the terms of the safety order upon a written request timely submitted demonstrating good cause for an extension.
11. **Documentation of the Costs.** It is requested that ETRN maintain documentation of the costs associated with implementation of this safety order. Include in each monthly report submitted, the to-date total costs associated with: (1) preparation and revision of procedures, studies, and analyses; (2) physical changes to pipeline infrastructure, including repairs, replacements, and other modifications; and (3) environmental remediation, if applicable.

The actions proposed by this Notice are in addition to and do not waive any requirements that apply to Respondent's facility under 49 C.F.R. Parts 190 through 199, under any other order issued

to Respondent under authority of 49 U.S.C. § 60101 et seq., or under any other provision of Federal or state law.

After receiving and analyzing additional data in the course of this proceeding and implementation of the RWP, PHMSA may identify other safety measures that need to be taken. In that event, Respondent will be notified of any proposed additional measures and, if necessary, amendments to the RWP or safety order.

Respondent may appeal any decision of the Director to the Associate Administrator for Pipeline Safety. Decisions of the Associate Administrator shall be final.

Response to this Notice

In accordance with 49 C.F.R. § 190.239, you have 30 days following receipt of this Notice to submit a written response to the official who issued the Notice. If you do not respond within 30 days, this constitutes a waiver of your right to contest this Notice and authorizes the Associate Administrator for Pipeline Safety to find facts as alleged in this Notice without further notice to you and to issue a safety order. In your response, you may notify that official that you intend to comply with the terms of the Notice as proposed, or you may request that an informal consultation be scheduled (you will also have the opportunity to request an administrative hearing before a safety order is issued). Informal consultation provides you with the opportunity to explain the circumstances associated with the risk condition(s) alleged in the notice and, as appropriate, to present a proposal for a work plan or other remedial measures, without prejudice to your position in any subsequent hearing.

If you and PHMSA agree within 30 days of informal consultation on a plan and schedule for you to address each identified risk condition, we may enter into a written consent agreement (PHMSA would then issue an administrative consent order incorporating the terms of the agreement). If a consent agreement is not reached, or if you have elected not to request informal consultation, you may request an administrative hearing in writing within 30 days following receipt of the Notice or within 10 days following the conclusion of an informal consultation that did not result in a consent agreement, as applicable. Following a hearing, if the Associate Administrator finds the facility to have a condition that poses a pipeline integrity risk to the public, property, or the environment in accordance with § 190.239, the Associate Administrator may issue a final safety order.

Be advised that all material you submit in response to this enforcement action is subject to being made publicly available. If you believe that any portion of your responsive material qualifies for confidential treatment under 5 U.S.C. 552(b), along with the complete original document you must provide a second copy of the document with the portions you believe qualify for confidential treatment redacted and an explanation of why you believe the redacted information qualifies for confidential treatment under 5 U.S.C. 552(b).

In your correspondence on this matter, please refer to **CPF 1-2022-080-NOPSO** and for each document you submit, please provide a copy in electronic format whenever possible.

ROBERT
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12/29/2022

Robert Burrough
Director, Eastern Region, Office of Pipeline Safety
Pipeline and Hazardous Materials Safety Administration

Date issued