U.S. Department
of Transportation

**Pipeline and
Hazardous Materials Safety
Administration**

8701 S. Gessner, Suite 630
Houston, TX 77074

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

December 11, 2018

Todd Denton
President
Phillips 66 Pipeline, LLC
2331 City West Blvd.
Houston, Texas 77042

CPF 4-2018-5029S

Dear Mr. Denton:

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 Phillips 66 Pipeline, LLC's, LO-01, "Line-O," Pipeline to ensure pipeline 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 (713) 272-2847.

Sincerely,

Mary L. McDaniel, P.E.
Director, Southwest Region
Pipeline and Hazardous Materials Safety Administration

Enclosure: Notice of Proposed Safety Order

Cc: Mr. Alan K. Mayberry, Associate Administrator for Pipeline Safety, OPS
Ms. Linda Daugherty, Deputy Associate Administrator for Field Operations, OPS
Mr. Jeff Blatchford, DOT Coordinator, Phillips 66 Pipeline, LLC

DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION
OFFICE OF PIPELINE SAFETY
Southwest Region
8701 S. Gessner Road
Houston, Texas 77074

In the Matter of	)	
Phillips 66 Pipeline, LLC,	)	**CPF No. 4-2018-5029S**
Respondent	)	

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 of the safety of Phillips 66 Pipeline, LLC's (Phillips 66 or Respondent), LO-01 or "Line-O," Pipeline in Elk, City, Oklahoma.

As a result of the investigation, it appears that a condition exists on your pipeline facility that poses a pipeline integrity risk to public safety, property or the environment. Pursuant to 49 U.S.C. § 60117(l), PHMSA issues this Notice of Proposed Safety Order, 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.

For the purposes of this Notice, the term "affected pipeline" means the entire 272-mile length of the LO-01 Pipeline.

Preliminary Findings

- The LO-01, or "Line-O," Pipeline is a 10-inch, steel pipeline that extends 272 miles, beginning in Cushing, Oklahoma and ending in Borger, Texas.

- The LO-01 Pipeline was manufactured in 1951 and has a low-frequency, electric resistance welded (LF-ERW), longitudinal pipe seam along the entire pipeline.

- Pipelines manufactured before 1971 with LF-ERW, longitudinal seams are susceptible to failure due to multiple deficiencies created by the welding process including, cold-weld, hook cracks that are enlarged by fatigue, other manufacturing defects enlarged by fatigue, selective seam weld corrosion, hydrogen stress cracking, sulfide stress cracking, and stress corrosion cracking. The in-service failure of the LF-ERW, longitudinal seam on the LO-01 Pipeline indicates there is a condition posing a pipeline integrity risk to public safety, property and the environment.

- On November 29, 2018, at 6:53pm CT, Phillips 66 notified the National Response Center (NRC) of a release of crude oil from its LO-01 Pipeline in Elk City, Oklahoma.[1] The release occurred on the segment of the LO-01 Pipeline that begins in Elk City and ends at the Oklahoma State line. PHMSA deployed two investigators to the scene of the accident and PHMSA personnel were on-site from November 30, 2018 through December 2, 2018.

- The apparent cause of the release was a failure of the LF-ERW, longitudinal seam. The rupture of the seam was approximately 28.5 inches in length and 1.5-inches wide at the widest point.[2] It is estimated that approximately 672 barrels of crude oil were released as a result of the seam failure.

- The LO-01 Pipeline transports crude oil and is operated on a continuous basis. The maximum operating pressure (MOP) of the Elk City to State line segment of the LO-01 Pipeline is approximately 1125 psig.

- The LO-01 Pipeline has a coal tar coating.

- The LO-01 Pipeline passes through mostly rural areas land, but does closely pass the Oklahoma cities of Guthrie, Cashion, Clinton and Elk City, as well as the Texas cities of Wheeler, Pampa and Borger. There are ten pump stations located along the LO-01 Pipeline. The area where the accident occurred in Elk City, Oklahoma is an agricultural area that is slightly sloped with a terraced field.

- The accident site is not located in an Unusually Sensitive Area (USA), but the accident occurred on a segment that could affect high consequence area (HCA).

- The nearest HCA is located approximately 0.38 miles away at the city limit of Elk City, Oklahoma. Phillips 66 has reported that 127.41 miles of the LO-01 Pipeline are located within an HCA.

- The entire LO-01 Pipeline has the pre-1970, LF-ERW, longitudinal seam. This condition could impair the serviceability of the entire pipeline if left unaddressed.

---

[1] National Response Center Report, No. 1231662, November 29, 2018.

[2] *See* Exhibit 1.

- Phillips 66 performed a hydrostatic test on the section of the LO-01 Pipeline from the Elk City Station to the Oklahoma State line on June 18, 2006. That test revealed no leak indications or ruptures at a minimum test pressure of 1499 psig. On June 13, 2014, Phillips 66 ran a Rosen UT-C, in-line inspection tool on the LO-01 Pipeline starting in Clinton, Oklahoma and ending at the Oklahoma State line. That test found 82 anomalies that were designated as immediate repair conditions. Of the 82 anomalies, 80 were identified as cracks with a calculated burst pressure that was less than the Pipeline segment's 1125 psig MOP. The two remaining anomalies were cracks with no upper bound, meaning the size crack could not be accurately determined beyond a certain dimension. Phillips 66 reported that all anomalies were repaired in accordance Phillips 66's repair procedures. Finally, on July 1, 2016, Phillips 66 ran a T.D. Williamson combination magnetic flux leakage/deformation tool on the same section of pipe tested in June 2014. That test found five topside dents with metal loss, which were identified as immediate repair conditions. The test also found two 180-day conditions, one dent associated with the longitudinal seam and one top-side dent greater than 2% wall loss. Phillips 66 reported that these anomalies were repaired in accordance Phillips 66's repair procedures.

- On December 1, 2018, Phillips 66 repaired the pipe segment that ruptured on November 29th. Three joints of pipe were cold cut and removed. Three new joints of pre-tested pipe were then welded in place. Phillips 66 conducted a two-hour standup test on December 2, 2018. Phillips 66 also provided PHMSA with a repair plan with associated procedures to address the repairs performed along with a restart plan. The line returned to service on December 2nd at reduced pressure levels on each segment to coincide with a 20% total pressure reduction on the LO-01 Pipeline.

Proposed Issuance of Safety Order

Section 60117(l) 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 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 considering the age of the pipe involved, the manufacturer, the hazardous nature of the product transported and the pressure required for transporting such product, the characteristics of the geographical areas where the pipeline facility is located, and the likelihood that the conditions could worsen or develop on other areas of the pipeline and potentially impact its serviceability, it appears that the continued operation of the affected pipeline without corrective measures would pose a pipeline integrity risk to public safety, property, or the environment.

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

Response to this Notice

In accordance with § 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 conditions 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 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 **4-2018-5029S** and for each document you submit, please provide a copy in electronic format whenever possible.

Proposed Corrective Measures

Pursuant to 49 U.S.C. § 60117(l) and 49 C.F.R. § 190.239, PHMSA proposes to issue to Phillips 66 a safety order incorporating the following remedial requirements with respect to the LO-01 Pipeline:

1. ***Pressure Restriction.*** On December 1, 2018, Phillips 66 agreed to a pressure restriction of 80% of the operating pressure at the time of the accident on the entire LO-01 Pipeline. Phillips 66 provided PHMSA information regarding nine segments of the LO-01 Pipeline and the associated pressure reductions to accomplish the 20% de-rate of the line pressure.

2. ***Removal of Pressure Restriction.*** The Director may allow the removal or modification of the pressure restriction upon a written request from Respondent demonstrating that restoring the pipeline to its pre-failure operating pressure is justified based on a reliable engineering analysis showing that the pressure increase is safe considering all known defects, anomalies, and operating parameters of the pipeline. The Director may also consider a demonstration that temporary mitigative and preventive measures are implemented prior to and during the temporary removal or modification of the pressure restriction. The Director's determination will be based on the cause of the failure and evidence of the analyses and measures taken.

3. ***Mechanical and Metallurgical Testing***. Within 60 days of receipt of this safety order, Respondent must complete mechanical and metallurgical testing and failure analysis of the failed pipe and the two joints removed from the pipeline, including an analysis of soil samples and any foreign materials. Testing and analysis requirements are as follows:
   a. Document the chain-of-custody when handling and transporting the failed pipe section and other evidence from the failure site.
   b. Utilize the testing protocol provided by PHMSA.
   c. Prior to beginning the mechanical and metallurgical testing, provide the Director with the scheduled date, time, and location of the testing to allow for an OPS representative to witness the testing.
   d. Ensure the testing laboratory distributes all reports whether draft or final in their entirety to the Director at the same time they are made available to Respondent.

4. ***Root Cause Failure Analysis***. Within 120 days following receipt of this safety order, complete a root cause failure analysis (RCFA) and submit a final report of this RCFA to the Director. The RCFA must document the decision making process and all factors contributing to the failure. The final report must include findings and lessons learned. The RCFA must also include a discussion of whether the findings and lessons learned are applicable to other locations within Phillip 66's pipeline system.

5. ***Remedial Work Plan***. Within 45 days following receipt of the final report from the metallurgical testing laboratory, Respondent must submit a Remedial Work Plan (RWP) to the Director for approval. The Director may approve the RWP incrementally without approving the entire RWP. Once approved by the Director, the RWP will be incorporated by reference in this safety order.
   a. The RWP must specify the tests, inspections, assessments, evaluations, and remedial measures Respondent will use to verify the integrity of the LO-01 Pipeline. It must address all known or suspected factors and causes of the failure. Respondent should consider both the risk and consequence of another failure to develop a prioritized schedule for RWP related work along the entire 272-mile pipeline.
   b. The RWP must include a procedure or process to:
      i. Gather all data necessary to review the failure history (in-service and pressure test failures) of the LO-01 Pipeline and to prepare a written summary containing all the available information such as the locations, dates, and causes of leaks and failures.

ii. Integrate the results of the metallurgical testing, root cause failure analysis, and other corrective actions required by the safety order with all relevant pre-existing operational and assessment data for the LO-01 Pipeline. Pre-existing operational data includes, but is not limited to, construction, operations, maintenance, testing, repairs, and prior metallurgical analyses. Pre-existing assessment data includes, but is not limited to, in-line inspection (ILI) tool runs, hydrostatic pressure testing, direct assessments, close interval surveys, and DCVG/ACVG surveys.

iii. Determine if conditions similar to those contributing to the failure are likely to exist elsewhere on the pipeline.

iv. Conduct additional field tests, inspections, assessments, and/or evaluations to determine whether, and to what extent, the conditions associated with the failure, and other failures from the failure history, or any other integrity threats are present elsewhere the LO-01 Pipeline. At a minimum, this process must consider all failure causes and specify the use of one or more of the following:

1. Inline inspection tools that are technically appropriate for assessing the pipeline system based on the cause of the failure and that can reliably detect and identify anomalies,
2. Hydrostatic pressure testing,
3. Close-interval surveys,
4. Cathodic protection surveys, to include interference surveys in coordination with other utilities (e.g. underground utilities, overhead power lines, etc.) in the area,
5. Coating surveys,
6. Stress corrosion cracking surveys,
7. Selective seam corrosion surveys; and,
8. Other tests, inspections, assessments, and evaluations appropriate for the failure causes.

c. Describe the inspection and repair criteria Respondent will use to prioritize, excavate, evaluate, and repair anomalies, imperfections, and other identified integrity threats. Include a description of how any defects will be graded and a schedule for repairs or replacement.

d. Based on the known history and condition of the pipeline, describe the methods Respondent will use to repair, replace, or take other corrective measures to remediate the conditions associated with the failure, and to address other known integrity threats.

e. Implement continuing long-term periodic testing and integrity verification measures to ensure the ongoing safe operation of the LO-01 Pipeline considering the results of the analyses, inspections, evaluations, and corrective measures undertaken pursuant to this safety order.

f. Include a proposed schedule for completion of the RWP.

6. Revise the remedial work plan as necessary to incorporate new information obtained during the failure investigation, evaluations and associated remedial activities to

incorporate results of actions undertaken pursuant to the safety order. Submit any such plan revisions to the Director for prior approval.

7. Submit quarterly reports to the Director that: (1) include available data and results of the testing and evaluations required by the safety order; and (2) describe the progress of the repairs and other remedial actions being undertaken.

8. 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.

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

10. It is requested (not mandated) that Respondent maintain documentation of the safety improvement costs associated with fulfilling this Safety Order and submit the total to Mary McDaniel, Director, Southwest, Pipeline and Hazardous Materials Safety Administration. It is requested that these costs be reported in two categories: 1) total cost associated with preparation/revision of plans, procedures, studies and analyses, and 2) total cost associated with replacements, additions and other changes to pipeline infrastructure.

The actions proposed by this Notice of Proposed Safety Order are in addition to and do not waive any requirements that apply to Respondent's pipeline system 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 work plan, 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 work plan or safety order.

Mary McDaniel, P.E.
Director, Southwest Region
Pipeline and Hazardous Materials Safety Administration

12/11/2018
Date issued

Exhibit 1