Appendix

Safety and Environmental Impact Analysis of the

Energy Transfer's Dakota Access Pipeline

Report to the Standing Rock Sioux Tribe

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1. I am an attorney, incident investigator, and process safety practitioner with many decades of experience with the oil industry and U.S. government. I worked for the U.S. Chemical Safety and Hazard Investigation Board (CSB), a non-regulatory scientific agency modeled after the National Transportation Safety Board for 17 years. At the CSB, I managed, led or participated in over 70 major chemical accident investigations serving as a Lead Investigator, Investigation Supervisor and head of the Recommendations Department. For nearly a decade, I directed the Western Regional Office of the CSB. I managed or led many of the largest and most significant chemical incident investigations in recent U.S. history, including the 2005 BP Texas City explosion, the 2010 Tesoro Anacortes oil refinery fire, the 2010 Deepwater Horizon offshore fire and explosion, and the 2012 Chevron Richmond, CA oil refinery fire. During my tenure, approximately two thirds of the Board's investigative staff worked for the Western Regional Office under my direction. I have published over 15 professional papers related to my expertise. My CV is attached (See Attachment 1).

2. I have extensive experience drafting root-cause investigation reports for releases of hazardous materials or chemical accidents in the oil and gas or chemical industries. I drafted reports that addressed the importance of effective management systems for incident investigation, corporate safety oversight, safety culture and risk management. In particular, two investigations I led and managed for the CSB — the 15 fatality 2005 BP Texas City refinery explosion[1] and the 11 fatality 2010 Deepwater Horizon blowout and explosion[2] both involved a history of repeat incidents, ineffective "lessons learned" systems, flawed safety culture, and a failure of corporate leadership and oversight. The CSB reports and recommendations on these incidents and others were highly regarded[3] and resulted in new safety standards and regulatory initiatives by the American Petroleum Institute (API), BSEE, EPA and OSHA.

3. Upon completion of the BP Texas City investigation, I had numerous meetings and presentations to Congressional representatives and government agencies including the Pipeline and Hazardous Materials Safety Administration (PHMSA). PHMSA was concerned about these same issues and had specific concerns about BP pipeline spills in Alaska. As a result of our interaction, CSB staff participated at PHMSA's request on the API committee that developed Recommended Practice 1173, *Pipeline Safety Management Systems* (2015). CSB staff was part of the team that developed the applicable safety management standard.

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[1] https://www.csb.gov/bp-america-refinery-explosion/

[2] https://www.csb.gov/macondo-blowout-and-explosion/

[3] The CSB "chemical industrial accident investigations and recommendations have been called the 'gold standard' in industrial accident prevention by Rep. George Miller (D-Calif.)." Chemical and Engineering News, Volume 86, Issue 35, September 2008 https://cen.acs.org/articles/86/i35/Bringing-Life-Deadly-Accidents.html. Congressional Recor d-House, Volume 154, Pt. 5, April 30, 2008, p.7343. https://www.govinfo.gov/content/pkg/CRECB-2008-pt5/pdf/CRECB-2008-pt5-Pg7331-4.pdf.

4. That important pipeline safety standard was developed in response to a recommendation from the NTSB out of the 2010 Enbridge Marshal, MI crude pipeline disaster. Having reviewed recent serious pipeline incidents, the NTSB concluded that safety management systems "are needed to enhance the safety of pipeline operations," citing the CSB's BP Texas City Refinery Report as support for its position.[4] API 1173 incorporated many of the key lessons from the CSB BP Texas City Report including the importance of effective corporate safety leadership and oversight, root cause investigations, safety culture and the use of leading and lagging key performance indicators. In contrast, the minimum regulatory requirements of PHMSA are dated and have not kept up with modern pipeline standards[5] and responses to Congressional mandates and recommendations from government reports.

5. I also have personal experience recommending to companies handling highly hazardous material when to stand down their operations to address serious issues with chemical incidents and lack of effective integrity management. In investigations I led or managed, the CSB on occasion advised companies to shut down, or postpone restart operations, until serious systematic issues were addressed. At times companies were eager to restart operations before the causes of the incident had been determined or their safety systems and plants were safe to operate. While non-regulatory, the CSB had the authority to issue urgent recommendations to address these concerns. These interventions were generally successful. For example, I and the CSB Board Chair advised the CEO of an oil refinery in Salt Lake City, Utah that had a serious history of leaks, incidents and mechanical integrity deficiencies to shut down operations and

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[4] *Enbridge Incorporated Hazardous Liquid Pipeline Rupture and Release, Marshall Michigan, July 25, 2010*; National Transportation Safety Board Accident Report.

[5] For example, PHMSA has not incorporated a new API standard by reference into their regulatory scheme since 2013. 49 CFR § 195.3. API standards are typically updated on a 5-year schedule.

address the problems. The refinery ceased operations for a number of months to upgrade their safety systems and the mechanical integrity of their piping and equipment.

6. I currently serve as a consultant to the Standing Rock Sioux Tribe and a member of the technical team advising the Tribe on technical matters relating to the risks imposed by the Dakota Access Pipeline ("DAPL").

7. As a member of the Tribe's technical team, I am also one of the contributors to the technical document submitted to the Army Corps as part of its remand review. That document provides additional detail on some of the topics discussed in this report. I also advise the Tribe on matters related to oil spill response planning and assisted the Tribe in drafting their Tribal Emergency Response Committee (TERC) Lake Oahe Pipeline Oil Spill Emergency Response Plan (March 2020).

8. To date, I have spent many hours involved in this work by reviewing documents and participating in meetings with Tribal agency heads, including the Departments of Emergency Management, Water Resources, and Environmental Regulation, the interdisciplinary technical team, and Tribal leaders. I have a high degree of familiarity with the environmental review documents prepared by the Corps and DAPL, as well as other technical declarations and documents filed by DAPL related to NEPA litigation addressing the issue of remedy (including declarations of Stamm, Aubele, and Godfrey). I served as an expert witness on behalf of the Tribe before the North Dakota Public Service Commission when it was considering a proposal to double the capacity of DAPL. I have also carefully reviewed and summarized recent data from the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety

Administration (PHMSA) related to hazardous liquid[6] pipeline spill incidents and operator safety information.

9. In the Remand record and various litigation declarations, DAPL and the Corps try to make the case that operation of the pipeline is safe and hence the Court should not vacate its permits. They even go so far as to proclaim DAPL the safest pipeline in the world. This hyperbole is not supported by the record or the facts. The very issues that they cite to buttress their claim of safety, for example, the worst case discharge calculation, ETP safety record, leak detection and shutdown systems, spill preparedness, and among others, are issues that the Tribe has been contesting since the very start of this process. In fact, many of them formed the basis of this Court's decision in favor of the Tribe. But DAPL simply repeats, or expands upon, the same contested claims that the Tribe has been debunking throughout the process. I disagree with the factual allegations made in the Corps and DAPL's multiple Remand documents and expert and corporate declarations. These issues have been addressed in multiple submissions made by the Tribe. I will focus on some key assertions in my review. In my view, DAPL is an unusually unsafe pipeline, managed by a corporate entity with an unusually troubled safety record. In this report, I provide a detailed look at ETP's misleading claim to have an ordinary or even impressive safety record, which it does not. I then briefly turn to other issues, including worst case discharge, leak detection, best practices, and the proposal to double DAPL's capacity.

10. In my view, given the gravity of the safety performance, pattern of hazardous liquid spills, and regulatory violations and enforcement history of Dakota Access Pipeline's (DAPL) operator Sunoco Logistics and corporate parent Energy Transfer LP remains of great

[6] PHMSA defines hazardous liquids as "petroleum, petroleum products, anhydrous ammonia and ethanol." 49 CFR 195.2 Definitions. Hazardous liquid "commodity released" categories for incident reporting include crude oil, highly volatile liquid (HVL) and refined products. PHMSA regulates these hazardous liquids under a common framework as they present similar hazards.

concern. Since 2012, Energy Transfer and its subsidiary hazardous liquid pipelines have the worst safety record in terms of spill numbers, significance and volume in the PHMSA database compared to other corporate pipeline families with large numbers of spills. Their most recent spill and enforcement record since 2016 does not reflect improvement. It is clear that Energy Transfer's corporate oversight over safety and learning from incidents is broken — they are failing to meaningfully lessen the frequency and severity of their pipeline spills.

11. In addition, as revealed by PHMSA data and DAPL-related documentation, multiple other aspects of Energy Transfer's pipeline safety management systems are significantly flawed. These systems include the DAPL's risk management approach; failure to apply modern, more protective pipeline safety standards such as API RP 1173; integrity management plan; their operations, maintenance and emergency response procedures; leak detection; and breaches of the Corps' Lake Oahe Easement Conditions that impact safe operations. Allowing Energy Transfer's DAPL[7] to operate without a valid and approved assessment of its environmental impact in this context poses a serious threat to people, property, and the environment.

12. API RP 1173 is widely recognized as a critical standard for pipeline safety performance improvement. Its stated goal is to provide a framework for operators to establish effective pipeline safety management systems that drive toward zero incidents and continuous improvement of safety performance.[8] The standard details safety management systems that are needed to achieve those goals including leadership and management commitment; incident investigation, evaluation and lessons learned; safety assurance including performance

[7] The Dakota Access Pipeline is a less than wholly owned subsidiary of Energy Transfer Operating, LP (ETO). ETO is a consolidated subsidiary of Energy Transfer LP (ET), 2019 United States Security and Exchange Commission Form 10-K, pp. iii, 1. https://ir.energytransfer.com/static-files/4ecb1de6-ace2-4da3-b708-e655eaef13c1. DAPL's operator is Sunoco, a subsidiary of Energy Transfer LP.

[8] API RP 1173 *Pipeline Safety Management Systems* (2015) Introduction, p.vii.

measurement and evaluation of the data; and management review and continuous improvement. API RP 1173 emphasizes that "commitment, leadership and oversight from top management are vital" for the success of the pipeline safety management systems.[9]

13. In order to evaluate the risk of the continued operation of the DAPL Lake Oahe crossing, it is important to review Energy Transfer's pipelines spill record and related data. The API Standard specifically addresses pipeline risk by focusing on the operators' performance data. The risk management approach of API RP 1173 first emphasizes data gathering specific to the pipeline system:

> *These data serve as the foundation of risk management and shall include available data over the pipeline life cycle and shall be updated based on work performed and as needed during the life of the pipeline. Incident data, including the cause of incidents, shall be included as appropriate. The pipeline operator shall conduct a regular review to identify data gaps and evaluate data quality as part of risk assessment, consistent with continuous improvement.*[10]

API RP 1173 emphasizes the key role such operator's own performance data plays in its continuous assessment and improvement approach called "Plan-Do-Check-Act." That approach focuses on the real risk measured by the corporation's own safety performance history, not by generic incident data compiled from other operators as DAPL and the Army Corps assert. Energy Transfer is the corporate parent of a family of hazardous liquid pipelines regulated by PHMSA that are subsidiaries or controlled but less than wholly owned. PHMSA requires that hazardous liquid pipeline spills meeting specific criteria be reported to the agency[11] and assigns an Operator ID for each pipeline system identified in PHMSA submissions.

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[9] *Ibid.*
[10] *Id.* at 11.

[11] 49 CFR §195.50. Reporting Accidents requires an accident report for hazardous liquid spills (with some exceptions) that result in spills over 5 gallons, explosion or fire, death of a person, personal injury requiring hospitalization, estimated property damage exceeding $50,000.

PHMSA also requires that operators identify the safety program relationship between different operators and the primary operator for those pipelines. For purposes of reporting DAPL hazardous liquid incidents to PHMSA, Energy Transfer has grouped together DAPL and the connected Energy Transfer Crude Oil Company, LLC (DAPL-ETCO). For DAPL-ETCO, Energy Transfer is identified as the primary operator ID. In total, 14 different hazardous liquid[12] operator IDs have Energy Transfer LP (Operator ID 32099) as the designated primary operator indicating their common safety program relationship. These include Sunoco LP (18718), Mid-Valley Pipeline (12470), West Texas Gulf (22442), Energy Transfer (32099),[13] DAPL-ETCO Operations Management LLC (39205), Inland Corporation (32683), Permian Express Partners LLC (39596), Bayou Bridge Pipeline LLC (39462), and Harbor Pipeline Co. (7063). My review of Energy Transfer pipeline safety performance and incident data will focus on these 9 hazardous liquid pipelines.[14]

14. While some of the listed Energy Transfer hazardous liquid pipelines are recently constructed (DAPL-ETCO, Permian Express and Bayou Bridge), others have a lengthier corporate subsidiary relationship with Energy Transfer or its predecessor Energy Transfer Equity (ETE).[15] Energy Transfer Equity LP (ETE) merged with Energy Transfer Partners in 2018 to form Energy Transfer LP. In 2012, ETE's then subsidiary Energy Transfer Partners (ETP) had acquired

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[12] I have limited the Energy Transfer review to hazardous liquid hydrocarbons, excluding CO2 and ammonia pipelines. I have also removed hazardous liquid terminals from review that have no or minimal associated pipelines.
[13] Note Energy Transfer LP (32099) is listed as both a primary operator and also with its own Operator ID for its own separately listed hazardous liquid pipeline assets.
[14] Other listed Energy Transfer operator IDs were not included in the incident and safety analysis due to inactive status, functioning primarily as a hazardous liquid terminal, and lack hazardous liquid pipeline mileage or no submitted data.

[15] Energy Transfer Equity LP (ETE) merged with Energy Transfer Partners in 2018 to form Energy Transfer LP in a move that simplified its corporate structure – "Energy Transfer Equity now called Energy Transfer LP," *Energy Transfer Equity, L.P. And Energy Transfer Partners, L.P. Complete Merger, Simplify Structure*, Energy Transfer Press Release, October 19, 2018, https://ir.energytransfer.com/news-releases/news-release-details/energy-transfer-equity-lp-and-energy-transfer-partners-lp. Prior to the merger, Energy Transfer Partners had been a consolidated subsidiary of ETE, *Energy Transfer Equity 2012 Annual Report*, p.4, https://ir.energytransfer.com/static-files/6a687e75-d5fc-4a96-bc4d-b346e79ab250.

Sunoco Inc. for 5.3 million dollars.[16] Sunoco Inc., Sunoco Logistics and ETP were listed as consolidated subsidiaries of the parent corporation ETE in its 2012 Annual Report.[17] At the time of the Sunoco acquisition by ETP, Kelcy L. Warren was both the Chairman of the Board of ETP's General Partner and the General Partner of ETE, LE GP LLC.[18]

15. My review of the safety record of the Energy Transfer's consolidated subsidiaries and controlled hazardous liquid pipelines focuses on incident and safety data since 2012 and examines performance since 2016 to assess any improvements. I will also look at performance of the pipelines since 2006 to provide historic context.

16. In the 2012 Sunoco acquisition, ETE became the corporate parent of what is now a significant portion of its hazardous liquid pipeline assets, including Sunoco LP, Mid-Valley Pipeline Co. and West Texas Gulf Pipeline Co.[19] These three pipelines, in addition to Energy

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[16] *Energy Transfer Partners To Acquire Sunoco In $5.3 Billion Transaction*, Energy Transfer Partners Press Release, April 30, 2012, https://ir.energytransfer.com/news-releases/news-release-details/energy-transfer-partners-acquire-sunoco-53-billion-transaction.

[17] *Energy Transfer Equity 2012 Annual Report*, p.4, https://ir.energytransfer.com/static-files/6a687e75-d5fc-4a96-bc4d-b346e79ab250. *Id.* at 119 and 121. The 2012 Annual Report states that ETE as a limited partnership is managed by its General Partner. The report also states, "Our General Partner is majority owned by Kelcy Warren." Kelcy Warren is currently the CEO and Chairman of the Board of the General Partner of Energy Transfer LP.

[18] *Id.* at 119 and 121. The 2012 Annual Report states that ETE as a limited partnership is managed by its General Partner. The report also states, "Our General Partner is majority owned by Kelcy Warren." Kelcy Warren is currently the CEO and Chairman of the Board of the General Partner of Energy Transfer LP.

[19] Sunoco purchased a controlling interest in West Texas Gulf pipeline in 2002. https://www.bulktransporter.com/archive/sunoco-logistics-acquire-interest-west-texas-gulf-pipe-line. Sunoco bought the Mid-Valley pipeline in 2006. https://www.tulsaworld.com/archive/sunoco-closes-acquisition-of-mid-valley-pipeline/article_81444925-c157-5ae5-a95c-b7827f3933eb.html

Transfer's separately listed pipelines, account for over 90% of hazardous liquid pipeline spills for Energy Transfer's family of pipelines since the 2012 acquisition.[20]

18. DAPL-ETCO has experienced 12 spills since the pipelines were operational in June of 2017. Over six thousand gallons (146 Bbls) of crude oil has been spilled with nearly $200,000 in property damage. One spill impacted a High Consequence Area (HCA) and another spill of five thousand gallons (119 Bbls) was categorized by PHMSA as significant.[21]

19. PHMSA pipeline safety regulations have developed the concept of an HCA, to identify specific locations where spills can have the most serious negative impact on critical resources such as drinking water sources, populated locations and "unusually sensitive" environmental areas. HCAs require additional regulatory programs such as Integrity Management Plans to prevent spills from impacting these highly sensitive areas. Lake Oahe has been determined to be an HCA due to its ecological characteristics. From my experience and review of the PHMSA incident data, this number and impact of spills for a pipeline only in operation for 3 years is highly unusual and very concerning.

20. The nine Energy Transfer pipelines tracked in my review from 2012 to present spilled hazardous liquid on 290 occasions or on average 2.9 spills per month. These spills were

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[20] PHMSA provides pipeline safety source data in several formats. https://www.phmsa.dot.gov/data-and-statistics/pipeline/source-data. Operator hazardous liquid incident data and programmatic information can be found and searched on the Operator Information web page https://opsweb.phmsa.dot.gov/primis_pdm/pub_op_search.asp. Detailed hazardous liquid incident data spreadsheets derived from incident reports can be downloaded from the Annual Report Data web page https://www.phmsa.dot.gov/data-and-statistics/pipeline/gas-distribution-gas-gathering-gas-transmission-hazardous-liquids. The most recent hazardous liquid annual file provides incident data from 2010 to present.

[21] PHMSA defines a significant spill as resulting in death or injury requiring inpatient hospitalization, $50,000 in total costs, non-HVL liquid such as crude oil of 50 barrels or more, releases resulting in fire or explosion or HVL releases of 5 barrels or more.

not minor or lacking impact. 94 or 32% of those were significant incidents as defined by PHMSA. The spills resulted in over 2 million gallons (48,777 Bbls) of hazardous liquid released with over $90 million in property damage. Energy Transfer's separate operator ID pipelines alone spilled over 625,000 gallons (14,994 Bbls) of hazardous liquid with property damage of nearly $5 million.

21. Equally alarming is the record in HCAs. From 2012 to 2018[22] the Energy Transfer pipelines experienced 50 incidents defined as large spills by PHMSA.[23] Nearly 20% of all of the spills over this time period were large spills in high consequence areas like Lake Oahe.

22. Furthermore, Energy Transfer's pipelines required over 300 HCA "immediate condition repairs." These repairs are defined as serious enough to require immediate shutdown of the pipeline or a reduction in operating pressure to conduct the urgent repair and protect the highly sensitive areas.

23. Energy Transfer's spill and integrity management record since the year of its acquisition of Sunoco is extremely troubling. Their management leadership and corporate oversight has failed to improve the poor safety performance of these pipelines when compared to a longer time-frame prior to the Sunoco purchase.

24. Looking at the data from 2006 to present, the same nine pipeline operator IDs in my review experienced 490 spills or 2.9 per month. 148 or 30% of those incidents were categorized as significant. From 2004 to 2018 these pipelines had 107 large spills in HCAs and required over 900 HCA immediate condition repairs. The spill volume over 14 years totaled

[22] PHMSA's integrity management performance data is available through 2018.
[23] To be classified as a large HCA spill by PHMSA the release must result in death or personal injury requiring hospitalization, property damage greater than $50,000, a release of more than 5 barrels, fire or explosion, or pollution of water.

nearly 3 million gallons (71,172 Bbls) and resulted in $113 million in property damage.

25. It is important to note that the vast majority of property damage ($90 Million) occurred under Energy Transfer corporate leadership compared to the 14-year total of $113 million for the 9 operator IDs. The three pipelines operator IDs historically related to Sunoco – Mid-Valley, West Texas Gulf and Sunoco LP – account for over 90% of the PHMSA fines since the ETE acquisition in 2012.

26. Even more revealing of Energy Transfer's failure to make pipeline safety improvements during its corporate leadership tenure is its recent incident history. From the year of the construction of DAPL in 2016[24] to present, the nine Energy Transfer pipelines reviewed had 125 hazardous liquid spills or 2.4 per month. 43 or 34% of those spills were categorized by PHMSA as significant. Over 1 million gallons (25,597 Bbls) of hazardous liquid was spilled leading to $34,477,683 million in property damage. Energy Transfer pipelines experienced 21 HCA large spills and 116 HCA immediate repairs from just 2016 to 2018. This is not meaningful safety improvement.

27. Spills in the pipeline rights of way (ROW)[25] or releases of hazardous liquid that migrate off the operator's property occur in 31% of all Energy Transfer pipeline incidents. Energy Transfer has implied that since some spills have not migrated outside of the ROW, its spills have had minimal impact. To the contrary, Energy Transfer hazardous liquid spills have had very significant offsite impacts. Since 2012, 32% of the corporation's spills with offsite consequences have resulted in water system contamination including drinking, surface, ground

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[24] DAPL incident reports list the installation year the equipment involved in the incident – for all the DAPL incidents it was 2016. DAPL was put into operation in June of 2017.

[25] PHMSA defines rights of way as "the property, or easement, that pipeline operators secure to install and maintain transmission pipelines." https://primis.phmsa.dot.gov/comm/ROWBrief.htm?nocache=3133.

and well water. The 71 incidents with offsite impacts have resulted in a total spill volume of 1,227,870 gallons (29,235 Bbls). These offsite hazardous liquid releases are in fact 60% of the total incident spill volume since 2012. Rather than a minimal impact, the majority of Energy Transfer's immense incident spill volume is impacting people, the public and private property, water systems and the environment away from the property controlled by the operator, resulting in serious impacts.

28. I compared the PHMSA record of the Energy Transfer family of pipelines to other major hazardous liquid pipeline corporations and their primary operator IDs from both 2012 and 2016 to present. Since 2012, Energy Transfer's family of pipelines had 291spills – the most of any other corporate family of pipelines. During that period, Energy Transfer had the most significant incidents and barrels spilled. Since 2016, Energy Transfer's 125 hazardous liquid spills was second worst (trailing only Enterprise with 231 spills). ET was second also in terms of property damage and barrels spilled. I examined hazardous liquid pipelines with the most number of spills since 2017 where the "item involved" in the spill was limited to newer installations[26] for pipeline operator IDs transporting primarily crude oil. Energy Transfer's family of pipelines experienced the 28 spills second only to Enterprise with 36. A single pipeline operator ID DAPL-ETCO was fourth with 12 spills. Looking at the most recent data, Energy Transfer had the second worst spill record overall and involving new installations. The DAPL-ETCO safety record was particularly concerning having the fourth most spills for a single pipeline operator ID for new installations compared to other pipeline families.

29. The Corps mischaracterizes the Tribe's position concerning more prevalent

[26] New installations refer to new equipment, pipelines systems; and expansions, extensions, or replacements. The review focused on new installations since 2016, the year that DAPL's 12 spill incidents listed as the equipment involved in the spill as the "installation year."

failures with newer pipelines such as DAPL. The Corps asserts that since DAPL has been in operation for nearly three years it is now no longer "new" and not subject to a generalized concern of spills and incidents. The Tribe, however, in its 2018 expert report submitted during the remand cited an analysis by the Pipeline Safety Trust that reviewed PHMSA data for the frequency of hazardous liquid incidents by decade.[27] That report noted, looking at incidents by decade installed since the 1920s, that "more dangerous still were the very newest pipelines – those installed since 2010."[28] The Trust had compared decades of performance, not "new" pipelines. The incidents since 2010 by pipeline mileage were more than double the previous decade of the 2000s and greater than pipelines built in the 1920s. More importantly, my review is not generalized – the DAPL-ETCO and Energy Transfer safety data and incident record underscores our corporate-specific concerns about the frequency and severity of their pipeline spills.

30. Equally concerning is Energy Transfer's history of regulatory violations and enforcement actions both in terms of cases initiated by PHMSA and penalties collected. Since ETE acquired Sunoco in 2012, Energy Transfer's family of pipelines have seen 59 PHMSA enforcement cases resulting in $3,411,800 in penalties collected and five Corrective Action Orders (CAOs).

31. CAOs are one of PHMSA most serious enforcement tools – one that is rarely employed.[29] CAOs require operators to take specific necessary actions to address conditions that

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[27] Standing Rock Sioux Tribe, *Impacts of an Oil Spill from the Dakota Access Pipeline on the Standing Rock Indian Reservation*, pp. 53-54 (2018).
[28] Pipeline Safety Trust, *Are Older Pipelines Really More Dangerous*, Pipeline Safety, Spring 2015, https://pstrust.org/wp-content/uploads/2013/03/Incidents-by-age-of-pipes-PST-spring2015-newsletter-excerpt.pdf , p.6.
[29] PHMSA has only issued 15 corrective action orders since 2016. https://primis.phmsa.dot.gov/comm/reports/enforce/CAO_opid_0.html#_TP_1_tab_1

PHMSA finds to be hazardous to people, property or the environment.

32. In fact, most of the more serious enforcement actions have taken place more recently. From 2016 to present, PHMSA has initiated 37 enforcement cases and collected over $3.3 million in penalties. The $3.3 million in penalties collected over the most recent four-year period represents nearly all of the cumulative fines levied on the nine pipelines over the last 8-years indicating a deteriorating safety performance under Energy Transfer's corporate leadership.

33. Compared to other corporate families of pipelines and their primary operator IDs with the most spills since 2012, Energy Transfer had the most enforcement cases against them by PHMSA and the largest number of penalties collected. They had the most CAOs (5) compared to the next worst company (Colonial Pipeline) that had two. Applying these criteria since 2016, Energy Transfer had the most enforcement cases, most penalties collected and the largest number of CAOs. In that recent period, among the corporate pipeline families that had the most spills Energy Transfer had penalties collected ($3.3 million) that were over 6 times greater than Enterprise – the next most fined corporation.

34. A number of Energy Transfer's PHMSA enforcement actions include repeat citations with a history of failure to effectively report or investigate incidents; develop operations, maintenance and emergency response procedures; and implement integrity management and corrosion control plans. Energy Transfer has demonstrated that it tolerates systematic safety problems in its pipeline operations.

35. For example, in March 2015, PHMSA issued a Corrective Action Order to ET's West Texas Gulf Pipeline Company as a result of a February crude oil spill. PHMSA discovered that a portion of the pipeline with 80% metal loss was "fixed" with a clamp, which the CAO

rejected and required the section of pipeline be replaced. The original CAO was amended in September, 2015, as a result of multiple additional incidents that PHMSA described as causing "the expansion of PHMSA concerns regarding the safety of the West Texas Gulf System."[30] The events that led to the amended CAO include a prior failure to report a February 19, 2013 incident; additional incidents in April, 2015 of improper pipeline repairs; a second leak on June17, 2015 due to metal loss near the location of the original February spill; a June 19, 2015 "major release" of 138,600 gallons (3300 Bbls) of crude; two additional incidents on May 28, 2015 and June 23, 2015 on the Permian Express II managed by West Texas Gulf; and a November 10, 2015 spill that sent five workers to the hospital.

36. Most significantly, DAPL was ordered by PHMSA and later agreed in an October 3, 2016 Consent Agreement (See Attachment 2) to create "a Safety Management System promoting a safety culture" based upon the elements of API RP 1173.[31] Those RP 1173 system elements listed included Management Commitment and Leadership, Risk Management, Incident Investigation, Safety Assurance and Continuous Improvement and Emergency Preparedness and Response.

37. As a result of the events related to the CAO, PHMSA pursued additional enforcement violations against West Texas Gulf. In a related November 2015 enforcement action for failure to report the February 19, 2013 spill incident that resulted in a fire and injuries to five workers, PHMSA fined West Texas Gulf $141,000.[32] The company was cited for failure

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[30] Pipeline and Hazardous Materials Safety Administration Consent Agreement, CPF No. 4-2015-5005H, In the Matter of West Texas Gulf Company, October 2016, p. 1, https://primis.phmsa.dot.gov/comm/reports/enforce/documents/420155005H/420155005H_Consent%20Agreement_10032016.pdf.

[31] *Id.* at p.5.

[32] PHMSA Final Order, West Texas Gulf Pipeline Company, CPF No. 4-2015-5009, November 3, 2015, pp.2-3, https://primis.phmsa.dot.gov/comm/reports/enforce/documents/420155009/420155009_Final%20Order_11032015.pdf

to provide timely notice of the incident or submit an incident report.

38. In a separate action, in a December 2019 Final Corrected Order to Energy Transfer LP CEO Kelsey Warren[33], PHMSA found numerous pipeline safety violations including several citations relating to flawed implementation of the requirements of 49 C.F.R 195.402, *Procedural Manual for Operations, Maintenance and Emergencies*. The citations stated that the company failed to follow its own incident investigation procedures, noted reoccurring similar incidents, and the lack of a root cause investigation report required by its own procedures. PHMSA collected a penalty of $1,019,200. A number of other recent Energy Transfer significant enforcement actions have addressed similar issues.[34] DAPL and its declarants ignore their own PHMSA violations and enforcement record and their recent history of large fines, CAOs, and repeat violations.

39. Energy Transfer's pipeline safety incidents have led to unprecedented regulatory actions related to the construction and operation of its pipelines, for many different violations on different pipelines throughout the United States. Pipeline safety performance deficiencies that

[33] PHMSA Final Corrected Order, West Texas Gulf Pipeline Company, CPF No. 4-2016-5022, December 9, 2019, pp.3-9, https://primis.phmsa.dot.gov/comm/reports/enforce/documents/420165022/420165022_Corrected%20Final%20Order_12092019_text.pdf.

[34] PHMSA Corrective Action Order, Mid-Valley Pipeline, CPF No. 4-2014-5026H, arising upon a 4000 Bbls release on October 13, 2014 into Tete Bayou an HCA based upon environmental sensitivity and proximity to drinking water intakes. https://primis.phmsa.dot.gov/comm/reports/enforce/documents/420145026H/420145026H_Corrective%20Action%20Order_10172014.pdf. PHMSA found this was the second failure on the same pipeline - another spill of 364 Bbls occurred in a nature preserve seven months earlier that had led to its own corrective action order (CPF No. 3-2014-5002H). https://primis.phmsa.dot.gov/comm/reports/enforce/documents/320145002H/320145002H_Corrective%20Action%20Order_03252014.pdf. PHMSA in a Final Order dated June 15, 2018 found that Sunoco had failed to submit an incident report related to the release and ignition of crude oil in a Terminal that injured seven workers. Sunoco did not contest the violation.

are reflected in a range of activities, locations, and phases of work can be evidence of broader systemic problems. That is the situation with Energy Transfer.

40. In 2017-2018, Sunoco was forced to suspend pipeline operations because of environmental contamination on four separate occasions across three states. Other examples include a 2018 explosion of the newly in-service Revolution Pipeline in Pennsylvania that destroyed a residential home resulted in a record $30 million fine.[35] In May 2020 it was revealed that the Pennsylvania Department of Environmental Protection (DEP) issued an additional 680 violations for stream pollution, erosion and pipeline route slip leading to slides and stability issues according to the DEP. It is reported that the Department of Justice is conducting a criminal investigation.[36] In June 2017, the Ohio EPA levied a $431,000 fine for 18 incidents of mud spills from drilling, and storm water pollution on the Rover Pipeline.[37]

41. Just the previous month, Rover had spilled over 2 million gallons of drilling mud in three incidents. The Ohio EPA Director stated "All told, our frustration is really high. "We don't think they're taking Ohio seriously...Normally when we have...a series of events like this, companies respond with a whole lot of contrition and whole lot of commitment. We haven't seen that. It's pretty shocking."

42. Energy Transfer's Mariner East pipeline construction in Pennsylvania has been plagued with regulatory violations, construction stoppage orders, sinkholes and water system

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[35] State Impact Pennsylvania, *The Revolution Pipeline Explosion Resulted in A Huge Fine for Energy Transfer. Now, DEP Says It's Found Hundreds of New Violations*, May 7, 2020, https://stateimpact.npr.org/pennsylvania/2020/05/07/the-revolution-pipeline-explosion-resulted-in-a-huge-fine-for-energy-transfer-now-dep-says-its-found-hundreds-of-new-violations/.

[36] *Id.* Pittsburg Post Gazette, *DOJ is Building a Criminal Case Around Energy Transfer's Rover Pipeline Explosion*, February 26, 2020, https://www.post-gazette.com/business/powersource/2020/02/26/Energy-Transfer-pipeline-explosion-Revolution-criminal-investigation-DOJ/stories/202002260046

[37] Marcellus Drilling News, *EPA Slaps Rover Pipe with 431K Fine for Spills, other Issues, May 10, 2017,* https://marcellusdrilling.com/2017/05/ohio-epa-slaps-rover-pipe-431k-fine-for-spills-other-issues/

contamination. The Pennsylvania DEP fined Sunoco $2 million in January 2020 for a spill during the construction of its Mariner East 2 of three million gallons of drilling fluid.[38] Those releases occurred over several months in 2017 and led to 208,000 gallons of drilling fluid settling on the bottom of a Pennsylvania lake.

43. In another incident, Sunoco was levied a $200,000 fine and agreed to oversight by an independent expert as part of a settlement over a 2017 release of flammable gases on their Mariner East 1 pipeline.[39] The Public Utilities Commission cited the company's lack of corrosion management and inspections as the cause of the leak.

44. An effective integrity management program focuses not just on the lessons learned from these significant incidents that Energy Transfer has experienced, but on lesser mechanical integrity failures as well. It is universally accepted that major incidents are low frequency/high consequence events.[40] It is an axiom of incident investigation that accidental chemical releases have multiple system causes and typically have precursor events. This makes investigating and learning from more numerous smaller releases key to preventing major incidents. Often the difference between a large event and a small one is a matter of fortuitous circumstances; a release is observed immediately by company personnel or a member of the public or flammable vapor drifts away from sources of ignition. The dismissing of the

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[38] Farm and Dairy News, *Sunoco Fined Nearly $2M for Pennsylvania Pipeline Violations,* January 16, 2020, https://www.farmanddairy.com/news/sunoco-fined-nearly-2m-for-pennsylvania-pipeline-violations/595368.html.

[39] State Impact Pennsylvania, *Sunoco To Pay $200,000 Fine, Must Increase Oversight Following Investigation of Aging Mariner East 1 Pipeline*, March 2, 2020, https://stateimpact.npr.org/pennsylvania/2020/02/27/sunoco-to-pay-200000-fine-must-increase-oversight-following-investigation-of-aging-mariner-east-1-pipeline/.

[40] DAPL and its declarants inappropriately refer to "low risk, high consequence" in their analysis ignoring that high consequence is an element of the risk equation. When examining major accident potential, modern more rigorous risk assessment approaches place less emphasis on claims of low frequency and focus more effective preventative measures when the consequences of a spill are high. Note Lake Oahe is a high consequence area. Both the Deepwater Horizon explosion and spill and the BP Texas City refinery incident were preceded by assertions that an incident was very unlikely to occur.

significance of smaller releases by DAPL and its experts is revealing of the lack of rigor of their approach and safety management systems to address mechanical integrity deficiencies and prevent hazardous liquid releases.

45. The dismissal by DAPL and its experts of the significance of smaller oil spills reveals a cavalier attitude toward safety management systems, in contravention of the standards established by API in RP 1173. It is this lackadaisical approach that puts the Standing Rock Sioux Tribe at significant risk from DAPL and justifies shutdown of the pipeline pending preparation of an environmental impact statement by the Corps of Engineers.

46. The spill record and regulatory violations point to a failure of corporate leadership in addressing the serious history of hazardous liquid spills, lack of effective incident investigation and prevention systems, and a corporate safety culture that that has normalized spills. DAPL touts its "exceptional" spill record and cites data based upon spills-per-mile that is "about equal" to the industry average for just one year – 2019. My review of Energy Transfer's safety record and enforcement history tells a completely different story. Not all pipeline miles would result in the same environmental consequences – Energy Transfer's record since 2012 of serious spill impacts to water systems and HCAs like Lake Oahe undermine DAPL's claims. This is especially the case concerning recent spills and violations. It must be noted as well that the goal of API RP 1173 is not to drive incidents to a claimed industry average. Hazardous liquid spills are unacceptable. Energy Transfer has failed in effectively working toward the goal of API RP 1173 – zero incidents and meaningful continuous improvement.

47. Applying modern, more protective pipeline safety standards to reduce risk and prevent incidents is one of the most important elements for safe operation. As a result of lessons learned from recent major incidents, Congressional mandates, NTSB recommendations and

Government Accountability Office (GAO) reports, standard-setting bodies have recently issued a number of more rigorous pipeline safety standards. API RP 1173 on *Pipeline Safety Management Systems* has been recognized as a key advance for the pipeline risk management and the prevention of incidents. PHMSA has supported the adoption of the API RP 1173 management system approach, concluding it will result in pipeline safety improvements.[41] It is applicable to pipeline design, construction, operations, maintenance and emergency planning.

48. There is no evidence that Energy Transfer has applied API RP 1173 to the Dakota Access Pipeline. It was not listed among standards adopted in the Corps' Environmental Assessment, the Corps' Remand Report or anywhere else in the Remand Administrative Record despite the fact that the Standing Rock Sioux Tribe's reports and correspondence asked numerous times for its application and documentation of its use. While DAPL now claims in recent filings after 3 years of DAPL operation to have adopted RP 1173, their longstanding lack of candor about the use of RP 1173 makes that assertion unconvincing. DAPL's failure to discuss API RP 1173 goals, specific elements, tools, or metrics required by the standard underscore that it is not being applied. Their lack of progress in reducing spills in their impact reinforces that conclusion.

49. Equally important for the evaluation of the safe operation and risk of DAPL are the use of effective operations, maintenance and emergency procedures. PHMSA requires a manual of such pipeline procedures to be developed prior to operation.[42] The manual must be

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[41] PHMSA, Safety Management Systems; API RP 1173; Energy Pipeline Management Summit; Slides 25 and 46, May 23, 2016; https://www.slideshare.net/MarcusEvansEnergy/emphasizing-the-importance-of-pipeline-safety-management-systemsbill-lowry-phmsa.

[42] 49 C.F.R. 195. 402(a), Procedural Manual for Operations, Maintenance and Emergencies.

specific "for each pipeline system."[43] It is key that the manual be pipeline system specific as it must address such system specific procedure details such as operating and maintaining existing equipment, minimizing hazards unique to the pipeline system, and identifying pipeline facilities located in areas that would require an immediate response to protect people or the environment. These details are required by PHMSA as well.[44] The procedures should also include what system specific actions to take with safety critical equipment to mitigate a spill such as an Emergency Flow Restriction Device (EFRD) that fails to close and the specific location and how to close the EFRD manually if needed.[45] Energy Transfer, however, did not have a DAPL specific, PHMSA compliant set of operation, maintenance and emergency procedures prepared at the time the pipeline was put into service or during the Corps remand process. To the best of my knowledge, it still does not exist.

50. Energy Transfer acknowledged there was no DAPL specific operations and maintenance procedures.[46] Sunoco as the DAPL operator had used instead a generic set of maintenance procedures that contain no DAPL specific information: "prior to issuing the easement conditions for the Lake Oahe crossing, this Liquids Pipeline Operations and Maintenance Manual was not fully developed to include this new DAPL system."[47] The Sunoco manual only referenced the name DAPL-ETCO once in the manual in a list of Sunoco operated

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[43] *Id.*
[44] 49 C.F.R. 195. 402(c)
[45] Note that PHMSA has cited Energy Transfer LP in a case where 49 C.F.R. 195. 402 was violated where Sunoco failed in their operations, maintenance and emergencies manual to include procedures for a specific valve that failed in the incident. Sunoco argued in the hearing that a procedure should not be required for a specific valve. PHMSA disagreed and the citation was upheld determining a procedure was needed to safely operate, maintain and repair the specific valve. A citation of $251,800 was levied in the case.
[46] Email string between Army Corps' Brent Cossette and Energy Transfer's Tom Siguaw, *DAPL – Lake Oahe – Operations Manual ****Submittal to USCOE****,* April 10, 2018, RAR004499.
[47] *Id.* at RAR004499-4500.

pipelines.[48] Energy Transfer stated that they planned an update at some unspecified time in the future to include the DAPL.[49] In fact, the attached *Sunoco Pipeline L.P. (SPLP) & Affiliates DOT 195 Maintenance Manual* contained no procedures related to operations or emergencies at all. This was not the first time the Corps had requested this manual. The production of the manual was specifically required by the Corps' Environmental Assessment (EA) and the Lake Oahe easement conditions.[50] Energy Transfer has been in breach of these requirements as evidenced by the record in this matter.

51. It is significant that flawed operations, maintenance and emergency procedures were the most cited Energy Transfer pipeline violations by PHMSA. An operations manual is not a paperwork exercise. The fact that Sunoco personnel have no DAPL-specific maintenance procedures and are completely lacking operations and emergency procedures – as required by regulation – places the continued operation of DAPL at high risk and is untenable.

52. Similarly, DAPL failed to produce a PHMSA-compliant Integrity Management Plan to the Corps also required by the EA and the easement conditions. As with the requisite operations procedures manual, Energy Transfer told the Corps they lacked a DAPL-specific plan and would produce one some unspecified time in the future.[51]

53. PHMSA requires Integrity Management Plans (IMPs) specifically for high consequence areas. IMPs are essential for preventing releases into sensitive areas like Lake

[48] *Id.* at RAR004507.
[49] *Id.* at RAR004500.
[50] U.S. Army Corps of Engineers – Omaha District, Environmental Assessment: Dakota Access Pipeline Project Crossings of Flowage Easements and Federal Land, July 2016, p. 3-4.
[51] Email string between Army Corps' Brent Cossette and Energy Transfer's Tom Siguaw, *FW: (Non-DOD Source) DAPL – Lake Oahe – Risk Assessment (Pipeline Integrity Management Plan)****Submittal to COE****,* April 10, 2018, RAR004721-22.

Oahe. The IMPs must be developed for "each segment of pipeline" and include a requirement of an initial baseline assessment of that specific pipeline.[52] The Sunoco Logistics *Pipeline Integrity Management Plan* (2017) like the procedure's manual is not DAPL-specific and only makes reference to DAPL in the list of Sunoco operated pipelines and location of their offices.[53] PHMSA regulations require that a written IMP be produced for a pipeline installed after 2001 within one year of operation. The Energy Transfer letter dated in April was just prior to the one-year date of operation. However, no DAPL-specific IMP was provided to the Corps subsequent to this communication that is evident in the record. The available evidence is that none was ever drafted or provided to the Corps as part of this litigation.

54. The 2019 edition of API RP 1160 *Managing System Integrity for Hazardous Liquid Pipelines* has incorporated many of the management system elements and focus on data and performance metrics from API RP 1173 to promote continuous integrity management improvement. There is no evidence in the EA's list of standards or remand record that DAPL has adopted API RP 1160 (either the 2013 or 2019 editions). Integrity Management Plans and the prevention of spills in HCAs is a critical component of safe operation and protection of sensitive areas like Lake Oahe. The fact that no PHMSA-compliant IMP is evidenced in the record reflects seriously flawed corporate management system performance and helps explain the number of DAPL-ETCO spills and overall Energy Transfer safety performance.

55. Preventing incidents is key to protecting people and the environment, but if a spill occurs effective leak detection is vital to mitigating the impact of a release of hazardous liquid.

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[52] 49 C.F.R. 195.452(a)(2) and (3) Pipeline Integrity Management in High Consequence Areas.

[53] Email string between Army Corps' Brent Cossette and Energy Transfer's Tom Siguaw, *FW: (Non-DOD Source) DAPL – Lake Oahe – Risk Assessment (Pipeline Integrity Management Plan)****Submittal to COE****,* April 10, 2018, RAR004830 and 4832.

Energy Transfer has asserted that its computational pipeline monitoring (CPM) leak detection software is state-of-the-art and will detect all spills at or below 1%. However, a comprehensive PHMSA study looking at incident data found that CPM only had a successful detection rate of 20% for hazardous liquid spills.[54]

56. In my review of PHMSA data I examined Energy Transfer's effectiveness of using CPM to detect leaks. I used similar criteria as PHMSA in examining the data limiting the review to spills in the rights-of-way (ROW) where CPM was functional. PHMSA requires tracking of the "accident identifier" in the incident reports submittals such as notification from the public, CPM and SCADA systems or local operating personnel. Looking at the data from 2012, CPM was functional in only 25 of the 92 spills that also met the ROW criteria. Of those 25 spills, only 5 or 20% were detected by CPM or SCADA systems, similar to the identified serious weaknesses in operator performance in the PHMSA leak detection study. Random notification from members of the public were twice as likely to detect Energy Transfer spills than CPM or SCADA. Ground patrols – also touted by Energy Transfer as an effective safeguard – detected zero spills.

57. The American Petroleum Institute developed a standard to assist operators to assess and improve leak detection performance, API RP 1175*, Pipeline Leak Detection Management* (2015). RP 1175 explains that the standard has been promulgated in response to mandates and recommendations from Congress and the NTSB to improve identified weaknesses in pipeline leak detection.[55] The recently adopted API RP 1175 includes guidance on the selection of leak detection systems and establishing performance criteria and the use of metrics

[54] Pipeline and Hazardous Materials Safety Administration, Final Report 12-173, Leak Detection Study, at 2-11
[55] API RP 1175, Pipeline Leak Detection Program Management, p. 4 (2015).

for system improvement. However, there is no evidence in the EA that DAPL has adopted RP 1175 or used performance metrics to improve its own troubled leak detection record. This is another example of Energy Transfer failing to adopt a more modern protective safety standard that was developed to improve identified deficiencies in industry performance.

58. Another standard, API RP 1130 on *Computational Pipeline Monitoring for Liquids* (2007), has been incorporated by reference into the PHMSA regulatory scheme. RP 1130 provides for testing of leak detection systems through actual or simulated withdrawal of the pipeline hazardous liquid. There is no evidence in the remand record of any actual CPM performance testing or results. Energy Transfer's actual historic CPM performance indicates these standards are not being adopted or are applied ineffectively.

59. Energy Transfer's largest recent incident is illustrative of their actual troubled CPM performance. The newly in-service 2016 Permian Express II spilled 361,000 gallons (8600 Bbls) from a pinhole leak that led to $4 million in property damage. According to ET's incident report operators initial observed "line imbalance indications" which were stated not to exceed "established normal operating to lerances."[56] The pipeline was not shut down for 12 days until the leak was eventually discovered. DAPL and its experts imply CPM was not involved in the incident, but the incident reports states that CPM was operational but not "functional." That can indicate a variety of operational and maintenance deficiencies including a lack of effective initial performance testing, as required by API RP 1130. DAPL states the leak was detected by the SCADA system but fails to explain why the leak was not shut down immediately, as the company purports to be its practice.

[56] PHMSA Distribution, Transmission & Gathering, LNG, and Liquid Accident and Incident Data, Hazardous Liquid Accident Data – January 2010 to Present, Incident Report Number 2016035. The description of the incident comes from the report data and narrative.

60. Leak detection systems do not typically automatically initiate pipeline shutdown and isolation. Shutdowns typically require human and organizational decision-making. The likely answer is that a discovered leak that is allowed to persist for 12 days is very likely being hindered by ineffective control center human and organizational factors. API RP 1130 recognizes that leak detection requires evaluation and decision-making by a pipeline controller when detection systems indicate a possible release. Those organizational and human factors issues addressed in RP 1130 were not effectively managed by Energy Transfer in the Permian Express II incident. The attempt to minimize the significance of a 361,000-gallon crude spill also reflects the lack of prioritization by Energy Transfer to identify system weaknesses and improve performance.

61. The determination of worst case discharge (WCD) is also directly related to the risk of DAPL's continued operation. The greater the WCD, the greater the potential consequence and risk. The WCD impacts risk assessment, potential harm to people and the environment, and emergency preparedness.

62. DAPL and its experts' primary disagreement is with the minimum legal requirements of PHMSA and its WCD formula, which they argue is unrealistic and overly protective. Yet PHMSA's definition and calculation formula reflects what is required for determination of worst case consequences, not the likely case as imagined by DAPL. PHMSA also requires that the worst case definition be applied to each element of the calculation. That is a prudent approach, because major accidents typically occur when there are multiple system failures.

63. DAPL has failed to rebut the fact that the Lake Oahe WCD calculation is grossly understated, and leaves out key components of the required WCD formula. DAPL would like

only to look at the best case of partial equipment shutdown. The DAPL calculation only uses the 9-minutes it takes to shut down the pump station. However, the PHMSA formula requires consideration of detection time, valve closure, and the effects of adverse weather conditions which was not incorporated into the DAPL calculation, even though legally required. DAPL and its declarants provide misleading information that their WCD calculation was based upon 12.9 minutes and talk about the 3.9 minutes it takes to shut the EFRDs, however that additional time was not included in their calculations. The only time period used by DAPL in WCD volume calculations was 9 minutes for the shutdown of a pump station – "The Total Volume of Oil Released = The volume of oil that leaves the pipeline under pressure before the pumps are shut down + the volume of oil remaining in the pipeline between the next nearest valves." No detection time was included in the 9-minutes – "Given: the pump stations are designed to shutdown in 9-minutes."[57] Even though lacking PHMSA required elements, the Corps makes clear in their final Remand Report that this calculation is the basis for the DAPL WCD.[58]

64. DAPL and its declarants inaccurately state that the Lake Oahe WCD calculation has been reviewed by the regulator. PHMSA did review and approve the DAPL Facility Response Plan and the WCD calculation for a North Dakota storage tank and a segment of pipeline in South Dakota. The South Dakota pipeline WCD unlike Lake Oahe did use a 12.9 minute shutdown time in the calculation.[59] However, the Lake Oahe WCD was shown in the

[57] Dakota Access Pipeline Project, North Dakota, Lake Oahe Crossing, Spill Model Discussion Document Number DAPL-WGM-GN000-PPL-STY-0019, Wood Group Mustang, May 2016, RAR014985.
[58] Analysis of the Issues Remanded by the US District Court for the District of Columbia Related to the Dakota Access Pipeline Crossing at Lake Oahe; Department of Army, Corps of Engineers; August, 2018; p.19.
[59] Facility Response Plan (FRP), Dakota Access Pipeline North Response Zone, February 2019, p.51. The 12.9 minutes is still a best case of equipment operation and leaves out key components of the WCD such as detection time and the impacts of adverse weather conditions.

FRP only as the total volume and lacks any methodology or calculations.[60] This information could not have been reviewed by PHMSA as it was not provided even though the methodology and calculations were required by regulation.[61] The Lake Oahe WCD volume lacking calculations gave the misleading appearance of using the same methodology as the South Dakota pipeline WCD where the calculations were provided. Any claim that PHMSA reviewed the FRP and approved the methodology and calculation of the Lake Oahe WCD is inaccurate.

65. Moreover, the impacts of adverse weather conditions are more than subfreezing temperatures, as DAPL argues. The Lake Oahe EFRDs do not have backup power to close the valves in the advent of a power failure, not an uncommon event in rural North Dakota. The Corps' Lake Oahe Easement Conditions require EFRDs to be capable of closure at all times. If power is unavailable and if manual closure is required it could take up to a number of hours for personnel to reach the valves in harsh North Dakota winter conditions. If a pipeline leak in Lake Oahe occurs in under ice conditions and CPM and SCADA are not effective, it could take days to discover. These credible WCD scenarios need to be considered using the required PHMSA formula. Also, a pinhole leak under the 1% detection limit (up to 6000 bpd) could result in a much larger WCD either under ice or given the fact that overflights can be delayed as long as three weeks as described in the EA. The proposed near doubling of DAPL's capacity would significantly increase a true DAPL WCD and amplify the DAPL spill risk, potential impact to the Tribe and the sensitive Lake Oahe environment, and lack of preparedness of responders.[62]

[60] *Id.*
[61] 49 C.F.R 194.105, Worst Case Discharge, (a) Each operator shall determine the worst case discharge for each of its response zones and provide the methodology, including calculations, used to arrive at the volume.
[62] DAPL's claims to preparation based upon a larger WCD storage tank spill are inopposite. A emergency response action to a storage tank spill on land with secondary containment would be significantly different than a spill in Lake Oahe that is larger than the grossly understated DAPL volume in terms of equipment, hazards, training and difficulty.

66. Energy Transfer's DAPL has breached the Corp's Lake Oahe easement conditions, seriously impacting safe operations. As noted, the Corps' Special Conditions in the Lake Oahe Easement require the "Documentation Conditions" of the production and submittal of the Operations and Maintenance Manual and the Risk Assessment (Integrity Management Plan).[63] DAPL-specific plans as required by PHMSA are not evident in the remand record. The Easement under "Pipeline Safety Conditions" requires that the Lake Oahe EFRDs be fully available for closure – "Main line valves must be capable of closure at all times."[64] We know from a review of the Lake Oahe EFRD technical drawings that there is no backup power to remotely close the valve actuators in the event of a power failure – a well-known important risk assessment scenario. While there is backup power to the communication system for Lake Oahe EFRDs, there is no backup electrical power to remotely close the valves – they are not capable of closure "at all times."

67. These are serious breaches of the Corps' Lake Oahe DAPL easement conditions that impact the safe operation of the pipeline. Safety critical equipment that may not be capable of closure, lack of essential procedures that are necessary to operate and maintain the pipeline, lack of plans that prevent mechanical integrity failures all are necessary for the prevention of spills into the Lake Oahe high consequence area.

68. As noted, I served as an expert witness on behalf of the Tribe to the ND Public Service Commission when it was considering DAPL's application to double the capacity of the pipeline from 570,000 barrel/day capacity to 1.1 million. In my view, and in the testimony I presented to the Commission, doubling of the capacity of the pipeline would significantly

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[63] Department of the Army Easement for Fuel Carrying Pipeline Right-of-Way Located on Lake Oahe Project Morton and Emmons Counties, North Dakota; February 8, 2017, USACE_ESMT000037.

[64] *Id.* at USACE_ESMT000039.

increase the risks of an incident and make the potential consequences more severe should one occur. More saliently, the proposal to double capacity renders a significant part of the NEPA analysis, and work done on remand, pointless. For example, the Corps would need to identify a new WCD based on the increased maximum flow rate. That corrected WCD would then inform the spill model, downstream receptor analysis, Facility Response Plan, Geographic Response Plan and DAPL risk assessment—all of which rely on the existing (already flawed) WCD. DAPL has falsely asserted that the WCD would not change if the capacity was doubled. However, in the PHMSA regulation the WCD would significantly increase – it is directly correlated to the "maximum flow rate expressed in barrels per hour."[65] The claim made by DAPL that they have already done all of the work required for an EIS is wrong in any event, but is completely unsupportable in light of the expansion proposal.

69. The safety record and spill history of the Energy Transfer family of pipelines, including DAPL, is very troubling. Actual performance represents the real risk of continued operation. One of API RP 1173's basic principles is the necessity of up-to-date standards to reduce risk: "Pipeline operators conform to applicable industry codes and consensus standards with the goal of reducing risk, preventing releases, and minimizing the occurrence of abnormal operations."[66] API RP 1173 also identifies that "meeting and exceeding minimum standards" is

[65] 49 CFR 194.105(b)(1), Worst Case Discharge. PHMSA uses the formula $WCD\ (bbls)=[(RT+ST)\times FR]+DDV$ where RT=response time, ST=shutdown time and DDV=drain down volume. While the "largest line drainage volume after shutdown" would remain the same, the "maximum flow rate expressed in barrels per hour" is multiplied by the sum of response time plus shutdown time. Increasing the maximum flow rate to 1.1 million bpd would seriously impact the WCD and greatly increase the safety risk of DAPL. For purposes of illustration, with a 1.1 million bpd maximum flow rate (45,833 barrels per hour), a one hour time to respond and shutdown the pipeline and a hypothetical drain down volume of 10,000 Bbls, the WCD would be 55,833 Bbls. With the same assumptions, at a 600,000 bpd maximum flow rate (25,000 barrels per hour) the WCD would be 35,000 Bbls.

[66] API RP 1173 Pipeline Safety Management Systems (2015), p.vii.

evidence of a positive safety culture.[67] Despite their claim in the EA to do just that,[68] the failure of Energy Transfer to effectively apply more protective standards to DAPL such as API RP 1173, 1160, 1175, 1130 and other recent standards indicates an unwillingness to continuously improve.[69] This also helps explain Energy Transfer's ongoing poor spill performance and record of regulatory violations and enforcement.

70. Many of Energy Transfer's regulatory violations relate to their observed spill prevention deficiencies, and the failure to report incidents, conduct effective incident investigations and effectively address corrosion control and integrity management. It is particularly concerning that the corporation and top management have not implemented more rigorous safety practices that were promulgated by the leading oil industry trade association to address the need for companies to improve their safety performance – companies such as Energy Transfer. This approach is antithetical to a key provision of API RP 1173, the importance of corporate oversight and leadership commitment to drive toward zero incidents and continuous improvement.

71. In sum, it is my expert opinion that continued operation of DAPL, while an EIS is being prepared, presents untenable risks to the Standing Rock Sioux Tribe and others who rely on Lake Oahe. It is respectfully recommended that this court shut down the Dakota Access Pipeline in light of DAPL's violation of its easement conditions, insufficient management plans, absence of backup power, inadequate response capabilities, and lax safety culture.

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[67] *Id.* at xi.

[68] U.S. Army Corps of Engineers – Omaha District, Environmental Assessment: Dakota Access Pipeline Project Crossings of Flowage Easements and Federal Land, p. 48, 88 (July 2016).

[69] These standards are not referenced in the Environmental Assessment as applicable to DAPL where the EA provided the list of standards applicable to the project, Id. at 4 and 39. Note API RP 1130 and 1160 appear in the text but not in the context of their stated utilization in the construction, operation and maintenance of the Dakota Access pipeline.

Attachment 1

DONALD HOLMSTROM CV

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Key Qualifications

Over 35 years of experience conducting chemical incident investigations for the oil industry and US government. Seventeen years of experience managing and leading chemical incident investigation and recommendations activities at the US Chemical Safety Board (CSB), a non-regulatory, scientific agency modeled after the National Transportation Safety Board (NTSB). Nineteen years of industry experience in oil industry operations, process safety systems and extensive involvement with incident investigation in process plants, pipelines and exploration and production. Recognized leadership in process safety problem solving. Broad knowledge of safety practices, standards and regulations. Demonstrated ability as a writer and public speaker.

Work Experience

US Chemical Safety and Hazard Investigation Board (1999-2016, retired 111-16)

Director, Western Regional Office (WRO) (2008-2016)

- Managed and/or led over 70 major accident investigations - many of the largest and most significant chemical incident investigations in recent US history including the 2005 BP Texas City explosion, the 2010 Tesoro Anacortes oil refinery fire, the 2010 Deepwater Horizon offshore fire and explosion, the 2012 Chevron Richmond, CA oil refinery fire and the field investigation of the 2013 West, Texas ammonium nitrate explosion.
- Developed and successfully advocated the implementation of important technical, safety standard and regulatory recommendations that were addressed to parties such as the National Fire Protection Association (NFPA), the American Petroleum Institute (API), National Association of Corrosion Engineers (NACE), the Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA).
- Responsibilities included managing multi-disciplinary teams of chemical and mechanical engineers, chemists, human factors specialists, and lawyers – approximately two thirds of the agency investigators reported to the WRO.

Total Petroleum Inc./Ultramar Diamond Shamrock/Asamera Oil (1981-1999)

Operations and Process Safety (1981-1999)

- Participated in and led numerous chemical accident investigations. Implemented the first root cause analysis and process hazard analysis activities at Total Petroleum Inc. in response to serious process safety issues. These activities led to establishing new procedures for incident investigation, the elimination of unsafe refinery equipment, process winterization, decommissioning process equipment, establishment of more rigorous mechanical integrity protocols, asbestos handling protocols for insulation removal, and safe lighting of fired heaters.

Additional Experience

- Numerous technical certifications and/or training related to fire and explosion investigation, hazardous materials, mechanical integrity, root cause determination, process safety systems, human factors analysis, chemical testing, and emergency response.
- Speaker on CSB investigation reports and recommendations to such organizations as American Petroleum Institute (API), the American Industrial Hygienist Association (AIHA), the Center for Chemical Process Safety (CCPS), the United Steelworkers (USW), the Department of Energy (DOE), the Pipeline and Hazardous Materials Safety Administration (PHMSA), the American Chemistry Council (ACC), the International Association of Drilling Contractors (IADC), the Texas Chemical Council, Exxon Mobil, Chevron, Covestro, Chlorine Institute, and the Society of Petroleum Engineers (SPE).
- Author or co-author of numerous articles on incident investigation and process safety in publications such as <u>Chemical Engineering Progress</u>, <u>Loss Prevention Bulletin</u>, <u>Process Safety Progress, Journal of Hazardous Materials</u> and the <u>NFPA Journal</u>.
- Colorado Governor's Panel of Health Advisors, 1993-94.
- Served on the 2014 Technical Panel for the project "Separation Distances in NFPA Codes and Standards" undertaken by The Fire Protection Research Foundation, an affiliate of NFPA.
- Presented the CSB's final two Macondo incident investigation reports on the day of release at the SPE International Conference on Health, Safety, Security Environment and Social Responsibility, "Macondo: Lessons Still to be Learned," Stavanger, Norway April 2016.
- Served as a member of the 2019 National Academy of Science, Engineering and Medicine (NASEM) Gulf Research Program's Safer Offshore Energy Systems Grants Review.

Education

Stanford University, Bachelor of Arts (Human Biology and English), 1974

University of Colorado School of Law, Juris Doctor, 1978

Publications

"The Hazards of On-line Maintenance: A Case Study of a Multiple Fatality Incident at the Tosco Avon Refinery in Martinez," California; D.S. Holmstrom; International Symposium Proceedings, Mary Kay O'Conner Process Safety Center, Texas A&M University, October 2000.

"A Multiple Fatality Incident at the Tosco Avon Refinery, Martinez, California; Donald Holmstrom, Stephen Selk, Stephen Wallace, and Isadore Rosenthal;" Loss Prevention Bulletin, Issue 167, Institution of Chemical Engineers (IChemE), October 2002.

"Chemical Hazards Management: A CSB Perspective," Don Holmstrom, Joint EFCOG/Department of Energy (DOE) Chemical Management 2002 Workshop Presentation/Paper, November 2002.

"Improving Reactive Hazard Management, the Implementation of Recommendations," John F. Murphy and Don Holmstrom, 18th Annual Center for Chemical Process Safety (CCPS) Paper, Managing Chemical Reactivity Hazards & High Energy Release Events, September 2003.

"Understanding Reactive Chemical Incidents," John Murphy and Don Holmstrom, Chemical Engineering Progress (CEP), American Institute of Chemical Engineers, March 2004.

"CSB Investigation of the Explosions and Fire at the BP Texas City Refinery on March 23, 2005," Don Holmstrom, Francisco Altamirano, Johnnie Banks, Giby Joseph, Mark Kaszniak, Cheryle MacKenzie, Reepa Shroff, Hillary Cohen and Stephen Wallace, Process Safety Progress, American Institute of Chemical Engineers, Volume 25, Issue 4, September 2006.

"Buildup to Disaster," Mark Kaszniak, Don Holmstrom, and Cheryl MacKenzie; National Fire Protection Association (NFPA) Journal, July/August 2007.

"Human Factors Analysis of the BP Texas City Refinery Explosion," Cheryl MacKenzie, Donald Holmstrom, and Mark Kaszniak; Proceedings of the Human Factors and Ergonomics Society Annual Meeting, Vol. 51, Issue 20, October 2007.

"Investigating Beyond the Human Machinery: A Closer Look at Accident Causation in High Hazard Industries, Cheryl MacKenzie and Don Holmstrom, Process Safety Progress, American Institute of Chemical Engineers, Volume 28, Issue 1, December 2008."

"Trailer Siting Issues: BP Texas City," Mark Kaszniak and Donald Holmstrom, Journal of Hazardous Materials, Elsevier, Vol. 159, Issue 1, November 2009.

"Static Electric Discharge during Solvent Handling and Storage, Randy McClure, Donald Holmstrom, Laurence Britton and Mark Kaszniak; American Society of Safety Engineers (ASSE), 48th Annual ASSE Professional Development Conference Paper, July 2009."

"Valero-McKee Refinery Propane Release and Fire; Donald Holmstrom, Johnnie Banks, James Lay, Cheryl MacKenzie, and Vidisha Parasram;" Process Safety Progress, American Institute of Chemical Engineers, Volume 29, Issue 4, November 2010.

"Inadequacy of the Contractor Selection Process and its Impact on Worker Health and Safety: The US Chemical Safety Board Xcel Cabin Creek Hydroelectric Plant Investigation;" Don Holmstrom, Cheryl MacKenzie, Mark Kaszniak, Randy McClure, and Vidisha Parasram; 138th American Public Health Association (APHA) Meeting and Exposition Conference Paper, November 2010.

"The Human Factors of Process Safety and Worker Empowerment in the Offshore Industry Workshop Presentation," The CSB Macondo Report: Barriers to Worker Participation, National Academies Gulf Research Program, January 2018; presentation summarized in "The Human Factors of Process Safety and Worker Empowerment in the Offshore Industry, Proceeding of a Workshop," Steve Olson and Heather Kreidler, Rapporteurs, the National Academies Press, 2018.

"California's 2017 Process Safety Regulations for Oil Refineries - the Future of U.S. PSM Regulations?" Mike Wilson, Don Holmstrom and Bill Hoyle; 2018 Global Conference on Process Safety Paper, April 2018.

"Protecting Workers from Chemical Catastrophes: California's 2017 Process Safety Management Regulations for Petroleum Refineries;" Mike Wilson, Don Holmstrom and Bill Hoyle; requested and submitted to the Office of the High Commissioner for Human Rights, United Nations, UN Special Rapporteur regarding Human Rights and Worker Exposures to Toxic Substances, 2018.

Interests

River running, hunting and fishing in the Rocky Mountains

Attachment 2

PHMSA and West Texas Gulf Pipe Line Company Consent Agreement

U.S. DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION
OFFICE OF PIPELINE SAFETY
WASHINGTON, DC 20590

In the Matter of

West Texas Gulf Pipe Line Company,

Respondent.

CPF No. 4-2015-5005H

CONSENT AGREEMENT

On March 12, 2015, under the authority of 49 U.S.C. § 60112, the Associate Administrator for Pipeline Safety, Pipeline and Hazardous Materials Safety Administration (PHMSA), issued a Corrective Action Order (Original CAO) to West Texas Gulf Pipe Line Company (West Texas Gulf or Respondent), owned and operated by Sunoco Pipeline L.P. (SPLP), to take the necessary corrective actions to protect the public, property, and the environment from potential hazards associated with Respondent's West Texas Gulf Pipeline. PHMSA issued the Original CAO in response to a failure that occurred on February 25, 2015, on the West Texas Gulf Pipeline System #1, Unit 8514, at mile post (MP) 257 on the Blum-to-Wortham Segment, which resulted in the release of approximately 30 barrels of crude oil (Failure).

Since that time, there have been additional accidents on the West Texas Gulf Pipeline that have caused the expansion of PHMSA's concerns regarding the safety of the West Texas Gulf System. The following events have occurred:

- On April 8, 2015, PHMSA issued a Notice of Probable Violation and Proposed Civil Penalty and Compliance Order 4-2015-5009 (NOPV1) to Respondent for failure to report a serious accident that occurred on February 19, 2013, at its Wortham, Texas Facility (2013 Failure). Respondent has complied with the terms of the proposed Compliance Order and paid the proposed penalty, so PHMSA issued a Final Order and closed the case on November 3, 2015.

- On April 27, 2015, PHMSA issued a Notice of Probable Violation and Proposed Civil Penalty 4-2015-5012 (NOPV2) to Respondent for certain violations arising out of the Failure, alleging improper pipeline repair methods and the failure to correct a metal-loss condition that was known by Respondent to exist prior to the Failure. Respondent paid a portion of the proposed penalty in that case and is awaiting the issuance of a Final Order.

- On June 7, 2015, West Texas Gulf experienced a second leak on the Affected Segment involving external metal loss due to corrosion was reported to PHMSA by the Respondent at a location approximately seven miles downstream from the original leak and nine and one-half miles upstream of the Wortham, Texas Facility for which the Original CAO was issued.

- On June 19, 2015, a major release of crude oil occurred at Respondent's Wortham Facility, where an estimated 3,300 barrels of crude oil leaked from a failed flanged connection on piping that was installed in 2013 and associated with the construction/modification project in which the February 19, 2013 accident occurred.

- On May 28, 2015 and June 23, 2015, two reportable accidents occurred at the SPLP Corsicana facility as part of the Permian Express II construction project. This project was managed by the same West Texas Gulf department responsible for projects upon which the West Texas Gulf February 19, 2013 accident and the June 19, 2015 accidents occurred.

- On November 10, 2015, a failure of a relief valve and release of crude oil occurred while piping associated with the June 19, 2015 release was being replaced. Five people were transported to the hospital for treatment of crude oil exposure to the face and eyes as well as bruises and contusions after a relief valve failed when it was improperly disconnected while under pressure. The accident was a result of improper isolation and failure to follow instructions for safely de-energizing the valve before its removal.

- Taken together, the accidents described above raised serious concerns to PHMSA about the overall safety of the West Texas Gulf Pipeline System, the processes by which West Texas Gulf makes decisions about safety, how different parts of the company discuss and learn from past mistakes, and whether there are sufficient measures in place for the company to have an effective safety culture.

- On September 4, 2015, PHMSA issued an Amendment to the Original CAO (Amended CAO), with preliminary findings describing the events that had occurred since the Original CAO was issued in February 2015, and ordering West Texas Gulf to prepare a comprehensive written plan to improve the safety performance of the Affected Segment, to hire an independent third party to review and oversee implementation of the plan, and other corrective actions.

- West Texas Gulf has filed the required monthly reports regarding the actions taken to address the issues in the CAO. The most recent report, dated April 15, 2016, indicates the pipeline has returned to service and is limited to the 80% operating pressure based on approvals provided by PHMSA. The West Texas Gulf Pipe Line System is approximately 580 miles in length and transports crude oil from Colorado City, Texas, to terminals in Longview and Nederland, Texas. Respondent requested a hearing, but PHMSA and Respondent agreed that settlement of this proceeding will avoid further administrative proceedings or litigation of this Notice and that entry into this Consent Agreement is the most appropriate means of resolving issues raised in the Amended CAO and in the public interest. Therefore, pursuant to 49 C.F.R. Part 190, without adjudication of any issue of fact or law, and upon consent and agreement of Respondent and the PHMSA (the Parties), the Parties agree as follows:

I. General Provisions

1. Respondent acknowledges that its pipeline system is subject to the jurisdiction of the Federal pipeline safety laws, 49 U.S.C. § 60101, et seq., and the regulations and administrative orders issued thereunder. For purposes of this Consent Agreement, Respondent acknowledges that it received proper notice of PHMSA's action in this proceeding and that the Amended CAO states claims upon which relief may be granted pursuant to 49 U.S.C. 60101, et seq., and the regulations and orders issued thereunder.

2. Respondent agrees to take the actions specified in Section II of this Agreement (Corrective Measures) and to abide by the terms of this Consent Agreement. These actions, including any

work plans and schedules, shall automatically be incorporated into this Consent Agreement. This Consent Agreement does not constitute a finding of violation of any Federal law or regulation and may not be used in any civil or administrative proceeding of any kind as evidence or proof of any fact, fault or liability, or as evidence of the violation of any law, rule, regulation or requirement, except in a proceeding to enforce the provisions of this Consent Agreement.

3. After Respondent returns this signed Agreement, the PHMSA's representative will present it to the Associate Administrator for Pipeline Safety recommending that the Associate Administrator adopt the terms of this Agreement and Order. The terms of this Agreement and Order constitute an offer of settlement until accepted by the Associate Administrator.

4. Respondent consents to the issuance of a Consent Agreement and Order, and hereby waives any further procedural requirements with respect to its issuance. Respondent waives all rights to contest the adequacy of notice, or the validity of the Consent Agreement and Order, including all rights to administrative or judicial hearings or appeals. Upon issuance of a Consent Agreement and Order for this matter, Respondent’s Request for Hearing will be deemed withdrawn. The Original CAO will continue in full force and effect according to its terms, and the Amended CAO will be deemed withdrawn upon issuance of a Consent Agreement and Order.

5. This Consent Agreement and Order shall apply to and be binding upon the PHMSA, and upon Respondent, its officers, directors, and employees, and its successors, assigns, or other entities or persons otherwise bound by law. Respondent agrees to provide a copy of this Consent Agreement and Order and any incorporated work plans and schedules to all of Respondent's officers, employees, and agents whose duties might reasonably include compliance with this Consent Agreement and Order.

6. For all transfers of ownership or operating responsibility of Respondent’s pipeline, Respondent shall provide a copy of this Consent Agreement and Order to the prospective transferee at least 30 days prior to such transfer and simultaneously provide written notice of the prospective transfer to the PHMSA Region Director (Director) who issued the Notice.

7. This Consent Agreement and Order constitutes the final, complete and exclusive agreement and understanding between the Parties with respect to the settlement embodied in this Consent Agreement. The Parties acknowledge that there are no representations, agreements or

understandings relating to the settlement other than those expressly contained in this Consent Agreement and Order, except that the terms of this Consent Agreement and Order may be construed by reference to the original Corrective Action Order.

8. Nothing in this Consent Agreement and Order affects or relieves Respondent of its responsibility to comply with all applicable requirements of the Federal pipeline safety laws, 49 U.S.C. § 60101, et seq., and the regulations and orders issued thereunder. Nothing in this Consent Agreement and Order alters the PHMSA's right of access, entry, inspection, and information gathering or the PHMSA's authority to bring enforcement actions against Respondent pursuant to the Federal pipeline safety laws, the regulations and orders issued thereunder, or any other provision of Federal or State law.

9. This Consent Agreement and Order does not waive or modify any Federal, State, or local laws or regulations that are applicable to Respondent's pipeline systems. This Consent Agreement and Order is not a permit, or a modification of any permit, under any Federal, State, or local laws or regulations. Respondent remains responsible for achieving and maintaining compliance with all applicable Federal, State, and local laws, regulations and permits.

10. This Consent Agreement and Order does not create rights in, or grant any cause of action to, any third party not party to this Consent Agreement and Order. The U.S. Department of Transportation is not liable for any injuries or damages to persons or property arising from acts or omissions of Respondent or its officers, employees, or agents carrying out the work required by this Consent Agreement and Order. Respondent agrees to hold harmless the U.S. Department of Transportation, its officers, employees, agents, and representatives from any and all causes of action arising from any acts or omissions of Respondent or its contractors in carrying out any work required by this Consent Agreement and Order.

II. Corrective Measures

11. Upon issuance of the Consent Agreement and Order, Respondent agrees to perform the Corrective Measures set forth below.

12. Regarding the entire West Texas Gulf Pipe Line System, its operation, and the Operating, Maintenance and Construction policies and procedures under which it operates, including all aspects for which the regulations in 49 C.F.R. §195 apply to the pipeline system and its operator, Respondent must:

(1) submit, for prior review and approval of the Director, a comprehensive written plan, including timelines for specific actions to improve the safety record of Respondent's West Texas Gulf Pipe Line System; and

(2) hire an independent third-party pipeline expert in safety management systems (SMS) to review and assess the written plan, which third-party expert must oversee the creation, execution and implementation of the actions identified in the plan, and must provide bi-monthly monitoring summaries to PHMSA and Respondent concurrently. The specific role of the third-party SMS consultant is to review the creation, execution and implementation of the SMS, by performing a gap analysis, recommending improvements, observing the phases of implementation, providing consultation, and communicating via written reports concurrently to PHMSA and Respondent.

13. Respondent must address any deficiencies or risks identified in the third party's assessment, including modifying repair procedures and implementing corrective actions related to safety culture and safety management processes. If PHMSA disapproves of Respondent's rationale for deferment, the agency must provide written notice to Respondent in accordance with Section III below. The plan must be sufficiently detailed with specific tasks, milestones and completion dates. At a minimum, the plan must address:

(1) Organizational issues, including creation of a Safety Management System promoting a safety culture that is equivalent to the elements considered essential in the American Petroleum Institute (API) Recommended Practice (RP) 1173, including:

i. Management Commitment and Leadership

ii. Risk Management

iii. Operational Controls

iv. Incident Investigation, Evaluation and Lessons Learned

v. Safety Assurance and Continuous Improvement

vi. Competence, Training, Qualification and Development

vii. Emergency Preparedness and Response

viii. Documentation and Record Keeping

ix. Stakeholder Engagement;

(2) Contractor oversight and inspection of construction activities while performing construction in existing or operating facilities, whether the facilities are owned or operated by Respondent or other pipeline operators transporting hazardous materials and subject to the requirements of 49 C.F.R. §195, and the commitment to ensure adequate resources are provided to maintain safety during construction activities. Specific attention shall be given to:

i. Adherence to Respondent's Operations and Maintenance procedures required by 49 C.F.R. 195 Subpart F,

ii. Operator Qualification regulations in 49 C.F.R.§ 195 Subpart G, and

iii. Drug and Alcohol Post Accident Testing regulations in 49 C.F.R.§199;

(3) Work planning process and requirements to define the appropriate level of preparation, review, and approval to ensure safe performance of activities if the scope of work is not in an existing O&M procedure;

(4) Any other task, issue, or item that is necessary to promote and sustain the safety of the West Texas Gulf Pipe Line System.

14. The actions required by this Consent Agreement are in addition to and do not waive any requirements that apply to Respondent's pipeline system under the Original CAO, and under 49 C.F.R. Parts 190, 194, 195 and 199, as applicable, or 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.

15. Consent Order Documentation Report (CODR). Respondent must create and submit on a quarterly basis, a CODR. The intent is for the CODR to summarize all activities and documentation associated with the Consent Order and to identify any activities or documentation for the period reflected in previous report activities so the status of each item in the Consent Order is reflected in each report. When the Respondent has concluded all of the required items in the Consent Order, it will submit a final CODR to the Director. This will allow the Director to complete a thorough review of all actions taken by the Respondent with regards to the Consent Order prior to approving the closure of the Consent Order.

16. It is requested that Respondent maintain documentation of the costs associated with implementation of this Agreement, and include in each report submitted pursuant to Item 15, 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.

17. The Director may grant an extension of time for compliance with any of the terms of the Consent Order upon a written request, timely submitted, demonstrating good cause for an extension.

18. For all submissions based upon this Consent Agreement that requires the approval of the Director, the Director may (a) approve the submission in whole or in part; (b) impose specific conditions; (c) modify the submission to cure any deficiencies; (d) reject the submission in whole or in part; or (e) any combination of the above.

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

III. Review and Approval Process

20. With respect to any submission under Section II of this Consent Agreement that requires the approval of the Director, the Director may: (a) approve, in whole or in part, the submission, (b) approve the submission on specified conditions, (c) disapprove, in whole or in part, the submission, or (d) any combination of the foregoing. If the Director approves, approves in part, or approves with conditions, Respondent will take all action as approved by the Director, subject to Respondent's right to invoke the dispute resolution procedures in Section IV with respect to any conditions the Director identifies. If the Director disapproves all or any portion of the submission, the Director will provide Respondent with a written notice of the deficiencies. Respondent will correct all deficiencies within the time specified by the Director and resubmit it for approval.

IV. Dispute Resolution

21. The Director and Respondent will informally attempt to resolve any disputes arising under this Consent Agreement. If Respondent and the Director are unable to informally resolve the dispute within 15 days, Respondent may request in writing, within 10 days, a written determination resolving the dispute from the Associate Administrator for Pipeline Safety providing all information that Respondent believes is relevant to the dispute. If the request is submitted as provided herein, the Associate Administrator will issue a final determination in writing. The existence of a dispute and the PHMSA's consideration of matters placed in dispute

will not excuse, toll, or suspend any term or timeframe for completion of any work to be performed under this Agreement during the pendency of the dispute resolution process except as agreed by the Director or the Associate Administrator in writing.

V. Enforcement

22. This Consent Agreement and Order is subject to all enforcement authorities available to the PHMSA under 49 U.S.C. § 60101, et seq., and 49 C.F.R. Part 190. All work plans and associated schedules set forth or referenced in Section II will be automatically incorporated into this Consent Agreement and are enforceable in the same manner.

VI. Recordkeeping and Information Disclosure

23. Unless otherwise required in this Consent Agreement, Respondent agrees to maintain records demonstrating compliance with all requirements of this Consent Agreement for a period of at least five years following completion of all work to be performed. For any reports, plans, or other deliverables required to be submitted to the PHMSA pursuant to this Consent Agreement, Respondent may assert a claim of business confidentiality or other protections applicable to the release of information by the PHMSA, covering part or all of the information required to be submitted to the PHMSA pursuant to this agreement in accordance with 49 C.F.R. Part 7. Respondent must mark the claim of confidentiality in writing on each page, and include a statement specifying the grounds for each claim of confidentially. The PHMSA determines release of any information submitted pursuant to this Consent Agreement in accordance with 49 C.F.R. Part 7, the Freedom of Information Act, 5 U.S.C. § 552, DOT and/or the PHMSA policies, and other applicable regulations and Executive Orders.

VII. Effective Date

24. The "Effective Date" as used herein is the date on which the Consent Order is issued by the Associate Administrator incorporating the terms of this Agreement. Unless specified to the contrary, all deadlines for actions required by this Consent Agreement run from the Effective Date of the Consent Order.

VIII. Modification

25. The terms of this Consent Agreement may be modified by mutual agreement of the Parties. Such modifications must be in writing and signed by both parties.

________ _____ __________________ ______ _____

IX. Termination

26. This Consent Agreement terminates upon completion of all terms set forth in Section II (Corrective Measures) as determined by the Director, Southwest Region. Respondent may request written confirmation from the PHMSA when this Consent Agreement is terminated. To the extent ongoing monitoring is required, PHMSA may terminate this Consent Agreement with respect to all other requirements with the exception of such monitoring. Nothing in this Consent Agreement prevents Respondent from completing any of the obligations earlier than the deadlines provided for in this Agreement.

X. Ratification

27. The Parties' undersigned representatives certify that they are fully authorized to enter into the terms and conditions of this Consent Agreement and to execute and legally bind such party to this document.

28. The Parties hereby agree to all conditions and terms of this Consent Agreement:

[SIGNATURES ON NEXT PAGE]