

DOT US Department of Transportation
PHMSA Pipelines and Hazardous Materials Safety Administration
OPS Office of Pipeline Safety
Southwest Region

Principal Investigator Gene Roberson
Region Director R. M. Seeley
Date of Report 09/12/2013
Subject Failure Investigation Report – Enterprise Products Pipeline – Rio Grande PL Girth Weld Failure

Operator, Location, & Consequences

Date of Failure 12/27/2011
Commodity Released LPG Products (Propane/Butane)
City/County & State Kermit/Loving County, Texas
OPID & Operator Name 31618 Enterprise Products Operating LLC
Unit # & Unit Name 16024 Rio Grande Pipeline
SMART Activity # 137399
Milepost / Location MP 50.16
Type of Failure Girth weld failure (complete separation of circumference of weld)
Fatalities None
Injuries 1 requiring hospitalization (flash fire during repair)
Description of Area Impacted Rural area, within a production field
Property Damage \$230,000

**Failure Investigation Report – Enterprise Products Operating LLC – Girth Weld Failure
12/27/2011**

Executive Summary

At approximately 9:00 p.m. central standard time (CST), December 27, 2011, Enterprise Products Operating, LLC (Enterprise) controllers received an alarm indicating a pressure drop on several transmitters along their 8-inch-diameter Rio Grande Pipeline liquefied petroleum gas (LPG) system and proceeded to shut the system down. Enterprise notified the National Response Center (NRC) of the release at 10:42 p.m. on December 27, 2011. At approximately 3:00 a.m. on December 28, 2011, responding personnel confirmed the line rupture near mile post (MP) 50.16 in Loving County, Texas. During the pipeline repair, a flash fire involving residual pipeline product in the soil occurred, injuring 3 employees, one of whom required in-patient hospitalization. Enterprise had performed one cold cut of the pipeline and was preparing to cut off the other side of the failed pipe when the flash fire occurred. The rupture was attributed to the complete circumferential separation of an acetylene girth weld, and the flash fire was attributed to operator error. No additional product was released from the pipe.



Failed Girth Weld

**Failure Investigation Report – Enterprise Products Operating LLC – Girth Weld Failure
12/27/2011**

System Details

Enterprise’s 8-inch Rio Grande pipeline system transports LPG products 223 miles from Odessa, Texas, to San Elizario, Texas. The pipeline has three operating segments: Lawson Junction to Pecos River, Pecos River to Delaware, and Delaware to San Elizario. The failure occurred in the Lawson Junction to Pecos River segment at MP 50.16.

The Lawson Junction to Pecos River segment (MP 0 to MP 71) was installed in 1952. The pipeline has an maximum operating pressure (MOP) of 1,440 pounds per square inch gage (psig) and was operating at approximately 1,300 psig at the time of failure. A hydro test was performed in 1996 to 71 percent of specified minimum yield strength (SMYS) in the area of the failure.

During the 1952 construction project, portions of a 1928, 8.625-inch outer diameter (OD), 0.277-inch wall thickness, Grade B seamless line pipe with acetylene girth welds were tied into the Rio Grande Pipeline from MP 31 to MP 70 (vintage section).

Within the vintage section, there have been some replacements of the acetylene welded pipe.

1996	1 mile	MP 70 (sinkhole activity)
1996	All road casings + 100 feet	Between MP 31 to 70
1996	168 feet	MP 50 (47 feet upstream of failure)

Events Leading up to the Failure

The Enterprise Rio Grande Pipeline was operating normally prior to the incident until just prior to the release, on December 27, 2011, at 8:14 p.m., the Delaware pumping unit of the Rio Grande Pipeline experienced a power failure and shut down. The maximum discharge pressure from the Lawson pump station was 1,337 pounds per square inch (psi) at 8:27 p.m., and at 9:10 p.m., the discharge pressure was 731 psi. At 9:00 p.m., a pipeline leak monitor alarm was received, and at 9:28 p.m. the pipeline controller shut down the Lawson unit in response to the pressure drop. The controller closed the Lawson Junction block valve at 9:32 p.m. and closed the MP 159 block valve at 9:41 p.m. The estimated time of the failure was 9:00 p.m., which corresponded to the time the alarms were received in the control room followed by the drop in line pressure from 1,337 to 731 psi.

Emergency Response

The Enterprise Control Center responded to a rapid pressure drop on the Rio Grande Pipeline system from an operating pressure of 1,300 psi to 469 psi at approximately 9:30 p.m. on December 27, 2011. Upon receiving the alarms, the Control Center began the shut down sequence for the pipeline system and notified the local Sheriff’s department of a possible pipeline rupture in the area. Enterprise technicians were dispatched to the area to investigate.

Enterprise reported the release to the NRC (#999086) at approximately 10:42 p.m. CST on December 27, 2011 (Appendix A).

Failure Investigation Report – Enterprise Products Operating LLC – Girth Weld Failure 12/27/2011

Enterprise personnel confirmed the exact location of the rupture, MP 50.5, at approximately 3:00 a.m. on December 28, 2011. Once isolated, the pipeline was blown down and the released product dissipated. No local emergency or fire personnel responded to the scene. Due to the remoteness of the failure location, no roads were closed and no residents were evacuated. PHMSA did not respond to the accident site.

Summary of Return-to-Service

Following the emergency response, Enterprise isolated the pipeline. Enterprise secured the area and began taking steps to clear and repair the line segment. The residual hydrocarbons were purged with nitrogen from the upstream and downstream valve locations. The area was excavated with a backhoe to expose enough pipe to facilitate the repair. After the line was confirmed to be free of hydrocarbons, on-site contractors proceeded to cold cut the east side of the line. The first cold cut was successful, and approximately 20 feet of pipe was removed.

At approximately 5:00 p.m. on December 28, 2011, a flash fire occurred in the trench when a concentration of hydrocarbons exceeding the Lower Flammability Limit (LFL) for the hydrocarbon mixture ignited. Two Enterprise employees and four contractors were in the trench working on various tasks, such as removing additional soil with shovels, taking measurements, and evaluating the amount of additional pipe that needed to be removed from the west side of the weld failure, when the flash fire occurred. Three individuals were injured as a result of the flash fire. Enterprise discontinued all repair activities.

On December 30, 2011, following the development and implementation of a work plan and work permits, the failed section was cut out and replaced with 24 feet of new pipe. The pipeline was then purged and returned to service at 80 percent of the operating pressure at the time of the incident while the investigation continued into the cause of the failure. The removed pipe was then sent to Kiefner and Associates, Inc. for metallurgical analysis.



Pipe Replacement

Failure Investigation Report – Enterprise Products Operating LLC – Girth Weld Failure 12/27/2011

After receipt and analysis of the metallurgical report, and a subsidence hazard assessment performed as part of the accident investigation, the pressure restriction was removed from the system in December 2012.

Investigation Details

At approximately 10:42 p.m. CST, December 27, 2011, Enterprise Products reported, to the NRC, a release of LPG in Loving County, Texas. PHMSA's Southwest Region received the incident notification and began communicating with the operator. Upon isolation of the valve section, the area was made safe and the repair began. Cold cuts were being used to remove the section of old pipe, and one piece had been removed from the line. With multiple employees around the area, at 5:00 p.m., on December 28, 2011, a flash fire occurred due to product saturation in the soil around the bell hole. Due to the fire, 3 employees received minor burns. One of the three injured employees required in-patient hospitalization. The repair activities were stopped so that Enterprise could respond to the injuries and reassess the project. A maintenance crew from another location was dispatched to complete the repair. PHMSA then scheduled a meeting to investigate the actions taken due to the flash fire. Findings from this meeting indicated the initial area crew did not establish a job plan as required by Enterprise. Before performing the subsequent repair, a copy of the work plan (form SF20) was furnished to PHMSA investigators, upon request, from Enterprise, with all additional safety forms attached. Repairs were then completed.



Site After Flash Fire

Following the accident, the pipeline was returned to service at a reduced operating pressure. PHMSA requested additional testing and investigation into the cause of the failure. Enterprise's final report determined external stresses were exerted on the acetylene weld. Based on this finding, Enterprise initiated a study to review the possibility of this event reoccurring in other sections of the acetylene pipe that remained within the MP 31 to MP 70 sections. Golder Associates conducted a Subsidence Hazards Assessment of the Rio Grande Pipeline and presented their results to Enterprise in September

**Failure Investigation Report – Enterprise Products Operating LLC – Girth Weld Failure
12/27/2011**

2012. The information was also reviewed with PHMSA, and additional information was provided by Enterprise. A final meeting was held in December 2012, and the pipeline was returned to full service.

Metallurgical Analysis

The failed girth weld and associated pipe was sent to Kiefner & Associates, Inc., in Worthington, Ohio, for metallurgical analysis.

The conclusions of the analysis were:

- The fracture initiated at an area of incomplete penetration in the acetylene weld, in a ductile manner, and propagated within and around the circumferential weld.
- The cause of the girth weld failure was due to external stresses on the pipeline. This was the conclusion since no evidence of time-dependent degradation was identified on the pipe.
- The failure mechanism was longitudinal in nature (geotechnical soil shift/ thermal expansion).
- No failure would have occurred in the girth weld without the applied longitudinal stresses.

Mechanical Analysis

There was no mechanical analysis to be made.

Geotechnical Analysis

A Subsidence Hazards Assessment was performed by Golder Associates on the Lawson Junction to Pecos River segment of the Rio Grande Pipeline. The assessment identified a possible subsidence feature that could have contributed to the external forces that caused the failure. External forces could also have been caused by the 1996 pipeline rehabilitation project that replaced 168 feet of pipeline just 47 feet upstream of the failure location. No other actions were identified by the Assessment that required action on the pipeline segment.

Conclusion

A failure occurred in an acetylene girth weld that completely separated from the 8-inch Rio Grande Pipeline. The separation began in a location of incomplete penetration within the weld due to the application of external forces on the pipeline. The flash fire and injuries were a result of incorrect operation and failing to follow procedures associated with hot work on the pipeline.

Appendices

- A Telephonics Notice Report – NRC # 999086
- B Operator Accident Report – ODES # 20120023 Girth Weld Failure
- C Operator Accident Report – ODES # 20120070 Flash Fire from Soil
- D Operator Incident Investigation Report – #11856/SF-108

APPENDIX A



Pipeline & Hazardous
Materials Safety
Administration

(Version 4.0.0 PROD)

HMIS->INCIDENTS->TELEPHONICS

Rules of Behavior

Home

Logout

Menu

[Return to Search]

NRC Number: 999086
Call Date: 12/27/2011 Call Time: 23:42:43

Caller Information

First Name: BRAD Last Name: WELLS
Company Name: ENTERPRISE PRODUCTS PIPELINE
Address: 9420 W. SAMHOUSTON PKWY NORTH
City: HOUSTON State: TX
Country: USA Zip: 77064
Phone 1: 2818872641 Phone 2:
Organization Type: PRIVA Is caller the spiller? Yes No No Response
Confidential: Yes No No Response

Discharger Information

First Name: BRAD Last Name: WELLS
Company Name: ENTERPRISE PRODUCTS PIPELINE
Address: 9420 W. SAMHOUSTON PKWY NORTH
City: HOUSTON State: TX
Country: USA Zip: 77064
Phone 1: 2818872641 Phone 2:
Organization Type: PRIVA

Spill Information

State: TX County: ECTOR
Nearest City: ODESSA Zip Code:

Location

[Empty text area for location details]

Spill Date: 12/27/2011 (mm/dd/yyyy) Spill Time: 21:10:00 (24hh:mm:ss)
DTG Type: <- Select DTG Type ->
Incident Type: ALL Reported Incident Type: PIPELINE

Description

CALLER IS REPORTING A RELEASE OF PROPANE DUE TO KNOWLEDGE OF A LOSS OF PRESSURE IN THE PIPELINE.

Materials Involved

Material / Chris Name	Chris Code	Total Qty.	Water Qty.
PROPANE	PRP	0 UNKNOWN AMOUNT	

Medium Type: <- Select Medium Type ->

Additional Medium Information:

ATMOSPHERE

Injuries: Fatalities:

Evacuations: Yes No Unknown No. of Evacuations: _____

Damages: Yes No Unknown Damage Amount: _____

Federal Agency Notified: Yes No Unknown State Agency Notified: Yes No Unknown

Other Agency Notified: Yes No Unknown

Remedial Actions

ISOLATED THE PIPELINE AND TECHNICIANS ARE ON-SCENE.

Additional Info

NO ADDITIONAL INFORMATION.

Latitude

Degrees: _____ Minutes: _____ Seconds: _____ Quadrant: _____

Longitude

Degrees: _____ Minutes: _____ Seconds: _____ Quadrant: _____

Distance from City: _____ Direction: _____

Section: _____ Township: _____

Range: _____ Milepost: _____

Rescinded **Comments** (max 250 characters)

Previous

1..1 of 1

<< Save >>

APPENDIX B

NOTICE: This report is required by 49 CFR Part 195. Failure to report can result in a civil penalty not to exceed \$100,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed \$1,000,000 as provided in 49 USC 60122.

OMB NO: 2137-0047
EXPIRATION DATE: 01/31/2013



U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration

Report Date:

01/20/2012

No.

20120023 - 16510

(DOT Use Only)

ACCIDENT REPORT - HAZARDOUS LIQUID PIPELINE SYSTEMS

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0047. Public reporting for this collection of information is estimated to be approximately 10 hours per response (5 hours for a small release), including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.

INSTRUCTIONS

Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at <http://www.phmsa.dot.gov/pipeline>.

PART A - KEY REPORT INFORMATION

Report Type: (select all that apply)	Original:	Supplemental:	Final:
		Yes	Yes
Last Revision Date:	03/21/2012		
1. Operator's OPS-issued Operator Identification Number (OPID):	31618		
2. Name of Operator	ENTERPRISE PRODUCTS OPERATING LLC		
3. Address of Operator:			
3a. Street Address	1100 Louisiana Street		
3b. City	HOUSTON		
3c. State	Texas		
3d. Zip Code	77002		
4. Local time (24-hr clock) and date of the Accident:	12/27/2011 21:00		
5. Location of Accident:			
Latitude:	31.78341		
Longitude:	-103.46442		
6. National Response Center Report Number (if applicable):	999086		
7. Local time (24-hr clock) and date of initial telephonic report to the National Response Center (if applicable):	12/27/2011 21:10		
8. Commodity released: (select only one, based on predominant volume released)	HVL or Other Flammable or Toxic Fluid which is a Gas at Ambient Conditions		
- Specify Commodity Subtype:	Other HVL		
- If "Other" Subtype, Describe:	Propane/Butane mix		
- If Biofuel/Alternative Fuel and Commodity Subtype is Ethanol Blend, then % Ethanol Blend:			
%			
- If Biofuel/Alternative Fuel and Commodity Subtype is Biodiesel, then Biodiesel Blend (e.g. B2, B20, B100):			
B			
9. Estimated volume of commodity released unintentionally (Barrels):	3,283.00		
10. Estimated volume of intentional and/or controlled release/blowdown (Barrels):			
11. Estimated volume of commodity recovered (Barrels):			
12. Were there fatalities?	No		
- If Yes, specify the number in each category:			
12a. Operator employees			
12b. Contractor employees working for the Operator			
12c. Non-Operator emergency responders			
12d. Workers working on the right-of-way, but NOT associated with this Operator			
12e. General public			
12f. Total fatalities (sum of above)			
13. Were there injuries requiring inpatient hospitalization?	No		
- If Yes, specify the number in each category:			
13a. Operator employees			
13b. Contractor employees working for the Operator			
13c. Non-Operator emergency responders			
13d. Workers working on the right-of-way, but NOT			

associated with this Operator	
13e. General public	
13f. Total injuries (sum of above)	
14. Was the pipeline/facility shut down due to the Accident?	Yes
- If No, Explain:	
- If Yes, complete Questions 14a and 14b: (use local time, 24-hr clock)	
14a. Local time and date of shutdown:	12/27/2011 21:30
14b. Local time pipeline/facility restarted:	01/12/2012 10:55
- Still shut down? (* Supplemental Report Required)	
15. Did the commodity ignite?	No
16. Did the commodity explode?	No
17. Number of general public evacuated:	0
18. Time sequence (use local time, 24-hour clock):	
18a. Local time Operator identified Accident:	12/27/2011 23:02
18b. Local time Operator resources arrived on site:	12/28/2011 00:28

PART B - ADDITIONAL LOCATION INFORMATION

1. Was the origin of Accident onshore?	Yes
<i>If Yes, Complete Questions (2-12)</i>	
<i>If No, Complete Questions (13-15)</i>	
- If Onshore:	
2. State:	Texas
3. Zip Code:	79745
4. City:	Kermit
5. County or Parish:	Loving
6. Operator-designated location:	Milepost/Valve Station
Specify:	50.16
7. Pipeline/Facility name:	Rio Grande Pipeline
8. Segment name/ID:	LID 1058
9. Was Accident on Federal land, other than the Outer Continental Shelf (OCS)?	No
10. Location of Accident:	Pipeline Right-of-way
11. Area of Accident (as found):	Underground
Specify:	Under soil
- If Other, Describe:	
Depth-of-Cover (in):	22
12. Did Accident occur in a crossing?	No
- If Yes, specify below:	
- If Bridge crossing –	
Cased/ Uncased:	
- If Railroad crossing –	
Cased/ Uncased/ Bored/drilled	
- If Road crossing –	
Cased/ Uncased/ Bored/drilled	
- If Water crossing –	
Cased/ Uncased	
- Name of body of water, if commonly known:	
- Approx. water depth (ft) at the point of the Accident:	
- Select:	
- If Offshore:	
13. Approximate water depth (ft) at the point of the Accident:	
14. Origin of Accident:	
- In State waters - Specify:	
- State:	
- Area:	
- Block/Tract #:	
- Nearest County/Parish:	
- On the Outer Continental Shelf (OCS) - Specify:	
- Area:	
- Block #:	
15. Area of Accident:	

PART C - ADDITIONAL FACILITY INFORMATION

1. Is the pipeline or facility:	Interstate
2. Part of system involved in Accident:	Onshore Pipeline, Including Valve Sites
- If Onshore Breakout Tank or Storage Vessel, Including Attached Appurtenances, specify:	
3. Item involved in Accident:	Weld, including heat-affected zone
- If Pipe, specify:	

3a. Nominal diameter of pipe (in):	
3b. Wall thickness (in):	
3c. SMYS (Specified Minimum Yield Strength) of pipe (psi):	
3d. Pipe specification:	
3e. Pipe Seam , specify:	
- If Other, Describe:	
3f. Pipe manufacturer:	
3g. Year of manufacture:	
3h. Pipeline coating type at point of Accident, specify:	
- If Other, Describe:	
- If Weld, including heat-affected zone, specify:	Pipe Girth Weld
- If Other, Describe:	
- If Valve, specify:	
- If Mainline, specify:	
- If Other, Describe:	
3i. Manufactured by:	
3j. Year of manufacture:	
- If Tank/Vessel, specify:	
- If Other - Describe:	
- If Other, describe:	
4. Year item involved in Accident was installed:	1929
5. Material involved in Accident:	Material other than Carbon Steel
- If Material other than Carbon Steel, specify:	Acetylene Weld
6. Type of Accident Involved:	Rupture
- If Mechanical Puncture – Specify Approx. size:	
in. (axial) by	
in. (circumferential)	
- If Leak - Select Type:	
- If Other, Describe:	
- If Rupture - Select Orientation:	Circumferential
- If Other, Describe:	
Approx. size: in. (widest opening) by	4
in. (length circumferentially or axially)	4
- If Other – Describe:	

PART D - ADDITIONAL CONSEQUENCE INFORMATION

1. Wildlife impact:	No
1a. If Yes, specify all that apply:	
- Fish/aquatic	
- Birds	
- Terrestrial	
2. Soil contamination:	Yes
3. Long term impact assessment performed or planned:	No
4. Anticipated remediation:	No
4a. If Yes, specify all that apply:	
- Surface water	
- Groundwater	
- Soil	
- Vegetation	
- Wildlife	
5. Water contamination:	No
5a. If Yes, specify all that apply:	
- Ocean/Seawater	
- Surface	
- Groundwater	
- Drinking water: (Select one or both)	
- Private Well	
- Public Water Intake	
5b. Estimated amount released in or reaching water (Barrels):	
5c. Name of body of water, if commonly known:	
6. At the location of this Accident, had the pipeline segment or facility been identified as one that "could affect" a High Consequence Area (HCA) as determined in the Operator's Integrity Management Program?	No
7. Did the released commodity reach or occur in one or more High Consequence Area (HCA)?	No
7a. If Yes, specify HCA type(s): (Select all that apply)	
- Commercially Navigable Waterway:	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's	

Integrity Management Program?	
- High Population Area:	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Other Populated Area	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Unusually Sensitive Area (USA) - Drinking Water	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Unusually Sensitive Area (USA) - Ecological	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
8. Estimated Property Damage:	
8a. Estimated cost of public and non-Operator private property damage	\$ 0
8b. Estimated cost of commodity lost	\$ 100,000
8c. Estimated cost of Operator's property damage & repairs	\$ 105,000
8d. Estimated cost of Operator's emergency response	\$ 12,000
8e. Estimated cost of Operator's environmental remediation	\$ 0
8f. Estimated other costs	\$ 0
Describe:	
8g. Total estimated property damage (sum of above)	\$ 217,000
PART E - ADDITIONAL OPERATING INFORMATION	
1. Estimated pressure at the point and time of the Accident (psig):	1,338.00
2. Maximum Operating Pressure (MOP) at the point and time of the Accident (psig):	1,440.00
3. Describe the pressure on the system or facility relating to the Accident (psig):	Pressure did not exceed MOP
4. Not including pressure reductions required by PHMSA regulations (such as for repairs and pipe movement), was the system or facility relating to the Accident operating under an established pressure restriction with pressure limits below those normally allowed by the MOP?	No
- If Yes, Complete 4.a and 4.b below:	
4a. Did the pressure exceed this established pressure restriction?	
4b. Was this pressure restriction mandated by PHMSA or the State?	
5. Was "Onshore Pipeline, Including Valve Sites" OR "Offshore Pipeline, Including Riser and Riser Bend" selected in PART C, Question 2?	Yes
- If Yes - (Complete 5a. - 5f. below)	
5a. Type of upstream valve used to initially isolate release source:	Remotely Controlled
5b. Type of downstream valve used to initially isolate release source:	Manual
5c. Length of segment isolated between valves (ft):	63,589
5d. Is the pipeline configured to accommodate internal inspection tools?	Yes
- If No, Which physical features limit tool accommodation? (select all that apply)	
- Changes in line pipe diameter	
- Presence of unsuitable mainline valves	
- Tight or mitered pipe bends	
- Other passage restrictions (i.e. unbarred tee's, projecting instrumentation, etc.)	
- Extra thick pipe wall (applicable only for magnetic flux leakage internal inspection tools)	
- Other -	
- If Other, Describe:	
5e. For this pipeline, are there operational factors which significantly complicate the execution of an internal inspection tool run?	No
- If Yes, Which operational factors complicate execution? (select all that apply)	
- Excessive debris or scale, wax, or other wall buildup	
- Low operating pressure(s)	

- Low flow or absence of flow	
- Incompatible commodity	
- Other -	
- If Other, Describe:	
5f. Function of pipeline system:	> 20% SMYS Regulated Trunkline/Transmission
6. Was a Supervisory Control and Data Acquisition (SCADA)-based system in place on the pipeline or facility involved in the Accident?	Yes
If Yes -	
6a. Was it operating at the time of the Accident?	Yes
6b. Was it fully functional at the time of the Accident?	Yes
6c. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the detection of the Accident?	Yes
6d. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Accident?	Yes
7. Was a CPM leak detection system in place on the pipeline or facility involved in the Accident?	Yes
- If Yes:	
7a. Was it operating at the time of the Accident?	Yes
7b. Was it fully functional at the time of the Accident?	Yes
7c. Did CPM leak detection system information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the detection of the Accident?	Yes
7d. Did CPM leak detection system information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Accident?	Yes
8. How was the Accident initially identified for the Operator?	Controller
- If Other, Specify:	
8a. If "Controller", "Local Operating Personnel", including contractors, "Air Patrol", or "Guard Patrol by Operator or its contractor" is selected in Question 8, specify the following:	Operator employee
9. Was an investigation initiated into whether or not the controller(s) or control room issues were the cause of or a contributing factor to the Accident?	No, the Operator did not find that an investigation of the controller(s) actions or control room issues was necessary due to: (provide an explanation for why the Operator did not investigate)
- If No, the Operator did not find that an investigation of the controller(s) actions or control room issues was necessary due to: (provide an explanation for why the operator did not investigate)	Determined controllers actions did not contribute to the release.
- If Yes, specify investigation result(s): (select all that apply)	
- Investigation reviewed work schedule rotations, continuous hours of service (while working for the Operator), and other factors associated with fatigue	
- Investigation did NOT review work schedule rotations, continuous hours of service (while working for the Operator), and other factors associated with fatigue	
Provide an explanation for why not:	
- Investigation identified no control room issues	
- Investigation identified no controller issues	
- Investigation identified incorrect controller action or controller error	
- Investigation identified that fatigue may have affected the controller(s) involved or impacted the involved controller(s) response	
- Investigation identified incorrect procedures	
- Investigation identified incorrect control room equipment operation	
- Investigation identified maintenance activities that affected control room operations, procedures, and/or controller response	
- Investigation identified areas other than those above:	
Describe:	
PART F - DRUG & ALCOHOL TESTING INFORMATION	
1. As a result of this Accident, were any Operator employees tested under the post-accident drug and alcohol testing requirements of DOT's Drug & Alcohol Testing regulations?	No
- If Yes:	
1a. Specify how many were tested:	
1b. Specify how many failed:	

2. As a result of this Accident, were any Operator contractor employees tested under the post-accident drug and alcohol testing requirements of DOT's Drug & Alcohol Testing regulations? - If Yes:	No
2a. Specify how many were tested:	
2b. Specify how many failed:	
PART G – APPARENT CAUSE	
<i>Select only one box from PART G in shaded column on left representing the APPARENT Cause of the Accident, and answer the questions on the right. Describe secondary, contributing or root causes of the Accident in the narrative (PART H).</i>	
Apparent Cause:	G5 - Material Failure of Pipe or Weld
G1 - Corrosion Failure - only one sub-cause can be picked from shaded left-hand column	
External Corrosion:	
Internal Corrosion:	
- If External Corrosion:	
1. Results of visual examination:	- If Other, Describe:
2. Type of corrosion: <i>(select all that apply)</i>	
- Galvanic	
- Atmospheric	
- Stray Current	
- Microbiological	
- Selective Seam	
- Other:	
	- If Other, Describe:
3. The type(s) of corrosion selected in Question 2 is based on the following: <i>(select all that apply)</i>	
- Field examination	
- Determined by metallurgical analysis	
- Other:	
	- If Other, Describe:
4. Was the failed item buried under the ground?	
- If Yes :	
<input type="checkbox"/> 4a. Was failed item considered to be under cathodic protection at the time of the Accident?	
If Yes - Year protection started:	
4b. Was shielding, tenting, or disbonding of coating evident at the point of the Accident?	
4c. Has one or more Cathodic Protection Survey been conducted at the point of the Accident?	
If "Yes, CP Annual Survey" – Most recent year conducted:	
If "Yes, Close Interval Survey" – Most recent year conducted:	
If "Yes, Other CP Survey" – Most recent year conducted:	
- If No:	
4d. Was the failed item externally coated or painted?	
5. Was there observable damage to the coating or paint in the vicinity of the corrosion?	
- If Internal Corrosion:	
6. Results of visual examination:	
- Other:	
7. Type of corrosion <i>(select all that apply):</i> -	
- Corrosive Commodity	
- Water drop-out/Acid	
- Microbiological	
- Erosion	
- Other:	
	- If Other, Describe:
8. The cause(s) of corrosion selected in Question 7 is based on the following <i>(select all that apply):</i> -	
- Field examination	
- Determined by metallurgical analysis	
- Other:	
	- If Other, Describe:
9. Location of corrosion <i>(select all that apply):</i> -	
- Low point in pipe	
- Elbow	
- Other:	

- If Other, Describe:	
10. Was the commodity treated with corrosion inhibitors or biocides?	
11. Was the interior coated or lined with protective coating?	
12. Were cleaning/dewatering pigs (or other operations) routinely utilized?	
13. Were corrosion coupons routinely utilized?	
Complete the following if any Corrosion Failure sub-cause is selected AND the "Item Involved in Accident" (from PART C, Question 3) is Tank/Vessel.	
14. List the year of the most recent inspections:	
14a. API Std 653 Out-of-Service Inspection	
- No Out-of-Service Inspection completed	
14b. API Std 653 In-Service Inspection	
- No In-Service Inspection completed	
Complete the following if any Corrosion Failure sub-cause is selected AND the "Item Involved in Accident" (from PART C, Question 3) is Pipe or Weld.	
15. Has one or more internal inspection tool collected data at the point of the Accident?	
15a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run: -	
- Magnetic Flux Leakage Tool	Most recent year:
- Ultrasonic	Most recent year:
- Geometry	Most recent year:
- Caliper	Most recent year:
- Crack	Most recent year:
- Hard Spot	Most recent year:
- Combination Tool	Most recent year:
- Transverse Field/Triaxial	Most recent year:
- Other	Most recent year:
	Describe:
16. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Accident?	
If Yes -	Most recent year tested:
	Test pressure:
17. Has one or more Direct Assessment been conducted on this segment?	
- If Yes, and an investigative dig was conducted at the point of the Accident:	Most recent year conducted:
- If Yes, but the point of the Accident was not identified as a dig site:	Most recent year conducted:
18. Has one or more non-destructive examination been conducted at the point of the Accident since January 1, 2002?	
18a. If Yes, for each examination conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted:	
- Radiography	Most recent year conducted:
- Guided Wave Ultrasonic	Most recent year conducted:
- Handheld Ultrasonic Tool	Most recent year conducted:
- Wet Magnetic Particle Test	Most recent year conducted:
- Dry Magnetic Particle Test	Most recent year conducted:
- Other	Most recent year conducted:
	Describe:
G2 - Natural Force Damage - only one sub-cause can be picked from shaded left-handed column	
Natural Force Damage - Sub-Cause:	
If Earth Movement, NOT due to Heavy Rain/Floods:	
1. Specify:	

- If Other, Describe:	
- If Heavy Rains/Floods:	
2. Specify:	
- If Other, Describe:	
- If Lightning:	
3. Specify:	
- If Temperature:	
4. Specify:	
- If Other, Describe:	
- If High Winds:	
- If Other Natural Force Damage:	
5. Describe:	
Complete the following if any Natural Force Damage sub-cause is selected.	
6. Were the natural forces causing the Accident generated in conjunction with an extreme weather event?	
6a. If Yes, specify: (select all that apply)	
- Hurricane	
- Tropical Storm	
- Tornado	
- Other	
- If Other, Describe:	
G3 - Excavation Damage - only one sub-cause can be picked from shaded left-hand column	
Excavation Damage – Sub-Cause:	
- If Excavation Damage by Operator (First Party):	
- If Excavation Damage by Operator's Contractor (Second Party):	
- If Excavation Damage by Third Party:	
- If Previous Damage due to Excavation Activity:	
Complete Questions 1-5 ONLY IF the "Item Involved in Accident" (from PART C, Question 3) is Pipe or Weld.	
1. Has one or more internal inspection tool collected data at the point of the Accident?	
1a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run: -	
- Magnetic Flux Leakage	Most recent year conducted:
- Ultrasonic	Most recent year conducted:
- Geometry	Most recent year conducted:
- Caliper	Most recent year conducted:
- Crack	Most recent year conducted:
- Hard Spot	Most recent year conducted:
- Combination Tool	Most recent year conducted:
- Transverse Field/Triaxial	Most recent year conducted:
- Other	Most recent year conducted:
Describe:	
2. Do you have reason to believe that the internal inspection was completed BEFORE the damage was sustained?	
3. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Accident?	
- If Yes:	Most recent year tested:
	Test pressure (psig):
4. Has one or more Direct Assessment been conducted on the pipeline segment?	
- If Yes, and an investigative dig was conducted at the point of the Accident:	Most recent year conducted:
- If Yes, but the point of the Accident was not identified as a dig site:	Most recent year conducted:

5. Has one or more non-destructive examination been conducted at the point of the Accident since January 1, 2002?	
5a. If Yes, for each examination, conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted:	
- Radiography	Most recent year conducted:
- Guided Wave Ultrasonic	Most recent year conducted:
- Handheld Ultrasonic Tool	Most recent year conducted:
- Wet Magnetic Particle Test	Most recent year conducted:
- Dry Magnetic Particle Test	Most recent year conducted:
- Other	Most recent year conducted:
	Describe:
Complete the following if Excavation Damage by Third Party is selected as the sub-cause.	
6. Did the operator get prior notification of the excavation activity?	
6a. If Yes, Notification received from: (select all that apply) -	
- One-Call System	
- Excavator	
- Contractor	
- Landowner	
Complete the following mandatory CGA-DIRT Program questions if any Excavation Damage sub-cause is selected.	
7. Do you want PHMSA to upload the following information to CGA-DIRT (www.cga-dirt.com)?	
8. Right-of-Way where event occurred: (select all that apply) -	
- Public	- If "Public", Specify:
- Private	- If "Private", Specify:
- Pipeline Property/Easement	
- Power/Transmission Line	
- Railroad	
- Dedicated Public Utility Easement	
- Federal Land	
- Data not collected	
- Unknown/Other	
9. Type of excavator:	
10. Type of excavation equipment:	
11. Type of work performed:	
12. Was the One-Call Center notified?	
12a. If Yes, specify ticket number:	
12b. If this is a State where more than a single One-Call Center exists, list the name of the One-Call Center notified:	
13. Type of Locator:	
14. Were facility locate marks visible in the area of excavation?	
15. Were facilities marked correctly?	
16. Did the damage cause an interruption in service?	
16a. If Yes, specify duration of the interruption (hours)	
17. Description of the CGA-DIRT Root Cause (select only the one predominant first level CGA-DIRT Root Cause and then, where available as a choice, the one predominant second level CGA-DIRT Root Cause as well):	
Root Cause:	
- If One-Call Notification Practices Not Sufficient, specify:	
- If Locating Practices Not Sufficient, specify:	
- If Excavation Practices Not Sufficient, specify:	
- If Other/None of the Above, explain:	
G4 - Other Outside Force Damage - only one sub-cause can be selected from the shaded left-hand column	
Other Outside Force Damage - Sub-Cause:	
- If Nearby Industrial, Man-made, or Other Fire/Explosion as Primary Cause of Incident:	
- If Damage by Car, Truck, or Other Motorized Vehicle/Equipment NOT Engaged in Excavation:	
1. Vehicle/Equipment operated by:	
- If Damage by Boats, Barges, Drilling Rigs, or Other Maritime Equipment or Vessels Set Adrift or Which Have Otherwise Lost Their Mooring:	

2. Select one or more of the following IF an extreme weather event was a factor:	
- Hurricane	
- Tropical Storm	
- Tornado	
- Heavy Rains/Flood	
- Other	
- If Other, Describe:	
- If Routine or Normal Fishing or Other Maritime Activity NOT Engaged in Excavation:	
- If Electrical Arcing from Other Equipment or Facility:	
- If Previous Mechanical Damage NOT Related to Excavation:	
Complete Questions 3-7 ONLY IF the "Item Involved in Accident" (from PART C, Question 3) is Pipe or Weld.	
3. Has one or more internal inspection tool collected data at the point of the Accident?	
3a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run:	
- Magnetic Flux Leakage	Most recent year conducted:
- Ultrasonic	Most recent year conducted:
- Geometry	Most recent year conducted:
- Caliper	Most recent year conducted:
- Crack	Most recent year conducted:
- Hard Spot	Most recent year conducted:
- Combination Tool	Most recent year conducted:
- Transverse Field/Triaxial	Most recent year conducted:
- Other	Most recent year conducted:
Describe:	
4. Do you have reason to believe that the internal inspection was completed BEFORE the damage was sustained?	
5. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Accident?	
- If Yes:	
	Most recent year tested:
	Test pressure (psig):
6. Has one or more Direct Assessment been conducted on the pipeline segment?	
- If Yes, and an investigative dig was conducted at the point of the Accident:	
	Most recent year conducted:
- If Yes, but the point of the Accident was not identified as a dig site:	
	Most recent year conducted:
7. Has one or more non-destructive examination been conducted at the point of the Accident since January 1, 2002?	
7a. If Yes, for each examination conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted:	
- Radiography	Most recent year conducted:
- Guided Wave Ultrasonic	Most recent year conducted:
- Handheld Ultrasonic Tool	Most recent year conducted:
- Wet Magnetic Particle Test	Most recent year conducted:
- Dry Magnetic Particle Test	Most recent year conducted:
- Other	Most recent year conducted:
Describe:	
- If Intentional Damage:	
8. Specify:	
- If Other, Describe:	
- If Other Outside Force Damage:	
9. Describe:	

G5 - Material Failure of Pipe or Weld - only one sub-cause can be selected from the shaded left-hand column		
Use this section to report material failures ONLY IF the "Item Involved in Accident" (from PART C, Question 3) is "Pipe" or "Weld."		
Material Failure of Pipe or Weld – Sub-Cause:	Construction-, Installation-, or Fabrication-related	
1. The sub-cause selected below is based on the following: <i>(select all that apply)</i>		
- Field Examination		
- Determined by Metallurgical Analysis		Yes
- Other Analysis		
- If "Other Analysis", Describe:		
- Sub-cause is Tentative or Suspected; Still Under Investigation (Supplemental Report required)		
- If Construction, Installation, or Fabrication-related:		
2. List contributing factors: <i>(select all that apply)</i>		
- Fatigue or Vibration-related		
	Specify:	
	- If Other, Describe:	
- Mechanical Stress:		Yes
- Other		
	- If Other, Describe:	
- If Original Manufacturing-related (NOT girth weld or other welds formed in the field):		
2. List contributing factors: <i>(select all that apply)</i>		
- Fatigue or Vibration-related:		
	Specify:	
	- If Other, Describe:	
- Mechanical Stress:		
- Other		
	- If Other, Describe:	
- If Environmental Cracking-related:		
3. Specify:		
- Other - Describe:		
Complete the following if any Material Failure of Pipe or Weld sub-cause is selected.		
4. Additional factors: <i>(select all that apply)</i> :		
- Dent		
- Gouge		
- Pipe Bend		
- Arc Burn		
- Crack		
- Lack of Fusion		
- Lamination		
- Buckle		
- Wrinkle		
- Misalignment		
- Burnt Steel		
- Other:		Yes
	- If Other, Describe: Subsidence	
5. Has one or more internal inspection tool collected data at the point of the Accident?		Yes
5a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run:		
- Magnetic Flux Leakage	Most recent year run:	
- Ultrasonic	Most recent year run:	
- Geometry	Most recent year run:	
- Caliper	Most recent year run:	
- Crack	Most recent year run:	
- Hard Spot	Most recent year run:	
- Combination Tool	Most recent year run:	Yes
	Most recent year run:	2007
- Transverse Field/Triaxial	Most recent year run:	Yes
	Most recent year run:	2010
- Other:	Most recent year run:	

Describe:	
6. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Accident?	Yes
- If Yes:	
Most recent year tested:	1996
Test pressure (psig):	1,816.00
7. Has one or more Direct Assessment been conducted on the pipeline segment?	No
- If Yes, and an investigative dig was conducted at the point of the Accident -	
Most recent year conducted:	
- If Yes, but the point of the Accident was not identified as a dig site -	
Most recent year conducted:	
8. Has one or more non-destructive examination(s) been conducted at the point of the Accident since January 1, 2002?	No
8a. If Yes, for each examination conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted: -	
- Radiography	
Most recent year conducted:	
- Guided Wave Ultrasonic	
Most recent year conducted:	
- Handheld Ultrasonic Tool	
Most recent year conducted:	
- Wet Magnetic Particle Test	
Most recent year conducted:	
- Dry Magnetic Particle Test	
Most recent year conducted:	
- Other	
Most recent year conducted:	
Describe:	
G6 – Equipment Failure - only one sub-cause can be selected from the shaded left-hand column	
Equipment Failure – Sub-Cause:	
- If Malfunction of Control/Relief Equipment:	
1. Specify: <i>(select all that apply)</i> -	
- Control Valve	
- Instrumentation	
- SCADA	
- Communications	
- Block Valve	
- Check Valve	
- Relief Valve	
- Power Failure	
- Stopple/Control Fitting	
- ESD System Failure	
- Other	
- If Other – Describe:	
- If Pump or Pump-related Equipment:	
2. Specify:	
- If Other – Describe:	
- If Threaded Connection/Coupling Failure:	
3. Specify:	
- If Other – Describe:	
- If Non-threaded Connection Failure:	
4. Specify:	
- If Other – Describe:	
- If Defective or Loose Tubing or Fitting:	
- If Failure of Equipment Body (except Pump), Tank Plate, or other Material:	
- If Other Equipment Failure:	
5. Describe:	
Complete the following if any Equipment Failure sub-cause is selected.	
6. Additional factors that contributed to the equipment failure: <i>(select all that apply)</i>	
- Excessive vibration	
- Overpressurization	
- No support or loss of support	
- Manufacturing defect	

- Loss of electricity	
- Improper installation	
- Mismatched items (different manufacturer for tubing and tubing fittings)	
- Dissimilar meta's	
- Breakdown of soft goods due to compatibility issues with transported commodity	
- Valve vault or valve can contributed to the release	
- Alarm/status failure	
- Misalignment	
- Thermal stress	
- Other	
- If Other, Describe:	

G7 - Incorrect Operation - only one sub-cause can be selected from the shaded left-hand column

Incorrect Operation – Sub-Cause:	
Damage by Operator or Operator's Contractor NOT Related to Excavation and NOT due to Motorized Vehicle/Equipment Damage	No
Tank, Vessel, or Sump/Separator Allowed or Caused to Overfill or Overflow	No
1. Specify:	
- If Other, Describe:	
Valve Left or Placed in Wrong Position, but NOT Resulting in a Tank, Vessel, or Sump/Separator Overflow or Facility Overpressure	No
Pipeline or Equipment Overpressured	No
Equipment Not Installed Properly	No
Wrong Equipment Specified or Installed	No
Other Incorrect Operation	No
2. Describe:	

Complete the following if any incorrect Operation sub-cause is selected.

3. Was this Accident related to (select all that apply): -	
- Inadequate procedure	
- No procedure established	
- Failure to follow procedure	
- Other:	
- If Other, Describe:	
4. What category type was the activity that caused the Accident?	
5. Was the task(s) that led to the Accident identified as a covered task in your Operator Qualification Program?	
5a. If Yes, were the individuals performing the task(s) qualified for the task(s)?	

G8 - Other Accident Cause - only one sub-cause can be selected from the shaded left-hand column

Other Accident Cause – Sub-Cause:	
- If Miscellaneous:	
1. Describe:	
- If Unknown:	
2. Specify:	

PART H - NARRATIVE DESCRIPTION OF THE ACCIDENT

Kiefner Report
The failure was located in the Lawson Junction-to-Pecos River segment at Station 2647+52 (MP 50.16). A complete circumferential separation occurred at a girth weld. A portion of the upstream and downstream joints, including both sides of the failed girth weld, was sent to Kiefner & Associates, Inc. (KAI) to determine the cause of failure.

*The root cause of the girth weld separation was external forces likely due to soil movement. The fracture initiated at a location of incomplete weld penetration in an acetylene girth weld. There was no evidence that the girth weld flaw had enlarged in service over time or that the pipe had been leaking prior to the rupture event. The fracture initiated in a ductile manner and propagated within and around the circumferential weld.

*In the absence of evidence of a time-dependent degradation mechanism, the likely explanation for such a failure is an increase in external loading on the pipeline. The county adjacent to where the failure occurred has experienced subsidence in the past as a result of sink holes developing. Subsidence can impart significant axial loads on buried pipelines. It is unknown whether subsidence recently occurred near to this failure.


*Internal pressure was not the root cause of failure.

File/Fold Name:

PART I - PREPARER AND AUTHORIZED SIGNATURE

Preparer's Name	Joel E Kohler
Preparer's Title	Sr. Staff Engineer
Preparer's Telephone Number	7133814830
Preparer's E-mail Address	jkohler@eprod.com
Preparer's Facsimile Number	7133816660
Authorized Signature's Name	Joel E Kohler
Authorized Signature Title	Sr. Staff Engineer
Authorized Signature Telephone Number	7133814830
Authorized Signature Email	jkohler@eprod.com
Date	03/21/2012

APPENDIX C

NOTICE: This report is required by 49 CFR Part 195. Failure to report can result in a civil penalty not to exceed \$100,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed \$1,000,000 as provided in 49 USC 60122.		OMB NO: 2137-0047 EXPIRATION DATE: 01/31/2013	
 U.S Department of Transportation Pipeline and Hazardous Materials Safety Administration	Report Date:	03/13/2012	
	No.	20120070 - 16511 ----- (DOT Use Only)	
ACCIDENT REPORT - HAZARDOUS LIQUID PIPELINE SYSTEMS			
A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0047. Public reporting for this collection of information is estimated to be approximately 10 hours per response (5 hours for a small release), including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.			
INSTRUCTIONS			
<i>Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at http://www.phmsa.dot.gov/pipeline.</i>			
PART A - KEY REPORT INFORMATION			
Report Type: <i>(select all that apply)</i>	Original:	Supplemental:	Final:
		Yes	Yes
Last Revision Date:	03/21/2012		
1. Operator's OPS-issued Operator Identification Number (OPID):	31618		
2. Name of Operator	ENTERPRISE PRODUCTS OPERATING LLC		
3. Address of Operator:			
3a. Street Address	1100 Louisiana Street		
3b. City	HOUSTON		
3c. State	Texas		
3d. Zip Code	77002		
4. Local time (24-hr clock) and date of the Accident:	12/28/2011 17:00		
5. Location of Accident:			
Latitude:	31.78341		
Longitude:	-103.46442		
6. National Response Center Report Number (if applicable):			
7. Local time (24-hr clock) and date of initial telephonic report to the National Response Center (if applicable):			
8. Commodity released: <i>(select only one, based on predominant volume released)</i>	HVL or Other Flammable or Toxic Fluid which is a Gas at Ambient Conditions		
- Specify Commodity Subtype:	LPG (Liquefied Petroleum Gas) / NGL (Natural Gas Liquid)		
- If "Other" Subtype, Describe:			
- If Biofuel/Alternative Fuel and Commodity Subtype is Ethanol Blend, then % Ethanol Blend:	%:		
- If Biofuel/Alternative Fuel and Commodity Subtype is Biodiesel, then Biodiesel Blend (e.g. B2, B20, B100):	B		
9. Estimated volume of commodity released unintentionally (Barrels):			
10. Estimated volume of intentional and/or controlled release/blowdown (Barrels):			
11. Estimated volume of commodity recovered (Barrels):			
12. Were there fatalities?	No		
- If Yes, specify the number in each category:			
12a. Operator employees			
12b. Contractor employees working for the Operator			
12c. Non-Operator emergency responders			
12d. Workers working on the right-of-way, but NOT associated with this Operator			
12e. General public			
12f. Total fatalities (sum of above)			
13. Were there injuries requiring inpatient hospitalization?	Yes		
- If Yes, specify the number in each category:			
13a. Operator employees	1		
13b. Contractor employees working for the Operator	0		
13c. Non-Operator emergency responders	0		

13d. Workers working on the right-of-way, but NOT associated with this Operator	0
13e. General public	0
13f. Total injuries (sum of above)	1
14. Was the pipeline/facility shut down due to the Accident?	Yes
- If No, Explain:	
- If Yes, complete Questions 14a and 14b: (use local time, 24-hr clock)	
14a. Local time and date of shutdown:	12/28/2011 17:00
14b. Local time pipeline/facility restarted:	01/12/2012 10:55
- Still shut down? (* Supplemental Report Required)	
15. Did the commodity ignite?	Yes
16. Did the commodity explode?	No
17. Number of general public evacuated:	0
18. Time sequence (use local time, 24-hour clock):	
18a. Local time Operator identified Accident:	12/28/2011 21:10
18b. Local time Operator resources arrived on site:	12/28/2011 21:11

PART B - ADDITIONAL LOCATION INFORMATION

1. Was the origin of Accident onshore?	Yes
<i>If Yes, Complete Questions (2-12)</i>	
<i>If No, Complete Questions (13-15)</i>	
- If Onshore:	
2. State:	Texas
3. Zip Code:	79745
4. City:	Kermit
5. County or Parish:	Loving
6. Operator-designated location:	Milepost/Valve Station
Specify:	50.16
7. Pipeline/Facility name:	Rio Grande Pipeline
8. Segment name/ID:	LID 1058
9. Was Accident on Federal land, other than the Outer Continental Shelf (OCS)?	No
10. Location of Accident:	Pipeline Right-of-way
11. Area of Accident (as found):	Underground
Specify:	Under soil
- If Other, Describe:	
Depth-of-Cover (in):	22
12. Did Accident occur in a crossing?	No
- If Yes, specify below:	
- If Bridge crossing –	
Cased/ Uncased:	
- If Railroad crossing –	
Cased/ Uncased/ Bored/drilled	
- If Road crossing –	
Cased/ Uncased/ Bored/drilled	
- If Water crossing –	
Cased/ Uncased	
- Name of body of water, if commonly known:	
- Approx. water depth (ft) at the point of the Accident:	
- Select:	
- If Offshore:	
13. Approximate water depth (ft) at the point of the Accident:	
14. Origin of Accident:	
- In State waters - Specify:	
- State:	
- Area:	
- Block/Tract #:	
- Nearest County/Parish:	
- On the Outer Continental Shelf (OCS) - Specify:	
- Area:	
- Block #:	
15. Area of Accident:	

PART C - ADDITIONAL FACILITY INFORMATION

1. Is the pipeline or facility:	Interstate
2. Part of system involved in Accident:	Onshore Pipeline, Including Valve Sites
- If Onshore Breakout Tank or Storage Vessel, Including Attached Appurtenances, specify:	
3. Item involved in Accident:	Other

- If Pipe, specify:	
3a. Nominal diameter of pipe (in):	
3b. Wall thickness (in):	
3c. SMYS (Specified Minimum Yield Strength) of pipe (psi):	
3d. Pipe specification:	
3e. Pipe Seam, specify:	
- If Other, Describe:	
3f. Pipe manufacturer:	
3g. Year of manufacture:	
3h. Pipeline coating type at point of Accident, specify:	
- If Other, Describe:	
- If Weld, including heat-affected zone, specify:	
- If Other, Describe:	
- If Valve, specify:	
- If Mainline, specify:	
- If Other, Describe:	
3i. Manufactured by:	
3j. Year of manufacture:	
- If Tank/Vessel, specify:	
- If Other - Describe:	
- If Other, describe:	Fire from Soil Contamination
4. Year item involved in Accident was installed:	1929
5. Material involved in Accident:	Material other than Carbon Steel
- If Material other than Carbon Steel, specify:	Product Ignition from Soil
6. Type of Accident Involved:	Other
- If Mechanical Puncture – Specify Approx. size:	
in. (axial) by	
in. (circumferential)	
- If Leak - Select Type:	
- If Other, Describe:	
- If Rupture - Select Orientation:	
- If Other, Describe:	
Approx. size: in. (widest opening) by	
in. (length circumferentially or axially)	
- If Other – Describe:	Soil containing product ignited
PART D - ADDITIONAL CONSEQUENCE INFORMATION	
1. Wildlife impact:	No
1a. If Yes, specify all that apply:	
- Fish/aquatic	
- Birds	
- Terrestrial	
2. Soil contamination:	Yes
3. Long term impact assessment performed or planned:	No
4. Anticipated remediation:	No
4a. If Yes, specify all that apply:	
- Surface water	
- Groundwater	
- Soil	
- Vegetation	
- Wildlife	
5. Water contamination:	No
5a. If Yes, specify all that apply:	
- Ocean/Seawater	
- Surface	
- Groundwater	
- Drinking water: (Select one or both)	
- Private Well	
- Public Water Intake	
5b. Estimated amount released in or reaching water (Barrels):	
5c. Name of body of water, if commonly known:	
6. At the location of this Accident, had the pipeline segment or facility been identified as one that "could affect" a High Consequence Area (HCA) as determined in the Operator's Integrity Management Program?	No
7. Did the released commodity reach or occur in one or more High Consequence Area (HCA)?	No
7a. If Yes, specify HCA type(s): (Select all that apply)	
- Commercially Navigable Waterway:	
Was this HCA identified in the "could affect"	

determination for this Accident site in the Operator's Integrity Management Program?	
- High Population Area:	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Other Populated Area	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Unusually Sensitive Area (USA) - Drinking Water	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Unusually Sensitive Area (USA) - Ecological	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
8. Estimated Property Damage:	
8a. Estimated cost of public and non-Operator private property damage	\$ 0
8b. Estimated cost of commodity lost	\$ 0
8c. Estimated cost of Operator's property damage & repairs	\$ 0
8d. Estimated cost of Operator's emergency response	\$ 10,500
8e. Estimated cost of Operator's environmental remediation	\$ 0
8f. Estimated other costs	\$ 0
Describe:	
8g. Total estimated property damage (sum of above)	\$ 10,500
PART E - ADDITIONAL OPERATING INFORMATION	
1. Estimated pressure at the point and time of the Accident (psig):	1,338.00
2. Maximum Operating Pressure (MOP) at the point and time of the Accident (psig):	1,440.00
3. Describe the pressure on the system or facility relating to the Accident (psig):	Pressure did not exceed MOP
4. Not including pressure reductions required by PHMSA regulations (such as for repairs and pipe movement), was the system or facility relating to the Accident operating under an established pressure restriction with pressure limits below those normally allowed by the MOP?	No
- If Yes, Complete 4.a and 4.b below:	
4a. Did the pressure exceed this established pressure restriction?	
4b. Was this pressure restriction mandated by PHMSA or the State?	
5. Was "Onshore Pipeline, Including Valve Sites" OR "Offshore Pipeline, Including Riser and Riser Bend" selected in PART C, Question 2?	Yes
- If Yes - (Complete 5a. - 5f. below)	
5a. Type of upstream valve used to initially isolate release source:	Remotely Controlled
5b. Type of downstream valve used to initially isolate release source:	Manual
5c. Length of segment isolated between valves (ft):	63,589
5d. Is the pipeline configured to accommodate internal inspection tools?	Yes
- If No, Which physical features limit tool accommodation? (select all that apply)	
- Changes in line pipe diameter	
- Presence of unsuitable mainline valves	
- Tight or mitered pipe bends	
- Other passage restrictions (i.e. unbarred tee's, projecting instrumentation, etc.)	
- Extra thick pipe wall (applicable only for magnetic flux leakage internal inspection tools)	
- Other -	
- If Other, Describe:	
5e. For this pipeline, are there operational factors which significantly complicate the execution of an internal inspection tool run?	No
- If Yes, Which operational factors complicate execution? (select all that apply)	
- Excessive debris or scale, wax, or other wall buildup	

- Low operating pressure(s)	
- Low flow or absence of flow	
- Incompatible commodity	
- Other -	
- If Other, Describe:	
5f. Function of pipeline system:	> 20% SMYS Regulated Trunkline/Transmission
6. Was a Supervisory Control and Data Acquisition (SCADA)-based system in place on the pipeline or facility involved in the Accident?	Yes
If Yes -	
6a. Was it operating at the time of the Accident?	Yes
6b. Was it fully functional at the time of the Accident?	Yes
6c. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the detection of the Accident?	Yes
6d. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Accident?	Yes
7. Was a CPM leak detection system in place on the pipeline or facility involved in the Accident?	Yes
- If Yes:	
7a. Was it operating at the time of the Accident?	Yes
7b. Was it fully functional at the time of the Accident?	Yes
7c. Did CPM leak detection system information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the detection of the Accident?	Yes
7d. Did CPM leak detection system information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Accident?	Yes
8. How was the Accident initially identified for the Operator?	Local Operating Personnel, including contractors
- If Other, Specify:	
8a. If "Controller", "Local Operating Personnel", including contractors", "Air Patrol", or "Guard Patrol by Operator or its contractor" is selected in Question 8, specify the following:	Operator employee
9. Was an investigation initiated into whether or not the controller(s) or control room issues were the cause of or a contributing factor to the Accident?	No, the facility was not monitored by a controller(s) at the time of the Accident
- If No, the Operator did not find that an investigation of the controller(s) actions or control room issues was necessary due to: <i>(provide an explanation for why the operator did not investigate)</i>	
- If Yes, specify investigation result(s): <i>(select all that apply)</i>	
- Investigation reviewed work schedule rotations, continuous hours of service (while working for the Operator), and other factors associated with fatigue	
- Investigation did NOT review work schedule rotations, continuous hours of service (while working for the Operator), and other factors associated with fatigue	
Provide an explanation for why not:	
- Investigation identified no control room issues	
- Investigation identified no controller issues	
- Investigation identified incorrect controller action or controller error	
- Investigation identified that fatigue may have affected the controller(s) involved or impacted the involved controller(s) response	
- Investigation identified incorrect procedures	
- Investigation identified incorrect control room equipment operation	
- Investigation identified maintenance activities that affected control room operations, procedures, and/or controller response	
- Investigation identified areas other than those above:	
Describe:	
PART F - DRUG & ALCOHOL TESTING INFORMATION	

1. As a result of this Accident, were any Operator employees tested under the post-accident drug and alcohol testing requirements of DOT's Drug & Alcohol Testing regulations?	Yes
- If Yes:	
1a. Specify how many were tested:	3
1b. Specify how many failed:	0
2. As a result of this Accident, were any Operator contractor employees tested under the post-accident drug and alcohol testing requirements of DOT's Drug & Alcohol Testing regulations?	Yes
- If Yes:	
2a. Specify how many were tested:	6
2b. Specify how many failed:	0
PART G – APPARENT CAUSE	
<i>Select only one box from PART G in shaded column on left representing the APPARENT Cause of the Accident, and answer the questions on the right. Describe secondary, contributing or root causes of the Accident in the narrative (PART H).</i>	
Apparent Cause:	G8 - Other Incident Cause
G1 - Corrosion Failure - only one sub-cause can be picked from shaded left-hand column	
External Corrosion:	
Internal Corrosion:	
- If External Corrosion:	
1. Results of visual examination:	
- If Other, Describe:	
2. Type of corrosion: <i>(select all that apply)</i>	
- Galvanic	
- Atmospheric	
- Stray Current	
- Microbiological	
- Selective Seam	
- Other:	
- If Other, Describe:	
3. The type(s) of corrosion selected in Question 2 is based on the following: <i>(select all that apply)</i>	
- Field examination	
- Determined by metallurgical analysis	
- Other:	
- If Other, Describe:	
4. Was the failed item buried under the ground?	
- If Yes :	
<input type="checkbox"/> 4a. Was failed item considered to be under cathodic protection at the time of the Accident?	
If Yes - Year protection started:	
4b. Was shielding, tenting, or disbonding of coating evident at the point of the Accident?	
4c. Has one or more Cathodic Protection Survey been conducted at the point of the Accident?	
If "Yes, CP Annual Survey" – Most recent year conducted:	
If "Yes, Close Interval Survey" – Most recent year conducted:	
If "Yes, Other CP Survey" – Most recent year conducted:	
- If No:	
4d. Was the failed item externally coated or painted?	
5. Was there observable damage to the coating or paint in the vicinity of the corrosion?	
- If Internal Corrosion:	
6. Results of visual examination:	
- Other:	
7. Type of corrosion <i>(select all that apply):</i> -	
- Corrosive Commodity	
- Water drop-out/Acid	
- Microbiological	
- Erosion	
- Other:	
- If Other, Describe:	
8. The cause(s) of corrosion selected in Question 7 is based on the following <i>(select all that apply):</i> -	
- Field examination	

- Determined by metallurgical analysis	
- Other:	
- If Other, Describe:	
9. Location of corrosion (select all that apply): -	
- Low point in pipe	
- Elbow	
- Other:	
- If Other, Describe:	
10. Was the commodity treated with corrosion inhibitors or biocides?	
11. Was the interior coated or lined with protective coating?	
12. Were cleaning/dewatering pigs (or other operations) routinely utilized?	
13. Were corrosion coupons routinely utilized?	
Complete the following if any Corrosion Failure sub-cause is selected AND the "Item Involved in Accident" (from PART C, Question 3) is Tank/Vessel.	
14. List the year of the most recent inspections:	
14a. API Std 653 Out-of-Service Inspection	
- No Out-of-Service Inspection completed	
14b. API Std 653 In-Service Inspection	
- No In-Service Inspection completed	
Complete the following if any Corrosion Failure sub-cause is selected AND the "Item Involved in Accident" (from PART C, Question 3) is Pipe or Weld.	
15. Has one or more internal inspection tool collected data at the point of the Accident?	
15a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run: -	
- Magnetic Flux Leakage Tool	Most recent year:
- Ultrasonic	Most recent year:
- Geometry	Most recent year:
- Caliper	Most recent year:
- Crack	Most recent year:
- Hard Spot	Most recent year:
- Combination Tool	Most recent year:
- Transverse Field/Triaxial	Most recent year:
- Other	Most recent year:
	Describe:
16. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Accident?	
If Yes -	Most recent year tested:
	Test pressure:
17. Has one or more Direct Assessment been conducted on this segment?	
- If Yes, and an investigative dig was conducted at the point of the Accident:	Most recent year conducted:
- If Yes, but the point of the Accident was not identified as a dig site:	Most recent year conducted:
18. Has one or more non-destructive examination been conducted at the point of the Accident since January 1, 2002?	
18a. If Yes, for each examination conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted:	
- Radiography	Most recent year conducted:
- Guided Wave Ultrasonic	Most recent year conducted:
- Handheld Ultrasonic Tool	Most recent year conducted:
- Wet Magnetic Particle Test	Most recent year conducted:
- Dry Magnetic Particle Test	Most recent year conducted:
- Other	Most recent year conducted:

Describe:	
G2 - Natural Force Damage - only one sub-cause can be picked from shaded left-handed column	
Natural Force Damage – Sub-Cause:	
- If Earth Movement, NOT due to Heavy Rains/Floods:	
1. Specify:	
	- If Other, Describe:
- If Heavy Rains/Floods:	
2. Specify:	
	- If Other, Describe:
- If Lightning:	
3. Specify:	
- If Temperature:	
4. Specify:	
	- If Other, Describe:
- If High Winds:	
- If Other Natural Force Damage:	
5. Describe:	
Complete the following if any Natural Force Damage sub-cause is selected.	
6. Were the natural forces causing the Accident generated in conjunction with an extreme weather event?	
6a. If Yes, specify: <i>(select all that apply)</i>	
- Hurricane	
- Tropical Storm	
- Tornado	
- Other	
	- If Other, Describe:
G3 - Excavation Damage - only one sub-cause can be picked from shaded left-hand column	
Excavation Damage – Sub-Cause:	
- If Excavation Damage by Operator (First Party):	
- If Excavation Damage by Operator's Contractor (Second Party):	
- If Excavation Damage by Third Party:	
- If Previous Damage due to Excavation Activity:	
Complete Questions 1-5 ONLY IF the "Item Involved in Accident" (from PART C, Question 3) is Pipe or Weld.	
1. Has one or more internal inspection tool collected data at the point of the Accident?	
1a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run: -	
- Magnetic Flux Leakage	Most recent year conducted:
- Ultrasonic	Most recent year conducted:
- Geometry	Most recent year conducted:
- Caliper	Most recent year conducted:
- Crack	Most recent year conducted:
- Hard Spot	Most recent year conducted:
- Combination Tool	Most recent year conducted:
- Transverse Field/Triaxial	Most recent year conducted:
- Other	Most recent year conducted:
	Describe:
2. Do you have reason to believe that the internal inspection was completed BEFORE the damage was sustained?	
3. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Accident?	
- If Yes:	

Most recent year tested:	
Test pressure (psig):	
4. Has one or more Direct Assessment been conducted on the pipeline segment?	
- If Yes, and an investigative dig was conducted at the point of the Accident:	
Most recent year conducted:	
- If Yes, but the point of the Accident was not identified as a dig site:	
Most recent year conducted:	
5. Has one or more non-destructive examination been conducted at the point of the Accident since January 1, 2002?	
5a. If Yes, for each examination, conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted:	
- Radiography	Most recent year conducted:
- Guided Wave Ultrasonic	Most recent year conducted:
- Handheld Ultrasonic Tool	Most recent year conducted:
- Wet Magnetic Particle Test	Most recent year conducted:
- Dry Magnetic Particle Test	Most recent year conducted:
- Other	Most recent year conducted:
Describe:	
Complete the following if Excavation Damage by Third Party is selected as the sub-cause.	
6. Did the operator get prior notification of the excavation activity?	
6a. If Yes, Notification received from: <i>(select all that apply)</i> -	
- One-Call System	
- Excavator	
- Contractor	
- Landowner	
Complete the following mandatory CGA-DIRT Program questions if any Excavation Damage sub-cause is selected.	
7. Do you want PHMSA to upload the following information to CGA-DIRT (www.cga-dirt.com)?	
8. Right-of-Way where event occurred: <i>(select all that apply)</i> -	
- Public	
- If "Public", Specify:	
- Private	
- If "Private", Specify:	
- Pipeline Property/Easement	
- Power/Transmission Line	
- Railroad	
- Dedicated Public Utility Easement	
- Federal Land	
- Data not collected	
- Unknown/Other	
9. Type of excavator:	
10. Type of excavation equipment:	
11. Type of work performed:	
12. Was the One-Call Center notified?	
12a. If Yes, specify ticket number:	
12b. If this is a State where more than a single One-Call Center exists, list the name of the One-Call Center notified:	
13. Type of Locator:	
14. Were facility locate marks visible in the area of excavation?	
15. Were facilities marked correctly?	
16. Did the damage cause an interruption in service?	
16a. If Yes, specify duration of the interruption (hours)	
17. Description of the CGA-DIRT Root Cause <i>(select only the one predominant first level CGA-DIRT Root Cause and then, where available as a choice, the one predominant second level CGA-DIRT Root Cause as well):</i>	
Root Cause:	
- If One-Call Notification Practices Not Sufficient, specify:	
- If Locating Practices Not Sufficient, specify:	
- If Excavation Practices Not Sufficient, specify:	
- If Other/None of the Above, explain:	
G4 - Other Outside Force Damage - only one sub-cause can be selected from the shaded left-hand column	

Other Outside Force Damage – Sub-Cause:	
- If Nearby Industrial, Man-made, or Other Fire/Explosion as Primary Cause of Incident:	
- If Damage by Car, Truck, or Other Motorized Vehicle/Equipment NOT Engaged in Excavation:	
1. Vehicle/Equipment operated by:	
- If Damage by Boats, Barges, Drilling Rigs, or Other Maritime Equipment or Vessels Set Adrift or Which Have Otherwise Lost Their Mooring:	
2. Select one or more of the following IF an extreme weather event was a factor:	
- Hurricane	
- Tropical Storm	
- Tornado	
- Heavy Rains/Flood	
- Other	
- If Other, Describe:	
- If Routine or Normal Fishing or Other Maritime Activity NOT Engaged in Excavation:	
- If Electrical Arcing from Other Equipment or Facility:	
- If Previous Mechanical Damage NOT Related to Excavation:	
Complete Questions 3-7 ONLY IF the "Item Involved in Accident" (from PART C, Question 3) is Pipe or Weld.	
3. Has one or more internal inspection tool collected data at the point of the Accident?	
3a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run:	
- Magnetic Flux Leakage	Most recent year conducted:
- Ultrasonic	Most recent year conducted:
- Geometry	Most recent year conducted:
- Caliper	Most recent year conducted:
- Crack	Most recent year conducted:
- Hard Spot	Most recent year conducted:
- Combination Tool	Most recent year conducted:
- Transverse Field/Triaxial	Most recent year conducted:
- Other	Most recent year conducted:
Describe:	
4. Do you have reason to believe that the internal inspection was completed BEFORE the damage was sustained?	
5. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Accident?	
- If Yes:	
	Most recent year tested:
	Test pressure (psig):
6. Has one or more Direct Assessment been conducted on the pipeline segment?	
- If Yes, and an investigative dig was conducted at the point of the Accident:	
	Most recent year conducted:
- If Yes, but the point of the Accident was not identified as a dig site:	
	Most recent year conducted:
7. Has one or more non-destructive examination been conducted at the point of the Accident since January 1, 2002?	
7a. If Yes, for each examination conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted:	
- Radiography	Most recent year conducted:
- Guided Wave Ultrasonic	Most recent year conducted:
- Handheld Ultrasonic Tool	Most recent year conducted:
- Wet Magnetic Particle Test	Most recent year conducted:
- Dry Magnetic Particle Test	Most recent year conducted:

- Other	
Most recent year conducted:	
Describe:	
- If Intentional Damage:	
8. Specify:	
- If Other, Describe:	
- If Other Outside Force Damage:	
9. Describe:	
G5 - Material Failure of Pipe or Weld - only one sub-cause can be selected from the shaded left-hand column	
Use this section to report material failures ONLY IF the "Item Involved in Accident" (from PART C, Question 3) is "Pipe" or "Weld."	
Material Failure of Pipe or Weld – Sub-Cause:	
1. The sub-cause selected below is based on the following: <i>(select all that apply)</i>	
- Field Examination	
- Determined by Metallurgical Analysis	
- Other Analysis	
- If "Other Analysis", Describe:	
- Sub-cause is Tentative or Suspected; Still Under Investigation (Supplemental Report required)	
- If Construction, Installation, or Fabrication-related:	
2. List contributing factors: <i>(select all that apply)</i>	
- Fatigue or Vibration-related	
Specify:	
- If Other, Describe:	
- Mechanical Stress:	
- Other	
- If Other, Describe:	
- If Original Manufacturing-related (NOT girth weld or other welds formed in the field):	
2. List contributing factors: <i>(select all that apply)</i>	
- Fatigue or Vibration-related:	
Specify:	
- If Other, Describe:	
- Mechanical Stress:	
- Other	
- If Other, Describe:	
- If Environmental Cracking-related:	
3. Specify:	
- Other - Describe:	
Complete the following if any Material Failure of Pipe or Weld sub-cause is selected.	
4. Additional factors: <i>(select all that apply)</i> :	
- Dent	
- Gouge	
- Pipe Bend	
- Arc Burn	
- Crack	
- Lack of Fusion	
- Lamination	
- Buckle	
- Wrinkle	
- Misalignment	
- Burnt Steel	
- Other:	
- If Other, Describe:	
5. Has one or more internal inspection tool collected data at the point of the Accident?	
5a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run:	
- Magnetic Flux Leakage	Most recent year run:
- Ultrasonic	Most recent year run:
- Geometry	Most recent year run:
- Caliper	Most recent year run:
- Crack	Most recent year run:

- Hard Spot	Most recent year run:	
- Combination Tool	Most recent year run:	
- Transverse Field/Triaxial	Most recent year run:	
- Other	Most recent year run:	
	Describe:	
6. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Accident?		
- If Yes:		
	Most recent year tested:	
	Test pressure (psig):	
7. Has one or more Direct Assessment been conducted on the pipeline segment?		
- If Yes, and an investigative dig was conducted at the point of the Accident -		
	Most recent year conducted:	
- If Yes, but the point of the Accident was not identified as a dig site -		
	Most recent year conducted:	
8. Has one or more non-destructive examination(s) been conducted at the point of the Accident since January 1, 2002?		
8a. If Yes, for each examination conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted: -		
- Radiography	Most recent year conducted:	
- Guided Wave Ultrasonic	Most recent year conducted:	
- Handheld Ultrasonic Tool	Most recent year conducted:	
- Wet Magnetic Particle Test	Most recent year conducted:	
- Dry Magnetic Particle Test	Most recent year conducted:	
- Other	Most recent year conducted:	
	Describe:	
G6 – Equipment Failure - only one sub-cause can be selected from the shaded left-hand column		
Equipment Failure – Sub-Cause:		
- If Malfunction of Control/Relief Equipment:		
1. Specify: (select all that apply) -		
- Control Valve		
- Instrumentation		
- SCADA		
- Communications		
- Block Valve		
- Check Valve		
- Relief Valve		
- Power Failure		
- Stopple/Control Fitting		
- ESD System Failure		
- Other		
	- If Other – Describe:	
- If Pump or Pump-related Equipment:		
2. Specify:		
	- If Other – Describe:	
- If Threaded Connection/Coupling Failure:		
3. Specify:		
	- If Other – Describe:	
- If Non-threaded Connection Failure:		
4. Specify:		
	- If Other – Describe:	
- If Defective or Loose Tubing or Fitting:		
- If Failure of Equipment Body (except Pump), Tank Plate, or other Material:		
- If Other Equipment Failure:		

5. Describe:	
Complete the following if any Equipment Failure sub-cause is selected.	
6. Additional factors that contributed to the equipment failure: <i>(select all that apply)</i>	
- Excessive vibration	
- Overpressurization	
- No support or loss of support	
- Manufacturing defect	
- Loss of electricity	
- Improper installation	
- Mismatched items (different manufacturer for tubing and tubing fittings)	
- Dissimilar metals	
- Breakdown of soft goods due to compatibility issues with transported commodity	
- Valve vault or valve can contributed to the release	
- Alarm/status failure	
- Misalignment	
- Thermal stress	
- Other	
- If Other, Describe:	
G7 - Incorrect Operation - only one sub-cause can be selected from the shaded left-hand column	
Incorrect Operation – Sub-Cause:	
Damage by Operator or Operator's Contractor NOT Related to Excavation and NOT due to Motorized Vehicle/Equipment Damage	No
Tank, Vessel, or Sump/Separator Allowed or Caused to Overfill or Overflow	No
1. Specify:	
- If Other, Describe:	
Valve Left or Placed in Wrong Position, but NOT Resulting in a Tank, Vessel, or Sump/Separator Overflow or Facility Overpressure	No
Pipeline or Equipment Overpressured	No
Equipment Not Installed Properly	No
Wrong Equipment Specified or Installed	No
Other Incorrect Operation	No
2. Describe:	
Complete the following if any Incorrect Operation sub-cause is selected.	
3. Was this Accident related to <i>(select all that apply)</i> : -	
- Inadequate procedure	
- No procedure established	
- Failure to follow procedure	
- Other:	
- If Other, Describe:	
4. What category type was the activity that caused the Accident?	
5. Was the task(s) that led to the Accident identified as a covered task in your Operator Qualification Program?	
5a. If Yes, were the individuals performing the task(s) qualified for the task(s)?	
G8 - Other Accident Cause - only one sub-cause can be selected from the shaded left-hand column	
Other Accident Cause – Sub-Cause:	Miscellaneous
If Miscellaneous:	
1. Describe:	Soil containing product ignited upon removal of the pipeline

	segment within the ditch.
--	---------------------------

- If Unknown:
2. Specify:

PART H - NARRATIVE DESCRIPTION OF THE ACCIDENT

On December 27, 2011, at approximately 9:30pm, Pipeline Control (PLC) made notification to Texas NGL personnel of a suspected leak on the Rio Grande Pipeline between Lawson Junction and Delaware Stations. PLC indicated the Supervisory Control and Data Acquisition (SCADA) system showed a large pressure loss on several pressure transmitters. The Rio Grande Pipeline which was carrying a propane/butane mix (approx. 90% propane/10% butane) was shutdown and isolated.

Field Operations personnel responded to the suspected line segment and confirmed a line failure at mile post 50.5 at approximately 3:00am December 28, 2011. The 8 inch propane/butane pipeline had a complete weld seam failure, resulting in release of propane/butane to the surrounding soil and atmosphere. The line segment was blocked in at valves located at mile posts 47.7 and mile post 58.8.

Field Operations secured the area, and began taking steps to clear and repair the line segment. The residual hydrocarbons were purged with Nitrogen from the upstream and downstream valve locations. The area was excavated with a back-hoe to expose enough pipe to facilitate the repair. After the line was confirmed to be free of hydrocarbons, onsite contractors (S&S Construction) proceeded to cold cut the East side of the line. The first cold cut was successful and approximately 20 feet of pipe was removed.

Two Enterprise employees and four contractors were in the trench working on various tasks, such as removing additional soil with shovels, taking measurements and evaluating the amount of additional pipe that needed to be removed from the west side of the weld failure.

At approximately 5:00pm on December 28, 2011, a flash fire occurred in the trench when a concentration of hydrocarbons exceeding the Lower Flammability Limit (LFL) for the hydrocarbon mixture was ignited. Four individuals were in the proximity of the flash fire. One of those individuals required over night hospitalization.

File Fill Name

PART I - PREPARER AND AUTHORIZED SIGNATURE

Preparer's Name	Joel E Kohler
Preparer's Title	Sr. Staff Engineer
Preparer's Telephone Number	7133814830
Preparer's E-mail Address	jkohler@eprod.com
Preparer's Facsimile Number	7133816660
Authorized Signature's Name	Joel E Kohler
Authorized Signature Title	Sr. Staff Engineer
Authorized Signature Telephone Number	7133814830
Authorized Signature Email	jkohler@eprod.com
Date	03/21/2012

Appendix D
Incident Investigation Report

This document is on file at PHMSA