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

Principal Investigator Michael Yazemboski
Region Director Byron Coy
Date of Report 08/05/2011
Subject Failure Investigation Report – Buckeye External Corrosion Pit near Shippingport, PA

Operator, Location, & Consequences

Date of Failure 03/20/2011
Commodity Released Diesel
City/County & State Shippingport/Beaver County, PA
OpID & Operator Name 1845 Buckeye Pipeline LP
Unit # & Unit Name 3221 Coraopolis Area – PA
SMART Activity # 133920
Milepost / Location Latitude: 40.62252, Longitude: -80.4181
Type of Failure Pipeline Leak due to localized external corrosion pit
Fatalities 0
Injuries 0
Description of area impacted HCA area
Property Damage $118,617
Executive Summary

On March 20, 2011, Buckeye Pipeline reported a leak on their 10" line 820 that runs from their Coraopolis Terminal to the Midland Terminal. The leak was located in a wooded area behind a Gypsum plant near the intersection of Ferry Hill Road and Shippingport Road in Shippingport, PA. The leak was due to an isolated external corrosion pit located in the 12:00 position on the pipe. Approximately 300 barrels of diesel fuel were spilled as a result of the leak and it was estimated that 238 barrels were recovered. The spill follow the natural terrain from the leak site to a stormwater drainage canal located behind the Gypsum plant, where it was contained and prevented from entering the Ohio River. Buckeye was able to isolate the line by closing block valves upstream and downstream of the leak site. Once isolated, Buckeye drained the leaking segment of line into tank trucks located at their Midland Terminal. On March 23, Buckeye repaired the leak by cutting out and replacing a 10’ section of pipe with new pipe. The line was returned to full operation on March 23 around 10:00am.

System Details

The leak was on Buckeye’s Line 820. Line 820 is a 10" line running from Buckeye’s Coraopolis Terminal to their Midland Terminal located in Shippingport, PA. (Appendix A / Appendix B)

The Coraopolis Unit contains 145 miles of 6", 10", and 12" pipe that runs from Midland Terminal to the Indiana Terminal located in Indiana, PA and to the Pittsburgh airport.

Events Leading up to the Failure

The leak was initially reported to the NRC by a local resident (Appendix C).

Buckeye was in the process of pumping Ultra Low Sulfur Diesel (ULSD) fuel from Buckeye’s Coraopolis Terminal to their Midland Terminal located in Shippingport, PA. The pressure at the site at the time of failure was 462 psig which was below the MAOP of 1147 psig. A resident reported a spray of product that could be seen rising above the trees in a wooded area behind the Gypsum plant. Buckeye responded and determined that it was their line 820 that was leaking.

Emergency Response

On March 20, 2011, at approximately 14:02, Buckeye was notified by emergency responders of a possible leak on the Buckeye line in Shippingport, PA. Buckeye immediately dispatched local field personnel and began a controlled shutdown and isolation of the line. The appropriate internal and external notifications were made to report the release and dispatch teams of responders to contain the product and repair the defect in the line. Buckeye was able to isolate the line by closing block valves upstream and downstream of the leak site. Once isolated, Buckeye drained the leaking segment of line into tank trucks located at their Midland Terminal. Buckeye established a local command center on site. Local, State, and Federal agencies responded. Buckeye successfully implemented their Oil Spill Response Plan (dated 7/13/2010) and Emergency Plan Procedures.
Summary of Return-to-Service
On March 23, 2011, Buckeye repaired the leak by cutting out and replacing a 10’ section of pipe with new pipe. A successful pressure test was conducted prior to returning the line to service. During the start up phase, the pressure in the line was increased in incremental steps until final operating pressure was achieved. The line was returned to full operation on March 23, 2011.

Investigation Details
In April 2010, Buckeye identified a washout condition near the leak location. A review of the records indicated that approximately 2’ of pipe was exposed and that the coating was intact and not damaged. This washout area was scheduled to be monitored during future patrols of the area until permanent remediation could be implemented. This condition is not believed to be a contributing factor in causing the leak.

The damaged pipe was cut out and replaced on 3/23/2011. The pipe segment containing the defect was sent to a laboratory for metallurgical analysis to determine the exact cause of the release. Most of the product has been recovered as remediation efforts continue. A professional metallurgical analysis indicates it is likely that the corrosive low pH water directly contacting the exposed segment of pipeline caused the localized external pitting corrosion leading to the through wall defect and the surrounding metal loss.

Findings & Contributing Factors
The cause has been determined to be due to low pH water directly contacting the exposed segment of pipeline causing the localized external pitting leading to the through wall defect and the surrounding metal loss (Appendix D). The corrosion is limited to the section of exposed piping where the coating had become disbonded.

Appendices
Appendix A - Site Maps
Appendix B - Photographs
Appendix C - NRC Reports
Appendix D - Buckeye Accident Report
Photo 1

Leak location plugged with stick
Photo 2

Trench breaker found during excavation. Breaker consisted of concrete bags and backfilled with stone to prevent erosion. Leak was located approximately 1' outside of breaker.

Leak location. See stick plug.
Photo 3

Failed coating
Photo 4

[Image: Close-up of a wood plug and failed coating]

- **Wood plug**
- **Failed coating**
Corrosion was limited to the area around the leak. No other corrosion was found on the pipe in the area that was exposed and cleaned. CP readings taken at the leak location were acceptable. (-1.400 VDC)
Photo 6

Buckeye Line 820, 10"
Leak location.
3/21/2011
Line exposed approximately 2’ in washout area. Leak is due to corrosion located at the 12:00 position on the pipe. A temporary wooden plug marks the location of the leak.
Photo 8

Gypsum Plant and location of vac trucks about 2000' from leak location.
## Caller Information

- **First Name:** TERRY
- **Last Name:** ERICKSON
- **Company Name:** BEAVER COUNTY 911
- **Address:**
- **City:**
- **State:** PA
- **Country:** USA
- **Phone 1:** 7247750880
- **Organization Type:** LOCAL
- **Is caller the spiller?** Yes
- **Confidential:** Yes

## Discharger Information

- **First Name:**
- **Last Name:** UNKNOWN
- **Company Name:** BUCKEYE PIPELINE
- **Address:**
- **City:** SHIPPINGPORT
- **State:** PA
- **Country:** USA
- **Phone 1:**
- **Phone 2:**
- **Organization Type:** PRIVATE

## Spill Information

- **State:** PA
- **County:** BEAVER
- **Nearest City:** SHIPPINGPORT
- **Location:**
- **Spill Date:** 03/20/2011
- **Spill Time:** 14:00:00
- **DTG Type:** OCCURRED
- **Incident Type:** PIPELINE
- **Description:**
  CALLER STATED DUE TO UNKNOWN CAUSES A PIPELINE RUPTURED AND IS SHOOTING OIL ABOUT 40 FEET INTO THE AIR AND IT IS GOING INTO THE OHIO RIVER. NO INJURIES WERE REPORTED.

## Materials Involved

<table>
<thead>
<tr>
<th>Material / Chris Name</th>
<th>Chris Code</th>
<th>Total Qty.</th>
<th>Water Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNKNOWN OIL</td>
<td>OUN</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

[Return to Search]

[Version 3.4.06 PROD]

Rules of Behavior  | Home  | Logout  | Menu
Medium Type: WATER
Additional Medium Information: OHIO RIVER

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
FIRE DEPT IS ON SCENE AND HAZMAT IS EN ROUTE.

Additional Info
NONE GIVEN.

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

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

Distance from City: _____ Direction: _____
Section: _____ Township: _____
Range: _____ Milepost: _____

[ ] Rescinded  Comments (max 250 characters)
133920 Appendix C - NRC Report 970594

NRC Number: 970594
Call Date: 03/20/2011 Call Time: 15:33:36

Caller Information

First Name: CARL Last Name: OSTACH
Company Name: BUCKEYE PARTNERS
Address: 469 MOON CLINTON ROAD
City: CORAOPOLIS State: PA
Country: USA Zip: 15108
Phone 1: 4122929019 Phone 2: 4122997010
Organization Type: PRIVA
Is caller the spiller? Yes
Confidential: Yes

Discharger Information

First Name: CARL Last Name: OSTACH
Company Name: BUCKEYE PARTNERS
Address: 469 MOON CLINTON ROAD
City: CORAOPOLIS State: PA
Country: USA Zip: 15108
Phone 1: 4122929019 Phone 2: 4122997010
Organization Type: PRIVA

Spill Information

State: PA County: BEAVER
Nearest City: SHIPPINGPORT Zip Code: 15108

Spill Date: 03/20/2011 (mm/dd/yyyy) Spill Time: 15:10:00 (24hh:mm:ss)
DTG Type: DISCOVERED Incident Type: PIPELINE
Reported Incident Type: PIPELINE

Description
CALLER STATED ULTRA LOW SULFUR DIESEL FUEL RELEASED FROM A PIPELINE DUE TO UNKNOWN CAUSES AND HAS ENTERED INTO THE OHIO RIVER.

Materials Involved

<table>
<thead>
<tr>
<th>Material / Chris Name</th>
<th>Chris Code</th>
<th>Total Qty.</th>
<th>Water Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>OIL: DIESEL</td>
<td>ODS</td>
<td>0 UNKNOWN AMOUNT</td>
<td>0 UNKNOWN AMOUNT</td>
</tr>
</tbody>
</table>
Medium Type: WATER
Additional Medium Information: OHIO RIVER

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
PIPELINE HAS BEEN SHUTDOWN, CLOSING VALVES TO ISOLATE PIPELINE SECTION, ACTIVATED CONTRACTORS FOR CLEANUP, PUBLIC RESPONDERS SUCH AS POLICE, FIRE AND OTHER AGENCIES ARE ON SITE.

Additional Info
CALLER HAD NO ADDITIONAL INFORMATION AT THIS TIME.

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 >>
133920 Appendix C - NRC Report 970718

NRC Number: 970718
Call Date: 03/21/2011 Call Time: 17:11:57

Caller Information
First Name: CARL Last Name: OSTACH
Company Name: BUCKEYE PARTNERS
Address: 469 MOON CLINTON ROAD
City: CORAOPOLIS State: PA
Country: USA Zip: 15108
Phone 1: 4122929019 Phone 2: 4122997010
Organization Type: PRIVA
Is caller the spiller? Yes
Confidential: Yes

Discharger Information
First Name: CARL Last Name: OSTACH
Company Name: BUCKEYE PARTNERS
Address: 469 MOON CLINTON ROAD
City: CORAOPOLIS State: PA
Country: USA Zip: 15108
Phone 1: 4122929019 Phone 2: 4122997010
Organization Type: PRIVA

Spill Information
State: PA County: BEAVER
Nearest City: SHIPPINGPORT Zip Code: 15077
Location: ROUTE 168 SHIPPINGPORT RD.
Spill Date: 03/20/2011 Spill Time: 15:10:00
DTG Type: DISCOVERED Incident Type: PIPELINE
Reported Incident Type: PIPELINE
Description
*** THIS IS A QUANTITY UPDATE REPORT; REFER TO NRC REPORT # 970594*** THE QUANTITY HAS BEEN UPDATED FROM AN UNKNOWN AMOUNT TO 300 BARRELS DUE TO A DISCHARGE OF LOW SULFUR DIESEL FUEL FROM A TRANSMISSION PIPELINE THAT OCCURRED ON 20MAR2011. THE CALLER STATED THAT THE AMOUNT RECOVERED WAS 238 BARRELS.

Materials Involved
<table>
<thead>
<tr>
<th>Material / Chris Name</th>
<th>Chris Code</th>
<th>Total Qty.</th>
<th>Water Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>OIL: DIESEL</td>
<td>ODS</td>
<td>300 BARREL(S)</td>
<td></td>
</tr>
</tbody>
</table>
Medium Type: SOIL

Additional Medium Information:
/ NO OFF SITE IMPACT

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
238 BARRELS HAS BEEN RECOVERED, ALL PRODUCT IS CONTAINED AT THIS TIME AND NO ADDITIONAL ASSISTANCE IS REQUESTED.

Additional Info
*** THIS IS AN UPDATED REPORT; REFER TO NRC REPORT #970594*** CALLER HAD 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)
### 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](http://www.phmsa.dot.gov/pipeline).

### PART A - KEY REPORT INFORMATION

<table>
<thead>
<tr>
<th>Report Type: (select all that apply)</th>
<th>Original:</th>
<th>Supplemental:</th>
<th>Final:</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last Revision Date:</td>
<td>06/07/2011</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Operator's OPS-issued Operator Identification Number (OPID):</td>
<td>1845</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Name of Operator</td>
<td>BUCKEYE PARTNERS, LP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Address of Operator:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3a. Street Address</td>
<td>FIVE TEK PARK, 9999 HAMILTON BOULEVARD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3b. City</td>
<td>BREINIGSVILLE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3c. State</td>
<td>Pennsylvania</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3d. Zip Code</td>
<td>18031</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Local time (24-hr clock) and date of the Accident:</td>
<td>03/20/2011 14:02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Location of Accident:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Latitude</td>
<td>40.62252</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Longitude</td>
<td>-80.4181</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. National Response Center Report Number (if applicable):</td>
<td>970587</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Local time (24-hr clock) and date of initial telephonic report to the National Response Center (if applicable):</td>
<td>03/20/2011 14:24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Commodity released: (select only one, based on predominant volume released):</td>
<td>Refined and/or Petroleum Product (non-HVL) which is a Liquid at Ambient Conditions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Specify Commodity Subtype:</td>
<td>Diesel, Fuel Oil, Kerosene, Jet Fuel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- If &quot;Other&quot; Subtype, Describe:</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>- If Biofuel/Alternative Fuel and Commodity Subtype is Ethanol Blend, then % Ethanol Blend:</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>- If Biofuel/Alternative Fuel and Commodity Subtype is Biodiesel, then Biodiesel Blend (e.g. B2, B20, B100):</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>9. Estimated volume of commodity released unintentionally (Barrels):</td>
<td>300.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Estimated volume of intentional and/or controlled release/blowdown (Barrels):</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Estimated volume of commodity recovered (Barrels):</td>
<td>268.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Were there fatalities?</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- If Yes, specify the number in each category:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12a. Operator employees</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12b. Contractor employees working for the Operator</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12c. Non-Operator emergency responders</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12d. Workers working on the right-of-way, but NOT associated with this Operator</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12e. General public</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12f. Total fatalities (sum of above)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Were there injuries requiring inpatient hospitalization?</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- If Yes, specify the number in each category:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13a. Operator employees</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13b. Contractor employees working for the Operator</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13c. Non-Operator emergency responders</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13d. Workers working on the right-of-way, but NOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 133920 Appendix D - Buckeye Accident Supplemental Report

| Question |
|---|---|
| 13e. General public | | |
| 13f. Total injuries (sum of above) | | |
| 14. Was the pipeline/facility shut down due to the Accident? | Yes |
| - If No, Explain: | | |
| 14a. Local time and date of shutdown: | 03/20/2011 14:10 |
| 14b. Local time pipeline/facility restarted: | 03/23/2011 15:23 |
| - 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: | 03/20/2011 14:02 |
| 18b. Local time Operator resources arrived on site: | 03/20/2011 15:16 |

#### PART B - ADDITIONAL LOCATION INFORMATION

1. Was the origin of Accident onshore? | Yes |
| - If Yes, Complete Questions (2-12) | | |
| - If No, Complete Questions (13-15) | | |
| 2. State: | Pennsylvania |
| 3. Zip Code: | 15077 |
| 4. City: | Shippingport |
| 5. County or Parish: | Beaver |
| 6. Operator-designated location: | Milepost/Valve Station |
| Specify: | MP 1.46 |
| 7. Pipeline/Facility name: | | |
| 8. Segment name/ID: | IP820CP |
| 9. Was Accident on Federal land, other than the Outer Continental Shelf (OCS)? | No |
| 10. Location of Accident: | Pipeline Right-of-way |
| Specify: | Other |
| - If Other, Describe: | washout |
| Depth-of-Cover (in): | | |
| 11. Area of Accident (as found): | Aboveground |
| 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: | Pipe |
| 3. Item involved in Accident: | Pipe |
| - If Pipe, specify: | Pipe Body |
3a. Nominal diameter of pipe (in): 10
3b. Wall thickness (in): .279
3c. SMYS (Specified Minimum Yield Strength) of pipe (psi): 42,000
3d. Pipe specification: X42
3e. Pipe Seam, specify: Seamless
3f. Pipe manufacturer:
3g. Year of manufacture:
3h. Pipeline coating type at point of Accident, specify: Coal Tar
- 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:
4. Year item involved in Accident was installed: 1951
5. Material involved in Accident: Carbon Steel
- If Material other than Carbon Steel, specify:
6. Type of Accident Involved: Leak
- If Mechanical Puncture – Specify Approx. size: in. (axial) by in. (circumferential)
- If Leak - Select Type: Pinhole
- If Rupture - Select Orientation:
- If Other, Describe:
Approx. size: in. (widest opening) by in. (length circumferentially or axially)
- 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: Yes
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? Yes
7. Did the released commodity reach or occur in one or more High Consequence Area (HCA)? Yes
7a. If Yes, specify HCA type(s): (Select all that apply)
- Commercially Navigable Waterway:
<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was this HCA identified in the &quot;could affect&quot; determination for this Accident site in the Operator's Integrity Management Program?</td>
<td>Yes</td>
</tr>
<tr>
<td>- High Population Area:</td>
<td></td>
</tr>
<tr>
<td>- Other Populated Area:</td>
<td>Yes</td>
</tr>
<tr>
<td>- Unusually Sensitive Area (USA) - Drinking Water</td>
<td>Yes</td>
</tr>
<tr>
<td>- Unusually Sensitive Area (USA) - Ecological</td>
<td></td>
</tr>
<tr>
<td>8. Estimated cost to Operator :</td>
<td></td>
</tr>
<tr>
<td>8a. Estimated cost of public and non-Operator private property damage paid/reimbursed by the Operator</td>
<td>$ 0</td>
</tr>
<tr>
<td>8b. Estimated cost of commodity lost</td>
<td>$ 0</td>
</tr>
<tr>
<td>8c. Estimated cost of Operator's property damage &amp; repairs</td>
<td>$ 111,959</td>
</tr>
<tr>
<td>8d. Estimated cost of Operator's emergency response</td>
<td>$ 0</td>
</tr>
<tr>
<td>8e. Estimated cost of Operator's environmental remediation</td>
<td>$ 6,658</td>
</tr>
<tr>
<td>8f. Estimated other costs</td>
<td>$ 0</td>
</tr>
<tr>
<td>8g. Estimated total costs (sum of above)</td>
<td>$ 118,617</td>
</tr>
</tbody>
</table>

PART E - ADDITIONAL OPERATING INFORMATION

1. Estimated pressure at the point and time of the Accident (psig): 462.00
2. Maximum Operating Pressure (MOP) at the point and time of the Accident (psig): 1,147.00
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

5. Was "Onshore Pipeline, Including Valve Sites" OR "Offshore Pipeline, Including Riser and Riser Bend" selected in PART C, Question 2? Yes

5a. Type of upstream valve used to initially isolate release source: Remotely Controlled
5b. Type of downstream valve used to initially isolate release source: Remotely Controlled
5c. Length of segment isolated between valves (ft): 88,806
5d. Is the pipeline configured to accommodate internal inspection tools? Yes

5e. For this pipeline, are there operational factors which significantly complicate the execution of an internal inspection tool run? No

5f. If Other, Describe: None
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? No
      6d. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Accident? No

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? No
      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? No

8. How was the Accident initially identified for the Operator? Notification from Emergency Responder
   - If Other, Specify:

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? Yes, but the investigation of the control room and/or controller actions has not yet been completed by the operator (Supplemental Report Required)
   - 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)
   - 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
      - 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?  No

- If Yes:
  2a. Specify how many were tested:
  2b. Specify how many failed:

**PART G – APPARENT CAUSE**

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).

<table>
<thead>
<tr>
<th>Apparent Cause:</th>
<th>G1 - Corrosion Failure</th>
</tr>
</thead>
</table>

**G1 - Corrosion Failure** - only one sub-cause can be picked from shaded left-hand column

<table>
<thead>
<tr>
<th>Corrosion Failure – Sub Cause:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>- If External Corrosion:</td>
<td></td>
</tr>
<tr>
<td>1. Results of visual examination:</td>
<td>Localized Pitting</td>
</tr>
<tr>
<td>2. Type of corrosion: (select all that apply)</td>
<td></td>
</tr>
<tr>
<td>- Galvanic</td>
<td></td>
</tr>
<tr>
<td>- Atmospheric</td>
<td></td>
</tr>
<tr>
<td>- Stray Current</td>
<td></td>
</tr>
<tr>
<td>- Microbiological</td>
<td></td>
</tr>
<tr>
<td>- Selective Seam</td>
<td></td>
</tr>
<tr>
<td>- Other:</td>
<td>Yes</td>
</tr>
<tr>
<td>- If Other, Describe:</td>
<td>A professional metallurgical analysis claims it is likely that the corrosive low pH water directly contacting the exposed segment of pipeline caused the localized external pitting corrosion leading to the through wall defect and the surrounding metal loss.</td>
</tr>
</tbody>
</table>

3. The type(s) of corrosion selected in Question 2 is based on the following: (select all that apply)
- Field examination
- Determined by metallurgical analysis Yes
- Other: |

4. Was the failed item buried under the ground? No

- If Yes :
  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? Yes |

5. Was there observable damage to the coating or paint in the vicinity of the corrosion? No

- If Internal Corrosion: |

6. Results of visual examination: |

- Other: |

7. Type of corrosion (select all that apply): |
- 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: (select all that apply): |
- Field examination |
- Determined by metallurgical analysis |
- Other: |
  - If Other, Describe: |

9. Location of corrosion (select all that apply): |
- Low point in pipe
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: 2006

      - 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: 2007

   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: (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

<table>
<thead>
<tr>
<th>Excavation Damage – Sub-Cause:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- If Excavation Damage by Operator (First Party):</td>
</tr>
<tr>
<td>- If Excavation Damage by Operator's Contractor (Second Party):</td>
</tr>
<tr>
<td>- If Excavation Damage by Third Party:</td>
</tr>
<tr>
<td>- If Previous Damage due to Excavation Activity:</td>
</tr>
</tbody>
</table>

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
      - Ultrasonic
      - Geometry
      - Caliper
      - Crack
      - Hard Spot
      - Combination Tool
      - Transverse Field/Triaxial
      - 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:
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:

<table>
<thead>
<tr>
<th>Type of Examination</th>
<th>Most recent year conducted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiography</td>
<td></td>
</tr>
<tr>
<td>Guided Wave Ultrasonic</td>
<td></td>
</tr>
<tr>
<td>Handheld Ultrasonic Tool</td>
<td></td>
</tr>
<tr>
<td>Wet Magnetic Particle Test</td>
<td></td>
</tr>
<tr>
<td>Dry Magnetic Particle Test</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

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
- Private
- 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?

17a. If Yes, specify duration of the interruption (hours)

17b. 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?
   - 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:
### Material Failure of Pipe or Weld – Sub-Cause:

1. The sub-cause selected below is based on the following: *(select all that apply)*
   - Field Examination
   - Determined by Metallurgical Analysis
   - Other Analysis
     - If "Other Analysis", Describe:
     - Sub-cause is Tentative or Suspected; Still Under Investigation
       (Supplemental Report required)

2. If Construction, Installation, or Fabrication-related:
   - List contributing factors: *(select all that apply)*
     - Fatigue or Vibration-related
       - Specify:
         - If Other, Describe:
     - Mechanical Stress:
     - Other
       - If Other, Describe:

3. If Original Manufacturing-related *(NOT girth weld or other welds formed in the field)*:
   - List contributing factors: *(select all that apply)*
     - Fatigue or Vibration-related:
       - Specify:
         - If Other, Describe:
     - Mechanical Stress:
     - Other
       - If Other, Describe:

4. If Environmental Cracking-related:
   - Specify:
     - Other - Describe:

5. Complete the following if any Material Failure of Pipe or Weld sub-cause is selected.

   4. Additional factors: *(select all that apply)*:
      - 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:
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
       - Guided Wave Ultrasonic
       - Handheld Ultrasonic Tool
       - Wet Magnetic Particle Test
       - Dry Magnetic Particle Test
       - Other

G6 – Equipment Failure - only one sub-cause can be selected from the shaded left-hand column

<table>
<thead>
<tr>
<th>Equipment Failure – Sub-Cause:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- If Malfunction of Control/Relief Equipment:</td>
</tr>
<tr>
<td>1. Specify: (select all that apply) -</td>
</tr>
<tr>
<td>- Control Valve</td>
</tr>
<tr>
<td>- Instrumentation</td>
</tr>
<tr>
<td>- SCADA</td>
</tr>
<tr>
<td>- Communications</td>
</tr>
<tr>
<td>- Block Valve</td>
</tr>
<tr>
<td>- Check Valve</td>
</tr>
<tr>
<td>- Relief Valve</td>
</tr>
<tr>
<td>- Power Failure</td>
</tr>
<tr>
<td>- Stopple/Control Fitting</td>
</tr>
<tr>
<td>- ESD System Failure</td>
</tr>
<tr>
<td>- Other</td>
</tr>
</tbody>
</table>
|   - If Other – Describe:

<table>
<thead>
<tr>
<th>If Pump or Pump-related Equipment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Specify:</td>
</tr>
</tbody>
</table>
|   - If Other – Describe:

<table>
<thead>
<tr>
<th>If Threaded Connection/Coupling Failure:</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Specify:</td>
</tr>
</tbody>
</table>
|   - If Other – Describe:

<table>
<thead>
<tr>
<th>If Non-threaded Connection Failure:</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Specify:</td>
</tr>
</tbody>
</table>
|   - If Other – Describe:

<table>
<thead>
<tr>
<th>If Defective or Loose Tubing or Fitting:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- If Failure of Equipment Body (except Pump), Tank Plate, or other Material:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>If Other Equipment Failure:</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Describe:</td>
</tr>
</tbody>
</table>

Complete the following if any Equipment Failure sub-cause is selected.

6. Additional factors that contributed to the equipment failure: (select all that apply)
   - 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:

- If Damage by Operator or Operator’s Contractor NOT Related to Excavation and NOT due to Motorized Vehicle/Equipment Damage:

- If Tank, Vessel, or Sump/Separator Allowed or Caused to Overfill or Overflow:
  1. Specify:
  - If Other, Describe:

- If Valve Left or Placed in Wrong Position, but NOT Resulting in a Tank, Vessel, or Sump/Separator Overflow or Facility Overpressure:

- If Pipeline or Equipment Overpressured:

- If Equipment Not Installed Properly:

- If Wrong Equipment Specified or Installed:

- If Other Incorrect Operation:

  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

On March 20th 2011 at approximately 14:02, Buckeye was notified by emergency responders of a possible leak on the Buckeye line in Shippingport, PA. Buckeye immediately dispatched local field personnel and began a controlled shutdown and isolation of the line containing Ultra Low Sulfur Diesel (ULSD). The appropriate internal and external notifications were made to report the release and dispatch teams of responders to contain the product and repair the defect in the line. The damaged pipe was cut out and replaced with certified pipe on 3/23/11. The pipe segment containing the defect was sent to a laboratory for metallurgical analysis to determine the exact cause of the release. Once the permanent repair was completed on March 23rd, the line was restarted at a temporarily reduced MOP. As an extra precaution, the line is operating at the reduced MOP until the analysis of the pipeline is completed. Most of the product has been recovered as remediation efforts continue.

A professional metallurgical analysis claims it is likely that the corrosive low pH water directly contacting the exposed segment of pipeline caused the localized external pitting corrosion leading to the through wall defect and the surrounding metal loss.
### PART I - PREPARER AND AUTHORIZED SIGNATURE

<table>
<thead>
<tr>
<th>Preparer's Name</th>
<th>Dave Jones</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparer's Title</td>
<td>Regulatory Compliance Specialist</td>
</tr>
<tr>
<td>Preparer's Telephone Number</td>
<td>610-904-4916</td>
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<tr>
<td>Preparer's E-mail Address</td>
<td><a href="mailto:djones@buckeye.com">djones@buckeye.com</a></td>
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<tr>
<td>Preparer's Facsimile Number</td>
<td>610-904-4545</td>
</tr>
<tr>
<td>Authorized Signature's Name</td>
<td>John Reinbold</td>
</tr>
<tr>
<td>Authorized Signature Title</td>
<td>Group Leader - Compliance</td>
</tr>
<tr>
<td>Authorized Signature Telephone Number</td>
<td>610-904-4185</td>
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<tr>
<td>Authorized Signature Email</td>
<td><a href="mailto:jreinbold@buckeye.com">jreinbold@buckeye.com</a></td>
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<td>06/07/2011</td>
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