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

Principal Investigator	Doug Allen, CA SFM
Senior Accident Investigator	Peter Katchmar
Region Director	Chris Hoidal
Date of Report	11/9/2010
Subject	Failure Investigation Report – SFPP LP Bleed Fitting Corrosion

Operator, Location, & Consequences

Date of Failure	3/16/2010
Commodity Released	Refined Products
City/County & State	Sacramento, CA
OpID & Operator Name	18092 SFPP, LP
Unit # & Unit Name	33725 CSFM #1410F
SMART Activity #	129735
Milepost / Location	1111 Exposition Blvd, Sacramento, CA
Type of Failure	Leak from Bleed Fitting due to Internal Corrosion
Fatalities	0
Injuries	0
Description of area impacted	Mixed use suburban area
Property Damage	$480,000

Executive Summary

On March 16, 2010 at 1108 hours (PST), Kinder Morgan discovered a release on their LS20 pipeline (CSFM 0325) located at 1111 Exposition Blvd east of Building 601. By averaging the concentration of product in soil, Kinder Morgan estimated 5.12 barrels of transmix product was released and recovered. There were no injuries associated with the release. A leaking ½ inch body bleed fitting on a check valve bypass valve was the source of the leak.

System Details

The Kinder Morgan LS20 12" pipeline transports refined product 23 miles from the Kinder Morgan Sacramento Station to the Kinder Morgan Rocklin Station. The maximum operating pressure for LS20 is 1,434 psi. At the time of the incident, the line pressure at the American River North Check Valve was 417 psi. LS20 is classified as an Interstate pipeline.

Events Leading up to the Failure

Kinder Morgan discovered the release on March 16, 2010 while Kinder Morgan employees were preparing to repair an access point to the check valve bypass on LS20. The bypass is located just upstream of the American River North Block Valve at MP 76.75. Kinder Morgan inspects each check valve bypass on the LS20 pipeline twice each calendar year. During these inspections, they operate the bypass valves to flush any contaminates out of the bypass line. Additionally, they test for indications of hydrocarbons at the bypass valve access point using a portable vapor detector. The last inspection of this valve was on October 15, 2009 and while preparing for the April 2010 inspection Kinder Morgan discovered that sand and dirt had migrated in the access point preventing the inspection of the check valve bypass. Jason Brothers, Kinder Morgan Right of Way Specialist, discovered product in the soil shortly after he arrived at the check valve to mark the pipeline at 1108 hours (PST). Kinder Morgan began shutting down the pipeline while an investigation was started. Mr. Brothers reported the incident to CalEMA at 1122 hours (PST) on A 16, 2010.

At the time of the accident, the Kinder Morgan Concord Station pumps were providing pressure to LS20. These pumps were shutdown at 1116 hours (PST) on March 16, 2009. Kinder Morgan isolated the release site by closing the Sacramento MOV-4 (MP 70.12) at 1118 hours (PST), the American River South Block Valve (MP 75.32) at 1206 hours (PST), and the American River North Block Valve (MP 76.75) at 1208 hours (PST).

Emergency Response

Kinder Morgan excavated around both the American River North Block Valve and the American River North Check Valve attempting to locate the source. As a vacuum truck drained the pipe section, a small amount of product was seen dripping from a fitting on the Check Valve Bypass Valve. Further excavation revealed a trail of product approximately 30 feet upstream of the Check Valve. There is a 1 percent grade from the Check Valve to the end of the contaminated soil indicating a possible additional leak source. Kinder Morgan was unable to determine that the fitting was the only leak source. Because they could not rule out the 30-foot section of line pipe, Kinder Morgan decided to remove a 41' 3" section of pipe that included the check valve, the bypass, and the pipe over the contaminated soil. Kinder Morgan transported the removed pipe in two sections to their Rocklin Station.

Summary of initial start-up plan and return-to-service, including preliminary safety measures

At 1800 hours (PST) on March 17, 2010, Kinder Morgan removed the pipe section. In its place, a straight 12.75", X60, 0.0250" pipe was installed. Before they installed this straight pipe section, Kinder Morgan engineers determined that LS20 was able to operate safety without the American River North Check Valve in place. The new pipe had the CSFM hydrostatic test id #02-175 stenciled on the side. ARB Contractors, Scott Rogers and Sam Wegner, welded the pipe section in place. Both welders were certified on November 4, 2009 and had current operator qualifications. The weld successfully passed the NDT (xray) examination at 2240 hours (PST).

The startup procedure included a stand up pressure test for 30 minutes. The pipe was pressured to 400 psi at the Kinder Morgan Rocklin Station and was monitored at the release site and at the Kinder Morgan Orange Control Center. Kinder Morgan then conducted a running pressure test for an additional 30 minutes. They held 300 psi at the Kinder Morgan Rocklin Station while monitoring the line. The line successfully passed the stand up pressure test and the running pressure test. LS20 was returned to service at 0116 hours (PST) on March 18. I returned to the release site on March 18-19 to observe the coating of the new pipe section. The pipe coating material was Denso-Protal, an epoxy coating that was brush applied.

Investigation Findings & Contributing Factors

Kinder Morgan had Jose R. Rodriguez from the Mistras Group perform an examination on the removed section of pipe from LS20 at the Rocklin Station on June 1-4, 2010. He assessed the coating and conducted an NDT examination prior to the hydrostatic test. The pipeline had a FBE coating that was wrapped with Polyken tape. The tape was well bonded and the only damage to the existing FBE coating was attributed to the removal and transportation of the pipe. The NDT included magnet particle testing and ultrasonic examinations. Kinder Morgan contractor, ARB, sandblasted the pipeline and check valve with a sand and walnut hull mix in preparation for a magnetic particle inspection. Prior to the examination, Kinder Morgan reviewed the raw ILI data and found three areas that they wanted to review during the examination. The examination found these areas to be small flat spots on the pipe. Kinder Morgan believes they may be grind marks from the factory. A negligible amount of wall loss was found in these areas but did not contribute to the release. No indications of cracks or corrosion were found on the pipe, the check valve, or the check valve bypass. The hydrostatic test was performed on June 3, 2010 by ARB. A drip developed on a ½ inch fitting on the 4" check valve bypass valve as the pipe section was pressured to 83 psi. Kinder Morgan continued to pressure the pipe to 651 psi searching for additional leak sources; however, no other leaks were found.

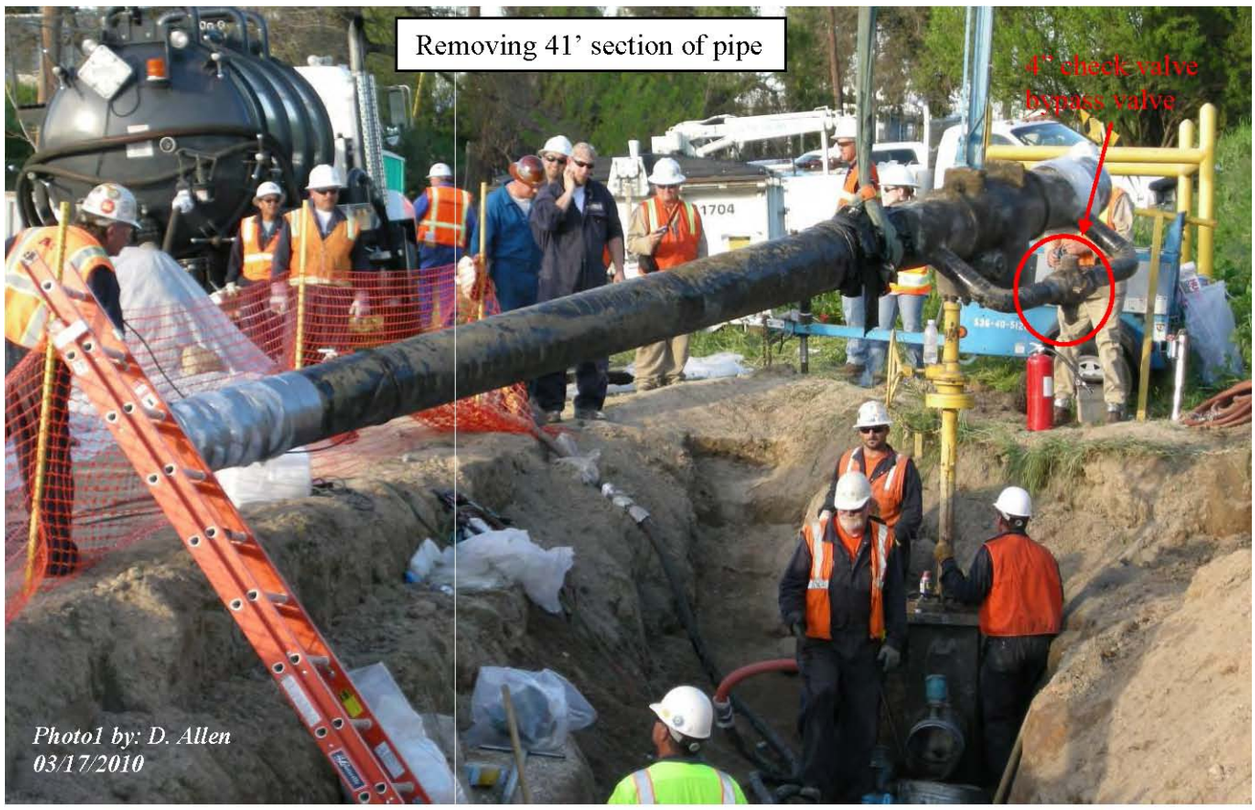
The March 16, 2010 release on the LS20 pipeline originated from a ½-inch body bleed fitting on a 4-inch check valve bypass valve. The release was caused by corrosion in the body bleed fitting. Residual water may have been trapped in the fitting assembly initiating the corrosion. Kinder Morgan was unable to determine the source of the water.

Appendices

Photographs

NRC Report

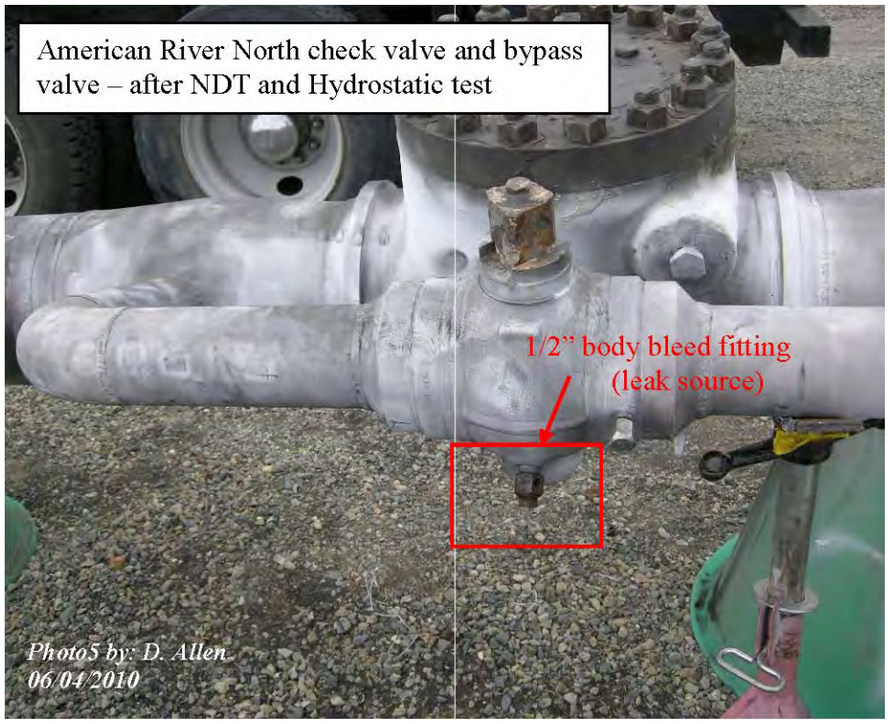
Operator Accident Written Report


Removing 41’ section of pipe
4” check valve bypass valve
Photo1 by: D. Allen
03/17/2010


1/2” body bleed fitting (leak source)
Photo2 by: D. Allen
03/17/2010


New 41’ section of pipe
Photo3 by: D. Allen
03/17/2010


Coating new 41’ section
Photo4 by: D. Allen
03/19/2010


American River North check valve and bypass valve – after NDT and Hydrostatic test
1/2" body bleed fitting (leak source)
Photo5 by: D. Allen 06/04/2010


Drip developed here during hydostatic test
Photo6 by: D. Allen 06/04/2010

NATIONAL RESPONSE CENTER 1-800-424-8802
*** For Public Use ***
Information released to a third party shall comply with any
applicable federal and/or state Freedom of Information and Privacy Laws

Incident Report # 934156

INCIDENT DESCRIPTION

*Report taken at 14:29 on 16-MAR-10
Incident Type: PIPELINE
Incident Cause: UNKNOWN
Affected Area:
The incident was discovered on 16-MAR-10 at 11:10 local time.
Affected Medium: SUBSURFACE

SUSPECTED RESPONSIBLE PARTY

XX

Type of Organization: UNKNOWN

INCIDENT LOCATION

1111 EXPOSITION BLVD County: SACRAMENTO
NEAR BUILDING 601
City: SACRAMENTO State: CA

150 FT FROM ADDRESS LISTED BELOW

RELEASED MATERIAL(S)

CHRIS Code: GAS Official Material Name: GASOLINE: AUTOMOTIVE (UNLEADED)
Also Known As:
Qty Released: 0 UNKNOWN AMOUNT
CHRIS Code: ODS Official Material Name: OIL: DIESEL
Also Known As:
Qty Released: 0 UNKNOWN AMOUNT

DESCRIPTION OF INCIDENT

WHILE DIGGING A CHECK VALVE ON A PIPELINE, A GAS / DIESEL MIXTURE WAS OBSERVED IN THE SOIL. THE CAUSE HAS NOT BEEN DETERMINED.

INCIDENT DETAILS

Pipeline Type: OTHER
DOT Regulated: YES
Pipeline Above/Below Ground: ABOVE
Exposed or Under Water: NO
Pipeline Covered: UNKNOWN

DAMAGES

Fire Involved:	NO	Fire Extinguished: UNKNOWN			
INJURIES:	NO	Hospitalized:	Empl/Crew:	Passenger:	
FATALITIES:	NO	Empl/Crew:	Passenger:	Occupant:	
EVACUATIONS:	NO	Who Evacuated:	Radius/Area:		
Damages:	NO				

Closure Type		Description of Closure	Length of Closure	Direction of Closure	
Air:	N				
Road:	N				Major Artery: N
Waterway:	N				

Track: N

Passengers Transferred: NO
Environmental Impact: UNKNOWN
Media Interest: NONE Community Impact due to Material:

REMEDIAL ACTIONS

CLEAN UP TBD
Release Secured: UNKNOWN
Release Rate:
Estimated Release Duration:

WEATHER

Weather: CLEAR, ºF

ADDITIONAL AGENCIES NOTIFIED

Federal: FEMA
State/Local: NONE
State/Local On Scene: NONE
State Agency Number: NONE

NOTIFICATIONS BY NRC

CA U.S. ATTORNEY'S OFFICE NORTH (MAIN OFFICE)
16-MAR-10 14:35
USCG ICC (ICC ONI)
16-MAR-10 14:35
CONTRA COSTA OFC OF SHERIFF (HOMELAND SECURITY UNIT)
16-MAR-10 14:35
DOT CRISIS MANAGEMENT CENTER (MAIN OFFICE)
16-MAR-10 14:35
U.S. EPA IX (MAIN OFFICE)
16-MAR-10 14:37
U.S. EPA IX (SECONDARY)
16-MAR-10 14:35
FEMA REGION 09 (SITUATION AWARENESS UNIT)
16-MAR-10 14:35
NATIONAL INFRASTRUCTURE COORD CTR (MAIN OFFICE)
16-MAR-10 14:35
NOAA RPTS FOR CA (MAIN OFFICE)
16-MAR-10 14:35
PIPELINE & HAZMAT SAFETY ADMIN (OFFICE OF PIPELINE SAFETY (AUTO))
16-MAR-10 14:35
CA STATE EMERGENCY SERVICES (MAIN OFFICE)
16-MAR-10 14:35
STATE TERRORISM & THREAT ASSESS CTR (COMMAND CENTER SACRAMENTO)
16-MAR-10 14:35
CITY OF YUMA EMERGENCY MANAGEMENT (COMMAND CENTER)
16-MAR-10 14:35

ADDITIONAL INFORMATION

NO ADDITIONAL INFORMATION.

*** END INCIDENT REPORT # 934156 ***

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:**	04/14/2010
	No.	20100042 - 15676 --- (DOT Use Only)

ACCIDENT REPORT - HAZARDOUS LIQUID PIPELINE SYSTEMS

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**
Report Status:	Submitted		
Create Date:	03/11/2011		
1. Operator's OPS-issued Operator Identification Number (OPID):	18092		
2. Name of Operator	SFPP, LP		
3. Address of Operator:			
3a. Street Address	500 DALLAS STREET		
3b. City	HOUSTON		
3c. State	Texas		
3d. Zip Code	77002		
4. Local time *(24-hr clock)* and date of the Accident:	03/16/2010 11:10		
5. Location of Accident:			
Latitude:	38.5997		
Longitude:	-121.4483		
6. National Response Center Report Number (if applicable):	934156		
7. Local time *(24-hr clock)* and date of initial telephonic report to the National Response Center (if applicable):	03/16/2010 11:25		
8. Commodity released: *(select only one, based on predominant volume released)*	Refined and/or Petroleum Product (non-HVL) which is a Liquid at Ambient Conditions		
- Specify Commodity Subtype:	Mixture of Refined Products (transmix or other mixture)		
- 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):	48.00		
10. Estimated volume of intentional and/or controlled release/blowdown (Barrels):			
11. Estimated volume of commodity recovered (Barrels):	5.12		
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:	03/16/2010 11:16
14b. Local time pipeline/facility restarted:	03/18/2010 01:16
- 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:	03/16/2010 11:10
18b. Local time Operator resources arrived on site:	03/16/2010 11:10

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)	
- If Onshore:	
2. State:	California
3. Zip Code:	95815
4. City	Sacramento
5. County or Parish	Sacramento
6. Operator-designated location:	Milepost/Valve Station
Specify:	76.75
7. Pipeline/Facility name:	LS 20
8. Segment name/ID:	LS 20
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):	60
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:	Valve

- 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:	Auxiliary or Other Valve
- 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:	1987
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:	Other
- If Other, Describe:	
- 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:	Yes
4a. If Yes, specify all that apply:	
- Surface water	
- Groundwater	
- Soil	Yes
- 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:	
Was this HCA identified in the "could affect"	

determination for this Accident site in the Operator's Integrity Management Program?	
- High Population Area:	Yes
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	Yes
- 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 cost to Operator :	
8a. Estimated cost of public and non-Operator private property damage paid/reimbursed by the Operator	$ 0
8b. Estimated cost of commodity lost	$ 490
8c. Estimated cost of Operator's property damage & repairs	$ 60,000
8d. Estimated cost of Operator's emergency response	$ 70,000
8e. Estimated cost of Operator's environmental remediation	$ 299,510
8f. Estimated other costs	$ 50,000
Describe:	Testing/Investigation for cause
8g. Estimated total costs (sum of above)	$ 480,000

PART E - ADDITIONAL OPERATING INFORMATION

1. Estimated pressure at the point and time of the Accident (psig):	417.00
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):	7,550
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?	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?	No
- If Yes:	
7a. Was it operating at the time of the Accident?	
7b. Was it fully functional at the time of the Accident?	
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?	
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?	
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 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)*	The performance of an informal investigation into the pre-existing condition of the pipeline (i.e. pressure, flow, line balance, etc.) was shown to provide no evidence of an existing problem the Controller(s) should have identified.
- 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?	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).

Apparent Cause:	G1 - Corrosion Failure

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

Corrosion Failure – Sub Cause:	
- If External Corrosion:	
1. Results of visual examination:	
- If Other, Describe:	
2. Type of corrosion: *(select all that apply)*	
- 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: *(select all that apply)*	
- Field examination	
- Determined by metallurgical analysis	
- Other:	
- If Other, Describe:	
4. Was the failed item buried under the ground?	
- 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?	
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
- Other:	Galvanic
7. Type of corrosion *(select all that apply)*: -	
- Corrosive Commodity	
- Water drop-out/Acid	
- Microbiological	
- Erosion	
- Other:	Yes
- If Other, Describe:	Galvanic
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:	Yes
- If Other, Describe:	Metallurgist's evaluation
9. Location of corrosion *(select all that apply)*: -	
- Low point in pipe	
- Elbow	
- Other:	Yes

- If Other, Describe:	Fitting
10. Was the commodity treated with corrosion inhibitors or biocides?	No
11. Was the interior coated or lined with protective coating?	No
12. Were cleaning/dewatering pigs (or other operations) routinely utilized?	Not applicable - Not mainline pipe
13. Were corrosion coupons routinely utilized?	Not applicable - Not mainline pipe
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: *(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:	
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)	
- If Construction, Installation, or Fabrication-related:	
2. List contributing factors: *(select all that apply)*	
- 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: *(select all that apply)*	
- 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: (*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:	
- 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: *(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 3/16/2010 at 1110, while repairing an access hatch to a checkvalve bypass valve, a Kinder Morgan maintenance employee discovered wet soil and diesel fuel. The pipeline was promptly shutdown and agency notifications were made. The OSRO was put on standby during the investigation. Later that afternoon, the release was confirmed and excavation continued to pinpoint the source. KM was originally unable to definitively pinpoint the source and removed approximately 40 feet of pipe along with the checkvalve and bypass valve and replaced with pre-tested pipe. The exact source of the release has been identified via testing as the body bleed venting port fitting. The apparent cause of the leak has been determined to be due to galvanic corrosion in the body bleed fitting assembly of the 4-inch auxiliary (check valve bypass) valve possibly caused by residual water trapped in the fitting assembly. The source of the water is undeterminable.

Note: PART A, **8 ¿ Mixture of gasoline and diesel

**9 A soil and groundwater investigation to determine the lateral and vertical extent was conducted and the amount released has been finalized.

**11 Any additional amount to be recovered will be done through long-term remediation efforts, if any.

Note: PART D, **4.a & 5 Minor amount reached groundwater; monitoring is being conducted under the auspices of the California Regional Water Quality Control Board.

We are finalizing this report because the release response consists only of long-term remediation and monitoring conducted under the auspices of an authorized governmental agency, the estimated final costs and volume recovered have been predicted with a reasonable degree of certainty, the volume of product recovered over time will consistently decrease to the point where an estimated total volume recovered can be predicted with a reasonable degree of accuracy, and we can justify that continuation of Supplemental Report filings in the future will not provide essential information which will be critically different than that contained in the Final Report. If any significant changes are made, we will supplement this report.

Note: PART E, **5.a Type of upstream valve used to initially isolate release source: An MOV was initially remotely closed upstream of the release site @ MP 70.12 @ 1118, then an upstream manual valve was closed @ MP 75.32 @ 1206, then a downstream manual valve was closed @ MP 76.75 (approximately 6 feet downstream of the release site) @1208 isolating the release site. We provided the isolation distance in 5.c between the two manual valves.

9. We were limited to 500 characters; our entire response is: The performance of an informal investigation into the pre-existing condition of the pipeline (i.e. pressure, flow, line balance, etc.) was shown to provide no evidence of an existing problem the Controller(s) should have identified. Furthermore, the actions taken by the Controller(s), upon learning of the potential problem from field personnel physically at the valve, were found to be in alignment with the Operators written policies and procedures and the timeline of events show that action was taken promptly and decisively thus helping to mitigate any further loss or environmental harm.

File Full Name

PART I - PREPARER AND AUTHORIZED SIGNATURE

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