DOT U.S. Department of Transportation
PHMSA Pipeline and Hazardous Materials Safety Administration
OPS Office of Pipeline Safety
Eastern Region

Principal Investigator	Robert Burrough
Senior Accident Investigator	Michael Yazemboski
Region Director	Byron E. Coy
Date of Report	1/14/2016
Subject	Failure Investigation Report—Columbia Gas Transmission Eagle Compressor Station Engine Fire, Chester County, PA

Operator, Location, & Consequences

Date of Failure	8/9/2015
Commodity Released	Natural Gas
City/County & State	Chester Spring/Chester County, Pennsylvania
OpID & Operator Name	2616 Columbia Gas Transmission, LLC
Unit # & Unit Name	2891—Downingtown-PA
SMART Activity #	151051
Milepost/Location	Lat: 40.097453 Long: -75.681189
Type of Failure	Leak—Equipment Failure
Fatalities	0
Injuries	0
Description of area impacted	Class 3 Area, Non-HCA
Total Costs	$484,579

Failure Investigation Report—Columbia Gas Transmission Eagle Compressor Station Engine Fire
Chester County, PA
Failure Date 8/9/2015

Executive Summary

On August 9, 2015, at 10:19 p.m. EST, the compression units at Eagle Compressor Station in Chester Springs, PA, shut down due to an emergency shutdown device (ESD) signal triggered by the Fire Detection/Melt-out sensors over Unit 3. At the time of the ESD, all four units at the station were running. Gas Control called the station operator, who observed a fire in the compressor building after arriving at the station. Line 1804's blowdown stack was releasing material into the atmosphere and its suction header fire valve (L-7210) was not fully closed, allowing material to continue to flow to the station and out the blowdown stack.

Material flowing into the station through Line 1804 was shut off using manually operated upstream block valves. An inspector from the Pipeline and Hazardous Materials Safety Administration (PHMSA) Eastern Region was dispatched to the location on August 10, 2015, to conduct an investigation into the cause of the incident. The source of the fire was determined to be an ethanol coolant leak on a short flexible hose connection between the coolant header and head connection on Unit 3, and notification was made to the National Response Center by Columbia Gas Transmission at 12:16 a.m. EST, on August 10, 2015. The other three units, 1, 2, and 4, were inspected for similar failures in the ethanol hoses before they were returned to service. There were no injuries or fatalities as a result of this incident, and no reported evacuations.

System Details

There are four compressor units located in the main compressor building at Eagle Compressor Station, and the Station Maximum Allowable Operating Pressure (MAOP) is 936 psig.

The PHMSA-designated inspection unit consists of 184 miles of pipelines and 2 compressor stations. The unit boundary stretches from the launcher/receiver at Marietta Compressor Station East to just south of Eagle Compressor Station, south to the PA/MD state line, and east to Gloucester County, New Jersey. Both Eagle Compressor Station and Downingtown Compressor Station are included in this unit.

Events Leading up to the Failure

Prior to the incident, Eagle Compressor Station was operating under normal conditions at a pressure of 775 psig—below the MAOP of 936 psig—with all four compressor units in operation. It was reported that valve maintenance was being conducted at the station; however, this work was not related to the incident.

Emergency Response

On August 9, 2015, at approximately 10:19 p.m., Columbia Gas Transmission, LLC's (CGT) Gas Control Center received a Supervisory Control and Data Acquisition (SCADA) alarm indicating a fire in the main compressor building at CGT's Eagle Compressor Station. Two compressor station operators were dispatched to the location by Gas Control, and when the first station operator arrived he observed a fire in the compressor building. Line 1804's blowdown stack was releasing material into the atmosphere and the Line 1804 suction header fire valve (L-7210) was not fully closed, allowing material to continue to flow to the station and out the blowdown stack.

Material flowing into the station through Line 1804 was shut off using manually operated upstream block valves.

Local residents also contacted CGT and 911 to report a fire at Eagle Station, to which local fire and police responded promptly. The ESD system automatically shut down all four compressor units to isolate the station, as it was designed to do.

An inspector from PHMSA's Eastern Region was dispatched to the location on August 10, 2015, to conduct an investigation into the cause of the incident.

Summary of Return-to-Service

Units 1, 2, and 4 were returned to service on August 10, 2015, at 3:14 a.m., after operating personnel performed safety checks and inspections on the units and found no damage. Unit 3, which was damaged during the fire, remained shut down and isolated. Lighting fixtures, electrical wiring, and paneling located above Unit 3 were also damaged; Unit 3 will remain out of service until proper repairs and inspections are completed.

Investigation Details

The estimated volume of gas released was 6,659 thousand cubic feet (MCF).

The fire and gas release originated at Compressor Unit 3, one of four units at Eagle Compressor Station.

The MAOP of the station is 936 psig, and a review of the SCADA pressures leading up to the incident showed historical operating pressures were below this. Pressure at the time of failure was 775 psig.

Damage was contained to Compressor Unit 3 and its associated ethanol cooling unit. The reinforced hose from the ethanol cooler to Unit 3 failed, causing the ethanol engine coolant to spray onto the compressor engine and exhaust piping. It is believed that the hot exhaust piping may have ignited the ethanol. The fire was a result of the ethanol release, and there was no natural gas released inside the building. Natural gas was only released as part of the isolation and station blowdown during the activation of the ESD system at the station.

Findings and Contributing Factors

The cause of the release and subsequent fire was due to a failure of the reinforced ethanol coolant line from the ethanol cooler to Compressor Unit 3. The coolant line consisted of a flexible reinforced hose connection, and a material defect or vibration from the engine or compressor may have been a contributing factor in this incident.

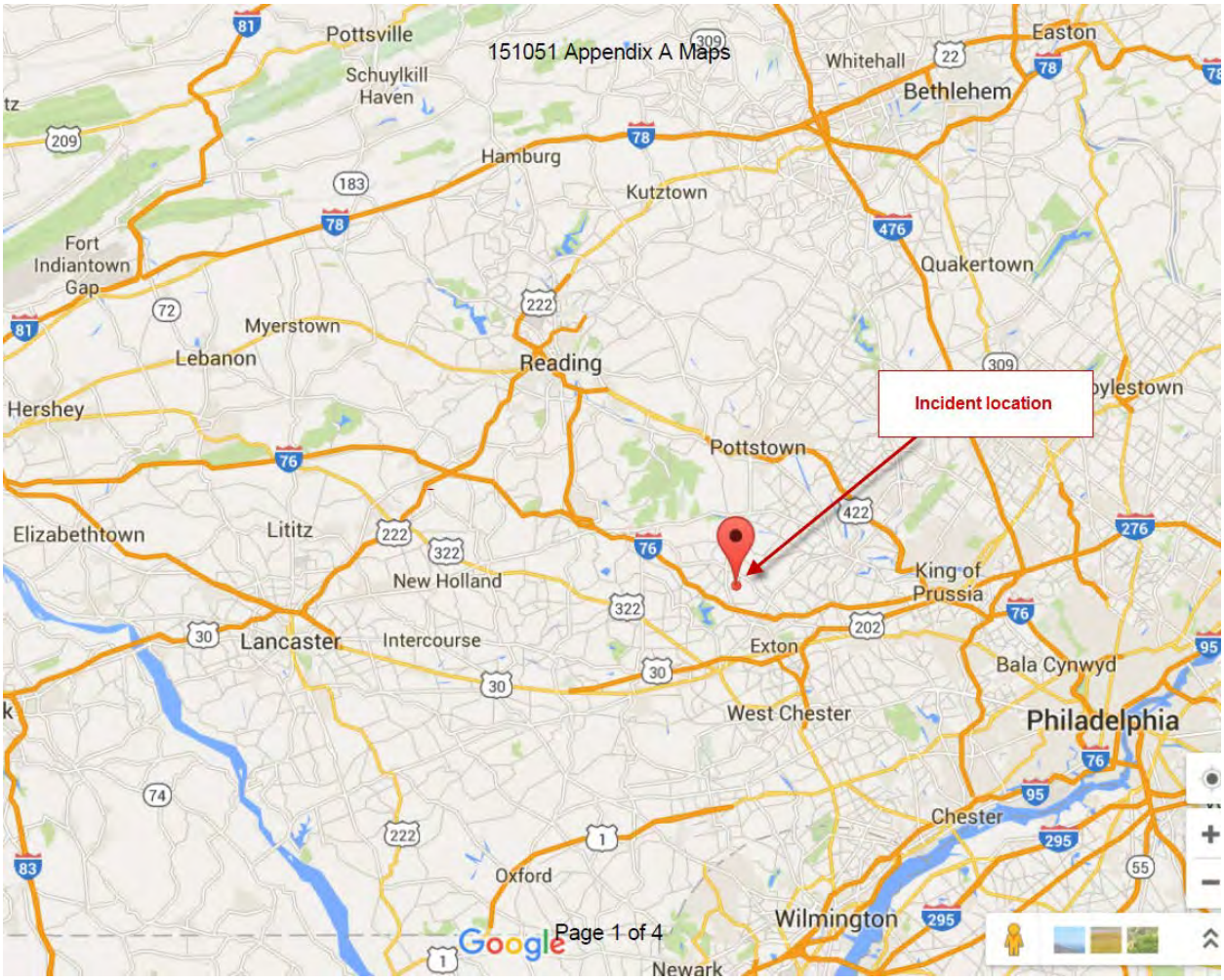
Appendices

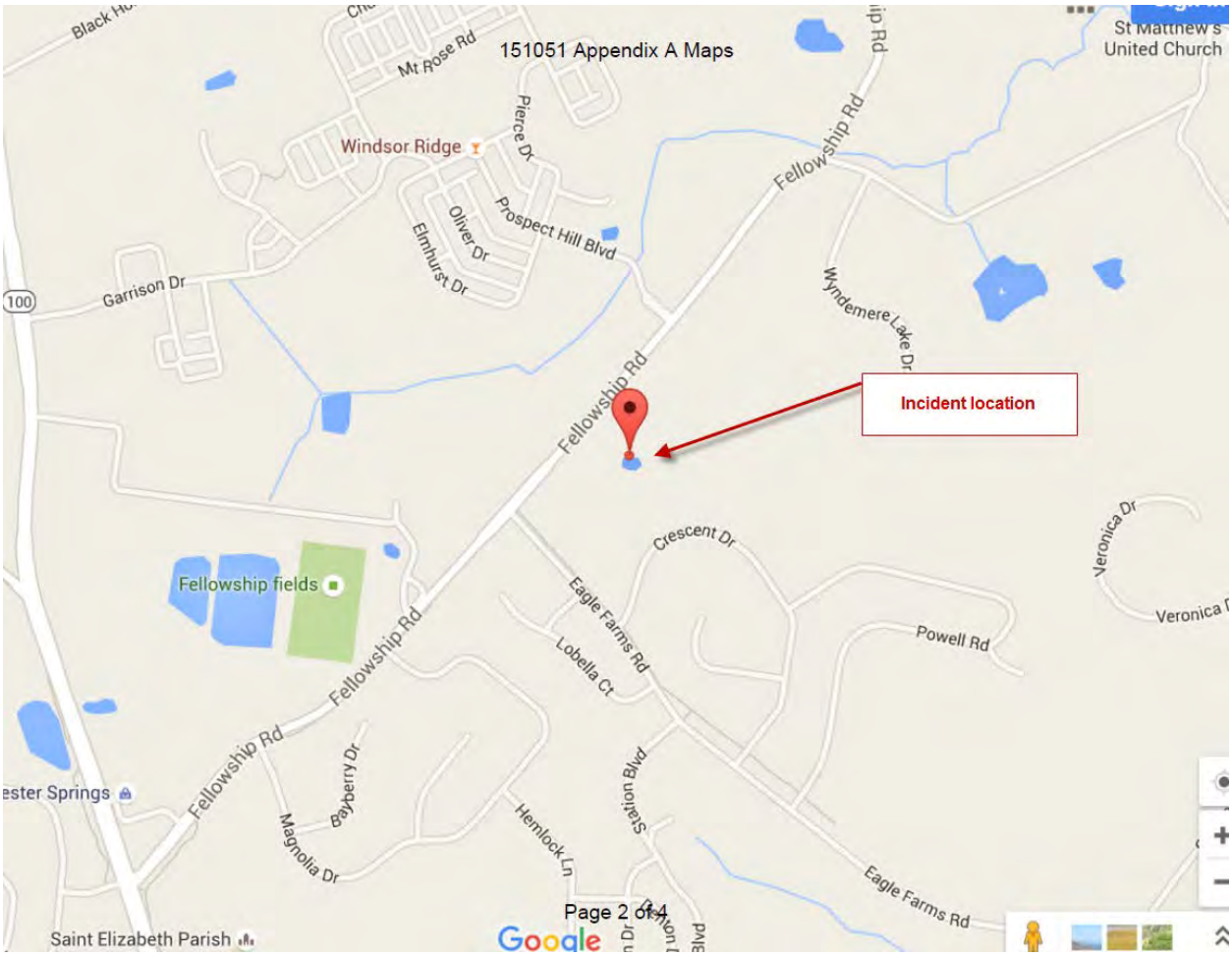
A 151051 Appendix A Maps

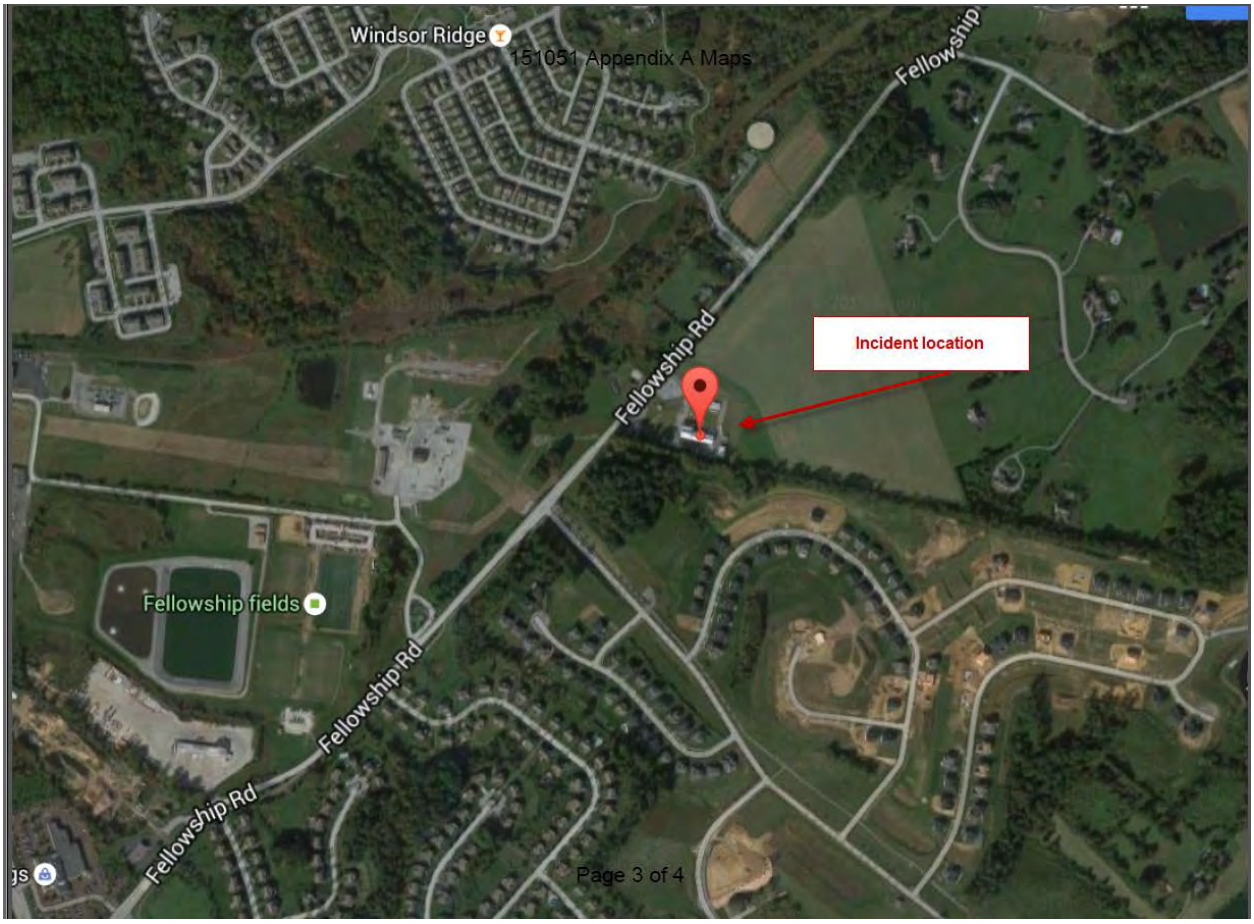
B 151051 Appendix B Photographs

C 151051 Appendix C Incident Report PHMSA Form 7100.2 20150111-16855

D 151051 Appendix D NRC Report 1125195

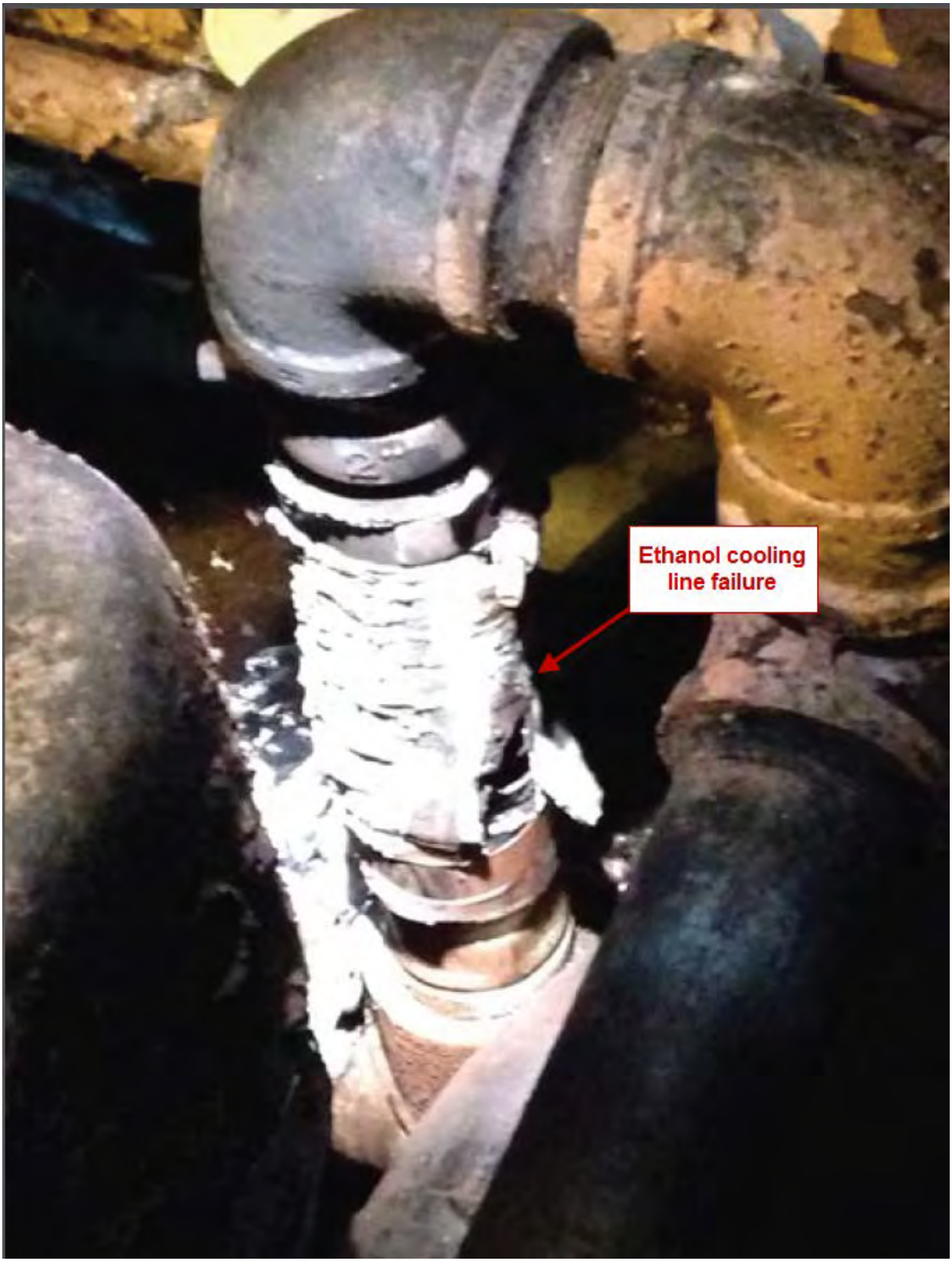

151051 Appendix A Maps
Incident location
Pottsville
Schuylkill Haven
Hamburg
Kutztown
Fort Indiantown Gap
Myerstown
Lebanon
Reading
Hershey
Pottstown
Elizabethtown
Lititz
New Holland
Lancaster
Intercourse
Exton
West Chester
King of Prussia
Bethlehem
Easton
Whitehall
Quakertown
Philadelphia
Bala Cynwyd
Chester
Wilmington
Oxford
Newark
Page 1 of 4
Google


151051 Appendix A Maps
Mt Rose Rd
Windsor Ridge
Pierce Dr
Oliver Dr
Elmhurst Dr
Prospect Hill Blvd
Garrison Dr
100
Fellowship Rd
Wyndemere Lake Dr
Incident location
Fellowship fields
Crescent Dr
Eagle Farms Rd
Lobella Ct
Powell Rd
Veronica Dr
Fellowship Rd
Bayberry Dr
Magnolia Dr
Hemlock Ln
Eagle Farms Rd
Saint Elizabeth Parish
St Matthew's United Church
Google


Windsor Ridge
151051 Appendix A Maps
Fellowship
Fellowship Rd
Incident location
Fellowship fields
Fellowship Rd
Fellowship Rd
Page 3 of 4


151051 Appendix A Maps
Incident location
Page 4 of 4


Reinforced flex
hose connector


Ethanol cooling
line failure


Heat damage from fire resulting from
ethanol coolant ignition


Heat damage to ceiling panels above compressor unit 3. Lighting fixtures and electrical wires also damaged. Units 1, 2 and 4 were not damaged.


Heat damage to ceiling panels above compressor unit 3. Lighting fixtures and electrical wires also damaged. Units 1, 2 and 4 were not damaged.


INGERSOLL-RAND

NOTICE: This report is required by 49 CFR Part 191. 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: 2137-0522 EXPIRATION DATE: 10/31/2016
U.S Department of Transportation Pipeline and Hazardous Materials Safety Administration	**Original Report Date:**	09/04/2015
	No.	20150111 - 16855 (DOT Use Only)

INCIDENT REPORT - GAS TRANSMISSION AND GATHERING 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 2137-0522. All responses to this collection of information are mandatory. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing the 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/library/forms.*

PART A - KEY REPORT INFORMATION

Report Type: *(select all that apply)*	**Original:**	**Supplemental:**	**Final:**
	Yes		
Last Revision Date:			
1. Operator's OPS-issued Operator Identification Number (OPID):	2616		
2. Name of Operator	COLUMBIA GAS TRANSMISSION, LLC		
3. Address of Operator:			
3a. Street Address	1700 MACCORKLE AVE., SE		
3b. City	CHARLESTON		
3c. State	West Virginia		
3d. Zip Code:	25314		
4. Local time *(24-hr clock)* and date of the Incident:	08/09/2015 22:20		
5. Location of Incident:			
Latitude:	40.097453		
Longitude:	-75.681189		
6. National Response Center Report Number (if applicable):	1125195		
7. Local time *(24-hr clock)* and date of initial telephonic report to the National Response Center (if applicable):	08/10/2015 00:16		
8. Incident resulted from:	Unintentional release of gas		
9. Gas released: (select only one, based on predominant volume released)	Natural Gas		
- Other Gas Released Name:			
10. Estimated volume of commodity released unintentionally - Thousand Cubic Feet (MCF):	6,659.08		
11. Estimated volume of intentional and controlled release/blowdown - Thousand Cubic Feet (MCF)			
12. Estimated volume of accompanying liquid release (Barrels):			
13. Were there fatalities?	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 fatalities (sum of above)			
14. Were there injuries requiring inpatient hospitalization?	No		
- If Yes, specify the number in each category:			
14a. Operator employees			
14b. Contractor employees working for the Operator			
14c. Non-Operator emergency responders			
14d. Workers working on the right-of-way, but NOT associated with this Operator			
14e. General public			
14f. Total injuries (sum of above)			
15. Was the pipeline/facility shut down due to the incident?	Yes		
- If No, Explain:			

- If Yes, complete Questions 15a and 15b: *(use local time, 24-hr clock)*	
15a. Local time and date of shutdown	08/09/2015 23:14
15b. Local time pipeline/facility restarted	08/10/2015 03:14
- Still shut down? (* Supplemental Report Required)	
16. Did the gas ignite?	No
17. Did the gas explode?	No
18. Number of general public evacuated:	0
19. Time sequence *(use local time, 24-hour clock)*:	
19a. Local time operator identified Incident– effective 10-2014, changed from "Incident" to "failure"	08/09/2015 22:19
19b. Local time operator resources arrived on site	08/09/2015 22:36
PART B - ADDITIONAL LOCATION INFORMATION	
1. Was the origin of the Incident onshore?	Yes
- Yes (Complete Questions 2-12)	
- No (Complete Questions 13-15)	
If Onshore:	
2. State:	Pennsylvania
3. Zip Code:	19425
4. City	Chester Spring
5. County or Parish	Chester County
6. Operator designated location	Milepost/Valve Station
Specify:	L-7210
7. Pipeline/Facility name:	Eagle Compressor Station
8. Segment name/ID:	Emergency Valve
9. Was Incident on Federal land, other than the Outer Continental Shelf (OCS)?	No
10. Location of Incident :	Operator-controlled property
11. Area of Incident (as found) :	Aboveground
Specify:	Typical aboveground facility piping or appurtenance
Other – Describe:	
Depth-of-Cover (in):	
12. Did Incident occur in a crossing?	No
- If Yes, specify type 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 Incident:	
Select:	
If Offshore:	
13. Approx. water depth (ft) at the point of the Incident:	
14. Origin of Incident:	
- If "In State waters":	
- State:	
- Area:	
- Block/Tract #:	
- Nearest County/Parish:	
- If "On the Outer Continental Shelf (OCS)":	
- Area:	
- Block #:	
15. Area of Incident:	
PART C - ADDITIONAL FACILITY INFORMATION	
1. Is the pipeline or facility: - Interstate - Intrastate	Interstate
2. Part of system involved in Incident:	Onshore Compressor Station Equipment and Piping
3. Item involved in Incident:	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 Incident – 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. Mainline valve manufacturer:	
3j. Year of manufacture:	
- If Other, Describe:	
4. Year item involved in Incident was installed:	Unknown
5. Material involved in Incident:	Carbon Steel
- If Material other than Carbon Steel or Plastic – Specify:	
6. Type of Incident involved:	Other
- If Mechanical Puncture – Specify Approx. size:	
in. (axial) by	
in. (circumferential)	
- If Leak - Select Type:	
- If Other – Describe:	
- If Rupture - Select Orientation:	
- If Other – Describe:	
Approx. size: in. (widest opening):	
by in. (length circumferentially or axially):	
- If Other – Describe:	
	Failed suction header fire valve.

PART D - ADDITIONAL CONSEQUENCE INFORMATION

1. Class Location of Incident:	Class 3 Location
2. Did this Incident occur in a High Consequence Area (HCA)?	No
- If Yes:	
2a. Specify the Method used to identify the HCA:	
3. What is the PIR (Potential Impact Radius) for the location of this Incident? Feet:	84
4. Were any structures outside the PIR impacted or otherwise damaged due to heat/fire resulting from the Incident?	No
5. Were any structures outside the PIR impacted or otherwise damaged NOT by heat/fire resulting from the Incident?	No
6. Were any of the fatalities or injuries reported for persons located outside the PIR?	No
7. Estimated Property Damage :	
7a. Estimated cost of public and non-Operator private property damage paid/reimbursed by the Operator – effective 6-2011, "paid/reimbursed by the Operator" removed	$ 0
Estimated cost of gas released unintentionally – effective 6-2011, moved to item 7f	
Estimated cost of gas released during intentional and controlled blowdown – effective 6-2011, moved to item 7g	
7b. Estimated cost of Operator's property damage & repairs	$ 466,000
7c. Estimated cost of Operator's emergency response	$ 0
7d. Estimated other costs	$ 0
Describe:	Cost of repairs to building including cranes.
7e. Property damage subtotal (sum of above)	$ 466,000
Cost of Gas Released	
7f. Estimated cost of gas released unintentionally	$ 18,579
7g. Estimated cost of gas released during intentional and controlled blowdown	$ 0
7h. Total estimated cost of gas released (sum of 7.f & 7.g above)	$ 18,579
Total of all costs	$ 484,579

PART E - ADDITIONAL OPERATING INFORMATION	
1. Estimated pressure at the point and time of the Incident (psig):_	775.00
2. Maximum Allowable Operating Pressure (MAOP) at the point and time of the Incident (psig):	936.00
Added 10-2014 2a. MAOP established by 49 CFR section:	192.619(a)(3)
- If Other, specify:	
3. Describe the pressure on the system or facility relating to the Incident:	Pressure did not exceed MAOP
4. Not including pressure reductions required by PHMSA regulations (such as for repairs and pipe movement), was the system or facility relating to the Incident operating under an established pressure restriction with pressure limits below those normally allowed by the MAOP?	No
- If Yes - (*Complete 4a and 4b 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?	No
- If Yes - (*Complete 5a. – 5e. below):*	
5a. Type of upstream valve used to initially isolate release source:	
5b. Type of downstream valve used to initially isolate release source:	
5c. Length of segment isolated between valves (ft):	
5d. Is the pipeline configured to accommodate internal inspection tools?	
- 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?	
- If Yes, which operational factors complicate execution? *(select all that apply)*	
- Excessive debris or scale, wax, or other wall build-up	
- Low operating pressure(s)	
- Low flow or absence of flow	
- Incompatible commodity	
- Other	
- If Other, Describe:	
5f. Function of pipeline system:	Transmission System
6. Was a Supervisory Control and Data Acquisition (SCADA)-based system in place on the pipeline or facility involved in the Incident?	Yes
- If Yes:	
6a. Was it operating at the time of the Incident?	Yes
6b. Was it fully functional at the time of the Incident?	Yes
6c. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume or pack calculations) assist with the detection of the Incident?	Yes
6d. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Incident?	Yes
7. How was the Incident initially identified for the Operator?	SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume or pack calculations)
- If Other – Describe:	
7a. If "Controller", "Local Operating Personnel, including contractors", "Air Patrol", or "Ground Patrol by Operator or its contractor" is selected in Question 7, specify:	
8. 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 Incident?	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)*	Root cause investigations identified that due to a breached ethanol line initiating the fire in the compressor unit building. SCADA system functioned as it was designed to and alerted the Gas Controller to perform necessary call-outs to address the alarms.
- If Yes, Describe 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 Incident, were any Operator employees tested under the post-accident drug and alcohol testing requirements of DOT's Drug & Alcohol Testing regulations?	Yes
- If Yes:	
1a. How many were tested:	1
1b. How many failed:	0
2. As a result of this Incident, 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. How many were tested:	
2b. How many failed:	

PART G - APPARENT CAUSE

Select only one box from PART G in the shaded column on the left representing the APPARENT Cause of the Incident, and answer the questions on the right. Describe secondary, contributing, or root causes of the Incident in the narrative (PART H).

Apparent Cause:	G6 - Equipment 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 incident?	
- If Yes, Year protection started:	
4b. Was shielding, tenting, or disbonding of coating evident at the point of the incident?	
4c. Has one or more Cathodic Protection Survey been conducted at the point of the incident?	
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:	
- If Other, Describe:	
7. Cause 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	
- Elbow	
- Drop-out	
- Other	
- If Other, Describe:	
10. Was the gas/fluid 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 Incident" (from PART C, Question 3) is Pipe or Weld.	
14. Has one or more internal inspection tool collected data at the point of the Incident?	
14a. 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 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:	
If Other, Describe:	

15. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Incident?	
- If Yes,	
Most recent year tested:	
Test pressure (psig):	
16. Has one or more Direct Assessment been conducted on this segment?	
- If Yes, and an investigative dig was conducted at the point of the Incident:	
Most recent year conducted:	
- If Yes, but the point of the Incident was not identified as a dig site:	
Most recent year conducted:	
17. Has one or more non-destructive examination been conducted at the point of the Incident since January 1, 2002?	
17a. 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 examined:	
- Guided Wave Ultrasonic	
Most recent year examined:	
- Handheld Ultrasonic Tool	
Most recent year examined:	
- Wet Magnetic Particle Test	
Most recent year examined:	
- Dry Magnetic Particle Test	
Most recent year examined:	
- Other	
Most recent year examined:	
If Other, 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 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 Incident 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 Previous Damage Due to Excavation Activity: Complete Questions 1-5 ONLY IF the "Item Involved in Incident" (From Part C, Question 3) is Pipe or Weld.	
1. Has one or more internal inspection tool collected data at the point of the Incident?	
1a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run:	
- Magnetic Flux Leakage	
Year:	
- Ultrasonic	
Year:	

- Geometry	
Year:	
- Caliper	
Year:	
- Crack	
Year:	
- Hard Spot	
Year:	
- Combination Tool	
Year:	
- Transverse Field/Triaxial	
Year:	
- Other:	
Year:	
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 Incident?	
- 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 Incident:	
Most recent year conducted:	
- If Yes, but the point of the Incident 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 Incident 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	
Year:	
- Guided Wave Ultrasonic	
Year:	
- Handheld Ultrasonic Tool	
Year:	
- Wet Magnetic Particle Test	
Year:	
- Dry Magnetic Particle Test	
Year:	
- Other	
Year:	
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? - Yes - No	
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, then one predominant second level CGA-DIRT Root Cause as well*):	
- Predominant first level CGA-DIRT 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 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 Previous Mechanical Damage NOT Related to Excavation: Complete Questions 3-7 ONLY IF the "Item Involved in Incident" (from PART C, Question 3) is Pipe or Weld.	
3. Has one or more internal inspection tool collected data at the point of the Incident?	
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 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:	
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 Incident?	
- 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 Incident :	
Most recent year conducted:	
- If Yes, but the point of the Incident 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 Incident 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 - Pipe, Weld, or Joint Failure	**Use this section to report material failures ONLY IF the "Item Involved in Incident" (from PART C, Question 3) is "Pipe" or "Weld."**
	Only one **sub-cause** can be selected from the shaded left-hand column

Pipe, Weld or Join Failure – Sub-Cause:	
1. The sub-cause shown above 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	
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:	
- If 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 Incident?	
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 Incident?	
- 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 Incident:	
Most recent year conducted:	
- If Yes, but the point of the Incident 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 Incident 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:	Failure of Equipment Body (except Compressor), Vessel Plate, or other Material
- If Malfunction of Control/Relief Equipment:	
1. Specify:	
- Control Valve	
- Instrumentation	
- SCADA	
- Communications	
- Block Valve	

- Check Valve	
- Relief Valve	
- Power Failure	
- Stopple/Control Fitting	
- Pressure Regulator	
- ESD System Failure	
- Other	
- If Other, Describe:	
- If Compressor or Compressor-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 Other Equipment Failure:	
5. Describe:	Emergency shut valve located on Line 1804 suction header failed to close after the emergency shutdown system was activated
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 gas/fluid	
- Valve vault or valve can contributed to the release	
- Alarm/status failure	
- Misalignment	
- Thermal stress	
- Other	Yes
- If Other, Describe:	Impurities in the actuator tubing
G7 – Incorrect Operation - only one **sub-cause** can be selected from the shaded left-hand column	
Incorrect Operation – Sub-Cause:	
- If Underground Gas Storage, Pressure Vessel, or Cavern Allowed or Caused to Overpressure:	
1. Specify:	
- If Other, Describe:	
- If Other Incorrect Operation:	
2. Describe:	
Complete the following if any Incorrect Operation sub-cause is selected.	
3. Was this Incident 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 Incident:	
5. Was the task(s) that led to the Incident 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 Incident Cause - only one **sub-cause** can be selected from the shaded left-hand column	

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

PART - H NARRATIVE DESCRIPTION OF THE INCIDENT

On August 9, 2015 at 22:19 EST, the compression units at Eagle compressor station (CS) located in Chester Springs, PA did shut down due to an emergency shutdown (ESD) signal that was triggered by the Fire Detection/Melt-out sensors over unit 3. At the time of the ESD all 4 units at the station were running. When the station operator arrived at the station in response to a callout, he noted presence of fire in the compressor building, Line 1804 blowdown stack was found to be releasing material into atmosphere and Line 1804 suction header fire valve (L-7210) not fully closed allowing material to continue to flow to the station and out the blowdown stack.
Material flowing into the station through Line 1804 was shut off using upstream block valves which were manually closed.
The source of the fire was determined to be a coolant leak on a short flexible hose connection between the coolant header and head connection at cylinder No. 5 on an engine/compressor package. The other units were inspected for similar indications on the ethanol hoses before the other units were returned back into service. After the full inspection and safety checks on the other units was completed, they were returned back into service in sequence. Unit No. 3 is still down awaiting repairs.

PART I - PREPARER AND AUTHORIZED SIGNATURE

Preparer's Name	George Hamaty
Preparer's Title	Engineer
Preparer's Telephone Number	(304) 357-3728
Preparer's E-mail Address	ghamaty@cpg.com
Preparer's Facsimile Number	
Authorized Signature Title	Manager System Integrity
Authorized Signature Telephone Number	(304)357-2548
Authorized Signature Email	mikehoffman@cpg.com
Date	09/04/2015

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

Incident Report # 1125195

INCIDENT DESCRIPTION

*Report taken by: CIV NICHAULUS THREATT at 00:16 on 10-AUG-15
Incident Type: PIPELINE
Incident Cause: UNKNOWN
Affected Area:
Incident occurred on 09-AUG-15 at 23:30 local incident time.
Affected Medium: AIR ATMOSPHERE

REPORTING PARTY
Name: GEORGE HAMATY
Organization: COLUMBIA GULF TRANSMISSION
Address: 1700 MACCORKLE AVENUE SE
CHARLESTON, WV 25314
Email Address: ghamaty@cpg.com

PRIMARY Phone: (304)5538306
Type of Organization: PRIVATE ENTERPRISE

SUSPECTED RESPONSIBLE PARTY
Name: GEORGE HAMATY
Organization: COLUMBIA GULF TRANSMISSION
Address: 1700 MACCORKLE AVENUE SE
CHARLESTON, WV 25314
PRIMARY Phone: (304)5538306

INCIDENT LOCATION
310 FELLOWSHIP RD. County: CHESTER
City: CHESTER SPRING State: PA Zip: 19425
COMPRESSOR STATION

RELEASED MATERIAL(S)
CHRIS Code: ONG Official Material Name: NATURAL GAS
Also Known As:
Qty Released: 0 UNKNOWN AMOUNT

DESCRIPTION OF INCIDENT

NATURAL GAS RELEASED FROM A TRANSMISSION PIPELINE COMPRESSOR STATION
DUE TO AN UNKNOWN CAUSE AT THIS TIME. THE COMPRESSOR STATION ENGINE
UNIT ALSO CAUGHT ON FIRE AS A RESULT OF THE INCIDENT.

SENSITIVE INFORMATION

INCIDENT DETAILS

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

IMPACT

Fire Involved: YES Fire Extinguished: YES

INJURIES: NO Hospitalized: Empl/Crew: Passenger:
FATALITIES: NO Empl/Crew: Passenger: Occupant:
EVACUATIONS:NO Who Evacuated: Radius/Area:

Damages: YES $50000

Closure Type	Description of Closure	Hours Closed	Direction of Closure
Air: N			
Road: Y	ROAD LEADING TO THE COMPRESSOR STATION		Major Artery:N
Waterway: N			
Track:			

Environmental Impact: UNKNOWN
Media Interest: UNKNOWN Community Impact due to Material:

REMEDIAL ACTIONS

ISOLATING THE FACILITY AND MAKING IT SAFE AND AT THIS POINT IT IS SAFE.
Release Secured: YES
Release Rate:

Estimated Release Duration:

WEATHER

Weather: CLEAR, 64ºF

ADDITIONAL AGENCIES NOTIFIED

Federal:
State/Local:
State/Local On Scene: FIRE DEPT.
State Agency Number:

NOTIFICATIONS BY NRC

CENTERS FOR DISEASE CONTROL (GRASP)
10-AUG-15 00:23 (770)4887100
DELAWARE EMERGENCY MGMT AGENCY (MAIN OFFICE)
10-AUG-15 00:23 (302)6593362
DELAWARE STATE POLICE (MAIN OFFICE)
10-AUG-15 00:23 (302)6593362
DOT CRISIS MANAGEMENT CENTER (MAIN OFFICE)
10-AUG-15 00:23 (202)3661863
DELAWARE VALLEY INTEL CENTER (REGIONAL FUSION CENTER/PHILI PD)
10-AUG-15 00:23 (215)8970800
U.S. EPA III (MAIN OFFICE)
(215)8143255
FLD INTEL SUPPORT TEAM PHILADELPHIA (MAIN OFFICE)
10-AUG-15 00:23 (215)8975406
USCG NATIONAL COMMAND CENTER (MAIN OFFICE)
10-AUG-15 00:23 (202)3722100
NATIONAL INFRASTRUCTURE COORD CTR (MAIN OFFICE)
10-AUG-15 00:23 (202)2829201
NJ STATE POLICE (MARINE SERVICES BUREAU)
10-AUG-15 00:23 (609)9636900
NOAA RPTS FOR PA (MAIN OFFICE)
10-AUG-15 00:23 (206)5264911
NATIONAL RESPONSE CENTER HQ (MAIN OFFICE)
10-AUG-15 00:23
NATIONAL RESPONSE CENTER HQ (AUTOMATIC REPORTS)
10-AUG-15 00:23 (202)2671136
NRC COMMAND DUTY OFFICER (MAIN OFFICE)
(202)2672100
NTSB PIPELINE (MAIN OFFICE)
10-AUG-15 00:23 (202)3146293
PA ENVIRONMENTAL PROTECTION AGENCY (EMERGENCY ENVIRONMENTAL RESPONSE)
10-AUG-15 00:23 (717)7875715

PA STATE POLICE (BUREAU OF CRIMINAL INVESTIGATION)
10-AUG-15 00:23 (717)5255260
PIPELINE & HAZMAT SAFETY ADMIN (OFFICE OF PIPELINE SAFETY (AUTO))
10-AUG-15 00:23 (202)3660568
PIPELINE & HAZMAT SAFETY ADMIN (OFFICE OF PIPELINE SAFETY WEEKDAYS (VER
(202)3661863
REPORTING PARTY (RP SUBMITTER)
10-AUG-15 00:23
DE DEPT OF NAT RES AND ENV CTRL (MAIN OFFICE)
10-AUG-15 00:23 (302)7399401
OFFICE OF ENV. POLICY & COMPLIANCE (MAIN OFFICE)
10-AUG-15 00:23 (215)5975012
MD DEPT OF ENV (MAIN OFFICE)
10-AUG-15 00:23 (866)6334686
PA EMERG MGMT AGCY (MAIN OFFICE)
10-AUG-15 00:23 (717)6512001
USCG DISTRICT 5 (D5 DRAT)
10-AUG-15 00:23 (757)3986231

ADDITIONAL INFORMATION
PHMSA EAST REGION WILL BE NOTIFIED.

*** END INCIDENT REPORT #1125195 ***
Report any problems by calling 1-800-424-8802
PLEASE VISIT OUR WEB SITE AT http://www.nrc.uscg.mil