Pipeline Failure Investigation Report

Pipeline System: Distribution **Operator:** NorthWestern Energy

Operator ID: 31632 **Unit Number:** _____ **Activity Number:** _____

Location: 13653 389th Ave, Aberdeen, SD 57401 **Date of Occurrence:** 12-03-2025

Material Released: Natural Gas **Quantity:** 4.57 MMCF

PHMSA Arrival Time & Date: N/A **Total Damages $:** $55,810

Investigation Responsibility: _x_ State __ PHMSA __ NTSB __Other _____

	Company Reported Apparent Cause:	*Company Reported Sub-Cause (from PHMSA Form 7000-1/7100.2):*
	Corrosion	
	Natural Force Damage	
	Excavation Damage	
X	Other Outside Force Damage	Vehicle impact
	Material Failure (Pipe, Joint, Weld)	
	Equipment Failure	
	Incorrect Operation	
	Other	

	Accident/Incident Resulted in (check all that apply):	*Comments:*
	Rupture	
X	Leak	Failure at weld due to impact of vehicle
	Fire	
	Explosion	
X	Evacuation	Number of Persons:_____2____ Area: __389th Ave___

Narrative Summary

Short summary of the Incident/Accident scenario

At approximately 08:57 on December 3, 2025, south of Aberdeen SD, a vehicle slid off an icy, gravel road striking a farm tap in the right of way. Driver was not injured. The night before the incident there was snow and freezing rain which affected road conditions.

At 09:11, Brown County 911 dispatch called NorthWestern Energy to report hit line and first responder was on scene at approximately 09:26. NorthWestern Energy first responder identified this was the main pipeline into Aberdeen, SD and company leadership was notified immediately. Multiple teams coordinated to assess system integrity, manage gas load to the city of Aberdeen, and ensure public safety.

Aberdeen Rural Fire Department (ARFD) turned off the above ground valve at the farm tap at approximately 09:30 which minimized the blowing gas; however, an underground leak was still present and releasing gas (initially ~610psig). The Brown County Sheriff Department blocked the road at the intersection north and south of the accident. The ARFD verified no one was home at the west residence and evacuated the two residents at the east residence.

Mitigation steps included monitoring ambient air, barholing for gas migration, and planning segment isolation to control the plume of gas for safe approach to the farm tap curb valve. To sustain the gas load for the city of Aberdeen during frigid winter weather conditions, four large industrial customers were curtailed and alternate supply interconnect support from Northern Natural Gas was arranged. Several attempts of isolation were organized and completed; however, gas load demands were a factor in execution due to frigid winter weather conditions.

At 18:33, with diminished gas load, the damaged farm tap was isolated, gas flow stopped, and system pressure restored. Contingency plans for heating to the two customers affected by the farm tap shut off and repair logistics were implemented. Final repair was deferred to next day with overnight monitoring in place.

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Region/State: _____ **Reviewed by:** _____

Principal Investigator: _____ **Title:** _____

Date: _____ **Date:** _____

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Failure Location & Response		
Location (City, Township, Range, County/Parish): 13653 389th Ave, Aberdeen, SD 57401, Brown County (Acquire Map)		
Address or M.P. on Pipeline: (1)	Type of Area (Rural, City): Rural (1)	
Coordinates of failure location (Latitude): 45.408062	(Longitude): -98.453984	
Date: 12-03-2025	Time of Failure: 08:57am	
Time Detected: Called 09:11am; On-Scene 09:30am	Time Located: Emergency Locate 2533758079	
How Located: Brown County 911 dispatch called in location		
NRC Report #: 1449410 (Attach Report) 1449575 updated report	Time Reported to NRC: 05:49pm	Reported by: Melissa Baruth

Type of Pipeline:

Gas Distribution	**Gas Transmission**	**Hazardous Liquid**	**___ LNG**
__ LP	__ Interstate Gas	__ Interstate Liquid	
__ Municipal	__ Intrastate Gas	__ Intrastate Liquid	
_X_ Public Utility	__ Gas Gathering	__ Offshore Liquid	
__ Master Meter	__ Offshore Gas	__ Liquid Gathering	
	__ Offshore Gas - High H_2S	__ CO_2	
		__ Low Stress Liquid	
		__ HVL	

Pipeline Configuration (Regulator Station, Pump Station, Pipeline, etc.):
Accident location was on farm tap (regulator station) approximately 2.5miles north of regulating station on 1" farm tap.

Regulator station served 2 non-adjacent customers.

See Farm Tap Drawing.

Operator/Owner Information	
Owner: NorthWestern Energy Address: 3010 W 69th St Sioux Falls, SD 57108 Company Official: Jason Merkel Phone No.: 406-443-8990 Fax No.:	Operator: same Address: Company Official: Jason Merkel Phone No. 406-443-8990 Fax No.

Drug and Alcohol Testing Program Contacts _X_ N/A

Drug Program Contact & Phone:

Alcohol Program Contact & Phone:

1 Photo documentation

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Damages	
Product/Gas Loss or Spill[(2)] 4.57 MMCF	Estimated Property Damage $4,508
Amount Recovered	Associated Damages[(3)] $24,686
Estimated Amount $ 24,616	Non-Operator property damage: $2,000

Description of Property Damage: Third party vehicle damage was estimated at $2,000 on the police report.
Cost of the farm tap damage was $4,508; emergency response cost is estimated at $24,686, and cost of gas loss is estimated at $24,616

Customers out of Service: _X_ Yes __ No Number: 2

Suppliers out of Service: __ Yes _X_ No Number:

Fatalities and Injuries ___ *N/A*

Fatalities:	__ Yes	X No	Company:	Contractor:	Public:
Injuries - Hospitalization:	__ Yes	X No	Company:	Contractor:	Public:
Injuries - Non-Hospitalization:	__ Yes	X No	Company:	Contractor:	Public:
Total Injuries (including Non-Hospitalization):			Company:	Contractor:	Public:

Name	Job Function	Yrs. w/ Comp.	Yrs. Exp.	Type of Injury

Drug/Alcohol Testing *X_ N/A*

Were all employees that could have contributed to the incident, post-accident tested within the 2 hour time frame for alcohol or the 32 hour time frame for all other drugs?

___Yes ___No

Job Function	Test Date & Time	Location	Results		Type of Drug
			Pos	Neg	

System Description

2 Initial volume lost or spilled
3 Including cleanup cost

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System Description
Describe the Operator's System: Aberdeen system is fed from Northern Border Pipeline approximately 5 miles south of Aberdeen where there is a regulating station. Six-inch steel branch goes north towards Aberdeen and operates at approximately 610psig. Aberdeen system has varying operating pressures varying from 610psig to 20psig.

Pipe Failure Description	*___ N/A*
Length of Failure (inches, feet, miles): 1” (1)	
Position (Top, Bottom, include position on pipe, 6 O'clock): (1) Top	Description of Failure (Corrosion Gouge, Seam Split): (1) Welded joint split due to vehicle impact
Laboratory Analysis: ___ Yes _X__ No Performed by:	
Preservation of Failed Section or Component: _X__Yes ___No If Yes - Method: Chain of Custody form completed and farm tap pipe has been locked in box.	
In Custody of: Risk Department has the key to locked box stored in warehouse (Huron, SD location).	
Develop a sketch of the area including distances from roads, houses, stress inducing factors, pipe configurations, direction of flow, etc. Bar Hole Test Survey Plot, if included, should be outlined with concentrations at test points.	

Component Failure Description	*___ N/A*
Component Failed: Steel pipe (1)	
Manufacturer:	Model:
Pressure Rating:	Size: 1”
Other (Breakout Tank, Underground Storage):	

Pipe Data	*___ N/A*
Material: Steel	Wall Thickness/SDR: 0.190
Diameter (O.D.): 1.328	Installation Date: 1997
SMYS: unknown probably Schedule 80 pipe	Manufacturer:
Longitudinal Seam:	Type of Coating: fusion bonded epoxy
Pipe Specifications (API 5L, ASTM A53, etc.): SCH 80 pipe	

Joining	*___N/A*
Type: Weld	Procedure: Weld
NDT Method: N/A	Inspected: _X__ Yes ___No

Pressure @ Time of Failure @ Failure Site	*_X__ N/A*
Pressure @ Failure Site:	Elevation @ Failure Site:

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Pressure @ Time of Failure @ Failure Site				***_X__ N/A***
Pressure Readings @ Various Locations:			Direction from Failure Site	
Location/M.P./Station #	Pressure (psig)	Elevation (ft msl)	Upstream	Downstream

Upstream Pump Station Data	***_X__ N/A***
Type of Product:	API Gravity:
Specific Gravity:	Flow Rate:
Pressure @ Time of Failure [4]	Distance to Failure Site:
High Pressure Set Point:	Low Pressure Set Point:

Upstream Compressor Station Data	***_X__ N/A***
Specific Gravity:	Flow Rate:
Pressure @ Time of Failure [4]	Distance to Failure Site:
High Pressure Set Point:	Low Pressure Set Point:

Operating Pressure	***___ N/A***
Max. Allowable Operating Pressure: 710psig	Determination of MAOP:
Actual Operating Pressure: 610psig	
Method of Over Pressure Protection: Regulator / Relief setup	
Relief Valve Set Point: 675psig	Capacity Adequate? __X_ Yes ___ No

Integrity Test After Failure	***_x__ N/A***
Pressure test conducted in place? (Conducted on Failed Components or Associated Piping): ___ Yes _X__ No	
If No, tested after removal? ___ Yes _X__ No	
Method:	
Describe any failures during the test.	

Soil/water Conditions @ Failure Site	***___ N/A***
Condition of and Type of Soil around Failure Site (Color, Wet, Dry, Frost Depth): Frost approximately 12", wet, typically standing water at this location in non-winter conditions	
Type of Backfill (Size and Description): soil	

4 Obtain event logs and pressure recording charts

Pipeline Failure Investigation Report

Soil/water Conditions @ Failure Site	***___ N/A***
Type of Water (Salt, Brackish): N/A	Water Analysis [5] ___ Yes _X__ No

External Pipe or Component Examination	***___ N/A***
External Corrosion? ___Yes _X__ No [1]	Coating Condition (Disbonded, Non-existent): [1] Bonded, no defects
Description of Corrosion: N/A	
Description of Failure Surface (Gouges, Arc Burns, Wrinkle Bends, Cracks, Stress Cracks, Chevrons, Fracture Mode, Point of Origin): Failure occurred on welded joint at an elbow	
Above Ground: ___ Yes __X_ No [1]	Buried: _X__ Yes ___ No [1]
Stress Inducing Factors: Vehicle impact [1]	Depth of Cover: 36” [1]

Cathodic Protection	***___ N/A***
P/S (Surface): -1.735v on 07-15-2025	P/S (Interface):
Soil Resistivity: pH:	Date of Installation: 1996
Method of Protection: Galvanic system with sacrificial anodes	
Did the Operator have knowledge of Corrosion before the Incident? ____ Yes __X_ No	
How Discovered? (Close Interval Survey, Instrumented Pig, Annual Survey, Rectifier Readings, ECDA, etc): failure from vehicle impact	

Internal Pipe or Component Examination	***___ N/A***
Internal Corrosion: ___ Yes _X__No [1]	Injected Inhibitors: ___ Yes __X_ No
Type of Inhibitors: N/A	Testing: ___ Yes __X_ No
Results (Coupon Test, Corrosion Resistance Probe): N/A	
Description of Failure Surface (MIC, Pitting, Wall Thinning, Chevrons, Fracture Mode, Point of Origin): No defects	
Cleaning Pig Program: ___ Yes __X_ No	Gas and/or Liquid Analysis: ___ Yes __X_ No

5 Attach copy of water analysis report

Pipeline Failure Investigation Report

Internal Pipe or Component Examination	***___ N/A***
Results of Gas and/or Liquid Analysis [6] N/A	
Internal Inspection Survey: ___ Yes __X_ No	Results [7]
Did the Operator have knowledge of Corrosion before the Incident? ___ Yes _X__ No	
How Discovered? (Instrumented Pig, Coupon Testing, ICDA, etc.):	

Outside Force Damage	***___ N/A***
Responsible Party: Amy Dunlavy	Telephone No.: 605-377-4134
Address: 13781 388th Ave, Aberdeen, SD 57401	
Work Being Performed: Driving vehicle	
Equipment Involved: Vehicle [1]	Called One Call System? ___ Yes _X__ No
One Call Name: N/A	One Call Report # [8] N/A
Notice Date: N/A	Time:
Response Date: N/A	Time:
Details of Response: Vehicle slid off icy road at approx. 8:57am and NorthWestern Energy technician was on site at approximately 9:30am.	
Was Location Marked According to Procedures? ___ Yes ___ No **N/A**	
Pipeline Marking Type: Sign [1]	Location: On bollard in front of farm tap [1]
State Law Damage Prevention Program Followed? _X__ Yes ___ No ___ No State Law	
Notice Required: ___Yes ___No	Response Required: ___ Yes ___ No
Was Operator Member of State One Call? __X_ Yes __ No	Was Operator on Site? ___ Yes _X__ No
Did a deficiency in the Public Awareness Program contribute to the accident? ___Yes _X__ No	
Is OSHA Notification Required? ___ Yes _X__ No	

Natural Forces	***X__ N/A***
Description (Earthquake, Tornado, Flooding, Erosion):	

6 Attach copy of gas and/or liquid analysis report
7 Attach copy of internal inspection survey report
8 Attach copy of one-call report

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Natural Forces	*X__ N/A*

Failure Isolation	*__ N/A*
Squeeze Off/Stopple Location and Method: Underground valve operation at the farm tap	(1)
Valve Closed - Upstream: Farm Tap curb valve - yes Time: 6:33pm	I.D.: M.P.:
Valve Closed - Downstream: N/A Time:	I.D.: M.P.:
Pipeline Shutdown Method: _X_ Manual __ Automatic __ SCADA __ Controller __ ESD	
Failed Section Bypassed or Isolated: Isolated	
Performed By: Lucas Nehlich – NWE Journey Technician	Valve Spacing: curb stop valve 10’ from farm tap

Odorization	*__ N/A*
Gas Odorized: _X_ Yes __ No	Concentration of Odorant (Post Incident at Failure Site): 0.28% gas in air 12-15-2025 at approx. 09:30am
Method of Determination: _X_ Yes __ No CGI	% LEL: __ Yes _X_ No | % Gas In Air: _X_ Yes __ No
	Time Taken: _X_ Yes __ No
Was Odorizer Working Prior to the Incident? _X_ Yes __ No	Type of Odorizer (Wick, By-Pass): Injection pump
Odorant Manufacturer: YZ Model: 7300GE-00N-1A1	Type of Odorant: Spotleak 1009
Amount Injected: 1.022cc/stroke	Monitoring Interval (Weekly): Quarterly

Odorization History (Leaks Complaints, Low Odorant Levels, Monitoring Locations, Distances from Failure Site):

Odorizer is 2 miles south of accident location. Odorant reads for the previous two years

0.35 % GAS IN AIR	11/08/2023
0.35 % GAS IN AIR	02/07/2024
0.36 % GAS IN AIR	05/11/2024
0.34 % GAS IN AIR	08/15/2024
0.33 % GAS IN AIR	11/05/2024
0.33 % GAS IN AIR	02/13/2025
0.35 % GAS IN AIR	05/05/2025
0.19 % GAS IN AIR	08/20/2025
0.32 % GAS IN AIR	11/18/2025

Weather Conditions	*__ N/A*

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Weather Conditions	***__ N/A***
Temperature: 5*F	Wind (Direction & Speed): 5-10mph N wind
Climate (Snow, Rain): Frigid, 10-20mph wind, mostly cloudy	Humidity: 76%
Was Incident preceded by a rapid weather change? __ Yes _X_ No	
Weather Conditions Prior to Incident (Cloud Cover, Ceiling Heights, Snow, Rain, Fog): Five days prior to incident there was snow in the area and the night before there was light snow and freezing rain.	

Gas Migration Survey	***__ N/A***
Bar Hole Test of Area: _X_ Yes __ No	Equipment Used: Sensit Gold CGI
Method of Survey (Foundations, Curbs, Manholes, Driveways, Mains, Services) [9] Barholes with CGI [1] See Barhole map.	

Environment Sensitivity Impact	***X__ N/A***
Location (Nearest Rivers, Body of Water, Marshlands, Wildlife Refuge, City Water Supplies that could be or were affected by the medium loss): [1]	
OPA Contingency Plan Available? __ Yes __ No	Followed? __ Yes __ No

Class Location/High Consequence Area	__ N/A
Class Location: 1 _X_ 2__ 3 __ 4 __ Determination:	HCA Area? __ Yes __ No _X_ N/A Determination:
Odorization Required? _X_ Yes __ No __ N/A	

Pressure Test History **__ N/A**
(Expand List as Necessary)

	Req'd [10]Assessment Deadline Date	Test Date	Test Medium	Pressure (psig)	Duration (hrs)	% SMYS
Installation	N/A	10/9/1996	Nitrogen	2180	5 hours	NA
Next						
Next						
Most Recent						

Describe any problems experienced during the pressure tests.

(See pressure test information)

Internal Line Inspection/Other Assessment History ***X__ N/A***
(Expand List as Necessary)

9 Plot on site description page
10 As required of Pipeline Integrity Management regulations in 49CFR Parts 192 and 195

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Internal Line Inspection/Other Assessment History *(Expand List as Necessary)*					***X*__ N/A**
	Req'd [10] Assessment Deadline Date	Assessment Date	Type of ILI Tool [11]	Other Assessment Method [12]	Indicated Anomaly If yes, describe below
Initial					__ Yes __ No
Next					__ Yes __ No
Next					__ Yes __ No
Most Recent					__ Yes __ No
Describe any previously indicated anomalies at the failed pipe, and any subsequent pipe inspections (anomaly digs) and remedial actions.					

Pre-Failure Conditions and Actions	**_X_ N/A**
Was there a known pre-failure condition requiring [10] the operator to schedule evaluation and remediation? __ Yes (describe below or on attachment) __ No	
If there was such a known pre-failure condition, had the operator established and adhered to a required [10] evaluation and remediation schedule? Describe below or on attachment. __ Yes __ No __ N/A	
Prior to the failure, had the operator performed the required [10] actions to address the threats that are now known to be related to the cause of this failure? __ Yes __ No __ N/A List below or on an attachment such operator-identified threats, and operator actions taken prior to the accident.	
Describe any previously indicated anomalies at the failed pipe, and any subsequent pipe inspections (anomaly digs) and remedial actions.	

Maps & Records	***___ N/A***
Are Maps and Records Current? [13] _X_ Yes __ No Comments:	

Leak Survey History	***___ N/A***
Leak Survey History (Trend Analysis, Leak Plots): This segment of pipe has no recorded leaks during leak survey in the last 12 years (4 cycles). The leak survey plot is from the regulator station approx. 2 miles south of the accident site and another 3 miles north and east of the accident site; for a total of approximately 5 miles.	

11 MFL, TFI, UT, Combination, Geometry, etc.
12 ECDA, ICDA, SCCDA, "other technology," etc.
13 Obtain copies of maps and records

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Pipeline Operation History	***_X__ N/A***
Description (Repair or Leak Reports, Exposed Pipe Reports):	
Did a Safety Related Condition Exist Prior to Failure? ___ Yes ___ No Reported? ___ Yes ___ No	
Unaccounted For Gas:	
Over & Short/Line Balance (24 hr., Weekly, Monthly/Trend):	

Operator/Contractor Error	***_X__ N/A***
Name:	Job Function:
Title:	Years of Experience:
Training (Type of Training, Background):	
Was the person "Operator Qualified" as applicable to a precursor abnormal operating condition? ___Yes ___ No ___ N/A	
Was qualified individual suspended from performing covered task ___ Yes ___ No ___ N/A	
Type of Error (Inadvertent Operation of a Valve):	
Procedures that are required:	
Actions that were taken:	
Pre-Job Meeting (Construction, Maintenance, Blow Down, Purging, Isolation):	
Prevention of Accidental Ignition (Tag & Lock Out, Hot Weld Permit):	
Procedures conducted for Accidental Ignition:	
Was a Company Inspector on the Job? ___ Yes ___ No	
Was an Inspection conducted on this portion of the job? ___ Yes ___ No	
Additional Actions (Contributing factors may include number of hours at work prior to failure or time of day work being conducted):	
Training Procedures:	
Operation Procedures:	
Controller Activities:	

Name	Title	Years Experience	Hours on Duty Prior to Failure	Shift

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Operator/Contractor Error	***_X__ N/A***
Alarm Parameters:	
High/Low Pressure Shutdown:	
Flow Rate:	
Procedures for Clearing Alarms:	
Type of Alarm:	
Company Response Procedures for Abnormal Operations:	
Over/Short Line Balance Procedures:	
Frequency of Over/Short Line Balance:	
Additional Actions:	

Additional Actions Taken by the Operator	***___N/A***
Make notes regarding the emergency and Failure Investigation Procedures (Pressure reduction, Reinforced Squeeze Off, Clean Up, Use of Evacuators, Line Purging, closing Additional Valves, Double Block and Bleed, Continue Operating downstream Pumps):	

Photo Documentation [(1)]

Overall Area from best possible view. Pictures from the four points of the compass. Failed Component, Operator Action, Damages in Area,
Address Markings, etc.

Photo No.	Description	Photo No.	Description
1		16	
2		17	
3		18	
4		19	
5		20	
6		21	
7		22	
8		23	
9		24	
10		25	
11		26	
12		27	
13		28	
14		29	
15		30	
Camera Type:			

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Additional Information Sources			
Agency	Name	Title	Phone Number
Police:	**Austin Ball, Brown Co. Sheriff Deputy**	**Officer # 3A18**	**Unknown**
Fire Dept.:			
State Fire Marshall:			
State Agency:			
NTSB:			
EPA:			
USCG:			
FBI:			
ATF:			
OSHA:			
Insurance Co.:			
FRA:			
MMS:			
Television:			
Newspaper:			
Other:			

Persons Interviewed		
Name	Title	Phone Number
Melissa Baruth	Superintendent Gas System Integrity	605-353-7462
Mark Hallenbeck	Lead Journey Gas Tech	605-228-6206
Travis VanDyke	Combo 1104 Welder	605-695-4154
Brent Doucett	Foreman West Line	406-497-2691
Patrick Duncan	Craftsman 1st Class Welder	406-497-2690
Josh Riley	Patrolman Operator	406-497-2690
Hoyt Gibson	Patrolman Operator	406-497-2690
Mark Doll	Construction Supervisor	

Event Log	
Sequence of events prior, during, and after the incident by time. (Consider the events of all parties involved in the incident, Fire Department and Police reports, Operator Logs and other government agencies.)	
Time / Date	Event
0857 / 12-03-25	Vehicle hit farm tap in ROW
0911 / 12-03-25	Brown Co 911 dispatch contacted NWE call center; Sheriff Dept has road closed off
0930 / 12-03-25	NWE Technician on-site
0930 / 12-03-25	NWE Technician calls Gas Operations Supervisor
0935 / 12-03-25	Aberdeen Rural FD turns off above ground valve at farm tap, gas still blowing from below ground
0935 / 12-03-25	Aberdeen Rural FD evacuates residence on east side of road
1045 / 12-03-25	Tom Glanzer sends email to SD Commission
1100 / 12-03-25	Paul Mantz begins contacting three large industrial customers to curtail: Groton POET, Aberdeen Agtegra, AGP Soybean plant
1125 / 12-03-25	NNG employees approximately 90 minutes out
1235 / 12-03-25	Paul Mantz contacts Mellette Agtegra to curtail
1500 / 12-03-25	Attempt to reduce plume at incident site but city of Aberdeen pressure drop was a concern
1630 / 12-03-25	City of Aberdeen pressure is holding on NNG interconnect feed
1742 / 12-03-25	Melissa Baruth completes NRC report
1833 / 12-03-25	Lucas Nehlich turned curb stop valve for farm tap and stopped blowing gas

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Investigation Contact Log			
Time	Date	Name	Description

Failure Investigation Documentation Log					
Operator:		Unit #:	CPF #:		Date:
Appendix Number	Documentation Description		Date Received	FOIA Yes	FOIA No

Pipeline Failure Investigation Report

Site Description
Provide a sketch of the area including distances from roads, houses, stress inducing factors, pipe configurations, etc. Bar Hole Test Survey Plot should be outlined with concentrations at test points. Photos should be taken from all angles with each photo documented. Additional areas may be needed in any area of this guideline.