# **COLORADO**



# **PIPELINE SAFETY TRAINING**



# **PROGRAM GUIDE**

Overview Pipeline Safety Excavation Best Practices Checklist Signs Of A Pipeline Release What To Do If A Leak Occurs Pipeline Emergency Common Ground Alliance Best Practices Pipelines In Our Community Damage Prevention Programs Pipeline Damage Reporting Law



# **EMERGENCY CONTACT LIST**

# COMPANY

# EMERGENCY NUMBER

Atmos Energy	1 966 202 9667
Atmos Energy	
Bravo Pipeline Company	
Chevron Pipe Line Company	
Colorado Interstate Gas Company, L.L.C.	
Colorado Natural Gas	
Colorado Sand Company	
DCP Operating Company, LP	
or	
Elevation Midstream	
Energy Transfer (Natural Gas)	
Energy Transfer (NGL)	
Energy Transfer (Crude)	1-800-753-5531
Enterprise Products Operating LLC	
Fundare Resources Company, LLC	1-720-547-3366
HF Sinclair Midstream	
Magellan Midstream Partners, L.P	1-800-720-2417
NGL Crude Terminals LLC	
NuStar Logistics, L.P.	
Phillips 66 Pipelines LLC	
Plains Pipeline, L.P.	
Rimrock Energy Partners	
Scout Energy Management LLC	
Summit Midstream Corporation	
Taproot Energy Partners	
Terra Energy Partners, LLC	
Transwestern Pipeline	
Tumbleweed Midstream, LLC.	
Western Midstream	
Williams Cureton	
Xcel Energy Service Inc. (Gas Transmission)	
Xcel Energy Service Inc. (Non-Public Emergency Number)	
Ace Energy convice me. (Non r usile Energency Number)	

Note: The above numbers are for emergency situations. Additional pipeline operators may exist in your area. Visit the National Pipeline Mapping System at www.npms.phmsa.dot.gov for companies not listed above.

ONE-CALL SYSTEM	PHONE NUMBER
Colorado 811	
National One-Call Referral Number	
National One-Call Dialing Number	

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# Pipeline Purpose and Reliability

- Critical national infrastructure
- · Over 2.7 million miles of pipeline provide 65% of our nation's energy
- 20 million barrels of liquid product used daily
- · 21 trillion cubic feet of natural gas used annually

#### Safety Initiatives

- Pipeline location
  - <sup>°</sup> Existing right-of-way (ROW)
- ROW encroachment prevention
  - ° No permanent structures, trees or deeply rooted plants
- Hazard awareness and prevention methods
- Pipeline maintenance activities
  - ° Cleaning and inspection of pipeline system

### Leak Recognition and Response

- · Sight, sound, smell indicators vary depending on product
- Diesel engines fluctuating RPMs
- · Black, dark brown or clear liquids/dirt blowing into air/peculiar odors/dead insects around gas line/dead vegetation
- Rainbow sheen on the water/mud or water bubbling up/frozen area on ground/frozen area around gas meter
- · Any sign, gut feeling or hunch should be respected and taken seriously
- Take appropriate safety actions ASAP

# High Consequence Area (HCA) Regulation

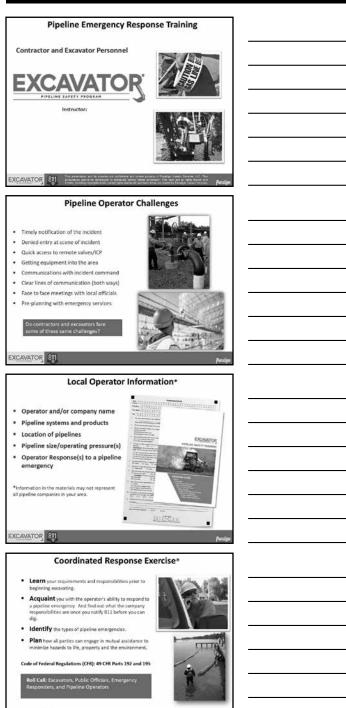
- Defined by pipeline regulations 192 and 195
- · Requires specialized communication and planning between responders and pipeline/gas personnel
- · May necessitate detailed information from local response agencies to identify HCAs in area

#### One-Call

- · One-Call centers are not responsible for marking lines
- · Each state has different One-Call laws. Familiarize yourself with the state you are working in
- · Not all states require facility owners to be members of a One-Call
- · You may have to contact some facility owners on your own if they are not One-Call members
- · In some states, homeowners must call before they dig just like professional excavators

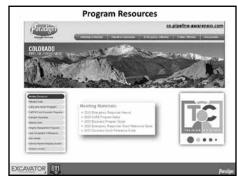


Know what's **below. Call** before you dig.



Program content and slides subject to change

EXCAVATOR 811





#### Safe Digging Practices and Resources





EXCAVATOR 811



- Notify pipeline company before work begins
  No skidding of logs on right of
- Crossing of pipeline must be
- approved • Drop cut trees away from
- pipeline • Do not remove existing cover • Restore right of way



#### EXCAVATOR 811



#### Pipeline companies are required to have Integrity Management programs to insure safe and efficient operations:

Internal and external cleaning and inspection, of the pipeline and affected areas

- Rights-of-Way and valves
   Supervisory Control and Data Acquisition (SCADA)
- Identification of High Consequence Areas (HCA)
- Aerial Rights of Way Patrols
- Public Awareness Outreach to stakeholders
- Participation as a member of 811
- Operator Qualification (OQ) Training
- Local Distribution Company (LDC)
- Meter Testing
- Lirak Sorveys







EXCAVATOR

# **Product Characteristics**

#### Hazardous Liquids

- ER Guide 128 (Pages 186-187) Crude oil, jet fuel, gasoline and other refined
- products

  Uquid in and liquid out of the pipeline

#### **Highly Volatile Liquids**

- ER Guide 115 (Pages 150-161) Propane, Butane, Ethane and natural gas liquids
- Propane, butane, conane and natural gas inqui
   Liquid in and vapor out of the pipeline

#### Natural Gas

- ER Guide 115 (Pages 160-161) Sas in and gas out of the pipe
- Gas in and gas out of the pipeline
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#### EXCAVATOR 811

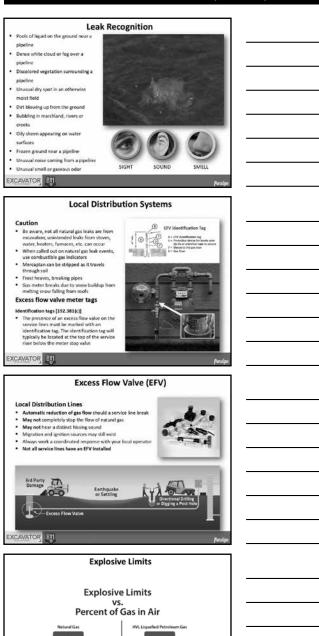
#### **Above Ground Storage Tanks**

Considerations when responding to tank farms/ terminals

- Work with your local operator to:
- Develop an effective response plan
   identify products and hazards
- Determine evacuation radius
- Response recommendations:
- Cool tank(s) or nearby containers by flooding with water
   Use unmanned hose holders/monitor nozzles
- Do not direct water at safety devices or icing may occur
- Let product burn, even after air supply line/system is closed
   Reviews of the notionial for Bolline Line
- Beware of the potential for Boiling Liquid Expanding Vapor Explosion (BLEVE)

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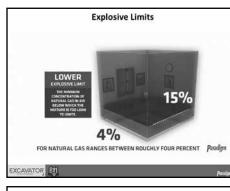
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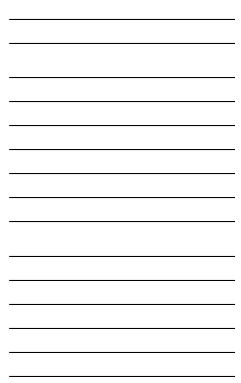


#### Farm Taps

- Mainly in rural areas, some natural gas pipeline companies may have facilities commonly referred to as "farm tap"
- These natural gas settings are made up of valves, pipes, regulators, relief valves and a meter. It may be located near the home or within the general vicinity
- To report the smell of gas near a farm tap, call 911 and the local gas company from a safe distance
- The lines after a farm tap or residential meter may or may not be PRIVATE LINES, be aware of these

be aware of these





#### **EXCAVATOR RESPONSIBILITIES:**

- Call Before You Dig It's the Law!
- Wait the required time for the markings! (state specific time – check your local One Call Law)
- Tolerance Zones May vary by state and/or company!
- Respect the marks!
- Dig with care!

## **RISK CONSIDERATIONS**

- Type/volume/pressure/location/geography of product
- Environmental factors wind, fog, temperature, humidity
- Sight, sound, smell indicators vary depending on product
- Black, dark brown or clear liquids/dirt blowing into air/peculiar odors/dead insects around gas line/ dead vegetation
- Rainbow sheen on the water/mud or water bubbling up/frozen area on ground/frozen area around gas meter
- Other utility emergencies

# PIPELINE MARKERS

The U.S. Department of Transportation (DOT) requires the use of signs to indicate the location of underground pipelines. Markers like these are located on road, railroad, and navigable waterway crossings. Markers are also posted along the pipeline right-of-way. Markers may not be located directly over the pipeline it marks.

#### The markers display:

- The product transported
- The name of the pipeline operator
- The operator's emergency number

# Product International Action of the second s

- White Lining (Pre-marking)
- One Call Facility Request
- One Call Access
- Locate Reference Number
- Separate Locate Request
- Pre-excavation Meeting
- Facility Relocations
- One Call Reference Number at Site
- Contact Names and Numbers
- Positive Response
- Facility Owner/Operator Failure to Respond
- Locate Verification
- Work Site Review with Company Personnel
- Documentation of Marks
- Facility Avoidance
- Marking Preservation
- Excavation Observer
- Excavation Tolerance Zone
- Excavation within the Tolerance Zone
- Vacuum Excavation
- Mismarked Facilities
- Exposed Facility Protection
- Locate Request Updates
- Facility Damage Notification
- Notification of Emergency Personnel
- Emergency Coordination with Adjacent Facilities
- Emergency Excavation
- Backfilling
- As-built Documentation
- Trenchless Excavation
- No Charge for Providing Underground Facility Locations
- Federal and State Regulations



# Signs Of A Pipeline Release

#### SIGHT\*

- Liquid on the ground
- Rainbow sheen on water
- Dead vegetation in an otherwise
   green area
- Dirt blowing into the air
- White vapor cloud
- Frozen area on ground

\*Signs vary based upon product

#### SMELL

- Odors such as gas or oil
  - Natural gas is colorless and odorless • Unless Mercaptan has been added (rotten egg odor)

# **OTHER - NEAR PIPELINE OPERATIONS**

- Burning eyes, nose or throat
- Nausea

# What To Do If A Leak Occurs

- · Evacuate immediately upwind
- · Eliminate ignition sources
- Advise others to stay away
- CALL 911 and the pipeline company number on warning marker
  - Call collect if necessary
- Make calls from safe distance not "hot zone"
- Give details to pipeline operator:
  - Your name
  - Your phone number
  - Leak location
  - Product activity
  - Extent of damage
- · DO NOT drive into leak or vapor cloud
- · DO NOT make contact with liquid or vapor
- DO NOT operate pipeline valves (unless directed by pipeline operator):
  - Valve may be automatically shut by control center
  - Valve may have integrated shut-down device
  - Valve may be operated by qualified pipeline personnel only, unless specified otherwise

- Ignition sources may vary a partial list includes:
  - Static electricity
  - Metal-to-metal contact
  - · Pilot lights
  - Matches/smoking
  - Sparks from telephone
  - Electric switches
  - Electric motors
  - Overhead wires
  - Internal combustion engines
  - · Garage door openers
  - Firearms
  - · Photo equipment
  - · Remote car alarms/door locks
  - · High torque starters diesel engines
  - Communication devices

# Pipeline Emergency

#### Call Gas Control Or Pipeline Control Center Use Pipeline Emergency Response Planning Information Manual for contact information

Phone number on warning markers Use state One-Call System, if applicable

#### Control Center Needs To Know

Your name & title in your organization Call back phone number – primary, alternate Establish a meeting place Be very specific on the location **(use GPS)** Provide City, County and State

#### Injuries, Deaths, Or Property Damage

Have any known injuries occurred? Have any known deaths occurred? Has any severe property damage occurred?

#### Traffic & Crowd Control

Secure leak site for reasonable distance Work with company to determine safety zone No traffic allowed through any hot zone Move sightseers and media away Eliminate ignition sources

## <u>Fire</u>

Is the leak area on fire? Has anything else caught on fire besides the leak?

#### **Evacuations**

Primary responsibility of emergency agency Consult with pipeline/gas company

#### Fire Management

Natural Gas – DO NOT put out until supply stopped Liquid Petroleum – water is NOT recommended; foam IS recommended Use dry chemical, vaporizing liquids, carbon dioxide

#### Ignition Sources

Static electricity (nylon windbreaker) Metal-to-metal contact Pilot lights, matches & smoking, sparks from phone Electric switches & motors Overhead wires Internal combustion engines Garage door openers, car alarms & door locks Firearms Photo equipment High torque starters – diesel engines Communication devices – not intrinsically safe

- SOUND
- A hissing or roaring sound

# Common Ground Alliance Best Practices

In 1999, the Department of Transportation sponsored the Common Ground Study. The purpose of the Common Ground Study was to identify and validate existing best practices performed in connection with preventing damage to underground facilities. The collected best practices are intended to be shared among stakeholders involved with and dependent upon the safe and reliable operation, maintenance, construction, and protection of underground facilities. The best practices contain validated experiences gained that can be further examined and evaluated for possible consideration and incorporation into state and private stakeholder underground facility damage prevention programs.

The current Best Practices Field Manual is divided into nine chapters that provide a collection of current damage prevention best practices. The nine chapters include:

- 1. Planning & Design Best Practices
- 2. One Call Center Best Practices
- 3. Location & Marking Best Practices
- 4. Excavation Best Practices
- 5. Mapping Best Practices
- 6. Compliance Best Practices
- 7. Public Education Best Practices
- 8. Reporting & Evaluation Best Practices
- 9. Miscellaneous Practices

To view the latest version of the Best Practices please visit www.commongroundalliance.com



#### Pipelines In Our Community

According to National Transportation Safety Board statistics pipelines are the safest and most efficient means of transporting natural gas and petroleum products, which are used to supply roughly two-thirds of the energy we use. These pipelines transport trillions of cubic feet of natural gas and hundreds of billions of ton/miles of liquid petroleum products in the United States each year.

This system is comprised of three types of pipelines: transmission, distribution and gathering. The approximately 519,000 miles of transmission pipeline\* transport products, including natural gas and petroleum products, across the country and to storage facilities. Compressor stations and pumping stations are located along transmission and gathering pipeline routes and help push these products through the line.

Approximately 2.2 million miles of distribution pipeline\* is used to deliver natural gas to most homes and businesses through underground main and utility service lines. Onshore gathering lines are pipelines that transport gas from a current production operation facility to a transmission line or main. Production operations are piping and equipment used in production and preparation for transportation or delivery of hydrocarbon gas and/or liquids.



Call before you dig.

\*mileage according to the Pipeline Hazardous Materials Safety Administration (PHMSA).

#### **Training Center**

Supplemental training available for agencies and personnel that are unable to attend:

- · Train as your schedule allows
- Download resources including pipeline operator specific information
- Sponsoring pipeline operator contact information
   Product(s) transported
- Receive Certificate of Completion

Visit https://trainingcenter.pdigm.com/ to register for training



Pursuant to 49 CFR Parts 192.614 (c)(2)(i) and 195.442 (c)(2)(i) pipeline operators must communicate their Damage Prevention Program's "existence and purpose" to the public in the vicinity of the pipeline and persons who normally engage in excavation activities in the area in which the pipeline is located.

State and federally regulated pipeline companies maintain Damage Prevention Programs. The purpose of which is to prevent damage to pipelines and facilities from excavation activities, such as digging, trenching, blasting, boring, tunneling, backfilling, or by any other digging activity.

#### **Pipeline Markers**

The U.S. Department of Transportation (DOT) requires the use of signs to indicate the location of underground pipelines. Markers like these are located on road, railroad, and navigable waterway crossings. Markers are also posted along the pipeline right-of-way.

#### The markers display:

- The material transported
- The name of the pipeline operator
- The operator's emergency number

### MARKER INFORMATION

- · Indicates area of pipeline operations
- May have multiple markers in single right-of-way
- May have multiple pipelines in single right-of-way
- DOES NOT show exact location
- DOES NOT indicate depth (never assume pipeline depth)
- · DOES NOT indicate pipeline pressure



## Call Before You Dig

Statistics indicate that damage from excavation related activities is a leading cause of pipeline accidents. If you are a homeowner, farmer, excavator, or developer, we need your help in preventing pipeline emergencies.

- 1. Call your state's One-Call center before excavation begins regulatory mandate as state law requires.
- 2. Wait the required amount of time.
- 3. A trained technician will mark the location of the pipeline and other utilities (private lines are not marked).
- 4. Respect the marks.
- 5. Dig with care.



For More Details Visit: www.call811.com



# OSHA General Duty Clause

Section 5(a)(1) of the Occupational Safety and Health Act (OSHA) of 1970, employers are required to provide their employees with a place of employment that "is free from recognizable hazards that are causing or likely to cause death or serious harm to employees."

https://www.osha.gov/laws-regs/oshact/section5-duties

# Product Characteristics

PRODUCT		LEAK TYPE	VAPORS
HIGHLY VOLATILE LIQUIDS [SUCH AS: BUTANE, Initially heavier than air, spread a		Initially heavier than air, spread along ground and may travel to source of ignition and flash back. Product is colorless, tasteless and odorless.	
	may cause dizzines	s or asphyxia h gas or lique	tion without warning and may be toxic if inhaled at high concen- fied gas may cause burns, severe injury and/or frostbite. Fire

PRODUCT		LEAK TYPE	VAPORS
NATURAL G			Lighter than air and will generally rise and dissipate. May gather in a confined space and travel to a source of ignition.
HEALTH HAZARDS	Will be easily ignited may cause dizzines trations. Contact wit	l by heat, spa s or asphyxia h gas or lique	rks or flames and will form explosive mixtures with air. Vapors tion without warning and may be toxic if inhaled at high concen- fied gas may cause burns, severe injury and/or frostbite.

PRODUCT		LEAK TYPE	VAPORS				
AS: CRUDE FUEL, JET F AND OTHEF	1	Liquid	Initially heavier than air and spread along ground and collect in low or confined areas. Vapors may travel to source of igni- tion and flash back. Explosion hazards indoors, outdoors or in sewers.				
HEALTH HAZARDS Inhalation or contact with material may irritate or burn skin and eyes. Fire may produce irritatir corrosive and/or toxic gases. Vapors may cause dizziness or suffocation. Runoff from fire cont or dilution water may cause pollution.							

#### Pipeline Damage Reporting Law As Of 2007

#### H.R. 2958 Emergency Alert Requirements

Any person, including a government employee or contractor, who while engaged in the demolition, excavation, tunneling, or construction in the vicinity of a pipeline facility;

- A. Becomes aware of damage to the pipeline facility that may endanger life or cause serious bodily harm or damage to property; or
- **B.** Damages the pipeline facility in a manner that may endanger life or cause serious bodily harm or damage to property, shall promptly report the damage to the operator of the facility and to other appropriate authorities.

#### Websites:

Call Before You Clear www.callbeforeyouclear.com

Common Ground Alliance www.commongroundalliance.com

Federal Office of Pipeline Safety www.phmsa.dot.gov

National One-Call Dialing Number: 811 www.call811.com

National Pipeline Mapping System

www.npms.phmsa.dot.gov

National Response Center https://www.epa.gov/emergency-response/national-response-center or 800-424-8802

Occupational Safety & Health Administration (OSHA)

www.osha.gov

Paradigm Liaison Services, LLC www.pdigm.com

United States Environmental Protection Agency (EPA)

www.epa.gov/cameo

Wireless Information System for Emergency Responders (WISER) https://wiser.nlm.nih.gov/



Register for access to Training Center Code: EX



# Operator Information

Operator Name(s) / Contact Information	Type(s) of Pipeline Systems Operating	Location within County	Pipe Size and Operating Pressure Range(s)	Average Emergency Response Time(s)

Paradigm is public awareness. We provide public awareness and damage prevention compliance services to assist with the regulatory requirements of 49 CFR 192 and 195, as well as API RP 1162. Since 2001, the oil and gas industry has worked with Paradigm to fulfill public education and community awareness requirements.

Our history of implementing public awareness programs and compliance services pre-dates API RP 1162. Most of the pipeline industry's large, mid-sized and small operators, as well as many local distribution companies utilize Paradigm's compliance services.

In serving our clients, Paradigm performs full-scope compliance programs from audience identification through effectiveness measurement. In addition, we offer consulting services for plan evaluation and continuous improvement. At the completion of each compliance program, we provide structured documentation which precisely records all elements of the program's implementation to assist with audits.

Paradigm leads the way in industry service. Pipeline operators and local distribution companies trust in Paradigm to implement their public awareness and damage prevention programs. Each year we:

- Distribute 25 million pipeline safety communications
- · Compile and analyze roughly 250,000 stakeholder response surveys
- Facilitate over 1,200 liaison programs
- Implement approximately 1,000 public awareness compliance programs
- · Provide audit support and assistance with over 50 public awareness audits

Contact Paradigm for more information regarding custom public awareness solutions.

## Contact us:

Paradigm Liaison Services, LLC PO Box 9123 Wichita, KS 67277 (877) 477-1162 Fax: (888) 417-0818 www.pdigm.com





Notes



Colorado 811 is a non-profit, non-governmental organization that is funded by its member facilities. According to C.R.S. 9-1.5-101-107, any person that engages in any type of excavation must provide advanced notice to the underground facility owners. The purpose of CO811 is to act as a messaging Center between excavators and underground facility operators for locate requests when excavation activity is taking place.

Today, more and more utility companies are supplying gas, water, electrical and telecommunications services underground. The far reaching consequences of careless or unsafe digging practices can take a staggering toll in terms of property and environmental damages, costly delays, liability, personal injury, and even loss of life.

The Federal Communications Commission has approved the use of "811" as a national call-before-you-dig telephone number. This three digit number will connect anyone intending to dig with their respective one-call center. CO811 is encouraging everyone to utilize the new "811" number.

After locates are completed, the excavator must exercise caution while excavating. Colorado state law requires excavators to use non-mechanized excavation or hand dig within 18" of the exterior sides of all utilities. Potholing is a recommended practice and should be used within the 18" tolerance zone to visually verify underground utilities.

CO811 continues to promote the following FREE online services to its Stakeholders; Positive Response, WEB Ticket Entry (WTE) for professional excavators and facility owners, and iDig for home owners to process locate. All services can be found on the Colorado 811 website.

For questions or more information please contact us by dialing "811" or visiting colorado811.org

	1	ICKE	TS	STATE LAWS & PROVISIONS									NOTIFICATION EXEMPTIONS					NOTIFICATIONS ACCEPTED						
COLORADO Colorado 811: 800-922-1987 Website: www.colorado811.org Hours: 24 hours	FAX	Online	Mobile		Statewide Coverage			Mandatory Membership	Excavator Permits Issued	Mandatory Premarks	Positive Response	Hand Dig Clause	Damage Reporting	DOT	Homeowner	Railroad	Agriculture	Depth	Damage	Design	Emergency	Overhead	Large Projects	Tolerance Zone
Advance Notice: 2 days, not to include the day of notice Marks Valid: 30 days (as long as marks are visible) Law Link: http://primis.phmsa.dot.gov/comm/DamagePreventionSummary.htm	N	Y	Y	,	r I	, ,	Y	Y	N	N	Y	N	Y	N	N	Y	Y	N	Y	Y	Y	N	Y	18'





1.877.477.1162 · co.pipeline-awareness.com