



LANDOWNER &  
COUNTY LEADER GUIDE  
TO  
**CARBON  
PIPELINE  
RISKS**

- 
- [🔗 BoldNebraska.org](https://boldnebraska.org)
  - [🔗 EasementLLC.org](https://easementllc.org)
  - [🔗 NEeasement.org](https://ne easement.org)

Bold Nebraska and the Nebraska Easement Action Team support landowners' property rights and work against projects that risk our water and our way of life.

Carbon pipelines are a major new risk for the Midwest. The Nebraska Public Service Commission is not reviewing the route of these proposed pipelines, leaving landowners and counties to manage all of the risks associated with these major projects. Our state is unprepared for the thousands of miles of pipelines that are being proposed. It is our hope that counties will pass strong pipeline zoning ordinances, and our state legislature will enact eminent domain and pipeline reforms around decommissioning and other areas within their jurisdiction.

## Contact Us:

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### For landowner questions:

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### For general questions & media:

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# **About Nebraska Easement Action Team / Landowner FAQ**



## **WHAT IS N.E.A.T.?**

We believe land justice starts with protecting property rights and ending eminent domain for private gain. Right now, big corporations think they have all the power to ram their projects through communities and personal property.

We believe in putting power back in the hands of landowners.

The Easement Action Teams Landowners and Lawyers Cooperative (LLC) works with local communities to provide immediate legal representation to landowners facing pipelines and other fossil fuel infrastructure. Our first priority is to protect landowners' property rights and water. We believe landowners should have the ultimate right of what does and does not happen on their land. We stand against the use of eminent domain for private gain.

The LLC's goal is to end eminent domain for private gain. We work with landowners fighting to protect and defend their lands, while simultaneously building and deploying a durable but flexible alliance of organizers, lawyers, law schools, and legal organizations critical to achieve long-term, positive legal change—ending eminent domain for private gain.

Currently, we are assisting landowners facing the proposed Summit, Tallgrass and Navigator carbon pipelines in Iowa, Nebraska, South Dakota and North Dakota.

The Easement Action Teams Landowners and Lawyers Cooperative (LLC) was founded on the model we created in Nebraska to protect the land and water from the risky Keystone XL pipeline. Landowners and neighbors concerned about the deck being stacked against them sought out the help of organizations like Bold Nebraska and the Farmers Union. Landowners decided a group totally focused on the legal challenges of those in pipeline routes needed to be formed. We contacted the Domina Law Group to assist us and over the years a legal model was developed that has helped protect property rights in Nebraska, Texas, Wisconsin, Oregon and many other towns and states.

The Domina Law Group and lead attorney Brian Jorde assist landowners with all aspects of the path ahead, from education and organization to representing landowners in any state proceedings, and for negotiating standard easement terms, if these proposed carbon projects ever get approved.

For years, Domina Law Group and its lawyers have been representing landowners across the Midwest and around the county in eminent domain battles and pipeline fights. For the last 12 years, Brian Jorde, trial lawyer and managing partner of Domina Law Group, has worked with and side-by-side hundreds of landowners in all aspects of property right education, landowner legal challenges to proposed pipeline projects, and handled hundred of lawsuits and appeals including constitutional challenges and condemnation litigation.

Most notably, Brian represented over one hundred families in an over decade-long fight against TransCanada's proposed Keystone XL tar sands oil pipeline. Due to the efforts of Domina Law and its over 220 lawsuits and appeals handled, TransCanada, the second largest pipeline company in the world, finally gave up on the multi-billion-dollar project — and Brian negotiated a complete release of all easements and a return of his clients' land to exactly how it was before TransCanada condemned their property.

The Nebraska Easement Action Team (NEAT) (<https://NebraskaEasement.org>) partners with groups like **Bold Nebraska** to engage in public education. You can see the work Bold is doing on their website at <http://BoldNebraska.org>.

## **What does N.E.A.T. offer landowners who join?**

N.E.A.T. will act as a “buffer” between landowners and CO2 Pipelines when the company approaches them, by taking CO2 Pipeline's calls, etc.

Once you have told CO2 Pipelines that you belong to NEAT and that you are represented by Brian Jorde and Domina Law, they cannot contact you any further and all communications should be sent the NEAT legal team at Domina Law so that you do not have to worry about further harassing phone calls or visits.

Domina Law will represent all NEAT affected landowners in any Nebraska state legal proceedings involving both Summit and Navigator. This means that you will have legal representation every step of the way to put your best case forward and make your voices heard. Representation here is designed to best protect your land by resisting these projects that seek to go on, under, and through your property.

NEAT will keep landowners abreast regarding if, and when, it may eventually be necessary to negotiate with Summit and/or Navigator over easement terms. This would occur only if and after all other efforts at legal protections have failed.

If a pipeline is approved and an easement is unavoidable, NEAT will work to negotiate the best uniform terms for all NEAT landowners using expertise from decades of easement negotiations so that landowners can have the best protections possible.

## **How can N.E.A.T. provide help to landowners at a low price?**

Brian Jorde and Domina Law have accomplished successful yet inexpensively priced efforts for landowners in Nebraska and Wisconsin, protecting their land against the Keystone XL pipeline and Enbridge expansion plans, and has handled these fights from A-Z before.

He and his Law Firm are offering their expertise to NEAT for much less cost than other attorneys could and would ordinarily charge, because he believes in the rights of people in regard to their own land. Not only that, as an attorney with expertise in property law, Mr. Jorde would be able to identify and deal with crucial elements more quickly than attorneys who are less familiar with these complex matters.

“Economies of scale” make a difference. By joining a large group of similarly affected Iowa landowners you can spread the costs of litigation across many families as opposed to a single family or a small group of families paying the entire cost of a lawyer to fight for them alone.

Landowners involved pay a pro-rata share of legal fees and expenses and thus only have a small fraction of the actual cost and expense of a major legal effort like these will be.

## **What is an easement?**

Any easement is a legal right usually reduced to writing in an Easement Agreement that spells out how the pipeline company will use your land for their profit while you continue to pay taxes and insurance.

It spells out what the pipeline company can do and therefore what you can't do and establishes restrictions on your land.

The proposed easements are “perpetual” which means forever. The pipeline company proposes to pay you one time and you can never go back and obtain more easement compensation in the future.

The pipeline company can sell or assign their easement on your property to any person, company, or country in the world at anytime and you can't do anything to stop that.

## **Do I have to sign an easement?**

Not only do you not have to sign the pipeline company's easement, you do not have to talk to them or interact with them.

We encourage you NOT TO SIGN ANYTHING until and if you completely understand all the risks and ways the easement and having the pipeline on your property will affect you forever.

If you join up with NEAT and become a part of our legal co-op – you never have to directly interact with these companies or their agents ever again.

## **Can the pipeline company survey my land?**

Not only do you not have to sign the pipeline company's easement, you do not have to talk to them or interact with them, including requests to survey your land.

We encourage you NOT TO SIGN ANYTHING until and if you completely understand all the risks and ways the easement and having the pipeline on your property will affect you forever.

If you join up with NEAT and become a part of our legal co-op – you never have to directly interact with these companies or their agents ever again.

## **Lawful Survey or a Trespass?**

It is lawful to enter onto private lands to examine or survey before the Pipeline Company actually has condemned the land IF all of the following are true:

1. The Pipeline Company either has eminent domain rights OR is the entity surveying is a representative of such a Company with eminent domain rights, and
2. Negotiations have failed, and
3. After they have identified themselves to the landowner or person in possession of the land, and
4. Informed landowner or person in possession of the land of their contemplated actions

If you believe any of the above are not true, then you are encouraged to call your local law enforcement and report the trespass.

Also, it is best practice to document actions of Pipeline Company or their agents with photos and video. You have the right to follow them anywhere on your property and document what they are doing. Photograph any damages of any kind you believed they caused.

If such “survey” is done by drone or by air – the law is less clear as to the exact amount of feet they must be above your property to not constitute a trespass and the law looks more at the type and severity of the intrusion on your solitude or seclusion – essentially your free enjoyment of your property.

The law allows for civil action against such a trespasser:

Any person, firm, or corporation that trespasses or intrudes upon any natural person in his or her place of solitude or seclusion, if the intrusion would be highly offensive to a reasonable person, shall be liable for invasion of privacy.

*Neb Rev Stat: 20-203*

## **What if I already have an attorney?**

If you have a previously established relationship with an attorney (e.g. for your will, estate, etc.) it is reasonable to let them know you are joining NEAT and why. Having your own attorney work with you, rather than NEAT, is your decision of course, but we encourage you to work with an attorney experienced in these matters and who has been battled large pipeline companies before.

If you have already contacted an attorney for the express purpose of having them deal with CO2 Pipelines, it is reasonable to have a forthright conversation with them about your interest in NEAT.



## **Once I have joined N.E.A.T., what can I expect and what do I need to do?**

You will be able to join our bi-monthly (sometimes weekly) ZOOM video conference meetings where landowners share information on what is happening across the state and our Legal Team provides guidance and answers your questions and discusses the plans and strategies moving forward.

You will receive periodic email updates on the latest news and urgent updates.

You will not have to deal with Summit and/or Navigator directly again, your Legal Team will handle all communications with the pipeline company.

## **What should I do if an CO2 Pipelines representative knocks on my door and wants to come in and talk, or telephones me to talk?**

Once you sign up to become a NEAT member, you do NOT have to speak with them in person or by phone, nor invite them into your home. You should ask for the representative's name and position with CO2 Pipelines, ask them for identification if in person, and politely state that you do not wish to speak to them.

You should advise them to call your lawyer, Brian Jorde, and provide his information to them. You do NOT have to give them ANY other information.

## **What is Condemnation?**

Condemnation is the name of a legal proceeding that occurs when an entity (usually a governmental entity) who has the power of eminent domain uses that power to condemn or take all or a portion of another's property for the condemner's use and purpose.

Condemnation is a process by which the landowner whose property is being taken can present evidence in Court to jurors from the county where the land is located who will determine the value, or the monetary compensation, that the taker must pay the landowner.

Often before Condemnation litigation starts, there is a period of negotiation with the taker, here potentially a Carbon Pipeline company, and you can negotiate the terms or fine print of the contract, called an Easement, and you can negotiate price or the financial compensation that will be paid.

If negotiations fail, condemnation often starts where you can go all the way to trial and/or continue to negotiate along the way if you think it is likely you can reach an agreement.

## **Who Can Become a Supporter of N.E.A.T.?**

N.E.A.T. will have the most impact for landowners and tenants who own or farm land the pipeline will cross and we urge you to become a N.E.A.T. Supporter and tell your neighbors to

as well. As a tenant you also have property rights and interests in the land you rent - these rights are compensable if and when affected.

If you have signed an agreement to let a pipeline company on your land to survey you can still join N.E.A.T.

If you have voluntarily signed an Easement already N.E.A.T. may be able to assist you in rescinding that easement or getting more money for it. Call or email today to learn more about this.

If you are someone who thinks "I will never voluntarily sign anything with a pipeline company" - we respect your opinion and option to exercise your Constitutional rights and force them to take you to Court and want you to know you can still join and become a Supporter of N.E.A.T. and benefit from our efforts! To learn more about Condemnation options Contact Us.

If you believe in what N.E.A.T. stands for and want to support N.E.A.T. but don't have any land affected you can still join and support our efforts.



NEAT believes the terms and fine print in all Easements must aggressively be negotiated for and in favor of landowners.

# Take Action

[PipelineFighters.org](https://PipelineFighters.org)

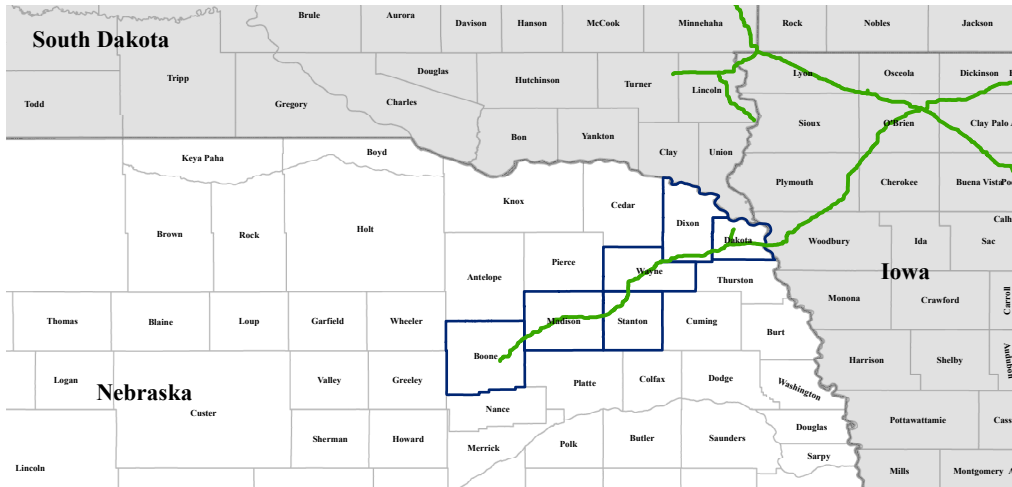


The Nebraska Easement Action Team, Inc. ("N.E.A.T.") is a non-profit education and legal defense fund first established by Nebraskans for the benefit of landowners and citizens affected by the TransCanada KXL pipeline, and now re-establishing as a new **co-op of landowners opposed to eminent domain** for proposed carbon (CO2) pipelines in Nebraska by Summit, Navigator, and potentially others.

**EXTRACTED**

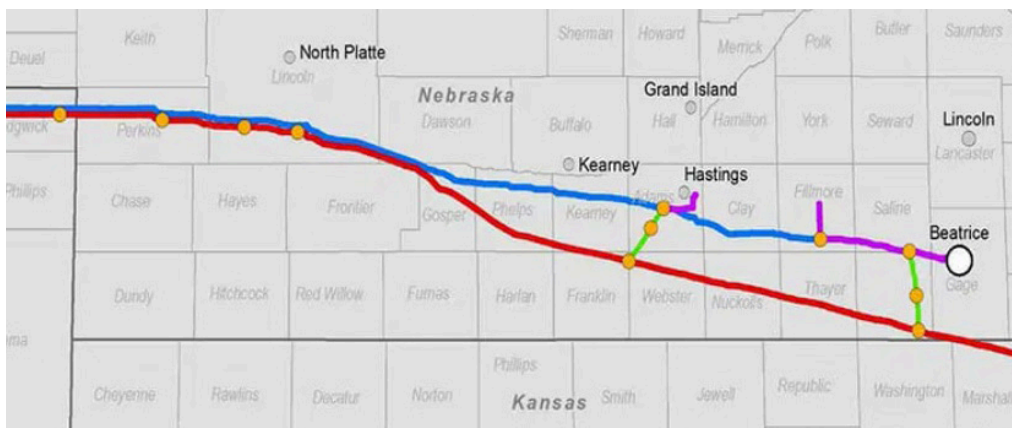
Visit [PipelineFighters.org](https://PipelineFighters.org) for our "EXTRACTED" daily news clips – plus access resources, expert analysis and actions YOU can take to protect the rights of property owners and citizens opposed to eminent domain.

# Proposed NE Pipeline Routes



## Navigator Heartland Greenway

CO2 Pipeline (green)  
 carrying supercritical CO2  
 118.6 miles in NE



## Trailblazer

Natural Gas Service Pipelines  
 carrying gaseous CO2

Blue and purple lines will  
 become carbon pipelines:

New pipe (purple)

Conversion from gas to  
 carbon (blue)

Rocky Express pipeline that  
 will continue with gas (red)

New pipelines carrying gas  
 (green)



## Summit Carbon Solutions

CO2 Pipeline (blue)  
 carrying supercritical CO2  
 318.79 miles in NE



Video still showing a "controlled" intentional rupture of a buried, 8-inch CO2 pipeline at a facility in Norway (Det Norske Veritas), with a shockingly intense and large plume of CO2 rapidly dispersed throughout a wide surrounding area.

# Top 8 Reasons to Oppose Risky Carbon Pipelines

1

## Lack of Safety

In the event of a carbon pipeline rupture or leak, an explosive plume of CO2 gas can emerge, odorless and colorless, an asphyxiant that can **suffocate all living beings**, and prevent combustion vehicles like cars from starting to enable an escape to safety.

At concentrations **between 2-10%**, CO2 can cause nausea, dizziness, headache, mental confusion, increased blood pressure and respiratory rate. **Above 8%**, nausea and vomiting appear. **Above 10%**, suffocation and death can occur within minutes. Contact with the cold gas can cause freezing of exposed tissue. Moisture in the air can lead to formation of carbonic acid that can irritate the eyes. CO2 is heavier than air and will accumulate in low lying areas.

## 2

# Eminent Domain Abuse

Landowners who have valid concerns **may have no say** whether a carbon pipeline company can build through their property.

Concerns for their families' safety; and impacts on their livelihoods, both from a pipeline explosion, and damages to crops, topsoil lands and waterways during construction and decades of maintenance. With almost zero regulation on the books for these new carbon pipelines, the final negotiations and the most potentially impactful might end up being directly between these corporations and landowners, who are facing down eminent domain condemnation of their property if they refuse to sign an easement.

All pipeline builders claim early in the process that they desire to “work with landowners” — including these proposed carbon pipelines — but ultimately this is all part of their ploy, as the threat of taking you to court to **simply take your land via eminent domain** always lurks during any easement “negotiations.”

## 3

# Damage to Topsoil & Crop Losses

Based on the experience with Dakota Access, **the fertility of cropland** can be adversely impacted for several (or perhaps many) years.

A 2021 Iowa State University study found “extensive soil disturbance from construction activities had adverse effects on soil physical properties, which come from mixing of topsoil and subsoil, as well as soil compaction from heavy machinery.” “Overall, in the first two years, we found the construction caused severe subsoil compaction, impaired soil physical structure that can discourage root growth and reduce water infiltration in the right-of-way,” said the lead soil physicist on the project. “They also found changes in available soil water and nutrients. The team found **crop yields in the right-of-way were reduced by an average of 25% for soybeans and 15% for corn during the first and second crop seasons, compared to undisturbed fields.**”

# 4

## No Regulations for Carbon Pipelines

Unlike for oil and gas pipelines (for which statutory landowner protections are also inadequate), it appears that under the current regulatory structure in Nebraska, **zero regulation exists** for carbon pipelines.

This means these carbon pipeline companies do not have to apply for any route permit required by the Nebraska Public Service Commission, or under go the usual months-long hearing process and review before seeking to use eminent domain to take land for their projects. With no state or federal oversight of carbon pipelines in Nebraska, decisions on whether to allow construction could be left up to County Boards, **made in all-backroom deals happening now**, where landowners and impacted community members have zero input — no required public hearings, or opportunities for public comment on the record. The final negotiation and the most potentially impactful will be between corporations and landowners, who are facing down eminent domain condemnation of their property if they refuse to sign an easement.

# 5

## Carbon Capture Doesn't Work

The “carbon capture” boondoggle enables Big Oil & Gas (and even coal) to keep **drilling, burning, and increasing emissions**, while failing as a technology to actually help reduce emissions and the impacts of climate change.

Despite extensive support, of projects that seek to commercialize carbon capture and sequestration technology, **80 percent have ended in failure**.

A recent review of relevant research shows that due to the large amount of energy required to power carbon capture and the life cycle of fossil fuels, carbon capture in this country has actually put **more CO2 into the atmosphere than it has removed**.

# 6

## Enhanced Oil Recovery?

In CCUS = the “U” stands for “utilization,” meaning the the fossil fuel industry “utilizes” the captured CO2 to help frack for more oil in a process called “enhanced oil recovery.” How is this a “climate solution” if the captured CO2 is being used to **drill for more oil?**

Wouldn't this lead to more burning and more emissions? **If climate change is an emergency, policymakers ought to treat it that way.** It cannot be enough to slowly induce oil and gas companies to shift to more carbon-friendly practices, taking care not to unduly startle them. They must be jolted.

# 7

## It's a Boondoggle, a Tax Scam

The U.S. Federal Tax credit program necessary to prop up carbon capture & storage technology is a **scam.**

“It is important to note that the credits under 45Q have a poor track record: A recent investigation by the U.S. Treasury Inspector General for Tax Administration and commissioned by Senator Menendez found that 87% of tax credits awarded under 45Q were claimed improperly, **without complying with the Environmental Protection Agencies monitoring, verification, and reporting requirements.** It is unclear whether the companies claiming to store carbon are even doing so.”

Of nearly \$1 billion in carbon-capture tax credits sought through 2019, **\$893 million** was submitted in ways that didn't meet EPA rules.

It's estimated that these carbon pipelines could each seek and obtain at least **\$600 million per year in federal subsidies** from the federal 45Q tax credit alone.





A CO2 gas pipeline in Satartia, Mississippi. Rory Doyle for HuffPost

[BoldNebraska.org](https://boldnebraska.org)



# 8

## All Risk, No Reward

Carbon capture and storage and the vast network of new pipelines that would be required for this sham technology's full implementation is once again seeing fossil fuel corporations, Big Oil & Gas, asking farmers & ranchers to shoulder a new **risk and burden** — just to help them clean up their own mess.

The only people making money on the carbon capture and pipeline scheme are the pipeline builders seeking federal tax credits, and the fossil fuel industry that gets one more lease on life to keep **drilling, burning and increasing emissions**. Meanwhile, landowners generally receive a measly one-time payment from pipeline companies to build an oil or gas (or carbon) pipeline on their land, while landowners with wind turbines or solar panels cited on their property are commonly paid annually in revenue-sharing agreements.

# **CO2 Pipeline Summary for Policymakers**

Pipeline Safety Trust



Yazoo County Emergency Management Agency

Summary for Policymakers  
May 2023

# CARBON DIOXIDE PIPELINE SAFETY

In 2022, the Pipeline Safety Trust (PST) commissioned a report from an independent pipeline safety expert on the unique aspects of carbon dioxide pipelines.<sup>1</sup> This Summary for Policymakers presents the current state of safety risks and knowledge gaps associated with CO<sub>2</sub> pipeline transportation.

As government and the private sector seek to reduce greenhouse gas emissions that contribute to climate change, lawmakers have increasingly incentivized carbon capture utilization and storage (CCUS or CCS), as a tool for decarbonization. The 2021 Infrastructure Investment and Jobs Act appropriated \$12.2 billion for CCUS<sup>2</sup> and the 2022 Inflation Reduction Act (IRA) provided an even greater level of support for CCUS through the extension and expansion of the 45Q tax credit for carbon capture, utilization, and sequestration.<sup>3</sup>

Transporting carbon dioxide by pipeline poses serious public safety risks due to the fact that CO<sub>2</sub> is odorless, colorless, heavier than air, and is an asphyxiant and intoxicant. Furthermore, carbon dioxide has a narrow definition within the federal regulations, only encompassing CO<sub>2</sub> transported as a supercritical fluid consisting of over 90% carbon dioxide molecules.<sup>4</sup> This narrow definition has the potential to exclude new CO<sub>2</sub> pipelines built for CCUS from federal regulatory oversight.

With the potential for a massive buildout of CO<sub>2</sub> pipelines in the next decade,<sup>5</sup> the report highlights the regulatory challenges and remaining knowledge gaps which need to be addressed to ensure public safety. **This summary is intended to assist policymakers and other stakeholders to ensure that pipelines associated with the deployment of CCUS projects minimize community safety risks while accomplishing climate objectives.**



Department of Energy Estimated CO<sub>2</sub> Pipeline Buildout by 2050  
6, 7, 8

## SUMMARY OF CONCLUSIONS



### Regulatory Oversight

**Supercritical CO<sub>2</sub>** — Regulated by the Pipeline and Hazardous Materials Safety Administration (PHMSA)  
**Liquid CO<sub>2</sub>** — Not regulated  
**Gaseous CO<sub>2</sub>** — Not regulated



### Public Safety Concerns

Carbon dioxide is odorless, colorless, does not burn, is heavier than air, and is an asphyxiant and intoxicant. These factors increase the need for public awareness and emergency response training.



### Dispersion Modeling

The unique physical properties of CO<sub>2</sub> can dramatically increase the size and scope of the impacted area of a rupture. Weather, terrain, and atmospheric pressure affect how quickly CO<sub>2</sub> will dissipate and how far the product will migrate away from the failure site.



### Pipeline Integrity

Hydrogen sulfide, methane, carbon monoxide, oxygen, nitrogen oxides, sulfur oxides, hydrogen, and water are all impurities which can occur depending on the source of the CO<sub>2</sub> and have the potential to impact the integrity of the pipeline.



### Existing Pipeline Conversion

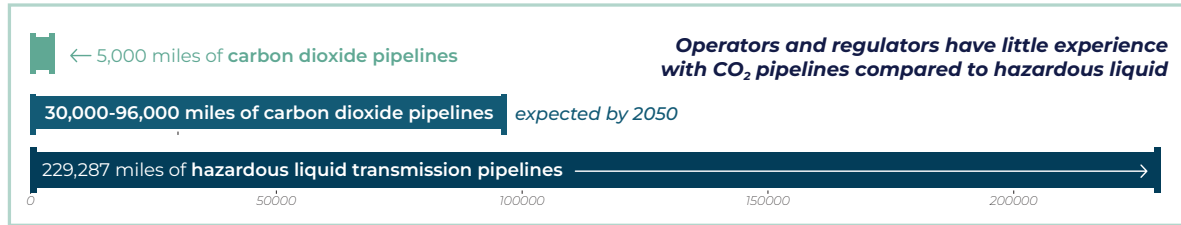
More research and consideration are needed to assess whether the conversion of existing pipelines to CO<sub>2</sub> service will impact public safety.

**Policymakers should be diligent and cautious in considering projects involving carbon dioxide pipelines, ensuring that pipelines will be a sufficient distance from people, that the pipelines will maintain their integrity, and that the project will indeed reduce greenhouse gas emissions.**

*The Pipeline Safety Trust (PST) is the only national, public-interest nonprofit organization dedicated to pipeline safety and was founded in the aftermath of a pipeline tragedy in Bellingham, WA in 1999 that took the lives of three boys. The mission of the PST is to promote pipeline safety through education and advocacy; thus, the subject of carbon dioxide pipeline safety is critical to our organization.*



## CO<sub>2</sub> PIPELINE MILEAGE AND REGULATIONS



*Operators and regulators have little experience with CO<sub>2</sub> pipelines compared to hazardous liquid*

At present, there are just over 5,000 miles of carbon dioxide pipelines in the United States, compared to 229,287 miles of hazardous liquid transmission pipelines carrying products such as crude oil, gasoline, jet fuel, and other liquid commodities.<sup>9</sup> The majority of CO<sub>2</sub> pipelines are currently used for enhanced oil recovery (EOR) where supercritical carbon dioxide is pumped into existing oil wells to extract more product. Most of the CO<sub>2</sub> being transported through these existing pipelines comes from high pressure, higher purity, natural underground sources.

Regulation of carbon dioxide pipelines began in 1988, primarily driven by a natural CO<sub>2</sub> release in Lake Nyos, Cameroon which killed more than 1,700 people. The final rule issued by the federal regulator, the Pipeline and Hazardous Materials Safety Administration (PHMSA), simply added the words

“and carbon dioxide” to existing regulations developed for Hazardous Liquid pipelines. Due to the small number of existing and anticipated CO<sub>2</sub> pipelines at the time, regulators opted not to issue more specific standards for supercritical CO<sub>2</sub> pipelines.

As stated previously, carbon dioxide is currently defined by PHMSA as “a fluid consisting of more than 90 percent carbon dioxide molecules compressed to a supercritical state.”<sup>10</sup> With the uncertainty surrounding the physical state and concentrations of CO<sub>2</sub> being transported to support new CCUS projects, this definition, along with the federal standards written for hazardous liquid pipelines, is not appropriate to ensure proper federal oversight and public safety in the coming years.

## CARBON DIOXIDE: AN INVISIBLE THREAT

Carbon dioxide has unique physical properties which can make transporting it via pipeline extremely dangerous in the event of a rupture. The physical characteristics of carbon dioxide which augment risks include:



**Carbon dioxide is odorless and colorless**, making detection by first responders and the public difficult.



Unlike other hydrocarbon pipelines, **carbon dioxide does not ignite or dissipate quickly** in the event of a release. Depending on topography and weather, CO<sub>2</sub> can migrate far away from the rupture site and settle in low lying areas before detection or dispersion.

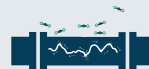


**Carbon dioxide is an asphyxiant.** The displacement of oxygen in the air by CO<sub>2</sub> has the potential to cause long-term health effects and casualties for both humans and animals.

**Carbon dioxide is heavier than air**, allowing the contents of a rupture to move along the ground and settle in low-lying areas.



**Supercritical CO<sub>2</sub> undergoes rapid phase changes upon a pipeline rupture.** These phase changes can exacerbate ruptures due to fracture propagation and cause large amounts of product to rapidly release into the environment.



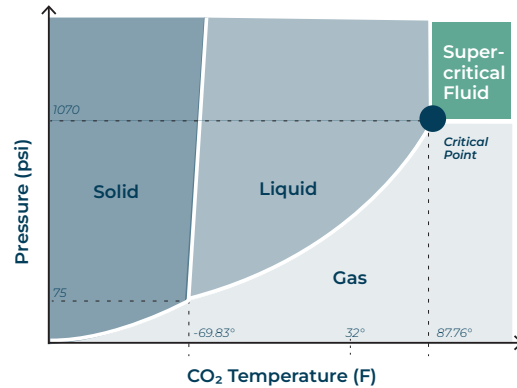
**Carbon dioxide's interaction with impurities**, such as water and hydrogen sulfide, can compromise pipe integrity and increase the risk of corrosion and failure.



## PHASES OF CARBON DIOXIDE

Depending on temperature and pressure, carbon dioxide can be transported by pipeline in three phases; liquid, gas, or supercritical fluid. **Supercritical fluid carbon dioxide has properties of both gas and liquid and is the only phase currently regulated by PHMSA.**

Carbon dioxide pipelines often operate outside the pressure and temperature necessary to maintain supercritical fluid state. Some proposed projects are designed to transport CO<sub>2</sub> strictly as a gas.<sup>11</sup> Communities need assurances that safety regulations apply to all CO<sub>2</sub> pipelines.



## SITING OF NEW CO<sub>2</sub> PIPELINES

In addition to all the technical and regulatory challenges surrounding a safe buildout of CO<sub>2</sub> pipelines, there are also concerns with permitting and siting authority. Currently, there is no federal oversight for the siting and permitting of CO<sub>2</sub> pipelines. Hazardous liquid pipelines, including CO<sub>2</sub> pipelines, are permitted by either the state or local authorities tasked with this responsibility. Interstate natural gas pipeline projects are approved by the Federal Energy Regulatory Commission (FERC).

Because permitting and routing authority differ depending on the local or state jurisdiction, it is not uncommon to see differing standards of review, policies, and safety or other concerns among different jurisdictions. In addition, the ways in which these issues are addressed can be drastically

different depending on the jurisdiction. This may result in an inconsistent level of safety along the route of a pipeline and communities facing differing levels of risk from one jurisdiction to the next.

Environmental justice and equity concerns should also play a role in the permitting and routing process of CO<sub>2</sub> pipelines.<sup>11</sup> All too often pipelines are routed through underserved communities, targeting “the point of least resistance” along the proposed route.<sup>12</sup> Whether a CO<sub>2</sub> pipeline is permitted, and how the route is chosen, can have significant impacts on the surrounding community, and therefore all state and local agencies holding this authority should ensure they are well versed in the technical and safety risks posed by CO<sub>2</sub> pipelines.

## WATER IN CO<sub>2</sub> PIPELINES: POTENTIAL FOR CORROSION



No Corrosion



Corrosion



Severe Corrosion

*Historically, CO<sub>2</sub> pipelines have transported relatively dry and pure CO<sub>2</sub>. However, the expansion in different sources of CO<sub>2</sub> has the potential to lead to higher water content and more impurities introduced into pipelines. In addition, carbon dioxide mixed with water can form carbonic acid which is extremely corrosive to the internal surface of the pipe.*

## CONCLUSION

Policymakers should be diligent and cautious in considering projects that involve moving carbon dioxide by pipeline. Decisionmakers must ensure the pipelines will be fully regulated by an appropriate authority and constructed and operated in a way that does not compromise pipe integrity or public safety. Carbon Dioxide pipelines should only be part of CCUS projects that will truly help the country decarbonize and reach our shared greenhouse gas reduction goals. Decisionmakers must also ensure that the risks placed on communities from these pipelines will be borne in a just and equitable manner.

## KNOWLEDGE GAP RECOMMENDATIONS

- A** The appropriate fracture toughness and steel pipe quality is currently unknown to prevent CO<sub>2</sub> pipeline leaks or ruptures. More research is needed to develop pipe quality standards and strategies for the correct placement of fracture mitigation measures along these pipelines.
- B** Further research is needed to explore the effects of corrosion, dents, cracks, or gouges on a wide range of steel grades for CO<sub>2</sub> pipeline operation.
- C** Further research should address odorization strategies to ensure safe and effective interaction with CO<sub>2</sub> transport.
- D** There is currently no defined safe distance or plume dispersion model for developing a potential impact area along CO<sub>2</sub> pipelines.

## RECOMMENDATIONS FOR ADVANCING SAFETY IN FEDERAL REGULATION OF CARBON DIOXIDE PIPELINES

- 1** PHMSA should update the definition of carbon dioxide in current regulation to include all phases.
- 2** PHMSA needs to identify in regulation the potential impact areas for CO<sub>2</sub> pipeline ruptures.
- 3** PHMSA should identify how to incorporate fracture propagation protection on CO<sub>2</sub> transmission pipelines.
- 4** PHMSA should mandate the use of odorant injection into CO<sub>2</sub> transmission pipelines.
- 5** PHMSA should establish regulations setting specific maximum contaminant levels for CO<sub>2</sub> pipelines.
- 6** PHMSA should strengthen federal regulations for conversion of existing pipelines to CO<sub>2</sub> pipeline service.

### Endnotes

1. <https://pstrust.org/wp-content/uploads/2022/03/3-23-22-Final-Accufacts-CO2-Pipeline-Report2.pdf>
2. <https://crsreports.congress.gov/product/pdf/R/R47034>
3. <https://www.whitehouse.gov/wp-content/uploads/2022/12/Inflation-Reduction-Act-Guidebook.pdf>
4. [https://www.ecfr.gov/current/title-49/subtitle-B/chapter-1/subchapter-D/part-195/subpart-A/section-195.2#p-195.2\(Carbon%20dioxide\)](https://www.ecfr.gov/current/title-49/subtitle-B/chapter-1/subchapter-D/part-195/subpart-A/section-195.2#p-195.2(Carbon%20dioxide))
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10. [https://www.ecfr.gov/current/title-49/subtitle-B/chapter-1/subchapter-D/part-195/subpart-A/section-195.2#p-195.2\(Carbon%20dioxide\)](https://www.ecfr.gov/current/title-49/subtitle-B/chapter-1/subchapter-D/part-195/subpart-A/section-195.2#p-195.2(Carbon%20dioxide))
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12. <https://doi.org/10.1029/2021GH000442>
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# "The Gassing of Satartia" (excerpt)

By Dan Zegart, Huffington Post, August 26, 2021

It was just after 7 p.m. when residents of Satartia, Mississippi, started smelling rotten eggs. Then a greenish cloud rolled across Route 433 and settled into the valley surrounding the little town. Within minutes, people were inside the cloud, gasping for air, nauseated and dazed.

Some two dozen individuals were overcome within a few minutes, collapsing in their homes; at a fishing camp on the nearby Yazoo River; in their

vehicles. Cars just shut off, since they need oxygen to burn fuel. Drivers scrambled out of their paralyzed vehicles, but were so disoriented that they just wandered around in the dark.

The first call to Yazoo County Emergency Management Agency came at 7:13 p.m. on February 22, 2020.

"CALLER ADVISED A FOUL SMELL AND GREEN FOG ACROSS THE HIGHWAY," read the message that dispatchers sent to cell phones and radios of



all county emergency personnel two minutes later.

First responders mobilized almost immediately, even though they still weren't sure exactly what the emergency was. Maybe it was a leak from one of several nearby natural gas pipelines, or chlorine from the water tank.

The first thought, however, was not the carbon dioxide pipeline that runs through the hills above town, less than half a mile away. Denbury Inc, then known as Denbury Resources, operates a network of CO2 pipelines in the Gulf Coast area that inject the gas into oil fields to force out more petroleum. While ambient CO2 is odorless, colorless and heavier than air, the industrial CO2 in Denbury's pipeline has been compressed into a liquid, which is pumped through pipelines under high pressure. A rupture in this kind of pipeline sends CO2 gushing out in a dense, powdery white cloud that sinks to the ground and is cold enough to make steel so brittle it can be smashed with a sledgehammer.

Even Durward Pettis, a contract welder for Denbury and chief of the local Tri-Community Volunteer Fire Department, didn't figure out that the mystery fog was CO2 for a full 15 minutes. He'd directed first responders to set up three roadblocks to prevent traffic from entering the area. But it wasn't until 7:30 p.m. that word went out that they'd need self-contained breathing apparatus, or SCBA, to enter Satartia and evacuate the town's 42 residents, many of them elderly, and about 250 others who lived just outside town. By then, rescuers and residents were already in motion, fleeing the gas or evacuating others.

Even once Pettis figured it out, none of the sheriffs' deputies and volunteer firefighters had any emergency training in CO2 leaks. Neither did staff at two area hospitals, which had detrimental consequences for gas victims, according to interviews with many of the 49 who were hospitalized.

"It was bad enough that I thought my mama wouldn't make it, and she still has trouble breathing," said Army veteran Hugh Martin, who fled Satartia in a

pickup truck with his 78-year-old mother as he struggled to remain conscious. "She never had asthma or COPD, now she's on inhalers full time."

Even months later, the town's residents reported mental fogginess, lung dysfunction, chronic fatigue and stomach disorders. They said they have trouble sleeping, afraid it could happen again.

## **Even months later, the town's residents reported mental fogginess, lung dysfunction, chronic fatigue and stomach disorders. They said they have trouble sleeping, afraid it could happen again.**

This story is the result of a 19-month HuffPost/Climate Investigations Center investigation into the Satartia pipeline rupture, and the safety of CO2 pipelines. It is based on interviews with more than 60 witnesses, victims, first responders, lawyers, medical and toxicological experts, pipeline and petroleum experts, and public health officials; and a review of medical records, police and fire reports, 911 recordings, emergency dispatch logs, internal documents from the Mississippi Emergency Management Agency and the state Department of Environmental Quality, as well as federal pipeline incident reports.

Meanwhile, the federal government is taking the first steps to vastly increase the size of the nation's carbon dioxide pipeline network as a way of fighting climate change. Our investigation reveals that such pipelines pose threats that few are aware of and even fewer know how to handle.

"We got lucky," said Yazoo County Emergency Management Agency director Jack Willingham, who oversaw the rescue effort. "If the wind blew

the other way, if it'd been later when people were sleeping, we would have had deaths."

## A Deadly Gas

Carbon dioxide has long been used to euthanize laboratory rodents and other small animals, a practice animal welfare organizations now consider inhumane due to the suffering the gas inflicts on the animals. Each year, CO<sub>2</sub> accidents kill about 100 workers worldwide — often in basements of restaurants that use CO<sub>2</sub>-charged systems for their bar mixers — or in industrial accidents.

Carbon dioxide is an asphyxiant that displaces ambient oxygen, making it more difficult to breathe. Smaller exposures cause coughing, dizziness and a panicky feeling called "air hunger." As CO<sub>2</sub> concentrations get higher and exposure times longer, the gas causes a range of effects from unconsciousness to coma to death. Even at lower levels, CO<sub>2</sub> can act as an intoxicant, impairing cognitive performance and inducing a confused, drunken-like state...

## "They Can't Come Evacuate Y'all"

DeEmmeris Burns was returning to his mother's house in Satartia from a fishing trip with his brother Andrew Burns and cousin Victor Lewis when they heard an explosion and then a deafening roar, like a jet engine. The stench of rotten eggs filled the car.

DeEmmeris Burns immediately thought: pipeline explosion. He knew there was one nearby, but other than its approximate location, knew nothing else about it.

They were driving on Perry Creek Road, a gravel and dirt country lane that hugs its namesake waterway and passes close to but below the location of the pipe rupture. They were almost at his mother's house.

He called his mother's cellphone at 7:18 p.m. and told her there had been a gas explosion. "You got to get out. We're close, we're coming to get you," Burns shouted over the roar of escaping gas.

On the other end of the call, 65-year-old Thelma Brown was trying to figure out why her son sounded so strange. He was hollering, breathing heavily, not making sense. She knew the pipeline he was talking about; it runs about half a mile from her house. But she hadn't smelled anything. She heard her son frantically repeating, "Cut the air! Cut everything off! Cut the air!" And then, silence.

She tried calling him back. No answer. She rang the other two men's cell phones, but got nothing.

Inside the car, the three men rolled up the windows to keep out whatever it was they were driving through. Then the engine died.

"Hunh," Burns said. "Car shut off."

Minutes later, Thelma's sister, Linda Garrett, who lived just down the road, smelled the gas and called too. Thelma repeated what her sons had told her before their call dropped. Garrett hung up with Thelma and called 911, but the dispatcher didn't seem to know about a gas leak.

"Do I need to be getting out of here?" Garrett asked. The 911 operator said she'd call her back and let her know.

"She can't breathe. She's on the floor right now"

Garrett noticed her own breathing was becoming labored. Then her daughter Lynett Garrett and 14-year-old granddaughter, Makaylan Burns, who had been out picking up a pizza for dinner, staggered in the door.

Makaylan seemed to be in full-blown respiratory distress, and Lynett was unable to talk. She pounded on the dining room table and panted.

"What is it? What's wrong? What is it?" Garrett shouted.

Makaylan dropped to the floor, unconscious. Garrett tried 911 again. This time the operator acknowledged that there was a gas leak.

"They have shut the highway down because of it. They're not letting anyone in, they can't come evacuate y'all," she said.



Terry Gann, chief investigator for the Yazoo County Sheriff's Department, with the truck he used to rescue gas victims in Satartia. Rory Doyle for HuffPost

Garrett was afraid if they left the house, all three of them would pass out. She insisted on an ambulance. The dispatcher said one would meet them outside of town.

Garrett and Lynett carried Makaylan out to the car. Garrett had a bad back and both adults were having trouble breathing, but they managed to get the teenager into the back seat, still unconscious.

Lynett drove and Garrett stayed on the phone with 911 as the operator told them the best route out of town. But after a few minutes, Garrett's breath "just cut out." "We ain't going to make it," she said, before she blacked out. Lynett drove to where they were supposed to meet the ambulance, but it didn't show up, and she had to drive to the hospital...

**Read the full story at:**  
<http://bit.ly/satartia>



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**READ:** Pipeline and Hazardous Materials Safety Administration Report on pipeline operator Denbury's CO2 2020 pipeline rupture:  
<https://bit.ly/denburyreport>

**WATCH:** Satartia Pipeline Explosion: Victims & First Responders Speak Out at PHMSA Public Meeting in Des Moines, IA: <https://bit.ly/43nZXmg>

**WATCH:** First responder Gerald Briggs' testimony on Satartia CO2 pipeline rupture at the North Dakota Public Service Commission:  
<https://bit.ly/briggstestimony>



# Welcome to the 45Q Tax Credit Piggie Farm!

By Paul Blackburn, BOLD Alliance, May 24, 2022

*This post is the first in a series that tours the 45Q carbon capture and storage tax credit hog farm! The other installments may be read at [PipelineFighters.org](https://PipelineFighters.org).*

No doubt, you're all dying to meet the piggies who are lining up at the federal 45Q tax credit trough, and to learn how Congress is planning to slop their trough with billions in federal tax credits to help fatten them up (even more). Since the 45Q tax credit is perhaps the primary driving financial force

behind the proposed carbon pipelines, it's important to understand.

Your tour will explore the tax credit farm in what I hope are a series of manageable blog posts, because it's hard to endure the stench of the place. So, hold your nose and follow me!

First, let's make sure everyone understands what a tax credit is. We all pay taxes, right? Well, no. There are no and low-income people who don't

pay income taxes (though they do pay sales and many other types of taxes amounting to a high proportion of any income they might have), because either they don't have any income or they need to keep every cent they earn just to survive. There are also very rich people who pay no taxes, or pay very low taxes relative to their incomes. How do they get away with this? One way is by snarfing up tax credits.

**A tax credit is an amount of money that a taxpayer can subtract directly from the amount of tax owed. Unlike deductions, which lower the amount of taxable income, tax credits reduce the actual amount of tax owed.**

Let's assume that a corporation earned \$1 million in income and owed \$210,000 in taxes (the theoretical 21% corporate tax rate). If it had \$200,000 in tax credits, it could subtract this amount from its taxes owed and pay just \$10,000 in tax, or 1% of its income.

There are many types of tax credits. Their public purpose is to encourage taxpayers to do things that the government wants them to do but without paying them directly. Let's say that a county government had a problem with litter along roadways and wanted to clean it up. It could pay someone to do this, but doing so would require that the county set aside money in its budget and then hire trash pickers, and many politicians are opposed to increasing government budgets and hiring more staff. One way around government budget concerns is to provide a tax credit for every pound

of trash picked up along roadways. That way, the county's budget would not increase, but its tax revenue would decrease.

With a tax credit of 10 cents per pound of trash, a property taxpayer would be given 10 cents off their taxes for every pound of trash picked up. 1,000 pounds of trash (a heaping pickup full) would equal a \$100 tax credit. At this low rate, probably no property tax payers would pick up trash. Too much work for too little tax benefit. But, what if the tax credit was \$1 per pound? Picking up 1,000 pounds would reduce a property tax bill by \$1,000 dollars. Some folks might do that, especially if they knew about a big pile of trash near their home and had a truck. What if the tax credit was \$10 per pound? Then, picking up a thousand pounds of trash would create a \$10,000 tax credit. At this rate, probably a bunch of people would pick up trash. Just to make the point, what about a \$100 per pound tax credit where a pickup full of trash would be worth \$100,000? Pretty much everybody would be out in the ditches scratching for trash, and maybe even littering on purpose just so they could pick it up. And, the county's tax revenue might disappear entirely.

One problem with tax credits is that by being overly generous they can create a goldrush mentality and end up wasting tax dollars, because it would have been cheaper just to accomplish the policy goal through direct payments.

Tax credits can have other problems, too. Let's say the county's tax credit rules said that only individuals with a garbage truck and a license to pick up trash could get the tax credit, and that the trash must be weighed at the dump so that everything looks on the up and up. But, it just so happens that the only person in the county with a license and a garbage truck is the richest guy in the county, and he also owns lots of farm land, and is a big political campaign contributor. Moreover, he lets his trash trucks drive around open and a lot of trash blows into the ditches, so his trash company is the cause of the litter problem in the first place.

Oh, and the guy who operates the scale at the dump is his cousin. In this case, the tax credit is likely a tax credit handout to a rich and powerful person. The tax credit would help the richest guy in the county get richer and pay no taxes, help politicians get political donations, encourage an endless cycle of littering and litter removal, and force all the rest of the taxpayers to pay for the scheme as well as everything else the county government spends money on.

**The point here is that tax credits can be a way to encourage people to take useful actions, but they can also be a form of corruption, particularly when politicians are too generous, give preference to only rich and powerful tax payers, encourage actions contrary to claimed policy objectives, or make it easy to cheat the system. The 45Q tax credit has already drawn allegations of cheating. [1]**

The 45Q tax credit gives polluters who emit carbon dioxide a tax credit if they capture carbon dioxide from their smokestacks, turn it into a fluid, transport it in a pipeline to a well, and then pump it underground, with the idea that this will reduce the

amount of CO<sub>2</sub> pollution and therefore help slow climate change. But, all of these carbon capture and storage processes require power and almost all of this power will come from burning fossil fuels and emitting CO<sub>2</sub>. It is critical to take these CCS CO<sub>2</sub> emissions into account.

Moreover, the CO<sub>2</sub> may be pumped underground for two reasons. The first is to store (sequester) it, hopefully for thousands of years. The second is to use the CO<sub>2</sub> in a process called enhanced oil recovery (EOR) that can squeeze very large amounts of oil out of old oilfields. This oil would be turned into fuels such as gasoline and diesel and then sold and burned, thereby releasing more CO<sub>2</sub> pollution – just the opposite of what the 45Q tax credit is supposed to accomplish.

Tax credits only benefit those who pay taxes and have very large tax liabilities, so by their nature they are regressive, meaning they help the rich more than the poor. The 45Q tax credit can only be claimed by large corporations, partnerships, or very rich individuals, because the minimum tax credit claim amount is for 25,000 metric tons of CO<sub>2</sub> per year. Only industrial facilities emit this much CO<sub>2</sub>. Capturing this much CO<sub>2</sub> would result in a sequestration tax credit of \$1,250,000 per year and an EOR tax credit of \$875,000. Do you know anybody who pays this much in taxes? I don't.

In theory, the 45Q tax credit could keep CO<sub>2</sub> out of our atmosphere, but key questions include:

- How is the 45Q tax credit related to the rush of pipeline development?
- Who will get the tax credits?
- Is the 45Q tax credit too generous?
- Who measures how much CO<sub>2</sub> goes underground for sequestration and EOR, and how is this verified?
- How much of the CO<sub>2</sub> will go to EOR?
- What would the net CO<sub>2</sub> reduction be given the oil that would be pumped out and burned?



Bold Alliance is a network of small but mighty groups protecting the land and water. Bold Nebraska, one of the Bold Alliance state affiliates, is a citizen group focused on taking actions critical to protecting the Good Life.

- **How much money will the oil industry earn from using the CO2 for EOR?**
- **Given Congress's purported objective of reducing climate change emissions, does it make sense to give the oil industry tax credits for pumping more oil out of the ground?**
- **Are there better ways of using tax dollars for climate change prevention?**

Now that we've reached the front gate, perhaps things are starting to smell a bit, so pull on your muck boots and get ready to wade! Stay engaged right here, I publish regular blogs and Bold has monthly webinars to ensure you have the information to understand the technical aspects of the pipelines, so you are better armed to push back at the local level.

## Read More



[Read the next installments in this 45Q tax credit series on PipelineFighters.org:](#)

The 45Q Tax Credit Pipeline Goldrush:  
Slop Time at the Piggie Trough (6/1/22)

Meet the 45Q Tax Credit Piggies! (6/8/22)

Is the IRS Ready to Wrangle the  
45Q Tax Credit Hogs? (6/20/22)

Will the 45Q Tax Piggies Be Hogtied  
by the U.S. EPA? (7/7/22)

# How to Contact Your County Board About the Pipeline





## How to Contact Your County Board About the Pipeline

With little or no federal or state regulations in place to protect our communities against proposed carbon pipelines, counties are in some cases like Nebraska the only regulatory body that will negotiate with the pipeline company.

Despite what the industry claims (and threatens legal action over), counties are empowered to put in place common-sense regulations on pipelines, such as setbacks that determine how far such a project can be from a residence.

### **TAKE ACTION:**

- Write emails to your county board commissioners or supervisors and let them know your concerns about carbon pipelines. Bold published a Sample Ordinance for counties, and CO2 pipeline info, which is also available online to download and print and share.
- Petition the board to get on the agenda at the next meeting, and bring a group of fellow concerned landowners to voice your concerns during the meeting. (All of the carbon pipeline companies are currently doing the same — petitioning to speak at your board meetings to sway them in favor of their projects). *Instructions on how to request that you be placed on the meeting agenda differ, and are provided on each County Board's website.*
- Consider submitting the Sample Ordinances for carbon pipelines to your County Board.

### **CONTACTS: NEBRASKA COUNTY BOARDS IMPACTED BY CARBON PIPELINES**

COUNTY	PIPELINE?	CHAIR	MEETINGS	COUNTY BOARD EMAILS
Wayne	Summit & Navigator	Dean Burbach	1st & 3rd Tuesdays, 9am	commish1@waynecountyne.gov, commish2@waynecountyne.gov, commish3@waynecountyne.gov,
Dixon	Summit & Navigator	Lisa Lunz	2nd Tuesdays, 9am	jdandersen@gmail.com, supervisorist2@dixoncountyne.gov, peterson9351@yahoo.com, neil.blohm@gmail.com, supervisorist5@dixoncountyne.gov, unclfred1950@gmail.com, smmr@nntc.net,



**NEBRASKA**  
EASEMENT ACTION TEAM

<b>Dakota</b>	Summit & Navigator	Robert Giese	<b>Every other Monday (Aug. 8 &amp; 22), 3pm</b>	bvanberkum@southsiouxcity.org, lovebrotrk@aol.com, troysautoworld@hotmail.com, bgiesessc@yahoo.com, mjtsastein@aol.com
<b>Madison</b>	Summit & Navigator	Troy Uhler	<b>Every two weeks on Tuesday, 9:30am</b>	rschmidt@madisoncountyne.com, estinson@madisoncountyne.com, tuhlr@madisoncountyne.com,
<b>Merrick</b>	Summit	Roger Wiegert	<b>Second and fourth Tuesdays, (Nov. 22), 9am</b>	Edwarddexter2@gmail.com
<b>Platte</b>	Summit & Navigator	Kim Kwaprnioski	<b>Every other Tuesday (Aug. 2, 16), 9am</b>	jengdahl@neb.rr.com, ca_scow@yahoo.com, rpfeif8@gmail.com, jerr1956@aol.com, lloyds@Frontiernet.net, Fliss@plattene.us, kimkwap@gmail.com
<b>Holt</b>	Summit	William Tielke	<b>Aug 16 &amp; 31, 9am</b>	dustin.breiner@holtcountyne.org, donjanbutter@gmail.com, dougfrahm@kmtel.net, dpaxton@nntc.net, wjtielke@telebeep.com, josh.treptow@holtcountyne.org
<b>Antelope</b>	Summit	Charles Henery	<b>1st &amp; 2nd Tuesdays, 9am</b>	dsmith@antelopecounty.org, ejacob@antelopecounty.org, rkrebs@antelopecounty.org, chenery@antelopecounty.org, carolyn@boydselectricinc.com,
<b>Pierce</b>	Summit	Tom Kuether	<b>Every other Monday (Aug. 8 &amp; 22), 9am</b>	kuether@ptcnet.net, hilltop81b@gmail.com, martikrue16@gmail.com



**NEBRASKA**  
EASEMENT ACTION TEAM

<b>Nance</b>	Summit	Timothy Cornwell	<b>2nd &amp; 4th Tuesdays, 9am</b>	tcornw@hotmail.com, aditter60@gmail.com, djnelson06@gmail.com, rhoracek@outlook.com, juracekbg@yahoo.com,
<b>Hamilton</b>	Summit	Rich Nelson	<b>Aug. 8, 15, 22, 8:30am</b>	nicolesabell@hamilton.net, rnelson68854@gmail.com, jtiv127@gmail.com, njsalmon@hamilton.net, nute23c@hamilton.net, rancisk@gmail.com
<b>York</b>	Summit	Randy Obermier	<b>Every other Tuesday, (Aug. 9, 23) 8:30am</b>	dgrotz@yorkcountyne.com, robermier@yorkcountyne.com, jsikes@yorkcountyne.com, sboehr@mainstaycomm.net
<b>Hall</b>	Summit	Ron Peterson	<b>Every other Tuesday, (Aug. 2, 16, 30) 9am</b>	board@hallcountyne.gov, butchh@hallcountyne.gov, karenb@hallcountyne.gov, scotts@hallcountyne.gov, paml@hallcountyne.gov, janer@hallcountyne.gov, garyq@hallcountyne.gov, ronp@hallcountyne.gov,
<b>Boone</b>	Navigator	Larry Temme	<b>Every Monday except 1st Monday, 9am</b>	comm1@boonecountyne.gov, comm3@boonecountyne.gov, comm2@boonecountyne.gov,
<b>Stanton</b>	Navigator	Dennis Kment	<b>3rd Mondays, 8am</b>	commdist1@stantoncountyne.org, joykment@gmail.com, duanerehak@yahoo.com

# Carbon Dioxide Pipelines: Dangerous and Under-Regulated

Pipeline Safety Trust



Credible.  
Independent.  
In the public interest.

## CO<sub>2</sub> Pipelines – Dangerous and Under-Regulated

*March 30, 2022*

Media Contact:

Kenneth Clarkson  
Pipeline Safety Trust  
Communications & Outreach Director  
kenneth@pstrust.org  
360-543-5686 x.104

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The Pipeline Safety Trust (PST) commissioned a report on the regulatory shortfalls of CO<sub>2</sub> pipelines. We have prepared this backgrounder to accompany the report to provide context and highlight its major findings. This report points to large, glaring regulatory shortfalls and analyzes a regulatory framework that does not address the significant safety risks CO<sub>2</sub> pipelines pose to the public.

PST commissioned the report in response to the flurry of multibillion-dollar CO<sub>2</sub> pipeline proposals put forward, driven by expanded tax credit incentives provided by the 2021 bipartisan infrastructure bill.

**The Pipeline Safety Trust believes existing federal regulations do not allow for the safe transportation of CO<sub>2</sub> via pipelines and calls on the Pipeline Hazardous Materials and Safety Administration (PHMSA) to update its regulations of CO<sub>2</sub> pipelines as quickly as possible.**

Carbon dioxide has different physical properties from products typically moved in hazardous hydrocarbon liquid or natural gas transmission pipelines. Those differences pose unique safety hazards and greatly increase the possible affected area or potential impact radius upon a pipeline release that would endanger the public. CO<sub>2</sub> pipeline ruptures can impact areas measured in miles, not feet. The way regulations currently consider and mitigate for the risks posed by hydrocarbon pipelines in communities are neither appropriate nor sufficient for CO<sub>2</sub> pipelines.

300 N. Commercial St., Suite B, Bellingham, WA 98225 360-543-5686 [www.pstrust.org](http://www.pstrust.org)

CO<sub>2</sub> is a potentially lethal asphyxiant. [When released from a pipeline](#), CO<sub>2</sub> will be heavier than air and high-rate releases will form clouds of cold dense gas fog. Upon warming, CO<sub>2</sub> plumes flow considerable distances from the pipeline unobserved, traveling over terrain, displacing oxygen while settling or filling in low areas. Oxygen displacement by CO<sub>2</sub> gas can cause asphyxiation and lead to death. Oxygen displacement also starves equipment that burns fuel causing it to shut off, potentially including first responder equipment, evacuating cars caught in the expanding release plume, and pilot lights on gas fired equipment.

PHMSA currently exercises no jurisdiction over pipelines transporting CO<sub>2</sub> as a gas or liquid, and only regulates CO<sub>2</sub> pipelines with a concentration of more than 90% carbon dioxide compressed to a supercritical state, rendering any pipeline moving CO<sub>2</sub> in any other state or with less than 90% purity entirely unregulated by the federal pipeline safety agency. There are other large regulatory gaps around siting, fracture mitigation, determining potential impact areas, use of odorant, emergency response, and contaminants.

**Federal pipeline safety regulations do not adequately address the risk a major CO<sub>2</sub> pipeline buildout poses to the public.**

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## **A Brief History of CO<sub>2</sub> Pipelines in the United States**

### **CO<sub>2</sub> Pipelines – A Significant Safety Hazard**

- In 1988, Congress required the Department of Transportation to regulate carbon dioxide transported by pipeline facilities. The impetus for this directive was a 1986 natural carbon dioxide release event in Lake Nyos, Cameroon. The release spanned many miles and killed over 1,700 people.
- On July 12, 1992, a final rule was promulgated that modified existing federal minimum pipeline safety regulations for hazardous liquid pipelines to address certain pipelines transporting CO<sub>2</sub> and narrowly defined CO<sub>2</sub> as follows: “Carbon Dioxide means a fluid consisting of more than 90% carbon dioxide molecules compressed to a supercritical state.”

### **The U.S. has the most CO<sub>2</sub> Pipelines in the world**

- There are approximately 5,150 miles of CO<sub>2</sub> pipelines operating in the U.S. These pipelines are regulated and reported to PHMSA.
- The vast majority, if not all, of these existing CO<sub>2</sub> pipelines are driven by the use of CO<sub>2</sub> for enhanced oil recovery (EOR) – increasing oil production utilizing CO<sub>2</sub> in a supercritical state. The nature of CO<sub>2</sub> utilization for EOR requires pipeline injection into oil fields as a supercritical fluid.

- Carbon Capture and Sequestration (CCS) efforts are driven by an entirely different purpose and the transmission by pipeline of CO<sub>2</sub> for CCS can take different forms. Current federal safety regulations for CO<sub>2</sub> pipelines are incomplete, inadequate and place the public at great risk.

### **Three States of Transmission (Supercritical, Liquid, Gas)**

#### **Supercritical**

- A supercritical fluid is a state with some properties of a gas and some properties of a liquid.
- A CO<sub>2</sub> pipeline carrying a supercritical state fluid can be more prone to running ductile fractures than hazardous liquid hydrocarbons pipelines or natural gas pipelines.
- **A ductile fracture can destroy many miles of pipeline. Think of it as a zipper opening up and running down a significant length of the pipe following a rupture.** Along with releasing massive amounts of CO<sub>2</sub> upon failure, these extreme ruptures can also hurl large sections of pipe, expel pipe shrapnel, and generate enormous craters.
- Federal regulations addressing supercritical CO<sub>2</sub> pipelines must be amended to require operators to prevent and mitigate the effects of fracture propagation.

#### **Liquid**

- Transporting CO<sub>2</sub> as a liquid usually requires cooling to slightly below ambient temperatures to assure the pipeline operates in one phase, a liquid. However, it is important that the pipeline stay well above the carbon steel brittle temperature transition point of approximately - 20 °F to avoid the threat of a catastrophic rupture.
- However, the liquid operation and lower temperature and pressure work to reduce the potential for pipeline fracture propagation inherent with super critical or gas pipelines.

#### **Gas**

- Situations may exist where existing liquid or larger diameter natural gas pipelines could be “repurposed” into CO<sub>2</sub> gas service.
- Such pipeline conversions would be at much greater risk of failure from CO<sub>2</sub> service than conventional hydrocarbons or new construction CO<sub>2</sub> pipelines due to higher pressure and unique fracture propagation.

### **Impurities in CO<sub>2</sub> Pipelines**

- Two impurities that could be found in CO<sub>2</sub> pipelines pose significant dangers to pipelines and the public: water and hydrogen sulfide (H<sub>2</sub>S).

- **The settlement of free water encourages the formation of carbonic acid in the pipeline, an acid that is incredibly corrosive to carbon steel.** Given the rapidity and unpredictability with which carbonic acid can attack pipelines, it is critical that PHMSA enact regulations prescribing limits on water quantities in CO<sub>2</sub> pipelines.
- Hydrogen sulfide, or H<sub>2</sub>S, is mentioned here because of a supercritical state CO<sub>2</sub> pipeline rupture failure in Satartia, Mississippi in early 2020. First responders reported seeing a “green cloud” from the pipeline release, which is a possible indication of high levels of H<sub>2</sub>S. The Center for Disease Control has stated that H<sub>2</sub>S levels of 300 ppm or higher are “immediately dangerous to life or health.”

## **Solutions for Advancing Safety in Federal Regulation of CO<sub>2</sub> Pipelines**

### **PHMSA needs to update the definition of carbon dioxide in the regulations**

- Federal regulations need to be modified to assure federal standards apply to all CO<sub>2</sub> transmission pipelines that transport CO<sub>2</sub>, including all supercritical, gas, and liquid CO<sub>2</sub> transmission pipelines.

### **PHMSA needs to identify the potential impact areas for CO<sub>2</sub> pipeline ruptures**

- The unique, and potentially very large impact areas for CO<sub>2</sub> pipeline ruptures need to be developed, defined, and promulgated into pipeline regulations. These areas are likely to be substantially larger than for hydrocarbon pipelines of similar diameter. Once we know how to determine the potential impact areas, that information must be used to inform regulations on routing and siting, emergency response requirements, and more.

### **Specific CO<sub>2</sub> pipeline federal regulations should not be based solely on industry**

#### **Recommended Practices**

- Changes in the CO<sub>2</sub> pipeline safety regulation are needed and should be prescribed to avoid misinterpretation or misuse. Recent efforts by many in the industry to rely on more performance-based standards, even those incorporated by reference, have proven ineffective.

### **PHMSA needs to specifically identify how to incorporate fracture propagation protection on CO<sub>2</sub> transmission pipelines**

- Regulations should specifically prescribe pipeline design methods to prevent and arrest CO<sub>2</sub> fracture propagation.

### **PHMSA needs to mandate the use of odorant injection into CO<sub>2</sub> transmission pipelines**



- Given the inability to detect or observe a CO<sub>2</sub> pipeline release, it is time to require the use of odorant injection in such pipelines to assist the public, first responders, and pipeline operator employees in identifying dangerous releases.

**PHMSA needs to require CO<sub>2</sub> pipeline operators to update their procedural manuals related to local emergency response coordination**

- The major differences and unique properties of CO<sub>2</sub> compared to hydrocarbons require that pipeline operators improve the sections of their federally mandated operation, maintenance, and emergencies procedural manuals for emergency response to CO<sub>2</sub> pipeline ruptures.

**PHMSA needs to establish regulations setting specific maximum contaminant impurities for CO<sub>2</sub> pipelines**

- PHMSA needs to prescribe the maximum concentration of water, H<sub>2</sub>S, and other impurities allowed in CO<sub>2</sub> pipelines.

**PHMSA needs to strengthen federal regulations for conversion of existing pipelines to CO<sub>2</sub> pipeline service**

- The general guidance of PHMSA’s 2014 advisory bulletin is not adequate for mitigating the risks posed by conversion of existing hydrocarbon pipelines to CO<sub>2</sub> pipelines. PHMSA needs to issue regulations appropriate to the serious risks that could result from repurposing a pipeline for CO<sub>2</sub> service.

**Resources – (Experts & Important Media)**

- **Rick Kuprewicz**, president, Accufacts Inc. – Pipeline Engineering – [kuprewicz@comcast.net](mailto:kuprewicz@comcast.net)
- **Paul Blackburn**, attorney, Bold Alliance – Pipeline Permitting and Regulations – [paul@boldalliance.org](mailto:paul@boldalliance.org)
- **Bill Caram**, executive director, Pipeline Safety Trust – Safety Regulations – [bill@pstrust.org](mailto:bill@pstrust.org)
- Article – [The Gassing of Satartia](#)
- Video – [8” CO<sub>2</sub> Pipeline Test Rupture](#)
- Report - [Congressional Research Service Report on CO<sub>2</sub> Pipeline Policy Issues 2009](#)
- Research Paper – [CO<sub>2</sub> Pipeline Material and Safety Considerations](#)

# **PHMSA Investigation Report: 2020 CO2 Pipeline Leak in Satartia, MS**

Pipeline Safety Trust



Credible.  
Independent.  
In the public interest.

**FOR IMMEDIATE RELEASE**

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**DEPARTMENT OF TRANSPORTATION’S PHMSA RELEASES INVESTIGATION INTO  
DISASTROUS 2020 CO<sub>2</sub> PIPELINE LEAK IN SATARTIA, MISSISSIPPI**

**PHMSA Fines Denbury Gulf Coast Pipeline LLC Nearly \$4,000,000, Initiates a New Rulemaking to Update Safety Standards for CO<sub>2</sub> Pipelines, and Publishes Advisory Bulletin Warning All Pipeline Companies About Pipeline Integrity Risks Associated with Climate Change**

BELLINGHAM, Washington [May 26, 2022] – The Department of Transportation’s Pipeline and Hazardous Materials Safety Administration (PHMSA) took large steps today to increase its safety oversight of CO<sub>2</sub> pipelines by initiating a new rulemaking to update standards for CO<sub>2</sub> pipelines, releasing an investigation report on the 2020 Denbury CO<sub>2</sub> pipeline failure in Satartia, MS, issuing a near \$4,000,000 fine against Denbury for non-compliance associated with that failure, and issuing a nationwide advisory bulletin on the emerging threat of geohazards.

**Denbury Gulf Coast Pipeline CO<sub>2</sub> Pipeline Failure Investigation Report**

PHMSA released a long-anticipated investigatory report detailing the multitude of failures Denbury Gulf Coast Pipeline LLC committed when its 24-inch Delhi Pipeline ruptured in Satartia, MS on Feb. 22, 2020 causing the entire town to be evacuated and sending 45 people to the hospital.

Denbury’s initial estimate of 222 barrels of CO<sub>2</sub> released by the pipeline was dwarfed by the actual amount that descended over the rural Mississippi community in the form of a green cloud. In the report, PHMSA concluded that the Delhi pipeline released 31,405 barrels CO<sub>2</sub>, a known asphyxiant. In some initial assessments, PHMSA determined that CO<sub>2</sub> concentrations

1812 Cornwall Ave., Suite 200, Bellingham, WA 98225 360-543-5686 [www.pstrust.org](http://www.pstrust.org)

ranged as high as 28,000 ppm, far beyond the established Occupational Safety and Health Administration (OSHA) permissible exposure limit of 5,000 ppm. The 45 community members sent to the hospital had various symptoms and effects related to CO<sub>2</sub> poisoning.

Under the current PHMSA reporting requirements for hazardous liquid pipelines, the 45 people who went to the hospital were not classified as injuries on incident reports. Pipeline Safety Trust Executive Director Bill Caram said this is a major reason why this disaster stayed under-the-radar for so long.

“The hazardous liquid pipeline regulations state that a victim needs to be an overnight patient to count as an injury,” Caram said. “But in the case of Satartia, previous reports have stated that hospitals pushed them out that night, though many had to return in the morning for further treatment.”

Caram added, “As listed, the incident data reads zero injuries and does not accurately tell the story of how harrowing this was for the Satartia community.” Caram noted that he understands there are still people experiencing health issues as a result of their CO<sub>2</sub> exposure.

The report also details the insufficient modelling Denbury conducted that failed to show the community of Satartia could be impacted by a pipeline failure. PHMSA also explains how Denbury was aware of the CO<sub>2</sub> release into the Satartia area and failed to notify emergency responders who were struggling to identify the nature of the risk they were dealing with and which mitigative actions to take.

#### **Denbury Gulf Coast Pipeline Probable Violations of Federal Regulations**

PHMSA also issued a Notice of Probable Violation and a Proposed Civil Penalty of \$3,866,734. The notice revealed several contributing factors to the accident and the fallout, all of which were preventable by Denbury.

According to PHMSA, Denbury did not address the risks of geohazards to its pipeline system, they underestimated the potential affected areas that could be impacted by a release in its CO<sub>2</sub> dispersion model, and they did not notify local responders to advise them of a potential failure. All told, PHMSA identified eight areas of non-compliance.

#### **Advisory Bulletin Regarding Land-Movement**

Following periods of intense rains, which resulted in a landslide, Denbury’s Delhi Pipeline experienced a heavy amount of strain causing a girth weld on the pipeline to rupture. Due to this complication, PHMSA has issued an advisory bulletin to all pipeline operators highlighting the immediate need to plan for land movement and geohazard threats to pipeline integrity.

Denbury representatives have told PHMSA, that on the Delhi pipeline route, they experience two to three issues per year involving land movement.

“Given the seeming rise in extreme weather contributions to pipeline failures in the era of climate change, operators need to spend more resources on tracking geohazards such as land movement and the threats they pose to their pipelines,” Caram said.

#### **New CO<sub>2</sub> Pipeline Safety Regulations**

PHMSA also announced the initiation of a new rulemaking to update standards for CO<sub>2</sub> pipelines. Caram said the Pipeline Safety Trust applauds PHMSA for starting the process to adopt new regulations for CO<sub>2</sub> pipelines.

“As Denbury’s failure in Sartoria, MS demonstrates, CO<sub>2</sub> releases can be incredibly hazardous to our communities,” Caram said. “We released a report earlier this year identifying terrifyingly large regulatory gaps and we hope and expect PHMSA will address each of those with new regulations. The list of proposed new CO<sub>2</sub> pipeline projects seems to grow every week, which makes it all the more important to modernize our safety regulations immediately. It is encouraging that PHMSA recognizes the risks and regulatory gaps and is taking steps to protect our communities.”

**About Pipeline Safety Trust:** The Pipeline Safety Trust is a nonprofit public watchdog promoting pipeline safety through education and advocacy by increasing access to information, and by building partnerships with residents, safety advocates, government and industry, that result in safer communities and a healthier environment.

###

# **PHMSA Announces New Safety Measures to Protect Americans From Carbon Dioxide Pipeline Failures After Satartia, MS Leak**

Pipeline and Hazardous Materials Safety Administration (PHMSA)

## PHMSA Announces New Safety Measures to Protect Americans From Carbon Dioxide Pipeline Failures After Satartia, MS Leak

Thursday, May 26, 2022

PHMSA 05-22

Contact: [PHMSAPublicAffairs@dot.gov](mailto:PHMSAPublicAffairs@dot.gov)

**WASHINGTON** - The U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) today announced it is taking steps to implement new measures to strengthen its safety oversight of carbon dioxide (CO<sub>2</sub>) pipelines around the country and protect communities from dangerous pipeline failures. The new measures, as well as an enforcement action taken today are a result of PHMSA's investigation into a CO<sub>2</sub> pipeline failure in Satartia, Mississippi in 2020 that resulted in local evacuations and caused almost 50 people to seek medical attention.

To strengthen CO<sub>2</sub> pipeline safety, PHMSA is undertaking the following:

- initiating a new rulemaking to update standards for CO<sub>2</sub> pipelines, including requirements related to emergency preparedness, and response;
- issuing a [Notice of Probable Violation, Proposed Civil Penalty, and Proposed Compliance Order](#) (NOPV) to Denbury Gulf Coast Pipeline, LLC for multiple probable violations of Federal pipeline safety regulations (PSRs). The proposed civil penalties amount to \$3,866,734.
- completing a [failure investigation report](#) for the 2020 pipeline failure in Satartia, Mississippi;
- issuing an updated nationwide [advisory bulletin](#) to all pipeline operators underscoring the need to plan for and mitigate risks related to land-movements and geohazards that pose risks to pipeline integrity like the 2020 incident in Satartia, Mississippi; and
- [conducting research solicitations](#) to strengthen pipeline safety of CO<sub>2</sub> pipelines.

"I recently visited with the first responders in Satartia to hear firsthand of the pipeline failure so that we can improve safety and environmental protections for CO<sub>2</sub> pipelines and work to protect communities from experiences like this," said PHMSA Deputy Administrator Tristan Brown. "The safety of the American people is paramount and we're taking action to strengthen CO<sub>2</sub> pipeline safety standards to better protect communities, our first responders, and our environment."

PHMSA's investigation identified a number of probable violations in connection with the 2020 accident, including the following alleged failures:

- the lack of timely notification to the National Response Center to ensure the nearby communities were informed of the threat;
- the absence of written procedures for conducting normal operations, as well as those that would allow the operator to appropriately respond to emergencies, such as guidelines for communicating with emergency responders; and
- a failure to conduct routine inspections of its rights-of-way, which would have fostered a better understanding of the environmental conditions surrounding its facilities that could pose a threat to the safe operation of the pipeline.

PHMSA has longstanding and comprehensive [guidance](#) on its enforcement of PSRs as well as its civil penalties, which are calculated using a [range of criteria](#) and based on statutory limitations. Under the authorities granted by Congress, PHMSA may propose civil penalties, with the recipient of the NOPV being able to contest, contest in part, or accept them. A pipeline operator that receives a proposed civil penalty may also request and receive an informal hearing before a presiding official of the agency and prior to a proposed civil penalty being finalized. PHMSA publishes its entire history of enforcement actions online for public consumption, available [here](#).

###

*The Pipeline and Hazardous Materials Safety Administration develops and enforces regulations for the safe, reliable, and environmentally sound operation of the nation's 2.8-million-mile pipeline transportation system and the nearly 1.2 million daily shipments of hazardous materials by land, sea, and air. Please visit <https://www.phmsa.dot.gov> for more information.*

# **Model Nebraska County Ordinance for Regulation of Carbon Dioxide Pipelines**





## MODEL NEBRASKA COUNTY ORDINANCES FOR REGULATION OF CARBON DIOXIDE PIPELINES

This packet includes the following three model county ordinances and resolutions for carbon dioxide (CO<sub>2</sub>) pipelines:

- A comprehensive special permit or conditional use permit process for CO<sub>2</sub> pipelines to amend an existing county zoning ordinance.
- A “level of cultivation” resolution that will allow counties to specify how deep a pipeline must be buried in agricultural lands.
- An emergency response resolution to support planning in the event of a CO<sub>2</sub> pipeline rupture.

Although the Nebraska legislature has enacted laws to route oil pipelines and reclaim land after oil pipeline construction, Neb. Rev. Stat. § 57-1401 *et seq.* and § 76-3301 *et seq.*, it has not extended these laws to cover pipelines that transport CO<sub>2</sub>. In the absence of state regulation of CO<sub>2</sub> pipelines, Nebraska’s counties may fill this regulatory gap by enacting ordinances to route and limit the damage caused by construction and operation of CO<sub>2</sub> pipelines.

While it is true that federal pipeline safety law prevents state and county regulation of the design, construction, operation, and maintenance of “supercritical” but not gaseous or liquid CO<sub>2</sub> pipelines, it is also true that a number of important exceptions to this federal authority exist. These exceptions are described below.

**Counties May Route CO<sub>2</sub> Pipelines** – The federal Pipeline Safety Act states: “This chapter does not authorize the Secretary of Transportation to prescribe the location or routing of a pipeline facility.” Since Congress has not authorized the federal government to determine the route of CO<sub>2</sub> pipelines, this power remains with the states. States may determine the route of a CO<sub>2</sub> pipeline and enact setbacks from residents and businesses. This is the reason why Nebraska was able to enact its Major Oil Pipeline Siting Act. In the absence of state legislation routing CO<sub>2</sub> pipelines, the power to determine pipeline location and route falls to Nebraska’s counties.

**Counties May Regulate CO<sub>2</sub> Pipeline Construction Mitigation** – Although federal law regulates pipeline construction, it covers only the construction of the pipeline itself, including matters such as the type of steel and welds to be used, pipe handling, the construction of pump stations, and other pipeline-specific standards. Federal law does not include standards for mitigation required during and after construction, such as topsoil management, public and private road protection, maintaining access to homes and farming structures, reseeding, fencing, noise, litter control, and other matters not directly related to pipeline materials, fabrication, and installation. This is the reason why Nebraska was able to enact its Oil Pipeline Reclamation Act. In the absence of state legislation requiring mitigation for CO<sub>2</sub> pipeline, control over such mitigation falls to Nebraska’s counties.

**Counties May Regulate the Depth to Which CO<sub>2</sub> Pipelines Are Buried in Agricultural Lands** – Federal pipeline safety regulations in 49 CFR § 195.248 specify the “depth of cover” that must be provided over supercritical CO<sub>2</sub> pipelines, which generally is 36 inches, but there is an exception for agricultural lands. Specifically, § 195.248 states: “all pipe must be buried so that it is below the level of cultivation,” but

then importantly, the federal pipeline safety regulations do not define the meaning of “level of cultivation.” In fact, no federal law provides this definition. This means that it’s up to states or counties to determine the depth to which cultivation extends. Two states, Minnesota and New York, have laws on their books that expressly define this depth, and pipeline companies have never challenged these laws. Given the variability of land types and agricultural practices, it makes sense that the “level of cultivation” should be defined locally by counties, and not by a distant bureaucrat. This being said, counties should also respect private agreements between landowners and pipeline companies about depth of cover.

**Counties May Regulate Their Own Emergency Response to CO<sub>2</sub> Pipeline Ruptures** – The federal Pipeline Safety Act requires that pipeline operators have an emergency response plan. 49 CFR § 195.402(e). Therefore, counties may not regulate how pipeline companies themselves respond to CO<sub>2</sub> pipeline ruptures. This being said, federal law regulates only how a pipeline operator and its employees and contractors respond to a leak or rupture. Federal law does not regulate state and county emergency response planning or efforts. That is, federal law does not “federalize” local emergency response. Instead, the federal regulations make clear that states and counties will have their own plans, and that pipeline operators are required to coordinate with state and local responders. 49 CFR § 195.65 (provide MSDSs to public responders); § 195.402(c)(12) (share information with public responders on response capacity and communications); § 195.402(e)(7) (notifying and coordinating with local officials). Therefore, Nebraska’s counties may adopt and implement their own emergency response plans for CO<sub>2</sub> pipeline ruptures to be implemented by their own first responders, and request information from pipeline operators so they know what their up against.

**Counties May Regulate Abandoned CO<sub>2</sub> Pipelines** – The purpose of the federal Pipeline Safety Act is to prevent pipeline leaks and ruptures, so that the products they transport do not harm persons and properties. For this reason, the Pipeline Safety Act regulates only pipelines that are “used or intended to be used.” 49 U.S.C. § 60101(a)(5) (definition of “hazardous liquid pipeline facility”). Once an operating pipeline is emptied, disconnected from other pipelines, and sealed, according to the requirements of 49 CFR § 195.402(c)(10), it is no longer “used or intended to be used” to transport hazardous liquids or CO<sub>2</sub>, such that the Pipeline Safety Act no longer regulates it. The pipeline is no longer a “hazardous liquid pipeline facility,” and instead is just scrap steel. Accordingly, neither the Pipeline Safety Act nor its federal regulations contain any rules about what happens to this abandoned steel. Yet, an abandoned pipeline can cause drainage problems, sinkholes, or interfere with farming or building construction. Given the limited jurisdiction of the Pipeline Safety Act, the fate of abandoned pipelines is in state or local government hands. Minnesota, Iowa, and Michigan, and Santa Barbara County, California, all regulate abandoned pipelines. Since Nebraska’s legislature has not passed any laws regulating abandoned pipelines, doing so is left to the counties.



**Resolution to Protect Citizens and First Responders  
from the Dangers of Carbon Dioxide Pipeline Ruptures**

**Whereas**, [pipeline developer] has proposed to construct a large high-pressure supercritical carbon dioxide pipeline through [county] for a total of [#] miles;

**Whereas**, no supercritical carbon dioxide pipelines currently exist in [county];

Whereas, carbon dioxide gas in high concentrations can asphyxiate and at lower concentrations can intoxicate humans and livestock, thereby creating a risk of injury or even death;

**Whereas**, a rupture of the [pipeline] has the potential to release a large quantity of carbon dioxide gas at high concentration levels over a potentially large geographic area within [county];

**Whereas**, carbon dioxide gas is colorless and odorless and may not be detected by human senses, making exposure difficult to detect and avoid and danger zones challenging to define;

**Whereas**, carbon dioxide gas can intoxicate citizens and first responders and cause disorientation and confusion, limiting the potential for self-evacuation by citizens and making first responder rescue operations challenging;

**Whereas**, carbon dioxide gas is heavier than air and can settle in and remain in low lying areas and closed structures for significant periods of time;

**Whereas**, high concentrations of carbon dioxide following a rupture of the [pipeline] could cause internal combustion engines in motor vehicles to malfunction or even stop operating, limiting the ability of citizens to use their trucks and cars to self-evacuate, and limiting the ability of first responders to use rescue vehicles;

**Whereas**, emergency alert systems exist, such as Amber alerts and automatic phone calls, that should be used to alert [county] residents within the danger zone for a CO<sub>2</sub> pipeline rupture;

**Whereas**, computer modeling is available to estimate the distance that carbon dioxide can disperse from a pipeline rupture depending on pipeline size and a range of weather conditions and topographies, but such modelling has not been provided to [county] for use by its commissioners, first responders, and residents, such that [county] has no reliable information about the geographic extent of the potential danger zone following a rupture of the proposed [pipeline];

**Whereas**, large high-pressure supercritical carbon dioxide pipelines may rupture with substantial force as the supercritical carbon dioxide depressurizes into a gas, producing explosive running ductile fractures along a pipeline for extensive distances unless stopped

through use of sufficiently strong pipe steel or crack arrestors, putting nearby citizens and properties in danger;

**Whereas**, [state] has enacted statutes and issued regulations that provide state and county emergency planning agencies with authority to plan and prepare for a wide range of emergencies, including release of large quantities of supercritical carbon dioxide; and

**Whereas**, [county] first responders should not bear the cost of the specialized emergency response equipment, training, and other resources uniquely necessary for response to a supercritical carbon dioxide pipeline rupture;

**Now therefore, be it resolved**: that [county] requests that [state]’s emergency planning, first response, and pipeline permitting agencies take the following actions:

- investigate the risks of and emergency planning needed for a potential rupture of the [pipeline] in [county], and in cooperation with [county] first responders prepare an emergency response plan for [county] in the event of such rupture;
- conduct or direct [pipeline developer] to conduct CO<sub>2</sub> dispersion computer modeling to identify the possible extent of CO<sub>2</sub> intoxication and asphyxiation zones from a rupture of the proposed [pipeline] in [county], taking into account a range of weather conditions and the county’s topography, to ensure that [county] can define a danger zone for a rupture of the proposed [pipeline] for emergency planning, response, and rescue purposes;
- identify and recommend emergency response training, equipment, and communication needs of [county] to respond to a rupture of the proposed [pipeline] and require that [pipeline developer] bear the cost of such needs;
- identify and recommend emergency communication resources needed to alert [county] residents, businesses, and first responders in the event of a rupture of the proposed [pipeline], such as automated alert phone calls and text messaging, and require that [pipeline developer] bear the costs of implementing any new alert system or modifying existing alert systems deemed necessary by [county];
- ensure that to the maximum extent allowed by law, [state] agencies condition their permit approvals by including a requirement that [pipeline developer] pay for all training, equipment, and communication needs of [county] to respond to a rupture of the proposed [pipeline]; and
- not grant any state permits for the proposed [pipeline] before completion of all actions requested by this resolution.



**MODEL HAZARDOUS LIQUID AND CARBON DIOXIDE PIPELINE  
“LEVEL OF CULTIVATION” RESOLUTION**

**Whereas**, federal pipeline safety regulations for hazardous liquid pipelines state in 49 C.F.R. § 195.248 that “all pipe must be buried so that it is below the level of cultivation;”

**Whereas**, 49 U.S.C. § 60104(e) of the federal Pipeline Safety Act states: “This chapter does not authorize the Secretary of Transportation to prescribe the location or routing of a pipeline facility,” such that a state, or in the absence of state regulation, a county may determine the “location” of a pipeline subject to the federal Pipeline Safety Act;

**Whereas**, federal pipeline safety regulations do not define the meaning of the term “level of cultivation;”

**Whereas**, no other federal regulation defines the meaning of the term “level of cultivation;”

**Whereas**, no federal court has defined the meaning of the term “level of cultivation” for the purposes of pipeline safety or other purpose;

**Whereas**, no Nebraska statute defines the meaning of the term “level of cultivation” or the minimum depth of cover required for hazardous liquid or carbon dioxide pipeline construction in Nebraska’s agricultural lands, such that action by the County to define this term is not inconsistent with state law;

**Whereas**, neither Neb. Rev. Stat. § 57-1401 *et seq.* (Major Oil Pipeline Siting Act); Neb. Rev. Stat. § 57-1501 *et seq.* (Governor approval of oil pipeline projects); nor Neb. Rev. Stat. § 76-3301 *et seq.* (Oil Pipeline Reclamation Act), apply to carbon dioxide pipelines or define the term “level of cultivation” or otherwise specify a minimum depth of cover for hazardous liquid pipelines in agricultural land;

**Whereas**, the County may define the meaning of the term “level of cultivation” under the powers granted to it by Neb. Rev. Stat. Chapter 23.

**Whereas**, the State of Minnesota defines depth of cover for hazardous liquid pipelines in Minn. Stat. § 216G.07, subd. 1, as follows:

Unless waived in the manner provided in subdivisions 2 or 3, any pipeline installed after May 26, 1979, shall be buried with a minimum level cover of not less than 4-1/2 feet in all areas where the pipeline crosses the right-of-way of any public drainage facility or any county, town or municipal street or highway and where the pipeline crosses cultivated agricultural land. Where the pipeline crosses the right-of-way of any drainage ditch, the pipeline shall be at least 4-1/2 feet below the authorized depth of the ditch, unless waived in the manner provided in subdivisions 2 and 3;

**Whereas**, the State of New York defines the minimum cover in farmlands for liquid petroleum pipelines in 16 NYCRR 258.5 as follows:

Notwithstanding the requirements of 49 CFR 195.248(a) for cover over buried pipelines in cultivated areas, all pipe installed in areas actively cultivated for commercial farm purposes in at least two out of the last five years, as identified by the farmland operator, shall be installed with a minimum cover of 40 inches unless the farmland operator agrees to or requires a different depth.

**Whereas**, no litigation has challenged the right of Minnesota and New York to define depth of cover over a pipeline in agricultural lands;

**Whereas**, neither the federal government, the legislature of the State of Nebraska, nor the Nebraska Public Service Commission have determined the “level of cultivation” or the depth of cover for hazardous liquid pipelines in agricultural lands in County, yet such determination is critical to continued farming productivity and farmer and farming equipment safety; and

**Whereas**, a definition by the county of the “level of cultivation” in County is neither preempted by federal law nor inconsistent with Nebraska statutes;

**Whereas**, the cultivated depth of the soil in agricultural lands is variable and cannot be readily defined by state-wide definition, much less a nationwide definition, but rather is highly dependent on location-specific factors including soil type, drainage, topography, and the nature of the crops produced, therefore, it is reasonable and necessary to define the term “level of cultivation” at a county level;

**Whereas**, a county-level definition of the term “level of cultivation” will benefit the residents and lands of County through: (a) limiting the damage caused to farmland by the construction of hazardous liquid and carbon dioxide pipelines; (b) preventing future conflicts between farming practices and pipeline operations resulting from excessively shallow installation of hazardous liquid and carbon dioxide pipelines; and (c) reducing the potential for possible future injuries to farmers, farming equipment, land, and water resulting from pipeline ruptures and spills by ensuring that operating hazardous liquid and carbon dioxide pipelines are initially installed deep enough to limit the potential for accidental damage due normal farming operations, taking into account possible future soil erosion over pipelines;

**Now, therefore be it resolved**, by the County Board of Supervisors for \_\_\_\_\_ County, Nebraska, that the “level of cultivation” in the County for the purpose of determining hazardous liquid and carbon dioxide pipeline depth of cover shall be [COUNTY TO SPECIFY; suggested language: *two feet below the depth of plowing, decompaction, drainage tiles, or other physical modification of the subsurface soils undertaken in the normal course of agriculture, but in no event less than 4-1/2 feet*], unless otherwise agreed to by mutual agreement between a landowner whose land is subject to an easement for a hazardous liquid or carbon dioxide pipeline and the company that proposes to construct a pipeline on landowner’s land.



**NEBRASKA MODEL COUNTY SPECIAL PERMIT OR CONDITIONAL USE PERMIT  
ORDINANCE FOR CO<sub>2</sub> PIPELINES**

**ADDITION TO DEFINITIONS SECTION:**

Carbon Dioxide Pipeline (CDP) shall mean a pipeline with an outer diameter of four inches or greater used to transport a gas, liquid, or supercritical fluid comprised of at least fifty percent carbon dioxide (CO<sub>2</sub>) for geologic sequestration, enhanced oil recovery, or other use. A CDP shall include the pipe used to transport carbon dioxide and any structure related to the pipeline and any space, resource, or equipment necessary for such transportation, including but not limited to all related pump or compressor stations, valves, cathodic protection systems, and communication and control systems.

**ADDITION TO SPECIAL PERMIT OR CONDITIONAL USE PERMIT SECTION:**

**[Section #]. Carbon Dioxide Pipelines**

A Carbon Dioxide Pipeline (CDP) may be allowed by [Special Permit/CUP] in the [AG District] in a route approved by the County upon consideration of the information included in an application for a [Special Permit/CUP] and any other evidence and comments provided by other interested parties, which [Special Permit /CUP] shall include the conditions required by this regulation. The application shall include the following information and proposed conditions:

- a. **Project Location and Description and Notification:** The application shall include the following materials:
  1. A general description of the CDP and its commercial purpose and claimed public use and benefits.
  2. A map and legal description of the proposed location of the CDP right-of-way, a list of properties subject to easements or leases, and a list of all properties owned or intended to be owned in fee by the applicant on which would be located facilities or equipment for the CDP in the County.
  3. A Notice of Location filed by the applicant with the County showing the right-of-way and any pump or compressor stations setting forth a legal description of the right-of-way, the location of the pipeline contained therein, and any pump or compressor stations and other CDP facilities.
  4. GIS data for the CDP and its right-of-way and easement areas.

5. A list of parcels subject to an easement for the CDP, either voluntary or by eminent domain, indicating whether as of the date of the application a voluntary easement has been agreed to for the property.
6. Confirmation that the Notice of Location has been delivered to all owners of property that would be subject to an easement for the CDP.
7. A plan by which applicant will contact all impacted property owners to review the timing of construction, discuss site-specific issues, and provide a plan for construction and mitigation for each impacted property.
8. Engineering drawings for all CDP components and equipment installed in the county.
9. Technical specifications for the CDP including its maximum design capacity and proposed minimum and maximum operating pressures.

b. **Construction Mitigation:** The application shall include a proposed Construction, Mitigation and Reclamation Plan (CMRP). The CMRP shall include the following conditions:

1. If the CDP passes within a distance of between one hundred and one (101) feet to two hundred and fifty (250) of any occupied residence or operational commercial structure, then applicant shall implement the following:
  - i. To the extent feasible, the applicant shall coordinate construction work schedules with affected residential and business owners prior to the start of construction in the area of the residences or businesses.
  - ii. Applicant shall install temporary safety fencing to control access and minimize hazards associated with an open trench and heavy equipment in a residential area.
  - iii. Applicant shall notify affected residents and business owners no less than twenty-four (24) hours in advance of any scheduled disruption of utilities and limit the duration of such disruption.
  - iv. Except where practicably infeasible, final grading and topsoil replacement, installation of permanent erosion control structures and repair of drainage tiles, fencing, and other structures shall be completed within ten (10) days after backfilling the trench or after any subsequent repair work. In the event that seasonal or other weather conditions, extenuating



circumstances, or unforeseen developments beyond applicant's control prevent compliance with this timeframe, temporary erosion controls and appropriate mitigating measures shall be maintained until conditions allow completion of cleanup and reclamation.

2. Applicant shall maintain access to all residences and businesses at all times, except for periods when it is infeasible to do so or except as otherwise agreed between the applicant and impacted residents and business owners. Such periods shall be restricted to the minimum duration possible and shall be coordinated with affected residents and business owners, to the extent possible.
3. Should a water well, or water supply, or aquifer be damaged (diminishment in quantity or quality) by CDP construction or operations, applicant shall immediately provide a comparable water supply to the owner of the well and the water well shall be restored or replaced at applicant's expense.
4. Applicant shall promptly remove all construction related debris and material which is not an integral part of the CDP. Such material to be removed includes all litter generated by applicant's employees, agents, contractors, or invitees, including construction crews. Following the completion of applicant's construction activities, applicant shall keep the CDP right-of-way clean and free of all trash and litter which may have been produced or caused by applicant or its employees, agents, contractors or invitees or its operations on the property. Applicant shall not bury or burn any trash, debris or foreign material of any nature within its right-of-way.
5. Following the completion of the CDP construction, applicant will restore the area disturbed by construction to the maximum extent practicable to its original preconstruction topsoil, vegetation, elevation, and contour.
6. Applicant shall, unless otherwise requested by a property owner, abide by all guidelines and recommendations of the local or regional field office of the United States Natural Resources Conservation Service or the CMRP, whichever is more stringent, regarding the removal, storage, and replacement of top soil and other soil horizons.
7. At a minimum, applicant shall remove and segregate topsoil and other soil horizons from the trench and segregate all soils by type. Following the construction and installation of each section of the CDP, the soil shall be replaced by type, to the extent feasible, as near as practicable to its original location and condition. Topsoil deficiency shall be mitigated with imported topsoil that is consistent with the quality of topsoil on the property. Following backfill and after completion of installation of all pipeline equipment, applicant shall decompact the

soil in accordance with the recommendations of the United States Natural Resources Conservation Service.

8. Applicant shall be financially responsible for all construction-related reclamation and mitigation expenses.
9. Applicant shall commence reclamation of the area through which a CDP is constructed as soon as reasonably practicable after construction.
10. Applicant shall complete final grading, topsoil replacement, installation of erosion control structures, seeding, and mulching within thirty days after backfill except when weather conditions, extenuating circumstances including landowner preference of delay due to personal or agricultural land use, or unforeseen developments do not permit the work to be done within such thirty-day period.
11. Applicant shall ensure that all reclamation and mitigation actions, including, but not limited to, choice of seed mixes, method of reseeding, and weed and erosion control measures and monitoring, is conducted in accordance with the Federal Seed Act, 7 USC 1551 et seq., the Nebraska Seed Law, and the Noxious Weed Control Act, United States Natural Resources Conservation Service guidance, and the CMRP, in consultation with landowners.
12. Applicant shall ensure that genetically appropriate and locally adapted native plant materials and seeds are used to reseed pasture and prairie lands based on site characteristics and surrounding vegetation as determined by a pre-reclamation site inventory.
13. Applicant shall ensure that mulch is installed as required by site contours, seeding methods, or weather conditions or when requested by a landowner.
14. Applicant's obligation for reclamation, mitigation, and maintenance of the CDP right-of-way shall continue until the pipeline is abandoned and permanently withdrawn from service and it has fully complied with its abandonment mitigation plan.
15. Applicant must install and maintain adequate warning signs for its buried pipeline that identify all road crossings, crossings into and out of fields, and turns in the pipeline of more than 5 degrees.
16. Applicant shall provide all landowners whose land is subject to an easement for the CDP with a map of the pipeline location on their land at least once every five years.

17. Applicant shall record all easements for the CDP and provide a map showing the as-built location of the CDP with the County Recorder.

18. Applicant shall provide fencing for all above-ground facilities.

c. **Public Inquiries and Complaints:** Application shall include a publicly available telephone number and identify a responsible person or position for the public to contact with inquiries or complaints throughout the application process, construction, and operation of the CDP. The applicant shall make a reasonable effort to respond to the public's inquiries and complaints and shall provide a monthly report of such inquiries and complaints to the County, together with actions taken and dates thereof to resolve any complaints. The County shall make this information available to the public upon request.

d. **Pipeline Safety:** The application shall contain a discussion of applicant's plans to comply with federal pipeline safety standards, or if no such standards are applicable, a plan to comply with industry standards.

1. If a CDP is subject safety standards adopted under the federal Pipeline Safety Act, the application shall include information demonstrating that applicant will comply with all such safety standards. An application shall include a description of all CDP components installed in the county, together with a description of the component's compliance with federal safety standards, and attach any engineering studies prepared by the applicant to ensure its compliance with applicable safety standards. When a CDP is subject to safety standards adopted under the federal Pipeline Safety Act, the county shall not adopt conditions that determine the safety of the design, construction, operation, or maintenance of the CDP, but the county may consider the safety information required herein for the purpose of understanding the unavoidable risks to public health and welfare resulting from operation of the CDP, and for the purpose of county emergency planning.

2. In the event the safety of the CDP is not subject to the jurisdiction of the federal Pipeline Safety Act or state law safety standards, an application shall provide copies of all industry design, materials, construction, equipment, operation, and maintenance standards applicable to the CDP; a description of all CDP components installed in the County together with a description of the component's compliance with applicable standards; a description of all construction activities together with a description of how these activities will comply with applicable industry standards; and a description of all operation and maintenance activities together with a description of how these activities will comply with applicable industry standards. The county may determine if the CDP will adequately comply with such industry standards and may condition a special permit to require such additional safety standards as are determined to be

necessary and reasonable by the county, such as emergency valve placement within the county.

- e. **List of Permit Applications:** The application shall include a list of permits required by the State of Nebraska, the US government, the County, and any municipalities within the county that applicant must acquire prior to construction of the CDP, and provide a description of the status of all such permit applications. Applicant shall update this list during the County’s permit review process at least quarterly, but shall also provide an update upon request by the County.
- f. **Abandonment Plan:** The application shall include a proposed abandoned pipeline mitigation plan describing the methods, procedures and cost of removing the CDP and all related supporting infrastructure after the pipeline has been abandoned and permanently removed from operation. The abandoned pipeline mitigation plan shall include the following conditions:
  - 1. A notice of abandonment requirement providing that within 90 days of completion of all physical steps necessary to permanently remove the CDP from operation, the CDP operator or owner shall notify the County, municipalities within the County, and all owners of land who own property subject to an easement or right-of-way agreement in the County, that the CDP has been abandoned, which notice shall also fully describe the rights of such owners of land to require removal or other reasonable mitigation actions.
  - 2. A commitment to provide a bond or equivalent enforceable financial assurance instrument sufficient to guarantee removal and mitigation of the CDP upon abandonment. The County shall approve the amount and terms of such financial assurance instrument as necessary to protect the public interest.
  - 3. In the event the CDP owner or operator fails to give notice of abandonment, the CDP shall be deemed to be abandoned within the County if the CDP does not provide transportation services for twenty-four (24) consecutive months. At any time after such period, upon discovery of non-use, the County shall provide by certified mail a written Notice of Abandonment to the owner and operator of the CDP and also to each property owner whose property is subject to an easement or right-of-way agreement for the CDP, at the landowner address recorded in the County Treasurers Office. The CDP owner or operator shall have the right to respond to the Notice of Abandonment within sixty (60) days from the date of receipt of such notice to present evidence that it has not abandoned the CDP. The County shall review any such response and determine whether or not the CDP has been abandoned. If it is determined the Pipeline has not been abandoned or discontinued, the Notice of Abandonment shall be withdrawn and notice of the withdrawal shall be provided to CDP owner or operator. If, after review of the

CDP owner or operator's response, the County determines that the CDP has been abandoned or discontinued, notice of such finding shall be provided by certified mail to the CDP owner or operator.

4. Upon a CDP owner or operator providing notice of abandonment, or upon issuance of a final decision by the County that a CDP is abandoned due to non-use, the abandoned pipe steel and all underground components shall be removed within one year of decommissioning or revocation of the special permit.
5. Property owners of land subject to a CDP easement may enter into an agreement with the CDP owner to abandon some or all underground CDP components in-place and for other mitigation requirements, including but not limited to filling abandoned in-place pipe under private roadways with cement to prevent roadway collapse, segmenting and plugging the pipe to prevent water drainage, and conducting depth of cover and erosion surveys to assess remaining depth of cover and potential future impacts of the abandoned underground pipe on agricultural operations.
6. In the event that the CDP owner or operator fails to initiate implementation of its abandonment mitigation plan within 180 days of its notice of abandonment or a notice of abandonment issued by the County, any owner of property subject to an easement or right-of-way agreement may implement the abandonment plan for such landowner's property and seek compensation for the expenses of plan implementation from the financial assurance instrument provided to ensure implementation of the plan, and if such funds are not sufficient, from the current and past owners of the abandoned CDP.

g. **County Emergency Response Plan:** The application shall include a proposed county and municipal emergency response plan for a potential full-bore rupture of the CDP. The applicant shall coordinate development of this proposed plan with county, municipal, and state emergency response agencies. This proposed county emergency response plan shall at a minimum include:

1. An estimate of the maximum volume of carbon dioxide that could be released given pipeline size, emergency valve locations, and other appropriate factors.
2. An estimate of the size of the danger zone on either side of the pipeline route based on the maximum distance that released CO<sub>2</sub> could travel from the pipeline's centerline from a rupture in the county, at concentrations that are immediately dangerous to life and health (IDLH) (an IDLH of 4 percent or 40,000 parts per million), given a range of weather conditions and topography. The distance estimate shall be based on state-of-the-art computer modeling that at a minimum takes into account amounts of CO<sub>2</sub> and hazardous materials released, release rate,

the volume of material ejected by pump or compressor operation before their shutdown and valve closure, the amount of material that would vent to the atmosphere between emergency valves, weather, topography, and the location of structures.

3. An estimate of the concentration of CO<sub>2</sub> at which internal combustion engine motor vehicles may not operate.
4. A list of local emergency response agencies that the CDP operator must notify immediately in the event of a rupture.
5. A list of CDP operator emergency response personnel contacts for use by county and municipal emergency response personnel.
6. A list and map of occupied residential, business, public, and other structures within the danger zone, and a plan for annual updates of this list and map.
7. A telephonic and electronic emergency alert system for individuals who live and operate businesses within the danger zone that provides alerts to evacuate in the event of a rupture.
8. Cost-free distribution and replacement of CO<sub>2</sub> detectors with alarms to occupied residences and businesses within the danger zone.
9. An evacuation plan for each occupied residence and business within the danger zone that avoids travel toward the pipeline.
10. A plan for county and municipal first responders to assist with evacuations.
11. An annual reminder of evacuation routes for occupied residences and businesses provided to landowners, business owners, and operators of commercial and public facilities.
12. A list of roadways that pass within the danger zone, and a plan to barricade impacted roadways to prevent vehicles and pedestrians from entering the danger zone.
13. A list of recommended emergency response equipment and training needed by county and municipal emergency response personnel and a commitment to provide such equipment and training to county and municipal agencies.

14. The CDP operator's federally mandated emergency response plan for its personnel, and a description of how the proposed county emergency response plan would coordinate with applicant's emergency response plan.
- h. **Setbacks:** The application shall provide that the CPD shall be constructed in a right-of-way that complies with the following setbacks:
1. For occupied single family homes, the center line of the CDP and the property line of a pump or compressor station shall be setback a minimum of 1,000 feet from the home.
  2. For operating businesses with fewer than 10 employees, the center line of the CDP and the property line of a pump or compressor station shall be setback a minimum of 500 feet from the structure containing the business.
  3. For structures that typically contain more than 10 persons, the center line of the CDP and the property line of a pump or compressor station shall be setback a minimum of 2,000 feet from such high occupancy structure.
  4. The setbacks may be increased to minimize the number of homes and businesses with the danger zone.
- i. **Noise:** The application shall contain a proposed noise mitigation plan that includes the following conditions:
1. No CDP pump or compressor station shall be located as to cause an exceedance of the following noise level standard. The noise level shall be measured at the closest exterior wall of any dwelling located on the property. If a pump or compressor station violates a noise standard on a dwelling, constructed after the CDP is approved, then the CDP becomes a non-conforming use. The noise level shall have a forty-two (42) dBA maximum ten (10) minute Leq for all hours of the day and night, or a three (3) dBA maximum ten (10) minute Leq above background level as determined by a pre-construction noise study.
  2. Each application shall include a professional third-party pre-construction noise study which includes all property within at least one mile of a pump or compressor station and must be able to demonstrate compliance with the noise standards in paragraph 2. The protocol and methodology for such studies shall be submitted to the County Health Department for review and approval. Such studies shall include noise modeling for all four seasons and include typical and worst-

case scenarios for noise propagation. The complete results and full study report shall be submitted to the County Health Department for review and approval.

3. Prior to the commencement of construction, pre-construction noise monitoring may be conducted to determine ambient sound levels in accordance with procedures acceptable to the County Health Department.
  4. Post-construction noise level measurements shall be performed in accordance with procedures acceptable to the County Health Department within one year of completion of construction to determine if the permittee is in compliance with this title and the terms of its special permit. Noise level measurements shall be taken by third party professional acousticians or engineering firms specializing in noise measurements and in accordance with procedures as approved by the County Health Department and shall be performed at the expense of the holder of the Special Permit. Any report, information or documentation produced in accordance with such study or measurements shall be provided to the County Health Department and shall be a public document subject to Nebraska's public records laws.
  5. All noise complaints regarding the operation of any CDP pump or compressor station shall be referred to the County Board. The County Board shall determine if noise monitoring in addition to that required under the paragraph above shall be required to determine whether a violation has occurred. If the Board determines that such noise monitoring shall be required, it shall be done at the expense of the holder of the Special Permit in accordance with procedures and by third party professional acousticians or engineering firms specializing in noise measurement approved by the County Health Department. The results of such monitoring shall be provided directly from the party or parties conducting the monitoring to the County Health Department for review and reporting to the Board of Commissioners.
- j. **Roads:** The application shall include a proposed road mitigation plan that includes the following conditions:
1. Prior to the commencement of construction of any CDP, the applicant shall enter into an agreement with the County Engineer regarding use of County roads during construction. This agreement shall ensure the appropriate and timely maintenance of all county roads pursuant to Neb Rev Stat §39-1402 and any amendments thereto.
  2. Applicant shall complete a county road and right-of-way application for each county, township, or municipal road or street and other public infrastructure to be



crossed or used for the purposes of constructing, operating, or maintaining the CDP.

3. Applicant shall, in coordination with the County and other appropriate jurisdictions, conduct a pre-construction survey of roadways and other public infrastructure that may be used or impacted by construction, either as primary or alternative routes. Such survey shall include photographs and written descriptions of the condition of potentially impacted public infrastructure and identify all applicable weight and size limits.
  4. Applicant shall, at its sole expense, restore roads, streets, bridges and other impacted public infrastructure to at least its pre-construction condition.
  5. After construction, County shall inspect all impacted infrastructure and determine the need for and extent of repair and direct applicant to make such repairs. County shall inspect all restored infrastructure. Where such restoration is insufficient, County will require additional restoration so that the infrastructure is restored to at least its pre-construction condition.
- k. **Environmental Impact Assessment:** The application shall include an assessment of impacts of construction and operation on state or federal threatened or endangered species, environmentally sensitive lands and waters such as wetlands, native prairie and grasslands, rivers, streams, and lakes, and public parks, schools, and similar amenities.
- l. **Indemnification:** The application shall contain a proposed indemnification condition with the following terms.
1. The applicant, its heirs, assigns, and successors shall indemnify, defend, and hold harmless County and any property owners whose land is subject to easements or right-of-way agreements from any and all liability, loss, damage, cost, expense, and claim of any kind, including reasonable attorneys' and experts' fees incurred by County and/or such property owners in defense thereof, arising out of or related to, directly or indirectly, the installation, construction, operation, use, location, testing, repair, maintenance, removal, or abandonment of the pipeline and/or related facilities, and the products contained transferred through, related or spilled from said pipeline and appurtenant facilities, including the reasonable costs of assessing such damages and any liability for costs of investigation, abatement, correction, cleanup, fines, penalties, or other damages arising under any law, including all applicable environmental laws.
  2. The indemnification shall apply except where individuals or companies damage the CDP or related facility through intentional bad acts.

3. No property owner or tenant or contractor of a property owner shall be held responsible for a leak or rupture of a CPD that occurs as a result of normal agricultural activities.
4. No property owner or tenant or contractor of a property owner shall be held responsible for a leak or rupture of a CPD where the owner or operator of the CPD fails to maintain required warning signs.
5. This indemnification shall not relieve a property owner, or tenant, agent, or contractor of such property owner, from their obligation to comply with the Nebraska One-Call Notification System Act and any amendments thereto (Neb Rev Stat §76-2301 to 76-2330), or relieve them of liability for their failure to do so.

**Severability and Separability:** Should any portion of this act be deemed unlawful for any reason or conflict with any existing state or federal law, that fact shall not affect any other portion or section of this act and any unaffected sections or portions of this act shall stand in effect.

**Effective Date:** This regulation shall take effect and be in force from and after the date of adoption by the County Commission.



Bold Nebraska was at the heart of the fight to stop the Keystone XL pipeline. Using a "small but mighty" model that kept a small staff with a laser focus on the target of stopping Keystone XL, Bold introduced a new way to organize in a red state. Local and national groups worked hand in hand to keep pressure on decision makers while infusing creativity every step of the way.



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