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**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA**

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**IN THE MATTER OF THE  
APPLICATION BY SCS CARBON  
TRANSPORT LLC FOR A PERMIT TO  
CONSTRUCT A CARBON DIOXIDE  
TRANSMISSION PIPELINE**

**HP22-001**

**INTERVENORS  
EDWIN “ED” & JOELL FISCHBACH  
INITIAL PRE-FILED TESTIMONY  
IN OPPOSITION TO SUMMIT’S  
APPLICATION**

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**Q: Please state your name.**

A: We are Edwin “Ed” and Joell Fischbach and we provide testimony here on our own behalf.

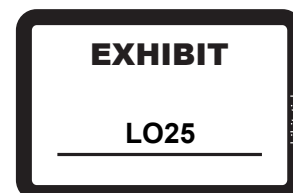
**Q: Do you either personally own or lease land or are you a fiduciary for or member or beneficiary of any entity that owns or leases land or real property in South Dakota, that you believe would be negatively affected by the proposed Summit hazardous CO2 pipeline (hereafter “proposed hazardous pipeline”)?**

A: Yes.

**Q: For the land discussed here that would be affected and impacted by the proposed hazardous pipeline, give the Commissioners an understanding of how long the land has been in your family including a little history of the land and its importance to you.**

A: We are fourth generation farmers. Some of my land was passed down to me by my parents and grandparents and has been in our family for over a hundred years while other land in our operation was purchased by us over the years as our operation continued to grow. We purchased our home property and adjoining land in 1986 following our marriage in 1985 and moved there with our infant son to begin our life together. We have continued to live on this property today.

**Q: Do you depend on the income from your land to support your livelihood or the livelihood of your family?**



A: Yes, our main source of income is dependent on the production and profitability of our land. Construction of a hazardous CO2 pipeline on or near our operation would severely impact our ability to maintain a profitable farming operation and jeopardize our safety and the safety of our livestock. Granting a permit for Summit's application would cause us undue stress and greatly impact any future plans we might choose in a significantly negative way.

**Q: As far as you know, does Attachment No. 1 purportedly depict Summit's "preliminary route" and preliminary permanent easement and other easements they may demand for pre-construction, construction, maintenance and operation of their proposed hazardous pipeline on, under, across, over, and through the land described?**

A: As far as I know, yes. This includes what they refer to as "**Exhibit A**" to their initial proposed Easement and is the best estimation we have been provided or able to obtain. However, as described this appears to be preliminary and not final. We don't "know" what the final proposal is or isn't or exactly how much land and the location of all the negative impacts should the PUC approve this project to cut across my land. They have not confirmed specifically and exactly what permanent, temporary, access, and other easements and property rights they seek on our land, and it appears they believe they have the power to unilaterally and at any moment move and or expand the perpetual and "temporary" easements they seek. The uncertainty around this is troubling and it seems they are seeking permission from the PUC for the idea of a route rather than a final route.

**Q: As you analyze Summit's proposed "preliminary" route and easements across your property, as depicted Attachment No. 1, please describe your property and its particular features and characteristics such that the Commissioners will be able to understand why digging, trenching, constructing, and operating a hazardous CO2 pipeline across your property is challenging or simply a bad idea in your opinion.**

A: **Attachment No. 1** contains three maps showing where pipeline may be located through our property and is extremely close to our home and farm crossing 2 and a half quarters of our land. Although we have never received any official confirmation from Summit, we believe that their current preferred pipeline route has been moved a short distance away from our home to the east. This was done without our knowledge nor at our suggestion. We would never wish something objectionable to us on to our neighbors unless they were willing to host such a hazardous and dangerous unnecessary pipeline. **Attachment No. 13** shows the approximate new route for the pipeline. Although the new route doesn't directly cross our property now, thus no easement, two completely separate quarters of our land will have the pipeline buried adjacent to our property line. This is a safety risk to us and will prevent us from ever building a future home for one of our sons or allowing livestock to graze there. We also have rural water pipelines on our property and are concerned that a CO2 rupture would contaminate our water supply that we are totally reliant upon. The risks of Summit's pipeline are too great for the PUC to grant a permit. If the PUC approves Summit's proposed route, they therefore authorize Summit's proposed easements near or potentially on our land as well as force upon us all the terms of Summit's easement forever. These potential actions by the PUC would have a permanent – forever – negative effect and impact on our land as well as our financial future, and on the economy of our county and State.

**Q: What is your understanding of the Public Utilities Commission's (PUC) role related to this proposed hazardous pipeline?**

A: Based on information provided in a PUC document entitled "South Dakota Public Utilities Commission Information Guide to Siting Pipelines" which is included here as **Attachment No. 2**, and my participation in these matters, I understand the PUC has the power to approve or deny Summit's Permit Application. If approved by the PUC, Summit would be able to forever route and site its proposed hazardous pipeline on, under, through, over, and across my land in question here and conduct any pre-construction, construction, and post-construction activities they deem

necessary at any time, forever, that it wants without my permission. If the PUC were to approve the Application and the route approved crossed any portion of my land, I would then be subject to an easement agreement which restricts what I can do on my land and how I, my tenants, invited persons, and all future generations can conduct ourselves on the land – forever. An approval by the PUC is the trigger for Summit to condemn my land using eminent domain powers to which I am opposed. So, the PUC has in its hands whether or not me and all future generations who seek to use, develop, and work the land in question as we see fit will be unwillingly subjected to unwanted and restrictive permanent easements preventing us from doing so and subjecting us to liability and risk. The PUC's actions, if approval of the Application, would also negatively impact our economic future forever. The PUC has my and this lands entire future in its hands.

**Q: Have you heard or read that the PUC has nothing to do with easements or similar claims?**

A: Yes, and that is logically and practically an incorrect assertion. Can you have a pipeline route without easements? The answer is no – a pipeline route is simply a series of connected easements – that's what a route is. This pipeline will not be built without PUC Approval and easements. If and only if the PUC approves this hazardous pipeline application will my land and all future owners, tenants, and visitors to my land be negatively affected by pipeline easements, access easements, work space easements, and all the limitations, restrictions, dangers, and risks associated with those easements and what this proposed hazardous pipeline company and its future owners can do on my land and prevent me from doing on my land. No PUC approval means no unwanted easements and no unwanted property right transfer from me to the hazardous pipeline company. You cannot separate what the PUC is doing in this proceeding with the taking of my property rights. PUC approval is a vote by this Commission that it is okay for my property rights to be taken and forever affected against my will and for the benefit of the proposed hazardous pipeline and for the economic gain of its wealthy investors.

**Q: And what about the condemnation piece – the PUC says it has nothing to do with condemnation have you heard that and if so, what do you think?**

A: I have heard that claim but again, same logic as above – no PUC approval means there is no project and no economic incentive to attempt to use eminent domain powers to condemn my land and my property rights. Only if the hazardous pipeline wanted to intimidate and scare me or send me a “message”, or if they were so confident that this process is a rubber stamp for them would they start condemnation actions before the PUC officially approved the route. But even if they would start condemnation prematurely, they would not go through the entire process and trial and the ultimate final taking of my rights unless the PUC approved their Application, so no PUC approval means there will not be a final forever taking of my land or property rights.

**Q: What should the PUC consider when assessing how the proposed hazardous pipeline will directly affect your land and property rights?**

A: In addition to what I have already discussed, you cannot have an intelligent consideration of a Route Application without reviewing Summit’s proposed Easement Agreement (herein referred to as the “Easement”) with a fine-tooth comb. This is the document that is part and parcel of a PUC Application approval. When you think about what a Pipeline Route is you conclude it is simply a long-connected chain of many Easements – no easements, no route. It is important to me that the PUC review this document in detail, understand the implications, and then consider all the implications relative to my land and property and how it is being used now and thinking into the future – forever – of how a PUC approval would therefore affect my land and my family. Each and every factor, as discussed in **Attachment No. 2**, is implicated by the Easement. A true and accurate copy of an example South Dakota Summit “Easement Agreement” is included here as **Attachment No. 3**. The provisions and terms found in this exemplar are consistent with what has been presented to me.

**Q: Please walk through the Easement and highlight your major concerns so the Commission can understand how their approval of Summit's Application would affect you forever.**

A: Well, the first question and concern I have is the company that would have perpetual rights in my land is identified as Summit Carbon Solutions, LLC, a Iowa limited liability company with its principal office in Ames, Iowa.<sup>1</sup> I have tried to determine who owns this LLC and what its assets are but I can't figure it out and I am very concerned that the PUC could force this LLC upon me and no one knows who is behind the LLC curtain. Summit has refused to disclose the hidden layers of LLC member entities so that it is a secret who Summit really is and the PUC has no idea who it is dealing with. If I am forced against my will to have a co-owner of my land via Summit's desired perpetual easement against my land to do as they see fit within the easement language, then I want to know exactly who I am dealing with and the PUC should require the LLC to reveal its owners and investors and if those owners and investors are also entities the PUC should require transparency **at every level of ownership** so we ultimately know the real people behind this newly formed for-profit private company. When looking up Summit Carbon Solutions, LLC on the Iowa Secretary of State website it states the LLC was formed on June 28, 2021 – and it says it is a Foreign Limited Liability Company and that the actual state of incorporation is Delaware not Iowa as the Easement suggests. This Iowa Secretary of State search also reveals these companies that appear to be related:

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<sup>1</sup> See page 1 of the Easement

## Business Entities Results

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Searched: **Summit Carbon**

Results 1 - 6 of 6

<u>Business No.</u>	<u>Name</u>	<u>Status</u>	<u>Type</u>
<a href="#">677862</a>	SUMMIT CARBON CAPTURE III, LLC	Active	Legal
<a href="#">677575</a>	SUMMIT CARBON CAPTURE II, LLC	Active	Legal
<a href="#">671355</a>	SUMMIT CARBON CAPTURE, LLC	Active	Legal
<a href="#">700745</a>	SUMMIT CARBON PROJECT HOLDCO LLC	Active	Legal
<a href="#">646300</a>	SUMMIT CARBON SOLUTIONS, LLC	Inactive	Legal
<a href="#">677150</a>	SUMMIT CARBON SOLUTIONS, LLC	Active	Legal

When you then turn to the Delaware Secretary of State business entity search, it reveals these entities:

<b>FILE NUMBER</b>	<b>ENTITY NAME</b>
4931823	<a href="#">SUMMIT CARBON CAPTURE ALASKA, LLC</a>
5004361	<a href="#">SUMMIT CARBON CAPTURE HOLDINGS, LLC</a>
5004363	<a href="#">SUMMIT CARBON CAPTURE, LLC</a>
5644331	<a href="#">SUMMIT CARBON HOLDINGS, LLC</a>
6494069	<a href="#">SUMMIT CARBON PROJECT HOLDCO LLC</a>
5927410	<a href="#">SUMMIT CARBON SOLUTIONS, LLC</a>

What we have learned from the North Dakota PSC Summit proceedings is that as of May 9, 2023, these entities owned some or all of SCS Carbon Transport LLC, which is the North Dakota PSC Applicant and the South Dakota PUC Applicant: Summit Agriculture Group, SK Group, Tiger Infrastructure Partners, TPG Rise Climate, and Continental Resources, Inc.

**Q: What is your next concern the PUC should be aware of?**

A: Summit's Easement refers to not only it as the "Company" involved but the defined term "Company" also includes any and all of Summit's unknown "successors and assigns." This means if the PUC approves Summit's Application it is automatically approving any future unknown person, entity, country, or foreign sovereign wealth fund – including potentially countries and interests adverse to South Dakota and the

United States – to be my unwanted partner in my land – forever. I have no vote, no power, and no say-so.

**Q: What is your next concern the PUC should be aware of?**

A: Summit’s Easement states that we, as “Landowner” “hereby grants, sells and conveys unto Company [Summit and all future unknown successors and assigns], for use by Company and its agents, employees, designees, contractors, guests, invitees, successors and assigns, and all those acting by or on behalf of it, the following easements...”<sup>2</sup> Again, we are not forced to deal only with Summit – because the Easement says any unknown “agent, employees, designees..” etc. can use all the easements described.

**Q: What is your next concern the PUC should be aware of?**

A: Summit’s desired easements on my land are all shown as “approximate locations” so no one really knows the actual location or size of their desired easements and taking on my land and I don’t believe the PUC should approve an “approximate” route – they should evaluate a precise route, so this process is completely transparent.

**Q: What is your next concern the PUC should be aware of?**

A: Summit’s desires several easements, one is referred to as “Pipeline Easement” and it is to be “fifty feet (50’) in width” and “free and unobstructed” and “permanent.” I can’t understand why Summit should be approved by the PUC to have a “permanent” easement when they are not proposing a permanent or forever project. Also, the fact they demand a “free and unobstructed” easement calls into question what we can do on and across the easement forever.

**Q: What is your next concern the PUC should be aware of?**

A: Summit states in their Easement that they can use the desired “Pipeline Easement” for “the purposes of owning, accessing, surveying, establishing, laying, constructing, reconstructing, installing, realigning, modifying, replacing,

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<sup>2</sup> *Id.* Para 1 Grant.



improving, substituting, operating, inspecting, maintaining, repairing, patrolling, protecting, changing slopes of cuts and fills to ensure proper lateral and subjacent support for and drainage for, changing the size of, relocating and changing the route or routes of, abandoning in place and removing at will, in whole or in part, one pipeline not to exceed twenty-four inches (24") in nominal diameter..." I want the PUC to understand that evaluation of the factors found in **Attachment No. 2** must be analyzed considering Summit can permanently and forever not only locate a hazardous pipeline on my land but also at anytime and forever access, survey, modify, patrol, cut and change the contours and slopes of my land, change and relocate the pipeline route, and abandon the pipeline in place, all on my land and without any permission or say-so from me or future owners. These rights alone, and we are still in the first paragraph of the Easement, not only poses a threat of serious injury to my social and economic condition but it also substantially impairs my health, safety and welfare all the while unduly interfering with the orderly development of my land and therefor the region. All of the above uses they want are "for the transportation of carbon dioxide and its naturally occurring constituents and associated substances and any appurtenant facilities above or below ground, including aerial markers, power drops, telecommunications, cathodic protection, and such other equipment as is used or useful for the foregoing purposes ..." <sup>3</sup> So, while they are marketing now the transportation of Carbon Dioxide, they have the wiggle room to change that at anytime to anything that could fit under "and its naturally occurring constituents and associated substances..." Where are the limits? I thought this was a CO2 pipeline only. If the PUC were to approve this Application, which it should not, it must limit what can be transported in this hazardous pipeline. Clearly, not knowing the limitations of what could be flowing on, under, through, and across my land also poses a threat of serious injury to my social and economic

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<sup>3</sup> *Id.* para 1.a.

condition but it also substantially impairs my health, safety and welfare all the while unduly interfering with the orderly development of my land and therefor the region. They also can place any facility and equipment of any kind above the ground or below ground on my land so long as Summit deems it “as is used or useful for the foregoing purposes” which covers any and everything they choose to do.

So, it appears what they would be able to do with the Pipeline Easement includes about everything and there are no time limitations, restrictions, or notice requirements as to any of these activities. Should the PUC approve this hazardous pipeline, which it should not, it should require reasonable limitations as to when these activities can be performed, for how long, and should be required to notify landowner well in advance of any such activity or entry onto landowner’s land. Further, Summit’s desired right to abandon in place their hazardous pipeline on my land must not be allowed. Should the PUC approve this hazardous pipeline, which it should not, it should require Summit, at landowner’s sole request, to remove the pipeline. If a landowner does not request this or if Summit and a particular landowner reach agreement and financial terms allowing the hazardous pipeline to remain, that should be up to each landowner. There is no provision for Landowner compensation for such abandonment nor any right for the Landowner to demand removal. Such unilateral powers and the threat and ability to abandon the pipeline in place poses a threat of serious injury to my social and economic condition but it also substantially impairs my health, safety and welfare all the while unduly interfering with the orderly development of my land and therefor the region.

**Q: What is your next concern the PUC should be aware of?**

A: The Easement language and powers are far too vague and wide ranging, again no limitations and these roving rights Summit would claim subject me and my property to significant restrictions as their rights dominate mine; this will prevent me and future owners and users of my land from improving and developing the land in the ordinary course. These restrictions have negative economic impacts now and into the future. I will not be able to increase the value and usable features on my land

and will not do so in fear of having to remove any such desired improvements or be subject to Summit's claims my desires interfere with their Easement rights. The less I can improve my land, the less valuable it is, the less real property and personal property tax is generated, and the more South Dakota is harmed.

**Q: What is your next concern the PUC should be aware of?**

A: The second easement Summit seeks is a "Temporary Easement." However, there is no definition of how long this can be and it only terminates "on the Company's delivery to Landowner of written notice of termination..." If the PUC were to approve this Application, which it should not, in addition to locating a hazardous pipeline on my land Summit reserves the sole right to also locate upon my land and use temporary construction areas and additional temporary workspaces areas. There is no limitation on how large these can be and there is no limitation on what "temporary"<sup>4</sup> means. How long is temporary? How long would Summit be able to argue "temporary" is all the while prohibiting me from using my land how I see fit.

**Q: What is your next concern the PUC should be aware of?**

A: The next easement sought is an "Access Easement" which again is a "free and unobstructed" easement "in, to, through, on, over, under, and across" my land forever "for the purposes of ingress and egress to the Pipeline Easement..." and to the "Temporary Construction Easement and for all purposes necessary and at all times convenient..." to Summit. So, if the PUC approves this Application, which it should not, Summit gets a blanket easement and access across my entire property forever that I have to keep "free and unobstructed." This means I cannot locate equipment, livestock, or anything that could hinder Summit's unrestricted total access of my land. Summit would take a forever right to travel anywhere it desires on my entire Property – not just within the Easement area. This ability to have free reign on a landowners' entire property reduces the value of the property and chills my desire to economically improve my property which again is a detriment not only

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<sup>4</sup> See para 1.b. of the Easement

to me but to the entire State in lost tax revenue. Such unilateral powers and the forever restrictions upon my land and me and all future generations poses a threat of serious injury to my social and economic condition, but it also substantially impairs my health, safety and welfare all the while unduly interfering with the orderly development of my land and therefor the region.

**Q: What is your next concern the PUC should be aware of?**

A: If the PUC were to approve this Application, which it should not, Summit unilaterally can determine the final location of the pipeline and it does not have to be in the middle of the easement: “the centerline of the pipeline may not, in all instances, lie in the middle of the Pipeline Easement.” See Easement paragraph 2 “Location.” To make matters worse – should Summit chose to change location, Landowner then, at their time and cost, has review, execute, and deliver to Summit any correct documents or any modifications that Summit requests. See Easement paragraph 2 “Location.”

**Q: What is your next concern the PUC should be aware of?**

A: If the PUC were to approve this Application, which it should not, Summit seeks to limit the compensation available for all the easements and any other damages that Landowner would suffer up and until the time of Summit’s restoration of our land following pipeline installation. Additionally, Summit seeks to cap damages to growing crops and yield loss for the three years following the initial construction of the pipeline. Summit claims it will pay Landowner “a reasonable sum” for any “subsequent actual, proven damages to growing crops...” but there is no mechanism or metrics of how this would work. My research shows that previous Landowners have had difficulty getting compensation for damages caused by pipeline construction and given yield loss can continue decades into the future this provision should concern the PUC. These provisions and limitations pose a threat of serious injury to my social and economic condition.

**Q: What is your next concern the PUC should be aware of?**

A: If the PUC were to approve this Application, which it should not, Summit does not have to repair or restore my land to as good a location or better as it found it as that claim in promotional statements. In fact, Summit only has to restore my land “insofar as reasonably practicable...” as solely determined by Summit. See Easement paragraph 4 – “Restoration.” Should there be a dispute in this regard, Landowner would have to incur more costs, expenses, and wasted time hiring legal counsel and perhaps experts, and likely litigating the matter. Therefore, these provisions and limitations pose a threat of serious injury to my social and economic condition.

**Q: What is your next concern the PUC should be aware of?**

A: If the PUC were to approve this Application, which it should not, Summit would have the unilateral power to tell Landowner what they can and can’t do on all of the easements. If anything, that Landowner wants to do on their property above the surface of where the pipeline or any easement is located that in Summit’s “sole discretion” “causes a safety hazard or unreasonably interfere[s]” with Summit’s rights, then Landowner is prohibited from taking such action. See Easement paragraph 5.a. – “Landowner’s Use.” Such restrictions chill the natural use of the property and negatively affects the value of the property and poses a threat of serious injury to my social and economic condition, but it also substantially impairs my health, safety and welfare all the while unduly interfering with the orderly development of my land and therefor the region.

**Q: What is your next concern the PUC should be aware of?**

A: If the PUC were to approve this Application, which it should not, I cannot, unless previously being given permission by Summit, construct anything on the easements, cannot drill or operate any well or equipment for production or development of minerals, cannot remove soil or change the grade or slope of my land, cannot impound surface water, and cannot plant trees or place landscaping. Landowner also cannot place any above ground or below ground “obstruction” of any kind that Summit may deem to interfere with or be inconvenient to operation of the pipeline

or other Pipeline Facilities or use of the Easements without written permission from Summit – which they can withhold. See Easement paragraph 5.b. – “Landowner’s Use.” Worse yet, if I do utilize my property as I see fit, and Summit in its sole discretion determines any such actions in any way “...interferes or may interfere with its right...” then Summit “shall have the immediate right to correct or remove such violation or obstruction at the sole expense of Landowner.” Such restrictions chill the natural use of the property and negatively affects the value of the property and poses a threat of serious injury to my social and economic condition, but it also substantially impairs my health, safety and welfare all the while unduly interfering with the orderly development of my land and therefor the region.

**Q: What is your next concern the PUC should be aware of?**

A: If the PUC were to approve this Application, which it should not, Landowner is prohibited “during the initial construction of the Pipeline Facilities or any construction, maintenance, repair, replacement or removal work on the Pipeline Facilities...” from using any portion of the Easements for any purpose. See Easement paragraph 5.c. – “Landowner’s Use.” Such restrictions chill the natural use of the property and negatively affects the value of the property and poses a threat of serious injury to my social and economic condition, but it also substantially impairs my health, safety and welfare all the while unduly interfering with the orderly development of my land and therefor the region.

**Q: What is your next concern the PUC should be aware of?**

A: If the PUC were to approve this Application, which it should not, I am prohibited from using my land for agricultural and pasturage purposes if they are in anyway interfere with Summit’s use of the Easement. So, assume Summit where to bury its proposed hazardous pipeline only four (4) or five (5) feet below the surface, then I can’t use any equipment with tires four (4) or five (5) feet in diameter or larger in my operations for fear if I would sink, the tires could come in contact with the pipeline. Preventing my ability to stay competitive and utilize larger equipment to work my land negatively impacts me by not allowing me to be as efficient as

possible and reduces my profitability. There is no reason for me to keep buying the newest and latest equipment which hurts local businesses. All of this has a negative impact on the State's economy and poses a threat of serious injury to my social and economic condition, but it also substantially impairs my health, safety and welfare all the while unduly interfering with the orderly development of my land and therefor the region.

**Q: What is your next concern the PUC should be aware of?**

A: If the PUC were to approve this Application, which it should not, Summit has the sole and exclusive “right to sell, assign, apportion, mortgage or lease this Agreement [the Easement]...” otherwise transfer this Agreement in whole or in part...”<sup>5</sup> If Summit exercises any of these rights and some unknown and unwanted party becomes the owner of the Easement on and pipeline and equipment on my land, not only do I have no say-so. Additionally, if Summit sells or assigns any part of the Agreement or the Easements to anyone else, then Summit “... shall be released from its obligations under this Agreement.” All of this has a negative impact on the State's economy and poses a threat of serious injury to my social and economic condition, but it also substantially impairs my health, safety and welfare all the while unduly interfering with the orderly development of my land and therefor the region. If the PUC were to approve this Application, which it should not, it must require any new entity that would become owner or operator of this hazardous pipeline to first apply for and be granted permission to take this project over from Summit. Assignment to any unknown person, company, or government could have terrible impacts upon all of South Dakota depending upon who may buy it and I don't know of any safeguards in place for us or the State to veto or have any say so in who may own, operate, or be responsible for this pipeline in the future. This concerns me because it would allow my easement to be transferred or sold to someone or some

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<sup>5</sup> See paragraph 7 of the Easement

company or country or who knows what that I don't know and who we may not want to do business with.

**Q: What is your next concern the PUC should be aware of?**

A: If the PUC were to approve this Application, which it should not, the liability and insurability aspects of this hazardous pipeline being forever located on my land are very concerning. See Easement paragraph 6 – “Indemnification.” Summit says it “shall pay commercially reasonable costs” for damages resulting from their use of the Easements. Why don't they pay any and all costs if there is damage resulting from their use of the Easements? Who determines what “commercially reasonable” means? I doubt I do. How much expense and time and frustration does Landowner go through fighting for payment of actual damages? The Easement also states that Company (Summit) shall indemnify and hold Landowner harmless for damages resulting from their use of their easements. Summit has acted as if this is a big concession – that they should be responsible for the damage they cause. However, their indemnification and hold harmless language does nothing at all to protect Landowner from any claim – a mere claim – that Landowner or its agents (tenants or others) acts of gross negligence or willful misconduct within the Easements caused damage. And there is no protection at all for any claims that Landowners or their agents took any action outside the Easements that may have caused issues within the Easements that then lead to damages or losses. Discussed in more detail later is Landowners inability to obtain liability insurance to protect itself from the damages and losses that occur when hazardous pipelines have a rupture or break that leads to a spill or release causing damages. Such restrictions chill the natural use of the property and negatively affects the value of the property and poses a threat of serious injury to my social and economic condition, but it also substantially impairs my health, safety and welfare all the while unduly interfering with the orderly development of my land and therefor the region.

**Q: What is your next concern?**



A: If the PUC were to approve this Application, which it should not, then I have no liability protection and am directly exposed to liability as Summit offers no indemnification or hold harmless protections to me for what damages or injury occur on my property outside of the specific Easement areas. This is true because, as discussed above, if the PUC approves this Application, then Summit has a blanket right to access my entire property and is not limited to the Easements. Also, Summit can allege either I or any person whom is on my property is negligent or partially negligent and I could be subjected to damages claims that would bankrupt me. Summit also shifts potential liability to me for any of my negligent acts that may occur in the Easement areas.

**Q: What is your next concern?**

A: If the PUC were to approve this Application, which it should not, then I am exposed for significant personal liability for any damages due to the existence of and potential release or rupture or spill from the hazardous pipeline. I have reviewed my insurance documents and coverage for my property and obtained information from my insurance company. I have learned that my insurance policies have what is known as a “pollution exclusion” and that I would have no insurance coverage should any damage or injury be caused by a carbon dioxide release from the hazardous pipeline as carbon dioxide is considered a “pollutant” under my policy. I have considered this scenario: “If a hazardous pipeline transporting carbon dioxide is placed upon my land, and either I or someone I have invited onto my land is determined to be responsible for some damage to the pipeline or responsible for an event that caused some damage to the pipeline, and then CO2 escapes and injures a person, or livestock, or property either on my own property or on my neighbors – do any of my insurance policies I have provide me a lawyer for a defense AND provide me insurance coverage to pay for the damage/injuries?” In considering these questions I have determined not only does my policy not afford me a lawyer and not afford me a legal defense that I also have no coverage for such a scenario, nor can I purchase coverage or an insurance rider. I would be completely unprotected and

exposed to liability, and I would have to pay for my defense out of my own pocket and personally pay for and damages ultimately attributed to me. This is unacceptable. The PUC must deny this project for these reasons alone. The PUC cannot put landowners out in the cold to defend ourselves without any assistance. I should never have these kinds of risks due to the presence of a hazardous pipeline I do not want. If the PUC were to approve this Application, which it should not, it must require Summit to be solely responsible for any injuries or damages of any kind either directly or indirectly caused by any release of CO2 from their pipeline other than those caused by criminal acts of the landowners. The PUC must also require Summit to add each and every landowner and their tenants as additional insureds on all Summit liability insurance policies. The PUC should require that Summit add each landowner and inhabitant and tenant on each affected property to Summit' insurance policy all as additional insureds.

**Q: Do you have any other concerns about this liability issues?**

A: When evaluating the impact on property rights implicated by Summit's Indemnity provision, you must consider the potentially extremely expensive fight a Landowner would have over this question of whether or not damage was an act of negligence. Putting this kind of potential liability upon the Landowner is incredibly problematic and is detrimental to the protection of property rights. I don't think this unilateral power which I can't do anything about as the landowner is in the best economic interest of the land in question or the State of South Dakota for landowners to be treated that way. This poses a threat of serious injury to my social and economic condition but it also substantially impairs my health, safety and welfare all the while unduly interfering with the orderly development of my land and therefor the region.

**Q: Is there any specific event or example you are aware of that makes this concern more real for you?**

A: Yes, one need not look further than a November 3, 2015, lawsuit filed against Nemaha County, Nebraska landowner farmers who accidently/negligently struck two Magellan Midstream Partners, LP pipelines, one used to transport a mixture of

gasoline and jet fuel and a second used to transport diesel fuel. Magellan alleged negligence and sued the Nebraska farmer for \$4,151,148.69. A true and accurate copy of the Federal Court Complaint is here as **Attachment No. 4**. The ability of a large company like Summit, or whoever buys their pipeline once they cash out to be able to sue me or place blame on me because they choose to put something on my land against my will is in no way in the public interest and is a reason this Application must be denied.

**Q: What is your next concern?**

A: If the PUC were to approve this Application, which it should not, then Summit forces landowner to deal directly with its tenant regarding any compensation landowner negotiates for any Easement or any damages landowner receives in terms of allocating any such payments between landowner and tenant. This guarantees that landowner will never be made whole by Summit for such damages as landowner and tenant have different interests and should each independently be compensated by Summit for such damages. Landowner should not be made to be the agent of Summit to deal separately with claims its tenant may be entitled to bring for compensation.

**Q: What is your next concern?**

A: If the PUC were to approve this Application, which it should not, it is essentially approving a roving right for Summit to locate its hazardous pipeline anywhere on my land. On Exhibit B of the Easement it talks about “proposed route” “proposed pipeline easement” and states the Exhibit B is “is not intended to depict the final alignment.” It is not a plat or a survey. So, I am in the dark – as is the PUC – of what it would be approving given there is no “final” route to approve. The PUC should deny the Application on this basis alone. It is not fair for Summit to have a roving right across my entire property or any length, size, and location of easements on my land it desires.

**Q: What is your understanding of the significance of the Easement as proposed by Summit?**

A: My understanding is that this is the document that will govern all of the rights and obligations and duties as well as the limitations of what I can and cannot do and how I and any future landowner and any person I invite to come onto my property must behave as well as what Summit is and is not responsible for and how they can use my land forever. This is why the PUC cannot pretend the Easement is anything other front and center in these proceedings. No court no judge no jury can change the terms of the Easement, only the PUC now can consider what Summit wants to force upon all of the land at issue in these proceedings and consider those effects in terms of the factors the PUC is to consider when evaluating Summit's Application.

**Q: You have discussed a number of concerns of how you would be negatively impacted by the terms and restrictions in the Easement alone should the PUC grant Summit's Application, do you think those negative effects go beyond just you as directly affected landowner?**

A: Yes, while myself, my family, future generations, and my land would all be directly and negatively impacted it doesn't stop there. Just like Summit wants to claim there is a multiplier effect economically by the spending during construction and increased consumption by the workers or others in South Dakota, the flip side is that the negative impacts on me and my land are forever – the easement is forever and therefore any restrictions or limits or outright bans on my and any future landowners' ability to use their land as they see fit, and to improve or develop their land is a direct and ongoing negative economic impact locally on small business that are not getting contracted to do work or certain projects, I believe the value of my land decreases should this hazardous pipeline and associated Easement terms cast a cloud over my land forever, and I intend to protest my valuations and seek a reduction in property tax which will negatively affect that State – and Summit is not making this up. They will pay no real property taxes on any of the Easements obtained. My state also suffers do to the ripple effect of less development, expansion, and property improvement. This project has no net benefits – it is a net negative on the State.

**Q: Do you have additional concerns how you would be negatively affected should the PUC approve this Application?**

A: Yes, I didn't mention the compensation piece. Summit proposes to pay me one time only for the Easements. They do not propose recurring annual or quarterly payments. They make my land a liability when it was previously an asset. If this was forced upon us we should be paid a royalty of some percentage of the annual profits and value generated by Summit and its investors. They can't earn a dollar number one without my land and the land of others and we should be compensated much differently than they propose. It is not fair to the landowner, the county, or the State. It is not fair to the landowner because they want to have my land forever for use as they see fit so they can make a daily profit from their customers. If I was to lease ground from my neighbor I would typically pay twice a year every year as long as they granted me the rights to use their land. That only makes sense – that is fair. If I was going to rent a house in town I would typically pay monthly, every month until I gave up my right to use that house. By Summit getting out on the cheap and paying once in today's dollars that is monthly, bi-annual, or at least an annual loss in tax revenue collection on the money I would be paid and then pay taxes on and contribute to this state and this country. It is money I would be putting back into my local community both spending and stimulating the local economy and generating more economic activity right here. Instead Summit's shareholders keep all that money and it never finds its way to South Dakota.

**Q: Do you think it is in the public interest of South Dakota to not be one-hundred percent clear on exactly who could become the owner of over hundreds of miles of South Dakota land?**

A: No, Summit should have to reveal all of its owners at each level and all of those owners and so on until there is no mystery as to who is behind this newly formed deal company.

**Q: Do you think it is in the public interest of South Dakota to not be one-hundred percent clear on exactly who will be operating and responsible for hundreds of miles of hazardous pipeline underneath and through South Dakota land?**

A: No.

**Q: Do you think that type of uncertainty and lack of control over a major piece of infrastructure crossing South Dakota is in the public interest?**

A: No, certainly not, in fact, just the opposite.

**Q: Does it makes sense to you that PUC approval of the Application would lead to a perpetual Easement affecting you and your land?**

A: I am unaware of any data proving there is a perpetual supply of carbon dioxide and the irony is we are supposed to produce less carbon dioxide and curb those activities more each year so one of the purposes of this project renders it by definition very limited in time and not something that a permanent easement should be available. Nowhere in Summit's application does it even attempt to argue let alone prove there is a perpetual necessity for this hazardous pipeline or to transport CO<sub>2</sub> to unproven underground storage in North Dakota. My understanding of energy infrastructure like wind towers is they have a decommission plan and actually take the towers down when they become obsolete or no longer needed. Nothing manmade lasts forever. My land however will, and I want my family or future South Dakota families to have that land as undisturbed as possible and it is not in my interest or the public interest of South Dakota to be forced to give up perpetual and permanent rights in the land for this specific kind of pipeline project. It is also not prudent to authorize a forever interference on my property so Summit can chase twelve (12) years of tax credits at over \$1,500,000,000.00 per year.

**Q: Do you have any other concerns about the Easement language that you can think of that is important for the PUC to know at this time?**

A: Generally such unilateral restrictions and limitations on my rights are not conducive to the protection of property rights or my economic interest. I reserve the right to

discuss any additional concerns that I think of at the time of live testimony during the Hearing.

**Q: Based upon what you have shared with the Commission above regarding Summit's proposed Easement terms and agreement, do you believe those to be reasonable or just, under the circumstances of the pipeline's impact upon you and your land?**

A: No, I do not believe those terms to be reasonable or just for the reasons that we discussed previously.

**Q: As the owner of the land in question and as the person who knows it better than anyone else, do you believe that Summit offered you just, or fair, compensation for all of what they proposed to take from you so that their hazardous pipeline could be located across your property?**

A: No, I do not. Not at any time has Summit, in my opinion, made a fair or just offer for all the potential impacts and effects and the rights that I'm giving up, and what we will be prevented from doing in the future and how their pipeline would impact my property forever and ever.

**Q: Has Summit ever contacted you and specifically asked you if you thought their proposed location of their proposed pipeline across your land was in your best interest?**

A: No, they have not.

**Q: Has Summit ever contacted you and specifically asked you if you thought their proposed location of their proposed pipeline across your land was in the public interest of the State of South Dakota or for public use?**

A: No, they have not.

**Q: Are you familiar with the Fifth Amendment to the U.S. Constitution and the Takings Clause and the corollary in the South Dakota Constitution?**

A: Yes, I am.

**Q: What is your understanding as those relate to taking of an American citizens property?**

A: My understanding is that, according to the United States Constitution and South Dakota's Constitution, that if the government is going to take land for public use, then in that case, or by taking for public use, it can only occur if the private landowner is compensated justly, or fairly.

**Q: What is your understanding of the PUC's framework for decision making relative to this proposed hazardous pipeline?**

A: **Attachment No. 2** includes four (4) main elements of proof that Summit has the sole burden to prove as summarized here: a) that Summit will comply with all applicable laws and rules; b) that no aspect of Summit's proposed hazardous pipeline will pose a threat of serious injury to: the environment, or to the social condition of current inhabitants or expected inhabitants in the siting area, or to the economic condition of current inhabitants or expected inhabitants in the siting area; c) that no aspect of Summit's proposed hazardous pipeline will substantially impair the health, safety, or welfare of the inhabitants; and d) that no aspect of Summit's proposed hazardous pipeline will unduly interfere with the orderly development of the region – with special consideration given to the views and positions of the governing bodies of affected local units of government.

**Q: What is your testimony regarding whether or not Summit will comply with all applicable laws and rules?**

A: That is impossible for the PUC to know and therefore it can't find in Summit's favor on that element. This type of analysis can only be based on what Summit claims it will do and given they have already admitted to failing to follow the law regarding their failure to timely and sufficiently notify all required persons affected by their Application and proposed route, the evidence available weighs against this element being able to be satisfied. Further, South Dakota counties have passed moratoria, ordinances, and regulations related to hazardous pipeline setbacks and other issues and Summit has not yet committed to following those applicable laws and rules and rather has stated they will not follow them or has sued to get out of following so rules and regulations. Until Summit dismisses all these lawsuits against the various



counties and affirmatively agrees to abide by any such setbacks and other ordinances, the PUC must deny their Application for failure to meet their burden of proof as to this element.

**Q: Do you believe any aspect of Summit’s proposed hazardous pipeline will pose a threat of serious injury to the environment?**

A: Yes, I do. There are many aspects of the proposed hazardous pipeline that pose threat of serious injury to the environment. I adopt and incorporate here all such concerns of all other witnesses. There are many such environmental concerns and I also adopt and share those as incorporated here and found in Attachment No. 5, It’s Time to End Carbon Capture of Climate Policy; Attachment No. 6. The facts, opinions, and arguments referenced here by no means include all such threats posed but highlight some of the many.

**Q: Do you believe any aspect of Summit’s proposed hazardous pipeline will pose a threat of serious injury to the social condition of current inhabitants or expected inhabitants in the siting area, if yes, why?**

A: Yes. The proposed Summit pipeline will pose a threat of serious injury to current future and social conditions, for the following reasons.

The proposed project’s finances and commercial foundation are dependent for ongoing commercial viability on the federal 26 U.S.C. § 45Q carbon capture tax credit program, which I will refer to as the 45Q Program. This dependency creates a risk to South Dakota’s social conditions. The purpose of the 45Q program is to reduce carbon emissions as a means to mitigate climate change. It was originally established by Congress in 2008 with a maximum tax credit benefit of \$20 per metric ton of carbon captured and sequestered. In 2018, Congress increased this value to \$50 per metric ton. In 2022, Congress further increased the value to up to \$85 per metric ton as part of the Inflation Reduction Act. The 45Q Program tax credits are available for the first twelve years of a capture facility’s operation, but the program has no limit on the total amount of tax credit claims by taxpayers or the tons of carbon dioxide sequestered. Thus, the 45Q program does not limit the

number of capture, transportation, and sequestration projects it may support. Further, these tax credits are essentially transferrable and the Inflation Reduction Act allows certain entities to claim them as a cash benefit paid by the U.S. Treasury, in certain circumstances converting this tax credit into a federal grant.

The Summit Project was proposed in 2021 when the 45Q tax credit for sequestered carbon stood at \$50 per metric ton. Then, in 2022, the tax credit was increased to \$85 per metric ton. At a tax credit rate of \$85 per metric ton, and given the Summit pipeline system's ultimate capacity of 15 million metric tons per year, the emitters of carbon dioxide that are contracted with Summit could receive up to \$1.275 billion in federal tax credits per year, or \$15.3 billion over twelve years. This federal tax benefit would provide essentially all of the revenue needed to pay for construction of the proposed project as well as Summit's ongoing transportation and sequestration services. That is, the proposed Summit Project is financially entirely dependent on the ongoing existence of the federal 45Q Program.

The Summit Project does not appear to have any other current government subsidies or market-based support sufficient to support its financial viability. Summit claims that its contracted ethanol plants may benefit from the low carbon fuel credits currently available in California, as well as possible similar programs that may be established in other states. However, the value of these low carbon credits is highly variable and dependent on supply of and demand for such credits. The more entities that lower their carbon score, the less valuable the credits become. The carbon dioxide emitters that are connected to the Summit system may be able to benefit from low carbon fuel credits to some degree, but by themselves such credits would likely not support the construction and ongoing operation of the proposed project. Low carbon fuel credits existed before Congress increased the value of the 45Q tax credits to levels that made the proposed project financially viable, indicating that the low carbon fuel credits by themselves were not sufficient to support development of regional carbon capture pipelines systems. Thus, low

carbon fuel standard programs, now and in the future, are unlikely to provide sufficient financial benefits to justify the construction and ongoing operation of Summit's proposed pipelines.

Another possible commercial foundation for the Summit system is use of captured carbon dioxide in enhanced oil recovery operations. For example, carbon dioxide has been captured at the Arkalon and Bonanza ethanol plants in Kansas, since 2009 and 2013, respectively and transported to enhanced oil recovery operations 15 miles to Oklahoma and 90 miles to Texas, respectively. However, these existing ethanol carbon capture and enhanced oil recovery projects have always been dependent on the 45Q Program and are much smaller scale projects. Moreover, enhanced oil using supercritical carbon dioxide has existed since the 1970s, but has not generated sufficient revenue by itself to support the cost of constructing carbon capture facilities and transporting anthropogenic carbon dioxide long distances to enhanced oil recovery operations. If enhanced oil recovery had been sufficiently profitable without federal subsidies to support anthropogenic carbon capture, then the carbon capture industry would have grown without the need for federal tax credits. Therefore, it is very unlikely that use of the captured carbon dioxide for enhanced oil recovery would by itself support the costs of constructing and operating the proposed project.

In addition, there is a commercial market for limited amounts of carbon dioxide for use in industrial and retail settings, but the total demand of such commercial markets is very small relative to the capacity of the Summit Project, and existing demand is met via existing carbon dioxide production facilities. Commercial demand for carbon dioxide is simply too small to support infrastructure on the scale of the proposed project.

Neither the low carbon fuel credits, enhanced oil recovery, nor other existing commercial uses of carbon dioxide are likely to provide sufficient revenue to support development of carbon capture systems on a scale of the Summit

Project. Thus, the Summit Project's current and future financial viability is entirely dependent on the continuation of the 45Q Program.

This dependency creates substantial long-term risks to the financial security of South Dakota's ethanol and corn industries. First, unlike other federal agricultural programs that subsidize South Dakota's otherwise market-based agricultural economy, the market for captured carbon dioxide is based for all practical purposes entirely based on the 45Q Program. The 45Q Program does not subsidize an existing market-based industry; it creates an entirely new industry, namely the carbon dioxide sequestration industry, which collects a pollutant and disposes of it. The 45Q Program converts a liability (carbon dioxide) into an asset. Absent the 45Q program, the carbon dioxide sequestration industry would not exist to the extent necessary to support construction and operation of Summit Project. While it is true that construction of the Summit Project would create a new revenue stream in the form of tax credits for ethanol plant investors, it is also true that this revenue stream would be entirely dependent on the continued existence of the 45Q Program, that in turn would depend on the financial health of the federal government and ongoing political support for the 45Q Program. As federal budget deficits increase, political pressure to limit federal expenditures will likely also increase, putting at risk funding programs deemed unnecessary or politically vulnerable, such as the 45Q Program.

Summit's application states that, "[t]he Heartland Greenway System will facilitate significant CO<sub>2</sub> emissions reductions that will allow industry and governments in the project footprint to meet their carbon reduction goals." Summit, however, does not identify any provision in South Dakota state law or local ordinances that mention or even recognize the existence of climate change, much less impose carbon reduction goals. Thus, the policy purpose for the Summit Project, which is climate change mitigation, is not in accordance with South Dakota law and does not advance state policy objectives. South Dakota's governments do not agree that climate change exists and have not adopted policies to mitigate it. Yet, Summit seeks South

Dakota government approval for its project, the sole purpose of which is to mitigate climate change. Approval of the Summit Project advances a policy objective with which the State of South Dakota does not agree.

Moreover, there are no federal mandates that South Dakota must approve the Summit Project or any other carbon capture climate change mitigation project. Federal law does not require South Dakota to support carbon capture and storage. It is possible that future federal air quality regulations may make carbon capture one option for addressing carbon dioxide emissions, but the promulgation of such possible rule is at best years in the future, subject to litigation, subject to rejection by future federal administrations aligned with South Dakota's position on climate change policy, and therefore entirely speculative. The Commission cannot approve the proposed project based on a claim that federal mandates require approval of the proposed project, because such mandates do not currently exist and may never exist. While the federal government currently has climate change policy objectives, it has not required development of carbon capture projects, but rather created tax credits that encourage but do not mandate such development. Participation in the 45Q Program is voluntary. Therefore, the federal government has left decisions on the merits of carbon capture projects to the judgment of state governments, which are free to support or reject any particular project or the carbon capture industry as a whole.

Given the State of South Dakota's rejection of the need for climate change mitigation and its freedom to accept or reject carbon capture development, a Commission approval of Summit's proposed project would likely be seen by many South Dakotans as an extreme example of hypocritical government action. As such, Commission approval of the Summit Project would result in substantial reputational damage to and a loss of citizen trust and faith in the Commission and South Dakota's state government in general. Since faith in government institutions is part of the bedrock of American society, such damage would constitute "a threat of serious

injury . . . to the social . . . condition of inhabitants or expected inhabitants in the siting area,” as well as within all of South Dakota.

The Summit Project also creates a threat of serious injury to the social conditions in South Dakota due to excessive state and local dependency on a politically unstable federal funding program. The threat of anthropogenic climate change is the subject of considerable political controversy within the United States and South Dakota. The future commercial viability of the 45Q Program and the Summit Project is entirely dependent on ongoing federal political support for climate change mitigation in general and the 45Q Program in particular. A change in federal leadership that agrees with the State of South Dakota’s position on climate change could result in future congressional and administrative actions to reduce or even eliminate the 45Q Program. Further, the ongoing viability of the 45Q Program is dependent on the financial health of the federal government, including the fiscal impacts of the ever-growing federal budget deficit. Given that the 45Q Program includes no cap on federal financial outlays, it will increase the federal deficit potentially by tens or even hundreds of billions of dollars annually, depending on how fast it grows. In the event of a severe economic downturn or a federal government default on its loans, Congress could reduce or entirely eliminate the 45Q Program, prior statutory commitments notwithstanding. Thus, the commercial foundation for the Summit Project is built on a political foundation that is too unstable to justify making South Dakota’s corn and ethanol industries dependent on it.

In the event that the 45Q Program falls out of favor, the commercial foundation for the Summit Project could disappear quickly, causing it to precipitously cease operation, in which case South Dakota’s corn and ethanol industries would face a potentially existential financial shock that could significantly disrupt South Dakota’s agricultural industries, many rural communities, and the state’s overall economic wellbeing. Further, landowners would be saddled with paying for the cost of abandoned pipeline mitigation. It is one thing for South Dakota to accept federal

subsidies for production of agricultural commodities for which there will always be demand. It is an entirely different thing to base a substantial part of South Dakota's farm economy on an entirely new federally created non-market-based industry that captures a waste product for which there will never be significant commercial demand. There is a risk to tying South Dakota's market-based agricultural economy to politically and fiscally unstable federal largess. Construction of the Summit Project would make its contracted ethanol producers and the farmers that provide them with corn overly dependent on a politically unstable federally created artificial market for carbon dioxide. The demise of this market, for either political or fiscal reasons, would severely damage the State's agricultural economy and disrupt rural communities throughout South Dakota. Such community disruption would constitute "a threat of serious injury . . . to the social . . . condition of inhabitants or expected inhabitants in the siting area," as well as within all of South Dakota.

While the promised financial benefits of the Summit Project appear to be tempting, their acceptance would come at a cost and create a threat of serious injury to the political and social fabric of the State of South Dakota.

Further, I adopt and incorporate the opinions found in **Attachment No. 7** and those found in **Attachment No. 8**.

**Q: Do you believe any aspect of Summit's proposed hazardous pipeline will pose a threat of serious injury to the economic condition of current inhabitants or expected inhabitants in the siting area, if yes why?**

A: In addition to those already discussed, based upon my experience and all the information obtained throughout this process and simple common sense the answer is yes – this hazardous pipeline does pose a threat of serious injury in this way. There are many such economic concerns. If the PUC approves this Application I will likely not invest in and develop my property as I would have without the effects of such a hazardous pipeline. The fact I can't purchase insurance to cover me and my property against certain claims and allegations and the fact whether or not I am alleged to be liable for or to have contributed to a leak or rupture event rests in the

hands of Summit's insurance defense attorneys should they seek to spread their risk of liability on to me, it is likely I and others will not use the easement area and surrounding areas to their highest and best use given the less activity in that area means the less likely we could be blamed for something relative to the pipeline or supporting equipment.

I share the concerns of Marvin Lugert and Loren Staroba about future fertility of the land and compaction and yield loss and loss in productivity not just in years one through three post-construction, but forever. As discussed by Mr. Lugert and Mr. Staroba, they have experienced continual yield loss for 20 to 45 years post-pipeline construction. All the claims and glossy brochures about how great the unknown contractors and workers who have the responsibility of screening the topsoil and other important aspects is just talk. I adopt and share those as incorporated here and found in **Attachment No. 9**, related to soil compaction and reduced yields – and that was a study funded by a major pipeline player. I also incorporate the conclusions and findings in **Attachment No. 10**.

The facts, opinions, and arguments referenced herein by no means include all such economic threats posed but highlight some of the many. The overall chill on development, expansion and freedom to do as you choose on and with your land are all significant economic detriments that occur only if the PUC approves this Application.

**Q: Do you believe any aspect of Summit's proposed hazardous pipeline will substantially impair the health, the safety, or the welfare of the inhabitants, if yes why?**

A: In addition to what we have already discussed, yes, this proposed hazardous pipeline would substantially impair the health and the safety and welfare of the inhabitants. There are many such substantial impairment concerns and I adopt and share those as incorporated here and found in **Attachment No. 11**. The facts, opinions, and arguments referenced here by no means include all such threats posed but highlight



some of the many. I further adopt the testimony of Dr. Schettler and Carolyn Raffensperger.

**Q: Do you believe any aspect of Summit’s proposed hazardous pipeline will unduly interfere with the orderly development of the region, if yes, why?**

A: Yes, I incorporate my answers above here. Adding a hazardous and dangerous pipeline to the region and taking people’s rights away while telling them what they can and can’t do is a direct undue interference with the orderly development of each affected parcel, the surrounding parcels, and thereby the region. The existence of this particular hazardous CO2 pipeline carries a stigma and perception that it is bad and dangerous. Such stigmas mean it is more likely that people will not want to purchase land with such a hazardous CO2 pipeline or would seek a discount to do so. I am aware of property that had interest for purchase but did not get bids once it was discovered a CO2 company sought to locate a hazardous pipeline on the land.

**Q: What is your understanding regarding the views and positions of the governing bodies of affected local units of government in and around the proposed siting and corridor area?**

A: I am aware of many local boards who continue to exercise their rightful local power to enact intelligent land use restrictions in ordinances and through setback requirements. Many counties are not in favor of this project. Others have enacted Moratoria pending further advances in federal law and guidance on the subject and pending further study. It would be irresponsible for the PUC to approve this Application until all counties have weighed in and complete their local ordinances related to CO2 pipelines. Instead of following local laws and ordinances we the people have asked out local boards and commissions to put in place, Summit has sued our counties – can you believe that? They have sued are counties who are simply trying to exercise local control within their rights to enact intelligent land use regulations and implement reasonable setbacks for development purposes. Unbelievable and this same company, Summit, who is suing about 250 South Dakotan, so far, in condemnation BEFORE the PUC hearing has even started let

alone before any Application is granted. That should tell the PUC all they need to know about this company and how they plan to treat South Dakotans in the future.

**Q: Have you been active in your objectives to protect landowner rights and their constitutional rights and if so, why?**

A: I have. I participated actively in the past legislative session. It was then and still is mind-boggling to me that people who call themselves “conservative” and claim to identify and espouse “republican” ideals are supporting this project? Since when is it conservative to support the corporate welfare that is the 45Q and 45Z tax credits these companies chase? Since when is it conservative to support the wealth and property transfer from individual landowners to corporations? Since when is it conservative to support eminent domain for private gain at our expense? Since when is it conservative to support destruction of our constitutional rights to own land and use and work that land as we see fit? Since when is it conservative to pick winners and losers? Summit is asking the PUC to pick it, one company and about four ethanol companies over every affected landowner in South Dakota? When I was in business you had to make it on your own. Since when is it conservative to support the heavy hand of big government manipulated to ensure billions in profits for one company? This is not the South Dakota my parents left me – it is not recognizable anymore and that is one reason I have to stand with my fellow landowners and citizens to oppose something that is so wrong.

**Q: What is it that you are requesting the PUC Commissioners do in regard to Summit’s Application for its proposed hazardous pipeline across South Dakota?**

A: I am respectfully and humbly requesting that the Commissioners think far beyond a temporary job spike that this project may bring to a few counties and beyond the relatively small amount of taxes this proposed foreign pipeline would possibly generate. Instead think about the perpetual and forever impacts of this pipeline as it would have on the landowners specifically, first and foremost, but also thereby upon the entire state of South Dakota. This project is not in the best interest of the

state of South Dakota. When you look at all the negative effects that will be in place forever versus limited benefits, if any, this proposed hazardous pipeline should not be approved. There are no net benefits of this project. It is not right to subject hundreds of miles and land and countless numbers of people and business to this hazardous pipeline all for the sole benefit of Summit's owners and possibly four or so Ethanol companies in South Dakota. This is not for the greater good, it is not for public use, Summit is not a common carrier, and this Application is a bad idea the must be denied. I also am against corporate welfare and the billions of dollars in our taxpayer dollars that will be allocated to this project if it is built.

**Q: Does Attachment No. 12 here contain additional information to support your concerns that if the PUC approves this Application, you will be unable to obtain liability insurance to that would assist in providing you a defense against claims of liability should CO2 from the proposed pipeline to be located on your land cause injury or damage to any person or thing that you wish to be part of your testimony that you can discuss in more detail as needed at the Hearing?**

A: Yes.

**Q: Do you believe the PUC should approve Summit's Application to locate its proposed hazardous CO2 pipeline, on, under, across, over, and through the land in question?**

A: No. they should not for all of the reasons expressed herein. However, if the PUC was to approve the Application, then it should force Summit to move the route along property boundaries and away from structures and any sensitive land features. Summit hasn't constructed an inch of this pipeline and they can and should re-route if approved.

**Q: Although you have made it clear that you believe there is no appropriate location on or near your property for a hazardous high pressure CO2 Pipeline, if the PUC asked you to provide a potential alternative location or route on your property, please describe where that would be, if any such potential location exists.**

A: There is no place on my property or anyone else that a hazardous CO2 pipeline should be approved by the PUC.

**Q: Are all of your statements in your testimony provided above true and accurate as of the date you signed this document to the best of your knowledge?**

A: Yes, they are.

**Q: What else would like the PUC Commissioners to consider in their review of Summit's Application?**

A: There are many reasons that the PUC should deny the permit for Summit's hazardous pipeline, see the facts addressed in **Attachment No. 14**, environmental, safety, etc. Additionally, the honesty and integrity of the applicant should be a vital part of the process. Recently, the PUC denied a potential grain buyers license application because the applicant was dishonest in his responses to commission questions. Commissioner Nelson spoke for all the commissioners in denying the license saying, "if an applicant is found to have lied or misled, then that is grounds for denying a permit." Highlighted portions of **Attachment No. 15** will show numerous instances of Summit officials' dishonesty. Pages 5 and 6 illustrate Summit chief officer, Jim Pirolli, lying to the media about potential use of eminent domain and whether an easement once given can be returned to the landowner. Because we are confident the PUC will stand by Commissioner Nelson's prior statements, the PUC has no option but to deny this application based on the foregoing false and misleading statements of Summit alone. **Attachment No. 16**, Summit's own promotional handout has numerous highlighted false statements. **Attachment No. 17, 18, and 19** will demonstrate Summit's attempts to compromise elected bodies and landowners through secrecy, intimidation, and dark money. Wouldn't PUC Commissioners want to know who the entity that is applying for a permit is and where the financial backing is coming from before they approve of them doing business in our state? Transparency should be a priority. Why does Summit refuse to release their investors to the public. That refusal should be a red flag for any permit applicant. **Attachment No. 20** will also demonstrate why the

PUC should reject the permit. Ten percent ownership from a nefarious South Korean firm convicted of fraud to our defense department, monetary ties to adversaries like China, and Saudi Arabia, and buying influence with public officials. Summit Carbon Solutions fails all areas needed for a permit approval: honesty, transparency, and fair treatment. The PUC should reject the permit application!

**Q: Does Attachment No. 21 here contain other documents that further illustrate your concerns about Summit's Application and that you wish to be part of your testimony that you can discuss in more detail as needed at the Hearing?**

A: Yes, more evidence of land destroyed by pipeline construction and installation as well as unkept pipeline promises after receiving regulatory approvals that were largely based on such false promises and relied upon by the regulators.

**Q: Have you fully expressed each and every opinion, concern, or fact you would like the PUC Commissioners to consider in their review of Summit's Application?**

A: I have shared that which I can think of as of the date I signed this document below, but other things may come to me, or my memory may be refreshed and I will add and address those things at the time of the Hearing and address any additional items at that time as is necessary. Additionally, I have not had an adequate amount of time to receive and review all of Summit's answers to our discovery and the discovery of others, so it was impossible to competently and completely react to that in my testimony here and I reserve the right to also address anything related to discovery that has not yet concluded as of the date I signed this document below. Lastly, certain documents requested have not yet been produced by Summit and therefore I may have additional thoughts on those I will also share at the hearing as needed.

**Q: Thank you, I have no further questions at this time and reserve the right to ask you additional questions at time of the Hearing in this matter.**

**Dated June 15, 2023**

*/s/ Ed Fischbach*

Ed Fischbach

*/s/ Joell Fischbach*

Joell Fischbach

# **Attachment No. 1**



July 24, 2021

Via 1<sup>st</sup> Class Mail

Joe H. Schricker & Joann Schricker Living Trust  
Edwin P. Fischbach, Joell R. Fischbach  
38928 152nd Street  
Mellette, SD 57461

**RE: CO<sub>2</sub> Capture & Sequestration Pipeline Project**

Dear Landowner:

The state of South Dakota has been a national leader in renewable energy, and is committed to the development of affordable, reliable, and sustainable fuels while seeking ways to lower greenhouse gas emissions. Summit Carbon Solutions (Summit) ([www.summitcarbonsolutions.com](http://www.summitcarbonsolutions.com)), an agricultural business investment company, has announced a pipeline project to take capture carbon dioxide being emitted by ethanol and biorefiners in South Dakota and elsewhere and permanently sequestering it underground. This is an example of the agriculture community continuously seeking new technologies and solutions to yield a zero-carbon footprint that provides a balance of the environmental stewardship and enhanced crop production.

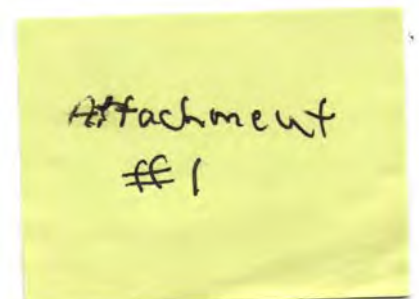
The proposed pipeline route for the Project is depicted on the enclosed map, and public records indicate that you are the record taxpayer of all or certain portions of such property. Please be advised that Summit and its consultant, TRC Companies Inc., will be performing initial Project activities in the coming weeks and are currently seeking your permission to conduct field evaluation activities on your property, including route analysis, civil, environmental, geotechnical/soil testing, and archeological/cultural resource surveys to assess the viability of the pipeline alignment (Surveys).

Prior to conducting the Surveys, we would like to arrange a meeting with you to address your questions and concerns regarding the Project. Understanding that everyone has a different perspective on in-person meetings amidst the COVID-19 pandemic, we are amenable to your preference to meet either in-person, or through telephone conversations, email, mail, or video conferencing such as Teams, Facetime or Zoom. Should you agree to allow the above-mentioned Surveys on your property prior to our meeting, you may simply send an email confirmation of your intent to [infoSD@summitcarbon.com](mailto:infoSD@summitcarbon.com), or you may sign the attached Survey Access form, include your contact information, and take a picture of the form and text it to (605) 553-9255 or email it to [infoSD@summitcarbon.com](mailto:infoSD@summitcarbon.com).

Thank you in advance for your support of this Project and Summit's efforts to create sustainable energy solutions for the citizens of South Dakota. If you have any immediate questions or concerns prior to our meeting, you may contact Lee Ferguson toll free at (800) 948-1722 or at the phone number and e-mail address set forth above.

*Eric Schovanec*  
Erik Schovanec, Project Director

Enclosure(s): Project Map, Survey Access Form  
Tract # SD-SP-0493.000, SD-SP-0494.000, SD-SP-0506.000





<b>State</b>	<b>County</b>	<b>Tract #</b>
South Dakota	Spink	SD-SP-0493.000, SD-SP-0494.000, SD-SP-0506.000



**SURVEY ACCESS FORM**

The undersigned hereby grants to CO<sub>2</sub> Capture & Sequestration Pipeline Project its agents, contractors, and their employees, for permission to enter the premises of the undersigned for the purpose of conducting pipeline survey(s), including, but not limited to, civil, environmental, geotechnical/soil borings and archeological/cultural resource surveys as may be required by local, state and federal agencies for the construction of a pipeline, subject to the condition that compensation shall be paid for damage to property and/or crops caused by said survey activities.

<b>Owners Name</b>	Joe H. Schricker & Joann Schricker Living Trust, Edwin P. Fischbach, Joell R. Fischbach
--------------------	---

<b>Address</b> <input type="checkbox"/> Primary Address <input type="checkbox"/> Winter or Alternative Address	
--	--

<b>Phone No.</b>	<b>Cell:</b>	<b>Home:</b>	<b>Business:</b>
<b>E-mail</b>			

Owner's Signature \_\_\_\_\_ Date: \_\_\_\_\_

Owner's Verbal Permission \_\_\_\_\_ Date: \_\_\_\_\_

<b>Tenants Name</b>	
---------------------	--

<b>Address</b>	
----------------	--

<b>Phone No.</b>	<b>Cell:</b>	<b>Home:</b>	<b>Business:</b>
<b>E-mail</b>			

Tenant's Signature \_\_\_\_\_ Date: \_\_\_\_\_

Tenant's Verbal Signature \_\_\_\_\_ Date: \_\_\_\_\_

**LANDOWNER / TENANT COMMENTS & RESTRICTIONS:**

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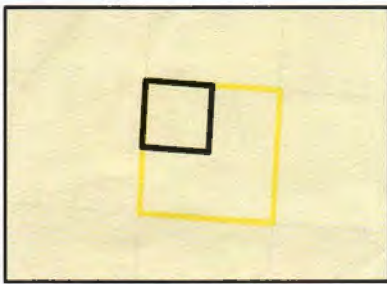


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<b>Land Agent</b>	
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# PRELIMINARY EXHIBIT "A" PROPOSED ROUTE

SEC 29 T120N R63W  
SPINK COUNTY, SOUTH DAKOTA



**SEC. 29 T120N R63W  
VICINITY MAP  
N.T.S.**



PROPOSED CENTERLINE = 3291.07 FT

### Legend

- PROPOSED CENTERLINE
- PARCEL BOUNDARY LIMITS
- ADJACENT PROPERTIES

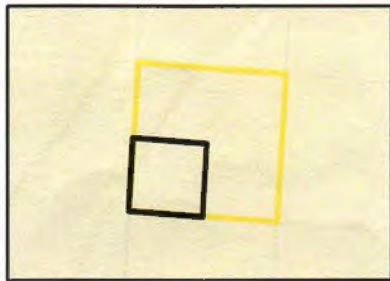
#### NOTES:

1. THE BASELINE IS APPROXIMATELY SHOWN ON EXHIBIT.
2. SKETCH WILL BE UPDATED TO A PLAT PREPARED BY A PROFESSIONAL SURVEYOR AND WILL BE FILED OF RECORD.

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

### PROPOSED PIPELINE ROUTE

DRAWN BY: TRC		SUMMIT CARBON SOLUTIONS MIDWEST CARBON EXPRESS JOE H & JOANN SCHRICKER LIVING TRUST TAX ID: 005248 TRACT NUMBER: SD-SP-0493.000
CHECKED BY: TRC		
MAP DATE: 7/22/2021		
SCALE: 1 inch = 650'		
REV NO.	DATE	DESCRIPTION
A	7/22/2021	PRELIMINARY ROUTE
DRAWING NO. C-MCE-SD-SP-0493.000		PROJECT NO. 450959
		SHEET NO. 01 of 01



SEC. 20 T120N R63W  
VICINITY MAP  
N.T.S.

# PRELIMINARY EXHIBIT "A" PROPOSED ROUTE

/TWN/RNG/MER: SEC 20 TWN 120 RNG 63 SW 1/4 20-  
120-63  
SPIK COUNTY, SOUTH DAKOTA



PROPOSED CENTERLINE = 1066.58 FT

### Legend

- PROPOSED CENTERLINE
- PARCEL BOUNDARY LIMITS
- ADJACENT PROPERTIES

#### NOTES:

1. THE BASELINE IS APPROXIMATELY SHOWN ON EXHIBIT.
2. SKETCH WILL BE UPDATED TO A PLAT PREPARED BY A PROFESSIONAL SURVEYOR AND WILL BE FILED OF RECORD.

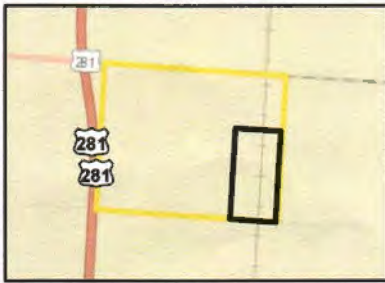
SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

### PROPOSED PIPELINE ROUTE

DRAWN BY: TRC		<b>SUMMIT CARBON SOLUTIONS MIDWEST CARBON EXPRESS FISCHBACH, EDWIN P</b>  TAX ID: 005158 TRACT NUMBER: SD-SP-0494.000
CHECKED BY: TRC		
MAP DATE: 7/22/2021		
SCALE: 1 inch = 200'		
REV NO.	DATE	DESCRIPTION
A	7/22/2021	PRELIMINARY ROUTE
DRAWING NO. C-MCE-SD-SP-0494.000		PROJECT NO. 450959
		SHEET NO. 01 of 01

# PRELIMINARY EXHIBIT "A" PROPOSED ROUTE

/TWN/RNG/MER: SEC 02 TWN 120 RNG 64 E 1/2 OF  
SE 1/4 2-120-64  
SPINK COUNTY, SOUTH DAKOTA



SEC. 02 T120N R64W  
VICINITY MAP  
N.T.S.



PROPOSED CENTERLINE = 1793.95 FT

## Legend

- PROPOSED CENTERLINE
- PARCEL BOUNDARY LIMITS
- ADJACENT PROPERTIES

### NOTES:

1. THE BASELINE IS APPROXIMATELY SHOWN ON EXHIBIT.
2. SKETCH WILL BE UPDATED TO A PLAT PREPARED BY A PROFESSIONAL SURVEYOR AND WILL BE FILED OF RECORD.

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

16350 Park Ten Place  
Houston, TX 77084  
(281) 616-0100

SUMMIT CARBON  
SOLUTIONS 44

## PROPOSED PIPELINE ROUTE

DRAWN BY: TRC		SUMMIT CARBON SOLUTIONS MIDWEST CARBON EXPRESS FISCHBACH, EDWIN P  TAX ID: 004955 TRACT NUMBER: SD-SP-0506.000
CHECKED BY: TRC		
MAP DATE: 7/22/2021		
SCALE: 1 inch = 300'		
REV NO.	DATE	DESCRIPTION
A	7/22/2021	PRELIMINARY ROUTE
DRAWING NO. C-MCE-SD-SP-0506.000		PROJECT NO. 450959
		SHEET NO. 01 of 01

# **Attachment No. 2**

# South Dakota Public Utilities Commission Information Guide to Siting Pipelines

This guide is intended to offer a simple overview of the Public Utilities Commission’s process in making a decision to approve or deny the construction of pipeline facilities specific to South Dakota Codified Laws Chapter 49-41B ([www.sdlegislature.gov/Statutes/Codified\\_Laws](http://www.sdlegislature.gov/Statutes/Codified_Laws)) and South Dakota Administrative Rules Chapter 20:10:22 ([www.sdlegislature.gov/Rules/RulesList](http://www.sdlegislature.gov/Rules/RulesList)). This guide is informational and does not address all situations, variations and exceptions in the pipeline siting process and proceedings of the PUC.

## PUC Authority

The South Dakota Legislature gave the PUC authority to issue permits for certain pipelines. South Dakota pipelines within the commission’s siting jurisdiction include those designed to transport coal, gas, liquid hydrocarbons, liquid hydrocarbon products, or carbon dioxide, for example. In considering applications, the commission’s primary duty is to ensure the location, construction and operation of the pipeline will produce minimal adverse effects on the environment and the citizens. The commission determines these factors based on definitions, standards and references specified in South Dakota Codified Laws and Administrative Rules. In pipeline siting cases, the commission has one year from the date of application to make a decision.

The commission strives to issue a reasoned decision and conditions, where appropriate, that uphold the law and discourage a potentially expensive and lengthy appeal process.

In rendering its decision, the commission may grant the permit, deny the permit, or grant the permit with terms, conditions or modifications of the construction, operation or maintenance as the commission finds appropriate and legally within its jurisdiction. The commission does not have authority to change the route or location of a project. The decision of the commission can be appealed to the circuit court and, ultimately, to the South Dakota Supreme Court.

The PUC is not involved in the easement acquisition process that occurs between applicants and landowners. Likewise, the PUC does not have a role in the eminent domain process, which is handled in the circuit court system. Landowners with concerns about these issues should seek advice from their personal attorney.

## Applicant Responsibility

The applicant that seeks the PUC’s approval must show its proposed project:

- will comply with all applicable laws and rules;
- will not pose a threat of serious injury to the environment nor to the social or economic condition of inhabitants or expected inhabitants in the siting area;
- will not substantially impair the health, safety or welfare of the inhabitants; and
- will not unduly interfere with the orderly development of the region with due consideration having been given to the views of the governing bodies of affected local units of government.

## PUC Staff Role

PUC staff members assigned to work on a pipeline siting case will typically include one attorney and multiple analysts. Staff attorneys have educational and practical experience in administrative law, trial procedure and business management principles. Staff analysts have expertise in engineering, research and economics. Some of the work the staff does involves reviewing data and evidence submitted by the applicant and intervenors, requesting and analyzing opinions from experts, and questioning the parties. The staff considers this information relative to state laws and rules and presents recommendations to the Public Utilities Commissioners.

## Public Involvement

South Dakotans have a variety of ways to stay informed and involved. Read more on back.

**South Dakota Public Utilities Commission**  
500 E. Capitol Ave., Pierre, SD 57501  
605-773-3201; 1-800-332-1782  
[www.puc.sd.gov](http://www.puc.sd.gov); [puc@state.sd.us](mailto:puc@state.sd.us)

09/2022

**Review the electronic docket.** A docket is the continually updated collection of documents filed with the commission for a particular case. Dockets are accessible under the Commission Actions tab on the PUC website, [www.puc.sd.gov](http://www.puc.sd.gov). Dockets are labeled to correspond with their type and filing date. For example, the Navigator Heartland Greenway Carbon Dioxide Pipeline docket is HP22-002; HP for hydrocarbon and carbon dioxide pipeline, 22 for the year 2022 and 002 to indicate it was the second hydrocarbon and carbon dioxide pipeline docket filed with the commission in 2022.

**Attend a public input meeting.** The PUC will hold a public input meeting or meetings on a pipeline siting case, with 30 days notice, as physically close as practical to the proposed route. At the meeting, the applicant describes its project and the public may ask questions and offer comment. Commissioners and staff attend this public meeting.

**Submit comments.** Members of the public are encouraged to submit written comments about an active siting case to the PUC. These ***informal*** public comments are reviewed and considered by the PUC commissioners and staff. Comments should include the docket number or siting project name, commenter's full name, mailing address, e-mail address and phone number. These comments should be emailed to [puc@state.sd.us](mailto:puc@state.sd.us) or mailed or hand-delivered to PUC, 500 E. Capitol Ave., Pierre, SD 57501. Comments are posted in the "Comments" section of the docket within a reasonable time after having been received. The commenter's name, city and state will be posted along with their comment. Comments received from businesses, organizations or other commercial entities (on letterhead, for example) will include the full contact information for such.

Please follow these guidelines when submitting written comments to the PUC:

- For comments sent by email, the maximum file size is 10 MB. If you have questions, please contact South Dakota PUC staff at 605-773-3201 (Monday – Friday, 8 a.m. – 5 p.m. Central Time).
- For comments sent by U.S. mail or hand delivered, no more than twenty (20) 8.5" x 11" pages, including attachments and support materials, should be submitted with a comment. Sheets with printing on both sides are counted as two pages.
- A reference document, article or other attachment not written by the person

commenting should clearly identify the source of the content. The inclusion of any copyrighted material without accompanying proof of the commenter's explicit right to redistribute that material will result in the material being rejected.

- In instances where individual comments are deemed to be a duplicate or near duplicate copies of a mass message campaign, the PUC will post only a representative sample and list the name, city and state of the commenter.
- Comments containing threatening language or profanity will be rejected.
- Multimedia submissions such as audio and video files will not be accepted as written comments.
- Electronic links will not be accepted.

**Become an intervenor.** Individuals who wish to be ***formal*** parties in a siting case may apply to the commission for intervenor status. Intervention deadline is clearly indicated within the docket. Intervention is appropriate for people who intend to actively participate in the case through legal motions, discovery (requests for facts or documents), the written preparation and presentation of actual evidence, and in-person participation in a formal hearing. Intervenors are legally obligated to respond to discovery from other parties and to submit to cross-examination at a formal hearing. Individuals seeking only to follow the progress of a siting case or to offer comments for the PUC's consideration need not become intervenors.

**Communicate on record.** Verbal communication between a commissioner and a person with an interest in a matter before the commission that does not occur in a public forum or as part of the official record should be avoided. Those who communicate in writing with a commissioner about an open or imminent docket matter should understand that their comments will become part of the official record and subject to review by all parties and the public. Likewise, comments made at a PUC public proceeding or submitted to the commission relative to a docket matter become part of the record, open to review by all parties and the public. Because commissioners have a decision-making role in docket matters, any discussion with a commissioner about an open or imminent docket must take place in an open forum, such as a public meeting, with notice given to all parties.

# **Attachment No. 3**



Prepared By:  
Brett Koenecke  
May, Adam, Gerdes & Thompson LLP  
503 S. Pierre St. / PO Box 160  
Pierre, SD 57501  
605-224-8803

Return Document to:  
Summit Carbon Solutions LLC  
c/o TRC Solutions  
800 S 7<sup>th</sup> Avenue  
Sioux Falls, SD 57104

Tract No. SD-

### EASEMENT AGREEMENT

This easement agreement ("Agreement") is made as of the date of the last Landowner signature to the Agreement (the "Effective Date") by and between \_\_\_\_\_ whose mailing address is set forth below, (hereinafter referred to as "Landowner", whether one or more), and **Summit Carbon Solutions, LLC**, an Iowa limited liability company, whose mailing address is 2321 N Loop Drive, Suite 221, Ames, Iowa, 50010, and its successors and assigns (such entity and its successors and assigns are collectively referred to as the "Company"). For the consideration of TEN AND No/100 Dollars (\$10.00) and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. **Grant.** Landowner owns the real property described on Exhibit A, incorporated by reference herein, ("Landowner's Property") and hereby grants, sells and conveys unto Company, for use by Company and its agents, employees, designees, contractors, guests, invitees, successors and assigns, and all those acting by or on behalf of it, the following easements in, over, through, across, under, and along Landowner's Property in the approximate locations shown on Exhibit B, incorporated by reference herein, except as noted below:
  - a. **Pipeline Easement.** A free and unobstructed permanent, non-exclusive pipeline easement fifty feet (50') in width ("Pipeline Easement"), for the purposes of owning, accessing, surveying, establishing, laying, constructing, reconstructing, installing, realigning, modifying, replacing, improving, substituting, operating, inspecting, maintaining, repairing, patrolling, protecting, changing slopes of cuts and fills to ensure proper lateral and subjacent support for and drainage for, changing the size of, relocating and changing the route or routes of, abandoning in place and removing at will, in whole or in part, one pipeline not to exceed twenty-four inches (24") in nominal diameter for the transportation of carbon dioxide and its naturally occurring constituents and associated substances and any appurtenant facilities above or below ground, including aerial markers, power drops, telecommunications, cathodic protection, and such other equipment as is used or useful for the foregoing purposes, (collectively, the "Pipeline Facilities").
  - b. **Temporary Easement.** For the period beginning on the Effective Date and terminating on the Company's delivery to Landowner of written notice of termination, which Company shall deliver within a reasonable time after completion of construction on the Landowner's Property, a free and unobstructed non-exclusive temporary construction

easement (the "Temporary Construction Easement") for the purpose of accessing, surveying, establishing, laying, constructing, reconstructing, installing, realigning, modifying, replacing, improving, substituting, operating, inspecting, maintaining, repairing, patrolling, protecting, changing slopes of cuts and fills to ensure proper lateral and subjacent support for and drainage for, changing the size of, relocating and changing the route or routes of, abandoning in place and removing at will, in whole or in part the Pipeline Facilities in the Pipeline Easement.

- c. Access Easement. A free and unobstructed non-exclusive easement in, to, through, on, over, under, and across the Landowner's Property and over the property of Landowner adjacent to the Easements and lying between public or private roads and the Easements (the "Access Easement") for the purpose of ingress and egress to the Pipeline Easement and, while in effect, Temporary Construction Easement and for all purposes necessary and at all times convenient to exercise the rights granted to it by this Agreement. Access Easement may not be specifically shown on Exhibit B.

The Pipeline Easement, Temporary Construction Easement and Access Easement may be collectively referred to in this Agreement as the "Easements".

2. Location. Exhibit B shows the approximate location of the Pipeline Easement and Temporary Construction Easement and may show portions of the Access Easement. Company shall have the right to select the exact location of the Easements and the location of the pipeline and other Pipeline Facilities within the Pipeline Easement, such that the centerline of the pipeline may not, in all instances, lie in the middle of the Pipeline Easement. The parties acknowledge that Exhibit B may be in preliminary form, whether as sketches or surveys or otherwise. Accordingly, the parties agree that upon completion of a more complete depiction of the locations of the Easements, the Company, without joinder of Landowner, may replace Exhibit B with Exhibit B-1, which shall be such final, more complete exhibit, by affidavit, amendment or otherwise. However, upon the request of Company, Landowner agrees to cooperate with Company and to execute and deliver to Company any additional documents, including an amendment to this Agreement, for the purpose correcting the legal description or location of the Easements or making such other modifications requested by Company to accomplish the purposes of this Agreement. Company shall provide Landowner with a copy of the recorded affidavit, amendment or re-recorded Agreement.
3. Damages. The consideration paid by Company includes the value of the Easements and all damages, excluding livestock damages, within the Easements arising as a direct result of the initial construction of the Pipeline Facilities and subsequent restoration of Landowner's Property. Landowner (or, if leased, its tenant) has been compensated for all damages to growing crops within the Easements for the three (3) years following initial construction of the Pipeline Facilities and restoration of Landowner's property. Landowner releases and forever discharges Company from all such damages. Company agrees to pay Landowner a reasonable sum for any subsequent actual, proven damages to growing crops on Landowner's Property directly caused by the exercise of Company's rights under this Agreement.
4. Restoration. After it has exercised its rights to use the Easements in any manner that disturbs the surface of the Easements, Company will, insofar as reasonably practicable and except as the surface may be permanently modified in accordance with the rights granted under this Agreement, restore the ground disturbed by the Company's use of the Easements and will

construct and maintain soil conservation devices on the Pipeline Easement as may be reasonably required to prevent damage to the property of Landowner from soil erosion resulting from operations of Company under this Agreement. Company shall restore all fences to as nearly as reasonably practicable to their condition prior to the use of said Easements, except for any portion within the Easements that is permanently altered in accordance with rights given under this Agreement. If Landowner notifies Company that any drainage tile or irrigation systems on the Grantor's Property have been damaged as a direct result of Company's activities in connection with the Easements, then Company shall investigate the damages and, if Company confirms the claim, at Landowner's option, repair or replace such tile or irrigation or pay Landowner the costs to repair or replace such tile or irrigation.

5. Landowner's Use.

- a. Subject to the following subsections, Landowner may use the Easements for any and all purposes not inconsistent with the purposes set forth in this Agreement. Landowner's uses may include but shall not be limited to agricultural, open space, and installation and maintenance of fences (provided Company shall at all times have access through any such fence by means of a gate), provided that any such use is not otherwise prohibited by applicable law and provided that such use does not, in Company's sole discretion, cause a safety hazard or unreasonably interfere with Company's rights under this Agreement. The use of the Pipeline Easement by Landowner shall be regulated by Company requirements and all appropriate ordinances, regulations, resolutions or laws of the governmental entity with authority over the Pipeline Easement.
- b. Landowner may not use any part of the Easements in a way that may damage, destroy, injure, and/or interfere with the Company's right to use said Easements for the purposes set forth in this Agreement. Without limiting the generality of the previous statement, Landowner is not permitted to conduct any of the following activities on the Easements without the written permission of Company: (1) construct or permit the construction or installation of any temporary or permanent building or site improvements; (2) drill or operate any well or any equipment for the production or development of minerals; (3) remove soil or change the grade or slope; (4) impound surface water; or (5) plant trees or landscaping. Landowner further agrees that no above or below ground obstruction, whether temporary or permanent, man-made or natural, that, in the sole discretion of Company, may endanger or interfere with the efficiency, safety, or convenient operation of the pipeline and other Pipeline Facilities or use of the Easements may be placed, erected, installed or permitted to exist without the written permission of Company. In the event the terms of this paragraph are violated, or the Easements are otherwise obstructed in a manner that Company determines in its sole discretion interferes or may interfere with its rights hereunder, Landowner shall immediately remove such violation or obstruction upon receipt of written notice from Company or Company shall have the immediate right to correct or remove such violation or obstruction at the sole expense of Landowner. Landowner shall promptly reimburse Company for any actual expense related to such correction or removal. Landowner further agrees that it will not interfere in any manner with the purposes for which the easements under this Agreement are conveyed. Any improvements, whether above or below ground, temporary or permanent, installed by Landowner subsequent to the date that Company acquires the Easements, may be removed by Company without liability to Landowner for damages.

- c. Landowner acknowledges and agrees that during the initial construction of the Pipeline Facilities or any construction, maintenance, repair, replacement or removal work on the Pipeline Facilities, Landowner may not have use of the Easements for any purpose so as to avoid disrupting such construction or other work or compromising the safety considerations of the construction or repair work. Landowner agrees to abide by any and all safety instructions established by the Company.
6. **Indemnification.** Company shall pay commercially reasonable costs and indemnify and hold Landowner harmless for any loss, damage, claim, or action resulting from Company's use of the Easements, except to the extent such loss, damage, claim, or action results from the gross negligence or willful misconduct of Landowner or its agents.
7. **Assignment.** Company shall have the right to sell, assign, apportion, mortgage or lease this Agreement, as amended from time to time, and the Easements granted under it, in whole or in part, to one or more parties, and Company shall be released from its obligations under this Agreement to the extent of such sale, assignment, apportionment, or lease, provided that any such purchaser, assignee, apportionee, or lessee assumes Company's obligations. The Pipeline Easement and Access Easement shall be permanent, and the Easements and provisions of this Agreement, including all benefits and burdens, shall constitute a covenant and burden on the land and shall run with the land.
8. **Landowner's Interest.** Landowner, for itself, its heirs, successors, and assigns, represents, warrants, and covenants that it is the sole true and lawful owner(s) of Landowner's Property and has full right and power to grant and convey the Easements. Landowner hereby binds itself and its heirs, assigns, devisees, successors, and legal representatives to warrant and forever defend the above-described Easements and rights, unto Company, and Company's successors and assigns, against every person whomsoever lawfully claiming or to claim the same, or any part thereof. Landowner relinquishes, releases and waives all rights of dower, homestead and distributive shares in and to the Easements.
9. **Landowner Liens.** Landowner consents to Company contacting any lender, mortgagee, or other pre-existing holder of a lien or interest in the Property in order to secure a consent, subordination, non-disturbance agreement or such other document as Company deems necessary for the benefit of the parties. Such form may be recorded in the real estate records of the county in which Landowner's Property lies. Upon the request of Company, Landowner agrees to fully cooperate with Company in order to secure such document from each lender, mortgagee, or other pre-existing holder of a lien or interest in the Property. Landowner shall not be required to incur any third party out of pocket expenses in connection with assisting Company in the pursuit of the foregoing documents; all such third party out of pocket expenses relating to the same shall be paid by Company.
10. **Property of Company.** Notwithstanding any rule of law or equity, unless otherwise sold, bartered or conveyed to another party, the pipeline and all other Pipeline Facilities shall at all times remain the property of the Company notwithstanding that the pipeline or those facilities may be annexed or affixed to the freehold or abandoned in place by Company.

11. Miscellaneous.

- a. To the extent provisions included in Exhibit C, incorporated by reference herein, if any, conflict with provisions of this Agreement, provisions of Exhibit C control.
- b. All notices given or permitted to be given under this Agreement shall be in writing. Notice is considered given either (i) when delivered in person to the recipient named above, (ii) upon deposit in the United States mail in a sealed envelope or container, postal charges prepaid, return receipt requested or certified mail, or (iii) upon deposit with an overnight courier service. Either party may, by notice given at any time, require subsequent notices to be given to another individual person, whether a party or an officer or representative, or to a different address, or both.
- c. This Agreement and the Easements granted under it shall be interpreted in accordance with the laws of the State of South Dakota and all applicable federal laws. All actions or proceedings with respect to this Agreement shall be instituted only in state court of the states of Iowa or South Dakota, and Landowner consents to the jurisdiction of or venue in such courts.
- d. Company may exercise all or any of its rights in this Agreement at any time, and Company's non-use or limited use of any such rights shall not constitute forfeiture of or otherwise limit any such rights.
- e. The waiver or failure to enforce any provision of this Agreement by either Landowner or Company or the waiver of a breach or violation of any provision of this Agreement by either party shall not operate as or be construed as a waiver of any subsequent breach, or waiver or failure to enforce, of any provision of this Agreement.
- f. This Agreement may be signed in counterparts and all such counterparts shall be deemed as originals and binding upon each party executing any counterpart and upon its respective heirs, devisees, representatives, successors and assigns. Company's payment of consideration for this Agreement is evidence of Company's acceptance of the Agreement. This Agreement, or a memorandum giving notice of this Agreement, and exhibits, including subsequent Exhibit B-1, may be recorded in the real estate records of the county or counties where Landowner's Property lies. Company may exercise its discretion in whether or not to record any document or exhibit referenced herein, including, but not limited to, Exhibit B or Exhibit B-1. The parties agree that failure to record any document or exhibit shall not affect its validity or the validity of this Agreement. Any document not recorded will be held by Company for safekeeping.
- g. This Agreement, including all exhibits, addendums and amendments to the Agreement, and any payment or damage calculation sheets provided to the Landowner and any other documents signed contemporaneously with this Agreement, contain the entire agreement between the parties and there are not any other representations or statements, verbal or written that have been made modifying, adding to, or changing the terms of this Agreement. Except as provided in paragraph 2, this Agreement, shall not be abrogated, modified, rescinded, or amended in whole or in part without the written consent of Landowner and Company, in writing and executed by each of them.
- h. If any provision of this Agreement is invalid under any applicable statute or is declared invalid by a court of competent jurisdiction, then that provision shall be deemed to be severed from this Agreement and the remainder of this Agreement shall continue in full force and effect and shall be construed to the furthest extent legally possible so as to accomplish the purposes set forth in this Agreement.

# **Attachment No. 4**

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF NEBRASKA

ZURICH AMERICAN INSURANCE )  
COMPANY, a New York Corporation, )  
 )  
Plaintiff, )  
 )  
v. )  
 )  
RICHARD ANDREW, JANE ANDREW, )  
LUKE ANDREW, and BRYCE ANDREW, )  
 )  
Defendants. )

CASE NO. \_\_\_\_\_

**COMPLAINT**

**COMES NOW** Plaintiff, Zurich American Insurance Company (“Plaintiff”), a New York Corporation, and for its causes of action against Defendants, states and alleges as follows:

**PARTIES**

1. Plaintiff is a corporation organized and existing under the laws of the State of New York, with its principle place of business located at 1400 American Lane, Schaumburg, Illinois.
2. Defendant, Richard Andrew, is a citizen of the State of Nebraska.
3. Defendant, Jane Andrew, is a citizen of the State of Nebraska.
4. Defendant, Luke Andrew, is a citizen of the State of Nebraska.
5. Defendant, Bryce Andrew, is a citizen of the State of Nebraska.

**JURISDICTION AND VENUE**

6. Venue is proper in this judicial district under 28 U.S.C. § 1391(a) because Defendants reside in this district, and a substantial portion of the events or omissions giving rise to Plaintiff’s claims occurred in this district.

7. This Court has jurisdiction over this matter pursuant to 28 U.S.C. § 1332(a) because the amount in controversy exceeds \$75,000.00, exclusive of interest and costs, and because diversity of citizenship exists with respect to Plaintiff and all Defendants.

### GENERAL ALLEGATIONS

8. At all times material to this action, Defendants were agents of each other and were acting within the course and scope of their agency relationships, and the negligence of any Defendant is imputed to all Defendants.

9. At all times material to this action, Defendants were engaged in a joint venture and were acting within the course and scope of the joint venture at the time of the event described below.

10. At all times material to this action, Defendants were engaged in a partnership, were carrying on a business for profit, shared profits of the business, and were acting within the course and scope of the partnership at the time of the event described below.

11. At all relevant times, Defendants Luke Andrew and Bryce Andrew were the lessees of property located in the East  $\frac{1}{2}$  of the Southwest  $\frac{1}{4}$ , Section 15, Township 4, Range 15 (the "Property"), Nemaha County, Nebraska, and were engaged in commercial farming operations for the benefit of all named Defendants in this action.

12. On or about December 10, 2011, Defendants Luke Andrew and Bryce Andrew were engaged in excavation activities on the Property, including the clearing of various vegetation near the northernmost property line of the Property.

13. The excavation was in the area of two pipelines owned and operated by Magellan Midstream Partners, LP ("Magellan"), including a 12" pipeline used to transport a mixture of gasoline and jet fuel as well as an 8" pipeline ("the Pipelines") used to transport diesel fuel.

14. At all times relevant to this action, Magellan owned a right-of-way and easement on the Property in the areas where the pipelines ran and Defendants had actual and constructive knowledge of the right-of-way and easement.

15. At all times relevant to this action, Defendants had actual and constructive notice of the pipelines on the Property and had notice that Magellan owned and operated such pipelines.

16. On or about December 10, 2011, while engaged in excavation activities, Defendants Luke Andrew and Bryce Andrew struck the pipeline, causing the release of approximately 2,167 barrels of mixed gasoline and jet fuel from the 12" pipeline and approximately 643 barrels of diesel fuel from the 8" pipeline onto the Property (The line strikes will hereinafter be referred to as "the Release").

17. As a result of the line strikes and release, Magellan was required by state and federal



law to engage in cleanup and remediation activities related to the Release.

18. At the time of the Release, Magellan was the named insured on a policy of insurance, Policy No. EPC 669256201 (“the Policy”), issued by Plaintiff.

19. Plaintiff has made payment on behalf of Magellan under the Policy and has a contractual and equitable right of subrogation and is subrogated to Magellan’s rights of recovery against Defendants for amounts paid on its behalf.

### **FIRST CLAIM: NEGLIGENCE**

20. Paragraphs 1-20 of this Complaint are incorporated as if fully set forth herein.

21. Defendants owed a duty to perform their work on the Property and within the right-of-way and easement owned and operated by Magellan in a reasonable manner, to use reasonable care in constructing improvements on the Property, to comply with the statutory requirements of Neb. Rev. Stat. § 76-2301 et seq., the One Call Notification System (“OCNS”), and to protect the Pipelines on the Property from damage during Defendants’ work on the Property.

22. Defendants negligently struck the Pipelines while performing excavation work on the Property.

23. Defendants were negligent in the following particulars:

- a. Defendants failed to perform their work on the Property within the right-of-way and easement in a reasonable manner;
- b. Defendants failed to use reasonable care in their work on the Property and the Pipelines’ right-of-way and easement;
- c. Defendants failed to comply with the statutory requirements of the OCNS;
- d. Defendants failed to notify Magellan of Defendants’ intent to excavate on December 10, 2011 in and over the right-of-way and easement on the Property;
- e. Defendants failed to give Magellan the opportunity to exercise its rights under the OCNS.

24. As a direct and proximate result of Defendants’ negligence, Plaintiff has paid \$3,044,255.19 on behalf of Magellan related to clean up, remediation, and other damages caused by the Release.

25. Clean up, remediation, and other damages are ongoing and Plaintiff continues to incur costs related to the same, with estimated future damages totaling \$1,106,893.50.

26. Plaintiff prays that the Court enter judgment against Defendants and award Plaintiff's damages on its first claim in an amount in excess of \$4,151,148.69 for Defendants' negligent strike of the Pipelines.

### **SECOND CLAIM: TRESPASS**

27. Paragraphs 1-29 of this Complaint are incorporated as if fully set forth herein.

28. Magellan owned and occupied a valid right-of-way and easement in and to the area of the Property where the Pipelines were located at the time of the Release.

29. Defendants physically invaded Magellan's rights within and to the right-of-way and easement where the Pipelines were located at the time of the Release.

30. Defendants had no right, lawful authority, or express or implied invitation, permission, or license to enter upon and disturb Magellan's rights and interests in and to the right-of-way and easement where Magellan's pipelines were located at the time of the Release.

31. Magellan's interest in and to the right-of-way and easement of the Pipelines were injured during the course of Defendants' trespass.

32. As a result of Defendants' trespass, Plaintiff has paid \$3,044,255.19 on behalf of Magellan related to clean up, remediation, and other damages caused by the Release.

33. Clean up, remediation, and other damages are ongoing and Plaintiff continues to incur costs related to the same, with estimated future damages totaling \$1,106,893.50.

34. Plaintiff prays that the Court enter judgment against Defendants and award Plaintiff's damages on its second claim in an amount in excess of \$4,151,148.69.

**WHEREFORE** Plaintiff hereby prays for a judgment of this Court in its favor and against Defendants for its damages in an amount to be proven at trial, pre-judgment and post-judgment interest, its costs incurred in prosecuting this action, and such other reasonable sums as this Court deems just and equitable.

### **JURY DEMAND**

Plaintiff, pursuant to Fed. R. Civ. P. 38 and Local Rule 40.1(b) demands a trial by jury on all issues so triable in Omaha, Nebraska.

ZURICH AMERICAN INSURANCE COMPANY,  
Plaintiff,

By:     /s/ Albert M. Engles      
ENGLES, KETCHAM, OLSON, & KEITH, P.C.  
1350 Woodmen Tower  
1700 Farnam Street  
Omaha, Nebraska 68102  
(402) 348-0900  
(402) 348-0904 (Facsimile)  
Albert M. Engles, #11194  
Dan H. Ketcham, #18930  
Michael L. Moran, #24042  
James C. Boesen, #24862

# **Attachment No. 5**

# It's Time to End Carbon Capture of Climate Policy

## An Open Letter to US and Canadian Leaders

On behalf of our millions of members and supporters across the United States and Canada, we call on policymakers to recognize that carbon capture and storage (CCS) is not a climate solution. It is a dangerous distraction driven by the same big polluters who created the climate emergency.

**CCS is unnecessary.** Renewable energy sources like solar and wind are cheaper and cleaner than fossil fuels. CCS just makes dirty energy more expensive and more energy-intensive.

**CCS does not work.** CCS projects have systematically overpromised and underdelivered. Despite the billions of taxpayer dollars wasted on CCS to date, the technology has not made a dent in CO2 emissions.

**CCS will do little to reduce industrial emissions.** Deploying CCS at scale is not economically viable for most heavy-emitting industries, such as plastic or chemical manufacturing. It diverts resources from available and scalable alternatives such as replacing fossil fuels with clean renewable energy sources to supply power and heat, and reusing inputs to reduce the production of virgin material.

**CCS makes dirty energy even more dangerous for frontline communities.** Facilities equipped with carbon capture technology have to burn more fossil fuel to get the same energy output, resulting in increased emissions of toxic and hazardous pollutants, like fine particulates (PM2.5).

**CCS imposes even more risks on communities from CO2 pipelines and storage.** Transporting, injecting, and storing CO2 presents new environmental, health, and safety hazards in communities targeted for CCS infrastructure. Pipelines can leak or rupture, and injection can contaminate water sources. These risks fall disproportionately on Black, Brown, Indigenous, and low-income communities, further entrenching a bleak history of environmental racism.

**Most CCS benefits polluters.** Nearly 80% of captured carbon is used to pump more oil out of the ground through “enhanced oil recovery.” Polluting industries are using the myth of CCS to justify business-as-usual operations that are dangerous for the climate and communities. Pumping even more public funds into new CCS subsidies for fossil fuel and petrochemical industries will just prop up unsustainable business models.

**We don't need to fix fossil fuels; we need to ditch them.** Instead of capturing carbon to pump it back underground, we should keep fossil fuels in the ground in the first place. And instead of bankrolling CCS, public funds should be boosting sustainable, job-creating solutions to the climate crisis, for fossil-dependent workers and communities: phasing out oil, gas, and coal; investing in energy efficiency and non-combustion renewable energy sources; and protecting forests and other ecosystems that naturally capture and store carbon.

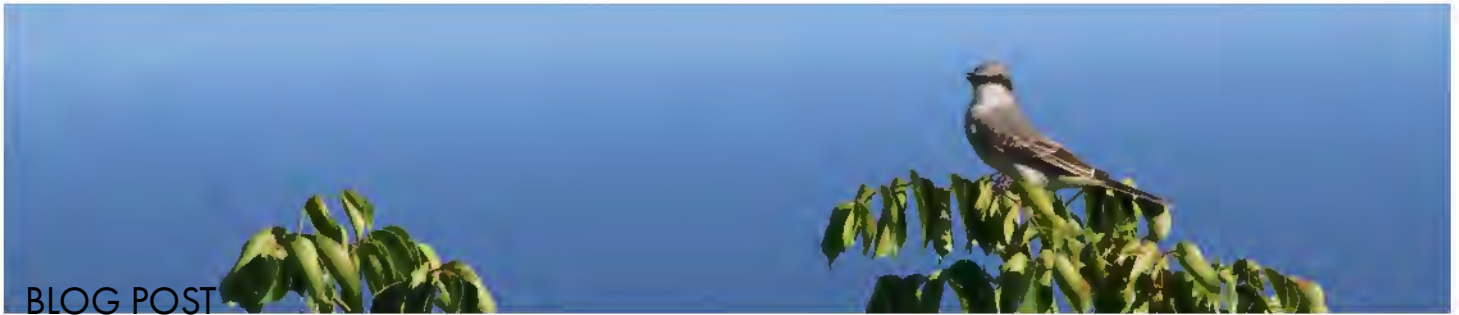
**It's time for decision-makers to abandon the dirty, dangerous myth of CCS. We call on you to:**

**Stop subsidizing CCS. Stop permitting CCS. Stop using CCS to justify climate inaction.  
And don't pretend you're a climate leader if CCS is part of your climate plan.**

198 methods  
2 Degrees Northampton  
350 Bay Area Action  
350 Brooklyn  
350 Butte County  
350 Central Mass  
350 Colorado  
350 Conejo / San Fernando Valley  
350 Corvallis  
350 Eugene  
350 Hawaii  
350 Juneau  
350 Kishwaukee  
350 Maine  
350 Massachusetts  
350 Merced  
350 Montana  
350 New Hampshire  
350 New Orleans  
350 NYC  
350 Sacramento  
350 Seattle  
350 Spokane  
350 Tacoma  
350 Triangle  
350 Wenatchee  
350.org  
A Community Voice  
Action Center on Race & the Economy  
ActionAid USA  
Advocates for Springfield  
AFGE Local 704  
Alabama Interfaith Power & Light  
Alberta Liability Disclosure Project  
Algalita  
Alliance for a Green Economy  
Alliance for Affordable Energy  
Amazon Watch  
American Environmental Health Studies Project  
American Family Voices  
American Indian Movement Southern California  
Animals Are Sentient Beings  
Animas Valley Institute  
Anthropocene Alliance  
Atchafalaya Basinkeeper  
Athens County's Future Action Network  
Atlantic Coast Conference Climate Justice Coalition  
Ban Single-Use Plastics  
Below 2°C  
Ben & Jerry's  
Berks Gas Truth  
Better Path Coalition  
Beyond Plastics  
Biofuelwatch  
Black Mesa Trust  
Black Voters Matter Fund  
Bold Alliance  
Breathe Project  
British Columbia Hydro Ratepayers Association  
Bronx Climate Justice North  
Buckeye Environmental Network  
Bucks County Concerned Citizens Against the Pipelines  
Bucks Environmental Action  
Businesses for a Livable Climate  
California Businesses for a Livable Climate  
California Democratic Party Environmental Caucus  
California River Watch  
California Safe Schools  
Call to Action Colorado  
Canadian Association of Physicians for the Environment  
Canadian Environmental Law Association  
Canadian Health Association for Sustainability & Equity  
Canadian Unitarians for Social Justice  
Canadian Voice of Women for Peace  
Canadians for Tax Fairness  
Cape Downwinders  
Carrie Dickerson Foundation  
Catholic Divestment Network  
CatholicNetwork US  
Catskill Mountainkeeper  
Center for Biological Diversity  
Center for Climate Integrity  
Center for Coalfield Justice  
Center for Environmental Health  
Center for Environmentally Recycled Building Alternatives  
Center for International Environmental Law  
Center on Race, Poverty & the Environment  
Chicago Area Peace Action  
Choctawhatthee Riverkeeper  
Church Women United in New York State  
Citizen Power  
Citizens Action Coalition  
Citizens Awareness Network  
Citizens' Resistance at Fermi 2  
Ciudadanos Del Karso  
Clean Air Action Network of Glens Falls  
Clean Air Now  
Clean Energy Action  
Clean Energy Now Texas  
Climate Action Now Western Mass  
Climate Action Powell River  
Climate Action Rhode Island / 350 Rhode Island  
Climate Emergency Unit  
Climate Hawks Vote  
Climate Justice Alliance  
Climate Justice Montreal  
Climate Justice Ottawa  
Climate Reality Project New Orleans  
ClimateFast  
Coal River Mountain Watch  
Coalition Against Death Valley  
Coalition Against Pilgrim Pipeline New Jersey  
Coalition for a Nuclear Free Great Lakes  
Coalition for Outreach, Policy, Education  
Colorado Businesses for a Livable Climate  
Colorado Small Business Coalition  
Columbus Community Bill of Rights  
Comite Pro Uno  
Committee for Human Rights in Latin America  
Common Ground Community Trust  
Community Action Works  
Community Church of New York  
Community Climate Council  
Comox Valley Council of Canadians  
Concerned Citizens for Nuclear Safety  
Concerned Citizens of Saint John  
Concerned Health Professionals of New York  
Concerned Ohio River Residents  
Conejo Climate Coalition  
Congregation of Sisters of Saint Agnes  
Conservation Congress  
Conservation Council for Hawaii  
Cool Effect  
Cooperative Energy Futures  
Corporate Accountability  
Cottonwood Environmental Law Center  
Council of Canadians / Le Conseil des Canadiens  
Courage California  
Courage Montreal  
Curr Dynasty Creative  
Damascus Citizens for Sustainability  
DC Environmental Network  
Deep Green Resistance New York  
Deep South Center for Environmental Justice  
Democratic Environmental Caucus of St. Bernard Parish  
Descendants Project  
Detroit Hamtramck Coalition for Advancing Healthy Environments  
Dis Organization for Solar Power  
Dogwood Alliance  
Don't Gas the Meadowlands Coalition  
Don't Waste Arizona  
Don't Waste Michigan  
Drawdown Bay Area  
Earth Action  
Earth Care  
Earth Day Initiative  
Earth Day Network  
Earthworks  
Ecoequity  
EcoHealth Network  
Ecologos Water Docs  
Education, Economics, Environmental, Climate & Health Organization  
Electric Auto Association of Central Coast California  
Elgin Green Groups 350  
Empower Our Future  
Endangered Species Coalition  
Environmental Defence Canada  
Environmental Protection Information Center  
Environmental Transformation Movement of Flint  
Environmental Working Group  
Environnement JEUnesse  
Environnement Vert Plus  
Équitere  
Extinction Rebellion New Brunswick  
Extinction Rebellion New Orleans  
Extinction Rebellion San Francisco Bay Area  
Family Farm Defenders  
Fenceline Watch  
First Presbyterian Church of Brooklyn  
First Unitarian Universalist Church of New Orleans  
Five Calls Civic Action  
Florida Student Power Network  
Food & Water Watch  
Food Shift  
For Our Kids North Shore British Columbia  
For Our Kids Toronto  
Forest Unlimited  
Fossil Free California  
Fossil Fuel Divest Harvard  
Fox Valley Citizens for Peace & Justice  
FrackBusters New York  
FrackTracker Alliance  
Franciscan Action Network  
FreshWater Accountability Project  
Fridays for Future Toronto  
Friends of Buckingham  
Friends of the Earth Canada  
Friends of the Earth U.S.  
Fuerza Mundial  
Genesis Farm  
Georgia Strait Alliance  
Glasswaters Foundation  
Global Alliance for Incinerator Alternatives  
Global Justice Ecology Project  
Global Witness  
Grand(m)others Act to Save the Planet  
Grandmothers Advocacy Network  
Grassroots Environmental Education  
Grassroots Global Justice Alliance  
Great Egg Harbor Watershed Association  
Great Old Broads for Wilderness  
Great Plains Action Society  
Greater Grand Rapids NAACP  
Greater New Orleans Interfaith Climate Coalition  
Green Education & Legal Fund  
Green New Deal Virginia  
Green Newton  
Green Retirement  
Green State Solutions  
Greenaction for Health and Environmental Justice  
GreenARMY  
GreenFaith  
GreenLatinos  
GreenPeace USA  
GreenRoots  
Greenvest  
Gulf Coast Center for Law & Policy  
Haiti Cholera Research Funding Foundation USA  
Harambee House  
Harvard Solar Gardens  
Healthy Gulf  
Heirs To Our Oceans  
Homewise Realty  
Hudson River Sloop Clearwater  
Idle No More SoCal  
In the Shadow of the Wolf  
Indian Point Safe Energy Coalition  
Indigenous Environmental Network  
Indivisible CA-43  
Indivisible Pittsfield  
Inland Ocean Coalition  
INOCHI / Women for Safe Energy  
Institute for Agriculture and Trade Policy  
Institute for Policy Studies Climate Policy Program  
Interfaith Council for Peace & Justice  
International Indigenous Youth Council Los Angeles  
International Marine Mammal Project  
Iowa Citizens for Community Improvement  
Ironbound Community Corporation  
John Muir Project  
Just Earth  
Just Transition Alliance  
Justice & Beyond  
Klamath Forest Alliance  
KyotoUSA  
LaPlaca & Associates  
Leadnow  
Living Rivers  
Local Environmental Action Demanded Agency  
Long Beach 350  
Long Island Progressive Coalition  
Longmeadow Pipeline Awareness Group  
Los Padres ForestWatch  
Louisiana League of Conscious Voters  
Lower 9th Ward Neighborhood Watch  
Manhattan Project for a Nuclear-Free World  
Maryland Legislative Coalition  
Mass Peace Action  
Massachusetts Forest Watch  
Maternal & Child Health Access  
Metro New York Catholic Climate Movement  
Michigan Alliance for Justice in Climate  
Michigan Environmental Justice Coalition  
Michigan Interfaith Power & Light  
Mid-Missouri Peaceworks  
Milwaukee Riverkeeper  
MiningWatch Canada  
Mission Blue  
Moral ReSources  
Mothers Out Front  
Mothers Out Front Tompkins  
Movement Rights  
MoveOn.org Hoboken  
My Sea to Sky  
Nassau Hiking & Outdoor Club  
Nature Canada  
Nature Rhythms  
Network in Solidarity with the People of Guatemala  
Network of Spiritual Progressives  
Nevada Nuclear Waste Task Force  
New Energy Economy  
New Jersey State Industrial Union Council  
New Mexico Environmental Law Center  
New York / New Jersey Environmental Watch  
New York Climate Action Group  
New York Lawyers for the Public Interest  
Ni Bthaska Stand Collective  
Nobody Leaves Mid-Hudson  
North American Climate, Conservation, and Environment  
North American Water Office  
North Bronx Racial Justice  
North Carolina Council of Churches  
North Carolina Interfaith Power & Light  
North Country Earth Action  
North Range Concerned Citizens  
Northern Michigan Environmental Action Council  
Northridge Indivisible  
No Waste Louisiana  
Nuclear Information & Resource Service  
Nuclear Watch South  
NY-16 Indivisible  
NYC Environmental Justice Alliance  
Occupy Bergen County  
Ocean Conservation Research  
Ohio Valley Environmental Coalition  
Oil & Gas Action Network  
Oil Change International  
On Behalf of Planet Earth  
Organized Uplifting Resources & Strategies  
Our Climate Education Fund  
Our Revolution Minnesota  
Our Santa Fe River  
Parents for Climate  
Partnership for Policy Integrity  
Pax Christi USA New Orleans  
Peak Plastic Foundation  
Peninsula Interfaith Climate Action  
People Over Petro Coalition  
People's Solar Energy Fund  
People's Health Movement Canada  
People's Party  
Peoples Climate Movement New York  
Physicians for Social Responsibility Arizona  
Physicians for Social Responsibility Iowa  
Physicians for Social Responsibility Pennsylvania  
Pipe Line Awareness Network for the Northeast  
Plastic Free Delaware  
Plastic Pollution Coalition  
PlasticFreeRestaurants.org  
Plymouth Friends for Clean Water  
Post Carbon Institute  
Power Past Fracked Gas  
Power Shift Network  
Presentation Sisters  
Preserve Montgomery County Virginia  
Progressive Democrats of America  
Public Citizen  
Public Goods Institute  
Publish What You Pay United States  
Pueblo Action Alliance  
Rachel Carson Council  
Rainforest Action Network  
Rapid Shift Network  
Reconstructionist Rabbinical Association  
RedTailed Hawk Collective  
Redwood Justice Fund/ Prison Radio  
Renewable Energy Long Island  
Réseau Québécois sur l'Intégration Continentale  
Resistance Action Tuesdays & Thursdays Pack  
Resource Renewal Institute  
Respecting Aboriginal Values & Environmental Needs  
RESTORE: The North Woods  
Rio Grande Valley Great Old Broads for Wilderness  
RISE St. James  
River Guardian Foundation  
River Valley Organizing  
Riverdale Jewish Earth Alliance  
RootsAction  
Safe Energy Rights Group  
San Luis Obispo Mothers for Peace  
Sane Energy Project  
Santa Barbara Standing Rock Coalition  
Santa Cruz Climate Action Network  
Save Our Illinois Land  
Save RGV from LNG  
Save the Frogs!  
Science & Environmental Health Network  
Seniors For Climate Action Now!  
Sequoia ForestKeeper  
Seven Circles Foundation  
Shenandoah Energy Services  
Sierra Club Canada Foundation  
Sierra Club Delta Chapter  
Simcoe County Environmental Youth Alliance  
Simcoe County Greenbelt Coalition  
Sisters of Charity Federation  
Sisters of Charity of New York  
Snake River Alliance  
Social Eco Education Los Angeles  
Socially Responsible Agriculture Project  
Society of Native Nations  
Solidarity Info Service  
Sonoma County Climate Activist Network  
South Shore Audubon Society  
Southeast Faith Leaders Network  
SouthWings  
Spirit of the Sun  
Spottswoode Winery  
Springfield Climate Justice Coalition  
Stand.earth  
Stop Fracking Long Beach  
Stop SPOT & Texas Gullfink: Save Our Gulf Coast  
Stop the Algonquin Pipeline Expansion  
Sullivan Alliance for Sustainable Development  
Sunflower Alliance  
Sunrise Knoxville  
Sunrise Movement New Orleans  
Sustainable Belmont  
Sustainable Medina County  
Sustainable Orillia Youth Council  
Syracuse Cultural Workers  
TBL Communications  
Texas Campaign for the Environment  
Texas Environmental Justice Advocacy Services  
Texas Grassroots Alliance  
The Borneo Project  
The Climate Center  
The Climate Mobilization  
The Climate Reality Project Canada  
The Enviro Show  
The Forest Foundation  
The Freedom BLOC  
The Future Left  
The Green House Connection Center  
The Last Beach Cleanup  
The Last Plastic Straw  
The Lilies Project  
The River Project  
The Wei  
Three Mile Island Alert  
Toledo Coalition for Safe Energy  
Transition Sebastopol  
Turtle Island Restoration Network  
Unitarian Universalist Congregation of Binghamton Green Sanctuary  
Unitarian Universalist Mass Action  
Unitarian Universalists for a Just Economic Community  
Unit North Metro Denver  
United Church of Christ Environmental Justice Ministry  
Utah Valley Earth Forum  
Valley Watch  
Verde  
Veterans for Peace Climate Crisis & Militarism Project  
Wall of Women  
Wasatch Clean Air Coalition  
Washington Physicians for Social Responsibility  
Washtenaw350  
Water and Air Team Charlevoix  
Waterkeeper Alliance  
Waterspirit  
West Dryden Residents Against Pipeline  
Western Organization of Resource Councils  
Western Rural + Plains States Project  
Western Watersheds Project  
White Rabbit Grove RDNA  
Wild Nature Institute  
WildEarth Guardians  
Wilderness Committee  
Wildsight  
Women Watch Afrika  
Women's Earth and Climate Action Network  
Women's Healthy Environments Network  
Working Families Joliet  
Young Democrats of America  
Environmental Caucus  
Youth United for Climate Crisis Action  
Youth Vs. Apocalypse  
Zero Hour

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# **Attachment No. 6**



## Over 500 Organizations Call on Policymakers to Reject Carbon Capture and Storage as a False Solution

On July 19th, over 500 organizations across the United States and Canada expressed **deep concerns about the US and Canadian governments' support for carbon capture and storage (CCS) and carbon capture, utilization, and storage (CCUS) technologies** in an open letter to policymakers in the United States and Canada. The letter's key messages and demands were published as full-page advertisements in The Washington Post (<https://www.ciel.org/wp-content/uploads/2021/07/CCS-Ad-The-Washington-Post-FINAL.pdf>) and Ottawa's Hill Times (<https://www.ciel.org/wp-content/uploads/2021/07/CCS-Ad-The-Hill-Times-FINAL.pdf>) newspapers.

Despite occupying center stage in the “net-zero” climate plans trumpeted by the United States and Canada at the Leaders' Summit on Climate, government spending programs, and bills pending before Congress and Parliament, **carbon capture is not a climate solution**. On the contrary, investing in carbon capture delays the needed transition away from fossil fuels and other combustible energy sources. It poses significant new environmental, health, and safety risks, particularly to Black, Brown, and Indigenous communities already overburdened by industrial pollution, dispossession, and the impacts of climate change.

Upon the letter's release, leaders from several signatory organizations made the following statements:

### Center for International Environmental Law

“CCS is life support for the fossil fuel industry — and a death sentence for the planet. We need to ditch fossil fuels, not ‘fix’ them with technologies that are dangerous, costly, unproven at scale, and at odds with environmental justice. Rather than bankroll the buildout of massive and risky CCS infrastructure on top of polluting industries, policymakers should finance the future, by replacing fossil fuels with renewables and creating sustainable jobs.” — **Niklas Reisch, Director of the Climate & Energy Program**

### Environmental Defence Canada

“Carbon capture is being used as a Trojan horse by oil and gas executives to continue, and even expand, fossil fuel production. It's a dangerous distraction driven by the same polluters who created the climate emergency. The Government of Canada should not use any kind of financial support or tax incentive to prop up false climate solutions that only serve to delay the necessary transition off of fossil fuels. Instead, we should be focused on real climate solutions including renewable energy and energy efficiency that are job-creating, safe, affordable and ready to be deployed.” — **Julla Levin, Senior Climate and Energy Program Manager**

### Institute for Policy Studies

“Carbon capture is an unproven technology, and there's no certainty it will ever be economically feasible. It is downright dangerous to pin our hopes on such a speculative technology to address the dire climate emergency humanity already faces. The U.S. government should stop incentivizing this technology through the tax code, or funding a buildout of carbon capture infrastructure through the various infrastructure proposals under consideration.” — **Basav Sen, Climate Policy Director**

### Global Witness

“It's simple: the world cannot meet its climate targets relying on carbon capture. The majority of CCS that exists is being used to extract more oil, ultimately driving more climate pollution. There is only one winner when it comes to these unproven and costly technologies: fossil fuel companies, who are trying to cash in on the climate emergency while being propped up with government handouts. The Biden administration must say enough is enough, and prioritize real climate solutions, good green jobs, and the health of our communities over the interests of polluters' profits.” — **Zorka Milin, Senior Policy Advisor**

## Gulf Coast Center for Law & Policy

“Industrial carbon capture utilization and storage is a false solution to this global climate crisis. Once again, Black, Indigenous and poor communities will be sacrificed just to ensure profit for polluting industries. We must reset our priorities to put people before profit. Let’s choose to use this moment to put people to work toward a healthy, safe and equitable future.” — **Colette Pichon Battle, Executive Director of the Gulf Coast Center for Law & Policy and National Lead for the Red, Black & Green New Deal at the Movement for Black Lives.**

## Food & Water Watch

“Incentivizing carbon capture is simply throwing a lifeline to the fossil fuel industry, when we need to be throwing a lifeline to the planet. The US government has already spent billions of dollars on carbon capture to no end. Continuing to do so is throwing good money after bad; diverting resources that could be put to use actually confronting our climate crisis. We demand Congress to end support of carbon capture and invest in truly renewable energy.” — **Mitch Jones, Policy Director**

## Friends of the Earth, US

“Why are Senate Democrats putting Big Oil talking points into policy at the expense of frontline communities already overburdened with pollution?” said **Sarah Lutz, Climate Campaigner**. “When it comes to CCS and the harms that would result from this polluter gimmick, the Administration should heed the recommendations from its own White House Environmental Justice Advisory Council.”

## Partnership for Policy Integrity

“We can’t burn our way out of the climate crisis. CCS technologies are being touted as a magic bullet for capturing the carbon from burning any kind of fuel – including woody biomass. This ignores the other harmful health and environmental impacts along every step of the fuel production chain, particularly in low-income communities of color where wood pellet production facilities and biomass power plants are disproportionately sited. There is a much better way of capturing carbon and effectively storing it while safeguarding the health of our communities – it’s called letting our forests grow.” — **Laura Haight, U.S. Policy Director**

## Indigenous Environmental Network

“Driving up more funding for carbon capture technology is a subsidy for the fossil fuel industry. Oil, coal and gas will use these funds to build out more pipelines and concentrate fossil fuel pollution on already impacted Indigenous nations and environmental justice communities. Billions of dollars for carbon capture essentially redirects money away from renewable energy like solar and wind. We do not have time and money to waste on more questionable carbon capture infrastructure.” — **Tom Goldtooth, Executive Director**

## Center for Biological Diversity

“Promoting dangerous carbon capture and storage is just one more way a dying fossil fuel industry is trying to save itself at the expense of our climate and communities. We don’t have time or money to waste on fossil fuel deception in a climate emergency. Instead of propping up dirty energy, we need to focus on proven clean energy solutions like solar and wind.” — **Victoria Bogdan Tejada, Staff Attorney**

## Ohio Valley Environmental Coalition (OVEC)

“Carbon capture technology is still in the early stages of development and not at a scale necessary to curtail the climate crisis. It is being used by industry and governments as a diversion to avoid addressing the climate crisis in a timely way using proven green technology.” — **Dr. Randi Pokladnik, volunteer**

## GreenLatinos

“Carbon capture and storage (CCS) technologies are false solutions that perpetuate and exacerbate existing burdens for frontline communities. They enable the perpetuation of toxic emissions along with very real potential risks of environmental damage is a glaring red flag for lawmakers. For Latino/a/x and other disproportionately pollution burdened communities, continued investment in carbon capture technology and subsidies amounts to a continuation of a long history of environmental injustice. We call on Congress to stop investing in CCS and instead focus investments on energy efficiency and renewables that facilitate a transition to a lower carbon and pollution-free future.” — **Lydia Cardona, Climate and Clean Air Program Manager**



## New York Lawyers for the Public Interest

“The climate crisis is upon us, it’s impacting every facet of our lives as well as taking far too many lives in its perilous process. Unfortunately, far too many of our lawmakers have become ensorcelled with profligate and unproven mechanisms to address the climate crisis including so-called carbon capture technology. These false solutions are the latest climate disinformation campaign by fossil fuel cartels and their political acolytes to beguile the people at a time when we need to scale up and scale out proven solutions rooted in frontline and Indigenous wisdom. Worse yet, these lawmakers, including Administrator McCarthy, are ignoring the voices and recommendations of leading Environmental Justice practitioners, including those who sit on the President’s White House Environmental Justice Advisory Council, who have stated emphatically that they don’t want these false solutions in their communities. It must, therefore, be stated lucidly that support for CCS is an exacerbation of environmental racism, an affront on Tribal/Indigenous sovereignty, and nothing more than a perverse lifeline to industries that profit off of death and calamity.” — **Anthony Rogers Wright, Director of Environmental Justice**

## Climate Justice Alliance

“False promises abound as big business salivates over the money to be made in appearing to care about the climate crisis that they created. The push for Carbon Capture and Storage is just another example of corporate controlled mechanisms being promoted as solutions when they actually cause harm to communities and the planet and have not been proven to do what needs to be done to address climate change—reduce emissions at source. If the fossil fuel and gas industries really want to atone for their sins they should immediately abandon this market-based scheme and fund truly renewable and regenerative community controlled approaches to a Just Transition, not ones that sacrifice frontline communities, yet again.”

## Oil Change International

“Carbon capture and storage isn’t just a colossal waste of money and an environmental justice disaster — it’s a lifeline to the fossil fuel industry and politicians unwilling to stand up to Big Oil and Gas. The desperate focus on false solutions like CCS is a dangerous distraction from the critical work of ending fossil fuel subsidies and winding down the fossil fuel era with a just transition.” — **Collin Rees, Senior Campaigner**

## Michigan Environmental Justice Coalition

“While low-income communities and communities of color face the brunt of the climate crisis, the U.S government is trying to provide subsidies and incentives for false solutions like Carbon Capture and Storage (CCS) projects. Detroit just experienced historic rainfall leaving many people with flooded basements, power and broadband outages, and water contamination. We need climate reparations and direct community investments in climate resilient infrastructure, not false solutions that benefit corporations and burden our communities. CCS allows the fossil fuel industry to continue polluting our neighborhoods while falsely claiming to be reducing greenhouse gas emissions. Michigan Environmental Justice Coalition stands for the health of people and the planet and against corporate greenwashing.” — **Juan Jhong-Chung, Policy Associate**

## Waterkeeper Alliance

Carbon capture and storage is a pipe(line) dream for the fossil fuel industry. They would obtain further subsidies for polluting our air, water and communities and also get to greenwash their image,” said Chris Wilke of Waterkeeper Alliance. “Not only is this unproven technology unlikely to lead to effective progress toward reducing carbon in the atmosphere, it also represents a false solution that risks squandering this important moment while we still have a real chance at staving off the worst impacts of climate change.” — **Chris Wilke, Global Advocacy Manager**

## Catholic Network.US

“As Catholics we are pro-life for all life and are not for false solutions that send more money to fossil fuel companies and the wealthiest in the guise of CCS, which will be an expensive failure. The opportunity cost is too high.” — **Marie Venner, Chair**

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# **Attachment No. 7**



## Environmental Justice Organizations post Comments on Carbon Capture and Storage to the White House Council on Environmental Quality

- [April 19, 2022](#)



Brenda Mallory  
Chairwoman, Council on Environmental Quality  
730 Jackson Place, NW  
Washington, DC 20503

**Re: Request for Comments Council for Environmental Quality's "Carbon Capture, Utilization, and Sequestration Guidance," 87 Federal Register 8808 (February 16, 2022), Docket CEQ-2022-0001**

18 April 2022

Dear Chair Mallory:

The Climate Justice Alliance (CJA) in coordination with Indigenous Environmental Network, Institute for Policy Studies, Grassroots Global Justice Alliance, Michigan Environmental Justice Coalition, and New York Lawyers for the Public Interest appreciate the opportunity to offer comments on the Council on Environmental Quality's, *Carbon Capture, Utilization, and Sequestration Guidance Document* ("Guidance Document").

These comments, led by environmental justice organizations, and supported by numerous ally organizations, highlight the serious concerns with the recently issued Guidance Document on carbon dioxide removal technologies that includes: carbon capture and sequestration/carbon capture utilization and storage (CCS and CCUS), direct air capture (DAC), and other related technologies.

Technological fixes such as CCS/CCUS will never address extraction-driven climate and ecological crises as long as fossil fuels continue to be extracted and burned, or put to other toxic uses such as hydrogen combustion or plastics production. Likewise, bioenergy with carbon capture and storage (BECCS) will never address the ecological crisis caused by destruction of forests for fuel. It should be noted that, currently, the only large-scale use of "captured" carbon dioxide is for enhanced oil recovery (EOR). Currently, 75 percent of carbon dioxide captured via industrial means is used to boost fossil fuel recovery, a fact that is profoundly overlooked in the Guidance Document.

From our perspective, the Guidance Document appears to act as a mechanism for fast-tracking the approval of massive CCS/CCUS and associated carbon dioxide permits in spite of significant opposition from the environmental justice community as well as the larger ecosystem of climate justice advocates. Even the timing of the Guidance Document's release seems concomitant with the Infrastructure Investment and Jobs Act (IIJA), which includes provisions that significantly undermine the National Environmental Policy Act (NEPA), which acts as a vanguard for environmental justice communities. In addition, IIJA diminishes the ability of communities to secure injunctions for harmful projects by expediting environmental reviews and increasing hurdles for communities to challenge projects in court.

President Biden declared it the policy of his administration to, "secure environmental justice and spur economic opportunity for disadvantaged communities that have been historically marginalized and overburdened by pollution and underinvestment..." However, this intention is not reflected in the Guidance Document or the process that led to its preparation. We, therefore, invite CEQ to consider our concerns and work more intentionally with Indigenous and environmental justice communities prior to the proliferation of CCS/CCUS technology and associated infrastructure in such a way that better aligns with the commitments made by President Biden, CEQ, and other federal agencies to prioritize environmental justice.

## **Background and Framing**

The proliferation of CCS/CCUS and associated infrastructure will inevitably have a profound impact on environmental justice communities – in some instances it already has, as was the case in Yazoo County, Mississippi following the rupture and explosion of a carbon dioxide pipeline that left many injured. CCS/CCUS also contributes to worsened air quality by increasing lifecycle emissions of toxic air pollutants, disproportionately harming disadvantaged and other environmental justice communities. In addition to worsening existing sources of

pollution, CCS/CCUS has the potential to expose environmental justice communities to new, under-studied risks associated with the buildout of carbon dioxide pipelines, as was the case in the aforementioned Yazoo County, Mississippi incident.

We declare the entire concept of CCS/CCUS is antithetical to environmental justice principles. As such, any attempt to reconcile CCS/CCUS guidance in the context of environmental justice is an exercise in futility. Whereas CCS/CCUS is an “end of the pipe” solution that attempts to remove carbon dioxide after fossil fuels have been extracted, transported, processed, and burned, causing harm to communities and ecosystems at every stage. True environmental justice requires addressing the root causes of the problem by leaving fossil fuels in the ground and reducing emissions expeditiously.

Therefore, we call on CEQ to withdraw the Guidance Document, and undertake a better, more inclusive process that demonstrates and exercises transparency, participation, as well as the consent of environmental justice community members that leads to a new guidance document. Further, we request a longer comment period of at least 60 days, and an additional process that would give stakeholders more opportunities to give input on CEQ’s guidance, including:

- Broader community engagement including direct outreach to frontlines and environmental justice communities, potential geographic hearings or listening sessions, etc;
- Development of further reports that go beyond CEQ’s 2021 report to Congress, *Council on Environmental Quality Report to Congress on Carbon Capture, Utilization, and Sequestration* (“CEQ 2021”), to assess the potential harmful impacts of CCUS on disadvantaged and other environmental justice communities that should be completed before any final guidance is issued; and
- A recommendation by CEQ for the cessation of all CCS/CCUS permitting projects until the final guidance is developed with robust stakeholder engagement.

Further, we are extremely concerned, pursuant to the Consolidated Appropriations Act of 2021, CEQ has been tasked with establishing “not less than [two] task forces, which shall each cover a different geographical area with differing demographic, land use, or geological issues,” for the purpose of facilitating the permitting and development of CCS projects. The law was enacted in December 2020 and gave CEQ 18 months to establish these task forces, which likely means that the process of establishing these task forces is close to completion. However, we, and numerous environmental advocates with whom we frequently work, have heard of no public announcements from CEQ whatsoever about which geographic regions they have selected, who the proposed members of the task forces are, nor any other relevant information.

We find this lack of transparency to be deeply concerning, and demand that CEQ immediately:

- Make public its plans for establishing these task forces;
- Prohibit the task forces from recommending permit processes for CCS/CCUS projects until environmental justice principles of transparency, consent, and participation are met to the satisfaction of the environmental justice community; and
- Provide meaningful opportunities for impacted communities in the selected geographic regions to engage and participate in the work of these task forces.

## **CEQ Failed to Undertake Meaningful Engagement with Indigenous and Environmental Justice Communities**

Environmental justice movements arose in response to decades of disproportionate environmental harms experienced by Indigenous, Black, Latin(a/o), Asian, and other communities of the global majority, and the poor in the United States and worldwide resulting from centuries of slavery, colonization, and the promulgation of racist, sexist, and inequitable policies. In response to legacy environmental racism, environmental justice movements have developed key principles, such as the 1991 Principles of Environmental Justice, the 1996 Jemez Principles of Democratic Organizing, and various principles of Just Transition.

Unfortunately, CEQ failed to consider any of these principles or include consultation with Indigenous and environmental justice Peoples and organizations in its preparation of the Guidance Document. This is antithetical to Section 219 of President Biden's Executive Order (E.O) 14008, which, in part, stipulates, "Agencies shall make achieving environmental justice part of their missions by developing programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts."

Additionally, the Guidance Document does not comply with mandated consultation policies with federally recognized Tribes pursuant to E.O. 13175. It is our assertion that CEQ and the Biden Administration should require Indigenous Peoples' consent, not just consultation, in accordance with the principle of Free Prior and Informed Consent for any decision impacting Indigenous Peoples, before any guidance on CCS/CCUS is issued to ensure meaningful consultation.

Furthermore, the process that led to the Guidance Document is inconsistent with CEQ's own "Guiding Principles for Meaningful Engagement" included as part of its 2016 Document, *Promising Practices for EJ Methodologies in NEPA Reviews*. Therein, CEQ recommends, "Meaningful engagement efforts with potentially affected minority populations, low-income populations, and other interested individuals, communities, and organizations are generally most effective and beneficial for agencies and communities when initiated early and conducted (as appropriate) throughout each step of the NEPA process."

The Guidance Document is inconsistent with public engagement recommendations and conclusions contained in CEQ 2021. For instance, the Guidance Document indicates the 2021 report was "... developed in response to the Congressional mandate to identify public engagement opportunities through existing laws, including under the National Environmental Policy Act of 1969." However, we find that the Guidance Document's assurances of consultation with environmental justice communities, and safeguards to prevent any harm to them, are specious. In fact, it can be argued that the entire process associated with the introduction of legislative priorities for carbon dioxide removal technologies has lacked inclusion and consent, since the views of environmental justice communities were not intentionally solicited, such as during a Congressional hearing for the Utilizing Significant Emissions with Innovative Technologies (USE IT) Act (which is included as part of Consolidated Appropriations Act of

2021), which, did not include a single representative of an environmental justice community or climate justice organization.

These and other recommendations to better engage with disadvantaged and other environmental justice communities were clearly absent from the process that led to the Guidance Document. Therefore, as previously mentioned, CEQ must undertake broader community engagement including direct outreach to frontline, Indigenous, and environmental justice communities through a series of public hearing opportunities that are accessible to concerned and other interested residents.

## **Guidance Documented Cites Selective Data That Fail to Document Past and Present CCS/CCUS Challenges**

The Guidance Document is largely informed by key findings included as part of CEQ 2021, which includes a litany of inconsistencies, unfounded conclusions, and, in some cases, blatant inaccuracies. For instance, one of CEQ 2021's key findings asserts, "Key guidance documents and best practices have been developed by the Federal Government, industry, and non-governmental organizations to assist CCUS project developers in moving CCUS efforts forward responsibly and efficiently." However, CEQ failed to cite any of these sources in CEQ 2021 and they are largely unknown to the various environmental justice organizations we solicited to determine their familiarity with these "key guidance documents and best practices."

Additionally, CEQ 2021 claims, "The Federal Government has an existing regulatory framework that is rigorous and capable of managing permitting and review actions while protecting the environment, public health, and safety as CCUS projects move forward." Yet, as our comments will demonstrate, CEQ itself confirms there is, for instance, no federal agency that currently holds jurisdiction over carbon dioxide pipelines – they are largely regulated by the states. In short, the fact that the recommendations of the Guidance Document are informed by CEQ 2021 is concerning and should be addressed prior to finalization of any guidance for the permitting and regulation of CCS/CCUS and associated infrastructure.

CEQ claims there is "growing scientific consensus" CCUS technologies and permanent sequestration are likely needed to prevent the worst impacts of climate change but fails to provide any references to back up this claim. However, CEQ conveniently ignored the growing body of evidence proving that carbon removal methods have not demonstrated energy efficiency or efficacy. As an example, according to three leading climate scientists, reliance on technological carbon removal, and the underlying misleading concept of "net zero" emissions targets, create a false sense of complacency by holding onto the promise of non-existent or experimental technologies, which could mitigate greenhouse gas emissions in the distant future, reducing the impetus to make deep cuts in emissions today.

Furthermore, the Guidance Document omits consensus from numerous environmental justice organizations who contend that carbon removal technologies perpetuate harm and risk to environmental justice communities. In fact, President Biden's White House Environmental Justice Advisory Council (WHEJAC), which includes leaders of the environmental justice community, explicitly named CCS/CCUS as an example of the types of projects that will not benefit disadvantaged and other environmental justice communities. Additionally, national



climate justice base-building organizations such as CJA have unequivocally indicated their opposition to CCS/CCUS, as well more than 500 national and international organizations who recently called on lawmakers in the United States and Canada to, “reject carbon capture and storage (CCS) and Carbon Capture, Utilization, and Storage (CCUS) as dangerous distractions and to end the ‘carbon capture of climate policy.’”

Omitting these resources from the Guidance Document could be seen as the federal government not acting objectively and signaling its preference for one technology over another. And, the fact that the IIJA earmarked an estimated \$12.1 Billion for CCS/CCUS projects compared to less than \$1 Billion for renewable energy projects compounds our concerns. This, despite the fact that over 80 percent of CCS/CCUS projects globally have been scuttled due to irreconcilable and exorbitant costs and/or the ineffectiveness of the technology altogether.

The Guidance Document makes no mention of the vast amount of taxpayer dollars spent on CCS/CCUS demonstration projects that never came to fruition. It’s troubling that CEQ makes no mention of the report prepared by the Government Accountability Office (GAO) which reveals that all eight Department of Energy (DOE) funded CCS demonstration projects for coal fired power plants have either been withdrawn, terminated, or are no longer in operation. Even the Wall Street Journal declared that government funded CCS/CCUS initiatives have, “a dismal record,” as part of a piece that also revealed the fact that there are neither federal requirements nor incentives that discourage corporations utilizing CCS/CCUS from releasing greenhouse gasses into the atmosphere.

For these reasons and more, CEQ must prepare additional reports that go beyond CEQ’s 2021 report in an effort to assess costs to taxpayers for subsidizing this technology and potential harmful impacts of CCS/CCUS on disadvantaged and other environmental justice communities.

## **Guidance Document Contains Inconsistent Policy Conclusions That Could Result in Confusion and Litigation**

CEQ must elucidate the extent to which federal agencies have jurisdiction over carbon dioxide (CO<sub>2</sub>) pipelines. The Guidance document and CEQ 2021 offer differing and, at times, ambivalent determinations. For instance, CEQ 2021 indicates, “no Federal entity is responsible for siting interstate CO<sub>2</sub> pipelines across Federal and non-Federal lands. States establish the regulatory frameworks within their state boundaries, which include responsibility for siting and permitting intrastate pipelines as well as segments of interstate hazardous liquids pipelines within the state boundary.” It goes on to say, “Because states and localities have distinct regulatory regimes, it may be more complex to move CCUS efforts forward in some jurisdictions than others.” However, the Guidance document suggests, “Because multiple Federal and State agencies will be responsible for planning and permitting priority pipeline pathways, and in order to ensure that these actions are aligned with climate, economic, and public health objectives, CEQ will convene the relevant agencies to assess opportunities for improvement in carbon dioxide pipeline permitting.”

CEQ must better stipulate which Federal, and which state agencies have jurisdiction over these pipelines. Moreover, since CO<sub>2</sub> pipelines in most cases would be transporting gasses that will eventually be utilized for a wide range of products (such as fertilizer, EOR and other forms of

commerce), CEQ must indicate how CO2 transported via pipeline across state lines would be consistent with the Interstate Commerce Clause.

Regarding compliance with NEPA, the Guidance Document evokes the idea of Tiering via Programmatic Environmental Impact Statements (EIS) to increase the efficiency of the permitting processes for CCS/CCUS and associated infrastructure. This is a problematic approach when considering that analyses of larger regions may not necessarily accurately account for the baseline conditions of physical, socioeconomic, or cultural resources for a specific geography within a larger region. This is precisely why, 43 CFR § 46.140(b) stipulates, “To the extent that any relevant analysis in the broader NEPA document is not sufficiently comprehensive or adequate to support further decisions, the tiered NEPA document must explain this and provide any necessary analysis.” Moreover, according to CEQ’s 2014 document, *Effective Use of Programmatic NEPA Reviews (2014)*, the agency, “finds it inappropriate to establish a presumption that substantive analysis is unnecessary or should be precluded in subsequent tiered documents.” Furthermore, CEQ must ensure their recommendations for tiering are not viewed as segmenting – the breaking up of a larger project into smaller components, in order to avoid finding no significant impact of a project considered as a whole, which, pursuant to 40 CFR 1500 – 1508, is prohibited.

Utilizing Programmatic EISs also increases the risk for localized environmental justice impacts to be overlooked and unaccounted for. Broader analyses will not necessarily depict specific, localized environmental justice impacts of a proposed action that is part of a larger, regional proposal. In fact, it is common practice to identify an environmental justice community by comparing the socioeconomic demographics of a local geography to its surrounding area. As such, a larger project’s demonstration of no impact in one area of a region is not necessarily representative of potential impacts for the entire region, or for local areas specifically. Inadequate analysis of environmental justice impacts would be inconsistent with Executive Order 12898 and could lead to litigation.

To these ends, CEQ should recommend that all CCS/CCUS projects require project-level EISs in lieu of programmatic EISs. Efficiency should never come at the expense of thorough analyses that investigate the full scope of potential impacts, especially to Indigenous and other environmental justice communities.

## **Conclusion**

CCS/CCUS is an unproven, profligate technology scheme that’s already cost taxpayers billions of dollars while putting Indigenous and other environmental justice communities at increased risk for disproportionate impacts including, but not limited to, exposure to toxic emissions and explosions due to ruptured and malfunctioning pipelines. The Guidance Document fails to address these issues or demonstrate the efficacy of CCS/CCUS as a true solution for reducing emissions. In fact in certain cases, such as the Quest Plant in Alberta, Canada, CCS/CCUS actually released more carbon dioxide than it sequestered.

Environmental justice organizations and advocates are gravely concerned that CEQ is hastily promoting an ineffective technology that will only allow the fossil fuel industry to continue emitting greenhouse gasses at a time when the science tells us we have less than a decade to

properly address the climate crisis. For environmental justice communities, where the vast majority of CCS/CCUS facilities would be located, the situation is even more dire and CEQ's Guidance Document provides little to no reassurances that impacts to these communities will be properly analyzed or mitigated.

CEQ must revisit the entire process that led to the Guidance Document and allow for a longer comment period of at least 60 days, as well as undertake an additional process that allows Indigenous and other environmental justice communities more opportunities for broader community engagement, direct outreach to environmental justice communities, and additional studies to assess the potential harmful impacts of CCS/CCUS.

We look forward to working with CEQ in an effort to assist the Biden Administration with living up to its environmental justice commitments as stipulated in EO 14008 and public statements made by the president and numerous representatives of federal agencies.

**Sincerely,**

Climate Justice Alliance  
Grassroots Global Justice Alliance  
Indigenous Environmental Network  
Institute for Policy Studies Climate Policy Program  
Michigan Environmental Justice Coalition  
New York Lawyers for the Public Interest

**Supporting Environmental Justice Organizations:**

7 Directions of Service  
Alliance for Affordable Energy  
Asian Pacific Environmental Network (APEN)  
Center for Coalfield Justice  
Center for Community Action and Environmental Justice  
Communities for a Better Environment  
Central California Asthma Collaborative  
Central Valley Air Quality Coalition (CVAQ)  
Cheyenne River Grassroots Collective  
Citizens for Clean Air and Water in Freeport Texas  
Citizens for Coalfield Justice  
Coalition Against Death Alley  
Common Ground Rising  
Communities for a Better Environment  
Cooperation Jackson  
Detroit Hamtramck Coalition for Advancing Healthy Environments  
East Michigan Environmental Action Council  
Friends For Environmental Justice  
Giniw Collective  
Greater New Orleans Housing Alliance  
Greater New Orleans Interfaith Climate Coalition  
Gulf Coast Center for Law & Policy  
Harambee House, Inc. / Citizens for Environmental Justice  
Healthy Gulf

Honor the Earth  
Idle No More SF Bay  
Inclusive Louisiana  
Indigenous Lifeways  
Ironbound Community Corporation  
Just Transition Alliance  
Kickapoo Peace Circle  
Lakota People's Law Project  
Little Manila Rising  
Little Village Environmental Justice Organization  
Micronesia Climate Change Alliance  
Migiziwillfly  
Mujeres Unidas y Activas  
Multicultural Alliance for a Safe Environment  
Native Movement  
NC Climate Justice Collective  
New York City Environmental Justice Alliance  
Nicaragua Center for Community Action  
North Dakota Native Vote  
OPAL Environmental Justice Oregon  
Parable of the Sower Cooperative  
People Organizing to Demand Environmental and Economic Rights (PODER)  
People's Action  
Pueblo Action Alliance  
SouthWest Organizing Project  
Spirit of the Sun, Inc.  
Texas Environmental Justice Advocacy Services (t.e.j.a.s.)  
The People's Justice Council  
Turtle Island Restoration Network  
United Native Americans  
UPROSE  
UUFDF Environmental Justice Team  
Waterspirit  
Women's Earth and Climate Action Network

**Supporting Organization Sign On:**

1000 Grandmothers for Future Generations  
198 methods  
350 Bay Area Action  
350 Colorado  
350 Conejo / San Fernando Valley  
350 Mass  
350 New Orleans  
350 Seattle  
350 Seattle  
350 Triangle  
350.org  
350Hawaii

5 Gyres Institute  
A Community Voice  
Accelerate Neighborhood Climate Action  
Activist San Diego  
AFGE Local 704  
Agricultural Justice Project  
Animals Are Sentient Beings Inc  
Association of Young Americans  
Athens County's Future Action Network/ACFAN  
Beyond Plastics  
Biofuelwatch  
Bold Alliance  
Breathe Project  
Buckeye Environmental Network  
Businesses for a Livable Climate  
Cabrini Care for Creation  
California Communities Against Toxics  
California Faculty Association  
California Safe Schools  
Call to Action Colorado  
Capitol Heights Presbyterian  
Care for Creation Team  
CatholicNetwork US  
Center for Biological Diversity  
Center for Environmental Health  
Center for International Environmental Law  
Citizen Power, Inc.  
Citizen's Alliance for a Sustainable Englewood  
Citizens Resistance At Fermi Two (CRAFT)  
Clean Air Council  
Clean Energy Action  
Climate Hawks Vote  
CO Businesses for a Livable Climate  
CO Dem. Party – Energy & Environmental Initiative  
CO Small Business Alliance  
Coalition to Protect New York  
COCRN Colorado Community Rights Network  
Colorado Western Slope Businesses for a Livable Climate  
Community for Sustainable Energy  
Concerned Citizens of St. John  
Concerned Health Professionals of Pennsylvania  
ConnectX Eco  
Dakota Rural Action  
DC Statehood Green Party  
Divest Ed  
Dogwood Alliance  
Don't Waste Arizona  
Earth Action, Inc.

Earth Care  
Earth Guardians  
ecoAmerica  
EcoEquity  
Ecology Center  
Empower our Future  
End Climate Silence  
Extinction Rebellion San Francisco Bay Area  
Food & Water Watch  
Fox Valley Citizens for Peace & Justice  
FracTracker Alliance  
FreshWater Accountability Project  
Friends of the Earth  
GAIA  
Grassroots International  
Greater New Orleans Climate Reality Project  
Greenpeace USA  
Heartwood  
I-70 Citizens Advisory Group  
Indivisible Ambassadors  
Indivisible Ventura  
Indigenous Outreach at St.Frances Cabrini Church  
Inland Ocean Coalition  
Interfaith Council for Peace and Justice  
John Muir Project  
Long Beach Alliance for Clean Energy  
Long Island Progressive Coalition  
Loudoun Climate Project  
Louisiana League of Conscious Voters  
Louisville Metro Public Defender  
Madhvi4EcoEthics  
Mayfair Park Neighborhood Association Board  
Mental Health & Inclusion Ministries  
Mn350  
Montbello Neighborhood Improvement Association  
Mothers Out Front Colorado  
MoveOn.org Hoboken  
Nancy Negrette Brows, Hair & Lashes Studio  
Natural Capitalism Solutions  
NELA Climate Collective  
Network for a Sustainable Tomorrow  
New Energy Economy  
New Mexico Environmental Law Center  
North American Climate, Conservation and Environment(NACCE)  
North Range Concerned Citizens  
Northern Alaska Environmental Center  
Nuclear Energy Information Service (NEIS)  
Nuclear Information and Resource Service (“for a nuclear-free, carbon-free world”)

Ohio Poor People's Campaign  
Oil Change International  
Our Revolution  
Peace Action WI  
Peak Plastic Foundation  
Physicians for Social Responsibility – Los Angeles  
Physicians for Social Responsibility Pennsylvania  
PIIC  
Plastic Pollution Coalition  
Plymouth Friends for Clean Water  
Private Equity Stakeholder Project  
Progressive Democrats of America  
Property Rights and Pipeline Center  
Protect Our Water Heritage Rights (POWHR)  
Putnam Progressives  
Rachel Carson Council  
RapidShift Network  
Resist the Pipeline  
Revolving Door Project  
Richmond Our Power Coalition  
River Valley Organizing  
Rogue Climate  
San Antonio Bay Estuarine Waterkeeper  
San Francisco Bay Physicians for Social Responsibility  
San Luis Valley Ecosystem Council  
Santa Cruz Climate Action Network  
Saphron Initiative  
Save EPA (former employees)  
School Sisters of Notre Dame  
Science and Environmental Health Network  
Science for the People – Twin Cities  
SEED of SW NM  
Small Business Alliance  
SoCal 350 Climate Action  
Social Eco Education (SEE)  
Solar Wind Works  
SolidarityINFOService  
Southwest Organization for Sustainability  
St Frances Cabrini Catholic Community  
St luke presbyterian  
Sunnyside United Neighbors, inc (SUNI)  
System Change Not Climate Change  
Terra Advocati  
Texas Campaign for the Environment  
The Green House Connection Center  
The Last Plastic Straw  
The Romero Institute  
The Shame Free Zone

Third Act Virginia  
Tishman Environment & Design Center, The New School  
Triple Justice Organization  
UCAN  
Unitarian Universalist Association  
Unitarian Universalist Mass Action  
Unite North Metro Denver  
United Women in Faith  
Valley Watch, Inc.  
Vote Climate  
Wall of Women  
Waterway Advocates  
Western Slope Businesses for a Livable Climate  
WildEarth Guardians  
Wilwerding Consulting  
Women's Environment and Development Organization (WEDO)  
Working for Racial Equity  
Womxn from the Mountain  
YUCCA (Youth United for Climate Crisis Action)  
Zero Hour



# **Attachment No. 8**

# Every Dollar Spent on This Climate Technology Is a Waste



Credit... Josh Haner / The New York Times

**By Charles Harvey and Kurt House** *New York Times* Aug. 16, 2022

<https://bit.ly/3Qw1xvU>

[Dr. Harvey is a professor of environmental engineering at the Massachusetts Institute of Technology. Dr. House is the chief executive officer of KoBold Metals, a metals exploration company.]

The technology called carbon capture and storage is aptly named. It is supposed to capture carbon dioxide emissions from industrial sources and pump them deep underground. It was a big winner in the climate provisions of the Inflation Reduction Act passed by Congress last week and signed into law by President Biden on Tuesday.

What the technology, known as C.C.S., also does is allow for the continued production of oil and natural gas at a time when the world should be ending its dependence on fossil fuels.

The Inflation Reduction Act does more to cut fossil fuel use and fight climate change than any previous legislation by expanding renewable energy, electric cars, heat pumps and more. But the law also contains a counterproductive waste of money, backed by the [fossil fuel industry](#), to subsidize C.C.S.

Fifteen years ago, before the cost of renewable energy plummeted, carbon capture seemed like a good idea. We should know: When we began a start-up 14 years ago — the [first privately funded company](#) to make use of C.C.S. in the United States — the idea was that the technology could compete as a way to produce carbon-free electricity by capturing the carbon dioxide emissions emitted from power plants and burying them. But now it's clear that we were wrong, and that every dollar invested in renewable energy — instead of C.C.S. power — will eliminate far more carbon emissions.

Even so, this technology has broad political support, including from Senator Joe [Manchin](#) of West Virginia, an [ally of the coal industry](#), because it enables the continued extraction and burning of fossil fuels while also preventing the resulting carbon dioxide from entering the atmosphere. Industry campaigns such as “Clean Coal” have also promoted the technology as something that could ramp up quickly to bridge the gap to the deployment of large-scale renewable energy. But by promoting C.C.S., the fossil fuel industry is slowing the transition away from fossil fuels.

Under the Inflation Reduction Act, facilities using this technology will be eligible for generous tax credits provided they break ground by the end of 2032 — an extension of the current deadline of 2025. Those benefits come on top of [\\$12 billion](#) in government investments in C.C.S., as well as in technology that would pull carbon dioxide directly from the air, which were included in the infrastructure bill signed by President Biden last fall.

C.C.S. is seen as a solution to the emissions problem for a range of industries, from electricity generating plants powered by fossil fuel to industrial facilities that produce cement, steel, iron, chemicals and fertilizer.

Where C.C.S. has been most widely used in the United States and elsewhere, however, is in the production of oil and natural gas. Here's how: Natural gas processing facilities separate carbon dioxide from methane to purify the methane for sale. These facilities then sometimes pipe the “captured” carbon dioxide to what are known as enhanced oil recovery projects, where it is injected into oil fields to extract additional oil that would otherwise be trapped underground.

Of the 12 commercial C.C.S. projects in operation in 2021, more than 90 percent were engaged in enhanced oil recovery, using carbon dioxide emitted from natural gas processing facilities or from fertilizer, hydrogen or ethanol plants, according to [an industry report](#). That is why we consider these ventures oil or natural gas projects, or both, masquerading as climate change solutions.

The projects are responsible for most of the carbon dioxide now sequestered underground in the United States. Four projects that do both enhanced oil recovery and natural gas processing account for two-thirds to three-quarters of all estimated carbon sequestered in the United States, with two plants storing the most. But the net effect is hardly climate friendly. This process produces more natural gas and oil, increases carbon dioxide emissions and transfers carbon dioxide that was naturally locked away underground in one place to another one elsewhere.

In an effort to capture and store carbon dioxide from fossil-fuel-burning power plants, the Department of Energy has allocated [billions](#) of dollars for failed C.C.S. demonstration projects. The bankruptcy of many of these hugely subsidized undertakings makes plain the failure of C.C.S. to reduce emissions economically.

The Kemper Power Project in Mississippi spent \$7.5 billion on a coal C.C.S. plant before giving up on C.C.S. in 2017 and shifting to a gas-powered plant without C.C.S. The plant was partially demolished in October 2021, less than six weeks before President Biden signed the infrastructure bill with its billions of taxpayer money for C.C.S.: good money thrown after bad. The FutureGen project in Illinois started as a low-emission coal-fired power plant in 2003 with federal funds, but ultimately failed as a result of rising costs.

The Texas Clean Energy and Hydrogen Energy California C.C.S. projects were allocated [over a half- billion dollars](#) collectively, then dissolved. The list goes on, with at least 15 projects burning billions of dollars of public money without sequestering any meaningful amount of carbon dioxide. Petro Nova, apparently the only recent commercial-scale power project to inject carbon dioxide underground in the United States (for enhanced oil recovery), [shut down in 2020](#) despite hundreds of millions of dollars in tax credits.

These projects failed because renewable electricity generation outcompetes C.C.S. Renewable power now is [cheaper than coal-fired power](#) without C.C.S. Add the cost of the energy required to couple C.C.S. with fossil fuel power and it becomes hopelessly [uncompetitive](#). We can only guess how much more the full costs of

C.C.S. would exceed renewable power because, after decades of promotion and many billions of dollars spent, we still have next to no real-world data about the costs of running, maintaining and monitoring large C.C.S. projects.

These C.C.S. projects are subsidized by Section 45Q of the federal tax code, which now offers companies a tax credit for each metric ton of carbon dioxide injected into the ground. Those enhanced oil recovery subsidies would rise under the new law, to [\\$60 per ton](#) from \$35. The legislation also significantly broadens the number of facilities eligible for tax credits. And they will be able to claim the tax credit through a tax refund. The 45Q program is nominally a program to fight climate change. But since nearly all carbon dioxide injections subsidized by 45Q are for enhanced oil recovery, the 45Q program is actually an oil production subsidy.

The Internal Revenue Service does not provide information about who gets the credits. But we do know that [it issued more than \\$1 billion of these credits](#) as of 2020.

These subsidies create a perverse incentive, because for companies to qualify for the subsidies, carbon dioxide must be produced, then captured and buried. This incentive handicaps technologies that reduce carbon dioxide production in the first place, tilting the playing field against promising innovations that avoid fossil fuels in the steel, fertilizer and cement industries while locking in long-term oil and gas use.

Industry campaigns for C.C.S. also have shifted their decades-long disinformation fight: Instead of spreading doubt about climate science, the industry now spreads false confidence about how we can continue to burn fossil fuels while efficiently cutting emissions. For example, Exxon Mobil advertises that it has “cumulatively captured more carbon dioxide than any other company — 120 million metric tons.”

What Exxon Mobil doesn't say is that this carbon dioxide was already sequestered underground before it “captured” it while producing natural gas and then injected it back into the ground to produce more oil. These advertising campaigns lend support to government programs to directly subsidize C.C.S.

Solving climate change requires resources; misappropriating these resources makes solving the problem harder. We have no time to waste. We need to stop subsidizing oil extraction and carbon dioxide production in the name of fighting climate change and stop burning billions in taxpayer money on white elephant

projects. Clean power from carbon capture and sequestration died with the success of renewable energy; it's time to bury this technology deep underground.

Charles Harvey is a professor of environmental engineering at the Massachusetts Institute of Technology. [Kurt House](#) is the chief executive officer of [KoBold Metals](#), an exploration company seeking metals for batteries.

# **Attachment No. 9**

# IOWA STATE UNIVERSITY

## College of Agriculture and Life Sciences

<https://www.cals.iastate.edu/news/releases/pipeline-study-shows-soil-compaction-and-crop-yield-impacts-construction-right-way>

### **Pipeline study shows soil compaction and crop yield impacts in construction right-of-way**

*Iowa State University College of Agriculture and Life Sciences  
November 11th, 2021*

AMES, Iowa — An Iowa State University study looking at the impacts of soil disturbance and early remediation practices from construction of the Dakota Access Pipeline finds significant soil compaction and gradual recovery of crop yield in the right-of-way over five years.

The research funded by Dakota Access Pipeline (DAPL) aimed to investigate construction influences of the underground pipeline on farmland. The pipeline transports crude oil over 1,172 miles from North Dakota to Patoka, Illinois, passing through South Dakota and about 347 miles in Iowa. The study's primary goal was to assess the extent of soil and cropping disturbances in the approximately 150-foot right-of-way caused by land clearing, topsoil removal and soil mixing, pipeline trenching and backfilling during the construction process.

Researchers also wanted to evaluate the effectiveness of state-mandated remediation requirements and a DAPL agricultural mitigation plan designed to minimize impacts to cropland. The Iowa Utility Code requires pipeline projects to remove topsoil and apply deep tillage to exposed subsoil before replacing the topsoil. The researchers are continuing to study the benefits of these practices, which can be costly.

Such field-based research quantifying soil properties and recovery in the years after a pipeline installation on farmlands is limited across the corn-soybean regions of the United States.

“Our findings show 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,” said Mehari Tekeste, assistant professor of agricultural and biosystems engineering, director of the Soil Machine Dynamics Laboratory at Iowa State, and leader of the project.



Tekeste worked with a team that included: Mark Hanna, retired Iowa State Extension agricultural engineer; Robert Horton, who holds the Charles F. Curtiss Distinguished Professorship in Agriculture and Life Sciences in agronomy; and Elnaz Ebrahimi, research scientist in agricultural and biosystems engineering.

After the local pipeline construction was completed in 2016, the researchers began studying the impacts of construction and reclamation on a short stretch where the pipeline crossed an Iowa State research farm near Ames, Iowa. They monitored soil characteristics like bulk density and chemical properties at different depths across three zones within the right-of-way and adjacent undisturbed crop fields. In 2017 and 2018, they analyzed yield data for corn and soybean plots planted on the reclaimed land in the pipeline right-of-way under two tillage systems (no-till and conventional tillage) and compared the yields to crops in the undisturbed fields with similar soils. A peer-reviewed article in the journal “Soil Use and Management” summarizes their early results.

“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 Horton, the lead soil physicist on the project. They also found changes in available soil water and nutrients.

Though the heavy equipment-induced compaction was still evident two years after construction, a deep subsoil tillage treatment showed some benefit for alleviating the compaction.


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.

“However, we have already started to see gradual recovery in yields from the soybean-corn rotation re-established in the right-of-way,” Ebrahimi said. “Also, results from our tillage comparisons suggest that use of no-till slightly improved corn production in the right-of-way zones, especially under the unfavorable weather conditions of 2020.”

The researchers are finalizing analyses from the subsequent years of the project. What they can say at this point is the compaction and yields are very slowly starting to recover. Ebrahimi has simulated the impacts of the soil compaction on crop yields over time using the Agricultural Production Systems sIMulator (APSIM). A publication on her results is in the process of review.

“We would like to continue this research -- and especially collect more years of data on corn -- and use it to provide recommendations for best management practices that can more effectively mitigate the impacts of future pipeline installation on crop yields,” Tekeste said.

# Effect of subsoil tillage during pipeline construction activities on near-term soil physical properties and crop yields in the right-of-way

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## Abstract

Persistence of subsoil compaction in construction right-of-way (ROW) areas is a major cropland concern following installation of underground pipelines. Soil physical disturbance and remediation practices including removal of topsoil, subsoil tillage and replacement of topsoil were investigated in a soybean–corn rotation field, which was located within a pipeline ROW. The objectives of the study were to investigate the effectiveness of subsoil tillage (300 and 450 mm) applied shortly after the pipeline installation used to help restore soil physical properties and to recover crop yields. Soil bulk density, soil cone index and crop yields (soybean and corn) from three ROW trafficked zones (Z1, Z2 and Z3) and adjacent unaffected zones were compared at one year and two years after pipeline installation. Compared to 300 mm of subsoil tillage in the ROW zones, 450 mm of subsoil tillage did not significantly improve the soil bulk density and crop (soybean and corn) yields. Compared to 300 mm of subsoil tillage, 450 mm of subsoil tillage created significantly lower soil cone index values within the treated soil layer. Compared to yield data from the adjacent unaffected zones, the ROW zones (Z1, Z2 and Z3) had statistically significant ( $p < .05$ ) crop yield declines of 25% in soybean (2017) and 15% in corn (2018). The near-term soil physical properties and crop yield have been improved from the subsoil tillage applied in the affected zones; however, their recovery to normal conditions as in the unaffected areas has not been achieved within the 2-year period.

## KEYWORDS

corn, soil bulk density, soil cone penetration resistance, soybean, subsoil tillage, tillage systems

## 1 | INTRODUCTION

Natural gas and oil consumption are projected (U.S. Energy Information Administration, 2019) to increase globally and domestically through 2040. According to the report released by the Interstate Natural Gas Association of America (INGAA, 2015), extraction and transportation of natural resources will require establishment of thousands of kilometres

of new pipeline infrastructures. As an inevitable consequence, installation of underground pipelines implicates extensive soil disturbance with adverse effects on soil physical properties through soil compaction and mixing of topsoil and subsoil because of construction right-of-way (ROW) activities (Naeth, McGill, & Bailey, 1987; Shi, Xiao, Wang, & Chen, 2014; Yu et al., 2010). Machinery-induced excessive soil compaction reduces crop yield (Bell, 2010; Lowery & Schuler, 1991;



Raper, Reaves, Shaw, van Santen, & Mask, 2005; Soon, Rice, Arshad, & Mills, 2000) through increases in soil bulk density and soil strength (Cambi et al., 2015; Kumar, Chen, Sadek, & Rahman, 2012; Lepilin, Laurén, Uusitalo, & Tuittila, 2019; Raper et al., 2005).

Restoration of soil productivity after disturbance depends on the severity of soil compaction, vulnerability of the loosened soil conditions to re-compaction, crop type and climate (Batey, 2015; Batey & McKenzie, 1999; Shi et al., 2014; Spoor, 2006). However, there are still knowledge gaps in understanding soil structural deterioration, effectiveness of tillage reclamation methods and revegetation strategies in disturbed ROW areas during the post-construction phase (Batey, 2015; Brown, 2012; Noble, 2006). Field-based research studies are rare that quantify soil compaction and recovery time in the subsequent years after installation of underground pipelines. Some studies have indicated the negative impacts of ROW construction activities on soil structure (Li, Deng, Cao, Lei, & Xia, 2013; Soon et al., 2000; Tekeste, Hanna, Neideigh, & Guillemette, 2019; Turney & Pthenakis, 2011) and crop yield in highly productive farmlands of the US-Midwest (Olson & Doherty, 2012). Soil structural recovery can be measured by spatial and temporal comparisons of soil characteristics, such as soil bulk density and cone penetration resistance in disturbed and non-disturbed areas.

Developing effective reclamation methods for disturbed croplands requires an accurate determination of the soil disturbance, the soil compaction and the restoration cycle of specific soil types after ROW activities. Different strategies such as application of subsoil tillage, alternative tillage systems and crop rotations can be applied during the post-construction phase. The decision on proper soil recovery management varies based on site-specific conditions, where the level of soil disturbance and environmental factors correlate with the intensity of site management necessary to promote soil restoration in cropland (Antille et al., 2016; Bolling & Walker, 2000; Li et al., 2013).

Determination of proper subsoil tillage depth, number of repeated tillage passes and traffic management to avoid unnecessary trafficking is important factors to consider in developing a best management strategy (Spoor, Tijink, & Weiskopf, 2003). The no-tillage (NT) system has been promoted to conserve soil, water and crop yields (Blanco-Canqui, Claassen, & Stone, 2010; Yadav, Lal, & Meena, 2019) and can potentially restore soil structure and productivity by increasing aggregate stability and soil organic matter (Kumar et al., 2012; Vepraskas, Busscher, & Edwards, 1995; Woodward, 1996).

Measurements made on an exposed subsoil after pipeline installation but prior to topsoil replacement at a pipeline site (Tekeste et al., 2019) indicated extremely high peak vertical soil stresses (up to 133 kPa) and bulk density ( $1.72 \text{ Mg m}^{-3}$ ) equal to the Proctor compaction test maximum bulk density

value. Such extreme soil compaction created during the pipeline construction phase and at a depth below the conventional deep tillage practices raised the need to investigate post-construction soil recovery management practices. Our current study investigates the effects of subsoil tillage and surface tillage on soil compaction and crop yields in pipeline installation ROW zones of a field in the Midwest region of the U.S.A.

The specific objectives of this paper are to (a) investigate the near-term effects of subsoil tillage treatments and surface applied tillage systems on soil compaction (soil bulk density and soil cone index) within the ROW zones and (b) quantify soybean and corn yield variations related to soil disturbance intensity within ROW disturbed zones relative to the adjacent unaffected areas.

## 2 | MATERIALS AND METHODS

### 2.1 | Description of the field site

Field plots were established on a crop farm along the Dakota Access Pipeline (DAPL) ROW area, which was located on an Iowa State University (ISU) farm in Story County, Iowa. A soybean (*Glycine max*)—corn (*Zea mays* L.) rotation was established on a 2 ha area after subsoil tillage reclamation practices, and topsoil replacement was completed in the ROW. As explained in the DAPL agricultural mitigation plan, the main construction activities in the ROW included removing and stockpiling topsoil (approximately depth of 525 mm), trenching and burying the pipeline, performing subsoil tillage to loosen the compaction created from the heavy machine trafficking and finally replacing the topsoil. Clarion loam (fine-loamy, mixed, super-active, mesic Typic *Hapludolls*) and Canisteo clay loam (fine-loamy, mixed, super-active, calcareous mesic Typic *Endoqualls*) were the two dominant soil series at the site (Web Soil Survey, 2018). Tekeste et al. (2019) provided further details on the heavy machinery equipment deployed during the pipeline construction phase and tillage equipment used for the subsoil tillage applications. The current study focuses on near-term soil physical properties and crop yield after the topsoil restoration practices of the DAPL agricultural mitigation plan were completed.

The field site was classified into ROW trafficked (disturbed) zones and adjacent unaffected (non-disturbed) areas. The ROW traffic area was divided into three zones based on the intensity of vehicular trafficking during the pipeline construction phase. Zone 1 (trench, Z1) was an area where the pipeline was buried, Zone 2 (Z2) was categorized as a heavy traffic area, and Zone 3 (Z3) was the area that received a relatively light traffic intensity. Each of the zones in the ROW was considered as a measurement zone. Classifying the zones as measurement zones was essential because the variations in

traffic intensity among the zones were created according to the DAPL field operation protocol.

Prior to replacing the topsoil to the ROW area, subsoil tillage treatments including two levels (300 and 450 mm) were established using a Randomized Complete Block Design (RCBD). The subsoil tillage treatment levels of 300 and 450 mm were randomly assigned on the experimental units within each of the zones in four replications. The subsoil tillage was applied directly to the exposed subsoil shortly after completion of the ROW construction activities and before topsoil was replaced. Each subsoil tillage plot was 7.6 m wide by 18.0 m long. The field plot setup also included two undisturbed (unaffected) zones, named control-north (CN) and control-south (CS), which were located on the north and south sides of the pipeline.

As part of the DAPL mitigation plan, the topsoil was replaced to the ROW zones and levelled by a Caterpillar D7E bulldozer (fully loaded weight was 256 kN with a track that had a nominal track contact length of 3.02 m and a width of 0.76 m, Figure 1). Following the site-levelling, surface tillage was performed using a field cultivator with a tool depth of 100 mm.

Post-construction phase cropping system surface soil conventional tillage operations were applied perpendicular to the pipeline on the field plots. The conventional tillage refers to operation of fall disc ripping, which was applied after the corn cropping season. Spring seed-bed tillage was applied using a field cultivator prior to planting both during the corn and soybean cropping seasons. No-till planting plots designated as 'no-till' (NT) were added during the second crop season (2018) adjacent to the conventional tillage (CT) plots.

## 2.2 | Soil bulk density and soil cone index measurements

During the post-construction phase, soil bulk density (BD) and soil cone index (CI) were measured in fall 2017 and fall 2018. In 2017, because of the limited number of field working days, soil cone index measurements were taken from the

relatively high traffic zones in the ROW zone (Z1 and Z2) and in one unaffected zone (CN). Both in 2017 and 2018, soil core samples for BD measurements were sampled from Z1, Z2, Z3 and the unaffected zones (CN and CS). A Giddings hydraulic-driven sampling probe (Giddings Machine Co.) was used to collect a 76 mm diameter and 1,200 mm long soil core at each sampling position. Twelve soil core sampling locations were taken along the centre of each zone within the ROW and in the unaffected crop field zones (CN and CS). Within each zone, three samples in two replicates were taken within each subsoiling depth treatment. Each tube sample was cut into 50 mm increments starting from the topsoil surface. The soil core samples were oven-dried at 105°C for 48 hr to determine dry soil bulk density and soil moisture content on a dry mass basis (% d.b.).

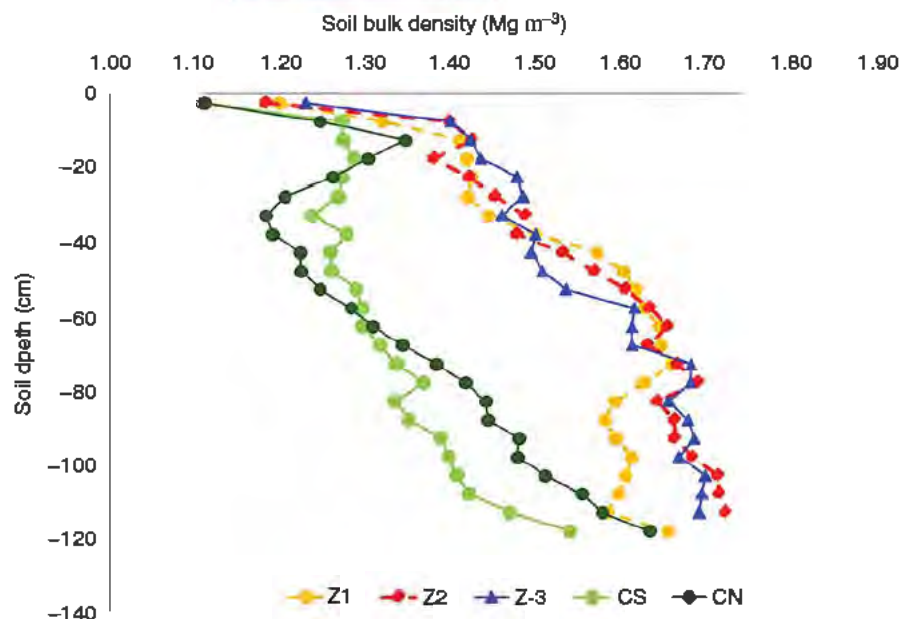
A tractor-mounted three-probe cone penetrometer designed and built at ISU (Tekeste et al., 2019) was used to measure the soil cone index according to ASABE standards (ASAE Standards, 2004a and ASAE Standards, 2004b). Within each top surface tillage measurement zone (9 m × 7 m), the three-probe cone penetrometer was inserted at 30 mm s<sup>-1</sup> (ASAE Standard, 2004b) on six sampling points. A total of 288 soil cone index measurements were taken within each zone. Cone penetration resistance force was measured using a Transducer Techniques model LPU-500 load cell transducer with 2224-N capacity (Transducer Techniques, LLC) and a Metromatics USB DEWE-43 DAQ System (Metromatics) acquiring data at 100Hz. Soil cone index (kPa) was calculated by dividing the cone penetration resistance force by the 285 mm<sup>2</sup> ASABE cone base area (ASAE Standard, 2004a).

## 2.3 | Crop planting and harvesting

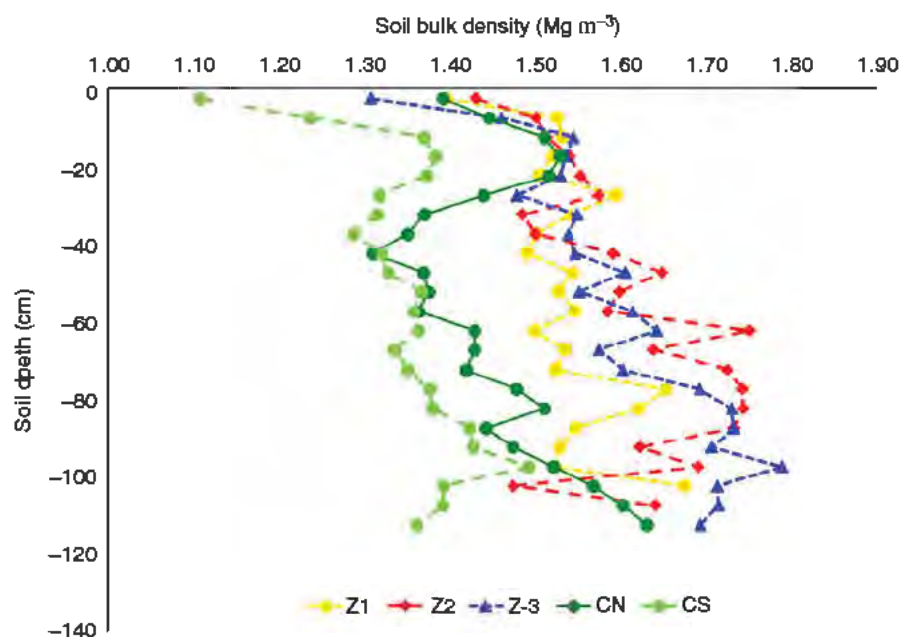
Soybean (2017) and corn (2018) were planted on 760 mm row-spacing using an 8-row John Deere Max EnERGE 5 Planter model pulled by a John Deere 6170R MFWD. Planting was performed parallel to the pipeline. Yield from the centre four rows of each plot, conventional and no-till sections, was combine harvested using the on-board Harvestmaster system



**FIGURE 1** (a) Topsoil pile adjacent to the ROW zones. (b) The top soil was replaced by a Caterpillar D7E bulldozer after the exposed subsoil was tilled. The Caterpillar D7E fully loaded weight was 256 kN. Each track had a nominal track contact length of 3.02 m and a width of 0.76 m (Tekeste et al., 2019) [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]



**FIGURE 2** Soil bulk density profiles from fall 2017 within the ROW zones (Z1, Z2 and Z3) and the unaffected zones (CN and CS) [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]



**FIGURE 3** Soil bulk density profiles from fall 2018 within the ROW zones (Z1, Z2 and Z3) and the unaffected zones (CN and CS) [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

HM800 grain gauge (Logan, UT) on a John Deere 9450 combine harvester. Within the smallest experiment unit (post-construction tillage system) of the ROW zones, there were a total of 16 samples of crop yield (two four centre crop rows for the two subsoil tillage treatments (300 and 450 mm) at four replicates). The harvesting pattern for the CN and CS zones was similar to the harvesting pattern within the ROW zones.

## 2.4 | Data analysis

All measured data for BD, CI and crop yield were subjected to analyses of variance using the GLM procedure (SAS JMP Ver. 14.JMP, 2013) and compared using Fisher's least significant

difference (LSD) method with 95% confidence ( $p$ -value .05). Analyses of variance were also performed to compare the soil physical properties and crop yields from the individual zones within ROW zones and compared with the data from the adjacent unaffected zones (control). Improvement indices were calculated as relative changes in BD and CI from 2017 to 2018 for the top soil layer (top layer soil restoration, TSR) and the subsoil layer (subsoil layer soil restoration, SSR). The conventional tillage operations perpendicular to the pipeline precluded the ability to randomize conventional and no-till plots with respect to each other within the two levels of post-construction subsoiling (300 and 450 mm) that were previously established. Statistical comparison between the two post-construction tillage systems (NT and CT) from

the near-term study was not feasible because of the inability to randomly assign the no-till and the tilled plots within each of the ROW trafficked zones. In order to avoid experimental bias because of the placement of the no-till adjacent to the tilled plots, statistical comparisons of subsoil tillage impacts on the measured soil properties and crop yields were done within each of the tillage systems.

### 3 | RESULTS AND DISCUSSION

#### 3.1 | Soil bulk density

Soil bulk density profiles from the ROW zones (Z1, Z2 and Z3) (Figure 2, fall 2017; and Figure 3, fall 2018) indicated that soil compaction still persisted two years after the heavy equipment traffic and subsoil tillage. Differences in BD between the ROW and the unaffected zones were obvious in the top (0–500 mm) and deep (500–1,200 mm) soil layers. A summary of BD for the top soil layer (0–500 mm) and the deep soil layer (500–1,200 mm) is provided in Table 1.

In fall 2018, Z2 had the lowest BD in the top soil layer (0–500 mm) within the ROW. The mean BD of the top layer (fall 2018) within the ROW was  $1.52 \text{ Mg m}^{-3}$ , which was significantly larger than the BD in the unaffected zones of CN ( $1.44 \text{ Mg m}^{-3}$ ) and CS ( $1.29 \text{ Mg m}^{-3}$ ). For the deep soil layer (below 500 mm deep) from the fall 2018, no statistical differences ( $\text{LSD}_{0.05} = 0.045 \text{ Mg m}^{-3}$ ) of BD were found among the ROW zones (Z1, Z2 and Z3) with 300 and 450 mm subsoil tillage. Within the deep soil layer, the BD averaged over both years among the ROW zones and the two subsoil tillage treatments were  $1.60 \text{ Mg m}^{-3}$ , a value estimated to be at 93% of the maximum Proctor compaction test value (Tekeste et al., 2019). The BD in the deep layer

(500–1,200 mm) within the ROW was statistically larger ( $\text{LSD}_{0.05} = 0.0040 \text{ Mg m}^{-3}$ ) than the BD in the adjacent unaffected zones ( $\text{CN} = 1.48 \text{ Mg m}^{-3}$  and  $\text{CS} = 1.39 \text{ Mg m}^{-3}$ ).

The BD restoration (improvement index) calculated as percentage changes of 2018 BD data relative to the 2017 BD data is shown in Table 1. The BD restoration for the 0 to 500 mm soil layer was not significant because of subsoil tillage applied on the ROW zones ( $p = .196$ ) or because of interaction effects of the ROW zones and subsoil tillage ( $p = .11$ ). In the subsoil layer (500 to 1,200 mm), the BD showed significant improvements on Z1 (SSR = 9.2) ( $p < .05$ ), which was better than the improvements in Z2 (SSR = 1.25%) and in Z3 (SSR =  $-0.60\%$ ). Within the ROW zones, the BD in the subsoil layer decreased from  $1.65 \text{ Mg m}^{-3}$  (fall 2017) to  $1.60 \text{ Mg m}^{-3}$  (fall 2018). No statistical differences in BD recovery were observed in the subsoil tillage treatments within each ROW zone ( $p > .05$ ).

#### 3.2 | Soil cone index

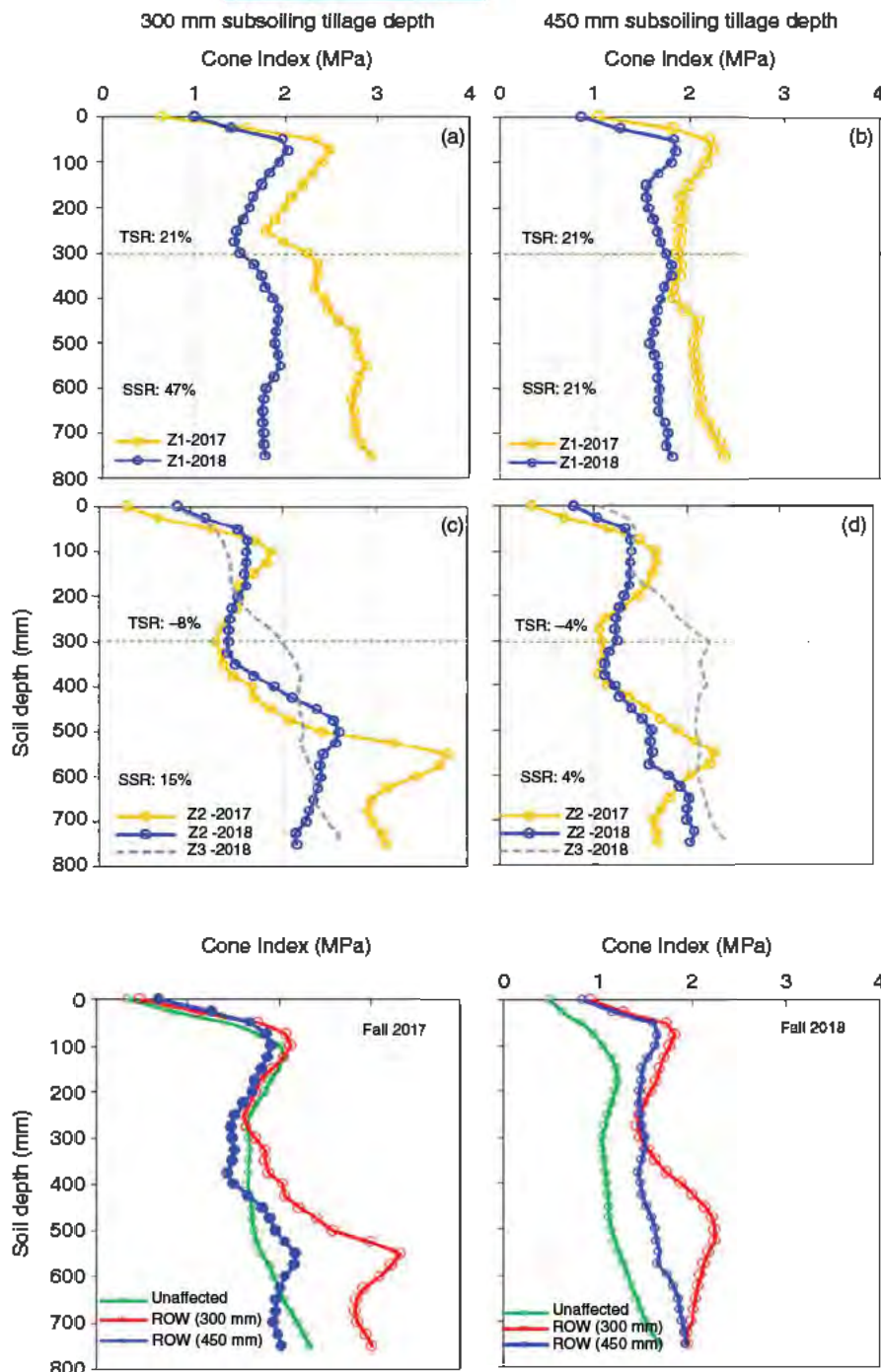
Figure 4 illustrates soil cone index (CI) profiles in fall 2017 and fall 2018 in ROW zones that received 300 and 450 mm subsoil tillage (Figure 4a–d). The subsoil tillage treatments in Figure 4 refer to the subsoil tillage treatments applied on the exposed subsoil prior to the topsoil replacement in fall 2016 (Tekeste et al., 2019). Within the ROW zones (Z1 and Z2), two peak soil cone penetration values occurred. One peak was at an approximate depth of 100 mm with the mean maximum values averaged by ROW and subsoil tillage depth of 2.06 MPa in 2017 and 1.73 MPa in 2018 (Figure 4a–d). The second peak in the soil cone penetration values occurred in the heavy equipment trafficked subsoil layer (300–600 mm soil layer) with mean maximum values averaged by ROW of

**TABLE 1** Soil bulk density measured in fall 2017 and fall 2018 in a surface soil layer (0–500 mm) and a subsoil layer (500–1,200 mm) in post-pipeline construction right-of-way (ROW) zones (Z1, Z2 and Z3) and in unaffected zones (CN and CS)

Zone	Soil depth class (mm)	Soil bulk density ( $\text{Mg m}^{-3}$ )				Soil bulk density restoration <sup>b</sup> (%)
		Fall 2017		Fall 2018		
		Mean <sup>a</sup>	SD	Mean	SD	
Z-1	0–500	1.46 (C)	0.06	1.53 (B)	0.14	–4.6 (TSR)
Z-1	500–1,200	1.67 (A)	0.04	1.53 (B)	0.14	9.2 (SSR)
Z-2	0–500	1.42 (DC)	0.04	1.49 (C)	0.11	–4.7 (TSR)
Z-2	500–1,200	1.62 (AB)	0.08	1.60 (A)	0.11	1.3 (SSR)
Z-3	0–500	1.42 (C)	0.08	1.55 (B)	0.09	–8.4 (TSR)
Z-3	500–1,200	1.66 (A)	0.03	1.67 (A)	0.05	–0.6 (SSR)
CN	0–500	1.23 (E)	0.08	1.44 (D)	0.12	
CN	500–1,200	1.41 (D)	0.03	1.48 (C)	0.06	
CS	0–500	1.25 (E)	0.03	1.29 (E)	0.05	
CS	500–1,200	1.31 (E)	0.05	1.39 (D)	0.04	

<sup>a</sup>Mean soil bulk density values followed by the same letter are not significantly different at  $\alpha = 0.05$ .

<sup>b</sup>TSR and SSR were calculated as relative changes in BD from 2017 to 2018.



**FIGURE 4** Soil cone penetration resistance profile for soils within trafficked ROW zones and unaffected zone from the fall 2017 and fall 2018 data. Within the ROW trafficked zones, subsoil tillage treatments of 300 mm (a, c) and 450 mm (b, d) were applied. Dashed lines (at 300 mm) separate the top soil layers from the subsoil layers. TSR and SSR (%) represent soil strength improvement within the affected zones (i.e. Z1, Z2) comparing data from fall 2017 and fall 2018. In Z3, TSR and SSR were not calculated because data were not collected in fall 2017 [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

**FIGURE 5** Mean soil cone penetration resistance profiles within ROW and unaffected zones from fall 2017 and fall 2018 data. Within the ROW (trafficked) zones, subsoil tillage treatments of 300 and 450 mm were applied [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

2.76 MPa in 2017 and 1.99 MPa in 2018. Even though subsoil tillage was used, subsoil (below 300 mm) within Z1 and Z2 (Figure 4a–d) had significantly larger CI values ( $p < .01$ ) compared to subsoil (below 300 mm) in the unaffected zones (Figure 5). The excessive soil compaction (CI greater than 2 MPa) in Z3 (fall 2018) occurred at a shallower depth than in Z1 and Z2. As part of the DAPL construction activities, the exposed subsoil surface in Z3 was at a higher elevation than the other ROW zones. Thus, the maximum CI occurred at a shallower depth in Z3 than in Z1 and Z2, because less topsoil was replaced on Z3 than on Z1 and Z2.

The TSR and SSR percent improvements from fall 2017 data (Figure 4) were found only in Z1 and Z2. The amount of soil strength improvement from 2017 to 2018 (Figure 4a–d; TSR vs. SSR) varied by zone and depth. Among both top- and subsoil layers, Z1 showed a higher recovery rate than Z2 (Figure 4). Within the ROW (affected), the mean CI profile values in fall 2018 were less than those in fall 2017, indicating a temporal reduction of soil strength (ROW mean TSR and SSR of 7.5% and 22%, respectively).

The heavy equipment-induced subsoil compaction was still evident for 2 years after subsoil tillage (300 mm or

450 mm) (Figure 5), because the ROW CI values were significantly larger ( $p < .01$ ) than those in the unaffected zones. Significant impacts ( $p < .01$ ) in reducing the mean CI were observed in the 300–600 mm soil layer of the subsoil tillage treatments. The 2017 and 2018 soil cone penetration measurements (Figure 5) indicated that the 450 mm subsoil tillage loosened the traffick-induced deep compaction better than the 300 mm subsoil tillage. Relative per cent changes in CI from the disturbed (ROW) zones and the unaffected (undisturbed) zones increased by 46.2% (CT) and 54.3% (NT) in the 300 mm, and by 31.5% (CT) and 48.3% (NT) in the 450 mm subsoil tilled fields, respectively (Table 2). Shi et al. (2014) found the values of soil properties (alkali hydrolyzable nitrogen (AN), available phosphorous (AP), total nitrogen (NT) and soil organic matter (SOM)) in the ROW areas (trench, piling and working areas, which are equivalent to Z1, Z2 and Z3) were lower compared to the values outside the working areas (20 and 50 m from the pipeline line). According to Håkansson (1994), subsoiling can only partially loosen compaction in deep subsoil layers, and in regions with high precipitation, it may not be practical. Lowery and Schuler (1991) reported that deep compaction was not removed completely by subsoil tillage even four years after heavy axle load traffic. The excessive subsoil compaction within the ROW in particular at the deeper soil layer (300–600 mm) could remain for many years (300–450 mm) (Raper et al., 2005). The presence of soil compaction in the topsoil layers two years after pipeline operations might be because of the heavy vehicle (Caterpillar D7E) used to bulldoze the stockpiled soil back to the ROW. The topsoil compaction was not entirely removed by the shallow tillage (100 mm field cultivation).

The per cent changes in CI between the ROW zones and the unaffected area by the subsoil tillage treatments are shown

**TABLE 2** Mean soil cone index (MPa) values from each zone in the ROW as influenced by subsoil tillage (300 and 450 mm) in conventional tillage (CT) and compared with the mean soil cone index (MPa) values from the unaffected zones in fall 2018. *SD* represents averaged standard deviation of means ( $n = 8$ )

Zones	Subsoil tillage (mm)	Soil Cone index (Mpa)		Relative change <sup>a</sup> (%)
		Mean	SD	
Zone 1	300	1.73	0.52	33
Zone 1	450	1.63	0.26	25
Zone 2	300	1.89	0.56	45
Zone 2	450	1.47	0.42	13
Zone 3	300	2.08	0.75	60
Zone 3	450	2.03	0.63	56
Unaffected		1.3	0.4	

<sup>a</sup>Relative change (%) was calculated from differences of mean soil cone index in each zone and subsoil depth relative to the unaffected zone.

in Tables 2 and 3. No-till plots had higher CI than the CT plots by 4% within the ROW and 2% in the unaffected areas, possibly contributing to the lack of statistical significance. Other studies (Bueno, Amiama, Hernanz, & Pereira, 2006; Kumar et al., 2012; Roth, Mayer, Frede, & Derpsch, 1988) reported that changing a tillage system from conventional tillage (CT) to no-tillage (NT) could result in higher soil BD and CI values especially in topsoil. Lower CI values are associated with the tilled layer near the soil surface. Cavalaris and Gemtos (2002) reported a linear increase of CI in their 0–200 mm soil layer, where the increase was steeper in the no-tillage system compared to the conventionally tilled soils. Radford, Yule, McGarry, and Playford (2007) reported that positive impacts of no-tillage (NT) were because of improvements in soil structure and soil resilience capacity after a disturbance, because soil organic matter increased, especially in the surface layer.

### 3.3 | Crop yields

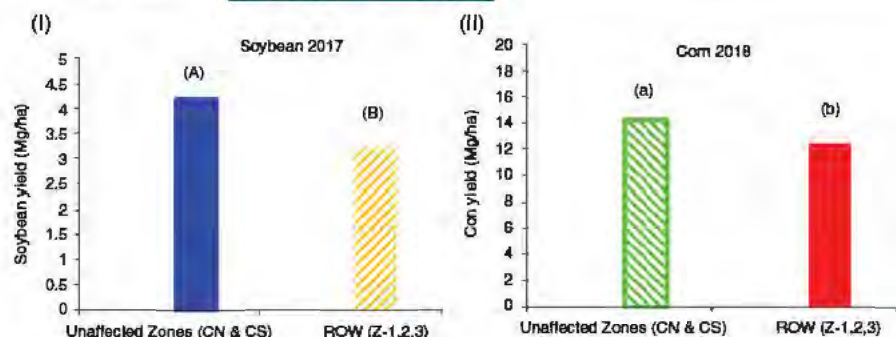
The ROW working zones (Z1, Z2 and Z3) had statistically significant ( $p < .05$ ) crop yield declines of 25% in soybean (2017) and 15% in corn (2018) in contrast to the crop yields from the adjacent unaffected zones (Figure 6). Yield reduction within zones ( $p < .01$ ) followed the damage from soil compaction as the highest soybean yield was measured in the unaffected zones (mean from CN and CS of 4.2 Mg ha<sup>-1</sup>), which had less soil compacted zones, followed by Z1 (3.2 Mg ha<sup>-1</sup>), Z3 (3.1 Mg ha<sup>-1</sup>) and Z2 (2.9 Mg ha<sup>-1</sup>). The highest mean corn yield in the CT tilled zone (fall 2018) was observed in the unaffected zones (14.4 Mg ha<sup>-1</sup>) followed by the corn yield from Z1 (12.5 Mg ha<sup>-1</sup>), Z3 (11.9 Mg ha<sup>-1</sup>)

**TABLE 3** Mean soil cone index (MPa) values from each zone in the ROW as influenced by subsoil tillage (300 and 450 mm) in no-tillage (NT) system and compared with the mean soil cone index (MPa) values from the unaffected zones in fall 2018. *SD* represents averaged standard deviation of means ( $n = 8$ )

Zones	Subsoil tillage (mm)	Soil Cone index (Mpa)		Relative change <sup>a</sup> (%)
		Mean	SD	
Zone 1	300	1.89	0.46	47
Zone 1	450	1.82	0.29	41
Zone 2	300	2.05	0.92	59
Zone 2	450	1.83	1.29	42
Zone 3	300	2.03	0.65	57
Zone 3	450	2.09	0.46	62
Unaffected		1.29	0.37	

<sup>a</sup>Relative change (%) was calculated from differences of mean soil cone index in each zone and subsoil depth relative to the unaffected zone.





**FIGURE 6** Soybean (I) and corn (II) crop yields ( $\text{Mg ha}^{-1}$ ) from ROW affected (Z1, Z2 and Z3) and unaffected zones (CN and CS). Same letters assigned to the bars are not significantly different at the  $p$ -value of .05 [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

and Z2 ( $11.5 \text{ Mg ha}^{-1}$ ). In the no-tilled (NT) zones (fall 2018), the highest mean corn yield was also observed in the unaffected zones ( $14.6 \text{ Mg ha}^{-1}$ ) followed by the corn yield from Z1 ( $13.3 \text{ Mg ha}^{-1}$ ), Z2 ( $12.6 \text{ Mg ha}^{-1}$ ) and Z3 ( $12.4 \text{ Mg ha}^{-1}$ ). Soybean and corn yields from the highest trafficked zone (Z2) were statistically lower compared to Z1 (Table 4). No statistical differences in crop yields were observed for the subsoil tillage treatments within each ROW zone ( $p > .05$ ).

For corn from the ROW, the yield from the NT system in the ROW was 7% larger than that for the conventionally tilled soil. The difference in corn yield in the unaffected areas between the CT and NT system was minimum ( $-1\%$ ). As shown in previous studies (Gaultney, Krutz, Steinhardt, & Liljedahl, 1982; Lowery & Schuler, 1991; Raghavan, McKyes, Taylor, Richard, & Watson, 1979; Schjonning & Rasmussen, 1994), heavy axle load-induced soil compaction showed significant crop yield declines (9%–50%) compared to the control. Our study indicated that the yield depressions on soybean (fall 2017) and corn (fall 2018) could be attributed to heavy equipment traffic-induced increases in soil bulk density and soil cone penetration resistance, which caused mechanical impedance to root growth. Raper et al. (2005) reported negative impacts of soil compaction on crop yield occurred as soil cone index exceeded 2–2.5 MPa. Another potential reason for crop yield depressions in the

ROW might be because of the mixing of top- and subsoil layers during construction activities and replacement of topsoil (data are not presented in this paper). Adjacent to the experiment site (approximately 1.6 km) along the pipeline, visual observations (Figure 7) were made in a soil trench cut perpendicular to the pipeline and across the ROW. The visual assessment showed that soil profiles in Z1 and Z2 had relatively poor soil structure and stubby (thicker) roots compared to the soil profile in the adjacent unaffected zone. Such a visual assessment could potentially be integrated into a post-construction feasibility assessment to minimize top- and subsoil mixing, especially during the topsoil replacement phase.

For short-term post-construction soil compaction management, application of subsoiling may be beneficial in the top- and subsoil layers to loosen the compacted layers that had soil cone index exceeding 2 MPa, a root limiting threshold value (Raper et al., 2005; Taylor & Gardner, 1963). The improved trend on crop yield in the short-term introduction of the NT system might be attributed to the benefits of reduced tillage practices (Sommer & Zach, 1992). Sommer and Zach (1992) reported the benefits of non-inverting soil loosening conservation tillage in reducing soil erosion, which implied that reduced tillage practices might have potential benefits as a long-term reclamation management strategy at pipeline construction sites.

Zone	Crop Yield ( $\text{Mg ha}^{-1}$ )					
	Soybean <sup>a</sup>		Corn <sup>b</sup>			
	CT		CT		NT	
	Mean	SD	Mean	SD	Mean	SD
Z-1	3.2 (B)	0.57	12.5 (B)	1.50	13.3 (AB)	1.21
Z-2	2.9 (B)	0.43	11.5 (B)	2.01	12.6 (B)	1.49
Z-3	3.1 (BC)	0.32	11.9 (B)	1.57	12.4 (B)	1.88
Unaffected	4.2 (A)	0.59	14.4 (A)	1.12	14.6 (A)	0.81

**TABLE 4** Soybean (fall 2017) and corn (fall 2018) yields ( $\text{Mg ha}^{-1}$ ) from the ROW (Z1, Z2 and Z3) and the unaffected zones (average of CN and CS) in conventional tillage (CT) system, and no-tillage (NT) system (fall 2018). The no-till plots were added during the second crop season (2018)

<sup>a</sup>Soybean yield values followed by the same letter are not significantly different at  $\alpha = .05$ .

<sup>b</sup>Corn yield values followed by the same letter are not significantly different at  $\alpha = .05$ .



**FIGURE 7** Visual observation of the soil structure from Zone 1, Zone 2 and the unaffected zone. A trench approximately 1 m wide by 2 m deep was excavated. Soil structure and root distribution were observed on the exposed trench face. The trench was on the DAPL pipeline, and it was located approximately 1.6 km east of the experimental plots [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

## 4 | CONCLUSIONS

Pipeline construction activities and subsoil tillage remediation impacts on soil properties resulted in significantly ( $p < .05$ ) larger CI and BD within the ROW zones compared to the adjacent unaffected zones. There were statistically significant ( $p < .05$ ) crop yield declines of 25% in soybean (2017) and 15% in corn (2018) in the ROW zones relative to the crop yields in the adjacent unaffected zones. Subsoil tillage of 450 mm created statistically smaller soil cone index values in the 300–600 mm soil layer in the ROW, compared to the subsoil tillage of 300 mm ( $p < .05$ ). BD and crop yield (soybean and corn), however, did not statistically differ for subsoil of 300 mm and 450 mm ( $p > .05$ ). Within the near-term period, introducing no-till resulted 7% increase in corn yield (2018).

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# **Attachment No. 10**

# Pipeline right-of-way construction activities impact on deep soil compaction

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## Abstract

A 762-mm-diameter pipe 1,886 km long was installed to transfer crude oil in the USA from North Dakota to Illinois. To investigate the impact of construction and restoration practices on long-term soil productivity and crop yield, vertical soil stresses induced by a Caterpillar (CAT) pipe liner PL 87 (475 kN vehicle load) and semi-trailer truck (8.9 kN axle load) were studied in a farm field. Soil properties (bulk density and cone penetration resistance) were measured on field zones within the right-of-way (ROW) classified according to construction machine trafficking and subsoil tillage (300-mm-depth tillage and 450-mm-depth tillage in two repeated passes) treatments. At 200 mm depth from the subsoiled surface, the magnitude of peak vertical soil stress from trafficking by the semi-truck trailer and CAT pipe liner PL 87 was 133 kPa. The peak vertical soil stress at 400 mm soil depth appeared to be influenced by vehicle weight, where the Caterpillar pipe liner PL 87 created soil compaction a magnitude of 1.5 greater than from the semi-trailer truck. Results from the soil bulk density and soil cone penetration resistance measurements also showed the ROW zones had significantly higher soil compaction than adjacent unaffected corn planted fields. Tillage to 450 mm depth alleviated the deep soil compaction better than the 300-mm-depth tillage as measured by soil cone penetration resistance within the ROW zones and the unaffected zone. These results could be incorporated into agricultural mitigation plans in ROW construction utilities to minimize soil and crop damage.

## KEYWORDS

deep tillage, soil bulk density, soil compaction, soil cone penetration resistance, vertical soil stress

## 1 | INTRODUCTION

Soil compaction is a process of soil particle rearrangement that reduces the air-filled fraction of soil pores and has been recognized as a major problem associated with crop production (Hamza & Anderson, 2005; Soane & Van Ouwerkerk, 1994). Compaction of soils often results in decreased soil aeration and hydraulic conductivity and increased soil bulk density and soil strength (Al-Adawi & Reeder, 1994; Hillel, 1998). Excessive soil compaction negatively affects crop

yield and accelerates soil erosion (Al-Adawi & Reeder, 1994; Hillel, 1998; Soane & Van Ouwerkerk, 1994). Reviews on how soil compaction is created and management practices to minimize its negative effects on crop yield and the environment have been published by Hamza and Anderson (2005), Raper and Kirby (2006), and Batey (2009).

Numerous studies conducted in Europe and North America during the 1980s have shown that heavy vehicles with an axle load of 10 t or higher can create subsoil compaction to a depth of 500 to 600 mm (Etana &



Hakansson, 1994; Hakansson & Reeder, 1994; Lowery & Schuler, 1991; Schjonning & Rasmussen, 1994). Schjonning and Rasmussen (1994) measured soil physical properties (i.e., bulk density and penetration resistance) and small grain yields after field traffic by a heavy vehicle (Volvo BM 860 Dump Truck). The vehicle with two front tyres of 18.0R25 XRA\*TL and four rear tyres of 20.5R 25XA\*TL were loaded to 10 t per front axle and 22 t per rear tandem axle. Four wheel passes by the truck on the exposed plough bottom (200 mm from the soil surface) created severe subsoil compaction (soil cone penetration resistance of 4.2 MPa) which was nearly a fourfold magnitude greater than the soil cone penetration resistance measured on the control treatment (no compaction). Hakansson and Reeder (1994) suggested limiting vehicle load to 10 t per axle in order to reduce the incidence of subsoil compaction and minimize long-term negative impacts on crop yields.

Soil compaction also occurs in cropland during utility construction activities within right-of-way (ROW) areas from heavy equipment traffic, trenching and backfilling, having adverse potential impacts on crop yields and soil quality. Batey (2015) reported bulk densities of  $1.7 \text{ t m}^{-3}$  (undisturbed) and  $1.9 \text{ t m}^{-3}$  (running track) at a depth of 350 mm, and restricted crop root growth 15 years after a pipeline was installed in the 1970s in Murthly, Perthshire, UK. On excessively deep compacted soils (bulk density values of  $1.9$  to  $2.0 \text{ t m}^{-3}$ ) such as in pipeline sites, Spoor (2006) recommended 5 to 6 repeated passes of tillage (up to 750 mm depth) to loosen the soils. The restoration of soil productivity and crop yield post construction depends on the vulnerability of the loosened soil conditions to re-compaction, crop type, climate and proper drainage (Batey, 2015; Spoor, 2006). Limited information was available on measurement of soil compaction and crop yield in the subsequent years after the pipeline installations (Batey, 2015).

Dakota Access, LLC (DAPL) (2016) installed a 762-mm-diameter pipe over 1,886 km to transfer crude oil in the USA from North Dakota to Illinois. The Iowa pipeline section was buried at a minimum depth of 1.2 m in all agricultural lands. DAPL developed an agricultural mitigation plan that implemented measures for minimizing impacts to cropland during the pipeline construction (e.g., land clearing, separation of top soil, pipeline trenching and backfilling of the subsoil materials) and restoration phases after compaction by heavy construction equipment on all impacted agricultural cropland (Dakota Access, LLC (DAPL) 2016). The DAPL mitigation plan includes three repeated passes of deep tillage to a depth of 450 mm on exposed subsoil, restoring the topsoil condition, and soil levelling to its preconstruction conditions in compliance with Chapter 9 "Restoration of Agricultural Lands During and After Pipeline Construction" of the State of Iowa Administration Code, Section 199: Utilities Division.

Limited field-based research studies are available to support the development of the agricultural farm and crop damage compensation plan from utility construction activities on croplands. Studies evaluating the impacts of heavy construction vehicles and restoration activities on subsoil compaction and long-term crop yields may benefit industry, researchers, extension and government institutions in developing data-driven decision support and restoration of agricultural soil and crop productivity to preconstruction conditions. The overall goal of this research was to quantify the impacts of utility construction equipment, heavy vehicle traffic management, and deep tillage on soil compaction and long-term crop yields. The objectives of this study were to (a) investigate the effects of construction equipment trafficking and deep tillage within the ROW on deep soil (subsoil) compaction, and (b) investigate the effects of deep tillage treatments on soil compaction.

## 2 | MATERIALS AND METHODS

### 2.1 | Experiment description

The experimental test was established along the pipeline ROW at the Iowa State University (ISU) farm in Washington Township of Story County, Iowa. A five year long-term corn-soybean (*Zea mays L.* - *Glycine max*) crop rotation study was established on an experimental plot of a 2 ha area consisting of a ROW section (46 m wide and 244 m long) and adjacent unaffected crop fields (39 m wide and 244 m long). The study began in fall 2016, and corn was planted in spring 2017. Clarion loam (*fine-loamy, mixed, superactive, mesic Typic Hapludolls*) and Canisteo clay loam (*fine-loamy, mixed, superactive, calcareous mesic Typic Endoqualls*) are the dominant soil series at the site according to the USDA soil survey (<http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>). The ROW was set at a bearing of  $123^\circ$  to accommodate the pipeline direction and was approximately 46 m wide. According to the DAPL agricultural mitigation plan, topsoil with an approximate depth of 525 mm below the original cropland topsoil surface was scraped from the ROW construction zone and stockpiled. Subsoil excavated from the pipeline trench was also stockpiled separately from the topsoil and returned to the excavated trench. Preceding the replacement of topsoil, the subsoil within the ROW which had been trafficked by heavy construction equipment was tilled to a depth of 450 mm from the top surface of the exposed subsoil using a subsoiler implement with 7-shanks at 760 mm spacing. The 450-mm-depth tillage was done in three repeated passes. After the topsoil was replaced, the land was levelled and tilled using a field cultivator at a tool depth of 100 mm.

Figure 1 shows the heavy vehicles frequently used for soil separation and pipeline installation. The ground contact



Caterpillar pipe liner PL 87. Fully loaded weight = 475 kN. Each track dimension had a nominal track contact length, which is the length of track in contact with a flat, unyielding surface (ISTVS, 1977), of 3.71 m and a width of 0.76 m.



Caterpillar 349F hydraulic excavator. Fully loaded weight = 522 kN. Each track had a nominal track contact length of 5.36 m long and a width of a 0.76 m.

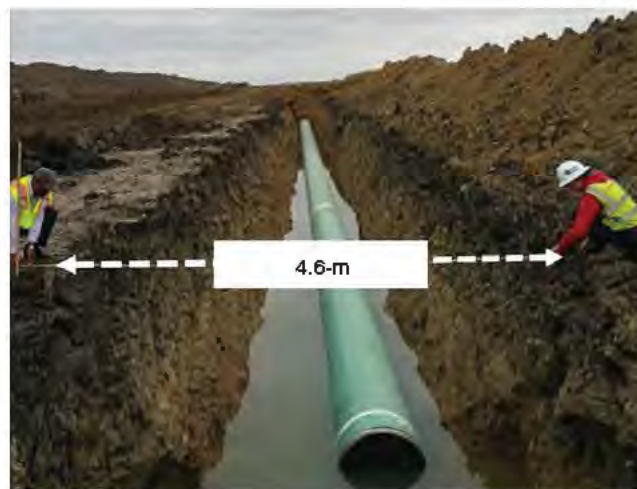


Caterpillar D7E bulldozer. Fully loaded weight = 256 kN. Each track had a nominal track contact length of 3.02 m and a width of 0.76 m.



Semi-trailer truck with three pipes (each pipe was 24.4 m long, 0.76 m outer diameter, and 9.5 mm wall thickness).

(a)



(b)

**FIGURE 1** Right-of-way pipeline construction heavy equipment—Caterpillar pipe liner PL 87, Caterpillar 349F hydraulic excavator, Caterpillar D7E bulldozer and semi-trailer truck with three pipes (a). The excavated trench for the pipe and the stockpiled subsoil adjacent to the pipe (b). At the experimental site, the pipe trench width was approximately 4.6 m [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

pressure estimated from the vehicle weight and track contact area for the Caterpillar pipe liner PL 87, Caterpillar D7E bulldozer and Caterpillar 349F hydraulic excavator

were 168, 111 and 128 kPa, respectively. The semi-trailer truck had single tyres on the front axle, dual tyres on each of two rear axles of the road tractor and dual tyres on each



of two rear axles of the trailer. The tyre size was 275/80R-24.5 (Michelin). According to the U.S. Department of Transportation (DOT), the front axle load of the semi-trailer truck carrying a full load should not exceed 8.9 kN on highway roads.

After observing the field operations and vehicle traffic management within the ROW, four zones were delineated depending on traffic intensity during land clearing, topsoil separation and pipe trenching and stockpiling subsoil materials. A 7.6 m wide zone with the pipe at centreline (CL) was classified as Zone-1 (Z-1). Zone-2 (Z-2) was classified as a zone adjacent to Z-1 and opposite to the stockpiled subsoil. Relative to all the zones within the ROW, Z-2 received the highest traffic intensity. Zone-3 (Z-3) received heavy equipment traffic less frequently and was located between Z-2 and the stockpiled topsoil. Between one of the unaffected crop field zones (located at the southern side of the pipe) and the stockpiled subsoil, a separate zone was classified as Zone-x (Z-x). Relative to Z-1, Z-2 and Z-3, Z-x was observed to receive the lowest traffic intensity. The four zones (Z-1, Z-2, Z-3 and Z-x) within the ROW and the two unaffected crop field zones (Control-N and Control-S) to the northern and southern side of the pipe were defined as experimental blocks in our experimental design (Figure 2). The unaffected crop zones were outside the ROW area and parallel to the pipeline.

## 2.2 | Peak vertical soil stress measurement

Soil stresses were measured prior to the topsoil replacement to quantify the impact of loading from the high axle vehicle trafficking on deep induced soil stresses. Within Z-x, vehicle induced peak vertical soil stresses were measured at three soil depths using a GEOKON model 3500, 1 MPa capacity,



**FIGURE 2** Map of experimental research plot showing the designated construction zones (Zone-1, Zone-2, Zone-3 and Zone-x) and unaffected crop field zones (Control-S and Control-N) aligned in reference to the pipeline. Zone-P refers to where the topsoil was piled Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)

piezoelectric earth pressure sensor (GEOKON [Lebanon, NH, USA]) as a vehicle passed over the sensors. The Caterpillar pipe liner PL 87 (with bender) and semi-trailer truck (with three pipes) were tested passing over the buried sensors. The pressure sensor was 100 mm in diameter and 10 mm in thickness. Each pressure sensor was installed at one of three soil depths (200 mm, 400 mm and 600 mm) from the top surface of the exposed subsoil. The centre-to-centre distance between the adjacent sensors along the vehicle travel direction was 300 mm. A trench with a width approximately three times the diameter of the pressure sensor was excavated. Before the trench was covered with the spoil material, an approximate 50-mm-thick layer of clean Ottawa #10 sand was placed above and below the sensor, according to the pressure sensor calibration procedure explained in White, Vennapusa, and Gieselman (2009) for studies on roller compactor-induced soil stress measurement. The vertical soil stress data were acquired using a USB-1408FS data acquisition (DAQ) device (Measurement Computing Corp., Norton, MA, USA) and sampled at 100 Hz. The soil during the soil stress measurement was moist and its consistency was close to the lower plastic limit. During the one-week heavy vehicle trafficking, mean precipitation measured at the nearest weather station in Boone, Iowa was 8.5 mm.

## 2.3 | Soil sampling for bulk density measurement

After the pipe was installed and prior to topsoil placement, soil core samples were taken for dry soil bulk density and soil moisture content measurement within Z-1, Z-2, Z-3 and Z-x starting from the top surface of the exposed subsoil. A Gidding hydraulic driven sampling probe (Giddings Machine Co., Windsor, CO) was used to collect 76-mm-diameter and 916-mm-long soil cores at each sampling position. Nine soil core sampling locations were selected along the centre of each zone within the ROW. Similarly, nine soil core tube samples were taken from the unaffected crop field zone (Control-S). Each tube sample was cut into 50 mm increments. The soil core samples were oven-dried at 105°C for 48-hr to determine dry soil bulk density and dry basis soil moisture content.

## 2.4 | Deep tillage experimental design

A Randomized Complete Block Design (RCBD) subsoiling tillage experiment was established with two subsoil tillage depths (300 mm and 450 mm from the top surface of the exposed soil) within the zones (Z-1, Z-2 and Z-3; Figure 3). Each zone was considered as an experimental block, where the tillage treatments were applied in four replicates. Two repeated subsoil tillage passes were applied in parallel to the pipeline. A John Deere 8320R MFWD tractor (196 kW [263 hp] PTO power) tractor pulling a John Deere V-Ripper (5-shanks at

**FIGURE 3** Based on the randomized complete block design (RCBD), the 300-mm- and 450-mm-deep tillage treatments were applied within Zone-1, Zone-2 and Zone-3 prior to topsoil replacement (“blue” rectangle). Each subsoil tillage plot size was 7.6 m width by 18 m long. Within the right-of-way (ROW), Zone-x and Zone-P (topsoil pile zone) were not part of the RCBD tillage experiment design. Crop field zones (Control-N, CN (north) and Control-S, CS (south)) were outside the ROW and unaffected by the pipeline construction [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]



760 mm spacing with DMI ripper points, 63.5-mm-wing width) was used to apply the subsoil tillage operation.

After the topsoil was replaced, the two unaffected zones designated as Control-N and Control-S (Figure 2) were added to the long-term (5-years) experimental plots to represent the soil and crop conditions outside the ROW that receive normal farm cultivation practices. Note that Control-N and Control-S had corn planted in the field adjacent to the ROW. At the unaffected zones, after the fall 2016 corn harvest and the pipeline construction were completed, including replacing the topsoil, Control-N received 300-mm-depth tillage using a Case 690 disk ripper pulled by a John Deere 8260R WFWD tractor (161 kW [216 hp] PTO power) which was followed by a second pass of 300-mm-depth tillage using the aforementioned John Deere 8320R MFWD tractor and the John Deere V-Ripper. In the Control-S zone, first pass tillage was completed at 300 mm depth using the Case 690 disk ripper pulled by the John Deere 8260R MFWD tractor and followed by a second pass of 450-mm-depth tillage using the John Deere V-Ripper pulled by the John Deere 8320R MFWD tractor. The disk ripper implement was the preferred tool to manage corn residue before applying the tillage using the V-Ripper without disc.

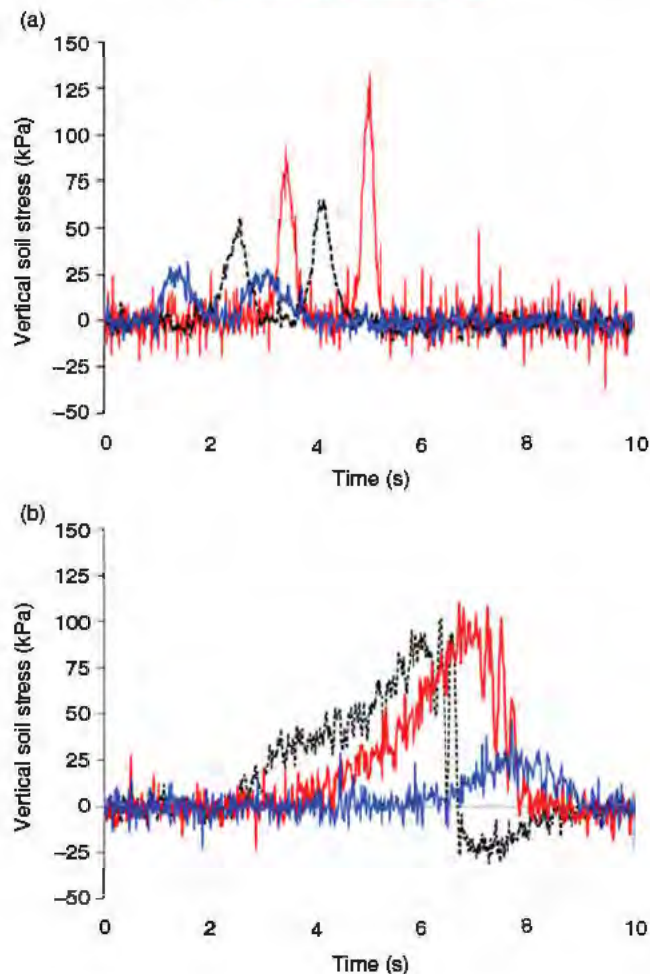
## 2.5 | Soil cone penetration resistance measurement

After the first year crop harvest in fall 2017, soil cone penetration resistance was measured according to the ASABE standards (ASAE Standards, 2004a,b). A tractor-mounted three-probe cone penetrometer designed and built at ISU (Figure 4) was used to measure the soil cone penetration resistance. Cone penetration resistance force was measured using a Transducer Techniques model LPU-500 load cell transducer with 2224-N capacity (Transducer Techniques,



**FIGURE 4** Three-probe cone penetrometer mounted on the three-point hitch of a tractor. The lateral spacing between the penetrometer probes was 150 mm during field measurements. An ASABE 30-degree conical tip with 285 mm<sup>2</sup> cone base area was attached to each of the probes. The probe insertion rate was 30 mm s<sup>-1</sup> [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

LLC (Temecula, CA)) and a Metromatics USB DEWE-43 DAQ System (Metromatics (North Lakes, Brisbane, QLD, Australia)) acquiring data at 100 Hz. Soil cone penetration resistance (kPa) was calculated by dividing the cone penetration resistance force by 285 mm<sup>2</sup> ASABE cone base area (ASAE Standards, 2004a).



**FIGURE 5** Soil vertical stress measured using the buried piezoelectric earth pressure cell at three depths (“red”—soil depth of 200-mm; “black”—soil depth of 400 mm; and “blue”—soil depth of 600 mm) as the semi-truck trailer hauling three pipes (24.4 m long, 0.76 m outer diameter, and 9.5 mm wall thickness); (a) and the Caterpillar Pipe Liner PL 87 (with bender) passes (b). Note that the comparison was made on the peak induced vertical soil stress (maximum soil vertical stress) from the front axle pass of the semi truck trailer and track pass of the Caterpillar Pipe Liner PL 87 [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

## 2.6 | Data analysis

Data analysis to compare the vertical soil stresses from the vehicles was performed on the first pass peak vertical soil stress. In order to not hinder pipeline construction field operations, the construction equipment for loading the pressure sensors was available for only one week. Thus, the measurement with the pressure sensor buried at the three depths was limited to one replicate. The field machine productivity was approximately 0.2 km h<sup>-1</sup> (personal communication with field superintendent).

Data from soil bulk density and soil cone penetration resistance were analysed using the GLM procedure in SAS JMP Ver. 14. (JMP, 2013). Means were compared using a *p*-value of 0.05 as a

**TABLE 1** Peak vertical soil stress induced from first pass of the heavy vehicle Caterpillar pipe liner PL 87 (with bender) and semi-truck trailer (with three pipes) on soil within the ROW

Soil depth (mm) <sup>a</sup>	Peak vertical soil stress (kPa)	
	Vehicle-A <sup>b</sup>	Vehicle-B <sup>c</sup>
200	133	133
400	115	78
600	63	49

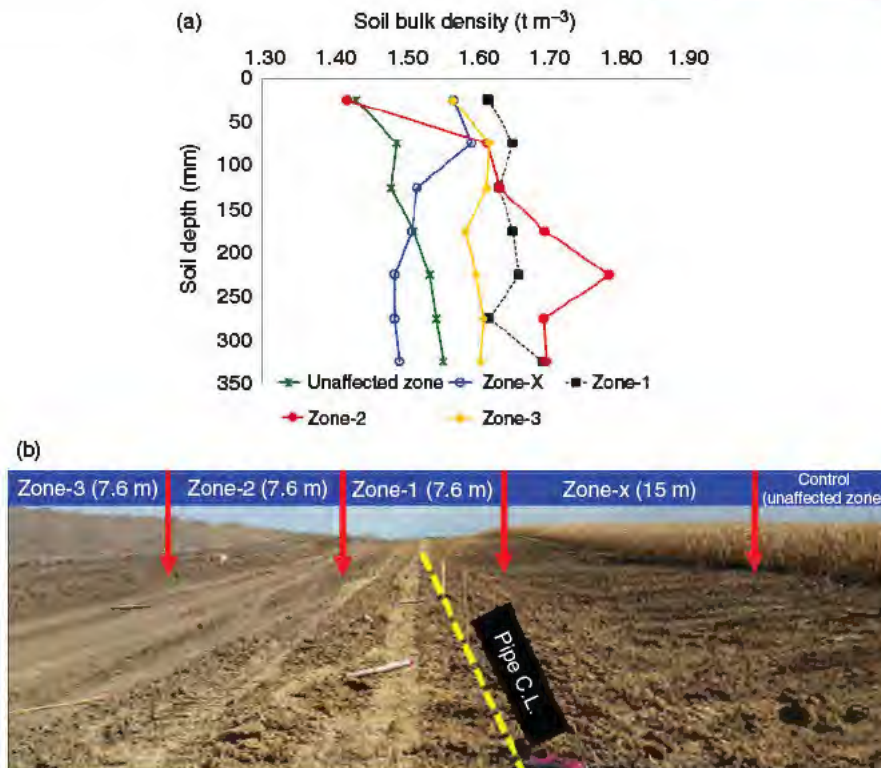
<sup>a</sup>Soil depth was measured from the top surface of the exposed subsoiled soil to the top surface of the sensor. <sup>b</sup>Vehicle-A: Caterpillar pipe liner PL 87 (with bender). <sup>c</sup>Vehicle-B: Semi-truck trailer (three pipes).

significance level. From the unaffected zone, the soil cores sampled from the top surface of the exposed subsoil to the end core length of the Gidding cylinder were used to compare with the soil bulk density at the corresponding soil depth from the ROW zones.

## 3 | RESULTS AND DISCUSSION

### 3.1 | Peak vertical soil stress

Multiple peak values of vertical soil stresses were observed as the tyres of the semi-trailer truck passed over the buried pressure sensors (Figure 5). From a single pass of the Caterpillar Pipe Liner PL 87 (with bender) travelling at 0.45 m sec<sup>-1</sup>, the peak vertical soil stress occurred towards the end of the track contact length. Table 1 shows the peak vertical soil stress measured from the first pass of the two heavy vehicles. At the shallow depth (200 mm), there was small difference in the peak vertical soil stress between the front axle (DOT highway limit of 8.9 kN) pass of the semi-trailer truck (275/80R-24.5 tyre) and the single pass of the Caterpillar pipe liner PL 87 (contact area of each track 2.82 m<sup>2</sup>). At the depth of 400 mm, the peak vertical soil stress appeared to be influenced more by the vehicle weight, whereby the peak vertical soil stress from the Caterpillar liner PL87 was 1.5 times higher than from the semi-trailer truck. At 600 mm depth, the magnitude of peak vertical soil stress from the Caterpillar pipe liner PL 87 was 1.3 times the stress induced by the semi-trailer truck. Having one replicate measurement statistically limited the comparison of impacts from heavy vehicles of the semi-trailer truck versus the Caterpillar pipe liner PL87. The narrow contact ground area and tyre inflation pressure from the semi-trailer truck had a strong effect on shallow vertical soil stress, while the deep (400 mm and 600 mm) vertical soil stresses was affected more by the magnitude of vehicle load. The effect of vehicle type with high tyre inflation pressure and axle load on shallow and deep soil compaction was similar to previous studies (Bailey, Raper, Way, Burt, & Johnson, 1996; Hakansson & Reeder, 1994). Measurement of soil stress from the other heavy vehicle (Caterpillar 349F and Caterpillar D7E) passes showed similar trends as the effects from the Caterpillar pipe liner PL 87. The soil pressure measurements from the Caterpillar 349F and Caterpillar D7E passes had



**FIGURE 6** Soil bulk density with depth from the construction ROW zones (Zone-1, Zone-2, Zone-3 and Zone-x) and the unaffected zone (Control-S). The reported soil depth refers to the top surface of the exposed subsoil (b) within the ROW. “C.L.” is the pipe centreline. Each data point is a mean of nine replicates [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

**TABLE 2** Mean soil bulk density ( $t\ m^{-3}$ ) by soil depth class

Soil depth class <sup>b</sup> (mm)	Soil bulk density ( $t\ m^{-3}$ )				
	Zone-1	Zone-2	Zone-3	Unaffected zone	Zone-x
0–50	1.62 (A) <sup>a</sup>	1.42 (B)	1.57 (A B)	1.46 (B C)	1.57 (B)
50–100	1.65 (A)	1.62 (A)	1.62 (A)	1.52 (B)	1.59 (A B)
100–150	1.63 (A)	1.63 (A)	1.62 (A)	1.51 (B)	1.52 (B)
150–200	1.65 (A)	1.70 (A)	1.58 (A B)	1.54 (B)	1.51 (B)
200–250	1.66 (A)	1.79 (A)	1.60 (B)	1.55 (B)	1.49 (B)
250–300	1.62 (A)	1.70 (A)	1.61 (A)	1.59 (A B)	1.49 (B)
300–350	1.69 (A)	1.70 (A)	1.61 (A B)	1.57 (B)	1.49 (B C)

<sup>a</sup>The same letter within each depth indicates there is no significant difference at  $p \leq 0.05$ . <sup>b</sup>The zero soil depth is in reference to the top surface of the exposed subsoil. The difference between soil depth (mm) relative to undisturbed topsoil surface on the unaffected zone “Control-S” outside of the ROW and soil depth (mm) relative to the top surface of exposed subsoil was the topsoil removed from the ROW.

relatively high data variability, partly because there was substantial precipitation prior to data collection.

### 3.2 | Soil bulk density

The soil bulk density trend at different soil depth (Figure 6) shows the higher magnitude of soil compaction from the soil disturbance and vehicle trafficking in the construction ROW zones compared to the unaffected zone. The soil bulk density

values in Figure 6 were all relative to the top surface of the exposed subsoil.

Comparing the soil bulk density values among zones (Z-1, Z-2 and Z-3) within the ROW and the unaffected area (Table 2), the soil compaction effect from the construction activity was statistically significant ( $p < 0.05$ ) to a depth of 300 mm below the top surface of the exposed subsoil. The differences in soil bulk density between the unaffected zone and Z-x that received relatively light traffic were minimum,

except in the top 50 mm. The deep compaction in Z-1 and Z-2 had soil bulk density close to a Proctor compaction test (ASTM D698) of maximum bulk density ( $1.72 \text{ t m}^{-3}$ ) at an optimal soil moisture content (21.5%, d.b.) of a loam soil (33.29% sand; 45.21% silt; 21.5% clay). The Proctor compaction test was conducted on loam soil (Clarion loam series) sampled at a nearby ISU farm location. The control (unaffected) area and the least trafficked zone in the ROW (Z-x) had wetter soil conditions (Figure 7), indicating that the compaction from the construction activities, especially on Z-2 and Z-3, seemed to restrict water infiltration prior to the bulk density measurement. The backfilled subsoil to the pipe trench in Z-1 was compacted by DAPL to reduce soil settlement.

Within the ROW (below 300 mm from the top surface of the exposed subsoil), soil compaction was found with higher bulk density in Z-1 ( $1.67 \text{ t m}^{-3}$ ), Z-2 ( $1.70 \text{ t m}^{-3}$ ), Z-3 ( $1.58 \text{ t m}^{-3}$ ) than the less trafficked zone (Z-x) ( $1.52 \text{ t m}^{-3}$ ). Soil core samples from the unaffected zone below 300 mm from the top surface of the exposed subsoil were not available due to the limit of the maximum Giddings cylinder stroke length.

### 3.3 | Deep tillage effect on soil cone index

Table 3 shows means and standard deviations of soil cone penetration resistance values within Z-1, Z-2 and an unaffected area (Control-N) for two soil depth layers of 0 to 300 mm and 300 to 750 mm. Taking cone penetration readings on all zones within the ROW (Z-1, Z-2, and Z-3) and adjacent zones (Control-N and Control-S) was not practically feasible without introducing wide soil moisture variations during the sampling period. To minimize undesired soil moisture effects on cone penetration resistance, we focused on Z-1, Z-2 and Control-N for comparison of

the tillage remediation effects within the ROW and the adjacent unaffected area. The soil moisture contents during the cone penetration reading from the topsoil (0–150 mm) within Z-1, Z-2 and Control-N were 16.28% d.b. ( $SD = 1.72\%$ ), 15.98% d.b. ( $SD = 1.11\%$ ), and 17.78% d.b. ( $SD = 1.72\%$ ), respectively. The soil moisture content was not significantly different across the various sampling zones ( $p = 0.09$ ).

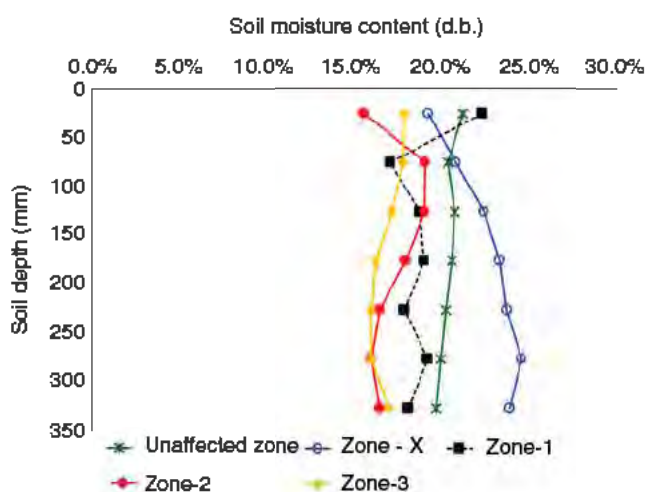
Within Z-1 and Z-2, the 300-mm-depth tillage and 450-mm-depth tillage applied prior to topsoil replacement did not have a significant effect on the soil cone penetration resistance within the 0 to 300 mm soil depth ( $p > 0.05$ ). Comparing the zones within ROW (Z-1 and Z-2) to the unaffected area, Z-1 had statistically the highest soil cone penetration resistance ( $p < 0.01$ ) in the topsoil profile (0–300 mm).

Deeper than 300 mm soil depth, the effect of the utility construction equipment on deep soil compaction was noticeable, even though the ROW zones received subsoiling from the tillage treatments (300-mm-depth tillage and 450-mm-depth tillage; Figure 8). Similar to the soil bulk density, deep soil compaction in Z-2 was higher than in Z-1 and in the adjacent unaffected crop field. Overall, the 450-mm-depth tillage alleviated the deep soil compaction created by the pipeline construction equipment better than the shallow tillage (300-mm-depth tillage). No significant differences ( $p > 0.05$ ) in the mean soil cone penetration resistance (300 to 750 mm) were observed comparing the compaction from each of the ROW zones (Z-1 and Z-2) to the unaffected zone after Z-1 and Z-2 received the 450-mm-depth tillage. In the deeper soil profile (below 600 mm; Figure 8), Z-1 and Z-2 which received the 450-mm-depth tillage had soil cone penetration resistance values close to those of the unaffected area.

After subsoiling at the 300-mm-depth tillage in Z-1 and Z-2, the deep soil compaction (300 mm to 750 mm) was not fully removed (Figure 8) and soil compaction was significantly ( $p < 0.05$ ) higher than in the unaffected area.

The pipeline construction equipment trafficking created deep soil compaction (a hardpan) as shown by an abrupt increase in soil cone penetration resistance as the cone penetrometer was inserted into the subsoiled layer (Figure 8). Tekeste, Raper, Schwab, and Seymour (2008) and Raper, Reaves, Shaw, van Santen, and Mask (2005) detected crop-limiting soil hardpan layers on Coastal Plains soils in the southeastern United States by analysing the soil cone penetration resistance profile for a soil depth range. Raper et al. (2005) applied site-specific tillage at a depth that had a maximum soil cone index approximating the depth of soil hardpan and reported soil compaction alleviation. Schjonning and Rasmussen (1994) also reported deep soil compaction on loam soils that persisted even after 5 years traffic with four passes of a vehicle with high axle load (32t) on the bottom of a 200 mm exposed soil layer.

The deep soil compaction created on the Clarion loam and Canisteo clay loam from the pipeline construction will require depth-specific subsoiling management in the future

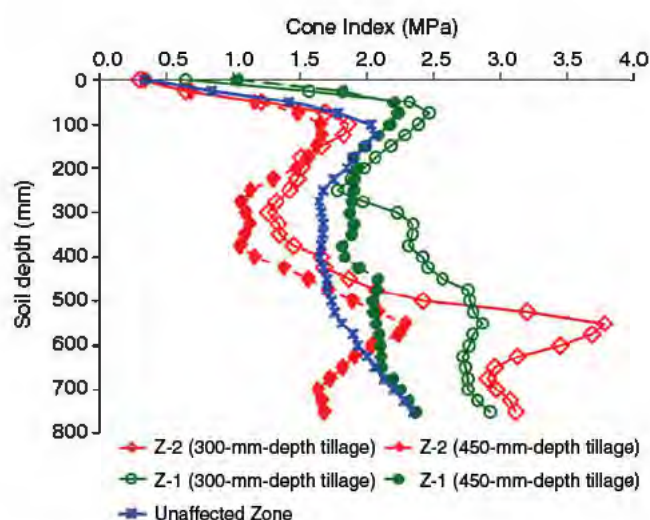


**FIGURE 7** Soil moisture content of soil depth from four construction zones Zone-1, Zone-2, Zone-3, Zone-x and an unaffected zone (Control-S). The reported soil depth refers to the top surface of the exposed subsoil within the ROW. Each data point is a mean of nine replicates [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

**TABLE 3** Mean soil cone index (MPa) for 0 to 300-mm and 300 to 750-mm soil depth range for the Zone-1, Zone-2 and the unaffected zone

Zone	Tillage remediation	Depth range (mm) <sup>b</sup>	Replicate	Soil cone index (MPa)	
				Mean	SD
Unaffected zone	Control-N <sup>a</sup>	0–300	4	1.7	0.19
		300–750	4	1.9	0.17
Z-1	300 mm depth tillage	0–300	4	2.1	0.3
		300–750	4	2.6	0.5
	450 mm depth tillage	0–300	4	2.0	0.2
		300–750	4	2.0	0.4
Z-2	300 mm depth tillage	0–300	4	1.4	0.4
		300–750	4	2.6	1.0
	450 mm depth tillage	0–300	4	1.3	0.1
		300–750	4	1.7	0.6

<sup>a</sup>The tillage practice in the unaffected area was similar to the tillage in control-N. <sup>b</sup>The top depth for the soil cone index reporting refers to the top surface of the unaffected zone.



**FIGURE 8** Soil cone index profile measured from the right-of-way (ROW) zones (Zone-1 and Zone-2) subsoiled at 300-mm- and 450-mm-depth tillage treatments prior to the topsoil replacement and the unaffected zone outside the ROW. The topsoil depth refers to the topsoil surface from the unaffected zone. Each data point is a mean of four replicates of the three-point cone penetrometer readings [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

to remove the root-limiting hardpan layers and prevent the persistent problem of deep compaction. Excessive compaction deeper than 500 mm soil depth is relatively deeper than typical fall tillage practices (200-mm-depth tillage) in the area (Karlen, Kovar, Cambardella, & Colvin, 2013).

## 4 | CONCLUSIONS

A five-year long-term corn–soybean field experiment was established to assess impacts of utility construction activities and deep tillage remediation treatments (300-mm-depth

tillage and 450-mm-depth tillage applied at the exposed subsoil) within the ROW.

Using a pressure sensor, the peak vertical soil stresses measured at three soil depths (200, 400, and 600 mm) successfully identified the machine configuration (size and tractive element) that created excessive soil compaction below the exposed subsoil.

The impact on soil compaction from pipeline installation on exposed subsoil was also evaluated comparing soil bulk density within ROW and adjacent unaffected crop field area. First-year soil responses to deep tillage were also investigated using cone penetration resistance measurement. Heavy vehicle and high traffic intensity within the ROW created deep soil compaction with significantly higher soil bulk density in the pipeline zone (Z-1) and adjacent heavily trafficked zone (Z-2) to a depth of 300 mm. Comparing the soil cone penetration profile from the ROW deep tilled zones and the unaffected zone, deep tillage applied using a 450 mm depth alleviated the deep compaction created during the pipeline construction. Subsoiling using 300-mm-depth tillage, however, did not significantly reduce the deep soil compaction.

Delineating the pipeline construction zones on the basis of vehicle trafficking, the techniques to quantify machine induced peak vertical soil stress and subsoil tillage management may be used to develop soil compaction management plans for pipeline construction activities in cropland.

Future studies will include deep tillage management effects on soil compaction (bulk density and cone penetration resistance) and corn–soybean crop yields.

## ACKNOWLEDGEMENTS

We acknowledge DAPL for providing funding to conduct this study. We also received field support from Kent R



Berns, Supervisor Agricultural Station, Carl H Pederson, Agricultural Specialist at the Department of Agricultural and Biosystems Engineering at Iowa State University in Ames, Iowa, and Kent Heikens, Agricultural Science Research Technician (Soils) at the National Laboratory for Agriculture and the Environment, USDA-ARS in Ames, Iowa.

## ORCID

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# **Attachment No. 11**



February 28, 2022

Iowa Chapter  
Physicians for Social  
Responsibility



Sign in Colorado. ——— Source: [Jeffre Beall](#)

## Carbon Capture and Public Health

By [Sheri Deal-Tyne](#), Health & Energy Policy Researcher, PSR Iowa, 2/28/22.

This series began with [Carbon Capture Basics](#), a basic overview of the process of Carbon Capture and Sequestration (CCS) and a brief synopsis of the current debate concerning its promotion. In this second report, we dive deeper into a frequently overlooked issue: the public health implications of CCS. *Read the first report [here](#).*

Anthropogenic, or human-made, CO<sub>2</sub> has been a focus of concern for scientists and environmentalists for decades. CO<sub>2</sub> makes up about **80%** of total greenhouse gas emissions (methane is next at 10%). The burning of fossil fuels (coal, natural gas, and oil) is the largest source of CO<sub>2</sub> emissions.

The UN Intergovernmental Panel on Climate Change (IPCC) released a report in 2018 announcing that CO<sub>2</sub> emissions would need to decline 45% from 2010 levels by 2030 and reach “net-zero” by 2050 to avoid a global temperature rise **beyond 1.5°C**. Many in the business and academic communities promote CCS and Carbon Capture and Utilization Sequestration (CCUS) as vital to reaching “net-zero” for the IPCC goal. PSR Iowa feels it is essential to recognize the significant public health risks associated with CCS. This report discusses the hazards accompanying each stage of the CCS process.

In the first stage, the CO<sub>2</sub> is captured and separated from other gases, using expensive technology requiring an additional energy source. Capture is proposed at various sites, including coal- and gas-fired power plants and ethanol production facilities. In the second stage, the CO<sub>2</sub> is compressed into liquid form, again requiring energy, and then pumped into and transported via pipelines. In the third and final stage, the liquid CO<sub>2</sub> is injected into the earth at the sequestration site.

### Lethality of CO<sub>2</sub>

CO<sub>2</sub> is the colorless and odorless gas humans exhale during respiration, contributing to the perception that CO<sub>2</sub> is harmless. Concentrated CO<sub>2</sub> is an asphyxiant and a recognized **toxicant** cited by OSHA, ACGIH, DOT, and NIOSH. Gaseous CO<sub>2</sub> is 1.5 times heavier than air. Liquid CO<sub>2</sub> is 10% heavier than water. When released in large

quantities as gas or liquid, CO<sub>2</sub> settles on the ground, flows downhill, and displaces ambient air.

**Ambient air** is the air we all breathe. The concentration of CO<sub>2</sub> in ambient air is around 400 parts per million (ppm) or 0.04% but can be elevated in areas with high vehicle traffic or industrial activity. *Atmospheric CO<sub>2</sub>* is the measurement of CO<sub>2</sub> in the earth's atmosphere. Atmospheric CO<sub>2</sub> **levels** are tracked by the National Oceanic and Atmospheric Administration (NOAA) and the Scripps Institution of Oceanography.

**Table. Health Effects of Exposure to Elevated CO<sub>2</sub> Levels**

— Information courtesy of Ted Schettler, MD, MPH

CO <sub>2</sub> concentration	Health Effect	Exposure Time
0.04% (Ambient Air)	No Health Effect	Lifetime
2% (20,000 ppm)	Respiratory center stimulated causing increases in breathing (tidal) volume	Rapid
4% (40,000 ppm)	Increases in breathing rate becomes distressing;	Immediately dangerous to life or health (IDLH) [NIOSH]
7-10%	Dimmed sight, sweating, tremor, unconsciousness	After only a few minutes
Over 10%	Convulsions, coma, death	Less than a minute
Over 20%	Emergency, Loss of consciousness, rapid death	Seconds

The physiological response to and seriousness of CO<sub>2</sub> inhalation varies depending on the concentration of CO<sub>2</sub> and the length of exposure time. Conditions from low to moderate exposures are generally reversible when a person is removed from the high CO<sub>2</sub> environment.

### CO<sub>2</sub> Capture Sites

As the debate about CCS gains momentum, that familiar idiom “can’t see the forest for the trees” springs to mind. Proponents of CCS focus on the potential value of removing CO<sub>2</sub> from industrial sites while quietly ignoring associated hazards. Combustion of fossil fuels and ethanol production release many pollutants along with CO<sub>2</sub>. These co-pollutants are associated with a wide range of public health dangers.

Extensive **research** has demonstrated the health hazards of coal-generated electricity. NO<sub>x</sub>, SO<sub>2</sub>, mercury, and PM<sub>2.5</sub> are emitted from coal plants along with CO<sub>2</sub>. NO<sub>x</sub> causes

airway inflammation, decreased lung function, asthma exacerbation, increased response to allergens, and contributes to particulate matter and ground-level ozone. SO<sub>2</sub> causes wheezing, shortness of breath, chest tightness and exacerbates asthma. Continued exposure reduces the ability of the lungs to function. SO<sub>2</sub> reacts with water to become acid rain. Mercury is a potent neurotoxin, especially for developing fetuses and young children. PM<sub>2.5</sub> contributes to premature mortality, increased hospitalizations, cardiovascular disease, bronchitis, cognitive decline, dementia, preterm birth, low birth weight, and congenital disabilities.

**Pollutants** from natural gas-generated electricity include less NO<sub>x</sub> and fewer particulates, do not include mercury, but do include significant methane leakage. In addition to being a precursor to ground-level ozone formation, and as a greenhouse gas, methane is **much more potent** than CO<sub>2</sub>.

Note that each stage of CSS technology requires its own energy sources, which generate additional emissions. CO<sub>2</sub> capture systems at power-generation plants and ethanol production facilities **also require copious amounts of water** for cooling and other purposes leading to extensive water consumption and increased water pollution, often in areas already facing water scarcity.

## **CO<sub>2</sub> Transport**

Large-scale development of CCS across the US will require the construction of thousands of miles of new pipeline infrastructure impacting ecosystems along their routes. Liquid CO<sub>2</sub> is transported in a **highly pressurized state**—higher than natural gas. Additionally, liquid CO<sub>2</sub> is corrosive when in contact with water, increasing the risk of leaks, fractures, and ruptures. Rupture of a highly pressurized liquid CO<sub>2</sub> pipeline results in an explosive release of an extremely cold (less than -70° C) flood of liquid CO<sub>2</sub> that forms ground-hugging clouds of gas and small particles that continue to spread until supply is turned off. Because CO<sub>2</sub> displaces oxygen, internal combustion engines would be rendered inoperable near a leak or rupture, interfering with emergency responders. Potential mass casualties would overwhelm rural emergency health systems.

Watch [this video](#) to see what a CO<sub>2</sub> pipeline rupture looks like.

## **CO<sub>2</sub> Injection Sites**

The rollout of CCS projects at the scale required to slow climate change effectively would require establishing CO<sub>2</sub> sequestration sites throughout the US. **Estimates** (see pp 18-19) of the storage potential and feasibility are theoretical and vary widely.

The risks of CO<sub>2</sub> sequestration **include** leakage of CO<sub>2</sub> and increased occurrence of earthquakes like that experienced with high-pressure water injection at fracking sites. CO<sub>2</sub> leaks at the surface could damage surface ecosystems or structures, threaten people and animals from high concentrations of CO<sub>2</sub>, and contribute to greenhouse gas accumulations, all undermining the theoretical value of CCS. Leaks that occur sub-surface could affect drinking water aquifers. Conceivably, using geologic formations as storage for carbon dioxide could compromise deep not-currently-used aquifers on which future generations may depend for drinking water.

## **Frontline Communities**

[Dr. J.M. Bacon](#), Professor of Environmental Sociology at Grinnell College, cautions us to be skeptical of “purely technological fixes when it comes to complex eco-social problems. From an Environmental Justice perspective, the first question is: how have communities been involved at the planning and decision-making stage?”

As has been widely documented, fossil fuel extraction and industrial processes have a legacy of disproportionately impacting Black, Brown, and Indigenous communities. Adding carbon capture to an existing fossil fuel or industrial site functions to extend the lifespan of that facility. Many of the communities already adversely impacted by these facilities would be further harmed by the increased emissions and water pollution associated with carbon capture units.

For example, an industrial corridor that stretches between New Orleans and Baton Rouge, Louisiana is being targeted as a [hub for carbon capture](#). This corridor is home to more than 200 oil and gas refineries, petrochemical plants, and other industrial chemical facilities. The area is known as “*Cancer Alley*” because decades of poor air and water quality from industrial pollution have increased cancer rates and other health problems. The [communities](#) most affected are predominantly Black.

The White House Environmental Justice Advisory Council (WHEJAC) Final Recommendations on climate and environmental justice include a list of “**EXAMPLES OF THE TYPES OF PROJECTS THAT WILL NOT BENEFIT A COMMUNITY**” ([see page 59](#)). Number 2 on the list is CCS or CCUS. It is also essential to note that number 1 on the list is “Fossil fuel procurement, development, and infrastructure repair that would in any way extend lifespan or production capacity, transmission system investments to facilitate fossil-fired generation or any related subsidy.”

### **History lessons: Satartia**

In 2020, a CO<sub>2</sub> pipeline in Satartia, MS ruptured, sending 49 people to the hospital and leaving many with long-term health impacts. More than 250 people required evacuation. First responders needed self-contained breathing apparatuses to conduct their rescues. Residents’ cars ceased to run, and victims were found dazed or even unconscious. See the full story [here](#).



The Sartartia pipeline rupture. Source: [Yazoo County Emergency Management Agency](#)

## Conclusion

Superficially, the potential CO<sub>2</sub> reduction associated with CCS projects seems desirable. However, CCS technology and associated pipeline infrastructure are economically costly and come with a significant set of public health hazards. We can achieve *more* CO<sub>2</sub> reduction *and* eliminate pollution and mining and pipeline infrastructure by utilizing existing and accessible renewable energy like wind, solar, efficiency, and other readily scalable and available strategies. It is reckless to spend money on unproven technologies that contribute negligible benefit or, worse, disproportionately impact already disenfranchised communities. If we instead focus funding on renewable energy projects and infrastructure, we avoid the myriad health risks associated with CCS altogether.

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## Dear Reader

Stay tuned for our next installment where we take a much closer look at issues surrounding three proposed CCS projects in Iowa.

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## GLOSSARY

**ACGIH:** American Conference of Governmental Industrial Hygienists

**CCS:** Carbon capture and storage/sequestration—The process of capturing human-made CO<sub>2</sub> at its source and storing it to prevent its release into the atmosphere.

**CCUS:** Carbon capture, utilization, and storage/sequestration—captured CO<sub>2</sub> is utilized in some way, typically for enhanced oil recovery.

**Co-pollutant:** Other types of pollutants that are generated during the burning of fossil fuels, along with CO<sub>2</sub>

**DOT:** Department of Transportation

**Net-zero:** A nebulous term promoted by some meaning an overall balance between emissions produced and emissions taken out of the atmosphere. Net-zero often replaces the term *carbon neutral*. To save our climate and health, we need to go beyond net-zero to zero production of carbon emissions.

**NIOSH:** National Institute of Occupational Safety and Health

**NO<sub>x</sub>:** Nitrogen oxide, a co-pollutant of fossil fuel combustion and potent greenhouse gas.

**OSHA:** Occupational Safety and Health Administration

**Ozone:** A co-pollutant of fossil fuel combustion, also known as “smog.” Ozone attacks lung tissue by reacting chemically with it.

**PM<sub>2.5</sub>:** Particulate matter, fine particles of toxic pollutants 2.5 microns or smaller in size. Such small particulates are dangerous because they can get into the lungs’ alveoli, cross into the bloodstream, and lodge in internal organs.

**Respiratory acidosis:** A condition that occurs when there is an accumulation of CO<sub>2</sub> in body fluids that causes acidic conditions that can lead to death.

**Sequestration:** In context to CCS, sequestration is the storing of CO<sub>2</sub> in underground geologic formations.

**SO<sub>2</sub>:** Sulphur dioxide, a highly toxic co-pollutant resulting from fossil fuel combustion.

**WHEJAC:** White House Environmental Justice Advisory Council

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## FURTHER READING

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# **Attachment No. 12**





Serving South Dakota...  
from South Dakota since 1916

PO Box 9 | De Smet, SD 57231 | Office - 605.854.3337  
www.desmetfarmmutual.com | Fax - 605.854.3704

We have received multiple inquiries from De Smet Farm Mutual members regarding liability exposure related to the CO2 pipeline that is expected to run through or near their property. There are specific exclusions for liability protection (Coverage L) that apply to pollutants.

EXCLUSIONS THAT APPLY TO COVERAGE L – PERSONAL LIABILITY  
AND TO COVERAGE M – MEDICAL PAYMENTS TO OTHERS

This policy does not apply to **bodily injury** or **property damage** which results directly or indirectly from:

the discharge, dispersal, release, or the escape of **pollutants** into or upon land, water or air.

CO2 and other chemicals (whether in solid, liquid, or gaseous form) would be pollutants as defined by your policy.

While we are not personally privy to any contracts between pipeline owners and landowners, please be aware that members may have exposure to significant personal liability for any damages caused by issues related to the pipeline on their property that are not covered by their liability insurance.

In the future, technology may render the pipeline useless or ineffective, pipeline owners and operators may change, and other factors could change that would increase the potential that you may be personally liable for cleanup, removal, and other activities that cause damage as a result of the pipeline being installed. Having a pipeline running through a member's property, carrying a pollutant, subjects them to substantial uninsurable exposure.

Bulletin (02-03-2023)

# Stahl Insurance

PO Box 22  
Mellette, South Dakota 57461  
(605) 887-3604

April 4, 2022

Marty Francoli  
38519 158<sup>th</sup> Street  
Mellette, South Dakota 57461

RE: Farm and Umbrella Policies

Dear Marty:

In reviewing both your Farm and Umbrella Policies with Farmers Mutual Insurance Company of Nebraska, you had concerns. Concerning the question you have about the proposed pipeline wanting to go thru Section 28-120-64. While visiting with the Claims Department, they stated that there would be no coverage for any Liability Claims on that section or any section of land you own or rent, having anything to do with a claim concerning the pipeline.

Sincerely Yours,



Douglas L. Stahl



Dear [REDACTED]

Thank you for your liability coverage inquiry into the Navigator CO2 pipeline that is expected to run through your property. There is specific exclusions for liability protection involving the release of any contaminants per the following policy language:

*Coverage L (liability) does not apply to:*

*Bodily injury or property damage arising out of the actual, alleged, or threatened presence, discharge, dispersal, seepage, migration, release, escape of, or exposure to contaminants or pollutants at or from any source or location.*

*We also do not cover:*

*Any loss, cost, or expense arising out of any request, demand, order, or statutory or regulatory requirement that any insured or others test for, monitor, clean up, remove, contain, treat, detoxify, neutralize, remediate, dispose of, or in any way respond to or assess the effects of contaminants or pollutants;*

*Any loss, cost, or expense arising out of any claim or suit by or on behalf of a governmental authority of damages because of testing for, monitoring, cleaning up, removing, containing, treating, detoxifying, neutralizing, remediating, disposing of, or in any way responding to or assessing the effects of contaminants or pollutants;*

While I am personally not privy to any proposed hold harmless agreements or the contract between the pipeline owners and yourselves; regardless of any agreements in place, there is significant personal liability exposure for yourselves while using your land for farming operations, for your own enjoyment and for your benefit renting the land out for others to do the same.

*For example, if you or your tenants or even someone without permission attempts to dig, plow, trench and pierces the pipeline causing a leak, the resulting damage may be argued to be your responsibility.*

As time passes, nearby landowners may change hands, the pipeline owners and operators may change, future technology may render the pipeline useless or ineffective. All of these factors among others, increase the potential that you may be held personally liable in the future for cleanup, removal and other activities that could cause damage as a result of this pipeline being installed.

As history has proved, any pipeline has a chance to fail, leak and seep resulting in significant damage to life and property. To place this type of risk or burden upon unwilling landowners, like yourselves, is tantamount to placing a risk to your livelihood without your permission.

In summary, having a pipeline running through your property, carrying CO2, a pollutant, subjects you to substantial uninsurable exposure.

Sincerely,

[REDACTED SIGNATURE]

**Renae Haug, Agent**

1471 Interstate Loop, Ste 1  
Bismarck, ND 58503  
Bus 701 255 4433 Fax 701 224 0715  
renae.haug.prgm@statefarm.com  
www.renaehaug.com



5/18/2023

Leo & Susan Doppler  
5412 Superior Dr  
Bismarck ND 58503-6146

RE: CO2 line on your property

Dear Leo & Susan:

Thank you so much for stopping in and going over the Pipeline issue. I spoke with my underwriting department and they explained the following:

When a pipeline or service line is brought onto a person's property, there is no coverage to that service line due to it not being "owned" by our insured.

In several sections of the ND policy, there is language which explains who and what we (State Farm Fire & Casualty Company) insure, who/what is defined and there is also a section called exclusions, which are item not covered. Simply put, there would be no coverage for a loss if the pipeline were to enter/exit your land and seep and/or somehow disseminate any gases/debris/emanation or otherwise cause an "injury" to any person, animal, property and so on. One reason is due to you not "owning the pipeline" but furthermore, negligence would be a factor as well. Below are some references.

Insured, defined under our ND policy, is listed as follows:

Under Definitions:

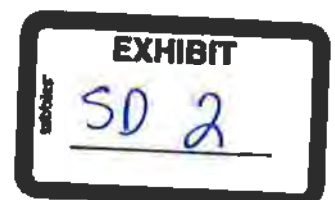
9. "**insured**" means:

- a. **you**;
- b. **your relatives**; and
- c. any other person under the age of 21 in the care of a person described above.

Under Section II, **insured** also means:

21. "**you**" and "**your**" mean the person or persons shown as "Named Insured" in the **Declarations**.

332 PU-22-391 Filed 06/02/2023 Pages: 2  
Susan Doppler Exhibit SD2 - State Farm Ins. Letter 5-18-23  
Susan Doppler



Under **SECTION II – EXCLUSIONS**

1. Coverage L and Coverage M do not apply to:
  - m. **bodily injury** or **property damage** arising out of the actual, alleged, or threatened presence, discharge, dispersal, seepage, migration, release, escape of, or exposure to contaminants or pollutants at or from any source or location. Contaminants and pollutants include but are not limited to any solid, liquid, gaseous, or thermal irritant, including smoke from agricultural smudging or industrial operations, smog, soot, vapor, fumes, acids, alkalis, chemicals, pathogens, noxious substances, fuel oil, asbestos, or lead.

Further, under the liability of the ND Homeowners policy, it states:

**We** also do not cover:

- (1) any loss, cost, or expense arising out of any request, demand, order, or statutory or regulatory requirement that any **insured** or others test for, monitor, clean up, remove, contain, treat, detoxify, neutralize, remediate, dispose of, or in any way respond to or assess the effects of contaminants or pollutants;
- (2) any loss, cost, or expense arising out of any claim or suit by or on behalf of a governmental authority for damages because of testing for, monitoring, cleaning up, removing, containing, treating, detoxifying, neutralizing, remediating, disposing of, or in any way responding to or assessing the effects of contaminants or pollutants; or
- (3) contamination or pollution arising out of actually or allegedly defective building materials, nuclear substances, or waste. Waste includes materials to be recycled, reconditioned, or reclaimed;

Please refer to your ND Homeowners policy for the full language and details related to this matter. Again, thank you for bringing this to our attention and inquiring whether coverage would apply.

Sincerely,



Renae Haug, Agent  
State Farm Fire & Casualty Company

**NS** **NORTHERN STATES**  
**INSURANCE SERVICES LLC**

819 Hill Avenue • Grafton, ND 58237  
701-352-2038  
Fax 701-352-2037

04/10/2023

Marilyn Bryan  
621 W Ave C  
Bismarck, ND 58501

Dear Marilyn:

I got your letter asking about specific coverage on pollution, here is what I found:

I reached out to the home office at North Star Mutual Ins, PO Box 48, Cottonwood, Mn. 56229 where your current coverage is at. Listed below is the response to the questions you asked:

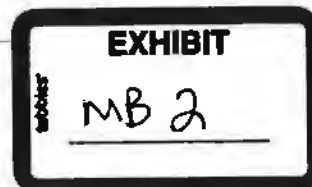
1. Yes, there is a pollution exclusion in our base liability form.
2. Yes, the CO2 being transported in the pipeline would be considered a pollutant.
3. We provide pollution coverage for "agricultural chemicals, liquids and gases intended for use in normal farming or ag operations. The CO2 in this pipeline is not considered an ag chemical, liquid or gas.
4. As the CO2 is a pollutant there would be no liability coverage or legal defense provided.
5. We do not offer an endorsement or rider that would provide this type of liability coverage.

I hope this helps clarify your coverage on this matter. I can shop around some for specific pollution coverage but not sure my vendors would provide this specific coverage.

Sincerely,



Chris L West / Agent





Farmers Union Insurance Company  
PO Box 2020  
Jamestown, ND 58401  
Phone: 701.252.2701  
Online: [www.fumic.com](http://www.fumic.com)

Dear Valued Policy Holder,

This letter acknowledges your inquiry into the CO2 pipeline that you expect to run through your property.

Farmers Union Insurance (FUI) is aware of the potential CO2 pipeline project in your area and wants you to be fully aware of the protections provided by your liability insurance policy's provisions, limitations, and coverages.

Your liability policy provides indemnity coverage and legal defense for any claim made against you as a result of your actions related to your farm liability or personal liability. It is first and foremost important to understand that your policy will only respond if you are legally liable for bodily injury or property damage as a result of your actions, inactions, or your alleged actions/inactions.

Please be aware that your liability policy contains exclusions for losses caused by pollutants. The policy may also exclude coverage for your responsibility to clean up, remove, treat, detoxify, remediate, or in any way respond to a loss caused by or due to pollutants. This means that there may be no coverage from your policy in the event that there is a release of pollutants.

You should understand that in the event that your land or property may be sold, leased, or transferred, any potential loss is subject to the insurance that is active at the time of the occurrence. Over time, the pipeline may become useless or ineffective, and if the policy is no longer in force at the time of the occurrence, you will be provided with no defense or legal indemnification.

FUI strongly recommends that you seek legal counsel prior to signing any contractual agreement. The contractual agreement will contemplate hold harmless agreements, waivers of subrogation, and potentially, the addition of outside parties as additional insureds on your policy. These contemplations are extremely important and could bind you to legal responsibilities in the event of a loss.

All claims are subject to their own merit, and as a result, it is not possible for FUI to provide you with a definitive summary of what may or may not be subject to coverage. As with all liability claims, FUI will provide coverage if you are legally liable, or deny coverage at the point it is determined that you have no coverage from your liability policy.

As always, any utility, pipeline, or other third-party exposure presents a substantial exposure to you from a liability perspective, unless the third party provides clear, contractual language which specifically holds you harmless. While no definitive coverage analysis can be provided until facts of a loss are contemplated, be aware that you may be at a substantially elevated risk of uninsurable exposure any time a third-party is allowed on your property.

Sincerely,

Brad Nold, AIC, AINS  
Chief Claims Officer



May 9, 2023

Insured: Marvin Abraham  
Policy #: FO233951

Dear Mr. Abraham,

Your agent Todd Newton has asked that we provide you with an assessment of the likely impact that a CO2 pipeline on your property might have on the insurability of your property with Northwest GF. First off, let me make the disclaimer that our assessments represent our analytical opinions only and are not purported to represent established science or fact. However, like all insurers, we group together homogeneous risks, meaning those having similar characteristics, in order that loss experience can be somewhat accurately predicted and adequate rates set accordingly. When risk characteristics become present that are not typically germane to a line of business, we must attempt to analyze and determine if these additional elements of risk would still be deemed insurable.

From an underwriting perspective, our research would indicate that CO2 pipelines likely present risk attributes that would not be present on other Farmowner accounts that we insure. Information that we have reviewed suggests that CO2 is an odorless, colorless asphyxiant, which can cause injury and death in sufficient concentrations. Additional literature indicated that pressurization on CO2 pipelines can be as high as 2800 psi, which is nearly double the pressurization of natural gas pipelines. Further articles suggested that it is difficult to eliminate moisture entirely from CO2, bringing the light the possibility of carbonic acid buildup (purported to have a ferocious appetite for carbon steel) thus making it possible/more probable that these pipelines may be susceptible to ductal fractures which could lead to the release of enormous amounts of CO2 as well as explosions which could entail the ejecting of large sections of pipe and shrapnel. In summary, an extensive release of CO2 could be reasonably interpreted to entail the risk of injury or death and damage to cropland, and adjacent structures.

Our concerns as an insurer would be that a policyholder could inadvertently damage an existing pipe or could be named in a lawsuit simply via the rupture/leak/explosion of a portion of the pipeline that would traverse under the insured premise. Concerns would be present that payment received for the existence of an easement could potentially make our policyholder a valid party to a lawsuit. Although your Northwest GF Farmowner policy does include pollution exclusions, there would be some ambiguity/uncertainty as to how these might apply in circumstances of injury and death. It is also never a good underwriting practice for insurers to accept risk with known significant non-covered liability exposures.

Additionally, from a first party perspective Northwest GF would likely have no coverage for CO2 damage to your owned and insured property.

We additionally are unaware if you or other policyholders with this exposure would be consulting with an attorney to explore unilateral Broad Form Indemnity Agreements in which the pipeline companies



would agree to indemnify and hold policyholders harmless for any and all damage that might occur to third parties stemming from the operation of the pipeline.

In view of the analysis and uncertainties expressed above, Northwest GF would likely elect to non-renew your policy if at the time of the renewal we were made aware of the introduction of a CO2 pipeline across your property. Until there is more experience and information available for us to analyze regarding how these arrangements are being executed and the degree of insulation protection being afforded to landowners by the pipeline companies, it would be difficult for us to intermix this exposure with other dissimilar farm accounts.

Mr. Abraham, we value your business and appreciate your loyalty to Northwest GF. I do hope you understand the concerns presented to us by this exposure.

Regards,

A handwritten signature in cursive script that reads "Brian Bowker". The signature is written in black ink and is positioned above the typed name and title.

Brian Bowker, Pres/CEO  
Northwest GF Mutual Insurance Company

# **Attachment No. 13**



**Common Land Unit**  
 - Non-Cropland  
 - Cropland  
 - CRP  
 - Tract Boundary  
 - PLSS

**Wetland Determination Identifiers**  
 - Restricted Use  
 - Limited Restrictions  
 - Exempt from Conservation Compliance Provisions

Unless otherwise noted, crops listed below are:  
 Non-irrigated  
 Intended for Grain  
 Corn = Yellow  
 Soybeans = Common  
 Wheat - HRS or HRW  
 Sunflowers = Oil or Non-oil  
 Producer Initial \_\_\_\_\_  
 Date \_\_\_\_\_

2022 Program Year  
 Map Created March 30, 2022  
 Farm 6015

17-120N-63W-Spink

United States Department of Agriculture (USDA) Farm Service Agency (FSA) maps are for FSA Program administration only. This map does not represent a legal survey or reflect actual ownership; rather it depicts the information provided directly from the producer and/or National Agricultural Imagery Program (NAIP) imagery. The producer accepts the data 'as is' and assumes all risks associated with its use. USDA-FSA assumes no responsibility for actual or consequential damage incurred as a result of any user's reliance on this data outside FSA Programs. Wetland identifiers do not represent the size, shape, or specific determination of the area. Refer to your original determination (CPA-026 and attached maps) for exact boundaries and determinations or contact USDA Natural Resources Conservation Service (NRCS).

Attachment # 2



Common Land Unit   PLSS

- Cropland
- Tract Boundary

**Wetland Determination Identifiers**

- Restricted Use
- ▼ Limited Restrictions
- Exempt from Conservation Compliance Provisions

Unless otherwise noted, crops listed below are:  
 Non-irrigated  
 Intended for Grain    Producer Initial \_\_\_\_\_  
 Corn = Yellow         Date \_\_\_\_\_  
 Soybeans = Common  
 Wheat = HRS or HRW  
 Sunflowers = Oil or Non-oil

2022 Program Year  
 Map Created March 30, 2022

**Farm 6015**

**8-120N-63W-Spink**

United States Department of Agriculture (USDA) Farm Service Agency (FSA) maps are for FSA Program administration only. This map does not represent a legal survey or reflect actual ownership; rather it depicts the information provided directly from the producer and/or National Agricultural Imagery Program (NAIP) imagery. The producer accepts the data 'as is' and assumes all risks associated with its use. USDA-FSA assumes no responsibility for actual or consequential damage incurred as a result of any user's reliance on this data outside FSA Programs. Wetland identifiers do not represent the size, shape, or specific determination of the area. Refer to your original determination (CPA-026 and attached maps) for exact boundaries and determinations or contact USDA Natural Resources Conservation Service (NRCS).

South  
Dakota



Edmunds











Brown

Clark

Hand

Spink

Beadle

-  Participating Ethanol Plant
-  County Seat
-  Highly Populated Areas
-  State Boundary
-  County Boundary
-  Route
-  Primary Road
-  Secondary Road
-  Local Road
-  Railroad

**71.52 MILES OF ANTICIPATED PIPELINE  
SPINK COUNTY  
SOUTH DAKOTA**

*Spink County South Dakota  
Pipeline Mileage Overview*

COUNTY: SPINK		DESIGNED BY: TRC
STATE: SOUTH DAKOTA		CHECKED BY: TRC
REV. NO.:	REVISION:	DATE:
A	ISSUED FOR REVIEW	2021-10-15
<b>PRELIMINARY ROUTE SUBJECT TO CHANGE</b>		
DATE: 10/15/2021	PROJECTION: UTM-14	DWG: 45000-01-SP-001
		SHEET: 15



# **Attachment No. 14**

# MEMO



**TO:** South Dakota Lawmakers  
**FROM:** Concerned Landowners and Citizens  
**DATE:** January 25, 2023  
**SUBJECT:** EFFECT of CURRENT **SD EMINENT DOMAIN LAWS**

**Summit Carbon Solutions or SCS (Summit) and Navigator Heartland Greenway (Navigator)** are new private for-profit companies formed to **take advantage of massive lucrative 45Q Federal tax credits** (directly and indirectly), also known as corporate welfare. Their proposed carbon pipelines will be the largest and **longest CO2 pipelines ever constructed** in the United States. **Neither company has any previous building nor management experience in hazardous CO2 pipelines.** South Dakota will be the guinea pig for their experiment.

These hazardous pipeline companies are **using Ethanol plants as a shield and marketing ploy.** What they aren't telling you is that higher grain, particularly **corn, prices are a risk for hazardous CO2 pipeline company profits.** They don't want higher grain prices and there is no evidence at all that Ethanol plants, who are experiencing record profits without these pipelines, "need" them. Bottomline – South Dakotans' constitutional property rights should not be trampled on through Eminent Domain use for the profits of any private corporations.

Both Summit and Navigator **have publicly stated they will use Eminent Domain against landowners** who do not want a hazardous CO2 pipeline affecting their land forever. Navigator stated on the first page of their introductory letter to landowners that Navigator would "exercise the right of Eminent Domain."

There is **foreign investment and ties to foreign companies** in Summit, including a South Korean company SKE&S, which is related to SK Holdings, a company **fined over 70 million dollars for defrauding US military contracts.** The Department of Justice Documents show SK Holdings pleaded guilty in 2018 and again in 2020 to Government Fraud. Another case was listed as a settlement, while another is still pending. Navigator is funded by Blackrock which has **significant foreign ownership.**

**CO2 pipeline easements would be for perpetuity**—forever. They become an asset of the pipeline company and **could be sold to another entity,** including foreign parties—**without any veto by landowners.** The easements can also be used as collateral.

CO2 pipeline easements **become a liability for landowners who lose control** of what happens on the easement even though they **still pay 100% of the real property taxes** on the easement land. Liability insurance coverage for land with a hazardous carbon pipeline is a concern. Easement routes divide land making farming and future land use difficult.

Easements would give a **one-time payment to landowners with no provisions** for land which does not return to productivity due to **soil disruption, compaction and tiling damage.** There is no compensation for **land adjacent to the easement being damaged during a CO2 pipeline rupture,** maintenance and repair.

Change of ownership of the easement would not generate additional compensation for the landowner.

Landowners with hazardous CO2 pipeline easements will see a **decrease in land value from loss of production, safety and liability concerns and future development constraints** including building eligibilities.

Access to **Eminent Domain allows private for-profit companies to pressure (force) landowners** into signing easements that do not come close to fairly compensating the landowner, and more importantly, **forces one-sided legal terms on landowners with little or no ability to negotiate.**

There is no incentive for private for-profit companies to compensate landowners fairly or annually for use of their land similar to windmills. It is easier and more lucrative for such companies to use the Eminent Domain guaranteed by current SD state law.

Landowners are compelled to spend large amounts of their own money to defend what they already own when private for-profit companies access Eminent Domain to forcibly take land and use it to make large profits.

South Dakota recently signed a law making it illegal for municipalities to use Eminent Domain to take private land then sell it to another private party in order to increase tax revenue. **Current Eminent Domain law in SD allows private for-profit companies to just take land through easements** and make large profits without the municipal intermediary. They try to make this palatable by promoting questionable increased tax revenue.

*Anyone who cares about South Dakota property rights must support current Eminent Domain legislative efforts. Please support landowner led bills to return the power to we the landowners, taxpayers, and voters.*

For more information contact:  
[LEDR2023@gmail.com](mailto:LEDR2023@gmail.com)



- L** Landowners United to Protect Property Rights
- E** Eminent Domain Reform to Protect Property Rights
- D** Defend Our Families to Preserve Our Children's Future
- R** Restrict Foreign Ownership of Private Land

*For more information contact:*  
[LEDR2023@gmail.com](mailto:LEDR2023@gmail.com)

PHOTO: 7<sup>TH</sup> GENERATION PROPERTY OWNER

## Protecting our families. Preserving the future.

- Protecting our constitutional rights
- Stopping eminent domain abuse through strengthening South Dakota legislation
- Free of fear for the safety of all South Dakota citizens
- Conserve our personal property rights





# CO2 PIPELINE FACTS - WHAT YOU NEED TO KNOW



The size and scale of these pipeline networks makes them the **first of their kind**. Carbon dioxide (CO2) through a pipeline is concentrated at very high pressures - 2100 psi which is 2-3x higher than a natural gas pipeline. The construction of pipelines can wreck soil structure, disrupt drain tile, and have other serious and long-term impacts on the integrity and productivity of agricultural land.

HAZARDOUS



- CO2 + water = carbonic acid which **eats through metal transport pipes**.
- While the air we breathe contains small amounts of carbon dioxide, (usually around 0.04%), concentrated CO2 is an **asphyxiant/intoxicant** – colorless and odorless – a silent killer.
- **CO2 exposure causes:**
  - 2% concentration: confusion, increased blood pressure
  - 8% concentration: nausea, vomiting
  - 10% and above: suffocation, death**



UNTESTED



- It takes **15.6** 8" pipes to carry the volume of **one 24"** inch pipe.
- CO2 pipeline safety valves are proposed every 20 miles apart.
- A 24" pipe 20 miles long is enough CO2 to fill 1,880 Olympic size swimming pools.
- Pipeline **monitoring is done remotely** from out of state.
- US DOT Pipeline & Hazardous Safety Administration (PHMSA) regulates CO2 pipelines.
- PHMSA report (5/26/2022) - **current regulations DO NOT protect citizens**.
- New and updated PHMSA regulations due in fall of 2024



DANGEROUS



- CO2 pipelines do **rupture and pose unique, significant safety hazards**.
- Response to ruptures requires specialized teams, equipment and vehicles.
- CO2 pipeline **incident rate currently is about twice that of natural gas**.
- A leak can open a CO2 pipeline like a zipper.
- CO2 leaks can threaten aquifers, wells, waterways, rivers.
- **Ruptures create a shrapnel** of dry ice, CO2 gas, dirt, rock, and pipe steel.
- One mile long 8" pipe rupture sends gas 197' high, 1,312' wide from pipe center\*
- A 12.5" pipe **rupture can travel 4.47 miles** from center.\*



# Protecting our families. Preserving the future.

**L** Landowners United to Protect Property Rights

**E** Eminent Domain Reform to Protect Property Rights

**D** Defend Our Families to Preserve Our Children's Future

**R** Restrict Foreign Ownership of Private Land



# LEDNR

**LANDOWNERS**  
*for Eminent Domain Reform*



# Proposed Carbon Pipeline: What You Need to Know

- 1) Damaging to land and poses a **significant health and safety threat** to families and communities.
- 2) CO2 pipelines of this size and length **have never been built before.**
- 3) Carbon capture companies formed with **foreign investment** to capitalize on Federal US tax credits.
- 4) CO2 pipelines have a **track record of ruptures.**
- 5) Burden of oversight and **safety falls to the counties.**
- 6) Ultimately, little to **no impact on climate change.**



## Carbon dioxide through a pipeline is concentrated at very high pressures 2-3X higher than natural gas.

- CO<sub>2</sub> + water = carbonic acid **eats through metal transport pipes**
- Unlike the air we breathe, **concentrated CO<sub>2</sub> is an asphyxiant & intoxicant – an odorless, colorless, silent killer**

### CO<sub>2</sub> Exposure Impact:

CONCENTRATION	EFFECTS
~0.04%	Air we breathe
2%	confusion, increased blood pressure
8%	nausea, vomiting
>10%	suffocation, death





UNTESTED

**This type of CO2 pipeline has never been built before and would be the largest & longest ever constructed in the United States.**

- Very limited existing pipelines in US
- 229,287 total miles of hazardous liquid pipelines
  - 5,100 miles (~2.2%) of those are CO2 (most in the world)
  - Most are less than 100 miles
- Safety valves proposed every 20 miles
  - Leak can open a pipeline like a zipper
  - Leaks can threaten aquifers, wells, waterways, rivers
- It takes more than **fifteen** 8-inch pipes to carry the volume of **one** 24-inch pipe.
- A 20 mile long 24-inch pipe could fill 1,880 Olympic size swimming pools.





## CO2 pipelines have a history of rupture with devastating impacts to people, communities and the environment.

- Ruptures pose unique, significant safety hazards
- **Create a shrapnel of dry ice, CO2 gas, dirt, rock, and pipe steel**
- Incident rate currently is about **twice that of natural gas**
- One mile long 8-inch pipe rupture sends gas 197 feet high, 1,312 feet wide from pipe center
- 12.5-inch pipe rupture can travel more than four miles from center





FEBRUARY 22, 2020

## ○ Satartia, Mississippi CO2 Pipeline Rupture

- 24-inch pipeline carrying liquefied carbon dioxide ruptured resulting in a plume
- Denbury Gulf Coast Pipelines, largest global CO2 pipeline owner (1,300 miles)
- Satartia incident pipeline was 77 miles long
- Records show they had two to three incidents per year
- Closing gates (9.55 miles apart) on either side of the rupture functioned perfectly
- Tunneled 30 feet under the highway, rupture still created a 40-foot crater
- Gas continued out of the crater one mile over a hill and into the town, although pre-construction modeling showed Satartia would not be affected
- Area first responders never received training or equipment for a CO2 rupture

# Bankruptcy gives companies a quick and easy exit – leaving the burden to our government and landowners.

## SATARTIA, MISSISSIPPI – RUPTURE TO BANKRUPTCY LESS THAN SIX MONTHS 2020



- Bankruptcy can void terms of lease agreements
- Most affected people have yet to receive fair compensation for their injuries
- Most severely affected have become dependent on the state



# Burden of oversight and safety falls to the counties, and ultimately citizens.

- 1) Pipeline **monitoring is done remotely** from out of state.
- 2) Response to ruptures requires **specialized teams, equipment and vehicles.**
- 3) PHMSA's safety oversight **only includes design, construction, and operation.**
  - Report (5/26/2022) - **current regulations DO NOT protect citizens.**
  - New and updated regulations due **fall of 2024**

# Summit Carbon Solutions & Navigator Heartland Greenway

- New private for-profit companies.
- Formed to take advantage of lucrative 45Q Federal tax credits.
- Significant foreign investment and ownership.
  - Summit ties to South Korean company that pleaded guilty and fined multiple times for Government Fraud
  - Navigator is funded by BlackRock (foreign ownership)
- Neither company has experience in building nor management of hazardous CO2 pipelines.

# Significant risk with insignificant impact on climate change.

- 1) A much-promulgated 2020 Princeton University study calls for **65,000 miles of CO2 pipelines by 2050.**
  - 65,000 miles of pipeline could only move about 15% of current annual US CO2 emissions.
  - It would take **2.6 million miles** of new hazardous pipelines to have **any meaningful effect** on reducing emissions.
- 2) Since 2009 the Department of Energy has doled out **\$1.1 billion dollars to carbon** capture and sequestration demonstration projects for 6 coal plants.
  - Only one was built and started operating before closing in 2020. The process was **too costly in energy and water.**

**The current rush to build CO2 pipelines  
is due to the 45Q tax credits.**

*“We are getting ahead of ourselves  
on pipelines. For billions of dollars,  
you make smart people do incredibly  
stupid things.”*

**Richard Kuprewicz**

**INDEPENDENT PIPELINE SAFETY CONSULTANT**

Expert witness who has worked  
in the oil and gas industry since 1970's



*Stand with South Dakota Citizens.*

**Preserve our land.  
Prioritize our communities.  
Protect our people.**

*Thank you.*

**229,287** MILES OF **HAZARDOUS LIQUID PIPELINES** IN THE US.

**2X** MORE INCIDENT REPORTS THAN NATURAL GAS PIPELINES.

**5,100** MILES OF EXISTING **CO2 PIPELINES** IN US – MOST LESS THAN 100 MILES EACH.

**NO** **OVERSIGHT** OF CO2 PIPELINE ROUTES BY US REGULATION. IN SOUTH DAKOTA **IT IS THE COUNTY'S RESPONSIBILITY.**

**65,000** MILES OF CO2 PIPELINE WOULD **ONLY MOVE 15%** OF CURRENT **ANNUAL US CO2 EMISSIONS.**

**\$1.1B** SPENT BY THE DEPARTMENT OF ENERGY ON **CARBON CAPTURE PROJECTS SHUT DOWN AS TOO COSTLY ON ENERGY & WATER.**

# Footnotes:

- 1) A Review of CO2 Pipeline Infrastructure in the U.S., U.S. Dept. Of Energy, 4/21/15
- 2) A Roadmap to At Scale Deployment of Carbon Capture, Use and Storage, Chapter 6, Energy Equipment and Infrastructure Alliance
- 3) US DOT, Pipeline and Hazardous Materials Safety Admin., Office of Pipeline Safety, 5/26/22
- 4) Accufacts' Perspectives on the State of Federal Carbon Dioxide Transmission Pipeline Safety Regulations as it Relates to Carbon Capture, Utilization and Sequestration within the US. Prepared for the Pipeline Safety Trust, 3/23/22
- 5) Who's Afraid of a Carbon Capture Pipeline, Sierra, 7/3/22
- 6) CO2 Pipelines and Carbon Capture: The Satartia, MS Investigation, Climate Investigation Center, 8/30/21
- 7) Denbury, Inc. Website
- 8) Plans to Capture CO2 from Coal Plants Wasted Federal Dollars, The Verge, 12/30/21

# **Attachment No. 15**





KELOLAND.COM ORIGINAL

## CO2 proposals spark eminent domain discussion

by: [Rae Yost](#)

Posted: Jan 31, 2022 / 03:48 PM CST

Updated: Feb 1, 2022 / 10:32 AM CST

SHARE



**Note:** *The story has been updated with the meeting time and date of 5:30 p.m., Wednesday, Feb. 2, in Redfield at the 4-H building on the fairgrounds.*

SIOUX FALLS, S.D. (KELO) — Landowners continue to gather and plan meetings as Summit Carbon Solutions has applied for a carbon dioxide (CO2) pipeline permit in Iowa.

“In the coming weeks we will be filing our permits in South Dakota and North Dakota,” said Jim Pirollo, the chief commercial officer for Summit. The developer has already applied in Iowa, Pirollo said.

Once the permit is submitted South Dakota that kicks off a process that is roughly a year long, he said.

Summit and Navigator have proposed two CO2 pipelines whose routes include South Dakota, parts of Iowa and Minnesota. Pipelines would capture CO2 from ethanol plants, which would reduce the plants’ overall carbon footprint and allow those plants to sell ethanol at a higher price in markets such as California, which has strict carbon guidelines. The project would also allow participants to use tax credits provided in the 45Q, which provides a tax credit for each metric ton of sequestered CO2. The captured CO2 would be buried at site in North Dakota by Summit and in Illinois by Navigator.

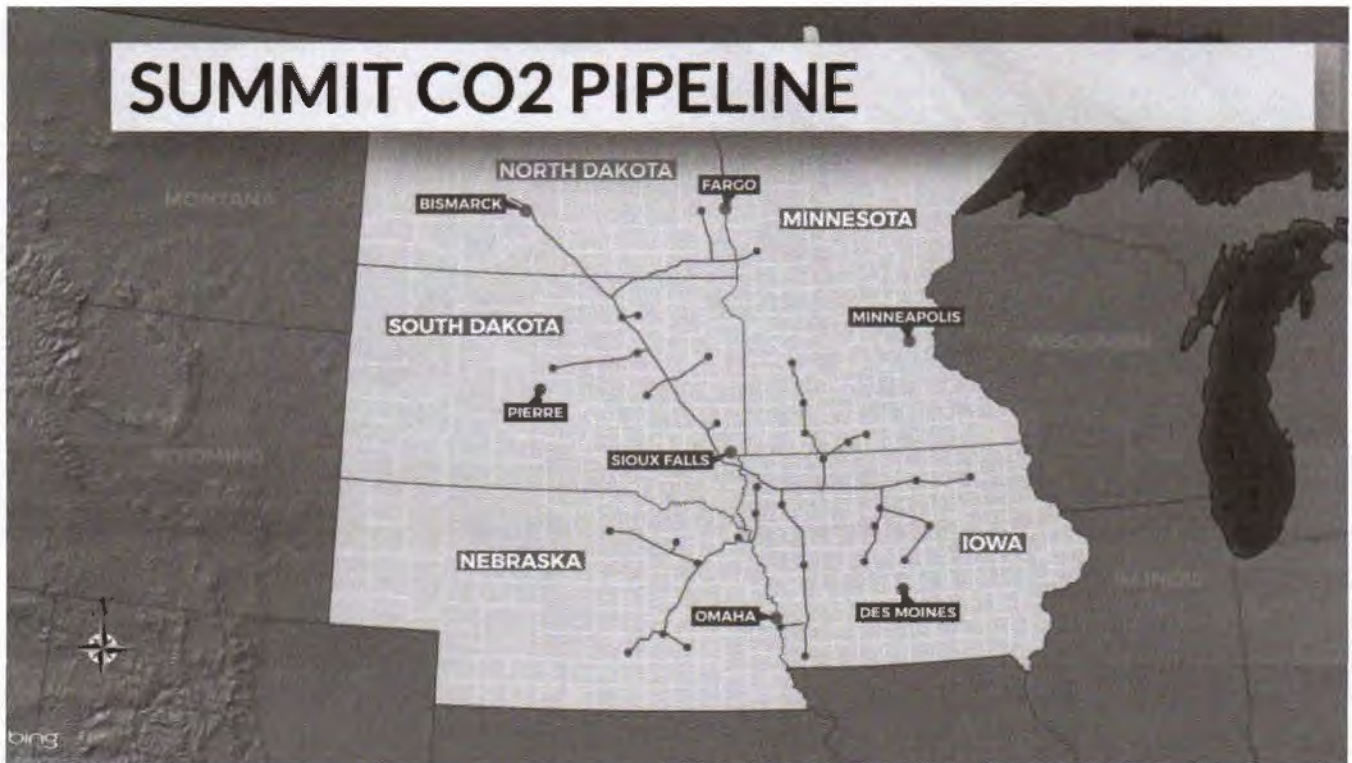
As Summit seeks to secure easements from landowners in South Dakota, Iowa and other states, the possible use of eminent domain comes up.

Ed Fischbach, a landowner in Spink County, said eminent domain is a concern because as of now, there is at least some opposition to agreeing to easements for the Summit pipeline in his region and in other states.

Eminent domain is “a right of a government to take private property for public use by virtue of the superior dominion of the sovereign power over all lands within its jurisdiction,” according to Merriam-Webster.

“I can only speak to my neighbors but there has been a lot of opposition,”

Fischbach said.



Several counties in Iowa have passed resolutions, or written letters to the state’s public utilities board, in opposition to the use of eminent domain for CO2 pipelines.

Pirolli said Summit is somewhat surprised by the letters and resolutions in opposition to eminent domain because it wants to use easements and the project will benefit farmers, participating ethanol plants and the overall rural economy.

“Iowa is really organized and ahead of us,” Fischbach said of organized opposition to CO2 pipelines and eminent domain.

McPherson County has passed a moratorium on pipelines that would include CO2 pipelines, Fischbach and Bruce Mack, a landowner near Aberdeen, said.

Opponents of the proposed CO2 pipelines cite safety concerns, permanent damage to the land on which the pipeline is buried, and the use of eminent domain on a private project in which a private developer will make millions.

Landowners should have questions about eminent domain and even the easements, said Dave Ganje, a lawyer based in Rapid city. Ganje works in natural resources law and commercial law and litigation.

## **Eminent domain for private developers**

“The use of eminent domain for pipelines and private developers has been established by the U.S. Supreme Court,” Ganje said.

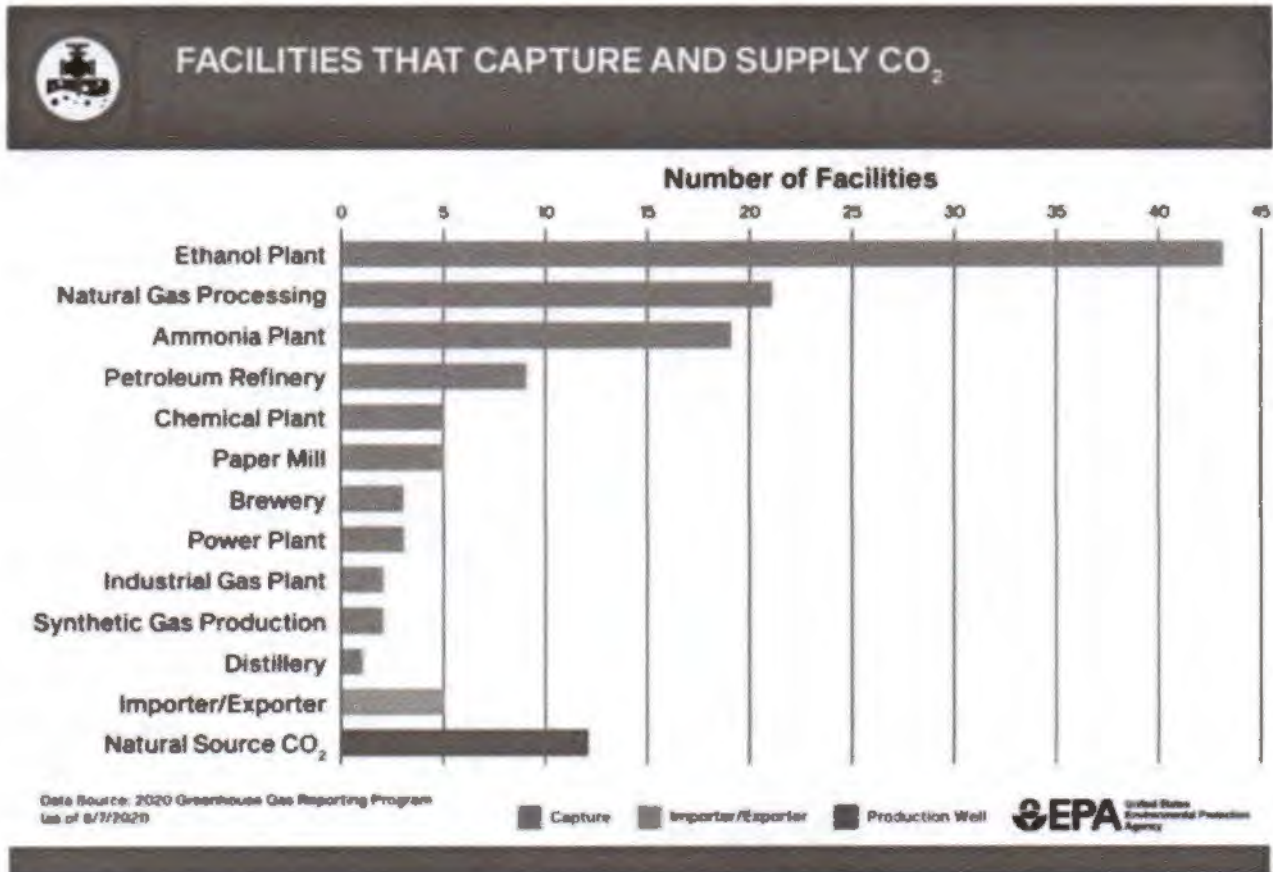
Ganje cited a 2005 U.S. Supreme Court case called *Kelo vs. City of New London* (Connecticut) in which the court ruled that the city could use eminent domain to transfer land from one private owner to another private owner. The use did not violate the 5th Amendment’s taking clause, according to the court. The court cited public use and economic development.

Rep. Charlie Hoffman, a Republican from Eureka, said the South Dakota courts may need to decide if eminent domain would be an appropriate use for CO2 pipelines.

Part of the original pipeline plan would have gone through Hoffman’s property. The route has since been switched but Hoffman said that is why he supports the pipeline. The pipeline will be a benefit to farmers and ethanol plants, Hoffman said.

Although he supports the proposed Summit CO2 project he understands farmers’ fears of eminent domain. In general, farmers don’t want private development on their property, he said.

Using eminent domain for the purpose of a pipeline is not unusual, Ganje said. The U.S. has thousands of miles of pipelines for various materials, he said.



The use of eminent domain can be allowed through statute, regulatory body such as a state agency or county government, Ganje said.

Chris Nelson, the South Dakota Public Utilities Commissioner, said the PUC does not get involved in eminent domain. That is between the landowner and developer and decided in circuit court, he said.

"Pirulli said it's too early to talk of eminent domain because Summit wants to work with landowners to obtain easements."

"We have just begun right of way acquisition in the state of South Dakota," Pirulli said. "So far, we've had a great reception."

"It's preliminary to say we would have to go down that path....," Pirulli said of eminent domain. "...acquiring right of way takes a long time."

not true

not  
true

If Summit believed it would have to use eminent domain to get much of the property for the pipeline, it would not have pursued the project, Pirolli said.

## **Eminent domain and easements as a share of the profit?**

If eminent domain is used then what is the obligation of the private developer to the property owners? Ganje asked.

How is the value of that property determined and should the property owner be entitled to more than a “one-off” payment, Ganje said are questions that must be asked. Should property owners share in the profit from the private development? Ganje asked.

Ganje said the same questions need to be asked with an easement.

Fischbach said landowners also need to understand if an easement obligates them completely, even if the project is not developed.

“They may never get that easement back,” Fischbach said.

Ganje said some easements are written to allow for uses other than the intended use if the original project does not happen.

not  
true

Pirolli said if Summit’s pipeline is not developed, nothing else can happen on that easement.

Summit has a structure it uses to determine a fair easement payment to the landowner, Pirolli said.

The structure is based on the value of the land, crop production and other factors, he said.

Summit will also pay 100% of the crop or pasture damage in the first year which is the year of construction, Pirolli said.

It will pay 80% of the crop or pasture damage in the second year and 60% in the third year, Pirolli said. Many farmers report little or no crop damage loss in the second and third year, he said.

not true

## Meetings

When Summit applies for a permit in the state of South Dakota the process includes information meetings, hearings and other requirements.

Summit already had several meetings in 2021 to inform the public about the proposed CO2 pipeline project in South Dakota, Pirolli said.

Fischbach said at least two meetings were held in October during harvest which was inconvenient for farmers. Also, he received a letter about the proposed CO2 project toward the end of July and surveyors arrived shortly after to ask about surveying property, Fischbach said.

“No one had heard anything prior to then (July letter),” Fischbach said.

Pirolli said Summit hasn’t been invited to meetings such as the one planned for 5:30 p.m. Wednesday, Feb. 2, at the 4-H building in the fairgrounds in Redfield.

Mack said they hope to have ethanol and county representatives at the meeting.

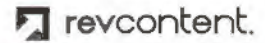
He described some meetings as organized by “activists who are not focused on the benefits of the project...” They are instead focused on opposing it, Pirolli said.

Summit is focused on educating the public about how pipelines can safely transport CO2 and how capturing it can improve the rural economy.

Meanwhile, Fischbach said landowners like him will continue to educate the public about the possible dangers of CO2 pipeline transport and discuss how to oppose a private development using federal tax credits to make money and possibly, take their land.

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### AROUND THE WEB



#### Best Remedy for Neuropathy Your Doc Won't Mention

Phytage Labs



#### Loophole Allows This Asset To Be Tax And Penalty Free In Your Retirement

Goldco



#### Labeled Scary - These Dog Breeds Should Be Feared

QuackFacts



#### 6 Cards That Offer No Interest Until 2023

Wise Bread



# **Attachment No. 16**



Earlier this year, Summit Carbon Solutions announced plans to develop a new carbon capture and storage project in Iowa, Minnesota, North Dakota, South Dakota, and Nebraska. The project, Midwest Carbon Express, will capture carbon dioxide emissions that otherwise would be emitted into the atmosphere from biorefineries, such as ethanol plants, compress the captured CO<sub>2</sub>, and transport it through a pipeline to North Dakota where it will be permanently and safely stored underground in deep geologic storage locations.



### BOLSTERING ETHANOL AND AGRICULTURE

- Midwest Carbon Express will bolster the ethanol and agricultural industries that are so critical to the South Dakota and regional economies. The ethanol industry:
  - Supports 360,000 jobs
  - Contributes more than \$45 billion to annual U.S. GDP
  - Utilizes approximately 40% of corn produced in the U.S.
  - Provides a \$14 billion boost to grain markets
- The project will put ethanol produced at our 31 partner facilities on track to produce a net zero carbon fuel by 2030. This will allow these plants to access new and emerging markets that have adopted low carbon fuel standards.



### ECONOMIC BENEFITS

- \$4.5 billion total investment
- 14,000 to 17,000 jobs created during construction
- 350 to 460 full-time jobs created once operational
- Summit Carbon Solutions will utilize local contractors, local suppliers, and local businesses and provide ongoing economic benefits to local communities across South Dakota and the Midwest



### COMMITMENT TO SAFETY

- Safety is and always will be our top priority
- Carbon capture technology is already in use at more than 40 ethanol plants in the United States
- There are 5,000 miles of CO<sub>2</sub> pipelines already in operation in the United States and pipelines are the safest way to transport this material
- There have been zero fatalities involving CO<sub>2</sub> pipelines over the past 20 years



### ENVIRONMENTAL BENEFITS

- Midwest Carbon Express will be the largest carbon capture and storage project in the world.
- This project will have the capacity to capture and permanently store up to 12 million tons of CO<sub>2</sub> every year. That's the equivalent of removing 2.6 million vehicles from our roads annually.

Attach in exp  
# 5



## SUMMIT CARBON SOLUTIONS' COMMITMENT TO SOUTH DAKOTA LANDOWNERS

- Summit Carbon Solutions will work with landowners, community leaders, stakeholders, and more, with respect, honesty, and transparency. If you feel that has not been demonstrated, please contact us at [InfoSD@summitcarbon.com](mailto:InfoSD@summitcarbon.com).
- The safety of our operations, our employees, the communities where we operate, and our landowner partners is our top priority and always will be.
- We will be good stewards of the land across our entire project area. Summit Carbon Solutions will protect and restore lands, topsoil, drain tiles, drainage systems, and more to their preconstruction levels.

To learn more about Summit Carbon Solutions or the Midwest Carbon Express project, please visit [www.SummitCarbonSolutions.com](http://www.SummitCarbonSolutions.com).

## QUESTIONS & ANSWERS

### What is carbon capture and storage?

Carbon capture and storage projects have the potential to help reduce greenhouse gas emissions while also creating good paying jobs and growing the economy. This technology, which has been proven over decades, captures carbon dioxide that is generated from power generation or other industrial processes and prevents it from being emitted into the atmosphere.

### Why does the project need a mainline, trunkline, and laterals?

Midwest Carbon Express will capture the carbon dioxide from numerous ethanol plants and other sources. Smaller diameter pipelines will gather individual plant volumes and interconnect with lines from other plants into regional trunklines. Eventually the trunklines will connect with a mainline pipeline.

### Will Summit Carbon Solutions protect sensitive areas during construction?

Yes. In addition to meeting, and in many cases exceeding, all federal, state, tribal, and local regulatory requirements, we will design and construct this project to minimize the impact to all natural and cultural resources.

### What is the diameter and thickness of the pipeline?

The mainline pipeline is being designed with a range of wall thickness from 0.250 inches to 0.625 inches thick and will be constructed with high-strength steel. The pipeline system will run approximately 2,000 miles in total with the ability to transport 12 million tons of CO<sub>2</sub> per year. The diameter of the pipeline/pipeline system will likely range from four to 24 inches.

### What materials will you use when constructing the pipeline?

At our partner facilities, carbon dioxide capture and compression equipment will be installed to capture CO<sub>2</sub> emissions. Small underground pipelines will connect each facility to a large trunk pipeline which will transport CO<sub>2</sub> to the sequestration site in North Dakota. Captured CO<sub>2</sub> is permanently stored in geologic storage areas in North Dakota. Wells are drilled several thousand feet below ground where CO<sub>2</sub> can be stored safely based on the standards put in place by the Environmental Protection Agency and North Dakota's Department of Mineral Resources.

### What happens if there is a leak in the pipeline?

In the very unlikely event that a leak occurs in the pipeline, our alert system will immediately notify us, and our engineering and safety teams will respond right away to address the issue. If released from the pipeline, carbon dioxide will become a gas and dissipate into the atmosphere. Carbon dioxide itself is a non-flammable, non-toxic gas that is present in low concentrations within the air we breathe.

not true

not true

# **Attachment No. 17**

Attachment  
No. 6

**Subject:**Summit Carbon Solutions Confidential Briefing

**Date:**2023-04-15 11:25

**From:**Dave Ackerman <[mcpersonso@valleytel.net](mailto:mcpersonso@valleytel.net)>

**To:**"[beilkedoc@aol.com](mailto:beilkedoc@aol.com)" <[beilkedoc@aol.com](mailto:beilkedoc@aol.com)>, "[atkunz123@icloud.com](mailto:atkunz123@icloud.com)" <[atkunz123@icloud.com](mailto:atkunz123@icloud.com)>, "[mark.opp@cropriskservices.com](mailto:mark.opp@cropriskservices.com)" <[mark.opp@cropriskservices.com](mailto:mark.opp@cropriskservices.com)>, "[jdneuharthfarms@hotmail.com](mailto:jdneuharthfarms@hotmail.com)" <[jdneuharthfarms@hotmail.com](mailto:jdneuharthfarms@hotmail.com)>, "[sfeickert@valleytel.net](mailto:sfeickert@valleytel.net)" <[sfeickert@valleytel.net](mailto:sfeickert@valleytel.net)>

**Cc:**McPherson County Auditor <[mcpersonaud@valleytel.net](mailto:mcpersonaud@valleytel.net)>, Dave Ackerman <[mcpersonso@valleytel.net](mailto:mcpersonso@valleytel.net)>

McPherson County Commissioners, Auditor Howard.

On Thursday April 13, I was contacted by Summit Carbon Solutions employee Trevor Jones, he asked that I pass along an invitation to a "HIGH LEVEL/CONFIDENTIAL" pipeline briefing to the McPherson County Commission. This is by invitation only and is scheduled for Tuesday April 18, 2023, at 2pm, the location is the Brown County Courthouse.

The invitation is for two Commissioners (avoiding the quorum) to attend and has been extended to Brown County and Edmunds County Commissioners and Emergency Management.

Brown County Commissioners Mike Wiese and Duane Sutton received this briefing last week. Jones encouraged anyone of our Commissioners to contact Sutton or Wiese for their take on the briefing and if they see value in attending.

I suspect they will provide updated numbers, a more definitive route and projected revenues, but I don't know this for certain. If anyone does visit with Sutton or Wiese I would appreciate hearing what they took away from the briefing.

I am considering attending. Let me know if there is any additional information you require from me.

Respectfully

Dave

Sheriff Dave Ackerman

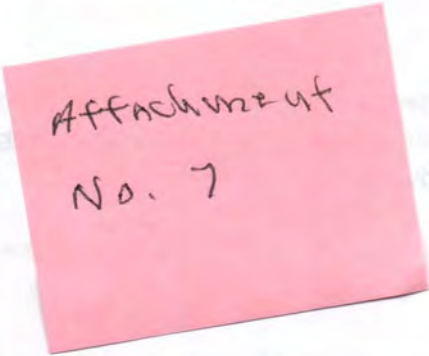
[McPhersonSO@ValleyTel.net](mailto:McPhersonSO@ValleyTel.net)

[\(605\) 439-3400](tel:(605)439-3400)

706 Main Street Leola, SD 57456

# **Attachment No. 18**

MENU



[< https://sdfu.org/>](https://sdfu.org/)

Home < <https://sdfu.org/> > Summit Carbon Solutions is No Friend to Farmers

# Summit Carbon Solutions is No Friend to Farmers

Posted on: May 3, 2023 | Category: [News Releases < https://sdfu.org/category/news-releases/>](https://sdfu.org/category/news-releases/)

*Column by Doug Sombke, President South Dakota Farmers Union*

Summit Carbon Solutions has violated farmers' landowner rights.

The company attempting to build a CO2 pipeline across the state is suing more than 80 South Dakota farmers who do not want the company and its pipeline on their land.

South Dakota Farmers Union members addressed the importance of landowner rights decades ago in their policy. It still stands as a major issue for today's members. Our policy strongly supports farmers' control and use of their own land. News of Summit Carbon Solutions suing 80 South Dakota farmers claiming eminent domain with more to come strikes a nerve at South Dakota Farmers Union.

During the 2023 Legislative Session Farmers Union joined with others to support HB1133. This is a House Bill which would have protected landowners from Summit Carbon Solutions. Unfortunately, the majority of state legislators did not support landowners. The bill failed.

Once again, South Dakota Farmers Union calls on state legislators and our Congressional leaders to not allow misuse of eminent domain laws. No private company should be allowed to rob family farmers of their land rights. If this is allowed what is next?

Summit Carbon Solutions has shown its true colors and it is no friend to farmers or landowners – period.

Summit Carbon Solutions is a privately held company with millions to lose if they are not able to complete their plans for this CO2 pipeline. They claim eminent domain with the excuse that this pipeline will benefit the public.

The facts are Summit Carbon Solutions in many cases has not dealt fairly in valuing the land or the farmers on an individual case by case bases. Nor have they been up front with them when discussing specifics of safety.

Pipelines can and do leak. And because the CO2 is converted to a liquid when it is pumped into the pipeline, if it springs a leak, the scary fact is, it could explode. <https://www.youtube.com/watch?v-14bdGO1Yfrs> < <https://www.youtube.com/watch?v-14bdGO1Yfrs> >.

Experts say a CO2 gas explosion would result in death of any human, livestock or wildlife in the vicinity of the pipeline.

To help preserve landowner's rights, please visit this website and sign this petition: <https://sdpropertyrights.com/>.

## NEWS / EVENTS

[News Releases < https://sdfu.org/category/news-releases/>](https://sdfu.org/category/news-releases/)

[SDFU Blog < https://sdfu.org/news-events/sdfu-blog/>](https://sdfu.org/news-events/sdfu-blog/)

[Union Farmer < https://sdfu.org/news-events/union-farmer/>](https://sdfu.org/news-events/union-farmer/)

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[Annual Events < https://sdfu.org/news-events/annual-events/>](https://sdfu.org/news-events/annual-events/)

[Photo Contest < https://sdfu.org/news-events/photo-contest/>](https://sdfu.org/news-events/photo-contest/)

## CATEGORIES

Industrial Hemp



# **Attachment No. 19**

Two reasons: money and politics. More on both next week.

Alan Guebert: 'The Great Carbon Boondoggle,' Part 2  
Jan 27, 2023 Updated Jan 27, 2023

Bruce Rastetter, Iowa's longtime agricultural and political power center, has a sixth sense when it comes to making money. In 1984, according to the Des Moines Register, Rastetter "started feeding hogs on contract... and within two years, 500 head grew to 100,000." A decade later, his Heartland Pork was the 12th largest hog farm in the U.S. Ten years after that, with Heartland wallowing in debt and low prices, Rastetter sold it and moved on to ethanol. His timing was nearly perfect; the federal government's Renewable Fuel Standard was about to ignite a massive ethanol boom.

Later, as that biofuel boom faded, "Rastetter... worked out a deal with Thomas H. Lee Partners," reported the Register in 2015, "which bought 80 percent of Hawkeye Holdings"—Rastetter's ethanol company—"investing \$312 million..."

Soon, Rastetter began investing in global ag and local politicians. Today he's a top collector of both: His Summit Agricultural Group reportedly controls 14,000 acres in Iowa, owns several livestock operations and "ethanol businesses in Brazil," and has "spent millions on federal, state, and local politics over the past two decades," notes the Register.

The latter is important given Summit's current focus, a 2,000-mile, \$4.5-billion carbon pipeline to link more than 30 "biorefineries" in five Midwestern states to gather, then deliver, pressurized CO<sub>2</sub> to "deep geologic storage locations" in North Dakota.

But not even Rastetter has deep enough pockets to bankroll this pipe dream. Enter his network of politicians and investors.

As highlighted here last week and according to a Nov. 2022 report published by the Oakland Institute, a California-based think tank, Summit's payroll includes General Counsel Jess Vilsack, the son of U.S. Secretary of Agriculture Tom Vilsack. Summit's "chief policy officer"—whatever that is—is Terry Branstad, Iowa's longtime former governor.

A May 2022 Securities and Exchange Commission (SEC) filing, highlighted by Oakland, lists the biggest investors in the Midwest Carbon Express, Summit's cheeky name its pipeline. They include TPG Rise Climate Fund (\$300 million), Continental Resources (\$250 million), SK E&S (\$110 million), Tiger Infrastructure (\$100 million), and Deere & Co., the farm equipment giant whose "size of its 'strategic investment'... remains unknown."

What also is known, though, is that most of these investors have deep ties to fossil fuels and some to oil-producing giants like Saudi Arabia. One, Continental Resources, notes Oakland, was founded by Harold Hamm, a frac oil billionaire, and "produces crude oil and natural gas" in Texas, Montana, Oklahoma, Wyoming, and North Dakota—the northern terminus of Summit's pipeline.

Coincidence? Not likely because compressed CO<sub>2</sub> is an effective tool in "enhanced oil recovery" efforts by frac oil firms to keep their thick crude flowing, writes Oakland, without reducing oil's critical role in climate change.

But the really big money in the Summit pipeline effort—and two other, already-announced competing pipelines—is yours, the taxpayer.

According to terms included in the 2022 Inflation Reduction Act (IRA), the federal government will pay carbon "sequesters" like Summit \$85 per CO<sub>2</sub> ton to collect, transport, and store it underground.

If, however, the compressed CO<sub>2</sub> is used in "enhanced oil recovery" systems to pump thick crude out of the ground, the per ton rate dips to \$60.

Collectively, Oakland estimates the three CO<sub>2</sub> pipelines planned for the Midwest could collect \$45 billion in federal guarantees—all transferable to any taxpayer for cash—over the next 12 years. Summit's share of that juicy federal pie is an estimated \$12 billion.

But that's only one slice. An estimated \$7 billion in federal "pilot program" and "development" money is also on the CO<sub>2</sub> table. Additionally, several state programs could, figures Oakland, raise the value of each ton of sequestered carbon to a wallet-bulging \$250 per ton, or three times what is promised today.

And yet, adds Oakland, almost every penny of this lard-laced federal program will prop up "polluting industries... [and] delay the transition away from dirty energy..."

Little wonder that ag insiders like Rastetter often move from growing actual hogs to nurturing government-fattened porkers like carbon pipelines. These big pigs, after all, could yield massive profits while greenwashing even more frac oil billions.

Attachment  
No. 8

# **Attachment No. 20**

Objection, Docket Number HLP-2021-0001

To Whom It May Concern:

I am writing in opposition to Summit Carbon Solutions LLC's Petition for a Hazardous Liquid Pipeline Permit.

Summit Carbon Solutions submitted a Form D to the SEC on October 22, 2021. It submitted an amended Form D to the SEC on May 12, 2022. You'll find those here: [EDGAR Entity Landing Page](#). I've also attached these documents for reference. The amended version lists a total of 464 investors in this project.

The amended Form D filing includes investors, who are identified as Directors under Related Persons, Item 3. Harold Hamm, William Berry, Emil Henry, Mike Stone, Jonathan Garfinkel, and Yu Jeong-Joon have all been added and are listed as Directors. I would assume this gives these individuals, on behalf of their investor pools or business enterprises, some say in the operation of this venture.

Yu Jeong-Joon is identified as vice president of SK E&S in various news articles. The firm's buy-in received coverage in the May 10, 2022, Aju Business Daily. See that here: <https://www.ajudaily.com/view/20220510105506193>. I've also attached this article for reference.

SK Group is a South Korean firm. It has experienced legal troubles in South Korea, some recent: [Prosecutors raid SK Group in connection with alleged slush fund case at SK Networks](#) (see also attached).

<https://en.yna.co.kr/view/AEN20210525006851315> (see also attached).

Under federal exemptions and exclusions (Item 6) in the May 12, 2022, amended SEC filing, Summit cites Rule 506(c). I believe this exempts Summit from closer scrutiny by the SEC, under the assumption that all of the investors in Summit are "accredited." I don't have any information to indicate that any of the investors identified to date are not accredited. Most remain unidentified.

I would ask the Utilities Board to conduct due diligence in order to determine if the SK Group is part of the same company, SK Holdings Co. Lt., that is listed in the following Contractor Misconduct Database:

<https://www.contractormisconduct.org/contractors/161/sk-holdings-co-ltd>.

If this is the same company, I think it should raise concerns regarding SK's involvement in the Summit Carbon pipeline project. My research indicates that it is affiliated, and that SK E&C now goes by the name SK ecoplant: SK E&C begins afresh as 'SK ecoplant'. See also attached. See also this listing of companies (attached):

<https://eng.sk.com/companies>.

The Contractor Misconduct database contains information on several actions taken against SK Engineering and Construction in the United States (see attached). The company pleaded guilty to defrauding the U.S. Army in June of 2020 and was fined more than \$68 million according to a Department of Justice Press release (see attached). I believe these were criminal sanctions.

The other Directors listed in the amended SEC filing, as best I can tell, are affiliated with Tiger Infrastructure (Emil Henry), TPG Rise (Mike Stone and Jonathan Garfinkel), and Continental Resources (Harold Hamm and William Berry).

I think with the exception of Continental Resources, all of these investors are private venture capital or investment firms. I don't think we know where a lot of the money comes from, and much of it may well come from foreign investors outside the U.S. This would include SK Group.

Tiger Infrastructure: <https://www.tigerinfrastructure.com/>

SK Group: <https://eng.sk.com/news/sk-group-appoints-first-head-of-u-s-corporate-and-government-affairs>

[The Drive for Better | SK](#)

TPG: [TPG Rise Climate | The Rise Fund](#)

Continental: Home - Continental Resources

Billionaire-founder Harold Hamm offers to take Continental Resources private in \$25 billion deal

You'll note in the above link that Harold Hamm wants to take Continental Resources private.

The Aju Daily article states that SK Group has a 10 percent stake in the Summit Carbon venture. In other, related articles, including the May 10, 2022, Biofuels Digest, TPG is identified as a global private equity firm. This indicates that additional monies for this venture are coming from foreign entities. In the Aju Daily article, SK also talks about using what it learns in Latin America.

According to a September 2021 article in the Financial Times, TPG Rise received an investment from Saudi Arabia's public investment fund (PIF): "PIF also invested in the \$5.4 bn TPG Rise Climate fund, chaired by Hank Paulson, a former US Treasury secretary." (Saudi Arabia's grandiose climate plans struggle to take off). See attached.

Summit Carbon has employed the LS<sub>2</sub> Group, or Larson Shannahan Slifka, as its representative and lobbyist. Recently, Dan Lederman, Chairman of South Dakota's Republican Party, spoke out in support of the program at various meetings held in his state. Lederman is listed as a senior advisor on LS<sub>2</sub>'s website. Lederman is also listed as an active foreign agent representing Saudi Arabia on the FARA website: <https://efile.fara.gov/docs/6749-Short-Form-20191202-26.pdf> (see attached), along with a host of other LS<sub>2</sub> staff members and subcontractors. My review of LS<sub>2</sub>'s filings on the FARA website indicates that in recent years, this Iowa firm has been paid many hundreds of thousands of dollars to represent Saudi Arabia.

If Saudi Arabia and other foreign principals have invested in Summit Carbon Solutions, Iowans should be informed of this fact, including the amount of monies invested.

Summit has identified the tax credits available through section 45Q of the federal tax code as one of its sources of revenue. I think most Iowans, particularly those

landowners whose property may be subject to eminent domain, might have something to say about a project that relies upon federal monies as a revenue source and takes on investors whose backgrounds Iowans know little to nothing about.

I know very little about the FIRRMA regulations that are meant to more closely scrutinize foreign investments: <https://www.lw.com/thoughtLeadership/final-cfius-regs-take-effect-feb-2020-10-key-questions-answered> (see also attached). I would request that the Iowa Utilities Board conduct due diligence to determine if the Summit Carbon pipeline project is subject to these regulations: <https://www.lw.com/thoughtLeadership/final-cfius-regs-take-effect-feb-2020-10-key-questions-answered>.

Thank you.

Sincerely,  
Nancy Dugan  
506 Second St. SE  
Altoona, IA 50009

The Securities and Exchange Commission has not necessarily reviewed the information in this filing and has not determined if it is accurate and complete.  
The reader should not assume that the information is accurate and complete.

**UNITED STATES SECURITIES AND EXCHANGE COMMISSION**  
Washington, D.C. 20549  
**FORM D**

OMB APPROVAL	
OMB Number:	3235-0076
Estimated average burden hours per response:	4.00

**Notice of Exempt Offering of Securities**

**1. Issuer's Identity**

CIK (Filer ID Number)

0001869302

Name of Issuer

Summit Carbon Holdings, LLC

Jurisdiction of

Incorporation/Organization

DELAWARE

Year of Incorporation/Organization

Over Five Years Ago

Within Last Five Years (Specify Year) 2021

Yet to Be Formed

Previous Names  None

SCS HoldCo I, LLC

Entity Type

Corporation

Limited Partnership

Limited Liability Company

General Partnership

Business Trust

Other (Specify)

**2. Principal Place of Business and Contact Information**

Name of Issuer

Summit Carbon Holdings, LLC

Street Address 1

10640 COUNTY HIGHWAY D20

Street Address 2

City

ALDEN

State/Province/Country

IOWA

ZIP/PostalCode

50006

Phone Number of Issuer

515-854-9820

**3. Related Persons**

Last Name

Rastetter

First Name

Bruce

Middle Name

Street Address 1

10640 County Highway D20

Street Address 2

City

Alden

State/Province/Country

IOWA

ZIP/PostalCode

50006

Relationship:  Executive Officer  Director  Promoter

Clarification of Response (if Necessary):

Chief Executive Officer, Managing Member and President of SCSMM, LLC ("Managing Member") of Issuer, Director of Issuer

Last Name

First Name

Middle Name



Kirchhoff Justin  
 Street Address 1 Street Address 2  
 10640 County Highway D20  
 City State/Province/Country ZIP/PostalCode  
 Alden IOWA 50006  
 Relationship:  Executive Officer  Director  Promoter

Clarification of Response (if Necessary):

Vice President of Managing Member of Issuer, Director of Issuer

Last Name First Name Middle Name  
 Probst Jonathan  
 Street Address 1 Street Address 2  
 10640 County Highway D20  
 City State/Province/Country ZIP/PostalCode  
 Alden IOWA 50006  
 Relationship:  Executive Officer  Director  Promoter

Clarification of Response (if Necessary):

Vice President of Managing Member of Issuer

Last Name First Name Middle Name  
 Hamm Harold G.  
 Street Address 1 Street Address 2  
 PO Box 268836  
 City State/Province/Country ZIP/PostalCode  
 Oklahoma City OKLAHOMA 73126  
 Relationship:  Executive Officer  Director  Promoter

Clarification of Response (if Necessary):

Director of Issuer

Last Name First Name Middle Name  
 Berry William B.  
 Street Address 1 Street Address 2  
 PO Box 268836  
 City State/Province/Country ZIP/PostalCode  
 Oklahoma City OKLAHOMA 73126  
 Relationship:  Executive Officer  Director  Promoter

Clarification of Response (if Necessary):

Director of Issuer

Last Name First Name Middle Name  
 Henry Emil  
 Street Address 1 Street Address 2  
 717 Fifth Avenue Floor 12A  
 City State/Province/Country ZIP/PostalCode  
 New York City NEW YORK 10022

Relationship:  Executive Officer  Director  Promoter

Clarification of Response (if Necessary):

Director of Issuer

Last Name	First Name	Middle Name
Stone	Mike	
Street Address 1	Street Address 2	
301 Commerce Street Suite 3300		
City	State/Province/Country	ZIP/PostalCode
Fort Worth	TEXAS	76102

Relationship:  Executive Officer  Director  Promoter

Clarification of Response (if Necessary):

Director of Issuer

Last Name	First Name	Middle Name
Garfinkel	Jonathan	
Street Address 1	Street Address 2	
301 Commerce Street Suite 3300		
City	State/Province/Country	ZIP/PostalCode
Fort Worth	TEXAS	76102

Relationship:  Executive Officer  Director  Promoter

Clarification of Response (if Necessary):

Director of Issuer

Last Name	First Name	Middle Name
Joon Yu	Jeong	
Street Address 1	Street Address 2	
1980 Post Oak Blvd	2000 Suite	
City	State/Province/Country	ZIP/PostalCode
Houston	TEXAS	77056

Relationship:  Executive Officer  Director  Promoter

Clarification of Response (if Necessary):

Director of Issuer

#### 4. Industry Group

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Agriculture                  | Health Care                                     | <input type="checkbox"/> Retailing          |
| <input type="checkbox"/> Banking & Financial Services | <input type="checkbox"/> Biotechnology          | <input type="checkbox"/> Restaurants        |
| <input type="checkbox"/> Commercial Banking           | <input type="checkbox"/> Health Insurance       | Technology                                  |
| <input type="checkbox"/> Insurance                    | <input type="checkbox"/> Hospitals & Physicians | <input type="checkbox"/> Computers          |
| <input type="checkbox"/> Investing                    | <input type="checkbox"/> Pharmaceuticals        | <input type="checkbox"/> Telecommunications |
| <input type="checkbox"/> Investment Banking           | <input type="checkbox"/> Other Health Care      | <input type="checkbox"/> Other Technology   |
| <input type="checkbox"/> Pooled Investment Fund       |   |   |

Is the issuer registered as an investment company under the Investment Company Act of 1940?  
 Yes       No

Manufacturing  
 Real Estate  
 Commercial  
 Construction  
 REITS & Finance  
 Residential  
 Other Real Estate

Travel  
 Airlines & Airports  
 Lodging & Conventions  
 Tourism & Travel Services  
 Other Travel  
 Other

Other Banking & Financial Services  
 Business Services  
 Energy  
 Coal Mining  
 Electric Utilities  
 Energy Conservation  
 Environmental Services  
 Oil & Gas  
 Other Energy

**5. Issuer Size**

Revenue Range	OR	Aggregate Net Asset Value Range
<input type="checkbox"/> No Revenues		<input type="checkbox"/> No Aggregate Net Asset Value
<input type="checkbox"/> \$1 - \$1,000,000		<input type="checkbox"/> \$1 - \$5,000,000
<input type="checkbox"/> \$1,000,001 - \$5,000,000		<input type="checkbox"/> \$5,000,001 - \$25,000,000
<input type="checkbox"/> \$5,000,001 - \$25,000,000		<input type="checkbox"/> \$25,000,001 - \$50,000,000
<input type="checkbox"/> \$25,000,001 - \$100,000,000		<input type="checkbox"/> \$50,000,001 - \$100,000,000
<input type="checkbox"/> Over \$100,000,000		<input type="checkbox"/> Over \$100,000,000
<input checked="" type="checkbox"/> Decline to Disclose		<input type="checkbox"/> Decline to Disclose
<input type="checkbox"/> Not Applicable		<input type="checkbox"/> Not Applicable

**6. Federal Exemption(s) and Exclusion(s) Claimed (select all that apply)**

<input type="checkbox"/> Rule 504(b)(1) (not (i), (ii) or (iii))	<input type="checkbox"/> Investment Company Act Section 3(c)	
<input type="checkbox"/> Rule 504 (b)(1)(i)	<input type="checkbox"/> Section 3(c)(1)	<input type="checkbox"/> Section 3(c)(9)
<input type="checkbox"/> Rule 504 (b)(1)(ii)	<input type="checkbox"/> Section 3(c)(2)	<input type="checkbox"/> Section 3(c)(10)
<input type="checkbox"/> Rule 504 (b)(1)(iii)	<input type="checkbox"/> Section 3(c)(3)	<input type="checkbox"/> Section 3(c)(11)
<input type="checkbox"/> Rule 506(b)	<input type="checkbox"/> Section 3(c)(4)	<input type="checkbox"/> Section 3(c)(12)
<input checked="" type="checkbox"/> Rule 506(c)	<input type="checkbox"/> Section 3(c)(5)	<input type="checkbox"/> Section 3(c)(13)
<input type="checkbox"/> Securities Act Section 4(a)(5)	<input type="checkbox"/> Section 3(c)(6)	<input type="checkbox"/> Section 3(c)(14)
	<input type="checkbox"/> Section 3(c)(7)	

**7. Type of Filing**

New Notice Date of First Sale 2021-10-08  First Sale Yet to Occur

Amendment

**8. Duration of Offering**

Does the Issuer intend this offering to last more than one year?  Yes  No

**9. Type(s) of Securities Offered (select all that apply)**

- Equity
- Debt
- Option, Warrant or Other Right to Acquire Another Security
- Security to be Acquired Upon Exercise of Option, Warrant or Other Right to Acquire Security
- Pooled Investment Fund Interests
- Tenant-in-Common Securities
- Mineral Property Securities
- Other (describe)  
Membership Interests ("Units")

**10. Business Combination Transaction**

Is this offering being made in connection with a business combination transaction, such as a merger, acquisition or exchange offer?  Yes  No

Clarification of Response (if Necessary):

**11. Minimum Investment**

Minimum investment accepted from any outside investor \$20,000 USD

**12. Sales Compensation**

Recipient (Associated) Broker or Dealer  None

Recipient CRD Number  None (Associated) Broker or Dealer CRD Number  None

Street Address 1 Street Address 2 ZIP/Postal Code

City State/Province/Country

State(s) of Solicitation (select all that apply) Check "All States" or check individual States  All States  Foreign/non-US

**13. Offering and Sales Amounts**

Total Offering Amount \$1,065,806,690 USD or  Indefinite

Total Amount Sold \$1,065,806,690 USD

Total Remaining to be Sold \$0 USD or  Indefinite

Clarification of Response (if Necessary):

**14. Investors**

Select if securities in the offering have been or may be sold to persons who do not qualify as accredited investors, and enter the number of such non-accredited investors who already have invested in the offering.

Regardless of whether securities in the offering have been or may be sold to persons who do not qualify as accredited investors, enter the total number of investors who already have invested in the 464

offering:

**15. Sales Commissions & Finder's Fees Expenses**

Provide separately the amounts of sales commissions and finders fees expenses, if any. If the amount of an expenditure is not known, provide an estimate and check the box next to the amount.

Sales Commissions \$0 USD  Estimate

Finders' Fees \$0 USD  Estimate

Clarification of Response (if Necessary):

**16. Use of Proceeds**

Provide the amount of the gross proceeds of the offering that has been or is proposed to be used for payments to any of the persons required to be named as executive officers, directors or promoters in response to Item 3 above. If the amount is unknown, provide an estimate and check the box next to the amount.

\$0 USD  Estimate

Clarification of Response (if Necessary):

Certain persons named in Item 3 and/or affiliates thereof, may be paid certain management or other expenses/fees which may be deemed paid out of proceeds, the amount for which cannot be estimated.

**Signature and Submission**

Please verify the information you have entered and review the Terms of Submission below before signing and clicking SUBMIT below to file this notice.

**Terms of Submission**

In submitting this notice, each issuer named above is:

- Notifying the SEC and/or each State in which this notice is filed of the offering of securities described and undertaking to furnish them, upon written request, in the accordance with applicable law, the information furnished to offerees.\*
- Irrevocably appointing each of the Secretary of the SEC and, the Securities Administrator or other legally designated officer of the State in which the issuer maintains its principal place of business and any State in which this notice is filed, as its agents for service of process, and agreeing that these persons may accept service on its behalf, of any notice, process or pleading, and further agreeing that such service may be made by registered or certified mail, in any Federal or state action, administrative proceeding, or arbitration brought against the issuer in any place subject to the jurisdiction of the United States, if the action, proceeding or arbitration (a) arises out of any activity in connection with the offering of securities that is the subject of this notice, and (b) is founded, directly or indirectly, upon the provisions of: (i) the Securities Act of 1933, the Securities Exchange Act of 1934, the Trust Indenture Act of 1939, the Investment Company Act of 1940, or the Investment Advisers Act of 1940, or any rule or regulation under any of these statutes, or (ii) the laws of the State in which the issuer maintains its principal place of business or any State in which this notice is filed.
- Certifying that, if the issuer is claiming a Regulation D exemption for the offering, the issuer is not disqualified from relying on Rule 504 or Rule 506 for one of the reasons stated in Rule 504(b)(3) or Rule 506(d).

Each Issuer identified above has read this notice, knows the contents to be true, and has duly caused this notice to be signed on its behalf by the undersigned duly authorized person.

For signature, type in the signer's name or other letters or characters adopted or authorized as the signer's signature.

Issuer	Signature	Name of Signer	Title	Date
Summit Carbon Holdings, LLC	/s/ Justin Kirchhoff	Justin Kirchhoff	Vice President of Managing Member of Issuer	2022-05-12

*Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB number.*

\* This undertaking does not affect any limits Section 102(a) of the National Securities Markets Improvement Act of 1996 ("NSMIA") [Pub. L. No. 104-290, 110 Stat. 3416 (Oct. 11, 1996)] imposes on the ability of States to require information. As a result, if the securities that are the subject of this Form D are "covered securities" for purposes of NSMIA, whether in all instances or due to the nature of the offering that is the subject of this Form D, States cannot routinely require offering materials under this undertaking or otherwise and can require offering materials only to the extent NSMIA permits them to do so under NSMIA's preservation of their anti-fraud authority.

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## SK E&S joins world's largest carbon capture project by acquiring 10% of U.S. project leader Summit

Lim Chang-von Reporter(cwlim34@ajunews.com) | Posted : May 10, 2022, 11:00 | Updated : May 10, 2022, 11:00

🌐 A A 🗨️



[Courtesy of SK E&S]

SEOUL -- SK E&S, an energy company affiliated with South Korea's SK Group, will join what would be the world's largest carbon capture project by spending \$110 million to acquire a 10 percent stake in U.S. project leader Summit Carbon Solutions, a business platform that addresses the global challenge of decarbonization.

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Summit's project is aimed at capturing up to 12 million tons of carbon dioxide (CO<sub>2</sub>) a year from 32 corn ethanol plants in five midwest states. CO<sub>2</sub> captured at each plant will be transported to an underground carbon storage facility to be built in North Dakota for permanent storage through a pipeline of 3,200 kilometers (1,988 miles).



[Learn more](#)

Construction is to begin in the first half of 2023 for commercial operation in the second half of 2024. For the carbon capture and storage (CCS) project, SK E&S said it would build a "CCS dream team" with Summit Agricultural Group, a diverse farming and agricultural investor, Continental Resource, a major U.S. petroleum and gas company, and private equity firm Texas Pacific Group (TPG).

SK E&S anticipates strategic synergy effects with Summit by using its biofuel business experience in the U.S. and Latin America as well as with Continental Resource which possesses know-how about various pipeline operations in petroleum and gas business.

Washington's renewable fuel standard (RFS) program calls for at least 10 percent in the ethanol volume required for blending into gasoline. Bioethanol, usually made by the fermentation of corn or sugarcane, can be used as motor fuel or an industrial raw material, but it generates CO<sub>2</sub> in the production process. Bioethanol produced with CCS technology can generate a carbon credit.



[Learn more](#)



By participating in the U.S. CCS project, SK E&S aims to establish a bridgehead in large global CCS projects. "CCS is a critical technology that can directly reduce carbon dioxide produced in the process of using different energy sources such as natural gas and biofuels," SK E&S vice president Yu Jeong-joon said in a statement on May 10.

In March 2022, SK E&S disclosed a project to turn a gas production facility in Bayu-Undan in the Timor Sea into a CCS plant capable of storing about 10 million tons of carbon dioxide annually. The project is aimed at securing an overseas storage base that can handle carbon dioxide generated from the Barossa gas field and blue hydrogen production facilities in South Korea.



Learn more

As part of a broad group-wide project to promote hydrogen as a new growth engine, SK E&S disclosed a \$1.4 billion investment decision In March 2021 to develop gas fields in northern Australia and bring in 1.3 million tons of liquefied natural gas per year for 20 years from 2025.



Lim Chang-won Reporter

email : cwlim34@ajunews.com

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## Prosecutors raid SK Group in connection with alleged slush fund case at SK Networks

2021-03-05 17:04



Choi Shin-won, the chairman of SK Networks Co., heads to a courtroom to attend his arrest warrant hearing at the Seoul Central District Court in Seoul on Feb. 17, 2021. (Yonhap)

Prosecutors on Friday raided SK Group's headquarters to see if the group is involved in the alleged creation of an illicit fund by the chairman of the SK Networks Co., a global trading unit of the group.

The anti-corruption unit of the Seoul Central Prosecutors Office said prosecutors and police investigators from the unit were searching the SK Group headquarters in Seoul to secure evidence for an investigation into the slush fund allegation.

On the same day, prosecutors indicted chairman Choi Shin-won, who was arrested last month on charges of embezzlement and breach of trust. He is a son of late SK Group founder Chey Jong-gun and a cousin of SK Group Chairman Chey Tae-won.

Choi faces allegations that he created a slush fund worth 223.5 billion won (\$198 million) through the company's six affiliates, including SKC, a chemical manufacturing company, and SK Telesys Co., a communication equipment manufacturer.

In addition, investigators are looking into the allegation that he was involved in stock manipulation.

SK Networks bought back 100 billion won worth of treasury shares from March to early June last year. After the plan was made public, shares in the company jumped to 5,600 won from 4,300 won.

Prosecutors suspect the buyback was aimed at boosting stock prices and Choi and company executives may have illegally profited in the process.

Also he was accused of hiding around 1.6 billion won under employees' names and violating the Foreign Exchange Transactions Act by taking around 900 million won overseas without reporting it.

Choi served as chairman for SKC Co. from 2000 to 2015 and has been in his current position since 2016.

The investigation into the suspected slush fund case began when the Korea Financial Intelligence Unit (KoFIU) under the Financial Services Commission (FSC) spotted suspicious flows of money at SK Networks in 2018. (Yonhap)

<http://www.koreaherald.com/common/newsprint.php?ud=20210305000747>



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# (LEAD) SK Group's No. 2 executive indicted on breach of trust charge

All News • 16:18 May 25, 2021



(ATTN: UPDATES with SK chairman not being booked in last 3 paras)

SEOUL, May 25 (Yonhap)— The No. 2 official at SK Group was indicted Tuesday on a breach of trust charge related to allegedly unlawful transactions among affiliates.

The Seoul Central District Prosecutors Office indicted Cho Dae-sik, chairman of the SK Supex the top decision-making body of the third-largest South Korean conglomerate, without



ly inflicted huge financial losses on SKC, a chemical manufacturing arm of SK Group, through dubious inter-affiliate stock transactions in 2012 and 2015, according to prosecution officials.



### Issue Keywords

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- #KCTU
- #rally
- #additional case
- #alert

(URGENT) S. Korea reports 7 new COVID-19 deaths, total at 24,582; KDCA

(LEAD) Umbrella union stages massive rallies in Seoul amid scorching heat



Umbrella union stages massive rallies in Seoul amid scorching heat



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(LEAD) Heat wave alert issued nationwide



This undated file photo shows Cho Dae-sik, chairman of the SK Supex Council. (Yonhap)

hide caption

### Most Liked

Cho is accused of having SKC invest 70 billion won (US\$62.34 million) in a capital increase of SK Telesys, a communication equipment manufacturer that was in a state of capital erosion in 2015, when he was serving as the chairman of SKC's board of directors. SKC reportedly sustained a huge loss from the SK Telesys deal.

He is also suspected of orchestrating the move to have SKC invest 19.9 billion won in SK Telesys' capital increase in 2012.

Prosecutors allege that SKC appeared to have skipped appropriate investment reviews ahead of its SK Telesys deals by providing false and insufficient reports on SK Telesys' self-rescue measures to SKC's outside directors, though the troubled company was in a state of being unable to recover due to capital erosion.

Cho Kyung-mok, a former top financial officer of SK Corp., and Choi Tae-eun, a former senior executive at SKC, were also indicted without detention for allegedly being involved in the dubious inter-affiliate deals.

Ahn Seung-yun, CEO of SK Telesys, was also indicted without detention on charges of accounting fraud. Ahn is accused of inflating company assets by 15.2 billion won after an unsuccessful capital increase attempt in 2015.

The latest indictments came while prosecutors were investigating Choi Shin-won, CEO and chairman of SK Networks, over allegations of overseas slush funds and other charges. Choi, a son of the late SK Group founder Chey Jong-gun and a cousin of SK Group Chairman Chey Tae-won, was serving as the chairman of SK Telesys in 2015. Choi was indicted in March on charges of embezzlement and breach of trust related to the creation of slush funds.

Choi's involvement was questioned in written form in connection with the SK Telesys case but was not booked as prosecutors failed to find evidence of a collusive relationship with Cho.

Prosecutors said Chey approved SKC's participation in the SK Telesys capital increase in advance but that there was no evidence to suggest that he received any specific progress report or colluded with Cho.

SK Group has denied the breach of trust charges against its executives, arguing that SKC's participation in the SK Telesys capital increase should be regarded as a normal management activity as the SK company turned a profit one year after its recapitalization.

ycm@yna.co.kr  
(END)

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## SK E&C begins afresh as ‘SK ecoplant’

2021-05-24 16:50



(SK ecoplant)

SK Engineering & Construction, the building arm of South Korea’s third-largest conglomerate SK Group, has officially changed its corporate name to “SK Ecoplant” as part of the group’s effort to enhance ESG management.

The company on Monday released its new corporate identity and future vision on the company’s intranet under the title “Deep Change Story.”

The new corporate name was approved at the extraordinary general shareholders’ meeting held at the company’s headquarters in Seoul on May 21.

In October last year, the builder filed an application to the Seoul Central District Court for the temporary registration of three corporate name candidates -- SK Ecoplant, SK Impact, and SK Circlers.

The corporate name “SK Ecoplant” reflects the company’s drive to grow beyond the conventional construction business and to embrace innovative eco-friendly

technologies, according to officials.

As a mid-term fiscal road map to back its vision, the company vowed to invest some 3 trillion won (\$2.67 billion) by 2023.

One of the suggested action plans is to enhance the role of Environment Management Corporation -- previously EMC Holdings -- and to gain an upper hand in downstream businesses including water treatment and waste incineration.

The company will also seek to acquire small-sized innovative players and develop new industrial complexes, under the bolt-on strategy, officials added.

Regarding its conventional construction business, SK Ecoplant will focus on expanding eco-friendly building materials and on establishing a circular economy through the so-called 3Rs -- reduce, reuse and recycling of waste.

“The new corporate name signals a new start in promoting eco-friendly business ideas and related technologies,” said Ahn Jae-hyun, president and CEO of the company.

“We shall figure out impactful business solutions so that we may grow into Asia’s top environmental enterprise in upcoming years.”

By Bae Hyun-jung ([tellme@heraldcorp.com](mailto:tellme@heraldcorp.com))

<http://www.koreaherald.com/common/newsprint.php?ud=20210524000809>



At SK, we get behind the unexpected opportunities that will form the new backbone of our global progress.

We operate more than 120 businesses across the energy, life sciences, advanced materials, mobility, and semiconductors industries. As part of the broader SK network, we also have access to global perspectives and resources that help us fulfill our vision for each of the markets we're in.

A to Z Industry Location

**SKC**

+5 subsidiaries

**SK broadband**

+1 subsidiary

**SK ecoplant**

+1 subsidiary

**SK energy**

**SK geo centric**

**SK biopharmaceuticals**

+2 subsidiaries

**SK chemicals**

+3 subsidiaries

**SK E&S**

+11 subsidiaries

**SK gas**

+6 subsidiaries

**SK hynix**





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## Federal Contractor Misconduct Database (FCMD)

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# Fraudulent Scheme to Obtain U.S. Army Construction Contracts

SK Engineering & Construction Co. Ltd. pleaded guilty to one count of wire fraud and paid \$68.4 million in criminal fines, restitution, and a False Claims Act settlement in connection with a fraudulent scheme to obtain U.S. Army construction contracts through payments to a Department of Defense contracting official and the submission of false claims to the U.S. government. SK obtained construction work at Camp Humphreys, South Korea, by paying millions of dollars to a fake Korean construction company, which subsequently paid that money to a contracting official with the U.S. Army Corps of Engineers. In order to cover these payments, SK submitted false documents to the Army. SK also admitted that its employees obstructed and attempted to obstruct government investigations.

### Misconduct Type

Government Contract Fraud

### Enforcement Agency

Justice

### Contracting Party

Defense - Army

### Court Type

Criminal

### Disposition

Pleaded Guilty

### Date of Plea

6/10/2020

Contractors Involved	Penalty	Further Information	Released
<a href="#">SK Holdings Co., Ltd.</a>	\$68,380,731	<a href="#">Criminal Information</a>	6/10/2020
<b>Total</b>	<b>\$68,380,731</b>	<a href="#">DOJ Press Release</a>	6/10/2020
		<a href="#">Plea</a>	6/10/2020

## See also:

- [U.S. v. Lee \(Fraudulently Obtaining U.S. Army Construction Contracts\)](#)

SK Holdings Co., Ltd.

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# U.S. v. Lee (Fraudulently Obtaining U.S. Army Construction Contracts)

SK Engineering & Construction Co., Ltd. employees Hyeong-won Lee and Dong-Guel Lee were indicted on various charges for their alleged roles in a scheme from 2008 to 2017 to fraudulently obtain U.S. Army construction contracts in South Korea. The defendants are accused of submitting fraudulent construction subcontracts to disguise millions of dollars in kickback payments to a U.S. Department of Defense official and obstructing investigations into the scheme.

### Misconduct Type

Government Contract Fraud

### Enforcement Agency

Justice

### Contracting Party

Defense - Army

### Court Type

Criminal

### Disposition

Pending

### Date of Indictment

11/8/2018

Contractors Involved	Penalty	Further Information	Released
SK Holdings Co., Ltd.	\$0	<a href="#">DOJ Press Release</a>	11/8/2018
<b>Total</b>	<b>\$0</b>	<a href="#">Indictment</a>	11/8/2018

## See also:

- [Fraudulent Scheme to Obtain U.S. Army Construction Contracts](#)

SK Holdings Co., Ltd.

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# Rigging Bids on Department of Defense Fuel Supply Contracts – Criminal Prosecution

Three South Korea-based companies, including SK Energy Co. Ltd., pleaded guilty to a criminal violation of Section 1 of the Sherman Act for their involvement in a decade-long bid-rigging conspiracy involving contracts to supply fuel to U.S. Army, Navy, Marine Corps, and Air Force bases in South Korea. According to the charges, beginning around March 2005 and continuing into 2016, SK Energy and other South Korean petroleum and refinery companies participated in a conspiracy to suppress and eliminate competition during the bidding process for U.S. military fuel contracts. SK Energy paid a \$34 million criminal fine (plus a \$400 special assessment). SK also paid more than \$90 million to settle related civil antitrust and False Claims Act charges (see SK Holdings Co., Ltd. instance, "Rigging Bids on Department of Defense Fuel Supply Contracts – Civil Settlement").

### Misconduct Type

Government Contract Fraud

### Enforcement Agency

Multiple Agencies

### Contracting Party

Defense - General

### Court Type

Criminal

### Disposition

Pleaded Guilty

### Date of Plea Announcement

11/14/2018

Contractors Involved	Penalty	Further Information	Released
<a href="#">SK Holdings Co., Ltd.</a>	\$34,079,185	<a href="#">Criminal Information</a>	11/14/2018
<b>Total</b>	<b>\$34,079,185</b>	<a href="#">DOJ Press Release</a>	11/14/2018
		<a href="#">Plea Agreement</a>	11/14/2018

## See also:

- [Rigging Bids on Department of Defense Fuel Supply Contracts – Civil Settlement](#)  
SK Holdings Co., Ltd.
- [Rigging Bids on Department of Defense Fuel Supply Contracts – Civil Settlement](#)  
S-Oil Corporation
- [Rigging Bids on Department of Defense Fuel Supply Contracts – Criminal Prosecution](#)  
S-Oil Corporation

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PROJECT ON GOVERNMENT OVERSIGHT

Home > Our Work > Databases > FCMD > All Misconduct > Rigging Bids on Department of Defense Fuel Supply Contracts – Civil Settlement



## Federal Contractor Misconduct Database (FCMD)

The federal government routinely awards contracts to companies with histories of misconduct, including contract fraud and other violations. POGO believes that providing this website will help to improve contracting decisions and increase public knowledge of how the government spends billions of taxpayer dollars each year. [Read more...](#)

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# Rigging Bids on Department of Defense Fuel Supply Contracts – Civil Settlement

The U.S. Department of Justice filed a civil complaint against three South Korea-based companies, including SK Energy Co. Ltd., alleging the companies participated in a decade-long bid-rigging conspiracy involving contracts to supply fuel to U.S. Army, Navy, Marine Corps, and Air Force bases in South Korea. According to the complaint, the three companies “defrauded the U.S. military by fixing prices and rigging bids for the contracts” and “met and communicated in secret with other large South Korean oil refiners and logistics companies, and pre-determined which conspirator would win each contract.” The government alleged the companies “and their co-conspirators illegally overcharged American taxpayers by well over \$100 million.” SK Energy paid \$90.4 million to settle civil antitrust (Sherman Act) and False Claims Act charges. SK Energy also paid a fine to settle a related criminal case (see SK Holdings Co., Ltd. instance, “Rigging Bids on Department of Defense Fuel Supply Contracts – Criminal Prosecution”).

### Misconduct Type

Government Contract Fraud

### Enforcement Agency

Justice

### Contracting Party

Defense - General

### Court Type

Civil

### Disposition

Settlement


### Date of Settlement Announcement

11/14/2018

Contractors Involved	Penalty	Further Information	Released
<a href="#">SK Holdings Co., Ltd.</a>	\$90,384,872	<a href="#">Competitive Impact Statement</a>	11/14/2018
<b>Total</b>	<b>\$90,384,872</b>	<a href="#">Complaint (Sherman Act)</a>	11/14/2018
		<a href="#">DOJ Press Release</a>	11/14/2018
		<a href="#">Proposed Final Judgment</a>	11/14/2018
		<a href="#">Settlement Agreement (False Claims Act)</a>	11/14/2018

## See also:

- [Rigging Bids on Department of Defense Fuel Supply Contracts – Civil Settlement](#)  
SK Oil Corporation
- [Rigging Bids on Department of Defense Fuel Supply Contracts – Criminal Prosecution](#)  
SK Holdings Co., Ltd.
- [Rigging Bids on Department of Defense Fuel Supply Contracts – Criminal Prosecution](#)  
SK Oil Corporation

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**Department of Justice**

Office of Public Affairs

FOR IMMEDIATE RELEASE

Wednesday, June 10, 2020

## **South Korean Engineering Company Pleads Guilty to Defrauding U.S. Army, Agrees to Pay \$68.4 Million**

SK Engineering & Construction Co. Ltd. (SK), one of the largest engineering firms in the Republic of Korea, pleaded guilty today to one count of wire fraud, in connection with a fraudulent scheme to obtain U.S. Army contracts through payments to a U.S. Department of Defense contracting official and the submission of false claims to the U.S. government.

SK entered the plea, pursuant to a plea agreement with the United States, before U.S. District Judge Thomas L. Parker in the Western District of Tennessee, who sentenced SK to pay \$60,578,847.08 in criminal fines, the largest fine ever imposed against a criminal defendant in the Western District of Tennessee, pay \$2,601,883.86 in restitution to the U.S. Army, and serve three years of probation, during which time SK agreed not to pursue U.S. federal government contracts. The U.S. Army previously suspended SK by order dated Nov. 17, 2017, from future contracting throughout the executive branch of the U.S. Government.

As part of SK's plea agreement, SK agreed to, among other things, cooperate fully with the United States in all matters relating to the conduct covered by the plea agreement and other conduct under investigation by the United States, to report violations of U.S. federal law, and to continue to implement a compliance and ethics program designed to effectively detect and deter violations of U.S. federal law throughout its operations. Separately, SK has entered into a False Claims Act settlement with the United States, under which it is obligated to pay \$5,200,000 in civil penalties to the United States, which the department credited against SK's criminal fine.

"SK paid millions of dollars to secure contracts with the Army and submitted false claims to conceal those illicit payments," said Assistant Attorney General Brian A. Benczkowski of the Justice Department's Criminal Division. "Today's guilty plea and substantial criminal penalty sends a clear message: companies who voluntarily self-disclose misconduct, cooperate, and remediate will receive appropriate credit for their efforts. But companies like SK – which withheld and destroyed documents, attempted to persuade a witness not to cooperate, and failed to discipline any responsible employees – will pay a price."

"This settlement demonstrates our commitment to root out corrupt practices that harm our military and American taxpayers, and to hold contractors accountable for their corruption," said Assistant Attorney General Jody Hunt of the Justice Department's Civil Division.

"Protecting the U.S. Treasury and the interests of the federal government abroad is a top priority of this office, and this guilty plea and sentence shows our commitment to hold foreign actors accountable for major fraud committed against the United States," said U.S. Attorney D. Michael Dunavant of the Western District of Tennessee. "The scheme committed by the defendant in this case is a serious crime of dishonesty and deceit that strikes at the very heart of those national interests and will not be tolerated. The Army-CID, the FBI, and DCIS are to be commended for their diligent investigative work in uncovering and exposing this fraud, and I am pleased that we have achieved justice by holding the defendant legally and financially accountable."

"American contracts are not for sale in the United States, nor abroad," said Paul Delacourt, the Assistant Director in Charge of the FBI's Los Angeles Field Office. "This case should send a message to companies and officials domestically and overseas that the FBI and our partners will hold accountable those who threaten the integrity of our military operations and who abuse their position to profit personally at the expense of American taxpayers."

"This plea demonstrates the great cooperation among our federal investigators and prosecutors," said Director Frank Robey of the U.S. Army Criminal Investigation Command's (CID) Major Procurement Fraud Unit. "It also holds SK responsible for their actions and sends a strong message that this type of conduct will not be tolerated."

"This sort of abhorrent behavior is a serious threat to the integrity of the DoD acquisition process and a gross betrayal of the public trust" said Special Agent in Charge Stan Newell of the Defense Criminal Investigative Service (DCIS), Transnational Operations Field Office. "The special agents of the DCIS, along with our partner agencies, will vigorously investigate and bring to justice those who pilfer taxpayer dollars and shamelessly enrich themselves through corruption and deceit."

According to plea documents, SK obtained a large U.S. Army construction contract at Camp Humphreys, South Korea in 2008 worth hundreds of millions of dollars. SK paid millions of dollars to a fake Korean construction company named S&Teoul, which subsequently paid that money to a contracting official with the U.S. Army Corps of Engineers. In order to cover approximately \$2.6 million in payments to S&Teoul, and ultimately to the contracting official, SK submitted false documents to the U.S. Army.

SK also admitted that its employees obstructed and attempted to obstruct federal criminal investigations of the fraud and bribery scheme. SK admitted that, in April 2015, its employees burned large numbers of documents related to U.S. Army contracts, in order to hamper U.S. and Korean investigators. Further, SK admitted that, in the fall of 2017, its employees obstructed a federal criminal proceeding by attempting to persuade an individual not to cooperate with U.S. authorities.

A number of relevant considerations contributed to the United States' criminal resolution with SK, including that SK frustrated the United States' investigation by withholding requested documents and information, destroying documents relevant to a pending federal investigation, and attempting to persuade a potential witness not to cooperate with the investigation. In addition, SK did not discipline any employees responsible for the misconduct, either through direct participation or failure in oversight, or those with supervisory authority over the area in which the criminal activity occurred, and failed to retain business records and otherwise failed to prohibit the improper destruction and deletion of business records.

In November 2018, two SK employees, Hyeong-won Lee and Dong-Guel Lee, were indicted by a federal grand jury in the Western District of Tennessee on charges of conspiracy, major fraud against the United States, wire fraud, money laundering conspiracy, and obstruction of justice for their alleged roles in the scheme.

The indictment is only an accusation, and the defendants are presumed innocent unless and until found guilty by a court of law. The case is U.S. v. Lee (2:18-cr-20378-TLP). Hyeong-won Lee and Dong-Guel Lee are currently fugitives of justice.

Army-CID, DCIS, and the FBI's Los Angeles Field Office investigated this case. Assistant Chief Justin Weitz and Trial Attorney Danny Nguyen of the Criminal Division's Fraud Section, and Assistant U.S. Attorney Tony Arvin of the Western District of Tennessee prosecuted the case. Trial Attorney Andrew Steinberg of the Civil Division's Fraud Section represented the government in the civil case. The Criminal Division's Office of International Affairs and Public Integrity Section and the Korean National Police Agency provided assistance in connection with the case.

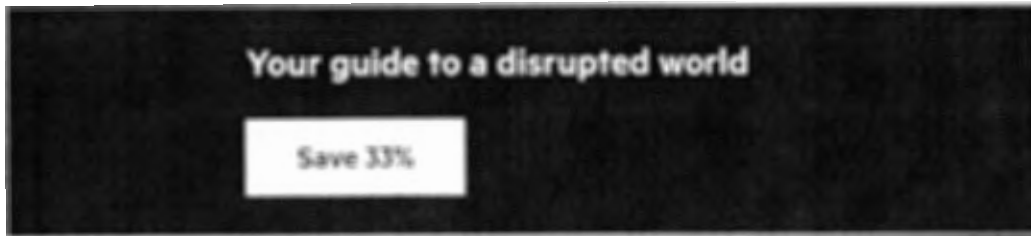
The year 2020 marks the 150th anniversary of the Department of Justice. Learn more about the history of our agency at [www.Justice.gov/Celebrating150Years](http://www.Justice.gov/Celebrating150Years).

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**Attachment(s):**

[Download SKEC Information](#)

[Download SKEC Plea Agreement](#)



**Saudi Arabia**

## Saudi Arabia's grandiose climate plans struggle to take off

Sceptics question whether kingdom's pledge to lead 'next green era' will be matched with tangible action



Water is sprayed over Muslim pilgrims to cool them down in the holy city of Mecca in 2015. Saudi Arabia has vowed that half of the kingdom's power generation will be provided by renewables by 2030 © Mosa'ab Elshamy/AP

**Andrew England** and **Camilla Hodgson** in London AUGUST 29 2021

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When Crown Prince Mohammed bin Salman announced Saudi Arabia's "green initiative" this year he did so with the type of eye-catching pledge that has come to characterise the young royal's grandiose plans to modernise the kingdom.

Promising that the world's top oil exporter would lead the "next green era", Prince Mohammed vowed that 50 per cent of Saudi Arabia's power generation would be provided by renewables by 2030, with the other 50 per cent fuelled by gas. Riyadh would also plant 10bn trees in the desert nation in the coming decades.

"As a leading global oil producer, we are fully aware of our share of responsibility in advancing the fight against the climate crisis," the prince said as he unveiled the plan in March. "And as [with] our pioneering role in stabilising energy markets during the oil and gas era, we will act to lead the next green era."

But as with many of the prince's ambitious schemes, sceptics question whether his rhetoric will be matched with tangible action on the ground. The kingdom burns about 1m barrels of oil equivalent a day to fuel its power system, a figure that rises sharply in the scorching summer months when Saudis rely on air-conditioning to keep cool.

The Climate Action Tracker, an independent research group, rates Saudi Arabia's climate commitments as "critically insufficient", citing a lack of clear policies or data about its emissions.

"It's not very clear how they actually aim to achieve these [climate goals], it's not very transparent at all," said Mia Moasio, analyst at the NewClimate Institute, which helps collate the Climate Action Tracker data. "I am quite cautious about [the kingdom's] announcements . . . There's no reason why it wouldn't be possible in Saudi. But there's a lot of inertia."





Saudi Arabia plans to plant 10bn trees in the coming decades © Fayez Nureldine/AFP/Getty

Riyadh said in its 2015 emissions reduction plan that it would decrease greenhouse gas emissions by 130m tonnes by 2030, but it did not outline how it would do that.

During negotiations with scientists, Saudi officials objected to some of the wording in this month's landmark UN climate report, according to several people involved in the discussions, wanting to replace references to "carbon emissions" with "greenhouse gas emissions".

Riyadh also unsuccessfully requested the removal of the term "net zero" from several sections of the report's summary on the grounds that it was "policy prescriptive", according to the International Institute for Sustainable Development.

Saudi officials insist the government is committed to taking action, saying Riyadh's objections to the use of carbon emissions in a section of the UN report related to their argument that to address the Paris Agreement climate goals, including net zero, "we really need to look at greenhouse gases not only carbon dioxide".

The officials said the kingdom, built on hydrocarbons, had taken great strides since putting climate change on the national agenda in 2015, with Prince Mohammed promising to ease the economy's addiction to oil.

“Now we are much more comfortable, back then we had a really big question mark,” a senior Saudi official told the Financial Times. “But the progress we have made since then has been just amazing.”

Three years ago, in a politically sensitive move, Riyadh doubled petrol prices and increased utility tariffs, partly to raise revenue but also to improve energy efficiency. It has also made multiple pronouncements on renewable energy projects, including hugely ambitious plans to create the world’s first carbon-zero city, The Line, intended to be powered by hydrogen, in Prince Mohammed’s flagship megaproject Neom.

And in 2018, he announced a \$200bn joint venture with Japan’s SoftBank to develop the world’s largest solar power project. But months after the announcement, the Public Investment Fund, which the prince chairs, was forced to issue a statement denying that the project had been shelved. In the three years since, there has been no detail on its progress.

The PIF, which invested \$40bn in SoftBank’s Vision Fund and is spearheading Prince Mohammed’s development plans, did not respond to a request for comment.



SoftBank's chief executive Masayoshi Son and Crown Prince Mohammed bin Salman in New York in 2018 © Jeenah Moon/Bloomberg

But the fund is expected to oversee 70 per cent of Saudi Arabia's renewable projects targeted in the kingdom's 2030 development plan. This month, ACWA Power, a utility 50 per cent owned by the PIF, announced the financial close for a SR3.4bn (\$907m) solar project, Sudair, that is expected to generate 1.5GW of electricity. PIF also invested in the \$5.4bn TPG Rise Climate fund, chaired by Hank Paulson, a former US Treasury secretary.

Saudi officials said there was currently 300MW of installed solar capacity, adding that Riyadh was developing 13 projects that would raise that to 5GW by 2024.

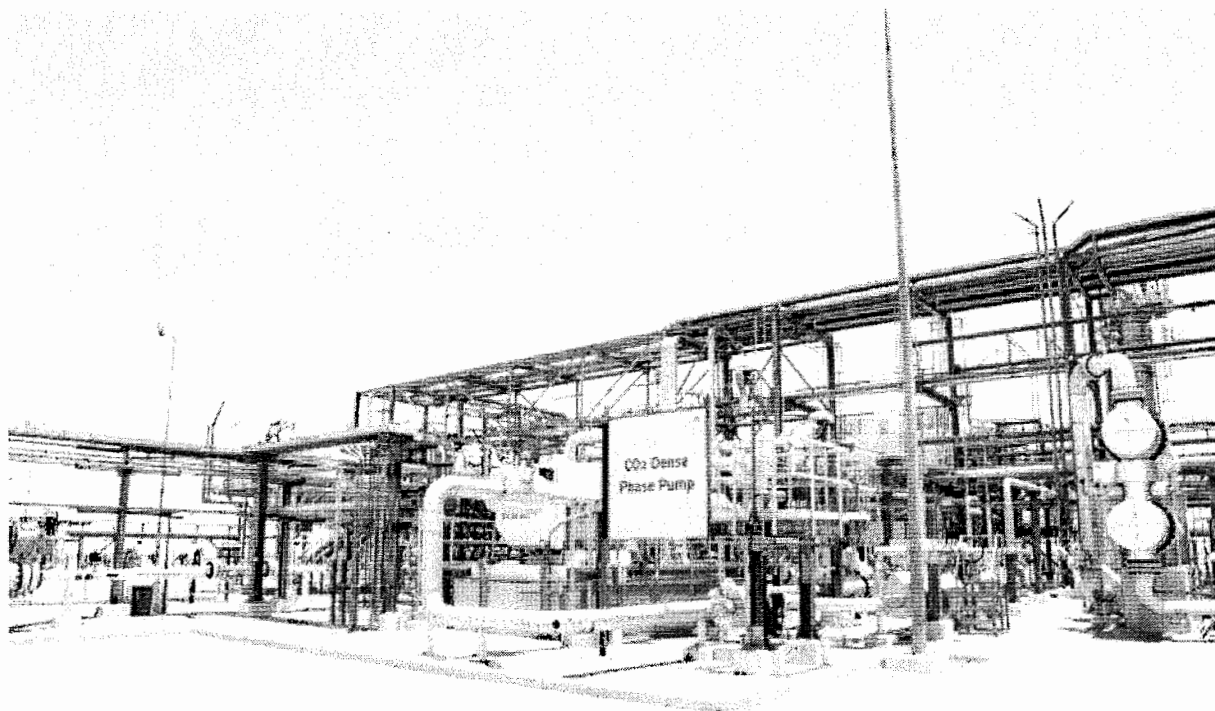
But Tim Buckley, director of energy finance studies, Australia/South Asia, at the Institute for Energy Economics and Financial Analysis, said the stop-start nature of Saudi projects had put potential investors off.

"The market's cynical: they announced the biggest solar project in the world three to four years ago and nothing came of it," he said.

However, he added that the kingdom's vast desert lands and hot climate meant it was endowed with resources that give it the potential to become "the solar capital of the world having been the oil capital of the world".

Government officials said they also planned to capture the emissions generated by the production of hydrocarbons — a much smaller volume than that generated when the fuels are burned — using carbon capture utilisation and storage (CCUS) and direct air capture (DAC).

Both the state oil company Saudi Aramco and the petrochemicals group Sabic were developing programmes in that field, Saudi officials said.



The Saudi Aramco-operated Hawiyah Natural Gas Liquids Recovery Plant © Maya Siddiqui/Bloomberg

“We realise we have to go beyond renewable, beyond electrification into making sure CCUS and DAC are well in hand; hydrogen becomes a clean fuel that needs to be established [and] we realise that even for aviation fuel we need to work hard on the e-fuel side,” the senior Saudi official said.

He said with clean hydrocarbon technologies there was no conflict between “utilising hydrocarbons and addressing climate”.

The kingdom remains dependent on oil for revenues and foreign currency. It also faces massive financial commitments to fund a raft of megaprojects that are part of Prince Mohammed’s plans to diversify the economy.

“The reality is that [the Saudis] have got no economic incentive to switch away from fossil fuel production at the moment,” said Richard Black, senior associate at the Energy and Climate Intelligence Unit.

## Climate Capital

U.S. Department of Justice

Washington, DC 20530

**Short Form Registration Statement**

**Pursuant to the Foreign Agents Registration Act of 1938, as amended**

INSTRUCTIONS. Each partner, officer, director, associate, employee, and agent of a registrant is required to file a short form registration statement unless he engages in no activities in furtherance of the interests of the registrant's foreign principal or unless the services he renders to the registrant are in a secretarial, clerical, or in a related or similar capacity. Compliance is accomplished by filing an electronic short form registration statement at <https://www.fara.gov>.

Privacy Act Statement. The filing of this document is required for the Foreign Agents Registration Act of 1938, as amended, 22 U.S.C. § 611 *et seq.*, for the purposes of registration under the Act and public disclosure. Provision of the information requested is mandatory, and failure to provide the information is subject to the penalty and enforcement provisions established in Section 8 of the Act. Every registration statement, short form registration statement, supplemental statement, exhibit, amendment, copy of informational materials or other document or information filed with the Attorney General under this Act is a public record open to public examination, inspection and copying during the posted business hours of the Registration Unit in Washington, DC. Statements are also available online at the Registration Unit's webpage: <https://www.fara.gov>. One copy of every such document, other than informational materials, is automatically provided to the Secretary of State pursuant to Section 6(b) of the Act, and copies of any and all documents are routinely made available to other agencies, departments and Congress pursuant to Section 6(c) of the Act. The Attorney General also transmits a semi-annual report to Congress on the administration of the Act which lists the names of all agents registered under the Act and the foreign principals they represent. This report is available to the public and online at: <https://www.fara.gov>.

Public Reporting Burden. Public reporting burden for this collection of information is estimated to average .429 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Chief, Registration Unit, Counterintelligence and Export Control Section, National Security Division, U.S. Department of Justice, Washington, DC 20530; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

1. Name Dan Lederman	2. Registration No. 6749
3. Residence Address(es) 725 Indian Wells Court Dakota Dunes, SD 57049	4. Business Address(es) 725 Indian Wells Court Dakota Dunes, SD 57049
5. Year of Birth 1972  Nationality USA  Present Citizenship USA	6. If present citizenship was not acquired by birth, indicate when, and how acquired.  n/a
7. Occupation Consultant	

8. What is the name and address of the primary registrant?  
 Name Larson Shannahan Slifka Group, LLC. Address 510 E. Locust St. Ste. 200  
 Des Moines, IA 50309

9. Indicate your connection with the primary registrant:

<input type="checkbox"/> partner	<input type="checkbox"/> director	<input type="checkbox"/> employee	<input checked="" type="checkbox"/> consultant
<input type="checkbox"/> officer	<input type="checkbox"/> associate	<input type="checkbox"/> agent	<input type="checkbox"/> subcontractor
<input type="checkbox"/> other (specify) _____			

10. List every foreign principal to whom you will render services in support of the primary registrant.  
 Royal Embassy of Saudi Arabia

11. Describe separately and in detail all services which you will render to the foreign principal(s) listed in Item 10 either directly, or through the primary registrant listed in Item 8, and the date(s) of such services. (If space is insufficient, a full insert page must be used.)  
 Provide strategic and government affairs advice, public relations and communications advice and services, and outreach and engagement with the public and media groups.

12. Do any of the above described services include political activity as defined in Section 1(o) of the Act and in the footnote below?

Yes  No

If yes, describe separately and in detail such political activity.

The activities identified in the answer to question 11 will include informing the public, government officials and the media about the importance of fostering and promoting strong relations between the United States and the Kingdom of Saudi Arabia.

13. The services described in Items 11 and 12 are to be rendered on a

full time basis  part time basis  special basis

14. What compensation or thing of value have you received to date or will you receive for the above services?

Salary: Amount \$ \_\_\_\_\_ per \_\_\_\_\_  Commission at \_\_\_\_\_ % of \_\_\_\_\_

Salary: Not based solely on services rendered to the foreign principal(s).

Fee: Amount \$ 10,000/mon  Other thing of value \_\_\_\_\_

15. During the period beginning 60 days prior to the date of your obligation to register to the time of filing this statement, did you make any contributions of money or other things of value from your own funds or possessions and on your own behalf in connection with any election to political office or in connection with any primary election, convention, or caucus held to select candidates for any political office? Yes  No

If yes, furnish the following information:

Date	Amount or Thing of Value	Political Organization or Candidate	Location of Event
11/10/19	\$100	Tamara St. John	Online Contribution
11/5/19	\$100	Rounds for Senate	Online Contribution
11/4/19	\$35	South Dakota Republican Party	Online Contribution
10/29/19	\$75	Republican National Committee	Online Contribution
10/12/19	\$42	South Dakota Republican Party	Online Contribution
10/8/2019	\$731.45	Dusty for Congress	In-kind Contribution
9/28/19	\$11.67	Nevada Republican Central Committee	Online Contribution
9/28/19	\$11.67	Donald J. Trump for President, Inc	Online Contribution
9/28/19	11.67	South Dakota Republican Party	Online Contribution

**EXECUTION**

In accordance with 28 U.S.C. § 1746, the undersigned swears or affirms under penalty of perjury that he/she has read the information set forth in this registration statement and that he/she is familiar with the contents thereof and that such contents are in their entirety true and accurate to the best of his/her knowledge and belief.

11/26/2019  
 (Date of signature)

  
 (Signature)

Footnote: "Political activity," as defined in Section 1(o) of the Act, means any activity which the person engaging in believes will, or that the person intends to, in any way influence any agency or official of the Government of the United States or any section of the public within the United States with reference to formulating, adopting, or changing the domestic or foreign policies of the United States or with reference to the political or public interests, policies, or relations of a government of a foreign country or a foreign political party.

U.S. Department of Justice  
Washington, DC 20530

### Short Form Registration Statement

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In accordance with 28 U.S.C. § 1746, and subject to the penalties of 18 U.S.C. § 1001 and 22 U.S.C. § 618, the undersigned swears or affirms under penalty of perjury that he/she has read the information set forth in this Short Form Registration Statement, that he/she is familiar with the contents thereof, and that such contents are in their entirety true and accurate to the best of his/her knowledge and belief.

Date

Printed Name

Signature

11/26/2019

DAN LEDERMAN



LATHAM & WATKINS

# Client Alert

Commentary

Latham & Watkins CFIUS & US National Security Practice

January 22, 2020 | Number 2582

## Final CFIUS Regulations Implementing FIRRMA Take Effect in February 2020: 10 Key Questions Answered

***Under the final regulations, CFIUS filings for certain transactions will be required, and CFIUS will have broader jurisdiction to review certain foreign investments.***

On January 13, 2020, the US Treasury Department published two Final Rules (available here and here) implementing changes to the foreign investment review process administered by the Committee on Foreign Investment in the United States (CFIUS). These changes, brought about by the Foreign Investment Risk Review Modernization Act of 2018 (FIRRMA), will take effect on February 13, 2020. These regulations finalize the proposed regulations that the Treasury Department issued in September 2019, which we reported on in a previous Client Alert.

The most important takeaways include:

- A CFIUS filing requirement for certain investments in US critical technology businesses (including some non-passive minority investments), similar to the CFIUS Pilot Program that took effect in November 2018
- A CFIUS filing requirement for most foreign-government-related investors making investments in US businesses involved in (1) critical Technology, (2) critical Infrastructure, or (3) sensitive personal Data (so-called "TID" US businesses)
- A carve-out from CFIUS jurisdiction of certain non-controlling investments in TID US businesses and covered real estate transactions by certain "excepted" investors from Australia, Canada, and the United Kingdom
- Broader jurisdiction for CFIUS to assert its power of review over minority and non-passive TID US business investments by foreign investors
- CFIUS jurisdiction to review the purchase or lease by, or concession to, a foreign person of real estate located in proximity to sensitive US government facilities (but no mandatory filing requirement for covered real estate transactions)

This *Client Alert* answers 10 key questions about how the final CFIUS regulations will impact parties to transactions involving foreign investments in the United States.



## 1. What is a TID US business, and why does it matter?

A TID US business includes the following:

- A US business that produces, designs, tests, manufactures, fabricates, or develops critical technology. The final regulations clarify that not all US businesses involved with critical technology are TID US businesses. For example, if a US business produces an item using a critical technology component from a third party, and if the role of the US business is limited to merely verifying the fit and form of the third-party-supplied component, the US business is not a TID US business. The final regulations also provide much-needed relief to US critical technology businesses that were subject to the CFIUS Pilot Program solely because they were involved with items subject to certain encryption controls under the Export Administration Regulations (EAR), but eligible to take advantage of License Exception ENC.
- A US business that performs specified functions with respect to certain critical infrastructure, such as owning, operating, manufacturing, supplying, or servicing critical infrastructure across subsectors such as telecommunications, utilities, energy, and transportation, each as identified in an appendix to the Final Rules.
- A US business that maintains or collects sensitive personal data of US citizens, which is defined to include, among other things, identifiable data related to US government employees, health information, certain financial information, geolocation data, and genetic test results. Impacted US businesses are those that (1) “target or tailor” products or services to a US executive branch agency or military department with intelligence, national security, or homeland security responsibilities, (2) maintain or collect sensitive US citizen data on more than 1 million individuals within the 12-month period preceding certain transaction-related dates, or (3) have a demonstrated business objective to maintain or collect sensitive US citizen data on greater than 1 million individuals — and this data is an integrated part of the US business’s primary products or services.

The final regulations expand CFIUS jurisdiction to reach non-controlling and non-passive investments by foreign investors in TID US businesses where the foreign investor is afforded certain triggering rights, such as board or observer rights, access to material non-public technical information about the TID US business, or involvement in the substantive decision-making of the TID US business. As discussed below, CFIUS filings are also required for certain investments in TID US businesses.

## 2. When will a CFIUS filing be required once the final regulations take effect?

Once the final regulations take effect, foreign investors will be required to file with CFIUS in connection with certain investments involving “critical technology” as well as certain investments in TID US businesses by parties in which a foreign government has a “substantial interest.”

- *Investment in critical technology businesses:* The CFIUS Pilot Program already requires review by CFIUS of non-passive investments by foreign persons in US businesses that produce, design, test, manufacture, fabricate, or develop one or more “critical technologies” either used in connection with or designed specifically for one or more of 27 specified pilot program industries. This Pilot Program is now a permanent part of the final CFIUS regulations, with certain changes, including:
  - The current Pilot Program requires a CFIUS filing if the US business has a nexus to one of 27 industries identified by certain North American Industry Classification System

(NAICS) codes. In a forthcoming rule change, the Treasury Department is expected to replace the reference to NAICS codes with criteria relating to export control licensing requirements.

- As noted earlier, the final regulations remove basic encryption items subject to License Exception ENC from consideration as a critical technology.
- *Substantial foreign government interest transactions:* With certain exceptions, a CFIUS filing will be required for transactions in which a foreign person in which a foreign government has a "substantial interest" will itself acquire a "substantial interest" in a TID US business.
  - A foreign government has a substantial interest in the foreign investor if the foreign government has a 49% or greater direct or indirect voting interest in the foreign investor. A foreign investor has a substantial interest in a TID US business if the investment gives the foreign investor a 25% or greater direct or indirect voting interest in the TID US business. Notably, the final regulations make clear that limited partnership interests held by a foreign government generally do not count toward the substantial interest test.

If parties fail to make a mandatory CFIUS filing, CFIUS can assess a civil monetary penalty against the foreign investor, the US business, or both, up to US\$250,000 or the value of the transaction, whichever is greater.

### 3. When does CFIUS have jurisdiction to review a transaction if a filing is not required?

CFIUS has jurisdiction to review three types of transactions:

- *Control transactions:* CFIUS retains jurisdiction to review any transaction that could result in control of a US business by a foreign person. The final CFIUS regulations define "control" broadly to encompass certain minority investments. Importantly, the final regulations maintain the carve-out from CFIUS jurisdiction for transactions that result in a foreign person holding 10% or less of the outstanding voting interest in a US business "solely for the purpose of passive investment." A US business is a business that engages in interstate commerce in the United States. (The final regulations, consistent with FIRRMA, delete the phrase "but only to the extent of its activities in interstate commerce in the United States." The Treasury Department noted in response to comments about the new, more expansive definition that the change "is not intended to suggest that the extent of a business's activities in interstate commerce in the United States is irrelevant to the Committee's analysis of national security risk.")
- *Certain non-controlling TID US business investments:* Once the final regulations take effect, CFIUS will have jurisdiction to review non-passive investments in a TID US business by a foreign person if the investment affords the foreign person any of the following triggering rights identified in the final regulations, even if the investment does not give the foreign person control of the US business:
  - Access to material non-public technical information of the US business regarding its critical technology or its covered investment in critical infrastructure
  - Membership or observer rights on, or the right to nominate an individual to a position on, the board of directors or equivalent governing body of the US business

- Involvement, other than through the voting of shares, in substantive decision-making of the US business regarding the business's critical technology, the operation or supply of a covered investment in critical infrastructure, or the use of sensitive personal data of US citizens
- *Certain real estate investments*: Once the final regulations take effect, CFIUS will have jurisdiction to review transactions involving the purchase or lease by, or concession to, a foreign person of real estate in the United States located within (or functioning as a part of) an airport or maritime port, or in "close proximity to" a US military installation or other facility "sensitive for reasons relating to national security."

When CFIUS has jurisdiction to review an investment but a CFIUS filing is not required, the parties should consider carefully whether to make a voluntary filing to obtain CFIUS clearance. Absent such a clearance, CFIUS retains the right to force a filing of a transaction after signing or even after closing — with the possibility that CFIUS may impose conditions on the deal (called "mitigation") or even recommend to the President of the United States that the President block or unwind the transaction. In most cases, once CFIUS clearance has been received for a control transaction, the parties to the transaction benefit from safe harbor from further review. The decision whether to make a voluntary filing with CFIUS depends on a variety of factors, including the national-security risks associated with the foreign investor and the US business, the deal timing, and the parties' tolerance for the possibility of a CFIUS review after signing or closing. Notably, CFIUS is devoting considerably more resources to identifying so-called "non-notified" transactions.

#### **4. Which transactions will not be subject to filing requirements or CFIUS jurisdiction?**

##### **Transactions Involving Only Non-Foreign Investors**

CFIUS does not have jurisdiction to review transactions involving only non-foreign investors unless an investor is ultimately controlled by a foreign person. As in the current CFIUS regulations, and in general terms, an entity qualifies as a foreign person if (1) it is organized under the laws of a country other than the United States and (2) its principal place of business is outside the United States or its equity securities are primarily traded on one or more foreign exchanges — unless the majority of its equity interests are ultimately owned by US nationals.

- *Principal place of business*: The final regulations include for the first time a definition for "principal place of business."
  - Principal place of business is defined as the place where a company's management "directs, controls, or coordinates the entity's activities," or in the case of an investment fund, where the investment fund's "activities and investments are primarily directed, controlled, or coordinated by or on behalf of the general partner, managing member, or equivalent."
  - If the investor has recently represented to the US government, a US state government, or any foreign government for tax or other purposes that its principal place of business is outside the United States, that location will be deemed to be the investor's principal place of business unless the investor can demonstrate that its principal place of business has changed to the United States since the earlier representation.

Although the definition of principal place of business will take effect on February 13, 2020, the Treasury Department is accepting public comments on the definition until February 18 and may revise the definition based on the comments.

### **Transactions Involving Certain Investment Funds**

As required under FIRRMA, certain transactions involving investment funds are excluded from the expanded scope of CFIUS's jurisdiction for non-controlling investments in TID US businesses (but not from the expanded jurisdiction for real estate investments). In addition, filings are not required for qualifying transactions involving investment funds. This topic is discussed in more detail in the answer to Question 9.

### **Transactions Involving Investors With Close Ties to Australia, Canada, or the United Kingdom**

FIRRMA requires CFIUS to exempt investors from some countries from the expanded scope of CFIUS's jurisdiction for non-controlling investments in TID US businesses and real estate investments. As alluded to in the proposed regulations in September 2019, the final regulations identify a short list of "excepted" foreign states: Australia, Canada, and the United Kingdom. The final regulations note that the list could be expanded in the future.

To qualify as an excepted investor, a party must satisfy several requirements establishing close connections to one or more of the excepted foreign states and/or the United States. For example, at least 75% of the foreign investor's board members and all individuals holding 10% or more of the voting interests in the investor must be from an excepted foreign state or the United States. (Under the proposed regulations, the requirement applied to all board members and individuals holding voting interests of 5% or more.) Even if a foreign investor satisfies these requirements, it will not be eligible for the exception if it has been found to have violated certain US laws, regulations, and orders. For instance, the foreign investor will not be eligible for the exception if it has been notified of a breach of a CFIUS mitigation agreement; if it has received a finding of a US sanctions violation by the Office of Foreign Assets Control; or if it has been debarred by the US State Department, or been identified on the Commerce Department's Entity List or Unverified List.

In a change from the proposed regulations, investors will not be required to file with CFIUS based solely on the fact that the government of an excepted foreign state has a substantial interest in a transaction. A filing could still be required for other reasons, however. For example, filings are required for certain transactions involving critical technology, and that requirement applies regardless of whether a foreign government has an interest in the transaction.

### **Transactions Involving Investors Subject to Other Governmental Oversight**

Some foreign investment transactions that are already subject to US government oversight do not need to be notified to CFIUS. For instance, for investments involving critical technology, the final regulations exempt from the CFIUS filing requirement certain investments through an entity that is already subject to a security control agreement, special security agreement, voting trust agreement, or proxy agreement to offset foreign ownership, control, or influence (so-called FOCI) pursuant to the National Industrial Security Program regulations. However, the fact that a transaction involves an entity operating under such an agreement does not exempt it from CFIUS's jurisdiction or the filing requirement for transactions in which a foreign government has a substantial interest, so a CFIUS filing may still be warranted under certain circumstances.

## 5. When will parties be able to file a short-form declaration with CFIUS instead of a full notice?

Under the Pilot Program, parties required to file with CFIUS have had the choice of filing a short-form declaration (currently a [five-page PDF form](#)) or submitting a full notice to CFIUS.

Under the final regulations, parties generally have a choice of filing either a declaration or a full notice to CFIUS, including with respect to real estate transactions. Declarations and full notices each have advantages and disadvantages. A declaration can be prepared more quickly than a full notice, and CFIUS completes its review of a declaration in 30 calendar days as opposed to the two to four months or longer that its review of a full notice takes. However, filing a full notice necessarily leads to a final decision by CFIUS, whereas filing a declaration can lead to an inconclusive result — CFIUS can ask the parties to file a full notice after finishing its review of a 30-day declaration, or can conclude its review of a declaration without clearing the investment, meaning that the parties must file a full CFIUS notice to obtain protection against post-closing review of the transaction.

## 6. Is there now a CFIUS filing fee?

Not yet. The final regulations do not provide for filing fees, but FIRRMA authorizes CFIUS to establish them, and the Treasury Department has indicated that it will issue a proposed regulation regarding filing fees “at a later date.” Under FIRRMA, the maximum fee is the lesser of 1% of the value of the transaction or US\$300,000, adjusted for inflation. However, the Treasury Department could establish fees lower than this statutory maximum in its regulations.

## 7. Which real estate transactions are subject to CFIUS jurisdiction under the final regulations, and what are the filing requirements?

The final regulations ([31 CFR Part 802](#)) expand CFIUS’s jurisdiction to review the purchase or lease by, or concession to, a foreign person of:

- Real estate located in or functioning as part of “covered ports,” which includes certain airports and maritime ports
- Real estate located within one of the following areas, consistent with the updated list of military installations identified in [Appendix A to Part 802](#):
  - One mile (close proximity) of certain military installations identified in [Part 1](#) or [Part 2](#) of Appendix A, such as the Pentagon in Arlington, Virginia, and Los Angeles Air Force Base in California
  - One to 100 miles (the extended range) of certain military installations identified in [Part 2](#) of Appendix A, such as real estate located within 40 miles of Cape Canaveral Air Force Station in Florida or Fort Bragg in North Carolina
  - Certain counties identified in connection with military installations identified in [Part 3](#) of Appendix A, such as Burke, Dunn, and McHenry counties in North Dakota in connection with the 91st Missile Wing Minot Air Force Base Missile Field
  - To the extent real estate is located within the limits of the United States’ territorial sea, any part of a military installation as identified at [Part 4](#) of Appendix A, such as the Boston

Range Complex offshore Massachusetts, New Hampshire, and Maine, and the Pensacola Operating Area offshore Alabama and Florida

The final regulations explain that the Treasury Department will make available to the public a web-based tool to help parties determine whether their transaction implicates “covered real estate.” In the interim, the Treasury Department has directed the public to consult TIGERweb, a tool maintained by the Census Bureau, to view relevant military installations, urbanized areas, and urban clusters on a map.

Consistent with the proposed regulations, CFIUS can assert jurisdiction under the final regulations if a foreign investor holds at least three of the following property rights:

- To physically access the real estate
- To exclude others from physical access to the real estate
- To improve or develop the real estate
- To attach fixed or immovable structures or objects to the real estate

As provided in FIRRMA, there is no filing requirement for covered real estate investments. Parties may determine whether to file a short-form declaration or submit a full notice to CFIUS.

## 8. Which real estate transactions are not subject to CFIUS review?

The final regulations carve out from CFIUS's jurisdiction the following types of real estate investments:

- Investments made by investors from excepted foreign states, as discussed above (currently limited to Australia, Canada, and the United Kingdom)
- Investments in real estate located within an “urbanized area” (an area with a minimum population of 50,000 individuals according to the most recent US Census) or an “urban cluster” (an area containing at least 2,500 and fewer than 50,000 people) — except if the real estate is located within or functioning as part of an air or maritime port, or within close proximity to a military installation
- Investments in a single housing unit, including fixtures and adjacent land, as long as the land is incidental to the use of the real estate
- Leases and concessions of real estate in airports and maritime ports only where for the purpose of retail sales
- Investments in commercial office space within a multi-unit commercial office building so long as, at the completion of the transaction (1) the amount of space occupied by a foreign person is equal to 10% or less of the total square footage and (2) the ratio of a foreign person and its affiliates to the total number of tenants in the building amounts to less than 10% of the total number of tenants “based on the number of ownership, lease and concession arrangements for commercial space in the building.”

## 9. What are the implications of the final regulations for private equity funds?

- *Principal place of business:* One important implication for private equity funds is the new definition of “principal place of business,” as discussed in Question 4. The final regulations define principal place of business, in the case of a fund, as the place “where the fund's activities and investments are primarily directed, controlled, or coordinated by or on behalf of the general partner, managing

member, or equivalent." This definition clarifies for private equity funds whether a transaction is subject to CFIUS jurisdiction and seeks to ensure that a fund's principal place of business is the same across federal, state, and foreign government filings.

- *Investment fund clarification:* The final regulations retain the clarification that excludes from CFIUS's jurisdiction certain non-controlling indirect investments in TID US businesses through investment funds where (1) the fund is managed exclusively by a general partner or equivalent that is not a foreign person, (2) if there is an advisory board or committee, the foreign person does not have the ability to control investment decisions of the fund through the advisory board or committee, (3) the foreign person does not otherwise have the ability to control the investment fund, and (4) the foreign person does not have any of the triggering rights discussed in response to Question 3 (e.g., board or observer rights).

## 10. What are emerging and foundational technologies, and why are they important?

The Final Rules continue to include "emerging and foundational technologies" in the definition of "critical technologies." The technologies that constitute emerging and foundational technologies are being determined by an interagency process, which is anticipated to result in a proposed rule for new Export Control Classification Numbers (ECCNs) on the EAR's Commerce Control List. Once these emerging and foundational technologies are identified in new ECCNs, they will become part of the CFIUS critical technology landscape.

On November 19, 2018, the Department of Commerce's Bureau of Industry and Security (BIS) published an [advance notice of proposed rulemaking](#), seeking public comment on the criteria for identifying emerging technologies that are essential to US national security. At the time, BIS identified 14 categories of technology under consideration, including artificial intelligence; biotech; robotics; position, navigation, and timing (PNT) technology; microprocessor technology; additive manufacturing; advanced computing technology; hypersonics; and advanced surveillance technologies.

The timing of a new rule identifying emerging technologies and corresponding new ECCNs remains unclear, but its publication will be another significant development for CFIUS as well as US export control purposes.

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# **Attachment No. 21**



# LAND RECLAMATION of the Bison Pipeline

TRANSCANADA'S BISON PIPELINE in  
Montana 04/12/2011

Pictures: Bob Zellar – Billing Gazette  
Lincoln Star Journal

A cattleguard damaged during installation of the Bison high pressure gas pipeline in southeast Montana 04/12/2011



Blowing and blown soil on Robert Rusley's property on the Bison high pressure gas pipeline right of way in southeast Montana. 10/27/2010

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10/27/2010 02:54

A pipeline sign lies fallen in a trench left after the soil over the Bison pipeline sunk in spring on Robert Rusley's property in southeast Montana 04/12/2011



One sign has fallen while another leans in the soft soil on the Bison high pressure gas pipeline right of way in southeast Montana 04/12/2011



Janelle Reiger walks on a concrete creek crossing damaged during installation of the Bison high pressure gas pipeline in southeast Montana 04/12/2011



Janelle Reiger stand in a trench left after the soil over the Bison pipeline sunk this spring on Wade Klauzer's property in southeast Montana 04/12/2011



Wade Kllauzer stands by a trench left after the soil over the Bison pipeline sunk this spring on his property in southeast Montana 04/12/2011





A pipeline sign lies fallen in a trench left after the soil over the Bison pipeline  
sunk this spring on Robert Rusley's property in southeast Montana  
04/12/2011



Water erosion on Wade Klauzer's property on the Bison high pressure gas pipeline right of way in southeast Montana 04/12/2011



Janelle Reiger walks by a trench left after the soil over the Bison pipeline sunk this spring in southeast Montana 04/12/2011

