

1 STATE OF IOWA
2 DEPARTMENT OF COMMERCE
3 BEFORE THE IOWA UTILITIES BOARD

4 IN RE: : Docket No.
5 : HLP-2021-0001
6 SUMMIT CARBON SOLUTIONS, :
7 LLC :
8 :
9 : X

10 DEPOSITION OF JOHN GODFREY,
11 taken by the Sierra Club before Darcy Kriens,
12 Certified Shorthand Reporter of the State of Iowa, at
13 111 East Grand Avenue, Suite 301, Des Moines, Iowa,
14 commencing at 1:30 p.m., Thursday, June 22, 2023.

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24
25 DARCY KRIENS - CERTIFIED SHORTHAND REPORTER



SUSAN FRYE COURT REPORTING | 515-284-1972
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9	(phonetic) indicates a phonetic spelling.	
	{sic} indicates the text is as stated.	
10	Quoted text is as stated by the speaker.	
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1 P R O C E E D I N G S

2 JOHN GODFREY,

3 called as a witness by the Sierra Club, being first
4 duly sworn by the Certified Shorthand Reporter, was
5 examined and testified as follows:

6 EXAMINATION

7 BY MR. TAYLOR:

8 Q. Will you state your name, please.

9 A. John Godfrey.

10 Q. Mr. Godfrey, I'm Wally Taylor. I represent
11 the Sierra Club.

12 Have you had your deposition taken before?

13 A. Yes, sir.

14 Q. So you know the routine?

15 A. Generally, yes.

16 Q. Just a couple of things specifically about
17 this one, perhaps. If any of us ask you a question
18 you don't understand, ask us to repeat it or rephrase
19 it. We want to make sure you understand it.

20 A. Yes, sir.

21 Q. And also, if we ask you a question and you
22 feel it's beyond your scope of testimony or something
23 that is beyond your expertise, let us know, and let us
24 know who might be a better person to ask that question
25 of.

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1 A. Okay.

2 Q. Maybe you don't know who might be a better
3 person, but at least if you do, let us know.

4 According to your written testimony, you
5 work for DNV. For the record tell us what "DNV" is.

6 A. DNV is an international standards
7 organization certification and verification company.
8 It is head quartered out of Oslo, Norway, and we
9 operate in approximately 100 countries and have
10 approximately 15,000 employees.

11 Q. And when you say that you establish
12 standards and so on, what does that mean exactly?

13 A. DNV is a recognized international
14 standards-writing body.

15 Q. Okay. So how do you develop these
16 standards?

17 A. Standards are developed by teams of
18 employees at DNV in the specific subject matter that
19 the standard applies. It also incorporates research
20 done at DNV facilities and other industry research
21 done by other parties and can involve outside
22 expertise and outside companies, depending on the
23 standard that's being developed.

24 Q. So you might contract with somebody else,
25 is that what you're saying, to help you develop the

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1 standards?

2 A. It's more likely that it would be done
3 through a joint industry project where other parties
4 would join and share in the cost of developing the
5 standard.

6 Q. And how long have you worked for DNV?

7 A. Nine years.

8 Q. And just kind of generally tell us what
9 your experience was before that in the pipeline
10 industry.

11 A. I was employed by Colonial Pipeline from
12 approximately 1987 to about 2004.

13 Q. Is that the one that got hacked a couple
14 years ago?

15 A. Yes, sir.

16 I was employed by Colonial Pipeline in a
17 variety of positions, including the integrity manager,
18 engineering manager, operations manager, district
19 project lead for all field construction and
20 maintenance activities in the Southeast District as
21 well as a staff engineer, area engineer. I believe
22 that's it.

23 Following Colonial I went to work for
24 Explorer Pipeline Company for four years as their
25 integrity leader. After Explorer I worked for two

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1 years at Berg Steel Pipe in line pipe manufacturing as
2 the vice president of quality control and quality
3 assurance.

4 I left there and worked a year at RCP as a
5 regulatory consultant and then worked two years at SGS
6 Industrial Services as vice president of operations
7 for a business unit that did mechanical integrity
8 inspection and engineering services for upstream and
9 downstream petrochemical facilities.

10 Q. When you talk about "pipeline integrity,"
11 what do you mean?

12 A. The inspections and activities that ensure
13 the mechanical integrity of the pipeline. More
14 specifically, compliance with 49 CFR Part 195.452,
15 commonly known as the Integrity Management Rule for
16 Liquid Pipelines.

17 Q. The PHMSA standards, as I understand it,
18 apply just to the design, construction, operation and
19 maintenance of the pipeline; is that correct?

20 MR. LEONARD: I'll object to the extent it
21 calls for a legal conclusion, but go ahead.

22 A. PHMSA regulations are not what I would
23 classify as standards. They're regulations, and they
24 cover design, construction, operation and maintenance.

25 Also, control room management to the extent

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1 that that includes personnel training and also
2 personnel training and operator qualification for
3 certain activities as well as emergency response,
4 accident reporting, drug and alcohol testing.

5 I'm sure there are a few other details that
6 I don't recall sitting here today.

7 BY MR. TAYLOR:

8 Q. You mentioned 195.452. Is that basically
9 what your testimony in this case revolves around?

10 A. No.

11 Q. 452 is the Integrity Management Program
12 section; is that correct?

13 A. That is correct.

14 Q. And that's basically what your testimony is
15 about, isn't it?

16 A. No. My testimony is broader. It includes
17 other elements of pipeline safety.

18 Q. Okay. So we'll get to those.

19 The first thing you talk about that I have
20 a note on in your testimony are ductile fractures.
21 Explain what a "ductile fracture" is.

22 A. It's a metallurgical term that refers to a
23 fracture that propagates through ductal failure of the
24 pipe. Ductal fractures can occur in the pipe body as
25 well as in the pipe seam.

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1 Q. And by the "pipe seam," you mean the weld
2 where the pipes come together?

3 A. No, sir.

4 Q. What's a "pipe seam"?

5 A. It's the weld that joins the pipe material
6 to form the cylinder. It's a longitudinal weld along
7 the axis of the pipe.

8 Q. I understand. I guess I thought the pipe
9 was a solid circle and not welded longitudinally.

10 Am I incorrect in that?

11 A. There are multiple ways to manufacture
12 pipe. Some pipe is seamless. The majority of pipe
13 used in lined pipe construction and operations does
14 contain a seam.

15 Q. Why would a pipe not be seamless? It seems
16 to me that would be much safer than having a long weld
17 that could fail.

18 MR. LEONARD: Objection. Calls for
19 speculation.

20 Go ahead.

21 A. Modern pipe seams don't present any greater
22 risk of failure than the pipe body in terms of the
23 technology. PHMSA regulations recognize a pipe seam
24 factor that's used when establishing operating
25 pressure to account for different seam types.

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1 BY MR. TAYLOR:

2 Q. Still, why wouldn't you manufacture a
3 seamless pipe and not even have to worry about that
4 weld?

5 MR. LEONARD: Same objection.

6 Go ahead.

7 A. Seamless pipe is more difficult to
8 manufacture at certain diameters and wall thickness
9 combinations. It can also -- No, strike that.

10 It's more difficult in general to
11 manufacture in different wall thickness and diameter
12 combinations.

13 BY MR. TAYLOR:

14 Q. And why is that?

15 A. The nature of the manufacturing process.

16 Q. Is it just more expensive?

17 A. I don't know the market price for seamless
18 pipe at this time.

19 Q. You cite Section 195.111 regarding ductile
20 fractures, and as I read it, that just says, "A carbon
21 dioxide pipeline system must be designed to mitigate
22 the effects of fracture propagation."

23 Is that your understanding of that section?

24 A. That's how I generally recall the section,
25 yes. I do not have it in front of me.

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1 Q. I'll show it to you.
2 A. Thank you.
3 Q. I'm not trying to hide anything from you.
4 (Brief pause.)
5 A. Yes, that's what the regulation says here.
6 Q. So there are no real standards or
7 guidelines as far as specific actions that a pipeline
8 company should take in order to satisfy that section?
9 Is that a fair statement?
10 A. No.
11 Q. There are none set out in the section;
12 correct?
13 A. Could you rephrase or repeat the question?
14 Q. Sure.
15 A. Know what are set out in the section? I
16 did not understand.
17 Q. Okay. Sure.
18 Section 195.111 simply has that one
19 sentence that I read to you; correct?
20 A. That's correct.
21 Q. In telling a pipeline company or firm that
22 the system must be designed to mitigate the effects of
23 fracture propagation, there's nothing to tell the
24 pipeline company or manufacturer or whoever this is
25 addressed to specific recommendations, standards,

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1 guidelines that they must follow in order to satisfy
2 that general directive of that section; is that
3 correct?

4 A. There's not a reference in that specific
5 section to another standard. I would have to go back,
6 though, and look at the standards incorporated by
7 reference at the beginning of Part 195 and see if any
8 of the applicable standards that deal with fracture
9 control and fracture propagation are, in fact,
10 incorporated by reference at the beginning of the
11 regulation.

12 Q. Generally how would you design a pipeline
13 to mitigate the effects of fracture propagation?

14 A. In broad terms, it's a function of the
15 toughness of the pipe and the yield strength of
16 material or the ultimate tensile strength of the
17 material and the wall thickness of the lined pipe.

18 Q. And in your testimony you said that Summit
19 has submitted to installing heavier wall pipe and
20 fracture arresters throughout the system where needed.

21 Do you recall that in your testimony?

22 A. Yes, I do.

23 Q. First of all, what are "fracture
24 arresters"?

25 A. Fracture arresters are devices or

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1 components that serve to arrest any running fracture
2 at a given point along the pipeline.

3 Q. And what does a fracture arrester look
4 like, or exactly what does it do?

5 A. It's a commonly used term that can -- that
6 generally describes a number of different components
7 that could be installed.

8 It can be a composite wrap around the
9 pipeline. It could be a steel reinforcement sleeve on
10 the pipeline, or it could be a heavier wall section of
11 pipe, short-jointed pipe, or it could be a heavier
12 wall fitting.

13 Q. Do you know what type of fracture arresters
14 Summit proposes to use?

15 A. Through conversations with Summit, they
16 have informed me that they plan on using composite
17 sleeves or composite wraps.

18 Q. So in other words, it's an additional wrap
19 around the pipe? Is that what you're talking about?

20 A. Generally it's a composite material that
21 consists of an adhesive, a binder and several wraps of
22 carbon fiber composites or other fibers around the
23 circumference of the pipe. The number of wraps depend
24 upon the desired strength that they want to achieve.

25 Q. And then you say they'll be used where

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1 needed. How do you know where they're needed?

2 A. That's part of the design process, and I've
3 not reviewed nor did I testify on Summit's design
4 process.

5 Q. So you're relying on Summit to follow up on
6 that; correct?

7 A. It's Summit's design. I was not asked to
8 review their design.

9 Q. Looking on page 3 starting at line 17 in
10 your testimony, you say, "Dispersion and over-land
11 spread analysis allows Summit and agencies to
12 understand the potential consequences of CO2 release."

13 Do you know whether Summit has done any
14 dispersion modeling?

15 A. I've not been asked to review nor have I
16 reviewed any dispersion modeling done for Summit.

17 Q. And what's an over-land spread analysis?

18 A. That's a term used in the industry to
19 describe the spread over land or transportation by
20 water of a spilled commodity, typically used for
21 hazardous liquids or used in the hazardous liquid
22 pipeline regulations.

23 Things such as oil spills, refined product
24 spills, spills of fluids that would be heavier than
25 air that would travel along the surface of the route.

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1 Q. Is that different than a dispersion model?

2 A. Dispersion modeling is a general term that
3 describes the dispersion of a released gas or vapor
4 within atmosphere. Dispersion models are generally
5 software programs.

6 Some types of programs have the capability
7 of doing over-land spread. Others do not.

8 Q. I'm still trying to figure out the
9 distinction between a dispersion model and over-land
10 spread analysis.

11 MR. LEONARD: Object to form.

12 Go ahead.

13 A. Dispersion modeling produces results of
14 concentrations of a gas in the atmosphere at distances
15 or how readily that gas would disperse within the
16 atmosphere. Over-land spread would figure how that
17 gas would flow over the surface of the land.

18 The two can be used together in
19 combination. Obviously, as it spreads over the land,
20 it will disperse as well.

21 Q. Do you know whether Summit has done an
22 over-land spread analysis?

23 A. I have not been asked to review Summit's
24 dispersion or over-land analysis. I would not have.

25 Q. So when you're testifying here, you're not

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1 asserting that Summit has or is going to do a
2 dispersion or over-land spread analysis? You're just
3 saying that would allow them, if they did it, to
4 understand the potential consequences of the CO2
5 release; is that correct?

6 A. May I see my testimony, please? I don't
7 have it in front of me.

8 Q. Sure. Sure. Starting at line 17.

9 (Brief pause.)

10 A. Could you repeat your question?

11 MR. TAYLOR: Can you read it back?

12 (The requested portion of the record was
13 read.)

14 A. I'll just refer back to the full paragraph
15 of my testimony beginning at line 14. "Additionally,
16 federal regulations require that CO2 pipelines conduct
17 an air dispersion analysis to determine how an
18 inadvertent CO2 release from a pipeline could impact
19 people and the environment. This analysis, which also
20 incorporates local terrain, is prepared to comply with
21 PHMSA's liquid Integrity Management Program
22 regulations. Dispersion and over-land spread analysis
23 allows Summit (and agencies) to understand the
24 potential consequences of a CO2 release. Under
25 PHMSA's integrity management regulations, Summit will

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1 also use this analysis to inform its selection of
2 appropriate preventive and mitigative measures
3 including valve locations, emergency response planning
4 and preparedness to reduce those potential
5 consequences."

6 BY MR. TAYLOR:

7 Q. I'll trade you.

8 A. Thanks.

9 Q. Have you ever been involved in conducting
10 over-land spread analyses?

11 A. Yes.

12 Q. How do you go about that?

13 A. As integrity manager, I was responsible for
14 over-land spread analysis at both Colonial Pipeline
15 and Explorer Pipeline for their systems, which were
16 refined product, hazardous liquid systems.

17 We contracted with a variety of software
18 providers and engineering firms to do the over-land
19 spread analysis and provide us with shake vials, which
20 were then integrated into our in-house GIS system.

21 Q. I sort of get the impression, from what
22 you've been saying, that the dispersion model has to
23 do with gases, and the over-land spread analysis has
24 to do with liquids. Is that a fair distinction?

25 A. No.

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1 Q. Why not?

2 A. Over-land spread analysis is applicable to
3 any fluid with a density greater than air that would
4 tend to stay low to the ground and flow with the
5 ground, including fluids like propane.

6 Dispersion analysis can also be used for
7 liquid volatilization and have a vapor component such
8 as a gasoline spill. So there is overlap between
9 liquids and gases.

10 Q. Thank you for the explanation. I was
11 getting confused.

12 Section 452 of Part 195 talks about
13 high-consequence areas; is that correct?

14 A. There are references to high-consequence
15 areas in that section of the code, yes.

16 Q. And "high-consequence area" has a
17 definition, but one part of the definition is a highly
18 populated area; correct?

19 A. High population is a definition and a
20 criteria for an HCA, that's correct.

21 Q. How does Section 452 relate, then, to a
22 rural area, which we have a lot of in Iowa, where the
23 pipeline might be close to a residence or close to a
24 livestock facility or close to a rural school, as a
25 matter of fact? How would the Integrity Management

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1 Program apply to an area like that?

2 A. The Integrity Management Rule is intended
3 to require operators to take certain actions in those
4 locations that are deemed higher risk, commonly
5 referred to as HCAs.

6 If locations qualify or are identified as
7 HCAs by the operator, then the provisions of the rule
8 would apply.

9 Q. But if it's a rural area that's not a
10 highly populated area or any other definition under
11 HCAs, the rule wouldn't apply, would it, or wouldn't
12 it? I'm talking about Section 452.

13 MR. LEONARD: I'm going to object to the
14 extent it calls for a legal conclusion.

15 Go ahead.

16 A. In my opinion, as I sit here today, the
17 rule would not apply to non-HCA locations, unless an
18 operator adopts provisions of the rule into their
19 procedures, in which case, under a separate section of
20 Part 195, operators are required to follow the
21 procedures they put in place regardless if those
22 procedures are specific to any particular provision of
23 195 or not.

24 BY MR. TAYLOR:

25 Q. Have you seen Summit's Integrity Management

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1 Program?

2 A. I have not.

3 Q. On page 5 of your testimony at line 15, you
4 indicate that DNV has built up a considerable
5 experience in carrying out experimental studies and
6 product testing for dense phase and gaseous phase CO2.

7 Does that include dispersion modeling?

8 A. Yes, it does.

9 Q. What has DNV done in the area of dispersion
10 modeling?

11 A. DNV is involved in producing and utilizing
12 our own air dispersion or dispersion models as well as
13 various joint industry projects and experimental
14 projects to tune other models to provide data for
15 validation of other models and to develop other
16 techniques within the realm of computational fluid
17 dynamics to model releases of CO2 that also includes
18 instrumented, large-scale testing.

19 Q. In terms of CO2 pipelines, what has your
20 testing revealed as to the average dispersion of CO2
21 after a rupture?

22 A. As I sit here today, I can't really
23 summarize in a nutshell something or anything that
24 it's done. There's several papers, many papers that
25 have been published with the results of the testing

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1 and the results of the validation work that's been
2 done. I'd just refer you to those.

3 Q. Would that be on DNV's website?

4 A. Some. Others are in industry journals.

5 Q. Okay. So if I Google "DNV, carbon dioxide
6 dispersion," I might find something?

7 A. Yes, sir.

8 Q. Okay. Thank God for Google. I forget what
9 term you used, but you were talking about a fracture
10 that runs along the length of the pipe.

11 Do you recall that?

12 A. Yes.

13 Q. What was your term for that?

14 A. Ductile fracture.

15 Q. Is it possible in a CO2 pipeline that there
16 may be just a local rupture or break in the pipe that
17 turns into a ductile fracture?

18 A. Do you have a specific in mind? I don't
19 want to speculate, but do you have a specific example
20 you could refer to?

21 Q. Not a specific example, but I just wanted
22 to verify it with you.

23 In a CO2 pipeline under the kind of
24 pressure we're seeing with the Summit pipeline, if a
25 local rupture -- it would open up kind of like a

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1 zipper along the length of the pipe?

2 MR. LEONARD: Objection. Calls for
3 speculation.

4 Go ahead and answer.

5 A. I'm still not getting exactly the example
6 you're trying to provide. I'm not -- I'm happy to
7 answer it. I just -- Can you be more specific?

8 BY MR. TAYLOR:

9 Q. I'll try. Is it possible for a CO2
10 pipeline to, perhaps, be breached by some object that
11 would just put a small hole in it, and that small hole
12 would then lead to a ductile fracture?

13 A. In terms of fracture mechanics, generally
14 not because once a leak begins and the pressure
15 equalizes across the leak, there's not energy to
16 develop a -- or energy to drive a cracked tip.

17 It's something we refer to as the leak
18 rupture boundary, at what point would a leak be more
19 prevalent than the potential for rupture. So in that
20 scenario, probably not.

21 Q. I think you mentioned earlier valve
22 spacing. Do you recall that?

23 I'm not sure it's in your written
24 testimony. I don't have a note on that, but this
25 afternoon, as I recall, you talked about valve spacing

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1 in some context.

2 Does PHMSA have requirements for valve
3 spacing?

4 A. I don't recall mentioning valve spacing
5 earlier, but it is in my written testimony on page 6
6 beginning at line 4 and going onto page 7.

7 Q. That's probably where I saw it.

8 So why is valve spacing important?

9 A. To reduce the volume of CO2 or any other
10 commodity in a pipeline between the valves.

11 Q. What's the purpose of that?

12 A. To control the amount of product that would
13 be released in the event of a leak.

14 Q. So the valves would shut off the fluid from
15 that area of the pipe where the leak occurs?

16 A. It's typical for a pipeline operator, if
17 they suspect or they know they have a leak on the
18 pipe, to close isolation valves on either side of the
19 known or suspected leak to limit the volume that would
20 be released.

21 Q. Are the valves there for any other reason,
22 other than in the event of a rupture?

23 A. Regulations also require that valves be
24 placed on either side of certain waterways and that
25 valves be placed on either side of pump stations and

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1 at the inlet or outlet of certain facilities.

2 Generally that's to facilitate maintenance as well as
3 emergency response.

4 Q. Are there any integrity issues for a CO2
5 pipeline in relation to water crossings?

6 A. There's been research done on the effects
7 of CO2 in seawater; however, I'm not aware of specific
8 research that's been done on the effect of a CO2
9 release in fresh water. It would depend upon the
10 amount of water that was flowing by and the volume of
11 the release.

12 So essentially the concentration within
13 water of CO2, the risks at that point would be that
14 there would be formation of acids, and it would cause
15 some level of acidification.

16 Q. Is that something that there's a PHMSA
17 regulation on or no?

18 A. Not to my knowledge.

19 Q. What would be the recommended, at least,
20 way to address the risk of a rupture at a water
21 crossing for a CO2 pipeline?

22 THE WITNESS: Could you read back the
23 question, please?

24 (The requested portion of the record was
25 read.)

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1 A. Through the prevention of a rupture through
2 the design of the crossing itself.

3 BY MR. TAYLOR:

4 Q. And how would you design the crossing to
5 better protect the integrity of the pipeline?

6 A. There are a number of industry standards
7 and recommended practices around water crossings and
8 risks at water crossings. The most common ways are
9 utilization of heavier wall pipe and additional or
10 specialty coatings as well as installation methods
11 such as horizontal directional drilling, all of which
12 will serve to reduce the risk or the probability of a
13 failure within the water crossing itself.

14 Q. Do you have any opinion about what, in
15 terms of the Summit pipeline, would be the proper wall
16 thickness for the pipe?

17 A. I've not reviewed their design, so I have
18 no opinion on the design wall thickness.

19 MR. TAYLOR: I think that's all the
20 questions I have. Other folks may have some
21 questions.

22 MR. WHIPPLE: I don't have any questions.

23 MR. OSTERGREN: I have no questions. Thank
24 you.

25 MR. LONG: Yes, I do.

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1 FURTHER EXAMINATION

2 BY MR. LONG:

3 Q. You discussed earlier high-consequence
4 areas. Do you know whether Summit has identified the
5 high-consequence areas for this proposed route in
6 Iowa?

7 A. I have not been asked to review their
8 high-consequence designations nor have I seen it.

9 MR. LONG: Okay. That's all.

10 MS. GRUENHAGEN: Hi. I'm Chris Gruenhagen
11 with Iowa Farm Bureau, and I just have a question for
12 you.

13 FURTHER EXAMINATION

14 BY MS. GRUENHAGEN:

15 Q. How are you associated with Summit?

16 A. DNV and myself specifically have been
17 retained by Summit to assist their permitting process
18 in the various states that they're proposing to
19 operate in.

20 Q. So is your role limited to testimony, or
21 are you advising on any parts of the project?

22 A. My individual role is limited -- it's
23 primarily to testify, but as I work with and interact
24 with management and leadership at Summit, if there's
25 any questions they have about pipeline integrity,

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1 pipeline design, anything they wish to discuss, I'm
2 happy to do that with them as well.

3 MS. GRUENHAGEN: Okay. Thank you. That
4 was all I had.

5 THE WITNESS: Yes, ma'am.

6 MR. LEONARD: Mr. Jorde, do you have
7 questions?

8 MR. JORDE: I've got some questions.

9 FURTHER EXAMINATION

10 BY MR. JORDE:

11 Q. You talked about the high-consequence
12 areas, and those high-consequence areas are determined
13 solely by the operator, in this case Summit; correct?

14 A. That is not correct.

15 Q. Okay. Who determines what a
16 high-consequence area is within a given county in
17 Iowa?

18 A. PHMSA, through the National Pipeline
19 Mapping System, publishes shapefiles that are derived
20 from census data bureau or high-populated areas and
21 other populated areas. They also publish data from
22 the Bureau of Transportation Statistics for
23 Commercially navigable waterways, and those are three
24 categories of HCAs.

25 Q. So break those down. So PHMSA has, it

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1 sounds like, only three areas that they look at.
2 Navigable waterways, they look at if there's a lot of
3 people, and what was the third one?

4 A. I referred to high-population areas, other
5 population areas and commercially navigable waterways.

6 Q. All right. So what factors, beyond those
7 three, should go into determining whether or not an
8 area is a high-consequence area?

9 A. The definition of high-consequence area
10 also incorporates unusually sensitive environmental
11 areas or USEAs. These can be threatened and
12 endangered species or certain drinking water
13 resources.

14 That is a separate part of Part 195. That
15 data is published at the state level by the states.

16 Q. Is any portion of determining a
17 high-consequence area dependent upon difficulty of
18 constructability of a pipeline?

19 A. I'm not aware of any.

20 Q. What is the maximum depth a CO2 pipeline
21 could be buried underground?

22 A. Well, that would require me to speculate on
23 the design of the specific CO2 pipeline, its internal
24 pressure, its wall thickness. Also, I'd have to
25 speculate on the ground itself.

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1 Designers do have to consider the potential
2 for collapse at great depth, and that includes both
3 for below-ground and sub-C pipelines.

4 Q. Okay. So what's the maximum depth that a
5 CO2 pipeline could be buried?

6 MR. LEONARD: Objection. Asked and
7 answered.

8 Go ahead.

9 A. You'd have to be more specific. We'd have
10 to know the operating pressure, the wall thickness of
11 the pipe, the design of the pipe's steel. We'd also
12 have to know very specifically the geology at the
13 location.

14 BY MR. JORDE:

15 Q. Those factors you just mentioned, do you
16 know any of those as it relates to the Summit proposed
17 pipeline?

18 A. I have not been asked to nor have I
19 reviewed Summit's design.

20 Q. Okay. So I'm just a little confused on
21 what your testimony is.

22 You don't know what their design is.
23 You're not opining on, you know, safety aspects or
24 emergency response type of things.

25 So what exactly is the crux of your

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1 opinions, if you don't know what the design of the
2 pipeline is?

3 A. I've testified in this matter to pipeline
4 safety issues and CO2 pipelines operated as hazardous
5 liquid pipelines in general.

6 Q. Okay. And the safety issues, are there any
7 particular safety issues? Are those confined to the
8 design portion, or are they confined to the operation
9 portion of a pipeline?

10 I don't want to stretch you, sir, where
11 you're not prepared to go, but I need to understand
12 kind of the limits, the boundaries of what you expect
13 your testimony to be.

14 A. My testimony, my written testimony has
15 covered PHMSA regulations and including specific
16 requirements for CO2 pipelines, industrial standards
17 that provide additional guidance for CO2 pipelines,
18 safety measures that pipeline operators take for CO2
19 pipelines, pipeline regulations that address potential
20 releases, how consequences of CO2 releases are
21 determined, whether air dispersion modeling has been
22 validated through testing, how does spacing a valve
23 affect CO2 releases, where Summit intends to install
24 those valves based on information from Summit
25 employees.

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1 What are setback requirements for CO2
2 guidelines and the history of CO2 pipelines in the
3 United States including the number of miles of CO2
4 pipelines, how long they've been in operation, how
5 Summit's system compares to existing CO2 pipelines,
6 what's the performance history of CO2 pipelines in the
7 United States, and how injurious leaks from CO2
8 pipelines in the U.S. have been.

9 Whether that data includes the release in
10 Satartia in Mississippi and how does Summit plan on
11 addressing safety concerns for their pipeline, and
12 will Summit inspect the pipeline after operation and
13 will Summit be required to make repairs if the
14 assessments post-operation identify anything? Will
15 the inspection and repairs be reported to PHMSA?

16 That's included in my testimony.

17 Q. So any portion of your testimony where it's
18 a topic on what Summit will or won't do, your
19 testimony is relying 100 percent on what employees are
20 telling you they will or will not do; right?

21 A. That is correct, as well as documentation
22 that they have provided when they provided it.

23 Q. Do you consider yourself to be an expert in
24 the way of PHMSA regulations as to hazardous liquid
25 pipelines?

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1 A. In my role at both Colonial and Explorer in
2 operating companies, regulatory compliance was
3 functionally underneath my department, my group. So I
4 managed the regulatory compliance activities.

5 As a member of API's operation's technical
6 committee and chairman of the Pipeline Integrity
7 Subcommittee, I regularly interacted with PHMSA for
8 the purpose of proposed rules and establishing
9 integrity rules, and I represented the industry as
10 part of API. Most recently we've also conducted -- as
11 DNV, we've conducted work directly for PHMSA in
12 research and have contracted to PHMSA as well.

13 So throughout my career I've been involved
14 with regulatory matters.

15 Q. Is that a long way of saying yes?

16 A. If yes answers your question, that would be
17 correct.

18 Q. Well, I mean, I want your answers. I mean,
19 I'm not saying you're not an expert. I'm just asking
20 you if you believe you are an expert and are going to
21 offer expert opinions or opinion testimony as to PHMSA
22 regulations, and it appears like you are; is that
23 fair?

24 A. Yes. The regulations that I'm familiar
25 with and as they apply to this project are included in

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1 my testimony.

2 Q. So you would agree, then, that PHMSA does
3 not have any regulations on whether or not a county
4 can develop its own Emergency Response Plan; correct?

5 MR. LEONARD: I'll object to the extent it
6 calls for a legal conclusion.

7 Go ahead.

8 A. 195, Part 195 for hazardous liquids doesn't
9 have any reference to counties. As far as anything
10 PHMSA might do above and beyond that, I do not recall
11 anything, as I sit here today. I just honestly can't
12 recall anything to answer that question.

13 BY MR. JORDE:

14 Q. Would you agree that PHMSA regulates
15 pipeline companies; it regulates the operators of
16 hazardous pipelines?

17 A. Yes.

18 Q. Would you agree that if a county was to
19 consider various factors, whether it be safety or
20 other things in work that the county does, that PHMSA
21 in no way has jurisdiction or rules that supersede
22 what a county would do?

23 MR. LEONARD: Same objection.

24 Go ahead.

25 A. In my experience, I've never run across

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1 that and seen that put into action. The federal
2 preemption and the regulations, to the best of my
3 understanding, give PHMSA primary authority for
4 pipeline safety and pipeline safety regulations.

5 To the extent that states and any
6 subdivisions within the states wish to regulate
7 pipeline safety, they have to do it through an
8 agreement with PHMSA.

9 BY MR. JORDE:

10 Q. A setback for land use purposes in any
11 particular county, is it your opinion that that is a
12 safety regulation as to a hazardous pipeline?

13 MR. LEONARD: Same objection.

14 Go ahead.

15 A. I'm not aware of any setbacks within
16 regulations that are specifically tied to a safety
17 case. Other than the one reference in Part 195 about
18 additional depth of cover within a certain distance of
19 certain structures, I'm not aware of any other safety
20 requirements that specify setbacks.

21 BY MR. JORDE:

22 Q. And would you agree that there are no PHMSA
23 regulations that cite or locate hazardous liquid
24 pipelines?

25 MR. LEONARD: Same objection.

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1 Go ahead.

2 A. PHMSA does not have siting authority. No,
3 they do not.

4 BY MR. JORDE:

5 Q. Now, I want to go back to my depth
6 questions. We learned yesterday that Summit at least
7 has the intent of keeping a 1-foot buffer or 1-foot
8 separation distance between any underground
9 structures, whether it be tile lines or other
10 pipelines from where it would locate its pipeline.

11 Is that consistent with what your
12 discussions with Summit had revealed?

13 A. I have not discussed separation distances
14 with other utilities or structures with any employees
15 at Summit.

16 Q. When going under a river or, say, a river
17 crossing, major river crossing, say the Missouri
18 River, how far beneath the river do you go, or how
19 does that work? How do you determine how far below
20 the surface you need to go?

21 A. That's based on local geology.

22 Q. And in your experience, what is some of the
23 larger depths below the river that the pipelines has
24 constructed?

25 A. I'm familiar with pipelines that have been

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1 constructed 80 to 90 feet below the mud line of a
2 river.

3 Q. Are there any, to your understanding, PHMSA
4 prohibitions on locating hazardous liquid pipelines
5 through wetlands?

6 MR. LEONARD: Same objection.

7 Go ahead.

8 A. I'm not aware of any PHMSA regulations for
9 locating pipelines through wetlands.

10 BY MR. JORDE:

11 Q. Is there a best practice, in your opinion,
12 related to the siting and location of a pipeline
13 relative to the soil types?

14 In other words, if you're constructing and
15 locating a pipeline, would you prefer to have heavier
16 clay type soils? Would you prefer to have sandy or
17 lighter soils, or what are your thoughts on that?

18 A. If you're asking specifically for my
19 opinion, siting a pipeline based on soils has merit
20 from both the constructability and the maintenance
21 perspective. It would depend upon what the options
22 are, what the local sites are.

23 I hesitate to say one type of soil is
24 generally better than another type. They all have
25 their pluses and minuses when it comes to maintenance

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1 and constructability, in my opinion. There's also
2 other parties that would be involved such as the Army
3 Corps in terms of permitting, the NRCS in terms of
4 local conservation.

5 You'd want to avoid high erosion
6 probability areas. You'd want to work with the
7 landowner as well for their intended and future land
8 use to best understand, you know, what areas to
9 install the pipe in and what soils you would prefer.
10 That's my opinion generally across the industrial.

11 Q. In terms of the concept of working with the
12 landowner to understand kind of the least impact based
13 on land use and future intentions, is it true there's
14 no PHMSA regulation requiring a pipeline company to do
15 that type of analysis or agree, for instance, to
16 locate in a particular area that the landowner may
17 specify? That's just left up to the goodwill of the
18 pipeline company to do or not do that; right?

19 MR. LEONARD: Same objection.

20 Go ahead.

21 A. I'm not aware of any PHMSA requirement in
22 that regard.

23 BY MR. JORDE:

24 Q. Are you aware of any design features that
25 Summit has expressed that have the purpose of

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1 preventing the pipeline or segments of the pipeline
2 from becoming buoyant or floating or shifting in any
3 way, depending on the different soil for different
4 aspects?

5 A. I have not been asked to nor have I
6 reviewed the details of Summit's design.

7 Q. Okay. So just to be clear, then, when we
8 get to this hearing, whenever this hearing takes
9 place, you're not going to be opining on Summit's
10 design, whether it's good or bad, or if they followed
11 the best practices or didn't; is that correct?

12 MR. LEONARD: I'll object to the extent it
13 invades privilege, but go ahead.

14 A. I've not been asked to review Summit's
15 design nor have I reviewed Summit's design to date.

16 BY MR. JORDE:

17 Q. Do you know, sir, if anyone on Summit's
18 behalf will be testifying as to their design?

19 A. I do not know.

20 Q. Of the other witnesses that have filed
21 testimony in this matter, do you consider any of them
22 to be pipeline design experts?

23 A. I have not seen all of the testimony that's
24 been filed in this case, and as I sit here today, I
25 can't recall specifically who may have testified about

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1 pipeline design.

2 Q. And I want to make sure I got this right.
3 Neither you nor your employer has been asked to do any
4 plume modeling or dispersion analysis for Summit; is
5 that right?

6 A. To the best of my knowledge, we have not.

7 Q. Is it correct that you have not reviewed
8 any of Summit's plume modeling or dispersion analysis
9 to the extent that they have any?

10 A. I've not reviewed any of their dispersion
11 analyses.

12 Q. In your expert opinion, do you believe that
13 understanding dispersion analysis and the findings of
14 a dispersion or plume modeling is something that is
15 important for regulators to consider when determining
16 whether or not a particular route or location of a
17 hazardous pipeline should be approved, amended or
18 disapproved?

19 A. That was a rather long question. Could you
20 rephrase it, please?

21 Q. I can. Do you have an opinion as to
22 whether or not a regulatory board, such as the Iowa
23 Utilities Board, should consider whether it's the best
24 practice for them to consider plume modeling,
25 dispersion analysis when we know that regulatory body

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1 is charged with siting or locating hazardous pipeline
2 in the most appropriate locations?

3 MR. LEONARD: Object to the extent it calls
4 for a legal conclusion.

5 Go ahead and answer.

6 A. I'm not familiar with the Iowa Utilities
7 Board's authority or the statutes that grant them
8 authority. I don't know what's in their purview or
9 not, and to say that a dispersion model would aid them
10 in their decision-making process would require me to
11 speculate in areas I'm not familiar with.

12 BY MR. JORDE:

13 Q. Well, I understand your answer, but I'm not
14 asking you whether or not the law says they can and
15 they should or shouldn't. I'm asking you, as a
16 proffered expert here with experience in design and
17 safety and all of the things that you've told us
18 about, wouldn't you agree that understanding the risks
19 and the danger zone and the areas in which you could
20 suffer adverse consequences from a rupture or leak or
21 a spill-release event be information helpful for a
22 regulatory body charged with siting to know?

23 MR. LEONARD: Same objection. Object to
24 form.

25 Go ahead.

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1 A. In terms of -- I don't know the scope of
2 the regulatory body with authority over siting, nor
3 would I want to speculate whether that information is
4 within the scope of their review.

5 BY MR. JORDE:

6 Q. Well, I understand you don't want to answer
7 the question, so you're answering your own question,
8 but, I mean, I can sit here and do this all day, sir.

9 So the question is: Would you or would you
10 not agree that it would be best practice for a
11 regulatory body who is making decisions on siting, on
12 locations, whether or not to locate a hazardous
13 pipeline by a home with young kids, by a feed yard, by
14 a school, by a hospital? Wouldn't you think it would
15 be wise for them to be armed with the dispersion
16 analysis, the plume modeling data?

17 MR. LEONARD: Same objection. Object to
18 form. Asked and answered.

19 Go ahead.

20 MR. JORDE: It's never been answered, but
21 go ahead.

22 A. Honestly, I don't know what their statute
23 is. I don't know what would be considered -- you say
24 "best practice." I don't know what that would entail
25 or what you'd define that as.

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1 You know, it's not within the scope of my
2 testimony to suggest that a regulatory body should
3 consider one thing or another. I will testify, as I
4 do in my written testimony on the bottom of page 3
5 starting at line 14, that dispersion modeling is
6 required by PHMSA regulations, and it's used by the
7 operator to identify appropriate preventive and
8 mitigative measures for the prevention of releases.
9 In the highly unlikely event there is a release, to
10 aid the operator in making decisions around response
11 planning and emergency response preparedness.

12 BY MR. JORDE:

13 Q. All right. Do you think you answered my
14 question there?

15 A. That's my answer.

16 Q. Okay. So let's just try this again.

17 Is there any reason you can think of why an
18 agency, who has the responsibility of locating a
19 hazardous pipeline, would not know what the plume
20 modeling, dispersion modeling data and conclusions are
21 in terms of the risk areas and the risk zones?

22 MR. LEONARD: Same objection.

23 Go ahead.

24 A. I don't know the workings of those bodies.
25 I've not participated in one of those bodies, not been

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1 a member of one of those bodies.

2 I would envision that if they wanted that
3 information and it was within their statutory scope,
4 they could request or have that information produced
5 themselves.

6 BY MR. JORDE:

7 Q. All right. What question do you think you
8 just answered there?

9 A. I think I was trying to answer your
10 question to the best of my understanding of your
11 question.

12 Q. Well, then you're not understanding the
13 question. I want to be very clear.

14 I'm not asking you what the statutes say
15 about the IUB, PSC, XYZ, ABC. I don't care.

16 I'm asking you, sir: As a self-proclaimed
17 safety expert on hazardous pipelines -- yes or no --
18 would you agree with me that it would be helpful for
19 the body, whomever it is that's going to locate a
20 hazardous pipeline, to know what the plume and
21 dispersion modeling and analysis says, yes or no?

22 MR. LEONARD: Same objection.

23 A. What's helpful for that body is up to that
24 body to decide. I'm not going to speculate.

25

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1 BY MR. JORDE:

2 Q. I'm asking for John Godfrey's opinion.

3 A. What's helpful for that body to decide is
4 up to that body itself to decide. I'd be happy to
5 provide an opinion on pipeline safety in general and
6 pipeline safety regulations as they exist, but I won't
7 speculate on what that regulatory body may find
8 helpful or may not find helpful.

9 Q. I'm asking you what you think.

10 A. And that was my answer.

11 Q. All right. If John Godfrey had to make the
12 decision whether or not this pipeline or any hazardous
13 pipeline should be located somewhere, would John
14 Godfrey think to himself, "Gosh darn it. Why don't we
15 look at the plume model and analysis so we know how
16 risky this pipeline is?" Would you say, John Godfrey,
17 "I don't need that. Stick it anywhere"? Which one?

18 MR. LEONARD: Object to form.

19 Go ahead.

20 A. You're asking me to speculate here on an
21 alternative regulatory scheme where I have authority
22 that comes without any statute or requirements and
23 allows me to pick and choose whatever information I
24 would want or would be required.

25 I don't want to speculate. This is

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1 outside -- you know, the authority of the Board is
2 outside my scope.

3 BY MR. JORDE:

4 Q. Yes. Again, you're writing your own
5 questions. I'm not asking about the authority of the
6 Board. Forget the Board. There is no Board.

7 I'm asking you: What would you do?

8 MR. LEONARD: Same objection.

9 Go ahead.

10 A. Dispersion modeling and consequence in
11 general of hazardous liquid pipelines is a useful tool
12 for both the operators and regulators to understand
13 risk. The primary purpose, in my mind, of
14 understanding the risk is to mitigate that risk, to
15 address that risk, to prevent that leak.

16 In my opinion, that is the primary benefit
17 of this analysis, is to understand for the purpose of
18 prevention what could happen. Siting in and of itself
19 is a more complicated endeavor that involves more
20 variables than just the potential of what could go
21 wrong.

22 So I view, in my personal opinion, air
23 dispersion modeling or over-land spread or oil spill
24 modeling to be a useful tool for operators in both the
25 design, the construction, the operation and

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1 maintenance of the assets through its entire life
2 cycle.

3 BY MR. JORDE:

4 Q. Would you agree, sir, that there are two
5 primary ways to deal with the potential and forecasted
6 risk of hazardous pipelines, and one is the design and
7 construction features, and two is based on where that
8 is located from high-consequence areas?

9 THE WITNESS: Could you repeat that
10 question back please, ma'am?

11 (The requested portion of the record was
12 read.)

13 THE WITNESS: Thank you.

14 A. My answer is no.

15 BY MR. JORDE:

16 Q. All right. So then what are the factors?
17 Are those two of many factors, or are you saying you
18 disagree that a risk mitigation tool can be the
19 location of the particular hazardous pipeline, or are
20 you saying you don't agree that design techniques can
21 assist in minimizing risk?

22 A. That was a multi-part question. Can you
23 break it apart for me, please?

24 Q. Well, why don't you tell me why you
25 disagreed with my first question.

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1 A. It was an oversimplification of the design
2 and siting process, in my opinion.

3 Q. Okay. And that may very well be true. I
4 don't want to keep you here all day, so what I'm
5 trying to understand from you is: We know there's
6 risks, okay? I understand no one wants to talk about
7 the risks, okay?

8 There are risks to pipelines. Everyone can
9 stipulate to that. Now, because we know that, do you
10 agree that design is one way to deal with minimizing
11 risks?

12 MR. LEONARD: Object to form.

13 Go ahead.

14 A. Yes.

15 BY MR. JORDE:

16 Q. Okay. And would you also agree that the
17 location of a hazardous pipeline that has inherent
18 risk with it is a factor that can help minimize those
19 risks?

20 MR. LEONARD: Same objection.

21 Go ahead.

22 A. Yes.

23 BY MR. JORDE:

24 Q. Okay. And then what are the other factors
25 that can help minimize risk outside of how we design a

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1 hazardous pipeline or where we locate it?

2 A. How the pipeline is constructed, how the
3 pipeline is operated, and how the pipeline is
4 maintained.

5 Q. Okay. Very good. And so is the operation
6 mainly due to operating within the right pressures,
7 right temperatures, or what are some of the key
8 operational aspects that we need to look at for risk
9 mitigation?

10 A. There's a large list of operating
11 parameters and considerations when you consider
12 pipeline risk, but generally operating within
13 established operating pressures and operating
14 procedures is the simplest way to answer that.

15 Q. Okay. And then as to maintenance,
16 obviously, PHMSA has standards on maintenance and
17 timetables and specifications. Is that what you would
18 rely on in terms of the best practices for
19 maintenance?

20 A. No.

21 Q. Okay. Where would a pipeline company find
22 those, if they're just starting out and have never
23 done this before?

24 A. Regulatory requirements for maintenance of
25 the pipeline are included in Part 195, and more

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1 specifically Integrity Management Programs are
2 considered part of the maintenance regime as is
3 cathodic protection, damage prevention and
4 right-of-way maintenance.

5 I would also look to the standards
6 incorporated by reference into Part 195 and then also
7 look at industry recommended practices and other
8 industry standards to provide guidance to the
9 operator; those standards that aren't specifically
10 incorporated by reference but are available.

11 Q. Are there any risks to the integrity of a
12 given segment of pipe if it is sitting out in the
13 weather elements for a certain period of time?

14 MR. LEONARD: Objection. Calls for
15 speculation.

16 Go ahead.

17 A. It depends on what you mean by "sitting out
18 for a period of time." How long? What elements?
19 What pipe material? What specifically are you talking
20 about?

21 BY MR. JORDE:

22 Q. Okay. Fair point. Say Summit has a pipe
23 yard somewhere, and they have the type of pipe that
24 they intend to use here, and it's sitting somewhere in
25 Iowa that has all four seasons for a couple of years.

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1 Is there a time when, in your opinion, you
2 need to do some testing on that pipe, or is there kind
3 of a grace period where it's going to be fine no
4 matter what?

5 How would we think about that in terms of
6 pipe that might be outside and exposed to the weather?

7 A. Again, that would be dependent upon the
8 pipe, the pipe's coating, how the pipe is stored in
9 the weather, where specifically it's stored. I'd have
10 to have all that information to give you any sort of
11 opinion as to the time frame.

12 Q. Okay. And to be clear, do you know that
13 information insofar as the coating and the aspects of
14 the pipe, the type of pipe that Summit intends to
15 install in Iowa or no?

16 A. I'm not familiar with the design and was
17 not asked to review the design.

18 MR. JORDE: Okay. All right. I think
19 that's it, sir. I appreciate it.

20 MR. LEONARD: I don't have any questions.
21 Anyone else?

22 MR. TAYLOR: No.

23 MS. GRUENHAGEN: No.

24 (Brief pause.)

25 MR. LEONARD: I talked to Mr. Whipple. He

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1 **doesn't have any questions. Thank you.**
2 **(Deposition concluded at 2:52 p.m.)**
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1 C E R T I F I C A T E

2 I, the undersigned, a Certified Shorthand
3 Reporter of the State of Iowa, do hereby certify that
4 there came before me, at the time, date, and place
5 hereinbefore indicated, the witness named on the
6 caption sheet hereof who was by me duly sworn to
7 testify to the truth of said witness's knowledge, that
8 the witness was thereupon examined under oath, the
9 examination taken down by me in shorthand and later
10 reduced to a transcript through the use of a
11 computer-aided transcript device under my supervision
12 and direction, and that the deposition is a true
13 record of the testimony given and of all objections
14 interposed.

15 I further certify that I am neither
16 attorney or counsel for, nor related to or employed by
17 any of the parties to the action in which this
18 deposition is taken, and further that I am not a
19 relative or employee of any attorney or counsel
20 employed by the parties hereto, or financially
21 interested in the action.

22 Dated this 3rd day of July, 2023.

23 
24 CERTIFIED SHORTHAND REPORTER
25 Darcy Kriens, Iowa CSR #988

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