STATE OF NORTH DAKOTA

PUBLIC SERVICE COMMISSION

SCS Carbon Transport LLC Midwest Carbon Express CO2 Pipeline Project Siting Application	Case No. PU-22-391

TRANSCRIPT OF FORMAL HEARING

May 30, 2024

Bismarck, North Dakota

APPEARANCES

Commissioners Randy Christmann, Sheri Haugen-Hoffart, and Substitute Decisionmaker Timothy J. Dawson

BRET DUBLINSKE, PATRICK MAHLBERG, and TYLER GLUDT, Fredrikson & Byron, PA, on behalf of Applicant SCS Carbon Transport LLC

RANDALL J. BAKKE, Bakke Grinolds Wiederholt, on behalf of Intervenor Burleigh County

BRIAN E. JORDE, Domina Law Group, on behalf of Intervenors/Landowners

ZACHARY PELHAM, Special Assistant Attorney General Advisory Counsel to the Public Service Commission

C O N T E N T S

INTERVENOR/LANDOWNER/BURLEIGH COUNTY WITNESSES

ALJ HOGAN: All right. Good morning. My clock shows it's 8:30 so we are going to get started.

Today is May 30th, 2024, at 8:30 a.m. and we are reconvening in Public Service Commission Case No. PU-22-391, which is a siting application for SCS Carbon Transport LLC for the Midwest Carbon Express CO2 pipeline project. Our hearing today is being held in the Pioneer Room in the State Capitol.

Before we get started with testimony, I'll just ask if there's any other matters we need to address this morning.

One thing, Mr. Jorde, I received an email last night with the materials that Commissioner Christmann had requested, and I think it was a link. Did you -- I haven't opened the link, but is there certain materials -- should we mark it as an exhibit, or how did you want to handle that?

MR. JORDE: I think Roseanne, who I think is there today, was going to upload that to the docket just to make it official. So if that hasn't happened, that will be happening.

ALJ HOGAN: Okay. And are we marking it as an exhibit?

UNIDENTIFIED SPEAKER: Your Honor, that was filed last night and it was marked.

ALJ HOGAN: Oh, okay.

UNIDENTIFIED SPEAKER: Exhibit 51, Your Honor.

ALJ HOGAN: Okay. Thank you.

MR. JORDE: So I guess I'd offer Exhibit 51 to complete the record there.

ALJ HOGAN: Any objection from Summit to that exhibit?

MR. GLUDT: No objection, Your Honor.

ALJ HOGAN: Mr. Pelham.

MR. PELHAM: No.

ALJ HOGAN: All right. Then Landowners Exhibit 51 is received.

All right. First witness this morning.

MR. BAKKE: Good morning, Your Honor. We'll call Mr. Chad Wachter.

ALJ HOGAN: Good morning, Mr. Wachter. First thing I'll have you do is turn your microphone on.

CHAD WACHTER: Good morning.

ALJ HOGAN: I'll have you state your full name for the record and spell your last name.

CHAD WACHTER: Chad Wachter, W-A-C-H-T-E-R.

ALJ HOGAN: And, Mr. Wachter, before you testify this morning, I'm required by law to advise you on the penalties for perjury in the state of North Dakota.

Perjury is a Class C felony, punishable by a

maximum fine of $10,000, maximum five years' imprisonment, or both.

Do you understand what perjury is?

CHAD WACHTER: I do.

ALJ HOGAN: And being advised of the potential penalties for perjury, do you promise to tell the truth in this case today?

CHAD WACHTER: I will.

ALJ HOGAN: All right. Thank you.

Go ahead, Mr. Bakke.

CHAD WACHTER,

being first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BAKKE:

Q. Good morning, Mr. Wachter. You previously testified in this matter when you were a named intervenor party in the case; is that correct?

A. Yes.

Q. Okay. And as of March 8, 2024, you have no longer been a party to the case; is that correct?

A. Correct.

Q. Okay. After the application of Summit was denied on August 4, 2023, sometime thereafter did you learn about the reroute being proposed by Summit around

Bismarck for their proposed pipeline?

A. Yes.

Q. Okay. And did you get a chance to take a look at that?

A. Yes.

Q. And did you see that, at least from what Summit filed with the Public Service Commission, they did not show any change to the eastern route near Silver Ranch? Is that your understanding?

A. Yes.

Q. Okay. And did Summit ever tell you that they were going to change the location of the eastern route any distance at all as part of their reroute?

A. They told me that they would not change the eastern portion, that they couldn't.

Q. And did you speak with someone from Summit directly in that regard?

A. Yes.

Q. Okay. And who did you speak with that provided assurance that they were not moving the eastern proposed route any distance at all from the original route?

A. Let's see here. Wade Boeshans.

Q. Okay. And when did Mr. Boeshans make that representation to you, that the eastern route would not change from the original route?

A. I wouldn't be able to give you an exact date when that happened.

Q. Can you give us an approximation or can you tell the circumstances? Was it a phone call?

A. Well, Wade and I have had numerous discussions about the location of the pipeline. And I have advocated very hard to try to convince him to move the pipeline further east and, again, numerous discussions. And every one of those discussions I was told that it's not possible.

Q. Okay.

A. I can't -- you know, I don't remember every date.

Q. Okay. That's fine.

And then I would draw your attention to Burleigh County Exhibit 101. And that's in the black binder to your left. If you just turn to Exhibit 101, there's a map there that Burleigh County prepared based on GIS data.

A. Yes.

Q. And you can see on there that Burleigh County, using GIS data, based on some rudimentary information provided by Summit, has shown the original pipeline route by the red line and then they have plotted in the reroute with the -- excuse me, they plotted in the

route -- the reroute in red and the original route is shown in the green. Do you recognize that there?

A. Yes.

Q. Okay. And you can see in the location near Silver Ranch directly to the east, that where the red line is just north of I-94, under their reroute, they are moving that further to the west towards Silver Ranch. Do you see that there?

A. I do.

Q. And you can see that they then propose that that reroute location go adjacent to the existing rest areas on I-94. I assume you're familiar with that location?

A. I am.

Q. Okay. And then they route it further north from there, which would still be west of where they had it routed originally in green. Do you see that?

A. I do.

Q. Okay. And based on your testimony here today, is it accurate to state that Mr. Boeshans nor anyone else from Summit told you that under the reroute, in fact, they're planning to move the Summit pipeline route closer to your development at Silver Ranch?

A. That's correct. That would be true.

Q. Okay.

A. I did not hear that.

Q. Okay. In fact, they told you it was staying in its original route?

A. Yes.

Q. Okay. So having seen now and heard that Summit, in fact, intends to move the reroute closer to your development and closer to Bismarck, what is your reaction to that?

A. I guess I'm surprised. Maybe I shouldn't be. A little upset about it. I don't think this -- I mean, the situation is definitely not better because of that. So, yeah, I'm not very happy about it.

Q. Okay. Do you think it will have a negative impact on your development of lots and homes in Silver Ranch?

A. Yes.

Q. Okay. In relation to where the Summit pipeline is proposed to be routed to the east of your development, how far away do you feel would be an appropriate and safe location for the Summit pipeline to be routed if you had some voice in that process?

A. 20 miles away.

Q. And why do you make that request and why do you say that?

A. Based on what I saw happen in Mississippi.

Q. And you're talking about the Satartia,

Mississippi, event?

A. Correct.

Q. Okay. And then have you subsequently learned that since you have been a party in this case there was another CO2 pipeline leak in Louisiana? Were you aware of that?

A. I heard that, yes.

Q. Okay. And does that add to your level of concern?

A. It does.

Q. Okay. Well, let's turn to another topic. You can set the map aside for now. You mentioned these contacts that you've had with Summit. Have you had some in-person meetings with representatives of Summit since August 3, 2024 -- or 2023? I'm sorry.

A. I have.

Q. Okay. And was one of those meetings a meeting where you were contacted by Ron Ness from the North Dakota Petroleum Council?

A. Yes.

Q. Okay. And tell the commissioners about that.

A. I was contacted by Mr. Ron Ness. And he invited me to come to his office, stated that he had negotiated with Carbon Summit Solutions so we could take a look at the dispersion modeling.

Q. Okay. And approximately when was this call from Mr. Ness?

A. Well, I don't remember when the call was, but the meeting took place on January 24th.

Q. Of 2024?

A. Yes. Sorry. Yes, January 24th, 2024, at 2:30 p.m.

Q. Okay. And where is the North Dakota Petroleum Council located at?

A. It's in the Broadway Building.

Q. Downtown Bismarck?

A. Downtown Bismarck Broadway Building, yes.

Q. Okay. And so you went to that meeting. Who was present at that meeting?

A. I believe it was Justin Kringstad, Brady Peyton (phonetic), Wade Bo- -- I'm sorry, I always get your name mixed up -- Wade Boeshans, Ron Ness, and myself.

Q. Who is Justin Kringstad?

A. I'm not sure. I didn't -- I don't know.

Q. Okay. And Mr. Ness, Ron Ness, you understand to be the CEO or executive for the North Dakota Petroleum Council?

A. Yes.

Q. And that is a not-for-profit organization for the energy industry. Were you aware of that?

A. I am.

Q. Okay. And he's not -- to your knowledge, Mr. Ness isn't employed by Summit; Mr. Powell told us that earlier in these hearings. Is that your understanding?

A. Say that again.

Q. Mr. Ness is not employed by Summit --

A. No. No, he's not.

Q. Okay. And tell the commissioners who you saw in relation to a presentation on the dispersion modeling at Mr. Ness's office?

MR. GLUDT: Objection, Your Honor. We've been down this path multiple times now. Mr. Bakke has a pending motion before the Commission. Summit has not yet responded but will. And Mr. Bakke's attempting to litigate that motion by implying somehow there may be a waiver because of the people present at this meeting. And it's not appropriate to be litigating that motion here today.

ALJ HOGAN: Didn't we address this yesterday? I mean, I think we're talking about the same issue we were talking about yesterday.

MR. BAKKE: I don't think so. And our motion doesn't include discussion, at least at this point, in relation to Summit showing this dispersion modeling

information to individuals, private citizens, that they -- of their choosing in relation to the dispersion model. That's a complete waiver of their claim that it's confidential. They can't --

ALJ HOGAN: Doesn't that go to your motion, though? I mean, we have a motion pending. I don't understand why we're addressing it at this hearing when we need to address that -- the Commission will need to address that motion first.

MR. BAKKE: Well, I think the reason we're asking it to be addressed now is there's a very clear waiver. I mean, how can Summit selectively decide who in the public, which private citizen gets to see the plume model and who doesn't. And this is our opportunity to question witnesses from -- private citizens who have been shown this dispersion model and -- at this time and avoid the potential of another hearing date to address these issues in the event the motion was granted.

But they're the ones that made the affirmative choice, Summit, to show this to select private citizens. And you can't have it both ways. I mean, if you're showing it -- and at that point he's a party and at that point I was still representing him.

ALJ HOGAN: Mr. Pelham, do you have a position

on this issue?

MR. PELHAM: First off, the Commission has decided to grant a protective order for the information.

The second thing I would note is, just from a procedural standpoint, Mr. Wachter testified this meeting took place in January of 2024. Burleigh County has been an intervenor since August of 2023. The order, protective order, has been in place since August of 2023. We received a motion for reconsideration from Burleigh County the day before, on Memorial Day, of these proceedings this week. Whether or not a waiver has occurred or not is subject to a legal motion that has been made.

Now is not the time to determine the issue. The issue has been decided. And the Commission is now being presented with a question that could have, probably should have, been brought up before today and these proceedings but was not. That isn't the Commission's decision to not have brought these issues up, which were known but were not brought up.

So I don't think it's appropriate to be litigating the present motion for reconsideration. The company hasn't responded. And I'll be honest, I haven't had time to fully review the motion either.

So I think that that is something that the

Commission is going to have to take up, make a decision on, and then proceed. But at present, as it stands right now, there is a protective order that the Commission has made a determination that the dispersion modeling is confidential and protected under the North Dakota procedures.

Thank you.

MR. BAKKE: And with all due respect, I think this is a new legal issue for Your Honor to address in these proceedings. This is Burleigh County's first opportunity to question witnesses in this case. By the time they got involved, as Mr. Pelham pointed out, in August of 2023, all the hearings were done already. We've had no opportunity to call witnesses until this week.

And so presenting evidence at a hearing, including through Mr. Powell, which I couldn't get before he testified, there was no way for me to file a motion prior to that and take the position that Mr. Powell admits these were private citizens because I had no opportunity to question him until this week. He then admitted this was shown to two private citizens. We now have Mr. Wachter here today to do that and to confirm that. He's just done that.

So to suggest we should have filed a motion

before we had the evidence just doesn't make sense in this case. And irrespective of the timing of it, this is new information for the Court.

And if the Court feels it can't rule on it now, I understand, but the fact of the matter is this is really an evidentiary issue in terms of whether there's been a waiver. It's a legal issue. And I think he should be able to talk about that because they voluntarily showed it to him and another private citizen. So they put it out in the public affirmatively.

ALJ HOGAN: Well, for the record, I did not decide the motion for confidential or privileged status. That was decided by the Commission. That order is in place so we're not talking about those issues today.

There is a pending motion that was -- like Mr. Pelham said, was just filed this week. The other parties haven't responded. I think this whole line of questioning falls under whether or not that motion is granted. So I think the Commission needs to address that motion first after it's been fully briefed before we're going further on that line of questioning.

So as I indicated yesterday and I think the day before, I am going to sustain the objection. We're not going to go down that road during this hearing.

MR. BAKKE: Okay.

Q. (BY MR. BAKKE) Let me just ask you some general questions, Mr. Wachter, about this meeting with Summit at the North Dakota Petroleum Council. Were you given any instruction that any of the information that you learned about or that was discussed there was somehow national security information?

A. Not national security, no.

Q. Okay. And did you receive any email or written instruction saying that anything you discuss there or learned there was confidential or Summit thought it was confidential?

A. Yes. On the first page of the presentation it said it was confidential.

Q. Okay. And when you were there, did anybody instruct you from Summit that you can't talk to anybody about this?

A. I don't recall there being statements to that effect. I think it was maybe just implied because of the --

Q. In relation to what you learned at that meeting, did you have -- continue to have safety concerns after being at that meeting in regards to the Summit pipeline?

A. I just want to be careful that, by answering this question, I don't want to violate any order here.

It would depend on whether or not the information that I saw was accurate.

Q. And in terms of information you learned about, did you want that information to be tested and studied and verified by an independent expert or individual who had knowledge on the criteria used as part of that?

A. Yes.

Q. Okay. And did you express that at the meeting?

A. I expressed that many times with many conversations with Summit.

Q. Okay. And is that still your request today, that that information be vetted, the criteria tested and addressed by an independent expert not affiliated with Summit?

A. Yes.

Q. Okay. Let's turn to the next meeting with Summit. Did you have another meeting with Summit representatives?

A. Yeah. I've had various phone calls and -- and some meetings in person, yes. I believe the next meeting I had was on February 21st, I think.

Q. And how did that meeting come about? And that would be 2024; correct?

A. Correct. Yep. I'm sorry. Yep, February 21st, 2024. Wade and I had agreed that we would get together

and just have a discussion about where things are at, kind of get an update on some different things related to the pipeline so...

Q. Okay. So was it Mr. Boeshans that contacted you?

A. I don't remember if he contacted me or I contacted him. I think he contacted me for that particular meeting based -- probably based on a phone call that we had had, a prior phone call that we had had, so...

Q. And where was the meeting with Summit representatives on February 21, 2024?

A. It was at the University of Mary, at the Harold Hamm School of Engineering.

Q. And who was present at that meeting?

A. Bruce Rastetter, Wade Boeshans, and then was greeted by Andrew Feist, Jerome Richter, and ran into Scott Hennen in the entryway.

Q. And who did you understand Mr. Rastetter to be?

A. Well, I -- he's with Summit Ag, which I think is -- I mean, this is their project through Summit Carbon Solutions so... I've -- my understanding is he's the top dog.

Q. Okay.

A. So...

Q. And also a major investor in the Summit pipeline?

A. Yes.

Q. Is that your understanding? Okay. And tell the commissioners what happened at that meeting.

A. You know, we had a meeting and we discussed various aspects of the pipeline. Mr. Rastetter kind of gave a little bit of a history about himself and a little bit about the project from his point of view. And we did discuss the dispersion modeling and --

THE WITNESS: You're just going to have to tell me if I need to stop with my testimony from violating your -- I'll do my best to stay in the parameters of --

ALJ HOGAN: Well, I would ask that you don't talk about the specifics of any dispersion modeling. So I think the fact that you mentioned you discussed it, great, but let's not go into specifics about --

THE WITNESS: Okay.

ALJ HOGAN: -- what was discussed.

A. Okay. So I don't think that this would violate it, but I -- I just reiterated that I thought the worst-case scenario should reflect the incident in Satartia, Mississippi. I expressed some frustration over the delay being able to see the model, that it would have saved some significant time, money, and

perhaps some legal resources, and that -- not really going to talk about anything else with the meeting because I think it's too intertwined with -- with the protective order so...

Q. Without disclosing the content of the discussion, did you discuss continuing concerns you had with the dispersion model by Summit that you had seen?

A. Yes.

Q. Okay. And without getting into details, did you talk to them about some specific details in the dispersion model that you felt were either inappropriate or criteria that had not been considered that you felt should have been?

A. Yes.

Q. Okay. Okay. Did you also discuss the topic of risk management and emergency response issues should there be a leak in the Summit pipeline?

A. Yes.

Q. Okay. And what discussion did you have in that regard in regards to risk management and emergency response?

A. I had just stated that I felt that it was in the best interest of the city of Bismarck, our community, that this dispersion model should be shown to all first responders, emergency management, public officials

within the city and the county, and that -- and that if there was something that I could do to facilitate that so that would happen, because I feel it's important that we need to get information out so people can see it, so they know what they're dealing with. That was -- that was the extent of that.

Q. Okay. Did you reiterate your request that an independent expert should look at the dispersion modeling information?

A. I don't know if I brought it up really there. I mean, I made the statement that, no, that this isn't my background, I'm not an expert in this stuff, and it sure would be nice to have somebody that is more qualified than me to go to, to look at it and tell me whether -- whether it's accurate.

Q. Did you have discussions with the Summit representatives in regards to how they had dealt with the public and with landowners in relation to the Summit pipeline and their attempts to secure easements from landowners?

A. Yeah, we did actually talk about that. And I think that, you know, the meeting was -- Summit pretty much acknowledged at that meeting that in the beginning they didn't hire the right people and that there were some things that were being done that should not have

been done, and that when they discovered that, that they took immediate action to correct those things so they would not happen, such as threatening people with eminent domain if they don't sign. You know, that was -- because that happened to me.

So I think they've acknowledged that that was not the right way to deal with those situations and -- and, you know, now they have a really good group of people that are working for them, that's the conversation, so those things are not happening.

Q. And you don't have any knowledge as to whether they continue to threaten eminent domain with some hold-out landowners or not; correct?

A. I only know what I've read in the paper about it and -- but I have not spoken with anybody recently on that so...

Q. Okay. And did you have a discussion with them regarding what your practices are as a real estate developer in dealing with adjacent landowners?

A. Well, I've -- I have had those conversations with Summit. You know, I don't believe that happened at that particular meeting, but I've -- you know, I've explained to Summit that when we're going to do a zoning change or develop an area, the first thing that we do is we contact everybody that's going to be affected by it,

we try to have a meeting with all of them, we try to explain to them everything they're -- you know, what's going to happen. I try to find out what their concerns are. I try to answer their concerns. If there's something they're not happy about, I try to compromise with them. And when I do that, I don't have to worry about having 500 people show up at a planning and zoning meeting, you know, fighting me on it because, you know, those -- if you do those things, those things don't happen.

And that was -- I was trying to maybe give a little bit of advice that -- that I think that if Summit would have -- would do more of those things, that maybe this would be a little bit smoother for them so... And I know they've gone out and tried to talk with people one-on-one and I'm not trying to discredit any of that but...

Q. Okay. And when you left the meeting, did you have an impression one way or the other whether Summit was going to follow up with you or recontact you?

A. Well, we never really set a date for -- well, any other meetings. I just said that if I -- I told them that if I can be of any assistance to make sure that emergency information, you know, the dispersion modeling, to make sure that it's getting to where it

needs to so people can see it so we can figure out how we're going to train our first responders, how emergency management -- so they can -- they know how to respond to an incident, I just reiterated that it was important to have those conversations and -- and that that information be provided and -- but I think I had an understanding that -- you know, that they wanted to do that now and -- and they were going to do that. And if they needed an introduction or something like that, which, I mean, I'm sure they -- they don't need one from me, but I was trying to be cordial in my communication with them so...

Q. Okay. And since that meeting that you had on February 21, 2024, have you had any further contacts with Summit in terms of meetings?

A. I've had a few conversations with them but not really any -- maybe, you know, one meeting and that was it.

Q. Okay. And any significance on any of those contacts, whether by phone or any subsequent meeting?

A. No, nothing really. Did you -- was there something specific you wanted me to --

Q. No. I just wondered if there was anything significant in any of those subsequent communications that you thought would be helpful to the commissioners.

A. Well, we talked -- I did talk to Wade about his testimony and he had -- he was being investigated by the Morton County Sheriff's Department. And so he actually sent me a copy of his testimony and -- and asked me if I thought that he said anything that was untruthful. And I read it. And I told -- I told him that as far as him and I, I can't speak for the other people, but I -- I didn't see anything that was untruthful related to me and him.

I did have a concern with, you know, the statement that -- and I don't recall exactly what was said, but, to the fact that the pipeline wouldn't really have any impact on the growth pattern, there was a statement. And I'm not saying that Wade was being untruthful with his statement there, but, you know, maybe there was a misunderstanding.

But my position still is, is that this pipeline will, where it's situated at to the east of the city of Bismarck, is going to cause problems. It is in our growth corridor and we are going to have some things that we're not going to be able to do if it does go in that location.

Q. Let's turn to one final topic and that is the effect of having natural gas or oil pipelines on development property. And setting aside CO2 pipelines

for purposes of the discussion because you haven't had any developments and I assume you're not aware of any developments in the Bismarck, Mandan or Burleigh County area where there's ever been a CO2 pipeline installed or proposed to be installed before the Summit pipeline; correct?

A. That's right.

Q. Okay. So let's focus on your experience with natural gas pipelines and/or oil pipelines near or in developments. There was a witness called earlier this week by the name of Jeff Olson, a gentleman from -- I think he resides primarily in Wisconsin. Did you have an opportunity to review Mr. Olson's written testimony that he filed with the PSC?

A. I did.

Q. Okay. And he offered two primary opinions. First, he said there's no pattern as to which lots are developed first in housing subdivisions in Bismarck or Burleigh County. Many of the encumbered lots are some of the first to sell. And by "encumbered lots," he indicated he meant natural gas or oil pipelines. Do you agree with that testimony?

A. I don't agree with that testimony, no.

Q. Okay.

A. That's not been my experience.

Q. Okay. And then, second, he said there's no market evidence in the Bismarck area that he uncovered at least that suggested pipelines impact the market value of residential properties when they're either on the property or adjacent to the property. Do you agree with that opinion by Mr. Olson?

A. No, I don't.

Q. Okay. Can you tell the commissioners what your experience is in regards to what happens with residential lots in a development that are encumbered with natural gas or oil pipelines?

A. Typically, they are usually the last lots to sell. Sometimes we have to discount them. Sometimes a property owner that will have a house next to a vacant lot that's got the pipeline cutting through the corner of it will buy it just so they can have a bigger yard but with no intentions of putting anything on that lot.

You know, if I look at Promontory Point, which is one of our developments, the -- I can show you with pictures.

Q. Yeah. And do you have in front of you what's been marked as Burleigh County 136 which are photographs showing some lots in Promontory Point 5 in northwest Bismarck that are lots that you or your company own and have --

A. Yes.
Q. -- for sale?
A. Yeah. So --
Q. Just one minute, Mr. Wachter, we've got to pass that around and then I've got to offer that.
A. Sure.
Q. And just for the record, you provided these photographs to me last night, is that correct, after reading Mr. Olson's testimony?
A. Right. After I read the testimony, I thought it would be good at least to send these pictures to you, yes, that's correct.
Q. And these are all photographs, Burleigh County 136, of Promontory Point 5 in northwest Bismarck of lots that you owned or own?
A. Yes, that's correct.
MR. BAKKE: Your Honor, we'll offer Burleigh County Exhibit 136.
ALJ HOGAN: Any objection?
MR. GLUDT: No objection, Your Honor.
ALJ HOGAN: Mr. Pelham.
MR. PELHAM: No objection.
ALJ HOGAN: All right. Burleigh County 136 is received.
Q. (BY MR. BAKKE) Okay. Can you please explain

to the commissioners, starting on the first page of these photographs, there's two to a page, what these photographs show?

A. These pictures were taken in Promontory Point located in northwest Bismarck. I took these pictures yesterday. The pictures that you're looking at show vacant single-family lots that we have not been able to sell that are still in inventory.

Q. And are they encumbered by some sort of pipeline?

A. Yes.

Q. Is that what the yellow and blue poles signifies, is that's a, what? A gas pipeline?

A. Yes.

Q. Okay. And when were these lots first available for sale, roughly?

A. I would say it's been about five to seven years.

Q. And would I be correct in understanding that as these are developed lots, meaning you have all the city services available to the lot, curb, gutter, paved road, sewer line, waterline, etcetera, that you would have to continue to pay taxes and specials on those lots each year --

A. We do.

Q. -- as an ongoing expense or --

A. Yeah. We -- we -- we have to pay taxes and special assessments every year.

And what was the other part of the question?

Q. I think that was it.

A. Okay.

Q. I think you answered it.

So, you know, holding it for five to seven years, what would you be talking about on a lot like that in, you know, either the lots shown on the first page paying in taxes and specials each year, roughly?

A. Well, it costs us about a $2,000 a year to hold a lot, the one lot. So, you know, if there's -- we're holding for five years and we've got four lots there, our holding expenses are 40,000 bucks.

Q. Okay. And then in the location where the pole is shown, there would have to be certain setbacks for structures or anything that would -- you can't have anything covering that location; correct?

A. That's right.

Q. Okay. So that's going to affect the size or the footprint of the home and the configuration of the home that can be built on the lot as well?

A. Yeah.

Q. Okay.

A. Yeah. So initially when you -- we -- yes, we have it actually right on the plat showing the easement so there's no misunderstanding when somebody pulls a building permit, they know exactly where it's at and how far they need to be away from it.

Q. And do you have other lots in other locations other than Promontory Point 5 where you've experienced the same thing, meaning that you are unable to sell or there's a significant delay in selling lots that are ready for sale and to be built on, but because they're encumbered by a gas or oil pipeline, you're unable to sell them?

A. There are no other projects that I have developed. There are projects out there, but not ones that I have developed. So I don't think I would be able to be very -- provide very much value by commenting on those.

Q. Have you observed other lots in town of other developers other than yourself where you've seen the same thing, where they have lots that appear to be encumbered by a natural gas or oil pipeline that seemed to continue to be vacant?

A. Yes. Even large electrical -- I know we're not talking about electrical transmission lines, but even those as well, have one running right through Pebble

Creek and people are scared to be by it and it's -- you know, I don't know if that's relevant or not. I'm just saying that even with those the public is scared so...

Q. Okay. That's all the questions I have for you, Mr. Wachter. There may be others that do. Thank you.

ALJ HOGAN: Mr. Gludt, any questions?

MR. GLUDT: Yes, Your Honor, just briefly.

CROSS EXAMINATION

BY MR. GLUDT:

Q. Thank you for being here today, Mr. Wachter.

A. Thank you.

Q. Would you agree that to the extent where it's possible or feasible for Summit, that Summit should be doing its best to accommodate potential reroutes on landowner properties if the landowner were to request those?

A. Yeah.

Q. Would it surprise you to learn that this adjustment that Mr. Bakke discussed with you to the east of Bismarck was made pre -- before the Commission's August 4th order and at the request of a landowner?

MR. BAKKE: Object for lack of foundation. There's been no testimony or evidence on that.

ALJ HOGAN: I'll allow him to answer.

A. Repeat the question, please.

Q. (BY MR. GLUDT) Would it surprise you to learn that the reroute that Mr. Bakke discussed with you to the east of Bismarck was actually made before the Commission's August 4, 2023, order and at the specific request of a landowner?

MR. BAKKE: Same objections.

A. Yes.

ALJ HOGAN: I'll allow him to answer.

MR. GLUDT: I have no further questions.

ALJ HOGAN: Mr. Pelham, any questions?

MR. PELHAM: Yes.

CROSS EXAMINATION

BY MR. PELHAM:

Q. Good morning, Mr. Wachter. Thanks for being here. Some questions for you on the Exhibit 136, the last page. Looks like a line drawn through --

A. Yeah.

Q. That's the natural gas pipeline, representative of it, at least; right? Not to scale.

A. I apologize it was not straighter.

Q. That's okay.

A. I did my best.

Q. I think we get the idea.

And I guess my question for you, sir, if you know, I assume Wachter Development Inc. is your company;

right?

A. That's correct, yes.

Q. And as a developer of this property, at one time all of the lots shown here would have at one time been owned by Wachter Development Inc.; is that right?

A. Yes.

Q. And I'm just wondering then as to the lots that are not developed, kind of like in the island between Powder Ridge Drive and Clairmont Road and Valley Drive, and I can't make out the other road there, but that island there, do you see that there, sir?

A. Are you talking -- are you talking over here?

Q. No, I'm sorry, I'm not. And I'm not describing it --

A. Here?

Q. Yeah, the -- and I'm describing it as an island --

A. Oh.

Q. -- just because it's surrounded by roads and streets.

A. Okay. I know what you're talking about. Yes.

Q. And primarily the areas that are not sold at present. I'm just wondering if you are able to say when, for example, the Bryce and Amber, looks like "Fast" lot would have been sold in comparison to the

other lots?

A. I -- if there wasn't a pipeline going through that area, those lots would be sold.

Q. And as far as other areas of Promontory development, are there other lots that have not been sold but do not -- or are not encumbered by a pipeline?

A. There's a couple other lots in Promontory Point that are not in these pictures that have not been sold that also have the pipeline on them, yes.

Q. Specifically as to these lots shown and depicted on page 4 of Exhibit 136, I'm wondering if you've -- if you or anyone with your company, sir, have been told by potential buyers that the reason why they are not purchasing is because of the restrictions related to the encumbrance of the pipeline?

A. Yes, I have -- we have had people tell us that.

Q. And specifically, sir, if you recall, how many people do you recall have told you that?

A. I would say five.

Q. And of those five, do you recall -- well, what did they specifically tell you, if you can recall, sir?

A. Well, some of them were not able to get the house to fit because of the setback from the pipeline. Some just didn't want to be that close to a pipeline like that. It was either they couldn't get something to

fit or they were scared of it and they didn't want to be near it.

Q. Fair enough.

If you know, sir, do you know whether or not the -- the asking price on these particular lots had been lowered in comparison to the lots that were sold?

A. Well, we're marketing them at -- at the fair market value, the same market value, as what we are -- all of our lots with the understanding that we realize we're going to have to discount these lots if we have somebody that is interested. We usually won't discount until we get somebody engaged in a discussion.

Q. Fair enough.

So as part of the negotiation process just generally across the Wachter Development, and I think you described it as inventory so I'll use that word and you can correct me if I'm using that incorrectly, but the inventory, of the inventory that Wachter Development has in Bismarck, how many times specifically has the price been negotiated downward as a result of the pipeline encumbering that property?

A. I believe that -- try to put it into really easy terms. I would say 80 percent of every sale that we have made that has a pipeline on that property, we've had to take a lower price for the property in order to

get it sold.

Q. Thank you, sir. I don't have any other questions for you.

ALJ HOGAN: Mr. Jorde, do you have any questions?

MR. JORDE: Yes, Your Honor. Thank you. I do have a few questions.

CROSS EXAMINATION

BY MR. JORDE:

Q. Mr. Wachter, I don't know if you can see me, but as long as you can hear me, it will be okay.

Your first couple of line of questionings with Mr. Bakke was -- you made the comment that Summit had told you it wasn't possible -- I think your exact phrase was "not possible" -- to move the pipeline. And was that further east of Bismarck?

A. Yes.

Q. Okay. And did you -- I mean, did they present any information like here's a federal regulation or here's a state law to justify the phrasing "not possible," or did you take that to be inconvenient or it wasn't their preference to adjust the route further east?

A. No. I think they said they had some archaeological concerns to the east --

Q. Okay.
A. -- and --
Q. I'm sorry, go ahead.
A. And that was the primary reason for their inability to go further east.
Q. But did they show you any data or evidence to substantiate that?
A. Last year I saw a GIS map where you can turn on layers, and I was able to see the areas, you know, of these different sites and they would have to, you know, zigzag -- they can get around them, but they just have to zigzag to get around them.
Q. Okay.
A. And they don't --
Q. No, I'm sorry. And I appreciate that. And I was just trying to understand the phrasing "not possible" because that's a pretty big statement. But from what they showed you, it can be done in certain locations, but they didn't want to do that, at least that's what I'm taking. Is that fair?
A. Well, yeah. I mean, they said it can't be done, but the truth is it can be done.
Q. Right.
A. It's just a lot of work and a lot of zigzagging around to be able to do it.

Q. Okay.

A. And you're probably not going to get a nice straight line like what they're trying to get now.

Q. And did they happen to tell you how many right angles, how many bends or curves they already have in their over 350 North Dakota proposed miles?

A. No.

Q. And did they tell you that they had to be located in Burleigh County for some reason, or given the vast nature of North Dakota, did you have any discussions with them about completely changing the route and not even coming into Burleigh County?

A. No, I don't think I've had those discussions with them.

Q. When you were at the -- I believe it was the January 24th, 2024, meeting at the North Dakota Petroleum Council office, I think you said you were shown a presentation. I'm not going to get into the content for all the objections and reasons stated, but I want to clarify, was that presentation, sir, like a PowerPoint on some type of a monitor or computer?

A. That's what it was, yes.

Q. Okay. And did they -- don't tell me what they gave you, but did they also, in addition to the PowerPoint, hand you any hard copy of a summary or notes

or reports or studies or anything like that?

A. No.

Q. Okay. So to be clear, the exclusive information in terms of any type of visual presentation related to any of this plume or dispersion or risk modeling was this PowerPoint; is that correct?

A. Yes.

Q. You had said that in -- I think it was in your February 21st, 2024, meeting where Mr. Rastetter was present, I believe your phrasing was that Summit pretty much acknowledged, in the beginning at least, it didn't hire the right people and things were -- had been done that shouldn't have been done. Was it your understanding that the things that shouldn't have been done that were included certain persons threatening eminent domain if landowners didn't sign?

A. Yes.

Q. And after they acknowledged that those threats had been made to pressure people into signing easements, did Mr. Rastetter or anyone from Summit share with you how many of the easements obtained after such threats that Summit rescinded or canceled or tore up or gave back to those landowners?

A. No.

MR. JORDE: I don't have anything further.

Thank you, sir.

ALJ HOGAN: Commissioner Christmann.

COMMISSIONER CHRISTMANN: Good morning. A few questions to tie up my understanding of your testimony.

Were there any other developers or, you know, Burleigh County citizens or Burleigh County government representatives at that meeting at the Petroleum Council?

THE WITNESS: No.

COMMISSIONER CHRISTMANN: And the University of Mary, the same?

THE WITNESS: Correct.

COMMISSIONER CHRISTMANN: Okay. And then so I understand --

THE WITNESS: Commissioner, just to clarify, could you just repeat your question one more time? I want to make sure I'm answering it correctly. I have a second thought on that.

COMMISSIONER CHRISTMANN: So at either one of those meetings. I was mainly thinking of the other developers who had previously been here but also maybe Burleigh County representatives or --

THE WITNESS: No.

COMMISSIONER CHRISTMANN: You mentioned some people like Ron Ness.

THE WITNESS: Yeah. It was Ron Ness, myself, and somebody who works for him, and then Wade and the person who was presenting the information.

COMMISSIONER CHRISTMANN: Okay. Then on this new exhibit this morning with these pictures --

THE WITNESS: Yes.

COMMISSIONER CHRISTMANN: -- sorry, I don't drive around town very much so I don't know all these streets and everything. I don't even know for sure where Promontory Point is but --

THE WITNESS: Sure.

COMMISSIONER CHRISTMANN: The last page here, I look at this map and I think I am seeing five encumbered lots that are unsold; correct? Because that one is kind of pie-shaped and it's partially encumbered.

THE WITNESS: There's four. That four that we have that are unsold.

COMMISSIONER CHRISTMANN: Oh, I see that bottom pie-shaped one is.

THE WITNESS: Yes. Sold, but they have elected not to do anything with it. I think they just wanted -- yeah, I'm not, I guess --

COMMISSIONER CHRISTMANN: Okay, that --

THE WITNESS: Yeah, if you look at the house, it's the same owner.

COMMISSIONER CHRISTMANN: Yeah, I see that now.

THE WITNESS: So they just bought it for a larger backyard.

COMMISSIONER CHRISTMANN: Because I don't understand the dimensions of Promontory Point, is this one example of some of these encumbered unsold lots or is this all of them in Promontory Point?

THE WITNESS: This is just one example. There's --

COMMISSIONER CHRISTMANN: How many -- you can have a series of these. How many, about, encumbered lots are unsold?

THE WITNESS: I would say that there's probably -- we have, to the best of my recollection, I would say seven.

COMMISSIONER CHRISTMANN: Okay. And then about how many encumbered lots are sold?

THE WITNESS: I would say seven or eight.

COMMISSIONER CHRISTMANN: Okay. Now I want to ask about that development area --

THE WITNESS: Yeah.

COMMISSIONER CHRISTMANN: -- and the unencumbered lots. About how many are sold and unsold?

THE WITNESS: Can I give it to you in percentages or do you want actual numbers?

COMMISSIONER CHRISTMANN: If you can -- I know you're not going to lie to me. Just an estimate about of how many --

THE WITNESS: I'm just going --

COMMISSIONER CHRISTMANN: -- the numbers of them.

THE WITNESS: I just don't know off the top of my head how many lots we have there.

COMMISSIONER CHRISTMANN: Let's do percentages then. So we've kind of determined that about half and half of the encumbered.

THE WITNESS: Yeah.

COMMISSIONER CHRISTMANN: So what -- yeah, percentages would be fine in the unencumbered.

THE WITNESS: Of Promontory Point, I would say that we are, I don't know, 80 percent sold out.

COMMISSIONER CHRISTMANN: That gives me perspective that it is making a difference --

THE WITNESS: Yeah, the only --

COMMISSIONER CHRISTMANN: -- in this development.

THE WITNESS: Yeah, the only other lots that we ever had a hard time selling other than pipeline lots are corner lots. They also can be very challenging because special assessments are more for corner lots

than -- we've done good up here with our corner lots. We managed to get them sold.

COMMISSIONER CHRISTMANN: Then over in -- and I'm pretty sure you covered this in your testimony last year.

THE WITNESS: Sure.

COMMISSIONER CHRISTMANN: I just need to be refreshed. Your development north of the interstate on the east side of Bismarck --

THE WITNESS: Yeah, Silver Ranch.

COMMISSIONER CHRISTMANN: -- Silver Ranch.

THE WITNESS: Yeah.

COMMISSIONER CHRISTMANN: How close is the eastern boundary of it to where this new proposal is for the pipeline running just along the east side of section 24 and 13?

THE WITNESS: Looks like about two and a half miles, depending on where you're measuring from.

COMMISSIONER CHRISTMANN: Because now I see that from the interstate -- how far north do you go from the interstate?

THE WITNESS: I'd say we're about a mile north of the interstate.

COMMISSIONER CHRISTMANN: The north edge of it is?

THE WITNESS: Yeah.

COMMISSIONER CHRISTMANN: Okay.

THE WITNESS: And just to be clear too, because I don't want to mislead you, when I talk about a development, I'm talking about the stuff that is in our plan to develop it. You might not see it here today, but it will be developed.

COMMISSIONER CHRISTMANN: So then you have plans to develop, I'm thinking, about a half mile east of the current city limit.

THE WITNESS: Yes. So we have plans to develop up to 80th Street, all the way over to 80th Street. So it's two sections on the north side of 43rd. To put that in some perspective, it's right across the street from the Burleigh County shop, if that helps.

COMMISSIONER CHRISTMANN: Okay. So you don't own any of that land, that next two and a half miles up to the pipeline, or do you own that and use it for other purposes and development right now?

THE WITNESS: I don't own any land east of 80th Street.

COMMISSIONER CHRISTMANN: Okay. So now I can get to what I'm trying to understand about how this all works and who gets impacted.

THE WITNESS: Sure.

COMMISSIONER CHRISTMANN: So when you get to the next -- I don't know how big of tracts you usually acquire, quarter section or section or something, that you think you'd like to develop -- I use this example because we work with abandoned coal mines. If there's something that's been excavated out from under -- there can be places where it's uninhabitable, you just can't build there. If you're buying that land and there was a few acres of that, I presume you would pay less for that whole tract because part of it has to be left undeveloped; correct?

THE WITNESS: That -- that's the way it's supposed to work, but it doesn't -- it depends on the seller, how difficult they are. That's the way I like to negotiate it, the way that you just explained it, but sometimes I've had to buy stuff that they just want the same amount per acre regardless of -- you know, regardless of if it's usable or not.

COMMISSIONER CHRISTMANN: And then you make your decision whether you're paying X for most of the acreage and discounted Y for a few acres, or just some overall average for all of the acres, you have to figure out whether you think you can turn a profit on the development?

THE WITNESS: That's correct. Yes. Yeah.

COMMISSIONER CHRISTMANN: And so if you buy land with, instead of the coal mine example, with the pipeline example, presumably that landowner was compensated, gets out of our domain but, hopefully, a just compensation for that, so shouldn't the developer then be able to acquire it for a price for which they can develop it and knowing that some lots will probably sell for less or not be saleable?

THE WITNESS: So if I -- I want to make sure I understand the question. You're saying that when we're negotiating to buy a piece of property, that we should be able to negotiate a lower price for the pipeline portion, for the area where the pipeline is at, and then make adjustments on our sales price accordingly. So basically, if you're going to bring down the purchase price and you bring down our sales price, the net effect would be the same.

I can tell you, like up in Promontory Point, we didn't -- we didn't get any discount for any of the portion where the pipeline was so that didn't -- it didn't happen. That would be the way to do it, but it doesn't happen that way in the real world usually, not when it comes to development land.

COMMISSIONER CHRISTMANN: Okay. I don't have any other questions. Thanks for being here,

Mr. Wachter.

THE WITNESS: Yeah, you bet. Thank you.

ALJ HOGAN: Commissioner Haugen-Hoffart.

THE WITNESS: Good questions.

COMMISSIONER HAUGEN-HOFFART: I'm going to continue off of -- you mentioned that we might not see but you have future plans of development.

THE WITNESS: Yeah.

COMMISSIONER HAUGEN-HOFFART: Can you explain like the location of what your future plans are? And I'm going to have you reference Exhibit 101.

THE WITNESS: Okay.

ALJ HOGAN: You can take it out of the binder if that's easier.

THE WITNESS: Okay, Commissioner, what we have planned for this area, Silver Ranch development, is we are hoping some way in the next five years we're going to get an interchange on 66 off of I-94, which is going to help us with the commercial part of our development. Most of the commercial that we're planning to do is going to be from 43rd Avenue Northeast all the way down to the interstate. And in that same area --

And, Commissioner, do you see on the map where I'm talking about?

COMMISSIONER HAUGEN-HOFFART: Yep.

THE WITNESS: Right through the middle of that area, Commissioner, Century Avenue is going to come through at some point. And Century Avenue will come right through the middle of that area and connect to 66 Street.

Then if you look in the northwest part of that little area that we're talking about, you'll see there's kind of a maroon outline and it's gray. That's where we've done single family and a little bit of lower density multi-family developments such as twin homes in that area. And then as we move to the north, we've got single family twin homes, lower density -- or medium density multi-family.

And then as we continue up to the north, we just donated ten acres to Bismarck Public Schools for a new 30-thousand-square-foot career academy and they're going to start building that soon. And then directly across the street to the east we just closed with the Diocese of Bismarck. They acquired close to 25 acres. They're going to build a Catholic campus up in northeast Bismarck. We're really excited about that. To the south of that area we're working with an assisted living center.

And then as we go outside of that gray area and we go up into the remainder of these different sections,

a lot of what we'll see is going to be single family and multi-family development.

So the objective would be to get about 4,500 dwellings in the Silver Ranch development over the next 22 to 25 years. And that's figuring about 150 to 200 a year. We're not hitting that now with interest rates the way they are, but once we get back on track, I'm confident that we'll hit those numbers.

COMMISSIONER HAUGEN-HOFFART: And all that, that you described, is approximately two miles from the proposed pipeline?

THE WITNESS: That is right. That's correct. Yes.

COMMISSIONER HAUGEN-HOFFART: Okay. Thank you. Any other development north or east?

THE WITNESS: So basically if you go from 52nd Street all the way over to 80th, there's going to be 4,500 dwellings that will be in that area. We'll have some mixed use. We need to get some other type of commercial stuff kind of incorporated into the development. So I just don't have that laid out yet.

COMMISSIONER HAUGEN-HOFFART: Okay.

THE WITNESS: Might have to move that around a little bit. And commercial is actually driven by rooftops. So we need to -- in order to get the

commercial, we have to have more rooftops. And we really need that interchange at 66.

COMMISSIONER HAUGEN-HOFFART: Okay. Okay. Thank you.

THE WITNESS: Yeah.

COMMISSIONER HAUGEN-HOFFART: There was testimony as recent as yesterday that the reroute that was submitted by Summit Carbon Solutions was influenced by you as a Bismarck area intervenor. Would you agree with that statement?

THE WITNESS: I would say that I don't think I had any influence because the pipeline has not only not moved on the east side, but now it's closer in one area.

As far as what happened -- I can give you my opinion if you want to hear it. I believe that Summit had no intentions of moving the pipeline to the east because they had already gone through all the way to get all those easements and they didn't want to have to do it all over again. And on the north side they didn't have all the easements they needed so it was very easy for them to just move because they didn't have to get what -- they didn't have to abandon, you know, the easements because they didn't have them, you know. But to have to go and get all those easements again on the east side, what a hassle that would be.

COMMISSIONER HAUGEN-HOFFART: And costly.

THE WITNESS: And costly, yes.

COMMISSIONER HAUGEN-HOFFART: Okay. How would you describe your relationship with Summit Carbon Solutions?

THE WITNESS: I think it's good. I get along with them. I have to -- I have to get along with people that I don't disagree with. That's just the nature of my business and that's just me and who I am. So I have no issues with -- with these guys as far as getting along with them.

I don't like -- I'm not against their project. I want to be clear because I've had people say that I'm against this project. I am for this project. I just don't want it so close. I don't want that portion of the pipeline to be so close to the city on the east side. I don't think it's in our best interest as a community for safety and growth.

You know, we might not have problems today, but we are going to have problems, you know, 50 years down the road. If you ever get time, look at the maps of Bismarck from 50 years ago and look at how much growth has happened and then you're going to realize that, oh, my gosh, we're going to be where this pipeline is in no time, much sooner than what we think. And it's not

going to be very easy to go under this pipeline and -- you know, so I -- I have concerns.

But Summit has been very respectful to me. I will say at the beginning, no, they were not, but I'm on good terms with them. I don't agree with them, but I'm on good terms.

COMMISSIONER HAUGEN-HOFFART: What don't you agree with?

THE WITNESS: Where the pipeline is going on the east side.

COMMISSIONER HAUGEN-HOFFART: Okay. Okay. There's been -- you referenced that you would like it 20 miles further out --

THE WITNESS: Right.

COMMISSIONER HAUGEN-HOFFART: -- than the proposed -- we heard yesterday from someone 14 miles.

THE WITNESS: Yeah. I know, you're getting all these numbers and you're like how do you -- how do you back up what these numbers are; right? Well, I think part of the problem is, is that we've got this study that nobody can look at and so, because of that, you can't get a definitive number. You have people that are looking probably at what happened down in Mississippi and looking at how far that plume traveled, and that's probably where people are coming up with their -- with

their distance. That's how I came up with my distance. I'm, like, okay, I heard that it traveled 8 to 12 miles. Let's be -- we're 20 miles away, you know.

COMMISSIONER HAUGEN-HOFFART: Okay. Thank you so much. I have no further questions.

ALJ HOGAN: Mr. Dawson, any questions?

SUBSTITUTE DECISIONMAKER DAWSON: No questions.

ALJ HOGAN: Any redirect, Mr. Bakke?

MR. BAKKE: Yes, Your Honor. But can I -- I need to ask him confidentially about something in Silver Ranch as to whether I can ask him about it because it would go to Commissioner Haugen-Hoffart's question about development in that area. So can I just very quickly?

ALJ HOGAN: Yes.

(Pause)

REDIRECT EXAMINATION

BY MR. BAKKE:

Q. A few follow-up questions, Mr. Wachter. First of all, in relation to the questions you got from Summit's attorney about supposedly some landowner making a request to move the pipeline further west towards Bismarck, has Summit ever told you that? Are you hearing that for the first time today?

A. First time today.

Q. Okay. And, in fact, what Summit told you is

that the original route would not be moved from the location that is shown on BC101, the map, meaning that you're learning now that they're planning to move it further to the west towards Bismarck; correct?

A. Yeah. What I was told, Mr. Bakke, is that the pipeline on the east side of Bismarck would not be moved and that it would only be moved on the north, and then I come here and I learn that it actually did move, but it moved closer to the city of Bismarck.

Q. Irrespective of -- if that occurred, irrespective of whether it was on the original route or the reroute, they never told you either way that they were moving it to a location further to the west towards Silver Ranch at any time?

A. No. I've never heard that.

Q. Okay. And the one other development that -- that I think is going to happen in Silver Ranch, but you can tell the commissioners, are there plans in relation to the Gaia House going in Silver Ranch?

A. Yeah, that's true. Yep. Gaia is -- just acquired property in Silver Ranch and they're going to build a hospice facility there, which I think is great because we need that in Bismarck.

Q. Okay. And where will that be located?

A. That's going to be located north of Silver Ranch

elementary school about five blocks.

Q. Okay. And Silver Ranch Elementary School is currently open and in operation?

A. Yep. Open and operation and about 400 students there.

MR. BAKKE: That's all the questions I have. Thank you.

ALJ HOGAN: Mr. Gludt, any other questions?

MR. GLUDT: No, Your Honor.

ALJ HOGAN: Mr. Pelham.

MR. PELHAM: No.

ALJ HOGAN: Mr. Jorde.

MR. JORDE: No, thank you.

ALJ HOGAN: Any other commissioner questions or Mr. Dawson?

All right. Thank you, Mr. Wachter.

MR. JORDE: Your Honor, if I might, I know Mr. Bakke has been busy with his witness; I've got Mr. Howard virtually on here that won't be a long witness. I'm wondering if Mr. Bakke wouldn't mind if I get through Mr. Howard at this time.

MR. BAKKE: And I also have Mr. Steinbronn waiting on the Zoom link right now and he's been waiting a while. Maybe I can give you a call on break after I've had a chance to talk to him, if we are taking a

break now.

ALJ HOGAN: Yeah, we can take our break. Let's take a 15-minute break and the two of you can talk and then when we come back you'll tell me who's next.

MR. BAKKE: Okay. And just to update you on the status of the other witness who had the medical issue, she will not be able to appear today for medical reasons.

ALJ HOGAN: Okay.

MR. BAKKE: So I'm going to be communicating with her about whether she could testify on Monday sometime. She's trying to rearrange her work schedule. I should know something more by tomorrow.

ALJ HOGAN: Okay. All right. We will reconvene at 10:15.

(Recess)

ALJ HOGAN: All right. My clock shows 10:15 so we're going to get started again. And next witness is who?

MR. BAKKE: It's Jeff Steinbronn.

ALJ HOGAN: All right. And, Mr. Steinbronn, can you hear me okay?

JEFF STEINBRONN: Yes, hear you loud and clear.

ALJ HOGAN: All right. I'll have you start by stating your full name for the record and spelling your

last name.

JEFF STEINBRONN: Jeffery Paul Steinbronn, S-T-E-I-N-B-R-O-N-N.

ALJ HOGAN: And, Mr. Steinbronn, before you testify this morning, I'm required by law to advise you on the penalties for perjury in the state of North Dakota.

Perjury is a Class C felony, punishable by a maximum fine of $10,000, a maximum five years' imprisonment, or both.

Do you understand what perjury is?

JEFF STEINBRONN: Yes.

ALJ HOGAN: And being advised of the potential penalties for perjury, do you promise to tell the truth in this case today?

JEFF STEINBRONN: I do.

ALJ HOGAN: All right. Thank you.

Go ahead, Mr. Bakke.

MR. BAKKE: Thank you, Your Honor.

JEFF STEINBRONN,

being first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BAKKE:

Q. Mr. Steinbronn, could you tell the commissioners

where you're located at today?

A. I'm in Indianapolis, Indiana.

Q. Okay. And I want to talk a bit about your background. Can you tell the commissioners about your educational background?

A. Yes. I was the valedictorian in my high school class in a little school there in northeast Iowa and went on to Iowa State for a degree in chemistry. And while I was at Iowa State, I joined the military on the Nuclear Power Officer Program. And after graduating, went to OCS, got my commission, and went through the training pipeline in nuclear power and, from there, when I got through my first submarine, I signed up to be an instructor at Naval Nuclear Power School, which is in Orlando. And while I was at Orlando, I also got my master's in business administration.

Then from there went on to my second submarine and then cross-decked over to my third submarine where we did an engineered refueling overhaul, which was a very large training event in and of itself where I was the nuclear -- on the nuclear joint task group as well as the non-nuclear joint task group. So anything that was being tested on the submarine, it had to go through me. And from the second submarine, then I went on to the -- to work with the Reserves.

And then I went down to San Diego to work with the Coral battle groups as well as being a navigation assistant for all the submarines that came through San Diego. And from there went here to Indianapolis as the commanding officer of the Naval Marine Corps Reserve Center in Indianapolis. Three days after I took over, we sent our 104 Marines over to Iraq for Iraqi Freedom.

And also, after I retired, I went into teaching. And one of the requirements for doing the dual credit is to do master's program work in the subjects that you're going to be teaching, which is both chemistry and physics, as well as in the program there that I went through, Troops to Teachers, as well as the Indianapolis Teaching Fellows Program, and that was run by Marian College then. It's now Marian University. And so I have my master's in art of teaching there plus a bunch of credits in a master's program, chemistry, as well as physics.

Q. Okay. And how long total were you in the military, in the Navy?

A. 22 years, 9 months, and 9 days.

Q. Okay. And can you tell us about your background and experience with welds and weld joints and connections on pipes?

A. When I was the damage control assistant in

my first submarine, we -- sometimes we had to put freeze seals on. And that's when it's a live system and we had to cut something out to get another submarine underway, and then we had to restore from that. And during that part -- portion of it, that's the first time I ever saw a freeze seal where you're using liquid nitrogen to freeze everything in the line. And that came up again when I was in the shipyard with my third submarine, and that freeze seals should not be used on carbon steel because it's going to cause them to go through brittle fracture transformation. And so you'd basically -- once you put the freeze seal on, you're going to have to cut upstream of it to be able to get rid of that piece of the pipe and you have to do non-destructive testing to figure out how far up the line you'd have to do that.

And so other job duties, we -- I got there, to the third submarine, just as we were landing the new core for a nuclear fuel overhaul, and that's where I was the nuclear JTG from the ship as well as non-nuclear. So all the piping systems, we had a bunch of mock-ups as well as all the diagrams for those things. So it's -- in submarine qualification, you have to be able to trace all the pipes throughout the submarine. And the submarine itself is a pipe by itself. And so that lends itself to, when you're doing the nuclear portion, you're

inside the reactor compartment. And inside the reactor compartment, there's the other -- other high rad areas that you have to avoid. So you have to know what's in every pipe that you're going to be going past.

Q. Okay. Then can you tell the commissioners a little bit about your background and experience in chemistry and studying and with -- experience with CO2?

A. Well, as a Dow Chemical scholar for IOSD, there's only one of those per year. I was also the freshman chemistry performance award winner. There's only one of those per year.

And going with the -- with the nuclear plants, you have steam and you have water and you have subcooled and superheated kind of things.

And then carbon dioxide, one of the first carbon dioxide detectors went onto the nuclear submarines, and that was before the one that went out, Mauna Loa (phonetic), in 1956. So Nautilus was launched in 1954 to -- and on board there were CO2 scrubbers.

We also have something called CAMS -- that's a central air monitoring system -- so that you maintain all your levels low. It gives you alarms if you go high in any of the 13 things that it was monitoring back in the day. So the carbon dioxide levels, if you -- your ship is pressurized when you're underway most of the

time so you can maintain your oxygen levels separate from the carbon dioxide. So carbon dioxide levels, if you -- if you have problems with your CO2 scrubbers, you're going to have to ventilate more often, which means come to periscope depth and circulate air from the outside to get your carbon dioxide levels down. So those limit -- 30-day limits, instantaneous limits, and all that stuff, it's still governed by the CEC.

And so carbon dioxide, we also -- a friend of mine was in charge of all of the salvaging of other submarines and he just had done the 27-country Rim of the Pacific salvage operations just before the Kursk blew itself up in the North Sea. And we could have been there in 17 hours and saved those guys, but the Russians, yeah, once there's a problem, they start lying. That's their immediate action. And so they were trying to blame us for blowing that thing up. No. We had all the tapes. And so we were offering to save those guys that were stranded aft. And every one of those guys died of carbon dioxide toxicity. And that was avoidable.

Q. Okay. Let's talk about what you've done in relation to this case. Have you reviewed certain documents in relation to the proposed Summit pipeline in North Dakota specifically and more specifically in

Burleigh County?

A. Yes. Yes, I have. And also done other background information from places where they -- they claimed victory, from Saudi Arabia, Qatar, and also from China, working with these systems. But most of those systems are either compressed gas or super -- it's dense phase carbon dioxide.

So from the phase diagram -- I don't know if you have a copy of that there -- there's five specific places on the phase diagram. You have the solid, which we know as dry ice. We have the gas phase, which most people know about. You have a liquid phase and the dense phase above that. As you pressurize it, it changes its characteristics. That's a physical piece. And then once you -- there's two places. Most people know about the triple point where you can have solid, liquid, and gas phases all present at the same time, but then there's the critical point. The critical point is a higher temperature, higher pressure, and that forces the gas or the liquid into what's called a supercritical fluid.

So in that supercritical fluid, if there's impurities, it also changes the characteristics of the fluid that's going to be flowing and it -- if you drop the pressure below the critical pressure, depending on

temperature, you're going to turn it into a gas or you're going to turn it into a liquid. Now that's a process, it takes time, but as you turn the supercritical fluid, the pressure drops below the critical temperature, you're going to be flashing that into steam. Well, the vapor phase of carbon dioxide. So it's going to go to a gas. So the gas, depending on the pressure, is the density change. So you have a change in volume as you go to the gas. Even though it's at the same temperature with a different pressure, it's going to go to a larger volume.

So even in the supercritical fluid, as you raise the pressure, you're going to change the density. So the supercritical fluid is compressible. Liquid, not so much. You can pump some more liquid in to raise the pressure, but it's -- it's not compressible. You can push it in so you have more in it, which, by Pascal's Law, it's going to feel that pressure throughout the fluid and into the walls without abatement. It's going to be the same all the way across.

But when you get to the gas phase, that's where things -- you're going to be at least two phases when you drop pressure. If you drop temperature as well, you're going to have three phases of matter, which is the liquid, the gas, and the supercritical fluid.

Q. Okay. Let me stop you there and just -- if you could just briefly describe the documents, not going into any great detail, but the documents that you have studied and considered in regards to offering opinions in this case on the Summit pipeline?

A. Okay. Went back to the metallurgical book. It's "Nature and Properties of Engineering Materials." I have the map of the anticipated pipeline in Burleigh County, North Dakota. That's the 51.46 miles. I also looked at some things from the internet to check out temperatures inside North Dakota. And I've also went to some engineering sites, Kenexis, and that's where we're looking at hazards of things both inside the pipeline and outside the pipeline in carbon steel to -- as a technical document, to verify the things that were in the engineering materials book.

Also went to a -- the CDC, verifying what the current levels for lethal dose of carbon dioxide and effects thereof, depending on whether it's a five minute, 30 days, and instantaneous immediate danger to a human life. I've also looked at the Britannica on the Lake Nyos disaster that was carbon dioxide from a volcano that was dissolved underneath a lake and released the carbon dioxide and the effects that happened there, as well as the population review of

Bismarck, amongst other papers to make sure that the phase diagram that I have is the most accurate so it checks with four other sources.

Q. Okay. Then in relation to the map you described, did the map you received show the location or proposed location of the main valves for the Summit pipeline --

A. Yes.

Q. -- in Burleigh County?

A. Yes.

Q. Okay. So based on review of that information, have you formulated certain opinions in this case as to the carbon steel pipeline and how CO2 in a supercritical phase will be impacted by temperature and locations specifically in Burleigh County?

A. I have.

Q. Okay. So first of all, how will the Summit CO2 pipeline when operating be affected by weather and atmospheric conditions that are typically experienced in Bismarck, North Dakota, in our area of the country?

A. The ambient temperature in the summertime will not have too much of effect on it during the summer because the temperature band that -- from their document says they're going to maintain an operating box of 88 to 100 degrees Fahrenheit and 1,200 to 2,200 pounds per

square inch. So as they --

From the Chinese paper -- they've been doing this for a while. They have -- when they put it in -- they're also doing it in kilometers. So 350 kilometers is, roughly, 200 miles. So from the course of whatever temperature they put in, whether it is a liquid starting at 0 degrees or whether it's a super cool -- excuse me, a supercritical fluid carbon dioxide starting off at 100 degrees, it's going to be down to ambient temperature within 200 miles. That's without a pumping station. So it's just full flow from the -- whatever pumping station they started with. So it's going to be ambient temperature.

Insulation has nothing to do with it because insulation is also a conductor. It has an R-value that's based on certain things, but it's -- it's resistant to temperature change, but it can't stop the heat from flowing out.

So in the wintertime -- we just had a low in Dickinson, North Dakota, at a negative 70 windchill. Windchill is a thing because the convection heat is going to move out as if it was at that temperature. So the outer shell of the pipeline would have experienced a negative 70 even though it was only a minus 39 Fahrenheit and a 29 degree -- or a 29-miles-per-hour

wind. So it's convection heat transfer that's getting it down to that windchill temperature.

For those people who don't believe windchill temperature is a real thing, you just have to ask Morton Thiokol about their O-rings on the Challenger on the first -- or the 28th of January back in 1986. It's the windchill that caused those things to be brittle.

It's the same idea inside here. Because as I've learned more and more physics, everything's analogous to something else. So the analysis here or the analogy here is as soon as that outer shell, which is less than a millimeter thick, as soon as it gets down to that negative -- depends on the amount of carbon -- I don't know what the percent carbon is, whether it's low carbon, high carbon, medium carbon, what it is, but all carbon steels exhibit this brittle fracture transformation between 0 and a negative 20 degrees Fahrenheit.

Q. And so --

(Simultaneous speaking)

A. Sorry.

Q. Let me stop you there and maybe if you can try to shorten your answers. I know this is, from your perspective, stuff you know inside out and backwards, but maybe we can, at least for my sake, dumb it down a

little bit.

So my question is where will the carbon steel pipeline from the Summit pipeline in Burleigh County be exposed to the windchill and the extreme temperatures because, of course, much of it is proposed to be buried underground about four feet?

A. Yes. Everything that's aboveground is going to be subject to the windchill. So the windchill, you're normally going to have winds coming out of the northwest and that's -- the windchill is what the surface temperature of that pipe will be metallurgically.

What's inside, if you still have flow -- and as far as I can tell from the map, the pumping station is in South Dakota. So you're already going over 200 miles before it gets to Burleigh County. So that will be at ambient temperature when it gets there.

So when it gets to the -- goes -- rises up and over through the valve and down, that whole U-shape that's aboveground is going to be at cold temperatures. You're going to make out -- the strongest piece is the welds. Outside the welds, you have two bands that are already susceptible to brittle fracture. That's where your failure is going to be when the failure happens. So if it is brand-new pipe cold rolled in the United States, there's a different set than cold rolled over in

China. My son was a machinist and we know of those kind of things here too. So we --

The other piece is it's only being buried to 48 inches. That is the construction requirement that's based on tort law. Looking at other websites, we have a freeze line -- the frost line goes down to 75 inches in North Dakota as an average. So when it's above the frost line, things that are cold can get colder. A lot of people don't realize that if you throw ice in the freezer, it's going to go down to that negative 30 degrees. You have to heat it up to the melting point before that ground will thaw. So it's susceptible to the cold weather. It's just going to take a little bit longer for that cold air to pull the heat out of the ground, but it will.

So the brittle fracture transformation will still happen underground when the underground temperature gets to negative 20. So at the frost line, all of that is kind of insulation for the ground that's not frosted.

So here in Indianapolis, that -- once you're below the frost line by about three feet, you're still going to be able to maintain about a 48 to 50-degree Fahrenheit, but inside the frost line it can get as cold as it is outside because it's going to be convection

over the top, it's going to conduct through the soil. It's a little bit resistant depending on your soil, whether it's clay or whatever it is, it's a different heat transfer conductivity, but it's still going to conduct heat. It is still going to get cold, especially if you have a long cold snap at 48 inches, it could be just as cold as it is on the surface.

Q. Okay. And what happens to that pipeline underground if it gets as cold as the surface or very cold, how does that impact --

A. It will transform itself into a brittle material. So at minus 100 degrees, you could flick it with your finger and it would snap because it losses -- it's a curve that's almost straight down. As you go from normal temperatures of ambient, whether it's 70 degrees or 100 degrees, it will come all the way down to less than one-third for most -- most carbon steels, less than one-third in about a 25-degree temperature drop from 0.

Q. Okay. So in your opinion, what depth would be a safe location for this CO2 pipeline to be buried below ground in North Dakota with our cold weather extremes?

A. Well, with your cold weather extremes, you're still -- when the valves are above the surface -- but you have to be able to do maintenance, I understand

that, but if -- you have to be well below 75 inches because you have to be well below the frost line, I'd say, by -- just judging from what we have in Indiana, you'd have to be about four or five feet below the frost line to keep it from going below 0. Because --

Q. How deep would that be?

A. Well, 75 plus the three feet'ish, that would be a minimum of over a hundred -- we have 105 inches so that's about 9 feet deep. But you still have the riser coming out. So that piece is still going to be susceptible to brittle fracture transformation.

And every winter almost -- from the winters that I looked at in North Dakota there, you're going to have temperatures that are below a negative 20. So it's those cycles below that also transform more of the metal, not just the surface piece. Because brittle fracture is the rapid propagation of a flaw. You have plenty of pressure inside the plate to burst it from the inside once that brittle fracture propagates.

It propagates at the velocity of sound in the metal. Velocity of sound in the metal of carbon steels is somewhere around 5,700 meters per second, which is about 18,000 feet per second and it's only two pi feet around. And so, therefore, it's going to be about 333 microseconds to propagate a crack all the way around the

pipe. You don't have that kind of reflex.

Q. So the main line valves that are aboveground in Burleigh County, are they at risk of this brittle fracture given the supercritical CO2 in the pipeline?

A. Yes. Whether it's -- whether it's supercritical, whether it's gas, whether it's liquid, at that pressure, that will be enough. You already have enough stress right there to whip it free once it's (indiscernible).

Q. Can you hear us, Mr. Steinbronn?

A. Yes, I can.

Q. Okay. Okay. We had a little bit of a video issue, it seemed like, on our end.

So what is the risk and can that risk be mitigated at the main line valves for the Summit pipeline that are aboveground in relation to this brittle fracture risk?

A. If they're wide open, I don't see it. But if they -- they'd actually have to be able to heat that pipe. You'd have to have a large enough house there to make sure that you keep it heated well above the brittle fracture transformation point so it's --

Q. And what happens if there is brittle fracture of one of those main line valves?

A. Brittle fracture of the main line valve will

release all unisolated supercritical carbon dioxide in the form of gas.

Q. Okay.

A. Because the atmosphere outside of it is at one atmosphere, which is the 14.7 PSI. And so it's going to release all that.

So if we just look at a 15-mile portion of the pipeline, that's going to release 307 million standard cubic feet of carbon dioxide. And then that's at one atmosphere of pressure. So the lethal dose at 40,000 parts per million, which is 4 percent carbon dioxide, will get you 7.7 billion standard cubic feet.

Put it in real terms, Bismarck is 35.18 square miles of it -- to the town lines. And so that amount of carbon dioxide at 4 percent will make a volume that's eight feet above the ground at all portions of Bismarck.

Q. Okay. And have you looked at the location of the main line valves on the map on the proposed reroute of the Summit pipeline and where they're located at?

A. I have.

Q. Okay.

A. And on the northern section that's proposed to go in just south of 101st Street, you have four valves, three of them in Burleigh County and one just outside of Burleigh County, in Morton County. And on the northern

run that goes about pseudo parallel to 132nd Street, you have one valve that's just north of Interstate 84 (sic) and you have one that's about seven miles south of there, which is the first one. That's an isolation valve going into Burleigh County. So --

Q. And what's your understanding of the elevations of those main line valves in relation to the elevation of Bismarck itself?

A. Well, Bismarck is in the floodplain of the Missouri River. So that puts that at the lowest part, everything below Main Street to the south is going to be at that floodplain or below. So on the north side of Bismarck it has some elevation and hilly ground over there. But the portion that's going straight north and then cuts over to the west and deliberate out of the county towards Morton County, that is the one that's most at risk because you have the -- the wind comes from the northwest in the wintertime and so those three valves -- well, four if you include the Morton County valve, those will be very susceptible to the brittle fracture transition and making it a very weak joint.

Once again, the strongest part is the weld, but the metal on both sides is weaker because of martensite and all other things, things if they did not do any stress relaxation treatments of it to get it so that

it's not so brittle.

But as soon as it goes -- regardless, if it goes below 20 Fahrenheit, a negative 20 Fahrenheit, it's going to be in the brittle transformation zone. And we know that it gets colder than minus 40 in North Dakota. And it's only five months ago.

So it's a very imminent threat to life because of the energy that's inside that supercritical fluid. It's got more energy than gas. For those people that know about steam tables, gas can be -- the water vapor can be super heated and you're putting a lot more energy. You got to put in -- from bringing water up from 30 -- well, from 90 degrees Fahrenheit to the boiling point is one-seventh of the energy it takes to boil that water.

So the same idea is analogous here too. You've got to pressurize this with so much energy, you're condensing the gas into a liquid or you're condensing the gas directly into a supercritical fluid, which is what I think they're doing with the pumping system here that's located in South Dakota. So they're pressurizing the gas until it turns into a supercritical fluid, getting it towards the high ends of their operating range, which is somewhere around 2,800 PSI, which is effectively 20 atmospheres which is about -- it's a

serious amount of energy in that. So when the pressure drops, that's when it's going to turn into gas. If there's a fracture, all that supercritical fluid is going to turn into a gas and that's where it's deadly to humans.

Why it's deadly to humans is our blood pH is based on bicarbonate and carbonic acid. When carbon dioxide is dissolved in water, it instantly turns into carbonic acid. So we need to be in proper pH, which is a pH of 7.40. Plus or minus .05 pH units, you got to be around a 17-to-1 bicarbonate to carbonic acid ratio to be a proper buffer. Because when you go below that 7.35, you're on your way towards 6.8, which is where diabetic comas start.

And so the carbon dioxide -- most of the carbon dioxide in your body, 80 percent of it is dissolved in your bloodstream. You put more carbon dioxide than your body can handle, that's where we pass out. And carbon dioxide will not be able to be dissolved in your veins. It's going to come out in your brain. And that's what shuts you down.

Q. Okay. So let me ask you, have you done, calculated the measurements between the five valves in Burleigh County to determine the distances between the valves as shown on the latest drawing of the 50-plus

miles that you looked at from Summit?

A. I have.

Q. Okay.

A. So the valve that's around 37th Street and the valve that's up on -- the first valve on 201st Avenue, that's about 15 miles. So with those 15 miles, that's the number I quoted to you, that it's going to be eight feet tall at 4 percent carbon dioxide throughout Bismarck, but it's going to preferentially go to the lower elevations because it's going to cascade downhill.

Because carbon dioxide is 1.53 times more dense than air, air which is 80 percent nitrogen, which is diatomic, and about 19.6 percent for oxygen, which is also diatomic. So carbon dioxide at 44 versus the oxygen at 32 versus the nitrogen at 28. So that's how you get to the density piece.

Q. Okay. And you said that was how many miles between the valve stations there?

A. Approximately 15 miles --

Q. Okay.

A. -- with a 24-inch pipe. That's how I did my calculations for the million so standard cubic feet. That would be --

Q. Okay. So let's say hypothetically that valve at that location breaks, how far would the CO2 travel and

where would it travel to? Have you done that calculation?

A. Well, it's -- well, going back to when I was at SUBPAC West Coast, we did the drills for -- you know, we were at the emergency action center. We did the drills for contamination being released from Point Loma or from North Island, from the carrier. And so you're looking at -- the first thing you got to figure out is where is the centerline. So you're going to figure out the centerline by actually taking local conditions.

So the most dangerous one that would -- even if all the valves were shut, the most dangerous one for the people in Bismarck is one of the two on 201st Avenue Northeast because it's going to -- the carbon dioxide, because of its density, is going to flow downhill. When it flows downhill, it's going to settle in whatever looks like a bowl to it. So it's coming down the edge of the bowl and it's coming down to the bottom. So it's going to settle in there.

And it's going to be very concentrated when it comes out because it's going against one atmosphere pressure, it's going to completely dislocate the nitrogen and the oxygen at the point of rupture. It's going --

It's just like in a fire. You spray your water

at the base of the fire, it flashes into steam, but that is a 777-fold change in volume which displaced all the oxygen and the nitrogen at that one atmosphere and so you don't have enough heat to be able to cause the water to flash into steam.

So same idea here. You have all this energy in the sub -- in the supercritical fluid -- sorry I'm stumbling over this one. The supercritical fluid is pressurized. It has all that energy from the pumps, because they did work on this system to raise the energy level that's basically potential energy of your carbon dioxide. It's got the potential to cause it to go to gas. If the temperatures drop below 88 degrees Fahrenheit, it's going to go to liquid first, but it's not going to be able to stay in a liquid because the pressure drops as it leaves the pipe.

So either way, whatever the temperature of it is, the energy is in the compressive potential. And so it's going to expand. And so as it expands, when it's at full carbon dioxide without diffusion yet, it's going to start rolling downhill. It's going to be a cascade of gas that's coming down you can't see and you can't smell.

If your carbon dioxide detector goes off, before you can walk over to it, you will be passed out if

you're in the initial wave. So it's going to be an energy wave that comes at you too because it's going to be like a detonation as that gas comes out and expands --

Q. So let's say hypothetically there was a leak at the valve shown on 201st Street -- Avenue Northeast --

A. So is that a leak without brittle fracture so it's just a -- had some flaw that caused a leak to start? Is this under flow or no flow conditions?

Q. And so what would happen? How far would the flow get even if the pipeline was shut off at the next main valve?

A. Okay. So if it's shut off at the next main valve, then you're going to be no flow so it's going to be all the supercritical fluid of carbon dioxide that's trapped inside the pipe. It's going to unload itself.

Because when you have a leak from supercritical fluid or liquid carbon dioxide, doesn't really matter, as it expands through that hole, because it's going to go to the gas phase because it doesn't have pressure above one atmosphere coming out of there, which is your 14.7 PSI, it is going to super cool that pipe.

So the temperatures because of the expansion of the gas -- it's called the Joule-Thomson effect. Just like if you were going to spray a CO2 fire extinguisher

there in the conference area, you're going to have a white puff coming out. Why? Because you're freezing all the water vapor. You're seeing frozen water vapor. That's what that dust is. It's not a water vapor. It is ice crystals that are very, very tiny, because the carbon dioxide expanding is very cold. And you'll also have that same white -- white covering of your black cone on your carbon dioxide extinguisher because it's so cold it's going to instantly deposit frost on your cone.

Same thing's happening here, but you're stealing the energy out of the pipe. So if there's a flaw, it is going to propagate that flaw across a fault line in the pipe, which is due to the crystallization nature of a weld. And so that is going to expand.

That's what brittle fracture is, is when you get it to a brittle material, it loses most -- "brittle" means "not ductile." So it loses its previous characteristics of whatever temperature it was, it is now brittle and it's going to snap based on pressure.

You still have that pressure as long as there is supercritical carbon dioxide. Think of it as an energy source. It's going to continue to give its energy until all of it is a gas. And all of it can't be a gas unless the pressure goes below 1,071. And when it's at 1,071 PSI, it still has a lot of energy, and that energy can

continue to propagate the rupture.

Because pressurized gas is -- is gas on both sides. If you ever saw a TXV valve in the summertime from your LP gas while you're barbecuing, yeah, it's very cold on the outside of your TXV, which is a thermal expansion valve, which is what's happening when you have a leak in a high pressure pipe.

Because if you look back at steam, even though the steam is only at 500 PSI, it's got so much energy that it's going to continue to cut the pipe like it was a blowtorch. And so you use a broom -- you put a broom up to it so wherever -- because it's so loud. You put a broom up to it because it's going to cut those things off. If you put your hand up there, it's going to cauterize the wound because it's got so much energy; you're not going to bleed out. You're just not going to have any fingers.

So this is the same type -- well, it's analogous. It's not the same. The supercritical fluid has a tremendous amount of energy in it even when it's --

Q. So getting to my question about, if the valve is shut off, so you have that zero flow condition, how far would that travel in that 15-mile distance between the two valves using the one on Exhibit 122 showing the main

line valves for the valve shown on 201st Avenue Northeast? How far would it travel to the south towards Bismarck?

A. Yeah, when it travels -- it's going to travel downhill. It's going to get to the south side of Bismarck. And so it's -- until the diffusion effect can take effect, because you're displacing the oxygen and the nitrogen in this cascade of carbon dioxide as it comes out of the pipe.

So you have -- you got -- it's not -- the source of the carbon dioxide gas is not going to stop until all of the unisolated supercritical CO2 is expended. So it can get all the way -- it will get to the bottom of the hill in south Bismarck. It will. Because of its density and because of the energy that's being -- that's forcing it downhill.

And then the only thing that's going to be mitigating here is if you have high winds at the time. And you can't bet on high winds.

Q. Okay. And then what if it isn't in zero flow? In other words, zero flow assumes that the redundancy system or the automatic shut-off valve at the next valve does shut off. What happens if it doesn't shut off and you continue to flow CO2 and it's not zero flow and there's a rupture or break?

A. So when -- if you're not at zero flow, your pumps are still pumping, and in South Dakota you're going to have an unlimited supply of carbon dioxide that's just going to flood the valley. In that case, I don't believe anybody could survive.

Q. Okay. Thank you, Mr. Steinbronn. I don't have any other questions. I'm sure some of the other attorneys or the commissioners may.

ALJ HOGAN: Mr. Mahlberg, any questions?

MR. MAHLBERG: Yes, Your Honor.

CROSS EXAMINATION

BY MR. MAHLBERG:

Q. Good morning, Mr. Steinbronn.

A. Good morning.

Q. Just a few topics to touch on. You testified in some detail, and I'll confess I may not have understood all of it, about the operation of pipelines when it's cold out; right?

A. Yes.

Q. You're aware that there are pipelines in North Dakota; right?

A. I am.

Q. You're aware that there are several thousand miles of pipeline in North Dakota; right?

A. I believe so, yes.

Q. And you're aware that they operate in the winter; right?

A. What type of pipelines are you talking about?

Q. Well, there is -- I assume you're aware, Mr. Steinbronn, that there are natural gas pipelines, there are refined products pipelines, there's a CO2 pipeline. You're aware of all of those; right?

A. Yes.

Q. And they all operate in North Dakota, they all have aboveground components, valves and such; right?

A. I don't know when they started with the -- when did they actually start with carbon dioxide in the pipelines? And was it -- is it supercritical fluid carbon dioxide that's presently running? I've got to know this because I can't -- I can't give you an informed opinion unless I know that.

Q. Right. And so as I understand it, Mr. Steinbronn, your opinion is uninformed by the existence of a CO2 pipeline that is operating in North Dakota? That would be an important fact to know; right?

A. Yes, it would. What are the dimensions of that CO2 pipeline so I can be more informed?

Q. Yeah, you'd want to know all those things if you were going to provide an informed analysis to this Commission; right?

A. I -- from what I have for the anticipated pipeline, I have the dimensions of those things and I have a notice that it's going to be carbon steel. That is what I'm testifying to. For all the other pipelines, I could not testify to them because I don't have data on them.

Q. You're not even aware that it exists?

A. You just told me it exists.

Q. You're not aware how deep it's buried?

A. That is correct.

Q. You don't know where it is, how cold it gets, whether they've ever experienced the parade of horribles you're talking about when it gets cold in the winter; right?

A. Yes.

Q. I assume, Mr. Steinbronn, as you looked at the details about this pipeline, you looked at things like testimony on fracture control plans and how the company's plans do address the sorts of issues that you're talking about; right?

A. No. That was not released to me.

Q. Okay. So you were what, given a set of data from --

A. Yes.

Q. -- from the lawyer?

A. Yes.

Q. And then you went on the internet at your -- you found what you stumbled across with internet searches; right?

A. It was not stumbling across.

Q. Fine. Targeted searches that -- I assume you looked for CO2 pipelines in North Dakota and you found some things fairly friendly --

A. I --

Q. -- not toward CO2 pipeline in North Dakota.

A. I looked for pipelines outside of the United States. Because when I was doing my research on Covid for my biochemistry sources, master's level things, I found that I could find more data outside the United States that was not -- was not abridged or was not spun. So I was looking for things that correlated between other countries.

I don't go for just one thing to think that, oh, this has got to be the best. No. I go through different mechanisms because of my previous research searches of my -- all my master's pieces, both in chemistry and physics. You can't just go with one thing. It has to be preponderance of evidence.

So I didn't think that CO2 pipelines that were in the same state would give me anything different. I

was looking for different.

Q. Okay. You looked at, I assume, Mr. Steinbronn, the applicable regulations for the design and construction and inspection of pipelines operating in the United States?

A. Yes. And I have a question on that. Do you have --

Q. Perhaps after this, Mr. Steinbronn --

A. If I could ask this question, please. Do you have failure mode and effects analysis for every type of failure for this pipeline? And do you have a full-scale mock-up with as -- at least two valves in three sections of pipe so that we can look at that?

ALJ HOGAN: Mr. Steinbronn, the way these hearings work, it's not an open discussion back and forth so...

THE WITNESS: I'm sorry.

ALJ HOGAN: You've been offered as a witness so we're going to have you answer the questions this morning.

THE WITNESS: Sorry.

A. Could you rephrase your question?

Q. (BY MR. MAHLBERG) Yeah, that's okay, Mr. Steinbronn. These hearings aren't a natural setting for most people.

My question was you're aware of the federal regulations about pipeline safety; right?

A. I have some things from the pipeline safety center, yes.

Q. And what's the name of the agency that regulates pipeline safety?

A. It's escaping me right now.

Q. You're aware, Mr. Steinbronn, that there is federal regulation governing the design, construction, and operation of CO2 pipelines in the United States of America; right?

A. Yes. I'm also aware that --

Q. Did you review any of those regulations relative to Summit's design of its pipeline?

A. No.

Q. Did you review any of those regulations with respect to the proposed construction of Summit's pipeline?

A. That it has to monitor the operations 24/7 and it can shut down a CO2 pipeline if there's a problem.

Q. You pulled that from the regulations? Or was that provided to you by someone? I'm just trying to understand the basis of your opinions.

A. It's from the pipeline safety trust.

Q. And you understand the pipeline safety trust is

the regulator?

A. It is not.

Q. All right. Moving on from that, I guess, Mr. Steinbronn, how far is it from the pipeline to the south of Bismarck?

A. From which direction?

Q. You tell me. You tell me, Mr. Steinbronn. You were giving an opinion about an analysis that we'll talk about in a second from a location along the pipeline to, I think as you described it, the bottom of the hill in south Bismarck. How far is that distance that you were testifying about?

A. Okay. That is approximately 18 miles.

Q. And what's the topography between the pipeline and the bottom of the hill in south Bismarck?

A. You have a floodplain that goes along the Missouri River. So the portions that are west of US 83 are going to be close to the level of the floodplain. Once you go on the east side of interstate -- or the US -- US 83, it's going to be going uphill and it makes a corner and all that is in the hills to the northeast of Bismarck. And it slopes down as you get to US 94 -- let me check that to make sure because these are tiny numbers. Interstate 94. And then that's at the riverbed again that goes through the Lincoln -- the

suburb of Bismarck. And it stays fairly flat as it goes across or under the railroad tracks and it's going to be about the same level as Lincoln as it travels down to North Dakota Road 1804, as I understand.

Q. Have you been to Bismarck?

A. I have not.

Q. You've been to north of Bismarck?

A. No.

Q. Have you looked at topographical maps in the vicinity of this pipeline?

A. I have one, but it's not very accurate.

Q. Despite all that, you -- as I understand it, Mr. Steinbronn, you're testifying about a dispersion analysis that you performed?

A. It's not a dispersion analysis.

Q. Well, you just said that the dispersion is going to reach a certain distance. You've not looked at topography. You have to make a whole host of assumptions, Mr. Steinbronn. So which assumptions did you make for the analysis that you performed? And in a compound question, what software did you use to perform the analysis?

MR. BAKKE: I'm just going to object to him misstating his testimony. He just described, I think, fairly accurately the topography from north to south --

north of Bismarck to the south of Bismarck. So to state that he didn't consider topography, he just asked him about that and he described it, I think, accurately.

MR. MAHLBERG: Mr. Bakke can recharacterize the testimony how he wants to. It's a fine question for cross-examination. This witness just said he has not looked at anything other than a topographical map that he says is not very accurate.

A. It doesn't -- it doesn't give me feet above mean low level so --

ALJ HOGAN: Mr. Steinbronn, the description when you answered the question regarding the topographic area or what you knew about that, is that the assumptions that you made as far as topography?

THE WITNESS: I talked to several people that actually live in Bismarck, of what it looks like, even though I haven't been there.

ALJ HOGAN: But your description when Mr. Mahlberg asked you about what you knew about the topography, is that what you used --

THE WITNESS: Yes.

ALJ HOGAN: -- when you -- okay.

THE WITNESS: Because it's -- the carbon dioxide is denser than air. It will go -- flow to the lowest level it can. And it's going to fill that --

ALJ HOGAN: Well, outside of the characterizations by the attorneys about that, I think that that answers the question about what he used as far as assumption on topography.

A. Yep. I used --

Q. (BY MR. MAHLBERG) And I'm --

(Simultaneous speaking)

A. -- to be able to figure out that this is the way it's going to be, I didn't use any software. I didn't use any software when I was shooting torpedoes from our submarine. Everything --

Q. Which assumptions did you use for the humidity at the time of a release?

A. I didn't mention anything about humidity.

Q. Well, I understand that, but I'm assuming, Mr. Steinbronn, that as you talk about an analysis that is alleging where a release is going to travel to, that you're taking into account the variables that would affect that; right?

A. Yes.

Q. All of them; right?

A. The ones that matter.

Q. Okay. What was the wind speed and its direction in the event of a release that you're testifying about?

A. I didn't mention that either.

Q. So wind speed doesn't matter for your analysis?
A. Wind speed matters for the brittle fracture transition.
Q. In your opinion, wind speed matters more as to whether there is going to be a fracture in the pipeline which may be 48 inches, may be 60 inches below ground, maybe it's aboveground, appurtenances. It matters more as to whether there's going to be a fracture --
A. Yes.
Q. -- than how the CO2 would move if released? That's your testimony?
A. No, that is not my testimony. Without the fracture, there is no release. Without the fracture, there is no release.
So if it's a northwest wind, the most dangerous one, it's going to be the one right there on US 83 for the people on the western side -- or on the eastern side of Bismarck. If you have the fracture right near the Missouri bed which is right on the edge of the county between Burleigh and Morton, when it's northwest, that's going to go straight to the heart of Bismarck.
If -- even though this is not Burleigh County, the first valve inside Morton, if that one has the fracture, that is going to go and it's going to deposit itself directly in the south portion of Bismarck. And

the next valve is not for another ten miles. So if that valve bursts, you have ten miles to the west and you have five miles to the east of that valve station, and that is what I had calculated to be that amount of carbon dioxide, the 4 percent, for the entire 31.5 square miles of Bismarck. So if it goes into a bowl on the floodplain, that's going to be proportionately higher percentage. You have less time to be able to respond.

Other things that I've looked as the -- is the -- what was called a leak down in Louisiana and it took their emergency crews --

MR. MAHLBERG: Your Honor, I'm going to --

A. -- two and a half hours --

ALJ HOGAN: Mr. Steinbronn, hang on, hang on.

THE WITNESS: Yep.

ALJ HOGAN: I'm going to stop you there.

MR. MAHLBERG: I'm going to ask that the witness be stopped at this point. I've let him go a long time, but we're getting back to this spot where we're just talking and not responsive to a question right now.

ALJ HOGAN: Mr. Steinbronn, if you can limit your answers to the question asked, I would appreciate that.

THE WITNESS: Yes, ma'am.

Q. (BY MR. MAHLBERG) And sorry to cut you off, Mr. Steinbronn, that's just -- that's the way these things work.

To confirm, you considered no variables whatsoever in conducting this analysis as to where the CO2 would go in the event of a release; correct?

A. No. I considered --

Q. You did not consider wind speed; right? You did not consider --

MR. BAKKE: Can he answer the question?

MR. MAHLBERG: Sure.

ALJ HOGAN: Yep.

A. The reason why I --

ALJ HOGAN: Do you need the question again?

THE WITNESS: I think I have it. He's asking about what I need to -- what I considered as variables.

Q. (BY MR. MAHLBERG) Well --

A. I got to --

ALJ HOGAN: Well, he asked you specifically about wind speed.

A. Wind speed. Yes, I considered the wind speed for the brittle fracture.

Q. My question -- understood. Mr. Steinbronn, my question is, as to the analysis that you are suggesting you performed about where CO2 would travel in the event

of an accidental release, you did not consider wind speed for the dispersion of the CO2; right?

A. I did. Because how it acts under wind, it's like a temperature inversion. Because you have a higher temperature down below, if you have the wind that comes over the hill, it's going to cause a wedge of the carbon dioxide and that's going to keep it concentrated, it's not going to diffuse as fast, and it's going to push it to the lowest portion. And it's basically going to -- like an airfoil, it's going to -- just like on your car, so there's less drag, it's going to go over top of this thing. So it's a stable mass of high density air.

Q. What was the wind speed that you used?

A. The wind speed that we had just using the normal piece from Dickinson, which is to the west of you guys, they had --

Q. What was --

A. -- a 29-mile-an-hour wind speed so that's the only thing I considered. This is something that happened five months ago so this is -- this is where I started my -- my analysis of the pipeline.

Q. And you plugged 29-mile-per-hour wind speed into your formula that specifically told you how the CO2 molecules would act in the event they were released?

A. Okay. CO2 molecules depend on the phase. It's

going to be gas phase when it leaves the pipeline. Because there's no source of pressurizing it after it leaves the pipeline. It is 1.53 times more dense than air. It's going to seek the lowest level. It's going to flow downhill regardless of the wind. The wind is going to affect the diffusion to bring oxygen back in that was displaced when the supercritical fluid turned into a gas.

I'm looking at the mechanics. I'm not looking at software to give you an exact thing based on a whole bunch of things. Weather is not like that. The weather is a fluid and it is energy. Whether that be a cyclone, whether that be a hurricane, whether that be a tornado, or whether it just be straight line wind. It's a fluid and it's energy. Both of those things apply in chemistry and physics.

And so I'm -- it's properties of the gas as it leaves the pipeline is all that mattered there. It is going to seek the lowest level. The wind is what's going to affect the diffusion but until --

Q. Do you --

A. -- have a source of carbon dioxide coming out of one atmosphere, the wind is only causing it to find a different low area. So it matters where the first one happens. But as long as you have the energy and the

supercritical fluid in the pipe, if you're piping -- if you're pumping yet because an isolation valve did not shut, you have almost an unlimited amount of carbon dioxide to keep throwing out there. So as it flows downhill, if the wind changes --

MR. MAHLBERG: Your Honor.

A. -- it's going --

ALJ HOGAN: Mr. Steinbronn, I'm going to cut you off there.

Q. (BY MR. MAHLBERG) And, again, I apologize that you have to be cut off. It's the same reason that Mr. Bakke asked that the answers just be a little bit more tight. In this setting, it's -- I'll try a yes or no and then, hopefully, we can be done.

You did not perform any sort of what you call diffusion analysis or dispersion analysis; right?

A. That's correct.

Q. Thank you. No further questions.

ALJ HOGAN: Mr. Pelham, any questions?

CROSS EXAMINATION

BY MR. PELHAM:

Q. Good morning, sir. I'm just wondering, sir, what other bodies or courts have you provided testimony to in an expert capacity?

A. This is my first in a technical hearing

situation.

Q. Are you familiar with Dakota Gasification plant?

A. The Dakota what?

Q. The Dakota Gasification plant.

A. I am not.

MR. PELHAM: I don't have any other questions. Thank you.

ALJ HOGAN: Mr. Jorde, any questions?

MR. JORDE: Your Honor, yes, I do have a few questions.

CROSS EXAMINATION

BY MR. JORDE:

Q. Sir, does the fact that there's an existing pipeline in western North Dakota change any of the scientific opinions you provided today?

A. No. I haven't looked at anything other than this piece.

Q. And does the name of the agency that regulates pipeline standards, construction standards, regardless of what anyone calls it, does that change your scientific opinions provided?

A. It does not.

Q. Now you were asked some questions relative to federal standards by Mr. Mahlberg. And I'm curious, sir, do you remember years ago when seatbelts weren't

required in cars?

A. Yes.

Q. And then people died and the feds strengthened minimum standards; right?

A. That's correct.

Q. And then people kept dying and being catastrophically injured and then along come airbags now part of minimum safety standards. Are you aware of that?

A. I am.

Q. And so let's assume if the PSC grants both of Summit's pending applications and then Summit does meet current minimum federal safety standards, does that in any way change any of the scientific opinions you provided today?

A. It does not.

MR. JORDE: Nothing further. Thank you.

ALJ HOGAN: Commissioner Christmann.

COMMISSIONER CHRISTMANN: Thank you, Your Honor and Mr. Steinbronn.

I think you provided a lot of information and I was trying to take notes, but I think you said along the way that you preferred getting pipeline information from foreign countries because the information was just more available; is that correct?

THE WITNESS: That's correct. They also have things that they actually put into the ground so they -- according to their research papers and how it's working.

COMMISSIONER CHRISTMANN: And so in your research of this, in many other ways like, you know, building codes regarding fires or earthquakes, I've heard for years about how much better America's safety features are than most foreign countries. What is your evaluation when you gather that information on pipelines from foreign sources? Do many of those foreign countries have better overall pipeline safety than America or does America have better overall pipeline safety than those?

THE WITNESS: I'm not sure that I'm in a position to answer that one, but what I've found from the Saudis is they're building these pieces away from populated areas and they're going straight into the Red Sea into a containment. So the pipelines are so much shorter from the papers that I've seen.

And China, most of their things are, where they're sequestering it, it's all outbound from the cities. The cities are built there to be able to provide workers to be able to do whatever they got to do for their pipelines.

COMMISSIONER CHRISTMANN: So am I

misunderstanding -- I don't want to mischaracterize you. Would you say that Saudi Arabia and China have better pipeline safety standards than America?

THE WITNESS: I don't think I can say either way right now. I'd have to do some more research.

COMMISSIONER CHRISTMANN: Okay. And then outside of safety standards in various countries, I'm trying to follow -- I mean, I get your logic on the extreme cold temperatures where there are risers and we get above ground, but when we get below ground, I was struggling to follow that logic.

Am I not right that in the winter when we're experiencing -- and, of course, the temperatures fluctuate, it's below 0, it's above 0, sometimes it's above freezing, but we typically have some snow cover too, which I've always understood to kind of insulate the ground and keep it at about 0. But give or take, the ground level should be around 0 when it's real cold for a spell, maybe a little lower.

But if you're looking at an area with four feet of frost, say, the temperature of that soil would drop -- or would rise from about 0, roughly, at ground level down to when you get to four feet below in the bottom of the frost, it would be right at 32 because it ceases to be frozen. Am I way off on that?

THE WITNESS: That's kind of what it is but you have -- when you have impurities in water, it's going to drive the freezing point lower. So at the frost line, it's actually probably around -- in Fahrenheit, it's probably going to be around 28 degrees or 26 degrees, somewhere around there. So above that frost line it's going to be colder as you get higher.

So in North Dakota when you have a frost line of 75 inches, that's where your 25, 26 Fahrenheit will be. And above that you're going to have a gradient based on all the resistivity to giving up its heat. And that's going to all matter by how much prevailing wind you have when it's coldest.

COMMISSIONER CHRISTMANN: Is 75 -- is 75 inches our normal frost level?

THE WITNESS: Yeah. You guys are number three in the nation. Number one is Alaska because they're above the arctic circle. And then Minnesota is the next one. But then North Dakota is number three right behind Minnesota. That's the average frost. So farther north you're going to have it deeper than 75, farther south you may have something a little bit less than 75, but 75 is your average of the state.

COMMISSIONER CHRISTMANN: And when you were talking about the risers then --

THE WITNESS: Yes.

COMMISSIONER CHRISTMANN: -- is your presumption that those are uninsulated?

THE WITNESS: Insulation doesn't matter because the insulation is going to be subject to the weather also. It's just a matter of time, how much time it takes. Because you're going to have a thermal gradient from your operating fluid to the edges of the wall on the inside and then you're going to have a huge temperature gradient across that three-quarters inch of metal.

And then any insulation is just a resistance to releasing heat energy. It's not stopping it. It's not impenetrable to heat. So if you have a cold snap -- that's why it says for a day. Ambient temperature of one day causes the brittle fracture transformation and that is not recovered when it goes back up. You have --

COMMISSIONER CHRISTMANN: So --

THE WITNESS: -- physically changed the metallurgy of the carbon steel once that -- it get -- assuming first at the surface. So you're starting with any imperfection in the surface, that's where it's going to start. And then as you have more cycles, then it's going to get deeper into the material. That's how the brittle fracture mechanism is going to achieve itself.

COMMISSIONER CHRISTMANN: Did you research much or have any familiarity with Storm Uri and the electric and natural gas problems it caused in Southwest Power Pool and especially ERCOT?

THE WITNESS: And where is this located?

COMMISSIONER CHRISTMANN: Basically from here down to Texas, the whole Storm Uri thing in 2020, I believe, in February, when we had electrical problems, transmission.

THE WITNESS: No, I'm not aware of that. That was during Covid so it was -- everything gets closed in. I was more worried about my students --

COMMISSIONER CHRISTMANN: Okay.

THE WITNESS: -- were healthy.

COMMISSIONER CHRISTMANN: Let me just explain my understanding of something and then you tell me if you think I'm way wrong.

So a lot of the problems that we had during Storm Uri with electric shortfalls had to do with the fact that, especially in Texas and Oklahoma, natural gas wells froze up, even though it was colder in North Dakota than it was in Texas and Oklahoma, the difference being ours are built to be in cold weather and so they're insulated and weatherized and in Texas it happens so rarely that they don't bother with that. So

theirs froze up, ours didn't, even though it was colder here.

THE WITNESS: Yes.

COMMISSIONER CHRISTMANN: Wouldn't the same kind of thought be here, too, that PHMSA, there are standards for this and that these risers and such, that perhaps you're wrong, that the insulation does work?

THE WITNESS: And what is the source of your heat for your insulation?

COMMISSIONER CHRISTMANN: Well, I don't know that, but I just know our other pipelines don't seem to be breaking up badly.

THE WITNESS: Insulation is not a barrier to heat loss. It reduces it because it has something called an R factor. That's the resistance to heat conduction. So it's best when there's no wind because you don't have the convection effect of removing heat rapidly. It's going to have a large temperature gradient across it at basically calm wind, but that gradient is going to be greatly reduced when the wind picks up.

So most -- I come from Iowa. I went through the storms of '76, '78, and had to carry water to the cattle at 40 below with a 40-mile-an-hour wind. You can run on top of the snow because it is frozen. It is frozen

hard. It is at the same temperature as the air because the wind is so much. And so you run across the frozen tundra and you get it to the cattle and it's barely lukewarm after you've run as hard as you can for a hundred meters.

So it -- the wind is significant in the convection heat loss of the insulation and as well as the pipe.

COMMISSIONER CHRISTMANN: Okay. I have no questions.

THE WITNESS: Okay.

COMMISSIONER CHRISTMANN: Go ahead. You can finish.

THE WITNESS: So the key piece here is if it goes to no flow -- I don't know how your -- what your failsafe on your valves is, but failsafes on valves, if you lose electrical power, they're going to shut. So you're going to have isolated, you're going to be at a no-flow condition, and that's where the weather's going to take it. Because if you have no flow, you have no source of reheating your working fluid.

When your working fluid goes down in temperature, you're going to be in liquid phase or the gas phase. Eventually, you're going to be in the gas phase if you lose energy for so long that your pumps are

not pumping and your valves are not open. There's where the problem is going to be.

COMMISSIONER CHRISTMANN: Okay. I have no other questions. Thank you.

ALJ HOGAN: Commissioner Haugen-Hoffart.

COMMISSIONER HAUGEN-HOFFART: Good morning.

THE WITNESS: Good morning.

COMMISSIONER HAUGEN-HOFFART: In your testimony, you started to talk, but you were cut off. So I believe I heard you say that you made some calls to Bismarck regarding your analysis. Was that correct?

THE WITNESS: Yes.

COMMISSIONER HAUGEN-HOFFART: Can you tell me who you called?

THE WITNESS: I can.

COMMISSIONER HAUGEN-HOFFART: And summarize them for me, please, who you called and just summarize those telephone conversations.

THE WITNESS: Called Brian Bitner and also the lawyer you have there, Mr. Bakke. And I asked some questions about what the layout of Bismarck is. Because knowing what carbon dioxide is and what its physical properties are, regardless of the five different phases it can be in, is essential to any kind of analysis of what would happen if it gets out of the pipe.

COMMISSIONER HAUGEN-HOFFART: So when you talk about layout, can you be a little bit more specific there as far as what was provided?

THE WITNESS: Yes. I got the map that's got the 51.46 miles of anticipated pipeline for Burleigh County, North Dakota. And then I asked questions about, okay, how is Bismarck elevation-wise related to where the proposed pipeline is. And the answers I had was Bismarck butts up against the Missouri River and the southern portion of it, which is south of Main Street, is on the floodplain.

So the floodplain is where the majority of it will reside unless the wind is straight out of the west and the fault is on the eastern side of Bismarck below that -- I've got to pull up a magnifying glass here again -- Interstate 94. If it's calm when it actually fractures -- because the energy inside the supercritical fluid carbon dioxide, it's a lot of energy. Because if you just think of gas as having to be compressed, you're putting all that work energy from the pump on the fluid. All that energy ends up in the fluid. That's another portion of the Joule-Thomson effect of pressurizing fluids. So it is going to continue to flow out if the isolation valves --

Because here's the other part of supercritical

fluid that I understand, is that in petroleum, if you use carbon steel, the oil is going to coat the carbon steel and preserve it against corrosion. Carbon dioxide is a supercritical fluid. If there's one molecule of water, it's going to be acidic. If it's pure, it's going to be caustic. It is not providing any -- any protection to the pipe that it's going through.

So one of my first questions was, okay, what are they coating the inside of these things with? So if it's pure --

COMMISSIONER HAUGEN-HOFFART: Were you given an answer to that?

THE WITNESS: I couldn't get an answer from that because it wasn't released.

COMMISSIONER HAUGEN-HOFFART: Okay.

THE WITNESS: It wasn't released (inaudible) one of them.

COMMISSIONER HAUGEN-HOFFART: Okay. Thank you.

THE WITNESS: So (indiscernible) is going to be coated with Teflon or something to keep the pipe from corroding from the inside.

The other problem is going to be in the valves. The valves' surfaces --

COMMISSIONER HAUGEN-HOFFART: Okay.

THE WITNESS: -- themselves. And we have some

dimensions of that, but it's getting into the weeds.

COMMISSIONER HAUGEN-HOFFART: Okay. Thank you. I have no further questions.

ALJ HOGAN: Mr. Dawson, any questions?

SUBSTITUTE DECISIONMAKER DAWSON: I'm trying to understand what you said earlier. Did you say that carbon steel gets brittle at a temperature commonly reached in the state of North Dakota?

THE WITNESS: In the wintertime, yes.

SUBSTITUTE DECISIONMAKER DAWSON: Okay. And so that would be carbon steel in pipelines or on bridges or in cars or anywhere?

THE WITNESS: Yes.

SUBSTITUTE DECISIONMAKER DAWSON: Okay. And did you say that when there is a -- the pipe is ruptured in any sort of manner, it would be a guillotine break because of the freezing action or the fracturing action?

THE WITNESS: Not necessarily. It depends on how much of the pipe has been in brittle before the first leak occurred. So when the leak occurs, you're going to be expanding the fluid. Whether it's high density liquid or whether it's a supercritical carbon dioxide, it's going to be expanding and releasing at one atmosphere, 14.7 PSI. That system itself is going to cause super cooling of the pipe. So whether it happens

at 100 degrees or whether it happens at a negative 40 degrees, it's going to get a lot cooler very fast.

Just like your CO2 fire extinguisher. Release that thing from -- just pressurized gas, CO2 inside of it, to the outside at one atmosphere, it's going to put -- deposit frost on the cone and then --

SUBSTITUTE DECISIONMAKER DAWSON: Okay.

THE WITNESS: -- it conducts electricity. That's why it's a problem for people by electrical fires.

SUBSTITUTE DECISIONMAKER DAWSON: Thank you.

ALJ HOGAN: Mr. Bakke, any redirect?

MR. BAKKE: Just briefly, Your Honor.

REDIRECT EXAMINATION

BY MR. BAKKE:

Q. In relation to this issue of pipeline regulations, you were asked about that. And the entity that governs pipelines in the U.S. is called PHMSA, P-H-M-S-A. However, they are in the process of formulating specific pipeline standards on CO2 because the current pipeline standards deal with all materials in pipeline: natural gas, oil, etcetera.

Is what needs to be considered here is information and standards specific to CO2 because, as you pointed out for other things such as natural gas or

oil, there's different considerations from a chemistry standpoint and a physics standpoint --

MR. MAHLBERG: I'm going to object. Mr. Bakke is about a minute into a question. It's pure testimony. And this witness has testified he's not familiar with the federal regulations. And if he's going to be asked to be opined about potential changes to federal regulations, he does not have foundation for that opinion.

MR. BAKKE: I can phrase it a different way.

ALJ HOGAN: Please do.

Q. (BY MR. BAKKE) So is it important to know what's going to be inside the pipeline in determining what standards should be adhered to?

A. Absolutely. No doubt.

Q. Okay. And then you talked about carbon steel getting brittle and you said for some products inside the pipeline there is either Teflon insulation or there's actually some insulative material that occurs due to the product inside the pipeline; is that correct?

A. That is close. I was expecting Teflon to be there because of the caustic nature without water and the acidic nature with water as an impurity inside the supercritical carbon dioxide. So that matters.

The natural gas is just compressed gas. It

doesn't have a -- as far as I know, it doesn't have any caustic nature or any acidic nature because it's just methane. It's compressed methane. And so the petroleum by nature is nonpolar. It's not going to be invasive to a metal and cause it to corrode.

Q. And is that -- is that part of what makes carbon dioxide in a supercritical phase so dangerous in a pipeline, is it has chemical constituents and makeup that's different than many products that go in pipelines such as natural gas and oil?

A. Carbon dioxide is a very unique gas when it's in the supercritical fluid stage. It's -- most of the research that I've been able to read through and understand was that they're using it in systems like the Rankine cycle for air conditioning. You're using it as a working fluid. It's not coming in from one side, open -- it's not an open source kind of piece. You're not open from one side and putting it to some other side. It's inside of a closed loop and the pipes are tiny.

So when you put high pressure -- this goes right back to main condensers in submarines. Your most critical weld is in the main condenser. Why? Because we're going to have submergence pressure of the seawater and that seawater is 35,000 parts per million of chlorine regardless of everything else that's in it.

That's going to cause your chlorine pitting of it.

So those are the critical pieces. And they have to be heat treated to make sure they're not going to leak. We have tattletales inside of the main condenser to see if we're getting seawater, but the last thing is having salinity alarms when seawater starts going into our feed water which we're going to put into our steam generators which (indiscernible) primary fluid on the other side of those U-tubes.

So that is the critical piece. You have to -- we have to have the seawater on the inside of it because we need the steam to condense on the outside. The steam condensing on the outside keeps all that metal from being cold. Because we go into the arctic waters as well, just like the Nautilus did before back in what, 1958.

So we have to be able to withstand the temperature changes. That's why we don't use carbon steel. We use Inconel and that, because it's resistant to chloride pitting as well as it doesn't have any phase transformation that turns into a brittle substance.

While you have your fluids moving and your fluid temperatures on the inside are good, that's why you haven't seen many failures yet if they've been reusing supercritical fluid that's above 88 degrees.

Q. Okay.
A. Because even with the --
Q. Let me stop you there and just a couple of final questions.
Is the time of year that Bismarck and Burleigh County would be at greatest risk is during the winter months in extreme cold --
A. Yes.
Q. -- situations?
Okay. And in terms of the wind speed, the wind direction, all variables that can change day to day, temperature, humidity, is that part of the danger is you just don't know when you might have a failure or a rupture or a loss of power to this CO2 pipeline, is you -- you want to plan for the worst and hope for the best?
A. Well, you have to plan for the worst because emergency action on this thing is just going to be so short. It's colorless. It's scentless. You can't even taste it until it's 30 percent, and that's too late. 4 percent is going to cause you to pass out within four minutes. And so that's what I base my -- what volume of pipe you would need to be able to fill the whole valley there with carbon dioxide bigger than 4 percent. So --
Q. Okay. Thank you, Mr. Steinbronn.
A. -- there's nothing you can't -- the warning will

be way too short.

Q. Okay. Thank you, Mr. Steinbronn. I don't have anything further.

ALJ HOGAN: Mr. Mahlberg, any other questions?

MR. MAHLBERG: No thank you, Your Honor.

ALJ HOGAN: Mr. Pelham.

MR. PELHAM: No questions.

ALJ HOGAN: Mr. Jorde.

MR. JORDE: No questions.

ALJ HOGAN: Any other commissioner questions or Mr. Dawson?

All right. That's all the questions we have for you, Mr. Steinbronn. Thank you for testifying this morning.

THE WITNESS: Thank you for having me.

ALJ HOGAN: All right. Mr. Jorde, I think the next witness was yours. And it's about 11:45. I think you indicated before that you anticipate this to be a short testimony.

MR. JORDE: Well, I've been wrong --

ALJ HOGAN: I know you can't control the other parties but --

MR. JORDE: Well, no, it's all good. Can I ask Your Honor a question? Are you intending to break at 12:30 today or just in 15 minutes? Because that would

affect what we do.

ALJ HOGAN: We don't have a hard break at noon so I think we can go a little over today if we need to. So I think we want to be in the neighborhood of 12, 12:30, but I don't think there's any hard deadlines today.

MR. JORDE: That helps very much. So in that case, I will call Dr. John Abraham who appears virtually, Your Honor.

ALJ HOGAN: Mr. Abraham, can you hear me, or Dr. Abraham.

JOHN ABRAHAM: Yeah, I can. I'm trying to get my camera to work and it looks like it's having trouble with the camera so I can try to fix that. Can I testify if my camera is not working?

ALJ HOGAN: Yes, I think it's okay as long as we can hear you.

MR. JORDE: You can. I prefer to see you, but on the GoTo Meeting, Doctor, next to the mic, do you see that camera button? There we go.

ALJ HOGAN: There you are.

MR. JORDE: All right.

ALJ HOGAN: Dr. Abraham, I'll have you start by stating your full name for the record and spelling your last name.

JOHN ABRAHAM: Sure, sure. My name is John, J-O-H-N, Patrick, P-A-T-R-I-C-K, Abraham, just like Lincoln, A-B-R-A-H-A-M.

ALJ HOGAN: And, Dr. Abraham, before you testify today, I'm required by law to advise you on the penalties for perjury in the state of North Dakota.

Perjury is a Class C felony, punishable by a maximum fine of $10,000, a maximum five years' imprisonment, or both.

Do you understand what perjury is?

JOHN ABRAHAM: I do.

ALJ HOGAN: And being advised of the potential penalties for perjury, do you promise to tell the truth in this case today?

JOHN ABRAHAM: I do.

ALJ HOGAN: All right. Thank you.

Go ahead, Mr. Jorde.

MR. JORDE: Yes. Thank you.

JOHN ABRAHAM,

being first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. JORDE:

Q. Doctor, we've marked as exhibit -- Landowner Exhibit 43 a copy of your resume. And I would like to

ask you a few questions, and basically if you can kind of essentially give the Commission a little flavor for your education, experience, background, specifically in mechanical engineering and, most poignantly for today, in dispersion and modeling and computational fluid dynamics. So, with that, I'll just kind of let you highlight the key points to give the Commission a flavor of your expertise.

A. Yeah, sure. And I can start talking, Mr. Jorde, even before you get the exhibit up, if that's okay with you.

Q. That's fine. I would ask that -- I think the Commission might have it in front of them. And, frankly, let me just offer it, I don't think there's going to be objections, and then everyone will be able to look at it.

MR. JORDE: I would offer Landowners 43.

ALJ HOGAN: Is there any objection to Landowner 43?

UNIDENTIFIED SPEAKER: 43?

ALJ HOGAN: Yes, 43.

MR. DUBLINSKE: And 43 is just the CV, not any testimony; correct, Mr. Jorde?

MR. JORDE: That's -- that's correct.

MR. DUBLINSKE: No objection.

ALJ HOGAN: Mr. Pelham.

MR. PELHAM: No objection.

ALJ HOGAN: All right. 43 is received.

Q. (BY MR. JORDE) Okay. So please summarize the salient -- the salient points.

A. Sure. And I'll be brief. So I have three degrees in the field of mechanical engineering with a special emphasis on an area called thermal sciences which deal with flow. And it's the flow of heat and it's also the flow of fluids and mass. And, by the way, fluids can be liquids like water or they can be gases like air. Both of those refer to fluids. So that's my primary specialty. I do work in other disciplines of engineering, but that's the relevant experience that I bring to the table for this -- this case.

I have performed about 400 or 450 -- produced 400 or so pieces of research. Most of those are peer reviewed in the scientific literature. And many of those deal with a topic called CFD, which is short for "computational fluid dynamics." And that is using computers to predict where fluids will travel. And, in addition, my scientific research heavily focuses on heat transfer; how things get heated up and what happens when they get heated up.

In addition to that, I have written textbook

chapters or textbook material on how to perform fluid flow analysis and I've also published a peer-reviewed study on carbon dioxide plumes that emerge after a rupture, a pipeline rupture, and where they go.

So that's a brief summary of my -- oh, and, lastly, I've got a lot of experience with what's called "overland flooding," about 40 different journal papers on the topic of water management and many of those include flooding.

Q. And then do you edit or have you edited or been a part of any type of publications that publish scientific articles or research in any of these fields?

A. Yes. I'm the editor-in-chief of two of the top journals in numerical heat transfer that deals with this topic called CFD. I'm also the primary editor on the top-ranked book series in heat transfer which also deals with fluid flow. And I'm also the editor on another series published by CRC Press on the same topic. So I'm editor of four different publications.

Q. And, sir, approximately how many times, be it agency or courtroom proceedings, have you testified as an expert in your various fields of expertise?

A. I've testified in trials or hearings such as this in the low 20s. Maybe 22 or 23 times. And I've sat for depositions approximately 50 times.

Q. Now getting to the North Dakota specific matter before us here, and to speed this along a bit, is it true or does it fit with your recollection that over a year ago I had contacted you to see if you would be interested in providing technical expertise in this particular matter?

A. Yeah. That's what I remember. In the first maybe quarter of last year, that's my recollection, we had our first contact related to this case.

Q. And then at some point -- you probably don't necessarily remember, but at some point this matter was decided, at least initially the PSC made a ruling denying the application and I never ended up utilizing you last year. Is that kind of a fair summary?

A. Yeah, that's correct.

Q. But over a year ago when I initially contacted you, is it true that I asked if you would be willing and able to review and vet Summit's or their consultants' data related to any of their dispersion modeling or risk analysis?

A. Yes. That's what I understood part of my primary tasks to be.

Q. And then without stating the obvious, I guess in order to review Summit's, what they claim or present as the dispersion, the plume analysis, the risk, their

methodology, inputs, outputs, would you need all of those things in order to vet their ultimate conclusions?

A. Well, yeah. I mean, to state the obvious, it's true, I need to see their work in order to evaluate their work. And I haven't been provided any of their materials. And it's my understanding that it hasn't been made available. So what you stated is correct.

Q. And do you recall that last year there were some attempts to get that material, but then ultimately the Commission had denied the application, and then again this year there's been renewed attempts, but we don't have those Summit documents. Is that your understanding?

A. That is my understanding.

Q. All right. And so it's impossible then for you to perform the task on behalf of the landowner clients of reviewing and vetting and testing the inputs and the values that Summit may or may not have used in whatever risk analysis they did unless you are furnished all that documentation and the methodology behind it. Is that correct?

A. Yeah. I mean, that's correct. I mean, I can't review what I don't have access to. And that's a short way of putting it. You were a little more eloquent, but, yes, that is correct.

Q. All right. So until such time that that's provided, you wouldn't be able to perform the function for which I asked you for assistance in this case; correct?

A. Correct.

Q. All right.

MR. JORDE: I don't have any further questions of this witness. Sir, I'll turn you over to cross, if there are any, on the limited topics we discussed in direct.

ALJ HOGAN: Mr. Dublinske, any questions?

MR. DUBLINSKE: No questions, Your Honor.

ALJ HOGAN: Mr. Pelham.

MR. PELHAM: I don't have any questions. Thank you.

ALJ HOGAN: Mr. Bakke.

MR. BAKKE: No questions, but "Go Tommies."

THE WITNESS: Yes, "Go Tommies." Thank you for that.

ALJ HOGAN: Commissioner Christmann.

COMMISSIONER CHRISTMANN: None, Your Honor. Thank you.

ALJ HOGAN: Commissioner Haugen-Hoffart.

COMMISSIONER HAUGEN-HOFFART: No, I do not.

ALJ HOGAN: Mr. Dawson.

SUBSTITUTE DECISIONMAKER DAWSON: No questions.

ALJ HOGAN: All right. Well, you got the least amount of questions in our hearing so far, Dr. Abraham.

THE WITNESS: It's so anticlimactic. I expected a grilling. And if you need me to come back, I'd be happy to do so.

MR. JORDE: Thank you, Doctor.

ALJ HOGAN: Thank you for appearing this morning.

All right. I think we will take our lunch break next, but I just want to confirm, I think, Mr. Jorde, you have all the witnesses this afternoon, so could you confirm who you're calling this afternoon?

MR. JORDE: So, yes. And maybe to everyone's joy, I'm not sure, but based on how everything has gone -- and let me just preface, you know, I -- I'm familiar with not getting my way and so no hard feelings there, but based on how the rulings and things have gone, I'm only going to have one more witness and that would be Mr. Howard who's waiting on the line. I think I could have him on and off in 15 minutes, and that's my last witness.

ALJ HOGAN: For today or for the hearing?

MR. JORDE: For today.

ALJ HOGAN: For today.

MR. JORDE: No. But I want to be clear, just so this is not a trick, on June 3rd I'm planning on having one witness. So I'm saying I'm cutting the rest of my experts loose, is what I'm telling you.

ALJ HOGAN: And what you're asking is to take Mr. Howard's testimony now --

MR. JORDE: I think his entire testimony is going to take less than 25 minutes and then we're done, unless Mr. Dublinske has anyone that can be in rebuttal on either remote or in person, but then I'm done for today.

ALJ HOGAN: Mr. Bakke, you don't have anybody else available for today?

MR. BAKKE: I do not. My one witness, as I said, had a medical issue so she can't be here.

ALJ HOGAN: Okay. Mr. Dublinske, I don't know if you were aware of possible hearing time this afternoon but --

MR. DUBLINSKE: Mr. Jorde and I talked about that last night but we -- I did not know who all he was going to pass on or not and so we were still waiting to see what happened today to determine rebuttal. We do not have witnesses lined up. We can certainly move them to Monday morning instead of Monday afternoon to accommodate the change in space. If Mr. Bakke's

concluded and Mr. Jorde only has one, we can have everybody ready earlier in the day, but, unfortunately, we can't have folks ready yet this afternoon.

ALJ HOGAN: Any objection to taking Mr. Howard's testimony and then recessing for the rest of the day?

COMMISSIONER CHRISTMANN: Your Honor, I'm only speaking for myself. I don't object to doing that. I do have this question. I think I understood Mr. Jorde to say that when we finish with this witness, he will just have one on Monday. Which one is that?

MR. JORDE: Yes. That -- so it's Jon Hagerott, an affected landowner who unfortunately couldn't make it. I tried him the first three days of this week. So that's an affected landowner. I don't know if Mr. Rockstad, another affected landowner would testify. He would be remote. He's out of state. But to be very clear, I am not going to be calling any of my non-landowner witnesses, and those are the only two landowner witnesses that would potentially testify on June 3rd.

COMMISSIONER CHRISTMANN: Okay.

ALJ HOGAN: Are you two okay with proceeding?

COMMISSIONER HAUGEN-HOFFART: Yes.

ALJ HOGAN: Okay. Yes. And so I'm not sure, is it Mr. Howard or Dr. Howard?

MR. JORDE: Mr. Howard, yes.
ALJ HOGAN: Mr. Howard.
Mr. Howard, can you hear me okay?
JASON HOWARD: Yes. Can you hear me?
ALJ HOGAN: Yes.
JASON HOWARD: Great.
ALJ HOGAN: I will have you start by stating your full name and spelling your last name for the record.
JASON HOWARD: Full name is Jason Richard Howard, H-O-W-A-R-D.
ALJ HOGAN: And, Mr. Howard, I know you were on and off this morning. Did you hear me go through the penalties for perjury already today?
JASON HOWARD: Yes.
ALJ HOGAN: And do you understand what perjury is?
JASON HOWARD: I do.
ALJ HOGAN: And being advised of the potential penalties for perjury, do you promise to tell the truth in this case today?
JASON HOWARD: I do.
ALJ HOGAN: All right. Thank you.
Go ahead, Mr. Jorde.
MR. JORDE: And I'm sorry, I beg your pardon, I

want to circle back to Commissioner Christmann's question. I did have one more witness and that -- I forgot, he's not on my list. That's Victor Schock. I've been communicating with Mr. Pelham. It's simply a -- basically procedural questions, and he would take about three minutes. So I -- I could call him today, on the 3rd or on the 4th. It doesn't matter. But I just want to be clear that I forgot to mention Mr. Schock.

JASON HOWARD,

being first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. JORDE:

Q. But with that, Mr. Howard, thank you for waiting so patiently.

You've prepared prefiled or direct testimony in this matter. I'll tell you it's been marked in these proceedings as Exhibit 47. That's not relevant to you. But do you recall providing prefiled testimony of a couple pages and then attached to it some -- well, your resume and then various maps that you prepared?

A. Yes.

ALJ HOGAN: Can you hang on, Mr. Jorde? Do we have hard copies of those?

MR. JORDE: Oh, sorry. I thought Roseanne had

passed those out. I apologize.

ALJ HOGAN: They're coming around just now so...

MR. JORDE: Okay.

Q. (BY MR. JORDE) So while those are circulating, maybe I can just have you tell a little bit to summarize your resume and your expertise in the GIS mapping field.

A. Sure. I have 25 years -- I think it's 25 years of professional expertise in the GIS field. Currently working for Maricopa Association of Governments in Phoenix, Arizona, where I have been the GIS program manager for, I think, about 16 years now. I've been at the agency about 17 total. Got my undergraduate degree in geography from the University of Colorado, Colorado Springs, and a master's in geography at Arizona State University.

Q. And by looking at your resume, sir, without going through every page, it's -- almost everything you have listed there in your professional career has to do with GIS mapping or your geography or cartography. And for the benefit of the Commission, what does "GIS" stand for?

A. Geographic information systems.

Q. And today, sir, so much can be done if you have access to various software systems and data. And just kind of summarize generally what your methods were and

what you did here to produce the attachments to Exhibit 47?

A. Okay. Well, there's the -- the attachments that go county-by-county and depict the pipeline route as provided by Summit as well as a one-mile buffer. That one-mile buffer was based on emergency response information from Satartia, Mississippi. And this actually originated from work I have been doing in Iowa and the -- we and basically the -- I would call my steering committee of individuals who are volunteers in Iowa came up with this one-mile buffer because it did track with what happened in Satartia. And for everyone's edification, Satartia was about a mile from the pipeline rupture so we chose that as a good buffer for that pipeline.

Q. And let me just stop you there for a second because I'm going to offer the exhibit in a moment and I'm going to get into those attachments in a little bit more detail, but in terms of the process, like the ingredients that went into this, if we could -- you started with Summit's publicly-available maps, I think, as maybe -- was it January 2024, what were available on the North Dakota PSC website; is that right?

A. That's correct.

Q. Okay. And then you take their maps, their data,

and you accept that as true. And then you look for, in your first set, was it residences within various distances?

A. Yes. I've been referring to them as "dwelling units" throughout this whole process --

Q. Okay.

A. -- again, back to Iowa. But for what we're dealing with here in North Dakota, they're just going to be single-family residences. We're not getting in -- I didn't identify -- I don't think I identified any apartments or any other type of dwelling unit. So basically dwelling units is single-family residences. That's where that one-mile buffer really comes in, is that's kind of the defining boundary. I wanted to identify houses within a mile either side of the pipeline. And that was done visually.

So once I had located the pipeline, got my one-mile buffer, I went through using aerial imagery that's publicly available through ESRI and identified what -- what I could identify from that as dwelling units. I tried to use some Google Street View if I could if there was any question, but that's kind of hit and miss with the coverage there. So that's how I identified those dwelling units.

Q. Okay. And then, again, at this point I'm just

laying some kind of quick foundation for each set of the attachments.

So then moving to what you refer to as Attachment 3, that's the landslide area. And then kind of the ingredients there, what was the under -- you accepted as true Summit's route based on their PSC-filed data. And then it looks like, did you overlay that on something?

A. Yes. That -- that I paired with publicly-available landslide data from the North Dakota Geological Survey. And these are existing landslides that the Geological Survey has identified.

Q. All right. And then it looks like, lastly, which would be, I believe, Attachment 4, it's two color aerials -- or is that part of the other attachment? It looks like you go into detail on the landslides. Okay.

A. Yeah, that -- that's the color -- that's just detail where there's an intersection between known landslides and the pipeline route.

Q. Okay.

MR. JORDE: With that, I would offer Exhibit 47.

ALJ HOGAN: Any objection to 47?

MR. DUBLINSKE: No objection.

ALJ HOGAN: Mr. Pelham.

MR. PELHAM: No objection.

ALJ HOGAN: 47 is received.

Q. (BY MR. JORDE) And so, again, the Commission has that and I don't need to get into every nitty-gritty detail, but I just want to, for the record, make sure to touch on a couple things.

So in the first several pages you're looking at dwelling units. And you've defined how you went about that and what it excludes. And then you select the distances of 400 feet or less, and then 401 foot up to 1,855, and then greater than 1,855 but yet still within the one-mile buffer. Is that fair?

A. Correct.

Q. And, sir, approximately how many dwelling units, based on your definition, so not apartments or things other than what's, I think, single-family residences, did you come up with in that 401 to 1,855 distance?

A. 163 dwelling units.

Q. All right. And, again, you didn't do hospitals or daycare centers or other sensitive things. You were focused simply on dwelling units; correct?

A. That's correct. The hospitals, daycares, nursing homes, those would be group quarters and I would have difficulty -- it would be more difficult for me to identify their capacity anyway.

Q. Okay. Thank you for that clarification.

And then if I toggle down to the landslide data, it looks like you've got -- and I'm looking at on page, what is 19 of the exhibit, you've got the -- showing kind of the eastern portion of North Dakota and Cass, Richland, Sargent, Dickey counties, and then you get over to the area by Bismarck on page 20.

And tell me why you highlighted and included page -- the last two pages of the color aerial versions?

A. Those are -- those are the areas where Summit's pipeline route crosses known landslide areas.

Q. Okay. All right.

A. So to be clear -- to be clear, the Geological Survey has identified existing landslides, land -- you know, it's already moved but they -- there's -- that doesn't exclude the potential for future movement.

Q. All right. And to be clear and fair to you, you're not here to opine on the relative risks of being in that area. This is for demonstrative and educational purposes for the Commission and their consideration based on your GIS expertise; correct?

A. That is correct.

Q. All right. Sir, I thank you. With that, again, it's very detailed and I'm going to leave it there and see if there's any cross-examination questions for you. Thank you.

ALJ HOGAN: Mr. Dublinske, any questions?
MR. DUBLINSKE: No questions, Your Honor.
ALJ HOGAN: Mr. Pelham.

CROSS EXAMINATION

BY MR. PELHAM:

Q. Sir, I'm just wondering, did you do any other potential route analysis in comparison to the population numbers that would determine your one-mile buffer for the proposed --

A. I did not. I did not. I took Summit's -- Summit's route as written.

Q. Do you know whether or not a potential route would exist in the state of North Dakota that would avoid all population, human population?

A. I do not. I do not. But just judging by what I can see of North Dakota's landscape, it's fairly sparsely populated.

Q. Thank you, sir. I don't have any other questions for you.

ALJ HOGAN: Mr. Bakke, any questions?
MR. BAKKE: Yes, just briefly.

CROSS EXAMINATION

BY MR. BAKKE:

Q. Could you turn to page 9 of Exhibit 47 where you have the map of Burleigh County?

A. Burleigh, got it.

Q. Okay. And did you happen to count up how many dwelling units there were within the -- which are the yellow ones from 401 feet to 1,855 feet?

A. I haven't, but I can if you can humor me for a minute.

Q. Sure. And then I'm going to have the same question regarding the greater than 1,855 feet but still within one mile.

(Pause)

A. So Burleigh. You were looking for the 401 --

Q. 401 to 1,855 first.

(Pause)

A. So we should have -- in the 401 to 1,855 range, we should have 58 units.

Q. Okay. And then from the 1,855 feet to 1 mile, how many have you identified in Burleigh County?

A. We should have 170.

Q. Dwelling units?

A. Dwelling units.

Q. Okay. And how is "dwelling units" defined?

A. Basically, for this, it's -- it would be a single-family home or a multi-family residence, but I did not -- I did not identify any apartment dwellings in Burleigh County.

Q. Okay. So your definition of "dwelling units" would be occupied structures by humans?

A. Occupiable. I can't -- I can't speak to whether they are occupied or not. I can't -- likewise, I can't really identify whether a home is abandoned or not from aerials. I can generally get a pretty good idea whether a house is abandoned, just kind of based on, you know, what kind of activity looks like is taking place around it. And I did try to exclude those.

Q. So you didn't identify any abandoned dwelling units in Burleigh County within the one-mile buffer?

A. I would have been trying not to include those.

Q. Okay. And then how about within the 400 feet or less, were there any identified? There's a lot of dots here so it's kind of hard to see.

A. Yes, there's -- there was -- there was one, I think. Let me just verify that.

(Pause)

A. Yeah. No, not within 400. The one -- the one within 400 was in -- there was actually one within 400 and that was Sargent County.

Q. Okay. And then in looking at the -- all of the maps of North Dakota identifying the dwelling units, including Burleigh County through all the other ones in Exhibit 47 that goes -- continues on after that, it

looked to me like the -- the county by far that had the greatest number of dwelling units within one mile of the proposed location of the Summit pipeline route is Burleigh County. Is that accurate?

A. That would -- that would be my guess.

Q. I mean, rather dramatic difference between Burleigh County and the other counties in terms of the number of dwelling units within one mile?

A. Correct.

Q. Okay. That's all the questions --

A. Yeah, I might --

Q. -- I had.

A. Okay.

Q. Go ahead.

A. I might add that rather than including the count of the individual dwelling units at the bottom of the map in the legend, I included an estimated impact population, and that would more or less track with the number of dwelling units since your persons per household across these counties is fairly -- fairly consistent.

Q. Okay. And for Burleigh County, that -- the estimated impacted population was 992?

A. Correct.

Q. Which, in comparison to the other counties, is

substantially more?

A. That is -- yes, it is substantially more.

Q. Okay.

MR. BAKKE: That's all the questions I have.

ALJ HOGAN: Commissioner Christmann.

COMMISSIONER CHRISTMANN: Are you familiar with North Dakota code and what our setback requirement is from occupied structures?

THE WITNESS: I believe it was 500 feet.

COMMISSIONER CHRISTMANN: And then did you say why you chose to base this on 400 rather than 500?

THE WITNESS: I carried that over from our work at -- well, my work in Iowa where -- I'll just tell you where that originated from. The 400 foot was a number that Iowa Farm Bureau came up with as recommending keeping -- keeping structures away from. And so the 400 feet was a bit more conservative and it carried over -- we just carried that over to North Dakota. And within that -- within that -- if you're looking at the 500-foot-threshold, at that point you're only talking about two -- is it two? Yeah, it's, I think, two dwelling units across the entire pipeline in North Dakota.

COMMISSIONER CHRISTMANN: Does Iowa, like from a legislature or some official elected body, have a

setback requirement? I'm curious why you chose to use Farm Bureau's.

THE WITNESS: That's what was available. I don't -- to my knowledge, there's not a statewide standard. I believe individual counties are attempting to adopt something, but all we really have to go on is Iowa Farm Bureau's recommendation --

COMMISSIONER CHRISTMANN: So the State of Iowa doesn't have a setback requirement?

THE WITNESS: Not that I'm aware of.

COMMISSIONER CHRISTMANN: Okay. And then regarding the landslide areas, so it's just the two of them and they're pretty close together, one in Cass and one in Richland counties; right?

THE WITNESS: Yes.

COMMISSIONER CHRISTMANN: And where did you get that information from?

THE WITNESS: That's available online from the North Dakota Geological Survey --

COMMISSIONER CHRISTMANN: Are you aware -- are you aware that these applications are sent to the North Dakota Geological Survey and they provide comments to us on things that should be avoided or things that should be used with certain limitations or things like that?

THE WITNESS: Well, I am now.

COMMISSIONER CHRISTMANN: Okay. Thank you. No other questions.

ALJ HOGAN: Commissioner Haugen-Hoffart.

COMMISSIONER HAUGEN-HOFFART: Thank you for your testimony. I have no questions.

ALJ HOGAN: Mr. Dawson, any questions?

SUBSTITUTE DECISIONMAKER DAWSON: Why did you choose 1,855 feet?

THE WITNESS: 1,855 feet is based on publicly-available data from Navigator's modeling for South Dakota and Illinois. And so that was the distances -- the CO2 plume could travel with a concentration of 40,000 parts per million and from an 8-inch pipeline. We didn't -- we don't have anything else from Summit so the Navigator data is all we have to go on at this point.

SUBSTITUTE DECISIONMAKER DAWSON: No further questions.

ALJ HOGAN: Any redirect, Mr. Jorde?

MR. JORDE: No.

Thank you, Mr. Howard. I don't have any questions. I appreciate it.

THE WITNESS: Okay.

ALJ HOGAN: All right. Thank you, Mr. Howard, for testifying for us today.

THE WITNESS: Thank you, Chair.

ALJ HOGAN: All right. Any other matters we need to address before we conclude?

Mr. Pelham?

MR. PELHAM: Thank you, Your Honor. I would like to address Mr. Jorde's comment about calling Victor Schock to the stand. I've communicated with Mr. Leibel as to the -- what I understand the general nature of the questions that Mr. Schock is going to be asked. I provided some information to Mr. Jorde last night. I don't know if that's satisfactory or not.

I would note that Mr. Schock was not listed as a witness. He was subsequently listed as a witness on one of the forms. But I would like to get this matter resolved now rather than later.

MR. JORDE: And I'm happy to call him right now. Like I said, it would just take a few minutes. I will list him for June 4th if we don't get it done. I don't want to be difficult about this. And it's not going to be any gotcha questions for him. I just need to complete the record on this matter.

ALJ HOGAN: Mr. Pelham, when you mean "get it done," do you mean call Mr. Schock?

MR. PELHAM: I think we do it now.

ALJ HOGAN: Okay. Mr. Schock, do you want to

take the witness stand? I'll have you start by stating your full name for the record and spelling your last name.

MR. DUBLINSKE: Your Honor, if we may, it is obviously a bit -- there are some issues with calling staff counsel. My understanding from the conversation that Mr. Pelham had with Mr. Leibel was that this was an issue that could be resolved by stipulation rather than by calling the witness. On the basis of that representation, we agreed to provide certain information, which I understand Mr. Pelham provided last night, that we thought was for the purpose of resolving this issue by stipulation rather than calling the witness. And I am not aware of what changed since that representation was made, but we certainly kept our end of the deal to allow the information to be provided to Mr. Jorde.

MR. PELHAM: If I might just respond, Mr. Jorde hasn't communicated with me. I mean, ordinarily, I would pick up the phone and call someone, but that didn't happen. So I communicated that information to him. I had a communication not with Mr. Jorde but with his colleague, Mr. Leibel, who's not -- unable to be here today, but I provided the information, but apparently it's not satisfactory given Mr. Jorde's

representations earlier this morning to still seek to call Mr. Schock. So I don't know what the -- what the issue is.

ALJ HOGAN: Mr. Jorde, can you enlighten us?

MR. JORDE: Sure. Is there a restriction on calling Mr. Schock as a witness? If not, we're, frankly, kind of wasting our time with all this. I'm going to be done with him in three minutes or not. So if there's not a restriction, can we just proceed, respectfully, please?

ALJ HOGAN: I personally have never looked into that issue. I mean, I -- Mr. Schock has obviously questioned witnesses in this proceeding so far and is probably going to be assisting in the decision-making process so I think it is an unusual request. I don't know -- I don't know the substance of the information that was requested or provided. I know -- all I know is there's been discussions that have been had between the parties outside of our hearing regarding calling Mr. Schock as a witness.

So I think if there was a way to put this information into the record without calling him as a witness, that would be better. Because I do have concerns about opening a potential can of worms there.

MR. JORDE: Well, I'm not going to ask him any

opinions. This is just fact -- you know, I just need to get some facts into the record through him. So -- I mean, I'm sorry, I'm not trying to be difficult, but I just -- unless there's a legal prohibition on calling him as a witness, I don't see how this is any different than anyone else that's testified.

MR. BAKKE: And, Your Honor, if I could, just for the record, you said there were communications between the parties. I'm not in the loop on this at all. I checked my emails just now and I don't see an email from Mr. Pelham, but sometimes on my phone they stack so I don't know if that was sent to me as well.

MR. PELHAM: No, it wasn't. I didn't send you anything.

MR. BAKKE: Yeah. So I don't even know what the -- what the issue is so I'm -- just so you know, I wasn't one of the parties involved in any of these communications, but I guess probably I should be.

ALJ HOGAN: Well, I guess -- I've noted my -- my thoughts on potential concerns. I haven't looked into this issue so I guess I can't say for certain whether or not it is or it isn't an issue.

Mr. Pelham, I assume, since you're maybe reluctantly saying --

MR. PELHAM: Well, I mean, look, my preference

is to provide the information that Mr. Jorde is requesting. I provided him the information that I understand that he's requested, but he's still insisting on calling Mr. Schock.

There's past precedence for Commission staff being called as witnesses at hearings so I don't think that there's any legal preclusion from it. But, you know, again, we're spending however much time we spent talking about this, was already attempted to be resolved prior to spending the time on it.

My preference is to work with Mr. Jorde on that, but from what I understand and him still insisting on calling Mr. Schock, that would not result in any -- in any ability to do that. So rather than doing that, my preference would be, is to just get it done now.

MR. DUBLINSKE: Your Honor, my only concern -- and obviously, you know, there have been a lot of things that we certainly believe, rightly or wrongly, are undertaken for delay. What we don't want is a situation where Mr. Schock is up here for a couple of procedural questions and then there's later an argument, not necessarily by Mr. Jorde but by anybody, that in that case Mr. Schock should not be able to advise the Commission, for example, and whether or not that hinders the Commission's processes.

Again, I haven't fully researched it. I know that that is an issue in some states. That's the sort of thing I'm trying to avoid.

And if we can just stipulate to the information that Mr. Jorde wants, it solves all those problems. It prevents all of those potentialities down the road. And I thought we had that worked out and, you know, I guess my -- my bad for us cooperating.

ALJ HOGAN: Mr. Jorde, is there any reason why you can't stipulate?

MR. JORDE: Well, I wouldn't -- well, I guess my answer to that would be there's no reason why I called any -- I mean, sure, there's multiple ways to do anything. There's no prohibition on what I'm requesting. And I respectfully request to just get on with this, please.

MR. PELHAM: Well, before that, Judge, I would -- I would just like a stipulation, at least from Mr. Jorde, that he's not going to later object to Mr. Schock's further involvement in the case because of the fact that he was called as a witness.

MR. JORDE: Absolutely not, meaning I will stipulate to that.

MR. PELHAM: Sure.

MR. JORDE: I don't want Mr. Schock off the

case. He clearly knows what he's doing. So that is not the intent. Absolutely.

MR. PELHAM: And I appreciate that, Mr. Jorde. And that was Mr. Dublinske's comment so I just wanted to make sure that that wasn't an issue.

So I don't have an objection to doing it and having Mr. Schock examined on the limited procedural basis that's been represented. And if there's a question that's objectionable, then I'll object.

MR. JORDE: Absolutely.

ALJ HOGAN: All right. Does that satisfy your concern, Mr. Dublinske?

MR. DUBLINSKE: It really is Mr. Pelham's issue. If Mr. Pelham's comfortable, we don't object.

ALJ HOGAN: Okay. All right. Mr. Schock, do you want to state your full name and spell your last name for the record?

VICTOR SCHOCK: Victor Schock, S-C-H-O-C-K.

ALJ HOGAN: And I know you've heard me go through the penalties for perjury numerous times --

VICTOR SCHOCK: Many, many times.

ALJ HOGAN: -- over the last couple days. Yep. And do you understand what perjury is?

VICTOR SCHOCK: I do.

ALJ HOGAN: And being advised of the potential

penalties for perjury, do you promise to tell the truth in this case today?

VICTOR SCHOCK: Yes, I do.

ALJ HOGAN: All right. Thank you.

Go ahead, Mr. Jorde.

MR. JORDE: Thank you.

VICTOR SCHOCK,

being first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. JORDE:

Q. And thank you, Mr. Schock, for bearing with us. And for what may seem like stating the obvious, sir, you are the director of the Public Utilities of the North Dakota Public Service Commission; correct?

A. Yes.

Q. And you have responsibilities related to the Summit Carbon pipeline docket that brings us here today; is that correct?

A. Correct.

Q. And as a part of those responsibilities, without telling me any details, is it true that you or the persons working with you at the Public Service Commission receive documents from all sorts of sources, from Summit, from third parties, from state agencies,

from other people concerned in this docket?

A. Correct.

Q. And is the -- is the -- do you see yourself as the PSC as both a party to the proceedings and an advisor to the Commission?

MR. PELHAM: I would object. I think that calls for a legal conclusion.

ALJ HOGAN: I agree.

MR. JORDE: Okay.

ALJ HOGAN: The objection is sustained.

MR. JORDE: That's fine. I mean, I guess I can figure out what that answer is.

Q. (BY MR. JORDE) And, sir, in this particular case, it's been proven that Summit did provide certain dispersion modeling or certain type of documents or data or information related to dispersion modeling or methodologies and pipeline risk assessment to the PSC. Is that limited fact true?

A. Yes.

Q. And for that type of data that was provided by Summit to the PSC, are you aware that that data has not been provided to the other parties in this matter pursuant to a protective order?

A. I'm not sure what parties Summit may or may not have provided it to. I know the Commission has not

provided that to any of the parties.

Q. Okay. That's fair.

And are you able, without telling me any of the content, any of the findings, any of the inputs, any of the relevant underlying data, are you in a position to tell me, for instance, like the title or the name of the documents that the PSC received relative to the dispersion or risk that the PSC has not provided to the parties?

MR. PELHAM: I'm just going to state an objection that, by answering this question, there's no waiver on behalf of the Commission as to its previously determined order. But with that stated --

MR. JORDE: Yep, yep. I'll stipulate to that, Mr. Pelham.

MR. PELHAM: Okay.

MR. DUBLINSKE: And, Your Honor, for the record, we would also reserve our rights and want to make sure that disclosing the titles of the documents is not intended to be a waiver on behalf of SCS Carbon Transport either.

MR. JORDE: So stipulated.

ALJ HOGAN: All right. Go ahead.

A. So with that, so I guess the titles, and I had to -- they're lengthy so I had to write them down for

myself, but it's "Dispersion Modeling Methodology," is one of the documents. The other is "Pipeline Risk Assessment Overview Report."

Q. Okay. And, again, I'm not trying to circumvent, I don't want you to tell me anything about the content of those documents, but is that, sir, to your understanding the sum and substance of any type of dispersion or plume modeling analysis or inputs of any kind that the Commission has received from Summit that also have not been provided to the parties by the Commission?

A. So I guess the way I would characterize it is the Commission specifically asked Summit for dispersion modeling at one of the hearings last year, I forget which one or exactly which date, and these documents were what we received in that response to that request.

Q. Understood. And -- okay. And that includes that pipeline risk assessment document you referenced; correct?

A. Correct.

Q. All right. I think that's all I have, sir. I just wanted to lay that foundation. I appreciate your willingness to answer those questions.

ALJ HOGAN: Mr. Dublinske, any questions?

MR. DUBLINSKE: No questions, Your Honor.

ALJ HOGAN: Mr. Pelham.

MR. PELHAM: No, Your Honor.

ALJ HOGAN: Mr. Bakke.

MR. BAKKE: No, Your Honor.

ALJ HOGAN: Commissioner Christmann.

COMMISSIONER CHRISTMANN: None.

ALJ HOGAN: Commissioner Haugen-Hoffart.

COMMISSIONER HAUGEN-HOFFART: No.

ALJ HOGAN: Mr. Dawson.

SUBSTITUTE DECISIONMAKER DAWSON: None for me.

ALJ HOGAN: All right. Thank you, Mr. Schock.

All right. Any other matters we need to address before we conclude today?

Commissioner Christmann?

COMMISSIONER CHRISTMANN: I just am clarifying. Mr. Jorde said he intended to call Landowner Hagerott and maybe Rockstad on Monday, but did Mr. Bakke -- what witnesses is he calling?

MR. BAKKE: So we may call Bailey Elkins, but that's our witness who has some medical issues so I just don't know how that's going to -- and possibly work-related. I'll try to find out as soon as I can. But I suppose, you know, depending on the -- I don't want to get into someone's personal information --

COMMISSIONER CHRISTMANN: Sure.

MR. BAKKE: -- but depending on her condition, I may not know until Monday.

COMMISSIONER CHRISTMANN: But that's the only one.

MR. BAKKE: That's the only one, yeah.

COMMISSIONER CHRISTMANN: And do we know who Summit is calling for --

ALJ HOGAN: Rebuttal?

COMMISSIONER CHRISTMANN: Rebuttal or anything like that.

MR. DUBLINSKE: Your Honor, consistent with the practice and the proceeding thus far, we can file that list tomorrow.

ALJ HOGAN: And, Mr. Dublinske, you might want to have them available for the a.m. too --

MR. DUBLINSKE: Absolutely.

ALJ HOGAN: -- because we may --

MR. DUBLINSKE: We will have them available all day on Monday.

ALJ HOGAN: Okay. Any other matters to address?

MR. JORDE: Your Honor, first of all, I want to thank everyone for the remote option. It's worked extremely well and it's saved the landowners a significant amount of money. Is it going to be possible to have this same arrangement for June 4th in Linton or

are you, Your Honor, in a position to give me guidance on that, if you can?

ALJ HOGAN: We use -- not "we." The Commission uses another company that helps with -- well, maybe I should defer because you guys might know more information than my last update which was two days ago, I think.

UNIDENTIFIED SPEAKER: Yeah, the same hearing room, same link and everything should be used by Dakota Sound in the Linton hearing. They're the ones who run our off-site hearings. But, yeah, they will have GoTo Meeting. And that's, in fact, how we report it back here to broadcast it out. So it should be up and available.

MR. SCHOCK: This is Victor. I just want to reel that in just a smidgeon because I have heard from Dakota Sound. They don't have certainty of an internet connection in that location. They were -- the last I spoke to them, they were trying to work that out, but I haven't received confirmation that they have a solid internet connection. So what they advised me is they should be able to get audio out of there, but they're not a hundred percent sure about video and they were still kind of working out those details.

UNIDENTIFIED SPEAKER: So, if anything, they

might just do a phone call with them.

MR. SCHOCK: Right.

UNIDENTIFIED SPEAKER: Okay.

MR. JORDE: Okay. So worst case, remote participation is still going to be available on June 4th, it might be audio only; correct?

MR. SCHOCK: I would say that's fair.

MR. JORDE: Is that fair? Okay. Very good. That helps with planning.

And the reason I ask is, for instance, if over the weekend here Ms. Bailey isn't able to go and then something happens with Mr. Hagerott, I want to -- I'll send an email out and then maybe I could have them call in to Linton. I just want it to be a little flexible. So I appreciate that.

COMMISSIONER CHRISTMANN: Well, Your Honor, I just want to say I am now starting to get concerned about the potential of, oh, well, we'll knock off early Thursday, we won't do much of anything on Monday -- yeah, Monday, and we'll jam everything into Tuesday so we can't possibly get done and then the Commission should start scheduling more hearing dates.

ALJ HOGAN: Yeah, that would be my concern too because Emmons County filed their witness list, I believe, yesterday afternoon and they have a potential

four to five witnesses so -- and, plus, the Commission made it clear that the Wahpeton and the Linton hearings were primarily to hear from affected landowners in those areas and to take public testimony. So like Commissioner Christmann said, that day was not designed to be a catchall for everything else that didn't fit elsewhere.

MR. JORDE: Yeah, I don't know if those comments are directed at me. I don't -- I'm hopeful Summit won't delay in their rebuttal because they'll have the most -- you know, the most lengthy witnesses. But like I said, Jon Hagerott's scheduled for June 3rd. I'm simply -- and apparently it's not the preference to do it on the 4th so I'll try to continue to have him available on June 3rd and maybe Mr. Rockstad. But those are my only two witnesses regardless of where they fit in. And I'm not bringing anybody else.

ALJ HOGAN: Do you mean for the Linton hearing?

MR. JORDE: I mean --

ALJ HOGAN: Are you having any witnesses for Linton?

MR. JORDE: No, I mean -- yeah. So in Linton we have one landowner that's in -- the Kertzmans. So Mitch and Julia, they're Emmons County landowners and so they were going to testify in Linton. But like my prior

landowners, they should be pretty -- pretty brief.

ALJ HOGAN: Mr. Bakke.

MR. BAKKE: Yeah. And then June 3rd remote is still available; correct? Yeah, okay. Yeah, okay, because I -- Ms. Elkins may decide that's the best option for her if she can testify.

ALJ HOGAN: And maybe it makes sense, Mr. Schock, once we get confirmation from Dakota Sound on Linton's setup, maybe you could send an email to everybody and let us know.

MR. SCHOCK: I can, but most of the time they don't go down until the evening before so they may be speculating until they can get onsite and get things hooked up.

ALJ HOGAN: Okay.

MR. SCHOCK: So we may not know until the morning of --

ALJ HOGAN: Okay.

MR. SCHOCK: -- or very late the evening before so...

ALJ HOGAN: Well, as helpful as that is, I wouldn't -- probably not video, probably audio.

MR. SCHOCK: Yeah.

ALJ HOGAN: All right. Any other matters?

All right. We will recess for the rest of the

day and reconvene Monday morning.

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