IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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SOLARIS OILFIELD SITE SERVICES OPERATING, LLC and SOLARIS OILFIELD SITE SERVICES PERSONNEL, LLC,
Petitioners,

v.

MASABA, INC.
Patent Owner

_____

Case IPR2024-01179

Patent No. 11,780,689

_____

DEPOSITION OF TRAVIS ANDERSON

WEDNESDAY, JUNE 11, 2025

Reported by: Monice K. Campbell

Utah CSR, CA CCR No. 14171, CRR, RMR

Job No.: 586514

DEPOSITION OF TRAVIS ANDERSON, held on Wednesday, June 11, 2025, at 9:17 a.m., before Monice K. Campbell, Certified Court Reporter, in and for the State of Utah.

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WEDNESDAY, JUNE 11, 2025

9:17 A.M.

* * * * *

Whereupon,

TRAVIS ANDERSON,

having been sworn to testify to the truth, the whole truth, and nothing but the truth, was examined and testified under oath as follows:

EXAMINATION

BY MS. FLANNERY:

Q. Good morning.

A. Good morning.

Q. Could you please state your full name for the record?

A. Travis A -- Travis Adair Anderson.

MS. FLANNERY: Should we state appearances for the record? Liz Flannery from Baker Botts representing the petitioners.

MR. NYDEGGER: Chad Nydegger from Workman Nydegger representing the patent

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owner.

MS. FLANNERY: I don't know if that's required, but if it is, it's there.

BY MS. FLANNERY:

Q. Is it Mr. Anderson or Dr. Anderson?

A. Mr. Anderson.

Q. Just want to make sure I did it right.

Mr. Anderson, where do you live?

A. I live in Seguin, Texas.

Q. Mr. Anderson, have you had your deposition taken before?

A. A couple of times.

Q. When was the most recent time?

A. It was a product liability lawsuit in 2018, 2019, somewhere in that area. I can't recall. I don't know if I included that on my CV or not. I think I did.

Q. It's been a minute?

A. It's been a minute.

Q. I'll just sort of go over a couple of ground rules you may have talked about with

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your attorney just to remind you. The court reporter is going to be trying to take down everything we say. Important that we don't talk over each other. So I will try to pause when my questions are done, and I will try to wait for you to pause when your answer is done. Hopefully to avoid any sort of issue there.

But please just make sure you're doing your best to kind of wait there until I finish my question so we don't end up with a bad transcript. Make sense?

A. Yes.

Q. If you need a break at any time, I'm usually pretty good about going about an hour or an hour and 15, something like that, but if you find yourself needing a break before we get to one of those points, just ask me. I'm certainly happy to accommodate.

The only instance in which we'll need to just wait is for an answer to a pending question before we take a break. Is

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that acceptable?

A. Acceptable.

Q. Okay. Very good.

If you don't understand any of my questions, just ask me; I'll rephrase it. If you do answer the question, I'm going to assume that you understood the question and answered it to the best of your understanding. Sound reasonable?

A. Sounds good.

Q. Looks like you got a binder there in front of you. Can you tell me what is there in that binder?

A. Yes, ma'am. These are the exhibits -- printed exhibits that have already been, you know, shared with everyone. That's all it is. No writing or anything in it.

Q. So those are clean copies of exhibits of the proceeding?

A. Yes, ma'am.

Q. I'm certainly fine if you want to refer to those copies. I have copies of

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certain exhibits, but if you're going to refer to one in that binder, just let me know so that I know we're looking at the same thing.

A. Got it.

Q. I'm actually going to go to your CV which I think is attached to your declaration.

A. Yes, ma'am.

Q. Exhibit 2004. You may not need to look at it, you probably know it well, but I'm going to ask you a couple of questions about some things listed there.

So I'd like you to start -- I guess, your most -- is it correct that your most recent employment was with NOV?

A. Yes, ma'am.

Q. And you were employed with NOV -- am I saying that right?

A. Yes, ma'am.

Q. From 2017 to 2023; is that correct?

A. Not -- it's hard to break that apart. I started working in 2008 for a company called APPCO, and then about

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three years later we were purchased by NOV. And from 2008 to 2017, I was as at the NOV-APPCO facility in San Antonio. So then in 2017 they closed the APPCO facility, and I started working at the Rolligon facility in College Station from 2017 to 2023.

Q. So the name Rolligon, does that signify a location or was that a different company that was acquired?

A. As NOV acquired these companies, they allowed them to retain their original name by hyphenating, you know, NOV hyphen with their original name to kind of give them the -- you know, that same -- the customers knew them as Rolligon, so now they know them as NOV-Rolligon.

Q. What was -- did Rolligon have a particular product line focus?

A. Yes. Rolligon's focus were frac equipment, equipment for the fracturing -- oil well fracturing industry. That included high-pressure pumps, blenders, and, of course,

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the frac sand equipment that I was the manager of.

Q. During your time at NOV-Rolligon, did you have any responsibilities outside of the frac sand equipment?

A. As far as the -- no other product line was I responsible for, no, ma'am.

Q. Did you have any involvement, even if you weren't responsible for the product lines?

A. What do you mean by "involvement"?

Q. Did you have any -- did you do any design work, sales work, even if you weren't responsible for it? Did you do any sales or design work associated with those products?

A. No, ma'am.

Q. Did you do any type of work associated with those products?

A. I would informally discuss various things with the other groups, like the high-pressure group. If there was problems, you know, a lot of times we'd informally have

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a discussion, things like that, but nothing in a formal sense.

Q. And so your role was engineering group leader at Rolligon?

A. Yes, ma'am.

Q. At a high level, describe to me your responsibilities with regard to the frac sand equipment in that role?

A. Sure. I had a team of engineers and designers and drafters, and we designed and also did improvements on the sand fracturing equipment.

Our main project that we worked on, as highlighted in my CV, was the SandBank Proppant Silo system, which one of the exhibits is the patent for that system.

Q. I'll have some more questions about that later.

A. Okay.

Q. Looking at your time at APPCO, so first question, did APPCO have a different product focus then the Rolligon division?

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A. Well, all of -- the APPCO facility is where we did all of the sand equipment, all the frac sand equipment, proppant equipment. So we did things like frac sanders which deliver the sand from the fracturing process. We designed and manufactured the high-volume sand terminals. We designed and manufactured the equipment that handled the material from, say, the railcar into those terminals.

Also, unloading sand from the fracturing equipment at the site into haulers. So any of those products that were related to the fracturing -- sand fracturing product is what we worked on, all that equipment.

Q. Did you have any responsibility for any other equipment while you were at APPCO?

A. Can you give me examples like other equipment?

Q. The pumps and blenders that you mentioned before.

A. No, ma'am.

Q. And so the different types of

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equipment that you listed there that APPCO was -- that APPCO had that you were responsible for, is there any of that that you, in your opinion, is not relevant to this case in terms of the -- and I should be more specific.

Is there any of that equipment that you feel is not relevant to the field as -- in terms of the definition of a person of skill in the art?

A. No, it's all very relevant.

Q. Same thing true of the equipment that you were responsible for at Rolligon?

A. Right. So essentially, when they closed the APPCO facility, all of that equipment and the whole design, engineering, manufacturing, that was moved to the Rolligon. So prior to, Rolligon did not have that in their facility. So essentially, the APPCO facility was moved to the Rolligon facility.

Q. I see. So at least -- sorry, go ahead.

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A. It was just a block transfer of that stuff. And, unfortunately, they didn't let me bring my team. I had to start with a new team in Rolligon.

Q. Understood.

So in terms of the products that you were responsible for, there really isn't a difference between the products at APPCO and the products at Rolligon?

A. Correct. To clarify further, from 2008 to 2023, all of that was in this type of equipment, my experience.

Q. Understood.

So of all of your time at those different divisions or portions of NOV, how much of your time was spent actually hands-on designing or building aggregate transfer equipment?

A. So in my role, I was not just a manager. I did a lot of engineering and designing myself through the whole time from 2008 to 2023. So not only did I manage a team

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engaged in that activity, I also was involved in that activity as well.

Q. So as of the time when you left in 2023, about what percentage of your time as an average would you have been spending doing that work hands-on versus managing a team?

A. I'll estimate probably 75 percent. I had a good team. It didn't take a lot of managing.

Q. And was that -- was that sort of the high-water mark, the maximum amount of time that you spent hands-on designing through your time at APPCO -- through your times at NOV?

A. I'm not sure what you mean. Is that --

Q. Let me ask a better question. Maybe it will be easier.

During your tenure at NOV, did that amount of time, that roughly 75 percent, did that fluctuate over time?

A. Oh, yeah. Depending on the

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projects and various things that were occurring. Sometimes it would be more managerial type of things and sometimes it would be more hands-on designing depending on what the project deadlines were and things like that.

Q. Were there any periods within that time of a year or longer when you were doing less than half or your time designing and building?

A. No, ma'am.

Q. The equipment that you were responsible for there at NOV, did you observe it being used in the field as part of your responsibilities?

A. Yes, ma'am.

Q. When -- I just want to make sure I understand. NOV, I assume when its equipment would be used, it would be used by a customer at a customer well site; is that correct?

A. Yes, ma'am.

Q. Would NOV always send an

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operator -- would NOV always send personnel out to the customer site for purposes of either operating or observing the equipment or were there times it was just the equipment sent?

A. Most of the time we would manufacture the equipment, it would go to the field like that without an operator. We did not have operators for the equipment. The customer provided their own operator.

For example, the Sand Bank project, we -- my team of engineers and I went to a location to do commissioning, meaning that we did training. We helped with the maintenance aspect, essentially as a training role, to show how to maintain the equipment, how to operate the equipment, and, in fact, before the -- some of this newer equipment was released to the customer, we would do training sessions with the customer's personnel to show them how to operate, troubleshoot, and maintain the equipment.

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Q. Did you personally do that in your role?

A. Yes.

Q. Other than -- well, let me take a step back.

The equipment that you were responsible for at NOV, was all of it transportable?

A. Through the 2008 -- through 2023, my time at APPCO and -- not all of it was. When we were doing the high-volume sand terminals, those are all nontransportable because they're silos and they're bucket elevators that are stationary, conveyors that are stationary.

And then pretty much when we moved into the Rolligon facility, we weren't doing any more of the stationary terminal equipment. It was all then mobile.

But in 2008 to 2017 when I was at APPCO, we would do a combination of terminals and then also the mobile equipment. So

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throughout the 2008 to 2023 I had mobile equipment in my area of responsibility.

Q. Okay. The high-volume sand terminals, how do those differ from a movable silo?

A. So because they were stationary, terminals can be or the silos can be larger, much larger. They hold more volume of material, of sand and aggregate material, sand.

Conveyors that were stationary, typically they would be under a railroad track to drop the sand and then transfer that into -- convey that into the silos through bucket elevators and distribution shoots and things like that.

So that's how they're different. They're not intended to be moved.

Q. They're only intended to be used at one site. Is that fair to say?

A. Correct. Once they're set in place, they stay.

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Q. In your work on the transportable equipment that you worked on, were you ever responsible for designing the mechanisms for coupling those systems to a trailer or a vehicle of some kind?

A. Yes, ma'am.

Q. And roughly how many times did you do that kind of design work? Not looking for an exact number. How many different products, I guess I would say, how many different systems?

A. Goodness. That's going to be a hard guess. But I'll just throw a number out. 75 pieces of equipment. Different types of equipment, I should say.

Q. Different types of equipment in the range of things that we talked about earlier?

A. Yeah.

Q. Got it.

Do you have -- let me take a step back.

So NOV's customers, it sounds like

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at least the majority of them were in the oil and gas hydraulic fracturing-type equipment.

Did you work on any equipment that was used in the oil and gas industry not for fracturing?

A. Not used in fracturing? Let me think.

Q. Some other operation at an oil site.

A. Yes. Actually, we did a few cement bulk transfer trailers, which are used to cement the wells, which after it's drilled, encased, and then it's cemented.

Q. About when did you work on those?

A. Let's see, around the 2015, 2016 range. Estimate.

Q. Is that a product line that NOV -- was that a product that those divisions of NOV provided throughout your tenure and you just worked on it for a certain period of time, or was that just a limited time that the product was even offered?

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A. It was very limited. Essentially, a couple of prototypes. But then shortly thereafter, NOV purchased another company that knew more about bulk cement transport trailers so no longer was that prototype and things needed.

Q. Understood.

Do you have any experience with systems for handling aggregate outside of the oil and gas industry?

A. Yes.

Q. Okay. What is that?

A. So in the San Antonio area, we have a lot of limestone mines, and a lot of that equipment, the conveyors, hoppers, bins, things like that, were part -- we made those through the APPCO line.

Q. Was there a point in time when -- well, I guess, does -- at the time you left NOV, did NOV-APPCO still make those products?

A. We moved away from doing those types of equipments and focused on the oil and

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gas industry, the fracturing -- frac sand or proppant very heavily, and that was shortly after I arrived in 2017 where that focus shifted.

Q. Why did they make that shift?

MR. NYDEGGER: Objection. Form.

THE WITNESS: My speculation is that there was more money involved in the oil and gas equipment, but -- so that's why I think that shift was made.

BY MS. FLANNERY:

Q. And the limestone mines, for what purposes was the limestone that was taken out of those mines used? I mean what sort of industries did that support?

MR. NYDEGGER: Objection. Form.

THE WITNESS: So --

MR. NYDEGGER: Give me just a --

THE WITNESS: I'll give you a few seconds.

BY MS. FLANNERY:

Q. That's the other reason to pause.

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A. We were in it.

The limestone is used not only for its whole product and being crushed into smaller product for various things, road base and things like that, but it also supplied some of the cement manufacturing plants where they would take the limestone and grind it and use it to create cement.

Q. When APPCO made that shift, just so I know, was that before or after they got acquired by NOV?

A. It was before the acquisition.

Q. When they made that shift, did APPCO hire a bunch of new people?

A. No.

Q. Was it your understanding or did you believe at the time that APPCO's existing employees and sort of infrastructure technologies was suited to building the frac sand and proppant-type equipment that was needed?

A. So to be clear, not only did APPCO

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do the work for the mines or the conveyors and such of the mines, but they also made frac equipment. They were doing both before I arrived. And then after -- shortly after my arrival in 2017, we shifted focus. And by shifting focus, it meant that we still kept these customers on call, you know, essentially, but our main focus was the oil and gas fracturing -- sand fracturing equipment.

Q. Were there different teams dedicated to those different product lines in terms of the engineering aspects?

A. No.

Q. The same teams of engineers worked on engineering the proppant equipment as well as the limestone equipment?

A. Right. Small team.

Q. About how many engineers?

A. When I arrived, I had two engineers and one designer.

Take that back. One engineer and

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two designers.

Q. Great. Going back a little bit more in time in your CV, your previous position at Alamo Group. What types of equipment did you work on when you were at Alamo Group?

A. Side-of-highway vegetation control equipment. So large -- the large Batwing-type mowers. Boom -- mowers that are mounted on the end of an articulating arm. Those types of things for maintaining side-of-highway vegetation.

Q. Did any of that equipment that you worked on at Alamo Group, did any of it involve handling of aggregate materials?

A. No.

Q. Why did you discuss this in your declaration for this case?

A. I don't understand.

Q. I think -- I think earlier in your declaration you included your work at Alamo as part of your prior experience, correct?

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A. Oh, yes, because that's all -- it's all engineering experience. It's things that has to do with engineering equipment and product, doing the design work, doing the structural analysis, and things like that.

Q. Did you feel it was relevant to your qualifications as a person of ordinary skill in the art in this case?

A. Yes.

Q. I think you mentioned earlier in your testimony that you supervised -- in your position at NOV, you supervised engineers, correct?

A. Correct.

Q. At any point were those engineers that you supervised, did you ever have electrical engineers that you supervised?

A. No, ma'am.

Q. Were there any electrical engineers that were working on the same equipment that you worked on at NOV?

A. So another team -- I'm not sure of

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their degrees, but we had a controls group that took care of doing the control systems for the equipment that we worked on.

Q. So you mentioned the controls group. Was that different from the engineering group of which you were a member?

A. Well, the engineering team that I managed was the team that did the mechanical aspects of the components or the equipment. We had a controls team that would then help install the control systems on -- we would have to collaborate with them to, you know, determine -- a lot of education on their part, especially with the aggregate equipment or the conveyors, because they were so unfamiliar with it.

So we had to collaborate with them in order for them to develop a control systems that met our requirements.

Q. And that collaboration, what are the sorts of things they would have to learn?

A. Speeds of conveyors, what is

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important about volumes and speeds on conveyors, things like that.

Q. So in the teams at NOV you mentioned the controls group, the engineering team that you mentioned --

A. Right.

Q. -- doing mechanical.

In terms of technical work, were there any other discrete teams that were involved in the work on the products that you worked on?

A. None that I can think of.

Q. Were you ever involved in engineering the electrical components of the systems that you worked on at NOV?

A. So by "involvement," what do you mean by that?

Q. Did you do any technical design work on those aspects?

A. Yes. Yeah. To the level at which we as, you know, the mechanical part could do. So, for example, the sensors and things like

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that, we would make schematics for the electrical systems. We would also do the hydraulic systems, schematics, and things like that.

So with collaborating with the control systems groups, we would -- they would say, for example, we need a sensor here to detect this. We would put a sensor in, collaborating with them with the sensor type. Put that into the electrical schematic and put that into the design.

Q. Did that happen with most of the products that you worked on or was that more of -- or was that less common?

A. It depended on the equipment. Some equipment didn't require any of that type of controls, you know, it was all mechanical-type controls, but then the higher-level equipment that needed a control system, that's when we would pull in the controls team.

Q. I apologize for not clarifying.

So for products -- for systems that

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had an electrical component, you said in some instances your team, not the controls group, but your team, you or your team would create schematics, collaborate on the type of sensors, things like that; is that right?

A. Right.

Q. Did that happen for every piece of equipment that had an electrical component, you'd work on those things?

A. I'm kind of getting lost in your question. I'm sorry.

Q. That's okay.

In the collaborating that you personally did on the electrical components --

A. Collaborating with the control group?

Q. Yes. Correct. Did you end up doing that collaboration work on all of the types of the equipment that had electrical components?

A. Well, again, it depended on the complexity of the system. If it's simply a --

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say, for example, a piece of equipment that had a pressure sensor and a gauge, we wouldn't need -- wouldn't need the control group to be involved in that. We would get a pressure sensor and a pressure gauge and we were done. So it wasn't 100 percent every time.

Am I answering your question?

Q. I think so. I understand what you're saying. Let me ask about the reverse. Were there instances where the controls group collaborated with your team to make modifications to mechanical aspects of the system?

A. Oh, no. No. I mean, all the mechanical aspects were by our team that did the mechanical aspects.

Q. Understood.

Were there instances where the individuals on the electrical controls team -- excuse me, on the controls team collaborated with your team to make modifications on the mechanical side?

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A. No. All the mechanical things were done by mechanical -- my mechanical group.

Q. And you never received input from the electrical -- from the controls group on those types of -- on that work?

A. No. I don't -- I may be missing your question, but no. All the mechanical aspects were done by the mechanical group. The control system, those engineers in the control system, they were focused on just the control aspects of it, and we had to show -- tell them, you know, these are the types of things that, you know, we need to control.

But as far as, I guess, their input into the actual mechanical design, no. And that's typical with controls groups. They'll -- they do the control systems. That is their focus.

As far as mechanical aspects, the conveyors, the belts, and things like that, that's left to the mechanical engineers who are doing the actual mechanical parts.

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Q. You referred to some educating that you would -- that your team had to do of the folks in the controls group about the mechanical aspects. Do you recall that?

A. Yeah.

Q. Why did you have to do that?

A. Because they were unfamiliar with those mechanical aspects of the components.

Q. And did they need to be familiar with them?

A. Well, as a -- if you're going to control something on the mechanical side, they need to then understand what's important with what they're controlling. They didn't know everything about it, just the things that they needed to know. And, for example, how a field belt and the rate at which that belt is moving has to do with the flow rate of the product.

Q. Understood.

I want to go in your declaration to paragraph 11.

Just for the record, this is

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Exhibit 2004.

MR. NYDEGGER: Do you have copies?

MS. FLANNERY: I do.

BY MS. FLANNERY:

Q. Paragraph 11, are you there?

A. Yes, ma'am.

Q. You mentioned a couple of different types of equipment, and in the very last sentence, very last line of that paragraph, you mention Sand Chiefs and Mountain Movers.

Do you see that?

A. Yes, ma'am.

Q. What's a "Sand Chief"?

A. We call them frac sanders, but each company we sold the frac sander to had their particular name that they called it. So a Sand Chief and a Mountain Mover was some of our customers' names for frac sanders. For a lot of people they recognize, oh, it's a Sand Chief. They don't call it a frac sander.

Q. And what was the purpose of a frac sander no matter what it was called?

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A. The frac sander held the proppant and then had a conveyor underneath, and it delivered it into either a T-belt or a multi-sander, which meant that you could have multiple frac sanders feeding into this T-belt or multi-sander, which would then distribute that into or convey that into the blender.

Q. The blender that prepared the fracturing fluid?

A. Yeah. The blender would then mix the frac sand and all the fluids, and then that would be sent to the pumpers who would then pump it down the well.

Q. Understood.

Sand Chiefs and Mountain Movers, and, I guess, frac sanders generally, when abouts were frac sanders first made commercially?

MR. NYDEGGER: Objection. Form.

THE WITNESS: From my recollection, I would say at the start of fracturing, which was in the 70s.

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BY MS. FLANNERY:

Q. So before your time?

A. Yeah. Well, before my career time.

Q. There you go. Before your time -- before your time in the industry?

A. Yes, ma'am.

Q. Understood.

To your recollection, when was the first use of a bucket elevator in handling sand or proppant at the well site?

A. At the well site?

Q. Yes.

A. I would say somewhere in the neighborhood of 2010, 2012.

Q. In what context did you become aware of that?

A. At some point, Schlumberger was experimenting on a few things that I was aware of. Again, I'm not real sure on the date. But I would hazard a guess that 2010 to 2012. I know they were experimenting with various things.

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Q. It wasn't an NOV product at that point?

A. No, ma'am.

Q. When did NOV first have a product that used -- well, hang on a second. Let me take a step back. Did you want to clarify something in your answer?

A. No. Because we -- APPCO had a piece of equipment called a silo that had an integrated bucket elevator in it. It was not used at a frac site at that time, but we had looked at using that product at a frac site because of that need -- and that was definitely in that 2010, 2012 range that we were contacted to try to have more volume of sand at the site.

And the bucket elevator was a great way to fill the silo. And we had a silo that was with an integrated bucket elevator, and the thought was that we could place these E-tanks is what they were called at the frac site and then use haulers to load material

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into those silos, and then those silos were then distributed into the blender ultimately.

Q. Let me ask you a couple of things about that. You mentioned they were called an E-tank?

A. E-tank, yes, ma'am.

Q. What were they used for?

A. They would be considered a semi-portable silo in that if you had an area where you needed to have a small terminal for maybe two, three years, you would set up a battery of these E-tanks that would be used to service frac sites in the various areas.

So you would fill those E-tanks. Trucks would then be loaded with the sand from those E-tanks, and then they would take those to the frac sites, fill the frac sanders and then they would, you know, distribute that into the blender.

Q. I see.

So this was sort of an intermediate storage for frac sand or other product?

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A. Yes, ma'am. That's a good way to put it.

Q. And how long have they been used for that purpose?

A. If I remember correctly, the first E-tanks were in the mid-80s.

Q. And those had bucket elevators in them integrated?

A. They had integrated.

Q. To make sure we're speaking the same language, when you talk about a bucket elevator, is it your understanding from that term that a bucket elevator is vertical?

A. Yes, ma'am.

Q. I'll try to use that -- I'm fine with using that same assumption. If it occurs to you that there is something that you recall of a bucket elevator that is not at least substantially vertical, let me know and we can correct that for the record, but we'll work from that assumption.

A. Yes, ma'am.

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Q. So other than the applications that we just talked about, were there other applications for bucket elevator systems in the oil and gas industry?

MR. NYDEGGER: Objection. Form.

THE WITNESS: None that I can think of right now. I mean, the bucket elevator is intended to fill silos and other tall vessels for high volumes. So, you know, in the 2010 to 2012 range, you know, that need of having more volume in the bucket elevator, that's when it became more prominent -- you know, the need became more prominent at the well site.

BY MS. FLANNERY:

Q. In those applications, was it always sand or other proppant that was stored or were there other aggregate materials that were used to store?

A. For the E-tanks?

Q. Yes.

A. The main focus for the E-tank was sand. So it was intended for the frac sand,

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if that's what you're asking.

Q. Was it ever intended to be -- was it ever marketed or used, to your knowledge, to store other types of aggregates or other types of materials?

A. If it was, it would be a customer that did something else with it, but the customers that I am aware of used them for the frac sand.

Q. Understood.

You're not aware of a customer using it for some other material?

A. No, ma'am.

MS. FLANNERY: We are going to mark an exhibit now. We will mark this as 1036.

(Exhibit Number 1036 marked.)

BY MS. FLANNERY:

Q. You've been handed what's been marked as Exhibit 1036. The title of this document is the "Sand Bank Proppant Silo System."

Does this appear to refer to the

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Sand Bank system that you mentioned that you worked on during your time at NOV?

A. Yes, ma'am, it looks like that.

Q. At least the document reflects, and I think you mentioned, that that system included a bucket elevator?

A. Yes, ma'am.

Q. Where was that bucket elevator located in the system?

MR. NYDEGGER: I'm just going to put an objection on the record to the exhibit authentication.

You can go ahead.

BY MS. FLANNERY:

Q. And if you need me to repeat it whenever that happens, I'm happy to do that as well.

A. Yes, ma'am. Similar to the E-tank, the bucket is integrated within the silo, and if you turn to -- that looks like page 3 of 10, the black chute that is plugged into that rectangular area, that hopper, that is where

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the boot section of the bucket elevator is. And then you can see that bucket elevator going up into the silo.

And then, ultimately, if you look at the picture next to it, to the right of it, you can see the bucket elevator head section or head portion where it then discharges into the top of the silo.

Q. When was this system first released commercially?

MR. NYDEGGER: Objection. Form.

THE WITNESS: 2022, 2021. I'm trying to think of the time -- gosh. Sometimes my brain has a hard time remembering dates. That's why I like to look at stuff like this.

Yeah, so -- so 2020, early 2020 was when it would be -- was released for -- we were attempting to find customers to test it and such and buy and test it and such.

BY MS. FLANNERY:

Q. Did you work on the design of that

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system since its inception?

A. Yes, ma'am.

Q. Does NOV still offer that system today?

A. Yes, ma'am. The last time I looked it's still on the website.

Q. At least as of the time you left NOV it was still being offered?

A. Yes.

Q. In terms of how NOV provided that, was the practice generally the same that NOV would provide the Sand Bank system to a customer but the customer would provide the operator?

A. Yes, ma'am.

Q. When a customer was finished with it, they would return the system to NOV?

A. Well, the focus on the product was to actually sell the system to a customer. In this particular case of the Sand Bank system, we sold two pieces of equipment or two systems to Argentina and we -- my team and I went to

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Argentina to do the commissioning which meant that we trained on the operation, the maintenance, and things like that.

They did not have a well site yet for the system, so we did all of the commissioning on their site, and then they took the system into the field several months after we had left to actually do the work. So that's how the first two systems were done.

The next two systems were on a lease arrangement with a customer, and in that instance, we did the same thing, did some training, even prior to the delivery of the equipment, and then when the equipment was delivered, we were on-site through a full frac.

And then after doing the frac and helping with, you know, the troubleshooting, the operation, helping train the employees, the technicians, the system, we learned a few things that the customer wanted to change. The systems were brought back to NOV. We

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designed and developed the improvements.

Again, did the same thing: Took it to the site. My engineering team and I actually went to the site and did the same thing. And then learned more things, and then brought it back.

And then the customer abruptly, after we -- they wanted some other changes, we made those changes, and then abruptly said, no, we are going to move to another system. So they had not bought the system, it was leased, so that was part of their ability to do.

Q. So let me ask you another sort of background question. The other types of equipment that you were responsible for at NOV, not just the Sand Bank but the other types of things, were those typically offered on a leased basis or an outright purchase basis?

MR. NYDEGGER: Objection. Form.

THE WITNESS: No, ma'am. Those --

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the leasing arrangement that we had was the -- the only one that I'm aware of, I'm not sure if there was any others, but -- as far as other equipment, but this is the only one that I was aware that we leased. Normally, it was a sale to the customer.

BY MS. FLANNERY:

Q. In the industry more generally was that the common practice or was leasing something that happened at other companies more frequently than perhaps at NOV?

MR. NYDEGGER: Objection. Form.

THE WITNESS: I'm not sure exactly what the normal was. I am aware that there was lease arrangements that occurred, but I have no other information past that.

BY MS. FLANNERY:

Q. You mentioned as part of your commissioning of equipment for the Sand Bank at least, that part of that commissioning involved training on maintenance?

A. Yes, ma'am.

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Q. Was that true of the other equipment that you worked on as well?

A. It depended on the equipment. We had done some improvements on equipment, for example, added a dust collection system. And in that case, we helped commission that into the field because it was a new add to an existing frac sander. So that helped train the operators on how to operate it and things like that.

Q. When you did that sort of training, did it typically involve also training on maintenance?

A. Yes.

Q. Any equipment that you can remember that you didn't do training on maintenance just because it wasn't required?

A. Well, the -- at APPCO, for example, the frac sanders that we did, it was a mature product. The customer was a mature customer, so they received those products and there was no training necessary from us. The customer

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would do their own training for the equipment because they were very familiar with it.

So it depended on the equipment, again, whether or not training was needed for the customer, training regarding maintenance, operation, things like that.

Q. All of those types of equipment would require periodic maintenance of some kind. Is that fair to say?

A. Oh, yes.

Q. And periodic maintenance, for my car, I get my oil changed every three months. I try to. How often is the periodic maintenance for this type of equipment?

A. That is very --

MR. NYDEGGER: Objection. Form.

THE WITNESS: That is very difficult to say because it depends on the equipment. It depends on the environment. So I can't definitively put an answer to that question. I'm sorry.

/ / /

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BY MS. FLANNERY:

Q. Understood.

Is there a range that you can give? Understanding it's going to vary depending on all of those things. Is there equipment out there that requires maintenance every day?

A. Yes.

Q. Is there equipment that wouldn't require maintenance even beyond six months?

A. Yes. And those would be things like hoppers that just simply hold the sand or aggregate.

Q. So other than a hopper, pretty much any of the equipment you have worked on is going to require maintenance within six months or sooner. Fair to say?

A. I have a hard time answering that because there's so many different pieces of equipment that, you know, there's daily maintenance for various points of the equipment on some things. You know, even the most mundane things like hoppers obviously

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need to be inspected and those types of maintenance occurred. You know, if there's a hole that wears into it that has to be fixed and such.

So it's very difficult to try to quantify, without looking at a specific piece of equipment, but it's fair to say that all of the equipment requires some form of maintenance. But as far as the timetable, it depends on the type of equipment and the various points and components that are used.

Q. Okay. Fair enough. A typical range -- the typical time period for the maintenance somewhere in the days to six months' time period. Is that -- and I recognize there could be exceptions to that.

A. Can be exceptions. And some things require twice a day even depending on the --

Q. Fair enough.

The Sand Bank system that we were talking about here, how often was its maintenance?

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A. Yeah. So there were points that required twice a day inspection. And because the equipment is used 24 hours a day, 7 days a week, continuously, that's why the maintenance interval is much sooner than other equipment that may only operate 4 hours a day.

So that's why it's so difficult to put a number on it.

Q. Understood.

Let's mark another exhibit. This is actually previously marked.

So I'm going to ask you some questions about Exhibit 1028. It's already marked as 1028.

(Exhibit Number 1028, which was previously marked, was referenced.)

BY MS. FLANNERY:

Q. I don't know if you have a copy of that in your binder, but if you don't, there you go.

A. I don't. I know this one.

Q. Are you familiar with this patent

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application?

A. Yes, ma'am.

Q. Is this the patent application that relates to the -- is this a patent application that relates to the Sand Bank proppant silo system that we were talking about a second ago?

A. Yes, ma'am.

Q. So I want to direct you to -- it's labeled as page 4, the page 4 of the text. So it's after the figures. I think it's page 47 at the bottom of the document.

A. 47. Got it.

Q. All right. And I'm looking at paragraph 0123, which is on the left-hand side.

Do you see that?

A. Yes, ma'am.

Q. And at least the second sentence of this paragraph, is this talking about the integrated bucket elevators that are integrated in the silo that you were

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mentioning earlier?

MR. NYDEGGER: Objection. Form.

THE WITNESS: It appears as such from what I'm reading, the first, I guess, paragraph.

BY MS. FLANNERY:

Q. You can read as much of that paragraph as you'd like. The question that I'm going to ask you relates to the very last sentence where it says:

"The integration of the bucket elevator into the silo provides redundancy because at times when the bucket elevator breaks down, alternative bucket elevators may be available to continue loading proppant into other silos."

A. Where are you reading that?

Q. The last sentence of paragraph 0123.

A. Okay.

Q. Can you describe to me how that

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would work in connection with a set of silos having these integrated bucket elevators? And if it helps to point to one of the figures, certainly feel free to do that.

A. I guess I'm -- yes. Okay. So if you go to Figure 20, which is on page 11 at the very bottom.

Q. Okay. I'm there.

A. If you see, there's those two chutes that are crossed with one another?

Q. Yes, I see that at the bottom.

A. Right. So what can happen is that if, for example, the silo on, say, the right side is no longer able to be filled with the bucket elevator, the silo on the left, its bucket elevator can then send material down, and then that material then can flow over to the other side through that chute.

Q. And so those chutes, are those at the lower end of the bucket elevator?

A. Yes, ma'am. Well, sorry. Those are at the lower end of the silo.

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Q. Fair. So if I'm using --
A. Might want to turn to Figure 22. It's a little clearer.
Q. So you described a circumstance where the bucket elevator for the silo on the left becomes inoperable for some reason; is that right?
A. Well, I'd have to look back. Let's just redo it. For example, if the bucket elevator on the right side no longer worked, the bucket elevator that is integrated into the silo on the left could then discharge its material, it would go through the silo through that chute and then discharge through -- or discharge through that chute at the bottom of the silo there.
Q. And what would it be discharging proppant into?
A. Into the conveyor down here.
Q. That's the conveyor that's going to take the sand --
A. To the blender.

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Q. Okay. So the sand, then, would not be going into the silo that is on the right-hand side any longer into the storage area.

A. Well, it would be going into -- so it would be fulfilling the duty of the right-hand silo because it was being filled in the left-hand silo.

Q. Understood.

But the proppant then goes into that bucket elevator on the left-hand side is not going into the storage area on the -- of the silo on the right-hand side in that method.

A. Maybe I'm looking at a different embodiment of that.

It may not show a figure -- okay. So I believe I may have this confused with another embodiment that may be in here. What that -- I don't see a figure of it. It would be essentially the same connection, but it would be higher up on the silos. It was the

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same crossover system, but it was higher on the silos. Yeah, I don't see that as a figure in here.

Q. Okay.

A. So let's utilize Figure 22. So the other would be that same crossover system but located higher up on the silo. Same crossover-type system. That's -- it's been a bit since I've read this, but I believe that's what that embodiment is describing.

Q. So. I'm going to look at Figure 21.

A. Okay.

Q. Because that appears to show the full height of the silo?

A. Yeah.

Q. So the bucket elevator that's on the right-hand side, that's labeled as 110.

Do you see that?

A. Yes.

Q. If that no longer worked, how would you use the bucket elevator on the left to

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fill the silo on the right?

A. Right. So if you take these crossover tubes that are shown in Figure 1 at the bottom, which, I believe, is shown as another embodiment, but I don't know. I don't recall.

Q. Okay.

A. But if you take this system and move it higher up on the silos, then you would be able to then fill as this bucket -- or as this silo filled, it would then dump material into the adjacent silo that does not have a working bucket elevator.

Q. I see.

Where would those crossover tubes connect?

A. High enough up where the angle of repose for the material would then allow it to dump into the other silo.

Q. Would there be outlets on the silo that would allow that?

A. Yeah. For the connection, yeah.

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That would be, as I said, a different embodiment than went into commercial.

Q. So that embodiment was never commercialized?

A. Correct. Since I've been there. Who knows what my guys have done since.

Q. Understood.

What were the benefits that APPCO or NOV advertised of the Sand Bank system?

MR. NYDEGGER: Objection. Form.

THE WITNESS: From my experience with the marketing team, it was obviously the high-volume capability, the small footprint, and the speed at which they could fill or the silos could be filled.

BY MS. FLANNERY:

Q. During your time at NOV, were you skeptical of the reliability of bucket elevators?

A. When you put a bucket elevator into a mobile system, it throws a lot of variables into the mix because most of the time a bucket

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elevator from previous times were stationary. So once you put it in place, you can keep it very vertical. You can keep the belt tracked. It was easy to maintain in that regard.

So when they became mobile and being used on a frac site, it gets -- you're going off into a new realm of problems that have to be taken care of.

Q. When you say "problems," you mean things that would require maintenance?

A. Things, for example, when -- because they're mobile and you set it on the site, you have to make sure that that bucket elevator is vertical. If it isn't vertical, then it can -- the belt can mistrack because the load is off-center.

There's also the maintenance aspect. They have to be inspected and maintained. The buckets wear. There's gear boxes and things that are located, you know, high up on the silo that are very difficult to reach.

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Q. You can set that exhibit aside.

I'm going to ask a few questions about what has already been marked as Exhibit 1008.

(Exhibit Number 1008, which was previously marked, was referenced.)

BY MS. FLANNERY:

Q. Exhibit 1008, do you see this is a patent with applicant Schlumberger Technology Corporation?

Do you see that?

A. Yes.

Q. And you've reviewed this Exhibit 1008?

A. Yes. I've looked it over.

Q. I believe earlier today you mentioned that you thought Schlumberger in the 2010, 2012 time frame had a bucket elevator system. Do you recall that?

A. I did, yeah.

Q. Do you know whether or not the system that is described here reflects that

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system?

A. I don't know.

Q. The system that you thought of in 2010, 2012, how was it -- do you know how it was different from what's shown here?

A. I don't. It was people talking about Schlumberger developing a bucket elevator system or working on a bucket elevator system. That's how -- that's where I learned it from.

Q. Do you know if that bucket elevator system was integrated into a silo?

A. I don't know.

Q. Do you agree that this system -- sorry, Exhibit 1008, the PHAM reference, do you agree that it discloses a system for dispensing proppant into a silo at the top of the silo?

A. I'm looking at Figure 5, and it shows some rectangular silos and it shows a bucket elevator with what look to be tube chutes that are going into the silos. So can

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you ask the question again?

Q. Sure. Would you agree that PHAM, Exhibit 1008, discloses a system for dispensing proppant into a silo at the top of the silo?

A. Yes, ma'am.

Q. We may have covered this, proppant, would you consider that an aggregate?

A. Yes, ma'am.

Q. And do you agree that it discloses using a bucket elevator for elevating the proppant?

A. Yes, ma'am. From review of those figures, yes.

Q. Do you know if Schlumberger ever had a system, a commercial system, like what's shown here?

A. Yes, ma'am. In fact, I believe I have seen it on their web as something that they were offering.

Q. Are offering either today or as of the time you left NOV?

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A. Right. And, in fact, at the time -- prior to -- shortly prior to leaving NOV, I did see one of these systems in operation.

Q. So in the 2022/2023 time period they were offering a system that looks like this?

A. Yes.

Q. Do you remember what it was called?

A. I don't, actually. I don't know what the commercial name was.

Q. Schlumberger is certainly a large company in the oil and gas industry?

A. Yes, ma'am. Very respectable company with very bright engineers.

MS. FLANNERY: We have been going about an hour and 10. Want to take a break?

MR. NYDEGGER: We can.

(Recess.)

BY MS. FLANNERY:

I'm going to hand you what has been previously marked as Exhibit 1004.

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(Exhibit Number 1004, which was previously marked, was referenced.)

BY MS. FLANNERY:

Q. This is the Waldner reference. The company that is listed as the applicant Norstar Industries.

Do you see that?

A. Yes, ma'am.

Q. Are you familiar with that company?

A. I am now familiar with it in the sense that I know that they -- I researched it and found them online.

Q. What's your understanding of their industry?

A. Well, from what I've learned, is that they do equipment for silos and filling aggregate things and apparently frac sand as well.

Q. You hadn't heard of them before this case?

A. Not that I recall.

Q. Were you aware of either this

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patent or the system that's described in it before this case?

A. I don't recall seeing this.

Q. Do you agree that it discloses a system for dispensing aggregate into a silo at the top of the silo?

A. Yes. If I recall, part of the -- part of descriptions talked about placing the material into silos.

Q. And you agree it discloses filling it from the top of the silo?

A. Yes, ma'am.

Q. Maybe a general question. Is it possible to fill a silo from the bottom in your experience?

A. Without elevating the material?

Q. Yes.

A. Not from my experience.

Q. I think that's right. I just wanted to make sure.

A. If you can think of one.

Q. I'll let you know.

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In Waldner Exhibit 1004, do you agree that it discloses a bucket elevator which is labeled 50 in the various embodiments shown in the figures?

A. Yes, ma'am.

Q. In the various figures that show Element 50, do they show the actual buckets, the belt that is the bucket elevator?

A. I don't recall seeing anything that shows that. I don't recall seeing anything to that effect.

Q. Okay. When it shows the bucket elevator 50, is it your understanding that it's enclosed in some sort of structure, the belt and the buckets of the bucket elevator?

A. Yes, ma'am.

Q. Is that typical of bucket elevators in your experience?

A. Yes, ma'am.

Q. What is the purpose of the enclosure?

A. Well, it maintains -- keeps the

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dust that occurs when filling. It gives the bucket elevator structure for holding all the components. It is a guide for the bucket elevator belts. So those are some of the reasons you have them. Elevator shaft is what it's called.

Q. That enclosure obviously has to be at least a little bit larger than the bucket elevator itself; is that correct?

A. Yes, ma'am.

Q. In your experience, would the enclosure -- how much clearance on either side of the bucket elevator itself would that involve? Is there a standard?

A. Not generally a standard, but we would keep, you know, a good 7 -- 6 to 7, 8 inches on each side for clearance.

Q. So the enclosure would need to be at least 6 or 7 -- 6 to 8 inches wider than the bucket elevator itself?

A. Let's just say in general, yeah. I mean, depending on the application. For

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mobile applications when you're trying to keep things compact, you know, we have to pull the width in so we kind of play with that to pull it in close. But I would say, yeah, 6 inches plus or minus would be a good range of gap.

Q. Could it be larger if a particular application required it and allowed it?

A. And allowed it, yeah.

Q. So in comparing a couple of different figures, Figure 1 shows that bucket elevator 50.

Do you agree with that?

A. Yes, ma'am.

Q. Figure 11 also depicts a bucket elevator 50.

Do you see that?

A. Yes.

Q. And just to close the loop, Figure 15 also shows a bucket elevator 50.

A. Figure 15, yes.

Q. Would you agree, generally, it's true that the bucket elevator 50 looks a

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little bit different as between Figure 1 versus Figure 11 versus Figure 15?

A. Yeah. Just looking at the figures, are you asking if I see some differences from Figure 1 versus, say, Figure 15?

Q. Yes. Correct.

A. Yes, I see some differences.

Q. For example, in Figure 15, the bucket elevator appears to include a frame around it?

A. Yes, ma'am, I see that.

Q. And that frame is in addition to the enclosure that would be around the bucket elevator, correct?

A. Yes, ma'am.

Q. But Waldner -- whether it has a frame or not, Waldner always refers to that as elevator 50.

A. Okay.

Q. Do you agree with that?

MR. NYDEGGER: Objection. Form.

THE WITNESS: I'm not 100 percent

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sure that's what it is. I haven't looked into that much of a detail, but I see that it looks like 50 prime is being pointed to in 15. So I would need to look to see if -- if it refers to that differently.

BY MS. FLANNERY:

Q. So let me ask a little bit different of a question. In the different embodiments that we talked about, Figure 1, Figure 11, Figure 15, is it your understanding that Waldner teaches that Element 50 might have a frame or it might not?

A. Just looking at Figure 11?

Q. Across the different 1, 11, and 15, the three we just talked about.

A. It shows an embodiment without a frame in Figure 1 from what I can see. And looking at Figure 11, it looks like that embodiment has a frame around it. And then Figure 15 looks like it has a frame around the bucket elevator shaft.

Q. What would be the purpose of having

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the frame around that bucket elevator?

A. To add additional support to the bucket elevator would be my guess.

Q. And that frame would be around the enclosure that is around the actual bucket elevator; is that correct?

A. Looking at the embodiment, that's what I see in Figure 11 and Figure 15.

Q. And so the frame -- you'd agree that the frame would need to be at least some amount wider than the enclosure itself, correct?

A. Well, in order to have the elevator shaft fit between, yes, ma'am.

Q. In your experience, how much bigger would that -- how much clearance would you want there?

A. I guess I've never experienced a frame around the bucket elevator shaft, but are you asking me if I were to design a system like this, how much clearance I would have?

Q. Yes.

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A. You could probably push that elevator shaft right up against the frame.

Q. Can you imagine persons of ordinary skill in the art might want to have it wider to allow some clearance around that?

A. I can imagine that.

Q. In part of the maintenance of a system like this, would it ever be needed to access the inside of the enclosure?

A. The enclosure that -- not really in between for regular maintenance because it's just an empty shaft with a belt and the bucket system going through it. Perhaps if the belt were mistracked and it caused some issues with the side of the bucket elevator, then you would have to then, obviously, put a plug or patch over it, which would be a form of maintenance. But to access the inside of it, no.

Q. So it sounds like maybe not for regular maintenance but for repairs of some kind?

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A. Repairs, yeah.

Q. In order to perform those repairs, would you want the frame to have some clearance around the enclosure to allow for that?

A. Again, it would depend on the application or what was being -- what was being done with the frame and the enclosure.

Q. It would be within the skill of a person of skill in the art to decide how large to make that -- how wide to make that frame depending on the application?

A. Yes, ma'am.

Q. Audible answers. I always forget that too. No problem.

Okay. Let's put that one aside for the moment. We'll come back to it.

But then I also have some questions about Exhibit 1006, which is the ^Sleeman reference. Maybe one you have in there.

A. I do.

(Exhibit Number 1006, which was

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previously marked, was referenced.)
BY MS. FLANNERY:
Q. And first question, the company listed as the applicants, Westcap AG Corp., is that a company you were familiar with before this case?
A. No, ma'am.
Q. Have you become familiar with them?
A. No, ma'am.
Q. Okay. Prior to this case, were you aware of the system -- either this patent or the system that it describes?
A. I don't recall seeing it, no, ma'am.
Q. Do you agree that it discloses a system for dispensing aggregate into the top of a silo?
A. I believe -- I recall a review of the patent mentioned it going -- discharging into a silo. So what this system does, it brings it from the lower position, elevates it, and then dispenses it into, I believe it

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said silos and things.

Q. Okay. Do you agree that it discloses using a bucket elevator for lifting the proppant up to the top of the silo?

A. Yes, ma'am.

Q. Would you agree that Sleeman and Waldner disclose generally similar types of systems?

MR. NYDEGGER: Objection. Form.

THE WITNESS: Generally, the fact that it has bucket elevators and dumps into a silo, that would be the similar systems.

BY MS. FLANNERY:

Q. Do you agree it discloses doing that for similar types of aggregates?

A. Yes.

Q. You can set that aside for now. Again, we'll come back to that one.

I'm going to mark an exhibit.

(Exhibit Number 1037 was marked.)

BY MS. FLANNERY:

Q. You've been handed what's been

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marked as Exhibit 1037.

A. Okay.

MR. NYDEGGER: I'm going to just put an objection on the record as foundation and authentication.

MS. FLANNERY: Understood.

BY MS. FLANNERY:

Q. Are you familiar with the company called Foresight Logistics?

A. Not that I can recall off the top of my head.

Q. Do you recall seeing a proppant tower system like what's described in this Exhibit 1037?

A. I don't recall seeing this.

Q. And I will hand you --

MS. FLANNERY: Mark this as 1038.

(Exhibit Number 1038 was marked.)

BY MS. FLANNERY:

Q. Exhibit 1038 purports to be a services guide by Foresight Logistics.

Do you see that?

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A. Yes.

MR. NYDEGGER: Before we go, I just want to lodge objections again as to foundation and authentication.

THE WITNESS: Yeah. I see it says on the front cover "Services Guide."

BY MS. FLANNERY:

Q. And if you look on page 4 of this document, you see where it refers to a tower belt system?

A. I see that.

Q. Do you recognize that as sort of another view of what's shown in Exhibit 1037 that we were looking at?

MR. NYDEGGER: Objection. Foundation.

THE WITNESS: Yes. 1037 shows the top of it, and it looks like that might be a snip from the tower belt system depicted in Exhibit 1038.

BY MS. FLANNERY:

Q. Looking at 1037 and 1038 together,

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does that refresh your memory as to whether or not you've seen a system like this or not?

A. It does not.

Q. Do you agree that it appears to have a telescoping boom leading from the vertical tower into a silo?

MR. NYDEGGER: Objection. Foundation.

THE WITNESS: It looks like that is a telescoping conveyor frame with conveyors inside.

BY MS. FLANNERY:

Q. How do you know there are conveyors inside?

A. In 1037, I can see a belt right here.

Q. That's sort of the part of the arm that is closer to the vertical piece?

A. Yes, ma'am. Right above to the top left of where it says "Foresight Logistics" on the label, I see a belt right there.

Q. Looking at this, it would be your

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understanding that there's a conveyor belt within that arm that extends laterally?

A. Yes, ma'am.

Q. Would you expect that that conveyor belt or some other conveyor belt extends to the end of that arm?

MR. NYDEGGER: Objection. Foundation.

THE WITNESS: Yes.

BY MS. FLANNERY:

Q. Why do you say that?

A. Well, really no other way that I see that the conveyor could get to the end other than being a conveyor.

Q. Do you agree that arm is substantially horizontal?

MR. NYDEGGER: Objection. Foundation.

THE WITNESS: Yes. Yes, as it's shown in the photo, it is horizontal.

BY MS. FLANNERY:

Q. You can set those in the stack.

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For silos that are used to store aggregate such as proppant in the oil field, are those equipment typically subjected to harsh environments?

A. I want to restate your question. You're asking whether or not the equipment that is used on frac sites are exposed to harsh conditions?

Q. Yes. That's a finer statement.

A. Yes.

Q. And would that include silos and equipment used to fill those silos?

A. Yes.

Q. And generally speaking, would harsh conditions tend to require more maintenance?

A. Yes.

Q. In designing a system for filling a silo from the top, how would a person of skill in the art know how tall the conveyor, whatever system it is that has to go to the top has to be?

A. Well, it would depend on -- can you

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ask the question again?

Q. Sure. In designing a system for filling a silo from the top, how would a person of skill in the art know how tall that conveyor system needs to be?

A. Well, obviously, the conveyor system would be -- have to be high enough to fill the silos. So they would need to know the height of the silos.

Q. And for systems that are used at frac sites to store proppant, is there a typical height for those types of silos?

A. I think it varies, in -- it varies depending on the particular company that's manufacturing the silo.

Q. So a company might choose to have a particular height?

A. Yeah.

Q. In your experience, what is a typical height of silos that you've seen and interacted with?

A. Like a range?

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Q. Sure.

A. I can give you a range. I would say in the 60- to 70-foot range.

Q. Would a person of skill in the art want to design a conveyor system to fill that silo to be significantly taller than the silo that it's being used to fill?

MR. NYDEGGER: Objection. Form.

THE WITNESS: Again, it would be the method at which they were using to fill the silo. So it would need to be at least as tall as -- above the silo.

BY MS. FLANNERY:

Q. Would there be any reason for a person of skill in the art to make it 20 feet taller than the silo?

A. It depends.

Q. On what?

A. On the type of method that's being used to fill the silo.

Q. What types of methods to fill the silo would involve having a -- having that

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conveyor be 20 feet taller than the silo?

A. So from my experience with various -- and what you see in the industry, there's various methods to fill the silo, and the -- a chute discharge -- a chute system to fill the silos would require it to be elevated so that the chute could then allow the material to discharge into the silo.

Q. Okay. Do you agree that there would be drawbacks to making it -- to making that conveyor system significantly taller than the silo?

A. It depends. Sometimes there would be; sometimes there wouldn't be.

Q. Would making that system significantly taller than the silo, would that create drawbacks in terms of the transportation of that system?

A. It potentially could, depending, again, on all the variables.

Q. What other types of drawbacks could there be to making the system taller,

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significantly taller than the silo that it's being used to fill?

A. I'm just kind of thinking about, you know, a little bit more material that's involved with it, but not a lot.

Q. Do you agree that in the oil field, at least in your experience, time is money?

A. Definitely.

Q. The time that it takes to fill a silo, if that process takes longer, that's generally going to be more expensive, less convenient for the customer?

A. Yes.

Q. One other question. So in the systems of the Waldner and Sleeman references that we were looking at earlier, you agree those have a drive-over system for unloading the proppant from the base of a truck?

MR. NYDEGGER: Objection. Form.

BY MS. FLANNERY:

Q. Do you agree?

A. I believe they do show that. I'm

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looking at various figures and things that show that.

Q. The trucks that are used to deliver the proppant to those systems would have certain set dimensions independent of these systems, correct?

A. What do you mean by independent of these dimensions?

Q. The companies that design the trucks are generally different from the companies that design the conveyor systems. Do you agree with that?

A. Generally speaking, they are, but the systems like this have to be designed to handle those trucks.

Q. So you anticipated my question.

So when designing those conveyors -- those systems at the bottom that receive proppant from a truck, would a person of skill in the art have to decide on the -- would they have to take into account the size of the truck, for example, in order to decide

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how big those systems should be?

A. Yes, ma'am.

Q. In preparing your work on this case, did you speak with any individuals, other than Masaba's counsel?

A. No, ma'am.

Q. Did you speak with any employees of Masaba?

A. No, ma'am.

Q. Did you review any statements by employees of Masaba, written documents?

A. No, ma'am.

Q. What about a Mr. Mike Stanton? Have you ever heard of him?

A. I have.

Q. Have you met Mr. Stanton?

A. Yes, ma'am.

Q. Did you speak with Mr. Stanton prior to preparing your declaration in this case? Let me restate it.

Did you speak with Mr. Stanton in the course of preparing your declaration in

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this case?

A. Are you asking if I talked to him about anything relevant to this case?

Q. Yes.

A. No, I did not.

Q. How do you know Mr. Stanton?

A. When I was at NOV, he visited and asked if we -- NOV -- would like to purchase the rights for this system, and we did not. NOV management decided not to. And I kind of kept in contact with him.

Q. When you say "this system," what system are you referring to?

A. I'm sorry, the Masaba system that's covered in the '689 patent.

Q. When did that conversation occur?

A. The initial conversation?

Q. Yes.

A. Would put it around 2022.

Q. And were there subsequent conversations with him about that?

A. Short of saying that NOV management

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decided not to move forward with it, no more regarding it.

Q. About how long after that initial conversation did that subsequent conversation happen?

A. About a week.

Q. Okay.

A. It was short term.

Q. In connection with those conversations, did you discuss any of the technical aspects of the system with Mr. Stanton?

A. Not deeply technical, just overall what it did and how it, you know, sort of your marketing-type information.

Q. Did he discuss a patent with you?

A. If I recall, that's why he was asking if we would like to work with Masaba to purchase the product line, and I believe that he mentioned the patent, but I can't recall 100 percent.

Q. For purposes of preparing your

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declaration in this case, did you rely on anything Mr. Stanton told you in those discussions?

A. No, ma'am.

Q. Just to make sure I'm not missing anything, any email discussions that you had with Mr. Stanton about that prior exchange?

A. As far as covering any of the -- for preparing my declaration, I did not talk -- refer to any emails or anything else.

Q. Just to orient you, I'm not trying to trick you. The priority date of the '689 patent I'll represent to you in this case is in July of 2021. Does that sound familiar to your recollection?

A. I believe that's correct. I could look.

Q. You can -- all of my questions will be subject to the veracity of that statement, not trying to trick you.

A. Okay.

Q. So just using that time frame,

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July 2021 to orient you, were there bucket elevators that were used to transfer aggregate in systems -- in commercial systems? Did that exist as of July 2021?

MR. NYDEGGER: Objection. Form.

THE WITNESS: Can you ask that question again?

BY MS. FLANNERY:

Q. Sure. As of July 2021, were there commercial systems that used bucket elevators to transfer aggregate into the top of the silo?

MR. NYDEGGER: Objection. Form.

THE WITNESS: Yes, ma'am.

BY MS. FLANNERY:

Q. In your experience -- and this is not necessarily in connection with bucket elevators -- bucket elevator projects, but in general -- was it known to use things like outriggers to stabilize a vertical piece of equipment?

A. Ask that question one more time.

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Q. Sure. In your experience, prior to -- as of July 2021, was it known in the industry that you could use outriggers to stabilize a vertical structure?

A. Yes, ma'am.

Q. Was it known as of that time frame that you could use guide wires to stabilize a vertical structure?

A. Yes, ma'am.

Q. Was it known to be able to use other types of mechanisms to stabilize a vertical structure?

MR. NYDEGGER: Objection. Form.

THE WITNESS: I know of other methods to do it.

BY MS. FLANNERY:

Q. What are some other methods that you knew of -- again, that existed as of that July 2021 time period?

A. Weighted bases.

Q. Anything else?

A. I can't think of any offhand.

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Q. Okay. We talked about earlier your -- that you've been deposed a couple of times in your career.

A. Yes, ma'am.

Q. Have you ever served as an expert in a patent case?

A. Yes. And that was shown on my CV.

Q. Yes. So that -- there was one case that was listed.

A. One case.

Q. Any other instances where you have served as an expert in a patent case?

A. No, ma'am.

Q. Have you served as an expert witness in any other type of court case or litigation case?

A. I previously mentioned the product liability and then the one that I did -- the expert witness many years ago. Those are the two.

Q. So one in a products liability case and one in a patent case?

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A. Yes, ma'am.

Q. I'd like to turn to your declaration, which is Exhibit 2004, already marked.

(Exhibit Number 2004, which was previously marked, was referenced.)

BY MS. FLANNERY:

Q. And if you could turn with me to paragraph 27. In paragraph 27, at the sort of bottom of theat paragraph, you state:

"It is my opinion that a POSITA" -- you understand a POSITA is a person of ordinary skill in the art?

A. Yes, ma'am.

Q. And we can use that moniker today in the deposition?

A. Yes, ma'am. I'll use it as well.

Q. Great.

You see where you state:

"It is my opinion that a POSITA for the '689 patent would have a degree in mechanical engineering or perhaps

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petroleum or civil engineering with at least two years of experience engineering the structure and/or mechanical aspects of aggregate transferring equipment."

Do you see that?

A. Yes, ma'am.

Q. In talking about the degrees, you say "a mechanical engineering or perhaps petroleum or civil engineering degree."

Do you see that?

A. Yes, ma'am.

Q. How would you know if a person with civil or petroleum engineering qualifies under your definition?

A. Because I'm familiar with those degrees and the curriculum that are involved in it.

Q. Let me ask the question a little bit differently.

When you say "perhaps," is it your understanding that sometimes people with those

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degrees would meet the definition and sometimes they wouldn't?

A. Yes, ma'am.

Q. How would you be able to distinguish between those cases?

A. Depending on the things that they have done in their career. There's some petroleum engineers that have only done petroleum-type things like developing fracturing plans and things like that, but there's other petroleum engineers that have been heavily involved in machine design.

The civil engineers are very much involved in the design of the structures, but not always. Again, sometimes a civil engineer works on surveying lands and things like that. So those are a little tricky because they may have the educational background. They may not have been doing those things, you know, to -- to backfill their mechanical knowledge.

Q. Would somebody who has a petroleum engineering degree and at least two years of

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experience engineering the structural or mechanical aspects of aggregate transfer equipment, would they meet your definition?

A. I'm sorry, ask that question again.

Q. Sure. Would a person having a petroleum engineering degree that also has at least two years of experience engineering the structural or mechanical aspects of aggregate transferring equipment, would they meet your definition?

A. Yeah. I mean, that's how I defined it.

Q. And same thing is true for a civil engineer with the same amount of experience?

A. Yes, ma'am.

Q. Okay. Did you consider whether any other degree programs could qualify under this prong of your definition?

A. Not at the time. I just kind of generally put those in there.

Q. What about industrial engineering? Are you familiar with that type of degree

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program?

A. I am. From my experience with industrial engineering, they are more working on the -- I guess, the industrial side, potentially. I would have to get into that one. I'm not as familiar with the industrial engineering curriculum as I am the civil and the petroleum.

Q. Would a person with an industrial engineering program, would they fit under the prong of your definition under paragraph 28, the following paragraph?

A. Yeah. Other engineering fields and then the four to six years of the experience.

Q. So would a person -- I'm sorry, go ahead.

A. Yes. Then because that's another engineering field -- degrees in other engineering fields.

Q. So would a person with a industrial engineering degree who has four years of hands-on experience specifically related to

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engineering, those aspects that we discussed, would they meet your definition?

A. Yes, as I have written.

Q. What sorts of undergraduate courses provide a person of skill in the art the training that you believe is necessary to qualify as a person of skill in the art?

A. So those would be the mechanical engineering aspects, the statics, dynamics, where you learn and determine -- how to determine loads and stresses on structures.

Mechanical design courses that teach you how to use various techniques to design mechanical systems.

Q. And what sorts of calculations would a person of skill in the art have to be comfortable with performing in order to design this type of equipment?

A. That would be --

MR. NYDEGGER: Objection. Form.

THE WITNESS: That would be calculating the loads associated with -- that

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would be what the components would experience, the stresses that those loads would produce, rate calculations, horsepower calculations. Just to name a few.

BY MS. FLANNERY:

Q. Are there any more that you can think of that would be necessary?

A. Well, there's a lot more. But I mean, how many more -- horsepower, strength of materials. Just leave it at that. I think those are good.

Q. In both of these definitions, when you refer to -- I think you used the phrase engineering the structural and or mechanical aspects of aggregate transferring system. I assume that would include actually building or actually designing those systems. Would you agree?

A. Yeah.

Q. Okay. Would that include supervising engineers who do that work?

A. I think those who supervise need a

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general idea of what their team is doing, but those who actually have the hands-on experience are the ones that I'm describing, I guess.

Q. So I just want to make sure I'm understanding your answer. So when you talk about in your definitions having at least two years or four to six years of hands-on experience, does that -- do those time periods -- would that be satisfied, at least in part, by supervising, periods of supervision of those activities?

A. Well, similar to the way that -- I mean, I did a lot of hands-on, for example, but I also supervised those that were within that discipline, engaged in those activities. But if you had someone that all they did was supervise a team who were engaged in those activities, then they don't have that hands-on experience.

Q. Okay. So if someone has two years of building or designing these systems, they

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would qualify under that phrase in your definition, setting aside the degrees for these for a moment?

A. That definition being the years of experience engineering the structural and or mechanical aspects of aggregate transferring equipment, yeah.

Q. Okay. If a person had one year of experience building and designing those systems and then one year of supervising, would that meet the definition that you have here in paragraph 27?

A. Well, it wouldn't meet -- directly it would not meet. If you're asking me how does that meet the definition of what I've written in my declaration, then no, because that supervision aspect is simply supervising.

Q. Okay. So that would be your opinion even if they had done one year of work actually designing?

A. Yeah.

Q. Okay. What if someone had done one

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year of work designing, building, and 20 years of work supervising, would that change your view?

A. Probably not. I mean, I'm looking at my definition that I've written, and using that as the gauge, then simply supervising and not having that direct engineering experience with these mechanical components, I would say not. They would not meet that definition.

Q. Again, looking at the two years of experience engineering the structural or mechanical aspects, the commissioning work that you described, would that work count towards this two years of experience engineering?

A. Well, part of that experience is being involved in -- I would say yes, because that experience involves looking at the components and monitoring the system and thinking of ways of improving those systems and things like that.

Q. In these definitions when you refer

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to "aggregate transferring," I want to understand, conveying aggregate is obviously one example of transferring aggregate. Would you agree with that?

A. Yes.

Q. How, if at all, does transferring aggregate differ from conveying aggregate?

A. Well, transferring, I would say, is sort of your overall definition. Conveying is a specific method of using conveyors to convey it. Other ways of transferring is through a chute. That's a transferring method.

Q. Would storage of aggregate count as this aggregate -- in your definitions of a person of skill in the art, would experience with systems used to store aggregate qualify?

A. No.

Q. And why is that?

A. Because looking at what the '689 patent consisted of, it consists of things that transfer aggregate material.

Q. In either the definition in

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paragraph 27 or paragraph 28, either of those alternatives, is it your view that more experience can make up for, perhaps, not having the exact education levels that you described?

A. The experience related to the hands-on experience related to engineering and/or structural or mechanical aspects, yes. But that would be the hands-on experience with doing that.

Q. For example, if a drafter didn't have an undergraduate degree in any of these fields but they had four, six, maybe more experience --

A. More, yes.

Q. -- they might meet the definition of a person of skill in the art?

A. Yes, ma'am.

Q. And why is that?

A. Well, because they are familiar with things that are in the state of the art. They are familiar with conveyors. They're

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familiar with all those different things. But -- yeah, but that's with that body of knowledge. And then also during that experience, gaining the ability to do a lot of those structural calculations and other things.

Q. Is it your view that only the design work can give them that -- can give a person that experience other than an educational degree?

A. Yes.

Q. Is there any amount of use of these types of aggregate transferring equipment that would be sufficient to make up for, for example, a degree in mechanical engineering?

A. Can you maybe restate that?

Q. Sure. If someone had, let's say, hypothetically, 10 years of experience in using aggregate transferring equipment and the use included troubleshooting, maintenance, things like that, is it possible that that could make up for the lack of meeting these

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other requirements?

A. Not in my opinion.

Q. Is there -- I gave you an example of 10 years. Is there any amount of experience that could give that in your mind?

A. I can't think of any amount that would -- you know, it would have to be a case-by-case, but I can't think of it occurring.

Q. In a normal working career, I suppose?

A. In a normal working, yes.

Q. Do you know -- well, I'll start with Mr. Stanton. Do you know if Mr. Stanton qualifies as a person of skill in the art under either of your definitions?

MR. NYDEGGER: Objection. Foundation.

THE WITNESS: I don't know.

BY MS. FLANNERY:

Q. Do you know a gentleman named Dan Brinkman?

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A. No, ma'am, I do not know him.
Q. What about Jason Brenden?
A. I do not know him.
Q. Tyler Dewitt?
A. I do not know him. I believe they're mentioned in the patent. Yeah. Okay.
Q. Do you know anything about their backgrounds?
A. No, ma'am.
Q. Fair enough.
When we speak about aggregate in the context of the '689 patent, what are the requirements for a material to qualify as an aggregate?
A. Aggregates are particulate material. Some of the examples would be sand for sure, gravel, small pebbles and rocks, clay, you know, chunky clay, things like that.
Q. What are the features of a particulate material that decide -- that determine whether it is an aggregate material or not?

A. It's generally if you -- there's various definitions. It's generally a mined product that may go through some classifications where they screen, but that's generally what your aggregates are. They're the mined product. They're raw materials that you would see.

Q. I see.

So it's based on the source of the material?

A. That's part of it, yeah, the source.

Q. Okay. What are the other parts of the criteria for a particulate being an aggregate versus not?

A. Yeah. So it's -- I'm thinking of things that are mined. For example, gold, but you wouldn't consider gold an aggregate. So that's why things like that would not be generally considered an aggregate, per se.

Aggregates are things that are mined that are then used to -- you know, many

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times in construction, that they're used also to make concrete with the addition of cement. So those would be the things.

Q. Okay. So the criteria that we have gone through are the source and then the things that they're used for?

A. Yeah.

Q. Is there any other criteria that you can think of?

A. The definition for aggregate is not really set in stone, no pun intended, but generally the industry sees aggregate materials as rock and gravel and sand. So those things -- those are examples of what an aggregate are.

Q. I believe you stated in your declaration that it is your view that bulk cement is not an aggregate?

A. Bulk cement is not an aggregate.

Q. And why is that?

A. Cement is a manufactured product.

Q. Are there materials that as to the

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look and feel of them that are mined that might appear to be -- that might appear very similar to cement?

A. Some that I can think of would be, like, gypsum or talc. You know, those types of things.

Q. Would gypsum and talc be aggregate materials?

A. Well, the industry wouldn't see those as an aggregate, per se, because, again, their use is -- you know, it's not the same as being used for -- most aggregate materials are ultimately used for making concrete. So I wouldn't see those items as being considered aggregates either.

Q. Would you agree that the definition of aggregate varies somewhat within person -- amongst persons of skill in the art?

A. I think generally the industry sees aggregates as how I described them, that some may consider those other things aggregates, but they sort of wouldn't really be correct

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with the rest of the industry from what I -- from what I've experienced.

Q. Are there systems that can be used for handling both aggregate materials as well as non-aggregate particulate materials?

A. Each material has certain characteristics that may or may not affect how they are handled and conveyed and various other things.

Q. I'm not sure I understand your answer. I'm going to try -- I'm asking if there are systems that you are aware of that can be used to transfer aggregate materials but then can also be used to transfer a material that you would not consider an aggregate.

A. I'm not aware of any because of the fact that many times the way that you handle some aggregate materials are different than the way you handle things like powders.

So I don't know if that answers your question, but I'm not aware of any.

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There's different things that you have to do to make it work.

Q. I'm turning in your declaration, Exhibit 1004, to paragraph 39, please.

A. Yes.

Q. You stated about halfway through this paragraph that:

"Using Waldner's system for concrete or bulk cement would be problematic and would require different components and features to work."

Do you see that?

A. Yeah.

Q. And what is your basis for that statement?

A. Well, I'm looking at what is disclosed in Waldner, the chute, for example, having a cement flow through that chute is very difficult, typically requires things like air to blow and aerate the material, but I see no disclosure of that type of system on that chute.

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It describes a bucket elevator but no other features that would help it handle cement. And the scope of what the -- the '689 -- I'm sorry, the Waldner patent shows, shows it's for an aggregate system.

Q. Let me take a step back. What is your experience with handling cement, systems for handling cement?

A. My experience is with talking with my team, who have had some experience with cement, and the things that it requires in order to move cement.

Q. Did you talk with those individuals on your team in the course of preparing for your deposition?

A. No, ma'am. This was just, you know, through my life's experience in the industry.

Q. Over the years?

A. Over the years, yeah.

Q. So you spoke with individuals who --

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A. Yes. And I've seen systems that handle cement.

Q. So based on your experience speaking with individuals who work on those systems and having seen those systems, that is the basis for your giving the opinions about what would be required?

A. Yes, ma'am.

Q. Do you agree that a bucket elevator could be used to convey cement?

A. Yes.

Q. Do you agree that a chute could be used to transfer cement?

A. I agree in the sense that you would have to add additional components to those items. The buckets, from my experience seeing equipment that handles cement, requires things like holes in the bucket to keep it from -- pardon the phrase -- poofing when it lands into the bucket.

And as I mentioned earlier, the shoots themselves, the cement material doesn't

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flow so it requires aeration of that material to allow it to flow and generally steeper -- very steep chutes and things like that to get that cement to flow.

Q. The bucket elevator that's described in Waldner, those features that you described, those would be within the enclosure, correct?

A. They would be, but they're not described within any of the description of the system or anything else, which would be very -- if you're doing that, you want to make sure to include those things.

Q. You would want to make sure to include those things. What's your basis for saying that?

A. Because if you're wanting to handle cement, you have to have the special features in order to do it.

Q. And would a person of skill in the art know that?

A. A person of skill in the art of

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aggregate equipment?

Q. Yes.

A. Yes.

Q. Okay. Let's go to paragraph 34, just a couple of pages back in Exhibit 2004.

A. Say that one more time. 2004 and what paragraph?

Q. Exhibit 2004, paragraph 34.

A. 34.

Q. Yes.

A. Got it.

Q. And here -- and I'm looking at the second sentence. I mean, you can read as much of this as you like -- I'm trying to keep you from that -- but focusing on the second sentence:

"In the relevant field of moving aggregate materials, a POSITA would understand a conveyor extension assembly and extension conveyor for moving aggregate to be a device that imparts motion to the aggregate to transport it

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from one point to another."

Do you see that?

A. Yes, ma'am.

Q. So is it your understanding that a conveyor has to exert some sort of force on the aggregate to do that?

A. Yeah. The conveyor imparts the motion -- carries the equipment -- carries the material from one point to the other.

Q. Does whether or not a device qualifies as a conveyor under your definition here, does that depend on the type of material you're conveying?

A. Ask that question again.

Q. Yeah. So whether something qualifies as a conveyor in your view, will that depend on the type of material that it's being used to convey?

A. No. A conveyor is a conveyor.

Q. As an example, I've not been in a warehouse in a while, but are you familiar with con- -- with rollers that may be used to

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convey like a box at a warehouse?

A. Mm-hmm.

Q. Would you consider that to be a conveyor for aggregate material?

A. If you're asking me the example of a roller-type conveyor that has rollers that are spaced right next to each other to move boxes, are you asking if that is something that I would see in the aggregate industry?

Q. I'm asking whether that would qualify as a conveyor within the context of the '689 patent.

A. I mean, that type of conveyor would not be used for aggregate, but it is a type of conveyor because it imparts that motion. It mechanically takes and imparts that motion onto the product.

Q. Is it your understanding that that type of conveyor would read (ph) on the scope of the '689 patent claim?

MR. NYDEGGER: Objection. Form.

THE WITNESS: Maybe ask a different

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way. I'm not real sure what you're asking.
BY MS. FLANNERY:
Q. If the chute in the Waldner reference was a place with a roller-type conveyor, would that meet the extension conveyor for moving aggregate requirement of the '689 patent claims?
A. It wouldn't move --
MR. NYDEGGER: Objection. Form.
THE WITNESS: I don't know -- that -- that's a very hypothetical question because it -- I don't see how that type would move aggregate, so why would we have that type of conveyor?
BY MS. FLANNERY:
Q. I'm not asking as to why somebody would design a system that way. That's not my question.
A. So it's just a hypothetical is that a conveyor.
Q. I'm asking whether it would meet the definition within the '689 patent?

A. I'm not sure if the '689 patent says a belt, but I thought it did, a belt conveyor, but it would be a stretch. I am having trouble with making that connection --

Q. Okay.

A. -- because I -- everything that the '689 patent shows is a belt conveyor.

Q. Is it your understanding that the '689 patent claims require a belt conveyer in these terms, the extension conveyor for moving aggregate?

A. That's what they -- how they describe a conveyor. It's -- it is a conveyor, and the figures show it to be a conveyor -- belt conveyor. So yes.

Q. What, other than a conveyor, can be used to transfer aggregate materials and other than chutes? I know we talked about chutes as one example. What other types of devices could be used to transfer aggregate material?

A. Right. And just to make --

MR. NYDEGGER: Objection. Form.

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THE WITNESS: Just to make the distinction, you're saying transfer.

BY MS. FLANNERY:

Q. I am.

A. Yeah. Because a chute doesn't -- it just transfers.

Q. I am. I'm not trying to trick you on that. I am.

A. There's other methods to transfer material. There's the belt conveyors. There's augers. There's air slide conveyors. There's various types of conveyors.

Q. You mentioned air slides. Is an air slide a type of conveyor?

A. An air slide would be a type of conveyor.

Q. What mechanism does -- so just so I'm understanding correctly, an air slide would be a type of system that is used to -- that imparts motion to an aggregate?

A. Well, there's various types of air slides. Some simply aerate the material and

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allow it to slide. There's some types that actually -- and it's generally not called an air slide, it's usually called a pneumatic -- pneumatic system that actually blows the material through a tube. That would be a way to transfer material, like, that are on pneumatic bulk transports, things like that.

Q. So the type of pneumatic system that you described there, would that be a conveyor?

A. Well, didn't you ask for transferring methods or conveyors?

Q. Yes. Well, let me ask it a slightly different way. Would you agree there are some air slides that are conveyors under your definition?

A. If they're configured correctly, they could be considered a conveyor. Again, it -- it's kind of how does that -- how does it work, how does it impart the motion onto the material.

Q. Give me an example of an air slide

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that imparts motion to aggregate that would not qualify as a conveyor?

A. If it doesn't impart the motion on the material, you could not call it a conveyor.

Q. So let me ask -- so does an air slide that imparts motion to a material, does that qualify as a conveyor?

A. Yeah. One that actually moves the material through its mechanisms that act on the material to move that material directly.

Q. You referred to "mechanisms." What type of mechanisms could that be?

A. Well, air that's directed onto the material that forces it to move.

Q. Okay. We talked about air forcing -- being blown by some sort of mechanism, a pump or a fan?

A. Yeah.

Q. Obviously, an electric system that has to be turned on to work?

A. Could be electric. Could be --

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Q. A motor?
A. -- something that creates the air.
Q. A powered system that moves the air?
A. Yes, ma'am.
Q. I think you mentioned a pneumatic system. If a pneumatic system imparts motion to the aggregate, that would be considered a conveyor?
A. I think in a rough definition, it's getting -- again, even the air slide, you know, I think there would be some in the industry that would say no, but in my viewpoint, a conveyor is something that imparts mechanic -- mechanically imparts motion into the material.
So there's some that may say, you know, no, that's not strictly a conveyor. They think of conveyors as, you know, a belt conveyor. Even an auger system would be an auger conveyor.
But I'm kind of open to that

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definition that any mechanical thing that imparts motion onto the material would be considered a conveyor.

Q. Do some conveyors rely on a combination of mechanisms to impart motion?

MR. NYDEGGER: Objection. Form.

THE WITNESS: Ask that question again.

BY MS. FLANNERY:

Q. Sure. Are there conveyors that meet your definition of a conveyor that rely on multiple mechanisms to impart motion to the aggregate?

MR. NYDEGGER: Objection. Form.

THE WITNESS: I'm not aware of any.

BY MS. FLANNERY:

Q. What about a screw-type auger? You'd consider that a conveyor?

A. Yeah.

Q. Do screw-type augers rely on gravity to any extent?

A. No, ma'am.

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Q. No?
A. I mean, to convey the material, is that what you're asking?
Q. Yes.
A. No, ma'am.
Q. What about pneumatic systems? Do they rely on gravity to any extent?
A. Are you specifically talking about the pneumatic conveyance like on a pneumatic hauler that blows material in a tube?
Q. Yes.
A. Okay. So what was your question again?
Q. Does that type of system rely on gravity to convey material?
A. That system does not.
MR. NYDEGGER: Objection. Form.
BY MS. FLANNERY:
Q. What about air slides? Do air slides that impart motion to aggregate, do they rely on gravity to convey the material, in part?

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MR. NYDEGGER: Objection. Form.

THE WITNESS: An air slide can be set at an angle that only allows the material to aerate and then gravity allows it to slide. So that type is not imparting a mechanical motion in the direction you want it to travel. Gravity is being used to transfer that material.

BY MS. FLANNERY:

Q. I'm going to hand you what's been marked already as Exhibit 1014.

A. I don't think that's the same.

(Exhibit Number 1014, which was previously marked, was referenced.).

BY MS. FLANNERY:

Q. So Exhibit 1014, and I'm going to direct you to page 28. We will start there.

A. Okay.

Q. Do you understand that this is describing an EconoLoader air slide conveyor design?

Do you see that?

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A. Yeah. Air slide conveyor-based loading system. I see it at the top.

Q. In your opinion -- according to your definition, is this a conveyor?

A. Well, they are saying that it's an air slide conveyor-based loading system. So they're calling it a conveyor. So using their statement there, they're calling it a conveyor.

Q. So you'd agree a person of skill in the art would understand this is a conveyor?

A. They would read that and see, oh, that's called a conveyor.

Q. Do you know if the air slide conveyor-based system that's shown here, does that air slide impart motion to aggregate?

A. From the information that I have here, I don't know the motion to transfer it, no.

Q. Can you tell one way or the other from looking at this whether this is the type of air slide that just aerates material, I

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think is what you described?

A. I can't.

Q. Do you agree that it transfers material -- well, let me take a step back.

In the figure that's shown there at the bottom sort of sketch on page 28, do you see how the air slide is mounted on a pedestal?

A. Yes, ma'am.

Q. That air slide is mounted at some elevation from the ground level?

A. I see something that's pointed to that says "main conveyor arm pivot." Is that what you are asking?

Q. Yes. And that's mounted at a level that is above the ground?

A. Yes.

Q. So would you agree that that air slide conveyor-based system transfers material to a location that is elevated relative to the ground?

MR. NYDEGGER: Objection. Form.

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THE WITNESS: It doesn't elevate the material. It just moves the material from -- I mean, looking at that figure it is at an elevated position. I don't know how tall that pedestal is, but yeah, it doesn't transfer it to an elevated. It transfers at an elevated position.

BY MS. FLANNERY:

Q. Would you agree it transfers the aggregate from one elevated position to another elevated position?

MR. NYDEGGER: Objection. Form.

THE WITNESS: Generally, it does. It looks that way.

BY MS. FLANNERY:

Q. Okay. Would you agree that this conveyor-based system has a pivot joint at the pedestal?

A. Looking through the figures and the description, it looks like there is a pivot at the pedestal.

Q. And do you agree it has a second

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pivot that is spaced laterally from the pedestal?

A. Yes.

Q. If you go a couple of pages further into that Exhibit 1014 to page 31, please. Actually, before you do that, I'm sorry, one other question.

The air slide conveyor-based system that we see there on page 28, the arm that extends from the pedestal, it has a bit of a downward slope.

Do you see that?

A. Yes, ma'am. It looks like it has a 6- to 7-degree slope as it's described.

Q. Do you know why that is?

A. Again, on this type of conveyor, it could be using the slope along with air to blow it in that direction or to materially move it in that direction. So the slope potentially helps that move that.

Q. It says 6 to 7 inches of slope there in the drawing.

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A. Oh, it does.

Q. Based on that information, would you consider this extension to be substantially horizontal?

MR. NYDEGGER: Objection. Form.

THE WITNESS: No, I mean, we're looking at a thing that's sloped down.

BY MS. FLANNERY:

Q. Okay. Now, we can go further to page 31. This is a screw conveyor-based loading system.

Do you see that?

A. 31, yes.

Q. Screw or an auger, would you understand those to be, at least at the level that this is describing, a relatively interchangeable term?

A. Yes.

Q. Would you agree that the extension arm that comes off of the pedestal in that figure at the bottom, is that substantially perpendicular to the pedestal?

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A. Yeah. I see that it looks to be that way.

Q. Would you agree that this is a conveyor system?

A. Yes.

Q. Would you agree that this also has two pivot joints, one at the pedestal and then one spaced laterally from the pedestal?

A. Yes.

Q. A few more pages down to page 34, please.

A. Okay.

Q. And you see this is discussing a drag conveyor-based loading system.

Do you see that?

A. Yes, ma'am.

Q. What's your understanding of a drag-based conveyor system or drag conveyor-based system?

A. What are you asking me?

Q. How does that compare to, say, a belt conveyor?

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A. A drag conveyor -- I've never used them. I've seen them depicted in various things, but from my understanding, it has devices that are placed in the conveyor channel or whatever you would call it, and the material that's in that channel, then those paddles are moved and they drag the material to convey it.

Q. Would you agree that the extension arm that's shown here is substantially perpendicular to the pedestal?

A. Yes.

Q. And would you agree that this conveyor system has -- also has two pivot joints, one at the pedestal and one distanced laterally from the pedestal?

A. Yes.

Q. Let's see. I'd like to go to the Waldner reference, which is Exhibit 1004. I think it's one that you've got in your binder. And I'd like to -- let's look at Figure 15. That's a good one to orient ourselves.

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A. Okay.
Q. Do you see the chute 242?
A. Yes.
Q. Do you agree that the chute 242 extends from the bucket elevator 50 ^^prime?
A. Yes. It's extending away from the bucket elevator.
Q. That chute 242, is it your understanding that it can retract or extend in length?
A. Yes. It's -- it looks like a telescoping chute if that's what you asked.
Q. Do you agree that chute 242 has an inlet for receiving aggregate?
A. Well, 244, I'm not sure what -- 242 describes the whole chute from where it receives material from the discharge. So if that's what 242 is pointing to, then, yeah, it has the -- what was your question again?
Q. The inlet for receiving aggregate.
A. It looks like it has an inlet for receiving the material.

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Q. And you agree 242 has an outlet for dispensing aggregate?

A. It looks like it does. It's at 246A.

Q. Let's look at Figure 1 for a second.

A. 36. Okeydoke.

Q. Figure 1 shows the bucket elevator 50 but does not show the chute 242 or another chute in its location?

A. Yes, I see that.

Q. In this instance, if the bucket elevator carries aggregate up to the top and fully dispenses it at the top, the aggregate -- what would happen to the aggregate as it exits the elevator?

MR. NYDEGGER: Objection. Form.

THE WITNESS: Well, the aggregate would pour out of what looks to be labeled 60 or 50.

BY MS. FLANNERY:

Q. I think it's 60. I think you're

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right.

A. Yeah. It would pour out of there. Just as we see it.

Q. I understand. That is what I'm asking.

It would just fall down vertically?

A. If it's -- yeah, depending on the material, you know. If it's sand it's going to blow and everything else.

Q. I'm sure that would be fun.

A. Yeah.

Q. So would you agree that in Figure 15, where there is a chute attached, that chute 242 directs the aggregate to 246A?

A. Yeah. The chute is used to direct the material where it discharges 246A.

Q. Is it your opinion that chute 242 is a fixed tube or a fixed chute?

MR. NYDEGGER: Objection. Form.

THE WITNESS: Fixed in what manner?

BY MS. FLANNERY:

Q. Does not move.

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A. Relative to?

Q. Space. I wasn't trying to trick you.

A. Well, I know. I'm making sure I answer your question correctly. Because it is my understanding that that chute is telescoping, and that it moves up and down and it also pivots left and right.

Q. Based on that information, is it your opinion that this is fixed -- that the chute is fixed in space?

A. Well, no, it's not fixed in space. I just described how it moves.

Q. Understood.

One end of the chute, the end that is right at the inlet of the bucket elevator, that ending may be fixed?

A. Yeah. Relative to its motion, it stays in that position in order to receive the material from the discharge of the bucket elevator.

Q. Understood.

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But the rest of the chute, not fixed?

A. Yeah. As depicted, it shows that it can do all those things that I mentioned.

Q. And if the chute is -- well, let me ask you, in the Waldner reference, is it possible to orient that chute to be horizontal or perpendicular to 50 prime, either way you want to say it?

A. Up and down, horizontally, that's what you're asking?

Q. Yes.

A. I don't know if you could get in that position. It doesn't describe it. But being a chute, it's going to have to be angled down.

Q. In order to dispense proppant?

A. Yes.

Q. All I'm asking, not with regard to whether proppant will actually flow down it, does the range of motion that's allowed by the mechanisms that are described here, does it

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allow that chute to be oriented in a horizontal position?

MR. NYDEGGER: Objection. Form.

THE WITNESS: I don't know if it could go directly horizontal.

BY MS. FLANNERY:

Q. You don't know?

A. I don't know.

Q. Possibly, you just haven't looked at it?

A. Yeah. Or it isn't disclosed or even described in that way. I mean, as far as fully horizontal, you know, because -- I don't know.

Q. Okay. Is there anything in Waldner that leads you to believe that it cannot be oriented that way? Again, setting aside the is it actively dispensing proppant?

A. I don't recall seeing anything that keeps it from being positionable fully horizontal, that I recall.

Q. I have one more very short set of

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questions and then maybe we break for lunch. Let me finish up on this one point and then we can break and see if it's here.

(Exhibit Number 1001, which was previously marked, was referenced.)

BY MS. FLANNERY:

Q. I'm going to hand you what has been marked as Exhibit 1001, which is the '689 patent. I'm reasonably certain it's in your binder.

A. Yes, ma'am.

Q. I want to direct your attention to the claim line, which is page -- it's on page 30.

A. Got it.

Q. And I'm specifically looking at the extension conveyor for moving aggregate that's sort of the second-to-last indented paragraph.

Do you see that?

A. Yes.

Q. Okay. And then I want to look at the indented paragraph that follows that, it

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begins "Wherein the extension conveyor."

Do you see that?

A. Yes, ma'am.

Q. It says:

"Wherein the extension conveyor is articulated between the inlet and outlet with an inboard segment and an outboard segment."

Do you see that?

A. Mm-hmm.

Q. Is it your understanding that both the inboard and the outboard segments each have to have a device that conveys -- that imparts motion to the particulate -- to the aggregate? Excuse me.

A. As it's described -- excuse me for having you repeat the question. I'm sorry.

Q. No reason to apologize. Happy to do it.

Is it your understanding that both the inboard segment and the outboard segment each have to have a device that imparts motion

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to the aggregate to meet this limitation?

A. Yes, I believe so.

MS. FLANNERY: I think now is a good time to break.

MR. NYDEGGER: Monice, we're coming back after lunch.

(Recess.)

BY MS. FLANNERY:

Q. Back on the record. So I'll go back to your declaration. We'll go to paragraph 36.

A. I am there.

Q. And in paragraph 36, you quoted Dr. Durham's statement of the problem facing the '689 patent ^^ and you say you disagree with his statement of a problem. And following that you say in your opinion:

"The '689 patent is concerned with the problem designing a transportable apparatus to transfer aggregate material to an elevated location such as the inlet of a storage silo."

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I think in the following sentence you said that Dr. Durham's statement of the problem improperly assumes a solution that uses a conveyor system, correct?

A. Correct.

Q. Is that opinion based on your definition of the -- of a conveyor system as we talked about earlier in the deposition?

A. No. It's simply that he said that this was the problem facing his designing a conveyor system. Just the nomenclature of the words that he used is what I disagree with, because I don't think he accurately represented what the '689 patent -- yeah.

Q. Okay. I think I understand.

So in your view, the problem facing the '689 patent, in other words, is broader than just designing a conveyor system?

A. A conveyor system, yeah.

Q. And I think we talked about a conveyor is one modality of transferring aggregate, true?

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A. Right. And he makes the assumption that the -- that uses a conveyor system as part of it, so -- right.

Q. Well, I just want to make sure I understand. It is correct that conveyors are a type of transferring system, true?

A. A conveyor is part of a transfer system.

Q. Is one type of a transfer system?

A. Yes, ma'am.

Q. You also stated that Dr. Durham's statement of the problem did not account for the need of the apparatus to be transportable. And you restated the problem in your opinion as requiring a transportable apparatus.

A. Yes, ma'am.

Q. Is it your opinion that a person of skill in the art would only consider prior art systems that are transportable to be analogous prior art?

MR. NYDEGGER: Objection. Form.

THE WITNESS: Can you reask that

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question?
BY MS. FLANNERY:
Q. Sure. Is it your opinion that a POSITA would only consider systems that are transportable or publications about systems that are transportable to be analogous prior art?
MR. NYDEGGER: Same objection.
THE WITNESS: I think a POSITA would look for -- look for systems that are transportable, and so I -- I think so. I think they would be looking at transportable systems.
BY MS. FLANNERY:
Q. Exclusively transportable systems?
A. I think that would be not an exclusive, but they may look at other systems. But I don't know that it would just be exclusively transportable. But they may look at other systems.
Q. Let's move to paragraph 39, please.
A. Got it.

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Q. And I think in that paragraph you were discussing Dr. Durham's discussion of the Waldner reference.

Do you see that?

A. Yes.

Q. And in the last sentence that begins at the bottom of page 17 there, you say:

"To the extent that Durham is saying that Waldner's system is for handling concrete/bulk cement systems, I disagree."

A. Correct.

Q. Now, you agree that Waldner is used for handling aggregate material, correct?

A. Yes. I believe that's part of its description -- in its descriptions and things.

Q. Is it your understanding that the Waldner reference is limited to a particular type of material?

MR. NYDEGGER: Objection. Form.

/ / /

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BY MS. FLANNERY:

Q. Let me restate that. Sorry. I misstated.

Is it your understanding that the Waldner system is only applicable for aggregate material?

MR. NYDEGGER: Objection. Form.

THE WITNESS: I would say that the Waldner system, as it's depicted, is for aggregate material.

BY MS. FLANNERY:

Q. Okay. Is it your opinion that it is exclusively for aggregate material?

A. Looking over -- I'm going to look and see because I thought that Waldner also said something about architectural products.

Q. Waldner is 1004.

A. So according to the abstract, they talk about the particulate material at an elevated location. So I would say -- yeah, I mean, particulate material to an elevated would be the aggregate material.

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Q. Well, since you pointed it out, so when Waldner -- in the abstract, it talks about a portable conveyor system for receiving particulate material from a transport vehicle.

Do you see that?

A. Mm-hmm.

Q. And conveying that particulate material to an elevated location?

A. Correct.

Q. Is that your understanding of the types of materials that the Waldner system is applicable to?

A. Yeah.

Q. Going back to your declaration, paragraph 44, please.

A. Okay.

Q. In this paragraph, you responded to Dr. Durham's statements about a belt conveyor being more advantageous in its ability to control the speed of discharge as opposed to gravity-based systems.

Do you see that?

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A. Can you read it maybe?
Q. Sure. The very first sentence there.
A. Yeah.
Q. You note Dr. Durham's statement that a belt --
A. Yes. Okay.
Q. And so in the Waldner-based system, what impacts the speed of discharge from the chute?
A. To get our terminology correct, there's speed of the material and that would be the velocity, say, like your speed of a car. Then there's the rate, material flow rates, which is either, you know, like a volume flow rate, like cubic inches per minute or pounds per minute. Okay? So that's a flow rate.
So I just wanted to make sure we were speaking the same nomenclature speed versus flow rate. So can you ask your question again?

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Q. Yeah. So -- and let me back up a second here.

So when Dr. Durham states that a belt conveyor would be more advantageous in its ability to control the speed of the discharge, do you understand that to be talking about the velocity of the discharge?

A. It's unclear because I don't know that he understands the difference between speed and flow rate. I have to take it as what he says is speed means the velocity of the material.

Q. Okay. And do you disagree with the statement that a belt conveyor would be more advantageous in its ability to control the velocity speed of the discharge as opposed to a gravity-based system?

A. As far as the velocity of the material, would it be advantageous to control with -- more advantageous with a conveyor system than a gravity-based system? Perhaps. I'm sorry that I'm thinking of ways that a

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gravity-based system you could control the speed -- if you were interested in speed. It's sort of a weird thing to talk about as far as the speed as opposed to flow rate.

Q. Okay. So in the sentence that follows, you note Dr. Durham's statement that:

"A POSITA would have been motivated to substitute the EconoLoader of Dynatek for the discharge chute of Waldner, e.g., to increase discharge rates."

And there is an ellipses that I didn't read, but there's that.

A. Yeah, I see that.

Q. So let me ask a different question, then. What factors impact the flow rate of particles along the Waldner chute?

A. Things that impact the flow rate on the Waldner chute would be the type of material, and that's even within various frac sand classifications and grain sizes, humidity, the angle of the chute, the diameter of the chute, the surface friction of the

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chute. Those are several things that would affect the flow rate.

Q. The degree of incline of a chute would also impact the flow rate coming out -- of particles coming out of the chute, correct?

A. Yes, ma'am.

Q. And I think we talked about this before, but if the chute in Waldner were fully horizontal, then gravity would not act to pull any of the particles down that chute. Is that your view?

A. Right. If it's fully horizontal, it can't do that.

Q. Is it possible in using one Waldner system that has -- built from specific -- from one material, you know, not varying the materials, but one system that's sitting there -- is it possible to increase the flow rate of particles down the chute if you are decreasing the rate of incline?

MR. NYDEGGER: Objection. Form.

/ / /

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BY MS. FLANNERY:

Q. The angle of the incline.

A. Okay. Maybe reask that question again.

Q. Sure. For a given chute in Waldner, if you are decreasing the incline, making it more horizontal --

A. More horizontal. Okay.

Q. -- can you increase the flow rate?

A. Doing that -- moving it to a horizontal -- more horizontal position, can you increase the flow rate?

Q. Correct.

A. Not that I'm aware of.

Q. In the Waldner system -- and actually, it may make sense to look at a figure from Waldner. So if you can look at Exhibit 1004, Figure 15.

A. Got it.

Q. So, again, I think you mentioned that 246A is the outlet for that chute?

A. Yes, ma'am.

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Q. If the chute is at an alignment of, I guess, 0 degrees, 12:00 o'clock from the bucket elevator --

A. You mean completely horizontal?

Q. Not completely horizontal. I'm talking about in the --

A. Looking down from.

Q. Looking down, yes. Looking down on it. So in the -- in that rotation, so if it's at 12:00 o'clock --

A. Directly behind the bucket elevator.

Q. Yes.

A. Okay.

Q. Would you agree that the chute can reach its -- can reach a silo at the maximum length of the chute?

MR. NYDEGGER: Objection. Form.

THE WITNESS: I think I understand your question, but I'm not sure. Are you asking if -- I'm not sure what you're asking, I guess.

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BY MS. FLANNERY:

Q. Let me try a different -- I'm going to attempt against my better judgment to draw a top-down view of what we were just describing in a situation where you have six silos.

A. I understand drawings.

I don't remember describing a system that had six silos.

Q. I understand that. I'm going to put that as a hypothetical to you.

A. Okay. Thank you.

Q. All right. So I've drawn a top-down view of six silos. And would you agree that the six-silo arrangement that I've drawn here is sort of a typical arrangement for silos in oil field sites?

A. Yeah. That's the way I've seen it, sort of a six-pack that looks like this.

Q. And so I've drawn a top-view of the bucket elevator 50, probably inartfully. But do you understand that that represents the top

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view of the bucket elevator?

A. Yes, ma'am.

Q. And then the chute, extending at that 12:00 o'clock position that we talked about away from the bucket elevator.

A. Right.

Q. And that's labeled as 242.

A. Yes, ma'am.

Q. So with that in mind, and I would also like you to assume that the 242 chute here is at its maximum telescoped out.

A. Telescoped position. Okay.

Q. Okay. So in this depiction, the chute is reaching its maximum lateral distance from the bucket elevator. Do you understand that?

A. Right. The maximum distance from here to here in this position. Okay.

Q. I'm going to mark that maximum lateral distance with a dotted line --

A. Okay.

Q. -- which I'm going to label MAX.

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Do you understand that?

A. Sure.

Q. Now, you understand that the discharge chute 242 can rotate in a plane shown to the right or to the left or up or down, I guess, as you're looking at it here.

A. Yes, ma'am.

Q. If I rotate chute 242, let's say, 45 degrees to the right of the bucket elevator, do you agree that the outlet of the chute will not reach the dotted line of that maximum lateral distance under the assumptions that I gave?

A. Right. It will not reach the line.

Q. And the same thing going to the left, correct?

A. Correct.

Q. Another assumption about this hypothetical -- actually, before I forget, let's mark as -- we're going to continue to mark on it. Let's wait until after I'm finished working on it, I guess.

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In the hypothetical, let's say that this chute has a degree of incline that allows particle flow. So it's not perfectly horizontal.

A. Right.

Q. You can't see it in this plane, obviously, but it has some decline.

A. Okay.

Q. If I want to increase the rate of flow down that chute, I would need to increase the slope -- the downward slope of the chute. Would you agree with that?

A. Yeah. That would be one way to do it or are you talking about dynamically or in the design stage?

Q. Dynamically.

A. Dynamically, yeah. That would be one way to do it.

Q. If I were to decrease -- if I were to increase that downward slope, would you agree that the outlet would not reach the maximum lateral distance that I've marked with

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a dashed line? Would you agree with that?

A. In the hypothetical configuration you have here, it would not.

Q. Okay. Now let's mark this as Exhibit 1039.

(Exhibit Number 1039 marked.)

BY MS. FLANNERY:

Q. So going back to your declaration -- sorry for making you flip back and forth -- going to paragraph 44 again.

A. There we go.

Q. In this discussion where you are talking about the material flow rate, second to last line from the bottom, you state:

"The material flow rate of the system" --

I assume you're talking about the Waldner system here; is that correct?

A. Mm-hmm.

Q. (As read):

--"including the discharge rate is set at the input or loading point."

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Do you see that?

A. Yes, ma'am.

Q. So in the Waldner system, is that at the unloader at the base of the system?

A. Yeah. So the material flow rate that is entering the system, and in Waldner -- and I guess I could point to it -- would be where the truck is dumping into that first conveyor -- that would set the flow rate. Whatever material flow was being discharged into that belt, that -- that's what sets the rate of flow.

Q. Okay.

A. Material flow rate. Sorry.

Q. That sets -- does that set the -- it sets the maximum flow rate for the system, correct?

A. As it's discharging, that is the material flow rate. So I don't quite understand what you mean.

Q. So are you saying that in the use of the Waldner system, the rate at which

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particulate is discharged from the truck is always going to be the same as the rate of particulate flowing out of the discharge chute at the end?

A. It's got to be -- the flow rate has to be the same.

Q. You're not aware of any instance where the flow rate would be different?

A. Well, the flow rate could not be different. If it was more flow rate, it would be generating material. If it were less -- if it had the ability to flow at less flow rate, then material would built up between the two points.

Q. Does that occur sometimes in the operation of these types of systems?

A. Not on purpose.

Q. Does it happen sometimes out of necessity?

A. When stuff happens that goes wrong, for example, if the -- let's just say there was a blockage at the discharge of the bucket

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elevator and this flow rate is coming in and it's not able to discharge as fast, then you have more flow rate than is coming out. So it's going to build up in the bucket elevator, and it's a mess.

Q. If the particulate in the Waldner system becomes wet at the top, would that cause its flow rate to decrease relative to what the unloader is?

A. It could potentially, yes.

Q. Is it possible that a truck could unload proppant faster than a chute, an incline chute at the top could allow it to fall?

A. Well, typically, there's some control mechanism that sets that flow rate to ensure that, you know, if any of the downstream components are not -- let's just say this: There's components that are usually put in place where the truck is discharging to limit that flow rate so that you don't have a situation where the downstream component is

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unable to pass that material flow rate.

Q. I see.

So the person -- the operator putting that truck at the system would see my chute can only discharge a certain amount?

A. It would be something mechanical. Call it either an orifice or perhaps the material would build on the belt, and the belt that's down there is traveling at a certain rate of speed, and we know that the material that's on that belt is a certain cross-sectional area, so that cross-sectional area plus the speed then is setting that rate. So all those parameters are controlled in order to set that material flow rate.

And that would be by design because, you know, you would make sure that that material flow rate is not greater than what the bucket elevator can handle or any of the other downstream components can handle.

Q. Does it ever occur in the field that a truck delivers particulate, proppant

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aggregate, and that truck is capable of discharging it at a rate that is faster than what the silo filling system is capable of handling?

A. The truck itself, yes. But since it -- when it enters the system, at that point where it enters the system, the system then has those things installed, are part of the system to then set the rate. So even though the truck may have this huge discharge, it's only able -- once it gets into the system, at that point that system is only able to digest or move that flow rate.

Q. And that system, the discharge and filling of the silos using that system would be -- all else being equal, would be slower than if that truck were to use a system that was not so limited. Is that fair to say?

A. Say that again.

Q. Sure. All else being equal, you know, if a system had a larger orifice, then it would be able to discharge from a larger --

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at a faster rate?

A. Higher flow rate, yes.

Q. Than the one that is limited in the way we were talking about.

A. Just to make sure we're all on the same page, the system is designed to only allow that flow rate to enter into the system, and that flow rate being one that is -- will not over -- be more than what the downstream components can handle.

So even though you may have a large truck with a huge opening, it only then limits that amount that's being entered into the system to that flow rate.

Q. I see.

So at least at the design phase, the known maximum flow rate out of the discharge chute in Waldner, that may limit the rate that you discharge from the truck?

A. Are you asking if that chute then determines what flow rate is set at the entrance?

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Q. That's at least a factor in making that determination.

A. Yeah. Again, going back to -- you design all of your downstream components to be able to handle that flow rate that's entering that system.

Q. Okay. If you had a flow rate that a chute at Waldner, even at its maximum permissible incline could not handle the maximum flow rate out of that truck, would you agree that something would have to be done to limit the flow rate coming out of that truck?

A. Yeah. And that would be part of the design stage, when you would say, well, this chute at this position can handle X amount, so we will set that input flow rate to be at or less than that.

Q. Understood.

A. Typically less.

Q. Understood.

Let's look at paragraph 46, just a couple of pages down in your declaration.

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A. Sure. Got it.

Q. All right. And you state here in paragraph 46 that:

"Even if a POSITA were somehow motivated to replace the discharge chute of Waldner" --

I assume that's what we're talking about?

A. Yes.

Q. (As read):

--"with something with a greater flow rate capacity, a POSITA would not have been motivated to replace the discharge chute with a Dynatek belt conveyor."

Do you see that?

A. Mm-hmm.

Q. In the next sentence you say:

"To increase discharge rates of the chute to handle higher-input flow rates, a POSITA would merely increase the diameter of the discharge chute."

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Do you see that?

A. Mm-hmm.

Q. Would increasing the diameter of the discharge chute address any decrease in flow rate because of the proppant getting wet at the top?

A. Well, you design systems -- you don't want wet proppant anywhere along the system.

Q. Sure.

A. Yeah. So that's why you protect it with enclosed chutes, discharge chutes, things like that. So, again, what was your question?

Q. Yeah. So would increasing the diameter of the discharge chute prevent any clogging due to the proppant getting wet? Not desirably, I understand.

A. I couldn't answer that -- there's so many factors involved in that.

Q. Okay. But it might; it might not?

A. It might; it might not.

Q. Okay. All else being equal, would

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increasing the diameter of the discharge chute make that chute heavier?

A. All things equal, you could -- it would make it heavier, yeah.

Q. Would -- again, all things being equal -- would that increase the surface area, the total surface area of the chute?

A. Right. Because it would be larger, typically, you then could decrease the thickness of some of the materials because now you have a greater sectional stiffness. So there's some factors involved with it. It's not just a cut and dry -- so, you know, the amount of weight that you increase it isn't -- like you said, all things equal, it wouldn't necessarily make it as much heavier as you might think otherwise, because now your section -- your cross-sectional stiffness of that chute is larger.

Q. You would have to make additional modifications other than making the -- increasing the diameter to make that true. Is

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that accurate?

A. Yeah. You would do various things based on the new cross-sectional stiffness of that type of thing, then you could adjust the material thickness too to work in that situation. So it's part of the process.

Q. Is it your understanding that that would be within the level of a POSITA's skill?

A. Yeah. They're able to, you know, design chutes.

Q. Let's go to paragraph 47.

A. Okay.

Q. Very next paragraph.

You stated that:

"A POSITA would realize that for a given flow rate, chutes having fewer moving components and, thus, are less prone to breakdown due to wear and tear and the mechanical failures are significantly smaller and lighter, require smaller and less complicated amounts and are easier to transport than

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belt conveyor systems like that of Dynatek."

Do you see that?

A. Yes, ma'am.

Q. And based on that, it was your view that a person of skill in the art would not be motivated to make that substitution?

A. Yes.

Q. Even if it resulted in an increase in discharge rates?

A. Well, there's -- the better way of increasing the discharge rate is to make a larger -- simply make a larger chute, and that would allow it to transfer material at a higher flow rate.

Q. Okay. So because of that, is it your view that a person of skill in the art would have no motivation to consider the substitution?

A. Right. Because it's a very easy thing to just make the chute diameter larger.

Q. If you made the chute's diameter

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larger, you would have to adjust not just the chute but also the components that connect the chute to the bucket elevator, correct?

A. I don't have enough information to fully answer that because there's factors involved in that. How much larger, et cetera.

Q. You haven't looked at those factors?

A. No, ma'am.

Q. Is it your view that a person of skill in the art would never consider a more complicated system over a simpler one?

MR. NYDEGGER: Objection. Form.

THE WITNESS: A POSITA, in my opinion, would be motivated to use the simplest form of -- to transfer the material, and the chute is the simpler form of transferring the material.

BY MS. FLANNERY:

Q. My question was a little bit different.

I'm asking whether a POSITA -- I'm

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not asking whether a POSITA would be motivated to use the simpler form. I'm asking if a person of skill in the art would not be motivated to use a more complicated one. It's kind of the opposite.

MR. NYDEGGER: Objection. Form.

THE WITNESS: I'm saying that they would not be motivated to use a more complex system when a simpler system is available.

BY MS. FLANNERY:

Q. Is it your assumption that a person of skill in the art would only be motivated to use one or the other?

MR. NYDEGGER: Objection. Form.

THE WITNESS: Well, if a person -- a POSITA saw the Waldner patent and saw that it had a chute, and if they needed to increase the flow rate, they would make the chute a larger diameter.

BY MS. FLANNERY:

Q. Maybe this is a question that's more based on your understanding of the

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obviousness inquiry. When you're making that analysis, is it your understanding that a person of skill in the art can only be motivated to do the most simple solution?

MR. NYDEGGER: Objection. Form.

THE WITNESS: Given the idea that -- and when I say to -- if the desire for a higher flow rate is needed, in other words, to be able to allow the inlet to accept more flow of material -- flow rate of material to then increase the flow rate, ultimately of the system, that a POSITA would see that the chute -- a larger-diameter chute is capable of transferring more -- higher flow rate, so they would be motivated to look at that chute first and probably foremost. Why move to something different?

BY MS. FLANNERY:

Q. So I think you -- I think you got my question. They might look at that solution first. Is that accurate?

A. Right.

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Q. Is that the only solution that they would be motivated to look at at all?

A. It depends on what they're trying to do, right?

Q. Let's go to paragraph 50. And I'm actually -- you can read it again. You can read as much of this paragraph as you like. It's a relatively long paragraph, but my question is going to be about the part on page 28, which is where you talk about placing a conveyor belt within a chute with tail pulleys -- tail and head pulleys outside the chute.

Do you see that?

A. Yes.

Q. And you say that that would result in significant wear on the belt?

A. Yeah. I was trying to figure out what Dr. Durham was describing, and the only thing that I came to understand was that it was -- because he said something about putting belts within a chute. There's a thing called

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a ^^tubveyer. It is a type of conveyor. It is a -- rather than have rollers, the tube is formed, and there's a belt that runs in there. And at each end, there is a head pulley that drives the belt and a tail pulley.

And what happens is when that belt has to fold into that tube, it causes a lot of friction because if you can imagine taking that belt and rolling it up to get it into the tube. Now we've got a lot of these elastomeric forces because of that movement pushing down on the side of the tube.

And those things are very problematic in the field. There's a lot of people -- that's why you don't see them a whole lot in this type of application is because of the wear that they produce on the tubes and other components and the belt, for example.

Q. If I'm understanding when you call it a tubveyer, is basically the cross-sectional shape of the conveyor belt

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essentially a U-shape?

A. It becomes a tube. Yeah, it goes into the tube.

Q. Okay. I understand what you're saying now.

A. Okay.

Q. And so that's the arrangement that you were talking about here?

A. Yeah. And that's based on what Dr. Durham described, and that's where I came to with that.

Q. I'm going to go back to my favorite figure, Waldner Exhibit 1004, page 15.

MR. NYDEGGER: It's actually page 17, Figure 15.

BY MS. FLANNERY:

Q. Figure 15. Sorry about that.

A. There we go.

Q. And now that I think about it, it might actually be easier to understand with regard to Exhibit 1039, which is also the drawing that we drew of a top view of Waldner

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with six silos added that are not specifically in Figure 15.

A. Got it.

Q. So you can refer to either of those in answering these questions. It might be helpful.

In looking at how the chute 242 of Waldner can be rotated around the vertical -- around the vertical bucket elevator, would you agree that the Waldner chute can't be rotated a full 360 degrees?

A. A full 360? Correct. It could not be.

Q. What about 180 degrees?

A. Yes. It looks like it could go 180.

Q. And the 180 degrees would start at the 9:00 o'clock position, right?

A. 90 degrees -- I'll draw in blue.

Q. There you go. Go ahead.

A. This would be the 90-degree position here. And this would be the other

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90-degree position.

Q. Is it possible that you might -- well, I guess, let me just ask. Those 180-degree -- that 180-degree range, do you agree that's the maximum reach of what the system described in Waldner could potentially reach?

A. It's getting close. I can't definitively answer that because I don't know, you know, the details of it. But I'd say that's about right.

Q. It wouldn't go substantially beyond that?

A. I mean, not really.

Q. Okay.

A. You can see that there's a little bit of clearance there. You might be able to squeeze out a little bit more.

Q. Those would certainly reach to the maximum possible reach of those mechanical components, correct?

A. That's right.

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Q. I think when we talked about the chute that's shown in 242 in this top view, we assumed that that is showing the maximum possible reach -- the maximum lateral reach of the chute. Do you recall that?

A. Yeah. Based on the hypothetical drawing that you depicted here.

Q. Okay. If I -- chute 242 in Waldner can also be retracted telescopically such that its length would be less than that, correct?

A. Yes, ma'am, as I understand.

Q. I'm going to draw in pink. I ask that you sort of agree just with my understanding. If you retract the chute fully, to its fullest retraction, it's still going to extend out some amount from the -- away from the bucket elevator, correct?

A. Yeah. Based on if -- essentially, if you retracted this telescoping chute, it would -- yeah, it would still be sticking out slightly.

Q. So the outlet of that retracted

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chute, then, would be --

A. Somewhere in that area.

Q. -- right about here where the arrow is drawn, I think?

A. Sure.

Q. Is it true that if you had a filling point that was closer to the bucket elevator than that point laterally, then that chute would not be able to reach it?

A. Well, if we are looking only at the planar, yeah. But, say, for example, if the silo was down at a lower elevation or height, then the chute could then be pushed down and get even closer.

Q. Okay. You would have to increase --

A. You would have to increase the chute angle, right.

Q. You would increase the downward slope of the chute?

A. The downward slope.

Q. That would decrease, all things

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being equal, the discharge rate out of the chute as well, correct?

A. Its ability to transfer the rate. Yeah, it would be a higher -- it would have the ability to transfer a greater rate.

Q. If you wanted to keep the flow rate constant but reach a filling point that is closer laterally than that arrow, you wouldn't be able to do that with the Waldner discharge chute, correct?

A. It's not correct. Because, remember, the flow rate is set at the inlet. So once that flow rate is set, even if this was steeper, the speed or velocity of the material would be greater but the flow rate would be the same. Whatever is being input into the system would be output of the discharge.

Q. And when you're talking about the discharge rate there, you're talking about the amount that would be discharged over some period of time, correct?

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A. Right. That would be the flow rate, which is, like I said, the pounds per minute or tons per hour. That's a weigh or volumetric over a period of time as opposed to speed, which is simply per -- you know, feet per second or something like that, or mile per hour is the rate.

Q. So you wouldn't be able -- to sort of close the loop. You would not be able to keep the speed at a constant rate -- let me finish so we get this.

You would not be able to keep the speed at a constant rate if you decrease the downward slope to reach an outlet that is closer laterally to the bucket elevator; is that true?

A. You might be able to, but there would be no reason to affect the speed. There is -- would be no reason to.

Q. Okay.

A. All things equal.

Q. Okay. Let's go to -- look back

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actually a couple of paragraphs back to paragraph 41.

A. 41 of my declaration?

Q. Yes. It starts on page 18, but I'm going to ask you about page 19. It's a long paragraph.

A. 41. Got it.

Q. And here you say that:

"If the range of motion of Waldner needed to be increased, you could increase the height of the bucket elevator and the length of the discharge -- and/or the length of the discharge chute."

Do you see that?

A. Yes, ma'am.

Q. When you're talking about those two changes, you're talking about at the design stage; is that correct?

A. Yes, ma'am.

Q. That's not in dynamic real-time use of a single system?

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A. Well, other than the telescoping, no.

Q. Okay. The telescoping of the chute, correct?

A. Yeah. Telescoping of the chute.

Q. Are you suggesting that the bucket elevator could be telescoped in length?

A. That would be quite the design project.

Q. I take that as a no. All right.

Are you familiar with slewing joints?

A. Yes, ma'am.

Q. Were you familiar with those before your work at APPCO?

A. Yes, ma'am.

Q. Before your work at APPCO, what kind of systems had you seen slewing joints used in?

A. In one of our boom mowers at Alamo Group, we used a slewing bearing to mount a boom in order to pivot right and left.

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Q. Have you seen slewing joints used in systems for handling aggregate?

A. I have seen it in the Dynatek, yeah.

Q. Prior to this case, had you seen the slewing joints used in handling of aggregate?

A. I don't think I have.

Q. Do you agree that a slewing joint allows 360 degrees of rotational movement, assuming that there isn't something else obstructing that?

A. Right. They are designed for the 360-degree or you can stop it, however you wish.

Q. Right. Let's go to paragraph 48, please.

A. All right.

Q. About halfway through that paragraph, you state that:

"Dr. Durham's discussion of enhanced mechanical control."

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You interpreted that potentially as referring to the number of control points.

Do you see that?

A. Mm-hmm.

Q. Okay. And you stated that:

"Waldner's discharge chute contains three points of control."

And I just kind of want to get an inventory and understand what those are. I think you mentioned the pivot angle relative to the bucket elevator. Is that right/left?

A. Yeah. That would be, as we look from the top, the right and left.

Q. Okay. And then you say:

"The discharge angle relative to horizontally."

So, again, is that relative to -- that pivot is happening at a pivot point at the bucket elevator, correct?

A. Right. That's raising or lowering the angle of the discharge.

Q. Okay. So those are two directions

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of movement, although they pivot around the same point; is that accurate?

A. No. One's a vertical pivot, and this other one is a -- you know, the horizontal pivot. So --

Q. And both of those pivots are located on the bucket elevator, correct?

A. There's a mounting arm that's used that's attached to the bucket elevator frame, yeah, that I can see.

Q. And the third point of control you mentioned is the telescoping length of the chute?

A. Yes, ma'am.

Q. And that point is at some lateral distance out?

A. Yes, ma'am.

Q. So in the discharge chute of Waldner, if I want to adjust its position right to left as we were talking about in the plane that you can see in Exhibit 1039, the only place where I can make that pivot occur

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is at the first of those pivot points that we talked about, correct?

A. That would be the vertical pivot point, yes.

Q. That's the only one of those three where it can move in that direction?

A. Yeah.

Q. You discussed in your declaration an issue that you called belt mistracking?

A. Yes, ma'am.

Q. Can you describe for me what happens when a belt mistracks. When you're looking at it, how do you know it's mistracking?

A. Okay. If you're looking at the belt and it was mistracking, the belt would physically creep to one side. And if it remained unchecked, so to speak, it would roll off of the rollers. It would rub up against the side of the conveyor mechanisms, the frames, and things like that. So that's -- that's how you would see that it's

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mistracking.

Q. Okay. And I think you stated that that occurs when the belt is not level end to end?

A. Side to side.

Q. Side to side. Okay.

A. Yes, ma'am.

Q. So if the roller for the belt is not horizontal, basically?

A. So if you're standing on the inlet side of the conveyor and looking down the length, that would be the side-to-side level.

Q. Okay. Are you aware of belt mistracking occurring if the belt from end to end is not level?

A. Are you talking about if -- if my arm -- I know.

Q. I got a better idea, actually. I got a better way of doing this.

A. Right. Because we need to have it in the record, right?

Q. Let's take a look at Waldner

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Figure 1.

A. Okay.

Q. Actually, it's hard to see in Figure 15. You're going to have to look at Figure 1, sorry.

A. No worries.

Q. I promise. I'm trying to make it easier.

A. Okay. There's Figure 1.

Q. And do you see conveyor 44?

A. Yes, ma'am.

Q. And you see how, from a vertical standpoint, one end of that conveyor belt is at a height that is lower than the other end?

A. Yes, ma'am.

Q. In that sort of arrangement, would that cause a belt mistracking?

A. No. You can incline or decline a belt. That's how we call it.

Q. If the belt conveyor system shown in the Dynatek brochure is mounted level, would you expect there to be mistracking

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issues with that?

A. Mistracking can occur from various sources, but if the conveyor was level, horizontally, in the horizontal plane, I would not expect that the mistracking is occurring because of it being out of level or because of the levelness.

Q. Okay.

A. It would point to other things.

Q. And, again, that levelness is from one side of the width of the conveyor belt to the other?

A. Yes, ma'am.

Q. You mentioned that mistracking can occur from various other sources.

A. Right. If you have some worn idlers, for example, that are dragging the belt, it would steer it. If your head pulley was not parallel with, say, the tail pulley or perpendicular to the path of the belt, it would guide it away. So there's other things that cause mistracking, but levelness is one

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that will cause a mistracking with all of those other items good, let's just say.

Q. Back to your declaration, Exhibit 2004?

A. No worries.

Q. Paragraph 60, please.

A. Okay. Got it.

Q. So you mentioned here that:

"The Dynatek EconoLoader is much larger and much heavier than comparable discharge chutes."

Do you see that?

A. Yes.

Q. When you say "comparable discharge chutes," are you talking about discharge chutes in Waldner?

A. Well, I would say if you're wanting to pass a certain flow rate of material, that the size of conveyor and relative size to the size of a chute that would need to be -- or the size of a chute that would need to pass the same amount of material, the belt conveyor

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is larger.

Q. Okay. And would that be true of the chutes of Waldner?

A. Yeah. I mean, it's -- you would have to -- yeah. It would be the same, because the Waldner is a chute just the same as any other chute.

Q. Do you have an idea of how much those weigh, rough estimate?

A. It obviously depends on so many different factors, but just relatively speaking, because a tube chute is just the two shells or the shell that you've got to contain the material versus all the many different components that are required on a conveyor belt.

You've got the weighting of the belt. You've got the weighting of the frame. You've got the weights of the power sources driving the belt, the head pulleys, the tail pulleys and all those many different things.

Q. Do you know how much the Dynatek

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conveyor weighs?

A. I don't think they showed that in their literature sheets, so no, I do not know a specific value for that.

Q. Have you assumed that that device weighs more than the chute that would be used in Waldner?

A. Well, I experienced -- again, the relative size and the components utilized in a belt conveyor system to provide a material flow rate, a given flow rate, and then if I look at a chute to flow that same given material flow rate, relatively speaking, I know that that conveyor is going to be heavier.

It's -- it's all based on experience and you kind of can look at it. You look at a chute and then you look at the size of -- we can look at, say, the Dynatek conveyors. They're very large.

Q. Do you know if it would be heavier than what the bucket elevator in Waldner is

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capable of supporting?

A. Yeah. I don't know. I mean, I haven't run numbers. I don't have enough information to do that.

Q. Let's see. In paragraph 60, you also discuss -- and this is at the bottom at the second to last line, it begins "Also."

A. Yes, ma'am.

Q. (As read):

"A POSITA would have been concerned about wind loads pushing the Dynatek belt conveyors into a position where they are out of level side to side."

A. Yes, ma'am, I see that.

Q. And so when you say "out of level side to side," are you talking about the width -- side to side across the width of the conveyor? Is that what you're talking about?

A. Any time -- I'm saying, like, side to side of the conveyor, it means you're standing on one end of the conveyor, like, say the inlet end and then looking down the length

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of the conveyor, and side to side would be the right-to-left elevation. So, you know, one side being leaning.

Q. Would there be any concerns with regard to wind loads with regard to the bucket elevator?

A. Well, wind loads have to be accounted for. So the bucket elevator, the wind loads associated with the bucket elevator would be part of the -- part of the problem or part of the things to look at.

Q. So a person of skill in the art would -- it's your understanding they would take into account for that when they were building the system of Waldner?

A. Yes.

Q. Even if they weren't substituting the Dynatek system?

A. Correct.

Q. Would the discharge chute of Waldner also have concerns associated with wind loads?

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A. It would. And then, again, it's the relative size of -- the cross-sectional area affects how much load is placed on it. So the smaller size of the chute has less cross-sectional area for the wind to act upon.

Q. Would the chute in Waldner necessarily have a smaller surface area than the conveyor of Dynatek?

A. Right. Cross-sectional area would be less given the same flow rate abilities of -- and especially -- I think it's described essentially with the winds blowing, you know, the -- having those covered for dust control, that just gives you that full cross-sectional area for that wind to acted upon.

Q. So when you're saying something is covered, I'm sorry, what component are you talking about?

A. As far as the -- making sure that you have it covered for dust control.

Q. What are you talking about being covered?

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A. The side covers and top covers and things, but mainly the sides because the wind acts upon the sides.

Q. So the chute in Waldner has a side covering?

A. Well, the chute is a tube so it's already -- it's enclosed, right?

Q. On the sides as well?

A. Yes.

Q. Is it your understanding that the sides of the -- withdrawn.

Would a -- assuming the same cross-sectional surface area, would a heavier component present more or less wind risk than a lighter component?

A. Well, a heavier -- it sort of depends, right? Because a heavier component, it may be heavier, but it may have much greater cross-sectional wind resistance. So that's going to, you know, be much more affected by the winds than a smaller cross section of, say, a chute.

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Q. So if we have two components that are the same cross-sectional area --

A. Same cross sectional.

Q. -- but one is heavier than the other?

A. Oh. Yeah. As far as, say, for example, tipping and things like that, it would be less susceptible to it.

Q. The heavier one would be less susceptible?

A. The heavier one would be less susceptible.

Q. How much wind speed would make a bucket elevator system like what's described in Waldner unsafe in your opinion?

MR. NYDEGGER: Objection. Form.

THE WITNESS: I couldn't really answer that.

BY MS. FLANNERY:

Q. Well -- and let me ask you. Maybe this is an easier way of answering it. Are there wind speeds that would occur relatively

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frequently at an oil well site that would pose wind load risks?

MR. NYDEGGER: Objection. Form.

THE WITNESS: Yeah.

BY MS. FLANNERY:

Q. It doesn't require a tornado or a hurricane to pose these risks?

A. Right. You do have to take into consideration wind loads. And, typically, you design for a certain wind speed, and then you tell a customer that this -- do not allow it to experience loads greater than -- sometimes it's 100 miles per hour. Sometimes it's 80 miles per hour. So that's generally how it works.

Q. So is it your understanding that the systems like what's in Waldner might be used at wind speeds of 80 miles an hour?

A. I'm not saying that, per se, that it would be used at 80 miles per hour, but whether or not they would design it for 80 miles an hour, they probably would. You

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would want to design it for a particular wind speed and then make sure that your customer understood what that maximum wind speed is.

Q. If there were a situation where the customer was uncomfortable with using it at the wind speed or if the winds in a particular situation exceeded what was appropriate, what would be the typical -- what would be the typical solution in the field at that point?

A. You would probably fold it down and get it back down to the ground before you experience such winds. Only one way to do it.

Q. And these mobile systems, they are designed to be folded down, correct?

A. Yes.

Q. If a person of skill in the art were to make the substitution in Waldner to using -- if they were to substitute, take that Dynatek system and use it in place of the chute of Waldner, is it your expectation that any winds that -- well, let me ask it a little bit differently.

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In that combined system, is it your understanding that the maximum wind that it could be used in would be decreased significantly?

A. Yeah. For any reason they would be motivated to do it, they would be not motivated because of that, to replace it.

Q. So what -- what would be the -- I mean, what would be the delta, what would be the difference in the wind load that you would expect?

A. I wouldn't be able to quantify that, but the wind loads on the conveyor, as we discussed previously, would be greater due to the cross-sectional area.

Q. Do you know if they would be within what the Waldner system is already built to tolerate?

A. I couldn't answer that.

Q. Do silos that are used to store proppant, do they pose wind load risks?

A. Yes. Silos have a wind load rating

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as well.

Q. Are outriggers and guide wires, are those examples of components that are used to allow a system like that to withstand certain amounts of wind?

A. Those are things that can help stabilize it for wind loads.

MS. FLANNERY: I'm probably at a good spot for a break.

(Recess.)

BY MS. FLANNERY:

Q. If you could look with me back in your declaration back to paragraph 61.

A. Okay.

Q. And you discuss in this paragraph that:

"It would not have been apparent how to attach the Dynatek EconoLoader to Waldner's bucket elevator frame such that the transport configuration would be transportable with Dynatek's double stacked height."

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A. Yes, ma'am.
Q. Do you see that?
A. Yes, ma'am.
Q. And so in a subsequent sentence you note that:
"A POSITA would understand that in order to be road portable, the overall system needed to be under 13 and a half feet in order to accommodate all states."
But 14 feet, I guess, for some states?
A. Yes, ma'am.
Q. Are those the regulations for today or 2021 or both?
A. They're today and back in 2021. They've been around.
Q. Okay. Is it the case that, I guess, in 2021 is what I'm mostly interested in, if you needed to transport equipment that was higher than 14 feet, could you do that if you got a permit to do it?

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A. Yes. And there's various heights depending on the state you're in and what their requirements are with heights. Say you're at 15 feet, you may need only this type of situation or this type of precaution. They may give you a route to take.

But then if you're above a certain amount, they may say, well, you need a car in front but not in the back and vice versa. So it just kind of depends on what state you're in and their special regulations.

Q. So if you had a load that was, say, 20 feet, it could be done, you just would need to get the permissions. Is that --

A. When you get past that 13 and a half or 14 -- actually, it's more than 14 and a half feet, because then you have to worry about all of those different things depending on the state you're in, and the customers don't want to deal with having to pull permits.

Because you got to remember this is

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all very mobile equipment that moves every month to month and a half to two months to a different location. So having to, you know, have all these different permits and things to move it about to different locations is problematic for the customer. So it -- the goal is to get it at 13.5 or less.

Q. And I appreciate that.

A. Yeah.

Q. I'm asking if you had a system that needed to be taller than that 13 and a half or 14 feet, would that be permitted if you obtained the appropriate permits?

A. I don't know that I can definitively say that because I don't have that information in front of me. I would have to go and look at various states' regulations. I have to imagine that you get to a point, right, where it is just too high to take down the road, you know.

Q. Do you know if double stacking the Dynatek EconoLoader would get you that height

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or not?

A. Yeah. I did sort of some back-of-the-napkin type of calculations, and that's how I was able to get to looking at the Dynatek and stacking it on top of the Waldner bucket elevator, approximately what that would get us. Again, back-of-napkin calculations.

Q. And I think you said that back-of-napkin calculation was 16 to 17 feet?

A. Yes, ma'am. That's where -- if you -- I have the footnote, and then I have on page 37 the 10 plus 5 to 6 feet, plus the 1-foot gives me the 16 to 17 feet.

Q. And do you know if the 17-foot height is at a height where you can't even get a permit to transport it?

A. I don't know.

Q. And you did that back-of-the-napkin calculation based on your interpretation of Figure 6 from the Waldner reference; is that correct?

A. Yes, ma'am.

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Q. Okay. And so in doing that calculation, did you assume that Figure 6 was drawn to scale?

A. Well, what I did -- if you look at that ramp, I think it's labeled 308 maybe or 32, with a truck at 8-foot-6 as the width of a semitruck, based on that width and knowing that there's usually a foot or so on each side, that's how I was able to determine that the width of that was roughly 10 feet.

Q. So you assume that that width reflected the real-life width that you would expect of a truck?

A. Yeah, that I would see.

Q. You assumed that?

A. Right. And that's where I got the numbers for kind of doing some back-of-the-napkin calculations. But it's all based on what I know the width of the truck is. 8-foot-6 is the width of a truck, and with that knowledge and looking at that ramp, that's how I was able to obtain those values

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just to be clear.

Q. And you assumed that the bucket elevator 50 in Figure 6 was drawn at a height that was -- that corresponded to that height that you understand?

A. Right.

Q. You assumed that?

A. Yes, ma'am.

Q. Okay. And then for the heights of Dynatek -- of the Dynatek EconoLoader, you relied on the apparent scale of the photo in that?

A. Yeah. That was not a photo. It was the drawing that is located at the bottom. The little engineering drawing that's shown on the side or -- they call it a -- I guess a -- a general assembly drawing. I used that.

Q. Do you know if all Dynatek EconoLoaders are built to that scale shown in that drawing?

A. I don't.

Q. So when you did your calculation,

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you assumed that both arms of the Dynatek conveyor would be stacked one on top of each and then that would be stacked on top of the bucket elevator in Waldner, correct?

A. Yes, ma'am.

Q. If the arms of the Dynatek conveyor were rotated such that the outer arm was laterally offset from the bucket elevator, could that outer arm sit alongside the bucket elevator instead of on top?

A. Yeah. That's depicted in the '689 patent.

Q. Does the Dynatek system include the functionality to do that, to orient itself in that way?

A. Well, it's sort of an interesting point because the Dynatek conveyor doesn't show any sort of a transport or folded position. So there's no real need to look at it in that sort of configuration.

Q. So the outboard pivot, the pivot that is not attached to the pedestal in the

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EconoLoader, that allows for a full 360 degrees of movement, correct?

A. I think so. I think so.

Q. So for transportable systems like the Wald- -- I guess, I should take a step back. Scratch that.

You agree that the system that's described in Waldner is transportable?

A. The system that is shown in Waldner is transportable, yes, ma'am.

Q. For a transport system like that, in addition to the restrictions on height, are there also restrictions on the length?

A. There are. States require, you know, certain permits for over length. I have to say that they are a lot more lenient toward the length than they are the height because of bridges and things. But yeah, there's some state regulations that control the length of a trailer.

Q. Do you know what the limits of those are across states?

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A. Let's see. In Texas, I believe it's 53 feet, if I recall correctly. But I don't know what they are in other states.

Q. So you looked at the height restrictions but not the length?

A. Right.

Q. I believe in paragraph 63 -- and you can look at it if you wish -- but I think you made a statement that Masaba did not use the Dynatek EconoLoader in creating their design.

A. No, ma'am. Or rather, I made that statement.

Q. How do you know this?

A. If you look at Figure 8E on page 38, if you look at that outboard conveyer, and you'll notice that it is a lot thinner in height. If you just kind of look at it from the side, it's a lot thinner in height.

Now, if you look at the Dynatek conveyor, you can see both the inner and the

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outer are both relatively the same height.

So what I'm looking at here, this has all the indications of a pan-type conveyor, which is very different than a conveyor that we see on the inboard section.

Q. So based on those differences in the drawings, that's the basis for your understanding that they did not use the Dynatek system?

A. Yes, ma'am. It points to -- a POSITA would have been looking at this and said, well, yes, I see this is a pan-type conveyor because it doesn't show the elements of a traditional conveyor.

Q. Do you know if the engineers of Masaba were aware of the Dynatek system?

A. I don't know.

Q. So in looking at the differences in the system, are you concluding that they didn't consider anything in the Dynatek reference at all?

A. I don't know if they did or not.

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Q. You just concluded that they didn't use that exact system?

A. Yes, ma'am. That's correct.

Q. Fair enough.

Did you consider whether there are any similarities between the Dynatek system and what's shown in the '689 patent?

MR. NYDEGGER: Objection. Form.

THE WITNESS: Only in response to what Durham has brought forth, but not independently, no.

BY MS. FLANNERY:

Q. Do you know anything about the design requirements that Masaba was given to build the system, like the dimensions or anything like that?

A. I don't know any of those details.

Q. I want to look in paragraph -- still in paragraph 63 but on page 40. Sort of a continuation of that.

A. Okay. All right. Page 40.

Q. And you stated that:

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"A POSITA would conclude that the inventors of the '689 patent came up with a creative and unique way to fold the slider belt conveyors to further minimize the overall height of the system."

And you refer to Figure 2B of the '689 patent, which I think is shown on the next page.

A. Yes, ma'am.

Q. And so when you refer to that way of folding the conveyors, are you talking about the positioning of I guess it's 130 and 132?

A. Yes, ma'am.

Q. What is it -- what enables that positioning? Let me take a step back.

I assume you're talking about the positioning in that plane that we can see?

A. Yes, ma'am.

Q. Okay. And so would you agree that the slewing joints that are attached at the

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bucket elevator and then the outboard pivot are what allow for that?

A. Yeah. They -- the slewing joints are able to put each of those conveyors in those positions.

Q. Okay. Is there any other mechanism that's required to make that occur?

A. Well, the fact that the inventors of the '689 patent used the pan-type conveyor, with it being much thinner, it looks like it's able then to stack next to that bucket elevator without protruding too far down. So looking at the side plane, I guess, or the side view of it.

Q. Without hanging too far down the bucket elevator?

A. Too far, yeah.

Q. The distance that that arm would hang down the bucket elevator, does that add height to the system?

MR. NYDEGGER: Objection. Form.

THE WITNESS: Well, because the

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inner conveyor can be nestled right against the top of the bucket elevator, and the fact that it allows this outboard conveyor to then be positioned right next to the bucket elevator and then down -- like, to the side, located to the side of the bucket elevator, gives that a much more compact transport position. That's what allows it then to hit that transport height restriction.

BY MS. FLANNERY:

Q. The angled position of the arm?

A. Yeah. Because of those factors, being able to move this bucket -- I'm sorry, move these conveyors in this position and the fact that the inventors used a pan conveyor that's thinner, allows it then to nestle down and be tucked in so that you're only looking at the height of the inner conveyor.

Q. So the pan conveyor that you talk about, is that 130 or 132?

A. That's the 132.

Q. So that 132 is not sitting on top

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of the bucket elevator?

A. No, ma'am. That's right.

Q. It's sitting to the side?

A. Yes, ma'am. That's what makes it work.

Q. If you did not use a pan conveyor, if you used a conveyor that was a taller height, would that prevent you from putting it in this position?

A. It very well could because now you're looking at the -- a much thicker conveyor which would drop it down further. Plus, as you recall, if you look at Figure 8C, we have this outlet spout that is hanging below as well.

So the inventors must have looked at those things in combination and said, my goodness, we have -- you know, we're going to be able to do this because we have a thinner pan conveyor. Now we can tuck it in and have our transport height solved.

Q. Do you know if that can be done

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with the Dynatek conveyor?

A. It's going to be something that would be very difficult, if not impossible, just based on looking at the Dynatek's construction.

Q. What additional modifications would need to be made in order to allow the positioning of the Dynatek conveyor as shown here?

A. Well, the inventors of the '689 used a pan conveyor for the outer -- the outer section to get a thinner cross section or height. So that would be one way to do it. I'm sorry, going back to your question.

Q. So my question is: What additional modifications would need to be made to the Dynatek conveyor to allow it to be positioned as is shown in the plane view that we're seeing in the figure from the '689 patent?

A. Are you simply asking what modifications would be required just to simply get it into this position?

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Q. Correct.
A. Outside of anything else?
Q. Yes.
A. I guess none. But in the context of where it is being used, you would have to make the modifications as I described.
Q. To install it on the bucket elevator?
A. To install it on the bucket elevator, get it down to a transport position.
Q. Fair enough.
Let's go to paragraph 67 of your declaration, please. Page 48, if that helps.
A. Okay.
Q. I think you state in this paragraph -- and we talked about this a little bit -- that:
"The Waldner discharge chute cannot be substantially perpendicular to the bucket elevator in order to discharge proppant."
A. Right. And that's in the near

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horizontal orientation. And we discussed this a bit earlier with the chute. Approaching horizontal, obviously, it's not going to be able to discharge the material.

Q. In order for -- for that chute and -- well, I guess, more generally, substantially perpendicular, what variance from 90 degrees does that allow?

A. I maybe asked -- I'm confused on your question.

Q. Maybe it will be easier to ask. Let's look at the '689 patent itself. It's Exhibit 1001. And we're looking at Claim 4.

A. Claim 4?

Q. Yes, sir.

A. What page is that on?

Q. Column 17.

A. Column 17. That works.

I'm there.

Q. Claim 4.

The very end of that claim talks about:

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"The raised position of the extension conveyor being characterized by the extension conveyor being oriented substantially perpendicular to the deployable frame."

Do you see that?

A. Yes, ma'am.

Q. So in that context, how much variance from 90 degrees would still qualify as substantially perpendicular?

A. Well, in the '689, because we're talking about conveyors, you would need that to be very horizontal, and it would have to do with how much belt mistracking could occur from it being out of level.

So if the raised position is not, you know, very close to perpendicular or very horizontal in that context, then potentially the belt could be out of level side to side or get into a position where it's out of level side to side.

Q. Just so we're clear, when you use

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"side to side," you're talking about across the width of the conveyor?

A. Right. Looking the length and then looking side to side.

Q. So in the embodiments that are in the '689 patent, if the outboard and inboard segments were at 12:00 o'clock, were fully aligned, even if those are no longer perpendicular, those would be end to end, not level, correct?

A. Right. Declined or inclined.

Q. Right. Would there be a mistracking concern there?

A. Correct. There would not be a mistracking concern with it being at the 12:00 o'clock position.

Q. And so with regard to substantially perpendicular, then, can you quantify the amount of slope -- downward slope that would still meet the claim requirement? Is it dependent on belt tracking or something else?

A. Well, it does have to do with what

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amount of side to side out of level that particular belt could tolerate. And what comes into play is when you're not at the 12:00 o'clock position and either of the conveyors are swung to the side, now because you have that initial declination or inclination, that then becomes side to side out of level.

Q. Okay. So let me kind of come back to the question, then. So does whether or not a conveyor is substantially perpendicular to the deployable frame, can you quantify that?

A. As I said, it depends on how much that particular conveyor is able to handle a side-to-side, out-of-level situation. So let's just throw a number out there. If 2 degrees causes -- of side to side, out of level causes the belt to be substantially mistracked where it becomes problematic, well, then that inclination or declination angle at the 12:00 o'clock position is limited to no more than 2 degrees.

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Q. Okay. When belt mistracking occurs, is it something that's instantaneous or does it occur over a period of time?

A. If it's -- usually it happens and the belt will slide and you say instantaneous, it's not something that is a long-term effect. Once it's out of level, the belt will track, and the amount of time it takes depends on many factors, even the speed of the belt. But eventually it will move itself over and become, you know, pushing up against the side of the various conveyor components and things.

Q. I mean, in your experience, what would be -- if you had a 2-degree out of level, how long would it take a belt conveyor like that to exhibit mistracking?

A. Could be a matter of a couple minutes, and all of a sudden, you're in trouble.

Q. Let's go to paragraph 71 of your declaration.

A. 71. Got it.

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Q. And so in paragraph 71 you're discussing Figure 22A of Waldner, which, I guess, is the figure shown above; is that correct?

A. I believe so, yes.

Q. And do you agree that the brackets 252A and B, and then the links 256 and 262, and the pins 258, support the chute on the bucket elevator frame?

A. So go through that list again. 252A.

Q. And 252B. Links 256 and 262.

A. Yeah.

Q. And then the pins 258.

A. Yeah. So all of those components connect the chute -- discharge chute to that blue frame of the bucket elevator.

Q. When you say the "blue frame of the bucket elevator"?

A. I've got it colored or cyan. See the cyan color, that's attached to the bucket elevator.

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Q. So that's -- those are brackets 250A and B2. 252A and B, excuse me. I think that's what you said in paragraph 71.

A. Let me make sure I've got this right. Oh, yeah. Brackets 252A and 252B in cyan are in fixed relation to the frame 254. Yes, ma'am. The cyan pieces are attached to the bucket elevator frame.

Q. So I'll just ask one more for clarification.

Would you agree that the brackets 252A and B, the links 256 and 262 and pins 258 support the chute 252 on the bucket elevator frame?

A. Yeah. I mean, the cyan brackets are a part, I guess, of the frame of the bucket elevator frame. So then those other items, then, are attached to the cyan piece. So yes, if that's what you're asking.

Q. All right. And let's go to paragraph 74.

A. Okay.

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Q. And in paragraph 74, I want to look at the picture you've got there on page 53. The picture of the truss frame in the Dynatek system.

A. Yes, ma'am.

Q. In a situation, if you were to combine the Dynatek system with the Waldner system, as Dr. Durham describes, so in that combined system, would you agree that the truss frame of Dynatek would move relative to the bucket elevator when the extension conveyor is raised and lowered?

A. Just so I make sure I understand your question, can you maybe ask it again?

Q. Sure. In the combined system where you've combined Dynatek with Waldner, assuming that -- and I'm not putting aside the -- I'm just asking you to consider the hypothetical system with that combination. Do you understand that?

A. Mm-hmm.

Q. Okay. So in that combined system,

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do you agree that the truss frame in the Dynatek system would move relative to the Waldner bucket elevator when the extension conveyor is raised and lowered?

A. So just to be clear, that -- those conveyors are -- when the system goes into transport position, those conveyors rotate down relative to the bucket elevator?

Q. Correct. So I'm asking if the frame of those conveyors moves relative to the bucket elevator when that occurs?

A. You're talking about the truss frame that's part of the -- that's part of the conveyor. I mean, it's supporting the conveyor and all of its components.

Q. Yes. I understand that.

A. Yeah. Well, all of that, the whole thing is the conveyor.

Q. Okay.

A. You know. The conveyor -- yeah, that's the belt. All of that business is part of that truss frame that's in the -- part of

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the conveyor. All of that rotates relative to the bucket elevator when it goes into transport, if one were to do that.

Q. Okay. And do you agree that when that's being lowered into the transport configuration, do you agree that that conveyor, including its frame, would move toward the bucket elevator?

A. Well, it depends on -- the outer end, obviously, would move in closer to the bucket elevator. But, say, the top of this, moves away from the bucket elevator. So it depends on where your pivot point is.

Q. When you say "the top of this," can you indicate what -- can you sort of show me what you're saying?

A. Say, for example, if the pivot point was here and this area, when you -- this thing is pretty close to the bucket elevator, but yet when you pivot it down, it swings this way and it's further away because the pivot point is here.

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Q. So you're talking about a part of the conveyor that is behind the pivot point relative to the rest -- the extending part of the conveyor; is that right?

A. Right. And this area that is -- would be, say, a pivot point, that would stay in the same place.

Q. Let's look at paragraph 75 of your declaration. It should be on the very next page. You've got it right there.

A. Yes, ma'am.

Q. And you talk about the truss frame -- well, you talk about the conveyor support frame, which you highlighted in blue from Figure 8C there.

A. Yes, ma'am.

Q. And so you're saying that is the conveyor support frame that meets the requirements of Claim 6 and 7 of the patent?

A. Is that how I describe it? 6 and 7 of the patent. Let's look. Claims 6 and 7 we're looking at?

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Q. Yes, sir.
A. Yes.
Q. And when you were -- when we were talking about the conveyor support frame moving away from the deployable frame, you see that language in Claim 7, correct?
A. Right. You're saying in Claim 7 it says this?
Q. Yes. I just want to make sure you're oriented to Claim 7 there when we talk about the requirement of the extension conveyor pivoting -- the conveyor support frame pivoting away from the deployable frame when you are --
A. Right. So the blue piece -- the deployable frame is the bucket elevator frame as I understand it. So when the blue piece folds into the transport position, it brings it in closer to the -- or into the deployable frame, right?
Q. Okay. And there's actually -- might help. Figure 3 of the '689 patent. If

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we can look at that.

A. Yes.

Q. I have an extra copy because I'm going to want you to draw on this, and I think this will be easier. This is just Figure 3. I don't have an extra for you.

A. Okay.

Q. I'm going to ask for more artwork.

A. All right.

Q. So if you can, please show me where the conveyor support frame is in this figure.

A. The conveyor support frame would be -- how would you like me to do it? I can kind of shade it in maybe?

Q. You can draw the lines that are that. It doesn't have to be fancy.

A. I'll outline it, then.

Q. There you go.

A. Okay.

Q. Excellent. And so what's shown here in Figure 3 is the transport configuration, correct?

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A. Yes, ma'am. I think I left off something because we have this little knee right here that's part of it as well.

Q. And so when the system moves to the raised position, that conveyor support frame is going to pivot, correct?

A. Yeah. This pivots up.

Q. Okay. I'm going to hand you my red pen, and I'd like you to show me with an arrow the direction that that's going to pivot?

A. (Witness complied.)

Q. So part of the blue support frame there is going to pivot in that direction, it moves away from the conveyors -- the deployable frame, correct?

A. At what point on the deployable frame? I mean, this point here would move further out. This point -- depending on where you're calling "away from." If you're just talking about this surface of the deployable frame here, this surface actually gets closer to it.

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Q. Is it your understanding that this embodiment in the '689 patent meets Claim 7?

A. Let me look at Claim 7 real quick.

Q. Certainly. Go back there if you'd like.

A. Okay. Yeah, that would be right.

Q. And so even though parts of that deployable frame in blue do not move away -- I'm sorry. Let me -- I used the wrong term -- strike that.

So even though parts of the blue conveyor support frame do not move away from the deployable frame, that would still meet the requirements of Claim 7?

A. Well, generally speaking, you know, you're looking at the conveyor support frame, and I've highlighted it in blue. And as that pivots away, you're right, some parts would kind of -- and, again, it depends on where you put that. If I were to say that this surface here is the beginning of the deployable frame, then this part does, indeed, move away.

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Q. But not every part has to move away from every part of the deployable frame. That's not required.

A. Well, I mean, again --

MR. NYDEGGER: Objection. Form.

THE WITNESS: Again, this is the pivot point, and it stays stationary relative to the deployable frame. But when I read that, I know, I can see that this is what that's describing.

BY MS. FLANNERY:

Q. And you believe that this motion meets Claim 7, even though there are parts of the conveyor support frame that do not move away from certain parts of the deployable frame?

A. Well, yeah, generally speaking. I mean, we're looking at this frame and it's pivoting around. And, again, it's -- this is the deployable frame, and it's generally moving in that position. That's, you know, tracking, relatively speaking, forward of the

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deployable frame. But --

Q. I'd like you to take a look at the Sleeman -- wait, before we do anything. Let's mark this before I forget. I'm going to mark this as Exhibit 1040.

(Exhibit Number 1040 marked.).

BY MS. FLANNERY:

Q. Now I'm going to ask you about Sleeman. Sleeman is Exhibit 1006.

A. Yes, ma'am.

Q. I think you already have that somewhere.

A. Yes, ma'am.

Q. And let's look at Figure 12.

A. Okay.

Q. Do you agree that this shows the top portion of the ^^spouts 50 in the Sleeman system?

A. Yes.

Q. And it shows that the spouts 50 are attached there at the top of the bucket elevator of the system?

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A. They are attached to a pivoting gear 64, and then that is attached to the bucket elevator.

Q. And it's attached near the top of the bucket elevator, correct?

A. Yes, ma'am.

Q. So do you agree that Sleeman describes a horizontal pivot shaft 60 that defines the horizontal tilt access for those spouts?

A. Right. That's the pivot point for the raising and lowering.

Q. And a POSITA would understand that from reading -- looking at this figure in Sleeman?

A. Yes, ma'am.

Q. And so when Sleeman describes the horizontal tilt access, how are the spouts 50 going to move relative to that access?

A. They pivot about 60 -- maybe ask the question again. I'm a bit confused.

Q. Your answer is helpful. They pivot

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about .60. And what is the motion of the spouts themselves? Do they move side to side or up and down?

A. The chutes move up and down.

Q. Okay. When they move in that direction, do you agree that the spouts 50 -- well, in Sleeman when the spouts are moved up, that's to move them up to the operational configuration, correct?

A. Or move them in operation configuration, sure.

Q. As opposed to the stored transport configuration.

A. I believe so.

Q. When they are raised to that operational configuration, do you agree that the spouts 50 will pivot up and away from the bucket elevator? ^

A. Well, again, same thing. If you look at the top surface of this spout, as you call it, as it rotates up, it's moving closer to the bucket elevator.

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Q. At least portions of the spouts 50 will move away?

A. Portions, yeah.

Q. And what causes that movement about the horizontal tilt access? What causes it to pivot?

A. If you look at -- maybe look at Figure 15. Yeah, Figure 15. You can see what looks to be an actuator on the bottom side where the bottom of the actuator is attached to some sort of pivot point on the bucket elevator frame. And then the live end so to speak is connected to the bottom of the shoot.

Q. I'm going to direct you to some of the text of Sleeman. Column 19, please.

A. Got it.

Q. And I'm looking toward the bottom. It's the bottom paragraph of that column.

A. Okay.

Q. 19.

A. Right.

Q. Is that describing the actuator

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you're talking about?

A. Yes, ma'am, I believe it does.

Q. And so I'm actually -- if we look at Figure 4 --

A. Yes, there it is.

MR. NYDEGGER: Might want to look at Figure 32.

BY MS. FLANNERY:

Q. Okay. And you can look at either Figure 4 or Figure 32. I think they both depict Element 70.

Do you see that?

A. Yes. Is Figure 32 labeled with that? Yes. A much better view. 70 is the actuator. Okay. Right. Tilt actuator. And the bottom end of the respective vertical pivot, 72. Yeah. I think that pretty well describes what that does.

Q. So do you agree that, based on how a POSITA would read this, that tilt actuator 70 is what causes the spouts 50 to tilt about the horizontal tilt access?

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A. Right. Raises and lowers.
Q. Okay. You can set that aside.
Let's turn in your declaration to paragraph 147, please. It starts very briefly on page 91 but then continues on to page 92.
A. Got it.
Q. And I'm specifically interested in the sentence that sort of begins in the middle of that paragraph:
"A kingpin/fifth wheel connection would provide the same distribution advantages across the bed of a transport vehicle."
Do you see that?
A. Yes.
Q. And you say that both -- you say both are single-point connections.
A. Yes, ma'am.
Q. I assume you mean a kingpin connection or a fifth wheel connection?
A. Well, a kingpin is the same as a fifth wheel, and what I'm comparing that to is

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a gooseneck connection.

Q. Thank you. I appreciate the correction.

Let me reask. So when you say both or single-point connections, you mean the kingpin/fifth wheel and the gooseneck, they both have a single-point connection?

A. I say a kingpin or fifth wheel connection would provide the same -- well, distribution advantages across the bed as a gooseneck. So that is the same -- that's the comparison between the kingpin, fifth wheel, and a gooseneck.

Q. Are you aware of any benefits of a kingpin or fifth wheel connection over a gooseneck connection?

A. The kingpin/fifth wheel connections are usually for the higher loads. You see it on semitrucks. That's the standard as you see driving down is a kingpin or fifth wheel connection. The lighter weights, the gooseneck connections are not as robust. They

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don't have -- the reason is the fifth wheel connection has a plate that allows that load to be spread across that plate more evenly so the less wear. But as far as it being ultimately a single-point connection, they're both the same.

Q. Okay. Let's go back to Waldner, Exhibit 1004.

A. All right.

Q. And I think in Figure 3 is probably the easiest place to see it.

A. Yes, ma'am.

Q. The place where the gooseneck hitch-type connection is there at the end of what is labeled Element 20, right?

A. Yes, ma'am.

Q. If a POSITA had reason to use a different hitch type in a Waldner other than a gooseneck, would a POSITA assume it should be mounted in exactly the same location as what's shown here?

A. What do you mean by "exactly the

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same position"? The two are not -- they are different types of hitches. So a gooseneck configuration for, say, a pickup truck, that position and all is different than what the position would be for a fifth wheel.

Q. Okay. So a fifth wheel necessarily would have to be placed in a different location other than what's shown here in Figure 3 for the gooseneck connection. Do you agree with that?

A. I guess, if you're just looking at in general, it's sort of in the same spot because that spot is above where the axle is. So you have to maintain that. So with a -- say a fifth wheel mount, it would still need to be over the axles.

So based on the fact that you have to hit that connection over the axles, that's going to depict the geometry of the system.

Q. When you say you have to hit the axles, you're talking about the axles of this trailer?

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A. No, ma'am. The axles of the towing vehicle. So whether it be a semitruck or pickup truck, that point is generally above the axle set.

Q. Okay. And for a gooseneck connection in terms of the attachment to the trailer itself, will it -- if you were to change the gooseneck to a fifth wheel, would a POSITA understand that that may need to be mounted somewhere else on the trailer here that's shown in Figure 3?

A. I tell you what. If we look at Figure 2 --

Q. That might be easier.

A. -- that might be easier. You see the down drop for the gooseneck, Level 22?

Q. Yes.

A. A POSITA would know that that down drop is not going to be needed, and we mount a fifth wheel right underneath that frame that's marked 20 or that thing that's marked 20. So that rub plate would sit there, and that's

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where the kingpin would reside. So just relatively speaking.

Q. Would a POSITA assume that that's the only place that the kingpin could be attached?

A. Yeah. A POSITA knows that a kingpin rub plate is attached to the trailer, and then you have this little configuration here that then attaches to the rest of the trailer to the kingpin. So yes, that is where you always see one.

Q. Is it your view that a POSITA would not consider putting the kingpin anywhere other than the location shown as Element 22 in Figure 2?

A. Yeah. Right. I mean, that's -- that would make sense to -- if you're going to convert this, say, from this gooseneck configuration to a fifth wheel configuration, just generally, you would remove that down drop, put your rub plate here, and put a kingpin at that point. And then that's what

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they would do.

Q. You're saying a POSITA would not consider any other location?

A. There would be no reason to. Why move it? Why change it? It's working.

Q. Keep Waldner sort of -- you might want to put a flag there. I just want to make it easy for you to get back there.

A. Can I borrow one of your flags? Thank you.

Q. And let's go to paragraph 150 of your declaration.

A. Okay. Got it.

Q. And you state in this paragraph that:

"If the kingpin -- if a kingpin or hitch coupler was attached to Waldner's bucket elevator 50, that that would have been off-center relative to the wheels."

And you refer to Figure 7 of Waldner in making that conclusion.

A. Yes, ma'am.

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Q. And that's shown on the very next page of your declaration, I think. I think we're at 151, actually. Not 51.

A. Oh, so sorry. 151. Yes, ma'am.

Q. All right. Excellent. And this is -- Figure 7, this is the top-down view of the embodiment from Waldner that's shown in Figures 1 and 6, correct?

A. Yeah. The -- without the writing on it, that's what Waldner shows in this Figure 7.

Q. Fair. Thank you.

And so if we were to mount the kingpin onto bucket elevator 50, it's your view that bucket elevator 50 would have to be moved, I guess, downward in this drawing?

A. Yeah.

Q. But centered?

A. Yeah. In that hypothetical situation of moving the kingpin to a bucket elevator, yeah, the bucket elevator would have to shift in order to make sure that the

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kingpin is -- remains in the center of the trailer.

Q. Okay. Let's say you didn't make that change, if you just mounted the kingpin where it's shown here.

A. Okay.

Q. You say that that alignment would cause -- I guess, wear problems. Is that what you said?

A. Yeah. It would cause the trailer to track at an angle, and then that would cause wear with the tires and things.

Q. How long would it take for those problems to be apparent?

A. Who knows? It's hard to say, but it would not -- it may start smoking. It would be so bad. It depends on multiple factors, but it's very likely that you would notice it very soon.

Q. Okay. Now, if we were to move the bucket elevator to be centered on the trailer, as you said, would you agree that as long as

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at least some portion of the bucket elevator is centered on the trailer, then that would be sufficient?

MR. NYDEGGER: Objection. Form.

THE WITNESS: Well, I mean -- ask the question again.

BY MS. FLANNERY:

Q. Sure. So -- actually, let me -- when we say "centered," I assume you mean it has to be on the center line, and there's sort of a dashed line on the ends of Figure 7?

A. Yes. That run through the mounting point for the trailer and then the rear axles, yes.

Q. Okay. So is it true that as long as there is some piece of the bucket elevator that is on that center line, then the kingpin could be mounted there without having those wear problems?

A. You would have to get the kingpin in the center. That would be the trick. But if that kingpin was not in the center of the

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bucket elevator, now we are going to impart torsional loading on the bucket elevator going through all these hypothetical what ifs we do this.

But yeah. It would impart a torsional load. And, of course, all the bending load that would be associated on the bucket elevator because now that's carrying the entire weighting of the trailer.

Q. And the same would be true with regard to the other embodiments, Figure 10, Figure 15 -- sorry, Figure 11 and Figure 15 of Waldner that we talked about. You would be looking at moving that part of bucket elevator 50?

A. Okay. So which figures again?

Q. Sure. I think Figure 15 and then Figure 11, I think, is the other one.

A. Yeah. It looks like that bucket elevator is off-center on all of those embodiments. Well, actually, I don't know how you would do that on, say, Figure 12

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embodiment because it's folding the opposite way of the kingpin. Figure 15 as well, because the bucket elevator is folding down toward the wheels and not toward the kingpin.

So Figure 10, Figure 11, those embodiments, they're not -- they're not centered but they're also not folding down where the head section is on the side where the kingpin is.

Q. Okay. While we have -- sorry, don't lose Waldner. Let's go back to Waldner Figure 15 again.

A. Okay.

Q. And I had a couple of questions about Element 274.

A. 274, which is...

Q. Down at the end by the wheels.

Do you see that?

A. Yes.

Q. Do you understand -- and that element, and it's support 274, do you understand that that is mounted to the

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trailer?

A. Yes, ma'am.

Q. Do you agree that the bucket elevator 50 rests on that support 274 when it's in the storage or transport position?

A. That's what it appears.

Q. Would you agree that the support provides some stability for the bucket elevator 50 when it's in that position?

A. When it's in the transport position?

Q. Yes.

A. Yeah, it looks like it.

Q. You see 274, it's sort of U-shaped?

A. Yes, ma'am.

Q. Why is that?

A. I suspect it keeps the bucket elevator from -- say, for example, from taking turns and things, to keep it from having to be supported at the bottom where it pivots.

Q. You can put that aside.

A. Okay.

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Q. I'd like to ask you about the '689 patent so going to Exhibit 1001. And if you can go to Claim 13 for me, please.

A. Got it.

Q. And I'm going to the limitation -- it's in Column 20, so it's in the second column of Claim 13, where it talks about the lift arm structure, at least one lift arm structure.

A. What paragraph?

Q. Well, it's around line 20.

A. Around 20. Got it.

Q. Does that work?

A. Got it.

Q. Okay. And it discusses the lift arm structure mounted on the base frame and deployable frame and forming a linkage between the base frame and the deployable frame.

Do you see that?

A. Mm-hmm.

Q. What does forming a linkage mean there?

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A. Going back to -- let's look at Figure 5C. You can see the linkage represented with the actuator acting on the linkage, and the linkage is attached between the trailer and it's attached to the deployable frame.

Q. So the segments that are -- one attached with it looks like a pin to the deployable frame and then a pin at the base. Is that what you're talking about?

A. Yeah. So the linkage is that -- the total linkage is the link that's here that's attached to the deployable frame and then the link that then joins it with the frame of the unit.

Q. Okay. Flipping back to Claim 13, I want to keep going on that element, and it says:

"At least one lift arm structure being articulated between opposite first ends and second ends of the arm structure."

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A. Right. So this being the lift structure or lift arms. Those are articulated.

Q. And I think you said this in your declaration, if you want to go look at it, you can, but I think you said that "articulated" means that something is comprised of two connected parts that move relative to one another. Do you agree with that?

A. Mm-hmm.

THE COURT REPORTER: Is that a "yes"?

THE WITNESS: I'm sorry. Yes.

BY MS. FLANNERY:

Q. So two arms that pivot with respect to one another, does that meet the requirement of moving with respect to one another?

A. Well, they're -- yeah, they're moving -- I'm sorry, say that again.

Q. Sure. I think your definition of "articulated" was two connected parts that move relative to one another, and I'm just

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asking if a pivoting relative to one another counts as that moving.

A. I think I understand what you're asking. These link arms are moving relative to one another as they articulate, these arms that make up this lift arm structure.

Q. Okay. And, again, you agree that an articulated structure requires two separate pieces --

A. Yes.

Q. -- that are connected?

A. -- that are connected to articulate with each other, yeah.

Q. It wouldn't make sense to say a single unitary structure is articulated?

A. Exactly.

Q. Okay. Makes sense.

So when Claim 13 says that a structure is articulated between the opposite first and second ends, that would have to be between one end of one and the other end of the other?

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A. Yes, ma'am.

Q. Okay. Fair enough. That was hard.

A. Yes, it was. I knew you were going to ask this and I knew this was going to be hard to explain.

Q. I think we got it.

I'm going to hand you what's been previously marked as Exhibit 1011 McIver reference. You might have it. I don't know.

A. I think I do. Yep I have McIver. I'll set it here.

(Exhibit Number 1011, which was previously marked, was referenced.)

BY MS. FLANNERY:

Q. And I'll ask you to look at Figure 2.

A. Got it.

Q. Now, looking at Figure 2, do you see Element 204?

A. Yes, ma'am.

Q. And do you agree that Element 204 is connected at one end to trailer 102?

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A. Yes. At 212.
Q. And 212 is a pivot point, right?
A. Yes, ma'am.
Q. And that rocker arm 204 pivots relative to the trailer 102 at that point?
A. Yes, ma'am.
Q. Do you agree that the rocker arm, the other end of rocker arm 204 is connected to arm 206?
A. Well, 206 isn't a rocker arm. It's the second linkage.
Q. Yes.
A. So 204 is the rocker arm and then 206 is the link that then attaches it to the -- 210, I guess.
Q. And 204 is connected to 206?
A. Yeah. The rocker arm 204 is connected to 206 on one end and the other end of 206 is connected to the silo.
Q. Where 204 is connected to 206, that's another pivot point?
A. Yes, ma'am.

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Q. And I think you mentioned 206 on the other end is connected to the flipper mechanism 201?

A. Flipper mechanism. I said that because in the picture it looks like it's connected to the silo, but I do understand that that is a flipper frame 210.

Q. And it's connected there to Element 210 at another pivot point?

A. Ask that question again.

Q. 206 is connected to 210 at a pivot point?

A. Yes, ma'am.

Q. And so arm 206 is going to pivot with regard to 210 as well?

A. Right.

MS. FLANNERY: Why don't we go off the record.

(Recess.)

BY MS. FLANNERY:

Q. Just two follow-up questions for you. First, we talked earlier in your

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deposition about a communications that you had with Mike Stanton back when you were at NOV?

A. Yes, ma'am.

Q. I think you said that NOV declined the offer that he made to provide something with regard to the system or the patent that they had.

A. Yeah. As I understood it, Mike was the person that helped negotiate between Solaris and Masaba for Masaba to create the device that's depicted in the '689 patent. And I think Masaba was wanting to see if NOV wanted to purchase the rights for that product to manufacture.

So they -- he came -- Mike came to NOV, and because I was the manager for the frac equipment, he met with me, and then he met with -- also at the same time with my superior. And we got what he was offering, took it to NOV management.

NOV management reviewed and decided to decline. So I contacted Mike and said that

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we had declined. That was pretty much the whole thing.

Q. But did you give Mr. Stanton a reason?

A. No.

Q. And to be clear, I don't want anything that an attorney told you. I'm not going to get into that. But other than attorneys, do you recall NOV management saying anything to you about why?

A. Well, after listening -- because we were working so hard -- we had a small team working with the SandBank project, I recommended to management that we maintain what we were doing with the Sand Bank system instead of spreading ourselves thin by bringing in another piece of equipment and with my small team having to manage both of those.

So that was my recommendation that we not do it to management. Whether or not that was the deciding factor or not, I don't

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know. But they came back to me and said we're declining the offer, so please let Mr. Stanton know, and that's what I did.

Q. Understood.

During our breaks today, did you have any conversations with counsel about the substance of your testimony?

A. No, ma'am.

MS. FLANNERY: Okay. I have no questions. I'll pass the witness.

MR. NYDEGGER: Okay. Thank you.

EXAMINATION

BY MR. NYDEGGER:

Q. Now that you are facing more my direction and away from the court reporter, be sure to speak up so that she can hear.

A. Sounds good.

Q. Okay. Earlier you were asked questions about your management of a design team. Do you recall that?

A. Yes, ma'am -- sir.

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Q. And you had mentioned that when you arrived, you had two designers and one engineer. Do you recall that?

A. Yes, sir.

Q. Did that team ever change as far as numbers?

A. As far as the numbers, let me think. I at one point had four under me. So, yes, I guess it did.

Q. And during your tenure, how many different designers and engineers did you manage?

A. Oh, let's see. As a sum or at a given point?

Q. As a sum.

A. Oh, gosh. Through my entire tenure as an engineer or as an employee of NOV?

Q. Let's just limit it to NOV during the period you were working on aggregate transfer equipment.

A. Got it. So that's 4, 5 -- I'm counting those that I lost and then I had to

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replace. Five, 6, 7, 8, 10, 10, 11, somewhere in that area, I guess, total.

Q. You mentioned that -- you were talking about the requirements to qualify as a POSITA in the art of the '689 patent. Do you recall that?

A. Yes, sir.

Q. And you had mentioned that design work on aggregate transferring equipment could qualify a person as a POSITA given enough of that design work in combination with his or her education, correct?

A. Yes, sir.

Q. And so my question is: What about working in the capacity of constructing and building the equipment as opposed to design? Would that kind of work qualify someone as a person of skill in the art?

A. Well, a person -- a POSITA, in my opinion, if you're just part of the manufacturing side of it, you are not exposed to the breadth of all the different things

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that are in the state -- in the state of art, so to speak. So I'm -- my opinion would be that the POSITA -- that would not be someone that would be qualified as a POSITA.

Q. And with regard to doing maintenance, repair, troubleshooting, that kind of work, would that kind of work qualify as -- would that kind of work be relevant to somebody becoming a POSITA in the '689 patent?

A. So are you asking if someone with those backgrounds could become a POSITA or --

Q. So a POSITA has to have certain experience.

A. Yes, sir.

Q. And some experience helps to move them towards the -- to qualifying as a POSITA, and some experience does not.

A. Correct.

Q. And so my question is: Does maintenance, repair, troubleshooting, that kind of work on aggregate transferring products, is that kind of experience

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experience that moves someone towards becoming a POSITA?

A. Yes, sir. Those would be activities that would move someone toward that.

Q. So it's not just design experience that would move -- under which a person could qualify as a POSITA?

A. Correct.

Q. Do you recall earlier you were talking about the definition of "aggregates"?

A. Yes.

Q. I believe you mentioned that some of the things that qualify material as an aggregate is its source, correct?

A. Mm-hmm.

Q. And, also, you identified, for example, use?

A. Yeah. So if we look at the declaration, I believe we have some references to some of the definitions of what -- what aggregate is. Maybe that was -- maybe I just

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included the things that show what cement is. But, yeah, as far as -- in the industry, the aggregates are those things that are used to then mix with cement and water and then create concrete. That's sort of in the general definition of an aggregate.

Q. Is particle size relevant to whether a material is an aggregate or not?

A. Well, in a sense that there's varying sizes of particle sizes and aggregate and some of the thoughts about, say, for example, powder substances and things that aren't really used directly that are mined, those things would not be considered aggregates.

For example, to make a concrete with cement, there's other things that are added to it, but those additives are not part of the aggregate package.

Q. Let's talk about cement. So, I guess, just for nomenclature, there's a difference between concrete and cement,

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correct?

MS. FLANNERY: Object to form.

THE WITNESS: Yes. There is a difference between concrete and cement.

BY MR. NYDEGGER:

Q. What is the difference between what is concrete and what is cement?

A. Concrete is a manufactured product that is -- the way they make concrete is with aggregates, which is the gravel or the rocks, the sand and those things are mixed in with the cement and other additives with water. They're mixed together and then that resultant product is called concrete.

Q. Okay. So is it correct, then, that cement is one ingredient of concrete?

A. Yes. That is correct.

Q. And so if we talk about cement, is cement considered an aggregate?

A. No.

Q. And I believe that's what you testified earlier. One of the things you

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mentioned is it's not because it's a manufactured product, correct?

A. Yes.

Q. Does particle size have anything to do with whether cement is considered an aggregate or not?

MS. FLANNERY: Object to form.

THE WITNESS: Cement -- cement is a component that is not considered an aggregate in the aggregate package that is added to cement to make concrete. So no one in the industry sees cement as an aggregate because it's not. It's -- because otherwise you're mixing aggregate with other aggregate and that doesn't make sense. You're mixing aggregate with cement to make concrete.

BY MR. NYDEGGER:

Q. Okay. Are powders aggregates?

A. Not by my definition, no.

Q. Is cement considered a powder?

A. Its substance is powder.

Q. Okay. Earlier you were asked some

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questions about what constitutes conveyors under the '689 patent. Do you recall that?

A. Mm-hmm.

THE COURT REPORTER: Is that a "yes"?

THE WITNESS: Yes.

BY MR. NYDEGGER:

Q. We will come back to that. My computer decided it wanted to reboot. We'll come back to that.

Could you go to the '689 patent, please. That's Exhibit 1001.

A. Got it.

Q. And specifically you were asked about the conveyor extension assembly. Do you recall that earlier?

A. Yes, sir.

Q. And if you go to Column 1.

A. Column 1.

Q. Yeah. Line 53.

A. Got it.

Q. Do you see where it talks about the

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conveyor extension assembly?

A. Yes, sir.

Q. It says:

"May include an extension conveyor for moving aggregate from an inlet of the extension conveyor to an outlet of the extension conveyor at a location outward from the aggregate elevating assembly."

Do you see that?

A. Yes, sir.

Q. And does that description limit the conveyor extension assembly to any specific type of conveyor?

A. Well, as long as it's a conveyor, it's a conveyor is what it is.

Q. Okay.

A. We went over what a conveyor is.

Q. If you go to Column 9, paragraph -- well, Column 9, line 30.

A. Got it.

Q. And here we read:

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"The aggregate transferring apparatus 10 may further include a conveyor extension assembly 120 for conveying aggregate to locations horizontally outward from the aggregate elevating assembly 60 such as, for example, one or more silos to which the apparatus 10 is positioned adjacent. The conveyor extension assembly 120 may include an extension conveyor 122 for removing aggregate from the aggregate elevating assembly 60 to a location outward from the assembly 60."

Do you see that?

A. Yes, sir.

Q. Does that language limit the POSITA's understanding of the type of conveyor that can be a conveyor extension assembly?

A. Well, it needs to be a conveyor. I'm not sure I understand your question.

Q. When you say "it needs to be a conveyor," could it be a belt conveyor?

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A. Yeah. It could be a belt conveyor.
Q. Could it be an auger conveyor?
A. Well, any of the -- let's see here. Yeah, it says, these words say that it needs to be a conveyor, so it needs to be some form of conveyor, and an auger is a type of conveyor.
Q. So I believe earlier you testified -- you may have testified that the conveyor extension assembly of the '689 patent only covers belt conveyors. Does this refresh your recollection about whether the '689 patent is limited to belt conveyors?
A. Well, when looking at the '689 patent, you're looking at the various figures and embodiments and things like that, and a POSITA would look at the '689, the descriptions, and look at the figures.
I mean, looking at it just in itself, you know, yeah, but you're looking at all of the things that are shown in the '689, and a POSITA would see that this is a

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conveyor, a belt conveyor, and this is a traditional belt conveyor that shows the idlers, and this one is a drag pan or a pan-style conveyor.

Q. You're not a legal expert, correct?

A. No, sir.

Q. And what is your understanding about whether the use of conveyor extension assembly in the claims of the patent -- what is your understanding with regard to whether that is limited to what is shown in the figures of the '689 patent?

To rephrase my question, is the meaning of a conveyor extension assembly as used in the claims limited to what is shown in the drawings?

A. No. I think that you've got a conveyor extension assembly. Could be other conveyors, but what is depicted is belt-style conveyors.

Q. I understand what's depicted. My question is different.

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My question is: When we read the word -- when we read the words "conveyor extension assembly" in the claim, what types of conveyors does that language cover based on your understanding?

A. Well, for the most part, when you read "conveyor," most of us in the industry immediately think in terms of a belt conveyor, but the way it's written, a conveyor could be also any of the other conveyors that we talked about, for example, the auger conveyor.

Q. So going back to my earlier question, and this is -- well, going back to my earlier question, to your understanding, is the meaning of a conveyor extension assembly as used in the claims of the '689 patent limited to the types of conveyors shown in the figures of the '689 patent?

MS. FLANNERY: Object to form.

THE WITNESS: Well, if you're reading the claims, it says "conveyor, extension conveyor, or -- conveyor extension

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assembly." Is it limited to just belt conveyors in the claims? Not that I see.

BY MR. NYDEGGER:

Q. Could you go to Exhibit 1004? That's Waldner.

A. Got it.

Q. And earlier I believe you were asked about whether the system of Waldner could be used with materials other than aggregates like frac sand. Do you recall that?

A. Yes.

MS. FLANNERY: Object to form.

BY MR. NYDEGGER:

Q. Would you go to Column 1 of Waldner, please.

A. Okay.

Q. If you go down to line 50, you can just read that paragraph to yourself, please.

A. Yes.

The paragraph ends at U.S. Patent Number, right?

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Q. Yes.
A. Yes, I read it.
Q. Does this refresh your recollection about whether the system of Waldner can be used with other types of materials?
A. Yeah. That's where I thought that I had read that somewhere, and that's where it was.
Q. Could you go to paragraph 44 of your declaration, please.
A. Yeah. Got it. Oh, paragraph 44, sorry.
Q. I went to page 44 as well.
A. Got it.
Q. And do you recall earlier you were asked questions in connection with paragraph 44 about discharge rates, discharge speed, discharge flow rates --
A. Yes, sir.
Q. -- and the differences between those different terms?
A. Yes, sir.

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Q. Do you recall there were a series of questions concerning the discharge rate of unloading a truck relative to the flow rates of an aggregate transferring system such as that of the '689 or Waldner. Do you recall that?

A. I do.

Q. And you were asked whether the discharge rate of the truck, the discharge flow rate of the truck could exceed the discharge rate of the system. Do you recall that?

A. Yes, sir.

Q. And I just wanted to get some clarification on that line of questioning and the difference between speed and rates.

So does the discharge rate of the truck need to be equal to the input rate to the aggregate transferring system?

A. So as the material is being put into the transferring system, generally speaking in those terms, there is something

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either -- either an orifice or perhaps that very first belt that controls the material flow rate for the system. So once that material flow rate for the system is set, at that point all of the things downstream of that -- at that point must be able to transport -- transfer at a greater rate than what that point is.

Q. So all components downstream from the entry point must be able to transfer at least as high a flow rate as the input point, correct?

A. Correct.

Q. Now let's go back before that input point, before that orifice. Before that orifice, there is also a discharge rate from the truck, and that happens before the orifice, correct?

A. Before, sure.

Q. So can the discharge rate of the truck be greater than the transfer rate of that orifice that is the inlet to the

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aggregate transferring system?

A. I believe I understand your question. Depending on the design, for example, if you took the trailer and you just parked it over in open space and you, perhaps, opened the gate all the way, that flow rate potentially could be greater than what the orifice or other device is that's controlling that speed.

If that were to happen or when that happens if you are now over the orifice or whatever that case may be, the sand will mound and will close itself off. And that's, again, another part of the design. You have to have ways to contain it to keep it checked, and it's called choke flow where the sand, as it's dropping through, much like an hourglass, that orifice --

Q. Sorry to interrupt you. When you say "dropping through," you need to tell us what it's dropping through.

A. Sorry. Dropping through that

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orifice.

Q. When you say "orifice," are you talking about the orifice to the inlet or a different orifice?

A. Either the orifice to the inlet of the belt or, perhaps, the belt itself and its ability to build a mound of material on the belt that then the belt speed is then a known thing.

So that mound of sand that it can form, physically form with the speed of the belt, those two components then set that flow rate. So if the truck is capable by opening the gate all the way greater than -- and move material flow rate greater than what I just described is able to consume, then it will mound under the truck and the designs like that are called choke fill, which you contain the material under the discharge of the truck such that it will choke itself off and only the material that's flowing into that apparatus, that's the flow rate that it pulls

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from.

Boy, I hope that makes sense.

Q. Maybe I can ask some clarifying questions. So if I understand correctly, the inlet of the system has a flow rate.

A. Right.

Q. The discharge of the truck may initially exceed that flow rate. The discharge from the truck may initially, at least, exceed the rate it can flow through the input to the system, correct?

MS. FLANNERY: Object to form.

THE WITNESS: Yes, it could. But because we have that system in place, that ultimately whatever gets onto the -- that first component of the system is controlled to keep it from being greater than anything that the downstream components can handle.

BY MR. NYDEGGER:

Q. Okay. So when the discharge from the truck exceeds the flow rate that can go into the system, the aggregate backs up?

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A. Yeah. It start to mound up, exactly.

Q. And it will mound up to a point where it chokes off the flow rate of discharge from the truck, correct?

A. From the truck, correct.

Q. So initially, the discharge rate from the truck can be greater but then it would be choked down to the same flow rate as the inlet to the system, correct?

A. Exactly. I think you've got it.

Q. I appreciate you helping me understand that.

Now, when a POSITA is designing an aggregate transfer system and they sit down to design a system, and they want to decide the flow rate, what aspect of the system do they focus on for determining the maximum flow rate for that system?

A. Well, ultimately, it's customer needs and how quickly they want to load -- the customer wants to load the silo. So that is

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the goal of the flow rate. That's what you're shooting for as far as your material flow rate.

So based on that information, the very first component that then is your controlling mechanism, whether it be an orifice or the belt like I described, that then sets that flow rate to meet that criteria that the customer asks for.

And then subsequently all the components that are downstream for various examples, you know, if that conveyor then puts its material onto a bucket elevator, the bucket elevator must be able to consume that flow rate as a minimum, and it needs to be rated at probably something more so that you have a little head room.

The bucket elevator then becomes the next thing in the step, and then any of the -- all the things downstream subsequently need to be able to meet those flow rates.

Q. So what you just described, if I

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understood correctly, is once you decide what the flow rate's going to be, you start designing from the inlet and work your way towards the outlet?

A. In a sense, yes, knowing that, well, if that's what I have, I need to make sure that that first component will produce that amount or start that cadence of flow rate, and then knowing that everything downstream has to meet or exceed that amount of flow rate.

Q. Okay. Would a POSITA look at the discharge end and design the system with flow rates moving backwards?

A. Well, if you have the information, then you can make sure that that component that you're designing for that discharge, as long as you know that it's much greater than it's going to be able to handle, material flow rates that are much greater than what we know with what the design criteria are, then, yes, you could.

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Q. Is that how design of these systems is approached?

A. Well, it's a holistic approach. You're looking at the entire system. You want to be careful not to, you know, make downstream components any larger than they have to be. But at the same time, you know, you definitely do not want them to be able to move -- not able to move the material at the flow rates necessary.

Q. And once the flow rate is set at the inlet, can that flow rate be changed by downstream components?

A. No, sir.

Q. Why not?

A. Because if you -- the flow rate is set, and once the flow rate is set, then the pounds per minute or the tons per hour that are entering is going to be exactly what the outlet is.

Q. So let's take, for example -- I believe it was raised -- a hypothetical was

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raised where you have a system that uses a chute to discharge into the silo, and you moved that chute from a slight angle to a steep angle, what effect, if any, will that have on your discharge flow rate?

A. The material flow rate will be the same.

Q. What effect, if any, will that change in the angle of the chute have on the speed of the discharge?

A. Generally speaking, the material will be a thinner cross section but will be moving at a faster rate speedwise.

Q. So the speed will increase but the flow rate will stay the same?

A. Right. The velocity of the material.

Q. And so when designing an aggregate transferring system, such as that involved in Waldner that uses a chute, how would a POSITA approach that design given the chute will be at different angles in correlation to the flow

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rate at the input?

A. Right. The way that I see a POSITA looking at it would be what points are -- am I going to need or what points will this discharge chute need to hit, and based on where those points are, where do I need to have the angle of the chute, what are the diameters of the chute, the chute materials, and some of the other things we explored to ultimately say, well, at that furthest most point where we're not at a favorable angle, I'm still able to discharge material at or greater than what is being input?

Q. You mentioned that for the most point -- why did you talk about the furthest most point that the discharge chute must reach?

A. Well, as I think about, you know, a chute that's shown in Waldner, you have to hit -- as she showed on that hypothetical drawing, there's various points to reach with the chute. So whichever of those silos need

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to be at those various points, being the worst case, that's -- that then sets, you know, the angle and what angle do I need to have the chute in order -- and those other things to make sure that it can discharge at the flow rates that are being input.

Q. So when you talked about determining the flow rate that the chute has to handle, you mentioned you focused on the furthest most point?

A. Yes.

Q. Why?

A. Well, because as depicted in -- we're looking at the drawing that we marked on earlier. If you're looking at where that chute is in relationship, we know that, you know, where that chute is mounted and where those points are and that's going to determine that -- the angle, right?

So a shallow angle means that the chute will not be able to transfer the flow rate as much as if it was, say, in a more

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vertical position.

Q. Okay. So because the furthest most point is going to be the slightest angle of the shoot, a POSITA would use that slightest angle when doing calculations to make sure that it could at least handle the flow rate at the input level, correct?

MS. FLANNERY: Object to form.

THE WITNESS: Correct.

BY MR. NYDEGGER:

Q. Could you pull out that exhibit drawing?

A. Yeah.

Q. This is Exhibit 1039.

A. Yes.

Q. And do you recall that this drawing shows -- was drawn to depict Waldner from a top view with the red drawn chute extended at the 12:00 o'clock position to its furthermost out -- its furthest reach, correct?

A. Correct.

Q. Now I'd like to change the

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hypothetical.

A. Okay.

Q. Let's assume that this is no longer a chute but this is a conveyor belt, the type of Dynatek, where you have an inboard and outboard articulating conveyor belts, and those conveyor belts are extended to the furthest most point in the 12:00 o'clock position, the same as was described with the chute.

Do you see that?

A. Yes.

Q. Would that conveyor system be able to reach the outer -- would that conveyor system be able to reach the outer dotted line on -- of the furthest -- furthermost left and right silos?

A. No, sir. Because the -- it's in the same constraint. It would rotate and be unable to reach just the same.

Q. And so the reach of both the chute systems and conveyor systems that you've

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looked at to date in the 12:00 o'clock position is the limit of the reach and the limit is the limit, correct?

MS. FLANNERY: Object to form.

THE WITNESS: Yes. The limit is the limit.

BY MR. NYDEGGER:

Q. And so the fact that this is now a Dynatek articulating conveyor would not extend the reach to be able to reach those other silos, correct?

A. Correct.

Q. It would fall short the same as the chute, correct?

MS. FLANNERY: Object to form.

THE WITNESS: Correct.

BY MR. NYDEGGER:

Q. So given that context, when these systems are designed, are they designed with their end use in mind?

A. Yeah. And that end use is what are we trying to reach and where are those

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locations that we wish to discharge to.

Q. And so if a chute system -- if a transfer system using a chute is being designed to service a six-pack silo, how would that affect the design?

A. Well, just kind of in general, if this was just a two-silo design, this would work well. If it now becomes the six pack as depicted in this exhibit, then the chute would have to be lengthened, and depending on what angle that caused it to be in, it may have to be raised a bit to get material flow rate or maybe that chute would need to be a bit larger diameter.

Q. But those considerations would all be taken into consideration at the design phase knowing that it was going to be used with a six pack?

A. Yeah.

Q. Earlier you were asked a question about whether the bucket elevator of a shoot design such as Waldner could be dynamically

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raised on-site. Do you recall that?

A. Remind me a little bit more what was asked.

Q. Yes. You were asked if the bucket elevator of Waldner could be -- the height could be increased dynamically.

A. Right.

Q. Do you recall that?

A. I do recall that.

Q. And do you recall what your answer was?

A. Yes. Not very easily. I mean, if you could figure out how to do it, that would be the first I've ever seen.

Q. So let's now talk about the same setup but with a Dynatek-type articulating conveyor belt. Would the bucket elevator be able to be dynamically heightened in that kind of a system?

A. No, sir. Same -- same situation. They would not be able to be dynamically adjusted.

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Q. And so is it correct that these systems, when they're designed, they're designed to service silos within a certain height range and that's taken into account during the design phase?

A. Yes, sir.

Q. And so once a system is constructed, let's say -- let's take an example.

Let's say that Waldner system is constructed to service a 40-foot silo.

A. Okay.

Q. Could that product then be taken and used to service a 60-foot silo?

A. As is it could not, because it's not able to service a 60-foot silo. It's only designed for a 40-foot.

Q. What would be the problem?

A. It would not be tall enough to be able to discharge into the silo.

Q. Let's change the hypothetical. Let's take the Waldner system, but let's put

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now a Dynatek-type conveyor extension on it. Do you have that in your mind?

A. I do.

Q. And let's say that's designed to service a 40-foot silo six pack.

A. Sounds good.

Q. Could that system then be used for a 60-foot silo?

A. No, sir. Same constraint. Would not be able to service a 60-foot. It would be too short. Wouldn't be able to discharge or put material into the 60-foot silo.

Q. Okay. And so, once again, is it correct that the systems are designed to serve a certain size of silos?

MS. FLANNERY: Object to form.

THE WITNESS: Yes. It is designed for that.

BY MR. NYDEGGER:

Q. Could you turn to paragraph 60 of your report, please.

A. Yes, sir.

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All right.

Q. Do you recall that in connection with paragraph 60 of your declaration, you were asked a line of questioning concerning wind loads?

A. Yes, sir.

Q. And when talking about wind load tolerances, is there any difference in the sensitivity to wind loads in a conveyor such as Dynatek as compared to a chute such as Waldner?

MS. FLANNERY: Object to form.

THE WITNESS: Right. With -- again, with the same relative flow rate of -- capability of each, the wind loads on a chute would be less because it's a smaller device.

BY MR. NYDEGGER:

Q. Okay. I'm talking about the tolerance. And "tolerance" is probably not a good word because you're going to understand that in an engineering aspect and I'm using it in a layperson aspect.

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A. Okay.

Q. Is there a difference in the sensitivity to wind of a chute versus a conveyor system?

A. I see what you're asking now, I believe. Yeah. So if you're -- if you're looking at a chute being pushed on by winds and it deflects the chute, maybe rolls it a bit or does whatever, no big. If you have a wind load --

Q. Why is that?

A. Because there is no chance of this -- like for a belt conveyor, you've got -- if you start having wind loads on it, the conveyor starts to lean, you know, because things deflect, you know, steel deflects. So as it starts to lean, now, all of a sudden, very possibly you could get the conveyor out of level, side to side, out of level, and it would mistrack. And then you've got a great big mess.

Whereas a chute, there are none of

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those things to worry about with mistracking. If it rolls or if it, you know, bends a little bit, it's no big.

Q. Okay. And so is there a -- would a POSITA understand there to be a difference when considering wind loads and accounting for wind loads when designing a conveyor discharge system as compared to a chute discharge system?

MS. FLANNERY: Object to form.

THE WITNESS: Yeah. They would have to -- and recognizing that the conveyor with wind loads pushing and potentially causing it to be out of level, that would be a concern for sure. But a POSITA looking at a chute would not see that as much of a problem. So, obviously, wind loads making sure that it can handle wind loads are obviously always a consideration.

BY MR. NYDEGGER:

Q. Are the wind load considerations with regard to -- comparing the wind load

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considerations of a conveyor system as compared to a chute system, does one of those systems have more numerous or more complex wind load issues to deal with?

MS. FLANNERY: Object to form.

THE WITNESS: Right. Because the --

BY MR. NYDEGGER:

Q. It's just -- did this one have more --

A. Yes.

Q. -- more in number and more in complexity than the other?

A. Yes.

Q. Which has more in number and more in complexity?

A. That would be the conveyor system.

Q. Okay. Thank you.

Does the Waldner reference -- do you recall does the Waldner reference disclose any tolerances?

MS. FLANNERY: Object to form.

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THE WITNESS: I don't recall any of those tolerances.
BY MR. NYDEGGER:
Q. If the Waldner reference did disclose tolerances, would you be able to make calculations using those tolerances to figure out issues like wind load and support structure and that sort of thing?
MS. FLANNERY: Object to form.
THE WITNESS: Are you asking if I was given all of the loading considerations and parameters from Waldner, if I could then, I guess, determine those loads and such?
BY MR. NYDEGGER:
Q. Yes.
A. Yeah, if I had all the information.
Q. For example, I believe earlier you were asked whether you had calculated whether the chute support structure of Waldner would be able to handle the weight load of a Dynatek conveyor system. Do you recall that?
A. I think so.

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MS. FLANNERY: Object to form.

THE WITNESS: I think so.

BY MR. NYDEGGER:

Q. And I believe your response was that you had not done those calculations, correct?

A. I had not done the specific calculations.

Q. And does Waldner provide you with the information necessary to be able to perform those calculations?

A. No, sir.

Q. If Waldner did contain that information, would you be able to perform those calculations?

A. Yes.

Q. Okay. Could you go to page -- this is page not paragraph -- page 50 of your declaration.

A. Okay.

Q. And in paragraph 71, you state that:

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"As shown in this snippet from Figure 22A" --

And this is Figure 22A of which reference, of Waldner, correct?

A. Yes.

Q. (As read):

"As shown in this snippet from Figure 22A, brackets 252A, 252B, in cyan."

A. Right.

Q. And so those parts 252A and 252B are identified as brackets, correct?

A. Yes.

Q. And then it states:

"Are in a fixed relationship to frame 254."

Do you see that?

A. Yes, sir.

Q. And you see 254 indicating the frame?

A. Yes, sir.

Q. And I just wanted to clarify,

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because I believe earlier you testified that the brackets are the frame. Do you recall that?

A. Yeah. I don't recall saying that, but the brackets are then attached to the -- attached to the bucket elevator frame.

Q. Okay. So is it your understanding that 256 and 25 -- sorry, 252A and 252B are parts different from but attached to the frame?

A. Yes.

Q. Could you go to paragraph 147?

A. Yes.

Q. Okay. This paragraph discusses attaching a trailer to a vehicle, correct?

A. Yes.

Q. And in this paragraph, you state that, in the middle of the paragraph:

"A kingpin/fifth wheel connection would provide the same distribution advantages across the bed of the transport vehicle as a gooseneck

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connection," correct?

A. The same, yes, sir.

Q. And during your testimony, I believe that you mentioned that a kingpin/fifth wheel connection has a plate, correct?

A. Correct.

Q. And I believe you testified that the load of the trailer is spread across that plate, correct?

A. Right. It's part of the mechanism where the kingpin attaches, there's a rub plate. But by definition, even -- it's -- the whole system is a single-point connection to the towing vehicle. So I probably got into the weeds too much with that connection, but at the end of the day, it's a single-point connection to the towing vehicle.

Q. So does the use of that rub plate change the distribution of the weight of the trailer on the bed of the transport vehicle as compared to a gooseneck connection?

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A. No, sir, it does not because it's, again, a single-point connection.

Q. Okay. Thank you.

If you could go to Waldner, that's Exhibit 1004. If you go to Waldner, Figure 3. Actually, let's go to Figure 2.

A. Okay.

Q. Do you recall a series of questions concerning the placement of a fifth wheel connection to replace the gooseneck connection depicted in Figure 2?

A. Yes, sir.

Q. Do you see -- what is the purpose of the extension on the trailer numbered 20?

A. 20?

Q. Yes.

A. It projects the kingpin or gooseneck connection to the center of the axle set.

Q. When you say the "axle set," what axle set are you referring to?

A. That would be the rear axles of the

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towing vehicle.

Q. So the section that link 20 allows the connecting point to reach --

A. Over, yeah, into and then onto the back of the towing vehicle above the axles of the towing vehicle.

Q. Okay. And so as far as possible placements -- well, let me give you a hypothetical. Do you see where there's an indication for 12A?

A. I do.

Q. What would happen if you put a fifth wheel connection at 12A?

A. Well, I guess, to put -- if you put a connection at 12A, you'd have to have some mechanism to lift it up, and it would then be at a weird angle. So technically, that trailer would have to then have a bit of a nose angle so that when it was lifted all way from the ground all the way high enough to engage the fifth wheel of the towing vehicle, it would be relatively flat.

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So those would be the ramifications of doing that.

And, also, the kingpin would be in the dirt if it wasn't raised up slightly above that.

Q. So given that the trailer bed is a straight line for that whole length 12A, 34, that whole frame is straight, if you put the fifth wheel at 12A and then angle -- if I understood correctly, you said that would have to be lifted up so it would be at an angle to the towing truck?

A. Right. So the trailer then would -- obviously to get higher, and then, I guess, further to that, these rear trailing axles would need to be at an angle shown to -- from what we are right now, they would have to be at a pitch so that when the trailer was then lifted up high enough, they would be horizontal and the axles would be horizontal and the tires would be sitting on -- both tire sets would be sitting on the ground, and the

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kingpin and where it attaches to the fifth wheel that would be flat as well.

Q. And when you say that would be flat, what do you mean?

A. I could draw it. Would that be helpful? Or I can describe it. That's fine.

Q. Can you describe it?

A. So if we have the kingpin at 12A, and we lifted the entire thing up in order to get high enough to rest on the fifth wheel of the towing vehicle, that little section that it's setting on top of the fifth wheel of the towing vehicle would need to be horizontal.

The reason is as you make turns and things, you have the clearance and the fifth wheel -- or the back of the towing vehicle doesn't plow into the bottom of the trailer because if it was at an angle, it would.

And then if you can imagine that being at a pitched angle, and the whole trailer being at a pitched angle, the tire

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sets would have to then be flat so that they were on the ground. So if you lower it back down, now the trailer's wheels are at an angle.

Q. Okay. And then if you go to Figure 5, this is -- this has the bucket elevator in the transport position, correct?

A. Yes, sir.

Q. And so if you had the fifth wheel down on the portion 12A, so it's still on the trailer and assume it's centered on the trailer.

A. Sure.

Q. And then you lifted that up to access the fifth wheel on the towing vehicle, what would that do to the overall height of the trailer relative to the road?

A. Yes. So all those components that are on the trailer, then, would rise by that amount, essentially, and --

Q. Approximately what is that amount?

A. It's about 53 inches, 53 to

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56 inches. It's -- it kind of varies between towing vehicles. But roughly speaking, it's about 53 to 55 inches.

Q. And are all those issues part and parcel of why a POSITA would put the fifth wheel at 22 on Figure 2?

MS. FLANNERY: Object to form.

THE WITNESS: Yeah. That way that -- the whole thing would then remain lower to the ground. You wouldn't have all those other issues that I described. So they would put it exactly there, where -- kind of where 22 is pointing. That's where the fifth wheel/kingpin would be.

MR. NYDEGGER: All right. I have no further questions.

FURTHER EXAMINATION

BY MS. FLANNERY:

Q. Just a few follow-ups. So I'll start where you all finished to keep it fresh.

Looking at Waldner Figure 5 --

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well, I say looking at Figure 5. Actually, looking at Figure 2 is probably more helpful.

A. Okay.

Q. And so as I understood questions from your counsel -- and I'm going to paraphrase but I want you to tell me if you think that this is an appropriate paraphrase -- that if you were going to put a kingpin on this device, you wouldn't want to put it where 12A is marked because that would require lifting up that end of the trailer to attach to the towing vehicle, correct?

A. Correct.

Q. So having the kingpin generally at the elevation that is shown in 22 is important to avoid that -- avoiding that being required, correct?

A. Yes.

Q. Counsel asked you some questions about -- asked you specifically a question about are powders aggregates, and I wrote down your answer, and I think you said not by

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definition. Do you recall that?

A. Right.

Q. Okay. I just wanted to make sure I understood. Did you mean by that, powders are not necessarily aggregates?

A. In the industry, aggregates -- the things that are considered aggregates are not powdery substances, they're not cement; they are the sand and the gravel. Those are considered the aggregates.

So if someone were to try to say that a powdery substance is an aggregate, it would not be considered an aggregate by basic industry definition.

Q. Where is the transition between a coarse powder and an aggregate?

A. Well, going back to it, it's -- when it's mined, for example, you've got sand that's mined, it's then classified. And then there's some sand that's, you know, pretty small particle size, but that's still considered an aggregate because of where it

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came from. It was something that was mined, and it's small particle size, and it's then ultimately considered an aggregate because it would be used, say, for example, to make concrete. Those are the aggregate components.

Q. So as I understand it, there could be a sand that has particle sizes that are similar to things that would not be considered aggregates; is that true?

A. They would -- I guess the definition of "aggregate" is if you look at an industry definition of an "aggregate," those are the materials that are used to make concrete. So those would be the rocks and the sand that then are used to make the concrete by mixing it with cement. In the industry, substances like cement and flash are other things that are used to make -- that are added when they make concrete. Those items are not considered the aggregates.

Q. But they may share similar particle sizes. Is that accurate?

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A. I guess, generally speaking, most of the time you don't have your sand aggregates that are as small as a powdery substance, no.

Q. Generally speaking?

A. Generally speaking.

Q. But there may be examples of sand that is fine enough to where you would still consider it an aggregate but it would be similar in particle size to a powder?

A. I guess you're splitting hairs with the definition, and perhaps you could maybe argue that point, but generally speaking, you know, your aggregate materials are things that are sand that has, you know, say 100 mesh or 200 mesh. Yeah, they're fine, but they're not anything like a cement.

Q. Fair to say POSITAs might have a healthy debate over whether or not it falls into that category?

A. Maybe.

Q. All right. Fair enough.

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You talked a little bit about a choking-off phenomenon where you have a truck that has -- that can dispense particles faster than, perhaps, what the system filling the silo can put them into the silo.

A. Correct.

Q. That would cause a backup in the truck.

A. Correct.

Q. If you wanted to modify your system to where that didn't occur with that truck, fair to say you would have to make some modification to the downstream components and what rate of particle -- what particle flow rates they can permit?

A. Again, just to clarify, the first component of the system is what controls your ultimate discharge rate or your material flow rate.

So based on that, what is your question again?

Q. If you experienced that backing up

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into a truck but you wanted to modify your system to where that didn't occur, you could use the full particle discharge rate of the truck but have not -- no backup?

A. Right.

Q. You would have to make modifications downstream --

A. Yes.

Q. -- to permit -- hang on a second -- to permit -- to increase the particle rate flow, correct?

A. Yes. Everything including the inlet because that is that first point. Those things would have to be modified in order to have a higher flow rate, and then all the subsequent things downstream, but that's -- that would be difficult to do because trucks of many different designs have that maximum flow rate that if you just open a gate, it will let it flow directly. There's many different flow rates that many different trucks have.

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Q. I'm sure.

A. So you still have to get to a point where you establish a flow rate and then design everything downstream to be able to handle that.

Q. So conversely, if you -- as I understand it, your view is that systems like those in Waldner, Sleeman are designed -- well, let's just talk about Waldner specifically because, as we talked about, the flow of aggregate from the chute is going to vary depending on the horizontal slope of the chute, correct?

A. So the -- let's not get confused here. The ability for the chute to transfer a material flow rate, like in pounds per minute, with all things remaining the same at a greater angle is capable of transferring a higher material flow rate than it would be at a shallower angle.

Q. You said it perfectly. That's exactly what I had in mind. Thank you. I

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won't try to redo it.

So if you design a system -- if you design a system of Waldner with that maximum particle flow rate that it can allow for a certain set of silos, is it fair to say that if you have a different configuration of silos, the system of Waldner may or may not be able to deliver -- may or may not be able to deliver aggregate into a different configuration of silos?

A. Well, my thoughts on Waldner would be that it has, by design, a specific envelope of points at which it is able to discharge at the given flow rate or the advertised flow rate of the system. So that you can't exceed that envelope with where it resides on that six pack or four pack, whatever the case may be or wherever it is positioned. So the system has its envelope of operation, would be what I am envisioning with Waldner.

Q. So if I take that system of Waldner, fold it up, drive it to another site

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that has a larger configuration --

A. That are outside the abilities of Waldner's envelope?

Q. In this hypothetical, it wouldn't necessarily be outside the maximum reach, but it would be outside the -- it would be outside the reach at which you can get the flow of particulate you need.

A. Well, part of the envelope is how far can you reach and that is then going to depict what the angle of the chute is.

Q. Okay. I'm going to mark 1039.

A. Okay.

Q. Actually, I'll tell you what, let's make it a little less complicated.

Now I'm going to assume in my inartful drawing and ask you to assume that the length of the 242 in this new drawing is the same as the length of 242 in the other drawing.

A. In this. Okay. So its ability to telescope to the same length.

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Q. Yes. What I will do is draw the same six silos.

A. Okay.

Q. Just so it's clear. Same six silos. Now, if at the new site there are silos here and here and here and here, would the system of Waldner be able to dispense proppant into those silos?

A. No. As I said, the Waldner system, in my -- I envision it to have this envelope of operation based on, you know, those parameters of the chute length. So if one were to want to hit those points, then that envelope would have to expand so various things would have to be done.

In other words, a longer chute, perhaps a taller bucket elevator for, you know, to discharge the material into it or various other things.

So in a sense, it would be -- the Waldner system is set up for a particular envelope, and then there would be other maybe

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embodiments for it, maybe a larger envelope. I say "embodiments." Maybe that's the wrong term, but, you know, various modifications in order to hit those components.

Q. In order to hit the silos that I've drawn in blue, you would have to effectively redesign the system, rebuild components of the system?

A. Yeah. You'd have to perhaps make a larger chute, depending on the actual numbers involved. Perhaps make a larger chute. Perhaps make a longer chute that telescopes longer. Perhaps raise it in order to get a steeper angle to ensure that the material flow rate was met.

Q. Okay. I'm going to add another feature that I remember. The length of the inboard -- the proximal segment of the chute 242, and it's at the pink line. So this is the shortest that the segment can become.

A. Okay. Sure.

Q. So for the silos that I've marked

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with an S here, is it true that the chute of Waldner would not be able to reach these silos S?

A. Again, it's part of the whole -- we're looking at these hypotheticals. It's a potential that it could depending on how much it can compress and how much distance. It may be that the chute is much steeper in which case it would be advantageous. It could pass a much greater flow rate. But it could potentially still hit those silos.

Q. The flow rate would have to be increased in order to do that?

A. No, ma'am. Its ability to flow would be greater, but that doesn't mean that you have to increase the flow rate of the system.

Q. So you might have sand coming out of the chute at a quicker rate --

A. As far as speed goes, but the flow rate is the same.

Q. If the flow rate of the truck was

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not adjusted -- hang on. Let me finish the question.

A. Yes, ma'am.

Q. If you did that, if you made the angle so steep that that increased the speed of the sand flowing out of the Waldner chute, but you didn't increase the rate that was coming out of the truck or the speed of the bucket elevator --

A. Correct.

Q. -- you would have periods of not backup but you would have periods of gaps, correct?

A. No, ma'am. I'm not following how that -- that line of logic.

Q. So you're saying the sand -- are you saying that the sand would flow exactly the same way that it flows into the other silos that are further away?

A. Well, the flow rate, that would be the pounds per minute, would be the same because the flow rate is set at that very

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first point. Okay? So the ability for that chute at a very steep angle, its ability to -- actually, if you were to send it -- let's just start using some numbers.

Say 200 tons per hour would be the amount that is coming into the system. In other words, the system is set for 200 tons per hour by design. That chute at that steep angle may be capable because it's at such a steep angle may be capable now of doing 500 tons per hour, but that doesn't mean that the 200 tons per hour is just flowing through a chute that is capable of 500 but it's only still passing the 200 that it's being given.

Q. Okay. These chutes that are marked certainly wouldn't allow you to keep the speed of the aggregate flowing out of the chute at a constant rate, correct?

A. Let's just make sure we understand. The speed would be the velocity of the material.

Q. Yes.

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A. Yeah. The speed would change because what happens is the cross-sectional area, if you took the sand stream, you cut it and then looked at the cross-sectional area of that, that would be smaller because now your sand is jetting through there at a greater speed so the cross-sectional area is less.

So those two, a combination of speed and that cross-sectional area, that is your material flow rate which would be the same as what's being input.

MS. FLANNERY: I'm going to mark our second drawing as Exhibit 1041. Just so we've got everything.

(Exhibit Number 1041 was marked.)

MS. FLANNERY: I don't think I have any further questions. Pass the witness.

MR. NYDEGGER: Nor do I.

MS. FLANNERY: We are off the record then.

THE COURT REPORTER: Mr. Nydegger, would you like a copy of the transcript?

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MR. NYDEGGER: Yes. We do want to review and sign.

(Whereupon, the proceedings concluded at 4:38 p.m.)

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CERTIFICATE OF SHORTHAND REPORTER

I, Monice Campbell, Certified Reporter within the State of Utah, do hereby certify:

That Travis Anderson, the witness whose deposition is hereinbefore set forth, was duly sworn by me before the commencement of such deposition and that such deposition was taken before me and is a true record of the testimony given by such witness.

I further certify that the adverse party, Masaba, Inc., was represented by counsel at the deposition.

I further certify that the deposition of Travis Anderson occurred at the offices of Workman Nydegger, located at 60 East South Temple, Suite 1000, Salt Lake City, Utah, on Wednesday, June 11, 2025, commencing at 9:17 a.m. to 4:38 p.m.

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I further certify that I am not related to any of the parties to this action by blood or marriage, I am not employed by or an attorney to any of the parties to this action, and that I am in no way interested, financially or otherwise, in the outcome of this matter.

IN WITNESS WHEREOF, I have hereunto set my hand this 3rd day of June, 2025.



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