

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

HALLIBURTON ENERGY	)	
SERVICES, INC.,	)	
	)	IPR2021-01033
Petitioner,	)	
	)	
VS.	)	
	)	
U.S. WELL SERVICES,	)	
LLC,	)	
	)	
Patent Owner.	)	
	)	
	)	

ORAL AND VIDEOTAPED DEPOSITION
OF
ROBERT SCHAAF
JULY 1, 2022

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ORAL AND VIDEOTAPED DEPOSITION OF
ROBERT SCHAAF, produced as a witness at the
instance of the Defendant and duly sworn, was
taken in the above-styled and numbered cause
on JULY 1, 2022, from 12:56 p.m. to 3:41 p.m.,
Central Time, before KATERI A. FLOT-DAVIS,
CSR, CCR, in and for the State of Texas,
reported by machine shorthand, pursuant to the
Federal Rules of Civil Procedure and the
provisions stated on the record herein.

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P R O C E E D I N G S

THE VIDEOGRAPHER: We are on the record on July 1, 2022, at approximately 12:56 p.m., Eastern (sic) Time, for the remote video deposition of Mr. Robert Schaaf, for IPR2021-01033, in the matter of U.S. Well Services, Inc., et al., versus Halliburton Company, et al.

My name is Bryan Beltran and I am the videographer and document technician.

Will counsel please introduce themselves for the record, beginning with the party noticing this proceeding.

MR. TOBIN: Yes.

This is David Tobin here on behalf of petitioner.

Also joining remotely is Brandon Chen.

Both of us are from the law firm of Baker Botts.

And just so the record is clear, this case is actually Halliburton Energy Services, Inc., versus U.S. Well

1 Services, LLC, and it's in the Patent
2 Trial and Appeal Board.

3 MR. YATES: And my name is Jay
4 Yates of the law firm of Patterson and
5 Sheridan.

6 I'm here with my colleague, Jordan
7 Brown.

8 And we're for the patent owner,
9 U.S. Well Services, LLC, as well as the
10 witness.

11 MR. TOBIN: Good morning, sir --
12 oh, it's afternoon now.

13 THE REPORTER: I haven't sworn in
14 the witness.

15 THE VIDEOGRAPHER: Are we going to
16 swear in?

17 THE REPORTER: I haven't --

18 MR. TOBIN: I think -- yeah.

19 Let me withdraw that question.
20 Apologies. I'm jumping the gun here.

21 THE REPORTER: And, also, it's
22 Central Time, not Eastern Time, I think,
23 Bryan. Just letting you know.

24 THE VIDEOGRAPHER: Oh, yeah.
25 Sorry. If I said Central -- if I said

1 Eastern, it's Central.

2 THE REPORTER: No problem.

3 (Witness sworn.)

4 MR. TOBIN: Thank you.

5 Now that we're over those
6 hiccups...

7

8 ROBERT SCHAAF,
9 having been first duly sworn, testified as
10 follows:

11

12 EXAMINATION

13 BY MR. TOBIN:

14 Q. Sir, could you please state your
15 full name and address for the record?

16 A. Robert Schaaf, S-c-h-a-a-f, 607
17 Frankfort Avenue, Huntington Beach, California
18 92648.

19 Q. Mr. Schaaf, do you understand that
20 video and audio of this deposition is being
21 recorded?

22 A. Yes.

23 Q. I'll try to ask clear questions.
24 If the volume is too low or you -- you don't
25 understand them, just speak up and I'll repeat

1 them or clarify.

2 Sir, do you understand you've been
3 sworn to testify truthfully, to the best of
4 the your ability, just as if we were in court
5 today before a judge or a jury?

6 A. Yes.

7 Q. Is there any physical, mental or
8 other condition that would prevent you from
9 giving truthful and accurate testimony here
10 today?

11 A. No.

12 Q. And, sir, are you physically
13 located in the Patterson Sheridan office right
14 now, in Houston?

15 A. Yes.

16 Q. Other than Mr. Yates and Ms. Brown,
17 is there anyone else in the room with you?

18 A. No.

19 Q. If anyone else enters the room,
20 will you let me know?

21 A. I will.

22 Q. Sir, as I understand it, you have
23 paper copies of your declaration and exhibits
24 for IPR2021-0133 (sic).

25 Is that correct?

1 A. Yes, it is.

2 Q. Great.

3 MR. TOBIN: So I'll be putting
4 exhibits up on --

5 MR. YATES: Mr. Tobin, if I could
6 interrupt.

7 MR. TOBIN: Sure.

8 MR. YATES: This is Mr. Yates.
9 Specifically, he has his
10 declaration in front of him in the
11 patent-in-suit.

12 We have available copies that are,
13 sort of, not within arm's length, but we
14 can make available, of other exhibits
15 associated with this IPR, in the room.

16 MR. TOBIN: Thank you for that
17 clarification. I appreciate you doing
18 that.

19 So I'll show exhibits -- I'll make
20 them available in the Chat window for
21 you to download, and feel free to
22 download them.

23 And if you would like a paper copy,
24 just let me or Mr. Yates know, please,
25 and we can take a break for you to get

1 that paper copy and then have that in
2 front of you, if you don't already.

3 Sound good?

4 THE WITNESS: Yes.

5 Q. (BY MR. TOBIN) So just to make
6 sure that we're looking at the same
7 declaration, is the declaration that you have
8 in front of you labeled Exhibit 2034?

9 A. Yes, it is.

10 Q. Very good.

11 (Exhibit No. 2034 Previously
12 Marked.)

13 MR. TOBIN: I'm going to paste
14 Exhibit 2034 in the Chat window, so we
15 could also put it up on the screen.

16 And then feel free to use your
17 paper copy or what's on the screen,
18 whatever is easier for you.

19 THE WITNESS: Okay.

20 Q. (BY MR. TOBIN) Any notes or
21 annotations in your declaration?

22 A. None that I'm aware of.

23 Q. Okay.

24 What's shown on the screen is
25 Exhibit 2034, Page 1 of 107 pages.

1 Do you see that?

2 A. Yes.

3 Q. And then on the cover it says,
4 "Patent 8,789,601" and "Case IPR2021-01033"?

5 A. Yes.

6 Q. That's the copy of the declaration
7 you have in front of you in paper?

8 A. Yes.

9 Q. Very good.

10 Sir, do you recall discussions of a
11 company called ProFrac?

12 A. Yes.

13 Q. Do you understand what the business
14 of ProFrac is?

15 A. Generally, yeah.

16 Q. What's your general understanding
17 of the business of ProFrac?

18 A. That they do well stimulation
19 services in particular hydraulic fracturing
20 jobs.

21 Q. Have you reviewed any license
22 agreements between U.S. Well and ProFrac?

23 A. I don't believe so.

24 Q. Do you know which patents were
25 included in a license between U.S. Well and

1 ProFrac?

2 A. I don't know. I couldn't comprise
3 a complete list.

4 Q. Have you reviewed any technical
5 documents from ProFrac?

6 A. No.

7 Q. Have you spoken to any employees or
8 officers or representatives of ProFrac?

9 A. No.

10 Q. Do you know when ProFrac started
11 performing hydraulic fracturing?

12 A. No, I don't.

13 Q. As part of your analysis in this
14 case, have you ever spoken with Joel
15 Broussard?

16 A. No, I haven't.

17 Q. In the course of your career, have
18 you ever spoken with Joel Broussard?

19 A. I don't believe so.

20 I've spoken to a lot of people, so
21 if he has a different recollection -- but I
22 don't recall.

23 Q. Got it.

24 So using your best recollection,
25 you don't recall ever having spoken with

1 Mr. Broussard, correct?

2 A. That -- that's correct, yes.

3 Q. Let's turn to Page 66 of your
4 declaration, please, Exhibit 2034.

5 And -- actually, I'm sorry. Let's
6 start at Page 65, Paragraph 95.

7 This is a section where you're
8 discussing "commercial" -- your understanding
9 of "commercial success"; is that correct?

10 A. Yes.

11 Q. And turn to the next page.

12 At the top of Page 66, still on
13 Paragraph 95, you cite an Exhibit 2016; is
14 that right?

15 A. Yes.

16 (Exhibit No. 2016 Previously
17 Marked.)

18 Q. (BY MR. TOBIN) Do you recall
19 what -- and this isn't a memory test, but do
20 you recall what Exhibit 2016 is?

21 A. I don't want to -- there's a lot of
22 numbers this case. I'm not -- I don't want to
23 say for sure what that one is, because
24 that's --

25 Q. I -- I can paste it in the Chat

1 window, if that's helpful to you. I'm not --
2 again, I'm not asking you to guess.

3 A. Okay. Okay.

4 Yes. Now, I -- I've received a
5 copy of it, so...

6 Q. Okay.

7 MR. TOBIN: We thank Mr. Yates for
8 that.

9 Q. (BY MR. TOBIN) Exhibit 2016 is a
10 declaration of Joel Broussard?

11 A. Yes.

12 Q. Did you do any independent
13 investigation to verify the facts set forth in
14 Mr. Broussard's declaration?

15 A. No.

16 Q. Later in the paragraph, you see
17 there's an Exhibit 2023 that you cite.

18 A. Okay. Yes.

19 MR. TOBIN: And I'll put that in
20 the Chat window, also, so you can access
21 it.

22 (Exhibit No. 2023 Previously
23 Marked.)

24 Q. (BY MR. TOBIN) Exhibit --

25 MR. TOBIN: And do you have a paper

1 copy of that, Mr. Schaaf?

2 If not, we could just go off
3 electronic.

4 THE WITNESS: Yeah, I don't have a
5 paper copy of that one.

6 MR. TOBIN: That's fine.

7 I'll ask the videographer to put it
8 up on the screen, please.

9 Q. (BY MR. TOBIN) Exhibit 2023 is
10 labeled: "U.S. Well Services Files E-frac
11 Patent Lawsuit Against Halliburton, Cimarex
12 Energy."

13 Do you see that?

14 A. Yes.

15 Q. This is one of the exhibits you
16 relied on for commercial success?

17 A. Yes.

18 Q. Exhibit 2023 is a press -- is a --
19 is an announcement about a lawsuit that
20 U.S. Well filed, correct?

21 A. Yes.

22 Q. Did you do any independent analysis
23 to verify the facts set forth in Exhibit 2023?

24 A. No.

25 Q. Turn to the top of Page 2 of

1 Exhibit 2023.

2 Do you see where it says: "There
3 are fewer than 20 electric frac spreads in the
4 United States," and then continues?

5 A. Yes.

6 Q. Exhibit 2023 cites to either a
7 report or some commentary from Primary Vision.

8 A. Yes.

9 Q. Do you know who Primary Vision is?

10 A. I -- I can't -- I don't know any
11 details about them, no.

12 Q. Did you ask to see any reports from
13 Primary Vision?

14 A. No.

15 Q. Have you seen any reports from
16 Primary Vision?

17 A. I don't believe so.

18 Q. Let's go back to your declaration,
19 please, Exhibit 2034.

20 Actually, back -- back to where we
21 were with Primary Vision, did you do any
22 independent analysis to verify how many frac
23 spreads there are in the United States, or
24 what fraction is electric?

25 A. No, I did not.

1 Q. Did you do any independent analyses
2 as to the number of frac spreads that
3 U.S. Well is running?

4 A. No.

5 Q. Do you see, referring to
6 Exhibit 2023, U.S. Well Services is running
7 five e-frac spreads?

8 A. Which --

9 Q. It's in the top paragraph.

10 A. Oh.

11 Yes, I see that. Okay.

12 Q. And that's material that you cited
13 in your declaration in Paragraph 95, correct?

14 A. Yes.

15 Q. Where you say, "U.S. Well Services
16 having five fleets within the" -- "with the
17 contractual obligation to have four additional
18 fleets"?

19 A. Uh-huh. Yes.

20 Q. And in your view, does -- is the
21 fact that U.S. Well Services have five
22 fleets -- is that relevant to patent owner's
23 commercial success?

24 A. Yes.

25 Q. If you look in Exhibit 2023, do you

1 see there's a declaration of Evolution Well
2 Services in the --

3 (Simultaneous speaking.)

4 A. Yes.

5 Q. -- top paragraph?

6 And Evolution Well Services runs
7 seven e-frac spreads, correct?

8 A. Yes, according -- yeah. According
9 to at the time of this, yes.

10 Q. So according to Exhibit 2023, that
11 you relied on for commercial success,
12 Evolution Well Services was running more
13 e-frac spreads than the patent owner was,
14 correct?

15 A. Yes.

16 Q. And you understand that Evolution
17 Well Services was the assignee of the Coli,
18 C-o-l-i, patent, correct?

19 A. Yes.

20 Q. So let's go back to your
21 declaration, please, Page 67.

22 And towards the bottom of the page
23 there's a section called, "Industry Praise."

24 A. Yes.

25 Q. And this is a section where you

1 discuss industry praise and its relevance to
2 secondary considerations of nonobviousness,
3 correct?

4 A. Yes.

5 Q. In the section, you discuss
6 numerous awards that the patent owner has --
7 has won or praise that they purportedly
8 received from professionals in the industry;
9 is that right?

10 A. That's correct, yes.

11 Q. Did you review each of these awards
12 that you cite?

13 A. When you say "review them," I
14 was -- I'm aware of them.

15 Q. Do you -- did you investigate what
16 the criteria was for receiving the award?

17 A. Not in any detail.

18 Q. Did you investigate who else may
19 have won those awards?

20 A. No.

21 Q. So staying on your declaration,
22 please, I would ask that you turn to Page 26.

23 And -- and let me know when you're
24 there.

25 A. Okay.

1 Q. So I would like to ask you a few
2 questions surrounding Paragraphs 58 and 59.

3 Do you have those in front of you?

4 A. Yes, I do.

5 Q. So in -- in Paragraph 59, you
6 state: "Coli does not teach or suggest
7 preventing damage to the motors. Coli is
8 silent with respect to preventing damage to an
9 electric motor" -- parentheses --
10 (inaudible) --

11 Do you see that?

12 A. Yes.

13 Q. What relevance did it have to your
14 obviousness analysis as to whether Coli
15 discusses preventing damage to an electric
16 motor, or Coli is silent with respect to
17 preventing damage to an electric motor?

18 A. Well, because the '601 Patent,
19 or -- because that's part of the technology
20 that -- that U.S. Well Services put together,
21 and Coli does have not that in his tech- -- in
22 his technology.

23 Q. And when you say "Coli does not
24 have that in his technology," do you mean that
25 Coli does not either say the words or discuss

1 prevent- -- preventing damage?

2 A. Coli does not teach that.

3 Q. We've heard -- I've heard the
4 phrase "teach" in a couple of instances.

5 What is your understanding of what
6 it means to a reference to teach -- for a
7 prior art reference to teach something?

8 A. Well, that it -- it's part of the
9 patent and what -- what's involved with the
10 patent and the patent claims.

11 Q. Well, I'm more asking about the
12 word "teach."

13 What is your understanding of what
14 it means for a prior art reference to teach
15 something?

16 A. Well, that's exactly what I mean,
17 is that it does -- it's not -- the technology
18 that that particular patent is working on does
19 not claim -- take claims on that particular
20 aspect of technology.

21 Q. So when you were considering the
22 Coli reference for purposes of your
23 obviousness analyses, did you consider what
24 would have already been known by a person of
25 skill in the art prior to them reading the

1 Coli reference?

2 A. Well, I think a person reading the
3 Coli reference needs to understand what it's
4 teaching and what it's about, to figure out
5 what -- what it is exactly that patent is
6 directed towards.

7 Q. Well, I think we're talking across
8 each other.

9 So I'm asking: As part of your
10 obviousness analyses, did you consider the
11 general background knowledge or engineering
12 knowledge a POSITA would have had as they were
13 reading these references?

14 A. Yes, I considered it.

15 And then that's part of what the
16 analysis is -- is that you have to be specific
17 about what Coli does or does not disclose.

18 Q. So in -- so did the approach you
19 used for analyzing obviousness require that
20 the motivation or suggestion to combine Coli
21 with Horikoshi must be found within the Coli
22 or Horikoshi references themselves?

23 MR. YATES: Objection. Form.

24 THE WITNESS: Well, I think I have
25 a pretty good discussion about what --

1 what's required, and I -- I think that
2 that's -- that really says, within it,
3 what needs to be done in order to --
4 to moti- -- to have some motivation to
5 combine them.

6 Q. (BY MR. TOBIN) Well, I'm asking
7 you about your understanding and what you
8 actually did. So let me ask -- repeat the
9 question.

10 So when you were analyz- -- let me
11 ask a different question.

12 When you were analyzing obviousness
13 for the combination of Coli and Horiko- -- you
14 understand that petitioner is seeking to
15 combine the Coli reference and the Horikoshi
16 reference together, correct?

17 A. Correct.

18 Q. Okay.

19 And you also understands that in
20 analyzing obviousness, there should be a
21 motivation to combine the two references
22 together in order for them to be obvious,
23 correct?

24 A. Yes. I agree with that.

25 Q. And so in analyzing the obviousness

1 combination of Coli and Horikoshi, you needed
2 to assess whether or not there was a
3 motivation to combine Coli with Horikoshi; is
4 that also right?

5 MR. YATES: Objection. Form.

6 You can answer.

7 THE WITNESS: Yeah.

8 Yes, that -- that's correct. I was
9 trying to see if there was a motivation,
10 which I did not find.

11 Q. (BY MR. TOBIN) And in
12 understanding the motivation to combine Coli
13 with Horikoshi, you need to look at what Coli
14 discusses, correct?

15 A. Yes.

16 Q. And in understanding the motivation
17 to combine Coli and Horikoshi, you also need
18 to look at what Horikoshi discusses.

19 A. Correct.

20 Q. And if there's a certain topic,
21 such as preventing damage to a motor, that is
22 not discussed in a reference in either Coli or
23 Horikoshi, does that mean that the combination
24 of Coli -- Coli and Horikoshi has no
25 motivation to combine?

1 MR. YATES: Objection. Form.

2 THE WITNESS: Well, I think the
3 burden is to show why they -- there's a
4 motivation to combine.

5 And I didn't see any motivation to
6 combine the two, because they were
7 different -- talking about different art
8 and -- different technology, I guess
9 would be a better way of putting that.

10 MR. TOBIN: Well, let me ask the
11 court reporter to read back my question,
12 please.

13 (The record was read.)

14 THE WITNESS: And my answer was --
15 is that I did not see, from the
16 explanations from the petitioner, why we
17 should combine the two -- (pause) --
18 since --

19 (Simultaneous speaking.)

20 Q. (BY MR. TOBIN) Well --

21 THE WITNESS: -- they're dealing
22 with different technologies.

23 Q. (BY MR. TOBIN) One of the reasons,
24 as I understand what you're saying that
25 there's no motivation to combine, is because

1 Coli is silent with respect to preventing
2 damage to an electric motor.

3 That's what you say in
4 Paragraph 59; is that right?

5 A. That's correct. Yes.

6 Q. So in order to have a motivation to
7 combine Coli and Horikoshi, does Coli need to
8 say the words "prevent damage"?

9 MR. YATES: Objection. Form.

10 THE WITNESS: Again, you need a
11 reason for it.

12 If it did say that, that may be a
13 reason for it. But that's -- I'm not
14 saying that that's the only requirement.

15 You have to come up with the -- the
16 requirement. And I didn't see the
17 motivation to combine.

18 Q. (BY MR. TOBIN) So is the answer to
19 my question, "No"?

20 A. Well, I think my answer to the
21 question is what it was. Because it wasn't --
22 it -- my -- my answer is -- is that that --
23 that could be a -- if it was there, it could
24 be a reason to combine. But it -- it's not
25 there.

1 And it's not necessarily the only
2 reason that you have a motivation to combine,
3 but it certainly would help you if you did.

4 Q. So you've operated electric motors
5 before 2012, correct?

6 A. That's correct, yes.

7 Q. And a person of skill in the art
8 would have also operated electric motors
9 before 2012, correct?

10 A. Yes.

11 Q. Would a person of ordinary skill in
12 the art, before 2012 -- known that it was
13 desirable to prevent damage to an electric
14 motor?

15 MR. YATES: Objection. Form.

16 THE WITNESS: Well, I think you
17 don't -- I think it's pretty obvious to
18 anybody that you would want to prevent
19 damage to an electric motor. You don't
20 want to -- want to do that.

21 Q. (BY MR. TOBIN) And it's pretty
22 much obvious to anybody that you would want to
23 prevent damage to an electric motor, before
24 2012, correct?

25 A. I think that that's probably ever

1 since there's electric motors, there was
2 motivation to not -- or there -- there --
3 people believed that you didn't want to damage
4 them.

5 Q. And if people believed you didn't
6 want to damage electric motors since the start
7 of the electric motor, you would agree that
8 people also knew that you should try to
9 prevent damage to the electric motor.

10 MR. YATES: Objection. Form.

11 THE WITNESS: I mean, it's --
12 it's -- what you're saying is -- is that
13 you shouldn't do things that could
14 damage the -- the motor. That would be
15 known, yes.

16 But going forward, of how you would
17 do that is not necessarily in every
18 instance known how you would -- what was
19 the best method for doing that.

20 MR. TOBIN: Sir, I'm going to have
21 to object as nonresponsive, because that
22 isn't what I asked you.

23 Q. (BY MR. TOBIN) The question I
24 asked you, which I think you agree with, is
25 that before 2012, one of skill in the art

1 would have known that they should prevent
2 damage to an electric motor, correct?

3 A. Well, one of skill in the art would
4 know that somebody -- that -- that there was
5 reason to not damage a motor; if that's -- if
6 that's the question.

7 Q. Sir, are you hesitant to use the
8 word "prevent"?

9 A. No. I'm just trying to not just
10 repeat what it says there. But I could
11 just -- I can repeat what it says there, is:
12 "Coli does not teach or suggest preventing
13 damage to the motor."

14 And that's just it. They do not --
15 Coli does not talk about "teach or suggest
16 preventing damage to the motors."

17 Q. Sir, in assessing obviousness, did
18 Coli need to discuss preventing damage to an
19 electric motor, if that's something that a
20 person of skill in the art already knew?

21 MR. YATES: Objection. Form.

22 THE WITNESS: No. It's just --
23 it -- it does not -- Coli does not teach
24 that.

25 Q. (BY MR. TOBIN) Does Coli, in

1 assessing obviousness -- was it your opinion
2 that Coli needed to teach something that a
3 person of skill in the art already knew?

4 MR. YATES: Objection. Form.

5 THE WITNESS: Certainly as a
6 motivation to combine.

7 Q. (BY MR. TOBIN) Sir, as a
8 motivation to combine, Coli did need to
9 discuss preventing damage to an electric
10 motor, even if that's something a person of
11 skill in the art already knew?

12 A. That would be one way of -- that
13 would be one means of -- one motivation to
14 combine, yes.

15 So I'm -- I guess what I'm saying
16 is I'm partially agreeing with you, that if
17 they did that, that would be a motivation to
18 combine.

19 But that's -- that doesn't mean
20 that -- that that's the only way you have a
21 motivation to combine.

22 Q. I'm not asking -- I'm asking about
23 the motive -- you understand that petitioner
24 contends that one of the motivations to
25 combine was that what -- Coli and Horikoshi

1 was to prevent damage to an electric motor.

2 You -- you understand that,
3 correct?

4 A. Yes.

5 Q. And -- and is it your opinion that
6 that motivation to combine is not applicable
7 because Coli is silent with respect to
8 preventing damage?

9 A. That -- that unless you can --
10 that's the case, Coli is silent with respect
11 to preventing damage to an electric motor.

12 So he's not teaching that
13 technology and, therefore, there's no
14 motivation to combine it with Kor- -- I don't
15 know -- I'm going to butcher Korihashi's
16 (sic/phonetics) name, but you know who I'm
17 talking about.

18 Q. I think you're talking about
19 Horikoshi. And I --

20 (Simultaneous speaking.)

21 A. Horikoshi --

22 Q. -- (inaudible) --

23 A. -- yes. Horikoshi.

24 Q. If I --

25 (Simultaneous speaking.)

1 A. -- (inaudible) --

2 Q. -- understand -- if I understand
3 the approach you took -- and, you know, we can
4 have some further discussion about it, but I
5 just need to understand your approach first.

6 If I can understand the approach
7 you took, in order to find a motivation to
8 combine Coli and Horikoshi, you needed to see
9 that motivation to combine discussed in either
10 the Coli reference or the Horikoshi reference
11 itself, correct?

12 A. No. That would -- that would have
13 been a reason, but I -- it wasn't what --
14 it -- it wasn't the only motivation -- way to
15 get that motivation to combine.

16 Q. Well, I mean, sir, this -- these
17 are your words here: "Coli is silent with
18 respect to preventing damage to an electric
19 motor," correct?

20 At least, that's what you're
21 stating.

22 A. Correct.

23 That's why you can't use Coli,
24 saying that it's part of the equation to
25 combine the two references.

1 Q. I see.

2 So I cannot use Coli in the
3 combination of references, because Coli is
4 silent as to preventing damage, because
5 preventing damage is not discussed in Coli
6 itself; is that right?

7 MR. YATES: Objection. Form.

8 THE WITNESS: Yeah.

9 So it does -- it does -- Coli does
10 not give you the motivation to combine.

11 MR. TOBIN: Got it.

12 Q. (BY MR. TOBIN) And that's the
13 dispute you're having as to "motivation to
14 combine," is because that motivation to
15 combine is not found in Coli.

16 A. Well, that's one of the reasons.

17 Q. And that's the reason you -- you're
18 stating in Paragraph 59, correct?

19 A. Correct.

20 Q. So let's turn to Paragraph 68 of
21 your declaration. And that starts on Page 28
22 of 107.

23 And here you're talking about the
24 Horikoshi -- H-o-r-i-k-o-s-h-i -- reference,
25 correct?

1 A. Correct.

2 Q. And you state there: "Horikoshi
3 does not teach or disclose that overcurrent is
4 a potential source of damage to an electric
5 motor."

6 Correct?

7 A. Yes.

8 Q. You would agree with me, though,
9 that -- that Horikoshi does disclose
10 overcurrent.

11 A. Yes.

12 Q. But your issue is that Hori- --
13 although Horikoshi discloses overcurrent,
14 Horikoshi does not disclose that overcurrent
15 is a potential source of damage to an electric
16 motor.

17 A. That's correct.

18 Q. So if petitioner wanted to rely on
19 overcurrent as a motivation to combine Coli
20 and Horikoshi, you would have needed to see a
21 discussion in Horikoshi or Coli that
22 overcurrent is a potential source of damage to
23 an electric motor?

24 A. That certainly would be helpful
25 for -- if you want to combine them.

1 Q. Well, I think you say the word
2 "helpful."

3 But you would have needed to see
4 that discussion, correct?

5 It's not just helpful. You would
6 have required that discussion of -- of
7 overcurrent as a potential source of damage to
8 an electric motor in order to find a
9 motivation to combine.

10 MR. YATES: Objection. Form.

11 THE WITNESS: Well, again, I guess
12 it's -- what I'm saying is -- is that if
13 it was there, then -- then the argument
14 would be a good argument as a motivation
15 to combine.

16 But it's not there, so it's not a
17 good -- you can't rely on that for that
18 motivation to combine.

19 MR. TOBIN: I see.

20 Q. (BY MR. TOBIN) So because -- so
21 Horikoshi -- so let me summarize that and let
22 me know if I got it right.

23 So if Horikoshi -- Hori- -- so we
24 agree, Horikoshi does disclose overcurrent,
25 right?

1 A. Yes.

2 Q. But your opinion is that there's no
3 motivation to combine Coli and Horikoshi
4 because neither reference discusses that
5 overcurrent is a potential source of damage to
6 an electric motor.

7 MR. YATES: Objection. Form.

8 THE WITNESS: Again, if it were
9 there, then you would have a motivation
10 to combine.

11 That's not -- but there isn't
12 there, so you -- so there is no
13 motivation to combine.

14 Q. (BY MR. TOBIN) Sir, because the
15 court reporter is typing what we say,
16 sometimes the pronouns can be a little
17 confusing, when you say the word "there."

18 So by "there," you're referring to
19 within the references, Coli and Horikoshi,
20 themselves, correct?

21 A. Yes.

22 Q. Let me turn to a different
23 reference.

24 Do you have the Amrine reference,
25 Exhibit 1015, handy?

1 A. Yes.

2 Just give us a second here.

3 Q. Yes, sir.

4 A. Okay.

5 (Exhibit No. 1015 Previously
6 Marked.)

7 THE REPORTER: Is that Amrine? How
8 do you spell that?

9 MR. TOBIN: A-m-r-i-n-e.

10 THE REPORTER: Thank you.

11 MR. TOBIN: Yes.

12 THE WITNESS: Okay.

13 Q. (BY MR. TOBIN) Sir, do you have
14 the Amrine reference, Exhibit 1015, in front
15 of you?

16 A. Yes, I do.

17 Q. Sir, do you also have your
18 declaration in front of you?

19 A. Yes, I do.

20 Q. Okay.

21 Thank you.

22 MR. TOBIN: And thank you to
23 counsel for having those available.

24 Q. (BY MR. TOBIN) So turn to Pages --
25 Page 94 of your declaration, please.

1 Page 1- -- Paragraph 152.

2 Why don't you take a moment to read
3 that, and then I'll ask you a few questions
4 about that.

5 A. Okay.

6 (Witness reviewing exhibit.)

7 Okay.

8 Q. Are you with me?

9 A. Yes. Yes.

10 Q. Sir, in the middle of
11 Paragraph 15- -- so Paragraph 152 is
12 discussing your opinions on Ground 6, which is
13 the combination of Coli, Horikoshi, API
14 Standard and Amrine, correct?

15 A. Yes.

16 Q. In the middle of Paragraph 152, you
17 state: "Neither Coli nor Amrine use the word
18 'torque' or 'torsional,'" correct?

19 A. Yes.

20 Q. What relevance did it have to your
21 obviousness opinion that neither Coli nor
22 Amrine use the word "torque" or "torsional"?

23 A. I don't recall at -- at this point,
24 of that.

25 Q. Okay.

1 You're -- you're not sure --

2 (Simultaneous speaking.)

3 A. Yeah.

4 Q. -- why -- (inaudible) -- that is
5 there?

6 A. Yeah. Yeah.

7 Q. Do you stand by the sentence that:
8 "Neither Coli nor Amrine use the word 'torque'
9 or 'torsional'?"

10 A. Okay. Well -- give me a second.

11 Q. Yes, sir.

12 A. Maybe I can refresh my memory.

13 (Witness reviewing exhibit.)

14 MR. TOBIN: I'll withdraw the last
15 question.

16 Q. (BY MR. TOBIN) Sir, do you
17 remember what the Amrine reference was about?

18 A. It's about the trailer.

19 Q. Yes, sir.

20 A. (Witness reviewing exhibit.)

21 Okay. The -- the reason that
22 the -- that "torque" or "torsional" can be
23 found in Paragraph 151, based on my review of
24 Amrine, in my opinion, "...a person of
25 ordinary skill in the art at the time of the

1 invention would not be motivated to combine
2 Coli, Horikoshi, API Standard, Amrine, because
3 none of the references talk about electric
4 motor vibration or teach cross-members to
5 provide the support against torsional forces.

6 "In my opinion, a person of
7 ordinary skill in the art would not be
8 motivated to simply substitute the trailer of
9 Coli for the trailer of Amrine that has
10 cross-members.

11 "Coli, Holbrook (sic), API Standard
12 and Amrine do not discuss electric motor
13 vibration or cross-members that support the
14 torque of the motor rather than a trailer, as
15 I recited in Claim 19."

16 Q. Sir, I think you just read
17 Paragraph 151 of your declaration into the
18 record.

19 Was that for my benefit or your
20 benefit?

21 A. For -- for both our benefits.

22 Q. All right.

23 Very good.

24 So you understand in Ground 6 there
25 was a combination of Coli, Horikoshi, API

1 Standard and Amrine, correct?

2 A. Yes.

3 Q. And in your view there was no
4 motivation to combine, correct?

5 A. That's correct, yes.

6 Q. And the reason you give for no
7 motivation to combine is because electric
8 motor vibration is not discussed in any of
9 those references; is that right?

10 A. That's correct.

11 Q. So you look to the references to
12 see if they discuss the motivation to combine,
13 and that's how you perform your obviousness
14 analysis?

15 A. In this case, yes.

16 Q. And -- and so going back to
17 Paragraph -- and when you say "in this case,"
18 you mean not just for this combination, but
19 for the other grounds that -- that are in your
20 declaration, also. It's the same similar
21 process?

22 A. Well, I think that -- I don't want
23 to generalize, so that I'm basically answering
24 the question for everything that could
25 possibly be out there or anything that may

1 happen in the future.

2 So I want to limit it to the -- the
3 topic that we're discussing.

4 Q. Yeah.

5 And, sir, I'm -- I'm not trying to
6 make -- make pretend that I'm Johnny Carson
7 and predict the future here.

8 I'm talking --

9 (Simultaneous speaking.)

10 A. Uh-huh.

11 Q. -- about what's in your dec- --
12 what's in your declaration and the grounds
13 that you analyzed in your declarations in this
14 case.

15 That's the approach you used for
16 obviousness, right?

17 A. Well, again, in this particular --
18 yeah, in this particular instance, yes.

19 But I don't want to -- again, don't
20 want to generalize it because there are
21 certain other things in the future or in the
22 past that may go to something different.

23 And so I don't want to make it like
24 this is the only way I do things.

25 Q. Sir, I'm not -- no, I'm not asking

1 about your other cases that you're working --

2 (Simultaneous speaking.)

3 A. -- (inaudible) --

4 Q. -- on. I'm not even --

5 A. -- (inaudible) -- no --

6 Q. -- asking about the future of this

7 case. I'm asking about this declaration --

8 A. Yeah --

9 Q. -- and what's in here.

10 A. -- I -- I understand that's what
11 you're doing, but I know what attorneys will
12 do in the future. So that's -- that's why I
13 have to be careful about what I'm saying here
14 on that one.

15 Because I don't want -- I don't
16 want it to be concluded that that's the only
17 way that things were done.

18 Q. I'm very confused by that, sir.

19 A. Well, I think you shouldn't be,
20 though. Because just yesterday you -- or I
21 guess it was Wednesday, you brought in a
22 previous declaration that was done.

23 Q. To be clear, that was your
24 declaration, right?

25 A. That -- that's right. It was my

1 declaration.

2 But you brought it in from another
3 case. I realize it's related to this, but
4 that's -- that's -- that's -- that's what
5 attorneys do.

6 MR. YATES: Can -- can we go off
7 the record for just a moment?

8 MR. TOBIN: Sure.

9 MR. YATES: If we can go off for
10 just one moment.

11 THE VIDEOGRAPHER: The time is
12 1:38 p.m. and we're going off the
13 record.

14 (Brief Recess Taken.)

15 THE VIDEOGRAPHER: The time is
16 1:38 p.m. and we are back on the record.

17 Q. (BY MR. TOBIN) Sir, was there any
18 discussion just now of the substance of your
19 testimony already given, or anticipated to be
20 given?

21 A. No.

22 Mr. Yates just asked me not to
23 fight with you.

24 And I wasn't trying to fight with
25 you. I was just trying to give you an

1 explanation of why I don't want to generalize
2 my answer, that I --

3 (Simultaneous speaking.)

4 Q. All right.

5 A. -- want to be specific about my
6 answer.

7 So I hope that wasn't -- it wasn't
8 perceived to be fighting with you. I -- and I
9 apologize for that, if that's how it came off.

10 Q. (BY MR. TOBIN) Well, I also
11 appreciate Mr. Yates's ability. And if it
12 gives him any comfort, I'm also not trying to
13 fight with you.

14 Okay.

15 Sir, so going back to the original
16 question -- and I'm really asking about your
17 analysis in this case; I'm not asking about
18 other cases -- the way you approach
19 obviousness in this case, at least for
20 Ground 6, was to look at whether the
21 motivations to combine were discussed in the
22 references themselves, correct?

23 A. Yes. In Ground 6, for this case,
24 that's how it was done.

25 Q. And then via other Grounds,

1 1 through 5, in this case, for Exhibit 2034,
2 the way you approach obviousness was to see if
3 the motivations to combine were discussed in
4 the references themselves, correct?

5 A. That was one of the things I looked
6 at.

7 And if there was anything else
8 brought by the petitioner as a motivation to
9 combine, I would have -- I would have
10 considered that, as well.

11 Q. Okay.

12 Sir, I'm asking about Grounds
13 1 through 5, because I'm trying to save time
14 and not go through each one individually, and
15 to get you out of here a little early on a
16 Friday.

17 You do understand that, right?

18 A. Right.

19 And that's why I just want to make
20 sure that you understand my answer, and that
21 it would be the same for each one of the
22 grounds.

23 Q. Okay.

24 I'm sorry. What was that last
25 piece?

1 I -- I think you trailed off.

2 A. That my -- I would look for whether
3 there's a -- there's a reason for them to be
4 combined, and see if there was a motivation to
5 combine; and that included looking at the
6 particular references to see if they provided
7 any reason that you would want to combine
8 them.

9 Q. And so, sir, going back to, I
10 think, my original question from a few minutes
11 ago, Paragraph 152, when you say "Neither Coli
12 nor Amrine used the word 'torque' or
13 'torsional'..."

14 A. Yes.

15 Q. So I think we had a digression, so
16 I didn't get an answer for that.

17 Again, what relevance does it --
18 did it have to your obviousness conclusion
19 that neither Coli nor Amrine used the word
20 "torque" or "torsional"?

21 A. Well, do you -- do you want me to
22 read Paragraph 151 again?

23 Because that's -- that's what I
24 would do to answer your question.

25 Q. Well, I -- I have Paragraph 151,

1 and you have read it, and you've read it into
2 the record.

3 I'm really focusing on the word
4 "torque" or "torsional."

5 Was that important to your
6 analysis, that Coli and Amrine did not use the
7 word "torque" or "torsional"?

8 A. Again, to -- to answer your
9 question, I would just read Paragraph 151.

10 Q. That's the best answer you can give
11 to my question about the importance of whether
12 or not the references use the word "torque" or
13 "torsional" -- the best answer you can give is
14 read Paragraph 151?

15 A. I can't answer any better than how
16 it was written in Paragraph 151.

17 Q. Okay.

18 So how did you determine that
19 neither Coli nor Amrine used the word "torque"
20 or "torsional"?

21 A. Well, we reviewed it and we never
22 found it.

23 Q. Did you do -- did you do a
24 "Control-F," like a word search, to determine
25 that Coli and Amrine never used the word

1 "torque" or "torsional"?

2 A. I guess I didn't find it, and I
3 think I was given some help on this one to
4 confirm my findings.

5 Q. Okay.

6 But you, yourself, looked to see
7 whether Coli or Amrine used the word "torque"
8 or "torsional"?

9 A. Yes.

10 And, again, I -- not to say that I
11 could have missed it, if they did. But that's
12 why we -- it -- double-check for things like
13 that.

14 Q. Got it.

15 It's important to double-check your
16 work, to make sure you get it right?

17 A. Yes.

18 Q. All right.

19 Do you have the Amrine reference in
20 front of you, sir?

21 A. Yes, I do.

22 Q. Can we go to Exhibit 1015, Page 11,
23 please.

24 And let me know when you're there.

25 A. Okay.

1 (Inaudible) --

2 (Simultaneous speaking.)

3 Q. I'm sorry?

4 A. I got the wrong page.

5 Okay. I'm ready there.

6 Q. So on Exhibit 1015, Page 11, in the
7 left-hand column there's a Paragraph 41 that
8 continues to Para- -- to the right-hand
9 column.

10 Do you see that?

11 A. Yes.

12 Q. And about three lines from the end
13 of Paragraph 41, Amrine says -- and the line
14 starts with the word "While..."

15 But Amrine says in Paragraph 41:
16 "The load-bearing capacity of the trailer and
17 torsional robustness of the frame 14 were
18 substantially improved over prior designs."

19 Do you see that?

20 A. Uhm, I'm still looking for it.

21 (Witness reviewing exhibit.)

22 MR. YATES: With your permission,
23 Mr. Tobin, I'm going to point, I think,
24 what you're pointing out.

25 THE WITNESS: Okay.

1 No, I see it now. Okay.

2 MR. TOBIN: And, Jay, thank you for
3 asking.

4 Q. (BY MR. TOBIN) So Amrine does say:
5 "The load-bearing capacity of the trailer and
6 torsional robustness of the frame¹⁴ were
7 substantially improved over prior designs"?

8 A. Yes.

9 Q. So you would agree that Amrine does
10 use the word "torsional," correct?

11 A. Yes.

12 Q. And Paragraph 41, where Amrine uses
13 the word "torsional," he is talking about the
14 improved trailer design, that it offers
15 improved torsional robustness, correct?

16 A. Yes.

17 Q. So when you state in Paragraph 152
18 of your declaration that "Neither Coli nor
19 Amrine use the word" ... "'torsional,'" was
20 that an error in your analysis?

21 A. I would say so at this point.

22 Q. And now that Amrine does use the
23 word "torsional," does that affect your
24 obviousness analysis of the combination
25 involving Coli and Amrine?

1 A. No.

2 Q. I see.

3 So the fact that Amrine says that
4 it offers an improved trailer design while
5 offering torsional robustness, that doesn't
6 affect your opinions?

7 A. No.

8 Q. And is this a paragraph you have
9 considered in reaching your opinions?

10 A. I considered the entirety of the --
11 the reference.

12 And based on -- again, based on my
13 review, because they're talking about electric
14 motor -- were talking about electric motor
15 vibration to teach using cross-members to
16 provide support against torsional forces.

17 Q. And you do agree, Amrine discusses
18 providing increased support for -- against
19 torsional forces, right?

20 With this Paragraph 41?

21 A. It talks about that in a general
22 sense, and not with the specific sense of
23 what -- what the issues are and -- with the
24 fracturing equipment.

25 Q. I see.

1 So -- so for you to have agreed
2 that -- as to the motivation to combine, it's
3 not enough that Amrine does, in fact, discuss
4 torsional robustness; it would have also
5 discussed -- needed to discuss fracturing?

6 MR. YATES: Objection. Form.

7 THE WITNESS: It would have to be
8 more involved with the type of equipment
9 that -- that's involved with hydraulic
10 fracturing work.

11 Q. (BY MR. TOBIN) You would agree
12 that heavy-duty trailers are involved in
13 hydraulic fracturing work, correct?

14 A. Yes.

15 Q. And the title of Amrine is
16 "Heavy-duty Trailer," correct?

17 A. Correct.

18 Q. You would agree that Amrine does
19 have some relationship to the kind of
20 equipment used in hydraulic fracturing,
21 correct?

22 A. No. I wouldn't -- wouldn't draw
23 that conclusion. It's just talking about the
24 trailer for generalized use, that's -- for
25 use.

1 Q. What more would you have needed to
2 see in Amrine to convince you that Amrine
3 could be combined with Coli?

4 A. It would have to deal with the
5 specific types of equipment that Coli is
6 using.

7 Q. Such as?

8 A. High -- motors and pumps.

9 Q. But for Amrine -- so for there to
10 be a motivation to combine Coli and Amrine,
11 it's not enough that Amrine discloses a
12 heavy-duty trailer, but would you have needed
13 to see that Amrine also discloses pumps and
14 motors on that trailer?

15 A. Yes, or addresses -- addresses the
16 issue of what those things could do once
17 you're mounting them on a trailer.

18 Q. Well, you agree that mounting pumps
19 and motors on a trailer can cause vibrations,
20 correct?

21 A. Well, I guess, you know, you're
22 going to have to be a little bit more specific
23 than that.

24 Q. So you agree that electric motors
25 vibrate when they operate, correct?

1 A. Yeah. Yes.

2 Q. You agree that pumps vibrate when
3 they operate, correct?

4 A. Yes.

5 Q. And electric motors vibrating and
6 pumps motors vibrating when they operate, that
7 was known well before 2012, correct?

8 A. Yes.

9 Q. And the fact that electric motors
10 and pumps vibrate would have been known to
11 anyone who has ever even seen or been around a
12 pump and an electric motor, correct?

13 A. Yes.

14 Q. Similarly, if a pump or motor were
15 mounted to something, the vibrations of the
16 pump or motor would cause torsional forces at
17 the joints of the mount, correct?

18 That's just basic physics.

19 A. Well, it's basic physics, but then
20 there's vari- -- various types of pumps and
21 various sizes of pumps and motors.

22 And in order to properly design a
23 trailer, you would have to take the specifics
24 of the pump and motor into account to make --
25 to get the proper construction to make it work

1 without any -- without issues.

2 Q. And that's something a person of
3 skill in the art would have known before 2012.
4 In mounting pumps and motors to trailers, they
5 would need to consider the mounts themselves
6 to make sure they can withstand the vibrations
7 of the pump and the motor.

8 A. Could you --

9 (Simultaneous speaking.)

10 MR. YATES: Objection. Form.

11 THE WITNESS: Yeah.

12 Could you repeat the question?

13 MR. TOBIN: Sure.

14 Q. (BY MR. TOBIN) That anything (sic)
15 knew after 2012 that you would need to
16 consider vibrations when mounting a pump and a
17 motor.

18 A. Well, you could. I mean, it's
19 something different that you're dealing with.

20 Q. Is it your testimony that the issue
21 of mounting pumps and motors and accounting
22 for vibrations had not been addressed before
23 2012, by anyone?

24 MR. YATES: Objection. Form.

25 THE WITNESS: It's certainly been

1 analyzed for -- for the particular
2 applications that were done before 2012.

3 But post-2012, the applications
4 that might occur there could -- could or
5 would pose different engineering
6 challenges.

7 Q. (BY MR. TOBIN) What different
8 engineering challenges would be posed by
9 mounting pumps and motors to trailers after
10 2012 that did not exist before 2012?

11 A. Well, there's always new, different
12 types of pumps, different sizes of pumps,
13 different construction of the pumps, that are
14 all going to potentially cause different types
15 of vibration and other forces that would need
16 to be taken into account, if you so decided
17 to -- desired to mount them on a trailer.

18 Q. And everything you just stated was
19 also true before 2012, correct?

20 A. Everything I stated was true before
21 2012, yet you didn't have the same -- since
22 2012, new products have come on line and
23 they've required different review and
24 different design for how they're going to be
25 handled.

1 Q. And what relevance does that have
2 to an obviousness analysis, sir?

3 A. Because the -- the -- the trailers
4 that are going to be designed for a particular
5 piece of equipment, if they're part -- part of
6 the equipment itself, they'll have to be
7 designed -- take into account of -- what the
8 design is, and so it would make it a unique
9 piece of equipment.

10 Q. Sir, are you talking about actually
11 building something in the field or are you
12 talking about an obviousness analysis now?

13 A. Well, in -- in some senses both.
14 Because it wouldn't be obvious before you had
15 a certain -- were trying to do a certain --
16 certain procedure, what you needed to -- what
17 was going to be required to do that procedure
18 until you, in fact, did it, if it's a new
19 procedure.

20 Q. So is mounting trailers and
21 motors -- is mounting motors and pumps to
22 trailers a new procedure as of 2012?

23 A. Well, if the equipment -- if you
24 have equipment that's never been mounted to a
25 trailer that's specific to what a new -- new

1 type of operation that's being done, then,
2 yes, it's unique.

3 Q. Sir, the basic principles of
4 accounting for motor vibrations, those haven't
5 changed before 2012 to after 2012, have they?

6 A. No, they haven't. But the
7 challenges continue -- continue to be greater
8 as we try to put -- do other new things as
9 time goes on.

10 Q. Sir, I'm asking about the basic
11 physics and considerations an engineer would
12 have looked at.

13 The basic physics and
14 considerations that an engineer looks at in
15 mounting electric motors and pumps to trailers
16 are the same before 2012 and after 2012,
17 correct?

18 Maybe the applications change with
19 the technology, but the basic physics and
20 engineering considerations have not changed.

21 A. The basic physics have not changed.

22 But many times you don't know what
23 the -- what the issues are until you start,
24 actually, the operation of the equipment
25 itself.

1 Q. So you considered operation of the
2 actual equipment itself after 2012 as part of
3 your obviousness analysis in this case, sir?

4 A. Well, I think the issues that are
5 dealt with after 2012 are certainly something
6 that should need to be considered.

7 Q. And the issues that are dealt with
8 after 2012 are something that should be
9 considered as part of your obviousness
10 analysis in this case, correct?

11 MR. YATES: Objection. Form.

12 THE WITNESS: What I'm saying is --
13 is that what -- what the requirements
14 were, were not known -- for -- for this
15 equipment was not known before 2012.

16 Q. (BY MR. TOBIN) Which equipment are
17 you talking about, sir?

18 A. The system -- the -- the equipment
19 that exists in the claims of the patent.

20 Q. The requirements to mount an
21 electric motor and pump were not known after
22 Two Thousand- -- were not known before 2012,
23 sir?

24 Is that your testimony?

25 A. No.

1 Again, for this particular
2 equipment, the -- the vibrations and all the
3 factors that would be needed to mount these
4 properly to make them work properly were not
5 known before 2012.

6 Q. And, sir, just to make sure we're
7 on the same page, when you're talking about
8 equipment, you're talking about pumps, motors
9 and variable frequency drives; is that right?

10 A. I'm talking about all the equipment
11 that's involved in this patent, yes.

12 Q. No, sir.

13 I asked you about pumps, motors and
14 VFDs.

15 A. Well, that would be included in
16 that -- that group.

17 Q. So is it your testimony, sir, that
18 the ability-- that the -- it was not known how
19 to mount pumps to trailers before 2012?

20 A. That's not what I said.

21 I said the -- how the -- this
22 particular piece of equipment needed to be
23 mounted and how -- the construction of the
24 trailer were not known before 2012.

25 Q. And, sir, you're saying "this

1 particular piece of equipment," and I think
2 there's vagueness in what you're saying,
3 and -- and I don't think it's intentional.

4 But I'm having a hard time
5 understanding you, so I'm going to ask it
6 again.

7 Was it known how to mount -- how to
8 mount electric pumps and electric motors to
9 trailers before 2012?

10 You would agree with that, sir,
11 yes?

12 A. I would agree, in generalities,
13 that all the pumps and motors and setups that
14 were done prior to 2012, and that were
15 actually in operation and doing things, that
16 was known.

17 But what was not known was how to
18 mount and design the trailer for this
19 particular -- for this particular equipment.

20 Q. I got it.

21 So, sir, it's your opinion that
22 before 2012 it was not known how to design a
23 trailer for pumps, motors and VFDs?

24 A. No. It's like this -- this
25 particular equipment and how to use it was not

1 known, and how it would be done.

2 Q. You keep saying "this particular
3 equipment," sir.

4 Can you be more specific?

5 A. I'm -- the equipment involved in
6 the claims of -- of the patent at issue.

7 Q. Okay.

8 So the equipment involved in the
9 claims of the patent at issue are pumps,
10 motors and variable frequency drives, correct?

11 A. That would -- that would summarize
12 which equipment we're talking about, but I
13 think that that's not -- I don't think that
14 completes the '840 Patent. So...

15 Q. Sir, we're talking about the
16 '601 Patent now.

17 A. I'm sorry. The '601 Parent.

18 Q. Okay.

19 A. Yes. I'm sorry. Too many patents
20 going on here.

21 Q. Sure.

22 So -- so is it your view that the
23 '601 Patent teaches one of skill in the art
24 how to mount trailers, variable frequency
25 drives and pumps to a trailer?

1 MR. YATES: Objection. Form.

2 THE WITNESS: It teaches that --
3 the capability of it, and that what --
4 what is -- what -- what's there and what
5 can be done.

6 MR. TOBIN: That's not my question,
7 sir.

8 Do you need me to repeat my
9 question?

10 THE WITNESS: Yes.

11 Can you repeat it?

12 MR. TOBIN: I would ask Madam Court
13 Reporter to read back my question,
14 please.

15 (The record was read.)

16 THE WITNESS: Well, I think
17 specifically it -- the patent talks
18 about cross-members that support the
19 torque of the motor, and that's
20 what's -- the important aspect here.

21 MR. TOBIN: Got it.

22 Q. (BY MR. TOBIN) So is it your view
23 that before 2012, no one would have known to
24 use a cross-member on a trailer to support
25 torque?

1 A. Well, specifically what they would
2 need to do would depend on what -- what they
3 were trying to accomplish and what was -- what
4 would be necessary to accomplish that.

5 MR. TOBIN: Objection.

6 Nonresponsive.

7 Q. (BY MR. TOBIN) Sir, do you
8 remember my question?

9 A. Yes, and I'm trying to answer it.

10 It's -- it's that each situation is
11 going to be different, and what -- your
12 challenges are different.

13 And in this case the cross-members
14 that support the torque of the motor were part
15 of the claim construction.

16 Q. Sir, I'm having a hard time
17 understanding you, so let me ask my question
18 again, and hopefully I'll get a clearer
19 answer.

20 Is it your opinion that before 2012
21 one of skill in the art would not have known
22 that adding cross-members to a trailer helped
23 the trailer support additional torque?

24 A. Well, I think that simplifies a
25 much more complicated situation there, that

1 it's more than just say, "Okay, I can put a
2 cross-member here and that's going to solve
3 the problem."

4 It's -- it's a matter of putting --
5 arranging it in such a way that you're dealing
6 with the particular problem.

7 Q. Sir, does the '601 Patent tell you
8 at all how to arrange the cross-members in a
9 particular way to deal with the problem?

10 A. I don't -- I don't believe so.

11 Q. But, sir, are you imposing a
12 greater standard on Coli and Amrine than
13 you're imposing on the '601 Patent?

14 A. No. Because --

15 (Simultaneous speaking.)

16 Q. -- (inaudible) --

17 A. -- the '601 Patent addresses the
18 issue, whereas Coli and Amrine do not address
19 the issue.

20 Q. And the '601 Patent addresses the
21 issue because it says "cross-members that
22 support the torque of the motor"?

23 A. Yes.

24 Q. Does the '601 Patent tell one of
25 ordinary skill in the art how to arrange the

1 cross-members?

2 A. Not that I'm aware of.

3 Q. Does the '601 Patent tell one of
4 ordinary skill in the art how many
5 cross-members to use?

6 A. Not that I'm aware of.

7 Q. Does the '601 Patent tell one of
8 ordinary skill in the art the spacing of the
9 cross-members?

10 A. I don't believe so.

11 Q. Does the '601 Patent tell one of
12 ordinary skill in the art whether to use steel
13 or wood or some other material for the
14 cross-members?

15 A. I don't believe so.

16 Q. The '601 Patent tells one of skill
17 in the art to use cross-members, and then a
18 person of skill in the art could figure out
19 how to do it; is that right?

20 A. I don't -- I don't think that that
21 would be a correct statement.

22 Q. So one of ordinary skill in the art
23 could not figure out how to implement
24 cross-members that support the torque of the
25 motor based on the teachings of the

1 '601 Patent?

2 A. I think it would direct them that
3 there is going to need additional support in
4 order to handle this.

5 Q. That's not my question, sir.

6 A. Well, I think the issue is -- is
7 that there's going to be problems associated
8 with putting pumps and motors on a trailer.

9 And this is being addressed in the
10 '601 Patent and it wasn't addressed in the
11 other two.

12 Q. When you say "it wasn't addressed
13 in the other two," what do you mean by that,
14 sir?

15 A. Well, it wasn't -- it wasn't
16 addressed in Coli, that they do not deal with
17 the -- the problems of putting a electric
18 motor on a trailer.

19 And Amrine does not deal with the
20 specifics of -- of the type of equipment
21 that's used in frac jobs.

22 Q. But, sir, as part of your
23 obviousness opinion, it was your understanding
24 that Coli does not deal with the problems of
25 putting an electric motor on a trailer?

1 A. It doesn't -- in this particular
2 instance it doesn't deal with the -- the
3 issues of torque or torsional forces.

4 Q. And when you say Coli does not deal
5 with the issues of torque or torsional forces,
6 is that because Coli does not use the word
7 "torque"?

8 A. No. Because it just doesn't deal
9 with the issue. It doesn't teach the issues.

10 Q. Well, here you say, "Neither Coli
11 nor Amrine use the word 'torque' or
12 'torsional'."

13 Do you stand by that statement in
14 regards to Coli?

15 A. I believe so.

16 Q. Is that a correct statement in
17 regards to Coli?

18 A. I believe so. I would have to --
19 you know, I -- I could always make a mistake
20 and miss it.

21 Q. Is that a statement that you
22 double-checked, that Coli does not use the
23 word torque?

24 MR. YATES: Objection. Form.

25 THE WITNESS: I didn't personally

1 double-check that, but that's -- that
2 was -- I didn't see it used.

3 Q. (BY MR. TOBIN) Okay.

4 But you checked for whether the
5 word "torque" was used in Coli, and then based
6 on that you said Coli does not use the word
7 "torque"; is that right?

8 A. That's -- I didn't see it used.
9 That's what -- my -- when I was looking
10 through it.

11 Q. Sir, do you have a copy of the Coli
12 reference?

13 A. Somewhere. Yeah.

14 MR. YATES: We can get one if he
15 doesn't --

16 (Simultaneous speaking.)

17 MR. TOBIN: This is --

18 MR. YATES: -- have one.

19 MR. TOBIN: -- this is

20 Exhibit 1008.

21 I'm sorry. I said that wrong.

22 This is Exhibit 1009.

23 (Exhibit No. 1009 Previously
24 Marked.)

25 MR. TOBIN: Sir, do you have a

1 paper copy of the Coli reference in
2 front of you?

3 THE WITNESS: Yes, I do.

4 MR. TOBIN: All right.

5 And I thank Mr. Yates for that.

6 Q. (BY MR. TOBIN) So, sir, why don't
7 you look to Paragraph 11 of Coli? Which is on
8 Page 14.

9 Do you see where -- are you there?

10 A. Yes.

11 Q. Do you see where it says, "Electric
12 motor can be capable of operation in the range
13 of up to 15,000 rpms and up to 20,000
14 foot-pounds of torque"?

15 A. Yes.

16 Q. Let's now turn to Page 15, the
17 bottom of Paragraph 14.

18 Do you see where it says, last
19 sentence: "The replacement pumping module can
20 be, for example, a high-torque, low-rate motor
21 or a low-torque, high-rate motor"?

22 A. Where -- where are you again?

23 I missed that.

24 Q. Right above Paragraph 15, the last
25 line of Paragraph 14.

1 A. Oh, okay.

2 Q. Do you see that, sir?

3 A. Yes.

4 Q. And at the end of Paragraph 15, in
5 the second-to-last line, it talks about "a
6 motor operating up to 20,000 foot-pounds of
7 torque."

8 Do you see that?

9 A. Yes.

10 Q. Do you know how many times it used
11 the word "torque" in the Coli reference, sir?

12 A. Well, this is in reference to
13 what -- what the outputs of the pump are. It
14 has no reference to what the torque of the
15 trailer is --

16 (Simultaneous speaking.)

17 Q. Sir --

18 A. -- the forces --

19 Q. -- do you know how many --

20 A. -- on the trailer.

21 Q. -- times -- do you know how many
22 times you used the word "torque" in the Coli
23 reference?

24 A. Well, in terms of the pump itself,
25 I -- that was -- I could have used it quite a

1 few times. But that's not what we're
2 discussing here.

3 Q. Well, that's in terms of the motor
4 sir, where it's talking about the torque,
5 correct?

6 A. Yes. But that's not what -- the
7 kind of torque we're talking about in this --
8 in this particular ground here. It's talking
9 about the torque that these things cause onto
10 the trailer.

11 Q. Well, sir, when -- Paragraph 152,
12 when you say, "Neither Coli nor Amrine used
13 the word 'torque'," was that another error in
14 your declaration?

15 A. I would say it's misleading,
16 because -- and I apologize for that. Because
17 it's -- it should -- the sentence should
18 probably read: "Neither Coli nor Amrine used
19 the word 'torsional' or" -- "'torque' or
20 'torsional' in regards to a trailer."

21 Q. I see.

22 So is it your opinion still, now,
23 that Amrine does not use the word "torsional"
24 in regards to a trailer?

25 A. No.

1 And I -- you found one that I
2 missed.

3 Q. Got it.

4 So you would want to correct your
5 declaration further on that, right?

6 A. That -- that would -- that would be
7 the case.

8 MR. TOBIN: Let's take -- I think
9 we've been going for an hour. Let's
10 take a break and come back.

11 THE VIDEOGRAPHER: The time is
12 2:10 p.m. and we're going off the
13 record.

14 (Brief Recess Taken.)

15 THE VIDEOGRAPHER: The time is
16 2:20 p.m. and we're back on the record.

17 MR. TOBIN: Thank you.

18 Welcome back, sir.

19 Q. (BY MR. TOBIN) Sir, we got into
20 your education and background a little while
21 ago, but is it fair to say you've been in the
22 petroleum industry for 30 or so years by now?

23 A. Yes.

24 Q. And in your work in the petroleum
25 industry, you're familiar with -- there are

1 standard-making bodies that make standards for
2 equipment in the petroleum industry, correct?

3 A. Yes.

4 Q. One of those standard-setting
5 bodies for equipment in the petroleum industry
6 is the American Petroleum Institute, or API.

7 A. Yes.

8 Q. API is an organization you've heard
9 of well before this case, right?

10 A. That's correct, yes.

11 Q. Over the last 30 years, ballpark,
12 how many times -- estimate, how many times
13 have you consulted an API standard or code or
14 specification in your day-to-day work?

15 A. Quite a few times.

16 Q. Are API standards -- for decades
17 they have been the kinds of material that
18 those of skill in the art would have consulted
19 regularly?

20 A. Yes.

21 Q. Someone working in the petroleum --
22 excuse me.

23 MR. TOBIN: Withdrawn.

24 Q. (BY MR. TOBIN) Someone working in
25 the oil and gas industry would have relied on

1 API standards to learn how to construct,
2 specify and operate equipment.

3 A. It would depend on what equipment
4 it was. Because the API focuses on things in
5 the oil and gas industry, and some things that
6 are used there are not neces- -- used are not
7 necessarily strictly oil and gas products or
8 uses.

9 So it would depend, I guess, would
10 be the best way to say, to answer to that.

11 Q. Sure.

12 But you would agree, at least, that
13 the API standards are reliable sources for
14 those -- and have been reliable sources for
15 those in the oil and gas industry, right?

16 A. Yes.

17 MR. TOBIN: So I'm going to ask you
18 to get a paper copy -- or ask Mr. Yates
19 for a paper copy of Exhibit 1012,
20 please.

21 And I'll place that in the Chat
22 window.

23 (Exhibit No. 1012 Previously
24 Marked.)

25 MR. TOBIN: And, Mr. Schaaf, let me

1 know when you have it.

2 THE WITNESS: I have it.

3 Q. (BY MR. TOBIN) So, to make sure
4 we're on the same page, Exhibit 1012 is the --
5 from the American Petroleum Institute. It's
6 Standard 541-2003, correct?

7 A. Yes.

8 Q. And the API -- if I call it "API,"
9 will you understand what I'm talking about?

10 A. Yes.

11 Q. The API 541-2003 standard is from
12 2004, correct?

13 A. Yes.

14 Q. AP- -- so Exhibit 1012, the
15 API 541, teaches methods on how to design and
16 construct large induction motors for petroleum
17 applications, right?

18 A. Yes.

19 Q. So, I think in your declaration --
20 I'll find it if you need me to -- but you --
21 you discuss that: "In terms of motivation to
22 combine, API Standard with Coli and Horikoshi,
23 because Coli does not teach designing motors."

24 Do you recall that?

25 A. That -- that sounds correct.

1 Q. And I found it. It's Paragraph 142
2 of your declaration, on Page 89.

3 Did you find it?

4 A. Yes.

5 Q. All right.

6 And you state that: "A person of
7 ordinary skill in the art at the time of the
8 invention, looking at Coli, would not be
9 motivated to combine Coli, Horikoshi and API
10 Standards because Coli does not teach
11 designing motors."

12 Correct?

13 A. That's correct, yes.

14 Q. Would you agree that API Standard
15 does teach designing motors?

16 A. It certainly teaches some aspects
17 of design.

18 Q. Would you agree -- and you can look
19 at the Table of Contents even, if you like, on
20 Page 5 of Exhibit 1012 -- the term "Design" is
21 used numerous times even in the Table of
22 Contents, correct?

23 A. That's correct.

24 And I guess what I mean by that is
25 that it -- it certainly teaches aspects of the

1 design of it, but that there's quite a bit
2 involved with the design of motors, or
3 anything else, that can't all be put into a
4 specification.

5 Q. I'm sorry.

6 I didn't ask if it teaches
7 everything about it -- designing motors. That
8 would...

9 But at least the API does teach
10 designing motors, correct?

11 A. Yes.

12 So I think your statement there is
13 to -- basically what I was trying to say, that
14 it doesn't teach everything about the design.
15 So I agree with you on that.

16 Q. You agree with me that API Standard
17 does teach designing motors?

18 A. It -- it -- see, the reason I have
19 problem with your question is -- is because it
20 might -- some people might assume that it says
21 that it teaches everything about the design.

22 And that's not what I'm -- and I
23 think we agree that it doesn't teach
24 everything about the design. But it does
25 teach aspects of the design.

1 Q. Sir -- and I think the problem
2 is -- and maybe Mr. Yates can -- can address
3 this with you privately -- is that when you
4 fight me on everything like this, it -- it --
5 one, it makes the deposition take longer; and,
6 two, it detracts from credibility.

7 So I wasn't asking you if it
8 teaches everything about motor design.
9 That's -- That's an undergraduate or graduate
10 major.

11 I just asked if API teaches
12 designing motors.

13 And --

14 (Simultaneous speaking.)

15 A. Yeah.

16 Q. -- you're --

17 A. Yeah. No. I understand, and I
18 agree.

19 But I think that when some people
20 hear the word "design," they assume that means
21 everything.

22 Q. Got it.

23 So that -- is that what you -- when
24 you said "Coli does not teach designing
25 motors" in Paragraph 142, did you mean that

1 Coli does not teach everything about designing
2 motors?

3 A. What I mean by that is that it
4 doesn't teach aspects of the design.

5 Q. So you would agree that the API
6 Standard does teach about electric motors for
7 use in petroleum industry services, correct?

8 A. Yes.

9 Q. You would also agree that API
10 Standard is directed not only to designers,
11 vendors and manufacturers of motors, but also
12 to purchases -- purchasers of the electric
13 motors.

14 A. Yes. I would agree with that.

15 Q. For example, in Section 1.1.2 of
16 API Standard, on Page 7, it says: "This
17 standard requires the purchaser to specify
18 details and features. The purchaser shall" --
19 compete -- "the data sheets" -- "complete the
20 data sheets in Appendix A."

21 Correct?

22 A. Yes.

23 Q. So you would agree with me that a
24 target audience for the API Standard is
25 purchasers of electric motors in the oil and

1 gas industry.

2 A. I think that's one of them, yes.

3 Q. Would you also agree with me that
4 the inventor of the Coli reference was a
5 purchaser of motors for the oil and gas
6 industry?

7 A. Yes.

8 Q. Would a person of skill in the art,
9 looking to solve the problems of electric
10 fracturing, be a purchaser of electric motors
11 for the oil and gas industry?

12 MR. YATES: Objection. Form.

13 THE WITNESS: Could you repeat the
14 question?

15 MR. TOBIN: Let me ask a different
16 question. Counsel's objection is fair.

17 So, withdrawn.

18 Q. (BY MR. TOBIN) So you would agree
19 with me that a person of skill in the art
20 would be motivated to look to industry
21 standards, such as this API Standard in
22 Exhibit 1012, for information about electric
23 motors for petroleum industry services.

24 A. Not necessarily.

25 Q. Do you think a person of skill in

1 the art would not be motivated to look at this
2 API Standard to learn more about electric
3 motors for the oil and gas industry?

4 A. Not -- not -- no, not necessarily.
5 Not saying they won't, but I don't
6 think that there's anything that particularly
7 points to this.

8 Q. So when you say, "there's nothing
9 that points to this," what do you mean by
10 that?

11 A. What I mean by that is that nothing
12 that would say, yes, you should go look at the
13 API Standard for -- specifically API
14 Standard 541 for what it is you're trying to
15 accomplish here.

16 Q. And what you just stated, what is
17 the relevance of that in your obviousness
18 opinions that you formed in this case?

19 A. (Witness reviewing exhibit.)

20 Well, it -- in Paragraph 140,
21 towards the bot- -- last three lines of my
22 declaration, "API Standard discusses motors
23 not pumping fluids into a wellbore at high
24 pressure, as recited in the claim."

25 Q. I got it.

1 So a person of skill in the art
2 would not be motivated to look to the API
3 Standard, because the API Standard does not
4 discuss high pressure?

5 MR. YATES: Objection. Form.

6 THE WITNESS: And it does not --
7 does not discuss pumping fluids into a
8 wellbore.

9 MR. TOBIN: I see.

10 Q. (BY MR. TOBIN) So in order for a
11 person of skill in the art to have a
12 motivation to combine -- well, Coli does --

13 MR. TOBIN: Withdrawn.

14 Q. (BY MR. TOBIN) Coli does discuss
15 pumping fluids into a wellbore, correct?

16 A. Yes.

17 Q. I got it.

18 And your opinion is that the API
19 Standard does not discuss pumping fluids into
20 a wellbore; is that also correct?

21 A. Yes.

22 Q. And is that a reason why there is
23 no motivation to combine Coli and API
24 Standard, because API Standard does not
25 discuss pumping fluids into a wellbore?

1 A. That's because there's no --
2 there's no -- no clear motivation to combine
3 them.

4 Q. There's no clear motivation to
5 combine them because API Standard does not
6 discuss pumping fluids into a wellbore?

7 MR. YATES: Objection. Form.

8 THE WITNESS: Yes.

9 MR. TOBIN: I want to turn to the
10 Horikoshi reference. That's the one we
11 discussed earlier.

12 I would ask Mr. Yates to provide
13 you a paper copy, please, if you don't
14 have it.

15 MR. YATES: For the record, it's
16 actually Ms. Brown that's been providing
17 the paper copies.

18 I do appreciate the credit for the
19 team, and I will accept the accolades,
20 but the -- the actual work is being done
21 by Jordan Brown.

22 MR. TOBIN: Ms. Brown, we thank you
23 for your --

24 MS. BROWN: Yes.

25 MR. TOBIN: -- preparation.

1 THE WITNESS: We have the Coli one,
2 right?

3 MS. BROWN: The Coli? Yes.

4 THE WITNESS: Is that correct?
5 You said the Coli reference?

6 MR. TOBIN: I'm asking about
7 Horikoshi, which is Exhibit --

8 (Simultaneous speaking.)

9 THE WITNESS: Oh, Horikoshi. I'm
10 sorry.

11 MR. TOBIN: And now, with due
12 recognition, I would ask Ms. Brown to
13 provide a copy of the exhibit to the
14 witness.

15 THE WITNESS: Okay.

16 MR. YATES: She probably -- knowing
17 her, she probably prefers you to refer
18 to it as Mr. Yates, actually.

19 But we will -- there is a court
20 reporter here.

21 MR. TOBIN: All right.

22 So I'll guess we'll go with
23 "y'all."

24 Have y'all given --

25 MS. BROWN: Yes.

1 MR. TOBIN: -- the witness a copy
2 of Exhibit 1010, please?

3 MS. BROWN: Yes.

4 MR. TOBIN: Okay.

5 (Exhibit No. 1010 Previously
6 Marked.)

7 MR. TOBIN: And also shown on the
8 screen is Exhibit 1010, the Horikoshi
9 reference, Publication No. 2011-0241590.

10 Q. (BY MR. TOBIN) Mr. Schaaf, can you
11 see that on the screen?

12 A. Yes.

13 Q. Mr. Schaaf, do you have a paper
14 copy in front of you?

15 A. Yes, I do.

16 Q. Thank you.

17 Turn to Paragraph 5 -- I'm sorry --
18 Figure 5 of Horikoshi, please, which is on
19 Page 4 of the document.

20 A. Okay.

21 Q. Mr. Schaaf, are you at Figure 5 of
22 Horikoshi?

23 A. Yes, I am.

24 Q. Can you describe for me, please,
25 what's shown in Figure 5 of Horikoshi?

1 A. Figure 5 is a diagram showing the
2 configuration of a motor driving apparatus,
3 according to one embodiment of the present
4 invention.

5 Q. Would you agree that Figure 5 of
6 Horikoshi shows power semiconductors?

7 A. (Witness reviewing exhibit.)
8 I'm not sure.

9 Q. Would you agree that Figure 5 of
10 Horikoshi shows transistors?

11 A. I'm not sure.

12 Q. Do you know what the circuit
13 elements are that are shown in Figure 5 of
14 Horikoshi?

15 A. I would have to go through the --
16 the patent itself to give a detailed answer to
17 that.

18 Q. Based on the -- on the schematics
19 shown, are you able to -- to determine what
20 kind of transistors those are, shown in
21 Figure 5?

22 A. No.

23 Q. Would you agree at least that
24 Figure 5 shows transistors?

25 A. (Witness reviewing exhibit.)

1 (No Audible Response.)

2 Q. And I see you're --

3 (Simultaneous speaking.)

4 A. I -- I --

5 Q. -- reading the reference, sir.

6 A. Yeah. I -- that's why I say I
7 can't tell you for sure.

8 Q. All right.

9 Sir, do you have any background or
10 experience in reading circuit diagrams like
11 the ones shown in Figure 5 of Horikoshi?

12 A. Well, very limited, so I -- I can't
13 really help you on -- much on that.

14 Q. So you wouldn't be able to tell me,
15 for example, if Figure 5 is showing
16 insulated -- or isolated gate bipolar junction
17 transistors, IGBTs, or some other kind of
18 transistor?

19 A. That, I can't -- I couldn't -- at
20 this point I would do a further dive into it
21 to be able to give you any details on
22 Figure 5.

23 Q. Sir, in Figure 5, are you able to
24 ascertain where the overcurrent detectors are
25 measuring current?

1 A. I couldn't -- you know, I -- I
2 couldn't describe it.

3 Q. Would you agree that the
4 overcurrent detectors are measuring current at
5 the output of the drive?

6 A. I would agree with that.

7 Q. Sir, can you tell whether there are
8 any capacitors, inverters or rectifiers shown
9 in Figure 5 of Horikoshi?

10 A. I couldn't tell you for sure. I
11 would do a deeper dive into this drawing.

12 Q. Would you want to consult someone
13 within an electrical engineering degree or
14 background to better understand Horikoshi?

15 MR. YATES: Objection. Form.

16 THE WITNESS: I would just -- it
17 just would take me more time to go
18 through an electrical diagram than it
19 would something -- something else.

20 Q. (BY MR. TOBIN) Is that -- I'm
21 trying to figure out: The schematics in
22 Figure 5 of Horikoshi, is that something
23 you've done as part of your analysis in this
24 case?

25 A. No, it hasn't been.

1 Q. And, sir, if -- if I ask you a
2 similar question as to the other figures of
3 Horikoshi, Figures 1, 2, 3, 4, 6 through 9,
4 would you give me the same answer?

5 A. Yes.

6 Q. Could we go back to your
7 declaration, please?

8 And let's turn to Paragraph 79 of
9 that, please, which is on Page 31.

10 Let me know when you're there.

11 A. Okay. I'm there.

12 Q. Okay.

13 So we're on Exhibit 2034, Page 31,
14 Paragraph 79.

15 In the second sentence --

16 MR. TOBIN: Withdrawn.

17 Q. (BY MR. TOBIN) And this was part
18 of your analysis as to the combination of Coli
19 and Horikoshi.

20 That's what's set forth in
21 Paragraph 79, correct?

22 A. That's correct.

23 Q. And when you were analyzing the
24 combination of Coli and Horikoshi, you state
25 here in Paragraph 79: "For example, Coli does

1 not teach internal electric motor diagnostics,
2 and Horikoshi" -- "Horikoshi simply provides a
3 means of determining what type of overcurrent
4 has occurred once such overcurrent has
5 occurred."

6 Do you see that?

7 A. Yes.

8 Q. Sir, what do you mean by "internal
9 electric motor diagnostics"?

10 A. Well, just what it states. I don't
11 think I can say it any better.

12 It's -- it's the -- the diagnosing
13 or -- or telling what's going on within the
14 electric motor.

15 Q. So I'll get back to -- well,
16 actually, it's more the "internal" piece.

17 What did you mean by "internal," in
18 terms of "internal motor diag-" --
19 "electric" -- sorry. Let me ask you a
20 different question.

21 So in your declaration --

22 MR. TOBIN: Withdrawn.

23 Q. (BY MR. TOBIN) In your
24 declaration, Paragraph 79, you say: "Coli
25 does not teach internal electric motor

1 diagnostics."

2 And so for your obviousness
3 analysis you were looking as to whether or not
4 the references teach diagnostics of what's
5 happening inside the motor?

6 Is that why you added the word
7 "internal" here?

8 MR. YATES: Objection. Form.

9 THE WITNESS: Well, I'm -- what I'm
10 saying, just what it does say.

11 I mean, it -- to me, the -- the
12 meaning is plain and ordinary, that it
13 does not teach internal electric motor
14 diagnostics.

15 Q. (BY MR. TOBIN) How is "internal
16 electric motor diagnostics" different than
17 "electric motor diagnostics"?

18 A. Well, to some people it would be
19 the same thing, but it would -- "internal" is
20 just what's happening in the motor itself,
21 just to make that --

22 (Simultaneous speaking.)

23 Q. Is there --

24 A. -- clear.

25 Q. -- is there such a thing as

1 external electric motor diagnostics?

2 A. Sure. When you're reading the
3 temperatures and the vibrations, things like
4 that, that's -- that could be considered
5 external.

6 Q. All right.

7 Is reading the temperature of an
8 electric motor an example of electric motor
9 diagnostics?

10 A. Yes.

11 Q. Is reading the vibrations of a
12 motor an example of electric motor
13 diagnostics?

14 A. Yes.

15 Q. And did you understand the claims
16 of the '601 Patent to be referring to internal
17 electric motor diagnostics, as opposed to
18 external electric motor diagnostics?

19 MR. YATES: Objection. Form.

20 THE WITNESS: I understood it to
21 mean performing electric motor
22 diagnostics, just as it said.

23 Q. (BY MR. TOBIN) Well, here you add
24 the word "internal" electric motor diagnostics
25 in Paragraph 79. I'm just trying to figure

1 out why that is.

2 A. I don't think there's any
3 particular reason. It's just that that's --
4 that's part of it, certainly.

5 Q. That's part of what?

6 A. Well, I mean, there -- what I'm
7 saying is -- is that there -- there's
8 internal -- for the sentence that was there,
9 "Coli does not teach internal electric motor
10 diagnostics."

11 And I can stand by that statement.

12 Q. Does Coli teach external electric
13 motor diagnostics?

14 A. No.

15 Q. So in terms of "electric motor
16 diagnostics," we talked about temperature as
17 an example of electric motor diagnostics,
18 correct?

19 A. Yes.

20 Q. And sensing vibrations on an
21 electric motor is an example of electric motor
22 diagnostics?

23 A. Yes. I think -- I think we were
24 particularly talking about those in terms of
25 things that we can do with external.

1 Q. Uh-huh.

2 But those are still examples of
3 electric motor diagnostics, as you understand
4 the term, right?

5 A. Yes.

6 Q. Would you agree that sensing the
7 current going through a motor is an example of
8 an electric motor diagnostics?

9 A. I don't think I would say that
10 would be diagnostic, more than it would just
11 be reading what the -- what -- what the
12 operational situation is.

13 Q. So sensing current going through a
14 motor would be sensing an operational
15 characteristic and not diagnostics; but
16 sensing temperature of a motor would be
17 electric -- electric motor diagnostics.

18 Do I have that right?

19 A. I think you're -- we're
20 overanalyzing these words here.

21 I understand that that's important,
22 but what we're doing is -- it -- it could be
23 defined either way, is basically what I'm
24 saying.

25 Q. What do you mean, "it could be

1 defined either way"?

2 I -- I don't understand what you're
3 saying.

4 A. So when you're saying "electric
5 motor diagnostics," it's take -- trying to
6 take the condition of the electric motor and
7 certain elements of what's going on in it.

8 Q. Would you agree that the current in
9 an electric motor is an example of the
10 condition of an electric motor and what's
11 going on in it?

12 A. Yes.

13 Q. And so in that sense of the word,
14 sensing the current in an electric motor would
15 be an example of electric motor diagnostics,
16 correct?

17 A. Yes.

18 MR. YATES: Object to the form.

19 Q. (BY MR. TOBIN) And if we go to
20 Paragraph -- to Page 25 of your declaration,
21 there's a footnote.

22 Do you see that?

23 A. (Witness reviewing exhibit.)

24 Yes.

25 Q. And there you're providing other

1 examples of what you would consider a --
2 diagnostics on an electric motor to be,
3 correct?

4 A. Yes.

5 Q. And those are --

6 MR. TOBIN: Withdrawn.

7 So I'm going to ask you all to give
8 Mr. Schaaf a copy of the Vliet
9 reference, please, V-l-i-e-t.

10 And that's Exhibit 1011, which I
11 also posted in the Chat window.

12 (Exhibit No. 1011 Previously
13 Marked.)

14 MR. TOBIN: Mr. Schaaf, let me know
15 when you have your copy.

16 THE WITNESS: I have the copy.

17 MR. TOBIN: Thank you.

18 Q. (BY MR. TOBIN) So Exhibit 1011 is
19 a copy to Van Vliet, US2011-09- -- -19- --
20 2011-0197988.

21 Mr. Schaaf, is that the document
22 you have in front of you?

23 A. Yes, it is.

24 Q. If I refer to Exhibit 1011 as --
25 just as Vliet instead of J. Todd Van Vliet,

1 will -- will you understand what I'm referring
2 to?

3 A. Yes.

4 Q. Okay.

5 Thank you.

6 So having that, I want to ask you a
7 few questions about the -- the Vliet
8 reference.

9 So I would ask that you have that
10 document in front of you and also have your
11 declaration in front of you.

12 And let me know if you have both.

13 A. I do.

14 Q. Very good.

15 So if you could, please, turn to
16 your declaration, 84 -- Page 84.

17 And starting at Page 84 of your
18 declaration, Paragraph 132, you're discussing
19 Ground 2, the combination of Coli, Horikoshi
20 and Vliet; is that right?

21 A. Yes.

22 Q. I would ask you to turn then to
23 Paragraph 134, which is on Page 85 of your
24 declaration.

25 Do you see that?

1 A. Yes.

2 Q. At Paragraph 134 of your
3 declaration, you're providing opinions as to
4 motivation to combine Coli and Horikoshi with
5 Vliet; is that right?

6 A. Yes.

7 Q. And you ultimately concluded that
8 there was no motivation to combine the
9 references; is that also correct?

10 A. That's correct.

11 Q. So -- and, again, I'm looking at
12 Paragraph 134.

13 In forming your opinion that there
14 was no motivation to combine, you state that:
15 "Vliet is not relevant to the problems faced
16 by the inventors of the '601 Patent or the
17 problems faced by the inventors of Coli."

18 Do you see that?

19 A. Yes.

20 Q. What is the problem faced by the
21 inventors of the '601 Patent?

22 A. Well, how to put together a -- a
23 fully electric fracturing system.

24 Q. What -- what is the problem faced
25 by the inventors of Coli?

1 A. Well, the same thing, but only Coli
2 is addressing fracs at medium pressure, and
3 the '601 is -- is addressing them at high
4 pressure.

5 Q. So Coli and the '601 Patent address
6 the same problem, with the one difference
7 between that the '601 Patent addresses
8 fracturing at high pressure and Coli addresses
9 fracturing at medium pressure?

10 A. That's the main difference, yes.

11 Q. So is it fair that there's a common
12 denominator between the '601 Patent and Coli,
13 in that both the inventors of the '601 Patent
14 and Coli were addressing how to put together a
15 fully electric fracturing system?

16 MR. YATES: Objection. Form.

17 THE WITNESS: They both address, in
18 the broadest sense, the same issue of
19 elec- -- of electrical hydraulic --
20 electrical units to -- fully electrical
21 units to fracture wells.

22 Q. (BY MR. TOBIN) And it's your
23 opinion that the Vliet reference does not
24 address the problems of using electric
25 fracturing -- fully electric fracturing; is

1 that right?

2 A. That's correct, yes.

3 Q. So in forming your opinions on
4 obviousness, was a reference required to
5 discuss electric hydraulic fracturing of wells
6 in order to be combined with Coli and be
7 considered relevant to Coli?

8 MR. YATES: Objection. Form.

9 THE WITNESS: Again, that would
10 certainly be helpful, but it's not a
11 requirement. But it would -- would have
12 made a difference if -- if -- if that
13 was there.

14 Q. (BY MR. TOBIN) Well, but in the
15 sentence here at 134 -- Paragraph 134, one of
16 the reasons you give for no motivation to
17 combine is because the reference Vliet was not
18 addressing hydraulic fracturing using electric
19 pumps and motors; is that right?

20 A. That's correct, yes.

21 Q. And so in -- in assessing and
22 analyzing motivations to combine, you were
23 looking to see whether this Vliet reference
24 disclosed electric hydraulic fracturing.

25 A. I was looking for a motivation to

1 combine, or seeing if there was one, and I
2 didn't -- there wasn't one.

3 Q. But to look for the motivation to
4 combine, you were looking to see if Vliet
5 disclosed electric hydraulic fracturing.

6 A. No. That would -- that -- that
7 would -- that -- certainly, if they had had
8 that, that certainly would have given,
9 potentially, a motivation.

10 But it wasn't -- but that's --
11 that's -- that would not -- I wouldn't limit
12 it to that.

13 But there was nothing.

14 Q. Well --

15 (Simultaneous speaking.)

16 A. There was nothing -- no reason to
17 combine them. I just saw no reason to.

18 Q. Well, let's assume Vliet did not
19 address --

20 MR. TOBIN: Withdrawn.

21 Q. (BY MR. TOBIN) Would you agree
22 that Vliet at least addressed hydraulic
23 fracturing?

24 A. No.

25 I think it addresses one of the

1 issues that happens at a fracturing site.

2 Q. So why is the answer to my
3 question, "No"?

4 A. Because it's not talking -- it's
5 not talking about hydraulic fracturing. It's
6 talking about a fuel system.

7 Q. Vliet is not talking about
8 hydraulic fracturing?

9 A. Well, but that's not fracturing.
10 Fuel delivery to equipment is not hydraulic
11 fracturing.

12 Q. But you would agree that the
13 context of Vliet is about equipment for use on
14 a fracturing -- hydraulic fracturing site,
15 correct?

16 A. That would be one of the uses for
17 it.

18 And, yes, that's what it could be
19 used for, but it's not hydraulic fracturing.

20 Q. You keep saying it's not hydraulic
21 fracturing.

22 But why don't you take a look at
23 the abstract of Vliet, the first sentence.

24 Doesn't it say -- talk about a fuel
25 delivery system at a well site during

1 fracturing of the well?

2 A. True.

3 But it doesn't say that they're
4 using -- they're actually fracking a well.
5 They aren't. They are -- this is equipment
6 that can be used at the well site during a
7 fracking operation.

8 Q. So what's the distinction you're
9 drawing and how does that relate to
10 obviousness?

11 I'm not understanding.

12 A. I think it's pretty clear -- is
13 that this equipment does not fracture, or
14 could not fracture, a well. It just delivers
15 fuel. That's it.

16 Q. All right.

17 So to have found a motivation to
18 combine Vliet with Coli, you would have needed
19 to see, in Vliet, discussion of equipment that
20 actually performs fracturing rather than just
21 equipment that can be used on a fracturing
22 site?

23 A. It has to have some relevance to --
24 to what -- what -- the technology, or some
25 reason that you would combine it.

1 And there's none here. There's
2 nothing that has any -- this is just a fuel
3 delivery system. It's not something where you
4 were fracking a well with it.

5 Q. Well, sir, this isn't any fuel
6 delivery system, is it?

7 This is a fuel delivery system for
8 a fracturing site.

9 A. Yeah --

10 (Simultaneous speaking.)

11 Q. In Vliet.

12 A. -- but that's all it is. And
13 that's -- that's all it is. It's nothing more
14 than that.

15 Q. I see.

16 And for that reason there's no
17 motivation to combine with Coli?

18 A. Right. Because they're -- they're
19 talking about two different technologies.

20 Q. Coli is talking about electric
21 motors and pumps that actually do the
22 fracturing, and Vliet is talking about other
23 equipment that is located on a fracturing
24 site?

25 A. Yeah.

1 They're totally different things,
2 totally different technologies.

3 Q. Do you think a person on fracturing
4 site -- a person of skill in the art on a
5 fracturing site would look at not only the
6 pumps that do the fracturing, but in other
7 supporting equipment?

8 A. What do you --

9 MR. YATES: Objection. Form.

10 THE WITNESS: I guess I -- I would
11 like to know what you mean by "looking
12 at."

13 Q. (BY MR. TOBIN) Would a person of
14 skill in the art have considered not only the
15 pumps that perform the actual fracturing, but
16 other supporting equipment on a well site?

17 A. I guess I would have to -- it would
18 have to be a much more specific reference that
19 I can agree or disagree with.

20 Q. I'm talking about the -- the Vliet.
21 Is it fair to characterize the
22 Vliet reference as discussing supporting
23 equipment for a fracturing site?

24 A. It's -- it -- specifically, it's
25 talking about fuel delivery system at a frac

1 site, and that's it.

2 Q. Got it.

3 And so a fuel delivery system at a
4 frac site is completely different technology
5 from a fracturing pump at a frac site.

6 Is that your testimony?

7 A. It's completely different from
8 either Coli or the '601 technology, yes.

9 Q. So is -- so is a -- is discussion
10 of a generator on a fracturing site relevant
11 technology to the Coli or '601 Patent?

12 A. Yes, if the generator is being used
13 for the fracturing operation and providing
14 power to the equipment that's doing the
15 fracturing operation.

16 Q. So -- and, sir, I'm really just
17 trying to understand where the lines are as to
18 what you would consider relevant technology to
19 Coli and the '601 Patent and what you would
20 not consider relevant technology. So -- so
21 help me out there, please.

22 Where --

23 (Simultaneous speaking.)

24 A. Well --

25 Q. -- do you draw that line?

1 A. Okay.

2 Well, I don't know if I can draw an
3 exact straight line on that, but I have to
4 look at each of the references in particular.

5 But, again, this -- this Van Vliet
6 patent deals with fuel injection -- fuel tanks
7 that would be delivering fuel to, probably,
8 diesel-powered engines of various types at --
9 potentially designed more for a frac site, but
10 it could be used other places. But it's
11 specifically to that.

12 It has nothing to do with
13 electrical frack -- fracking with electrical
14 pumps and motors.

15 Q. Well, sir, would you agree that an
16 electrical generator on a fracturing site uses
17 fuel?

18 A. It -- well, it -- it has to have
19 some kinds of power source, yes.

20 Q. But you would agree that Vliet is
21 relevant -- could be relevant to providing
22 fuel to a generator on a fracturing site,
23 correct?

24 A. Yes, but still it's -- it's not the
25 technology that's being used. It's -- all it

1 is, is a system for fuel, meaning something
2 like diesel.

3 Q. So in determining what is relevant
4 technology for purposes of your obviousness
5 motivations to combine, were you really just
6 looking for technology surrounding fracturing
7 pumps and electric motors?

8 MR. YATES: Objection. Form.

9 THE WITNESS: I think that --
10 that's a -- that's too specific.

11 I was looking for -- to see if
12 there was any good reason to combine
13 them, or -- and consider if there was a
14 consideration that -- for that; which I
15 didn't see any.

16 Q. (BY MR. TOBIN) If Vliet had used
17 the words "fracturing pump," would you have
18 then thought that there was a motivation to
19 combine?

20 MR. YATES: Objection. Form.

21 THE WITNESS: I don't know. That's
22 kind of hypothetical, so I don't -- I
23 don't -- I would have to think about
24 that one.

25 Q. (BY MR. TOBIN) Well, sir, you are

1 allowed to answer hypotheticals as an expert.

2 You understand that, right?

3 A. Yes. But it's more difficult
4 because, you know, hypothetically, you can
5 come up with any kind of scenario. So it
6 would --

7 (Simultaneous speaking.)

8 Q. Are -- are you familiar with the
9 term "pumper"?

10 A. I am.

11 I don't know what -- there's
12 different contexts for it, so I -- you might
13 have to be specific about what -- what you're
14 talking about there.

15 Q. Sure.

16 Why don't you go to Paragraph 14 of
17 Vliet.

18 "Equipment at a well site used for
19 a fracturing job may comprise several pumpers
20 and blenders."

21 Do you see that?

22 A. Just a second.

23 (Witness reviewing exhibit.)

24 Yes.

25 Q. Would you agree that a blender is

1 relevant technology to the '601 Patent?

2 MR. YATES: Objection. Form.

3 THE WITNESS: Well, this paragraph
4 is discussing what -- the various things
5 that the fuel may be used for.

6 Q. (BY MR. TOBIN) Sir, would you
7 agree that a blender is relevant technology to
8 the '601 Patent?

9 A. Yes.

10 MR. YATES: Objection. Form.

11 Q. (BY MR. TOBIN) Would you agree
12 that a pumper is relevant technology to the
13 '601 Patent?

14 MR. YATES: Objection. Form.

15 THE WITNESS: Yes.

16 Q. (BY MR. TOBIN) Would you agree
17 that a blender is relevant technology to Coli?

18 MR. YATES: Objection. Form.

19 THE WITNESS: I guess I don't know
20 what you mean by "relevant" in this
21 case.

22 (Knocking sound.)

23 THE WITNESS: I mean --

24 MR. YATES: One second.

25 THE WITNESS: Pardon?

1 Q. (BY MR. TOBIN) Well, sir, you used
2 the term "relevant."

3 In Paragraph 134, you say, "Vliet
4 is not relevant to the problem faced by the
5 inventors of the '601 Patent or the problem
6 faced by the inventors of Coli" --

7 (Simultaneous speaking.)

8 A. I agree.

9 Q. -- correct?

10 A. Yes.

11 Q. And the inventors of the
12 '601 Patent, one of the problems they were
13 facing with an electric fracturing site
14 included blenders.

15 Would you agree with that?

16 A. I would agree that blenders are
17 used in frac jobs.

18 But that -- that has nothing to do
19 with what the Van Vliet patent is dealing
20 with.

21 Q. The Van -- blenders have nothing to
22 do with the Van Vliet patent?

23 A. It has to deal with a fuel delivery
24 system.

25 Q. So what would you have needed to

1 see in Van Vliet to convince that you there
2 was a motivation to combine with Coli or
3 Horikoshi?

4 A. I don't --

5 (Simultaneous speaking.)

6 MR. YATES: Objection. Form.

7 THE WITNESS: Yeah.

8 I don't think there's anything of
9 relevance here to -- anything --
10 anything they could have done to make --
11 to give a reason to combine.

12 It's just a totally separate
13 technology.

14 Q. (BY MR. TOBIN) What additional
15 disclosure would you have needed to see in the
16 Van Vliet reference to convince you that there
17 was a motivation to combine with Coli?

18 A. I don't think it's possible. I
19 don't think there's anything that -- that
20 would ever make -- it has nothing to do
21 with -- with either of them, in any regard.

22 Q. You would agree, sir, that turbine
23 generators -- it was known to use fuel to fill
24 turbine generators, correct?

25 MR. TOBIN: Withdrawn.

1 I asked a bad question.

2 Q. (BY MR. TOBIN) You agree that it
3 was known that turbine generators run off of
4 fuel.

5 A. I think it -- it needs a power --
6 it needs some kind of energy to run it, yes.

7 Q. And a known power source was -- was
8 liquid fuel?

9 A. That -- that's one potential way of
10 doing it, yes. But there -- you know, it can
11 be also run on natural gas and other things.

12 Q. It was also known that turbine
13 generators can run off of diesel fuel,
14 correct?

15 A. Yes.

16 Q. And it was known that diesel fuel
17 needs to be transported to or from a
18 fracturing site to power a turbine generator,
19 correct?

20 A. Yes.

21 If that's what the turbine
22 generators run on, is diesel, then that would
23 be -- that would be a requirement to get them
24 there somehow.

25 Q. Hmm?

1 A. If -- if the turbines are running
2 off of diesel, then would you need some method
3 to get the diesel to the generators in order
4 for them to run.

5 Q. In the '601 Patent, the turbine
6 generators could run off of diesel fuel,
7 correct?

8 A. I hadn't really considered it.

9 MR. TOBIN: All right. Let's take
10 a short break and move on to a different
11 line.

12 THE VIDEOGRAPHER: The time is
13 3:09 p.m. and we are going off the
14 record.

15 (Brief Recess Taken.)

16 THE VIDEOGRAPHER: The time is
17 3:24 p.m. and we are back on the record.

18 MR. TOBIN: So I would ask counsel
19 to hand the witness a copy, please, of
20 Exhibit 1017, which is the Stratton
21 reference.

22 (Exhibit No. 1017 Previously
23 Marked.)

24 MR. TOBIN: And I'll also post it
25 in the Chat window.

1 Q. (BY MR. TOBIN) And, sir, do you
2 have a copy of that?

3 A. Yes, I do.

4 MR. TOBIN: Just to make sure we're
5 all looking at the same thing, we're on
6 Exhibit 1017. It's U.S. Patent No.
7 5,293,947, to Stratton.

8 Q. (BY MR. TOBIN) Is that what you
9 have in front of you?

10 A. Yes.

11 Q. Great.

12 And so turn back to your
13 declaration, please, Page -- (communications
14 breakup/inaudible) -- 96.

15 MR. YATES: Counselor, was that
16 Page 96?

17 MR. TOBIN: Yes, sir.

18 MR. YATES: Thank you.

19 Q. (BY MR. TOBIN) Towards the bottom
20 of Page 96 there's a section that starts with
21 "Ground 8. The combination of Coli,
22 Horikoshi, API Standard and Stratton..."

23 Is that -- do you have that in
24 front of you?

25 A. Yes, I do.

1 Q. Okay.

2 And this is the section where you
3 discuss motivations to combine, again, Coli,
4 Horikoshi, API Standard and Stratton?

5 A. Yes.

6 Q. I would ask you to turn to
7 Paragraph 156, please, which is on Page 97 of
8 your declaration.

9 And -- and you state that: "A
10 person of ordinary skill in the art at the
11 time of the invention would not be motivated
12 to combine Coli, Horikoshi, API Standard and
13 Stratton, or Coli and Stratton."

14 Correct?

15 A. Correct.

16 Q. I would like to ask you a few
17 questions about what's in Stratton.

18 So do you have that in front of
19 you?

20 A. Yes, I do.

21 Q. Great.

22 You would agree that Stratton is
23 concerned with designing a trailer to reduce
24 vibrations of the variable frequency drives;
25 is that right?

1 A. Well, when -- it's -- it's an
2 electrical vehicle, if that's -- if that is
3 what it's talking about.

4 Q. Well, Stratton is talking about a
5 variable frequency drive, as well, correct?

6 A. Yes.

7 Q. And Stratton is also talking about
8 to -- shock-mounting a variable frequency
9 drive to a vehicle to prevent damage from
10 vibrations.

11 A. Yes.

12 Q. In fact, if you look at Stratton,
13 on Column 3, Lines 22 to 26, there it is
14 disclosing "mounting the variable frequency
15 drive to the vehicle to prevent damage from
16 vibrations."

17 A. Could you, again, tell me where
18 your at?

19 Q. I'm at Column 3, Lines 22 to 25.

20 A. Okay.

21 Q. And so you would agree that
22 Stratton is discussing a vehicle -- that's in
23 Line 24, correct?

24 A. Yes.

25 Q. And Stratton is discussing motor

1 controller should be shock -- shock-mounted to
2 the vehicle to prevent damage from vibrations.

3 A. Correct.

4 Q. And the example of a motor
5 controller that Stratton gives in the patent
6 is a variable frequency drive.

7 A. And he -- and he describes it as a
8 variable speed AC drive motor, yes.

9 Q. And you would agree that that's
10 also a -- that's another word for a variable
11 frequency drive.

12 A. Well, it doesn't specifically say
13 that. It probably -- it probably is some kind
14 like that, but since it doesn't specifically
15 say that, I can't necessarily draw that
16 conclusion.

17 Q. Well, if you look at the title of
18 Stratton, it's "Variable speed AC Electric
19 Drive Vehicle," correct?

20 A. Right.

21 And I agree that -- that they can
22 vary the speed of the electric drive.

23 Q. And "variable speed AC electric
24 drive" is another term for variable frequency
25 drive?

1 A. Well, variable speed drive is -- if
2 you use the terms "variable frequency drive"
3 and "variable speed drive," they can be used
4 interchangeably.

5 But this -- this adds words to that
6 which makes it so I'm not clear, necessarily,
7 on how they're using it.

8 Q. Well, if you look at Column 3,
9 Lines 10 to 12, of Stratton, it talks about "a
10 commercially available pulse width
11 modulated" -- parentheses -- "(PWM)" -- close
12 parentheses -- "AC motor speed controller 20,
13 which varies the AC frequency of its output."

14 Do you see that?

15 A. Yes.

16 Q. That variable frequency drive
17 varies the AC frequency of its output --

18 (Simultaneous speaking.)

19 A. Yes.

20 Q. -- as well.

21 A. So I can -- I think I can agree
22 with you on that.

23 Q. So we can agree that Stratton is
24 talking about a variable frequency drive,
25 correct?

1 A. I can -- I think we can agree on
2 that, yeah. I think I can accept that.

3 Q. And so then when we look towards
4 the end of Paragraph 3, Lines 22 to 25,
5 Stratton is talking about -- or Stratton is
6 discussing shock-mounting the variable
7 frequency drive to the vehicle to prevent
8 damage from vibrations.

9 A. Yes.

10 Q. If we look back to your
11 Paragraph 156 in your declaration,
12 Exhibit 2034, you still found no motivation to
13 combine because neither Coli, Horikoshi and
14 API Standard discuss using mounts to attach a
15 VFD to a trailer to reduce vibration to the
16 VFD.

17 Do you see that?

18 A. Yes.

19 Q. But Stratton does disclose using
20 mounts to attach a VFD to a trailer to reduce
21 vibration of the VFD.

22 A. Well, they -- they talk about it to
23 a -- a vehicle.

24 Q. So you would agree that Stratton
25 discusses -- it's your -- is it your point

1 that Stratton discusses using mounts to a
2 V- -- VFD to a vehicle to reduce vibration of
3 the VFD, but that the vehicle is not a
4 trailer?

5 A. Not in the -- not in the same sense
6 that the kind of trailers we're talking about
7 for these hydraulic fracturing jobs.

8 Q. When you say "not in the same sense
9 as the trailers that we're talking about for
10 these hydraulic fracturing jobs," is the point
11 that Stratton is not a hydraulic fracturing
12 reference and that's why there's no motivation
13 to combine?

14 A. Well, that's -- that's part of it.

15 I mean, there's -- there's --
16 there's nothing in here that shows us any
17 reason that you would even think about
18 combining it, because they're talking about a
19 vehicle that is going to be attached to an
20 overhead electrical power.

21 Q. Would you agree that in Figure 1 of
22 Stratton, that looks kind of like a trailer to
23 you?

24 A. (Witness reviewing exhibit.)

25 That wouldn't be my definition of

1 "trailer."

2 Q. That doesn't look like a trailer in
3 Figure 1 of Stratton?

4 A. I said that wouldn't be one of
5 my -- what my definition of a trailer is.

6 Q. How would you define a trailer?

7 A. Well, a trailer is something
8 that -- in -- in this case, for this specific
9 case, for hydraulic fracturing, it's a -- a
10 thing that can be -- that has wheels and it
11 can be carried and -- and have the ability to
12 mount pumps and motors and VFDs and
13 potentially other things on it.

14 Q. So in order for there to be
15 motivation to combine Coli with Stratton, you
16 would have needed to see in Stratton a trailer
17 that has wheels and has the ability to mount
18 pumps and VFDs and other motors?

19 A. Again, that would certainly be
20 helpful.

21 Q. Was that required in -- for you to
22 see?

23 A. Well, I -- what -- what I would say
24 is -- is that you have to show what -- what
25 the reason is that you would actually combine

1 them, and it would certainly help it if you
2 had the -- the prerequisites that you were
3 just stating.

4 Again, not necessarily that's the
5 only thing, but that's what -- that's -- you
6 certainly need the requisites.

7 Q. I got it.

8 So --

9 (Simultaneous speaking.)

10 A. Let's put --

11 Q. -- (inaudible) --

12 A. -- let's put it that way -- excuse
13 me.

14 Those prerequisites would certainly
15 help you give a justification for it, but
16 that's not the only thing that would -- could
17 do it.

18 Q. So is this a necessary, but not
19 sufficient, kind of answer?

20 In order to have a motivation to
21 combine Coli with Stratton, you would have
22 needed to see at least a trailer with wheels
23 and the ability to mount pumps and VFDs and
24 motors, and possibly other disclosure?

25 A. I think --

1 (Simultaneous speaking.)

2 MR. YATES: Objection. Form.

3 THE WITNESS: -- a better way --
4 yeah.

5 MR. YATES: You can answer.

6 THE WITNESS: Yeah.

7 I think a better way would put it
8 is if you had those, it certainly would
9 have been -- given you a motivation to
10 combine.

11 But you don't have them, and you
12 don't have anything else that would give
13 you a motivation to combine them.

14 Q. (BY MR. TOBIN) Well, you would
15 agree that both Coli and Stratton disclose a
16 variable frequency drive.

17 We already established that,
18 correct?

19 A. Yeah. I'll accept that.

20 Q. And you would also agree that
21 Stratton discloses mounting the variable
22 frequency drive to reduce vibrations of the
23 variable frequency drive, correct?

24 A. For this particular vehicle that he
25 is designing, or trying to get a patent -- or

1 he's got a patent on.

2 Q. So in learning from the disclosures
3 and teachings of Stratton, would one of
4 ordinary skill in the art understand that the
5 mounting of the -- of the VFD to reduce
6 vibration would only apply to this particular
7 trailer of Stratton?

8 A. Well, it would -- it would apply to
9 this trailer or trailers of a similar sort.
10 Or trucks of a similar sort, would probably be
11 a better way of putting it.

12 Q. When trying to understand
13 obviousness --

14 MR. TOBIN: Withdrawn.

15 Q. (BY MR. TOBIN) When trying to
16 analyze obviousness, would you also look at
17 the creativity of a person of ordinary skill
18 in the art and what they would have been able
19 to do based on the teachings of Stratton?

20 A. I didn't think it was necessary
21 because I didn't see any relevance of Stratton
22 to what we were doing.

23 MR. TOBIN: Let's stay on the
24 record.

25 Give me two more minutes to check

1 my notes, please, and I think we can --
2 we're approaching the end of the tunnel
3 here.

4 (Pause.)

5 MR. TOBIN: All right. Last --
6 last set of questions.

7 Q. (BY MR. TOBIN) Just because we had
8 some extended breaks today, during any of the
9 breaks was there a discussion of the substance
10 of your testimony, your anticipated testimony?

11 A. No.

12 Q. Okay.

13 MR. TOBIN: I'll pass the witness.

14 And thank you very much,
15 Mr. Schaaf, and Counsel, for staying
16 with us late on a Friday afternoon.

17 MR. YATES: I -- I have one
18 follow-up, just because I think it will
19 show up. And I hope this doesn't elicit
20 45 minutes of follow-up questions.

21

22 EXAMINATION

23 BY MR. YATES:

24 Q. But upon reading, in your
25 declaration, Paragraph 152 -- and we've

1 discussed at lengths a couple of sentences
2 there, and I would like to focus at the last
3 sentence in Paragraph 152 of your
4 declaration -- I believe your declaration is
5 Exhibit No. 2034.

6 A. Yes.

7 Q. In other parts of your declaration,
8 if you look -- if you look at the page before,
9 I believe, or in these paragraphs, you discuss
10 that a person would not have been motivated to
11 combine Coli and Amrine.

12 Do you recall that in your
13 declaration in other places?

14 A. Yes.

15 Q. And in this sentence you seem to
16 have left out the "not."

17 Can you confirm that there's a typo
18 or a missing word in that final sentence?

19 A. Yes. There -- there should -- it
20 should say, "...would not have been motivated
21 to simply substitute the trailer of Coli for
22 the trailer" -- and I guess, to read the
23 entire sentence, it's the last sentence of
24 Paragraph 152.

25 "Thus, in my opinion, a person of

1 ordinary skill in the art looking at Coli
2 would not have been motivated to simply
3 substitute the trailer of Coli for the trailer
4 of Amrine."

5 Q. And with the clarification of
6 adding that "not," is that considerate with
7 other sentences in your declaration?

8 A. Yes.

9 MR. YATES: No further questions.

10 MR. TOBIN: I just have a quick
11 follow-up.

12

13 EXAMINATION

14 BY MR. TOBIN:

15 Q. And, Mr. Schaaf, if you had
16 identified other errors in your declaration,
17 would you have pointed them out to me?

18 A. Yeah. Yeah. If there had been
19 anything else, I would have --

20 (Simultaneous speaking.)

21 MR. TOBIN: No further --

22 THE WITNESS: -- yes.

23 MR. TOBIN: -- questions.

24 MR. YATES: Thank you all.

25 MR. TOBIN: Thank you, everyone.

1 THE VIDEOGRAPHER: The time is
2 3:41 p.m., and this concludes today's
3 deposition.

4 (Deposition Concluded.)
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DATE OF DEPOSITION: JULY 1, 2022

PAGE	LINE	CHANGE	REASON
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[illegible]

1 I, ROBERT SCHAAF, have read the
2 foregoing deposition and hereby affix my
3 signature that same is true and correct,
4 except as noted above.

5 _____
6 ROBERT SCHAAF

7
8 THE STATE OF _____)
9 COUNTY OF _____)

10 Before me,
11 _____, on this day
12 personally appeared ROBERT SCHAAF, known to me
13 (or proved to me under oath or through
14 _____) (description of
15 identity card or other document) to be the
16 person whose name is subscribed to the
17 foregoing instrument and acknowledged to me
18 that they executed the same for the purposes
19 and consideration therein expressed.

20 Given under my hand and seal of
21 office this _____ day of
22 _____, _____.

23
24 _____
25 NOTARY PUBLIC IN AND FOR
THE STATE OF _____
COMMISSION EXPIRES: _____

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

HALLIBURTON ENERGY)
SERVICES, INC.,)
) IPR2021-01033
Petitioner,)
)
VS.)
)
U.S. WELL SERVICES,)
LLC,)
)
Patent Owner.)
)
)
)

REPORTER'S CERTIFICATION
DEPOSITION
OF
ROBERT SCHAAF
JULY 1, 2022

I, Kateri A. Flot-Davis, Certified
Shorthand Reporter in and for the State of
Texas, hereby certify to the following:

That the witness, ROBERT SCHAAF, was duly
sworn by the officer and that the transcript
of the oral deposition is a true record of the
testimony given by the witness;

There was a request for examination and
signature of the witness to the deposition
transcript. The original transcript was sent
for review on _____ to the

1 witness or to the attorney for the witness for
2 examination, signature and return to me by
3 _____;

4 I further certify that I am neither counsel
5 for, related to, nor employed by any of the
6 parties or attorneys in the action in which
7 this proceeding was taken, and further that I
8 am not financially or otherwise interested in
9 the outcome of the action.

10 Certified to by me this ____ of _____
11 , _____.

12 
13

14 _____
15 Kateri A. Flot-Davis
16 Texas CSR No. 8462
17 Expiration Date: 12-31-22
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- -19- 98:19 1 1 5:4 10:25 46:1,13 91:3 123:21 124:3 1- 38:1 1.1.2 81:15 10 121:9 1008 70:20 1009 70:22,23 1010 87:2,5,8 1011 98:10,12,18,24 1012 76:19,23 77:4,14 78:20 82:22 1015 36:25 37:5,14 49:22 50:6 1017 116:20,22 117:6 107 10:25 33:22 11 49:22 50:6 71:7 12 121:9 12:56 5:5 132 99:18 134 99:23 100:2,12 102:15 113:3 14 50:17 71:8,17,25 111:16 140 83:20 142 78:1 80:25 15 71:16,24 72:4 15,000 71:13 15- 38:11 151 39:23 40:17 47:22,25 48:9,14,16 152 38:1,11,16 47:11 51:17 73:11 128:25 129:3,24 156 118:7 122:11 19 40:15 1:38 44:12,16 2 2 15:25 91:3 99:19	20 16:3 121:12 20,000 71:13 72:6 2004 77:12 2011-0197988 98:20 2011-0241590 87:9 2012 27:5,9,12,24 28:25 55:7 56:3, 15,23 57:2,10,19,21,22 58:22 59:5,16 60:2,5,8,15,22 61:5,19,24 62:9,14,22 64:23 65:20 2016 13:13,16,20 14:9 2022 5:4 2023 14:17,22 15:9,18,23 16:1,6 17:6,25 18:10 2034 10:8,11,14,25 13:4 16:19 46:1 91:13 122:12 129:5 22 119:13,19 122:4 24 119:23 25 97:20 119:19 122:4 26 19:22 119:13 28 33:21 2:10 74:12 2:20 74:16 3 3 91:3 119:13,19 121:8 122:4 30 74:22 75:11 31 91:9,13 3:09 116:13 3:24 116:17 3:41 131:2 4 4 87:19 91:3 41 50:7,13,15 51:12 52:20 45 128:20 5 5 46:1,13 78:20 87:17,18,21,25 88:1, 5,9,13,21,24 89:11,15,22,23 90:9,22	5,293,947 117:7 541 77:15 83:14 541-2003 77:6,11 58 20:2 59 20:2,5 26:4 33:18 6 6 38:12 40:24 45:20,23 91:3 601 20:18 63:16,17,23 66:7,13,17,20, 24 67:3,7,11,16 68:1,10 94:16 100:16,21 101:3,5,7,12,13 108:8,11, 19 112:1,8,13 113:5,12 116:5 607 7:16 65 13:6 66 13:3,12 67 18:21 68 33:20 7 7 81:16 79 91:8,14,21,25 92:24 94:25 8 8 117:21 8,789,601 11:4 84 99:16,17 840 63:14 85 99:23 89 78:2 9 9 91:3 92648 7:18 94 37:25 95 13:6,13 17:13 96 117:14,16,20 97 118:7
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