

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

TOPSOE, INC.,)
)
Petitioner,)
)
vs.) NO. IPR2025-01454
)
CASALE SA,)
)
Patent Owner.)

VIDEO-RECORDED VIRTUAL DEPOSITION
UPON ORAL EXAMINATION OF

JAMES RITTER, PH.D.

12:00 P.M. EST
SEPTEMBER 2, 2026
WITNESS LOCATION: COLUMBIA, SOUTH CAROLINA

REPORTED BY: VICKY L. PINSON, RPR-CCR Washington 2559
California No. 9845; Oregon No. 16-0442

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1	A P P E A R A N C E S	1	Columbia, South Carolina; September 2, 2026
2	(All Parties Appearing Remotely)	2	12:00 p.m. EST
3		3	* * *
4	FOR THE PATENT OWNER:	4	
5	ERIN C. KOLTER		(This deposition is being taken via
6	Dorsey & Whitney, LLP	5	videoconference, and all parties, the
7	701 Fifth Avenue, Ste 6100		witness, the videographer and the court
8	Seattle, WA 98104	6	reporter are appearing remotely.)
9	206.903.8800	7	
10	kolter.erin@dorsey.com	8	THE VIDEOGRAPHER: We're now on the record at 09:00AM
11		9	12:00 p.m. on September 2nd, 2026. Please note that 09:00AM
12	FOR THE PETITIONER:	10	this deposition is being conducted visually quality of 09:00AM
13	JEFFREY ANDREWS	11	recording depends on the quality of a camera and 09:00AM
14	Yetter Coleman, LLP	12	internet connection of participants. What is seen from 09:00AM
15	600 Travis Street, Ste 5400	13	the witness and heard on screen is what will be 09:00AM
16	Houston, TX 77002	14	recorded. Audio and video-recording will continue the 09:00AM
17	713.632.8000	15	takes unless all parties agree to good off the record. 09:00AM
18	jandrews@yettercoleman.com	16	This is Media Unit one of the virtual L video-recorded 09:00AM
19		17	deposition of James Ritter Ph.D. in the matter of 09:00AM
20	ALSO PRESENT:	18	Topsoe Inc. Versus Casale patent owner filed in the 09:00AM
21		19	United States and trademark office the case number is 09:01AM
22	MELODY SORENSEN, Video Specialist	20	IPR 2025-01454, Patent 11,286,168. 09:01AM
23		21	My name is Melody Sorensen, representing 09:01AM
24		22	Veritext, and I am the videographer. At this time will 09:01AM
25		23	the attorneys please identify themselves and state whom 09:01AM
		24	they represent, after which the court reporter Vicky 09:01AM
		25	Pinson will swear in the witness. 09:01AM
	Page 2		Page 4
1	I N D E X	1	MS. KOLTER: Erin Kolter, Dorsey & 09:01AM
2		2	Whitney, on behalf of patent owner Casale SA. 09:01AM
3	EXAMINATION BY PAGE	3	MR. ANDREWS: Jeffrey Andrews with Yetter 09:01AM
4	Ms. Kolter 5	4	Coleman on behalf of petitioner Topsoe, Inc. 09:01AM
5	Mr. Andrews 51	5	* * * 09:01AM
6	Ms. Kolter 60	6	09:01AM
7		7	JAMES RITTER, PH.D., 09:01AM
8		8	sworn as a witness by the Certified Court Reporter, 09:01AM
9		9	testified as follows: 09:01AM
10	EXHIBITS FOR IDENTIFICATION PAGE	10	09:01AM
11	Exhibit 4 '168 Patent (previously 32	11	EXAMINATION 09:01AM
12	marked) 40	12	BY MS. KOLTER: 09:01AM
13	Exhibit 5 Topsoe EX1006 (previously	13	Q. You're sitting -- are you sitting in your 09:01AM
14	marked) 10	14	office in South Carolina today? 09:02AM
15	Exhibit 11 Dr. Ritter's Reply	15	A. Yes, I am. 09:02AM
16	Declaration 12	16	Q. And, Jeff, I just wanted to confirm quickly, 09:02AM
17	Exhibit 12 Casale EX2011 - Patent	17	there's no objection to the court reporter being 09:02AM
18	Application '808	18	situated in a different location; right? 09:02AM
19	Exhibit 13 '058 Patent 30	19	MR. ANDREWS: There is not. 09:02AM
20		20	And, you know, I'm having trouble -- sorry to
21		21	interrupt, Erin, but I'm having a hard time hearing
22		22	you. I can hear Melody very well, I can hear Vicky
23		23	very well, I can hear Jim very well. I'm having a hard
24		24	time --
25		25	THE COURT REPORTER: Same for me. 09:02AM
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1 THE WITNESS: Same thing. I keep turning 09:02AM	1 A. Yes. 09:05AM
2 my volume up for Erin. 09:02AM	2 Q. Can you tell me what those were? 09:05AM
3 MS. KOLTER: Okay, is that any better? 09:02AM	3 A. I said -- I have some of them open on my, my 09:05AM
4 THE COURT REPORTER: Not so much. Can you 09:06AM	4 computer screen. 09:06AM
5 maybe get closer to the microphone, or do you have a 09:06AM	5 Q. Okay. Could you go ahead and close any 09:06AM
6 headset? 09:06AM	6 documents you have on your computer screen? We'll just 09:06AM
7 MS. KOLTER: Let's go off the record 09:06AM	7 be looking at the documents that we're introducing 09:06AM
8 really quickly and get this sorted out and we'll come 09:06AM	8 today through Exhibit Share. 09:06AM
9 back on. 09:02AM	9 A. I can do that. But then I won't remember all 09:06AM
10 THE VIDEOGRAPHER: Off the record at 09:02AM	10 the exhibits that I looked at. 09:06AM
11 12:02. 09:02AM	11 Q. Can you recall any offhand? 09:06AM
12 (Off the record 12:02 p.m. - 12:10 p.m. EST) 09:03AM	12 A. Let me close these. 09:06AM
13 THE VIDEOGRAPHER: We're back on the 09:03AM	13 Sure. '168 Patent. The '058 Patent. The CAP 09:06AM
14 record at 12:10 p.m. 09:03AM	14 -- 2004 document. The Fjellhaug Patent. I don't know 09:06AM
15 Q. (By Ms. Kolter) Dr. Ritter, you've been 09:03AM	15 them by exhibit numbers. It's mostly by the name 09:06AM
16 deposed before. Right? 09:03AM	16 Rutter or R-u-t-t-e-r, Rytter or Rutter Patent. The 09:06AM
17 A. Yes. 09:03AM	17 IFA Topsoe presentation and I think Tarium, I think 09:07AM
18 Q. And you've been deposed in this IPR proceeding 09:03AM	18 might have been one of them. Tarium. And I did 09:07AM
19 before; right? 09:03AM	19 review, I should say, the Wolden declaration. 09:07AM
20 A. Yes. 09:03AM	20 Q. Okay. Anything else? 09:07AM
21 Q. Was your last deposition the deposition in 09:03AM	21 A. Not that I recall. 09:07AM
22 April in this proceeding or have you had another one 09:04AM	22 Q. Did you meet with anyone to prepare for your 09:07AM
23 since that time? 09:04AM	23 deposition? 09:07AM
24 A. That was the last deposition. 09:04AM	24 A. Yes. 09:07AM
25 Q. So today if I ask you a question and you don't 09:04AM	25 Q. Who did you meet with? 09:07AM
Page 6	Page 8
1 understand it, can you please ask me to clarify or 09:04AM	1 A. Jeff Andrews and Jeff Phillips. 09:07AM
2 re-ask my question? 09:04AM	2 Q. When did you meet with them? 09:07AM
3 A. Yes. 09:04AM	3 A. For an hour or so over the last few days, each 09:07AM
4 Q. If you answer a question, can I assume that 09:04AM	4 day. 09:08AM
5 you understood the question? 09:04AM	5 Q. Would that be an hour each day or an hour 09:08AM
6 A. Yes. 09:04AM	6 total? 09:08AM
7 Q. Is there any reason why you can't provide your 09:04AM	7 A. It was about an hour to an hour and a half 09:08AM
8 full, complete, and truthful testimony today? 09:04AM	8 each day. 09:08AM
9 A. There's no reason. 09:04AM	9 Q. Okay, and how many days? 09:08AM
10 Q. And if we need a break, just let me know and 09:04AM	10 A. Today's Wednesday? 09:08AM
11 we'll take one as long as there's no question pending. 09:04AM	11 Q. Yes. 09:08AM
12 Does that work? 09:04AM	12 A. I believe we started Thursday or Friday, so it 09:08AM
13 A. Yes. 09:04AM	13 might have been three or four days. I don't recall 09:08AM
14 Q. Do you have any materials in front of you 09:04AM	14 exactly. 09:08AM
15 today? 09:04AM	15 Q. And I think you've already referenced this, 09:08AM
16 A. On my desk, no. 09:04AM	16 but you've submitted three declarations in this IPR 09:08AM
17 Q. What did you do to prepare for today's 09:05AM	17 proceeding. Is that right? 09:08AM
18 deposition? 09:05AM	18 A. Yes. 09:08AM
19 A. I reviewed both of my declarations, the new 09:05AM	19 Q. Did you put all of your opinions into those 09:08AM
20 ones. I reviewed my first declaration. And all the 09:05AM	20 declarations? 09:08AM
21 materials that I cited in those declarations. I 09:05AM	21 A. Yes. 09:08AM
22 wouldn't say all, but most of the materials that I 09:05AM	22 Q. Have you formed any new opinions since you 09:08AM
23 cited in the new declarations. 09:05AM	23 submitted your declarations? 09:09AM
24 Q. Okay. Do you recall what those materials 09:05AM	24 A. No. 09:09AM
25 were? 09:05AM	25 Q. Okay, we're going to go ahead and look at 09:09AM
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1 what's been marked as Exhibit 11. We're starting at 09:09AM	1 No. It makes sense about, yeah, I think 09:12AM
2 Exhibit 11 because during your first deposition we 09:09AM	2 around July 12th or something. 09:12AM
3 marked 1 through 10. Can you open that document in 09:09AM	3 Q. Okay. How much time did you spend drafting 09:12AM
4 Exhibit Share, Dr. Ritter? 09:09AM	4 this declaration? 09:12AM
5 A. Yes, I can. 09:09AM	5 A. 10, 15 hours, approximately. 09:12AM
6 Q. Okay, let me know when you see it. 09:09AM	6 Q. Okay. Can you get to paragraph 11 in your 09:13AM
7 (Exhibit 11 was marked for identification.) 09:09AM	7 declaration? So the end of that paragraph on page 6. 09:13AM
8 A. I do see it. I was trying to see how to make 09:09AM	8 Let me know when you're there. 09:13AM
9 it a little bigger. I see, it's over on the left side. 09:09AM	9 A. I found it. 09:13AM
10 So I'm good. It's open. 09:09AM	10 Q. Okay. You referenced Exhibit 211 here. Is 09:13AM
11 Q. Okay. Do you recognize this document? 09:09AM	11 that right? 09:13AM
12 A. Yes. 09:09AM	12 A. Yes. 09:13AM
13 Q. What is it? 09:09AM	13 Q. Or 2011. And it states, here: Patent Owner's 09:13AM
14 A. My reply declaration. 09:09AM	14 own later-filed application uses the same industry 09:13AM
15 Q. And if you look to the last page, you signed 09:10AM	15 vocabulary equating "fired heater/process furnaces." 09:13AM
16 this on August 3, 2026. Is that right? 09:10AM	16 Do you see that? 09:13AM
17 A. Yes, I did. 09:10AM	17 A. Yes, I do. 09:13AM
18 Q. Who wrote this declaration? 09:10AM	18 Q. Okay. Go back, and give me a minute here. 09:14AM
19 A. I did. 09:10AM	19 We're going to mark a new exhibit here. So I've 09:14AM
20 Q. Did you start with a blank document and start 09:10AM	20 introduced Exhibit 12. Let me know when you can see 09:14AM
21 writing or did you get a template from counsel? 09:10AM	21 that. 09:14AM
22 A. I wrote the first draft and then I iterated 09:10AM	22 A. I can see it. 09:14AM
23 with the lawyers back and forth. 09:10AM	23 (Exhibit 12 was marked for identification.) 09:14AM
24 Q. Okay. So did you draft the entire declaration 09:10AM	24 Q. Okay. Do you recognize this document? 09:14AM
25 from start to finish or were there any other drafters? 09:10AM	25 A. I've seen it. 09:15AM
Page 10	Page 12
1 A. I did not draft it from start to finish. 09:10AM	1 Q. When have you seen it? 09:15AM
2 There were other drafters. But I started it. And -- 09:10AM	2 A. I don't recall. In writing my declaration, I 09:15AM
3 Q. Who -- go ahead. Apologies. 09:10AM	3 think. 09:15AM
4 A. Yeah, nothing. I started and formed the first 09:10AM	4 Q. So that would have been within the last few 09:15AM
5 draft. 09:11AM	5 months? 09:15AM
6 Q. Okay. Who else was involved in drafting this 09:11AM	6 A. I believe so. 09:15AM
7 declaration? 09:11AM	7 Q. What is this document? 09:15AM
8 A. I believe both Jeff Phillips and Jeff Andrews. 09:11AM	8 A. It's a patent application publication. 09:15AM
9 Q. So those are Topsoe's counsel? 09:11AM	9 Q. Whose patent application is this? 09:15AM
10 A. Yes. 09:11AM	10 A. Topsoe. 09:16AM
11 Q. Do you know what parts you drafted or what 09:11AM	11 Q. And if you look at the bottom, here, do you 09:16AM
12 parts they drafted, if you kind of look through the 09:11AM	12 see the marking Exhibit 2011? 09:16AM
13 declaration? 09:11AM	13 A. Where are we looking? It's called 09:16AM
14 A. Most of the legal language was their drafting. 09:11AM	14 Exhibit 12 -- Exhibit 2011. 09:16AM
15 The more technical stuff was mine. But of course they 09:11AM	15 Q. At the bottom of the actual document, the 09:16AM
16 put their lawyer language into the paragraphs. 09:11AM	16 first page. 09:16AM
17 Q. And that would be kind of throughout the 09:11AM	17 A. Yes, I do. 09:16AM
18 declaration they added their lawyer language? 09:11AM	18 Q. You see Exhibit 2011? 09:16AM
19 MR. ANDREWS: Object to form. 09:11AM	19 A. Yes. 09:16AM
20 A. We went back and forth with several drafts, and 09:12AM	20 Q. Okay. Is that the exhibit number you were 09:16AM
21 this was the final document we came up with that I 09:12AM	21 referencing in your declaration in paragraph 11? 09:16AM
22 signed. And these are all my opinions. 09:12AM	22 A. I have to go back. 09:16AM
23 Q. When did you start drafting this declaration? 09:12AM	23 Q. Okay. 09:16AM
24 A. I checked that date. I believe it was, or 09:12AM	24 A. I think I might have to download some of these 09:16AM
25 close to, like, August. Does that make sense? 09:12AM	25 if you keep going back and forth. 09:16AM
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<p>1 Q. If you wanted to download your declaration, 09:17AM</p> <p>2 that's probably the one we'll be going back to the 09:17AM</p> <p>3 most. 09:17AM</p> <p>4 A. Okay, I'll do it in a minute. I can put it on 09:17AM</p> <p>5 my desktop. It says Exhibit 2011, yes. 09:17AM</p> <p>6 Q. Okay. And in your declaration you say that 09:17AM</p> <p>7 this is patent owner's patent. That's not correct. 09:17AM</p> <p>8 Right? This is actually Topsoe's patent? 09:17AM</p> <p>9 A. I do -- yes, I see that now. 09:17AM</p> <p>10 Q. Okay. Do you recall if you wrote this 09:17AM</p> <p>11 sentence of your declaration or if this was something 09:17AM</p> <p>12 added by counsel? 09:17AM</p> <p>13 A. I do not recall. 09:17AM</p> <p>14 Q. Do you know if this application, Exhibit 12, 09:18AM</p> <p>15 has issued as a patent? 09:18AM</p> <p>16 A. I do not. 09:18AM</p> <p>17 Q. You don't know one way or the other? 09:18AM</p> <p>18 A. Pardon? 09:18AM</p> <p>19 Q. You don't know one way or the other whether 09:18AM</p> <p>20 this application has issued as a patent? 09:18AM</p> <p>21 A. That's correct. Okay, so I've got to go back. 09:18AM</p> <p>22 Q. (By Ms. Kolter) Okay, let me know when you've 09:18AM</p> <p>23 got your reply declaration Exhibit 11 back in front of 09:18AM</p> <p>24 you. 09:18AM</p> <p>25 A. I do not have permission to download these 09:18AM</p> <p style="text-align: right;">Page 14</p>	<p>1 from one computer to another. 09:21AM</p> <p>2 Q. So there's no -- 09:21AM</p> <p>3 A. Sorry, that's exactly what they're doing when 09:21AM</p> <p>4 you migrate files; right? 09:21AM</p> <p>5 Q. Who is they? 09:21AM</p> <p>6 A. Anybody who migrates files. 09:21AM</p> <p>7 Q. So your testimony is that migrating files is 09:21AM</p> <p>8 the same as migrating the website? 09:21AM</p> <p>9 A. That's my understanding, yes. That's what 09:21AM</p> <p>10 they're migrating. What's on the website? Files. 09:21AM</p> <p>11 Q. Have you ever migrated a website? 09:21AM</p> <p>12 A. I've migrated files. Not an entire website, 09:21AM</p> <p>13 no. 09:21AM</p> <p>14 Q. Not a website. Where did you get your 09:21AM</p> <p>15 understanding that migrating files is the same as 09:21AM</p> <p>16 migrating a website? 09:21AM</p> <p>17 A. Because when you buy a new computer, or at 09:21AM</p> <p>18 least at the University, and your IT person gets all of 09:22AM</p> <p>19 your files off your old computer and puts them on your 09:22AM</p> <p>20 new computer, which is like migrating a website, all 09:22AM</p> <p>21 the files take on the dates that they were transferred. 09:22AM</p> <p>22 Not their original date. It's horrible. I hate it. 09:22AM</p> <p>23 Because I use dates religiously to know when things 09:22AM</p> <p>24 happened. But the files, especially the folders, the 09:22AM</p> <p>25 folders all take on the date of the new transfer, so 09:22AM</p> <p style="text-align: right;">Page 16</p>
<p>1 documents. I'm a read-only view. 09:19AM</p> <p>2 Let me see if I can do something. Okay, I 09:19AM</p> <p>3 should be able to put -- I just opened the window a 09:19AM</p> <p>4 second time, and now I have Exhibit Share in stereo. 09:19AM</p> <p>5 So I can see, for example, the reply declaration and 09:19AM</p> <p>6 then maybe another exhibit that you want me to look at. 09:19AM</p> <p>7 Q. Great. 09:19AM</p> <p>8 A. Do you understand what I did? I clicked on 09:19AM</p> <p>9 share again, dragged it out, and it's a second window. 09:19AM</p> <p>10 So I have two separate windows. I have a pretty big 09:20AM</p> <p>11 computer screen here. I can see both. 09:20AM</p> <p>12 Q. That's fine. 09:20AM</p> <p>13 A. Okay, I'm good. Thank you. 09:20AM</p> <p>14 Q. So you can see your reply declaration 09:20AM</p> <p>15 Exhibit 11 in front of you at this point in time? 09:20AM</p> <p>16 A. Yes. 09:20AM</p> <p>17 Q. Okay. Can you go to paragraph 8 of your 09:20AM</p> <p>18 declaration? It's on page 3. 09:20AM</p> <p>19 A. I found it. 09:20AM</p> <p>20 Q. Have you ever built a website? 09:20AM</p> <p>21 A. No. 09:20AM</p> <p>22 Q. Do you have any experience migrating an 09:20AM</p> <p>23 organization's website? 09:20AM</p> <p>24 A. Not directly, but it's no different than 09:20AM</p> <p>25 migrating files from one computer system to another or 09:20AM</p> <p style="text-align: right;">Page 15</p>	<p>1 you don't know when that folder was really created. 09:22AM</p> <p>2 Q. So you're saying in your personal experience 09:22AM</p> <p>3 of having IT at the university you work at move files 09:22AM</p> <p>4 from one computer to a new computer, the dates all 09:22AM</p> <p>5 change on those files when that happens, in your 09:22AM</p> <p>6 experience? 09:22AM</p> <p>7 A. That's at least the folder dates. Yes, that's 09:22AM</p> <p>8 my experience. And that would be my opinion with the 09:23AM</p> <p>9 website. 09:23AM</p> <p>10 Q. And is that the complete basis for your 09:23AM</p> <p>11 opinion there? 09:23AM</p> <p>12 A. Yes. 09:23AM</p> <p>13 Q. What do you mean in this paragraph when you 09:23AM</p> <p>14 say ordinary operation of websites? 09:23AM</p> <p>15 A. Just what we were talking about. 09:23AM</p> <p>16 Q. Anything else? 09:24AM</p> <p>17 A. I have cited papers that have cited the 2007 09:24AM</p> <p>18 IFA long -- much earlier than 2023 and much earlier 09:24AM</p> <p>19 than the priority date of the '168 Patent. So it's 09:24AM</p> <p>20 inconsistent, their statement. Their inference is 09:24AM</p> <p>21 inconsistent. 09:24AM</p> <p>22 Q. Okay. Doctor, if you could answer my question 09:24AM</p> <p>23 that I asked: What do you mean by the phrase "ordinary 09:24AM</p> <p>24 operation of a website" in this paragraph in your 09:24AM</p> <p>25 declaration? 09:24AM</p> <p style="text-align: right;">Page 17</p>

<p>1 A. That would be my understanding of how websites 09:24AM</p> <p>2 operate. And this paragraph is talking about migration 09:25AM</p> <p>3 from one location to another. When that happens, the 09:25AM</p> <p>4 dates change. I already spoke about that. 09:25AM</p> <p>5 Q. So is that the complete basis for your opinion 09:25AM</p> <p>6 on the ordinary operation of websites? 09:25AM</p> <p>7 A. No. We have -- I have checked out when these 09:25AM</p> <p>8 documents appeared, when the IFA actually appeared in 09:25AM</p> <p>9 the Wayback machine capture. And so their statement 09:25AM</p> <p>10 didn't make much sense. 09:25AM</p> <p>11 So the only thing that makes sense here is 09:25AM</p> <p>12 that during the migration the dates changed to 2023, 09:25AM</p> <p>13 which is not consistent with other information that I 09:25AM</p> <p>14 have found and put in my declarations. 09:26AM</p> <p>15 Q. Okay. But I'm asking, you say the "ordinary 09:26AM</p> <p>16 operation of websites" here, and you have an opinion 09:26AM</p> <p>17 about the ordinary operation of websites. 09:26AM</p> <p>18 Is what you testified about, about the 09:26AM</p> <p>19 migrating of files, is that the complete basis for your 09:26AM</p> <p>20 opinions about the ordinary operation of websites? 09:26AM</p> <p>21 A. Yes. That's how they believe -- that's how I 09:26AM</p> <p>22 believe what happens when files migrate from one 09:26AM</p> <p>23 website to another. 09:26AM</p> <p>24 Q. How did you learn about the WordPress 09:26AM</p> <p>25 platform? 09:26AM</p> <p style="text-align: right;">Page 18</p>	<p>1 Q. How did you learn about the file architecture 09:29AM</p> <p>2 of the WordPress platform? 09:29AM</p> <p>3 A. I don't recall. It's just a general statement 09:29AM</p> <p>4 related to migrating files. 09:29AM</p> <p>5 Q. Did you draft this paragraph of your 09:29AM</p> <p>6 declaration, Dr. Ritter? Paragraph 8? 09:30AM</p> <p>7 A. Certainly some of it. Like I said, we 09:30AM</p> <p>8 iterated back and forth on several times with this 09:30AM</p> <p>9 declaration. So. 09:30AM</p> <p>10 Q. When you say some of it, do you know which 09:30AM</p> <p>11 parts of this paragraph you drafted versus counsel? 09:30AM</p> <p>12 A. I don't recall exactly. Certainly all the 09:30AM</p> <p>13 stuff around the Wayback capture, and some of the 09:30AM</p> <p>14 initial stuff that I took from Patent Owner's Response. 09:30AM</p> <p>15 Q. Okay, you drafted the statements about the 09:30AM</p> <p>16 file architecture of the WordPress platform? 09:30AM</p> <p>17 A. I don't recall. 09:30AM</p> <p>18 Q. Have you used the WordPress platform in your 09:31AM</p> <p>19 work? 09:31AM</p> <p>20 A. No. 09:31AM</p> <p>21 Q. Have you used it outside of work? 09:31AM</p> <p>22 A. No. 09:31AM</p> <p>23 Q. Let's just go down the page to paragraph 9, 09:31AM</p> <p>24 which is on page 4 of your declaration. 09:31AM</p> <p>25 A. I'm there. 09:31AM</p> <p style="text-align: right;">Page 20</p>
<p>1 A. I didn't hear most of your question. Could 09:26AM</p> <p>2 you repeat it, please? 09:26AM</p> <p>3 Q. Sure. How did you learn about the WordPress 09:26AM</p> <p>4 platform that's referenced in this paragraph? 09:27AM</p> <p>5 A. From Patent Owner's Response. I guess that's 09:27AM</p> <p>6 what WP stands for; correct? 09:27AM</p> <p>7 Q. I don't know. I'm asking you. 09:27AM</p> <p>8 A. Well, I don't see where WordPress platform -- 09:27AM</p> <p>9 oh, there it is. The word WordPress platform. 09:27AM</p> <p>10 Q. Is your answer complete or should I ask 09:28AM</p> <p>11 another question or do you have more to say on that? 09:28AM</p> <p>12 A. My statement here is an understanding of 09:28AM</p> <p>13 general file structures and architectures of any or 09:28AM</p> <p>14 most websites when they migrate files. 09:28AM</p> <p>15 Q. I'll ask again, how did you learn about the 09:28AM</p> <p>16 WordPress platform that you referenced in paragraph 8? 09:28AM</p> <p>17 A. After reading Patent Owner's Response or 09:28AM</p> <p>18 patent owner. 09:28AM</p> <p>19 Q. You learned that from patent owner? 09:28AM</p> <p>20 A. Yes. 09:28AM</p> <p>21 Q. What is the WordPress platform? 09:28AM</p> <p>22 A. As I stated, it's the file -- it's the 09:28AM</p> <p>23 architecture of the file that they use. 09:29AM</p> <p>24 Q. Who is "they"? 09:29AM</p> <p>25 A. WordPress platform. 09:29AM</p> <p style="text-align: right;">Page 19</p>	<p>1 Q. And do you see five lines down you have 28.8 09:31AM</p> <p>2 divided by 4.168? 09:31AM</p> <p>3 A. Yes. 09:32AM</p> <p>4 Q. When I do that math, I get the number 6.87876. 09:32AM</p> <p>5 Is that right? 09:32AM</p> <p>6 A. Yes. 09:32AM</p> <p>7 Q. Why do you have a range here, the 6.88 to 09:32AM</p> <p>8 6.89, for a division problem? 09:32AM</p> <p>9 A. Because that's the range that's in the Lako 09:32AM</p> <p>10 paper, and it's close enough. Because you've got one 09:32AM</p> <p>11 number with one significant digit and another one with 09:32AM</p> <p>12 four. 09:32AM</p> <p>13 So if you do that kind of analysis on this 09:32AM</p> <p>14 mainly, like a propagation of error analysis and 09:32AM</p> <p>15 accounts for these numbers of significant digits, you 09:32AM</p> <p>16 basically get seven, in all cases. 6.9. You won't get 09:32AM</p> <p>17 anything else. 09:33AM</p> <p>18 So in your case you'd get 6.8. But in that 09:33AM</p> <p>19 table that Lako has, he has two ranges with two 09:33AM</p> <p>20 different units. And this is my opinion, that it's a 09:33AM</p> <p>21 unit conversion issue that's more common units is 09:33AM</p> <p>22 joules. And what he provided -- to include in his 09:33AM</p> <p>23 table, calories, also. But those numbers 6.8, 6.9, 7, 09:33AM</p> <p>24 that's about all you're going to get out of these kinds 09:33AM</p> <p>25 of numbers as far as accuracy. 09:33AM</p> <p style="text-align: right;">Page 21</p>

<p>1 Q. Okay. And the number we're looking at here is 09:33AM</p> <p>2 6.88, 6.89. Is that right? 09:33AM</p> <p>3 A. Yes. 09:34AM</p> <p>4 Q. If we rounded the 6.8787 to one decimal point, 09:34AM</p> <p>5 that would be 6.9. Right? 09:34AM</p> <p>6 A. Yes. 09:34AM</p> <p>7 Q. If we rounded that to two decimal points, it 09:34AM</p> <p>8 would be 6.88? 09:34AM</p> <p>9 A. Yes. 09:34AM</p> <p>10 Q. Okay. We wouldn't round to 6.89. Right? 09:34AM</p> <p>11 A. No, I was just trying to make a point that 09:34AM</p> <p>12 this number agrees with the range that's in his table. 09:34AM</p> <p>13 And that that's where it probably came from. 09:34AM</p> <p>14 Q. Let's go down to paragraph 13 on page 7. Let 09:34AM</p> <p>15 me know when you're there. 09:35AM</p> <p>16 A. I'm there. 09:35AM</p> <p>17 Q. Okay. Do you see the reference to "electric 09:35AM</p> <p>18 boilers" in the middle of that paragraph? 09:35AM</p> <p>19 A. Yes, I do. 09:35AM</p> <p>20 Q. Are electric boilers used in ammonia synthesis 09:35AM</p> <p>21 processes? 09:35AM</p> <p>22 A. I don't know for sure, but they could be. 09:35AM</p> <p>23 Q. How? 09:35AM</p> <p>24 A. How? 09:35AM</p> <p>25 Q. Yeah. How? Well, you said it could be, so 09:35AM</p> <p style="text-align: right;">Page 22</p>	<p>1 make synthesis gas, understood by POSA to be a gas 09:37AM</p> <p>2 mixture of hydrogen, carbon monoxide, and carbon 09:37AM</p> <p>3 dioxide, mainly, as components. There are other 09:37AM</p> <p>4 components in there, but that's generally known as 09:37AM</p> <p>5 synthesis gas. Coming from the front end. 09:38AM</p> <p>6 Q. Okay. And that's when you say in the 09:38AM</p> <p>7 paragraph "produces and conditions synthesis gas," 09:38AM</p> <p>8 that's what you're referring to? 09:38AM</p> <p>9 A. Okay, I found it. Yes. 09:38AM</p> <p>10 Q. And that's the synthesis gas for the final or 09:38AM</p> <p>11 ultimate product? 09:38AM</p> <p>12 A. That's the synthesis gas from which the 09:38AM</p> <p>13 ultimate products are made. There may be additional 09:38AM</p> <p>14 gases added, but that's -- that's an important gas. 09:38AM</p> <p>15 Q. Is the same synthesis gas used, for example, 09:39AM</p> <p>16 methanol synthesis in ammonia -- synthesis? 09:39AM</p> <p>17 A. Coming from the front end? Yes, they 09:39AM</p> <p>18 certainly can be. 09:39AM</p> <p>19 Q. Are they -- they can be. Are they the same 09:39AM</p> <p>20 all the time? 09:39AM</p> <p>21 A. All the time? 09:39AM</p> <p>22 Q. Yes. 09:39AM</p> <p>23 A. It will depend on how they're running the 09:39AM</p> <p>24 front end. But the synthesis gas that's used to make 09:39AM</p> <p>25 ammonia, methanol, Fischer-Tropsch, chemicals, always 09:39AM</p> <p style="text-align: right;">Page 24</p>
<p>1 I'm asking you how. 09:35AM</p> <p>2 A. Use electricity instead of internal 09:35AM</p> <p>3 combustion, to boil water. I don't think they would. 09:35AM</p> <p>4 I haven't seen it. 09:35AM</p> <p>5 Q. After electric boilers, do you see the 09:36AM</p> <p>6 reference to nuclear steam generators? 09:36AM</p> <p>7 A. Yes, I do. 09:36AM</p> <p>8 Q. Are nuclear steam generators used in ammonia 09:36AM</p> <p>9 synthesis processes? 09:36AM</p> <p>10 A. Not that I know of, no. 09:36AM</p> <p>11 Q. What is a nuclear steam generator? 09:36AM</p> <p>12 A. It's steam generated from heat, generated from 09:36AM</p> <p>13 nuclear fission reactions. 09:36AM</p> <p>14 Q. Does that involve radioactive materials? 09:36AM</p> <p>15 A. Yes. 09:36AM</p> <p>16 Q. Let's jump down to paragraph 38. That's on 09:36AM</p> <p>17 page 21. Let me know when you're there. 09:37AM</p> <p>18 MR. ANDREWS: I'm sorry, Erin. Which 09:37AM</p> <p>19 paragraph? 09:37AM</p> <p>20 MS. KOLTER: 38, on page -- 09:37AM</p> <p>21 MR. ANDREWS: Thank you. 09:37AM</p> <p>22 THE WITNESS: I found it. 09:37AM</p> <p>23 Q. Okay. You referenced the "common front end" 09:37AM</p> <p>24 here. What is the front end? 09:37AM</p> <p>25 A. It's the part of these chemical processes that 09:37AM</p> <p style="text-align: right;">Page 23</p>	<p>1 starts with some concentration of hydrogen CO and CO2. 09:39AM</p> <p>2 Downstream of that synthesis gas is where these 09:39AM</p> <p>3 processes start deviating from each other with various 09:39AM</p> <p>4 unit operations to specifically make what chemical they 09:40AM</p> <p>5 intend to make. But the syngas you start with is that 09:40AM</p> <p>6 combination of mainly those three molecules of gas 09:40AM</p> <p>7 species. Depending on what you do in the front end 09:40AM</p> <p>8 could change their composition a little, but not 09:40AM</p> <p>9 greatly. So, yeah, they all start with the same 09:40AM</p> <p>10 syngas, essentially. 09:40AM</p> <p>11 Q. And that's the same for hydrocarbons in 09:40AM</p> <p>12 synthesis? 09:40AM</p> <p>13 MR. ANDREWS: Objection, form. 09:40AM</p> <p>14 A. What hydrocarbons are we going to synthesize? 09:40AM</p> <p>15 Q. Any. 09:40AM</p> <p>16 A. You mean gas -- 09:40AM</p> <p>17 MR. ANDREWS: Object to form. 09:40AM</p> <p>18 A. Do you mean gas to liquids? 09:41AM</p> <p>19 Q. Sure. 09:41AM</p> <p>20 A. Because most of these processes burn -- 09:41AM</p> <p>21 hydrocarbons is a very broad term. The front end burns 09:41AM</p> <p>22 hydrocarbons to make synthesis to gas. Generally they 09:41AM</p> <p>23 don't go back and make hydrocarbons again. They make 09:41AM</p> <p>24 other chemicals. 09:41AM</p> <p>25 Q. What is made -- and I think you were referring 09:41AM</p> <p style="text-align: right;">Page 25</p>

<p>1 to the Fischer-Tropsch process. What is synthesized in 09:41AM 2 that process? 09:41AM 3 A. These are called liquid hydrocarbons, but 09:41AM 4 they're generally more specific in things that aren't 09:41AM 5 made naturally or found naturally in natural gas or 09:41AM 6 oils. They are usually unsaturated liquids, things 09:41AM 7 like that, which do not occur naturally. 09:41AM 8 Q. Does the type of front end used impact the 09:42AM 9 quality of the synthesis gas produced? 09:42AM 10 MR. ANDREWS: Objection, form. 09:42AM 11 A. What do you mean by "quality"? 09:42AM 12 Q. Well, like how much H2 versus CO or CO2 is in 09:42AM 13 that synthesis gas? 09:42AM 14 MR. ANDREWS: Objection, form. 09:42AM 15 A. I think those ratios would change. The 09:42AM 16 composition in syngas would change, depending on what 09:42AM 17 you used to reform and what type of reformer you used, 09:42AM 18 and the temperatures and pressures in those reformers. 09:43AM 19 It's generally understood to be syngas. But that's 09:43AM 20 something that a chemical engineer would take the 09:43AM 21 composition coming off the system at hand, and design 09:43AM 22 downstreaming equipment to handle the compositions that 09:43AM 23 are coming off of the front end. So it's still syngas. 09:43AM 24 They don't change much. 09:43AM 25 Q. So if you take a methanol synthesis front end 09:43AM</p> <p style="text-align: right;">Page 26</p>	<p>1 So I just need a hydrogen source and I need a nitrogen 09:45AM 2 source. I can get my hydrogen source from the front 09:45AM 3 end, whether -- from the front end of these plants. 09:45AM 4 Whether it was designed for methanol, ammonia, I'm 09:45AM 5 going to have a mixture of hydrogen CO and CO2. Now 09:45AM 6 it's up to me to run shift reactor separation units to 09:45AM 7 get my hydrogen to make ammonia. Now you're designing 09:45AM 8 the downstream equipment. Not an issue. It's what we 09:45AM 9 do every day. It's what a POSA would do every day. 09:45AM 10 Q. Is the same synthesis quality required for 09:45AM 11 methanol consistent in ammonia synthesis? 09:45AM 12 MR. ANDREWS: Objection, form. 09:46AM 13 A. The amount of hydrogen in that synthesis gas. 09:46AM 14 MR. ANDREWS: Objection, form. 09:46AM 15 A. I think I already answered the question. The 09:46AM 16 downstream equipment will take care of that. For 09:46AM 17 example, to make methanol you need carbon monoxide. So 09:46AM 18 you may try to tune your reformers to give you what you 09:46AM 19 might be able to do. To give you more COs in CO2. In 09:46AM 20 other words, so you don't burn it all away. But that 09:46AM 21 you can deal with downstream. There's other unit 09:46AM 22 operations that you would put in place to make 09:46AM 23 methanol. 09:46AM 24 In all of these patents that I reviewed they 09:46AM 25 all talk about interchanging: Oh, this patent can be 09:46AM</p> <p style="text-align: right;">Page 28</p>
<p>1 and plug that into an ammonia synthesis back end, is 09:43AM 2 the quality of the ammonia that's produced impacted? 09:43AM 3 A. I can make ammonia with methanol synthesis at 09:43AM 4 front end because, as I've stated many times, all the 09:43AM 5 front ends are essentially the same. They make a 09:44AM 6 synthesis gas. Yes, some people may decide for 09:44AM 7 economic reasons or sources of hydrocarbons available 09:44AM 8 to send to their reformer, they may make different 09:44AM 9 choices that may make a minor difference. 09:44AM 10 But the syngas that's produced, depending on 09:44AM 11 how you process it after it's made, can be used to make 09:44AM 12 methanol, ammonia, gas to liquids, and even several 09:44AM 13 other chemicals. 09:44AM 14 Q. Well, you say you can make ammonia or these 09:44AM 15 other chemicals, but would the quality of the ammonia 09:44AM 16 change depending on the front end that you used? 09:44AM 17 A. Not -- 09:44AM 18 MR. ANDREWS: Objection to form. 09:44AM 19 THE WITNESS: Sorry, I spoke too -- 09:44AM 20 A. Not if I'm the chemical engineer. It would be 09:44AM 21 just fine. I would design the back end to make the 09:44AM 22 ammonia. Ammonia is ammonia. I don't understand the 09:45AM 23 question, really. 09:45AM 24 The quality of ammonia, NH3, is going to be 09:45AM 25 liquified eventually into pretty fairly pure ammonia. 09:45AM</p> <p style="text-align: right;">Page 27</p>	<p>1 used, you know, to make methanol, but by the way, I can 09:46AM 2 make ammonia. 09:46AM 3 Yes, everybody knows that. A POSA would know 09:46AM 4 that. This has been known for decades, if not half a 09:46AM 5 century or more. 09:47AM 6 Q. Do you need CO, carbon monoxide, to make 09:47AM 7 ammonia? 09:47AM 8 A. No. 09:47AM 9 Q. Do you need CO2 to make ammonia? 09:47AM 10 A. No. 09:47AM 11 Q. Let's go to paragraph 12 of your declaration. 09:47AM 12 A. I'm there. 09:47AM 13 Q. Page 6. Do you see the reference to a turbo 09:47AM 14 generator in this paragraph? 09:48AM 15 A. Yes. 09:48AM 16 Q. What is a turbo generator? 09:48AM 17 A. It's a turbine where the steam -- that steam 09:48AM 18 flows into. And the steam spins it generally to make 09:48AM 19 electricity. 09:48AM 20 Q. Is expansion of a turbo generator required to 09:48AM 21 make electricity here? 09:48AM 22 MR. ANDREWS: Objection, form. 09:48AM 23 A. I don't understand your question. 09:48AM 24 Q. Okay. Does a flow of steam produced in a 09:48AM 25 steam generator or a steam superheater produce 09:48AM</p> <p style="text-align: right;">Page 29</p>

<p>1 electricity? 09:49AM</p> <p>2 A. Only if that flow is going through something 09:49AM</p> <p>3 that spins a generator. 09:49AM</p> <p>4 Q. Okay. So without the expensor and the turbo 09:49AM</p> <p>5 generator, that flow of steam is not creating 09:49AM</p> <p>6 electricity? 09:49AM</p> <p>7 MR. ANDREWS: Objection, form. 09:49AM</p> <p>8 A. You could probably do it without -- well, 09:49AM</p> <p>9 there's always going to be expansion because you're 09:49AM</p> <p>10 getting pressure drop across anything you're creating 09:49AM</p> <p>11 with spin. But, yeah, you have to rotate a shaft and 09:49AM</p> <p>12 spin a generator. And that's done in a turbo 09:49AM</p> <p>13 generator. 09:49AM</p> <p>14 Q. I'm going to introduce Exhibit 13. A 09:49AM</p> <p>15 document. Okay, I've introduced Exhibit 13. Let me 09:50AM</p> <p>16 know when you can see it, Dr. Ritter. 09:50AM</p> <p>17 A. I do see it. 09:50AM</p> <p>18 (Exhibit 13 was marked for identification.) 09:50AM</p> <p>19 Q. Do you recognize this document? 09:50AM</p> <p>20 A. Yes, I do. 09:50AM</p> <p>21 Q. What is this document? 09:50AM</p> <p>22 A. It's the '058 Patent I've cited in one of my 09:50AM</p> <p>23 declarations. 09:50AM</p> <p>24 Q. Let's go to the second page, Figure 1. Do you 09:50AM</p> <p>25 see up at the top -- I know we're looking at this 09:51AM</p> <p style="text-align: right;">Page 30</p>	<p>1 step. They're the same, but I like the analogy with 09:52AM</p> <p>2 distillation. Especially when I teach this type of 09:53AM</p> <p>3 separation. 09:53AM</p> <p>4 But that's what it is. It's sending some gas 09:53AM</p> <p>5 from one bed to another, as purged. And this purge 09:53AM</p> <p>6 helps desorb some of the other gases. And that's what 09:53AM</p> <p>7 they're talking about. It's the gases that come off 09:53AM</p> <p>8 one of the beds during a purge step. 09:53AM</p> <p>9 Q. Does the word "purge," here, in the '058 09:53AM</p> <p>10 Patent have the same meaning as the phrase "purge flow" 09:53AM</p> <p>11 in column 1 of the '168 Patent? And I can go ahead and 09:53AM</p> <p>12 pull that up, if you'd like. The '168 Patent. 09:53AM</p> <p>13 MR. ANDREWS: Objection, form. 09:53AM</p> <p>14 A. Let's go to the '168 Patent. I want to see 09:53AM</p> <p>15 the context of that word. 09:53AM</p> <p>16 Q. Okay, let's do that. It was previously marked 09:53AM</p> <p>17 in your last deposition as Exhibit 4. One second here. 09:53AM</p> <p>18 (Exhibit 4 was identified/referenced.) 09:53AM</p> <p>19 Q. Okay, the '168 Patent, which was previously 09:54AM</p> <p>20 marked as Exhibit 4 should now be in the folder, 09:54AM</p> <p>21 Dr. Ritter. Let me know when you can see that. 09:55AM</p> <p>22 A. I have it open. Could you point to the column 09:55AM</p> <p>23 in mind? 09:55AM</p> <p>24 Q. At the bottom of column 1 there's a reference 09:55AM</p> <p>25 to purge flow. And the question was: Does that have 09:55AM</p> <p style="text-align: right;">Page 32</p>
<p>1 sideways -- the reference to "purge to fuel"? 09:51AM</p> <p>2 MR. ANDREWS: Dr. Ritter, you can download 09:51AM</p> <p>3 it and open it in Adobe, and you can rotate it 09:51AM</p> <p>4 90 degrees if you need to. 09:51AM</p> <p>5 THE WITNESS: It won't let me download. 09:51AM</p> <p>6 MS. KOLTER: You can zoom in and you can 09:51AM</p> <p>7 also look at -- I believe Figure 1 is the same image as 09:51AM</p> <p>8 on the front page of the patent. And you should be 09:51AM</p> <p>9 able to zoom in on that. 09:51AM</p> <p>10 A. I would -- yeah, I was going to suggest that. 09:51AM</p> <p>11 But I do see it. So -- but I think it's the same 09:51AM</p> <p>12 figure. In fact, isn't there only one figure? No, 09:51AM</p> <p>13 they have other figures, but they're nothing like the 09:51AM</p> <p>14 flow sheet. I'm on page 2. 09:52AM</p> <p>15 Q. Okay, thank you. What does "purge" mean here? 09:52AM</p> <p>16 A. That's a term used in PSA systems, Pressure 09:52AM</p> <p>17 Swing Absorption systems that is a fundamental step in 09:52AM</p> <p>18 a PSA process. So it's, we call it the purge gas, and 09:52AM</p> <p>19 it's usually a low pressure light product or some 09:52AM</p> <p>20 product coming off one of the absorption beds. 09:52AM</p> <p>21 So purge, if you're familiar with 09:52AM</p> <p>22 distillation? I know your background is -- I don't 09:52AM</p> <p>23 know your background, but purge is analogous to reflux 09:52AM</p> <p>24 in distillation. So I call this step a light reflux 09:52AM</p> <p>25 step. Early on in the industry they called it a purge 09:52AM</p> <p style="text-align: right;">Page 31</p>	<p>1 the same meaning as purge as used in Figure 1 of the 09:55AM</p> <p>2 '058 Patent? 09:55AM</p> <p>3 A. No, it does not. Let me keep reading: 09:55AM</p> <p>4 For example, from a cryogenic purification 09:55AM</p> <p>5 section of the synthesis gases or from a PSA unit. 09:55AM</p> <p>6 Yes. With respect to PSA unit, that purge 09:55AM</p> <p>7 flow is usually a light product or a product coming off 09:56AM</p> <p>8 the PSA unit. 09:56AM</p> <p>9 Q. So "purge flow" here, in the '168 Patent 09:56AM</p> <p>10 coming from a PSA unit, that's the same as the purge 09:56AM</p> <p>11 that's talked about in the '058 Patent? 09:56AM</p> <p>12 MR. ANDREWS: Objection, form. 09:56AM</p> <p>13 A. Yes. 09:56AM</p> <p>14 Q. So if we go back to the '058 Patent, 09:56AM</p> <p>15 Exhibit 13 -- 09:57AM</p> <p>16 A. If you open it, it starts at the beginning. 09:57AM</p> <p>17 Q. Sorry. 09:57AM</p> <p>18 A. It's software. Not your problem -- or your 09:57AM</p> <p>19 fault. Where are we at? 09:57AM</p> <p>20 Q. Let's go to column 4, lines 40 through 44. 09:57AM</p> <p>21 A. Okay, I'm there. 09:57AM</p> <p>22 Q. Okay. This says contained methane and 09:57AM</p> <p>23 residual carbon monoxide are also removed. 09:57AM</p> <p>24 Does that contained methane and residual 09:57AM</p> <p>25 carbon monoxide, here, refer to Stream 251? 09:57AM</p> <p style="text-align: right;">Page 33</p>

1 A. Stream 251? No, it does not. 09:57AM	1 Q. So those are the streams you were talking 10:01AM
2 Q. What stream is it referring to? 09:58AM	2 about in column 4? 10:01AM
3 A. 255. Which is not labeled. 09:58AM	3 A. Those are the streams produced from this PSA 10:01AM
4 Q. Okay. So contained methane and residual 09:58AM	4 unit. Those three streams. 10:01AM
5 carbon monoxide? 09:58AM	5 Q. And those were the same streams we were 10:01AM
6 A. Oh, it is labeled. Sorry. It is labeled. 09:58AM	6 talking about when we were looking at column 4 of the 10:01AM
7 Q. Okay. I'll ask my question again: 09:58AM	7 '058 Patent? 10:01AM
8 The reference to the removal of contained 09:58AM	8 MR. ANDREWS: Objection, form. 10:02AM
9 methane and residual carbon monoxide, does that become 09:58AM	9 Q. (By Ms. Kolter) Okay. And I think you 10:02AM
10 Stream 251? 09:58AM	10 referenced Table 1. Let's go ahead and look at that. 10:02AM
11 A. No. 09:58AM	11 Is that -- let's see. 10:02AM
12 Q. How is that different from Stream 251? 09:58AM	12 A. It's below column 10? 10:02AM
13 A. Look in the Table 1 in the patent. I think 09:58AM	13 Q. Yeah. Below column 10, and goes on to the 10:02AM
14 it's Table 1. Table 1 or Table 3. 09:58AM	14 next page. So in this Table 251, all the way over the, 10:02AM
15 Q. Still looking at paragraph 4 -- column 4, 40 09:58AM	15 second most right column, that's referring to Stream 10:02AM
16 through 44, the reference here to the ammonia synthesis 09:59AM	16 251. Right? 10:02AM
17 product consisting essentially of hydrogen and 09:59AM	17 A. Yes. 10:02AM
18 nitrogen, free of carbon oxides, and continue, less 09:59AM	18 Q. And then this reference in, on the left side 10:02AM
19 than .5 percent of other contaminants, is that 09:59AM	19 of the table, CH ₄ , that's methane. Right? 10:02AM
20 referring to Stream 255? 09:59AM	20 A. Yes, it is. 10:02AM
21 A. Yes. 09:59AM	21 Q. And so this shows that 251 has methane in it 10:02AM
22 Q. And the contained methane and residual carbon 09:59AM	22 as we know from column 4 and column 14? 10:02AM
23 monoxide are removed to get to that Stream 255? 09:59AM	23 A. Yes. 10:03AM
24 A. Yes, they're removed in the PSA unit. 09:59AM	24 Q. And CO, that's carbon monoxide. Right? 10:03AM
25 Q. And they become part of Stream 251? 09:59AM	25 A. Yes. 10:03AM
Page 34	Page 36
1 A. Not necessarily. There's three products from 09:59AM	1 Q. And this Stream 251 is carbon monoxide, as we 10:03AM
2 this PSA system. Not two. 09:59AM	2 know from the columns we just looked at in the '058 10:03AM
3 Q. What's the third product? 10:00AM	3 Patent? 10:03AM
4 A. Essentially, pure CO ₂ . 10:00AM	4 A. Yes. 10:03AM
5 Q. Is that the carbon dioxide that is removed 10:00AM	5 MR. ANDREWS: Objection, form. 10:03AM
6 from crude syngas by pressure swing absorption 10:00AM	6 Q. (By Ms. Kolter) And then all the way to the 10:03AM
7 referenced in lines 38 to 39? 10:00AM	7 right, we see the reference to 255. That's referencing 10:03AM
8 A. Column 4, still? 10:00AM	8 Stream 255. Right? 10:03AM
9 Q. Yes. Still column 4. Right above what we 10:00AM	9 A. Yes. 10:03AM
10 were just reading. 10:00AM	10 Q. And this column tells us the contents of 10:03AM
11 A. Yes, they produce essentially a pure CO 10:00AM	11 Stream 255. 10:03AM
12 stream. 10:00AM	12 A. Yes. 10:03AM
13 Q. Okay. So one stream is the pure CO ₂ . 10:00AM	13 Q. And we can see there's a lot of zeroes here, 10:03AM
14 Another stream contains the methane and 10:00AM	14 there's no methane in Stream 255. Right? 10:03AM
15 residual carbon monoxide? 10:00AM	15 A. The table says 0.0. 10:04AM
16 And a third is the ammonia synthesis product. 10:00AM	16 Q. And same for carbon monoxide. There's 0.0, so 10:04AM
17 A. Yes. 10:00AM	17 no carbon monoxide in Stream 255? 10:04AM
18 Q. And I think if we go down to column 14, lines 10:00AM	18 A. That is correct. 10:04AM
19 22 to 24? Let me know when you're there. 10:01AM	19 Q. So maybe this is an obvious question, but 10:04AM
20 A. I'm there. 10:01AM	20 Streams 251 and 255 don't have the same composition. 10:04AM
21 Q. Okay. And are these the three streams you 10:01AM	21 Right? 10:04AM
22 were talking about? The CO ₂ stream of 248; the 10:01AM	22 A. Correct. 10:04AM
23 contained methane and carbon monoxide in stream 251, 10:01AM	23 Q. Does the pre-reformer operate adiabatically? 10:04AM
24 and then the product gas in 255? 10:01AM	24 MR. ANDREWS: Objection, form. 10:04AM
25 A. Yes. 10:01AM	25 A. A pre-reformer works like a reformer. Usually 10:04AM
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James Ritter , Ph.D.; September 2, 2026

<p>1 it requires heat. 10:05AM</p> <p>2 Q. Does a pre-reformer have burners? 10:05AM</p> <p>3 A. The heat usually comes from a charged 10:05AM</p> <p>4 preheater. So generally not. 10:05AM</p> <p>5 Q. So a pre-reformer does not have burners? 10:05AM</p> <p>6 MR. ANDREWS: Objection, form. 10:05AM</p> <p>7 A. Generally not. No. A reformer would have 10:05AM</p> <p>8 burners. 10:06AM</p> <p>9 Q. What does adiabatically mean? 10:06AM</p> <p>10 A. No heat transfer to the surroundings from the 10:06AM</p> <p>11 vessel itself. But heat could be transferred from -- 10:06AM</p> <p>12 sensible heat could be transferred from streams 10:06AM</p> <p>13 entering and leaving the vessel. 10:06AM</p> <p>14 Q. Does an ETR operate adiabatically? 10:06AM</p> <p>15 MR. ANDREWS: Objection, form. 10:06AM</p> <p>16 A. I would think so. 10:06AM</p> <p>17 Q. Does an EPR have burners? 10:06AM</p> <p>18 MR. ANDREWS: Objection, form. 10:06AM</p> <p>19 A. By burners, you mean a place where fuel is 10:06AM</p> <p>20 supplied? 10:07AM</p> <p>21 Q. A place where burners that could burn fuel, 10:07AM</p> <p>22 yes. 10:07AM</p> <p>23 A. Not feed stock? 10:07AM</p> <p>24 Q. Well, let's ask both. 10:07AM</p> <p>25 A. Pardon? 10:07AM</p> <p style="text-align: right;">Page 38</p>	<p>1 Q. (By Ms. Kolter) I've added into the folder 10:22AM</p> <p>2 Exhibit 5 that was previously marked at your last 10:22AM</p> <p>3 deposition. Let me know when you can see that. 10:22AM</p> <p>4 A. I have it open. 10:22AM</p> <p>5 (Exhibit 5 was identified/referenced.) 10:22AM</p> <p>6 Q. Could you turn to slide 8, which I believe is 10:22AM</p> <p>7 on page 4, since there's two slides on each page. 10:22AM</p> <p>8 A. I think I'm there. 10:22AM</p> <p>9 Q. Is that the slide that has the title 10:22AM</p> <p>10 "Prereforming?" 10:22AM</p> <p>11 A. On the lower slide, yes. 10:22AM</p> <p>12 Q. Lower slide, yes. On page 4. Do you see the 10:22AM</p> <p>13 reference to "fuel" at the bottom of this slide? 10:22AM</p> <p>14 A. Yes, I do. 10:22AM</p> <p>15 Q. What is the fuel shown in this slide? 10:22AM</p> <p>16 A. Taking this presentation as a context in the 10:23AM</p> <p>17 whole, I see this as just a generic fuel with the idea 10:23AM</p> <p>18 it could be one of a number of things. It's fuel. Not 10:23AM</p> <p>19 natural gas. Not just hydrogen fuel. Not just a blend 10:23AM</p> <p>20 of hydrogen fuel post natural gas. But a generic fuel 10:23AM</p> <p>21 that would be used in these systems. 10:23AM</p> <p>22 Q. Okay. What do you mean by "generic fuel"? 10:23AM</p> <p>23 A. A chemical that can be burned. And in the 10:23AM</p> <p>24 context of this slide deck, or presentation, they 10:23AM</p> <p>25 generally talk about three different fuels. 10:23AM</p> <p style="text-align: right;">Page 40</p>
<p>1 Q. Let's talk about both. Does an ATR have 10:07AM</p> <p>2 burners for feed stock? 10:07AM</p> <p>3 A. Yes. 10:07AM</p> <p>4 Q. Does an ATR have burners for fuel? 10:07AM</p> <p>5 A. No. 10:07AM</p> <p>6 THE VIDEOGRAPHER: (Inaudible.) 10:07AM</p> <p>7 MS. KOLTER: We've been going for over an 10:07AM</p> <p>8 hour, so maybe let's take a 10-minute break. 10:07AM</p> <p>9 THE VIDEOGRAPHER: Going off the record at 10:07AM</p> <p>10 1:07. 10:07AM</p> <p>11 (Recess taken 1:07 p.m. - 1:20 p.m. EST) 10:20AM</p> <p>12 THE VIDEOGRAPHER: We're back on the 10:20AM</p> <p>13 record at 1:20. 10:20AM</p> <p>14 Q. (By Ms. Kolter) Okay, Dr. Ritter, I'm going 10:21AM</p> <p>15 to introduce what was previously marked as Exhibit 5 at 10:21AM</p> <p>16 your last deposition. It should be popping into the 10:21AM</p> <p>17 folder here. 10:21AM</p> <p>18 A. I'm trying to find my other folder. I still 10:21AM</p> <p>19 have this one. I don't know why it disappeared. You 10:21AM</p> <p>20 know, my separate window. I'm going to create a new 10:21AM</p> <p>21 window. I must have x'd it out. So I want to go back. 10:21AM</p> <p>22 THE VIDEOGRAPHER: Do you want to refresh? 10:21AM</p> <p>23 THE WITNESS: Okay. Okay, please repeat 10:21AM</p> <p>24 what you just said. 10:22AM</p> <p>25 MS. KOLTER: No problem. 10:22AM</p> <p style="text-align: right;">Page 39</p>	<p>1 And here they just use the term fuel. If I 10:24AM</p> <p>2 was looking at this, a POSA would see this as just a 10:24AM</p> <p>3 fuel that could be low in CO -- you know, produced a 10:24AM</p> <p>4 low CO2-containing fuel. It could be natural gas. 10:24AM</p> <p>5 The intent of this whole talk is CO2 10:24AM</p> <p>6 reduction, and that's the way a POSA would see this 10:24AM</p> <p>7 presentation. And that's -- yeah. 10:24AM</p> <p>8 Q. Could this be an H2 fuel when you say generic 10:24AM</p> <p>9 fuel? 10:24AM</p> <p>10 A. A hydrogen fuel? 10:24AM</p> <p>11 Q. Yeah. 10:24AM</p> <p>12 A. It could be, yes. 10:24AM</p> <p>13 Q. And you're getting this, you're understanding 10:24AM</p> <p>14 that this is a generic fuel, not any specific fuel, 10:24AM</p> <p>15 from the context of the entire presentation? 10:24AM</p> <p>16 A. Well, it just says fuel. This presentation 10:24AM</p> <p>17 was very specific. When they used natural gas as fuel, 10:24AM</p> <p>18 they used natural gas. When they used hydrogen-based 10:25AM</p> <p>19 fuel, they labeled it that way. And in several places 10:25AM</p> <p>20 they just used fuel, I believe a POSA would understand, 10:25AM</p> <p>21 with the intent that this fuel could be of different 10:25AM</p> <p>22 forms and could be used to reduce CO2 emissions. Which 10:25AM</p> <p>23 they elaborate on, on many of these slides. Including 10:25AM</p> <p>24 the table. 10:25AM</p> <p>25 Q. Could we go down to slide 12 on page 6? I 10:25AM</p> <p style="text-align: right;">Page 41</p>

11 (Pages 38 - 41)

<p>1 think I would call slide 12 the bottom slide on page 6. 10:25AM</p> <p>2 A. The S-350 Ammonia Synthesis Loop? 10:25AM</p> <p>3 Q. Yes. 10:25AM</p> <p>4 A. I'm there. 10:25AM</p> <p>5 Q. Do you see the letters BFW on this slide? 10:25AM</p> <p>6 A. Yes. 10:25AM</p> <p>7 Q. What is BFW? 10:26AM</p> <p>8 A. Boiler feed water, I believe. I think that's 10:26AM</p> <p>9 what a POSA would understand it to be. 10:26AM</p> <p>10 Q. What is boiler feed water? Is that water for 10:26AM</p> <p>11 feeding a boiler? 10:26AM</p> <p>12 A. Well, you're coming off a boiler and you're 10:26AM</p> <p>13 heat exchanging. So you're heat exchanging with boiler 10:26AM</p> <p>14 feed water. So I think you're heating up that stream. 10:26AM</p> <p>15 Because then you're taking energy out as you go down. 10:26AM</p> <p>16 And then they finally use chilled water. They're 10:26AM</p> <p>17 trying to cool that stream off the S-350 converter. 10:26AM</p> <p>18 So you've got a boiler, and then they're 10:27AM</p> <p>19 preheating boiler feed water. And then they're heat 10:27AM</p> <p>20 exchanging for the makeup gas. And then they finally 10:27AM</p> <p>21 use chilled water because eventually they've got to 10:27AM</p> <p>22 condense the ammonia; right? 10:27AM</p> <p>23 Q. Does this slide show the generation of boiler 10:27AM</p> <p>24 feed water? Generation of BFW? 10:27AM</p> <p>25 A. I don't understand the question. 10:27AM</p> <p style="text-align: right;">Page 42</p>	<p>1 makeup, could help reduce CO2 emissions. So it's that 10:29AM</p> <p>2 generic fuel. It could be hydrogen fuel. It could be 10:29AM</p> <p>3 natural gas. It could be a blend of the two, which are 10:29AM</p> <p>4 the three fuels labels that they use in this 10:29AM</p> <p>5 presentation. 10:29AM</p> <p>6 Q. Does the fact that there's CO2 gas tell you 10:29AM</p> <p>7 anything about what that fuel is? 10:29AM</p> <p>8 A. No. 10:29AM</p> <p>9 Q. Why not? 10:30AM</p> <p>10 A. Because in most of these cases, even in the 10:30AM</p> <p>11 '168 Patent, they would almost never use just hydrogens 10:30AM</p> <p>12 of fuel. Or the hydrogen stream, they could, but that 10:30AM</p> <p>13 might even have some CO2 in it. And generally they 10:30AM</p> <p>14 blend much like is shown in this presentation. They'll 10:30AM</p> <p>15 blend with some natural gas. I think they call it -- 10:30AM</p> <p>16 several of the patents, or at least the ones they say 10:30AM</p> <p>17 call it trim fuel or makeup fuel. 10:30AM</p> <p>18 So without numbers, I cannot do any kind of 10:30AM</p> <p>19 material balance on this slide to say that's the 10:30AM</p> <p>20 maximum amount of CO2 that's ever produced or the 10:30AM</p> <p>21 minimum amount. You cannot tell. It's saying -- 10:30AM</p> <p>22 Q. Would a hydrogen fuel produce the O2 flue gas? 10:31AM</p> <p>23 MR. ANDREWS: Objection, form. 10:31AM</p> <p>24 A. Not unless there was a carbon oxide in that 10:31AM</p> <p>25 fuel. 10:31AM</p> <p style="text-align: right;">Page 44</p>
<p>1 Q. Is boiler feed water being generated here when 10:27AM</p> <p>2 we see that arrow going through it? 10:27AM</p> <p>3 A. It's a, I believe it's just water passing 10:27AM</p> <p>4 through a heat exchanger that they're using to send to 10:27AM</p> <p>5 the boiler. In other words, they're preheating the 10:27AM</p> <p>6 boiler feed water. And there's the boiler next to it. 10:28AM</p> <p>7 I don't think the arrows are complete. It would be a 10:28AM</p> <p>8 little messy. But they're just showing certain 10:28AM</p> <p>9 aspects. But that's a source of water that's being 10:28AM</p> <p>10 heated, I presume. Because your temperature is 10:28AM</p> <p>11 decreasing as you're going into that orange arrow from 10:28AM</p> <p>12 left to right. It's just a source of water from boiler 10:28AM</p> <p>13 feed. And they're preheating. 10:28AM</p> <p>14 Q. Let's go down to the next slide. So slide 13 10:28AM</p> <p>15 on the top of page 7. Let me know when you're there. 10:28AM</p> <p>16 A. I'm there. 10:29AM</p> <p>17 Q. What is the fuel identified on this slide? 10:29AM</p> <p>18 Specifically, the fuel going into the reformer. 10:29AM</p> <p>19 A. I would repeat what I just explained fuel was 10:29AM</p> <p>20 on the previous slide when you asked that question. 10:29AM</p> <p>21 When they say fuel with the idea -- you know, 10:29AM</p> <p>22 they're just showing here where CO2 was produced in the 10:29AM</p> <p>23 process. Two of the places are from boilers and the 10:29AM</p> <p>24 reformer when they burn fuel. 10:29AM</p> <p>25 And so this fuel, depending on its content or 10:29AM</p> <p style="text-align: right;">Page 43</p>	<p>1 Q. Would a hydrogen fuel produce CO2 emissions? 10:31AM</p> <p>2 Is it the same answer? 10:31AM</p> <p>3 MR. ANDREWS: Objection, form. 10:31AM</p> <p>4 A. If it's a hydrogen-based fuel with no carbon 10:31AM</p> <p>5 oxide, namely -- or even carbon -- hydrocarbons, which 10:31AM</p> <p>6 can slip through like methane. No carbon species. 10:31AM</p> <p>7 Let me be clear. If it's a hydrogen fuel with 10:31AM</p> <p>8 no CO2, O2 methane in it, it would not produce any CO2. 10:32AM</p> <p>9 Q. Looking down to the fuel going into the 10:32AM</p> <p>10 auxiliary boiler, is your answer the same as the fuel 10:32AM</p> <p>11 going into the reformer? 10:32AM</p> <p>12 A. Yes. 10:32AM</p> <p>13 Q. Is natural gas a hydrocarbon? 10:32AM</p> <p>14 A. It's a mixture of hydrocarbons. 10:32AM</p> <p>15 Q. If we go down to slide 16 on page 8, the 10:32AM</p> <p>16 bottom slide on page 8 -- let me know when you're 10:33AM</p> <p>17 there. 10:33AM</p> <p>18 A. Found it. 10:33AM</p> <p>19 Q. Do you see the reference to BFW at the top of 10:33AM</p> <p>20 this slide? 10:33AM</p> <p>21 A. Yes. 10:33AM</p> <p>22 Q. Does that mean boiler feed water? 10:33AM</p> <p>23 A. Yes. 10:33AM</p> <p>24 Q. If we go down to slide 18, the bottom slide on 10:33AM</p> <p>25 page 9 -- let me know when you're there. 10:33AM</p> <p style="text-align: right;">Page 45</p>

1 A. I'm there. 10:33AM	1 be supplied to a pump? 10:37AM
2 Q. You'd agree the HRSG in the, at the bottom of 10:33AM	2 A. Yes, if it's an electric pump. 10:37AM
3 this slide, is a heat recovery steam generator? 10:33AM	3 Q. Could the electricity generated by a gas 10:37AM
4 A. Yes. That's my understanding of what a POSA 10:34AM	4 turbine be provided to an air separation unit? 10:38AM
5 would understand that acronym to stand for. Heat 10:34AM	5 A. Yes. If it requires electricity. 10:38AM
6 recovery steam generator. 10:34AM	6 Q. Does an air separation unit require electrical 10:38AM
7 Q. Can an HRSG be a stand-alone unit? 10:34AM	7 power? 10:38AM
8 MR. ANDREWS: Objection, form. 10:34AM	8 A. At a minimum, the control lever would. It 10:38AM
9 A. No. 10:34AM	9 depends on what air separation unit you're speaking or 10:38AM
10 Q. (By Ms. Kolter) Does it need a hot gas stream 10:34AM	10 talking about. But they all have control ones. 10:38AM
11 as an input? 10:34AM	11 Q. Does the HRSG on slide 18 have supplementary 10:38AM
12 A. Yes. 10:34AM	12 duct burners? 10:38AM
13 Q. Does that hot gas stream have to come from a 10:34AM	13 MR. ANDREWS: Objection, form. 10:38AM
14 gas turbine? 10:34AM	14 A. They can, and many times do. 10:38AM
15 A. No. 10:34AM	15 Q. Specifically the one that's shown on slide 18, 10:39AM
16 Q. So it could come from other components? 10:34AM	16 does that HRSG have supplementary duct burners? 10:39AM
17 A. Other components where? 10:34AM	17 MR. ANDREWS: Objection, form. 10:39AM
18 Q. Just other components. Could a hot gas stream 10:35AM	18 A. I don't think the -- 10:39AM
19 for an HRSG come from something besides the gas 10:35AM	19 THE WITNESS: Sorry, Jeff. 10:39AM
20 turbine? I think your answer was yes. 10:35AM	20 A. I don't think the following of this flow 10:39AM
21 A. That was my answer, yes. 10:35AM	21 diagram is such that you could tell. But certainly 10:39AM
22 Q. Can the exhaust from a gas turbine be fed to 10:35AM	22 there's not one indicated. 10:39AM
23 other components besides an HRSG? 10:35AM	23 Q. Is it your opinion that the package HP steam 10:39AM
24 A. If you were stupid. It's almost exclusively 10:35AM	24 boiler identified on slide 16 on the previous page is 10:39AM
25 fed to a heat recovery steam generator. Especially in 10:35AM	25 the same as the HRSG identified on slide 18? 10:39AM
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1 the context of chemical or ammonia synthesis in 10:35AM	1 A. The same, meaning identically the same? 10:39AM
2 chemical process plants. Gas turbines are quite common 10:35AM	2 Q. Yes. Is it your opinion that those are the 10:40AM
3 in heat -- HRSGs are quite commonly attached to them. 10:36AM	3 same thing? Referring to the same component. 10:40AM
4 They come as a package. 10:36AM	4 A. The heat recovery steam generator is a package 10:40AM
5 Q. Can the electricity generated by a gas turbine 10:36AM	5 high pressure steam boiler? 10:40AM
6 be provided to different components? 10:36AM	6 Q. The package HP steam boiler referenced on 10:40AM
7 A. Let me see if I understand your question. I 10:36AM	7 slide 16, is that the same as the HRSG on slide 18? 10:40AM
8 believe it was can the electricity provided -- 10:36AM	8 A. It could be a HRSG. They're not calling it a 10:40AM
9 Q. Generated. Generated. 10:36AM	9 HRSG. But it's taking exhaust gas off a gas turbine, 10:40AM
10 A. Generated from gas turbine be provided to 10:36AM	10 and that's what a HRSG can do. Heat recovery steam 10:40AM
11 other components? 10:36AM	11 generator. 10:40AM
12 Q. To different components. Does it always go to 10:36AM	12 This is a package high pressure steam boiler. 10:40AM
13 the same place? 10:36AM	13 They're serving the same purpose. Physically they may 10:40AM
14 A. If you're generating electricity, it can be 10:36AM	14 not be identical. 10:41AM
15 used for anything that requires electricity. I don't 10:37AM	15 Q. You're thinking you don't know one way or the 10:41AM
16 understand the basis of the question. 10:37AM	16 other? 10:41AM
17 Q. Okay. Could it -- could that electricity be 10:37AM	17 MR. ANDREWS: Objection, form. 10:41AM
18 supplied to a compressor in the process? In any 10:37AM	18 A. I'm saying they're labeled differently. 10:41AM
19 process. I'm not talking specifically at the one we're 10:37AM	19 Q. What does that tell you? 10:41AM
20 looking at here. 10:37AM	20 A. They may or may not be identical. I'm saying 10:41AM
21 A. Electric compressors exist. 10:37AM	21 you could put a HRSG there. No problem. Instead of a 10:41AM
22 Q. Are they ever used in ammonia synthesis 10:37AM	22 package high pressure steam boiler. 10:41AM
23 processes? 10:37AM	23 In my opinion, and the POSA's opinion, that is 10:41AM
24 A. I don't know. 10:37AM	24 probably a much simpler unit than a HRSG. It's just a 10:41AM
25 Q. Could electricity generated by a gas turbine 10:37AM	25 steam boiler. 10:41AM
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<p>1 Q. Okay, that wasn't my question. My question 10:41AM</p> <p>2 was: Is it your opinion that the package HP steam 10:41AM</p> <p>3 boiler in claim -- or on slide 16 is the same as the 10:41AM</p> <p>4 HRSG on slide 18, or not? 10:41AM</p> <p>5 A. They're serving the same purpose. 10:41AM</p> <p>6 Q. Are they the same component? 10:42AM</p> <p>7 MR. ANDREWS: Objection. 10:42AM</p> <p>8 A. I cannot answer that. They are labeled 10:42AM</p> <p>9 differently, but they're serving the same function. 10:42AM</p> <p>10 Could they be interchanged on these slides? Yes. But 10:42AM</p> <p>11 are they exactly the same components? You cannot tell. 10:42AM</p> <p>12 Q. Because they're labeled differently? Is that 10:42AM</p> <p>13 where you're getting that from? 10:42AM</p> <p>14 A. Yes. 10:42AM</p> <p>15 Q. What is decarbonized fuel? 10:42AM</p> <p>16 MR. ANDREWS: Objection, form. 10:43AM</p> <p>17 A. Fuel that doesn't contain a carbon species or 10:43AM</p> <p>18 molecule in it. 10:43AM</p> <p>19 Q. So no carbon species or molecule? 10:43AM</p> <p>20 A. No -- no species that have carbon in them. 10:43AM</p> <p>21 MS. KOLTER: Okay. I don't think I have 10:44AM</p> <p>22 any further questions, barring anything from 10:44AM</p> <p>23 Mr. Andrews. 10:44AM</p> <p>24 MR. ANDREWS: Let's go off the record and 10:44AM</p> <p>25 let me just review my notes quickly. I do anticipate 10:44AM</p> <p style="text-align: right;">Page 50</p>	<p>1 Jeff. I didn't hear you. Did I visit with anyone? 11:01AM</p> <p>2 Q. Did you speak with anyone during this break? 11:01AM</p> <p>3 This last break. 11:01AM</p> <p>4 A. No. 11:01AM</p> <p>5 Q. Could you turn to Exhibit -- let me make sure 11:01AM</p> <p>6 I have this right. I'm looking for your Reply 11:01AM</p> <p>7 Declaration. I think, Exhibit 11. Yeah, there we go. 11:01AM</p> <p>8 And turn to paragraph 26, please. 11:02AM</p> <p>9 A. Reply Declaration, Exhibit 11, paragraph 26. 11:02AM</p> <p>10 I'm there. 11:02AM</p> <p>11 Q. You're there. So in the second sentence, that 11:02AM</p> <p>12 paragraph refers to, quote, Dr. Wolden's observation 11:02AM</p> <p>13 that 2007 IFA does not depict a furnace preheating the 11:02AM</p> <p>14 ATR charge, and cites Exhibit 2007, paragraph 85 11:02AM</p> <p>15 through 88. 11:02AM</p> <p>16 Do you see that? 11:02AM</p> <p>17 A. Yes, I do. 11:02AM</p> <p>18 MS. KOLTER: Objection, form. Outside 11:02AM</p> <p>19 scope. 11:02AM</p> <p>20 Q. (By Ms. Kolter) Is that attribution correct? 11:02AM</p> <p>21 A. No. I discovered this citation was wrong. 11:03AM</p> <p>22 Q. What should the citation be? 11:03AM</p> <p>23 A. It should be Patent Owner's Response, pages 31 11:03AM</p> <p>24 to 32, I believe. I don't think it's 30 to 32. I 11:03AM</p> <p>25 think it's pages 31 and 32. 11:03AM</p> <p style="text-align: right;">Page 52</p>
<p>1 I'm going to have some brief redirect. 10:44AM</p> <p>2 And just to be totally clear, Erin, you are 10:44AM</p> <p>3 not going to be questioning Dr. Ritter on the 10:44AM</p> <p>4 Exhibit 1063? 10:44AM</p> <p>5 MS. KOLTER: What is 1063? 10:44AM</p> <p>6 MR. ANDREWS: That's his Declaration in 10:44AM</p> <p>7 Support of Opposition to a Motion to Amend. 10:44AM</p> <p>8 MS. KOLTER: I don't believe I'm going to 10:45AM</p> <p>9 introduce that. You know, we did talk about things 10:45AM</p> <p>10 referenced within there. 10:45AM</p> <p>11 MR. ANDREWS: Okay. 10:45AM</p> <p>12 THE VIDEOGRAPHER: Off the record at 1:45. 10:45AM</p> <p>13 (Recess taken 1:45 p.m. - 2:01 p.m. EST) 11:01AM</p> <p>14 THE VIDEOGRAPHER: We're back on the 11:01AM</p> <p>15 record at 2:01. 11:01AM</p> <p>16 MR. ANDREWS: I have just a few questions 11:01AM</p> <p>17 for you, Dr. Ritter, in redirect. 11:01AM</p> <p>18 * * * 11:01AM</p> <p>19 11:01AM</p> <p>20 EXAMINATION 11:01AM</p> <p>21 BY MR. ANDREWS: 11:01AM</p> <p>22 Q. First, some housekeeping issues. Did you 11:01AM</p> <p>23 speak with anybody during -- anyone during the break? 11:01AM</p> <p>24 This last break. 11:01AM</p> <p>25 A. Pardon. Let me turn you up a little bit, 11:01AM</p> <p style="text-align: right;">Page 51</p>	<p>1 Q. Okay. And with that correction, does the 11:03AM</p> <p>2 substance of your opinion in paragraph 26 change in any 11:03AM</p> <p>3 way? 11:03AM</p> <p>4 A. No. 11:03AM</p> <p>5 Q. Okay. So I want to turn to the '058 Patent, 11:03AM</p> <p>6 which I believe is Exhibit 13. 11:03AM</p> <p>7 A. I have it open. 11:04AM</p> <p>8 Q. So Ms. Kolter asked you about this exhibit, 11:04AM</p> <p>9 the '058 Patent. Independent of any deposition 11:04AM</p> <p>10 testimony today, are you familiar with the '058 Patent? 11:04AM</p> <p>11 A. Yes. 11:04AM</p> <p>12 Q. In your opinion what does the '058 Patent 11:04AM</p> <p>13 disclose about -- I'll pull it up here -- fire heater 11:04AM</p> <p>14 210? 11:04AM</p> <p>15 MS. KOLTER: Objection, form. Outside 11:04AM</p> <p>16 scope. 11:04AM</p> <p>17 A. It discloses that fire heater 210 can use fuel 11:04AM</p> <p>18 from a CO2-depleted fuel from hydrogen -- from the PSA 11:05AM</p> <p>19 system from the purge the fuel stream 251 as a charged 11:05AM</p> <p>20 preheater to preheat the desulfurization unit 211, run 11:05AM</p> <p>21 through a saturator, and to preheat the feed or the 11:05AM</p> <p>22 charge prior to entering Item 220, which is the ATR, 11:05AM</p> <p>23 the other reformer. So it -- it's teaching that. 11:06AM</p> <p>24 Q. In your opinion does the '058 Patent disclose 11:06AM</p> <p>25 splitting a CO2 to prove that a synthesis gas into two 11:06AM</p> <p style="text-align: right;">Page 53</p>

<p>1 streams of the same composition, one used as fuel and 11:06AM</p> <p>2 one sent to ammonia synthesis? 11:06AM</p> <p>3 A. No, in my opinion it does not. 11:06AM</p> <p>4 Q. Okay. Earlier today Ms. Kolter asked you 11:06AM</p> <p>5 whether purge flow in column 1 of the '168 Patent means 11:06AM</p> <p>6 the same thing as purge in Figure 1 of the '058 Patent. 11:06AM</p> <p>7 And you answered yes. What were you agreeing to? 11:06AM</p> <p>8 MS. KOLTER: Objection, form. 11:07AM</p> <p>9 A. That the so-called purge from a PSA unit could 11:07AM</p> <p>10 be used as a CO2-depleted fuel anywhere in the ammonia 11:07AM</p> <p>11 synthesis process. Charge preheater, steam boiler, 11:07AM</p> <p>12 steam generator. Because the PSA systems, it was known 11:07AM</p> <p>13 at the time of the '168 Patent that the PSA systems can 11:07AM</p> <p>14 remove CO2 very effectively from these streams. 11:07AM</p> <p>15 Q. When you were saying yes to Ms. Kolter's 11:07AM</p> <p>16 question about whether purge flow in column 1 of the 11:07AM</p> <p>17 '168 Patent means the same thing as purged Figure 1 of 11:07AM</p> <p>18 the '058 Patent, were you providing an opinion that the 11:08AM</p> <p>19 '058 Patent's heater fuel is the fuel fraction that 11:08AM</p> <p>20 Claim 1 required? 11:08AM</p> <p>21 MS. KOLTER: Objection, form. Leading. 11:08AM</p> <p>22 A. I was not providing an opinion about the fuel 11:08AM</p> <p>23 fraction. I was just stating -- I was just answering 11:08AM</p> <p>24 her question about when they talk about purge from a 11:08AM</p> <p>25 PSA system in the '168 Patent, that's what they're 11:08AM</p> <p style="text-align: right;">Page 54</p>	<p>1 that's what we were doing. 11:10AM</p> <p>2 But in general -- a general definition of 11:10AM</p> <p>3 decarbonizing I think would include just reducing 11:10AM</p> <p>4 carbon sources within a fuel stream. Not necessarily 11:10AM</p> <p>5 removing it. And I should have clarified that, because 11:10AM</p> <p>6 the project I worked with, it was, we wanted zero 11:10AM</p> <p>7 carbon. So. 11:10AM</p> <p>8 But that's not necessarily the case. In fact, 11:10AM</p> <p>9 the '058 Patent has carbon sources in their fuel that 11:11AM</p> <p>10 they're sending to the 210 unit the furthest, and it 11:11AM</p> <p>11 has carbon sources in it. And that would be considered 11:11AM</p> <p>12 generally a decarbonized fuel. Not completely, but at 11:11AM</p> <p>13 least somewhat decarbonized. 11:11AM</p> <p>14 Q. I believe earlier you also testified that an 11:11AM</p> <p>15 ATR has burners heat stock, but not for fuel. Am I 11:11AM</p> <p>16 remembering that correctly? 11:11AM</p> <p>17 A. Yes, I did say that. 11:11AM</p> <p>18 Q. In an ATR-based plant with no primary 11:11AM</p> <p>19 reformer, what equipment burns fuel? 11:11AM</p> <p>20 A. Charge preheater. 11:11AM</p> <p>21 Q. Okay. And how does the ATR generate heat? 11:12AM</p> <p>22 A. Well, the charge preheater preheats the 11:12AM</p> <p>23 species to be converted into syngas to a relatively 11:12AM</p> <p>24 high temperature. 800 to 1000 degrees. Don't quote me 11:12AM</p> <p>25 on that, but in that range. It's, it's always -- you 11:12AM</p> <p style="text-align: right;">Page 56</p>
<p>1 talking about also in the '058 Patent. But not 11:08AM</p> <p>2 necessarily -- I mean the PSA systems could be 11:08AM</p> <p>3 different. I was never indicating that this is the PSA 11:09AM</p> <p>4 system that the '168 Patent was referencing. Almost 11:09AM</p> <p>5 all PSA systems have approach stream. 11:09AM</p> <p>6 THE WITNESS: Let me close -- I forgot to 11:09AM</p> <p>7 close my door. Sorry about that. 11:09AM</p> <p>8 Q. (By Mr. Andrews) You testified earlier today 11:09AM</p> <p>9 that -- and I'm moving on to a new subject here. You 11:09AM</p> <p>10 testified earlier today that decarbonized fuel contains 11:09AM</p> <p>11 no carbon species. Do you remember that? 11:09AM</p> <p>12 A. You broke up a little bit, Jeff. Can you 11:09AM</p> <p>13 repeat that? 11:09AM</p> <p>14 Q. Sure. I believe that earlier today you 11:09AM</p> <p>15 testified, if I remember correctly, that a decarbonized 11:09AM</p> <p>16 fuel contains no carbon species. Do you recall that 11:09AM</p> <p>17 testimony? 11:09AM</p> <p>18 A. Yes, I do. 11:09AM</p> <p>19 Q. In practice, do the hydrogen risk fuels used 11:09AM</p> <p>20 in ammonia plants contain any carbon-bearing component? 11:10AM</p> <p>21 MS. KOLTER: Objection, form. 11:10AM</p> <p>22 A. They certainly can. I was -- these days, not 11:10AM</p> <p>23 relevant to that, I was given the definition of a 11:10AM</p> <p>24 decarbonized fuel that's more modern because I had a 11:10AM</p> <p>25 project recently on decarbonizing naval fuel, and 11:10AM</p> <p style="text-align: right;">Page 55</p>	<p>1 can see it's in the hottest part of the heater in this 11:12AM</p> <p>2 diagram on the '058 in Figure 1. And -- but that's 11:12AM</p> <p>3 just to get the reaction going. It's an excel thermal 11:12AM</p> <p>4 reaction. It's called autothermal. 11:12AM</p> <p>5 So once you reach a certain temperature, the 11:12AM</p> <p>6 reaction will run itself and it will give off a 11:12AM</p> <p>7 significant amount of heat while doing that. So almost 11:12AM</p> <p>8 an autothermal reformer. 11:12AM</p> <p>9 Q. Also now I want to turn to, I guess it was 11:13AM</p> <p>10 Exhibit -- let's see. Exhibit 5. And like you recall 11:13AM</p> <p>11 from the questioning Ms. Kolter was asking about, 11:13AM</p> <p>12 slides I guess it's 16 and 18 on pages 8 and 9 of the 11:13AM</p> <p>13 exhibit. 11:13AM</p> <p>14 Ms. Kolter was asking you about slide 16, the 11:13AM</p> <p>15 package high pressure steam boiler, and on page -- 11:13AM</p> <p>16 sorry -- on slide 18 the heat recovery steam generator. 11:13AM</p> <p>17 Do you recall those questions? 11:13AM</p> <p>18 MS. KOLTER: Objection, form. 11:13AM</p> <p>19 A. Yes, I do. 11:13AM</p> <p>20 Q. (By Mr. Andrews) Just taking -- Let me just 11:14AM</p> <p>21 ask it this way. What function does each of those 11:14AM</p> <p>22 units perform in their respective flow sheet? Slides 11:14AM</p> <p>23 16 and 18. 11:14AM</p> <p>24 MS. KOLTER: Objection, form. 11:14AM</p> <p>25 A. To be clear, the steam boiler and the HRSG? 11:14AM</p> <p style="text-align: right;">Page 57</p>

James Ritter , Ph.D.; September 2, 2026

<p>1 Q. Yes. 11:14AM</p> <p>2 A. Yeah. In particular, just those parts of it? 11:14AM</p> <p>3 They, they are performing the same function. 11:14AM</p> <p>4 They're generating steam to generate electricity and 11:14AM</p> <p>5 provide a steam source. So when you look at the 11:14AM</p> <p>6 package high pressure steam boiler, it performs 11:14AM</p> <p>7 virtually the same function as most, if not all, HRSGs. 11:15AM</p> <p>8 It'll generate a high pressure steam that goes through 11:15AM</p> <p>9 a turbine and generates electricity. 11:15AM</p> <p>10 And notice it also, off that turbine you get a 11:15AM</p> <p>11 medium pressure stream -- or steam, which is typical of 11:15AM</p> <p>12 a HRSG. There's usually several or at least two 11:15AM</p> <p>13 streams of steam that come off a HRSG. 11:15AM</p> <p>14 So they're performing the same function. And 11:15AM</p> <p>15 you can sort of see that, but you only see the one 11:15AM</p> <p>16 stream in the HRSG. But, in general, HRSGs do produce 11:15AM</p> <p>17 a medium pressure stream that may or may not be used 11:15AM</p> <p>18 for electricity. It may be used for other processes. 11:15AM</p> <p>19 And the high pressure steam is generally used to spin a 11:15AM</p> <p>20 steam turbine and generate steam. So they perform the 11:15AM</p> <p>21 same function. So they're essentially the same thing. 11:15AM</p> <p>22 Q. Again, for benefits of the court reporter, 11:16AM</p> <p>23 Dr. Ritter, can you confirm to me that when you're 11:16AM</p> <p>24 saying "HRSG," you're referring to an acronym that's 11:16AM</p> <p>25 spelled H-R-S-G? 11:16AM</p> <p style="text-align: right;">Page 58</p>	<p>1 not have to be the same. They could -- and the HRSGs 11:18AM</p> <p>2 could be very different in size to each other if 11:18AM</p> <p>3 they're both HRSGs. I think the slides are just 11:18AM</p> <p>4 intending to show you integration in both cases with 11:18AM</p> <p>5 how they might be integrating with an ammonia process 11:18AM</p> <p>6 of electricity generation. And, in fact, you can see 11:18AM</p> <p>7 in slide 16 the gas turbine is not even generating 11:19AM</p> <p>8 electricity. It's just another application of gas 11:19AM</p> <p>9 turbine. It's compressing processor for use around the 11:19AM</p> <p>10 pipe, which is quite common. In slide 18 they are 11:19AM</p> <p>11 producing electricity from the gas turbine, and then 11:19AM</p> <p>12 the off-gas from the turbine goes through the HRSG and 11:19AM</p> <p>13 generates more electricity from the steam that's 11:19AM</p> <p>14 generated in the heat recovery steam generator. 11:19AM</p> <p>15 I think I answered your question. 11:19AM</p> <p>16 Q. Yes. Thank you. Thank you, Dr. Ritter. Pass 11:19AM</p> <p>17 the witness. 11:19AM</p> <p>18 * * * 11:19AM</p> <p>19 11:19AM</p> <p>20 EXAMINATION 11:19AM</p> <p>21 BY MS. KOLTER: 11:19AM</p> <p>22 Q. Okay. Dr. Ritter, I think Mr. Andrews pointed 11:19AM</p> <p>23 you to paragraph 26 of your Reply Declaration, and you 11:20AM</p> <p>24 identified a citation error. Is that right? 11:20AM</p> <p>25 A. Yes. 11:20AM</p> <p style="text-align: right;">Page 60</p>
<p>1 A. That is correct. 11:16AM</p> <p>2 Q. Okay. Does your opinion that the fuel 11:16AM</p> <p>3 fraction feed a steam production furnace depend on the 11:16AM</p> <p>4 two units in slides 16 and 18, that is, the boiler and 11:16AM</p> <p>5 the HRSG being identical to each other? 11:16AM</p> <p>6 MS. KOLTER: Objection, form. Leading. 11:16AM</p> <p>7 A. I didn't hear the beginning of the question. 11:16AM</p> <p>8 Could you repeat it, Jeff, please? 11:16AM</p> <p>9 Q. Sure. Does your opinion that the fuel 11:16AM</p> <p>10 fraction feeds the steam production furnace depend on 11:17AM</p> <p>11 the steam boiler on slide 16 being an identical piece 11:17AM</p> <p>12 of equipment to the HRSG in slide 18? 11:17AM</p> <p>13 MS. KOLTER: Objection, form. Leading. 11:17AM</p> <p>14 A. Not at all. That was -- the fuel fractions 11:17AM</p> <p>15 could be whatever the design in disintegration of the 11:17AM</p> <p>16 gas turbine in the ammonia process and integrated 11:17AM</p> <p>17 reforming power cycle demands. 11:17AM</p> <p>18 And notice in slide 16 on page 8 they're 11:17AM</p> <p>19 actually taking the exhaust gas from the gas turbine, 11:17AM</p> <p>20 and knowing that there's quite a bit of oxygen in it, 11:18AM</p> <p>21 and adding more fuel to supply even more exhaust gas or 11:18AM</p> <p>22 more -- yeah, flow of gas, hot gases, to generate steam 11:18AM</p> <p>23 in the package high pressure steam boiler. 11:18AM</p> <p>24 So that's all a design choice. Those fuel 11:18AM</p> <p>25 fractions that are being used in slides 18 and 16 do 11:18AM</p> <p style="text-align: right;">Page 59</p>	<p>1 Q. When did you discover this citation error? 11:20AM</p> <p>2 A. In my review. While I was reviewing some of 11:20AM</p> <p>3 the documents, while I was reviewing my declaration. 11:20AM</p> <p>4 It may have been yesterday or the day before yesterday. 11:20AM</p> <p>5 Q. And you referenced a charge preheater. Is a 11:20AM</p> <p>6 charge preheater a reformer? 11:20AM</p> <p>7 A. Where are we referring to? 11:20AM</p> <p>8 Q. You referenced the charge preheater in one of 11:20AM</p> <p>9 your answers to one of the questions Mr. Andrews asked. 11:20AM</p> <p>10 A charge preheater. Is a charge preheater a reformer? 11:20AM</p> <p>11 A. No. 11:20AM</p> <p>12 MR. ANDREWS: Objection, form. 11:20AM</p> <p>13 MS. KOLTER: If I could just have two 11:21AM</p> <p>14 minutes to make sure we're done. 11:21AM</p> <p>15 MR. ANDREWS: Sure. 11:21AM</p> <p>16 MS. KOLTER: Okay. Come back in three 11:21AM</p> <p>17 minutes. 11:21AM</p> <p>18 THE VIDEOGRAPHER: Going off the record at 11:21AM</p> <p>19 2:21. 11:21AM</p> <p>20 (Recess taken 2:21 p.m. - 2:28 p.m. EST) 11:28AM</p> <p>21 THE VIDEOGRAPHER: We're back on the 11:28AM</p> <p>22 record at 2:28. 11:28AM</p> <p>23 MS. KOLTER: Okay, Dr. Ritter, I'm going 11:28AM</p> <p>24 to go ahead and pass the witness. 11:28AM</p> <p>25 MR. ANDREWS: Okay. Just for the record, 11:28AM</p> <p style="text-align: right;">Page 61</p>

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<p>1 we'd like to review and sign, and I think that's it. 11:28AM 2 THE VIDEOGRAPHER: We're going off the 11:28AM 3 record at 2:28, and this concludes the deposition for 11:28AM 4 today. 11:28AM 5 (Deposition concluded at 2:28 p.m. EST) 6 (Signature was reserved.) 7 * * * 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25</p> <p>Page 62</p>	<p>1 Jeffrey Andrews 2 jandrews@yettercoleman.com 3 September 4th, 2026 4 RE:Topsoe Inc. v. Sa, Casale 5 9/2/2026, James Ritter, Ph.D. (#8418988) 6 The above-referenced transcript is available for 7 review. 8 Within the applicable timeframe, the witness should 9 read the testimony to verify its accuracy. If there are 10 any changes, the witness should note those with the 11 reason, on the attached Errata Sheet. 12 The witness should sign the Acknowledgment of 13 Deponent and Errata and return to the deposing attorney. 14 Copies should be sent to all counsel, and to Veritext at 15 (Calendar-pnw@veritext.com). 16 Return completed errata within 30 days from 17 receipt of testimony. 18 If the witness fails to do so within the time 19 allotted, the transcript may be used as if signed. 20 21 22 Yours, 23 Veritext Legal Solutions 24 25</p> <p>Page 64</p>
<p>1 REPORTER'S CERTIFICATE 2 3 I VICKY L. PINSON, RPR-CCR, the undersigned 4 Certified Court Reporter, authorized to administer 5 oaths and affirmations in and for the states of 6 Washington, Oregon and California, do hereby certify: 7 That the sworn testimony and/or proceedings, a 8 transcript of which is attached, was given before me at 9 the time and place stated therein; that the witness was 10 duly sworn or affirmed to testify to the truth; that 11 the testimony and/or proceedings were stenographically 12 recorded by me and transcribed under my supervision. 13 That the foregoing transcript contains a full, 14 true, and accurate record of all the testimony and/or 15 proceedings occurring at the time and place stated in 16 the transcript; that a review of which was requested. 17 That I am in no way related to any party to the 18 matter, nor to any counsel, nor do I have any financial 19 interest in the event of the cause. 20 21 WITNESS MY HAND AND DIGITAL SIGNATURE this 3rd day of 22 September, 2026. 23  24 VICKY L. PINSON, RPR-CCR 25 Washington Certified Court Reporter, No. 2559 Oregon State Certified Court Reporter, No. 16-0442 California State Certified Court Reporter, No. 9845</p> <p>Page 63</p>	<p>1 Topsoe Inc. v. Sa, Casale 2 James Ritter, Ph.D. (#8418988) 3 E R R A T A S H E E T 4 PAGE____ LINE____ CHANGE_____ 5 _____ 6 REASON_____ 7 PAGE____ LINE____ CHANGE_____ 8 _____ 9 REASON_____ 10 PAGE____ LINE____ CHANGE_____ 11 _____ 12 REASON_____ 13 PAGE____ LINE____ CHANGE_____ 14 _____ 15 REASON_____ 16 PAGE____ LINE____ CHANGE_____ 17 _____ 18 REASON_____ 19 PAGE____ LINE____ CHANGE_____ 20 _____ 21 REASON_____ 22 _____ 23 _____ 24 James Ritter, Ph.D. Date 25</p> <p>Page 65</p>

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1 Topsoe Inc. v. Sa, Casale

2 James Ritter, Ph.D. (#8418988)

3 ACKNOWLEDGEMENT OF DEPONENT

4 I, James Ritter, Ph.D., do hereby declare that I

5 have read the foregoing transcript, I have made any

6 corrections, additions, or changes I deemed necessary as

7 noted above to be appended hereto, and that the same is

8 a true, correct and complete transcript of the testimony

9 given by me.

10

11 _____

12 James Ritter, Ph.D. Date

13 *If notary is required

14 SUBSCRIBED AND SWORN TO BEFORE ME THIS

15 _____ DAY OF _____, 20__.

16

17

18

19 _____
NOTARY PUBLIC

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[broad - combustion]

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Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

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