



Transcript of Proceedings:

Grievance of First Officer Michael Danford, ATL 18-14

AIR LINE PILOTS ASSOCIATION, INT'L
and
DELTA AIR LINES CO.

Volume Six

December 8, 2020

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VIRTUAL ARBITRATION

GRIEVANCE OF FIRST OFFICER MICHAEL DANFORD

CASE NO. 18-14

BETWEEN

AIR LINE PILOTS ASSOCIATION, INT'L

AND

DELTA AIR LINES CO.

VOLUME SIX

DECEMBER 8, 2020

REPORTED BY:

DAMIEN STONEBERGER

STORYCLOUD

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APPEARANCES

ARBITRATOR:

Mark Burdette

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Mike J. Doyle, Company Board Member
Patrick Burns, Company Representative

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APPEARANCES, CON'T

Also Present for the Union:
Emilio Marcos, Contract Administration
Committee Chairman
Kevin Morris, Union Board Member
Steve Mayer, Union Board Member
David Koch, Technical Advisor

Also Present:
Michael Danford, Grievant
Katy Hampton, Remote Technician

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TRANSCRIPT OF PROCEEDINGS, VOLUME SIX
DECEMBER 8, 2020

THE REPORTER: We are on the record. The time is 11:07 a.m.

THE ARBITRATOR: Okay. Now, we're going to put on the record that the grievant has an -- a technical expert today by the name of Dr. David Koch, spelled K-O-C-H. And I think, before we got on the record, Delta had expressed a desire to have a conversation about that.

MR. KASSIN: That's right. This may be more than way of a question. Maybe at some point, Dr. Koch can get his video going too. But the grievant has had an expert present throughout the hearing by the name of George Ellis. And as the arbitrator will recall, there was objections to the company having Howard Taylor present as a advising expert. Our understanding was that each side could have one advising expert during the course of the hearing who also would be free to testify. So, you know, I -- I just -- is -- is really probably more of a clarification for you, Arbitrator Burdette. Our underst -- you know, because we would have liked to have had another advising expert here that may have potentially been a rebuttal witness, but

1 we restricted it to one, believing that was what we
2 were required. So my understanding was that Mr. Seham
3 could have one and he has done so throughout the period
4 of the hearing with Mr. Ellis --

5 THE ARBITRATOR: But he's not here today. Mr.
6 Ellis isn't on today, right?

7 THE REPORTER: You are muted, Mr. Seham.

8 MR. SEHAM: Yes, I am. Well, yes. To start from
9 the beginning there -- there was never any discussion
10 about whether it was one or more. In any case, George
11 Ellis would never, was -- was never intended to
12 testify. He -- he will not be testifying, whereas Dr.
13 Koch may be testifying if -- if that's required after.

14 THE ARBITRATOR: Just for clarity, Mr. Ellis is not
15 on today, right?

16 MR. SEHAM: He's not available yet, but we can --
17 if he will become available.

18 THE REPORTER: Mr. Seham, your -- your audio is
19 erratic and I'm unable to hear you clearly. Can you
20 hear me?

21 MR. SEHAM: It would be Dr. Koch.

22 THE REPORTER: Mr. Seham, your -- your audio is
23 quite erratic and I did not hear any of that. We may
24 have to have you -- I think we should have you call in
25 as well.

1 MR. SEHAM: Okay.

2 THE REPORTER: If we may go off the record for a
3 moment to rectify this.

4 THE ARBITRATOR: Sure.

5 THE REPORTER: We are now off the record.

6 MR. SEHAM: What's the telephone number?

7 THE REPORTER: Oh, that's right. Chat is disabled.
8 Hang on just a moment. I will give you that info.
9 We're now off the record. The time is 11:11 a.m.

10 (OFF THE RECORD)

11 THE REPORTER: We're back on the record. The time
12 is 11:13 a.m.

13 MR. SEHAM: And Damien, I have to start from
14 scratch in terms of my response to Mr. Kassin on the
15 technical advisors; is that correct?

16 THE REPORTER: Yes, sir, I apologize for that.

17 MR. SEHAM: No, no. Yeah. I'm not asking for an
18 apology. I just wanted to clarify that. Mr. Kassin
19 raises issues for the first time an issue about
20 numerical limitation on technical advisors that we had
21 -- we had never heard that before. But even to the
22 extent there is a numerical limitation of one for
23 technical advisors who are also testifying, George
24 Ellis will not be testifying. We never intended to him
25 to testify. The only technical advisor who would be

1 testifying potentially is Dr. Koch. In any event at
2 this time, George Ellis is not available. We'd like
3 him to be able to join if he becomes available. He
4 just isn't at the time. But the only person who would
5 serve a dual capacity of technical adviser and witness
6 would be Dr. Koch.

7 THE ARBITRATOR: Mr. Kassin?

8 MR. KASSIN: I think with that understanding we'll
9 be fine. We should've clarified that with you and
10 that's on us to clarify that with you earlier on.

11 THE ARBITRATOR: Okay. Then let's proceed.

12 MR. KASSIN: Sure. I do not -- our first witness
13 today is Howard Taylor, PhD or Dr. Howard Taylor, and I
14 don't see him on the screen yet. If he maybe could be
15 admitted into the waiting room.

16 THE REPORTER: He is in now.

17 MR. KASSIN: Okay.

18 THE REPORTER: Okay. Mr. Taylor, can you hear us?
19 He's not -- he has not activated his system yet.

20 MR. KASSIN: And Katy, this is Tom Kassin. Once we
21 get going, Howard Taylor, his first exhibit, we're
22 going to refer to as his curriculum vitae and it's
23 Company Exhibit 15. Just to make it easier for you to
24 find and we're not going to go through the whole
25 document, but you should be able to follow the pages as

1 we go through like education and positions and stuff
2 like that, and we'll have you pull it up.

3 REMOTE TECH: Copy that. Thank you.

4 THE REPORTER: He still has not yet connected his
5 camera or his microphone.

6 MR. KASSIN: Okay.

7 THE REPORTER: Is someone in contact with him?

8 MR. KASSIN: He's at a different location, but we
9 may have to send somebody up there to go check up.

10 THE ARBITRATOR: Yes. Let's do that.

11 THE REPORTER: We're now off the record. The time
12 is 11:18 a.m.

13 (OFF THE RECORD)

14 THE REPORTER: On the record, the time is 11:22.

15 THE ARBITRATOR: Okay. Dr. Taylor, would you raise
16 your right hand, please? We've been swearing witnesses
17 today.

18 THE WITNESS: Yes.

19 THE ARBITRATOR: Do you swear or affirm that the
20 testimony you're about to give in this case will be the
21 truth, the whole truth, and nothing but the truth?

22 THE WITNESS: I do.

23 THE ARBITRATOR: Thank you very much. And would
24 you identify for us that there's nobody else in the
25 room with you?

1 THE WITNESS: There's no one else in the room.

2 THE ARBITRATOR: And do you have any documents that
3 you could refer to that are not a part of this case?

4 THE WITNESS: No.

5 THE ARBITRATOR: Thank you very much. Mr. Kassin,
6 proceed.

7 EUGENE HOWARD TAYLOR, PH.D.,
8 having been first duly sworn, testifies as follows:

9 DIRECT EXAMINATION

10 BY MR. KASSIN:

11 Q. Yes, sir. Please state your full name for
12 the record.

13 A. My full name is Eugene Howard Taylor.

14 Q. Dr. Taylor, what is your professional
15 specialty?

16 A. I'm a forensic toxicologist.

17 Q. Can you tell us what your current position
18 is?

19 A. Yes. I have two positions. I'm a forensic
20 toxicologist and co-owner of National Toxicology
21 Specialists. And I also serve as a laboratory director
22 for a clinical laboratory addiction labs of America,
23 also in Nashville, Tennessee.

24 Q. Can you just explain to the arbitrator and
25 board members what all those positions involve?

1 A. Sure. My -- the forensic toxicology we do --
2 we do workplace drug testing and monitoring of
3 professionals in recovery by monitoring drug and
4 alcohol testing. So that forensic testing is sometimes
5 called a third-party administrator, who manage
6 company's drug and alcohol testing programs. And in
7 addition to that, I serve as an expert witness,
8 particularly for the US Air Force. Much of my work
9 involves testimony and consulting with courts-martials
10 throughout the United States and the world. The --
11 that's the forensic side. On the clinical side, I
12 serve as a laboratory director for Addiction Labs of
13 America. It's a clinical laboratory. We do drug
14 testing for addiction treatment -- treatment centers
15 throughout the United States. So I hold both of those
16 positions of employment.

17 (Company Exhibit 15 marked for identification)

18 Q. Okay. Your curriculum vitae has been
19 submitted as an exhibit -- identified as Company
20 Exhibit 15. And I was going to ask Katy to scroll
21 through it with us. We won't go through the whole
22 document, but I just want to highlight a couple key
23 points. What previous positions have you held as a
24 toxicologist?

25 A. Prior to starting National Toxicology

1 Specialists, I was a laboratory director for the
2 National Reference Laboratory Substance Abuse Division.
3 We were a SAMHSA certified laboratory that did forensic
4 testing for workplace drug testing. We did about 3,000
5 specimens per day. Prior to that, I served as a -- in
6 a clinical laboratory also with National Health
7 Laboratories in Dallas, Texas for a short time. And
8 then prior to that, I also was with the same company,
9 National Health Laboratories -- National Reference
10 Laboratory. I served as director of their clinical
11 toxicology division. Prior to that, I was a tenured
12 associate professor at the University of Arkansas for
13 Medical Sciences in Little Rock. There I was in charge
14 of the clinical laboratory for clinical chemistry and
15 toxicology. I also taught medical students, pharmacy
16 students, and med -- medical technology students.
17 Prior to that, I was in a postdoc position at the
18 University of South Carolina, the medical -- medical
19 school there, in the department of laboratory medicine.
20 I did a two-year fellowship in -- in Clinical Chemistry
21 and Toxicology prior to moving to Arkansas.

22 Q. Okay. And are you board-certified and by
23 whom?

24 A. Yes. I'm board certified in both forensic
25 and clinical toxicology. The board certification

1 American Board of Forensic Toxicology, and also board
2 certified by the American Board of Clinical Chemistry
3 with a specialty in toxicology.

4 Q. Okay. And what professional licenses do you
5 hold?

6 A. I hold a laboratory directors' license, the
7 State of Tennessee for directing a toxicology
8 laboratory, also a COQ or a certificate of
9 qualification for the State of New York. Our
10 laboratory once was going to apply for certification
11 and it was necessary for me to become qualified as the
12 laboratory director for the State of New York in
13 toxicology.

14 Q. If you could briefly describe for us your
15 educational background.

16 A. Yes. I have two undergraduate degrees. I
17 have a BS in Chemistry and a BS Education in
18 Mathematics from Armstrong State College in Savannah,
19 Georgia, which is now part of Georgia Southern
20 University. Then I went to the Medical College of
21 Georgia, got my PhD in Biochemistry at the Medical
22 College of Georgia.

23 Q. Have you been appointed as an expert in other
24 judicial proceedings?

25 A. Yes. Most -- most all of my work in the --

1 in the court involves the Air Force. I've been
2 appointed as an expert in over 200 military
3 courts-martials and qualified as an expert in about 25
4 military courts-martials. And then I have an
5 additional about 25 civilian cases that I've done. So
6 I've testified about 50 times throughout my career,
7 predominantly with the Department of Defense
8 courts-martial.

9 MR. KASSIN: And Arbitrator Burdette, we'll let the
10 rest of his curriculum vitae speak for itself. At this
11 time, we would like to tender Dr. Taylor as an expert
12 forensic toxicologist.

13 THE ARBITRATOR: Okay.

14 MR. SEHAM: No objection.

15 THE ARBITRATOR: Thank you very much, proceed.

16 MR. KASSIN: Yes sir.

17 BY MR. KASSIN:

18 Q. Katy, if you can take that curriculum vitae
19 down. Thank you. Dr. Taylor, you know this case
20 involves the termination, that Mr. Danford was a pilot
21 for Delta Airlines and HIMS related program for
22 alcoholic, had been drinking alcohol contrary to his
23 agreement with Delta, and the requirements of his FAA
24 Special Issuance. And he had a positive PEth test
25 result as a result of a DBS or dried blood spot sample

1 taken on May 9th, 2018 as analyzed by the laboratory at
2 United States Drug Testing Lab or as we've been
3 referring to as USDTL. When were you first review --
4 I'm sorry. When were you first retained by Delta to
5 review the results of the USDTL drug testing results
6 for the May 9th PEth test?

7 A. I was contacted on June the 28th, of 2018 by
8 -- by telephone.

9 Q. Okay. And what were you asked to do?

10 A. I -- I was asked to basically consult to
11 review litigation package for the Quest Diagnostic
12 Laboratories for an EtG urine test, and also to review
13 the USDTL PEth testing that was done on -- on May the
14 9th to review those and then offer an opinion as to the
15 accuracy of those test results and interpret --
16 interpretation of those results.

17 Q. Were you provided with the Quest data
18 package, which is in the record as Company Exhibit 9
19 and the USDTL litigation package, which is in the
20 record is Company Exhibit 10?

21 A. Yes. Yes.

22 Q. And once you received those documents, what
23 steps or what things did you do next?

24 A. I -- I reviewed the documents for scientific
25 validity or accuracy of the litigation package, the

1 chain of custody, quality control, and the appropriate
2 analytical techniques. I had one concern relating to
3 the two results. The screen result was 69 on the
4 initial PEth screening tests and the confirmation
5 result was 98. After looking at both results, I wanted
6 to talk to Dr. Joe Jones at the laboratory to
7 understand the uncertainty or the reproducibility of
8 those results. I called him. We discussed that. He
9 explained to me that the uncertainty or reproducibility
10 precision, as we call it in the laboratory, is plus or
11 minus 30 percent. And those values are certainly
12 within plus or minus 30 percent of one another. So I
13 was satisfied that the -- the precision was -- was
14 appropriate and those results were in fact
15 scientifically valid.

16 Q. So after you completed your analysis of the
17 Quest May 1st, 2018, EtG results and the USDTL May 9th,
18 positive PEth results, at some point, did you have a
19 discussion with the Delta flight operations management?

20 A. Yes. I was involved in a conference call.
21 It was probably a week or two after that. I -- I
22 don't recall the exact date. And there was Mr. Puckett
23 and also two or three members of the management from
24 the flight -- flight ops at Delta. And we discussed
25 the results and also the interpretation.

1 Q. And with respect to the Quest data package
2 for the May 1st, 2018 EtG test results, what did you
3 tell the Delta flight operations management people
4 present on the call?

5 A. The litigation package was scientifically
6 valid. As I said before, I reviewed the chain of
7 custody, the quality control, and the methodology used
8 by Quest Diagnostics in Norristown. I was satisfied
9 that those were valid and accurate results. And then
10 we discussed the PEth results. Would you like me to go
11 and talk about that result as well?

12 Q. Sure. Did you advise him as to whether or
13 not that EtG result of 117 nanograms per milliliter was
14 positive?

15 A. Yes. It was positive, yes.

16 Q. Okay. Now, tell us also about your analysis
17 what you shared with the Delta flight operations
18 management team with respect to the USDTL May 9th,
19 positive PEth?

20 A. I -- I reviewed the same issues in the
21 litigation package, the chain of custody, quality
22 control and scientific validity of the testing process.
23 After reviewing that, I determined that was positive
24 and that is consistent with the EtG result of May the
25 1st. As -- as we know PEth has a detection window of

1 two to four weeks roughly. And this certainly would
2 overlap and be consistent with the initial EtG result
3 from May the 1st and May the 9th indicating that active
4 drinking had occurred.

5 Q. And did you inform the Delta management team
6 that was your opinion?

7 A. Yes.

8 Q. Okay. What did you say to them?

9 A. The test is -- test is positive for both EtG
10 in urine from May 1st and also positive for PEth from
11 the May 9th, blood spot specimen test. In my opinion,
12 it indicated drinking within the last two weeks,
13 roughly. That's generally what we see in -- in our
14 practice with -- with PEth. The -- the look-back
15 period is typically one to two weeks.

16 Q. Okay. Now, the cutoff that was used by USDTL
17 for that May 9th, 2018 test was 20 nanograms per
18 milliliter. How widely is that cutoff of 20 nanograms
19 per milliliter used in the toxicology field?

20 A. 20 nanogram per milliliter is a standard
21 cutoff in the United States, Europe has a slightly
22 different standard. But in the United States that is
23 the generally accepted cutoff. And -- and there's a
24 reason for that. The -- the idea is that we don't want
25 to overlap any negative results or someone that's not

1 drinking. Typically someone that's not drinking has
2 extremely low PEth value below the limit of
3 quantification or limit of detection. So if we apply
4 some of the uncertainty, as I said before, plus or
5 minus 30 percent to that 20 nanogram per milliliter
6 value. There's no overlap with the -- the very low
7 PEth results that would occur from a non-drinker.

8 Q. Okay. After your telephone discussion with
9 the Delta flight operations management and prior to
10 coming to the system Board of Adjustment to testify
11 today, did you make a site visit to the USDTL
12 laboratory?

13 A. Yes, I did.

14 Q. Can you tell us when?

15 A. Yes. It was March the 12th of this year,
16 2020.

17 Q. What was the purpose of your visit?

18 A. Two -- two purposes. One was to actually
19 observe the process for myself. I -- I currently serve
20 as a SAMHSA inspector. I've inspected about --
21 certified laboratories about 50 times -- 50 SAMHSA
22 inspections throughout my career. And I want to apply
23 some of those same standards in looking at the USDTL
24 results. So I observed the process. I also looked at
25 the SOP, the Standard Operating Procedure to make sure

1 that it was scientifically valid and that the
2 technicians were following the SOP. And also I looked
3 specifically at the validation data because we're
4 looking at dried blood spot tests. I wanted to really
5 understand how the validation testing was done, what
6 was done, and was that appropriate? And after spending
7 a day at the laboratory, I was -- I was assured and
8 convinced that the testing process was accurate and
9 certainly defensible, very sound forensic process.

10 Q. Okay. And general background. Did you also
11 look at their quality control procedures?

12 A. Yes, I did.

13 Q. Okay. And did you have an opportunity to
14 review the original data from Mr. Danford's DBS sample,
15 that was collected on May 9, 2018?

16 A. Yes, I did. I went back to the original
17 data, not the litigation package, which is basically a
18 summary of the data. But I looked at both the
19 screening, run the actual results that were produced in
20 the laboratory, the -- and also the confirmation
21 results. For the confirmation results specifically, I
22 was interested in something called carryover or
23 contamination. Is it possible for one sample to be
24 carried over into the next sample and make it positive?
25 USDTL actually inserts a blank solvent, a solvent

1 blank, in between every single confirmation specimen.
2 So that would assure that -- assure one, that there's
3 no carryover contamination from one specimen to the
4 next.

5 Q. Okay. So did you actually observe them --
6 the various steps of them actually conducting a test
7 analysis of dried blood spot?

8 A. Yes. I -- I -- I followed a technician
9 through the process, each individual step from receipt
10 of the specimen to how these punches are done. The
11 dried blood spot, they're -- they're three punches that
12 are done. They're each three millimeters in diameter.
13 And those are put into a test tube. And then the next
14 dried blood spot, next specimen, would be spotted. But
15 in between those, the technologist would use a Q-tip or
16 cotton swab dipped in methanol to actually clean the
17 pneumatic press that is used to assure, again, that
18 there's no carryover or contamination from one specimen
19 to the next. So in addition to watching the process
20 and observing that, I -- I also looked at the
21 instrumentation, what they're using. They're using an
22 Agilent liquid chromatograph coupled with a Sciex mass
23 spectrometer. And those are very appropriate, very
24 standard instruments used in -- in many forensic
25 laboratories in the United States. I also looked at

1 the Standard Operating Procedure manual to look at the
2 methodology, how it was done, and to make sure that the
3 technicians were following the -- the procedures. And
4 -- and as I -- as I said, following each step along the
5 way, I wanted to ensure that there was scientific and
6 also forensic defensibility. Chain of custody was
7 followed, the process was done appropriately, and then
8 the validation data. I spent quite a bit of time
9 looking at that to ensure that the validation was done
10 properly according to current Standard Forensic
11 Toxicology Guidelines.

12 Q. You testified just a moment ago about looking
13 at what's referred to as carryover. Could you
14 elaborate a little bit more on what that means and what
15 you did to review their processes on carryover?

16 A. Sure. The -- one of the -- the big problems
17 in laboratories, particularly high volume or high
18 throughput laboratories, is this characteristic, what
19 we call carryover. That is the contamination of one
20 specimen and that may precede another specimen and may
21 have a higher result. And that, that somehow would
22 bleed into or carry over into the next specimen. USDTL
23 takes several precautionary steps to ensure that does
24 not occur. As I mentioned before, they use a swab
25 dipped in methanol as a solvent to clean the pneumatic

1 press in between each single outreach specimen that is
2 -- is processed. They insert a blank in between every
3 confirmatory test result. In addition, they have an
4 upper limit of quantification of 500. And anything
5 over 500 would be subject or suspect with carryover.
6 But of course since they use solvent blanks there, and
7 they look -- they can look at the solvent blank and see
8 that no carryover has occurred. It's a very sound and
9 very defensible forensic process, as I said before.

10 Q. Okay. In connection with the carryover issue
11 that you just described, did you have the opportunity
12 to look at the sample that was run just prior to the
13 DBS sample that Mr. Danford provided on May 9th, 2018?

14 A. Yes, I did. It -- it was -- it was well
15 below the 500 nanogram per mL limit. And -- and in
16 addition to blank following that sample was completely
17 negative. There's absolutely no PEth carried over into
18 that blank sample. And therefore, Mr. Danford's sample
19 would not be subject to any contamination or carryover
20 as we say, due to our previous result.

21 Q. Okay. You mentioned that you also looked at
22 quality control safeguards that USDTL employed. Can
23 you tell us what those were and your observations of
24 them?

25 A. Yes. They use a single calibrator, a single

1 20 nanogram per mL calibrator. They use three
2 controls. Three positive or three controls in which
3 PEth is present, one below the cutoff, and two above
4 the cutoff. And they also use a certified negative
5 blood sample to prove that the matrix or blood has no
6 PEth in it, in order to demonstrate that there's no
7 production from any -- any just laboratory process, it
8 might inadvertently add PEth into -- into the process.
9 So a negative with three controls are included in -- in
10 every run.

11 Q. Okay. So based on your first visit to the US
12 Drug Testing Laboratory on March 12, 2020, and based on
13 your background as a board-certified toxicologist and
14 qualified SAMHSA inspector, what conclusions did you
15 reach about that laboratory?

16 A. The -- the -- the process is sound. The
17 laboratory has a very thorough and accurate forensic
18 process, both in chain of custody, quality control, and
19 the analytical methodology in which they're -- which
20 they're using.

21 Q. Okay. I'm going to switch gears a little bit
22 to you and talk about some of the testimony that we had
23 from experts on behalf of Mr. Danford earlier in this
24 case. And there was some concern expressed about the
25 difference, the quantitative difference between the

1 initial PEth result of 69 nanograms per milliliter and
2 the confirmatory PEth results of 98 nanograms per
3 milliliter, and you testified you also had questions
4 about that. Can you go into more detail about your
5 analysis of the concerns that you had, which I think
6 will address their experts also?

7 A. Certainly. So if we look at the initial
8 result, the PEth result of 69, and as we said before,
9 the reproducibility or uncertainty associated with that
10 result is plus or minus 30 percent. So if we -- if we
11 do the math, and I have a calculator here, if you'd
12 like me to, we can say where the range of where the
13 true value is. Of course, when you measure something,
14 you don't really know what the true value is. You
15 simply know what a -- a range it would encompass. And
16 the same thing is done for the 98. If we look at 98
17 and say that -- that true value is plus or minus 30
18 percent of that actual value. There's considerable
19 overlap between the 69 range plus or minus 30 percent
20 and the 98 range, of plus or minus 30 percent.

21 So I guess the bottom line is the actual value
22 probably lies somewhere between the two. Because we're
23 -- again, we're looking at an analytical measurement in
24 the laboratory. And one thing in a forensic process is
25 you always want to define the uncertainty associated

1 with that measurement. That's very critical. So if I
2 had seen a result of 69 and 690, well clearly those are
3 two very far apart results and -- and there's no
4 overlap between them. And I would be very concerned
5 about that. But in this case, it's -- it's -- it's
6 very simple to see that the -- the -- the average or
7 the mean is -- is probably closer to the true value.
8 And even if we look at the plus or minus 30 percent,
9 there's tremendous overlap there. So if you need me to
10 do the calculations, I certainly can.

11 Q. Would you please do that? I'd like to put
12 that on the record. And I'd like for you to explain,
13 when you do that, give us the range for 69 and then
14 give us the range for 98, and what you can conclude
15 from those two ranges?

16 A. Okay. And just to let everyone know, I have
17 a old-fashioned calculator here with me and a pad of
18 paper. So I'll very quickly do that calculation for
19 you. Okay, so if we look at the range with 69 plus or
20 minus 30 percent, that range is 48 to 90. 48 to 90.
21 And if we do the same thing, plus or minus 30 percent
22 of the 98 value, that range is 69 to 127. And you can
23 see that there's considerable overlap between those two
24 ranges.

25 Q. And what does that tell you?

1 A. Those -- that if -- if I ran that sample 100
2 times, let's say, I would see similar values between --
3 within that range that I just -- just showed you.

4 Q. Okay. What is the basis for use of the plus
5 or minus 30 percent? In other words, how do you come
6 up with that plus or minus 30 percent?

7 A. Sure. That -- that is something -- that is
8 something that comes from the laboratories validation
9 data. The -- the -- when -- when one analyzes the
10 particular cutoff at 20 nanogram per milliliter, and
11 analyzes that multiple times and looks at the mean and
12 the standard deviation, a standard deviation is simply
13 the spread of data. How -- how wildly or narrowly
14 distributed is that data. They come up with
15 calculations called a coefficient of variation. This
16 is standardly used in a laboratory to -- to -- to look
17 at the uncertainty. So in -- in looking at the 20
18 nanogram per mL cutoff, the CV or coefficient variation
19 was approximately or slightly less than 15 percent. In
20 the laboratory, we use two times the coefficient of
21 variation as the range of uncertainty. And there are
22 reasons for that I won't go into. But if you look at
23 two times 15 percent, that range is plus or minus 30
24 percent. So it's strictly related to the laboratories
25 validation data and they produce data that show that is

1 the uncertainty in their testing procedure.

2 Q. Okay. Again, we switch gears on -- with you
3 onto another -- before I do that, let me just ask you,
4 is there any question in your mind or your opinion as
5 to the accuracy of the May 9th, 2018 PEth test for Mr.
6 Danford conducted by USDTL?

7 A. No. In fact, if -- if we take a look at that
8 uncertainty and apply it to the -- the cut-off, if --
9 if you noticed the range that I just discussed, 69 and
10 the range is 48-90 and the 98 range is 69-127. Those
11 ranges are nowhere near the cutoff. So this -- this --
12 this result, even with all the uncertainty from the
13 laboratory, is not anywhere near 20 nanogram per mL
14 cutoff. So I'm -- I'm convinced that this PEth is
15 present, it's positive, and it's well above the cutoff.

16 Q. Okay. Next, I want to talk about some
17 testimony from one of the experts called by Mr.
18 Danford, whose name is Theodore Shults. And just as a
19 preliminary question, do you personally know Mr.
20 Shults?

21 A. Yes. I know -- I know Ted very well. We are
22 -- we are colleagues. In fact, we had lunch together
23 at -- at the last Society of Forensic Toxicology
24 meeting in San Antonio. I know him very well.

25 Q. Now, he has submitted a report, Union Exhibit

1 50, which the company shared with you earlier before
2 this hearing, correct?

3 A. Yes.

4 Q. Okay. And he had some testimony where he
5 discussed comparing some self tests that Mr. Danford
6 did on May 15, 2018 and May 16, 2018. And Mr. Danford
7 also submitted a package of those tests to Delta at an
8 appeal hearing on July 30th, 2018. And what I'd like
9 you to do and I'd like to ask Katy to bring up Company
10 Exhibit 20.

11 (Company Exhibit 20 marked for identification)

12 Q. And I want to look at page 1 of that
13 document, Katy. And as you get to the middle of the
14 page it -- there's the words negative and detection
15 limit of 20. And I think if you'd just blow that up a
16 little bit, you got it right there and lower it just a
17 hair, there we go. We -- we got it. The point of --
18 so what Mr. Shults's opinion was that it was not
19 possible for Mr. Danford to have a negative PEth test
20 on May 15, 2018 and a positive PEth test on May 9th of
21 2018. Do you agree with that opinion?

22 A. I disagree.

23 Q. Okay. And in connection with what you are
24 about to testify to, did the company ask you to prepare
25 a chart on half-life?

1 A. Yes. I -- I prepared a demonstrative aid on
2 half-life, yes.

3 (Company Exhibit 31 marked for identification)

4 Q. Okay. And that should be Company Exhibit 31,
5 which is -- was distributed before the hearing to
6 StoryCloud and to the board members, arbitrator, and
7 counsel. So I'd like Katy, can you bring up Company
8 Exhibit 31, please? And this is what I had --

9 MR. SEHAM: I have no -- I just want to state that
10 I have no prior knowledge of this. If you say you
11 distributed it, it must have been after the hearing
12 started.

13 Q. Mr. Seham, I'm not sure what time. I know we
14 did -- if you check you should be able to see it so --
15 but I will -- we're just looking at it now and we'll
16 just go -- we'll -- it's pretty straightforward. So
17 Dr. Taylor, on the -- the half life chart which is
18 Company Exhibit 31, what is page 1 showing us and tell
19 us what your calculations were?

20 A. Yes. I prepared two calculations based on --
21 one based on the 98 result and another based on the 69
22 result. So this -- this is using the 98 result. So
23 much discussion has been about half-life and the
24 application of half-life. So we know that the range of
25 half-life is from 1-13 days. It's a very wide range

1 with the average being about 4.5 days. But the
2 standard -- the standard deviation is about 3.5. So
3 it's one-day half-life is very possible. It's -- in
4 fact, it's within one standard deviation of the
5 average. So if we apply one-day half-life starting at
6 May the 9th. And you can see how -- just following the
7 column down for one day using a one-day half-life at --
8 at May the 9th, it simply have the result each day --
9 every day have the result.

10 By May the 14th, we're down to three. And certainly
11 that would easily produce a negative PEth test result
12 on May the 15th. And then if we look over at two days.
13 So let's assume for a moment that the -- the half-life
14 is two days. Well, beginning again at May the 9th of
15 98, go two days later to May the 11th, it's 49 and a
16 half, go two more days to May the 13th, it's 25, and go
17 two more days to May the 15th, it's 12. So again, even
18 with a two day half-life, we would be -- we would
19 produce a negative test result, recalling that in the
20 previous exhibit that the cutoff for the laboratory is
21 20. So this would produce a result well below 20
22 nanogram per mL, even if it's day 15.

23 So it's certainly reasonable to -- to -- to say
24 that the half-life for Mr. Danford lies between one and
25 two days, assuming that the value that we're starting

1 from is 98. I also did the same thing with 69. Is
2 that the second page of this exhibit? There we go. So
3 let's go back and let's just for -- for a moment assume
4 69, and again, just giving the benefit of the doubt to
5 the widest range of possibility, somewhere between 98
6 and 69, applying the same logic with a one-day
7 half-life beginning at 69 on May the 9th, then you can
8 easily see by May the 13th we are well below the 20,
9 that would certainly produce a negative PEth test on
10 May the 15th. Let's go to the middle column, which is
11 two days beginning again with May -- with May the 9th
12 being 69.

13 And then we come to May the 15th, you can see that
14 the May the 15th PEth result would easily be below 20
15 and produce a negative result. If we extend it all the
16 way out to the three-day half-life beginning 69 on May
17 the 9th, by May the 15th our value is 18. So again,
18 even with a 20 nanogram per mL cutoff, that would
19 produce a negative result. So certainly we can say the
20 half-life for Mr. Danford is certainly between one and
21 three days, perhaps closer to one to two days, and
22 that's consistent with what we see with alcoholics. We
23 know that alcoholics have a shorter half-life than do
24 social drinkers. That's a well-known -- well-known
25 fact. So certainly with a one to two day half-life,

1 either of those conditions would produce a negative
2 PEth test on May the 15th.

3 Q. And we had some testimony briefly from Mr.
4 Shults, but I wanted to -- are you familiar with the
5 scientific peer-reviewed study done by Dr. Javors?

6 A. Yes -- yes.

7 Q. I'd like you to just briefly to look at
8 Company Exhibit 27. Katy, if you could bring up page 1
9 of that. And then we're going to go over to seven.
10 And under -- Katy, if you could just bring down to
11 results and just blow that up a little bit. It's just
12 a little bit further down under the results. Does this
13 report you were saying in terms of the half-life of
14 PEth being anywhere from 1 to 13 days?

15 A. Yes, exactly. The range is 1 to 13 and the
16 average is 4.6. An inappropriate use of half-life is
17 to use 4.6 for calculations. That's simply the
18 average, that's not -- that's not Mr. Danford's
19 half-life. In fact, we just calculated Mr. Danford's
20 half-life of being between one to two days. So 4.6
21 cannot be used as an average. But the range again is 1
22 to 13 days.

23 MR. KASSIN: Okay. And you can take that down.
24 And that's all I have on Company Exhibit 31 for right
25 now. Let me put this back in place. Okay. Katy, if

1 you could go back to Company Exhibit page 3, and Dr.
2 Taylor, I want to refer you to a self test that Mr.
3 Danford presented to Delta. It was a hair EtG test
4 done on May 15th, 2018. And we can bring that up,
5 Company Exhibit page 3.

6 REMOTE TECH: Which Exhibit?

7 MR. KASSIN: I'm sorry, Katy, what?

8 REMOTE TECH: Which Company Exhibit? You said page
9 3, but which one?

10 MR. KASSIN: I'm sorry. Company Exhibit 20,
11 please.

12 REMOTE TECH: Okay. One moment.

13 MR. KASSIN: Okay. So can you just blow it up a
14 little bit more so we can all see it. It doesn't need
15 much. There you go.

16 BY MR. KASSIN:

17 Q. Dr. Taylor, what assisted Mr. Shults's
18 testimony in his report, states -- Union Exhibit 50, it
19 was not -- his opinion was it was not possible for Mr.
20 Danford to have a positive PEth test on May the 9th,
21 2018 and have a negative hair EtG test on May 15, 2018.
22 And my question for you is; is that inconsistent? The
23 negative hair EtG test on May 15th, with a positive
24 PEth test on May the 9th?

25 A. No. It's not inconsistent and here -- here

1 is the reason why. So if you look at the date of
2 collection of 5/15 and compare that to the PEth test --
3 positive PEth test that's May the 9th. The hair takes
4 about two weeks for it to grow or penetrate through the
5 skin. For example, if one uses a drug or alcohol and
6 it's incorporated into the hair, the hair follicle is
7 actually growing beneath the skin. It takes about two
8 weeks, for that process -- for it even to penetrate the
9 skin in order to be cut. Now if you notice, this is
10 chest hair which grows even more slowly than does head
11 hair. So two week period typically is for -- for head
12 hair and chest hair grows about half as fast as head
13 hair. So the -- the dormant period or look-back period
14 is -- is even greater with chest hair. So if we
15 subtract two weeks from 5/15, we can go all the way
16 back to May the 1st, that we couldn't see anything. If
17 -- if -- if he drank a ton between May the 1st and May
18 the 15th, you couldn't see it because it's below the --
19 the skin. It -- it's unable to be detected because it
20 has not penetrated the -- the skin in order to be cut.
21 So this test proves that or doesn't -- doesn't negate
22 or rebut the negative PEth test at all. There's not
23 enough time for the hair to grow in order to be
24 reflective of any drinking that might have occurred in
25 that period that we discussed previously with the PEth

1 test.

2 Q. Okay. Next, I'd like to refer you to page 4,
3 Company Exhibit 20. And Katy, if you'd just bring it
4 to the next page. Okay. Dr. Taylor, this is the PEth
5 test collected on May 16th, 2018. It's a self test Mr.
6 Danford took and it's part of the packet that he gave
7 to Delta at his appeal hearing. And it shows a screen
8 cut-off of 20 nanograms. And up above it, it refers to
9 it where it says test requests that it shows -- it was
10 a -- a dried blood spot. Am I reading that correctly?

11 A. Yes.

12 Q. Yes. Okay. Essentially, Mr. Shults's point
13 was that it's just not possible for Mr. Danford to have
14 had a positive PEth test on May the 9th, 2018 and have
15 a negative PEth test with a cutoff of 20 on May the
16 16th, 2018. Any brief observation regarding the May
17 16th test?

18 A. Well, we -- we've already shown that the --
19 the May the 15th test could certainly be negative if
20 his half -- half -- half-life was one to two days and
21 anything after May the 15th would certainly be negative
22 if the May the 15th PEth -- PEth test was negative. So
23 one done the subsequent day, that -- that makes perfect
24 sense. If -- if the previous day was negative, I would
25 expect the subsequent day to be negative.

1 Q. Okay. And then I'd like you to look at page
2 5 of Company Exhibit 20. And Katy if you could bring
3 us over to that page. This was the last of the self
4 test that Mr. Danford presented to the company at his
5 July 30th initial appeal hearing. And it was also a
6 dried blood spot collected on May 16th, 2018 and used a
7 confirmation cut-off level of eight nanograms per
8 milliliter. And it shows that it was negative and Mr.
9 Shults's opinion was that this particular test with an
10 eight nanogram cutoff being a negative, shows that it
11 was not possible for the May 9th PEth test that Mr.
12 Danford took to be a positive. Do you agree with that
13 statement?

14 A. Again, if you go back to the -- the chart
15 with the half lives, it certainly could be below eight
16 nanogram per mL on the 16th of -- of May. So that is
17 -- that is consistent with the May the 9th positive
18 PEth test. Assuming a half life of one to two days,
19 that -- that is certainly consistent.

20 MR. KASSIN: Now I want to switch your attention to
21 what's been identified as Union Exhibit 75. And Katy,
22 if you can bring that one up.

23 Q. It's a hair EtG test that was taken by Mr.
24 Danford on June the 20th of 2018, that was not given to
25 Delta Airlines. But I'd like to get your opinion on

1 some of the information that's contained on Union
2 Exhibit 75. And Katy, I don't know -- can you blow
3 that up just a hair more, but maybe not. It's looking
4 -- actually I can see it pretty good. So as you look
5 at Union Exhibit 75, Dr. Taylor, what's your initial --
6 or what's your initial, if you will, summary of the
7 information contained here?

8 A. Sure. The -- the result is positive 4.8
9 picogram per milligram with a cut-off of 2 picogram per
10 milligram. A very important thing to note on this
11 report, is look at the date of collected on 6/20th. So
12 now recall we -- we have enough time for the EtG
13 present in hair to penetrate the skin in order to be
14 detectable. So we -- we've -- we've surpassed that two
15 week, sort of dormant or latency period, that if we
16 went back prior to June the 20th, let's say subtract
17 two weeks back to June the 4th, then our look-back
18 period begins on June the 4th. So drinking would have
19 to have occurred prior to June the 4th. If you look at
20 that 4.8, a question becomes, is it possible to be --
21 to drink and have a result of 4.8? Is -- is that
22 entirely possible? And there's a very nice study by
23 Kronstrand -- Robert Kronstrand. He's a colleague
24 that's in Sweden. And I believe we have an exhibit for
25 that to -- to demonstrate that exact point.

1 Q. Sure. And Dr. Taylor, I'd like to refer you
2 to what's been identified as Company Exhibit 32. And
3 Katy, I'd like you to bring up the Company Exhibit 32
4 at this point, and you're probably going to need to
5 blow that up.

6 (Company Exhibit 32 marked for identification)

7 Q. Is this the scientific peer-reviewed article
8 by Kronstrand that you were referring to, Dr. Taylor?

9 A. Yes, it is.

10 Q. And can you point out to us the relevant
11 information and if you could just -- if you could
12 assist Katy and tell her where to go in that study?

13 A. Sure. If we could just show the abstract --
14 the portion of the abstract would be -- would be great.
15 And let me grab my copy here so -- I -- I cannot see
16 the copy very well on the screen. So I'm going to grab
17 the -- the actual exhibit here from the exhibit list.
18 Just a moment. And this was Company Exhibit -- which
19 one, 32?

20 Q. 32, sir.

21 A. Okay --

22 Q. Company Exhibit 32.

23 A. -- I have it. So if you look at the abstract
24 -- and maybe you can blow it up just a bit more to look
25 at the abstract, please, particularly the last four

1 lines.

2 A. So be -- beginning with the sentence where it
3 says, "We conclude." To -- to explain what the study
4 was about, individuals drank alcohol. It says 16 or 32
5 grams to put that in perspective, a drink is 14 grams
6 of alcohol. So 16 is roughly the equivalent of one
7 drink or 32 grams of alcohol or ethanol is the
8 equivalent of two drinks. So these individuals drank
9 daily for three months, every single day for
10 approximately 90 days. And what the study shows
11 basically is that, it is possible to get a negative
12 hair test with the drinking every single day because
13 the results fall below the threshold for detection.

14 And to look at the sentence in the abstract, it
15 says, "We conclude that persons who ingested 16 or 32
16 grams of ethanol daily for three months, presented with
17 low concentrations of EtG in hair well below the
18 proposed threshold for over consumption, 30 picogram
19 per milligram." And to put that in perspective, the
20 Society of Hair Testing is using heavy alcohol
21 consumption, moderate to heavy consumption at 30 pg/mg.
22 And then the last sentence is very important as well,
23 in that abstract. It says, "In addition, none of those
24 who ingested 16 g/day had concentrations over the
25 proposed abstinence threshold of 7 pg/mg." So to put

1 that in perspective with Mr. Danford's test of June the
2 20th, his EtG hair test value of 4.8. It is certainly
3 possible to drink. In fact, to drink every single day
4 for three months, one drink and have a concentration
5 less than seven picogram per milligram. So this study
6 demonstrates that just because a negative hair -- a
7 negative hair test does not rebut a positive PEth test.

8 And I'd also like to go in this article. It's page
9 4. If we could scroll down to in the upper left-hand
10 corner, it's got page 4 of the article. Yes. That's
11 it on the right-hand side, please. That's page 3, one
12 more page, please. Yes, that's correct. And if you
13 look below Table 3, the paragraph that begins another
14 significant finding. And the -- the next sentence
15 after that, which begins with the diagnostic
16 specificity." The diagnostic specificity for EtG is
17 theoretically very high since its formation is always
18 associated with metabolism of ethanol. However -- and
19 this is the important point. However, our results
20 showed an EtG concentration below seven picogram per
21 milligram does not exclude daily alcohol use. And thus
22 the sensitivity is questioned for the purpose of
23 monitoring total abstinence." So the question becomes,
24 does a seven if -- if a result is below seven picogram
25 per milligram, which is typically used as a cut-off for

1 hair testing, does a result below that prove
2 abstinence? And the answer is, it does not. Because
3 as we just demonstrated, one can drink as much as one
4 drink every single day for three months and be below a
5 seven picogram per milligram value. So the question
6 becomes, if you are abstinent, then what values would
7 you typically see in hair? And I think that's our next
8 exhibit, which is the article by Pirro.

9 MR. KASSIN: Okay. And Katy, can you please bring
10 up Company Exhibit 33?

11 (Company Exhibit 33 marked for identification)

12 Q. And Dr. Taylor, I would ask you, is this the
13 Pirro exhibit you're referring to?

14 A. Yes, it is.

15 Q. Okay. And can you take us to the relevant
16 portions of that study?

17 A. Yes. So let me -- let me explain the purpose
18 of this study. So here -- here we are asking a
19 different question. So if someone is abstinent, what
20 would an EtG in hair look like or what values would we
21 see in hair? So if we could go to the abstract, blow
22 that up. The very last sentence of the abstract. Very
23 last sentence of the abstract. And -- and let me
24 explain what they did here. So in this -- in this
25 instance, they -- they actually tested children. They

1 tested children because we know that these individuals
2 were abstinent from alcohol. And they looked at the
3 values that they got for EtG in hair. And it's -- and
4 they found the values to be extremely low,
5 approximately one, two picogram per milligram. And the
6 take home message for this article is the last
7 sentence. It says, "Cut-off value in the range of one
8 to two picogram per milligram can be reliably proposed
9 to support alcohol abstinence." If you recall on the
10 ExperTox report, they used a cut-off of two picogram
11 per milligram. That -- that cut-off is extremely
12 well-founded because we're asking a different question.
13 We're asking the question is Mr. Danford abstinent?
14 And that question it can be answered that he was not
15 because his value falls above that two picogram per
16 milligram range. There's one other part of this
17 article I would like to -- to -- to -- to -- to talk
18 about. And if we could go to actually, it's -- it's
19 upper left-hand corner page 232 of the article. I
20 believe it's page 4.

21 Q. Actually I believe it's page 5.

22 A. Page 5, upper-left-hand corner. Page 2 --
23 and below this table -- thank you. On the right-hand
24 side --

25 Q. Do you want to go back?

1 A. Right-hand side. No -- no, that was correct.

2 Q. See the rest of the table?

3 A. Just below the table on the right-hand side,
4 where it begins with 0.5. picogram per milligram.

5 Okay. So the -- the -- just to lead into that sentence
6 what -- what that says, it says, "The LOD and LOQ
7 values were 0.5 picogram per milligram and one picogram
8 per milligram respectively. In agreement with Society
9 of -- SoHT is Society of Hair Testing consensus for
10 alcohol abstinence assessment, which recently fixed the
11 minimum quantitative performance for such an
12 investigation (LOQ values less than three picogram per
13 milligram.) So to understand what the Society of Hair
14 Testing is talking about here, they're -- they're --
15 they're using three different suggested cut-offs. The
16 low end value of three picogram per milligram is for
17 abstinence as we were -- had just shown. The values
18 produced in this paper produced values between one and
19 two picogram per milligram.

20 Then they use a value of seven picogram per
21 milligram as a -- as a typical cut-off. Now, not all
22 laboratories can go down as low as ExperTox. That's
23 why they recommend using a seven milligram per --
24 seven picogram per milligram cut-off. So to say that
25 someone has a -- a value below seven picogram per

1 milligram does not necessarily mean they're abstinent.
2 We have to go below three picogram per milligram to --
3 to prove abstinence. And then the Hair -- Society of
4 Hair Testing also uses a much higher cut-off of 30,
5 which relates to excessive drinking, they call it
6 moderate to heavy drinking. So the cut-off is very,
7 very important to determine what question you're trying
8 to answer. If the question is abstinence, you need to
9 use the lowest possible cut-off. And I just want to be
10 clear on what -- what the purpose of all these cut-offs
11 were.

12 Q. Okay. And Dr. Taylor, you had initially
13 started to go to Page 5 on the left-hand column. Could
14 I direct your attention there, and what conclusions
15 does the Pirro study reach in terms of what alcohol
16 abstinence programs assessments should use?

17 A. Right. And that -- that was basically based
18 on that -- that sentence that I just read. In -- in
19 order for a laboratory to -- to use a hair test for the
20 purpose of abstinence the -- the -- the value needs to
21 be below three picogram per milligram. And that's
22 exactly what ExperTox did. That -- that cut-off is
23 well-founded in the literature for abstinence.

24 Q. Okay. Katy, can I get you to go two pages
25 over. So you are on page -- page 7. Thank you. There

1 we go, and it's to the left-hand column. Can you just
2 blow that up a little bit? Dr. Taylor, what is your
3 take on the paragraph that starts for the alcohol
4 abstinence assessment?

5 A. Yes. For -- for example, it says, "For the
6 alcohol abstinence assessment our experimental data
7 suggests a revision of the existing cut-off is
8 advisable, that a cut-off as low as one picogram per
9 milligram can reliably be proposed, at least for
10 clinical purpose. Meanwhile, prudently higher values
11 about two picogram per milligram can be maintained for
12 legal and forensic controversies." Exactly what we're
13 doing here. "Until consistent independent results will
14 be collected to support the selection of a cut-off at
15 such a low concentration." And again, that -- that's
16 exactly why ExperTox is using the cut-off that they're
17 using as opposed to the other laboratory which had a
18 much higher cut-off of 20 -- for -- for other hair test
19 results.

20 Q. Okay. Next, I want to shift our attention to
21 Union Exhibit 50, which is the expert report prepared
22 by Mr. Shults. And Katy, if you could take us to Page
23 5, please. Under interpretation results in that second
24 paragraph, Mr. Shults refers to the non-negative ethyl
25 glucuronide test referred to above, which is the May

1 1st EtG test that Mr. Danford had. Is non-negative in
2 this context the same as positive?

3 A. Yes.

4 Q. Okay. And also on page 5, and as well as in
5 his testimony, Mr. Shults made reference to normalizing
6 the results from Mr. Danford's test results with the
7 creatinine level. Do you agree with his opinion that
8 test results should be normalized and do laboratories
9 normally normalized results with creatinine level?

10 A. No. Well, I disagree with his conclusion.
11 Laboratories do not typically normalize EtG results.
12 To explain why normalizing is even relevant at all to
13 drug testing or alcohol, relates really to -- to drugs
14 that stay in the body a long time. The classic example
15 is THC. So the question that's asked, because THC
16 stays in the body for weeks, and in some studies even
17 months, is this new use or old use? That we need to
18 compare a previous point in time to a secondary value
19 to determine if the person smoking marijuana again.
20 And this is exactly what the purpose of normalization
21 is to do is to take out the effect of how hydrated one
22 is whether they're over hydrated or under hydrated or
23 whatever. So we understand what that is. SAMHSA labs
24 do not normalize results. Forensic drug testing
25 laboratories, if they do normalize results and they're

1 used for the purpose of comparing two results. It's
2 not possible to normalize a single result and provide
3 any interpretation. The -- the bottom line for this --
4 this paragraph, the EtG test is positive. Whether you
5 want to call it positive and normalized, it's still
6 positive. There's no -- there's no -- the
7 normalization does not change the fact that it's still
8 positive.

9 Q. Okay. And we'll be coming back to Mr. Shults
10 in a second, but I want to go over to Union Exhibit 57,
11 which is the expert report from Dr. Skipper and go to
12 page 4 where there's a -- a timeline, and there's a
13 table on page 4. I think it's one more, so it should
14 be one more page, please. And I'm focused on the May
15 -- May 1st, '18 statement there. We just blow that up
16 just a hair. But Dr. Skipper also talked about
17 normalizing the results for creatinine. And on this
18 particular -- he makes a similar comment to what Mr.
19 Shults said that in terms of -- if you normalize that
20 you come down to 46 nanograms per milliliter. What's
21 your assessment of that approach?

22 A. Well, there's no way to interpret that. I
23 mean, the -- the laboratory -- there's no laboratory
24 that says a certain normalized EtG result results in a
25 positive. Laboratories just don't do that. So Dr.

1 Skipper took a -- an arbitrary creatinine value, a
2 random creatinine value, and used that for his
3 denominator to -- to -- as the result. So the
4 calculation is purely arbitrary. The laboratory does
5 not do that. It's not customary to do that. The
6 laboratory's procedure and policy say that anything
7 over a 100 nanogram per milliliter is considered
8 positive. So it's still positive. There -- there's no
9 additional interpretation that would make this
10 negative. It's positive to begin with. And you can
11 normalize it all you want, but it's still positive.

12 Q. Okay. Katy, we're going to go back to Dr. --
13 I'm sorry Mr. Shults's Exhibit, Union Exhibit 50 and
14 we'll go back to page 5 of that exhibit. And I want to
15 go down to the bottom one third of that. The sentence
16 starts out the compelling evidence of laboratory error
17 are, and if you can take us -- here we go, yeah, you've
18 got the whole thing, that's great. If you can just
19 maybe blow that up just a hair. Maybe too much, maybe
20 go back. Here we go. Thank you.

21 So Dr. Taylor, what I want to ask you about is
22 these claims of laboratory error that Mr. Shults is
23 testifying to and putting in his report. So first of
24 all, he says, compelling evidence of laboratory errors
25 are, and we we've talked about the differential between

1 those tests, self tests that were done on May 15th and
2 16th versus the PETH on May 9th and I'm not going to go
3 back over that. And he also -- goes down towards the
4 bottom. It says, "I can only speculate what the
5 sources of error are here." By way of background, what
6 are the errors that a laboratory can make?

7 A. Well, a laboratory can -- an error in a
8 laboratory can happen one of three ways. The first
9 error, it would be a chain of custody error. It's not
10 the right sample. The second error could be an
11 analytical procedure. It's not the right technique,
12 it's the wrong procedure. The third way a laboratory
13 can make an error is a clerical error. I found no
14 evidence of error. I don't know what he's talking
15 about. When he wrote this report, he had not or has
16 not been to the laboratory. He had not even reviewed
17 the litigation package at the time he wrote this
18 report. So I -- I don't understand what he's talking
19 about and I -- I disagree with that comment.

20 Q. Okay. To be specific as to what you were
21 just referring to, you were talking about the USDTL
22 test results of May 9th and the positive PETH for Mr.
23 Danford, correct?

24 A. Right.

25 Q. When you looked at the Quest litigation

1 package, which is Company Exhibit 9, did you see any
2 basis for laboratory error by Quest?

3 A. No.

4 Q. Okay. And -- at the beginning of page 5 and
5 it will carry over to page 6, Mr. Shults talks about
6 dehydration. "Dehydration results in increased
7 concentration of metabolites in urine that is produced"
8 and -- and what I really want to do is change our focus
9 now from urine to PEth. "It also causes interference
10 in -- and if you can flip to the top of the next page
11 please, Katy, immunoassay test". Is a PEth test an
12 immunoassay test?

13 A. No. No test -- none of the tests here were
14 immunoassay tests. The EtG tests that was performed,
15 the screen and the confirmation are not immunoassay.
16 The PEth test is not immunoassay. Immunoassay
17 reference is not relevant here.

18 Q. Okay. And then staying on page 6 at the very
19 top there, it goes on to say, "Dehydration can also
20 change the characteristics of blood and can cause
21 interferences in dry blood spot tests and retention
22 time in the mass spectrum chromatography." What was
23 your reaction to that?

24 A. Well, the second part -- for the retention
25 time and mass spectrum, mass spectrometry is absolutely

1 not true. There's no basis for that whatsoever. The
2 retention time is one of the key criteria that we use
3 for identification of a compound. And that is not
4 true. That statement has no basis in fact.

5 Dehydration -- an individual's -- an individual's
6 hematocrit vary -- or male varies between about 42 to
7 52 percent. And as one drinks a lot of water, let's
8 say, your kidneys filter it out so your blood stays
9 very -- very homogeneous and preserves the -- the state
10 of hydration. So if one is -- if one is severely
11 dehydrated, well, the kidneys, what they -- how the
12 body responds is to retain water. So you try to
13 preserve that hematocrit in a -- in a very narrow range
14 for survival.

15 Dehydration, it may cause one or two percent
16 fluctuation in hematocrit. but it's certainly not
17 going be that traumatic. So if we look at Mr.
18 Danford's creatinine from the EtG tests from May the
19 1st, his creatinine was 254, I believe, approximately.
20 The normal range for creatinine is about 20 to 320. So
21 yes, it's a little bit toward the upper part of the
22 normal range, but it's -- it's by no means diagnostic
23 of kidney -- kidney disease or severe dehydration or
24 something like that. Yeah. His urine was a little
25 more concentrated. Yes. That's true, but certainly

1 not abnormal.

2 Q. Okay. And Katy, I'd like you to -- same
3 page. I'd like to go down to Mr. Shults' opinion,
4 starting with another important variable in the PEth
5 DBS test, you can stop right there. So Dr. Taylor, can
6 you see that? The statement having to do with the,
7 what effect does hematocrit have on PEth? And
8 statement that's underlined, "The physical
9 characteristics of DBS sample are also potentially
10 affected by the patient's hemoglobin, hematocrit
11 level." And then there's, down below, also, "The
12 relative amount of plasma in a disk punched from
13 different spots can vary and particularly exaggerate
14 when the hematocrit is extremely high or low." Your
15 reaction analysis as a board-certified toxicologist for
16 those statements?

17 A. Sure. Let's -- let's take -- kind of
18 separate them and let's just talk about the effect of
19 hematocrit. So there's some studies that say there's
20 no effect of hematocrit. In fact, the study that Dr.
21 Skipper referenced, we don't need to show that right
22 now. But the one that he referenced specifically says
23 there's no effect of hematocrit and there's no effect
24 of the -- the spot, the punching of the blood spot.
25 There's no effect. But -- but that particular study

1 had a very high cutoff for PEth. Other studies have
2 said, well, yeah, there's some contribution for
3 hematocrit, it can alter the result a bit. One
4 particular study that I recall said that the change in
5 hematocrit can alter the result by about 10 percent.
6 So if we look at that analytical variability that we
7 were talking about before, the laboratory USDTL says
8 that 10 -- plus or minus 10 percent is incorporated in
9 that plus or minus 30 percent. So that's simply
10 something that's inherent in the blood spot procedure
11 that adds a bit of variability into the result.

12 Other studies show, that again, that the plus or
13 minus percent, may be a, what's called a pre-analytical
14 variable. And that, in fact, may contribute or add to
15 the plus or minus 30 percent. So some other studies
16 says, well maybe the variability in the quantitative
17 result may be plus or minus 40 percent based on
18 individual hematocrit. But all the -- again, all of
19 this is pre analytical variability. So the hematocrit,
20 it may have some effect. Certainly it will. But how
21 much an effect, it's fairly minimal. It's going to be
22 well below anything that would alter this result
23 significantly enough to cause it to be below the
24 cutoff, for sure.

25 So the next statement about the relative amount

1 plasma disk is the -- the underlined statement in the
2 second paragraph. USDTL does not do a single punch.
3 They do three punches and those punches are randomly
4 selected. So the idea of -- of punching out a sample
5 that is far different and -- and unusual from the rest
6 of the blood spot is compensated by the fact that
7 they're taking three different punches and randomly
8 sampling that blood spot. So yeah -- yes, even if
9 there were changes by sampling three different times,
10 you can overcome that -- that variability. So again,
11 that's not -- not really an important factor. So I
12 guess the bottom line is that hematocrit, the maximum
13 affected it could have is plus or minus 10 percent of
14 the result. Which again is not -- not very high, since
15 we're already talking about plus or minus 30 percent in
16 the analytical world.

17 Q. Okay. Next, there was testimony by Mr.
18 Shults, he refers to it in the paragraph below. And
19 Katy, if you could bring us up one more paragraph, the
20 paragraph, this concentration effect. And he talks
21 about the fraud perpetrated by Theranos, and we don't
22 have the transcript of exactly what he said. I mean,
23 my recollection of his testimony was he clearly was
24 alluding to USDTL, maybe not so much Quest in terms of
25 what they're doing with their DBS. And I mean, what --

1 is it --

2 MR. SEHAM: For the record, I -- I'd ask that
3 counsel not -- I'm going to object to the
4 characterization of testimony.

5 Q. We'll let -- Mr. Seham -- or Mr. Arbitrator,
6 I'm sorry, sir. We'll let the record speak for itself.
7 The question was simply is -- and I think, many of us
8 are familiar with the Theranos situation and the
9 documentary that's been done on it and other writings,
10 but is that reference, the Theranos, an appropriate
11 reference to the state of the science on PEth testing?

12 A. No. In fact, this is beyond inappropriate
13 for an expert to say something like that, particularly
14 since he's never visited the laboratory and at this
15 point hadn't even looked at the litigation package.
16 That -- that is completely inappropriate and frankly,
17 I'm shocked that Ted would even go down this road.
18 It's -- it's nonsense.

19 Q. Okay. Mr. Shults also opines, "The PEth DBS
20 test performed here does not meet the fundamental
21 requirements of a forensic test." Your reaction to
22 that?

23 A. It -- it absolutely does. In -- in -- in a
24 forensic test, one of the first things that you have to
25 have is a chain of custody. There's chain of custody

1 of the specimen, there is chain of custody of the
2 aliquots. Is the procedures that are used
3 scientifically defend -- defensible and reliable and
4 accurate. The answer to all of those questions is yes.
5 Is there an SOP? Is the SOP consistent with what the
6 technologist are doing in the laboratory? The answer
7 is yes. Is the techniques and procedures forensically
8 sound? The answer is yes. Has there been validation
9 performed that's in accordance with standard guidelines
10 for forensic testing? The answer is yes. Do all of
11 those taken as a whole indicate this is a sound and
12 appropriate forensic test? The answer is yes.

13 Q. Okay. He also makes several other claims
14 that I want to go through them in a fairly rapid
15 fashion. His opinion on the positive PEth test on May
16 9, 2018 was a false positive; do you agree?

17 A. No, there's -- there's no evidence of that.

18 Q. USDTL is a non-certified laboratory, do you
19 agree?

20 A. Well, they are certified. They're certified
21 by the College of America Pathologists for forensic
22 drug testing. They're also certified by the State of
23 New York. I think perhaps what he's referring to is
24 the SAMHSA certification. As we know, PEth is not an
25 analyte, it's covered in a SAMHSA certified -- as a

1 covered -- as an analyte it's even tested in SAMHSA.
2 And if you look at alcohol for -- as just the breath
3 alcohol, testing is not done in a SAMHSA laboratory,
4 it's a breath test. So to apply or to even say that
5 this is -- is not -- is done in a SAMHSA certified
6 laboratory. Even if it were done in a SAMHSA certified
7 laboratory, as an inspector, I don't look at this stuff
8 because it's not relevant, it's not a SAMHSA test. So
9 that -- that has no bearing whether the laboratory is
10 certified by SAMHSA because it's not covered as an
11 analyte. But I disagree, the laboratory is certified.
12 In fact, they have the highest certification that they
13 could possibly have. The -- the forensic urine drug
14 testing certification is kind of the next level or next
15 tier relative to SAMHSA and also certified by New York
16 State as well.

17 Q. Okay. Another opinion he expressed his that
18 USDTL used the laboratory developed tests for its PEth
19 tests, and that's not FDA approved. Your reaction to
20 that?

21 A. No -- no laboratory developed test is FDA
22 approved. In fact, all chromatographic and mass
23 spectrometry tests are not FDA approved. So if -- if
24 -- if that's the requirement, you would put out --
25 every single forensic laboratory in the United States

1 would be out of business, including every SAMHSA lab
2 because every test that is done by gas chromatography
3 or liquid chromatography mass spectrometry, those are
4 all laboratory developed tests in the SAMHSA laboratory
5 and that would not be allowed. It's simply irrelevant.
6 And -- and FDA approval has to do with testing that's
7 run on automated instruments or automated analyzers,
8 not chromatographic techniques.

9 Q. Okay. Mr. Shults referred to a number of
10 scientific studies in his testimony, and what I wanted
11 to do is go through each of those with you and ask you
12 whether they're relevant to PEth testing and the issues
13 in this case or otherwise gets your -- just get your
14 thoughts on the relevance of what -- and accuracy of
15 what he's pointing to. The first one he talked about
16 was Union Exhibit 1. And I think, Katy for now I think
17 you don't need to refer to these unless the arbitrator
18 or counsel would like to look at specific pages. I
19 think -- I think we can go through these exhibits
20 rather quickly and just have everybody on the screen.
21 And Dr. Taylor, do you have a copy of Union Exhibit 1
22 with you?

23 A. Yes, I do.

24 Q. What was the study about and is it relevant
25 to what we're discussing in this case on the PEth

1 testing?

2 A. Yes. This is -- this is related to
3 therapeutic drug monitoring and clinical toxicology
4 guidelines for dried blood spot based test. And the --
5 the essence of this article is simply saying that you
6 have to have a sound validation procedure in order to
7 implement a dry blood spot test. As I said before, I
8 -- I reviewed the validation data in its entirety at --
9 when I visited USDTL. I looked at the following
10 things. I looked at precision, I looked at accuracy, I
11 looked at linearity, I looked at limit of protection,
12 limit of quantitation. I looked at something called
13 crosstalk. In -- in the laboratory, world crosstalk
14 has to do with an internal standard that you add to a
15 sample. Is there contribution or could you produce a
16 false result by adding internal standard? And the
17 answer was no.

18 I looked at the internal standard, what they used.
19 They used the deuterated internal standard. What that
20 simply means is it's an altered PEth molecule that has
21 the different molecular weight as what is commonly in
22 the body. I looked at the type of filter paper that
23 they were using, the Whatman 903 filter paper as
24 described. I also looked at their interference data
25 that they looked at several drugs to see if there were

1 interference. I also looked at the stability data that
2 they had. The -- the -- there was some -- relating to
3 the -- the sample coming in and was the sample stable
4 or able to be analyzed within a certain period of time?
5 And I also looked at a few other things I'm trying to
6 recall off the top of my head.

7 I looked at ion suppression and matrix effect.
8 That's a big thing that's -- that was talked about in
9 this particular article, that you need to evaluate the
10 matrix, the dried blood spot as -- as a matrix in doing
11 your evaluation and look at the ion -- what's called
12 ion suppression with that. The one thing that the
13 USDTL did not do was evaluate hematocrit. And that's
14 an important thing that was brought out in this
15 particular article. So when I asked Dr. Jones about
16 that, why they didn't do hematocrit, his answer was
17 that they actually used their -- their validation data
18 was based on using blood from 10 different people. So
19 if we look at a variation of 10 different people, they
20 certainly would have varied hematocrits. The only
21 problem is they did not record those hematocrits. So I
22 don't know exactly what the hematocrit was from those
23 10 individuals that they used to spike PEth into the
24 blood samples. But other than that, the validation
25 data at the laboratory is nearly identical, except for

1 a few minor things, what's -- what's in this article.
2 So the -- the laboratory did what they were supposed to
3 do with the forensic toxicology guidelines. And I
4 would argue that their validation is as good as any --
5 any laboratories validation data.

6 Q. Okay. And you mentioned that this study
7 addresses therapeutic monitoring. Is that
8 distinguishable from something that is to determine
9 whether someone's in compliance with an abstinence
10 program?

11 A. Yes. This is looking to see if someone's
12 taking a drug. It's -- it's slightly different.

13 Q. And what impact, if any, does volcanic effect
14 have on therapeutic monitoring as well as on what we're
15 doing with PEth testing?

16 A. Well, the -- the idea of being that the
17 volcano effect of a different concentration in the
18 center of the spot versus the periphery of the spot.
19 So as I said before, the laboratory takes three punches
20 randomly. It could be from the center, it could be
21 from a side or -- or certainly not near the edge. So
22 the decision points on making the -- the blood spot
23 punch is that it cannot touch the periphery where there
24 is no blood. So by taking three samples again, you're
25 minimizing any effect that would be due to a specific

1 concentration of -- of PEth in a narrow area of the
2 center or -- or whatever. So the volcano effect is
3 really minimized by taking three punches.

4 Q. Okay. The next study that Dr. -- sorry. Mr.
5 Shults referred to was Union Exhibit 26, which is the
6 Chang study on the effect of temperature on the
7 formation of the ethanol. Will you look at that study,
8 please?

9 A. Sure. This -- this particular study has to
10 do with blood. It's not related to dried blood spot.
11 And to explain the difference or what -- what the study
12 is even trying to talk about. So if you take blood and
13 you add basically a yeast or -- this Candida Albicans
14 is a yeast. If you add it to the ethanol -- add it to
15 the sample. Of course, we know the way to produce
16 ethanol is by fermentation. If you add some yeast, add
17 some sugar and allow it to ferment you will produce
18 ethanol. So the effect of -- of this study was trying
19 to say that you need to be careful because if you have
20 bacteria or -- or more preferably yeast in the sample,
21 you can produce ethanol. Of course, this has no
22 bearing on dried blood spot because dried blood spot
23 has a preservative or basically a chemical in it that
24 denatures any protein. I think Dr. Jones talked about
25 this, the guanidinium salts, that as soon as that blood

1 spot hits the paper, any enzyme is inactivated, so
2 there's no way to produce PEth by a blood spot that
3 even has this particular yeast in it. Also we might
4 note that if a preservative is included, typically that
5 eliminates any -- any growth of yeast or bacteria. And
6 there's a particular sentence that I would like to
7 point out that's also relevant here. It's on page 1,
8 2, 3, 4.

9 Q. Can you bring up page 4 of Union Exhibit 26,
10 please. Page 4, are you at the top?

11 A. Yes, that's it. And go down to the third
12 paragraph from the bottom. It begins with room
13 temperature. Yes. Right there, room temperature. Can
14 you blow that up just a hair. Yeah. Okay. If you
15 look at that sentence that begins that paragraph, room
16 temperature, so even under all these absurd conditions,
17 adding the yeast into a blood tube, it says, "Room
18 temperature storage of all specimens gave negligible or
19 no ethanol formation until day 5." All right. Even if
20 -- let's just assume, even if there's contamination and
21 there's there's ba-- there's yeast and it's been
22 fermenting, the specimen was analyzed the next day. So
23 the specimen collected on May the 9th was analyzed on
24 May the 10th. So even if that were true, we are well
25 within day 5. The yeast has to have time to reproduce

1 and to grow in order to produce ethanol as -- as you
2 know, from -- from just fermentation. So all this
3 study says is that it's possible, but it has no
4 application to dried blood spot.

5 Q. Okay. Next, I'd like you to look at Union
6 Exhibit 27 that was referred to by Mr. Shults. This is
7 the Viel study of Phosphatidylethanol. And did you
8 have a chance to review this article?

9 A. Yes. The only thing I would like to point
10 out, it's in the abstract, if you could bring up the
11 abstract and the very last sentence of the abstract. I
12 -- I'm not sure what his point of this article was, and
13 this -- to explain what this article even -- even is
14 about, is there was a literature search for -- for PEth
15 that -- just clinical interpretation and so forth, and
16 -- and I think that the last sentence is -- is -- is
17 very telling. It says, "The present analysis
18 demonstrates a good clinical efficiency of PEth for
19 detecting chronic heavy drinking. So this particular
20 article reinforces the fact that PEth is the -- is the
21 best marker for -- for detecting drinking. And that's
22 really all -- all I wanted to say about that one.

23 Q. Okay. Next, let's go to Union Exhibit 52 Mr.
24 Shults referred to.

25 A. Yes. And the -- the appropriate thing to

1 look at is on the second page of this article under
2 conclusions. Yes, that's it exactly. So this -- this
3 particular study used various cutoffs for detecting,
4 you know, I know that's been a -- an issue of what's
5 the cutoff and why do you use the cutoff and what's the
6 implication of the cutoff and so forth. So this
7 particular study, and I'll just read the conclusion, it
8 -- it provides evidence of why Delta is using the
9 cutoff that it currently uses. It says that, "An EtG-I
10 -- is an immunoassay, is an EtG cutoff of a 100
11 nanograms per milliliter is most likely to detect heavy
12 drinking for up to five days and any drinking during
13 the previous two days. If he -- you -- and then the
14 next sentence, "A cutoff of greater than 500 nanograms
15 per milliliter are likely only to detect heavy drinking
16 during the previous day."

17 So this obviously, in order to detect drinking or
18 to have a good screening test, you want to use the
19 lowest cutoff that's available. Now we know EtG has --
20 in urine has the unfortunate issue of hand sanitizer
21 and inadvertent exposure to alcohol, that could
22 certainly cause a positive result. But the idea for a
23 screening test is you want to detect, have the high --
24 the best detection value, and this actually explains
25 why Delta uses the -- the cutoff that it does. Why

1 choose a 100 nanogram per milliliter versus 500
2 nanograms per milliliter? Because obviously it has a
3 longer detection window up to five days versus the 500,
4 which is only likely to detect drinking within a day or
5 two.

6 Q. Okay. The next study I'd like to -- Mr.
7 Shults referred to was Union Exhibit 53 and I believe
8 that's Gruner study; is that correct?

9 A. Yes.

10 Q. And did you have an opportunity to review
11 Union Exhibit 53?

12 A. Yes. This has to do with using immunoassays
13 for virus identification, particularly hepatitis and
14 HIV. This is -- this is irrelevant for two reasons.
15 First of all, no immunoassay was done in this -- in any
16 of the testing, whether it's EtG or PEth so that's
17 irrelevant, and also this is testing for viruses, not
18 PEth, so again, it's just irrelevant.

19 Q. Okay. Next, if you could look at Union
20 Exhibit 54. And tell us did you review this study?

21 A. Yes.

22 Q. Okay. And what, if any, relevance did you
23 see in this study related to the PEth testing issues in
24 this case?

25 A. It's -- it's irrelevant. This talks about

1 glycated hemoglobin or hemoglobin A1C. No relevance to
2 PEth whatsoever. So this -- this has no bearing on
3 anything. It's irrelevant.

4 Q. Okay. Union Exhibit 57, we talked about a
5 little bit earlier. It's the Dr. Skipper expert report
6 and I'd like you to look at page 10 and there's a study
7 referenced in there by Dr. Skipper at the bottom of the
8 page, the Kummer study. Are you familiar with that?

9 A. Yes.

10 Q. And I believe that we have identified the
11 Kummer study as Company Exhibit 34, and can Katy, if
12 you can put up Company 34, please. Dr. Taylor, what I
13 will ask you to do is just -- basically you're familiar
14 with the Kummer study and the reference by Dr. Skipper.
15 What is your assessment?

16 A. Sure. If you look at the abstract, I -- I --
17 I think the abstract on the left-hand side if could
18 blow that up a bit, it -- it has the relevant
19 information that I was -- I was discussing earlier.
20 That's fine right there. So if you look at the fourth
21 sentence from the bottom where it begins, the
22 quantification. So this is relevant to the issue of
23 hematocrit. I discussed earlier that some studies say
24 that there's no issue with hematocrit and this is the
25 exact study that -- that I was referring to. So the

1 statement begins with, "The quantification of PEths in
2 C-DBS, dried blood spot was not significantly
3 influenced by hematocrit, punch location or spot
4 volume." And -- and essentially this negates any issue
5 of hematocrit. The -- the main drawback of the study
6 though, as Dr. Skipper pointed out was that the cutoff
7 was very, very high. But still it again calls into
8 question if there is any effect by hematocrit at all.

9 Q. Okay. The next topic I wanted to go to has
10 to do with some testimony from Dr. Joseph Tordella, and
11 he had a pilot that he was assisting by the name of
12 Matthew Dacier. If we can look at Union Exhibit 37,
13 please. And we're going to look for the results on the
14 other side of the bottom third of the page. So Dr.
15 Tordella pointed out that his deposit that he was
16 assisting had a low EtG result of 24 nanograms per
17 milliliter, and that what he said is that he followed
18 it up with a hair EtG test that actually took place on
19 May the 28, 2020 and that's Union Exhibit 38. If we
20 could just go over to 38 right now. And he was
21 expressing some questions and his testimony will speak
22 for itself, but the test that he did 10 days later
23 after the positive PEth test on hair came back negative
24 using a 20, picogram per milligram cutoff. Is that an
25 appropriate test to do as a follow-up to a low EtG

1 test?

2 A. No. The -- the -- the -- the test that you
3 referred to on the 18th was a PEth test, not -- not
4 EtG, so --

5 Q. I'm sorry. Okay. Thank you.

6 A. Again, we have two issues here. The 28th is
7 a fairly short time for the hair to grow out. It's
8 possible, but we know that someone can drink as much as
9 one to two drinks every day for three months and have
10 results that are below seven picogram per milligram.
11 So this cutoff is not appropriate to monitor
12 abstinence. The ExperTox cutoff is the appropriate
13 cutoff at two picogram per milligrams. Not -- not 20.

14 Q. Is --

15 THE ARBITRATOR: Mr. Kassin, can I suggest that we
16 take a five-minute bio break if it's not going to
17 impact your examination of Dr. Taylor.

18 MR. KASSIN: It would be more than appropriate if
19 we could have 10 minutes. That'd be great.

20 THE ARBITRATOR: All right. 10 minutes. Yeah,
21 we've been at this for two hours, so I think it's time
22 we give people a little bit of a break.

23 THE REPORTER: We are off the record. The time is
24 12:55 p.m.

25 (OFF THE RECORD)

1 THE REPORTER: We are back on the record. The time
2 is 1:05 p.m.

3 THE ARBITRATOR: Thank you. Mr. Kassin, proceed.

4 BY MR. KASSIN:

5 Q. Thank you, sir. Dr. Howard Taylor, I want to
6 go back to Dr. Tordella for a second and his Union
7 Exhibit 37, which is the PEth test, where he had a
8 value of 24 nanograms. And as I understood his concern
9 and the transcript will speak for itself. If he wanted
10 to do further testing instead of hair EtG test, what
11 would you have recommended to him?

12 A. I would've done an additional PEth test.

13 Q. In a moment I want to ask you for some
14 conclusions, but before we get there, based on the
15 research that you've done and your expertise as a
16 board-certified forensic toxicologist, is there a
17 scientific study, an article that you would recommend
18 and speak to that gives kind of the current status or
19 the science of PEth testing?

20 A. Yes. There's a very nice article by
21 Ulwelling. It's a couple of years old that really
22 gives a very good overview of the science and state of
23 the art of PEth testing.

24 Q. We've put that Ulwelling exhibit into the
25 record earlier in this case, it's Company Exhibit 28.

1 Could you refer to that? And Katy, could you please
2 bring that up for us? It's Company 28. And you may
3 need to blow that up just a little bit. Dr. Taylor, I
4 want to ask you, could you point to the key sections of
5 that you think that the arbitrator and board members
6 should take into consideration?

7 A. Yes. If you turn to the third page, upper
8 left-hand corner, little bit larger. Upper-left-hand
9 corner is what we're looking for, second sentence.
10 That's good enough right there. So if you look at the
11 second sentence where it says to protect. So the
12 sentence reads, "To protect against false positives
13 however, PEth is currently considered to be an
14 indicator of purposeful alcohol ingestion at values
15 greater than 20 nanogram per milliliter." There's been
16 discussion of 20, it's not standard, it's a laboratory
17 developed test and just all these issues relating to
18 the cutoff. And this explains exactly why the cutoff
19 exists, why it is. So many of the laboratory
20 toxicologists around the country have gotten together
21 and used 20 -- consensus basically at 20 nanogram per
22 milliliter is the appropriate cutoff. And the reason
23 for that is, we -- we don't want to have the cutoff too
24 low that we identify drinkers -- I'm sorry, non
25 drinkers at very low concentrations. But we want to

1 have a cutoff sufficiently high that we can in fact
2 reproduce that result if a value is greater than 20
3 nanogram per milliliter. That's exactly why the cutoff
4 exists as it -- as it does.

5 Q. Okay.

6 A. The next one is on the page upper left-hand
7 corner 1638. It's the one, two, three, four, fifth
8 page of the article. And it's the second paragraph --
9 second area that begins with legal acceptance of PEth.
10 Yes. Right there. That's fine, right there. Okay.

11 So a question has become that PEth is non-standard, is
12 not really accepted, is not used in judicial settings.
13 And the -- the -- actually that's not correct. It is
14 used -- widely used in administrative hearings across
15 the US and a reference to that it's -- it's commonly
16 used in situations such as this where you're trying to
17 establish drinking or identify if abstinence is
18 actually correct.

19 The next thing I want to talk about is the second
20 paragraph under there. Just scroll it up about three
21 lines. Right there. So it begins with the paragraph
22 on the left-hand side, second paragraph, a positive
23 PEth "A positive PEth finding greater than 20 nanogram
24 per milliliter in the lower range, that is 20-80,
25 indicates that the person has very likely consumed at

1 least 2.5 or more standard drinks for several days
2 prior to the test or has been binged rather heavily."
3 And the next sentence is key. It says, "While a low
4 PEth value does not reveal the pattern of consumption,
5 the unassailable conclusion is that the employee has
6 consumed alcohol within the past month or so." The next
7 thing I want to point out is if you could reduce the
8 size of that and the lower right-hand corner of that
9 page. That's probably good enough. Right there.
10 Scroll down just a bit. On the right-hand side, it
11 talks about interpreted guidelines. If you can scroll
12 that down just a bit, please.

13 Q. Scroll up.

14 A. Down. Scroll to -- to -- scroll -- scroll
15 up. I'm sorry. My apologies. Right -- right there.
16 On the right-hand side where it has the different PEth,
17 less than 20, 20-200. Could you scroll up or down just
18 a bit more? My apology. There you go. One -- a
19 little bit more, please. Right there is fine. So if
20 you look at the different interpretation from this
21 document, PEth less than 20, it says light or no
22 consumption or abstinence. Values between 20 and 200,
23 significant consumption. And then it identifies what
24 the -- what that means. Moderate level of drinking
25 averaging between two to four drinks a day for several

1 days a week. And then if you look at the last
2 categorization, greater than 200 nanograms per
3 milliliter, heavy consumption. And the very last
4 sentence of that paragraph is telling. It says, "The
5 literature is very consistent in concluding that PEth
6 is a highly sensitive and specific biomarker for
7 alcohol consumption." To understand what the difference
8 is between sensitivity and specificity, so sensitivity
9 is when the test is positive, the individual has been
10 drinking. Specificity is when the individual has not
11 been drinking, the test is negative. So this test,
12 PEth is -- is very good and that it has both high
13 sensitivity and specificity.

14 Q. Okay. Before we leave this particular study,
15 Dr. Taylor, I'd like to refer you back to page 3 on the
16 right column towards the bottom. And this has
17 something to do that you testified about earlier when
18 you were speaking to half-life.

19 A. Yes.

20 Q. Can -- Katy, it's the paragraph that begins,
21 PEth production begins. You may have to go a little
22 bit to the left, to get it in there. It's on the left
23 column. There we go.

24 A. Right, right there is fine.

25 Q. That's fine. This has to do with the

1 half-life discussion and --

2 A. Right. That's good right there. Yeah.

3 Q. -- you explained the point about heavy
4 drinkers or alcoholics and what their half-life is
5 related to?

6 A. Right. Exactly. So if you look about -- on
7 the left-hand side where the paragraph begins, PEth
8 production and about halfway in the middle of that
9 paragraph. Begins with the -- in the middle of that
10 page, "The shorter half-lives tended to be found in
11 studies involving alcoholics or heavy drinkers." In
12 other words, when -- we know that from the Dr. Marty
13 Javor's study, that the range of half-life is between 1
14 and 13 days with the average being 4.6. But that lower
15 end of that half-life range is consistent with
16 alcoholics. So this -- this statement is simply saying
17 that the shorter half-lives are found in alcoholics.
18 And that certainly supports our one to two day
19 half-life that we've found for Mr. Danford.

20 Q. Okay. You had pointed to the end of the
21 article about the literature being consistent on the
22 value of using PEth testing. I'd like you to look at
23 -- I'm sorry, Dr. Skipper's article which I believe is
24 Company Exhibit 18. Are you familiar with that study?

25 A. Yes.

1 Q. What were some of the key points that Dr.
2 Skipper made in his study regarding the value of using
3 PEth testing?

4 A. Right. The -- the -- the purpose of this
5 article was to evaluate individuals that had a low
6 urine EtG concentration because as -- as we know, there
7 are other things other than drinking alcohol that can
8 cause a low EtG result. So the idea is to use the PEth
9 test as a confirmatory test, and that -- that's
10 generally how that is done. In fact, in our practice,
11 what we do is exactly what Dr. Skipper recommends, is
12 the -- the EtG is a -- is a screening test. We don't
13 take action based purely on EtG. We follow it up with
14 a PEth test, and that's what we would recommend.

15 Q. Okay. So to reach a conclusion in your
16 testimony, you covered a good bit of ground with us
17 this morning and early afternoon. But based on the
18 evidence of the case that you reviewed, including the
19 May 9th, 2018 PEth test results for Mr. Danford as well
20 as his earlier EtG result from May 1st, 2018, what
21 conclusion do you reach regarding whether he has been
22 drinking and in violating his abstinence requirement?

23 A. Yes. It's my opinion that he was drinking
24 prior to the May the 9th PEth test. A two-week
25 interval prior to that is the most likely a time. If

1 you notice in this case, it's quite unusual, in that we
2 have three positive tests. We have a positive EtG test
3 from May the 1st, we have a positive PEth test from May
4 the 9th, and we also have a positive hair test from
5 June the 20th. All three of those point to use in that
6 two-week period preceding the positive PEth test. At
7 least they're all consistent. Those all are consistent
8 with drinking during that two-week period.

9 MR. KASSIN: Thank you. Arbitrator Burdette, if I
10 could have 30 seconds, I believe that I'm complete with
11 my direct examination.

12 THE ARBITRATOR: Okay. We'll go off the record
13 while you check.

14 THE REPORTER: We're now off the record. The time
15 is 1:17 p.m.

16 (OFF THE RECORD)

17 MR. KASSIN: Yes, sir. At this point, the company
18 has completed the direct examination of Dr. Taylor.

19 THE ARBITRATOR: Okay. Mr. Seham?

20 MR. SEHAM: I'm ready to start.

21 THE ARBITRATOR: Okay.

22 MR. KASSIN: We request a lunch break if you don't
23 mind.

24 MR. SEHAM: I don't object to a lunch break
25 provided that I can have a break after I do my initial

1 examination.

2 THE ARBITRATOR: Okay. Absolutely.

3 MR. SEHAM: Yeah. Okay.

4 THE ARBITRATOR: Absolutely can. Mr. Kassin, how
5 much time do you need?

6 MR. KASSIN: This is up to Mr. Seham at this point.
7 I mean, I would suggest our usual hour or 45 minutes or
8 so.

9 THE ARBITRATOR: Okay.

10 MR. KASSIN: I suggest an hour. Mr. Seham, what
11 would you suggest, sir?

12 MR. SEHAM: I'm not objecting provided I can have a
13 subsequent break, though. Yeah, that's fine.

14 THE ARBITRATOR: Absolutely. Okay. So we're going
15 to go off the record for lunch at 1:19 Eastern time,
16 and we'll be back at 2:19.

17 MR. KASSIN: Thank you.

18 THE ARBITRATOR: Thank you.

19 (OFF THE RECORD)

20 THE ARBITRATOR: Mr. Seham, the floor is yours.

21 CROSS EXAMINATION

22 BY MR. SEHAM:

23 Q. Thank you very much. Dr. Taylor, looking at
24 your resume, I'm going to focus on the 20-year period,
25 approximately between 1995 and 2014. What were you

1 doing during that period, that 20 year period of time?

2 A. I was -- I found a company called National
3 Toxicology Specialists. I'm the president and founder
4 of that company.

5 Q. Did that company operate a laboratory?

6 A. No.

7 Q. During that 20-year period, what direct
8 employment did you have with a forensic or clinical
9 laboratory?

10 A. I was a SAMHSA inspector. I performed SAMHSA
11 inspections during that time. I did not operate a
12 laboratory.

13 Q. Okay. My question was, and it will go faster
14 if you listen to my questions and answer what I ask
15 you. What I asked you was what direct employment did
16 you have with a clinical or forensic laboratory during
17 that period of time?

18 A. None.

19 Q. Is the answer --

20 THE ARBITRATOR: Repeat the answer, please.

21 A. None.

22 Q. Okay. Thank you. Now, please identify the
23 published peer-reviewed controlled studies in which you
24 have participated related to EtS.

25 A. You broke up just a hair. Did you say EtG?

1 Q. No, I said EtS. I asked you to identify the
2 published peer-reviewed controlled studies in which you
3 have participated related to EtS?

4 A. None.

5 Q. Could you please identify the published
6 peer-reviewed controlled studies in which you have
7 participated related to EtG?

8 A. None.

9 Q. I'm sorry, the answer is none?

10 A. Correct.

11 Q. Okay. You're breaking up a little for me
12 too, but we will all bear with it. Could you please
13 identify the published peer-reviewed controlled --
14 controlled studies in which you have participated
15 related to PEth testing?

16 A. None.

17 Q. Okay. Does your laboratory of what you're
18 the director now conduct PEth testing?

19 A. No.

20 Q. Are you familiar with the term abstainer, as
21 that term is used in the context of -- excuse me, in
22 the context of PEth, EtG, or EtS testing for alcohol --
23 alcohol abstinence?

24 A. Yes.

25 Q. Okay. So what does -- what's your

1 understanding of the term abstainer?

2 A. No alcohol.

3 Q. What's your understanding -- in the same
4 context, what's your -- and actually let me back up.
5 Abstainer means no alcohol over what period of time?

6 A. During the period of time you say you are --
7 you are abstained.

8 Q. Okay. So in the same context, EtS, EtG, and
9 PEth testing for abstinence, what does the term
10 teetotaler mean to your understanding?

11 A. No alcohol.

12 Q. Well, how is that distinguished from an
13 abstainer?

14 A. An abstainer is one that has previously drunk
15 alcohol, and a teetotaler is someone that does not
16 drink alcohol. For example, my wife is a teetotaler,
17 she does not drink alcohol, she is not under any
18 program. So someone may be under an aftercare
19 monitoring program at which they must not drink
20 alcohol, but yet they have in the past.

21 Q. Okay. A teetotaler is someone who has
22 historically not drunk alcohol?

23 A. Yes.

24 Q. An abstainer is someone who is just
25 abstaining for a given period of time; is that correct?

1 A. Okay.

2 Q. Now, you reviewed the litigation package for
3 USDTL with respect to the Danford PEth test, correct --

4 A. Yes.

5 Q. Let me finish the question, for the
6 collection of May 9th, 2018, correct?

7 A. Yes.

8 Q. The initial test -- what was the reading of
9 the initial test?

10 A. 69 nanogram per milliliter.

11 Q. The reading for the second test was what?

12 A. 98 nanogram per milliliter.

13 Q. Were the same instruments being used to test
14 both -- on both those occasions, for the initial test
15 and the second test?

16 A. I don't have evidence. I'll have to look at
17 that. I think that is true, but since I had to move
18 rooms, I don't have the -- the -- the documents in
19 front of me.

20 Q. Okay. Well, the same -- the same type -- you
21 don't know whether it was the same type of instrument?

22 A. It was the same type. I don't know if it
23 were the identical instruments.

24 Q. Okay. Is there an assay or is the same --
25 was the same chemical methodology used for both tests?

1 A. Yes.

2 Q. The same controls were used for same -- for
3 -- for both of those tests, correct?

4 A. Yes.

5 Q. In terms of being situated at a low, medium,
6 and high level?

7 A. Yes.

8 Q. Okay.

9 MR. KASSIN: Mr. Seham, we're going to move those
10 exhibit books over to where he is, so he could have
11 them in front of him for your questions.

12 Q. And when you first got the results and saw
13 the differentiation between the initial test, the 69
14 and the second test of 98, that did raise a concern for
15 you, correct?

16 A. Yes.

17 Q. And why did it raise a concern for you?

18 A. Simply whenever you see results that are not
19 identical, you ask a question, why -- why are they not
20 the same number? And I wanted to understand the
21 precision or reproducibility of the assay.

22 Q. Well, I mean, it's very common that there
23 would be a slight variation of 5 to 10 percent between
24 two test results the same day on the same sample,
25 correct?

1 A. Yes. Sometimes screening uses a different
2 procedure. For example, they may use a one-point
3 calibration and the confirmation may use a multi-point
4 calibration.

5 Q. Did that occur in this instance, the
6 differences in calibration?

7 A. No, they did not.

8 Q. Okay. What's the standard variation at your
9 laboratory when the same sample is tested twice with
10 the same type of instrument using the same assay?
11 What's the standard variation?

12 A. Plus or minus 30 percent.

13 Q. Plus or minus 30 percent at your laboratory;
14 is that correct?

15 A. I couldn't hear the end of that question.
16 Please repeat.

17 Q. The question was, you're saying at your
18 laboratory, when you test a sample of the same sample
19 twice using the same methodology on the same
20 instrument, what's the average variation in results in
21 terms of percentage?

22 A. The accepted range is plus or minus 30
23 percent.

24 Q. Okay. And who determines that plus or minus
25 30 percent?

1 A. The laboratory director.

2 Q. Sir, are you saying at your laboratory, for
3 example, at your laboratory, have you ever tested the
4 same sample twice using gas chromatography mass
5 spectrometry?

6 A. I'm sorry, you're breaking up.

7 Q. At your laboratory, have you ever tested the
8 same sample twice using gas chromatography mass
9 spectrometry?

10 A. No. We use liquid chromatography mass
11 spectrometry.

12 Q. Okay. Have you ever used that -- using that
13 methodology, have you ever tested the same sample
14 twice?

15 A. Occasionally, sometimes we do.

16 Q. And what's the variation that you've
17 experienced between your initial test and your second
18 test of the same specimen using the same methodology?

19 A. I'm not sure I've ever calculated it, but it
20 certainly is within plus or minus 30 percent.

21 Q. And you would consider 30 percent acceptable
22 at your laboratory?

23 A. Yeah. Yes. It's -- it's a clinical lab.
24 The differentiation -- we use a little wider range in a
25 forensic laboratory, but it's a clinical laboratory.

1 Q. Okay. What would be the range at a forensic
2 laboratory?

3 A. Typically, plus or minus 20 percent.

4 Q. And is there any variation on that
5 coefficient with respect to testing for alcohol?

6 A. It depends on the matrix. Urine, blood
7 depends.

8 Q. Okay. With respect to blood --

9 A. To test alcohol --

10 Q. -- what would be the -- pardon?

11 A. I -- I want to make sure we're clear. To
12 test actually alcohol, not PEth or some metabolite?

13 Q. Also testing for alcohol?

14 A. Oh, the -- the coefficient of variation is
15 much lower. It's -- it's probably plus or minus 10.
16 10 percent in terms of --

17 Q. It's about 10 percent, correct?

18 A. Yes. It's -- it's very low because that
19 particular assay is -- is a different -- different type
20 analysis.

21 Q. And you say it's up to the laboratory
22 director to determine what the tolerable deviation is,
23 the coefficient deviation is from test to test?

24 A. Yes. That's determined in the validation
25 data. And from that data the laboratory director makes

1 a call as to what is acceptable.

2 Q. And it was Joseph Jones told you that he had
3 determined that 30 percent was acceptable?

4 A. Yes. Plus or minus 30 percent.

5 Q. And he provided you the validation studies on
6 which he relied?

7 A. Yes.

8 Q. Okay. And what did those validation studies
9 conclude as the causes of the 30 percent deviation or
10 up to 30 percent deviation?

11 A. Well, there was no cause. That's simply the
12 procedure and what the variation showed. The cause was
13 not -- was not discussed.

14 Q. Well, before they conduct this testing, they
15 actually put in a blind sample as part of their
16 pre-testing calibration process, correct?

17 A. I'm not sure if USDTL does that or not. I
18 don't know if they do a blind sample.

19 Q. Do you recall doing any review of blind
20 samples that USDTL was using for internal control and
21 analysis?

22 A. I don't recall. They use internal quality
23 control. In other words, known or open controls, but I
24 don't know if there was a blind. I -- I can't recall.

25 Q. Okay. Do you know whether there were any

1 outside agencies monitoring USDTL with a third-party
2 blind sample program?

3 A. No. Proficiency program, no.

4 Q. No. Okay.

5 A. With respect to DBS, no.

6 Q. Okay. When did you -- you testified on
7 direct about when you were consulted first by Delta
8 Airlines concerning this case. Can you recall when
9 that was when you were first consulted?

10 A. Yes. It was June 28th, 2018.

11 Q. And was that a telephone call or was that a
12 meeting face-to-face? How did that transpire?

13 A. A telephone call.

14 Q. And how long did that telephone call take to
15 last?

16 A. I don't recall. I would -- I would estimate
17 10 to 15 minutes.

18 Q. Okay. And that was with Mr. Puckett?

19 A. Yes.

20 Q. Who else was on the phone?

21 A. Only him in the first call.

22 Q. Okay. And then there was a follow-up call
23 sometime after that?

24 A. Yes.

25 Q. And when did that happen?

1 A. It was a week or two after that. I don't
2 recall the exact date.

3 Q. How long did that call go?

4 A. Again, this is an estimate, maybe -- maybe 15
5 or 20 minutes.

6 Q. And that was just with Mr. Puckett or was
7 anyone else involved?

8 A. No. There were other individuals, two or
9 three additional individuals from Delta Flight Ops
10 Management. I don't recall their names.

11 Q. Well, did you ever speak to Captain Graham?

12 A. I may have. I don't know. I don't -- I
13 don't -- I don't know. Again, the names were not
14 important to me.

15 Q. Okay. So you had a call on June 28th of 10
16 to 15 minutes, you had a call -- you had a call a week
17 or two later of 15 to 20 minutes. And when was your
18 next interface with Delta representatives?

19 A. I don't know. I -- I would have to look at
20 my -- my files.

21 Q. Was that weeks later or months later?

22 A. I don't recall.

23 Q. Did they ever ask you for a written opinion
24 as to what your position was with respect to the
25 reliability of any of the tests involved in this case?

1 A. No.

2 Q. But you gave them your -- you gave them your
3 opinion as to the reliability of the tests in this
4 case, correct?

5 A. Yes.

6 Q. And when did you give them your opinion?

7 A. I couldn't hear you. You're breaking up.

8 Q. When did you give them your opinion in terms
9 of the reliability of the tests in this case?

10 A. Well, I guess there are two issues here. One
11 is the reliability of the litigation package, and then
12 second was the visit to USDTL in March of this year.
13 So in the first instance relying with that the two --
14 one to two weeks after that July 28th initial call, I
15 gave them my opinion that the litigation package was
16 sound and appropriate.

17 Q. Okay. And then it was March 2020 when you
18 actually went to USDTL?

19 A. Yes.

20 Q. Okay. I imagine you took notes as you went
21 through your inspection -- well, of your review of
22 their practices?

23 A. I'm sorry, you're breaking up again. I could
24 not hear you. Please repeat.

25 Q. Let me -- I kind of changed my question

1 midstream. Did you take notes, written notes as you
2 went through your review of USDTL in March of 2020?

3 A. I think I took one page of notes perhaps,
4 maybe one or two.

5 Q. And you never provided a written report to
6 Delta after March of 2020?

7 A. Correct.

8 Q. Do you know how many laboratories conduct
9 PEth testing for forensic purposes?

10 A. They're a handful. There is LabCorp, ARUP.

11 Q. I'm sorry, LabCorp. What was the second one?

12 A. The second one is A-R-U-P out of Utah.
13 Marty Javor's lab out in San Antonio and USDTL. Those
14 come to mind.

15 Q. And of those four, would it be just San
16 Antonio and USDTL that are using DBS or dried blood
17 test approach?

18 A. Yes, correct. Yes, correct.

19 Q. Okay. Now, you relied or you referenced
20 Company Exhibit 28. I don't think we have to bring it
21 up right now, but an article by William Ulwelling,
22 U-L-W-E-L-L-I-N-G, as a reliable source in terms of
23 PEth testing information?

24 A. Yes.

25 Q. Okay. But that was not -- that article does

1 not reflect an independent study, correct? In other
2 words, or indirect controlled -- excuse me, strike all
3 that. That article, it does not consist of an
4 independent controlled study, correct?

5 A. Right. It's a review article, correct.

6 Q. It's a review of other articles or other
7 studies?

8 A. I'm sorry, I lost -- can you please repeat.

9 Q. I think we're agreeing, but it's a survey of
10 other studies, correct?

11 A. Yes.

12 Q. Now, you said you reviewed -- let me back up
13 so we have a comprehensible record. What is an SOP?

14 A. Standard Operating Procedures.

15 Q. Does every laboratory -- is every laboratory
16 required to have one?

17 A. Yes.

18 Q. I think you referred to before the clinical
19 testing versus forensic testing. Could you draw a
20 distinction between the two or define for us your
21 understanding of what those two terms mean?

22 A. I'm sorry, again. I did not -- I heard the
23 last part, but not the first part.

24 Q. Clinical and forensic. What's the difference
25 in terms of laboratory testing?

1 A. Sure. A forensic laboratory is for legal
2 proceedings. A clinical laboratory is for diagnostic
3 testing, diagnostic measurements.

4 Q. Diagnostic meaning to provide people with
5 healthcare?

6 A. Yes.

7 Q. What areas does an SOP address?

8 A. It addresses all of the methodology. For
9 example, receipt of sample is typically the first
10 portion of an SOP. Accessioning receipt, chain of
11 custody procedures, quality control procedures, the
12 analytical testing methods, how it's done, how it's
13 performed, how it's interpreted. It also addresses
14 quality control. I think I mentioned that. And it
15 also involves, how to determine if a test is positive,
16 the interpretation of the results. What constitutes --
17 what criteria is for a positive result.

18 Q. You used a term that we might not all be
19 familiar with, accessioning. What does that mean?

20 A. Receipt and processing of samples and
21 aliquots.

22 Q. What is involved in the receipt portion of
23 the accessioning? That you mean the receipt from the
24 collection facility?

25 A. Yes. Typically by a courier or FedEx.

1 Samples are received, they're opened to look to make
2 sure there's no -- there's no tampering. It's all
3 intact. That the specimen identification number on the
4 specimen matches the chain of custody or requisition
5 form. The chain of custody is inspected for
6 completeness, for accuracy to make sure that there are
7 no blank spaces, no inappropriate spaces. Also
8 reviewed are what testing is required and what comments
9 may be made by the collector.

10 Q. Is the laboratory allowed to deviate from its
11 SOP?

12 A. No.

13 Q. If it does deviate from its SOP with respect
14 to a particular test, what is done with that test?

15 A. Again, I heard the last part, but not the
16 first part. My apologies.

17 Q. If a laboratory does -- if it's discovered,
18 let's make this personal. If you discovered that a
19 sample has not been processed with respect to
20 accessioning and receipt in accordance with your
21 laboratory's SOP, what is done with that test result or
22 what is done with that test?

23 A. It depends. There are two kinds of errors or
24 two kinds of issues. One are correctable issues and
25 others are fatal flaws. For example, if a date is left

1 off or a signature is left off, that may be something
2 that is correctable. If the chain of custody number on
3 the specimen does not match the chain of custody on the
4 receipt, that would be a fatal flaw or if there's
5 insufficient urine or insufficient sample, that would
6 be a fatal flaw. So it depends on the nature of the
7 issue as to what disposition would -- would occur with
8 that.

9 Q. To give you a specific example, what if the
10 packaging arrived in a form that's not in compliance
11 with the SOP? For example, a torn seal.

12 A. That would depend. If the SOP says that a
13 torn seal is a fatal flaw, the sample would be rejected
14 and not tested.

15 Q. You recall what the USDTL SOP provided in
16 terms of receipt and accessioning?

17 A. I cannot. I don't remember.

18 Q. Now, you determined -- it sounded like you
19 made a dispositive determination with respect to Mr.
20 Danford, that his sample would have a one or two day
21 half-life. Did you make that determination?

22 A. Yes. And I heard about a third of what you
23 said. I think it had to do with half-life. His
24 half-life.

25 MR. SEHAM: Yeah. You know, I'm going to -- I'm

1 using my phone because that's what I was told to do at
2 the storage. I'm wondering if I might experiment that
3 with the patience of the arbitrator. If I might
4 experiment going back to the regular Zoom approach.
5 Well, let me just do that. I'm going to go on mute.

6 MR. KASSIN: Mr. Seham, I don't know that it's your
7 problem. It might be the WIFI bandwidth where Dr.
8 Taylor is. Would it be okay with the arbitrator if we
9 took a short break and we'll have Dr. Taylor dial in
10 just like Mr. Seham is. Because Mr. Seham, we're
11 hearing you loud and clear without any --

12 MR. SEHAM: Okay.

13 THE ARBITRATOR: Okay. Let's take a five-minute
14 break off the record, Damien.

15 THE REPORTER: Off the record. The time is 3:04
16 p.m.

17 (OFF THE RECORD)

18 THE REPORTER: We are back on the record. The time
19 is 3:10 p.m.

20 BY MR. SEHAM:

21 Q. Okay. So to continue, Dr. Taylor, my
22 understanding of your testimony on direct was that you
23 made a definitive determination that Mr. Danfords'
24 half-life for PEth is between one and two days. Is
25 that correct, you made that determination?

1 A. I said between one and three and more likely
2 between one and two.

3 Q. Okay, and that's interesting. You said
4 between one and three. If we can bring up Company
5 Exhibit 31. Now, on this first page, you did half life
6 calculations based on a starting point of 98, correct?

7 A. Yes.

8 Q. And you just did one and two days. Why did
9 you not do a calculation for three days? Is that
10 because the result would be something that Delta would
11 not want to see?

12 A. Absolutely not. Because the May 15th hair
13 test was negative. And 12 -- the number 12, that clear
14 -- clearly shows that it's below 20.

15 Q. Okay. And then the second page -- if you can
16 move to the second page, you added the -- the third day
17 and -- and your explanation would be because of the
18 hair test, that you added the third day?

19 A. No, not the hair test because the 69 -- it
20 just -- it just shows using the two different values.
21 If you picked 69, what would the calculation looked
22 like, if you pick 98, what would it look like. Really
23 the -- the 69 is just for illustration.

24 Q. And so why did you not include that
25 illustration for the -- for the first page -- for the

1 98?

2 A. Well, I can certainly do the calculation
3 right now if you'd like.

4 Q. No, no. I'm not asking you to do that. I'm
5 asking why -- why did you omit that in the first page?

6 A. Because at -- at two -- at two days it was
7 below -- it showed that it was below 20.

8 Q. Mr. -- excuse me, Dr. Taylor. We -- we can
9 take this down so because I can't see Dr. Taylor with
10 it up. What controlled studies that have been peer
11 reviewed that you can you identify that analyze the
12 half life of PEth?

13 A. The -- the best is Marty Javor's article
14 that's already in evidence.

15 Q. Okay. Can you identify any others?

16 A. Yes. There -- there are many.

17 Q. There are many. I'm not asking you -- can
18 you identify any others?

19 A. Yes. If I have access to my notes and my
20 computer.

21 Q. Okay. I'm asking you right now as you sit
22 here today in this moment, can you identify any other?

23 A. Not off the top of my head, not by memory. I
24 would have to go back to my file.

25 Q. Very good. So with the -- with respect to

1 Javor's -- the Javor's publication, what is -- what is
2 the conclusion that you recall from Javor's?

3 A. The average half life was 4.6 days with a
4 standard deviation of 3.5. The range of values is from
5 one to 13 days.

6 Q. And how many -- how many participants in that
7 study?

8 A. I -- I would have to look at that paper
9 again.

10 Q. Would you know whether it was hundreds or a
11 couple of dozen?

12 A. Again, I would have to look at the paper.

13 Q. Okay. Well, you identified I think one
14 factor with respect to what could impact half life, as
15 I recall. My -- my recollection is the one factor you
16 identified is a history of drinking or past drinking.
17 Is that -- is that a factor --

18 A. Yes.

19 Q. What other factors impact?

20 A. Well, we -- we know that alcoholics have a
21 shorter half life than do social drinkers. Many --
22 many of the studies involving half life were with
23 social drinkers and they demonstrated value much --
24 much -- much greater.

25 Q. Yeah, sir, that was not my question. I said

1 -- my question was, aside from the level of alcohol
2 consumption, what other factors are you aware of in
3 published studies that impact on the duration of half
4 life?

5 A. That's the most prominent one. I can't
6 recall the others.

7 Q. Okay. Now, what you -- did you determine
8 that Mr. Danford, is a -- is an alcoholic?

9 A. No.

10 Q. Did you determine that he was a heavy
11 drinker?

12 A. No.

13 Q. In what proximity to the test does the
14 drinking have to occur in order for it to impact on the
15 half life?

16 A. That's a good question. Typically, we -- we
17 talk about tolerance. Tolerance is developed or lost
18 within a couple of weeks. So I cannot answer your
19 question directly. I -- I -- I don't know the answer.
20 But typically we -- when we talk about influence on
21 elimination rate or tolerance, we -- we typically talk
22 about a two-week period.

23 Q. Well, do you know of any published study that
24 addressed that in the context of PEth testing, the
25 proximity of the alcohol?

1 A. I do not. I--I do not.

2 Q. On what -- you concluded that -- you
3 concluded that Mr. Danford had a shorter half life or
4 had a half life at -- at the shorter end of the
5 spectrum identified by Javor's and others because of
6 your conclusion that Mr. Danford was drinking; is that
7 correct?

8 A. No. I -- I evaluated the data and showed,
9 based on the test results that I had evidence that I
10 had, his -- his half-life would be between one and two
11 days. I -- I -- I do not have the actual litigation
12 package or -- or raw data from the May the 15th test.
13 So I don't actually know that number. I just -- I
14 simply know it's below 20. That's all I know. So I
15 estimated -- so I estimated the range of half life
16 based on the data that I had.

17 Q. What data did you have?

18 A. I had a May the 9th PEth test and May the
19 15th PEth test.

20 Q. And that's the date on which you based your
21 determination of Mr. Danford's half life?

22 A. Correct.

23 Q. So your determination -- your determination
24 of Mr. Danford's half life was based on your assumption
25 that the May 9th test was accurate, correct?

1 A. Yes.

2 Q. Okay. Mr. -- excuse me, Dr. Taylor. If you
3 could -- we can bring up Company Exhibit 20. Okay.
4 All right. So if we can scroll down a little bit
5 further. I do -- actually -- actually stay there --
6 stay there for now. Go back to where you were. Do you
7 recognize this -- this document as being a LabCorp PEth
8 test result, correct?

9 A. Yes.

10 Q. And this was from Michael Danford?

11 A. Yes.

12 Q. And the specimen was collected on May 15th,
13 2018, correct?

14 A. Yes.

15 Q. Okay. And LabCorp as distinguished from
16 USDTL, uses venous blood or -- or whole blood for
17 testing, correct?

18 A. Yeah.

19 Q. Okay. And if you could -- if you now scroll
20 down, please. It -- it says here after -- it
21 references the detection limit, 20 nanograms per
22 milliliter. It says, "PEth levels in excess of 20
23 nanograms per milliliter are considered evidence of
24 moderate to heavy ethanol consumption. However,
25 alternate explanations should be explored following any

1 positive finding. Please note that while PEth is
2 considered relatively insensitive to incidental ethanol
3 exposures, the possibility remains that an individual
4 elevated PEth level may result from incidental or
5 unintentional ethanol exposure." So do you -- do you
6 disagree, Dr. Taylor with LabCorp's representation here
7 that alternative explanations should be explored
8 following any positive finding with PEth?

9 A. I -- I don't disagree. I do disagree that
10 there is any data to support that it's -- that
11 incidental ethanol exposure can cause a positive PEth
12 test. There's nothing to support that statement.

13 Q. But you don't disagree with the statement
14 that alternative explanations should be explored
15 following any positive findings?

16 A. Yes, that is -- that is certainly
17 appropriate.

18 Q. Okay. Well, if we can turn to Union Exhibit
19 75, please. You know what, I -- I -- you can take that
20 down, actually, I think I already addressed that.
21 Does the laboratory developing -- let me back up and
22 make sure we all are comfortable with the terminology.
23 A laboratory developed test, that's sometimes referred
24 to by the acronym LDT, correct?

25 A. Yes.

1 Q. Okay. And what is an LDT?

2 A. A laboratory developed test.

3 Q. Okay. Perfect. No controversy there. But
4 asking beyond that, as distinguished from what? What
5 is laboratory -- why do we have that term? What are we
6 distinguishing an LDT from?

7 A. Sure. A -- a -- a good example, a comparison
8 would be an immunoassay. An immunoassay are purchased
9 reagents from a company that are manufactured and sold
10 in mass to laboratories to do rapid screening on
11 automated chemistry analyzers. Those tests were not
12 developed by the laboratory, but by a manufacturer, as
13 opposed to a -- a chromatographic test, which involves
14 a piece of equipment, a -- a liquid chromatograph, a
15 mass spectrometer. The makers of mass spectrometers
16 and liquid chromatographs do not supply a -- a method
17 that is standard to be used with their equipment. They
18 leave it up to the user to develop their own. And
19 various users have -- some have better ideas than
20 others. So they develop what they consider to be a
21 very good assay that requires validation. That's the
22 important step to make sure that a laboratory developed
23 test is accurate and reliable.

24 Q. Does the developer of an LDT have any
25 obligation to validate pre analytical standards?

1 A. Not -- not necessarily. No. Some of those
2 pre analytical variables -- you're referring to pre
3 analytical like the collection process?

4 Q. Yeah. Anything that falls within that
5 spectrum of pre analytical including that. Yeah.

6 A. Right. They -- they may dis -- they may
7 discuss how the collection is to be done, but they
8 don't necessarily have to validate that to go out to a
9 collection site and observe someone doing it and say
10 they did it a 100 times correctly or something like
11 that. So they may --

12 Q. I'm sorry. That's not what I'm asking. I'm
13 asking you in terms of the standards. I mean, as to
14 what ought to be done?

15 A. Yes. The laboratory determines what
16 standards are appropriate for a collection of a
17 specimen. Yes. How -- how much volume is required,
18 the chain of custody procedure, the -- the shipping
19 procedure. Yes. All -- all of that is determined by
20 the laboratory.

21 Q. And are those incorporated in an SOP?

22 A. They may or may not.

23 Q. Now, are you -- with respect to your own
24 laboratory. And I'm sorry, if you could tell me what
25 -- the name of your laboratory again?

1 A. Addiction Labs of America.

2 Q. Addiction Labs of America. Under the -- are
3 you familiar in terms of the program at your
4 laboratory, with
5 the term or the objective quality results?

6 A. Quality results or quality control?

7 Q. No, quality results. Is that a term that you
8 use at your laboratory in terms of program objectives,
9 quality results?

10 A. Well, that -- that would be the objective of
11 any laboratory. I'm not -- I'm not sure I'm following
12 what -- what you're asking.

13 Q. Okay. We'll move on. I think you had
14 testimony concerning adjustment of quantitative results
15 based on creatinine. And is it your testimony that no
16 laboratories do that?

17 A. No. I didn't say that. Some laboratories do
18 it. I mean, I -- our -- for example, our laboratory
19 adjusts everything, but some things have no meaning.
20 And -- and the reason some things are adjusted is
21 because the -- the program that makes that calculation
22 is -- is something that's a third party that we don't
23 have any control over. We -- we do -- we do not use
24 EtG -- normalized EtG results for any purpose
25 whatsoever. It has no interpretive value whatsoever.

1 Q. And but you -- so you would -- I didn't
2 understand your testimony. You say your laboratory
3 does use creatinine adjustment in some context?

4 A. Yes, in some context. For example, in my
5 direct, I talked about using it for marijuana, very
6 appropriate, Buprenorphine, Benzodiazepines. These are
7 drugs that have a very long detection window of a week
8 -- weeks to month. So the purpose of creatinine
9 adjustment is to compare two values -- two points in
10 time. For EtG the -- the -- the EtG is positive for
11 only a few days, one to four days. So it wouldn't make
12 any sense to normalize it to creatinine. It just
13 wouldn't make any sense.

14 Q. Did you hear that -- you were present for the
15 testimony of the director of Quest Diagnostics, Barry
16 Sample?

17 A. Yes.

18 Q. Okay. Did you hear his testimony that to the
19 effect that it would be appropriate for the customer to
20 make a creatinine adjustment?

21 A. Well, a laboratory sends out results. The
22 customer --

23 Q. I'm asking do you recall his testimony to
24 that effect?

25 MR. KASSIN: Just let the witness answer.

1 A. The customer can do anything they want to
2 with their result. Yes.

3 Q. Does the customer also set the quantitative
4 value for your laboratory as to what is a positive and
5 what's the negative?

6 A. No, the customer does not. The laboratory
7 does, based on its validation data.

8 Q. That's the practice at your laboratory?

9 A. At all laboratories. The -- the customer may
10 choose from a menu of different cutoffs, but the --
11 some cutoffs are -- are not appropriate or not
12 available. It -- it depends on each laboratory. For
13 example, in -- in my laboratory, we have one cut-off
14 for each analyte. They're -- they're not multiple
15 cutoffs.

16 Q. Okay. And why don't you have multiple
17 cutoffs?

18 A. Because they're not necessary for what we do.

19 Q. Why are they not necessary? I mean, why
20 would you not let a customer dictate cutoff levels for
21 the testing that you conduct?

22 A. Well, what we typically do, we -- we -- we
23 treat addicts -- we're addiction treatment centers. So
24 for -- let me just use marijuana as an example. We
25 tested a 20 nanogram per mill cutoff for marijuana.

1 The federal workplace testing is 50. We're trying to
2 see if someone is using marijuana in treatment, not in
3 a workplace setting. So we're going to use the lowest
4 cutoff that we can for immunoassay for marijuana. The
5 federal rules we -- we don't care about because they're
6 irrelevant to us. We're looking for treatment, not for
7 workplace testing.

8 Q. Now, back to the Javor's study. That study
9 in -- that didn't involve whole blood distinguished
10 from DBS; is that correct?

11 A. I -- I thought it was DBS, but I -- I could
12 be mistaken.

13 Q. Okay. Then other than -- other than the
14 alcohol provided to the subjects in the study, the
15 participants were required to remain abstinent during
16 the 22 day study period, correct?

17 A. Right.

18 Q. And the study included the use of spiked
19 samples, correct?

20 A. I -- I believe so.

21 Q. And you recall that the imprecision rate
22 ranged between 6 and 11 percent as between the spiked
23 samples and the actual testing?

24 A. That -- that seems fair, yes. That's --
25 that's appropriate.

1 Q. And in most of the participants, PEth levels
2 were detectable after two weeks of total abstinence;
3 isn't that correct?

4 A. That -- that could very poss-- very well be
5 possible. We know that PEth is detectable up to a
6 month, up to four weeks. That -- that certainly is
7 possible.

8 Q. Okay. Would you agree that published studies
9 indicate that an EtG result can be generated by
10 pralines?

11 A. Pralines, like the candy?

12 Q. Yes.

13 A. I'm not familiar -- I'm not -- I've not heard
14 of that study.

15 Q. Would you agree with me that there are
16 studies that an EtG result can be generated by
17 non-alcoholic beer?

18 A. Possibly, yes.

19 Q. So there are studies that have reached that
20 conclusion?

21 A. I -- I have heard of some. Alcoholic --
22 alcoholic beer contains a very low percent of alcohol,
23 so alcohol is present in non-alcoholic beer. So that
24 is -- that is possible.

25 Q. Okay. And would you agree that there are

1 published studies indicating that an EtG result can be
2 generated by fruit juice?

3 A. I've not seen any studies to show that.

4 Q. And are you aware that there are published
5 studies indicating that an EtG result can be generated
6 by sauerkraut?

7 A. I am not aware of any study to support that.

8 Q. Are you aware of published studies indicating
9 that an EtG result can be generated by soy sauce?

10 A. No.

11 Q. Now, an EtG -- you would agree that and
12 you're aware of a published study that a EtG positive
13 can result from the incidental use of hand sanitizer or
14 mouthwash, correct?

15 A. Yes, that is possible.

16 Q. I'm trying to get an exhibit up here. Now,
17 you consider the Javor's article to be a reliable
18 source, correct?

19 A. Yeah.

20 Q. And the Ulwelling and Smith Guidelines for
21 the use of PEth, do you believe that to be a reliable
22 source as well?

23 A. Yes, I do.

24 Q. If we could turn to Company Exhibit 28. And
25 I'd like to move to 1635, of that article. Yeah. Down

1 a little further. I'm going towards the top of the
2 page. Yeah, perfect. You can stop right there. Thank
3 you. I'm looking at the second column on page 1635.
4 The first full paragraph that reads, "The EtG is
5 subject to false-positive due to "extraneous exposure"
6 to ethanol-based hand sanitizers when used 20 or more
7 times a day, such as by medical personnel.
8 Mouthwashes, when swallowed and the consumption of,
9 "pralines, non-alcoholic beer, pharmaceutical products,
10 fruit juice and sauerkraut". To effectively eliminate
11 false positives, laboratories tend to use a high EtG
12 minimum threshold of 250 nanograms per milliliter to
13 indicate the intentional consumption of alcohol." Do
14 you disagree with any of this information contained in
15 that paragraph?

16 A. No.

17 Q. If we could bring up Union Exhibit 1. Now,
18 did you review this document the Official International
19 Association for Therapeutic Drug Monitoring as it
20 related to PEth testing?

21 A. Yeah, but this doesn't relate to PEth
22 testing. It's talking about dried blood spots for
23 therapeutic drug monitoring, but yes, I -- I reviewed
24 that. Yes.

25 Q. Fair enough and I stand corrected. Are any

1 of the validation criteria identified in this document?
2 You've never -- let me back up. You've never engaged
3 in a validation process for PEth testing, whether it
4 was whole blood or dried blood, correct?

5 A. Correct.

6 Q. And within this article, are there any
7 criteria in terms of the validation for a dried blood
8 spot testing process that in your opinion, would not
9 apply to PEth testing? And if you're of that opinion,
10 if you could state the basis for your opinion.

11 A. Sure. Let -- let me pull the actual article
12 because there's -- there's several of those points.
13 Okay. I have the entire article in front of me. Let's
14 start -- let's start with the -- this -- the next page.
15 It talks about type of filter paper. And it talks
16 about various -- various types. The USDTL uses Whatman
17 903. That's one of the commercially available papers
18 that are discussed. So the first item would be
19 appropriate.

20 Let's see. The next item that they mention --
21 going to -- to the third page, it talks about
22 interferences originating from collection substrate and
23 then talks about sample volume. The next page is where
24 we're going here. Right up to that table, yes. The
25 Sample Volume. The USDTL does not use a specific

1 sample volume. In other words, the card is -- is -- is
2 filled with blood, but it's not necessarily a specific
3 volume, so that does not apply. The drying and storage
4 process really relates more to microbiological samples.
5 As you know -- as we've talked about before, PEth
6 testing is used for virus samples and microbiolo --
7 microbiological samples. While drying is important,
8 that's not -- not crucial to a PEth test. And it -- it
9 -- obviously, it's shipped in a -- in a box, so 24
10 hours of drying by the time it takes to get to the
11 laboratory. So the drying and storage process is not
12 as critical for a PEth test as it is for a
13 microbiological test. The next issue there --

14 Q. I wanted you to identify as you went what you
15 were relying upon. Do you know whether USDTL conducted
16 any validation studies with respect to the appropriate
17 drying process?

18 A. I did not see -- observe any, so I -- I don't
19 know if they did. I -- I'm -- I am not aware of any.

20 Q. Well, to the extent that they either
21 conducted a validation study or relied on somebody
22 else's validation study, they would be obliged to
23 comply with the results of that study, correct?

24 A. If it's -- if the laboratory director decides
25 that that's an issue. You asked me originally what

1 sample -- what issues that I think did not apply. So
2 in -- in my opinion, drying is not an issue that really
3 is -- is essential to PEth testing. It's for
4 microbiological testing.

5 Q. Okay.

6 A. Although if -- if the laboratory says to dry
7 it an appropriate amount of time or needs to, you know,
8 get on -- tested immediately after someone draws a
9 sample of blood, that's -- that's up to the laboratory
10 to decide that. But I did not review any data one way
11 or the other to say it should be dried or should not be
12 dried for a certain length of time.

13 Q. Okay. Well, would you agree though -- would
14 you agree though that PEth -- however it's obtained --
15 it doesn't determine the time, dose, or frequency of
16 use?

17 A. Correct.

18 Q. In terms of the quantity itself, correct?

19 A. That's correct. Yeah.

20 Q. And then would you agree that the -- yeah.
21 Okay. And I'm sorry and I -- thanks for supplying that
22 omitted element. Would you agree that there's no
23 correlation between the quantitative result of the test
24 and the level of consumption?

25 A. There -- there is some correlation, yes. The

1 higher the PEth value, the more alcohol that was
2 consumed during that time period. Yeah. Yes. It's --
3 it's -- it's not a great correlation, but there is a
4 correlation. Yes.

5 Q. Okay. Well, would you agree that 100
6 nanogram per milliliter does not reflect a consumption
7 level five times higher than a 20 nanograms per
8 milliliter result?

9 A. Yes, that's -- that's correct.

10 Q. Okay.

11 A. And I -- I -- I can keep going in this
12 article if you'd like me to, but I -- I think -- I
13 think we've kind of get the high -- the high points as
14 well, and what would be -- things that would not be
15 appropriate for PEth testing.

16 Q. Okay. All right. I'm satisfied. And would
17 you agree that the DBS has a shorter history than
18 traditional matrix such as liquid blood, plasma, serum?

19 A. Well, yes, partly. Dried blood spots had
20 been used since -- since the 1960s. I -- I -- I did my
21 PhD on Phenylketonuria, which was a -- is a devastating
22 inborn error of metabolism. Every newborn in this
23 country is tested for PKU and several other metabolic
24 diseases. So this -- this has been done since the
25 1960s with dried blood spots. So it's -- it's

1 certainly not new technology, but it's not as old as
2 testing blood or urine that could have been done for
3 100 years or so.

4 Q. Now, are you aware that the USDTL in its FAQ
5 asserts that there are no other labs that do commercial
6 dried blood testing -- excuse me. There are no other
7 labs that do commercial dried blood spot PETH testing,
8 so there are no labs for comparison with USDTL? Do you
9 consider that an accurate statement?

10 A. Partially. You are correct there are no
11 other commercial laboratories, but Marty Javor's lab is
12 the laboratory that we use for any additional testing.
13 If we want to retest a sample and send it to another
14 laboratory, we -- we use his laboratory. So -- and
15 that -- that laboratory is in San Antonio. It's a
16 University of Texas laboratory, it's not a commercial
17 laboratory. So that -- that is a true statement that
18 the -- there are not other commercial laboratories, but
19 there are other -- there are other laboratories for
20 comparison.

21 Q. So what's the difference between a commercial
22 laboratory and a non commercial laboratory?

23 A. It's not for profit.

24 Q. You made some reference about -- and if I'm
25 misquoting you it's not intentionally, that there was

1 some factor of pre-analytical deviation up to 40
2 percent. Does that ring a bell in terms of your direct
3 testimony?

4 A. Yes. There's a very good paper that was
5 published a couple of years ago by an author named
6 Ngyuen, N-G-Y-U-E-N, a Vietnamese name. And he
7 discusses the -- the variability of PEth testing and
8 discusses this -- the -- the analytical variability of
9 plus or minus 30 percent, which we've discussed several
10 times. The concern is or the question is, what
11 variability does the collection process add to that?
12 And I think you discussed or talked about the effect of
13 hematocrit. So what his paper does is, it says, well,
14 if we -- if we add all of the variables together,
15 pre-analytical variables, analytical variables, how --
16 how much can that -- that value range and the point of
17 his paper was plus or minus 40 percent is a very good
18 estimate of all of the variables that you take into
19 account for a dried blood spot test.

20 Q. And when was that test conducted?

21 A. 2018.

22 Q. 2018. And how many subjects did that
23 involve?

24 A. It was more of a theoretical paper. I'm not
25 sure if it was any -- were any specific numbers of

1 patients, or numbers of donors. It was discussing when
2 you take apart all of the -- in forensic toxicology, we
3 talk about something called uncertainty. And the way
4 you measure uncertainty is you add up all of the things
5 that you -- that have variability. Certainly the
6 collection process has variability. The -- the
7 analytical process has variability. And when you add
8 every single variable that there is, they -- they
9 describe and use plus or minus 40 percent as the
10 imprecision or the range that one could see for a
11 result.

12 Q. If we could bring up Union Exhibit 37. I
13 guess I need this scroll to the second page. Okay.
14 Here we go. I believe your testimony on direct --
15 first. Let me back up. What kind of test are we
16 looking at here?

17 A. This is a PEth test done on a donor by the
18 name of Matthew Dacier, collected on 5/18/2020.

19 Q. Okay. And I believe your testimony was that
20 subsequent to this test that Dr. Tordella should have
21 had his patient submit to another PEth test?

22 A. Yes.

23 Q. Okay. And why should he have done that?

24 A. Well, the PEth test is the best option
25 available. A hair test -- let -- let's say the hair

1 test is positive. Well, that just tells you what you
2 already know that this individual has been drinking.
3 The PEth test of 24, if the hair test was negative, it
4 doesn't rebut or refute this result. So the -- a hair
5 test would add no additional information to which you
6 already have. I would recommend the additional PEth
7 testing.

8 MR. SEHAM: Okay. I'd like to take a break at this
9 point and review my notes and talk to my client. Let's
10 see. I'm trying to figure out how long of a test -- a
11 break I want to take. Let say it's 20 minutes.
12 Arbitrator Burdette, if it's acceptable that you we'll
13 come back at 4:20. Excuse me, 4 -- what do I want?
14 Yeah, 4:10.

15 THE ARBITRATOR: 4:10?

16 MR. SEHAM: Yeah.

17 THE ARBITRATOR: Okay. We'll go off the record
18 until 4:10 Eastern Standard Time.

19 THE REPORTER: We are off the record at 3:49 p.m.

20 (OFF THE RECORD)

21 MR. SEHAM: Pass the witness.

22 THE ARBITRATOR: Okay. Mr. Kassin?

23 MR. KASSIN: Yes, sir. I have two questions for
24 Dr. Taylor.

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REDIRECT EXAMINATION

BY MR. KASSIN:

Q. Dr. Taylor, are you aware of any scientific studies that show that there have been a false positive PEth test?

A. No. In fact -- in fact, we have -- we've done 4 or 500 PEth tests over the seven or eight years we've been doing them. We've sent out six or seven retests and there've been no -- they've all confirmed. And the same with Joe Jones told me that USDTL has had the same experience.

Q. Okay. Are you aware of any scientific studies that show that PEth results at or above 20 nanograms per milliliter due to anything other than intentional ingestion of alcoholic beverage?

A. No. I'm not aware of any study.

MR. KASSIN: Arbitrator Burdette, those are only two questions I had.

THE ARBITRATOR: Okay. Mr. Seham, anything else?

MR. SEHAM: No. No further questions.

THE ARBITRATOR: Okay. Thank you very much, Dr. Taylor, you may be excused from the witness stand.

THE WITNESS: Thank you.

MR. KASSIN: Arbitrator Burdette, we had planned that Dr. Taylor taking the whole day and we're pretty

1 much there. I would like to have the opportunity to
2 resume our rebuttal in the morning at 10:00 a.m.
3 Eastern Time. But I would tell the board and counsel,
4 Mr. Seham, Ms. Samuda, I don't think that it will take
5 more than an hour other than for potential surrebutal
6 that Mr. Seham have.

7 THE ARBITRATOR: Okay. So what you're suggesting
8 is that we may be done by noon-ish time tomorrow?

9 MR. KASSIN: Yeah. We certainly would, I'm hopeful
10 that we'll certainly be done by noon-ish East Coast
11 Time tomorrow and we'll have more time if that's
12 necessary for Mr. Seham.

13 MR. SEHAM: Yeah. Well, in terms of surrebuttal,
14 that would not take place tomorrow. We essentially
15 heard the company's case for the first time today and
16 we would need time to review it, just as the company
17 had the better part of the year to review our expert
18 report. So we would have to schedule another date for
19 surrebuttal.

20 THE ARBITRATOR: Okay. Well, you and Delta will
21 get together and discuss when that would be?

22 MR. KASSIN: Yes, sir.

23 THE ARBITRATOR: Subject to the availability at my
24 calendar, which you can see in real time.

25 MR. SEHAM: Thank you.

1 THE ARBITRATOR: All right. So we're going to
2 conclude for today and go off the record, Damien, at
3 4:13 Eastern Standard Time. We'll reconvene tomorrow
4 morning at 9:00 a.m. Central and 10:00 a.m. Eastern.

5 (Whereupon the proceeding concluded.)

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REPORTER CERTIFICATE

I, DAMIEN STONEBERGER, hereby certify that the foregoing proceedings were recorded by audio by me, a disinterested person, and that the proceedings were thereafter transcribed to typewriting, by computer;

That I am neither attorney for nor a relative or employee of any of the parties to the action; further, that I am not a relative or employee of any attorney or counsel employed by the parties hereto, nor financially interested in its outcome.

IN WITNESS WHEREOF, I have hereunto set my hand this December 8, 2020.

DAMIEN STONEBERGER
STORYCLOUD

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SCOPIST CERTIFICATE

I, the undersigned, do hereby affirm:

That the foregoing electronically-recorded proceedings were scoped by me to the best of my ability.

I further affirm I am neither certified or financially interested in the action nor a relative or employee of any attorney or party to this action.

IN WITNESS WHEREOF, I have this date subscribed my name.

Dated: December 24, 2020

STEPHANIE MORANO

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