

STATE OF SOUTH CAROLINA
COUNTY OF COLLETON

State of South Carolina,

v.

Richard Alexander Murdaugh,

Defendant.

COURT OF GENERAL SESSIONS
FOURTEENTH JUDICIAL CIRCUIT

Indictment Nos. 2022-GS-15-00592,
593, 594, and -595

RESPONSE TO DEFENDANT'S
MOTION FOR INDEPENDENT
LABORATORY REVIEW OF
DNA EVIDENCE

Defendant has moved this Court for an order requiring the State to produce DNA evidence in this case for review by a defense laboratory. Specifically, Defendant requests access to remaining reserve samples of SLED Item No. 70, fingernails from Margaret Murdaugh's left hand, arguing that allowing independent review of this evidence would allow more thorough testing which could produce exculpatory evidence. The State filed a response to the original motion on June 28, 2026, and now responds to the subsequent defense motions and developments since the hearing before this Court on June 29, 2026.

In summary, it must first be noted that there is nothing "new" or recently discovered about the DNA result from Maggie's left-hand fingernails – the existence of this extremely partial profile in a not unexpected mixture was well known to the defense since 2022. Its significance – or frankly lack thereof – was litigated during the first trial.

Second, the defense's own new expert from Othram has admitted that given how minimal the unknown profile is, testing would be a "high risk" procedure and extremely unlikely his lab could generate enough of a DNA profile for analysis from the remaining extract. However, the defense expert noted such efforts would on the other hand permanently consume the remaining extract. Thus, there is no reasonably viable technological development such as forensic genetic genealogy that could be applied.

Third, as to the remaining reserve portion of the samples retained consistent with accepted practice, the State has reasonably offered to process and quantify it but then stop before testing to consult with the defense – ensuring both sides have a fair opportunity for input into the reserve samples. The defense has rejected this fair proposal, and has even stated it would not even agree to share any results with the State despite the likelihood of permanent consumption.

DISCUSSION

A. There is nothing ‘new’ about the DNA evidence – the defense had this discovery since 2022 and indeed cross-examined the State’s experts on it at the prior trial.

First, there is no new development or previously undisclosed information about the fingernail DNA result, despite the defense’s implications or characterizations. On August 31, 2022, the DNA report containing a reference to the mixed sample from Maggie’s fingernails was turned over to the defense. The defense visited the SLED lab to view the evidence on November 21, 2022, and also received the complete SLED DNA case file from the State in discovery on January 12, 2023.¹

During the trial, both SLED Items 70 and 71, which are Maggie’s fingernail samples, were admitted into evidence as State’s Exhibit 251. {Tr. 3206-3207}. During testimony, SLED analyst Rachel Nguyen testified that pursuant to standard practice, she prepared representative samples from the clippings which were then sent to DNA for further

¹ The defense even argued during an October 20, 2022 hearing that the unidentified alleles had not been tested against Curtis Eddie Smith, which the State was in the process of doing. Eddie Smith was excluded as a contributor to the sample, and a DNA report to that effect was issued on November 2, 2022 and provided to the defense on November 10, 2022. See <https://www.youtube.com/watch?v=wd8i0tsuGmI>, beginning at 07:42.

analysis. {Tr. 3207, lines 3-10}. The defense also cross-examined analyst Nguyen on this procedure {T. 3224}.

During direct examination, SLED DNA analyst Sarah Zapata testified that the mixed sample from the left hand fingernails contained "only a few alleles that were not [Maggie's] own alleles". {Tr. 3262}. She testified that those stray alleles were "a very low level of DNA that's being compared", and that it was possible for anyone in the courtroom could have those same three alleles. {Tr. 3263}. During cross-examination of DNA analyst Zapata by defense counsel, it was reiterated that there were a few alleles present from an unidentified male. {Tr. 3287-3288}. Zapata noted the following about the sensitivity and prevalence of touch DNA that can occur when any person interacts with their environment in daily life:

DNA under fingernails, you're picking up DNA any time you touch an item potentially. If she did get her nails done, it's possible that somewhere at the nail salon there was DNA that she picked up under her fingernails. We can't really tell you how or when the DNA got there, but at any point in time between getting her nails done and arriving home, she could touch an object and potentially DNA from the object could be under her fingernails, or she can touch an individual and no DNA be under her fingernails in that way.

{Tr. 3289}.² Defense counsel Barber also asked Zapata whether the sample was submitted to CODIS. She responded that "there were only three alleles that were foreign to [Maggie]," and that such an extremely minimal sample is simply insufficient to meet the threshold for submission to CODIS. {Tr. 3289-3290}. Zapata characterized it as "a very partial low level profile". {Tr. 3291}.

² Defense counsel also noted that Maggie had been to the nail salon earlier on the day she was murdered {Tr. 3288}. See also {Tr. 1337-1338} (text message about getting a "pedi").

The pathologist Dr. Reimer testified that there was "nothing that would indicate any kind of defensive wound" on Maggie's body. She was specifically asked about fingernails on direct examination:

Q: Did you observe any damage to her fingernails or anything that indicated that she had been in a fight with her attacker?

A: No. That's also part of the autopsy. In addition to collecting clippings from the fingernails, I look carefully to see – sometimes there's a fingernail broken, sometimes there is obvious tissue or blood underneath fingernails. And she didn't have any evidence of, you know, material visually evident underneath her fingernails."

{Tr. 3382, lines 13-21}.

Interestingly -- and indicative of the lack of significance of this evidence -- the defense during the first trial had a DNA expert listed on their potential witness list, but they elected not to call him. Moreover, the defense at the first trial did not even argue this specific DNA issue in closing.

Therefore, not only did both the State and the Defense have full access to this DNA information prior to the first trial, it was fully vetted and ultimately insignificant, as explained during the testimony: (1) it is a very minor, partial sample of only a few alleles that untold amounts of people share, (2) touch DNA has gotten so sensitive that it is able to detect DNA that people shed and pick up all day long as they interact with their environment, and (3) there is absolutely no evidence that Maggie struggled with or scratched her attacker, which the highly experienced pathologist specifically looked for. Indeed, if Maggie had scratched the skin of an attacker immediately before she died, the

chances would substantially increase that an extremely strong profile would have been found under her fingernails.³

B. The defense's new DNA expert has admitted that it is extremely unlikely his lab can do anything with the extract containing such a minor and partial profile.

Despite the long-time availability and insignificance of this DNA result from the left-hand fingernails, the State indicated in its June 28th filing and orally before this Court that it was "happy and willing to facilitate actual substantive conversations with the defense experts as to their proposals and representations as to their capabilities."

The State facilitated such a conversation on July 7, 2026, when the State hosted a WebEx on the issue. The WebEx included representatives from the SLED Forensic Laboratory, counsel for the State, Dr. David Mittleman from Othram Lab for the defense, and defense counsel. SLED analysts described the results and the quantification of this mixed sample from the left-hand fingernails to Dr. Mittleman, and noted that there were 47 microliters of reconstitutable extract from the processed sample that could be available for further testing.

In response, Dr. Mittleman stated words to the effect that: the ratio of 99 to 1 was pretty much a sole source sample (meaning just from Maggie), that it was almost not even a mixture, and that it would be extremely unlikely his lab could generate enough DNA to do anything additional with such a minor and partial profile. Dr. Mittleman further stated

³ See, e.g. Alketbi, Salem, "Fingernail samples as DNA reservoirs: Implications for forensic interpretation" World Journal of Advanced Research and Reviews. (April 10, 2026) ("Evidence from prevalence and persistence studies demonstrates that foreign DNA beneath fingernails is common in non-criminal contexts and that mixed profiles represent expected rather than exceptional findings." "Controlled simulations of scratching have shown that foreign DNA may be readily detectable immediately following contact"). Kettner, et. al., "IPV – Bridging the juridical gap between scratches and DNA detection under fingernails of cohabitating partners," Forensic Science International: Genetics (January 14, 2015) (Mean male DNA content was 16 fold higher in scratching vs. non-scratching fingers).

that if his lab tried to do anything, it would likely permanently consume any remaining extract, and called additional testing by his lab "very high risk" with little prospect of generating enough DNA for his analysis from a less than 1% contributor to the mixture. Defense counsel Harpootlian interjected, reminding Dr. Mittleman that he worked for the defense and that any comments he makes should go through counsel first. Counsel Harpootlian even went so far as to say on the call that the defense would not even promise to share the results of the analysis from Othram lab with the State.

Following the WebEx meeting, the State directed Lt. Stanley with the SLED Laboratory to send on July 9, 2026 to Dr. Mittleman portions of the DNA Case File, the Quant Trio Worksheet, and the relevant electropherograms for items 70 and 71. The State inquired of the defense if this information was sufficient, but no further requests as to the extract or contrary presentations as to what Dr. Mittleman said on the WebEx were forthcoming.

Additionally, counsel for the State had a conversation with defense counsel Griffin in which the State stated that as to the unprocessed reserve samples from items 70 and 71, the State was willing to have the SLED lab proceed with processing and quantification, but stop before completion of testing and analysis. The State noted it would then advise the defense of those initial results, and the likelihood of remaining extract being available, and then consult with the defense about proceeding forward based on those initial results from processing. Further email conversations were exchanged during which counsel for the State noted:

As we also discussed, I plan for SLED to process the reserve portion of the 70 and 71 samples where we can get quantification, at which point we would stop and consult with the defense on the quantifications and the likelihood of remaining extract before proceedings with STR or Y-STR – however, as I told you, I have paused that process while we discussed the matter. This is a fair process for both sides and one I am willing to work with you on, but

I should point out Dick made it very clear that the defense would not even promise to turn over results if reserve sample or extract was sent to you. I am happy to discuss this further and ensure a fair process for both sides.

Despite this reasonable offer, the defense sent an email objecting to this proposed fair resolution. **{Exhibit C}**.

As the above recitation demonstrates, the defense's new expert recognizes the insignificance of the partial profile in this sample, the unlikelihood that his lab has any technological capability to do further meaningful testing of this sample, and the high risk that the evidence will be permanently consumed without any viable results being obtained. Defense counsel's immediate reaction to his own expert for simply discussing the science is very telling about the scientific realities of this evidence.

C. The State offered a reasonable and fair resolution to preserve access to evidence for both sides which the defense unreasonably rejected.

As the factual recitation and proceeding section sets forth, the State offered a reasonable resolution as to processing of the remaining reserve sample in a manner that would ensure consultation and access to the evidence for both sides. The State also offered to consult with the Defense during stages of the testing process to again ensure fairness and opportunity for discussion for both sides. The State is still willing to do this in good faith, but simply cannot consent to a "high-risk" procedure that the defense's own expert admits has little likelihood of generating any data and will permanently destroy the evidence. This is particularly so given that the State has the obligation of burden of proof as well as obligations under the Preservation of Evidence Act. This is also particularly so when defense counsel said out loud that they would not even promise to share any results with the State, and presumably also then this Court or a jury. The State respectfully

submits that this Court should adopt the State's reasonable approach that ensures both parties equal and fair access to the evidence and any resulting data.⁴

Indeed, the Preservation of Evidence Act, effective in 2009, established certain obligations for the State as it relates to physical evidence and biological materials in cases involving certain violent crimes including murder. See S.C. Code Ann. §§ 17-28-300–360. Specifically, the Act requires the State to preserve physical evidence and biological material (1) subject to a chain of custody, (2) with sufficient documentation to locate the physical evidence and biological material, and (3) under conditions reasonably designed to preserve the forensic value of the physical evidence and biological material. S.C. Code Ann. § 17-28-320(B). Notably, this obligation remains in force until the person convicted of such an offense is released from incarceration, dies while incarcerated, or is executed for the offense. S.C. Code Ann. § 17-28-320(C).⁵

Not only does the State have a statutory obligation to preserve evidence, including the reserve samples at issue here, but it also has a general public policy obligation to preserve evidence in order to effectuate criminal prosecution. Allowing Defendant unfettered access to the remaining samples of Maggie Murdaugh's left-hand fingernails absent any oversight or assurances regarding preservation or sharing of test results would violate the State's own legal and public policy obligations to preserve evidence.

⁴ A Memorandum prepared by SLED Forensic Scientist Sarah Farr (formerly Zapata) as to Sample Consumption best practices and policy is attached to this pleading as Exhibit B.

⁵ See also *Am. Acceptance Corp. of SC v. Gietz*, 175 F.4th 502, 507–508 (4th Cir. 2026) (citing the Act in finding that lienholder's due process challenge to seized motorcycles for homicide investigation must fail where "[u]nder South Carolina law, LCSD had not only a right, but an obligation to retain them."). The Act provides further procedures for registering as a custodian of evidence and for petitioning to destroy evidence prior to the expiration of the required time period. S.C. Code Ann. §§ 17-28-330, -340. The Act also notes that a person who willfully and maliciously destroys or tampers with such evidence or material is guilty of a misdemeanor. S.C. Code Ann. § 17-28-350.

Courts generally have disfavored compelling the government to abdicate its role in the process of managing DNA evidence, and will defer to the government where a good-faith basis for its procedure is put forward. See Lee v. State, 503 P.3d 811 (Alaska Ct. App. 2021) (rejecting defendant's due process and statutory argument that state failed to adequately preserve biological evidence where lab used all of the biological material on multiple penile swabs to create the DNA extract, even though a portion of the DNA extract was preserved for future independent testing); United States v. Kingsbury, 317 F. Supp. 3d 476 (D.D.C. 2018) (rejecting due process argument that government failed to preserve DNA evidence by not cutting swabs in half where DNA testing resulted in leftover extract suitable for independent testing); United States v. Quinones, 236 F. Supp. 3d 375 (D.D.C. 2017) (same conclusion as Kingsbury); United States v. Anderson, 169 F. Supp. 3d 60 (D.D.C. 2016) (rejecting defendant's argument that due process required government to split DNA swabs in half prior to extracting DNA for testing, government was permitted to authorize the lab to potentially consume the entire sample if the lab deemed it necessary); United States v. Haight, 153 F. Supp. 3d 240 (D.D.C. 2016) (same conclusion as Kingsbury).

CONCLUSION

While the State does not oppose allowing further testing of this material, the State specifically opposes turning over the remaining reserve samples to Defendant and a third party where Defendant has represented he has no obligation to turn over any results of such further testing, has not guaranteed any preservation of said samples during or following testing, and the State would otherwise be violating its evidence preservation obligations by acceding to such a request in the manner set forth by the defense. The

State is willing to work with the defense to ensure consultation, fairness, and access to both sides, in a manner consistent with the State's custodial, burden of proof, and preservation requirements. It appears even the defense expert concedes that testing and permanent consumption of the remaining extract is unlikely to produce data that he can analyze, but if the defense wants to permanently consume the remaining extract and puts that understanding in writing, then the State is happy to consider providing that. As to the unprocessed reserve portion of the samples, the State has reasonably offered that if testing is desired to pause after SLED processing to consult with the defense as to next steps. It is respectfully submitted that the defense's motion be denied and the Court adopt the State's reasonable plan of action.

Respectfully submitted,

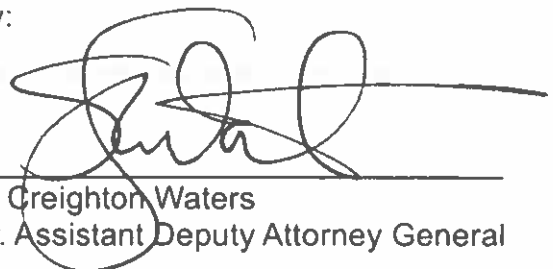
ALAN WILSON
ATTORNEY GENERAL
STATE OF SOUTH CAROLINA

DONALD J. ZELENKA
Deputy Attorney General

S. CREIGHTON WATERS
Sr. Assistant Deputy Attorney General

SAVANNA GOUDE
Assistant Attorney General

By:

A handwritten signature in black ink, appearing to be 'S. Creighton Waters', written over a horizontal line.

S. Creighton Waters
Sr. Assistant Deputy Attorney General

AUG 7 2026 PM3:28
COLLETON CO GS. GARY HALE

Columbia, South Carolina
August 7, 2026

EXHIBIT

A

(Transcript Excerpts)

AUG 7 2026 PM3:30
COLLETON CO GS, GARY HALE

1 THE COURT: All right, can't see the small print.

2 MR. BARBER: If we could make the message text in
3 particular with the date. Yeah.

4 (Break in proceedings.)

5 THE COURT: Proceed.

6 MR. BARBER: Thank you. Your Honor, I would ask the
7 Court to please ask the jury if they can now see
8 everything.

9 THE COURT: Can you -- is there anyone who cannot see?
10 Proceed.

11 MR. BARBER: Thank you, Your Honor.

12 BY MR. BARBER:

13 Q Line 18, who is this text message from?

14 A The text message, it shows the client, or the chat ID
15 is 1-803-942-1227.

16 Q Is that Alex Murdaugh?

17 A Yes, sir.

18 Q Okay, and what is the time of this message?

19 A The time of this message is June 7, 2021,
20 11:05:55 p.m. To correct to minus UTC, it's going to be
21 7:05:55 p.m.

22 Q Okay, and what does the message say?

23 A Paul says: You get -- or Paul says:

24 You were getting pedi. Call when you get done.

25 Q And there are two examination marks after pedi,

1 correct?

2 A Yes, sir, correct.

3 Q Showing some -- and pedi you would understand to mean
4 pedicure?

5 A Yes, sir, to the best of my knowledge it is.

6 Q Now, number 20 would be the next text message from
7 Mr. Murdaugh, and what is the time on that?

8 A The time on that on the paper is June 8, 2021, at
9 1:08:58 a.m. To correct the time to minus four UTC would
10 make the day June 7, 2021, at approximately 9:00 --
11 9:08:58 p.m.

12 Q And what does this one say?

13 A Going to check on M, be right back.

14 Q And then finally number 21, I'll just ask. Is this at
15 9:47 and 23 seconds p.m.?

16 A Yes, sir, once it's corrected for the UTC.

17 Q And what does this say?

18 A It says: Call me, babe.

19 Q And who is it from?

20 A It's from the same phone number of 1-803-942-1227, and
21 that phone number is for Alex Murdaugh.

22 Q I want to ask about that 9:08 text message because I
23 think the State talked about that a bit. Let me ask this.
24 Do you know when that text message was actually displayed
25 on Maggie Murdaugh's phone?

1 test just in general from hematrace testing?

2 A There's a positive result or a negative result.

3 Q Okay, and in this case, what was the result on this
4 steering wheel swab?

5 A On the steering wheel swab it was positive, which is a
6 result of blood identified.

7 Q And then what did you do with that swab once you
8 completed your testing?

9 A So, Item 56 was then prepared for DNA analysis and
10 forwarded to the DNA section for further analysis.

11 Q Okay. I'm going to next show you items -- or State's
12 Exhibits, excuse me, 251 and 252. Those are marked for
13 identification only.

14 (Break in proceedings.)

15 Q Okay. Can you tell us what are those items?

16 A So, State's Exhibit 251 corresponds to the left
17 fingernail clippings and right fingernail clippings of
18 Margaret Murdaugh. State's Exhibit 252 corresponds to the
19 left fingernail clippings and right fingernail clippings of
20 Paul Murdaugh.

21 Q So on State's 251, the fingernail clippings from
22 Margaret Murdaugh, what, if anything, did you do to those
23 items?

24 A So State's Exhibit 251, once received, is clipping
25 from her fingernails. So, I will take a portion of the

1 clippings that have been submitted, place it within a tube,
2 and forward it to the DNA section for further analysis.

3 Q Okay. When you say portion of the clippings, does
4 that mean you clipped some more and send to DNA, or what
5 does that mean?

6 A So, the literal fingernail clippings are what's being
7 submitted within the envelope. So, say there's five
8 clippings. I will forward approximately two to three of
9 what's been submitted, place it within the tube, and that's
10 what will be forwarded for analysis.

11 Q And did you do the same process with State's Exhibit
12 252, the fingernail clippings from Paul Murdaugh?

13 A Yes. State's Exhibit 252 will receive the same
14 preparation for DNA analysis.

15 MS. GOUDE: Your Honor, at this time the State will
16 move Exhibits 251 and 252 into evidence.

17 MR. BARBER: No objection.

18 THE COURT: They're admitted.

19 (FINGERNAIL CLIPPINGS MARKED AS STATE'S EXHIBIT NUMBER
20 251 WERE RECEIVED INTO EVIDENCE.)

21 (FINGERNAIL CLIPPINGS MARKED AS STATE'S EXHIBIT NUMBER
22 252 WERE RECEIVED INTO EVIDENCE.)

23 Q All right, Agent Nugyen, next if you could tell us a
24 little about State's Exhibit 418, which was Alex Murdaugh's
25 shirt. Could you describe how you first processed the

1 have already been collected based on a presumptive test.

2 Q Did someone instruct you to perform a hematrace test
3 upon the steering wheel?

4 A No. It is part of our general operating procedures.

5 Q But you did not perform hematrace tests on the
6 weapons?

7 A The, the swabs that were collected off of the weapons,
8 no, because they were not presumptively testing prior. So,
9 I could use our presumptive test on those items.

10 Q Did you perform or prepare any samples on the victims'
11 clothing or bodies other than the fingernail clippings that
12 you discussed?

13 A I do not believe so.

14 Q Okay. So, the only thing from the body of Maggie
15 Murdaugh or Paul Murdaugh that you tested were the
16 fingernail clippings for Maggie Murdaugh?

17 A So, I prepared the fingernail clippings for DNA
18 analysis, as well as the buccal swabs from those
19 individuals.

20 Q But nothing else from their bodies, correct?

21 A No. I did not test their clothing.

22 Q Or their clothing. Or their clothing.

23 A I did not test their clothing.

24 Q When looking at the t-shirt that you just testified
25 about, in those cuttings I think you have in the -- you

1 open the bag and the cuttings were there and you prepared
2 them. Did you perform any serology tests on those
3 cuttings?

4 A No. I just removed those cuttings from the shirt as
5 the result of the crime scene testing.

6 Q Are you aware of any serology tests being performed on
7 those cuttings?

8 A Of the shirt?

9 Q Yes, of those big shirt cuttings.

10 A I believe there was further analysis performed on
11 those cuttings.

12 Q Did somebody other than you later perform serology
13 tests on those cuttings, to your knowledge?

14 A It is my understanding that there was additional
15 testing on those cuttings.

16 Q Serology testing?

17 A Serology testing.

18 Q Specifically hematrace?

19 A I believe there was hematrace performed on the
20 cuttings from the shirt.

21 Q But that -- just to be clear, that wasn't performed by
22 you.

23 A I did not perform hematrace on any of the cuttings on
24 the shirt.

25 Q Did you perform any hematrace tests on the shorts or

1 that's being made.

2 Q So, just take into all of that interaction.

3 A Yes.

4 Q Let's move on to Exhibit 251, which was the left and
5 right fingernails from Maggie Murdaugh. If you would, take
6 a look at Exhibit 251. Did you analyze those items? I
7 believe Item 70 is the left fingernail clippings from
8 Maggie Murdaugh.

9 A Yes, and 71 is the right fingernail clippings from
10 Margaret Murdaugh.

11 Q Well, let's talk about the left fingernail clippings
12 first. What were the results of your analysis?

13 A Are you looking for all of the individuals who were --
14 who were compared?

15 Q Yes, the results, the entire results.

16 A Okay. For Item 70, a DNA profile suitable for
17 comparison was developed. Several individuals were
18 visually excluded from the profile first. Paul Murdaugh,
19 Anthony Cook, Roger Davis, Rogan Gibson, Connor Cook,
20 Phillip Beach, Renee Beach, Robin Beach, John Murdaugh,
21 Richard Alexander Murdaugh, Jr., or Buster, Richard
22 Alexander Murdaugh, Randy Murdaugh, Miley Altman, and
23 Morgan Dowdy are excluded as contributors.

24 Q Excluded.

25 A Excluded as contributors. For the proposition set,

1 the DNA profile was interpreted as a mixture originating
2 from two individuals. Because these are Margaret
3 Murdaugh's own fingernail clippings, she is assumed as a
4 contributor. So, the two scenarios are Margaret Murdaugh,
5 and in this case the comparison was made to Claude C.B.
6 Rowe using the STRmix software. So, that first scenario is
7 Margaret Murdaugh and Claude C.B. Rowe contributed to the
8 mixture. And the second scenario is Margaret Murdaugh and
9 an unidentified, unrelated individual contributed to the
10 mixture.

11 Q Now, why was Claude C.B. Rowe included in this
12 comparison?

13 A So, the other individuals I was able to visually
14 exclude, which just means by looking at the DNA profile and
15 comparing it to their standard, I could exclude them as a
16 contributor. If an individual happens to have the alleles
17 that -- or if an individual cannot be visually excluded --
18 so, I cannot say from looking at their DNA profile and
19 comparing it to the evidence that they're excluded, then I
20 will run the statistic to compare them to that profile, and
21 so that's why that comparison was made.

22 The result of the comparison is the DNA profile is
23 approximately 11 times more likely if Margaret Murdaugh and
24 an unidentified, unrelated individual contributed to
25 mixture than if Margaret Murdaugh and Claude C.B. Rowe

1 contributed to the mixture. So, this is a result in
2 support of that second scenario. It was not the first
3 scenario like the others that we've been discussing.

4 Q So, how much DNA were you looking at in this sample?

5 A Are you asking, like, DNA that was not attributable to
6 Margaret?

7 Q Well, I guess -- was there a small amount of DNA or a
8 large amount of DNA under those left fingernail clippings?

9 A There was not a lot -- there were not many alleles
10 that were not attributable to Margaret in the profile.

11 Q So, let's talk a little bit and explain about those
12 alleles there when you were doing your testing.

13 A Yeah. Like I explained earlier, the alleles are the
14 results of our test, and they will appear on -- in the
15 profile that we're looking at, and they will be different
16 at proportions based upon roughly how much DNA is present
17 from the different possible contributors. So in this case,
18 because they were Margaret Murdaugh's own fingernail
19 clippings, her DNA is present in the profile at a higher
20 level. And then we are looking at only a few alleles that
21 were not her own alleles to make the comparison to the
22 other individuals.

23 Q So, was it three alleles?

24 A Yes, that were not Margaret Murdaugh's alleles.

25 Q And those three alleles could be C.B. Rowe's alleles?

1 A I could not visually exclude him, which just means
2 when looking at his profile and comparing it to those other
3 alleles, he did have those alleles but at a very low level
4 of DNA that's being compared to, to him. And the result
5 was in support of that second scenario, which was Margaret
6 Murdaugh and an unidentified, unrelated individual
7 contributed to the mixture.

8 Q And this courtroom here is full of people. Could
9 anybody in this courtroom have those same three alleles
10 present in that testing?

11 A It's possible.

12 Q All right. Let's move on.

13 MS. GOUDE: Court's indulgence.

14 (Break in proceedings.)

15 Q And let's put this other chart we have here on the
16 screen. And the results concerning C.B. Rowe, was that
17 moderate support for exclusion on his results?

18 A So, what you're looking at is a scale. It's
19 representative of a verbal scale that we have on our
20 reports, and it's showing the different ranges for the
21 likelihood ratio results we can obtain. So, on one side
22 you have the likelihood ratios that are in support of that
23 first proposition, or that first scenario. And you -- on
24 the other side you have the scale for the results that are
25 in support of that second proposition. So, here it -- the

1 range is 2 to 99 for moderate support for that second
2 proposition, and his result is an 11 --

3 Q Okay.

4 A -- which falls within that 2 to 99 range.

5 Q Okay, and then the other result with just Margaret
6 Murdaugh?

7 A For Margaret Murdaugh, because it's her own fingernail
8 clippings, we're not calculating a statistic. We're
9 assuming her as a contributor.

10 Q And you also analyzed the fingernail clippings from
11 her right hand.

12 A Yes.

13 Q And those are there as well. What were the results of
14 your analysis there?

15 A The DNA profile developed is attributable to Margaret
16 Murdaugh.

17 Q And then State's Exhibit 252 is fingernail clippings
18 from right and left hands of Paul Murdaugh. If you could,
19 tell us any results from your analysis of Paul's fingernail
20 clippings.

21 A For both Items 72 and 73, the result was the DNA
22 profile developed is attributable to Paul Murdaugh.

23 Q Now, you also analyzed Alex Murdaugh's shirt, which is
24 State's Exhibit 418, your Item 9. And did you analyze Paul
25 Murdaugh -- or excuse me, the defendant, Alex Murdaugh's,

1 Q We've gone through a pretty long list of things that
2 you did analysis on. Did you do any analysis on any
3 clothing or anything from the victims' bodies other than
4 Maggie Murdaugh's fingernail clippings?

5 A I analyzed Margaret Murdaugh's fingernail clippings,
6 Paul Murdaugh's fingernail clippings, as well as their
7 buccal swabs.

8 Q And when you say their buccal swabs, that was simply
9 to collect their DNA for analysis. Is that correct?

10 A That was the known standard that I used to make
11 comparisons, yes.

12 Q And under Maggie Murdaugh's left fingernail clippings,
13 did you -- you found unidentified male DNA?

14 A Foreign to Margaret Murdaugh. There were some alleles
15 present, yes.

16 Q Well, when we say some alleles present, was there DNA
17 from an unrelated male under her fingernails?

18 A For Item 70, yes. One of the alleles indicates a male
19 contributor.

20 Q And this was an unrelated male.

21 A For -- do you mean unrelated as in unrelated like --

22 Q Well, let me strike that and rephrase. Were Paul and
23 Alex Murdaugh excluded as contributors?

24 A Yes.

25 Q So, male DNA under her fingernails, not from Paul, not

1 from Alex Murdaugh.

2 A The foreign DNA to her, yes, they were excluded as
3 contributors.

4 Q Would it have been possible to perform any further
5 analysis on this, a Y chromosome profile?

6 A It is possible, but because there were so many male
7 individuals who were related to each other as standards
8 that were submitted, it was decided that that would not be
9 the best course of action to continue analysis because the
10 male -- the Y chromosome testing that you were discussing
11 is inherited along the males of the familial line, and so
12 there would be no way to distinguish between any related
13 people, any related males.

14 Q I guess making this determination, were you all aware
15 from previous testimony that Maggie Murdaugh had been to a
16 nail salon late that afternoon?

17 A I did not have any information about that, no.

18 Q So if her nails were quite clean coming to Moselle,
19 she doesn't have a lot of opportunity to have contact
20 with --

21 MS. GOUDE: Objection. Counsel is testifying.

22 THE COURT: Overrule the objection.

23 Q So if her nails were clean coming to Moselle, it
24 doesn't appear she has much opportunity to have that kind
25 contact with unrelated males, does it?

1 A It could be DNA -- you know, DNA under fingernails,
2 you're picking up DNA any time you touch an item
3 potentially. If she did get her nails done, it's possible
4 that somewhere at the nail salon there was DNA that she
5 picked up under her fingernails. We can't really tell you
6 how or when the DNA got there, but at any point in time
7 between getting her nails done and arriving home, she could
8 touch an object and potentially DNA from the object could
9 be under her fingernails, or she can touch an individual
10 and no DNA be under her fingernails in that way.

11 Q Are you familiar with something called CODIS?

12 A Yes.

13 Q And what is CODIS?

14 A CODIS is a database that we use to enter unknown
15 profiles from a crime to attempt to identify links between
16 different cases, and also between individuals who may have
17 been arrested or convicted of a crime.

18 Q So, it's a database that you can submit DNA samples to
19 and see if you get a hit and you can identify whose DNA it
20 is.

21 A Correct.

22 Q Was this unidentified, unknown male DNA found under
23 Maggie Murdaugh's fingernails submitted to CODIS?

24 A It was not. Because like we explained earlier, there
25 were only three alleles present that were foreign to her,

1 and that does not meet the threshold of information
2 necessary to enter a profile into CODIS.

3 Q And it was decided not to do this further Y chromosome
4 analysis on it?

5 A Correct.

6 Q Is it unusual in your experience to not test victim's
7 clothing for DNA?

8 A It depends on the situation of the case.

9 Q A situation where an unknown person has killed two
10 people in close -- in close, pointblank shootings?

11 A It would depend on the question that you're trying to
12 answer when you are processing the clothing. Typically
13 victims of gunshot wounds, their clothing will be saturated
14 in their blood, or there will be lots of their blood
15 present. And so the if you're looking for touch DNA from
16 maybe an individual, you would need to know the specific
17 area of interest to attempt to gather that touch DNA from
18 because the potential blood from the victims would be on
19 the clothing, so we need to be able to isolate a specific
20 area. If that information is not known, then there is not
21 very much that we can do with that clothing because there's
22 just no specified area for us to test.

23 Q What about their hands? Wouldn't their hands always
24 been an area of interest?

25 A Again, it depends. If there is evidence of a

1 struggle, then perhaps, which is why we would take the
2 fingernail clippings. If you don't know, then sometimes
3 you take the fingernail clippings just to see if we can get
4 some DNA from the fingernail clippings. But --

5 Q And the one time in that -- the one time something was
6 taken from them, it revealed unknown, unidentified -- or
7 male DNA.

8 A A very partial low level profile foreign to Margaret.

9 Q And you found Maggie Murdaugh's DNA on the 300
10 Blackout shell casings that were recovered. Is that
11 correct?

12 A Are you referring to Item 7.1?

13 Q Yes.

14 A She was included as a contributor to that item, yes.

15 Q And your report doesn't separate between individual
16 shell casings, does it?

17 A No.

18 Q Is your report consistent with one of those shell
19 casings being found in physical contact with her body?

20 A I believe there was information from the crime scene
21 that one of the shell casings was recovered from underneath
22 her body.

23 Q And is your report consistent with that, that DNA
24 could be transferred by physical contact?

25 A That's possible, yes.

1 it was, but it may have included meat. I didn't see any
2 corn or, you know, green beans or anything like that. But
3 whatever it was, they were identical to each other. And I
4 believe she had 600 MLs, which is, like, it's -- 450 MLs is
5 a pound, so it's like almost one and a half pounds of food.
6 And he had 500 MLs, which is a little bit more than a
7 pound. But they looked similar like they may have shared a
8 meal together.

9 Q You testified that there was no defensive wounds on
10 Paul. Did you observe any defensive wounds on Maggie?

11 A Nothing that would indicate any kind of a defensive
12 wound.

13 Q Did you observe any damage to her fingernails or
14 anything that indicated that she had been in a fight with
15 her attacker?

16 A No. That's also part of the autopsy. In addition to
17 collecting clippings from the fingernails, I look carefully
18 to see -- sometimes there's a fingernail broken, sometimes
19 there is obvious tissue or blood underneath fingernails.
20 And she didn't have any evidence of, you know, material
21 visually evident underneath her fingernails.

22 Q What about her toxicology? Did she have anything in
23 her system, any drugs or alcohol?

24 A She had caffeine only, the same as Paul. And no other
25 alcohol -- no alcohol or other drugs other than caffeine.

1 (Members of the audience responded good morning.)

2 THE COURT: Do we have our witness, back? Doctor?

3 You may bring the jury.

4 (The jury returned to the courtroom.)

5 THE BAILIFF: The jury is present, sir.

6 THE COURT: Thank you.

7 Good morning.

8 (All jurors responded good morning.)

9 THE COURT: Day number seventeen.

10 Cross-examination.

11 MR. HARPOOTLIAN: Please the Court, Your Honor?

12 THE COURT: Yes.

13 The witness, ELLEN RIEMER, remained under oath
14 and continued testifying as follows:

15 CROSS-EXAMINATION

16 BY MR. HARPOOTLIAN:

17 Q Good morning, Dr. Riemer.

18 A Good morning.

19 Q Let me at the outset say we're going to be just about
20 -- yesterday as you went through direct, we saw some very
21 graphic images, and I apologize but we're going to have to
22 do that again today. You, of course -- this is what you
23 see every day, but I'm sure you understand how other people
24 may, especially people related to the deceased, might react
25 to that.

EXHIBIT

B

(SLED Memo)

AUG 7 2026 PM3:30
COLLETON CO GS, GARY HALE



South Carolina

STATE LAW ENFORCEMENT DIVISION

Henry D. McMaster, Governor

Mark A. Keel, Chief

P.O. Box 21398
Columbia, South Carolina
29221-1398

WWW.SLED.SC.GOV

(803) 737-9000

MEMORANDUM

Date: August 06, 2026
To: Lab Case File: L21-09074
From: Forensic Scientist Sarah Farr S(F
Subject: Sample Consumption

This memorandum provides information regarding sample consumption.

The FBI Quality Assurance Standards for Forensic DNA Testing Laboratories, Effective July 1, 2020, and the FBI Quality Assurance Standards for Forensic DNA Testing Laboratories, Effective July 1, 2025, put forth the following requirements regarding sample consumption.

- STANDARD 7.4: "The laboratory shall have a policy on sample consumption."
- STANDARD 7.4.1: "Where possible, the laboratory shall retain or return a portion of the evidence sample or extract."

In compliance with the above standards, the DNA Casework Department's practice is to make every effort to retain a portion of the evidence sample or extract. The DNA Casework Operations Manual Version 10 (the version in effect at time of analysis) documents this on page 32 (Section II. Quality Assurance, G. Evidence Control, 5. Consumption of Evidence) and page 37 (II. Quality Assurance I. Analytical Procedures, 1. Sample Evaluation and Preparation).

Section II. Quality Assurance, G. Evidence Control, 5. Consumption of Evidence, states:

5. Consumption of Evidence

- Every effort will be made to preserve a portion of evidence for further testing should it be necessary or requested. However, consumption of the evidence is allowed if the analyst determines that it is necessary in order to develop a profile. Consumption of evidence will be notated on the Evidence Worksheet.
- Evidence extracts will be returned after analysis is completed. The remaining extract will be treated as evidence and proper chain of custody maintained.

The above information is present in all subsequent versions of the DNA Casework Operations Manual (page 34 in Versions 11-13 and page 33 in Version 14).



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Section II. Quality Assurance I. Analytical Procedures, 1. Sample Evaluation and Preparation, states:

- Analysis of evidence is conducted in an attempt to provide maximum information with the least consumption of sample. Where possible, a portion of the sample shall be preserved for retesting if the need arises.

The above information is present in all subsequent versions of the DNA Casework Operations Manual (page 39 in Versions 11-13 and page 38 in Version 14).

Sample remaining is documented for each analyzed item in the case record.

Carly Jewell

From: Reinhart, Emily <ereinhart@sled.sc.gov>
Sent: Thursday, August 6, 2026 9:04 AM
To: Carly Jewell
Cc: Creighton Waters; Stanley, Stephanie; Farr, Sarah
Subject: RE: Murdaugh - DNA Question
Attachments: Sample Consumption Memo to Lab Case File L21-09074 8-6-26.pdf

Good morning,

Please see the attached memo provided by Sarah (Zapata) Farr in response to the request for policies regarding sample consumption. In addition, Sarah provided the statement below:

Sample selection for fingernail clippings is not explicitly stated in our protocol. However, the DNA Casework Operations Manual Version 10 (the version in effect at time of analysis) documents on page 89 (Section III. Protocols, B. DNA Analysis, 3. Procedures, a. Sample Selection and Preparation for DNA Extraction) "Sample selection is a function of experience, training, and sample limitations."

Fingernail clippings are handled according to the above. This information is also present in all subsequent versions of the DNA Casework Operations Manual (page 96 in Versions 11-13 and page 95 in Version 14).

Please let us know if you would like to discuss further.

Emily B. Reinhart, Captain
Forensic Administration
South Carolina Law Enforcement Division
4700 Broad River Road
Columbia, SC 29210
803-896-7331 (office)
803-260-0919 (cell)



EXHIBIT

C

(Email)

Creighton Waters

From: Creighton Waters
Sent: Tuesday, July 21, 2026 11:56 AM
To: Jim Griffin; david@othram.com; Dick Harpootlian (rah@harpootlianlaw.com); Phillip Barber; holli@harpootlianlaw.com
Cc: sstanley@sled.sc.gov; Whitsett, Adam; Carly Jewell; Jaime Harmon; Don Zelenka; David Fernandez; Savanna Goude
Subject: RE: Murdaugh Untested DNA

Jim –

Apologize for the delay in response – was on vacation during the weekend and was dealing with not one but two broken cars most of yesterday. As we discussed on our call, and as I understand it, and also as the records you have had since 2022 reflect, a representative sample was prepared from both Items 70 and 71 which was tested and from which ~47 microliters extract remains from each which could be reconstituted for defense testing (although your new expert stated he doubted they could do anything with it because it “was essentially a sole source result”). As we also discussed, I plan for SLED to process the reserve portion of the 70 and 71 samples where we can get quantification, at which point we would stop and consult with the defense on the quantifications and the likelihood of remaining extract before proceedings with STR or Y-STR – however, as I told you, I have paused that process while we discussed the matter. This is a fair process for both sides and one I am willing to work with you on, but I should point out Dick made it very clear that the defense would not even promise to turn over results if reserve sample or extract was sent to you. I am happy to discuss this further and ensure a fair process for both sides.

Regards,

Creighton

S. Creighton Waters
Senior Assistant Deputy Attorney General
Chief Attorney, State Grand Jury Section
Office of the South Carolina Attorney General
803-734-3453
P.O. Box 11549 | Columbia, SC 29211
cwaters@scaag.gov



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From: Jim Griffin <jgriffin@griffinhumphries.com>

Sent: Friday, July 17, 2026 4:51 PM

To: Creighton Waters <CWaters@scag.gov>; david@othram.com; Dick Harpootlian (rah@harpootlianlaw.com) <rah@harpootlianlaw.com>; Phillip Barber <pdb@harpootlianlaw.com>; holli@harpootlianlaw.com

Cc: sstanley@sled.sc.gov; Whitsett, Adam <awhitsett@sled.sc.gov>; Carly Jewell <CarlyJewell@scag.gov>; Jaime Harmon <jharmon@griffinhumphries.com>; Don Zelenka <DZelenka@scag.gov>; David Fernandez <DFernandez@scag.gov>; Savanna Goude <SGoude@scag.gov>

Subject: Re: Murdaugh Untested DNA

Creighton

We are somewhat perplexed over SLEDs desire to test leftover samples from 70 and 71 that have already been tested. We request that these unaltered samples be sent to Othram along with the previously tested extract with the unidentified male dna as soon as possible.

Please advise if SLED will transfer these samples and the previously tested extract to Othram immediately and without further alteration.

Thank you

Jim

Get Outlook for iOS

From: Creighton Waters <CWaters@scag.gov>

Sent: Friday, 17 July 2026 14:06:14

To: Jim Griffin <jgriffin@griffinhumphries.com>; david@othram.com <david@othram.com>; Dick Harpootlian (rah@harpootlianlaw.com) <rah@harpootlianlaw.com>; Phillip Barber <pdb@harpootlianlaw.com>; holli@harpootlianlaw.com <holli@harpootlianlaw.com>

Cc: sstanley@sled.sc.gov <sstanley@sled.sc.gov>; Whitsett, Adam <awhitsett@sled.sc.gov>; Carly Jewell <CarlyJewell@scag.gov>; Jaime Harmon <jharmon@griffinhumphries.com>; Don Zelenka <DZelenka@scag.gov>; David Fernandez <DFernandez@scag.gov>; Savanna Goude <SGoude@scag.gov>

Subject: RE: Murdaugh Untested DNA

Jim,

Yes, to my understanding these are the remaining reserve samples from that collected in Items 70 and 71. As we discussed last Friday when I raised these issues with you, we have not had SLED proceed pending further discussion with you. I also had asked you then if the SLED information provided on Items 70 and 71 to Dr. Mittleman was sufficient for what he was looking to receive; I am assuming that is the case unless you advise otherwise.

Regards,

C

S. Creighton Waters

Senior Assistant Deputy Attorney General

Chief Attorney, State Grand Jury Section

Office of the South Carolina Attorney General

AUG 7 2026 PM3:30
COLLETON CO GS. GARY HALE