

I. INTRODUCTION AND RELIEF REQUESTED

Plaintiff intends to offer Dr. Maher's personal or video recorded *de bene essee* deposition to testify regarding "gunshot sounds" on a mobile phone recording related to the September 9, 2023 incident. Based on his report and deposition testimony, Dr. Maher proposes to tell the jury, among other things, that:

- No gunshots are audible on the mobile phone recording prior to a particular time stamp ("first clearly audible gunshot");
- The 29 "clearly discernible" gunshots in the relevant segment are "likely" from firearms inside the cabin where the recording was made;
- The first 17 "audible shots" are "likely" from one firearm, while later shots have "distinguishing features" suggesting a different firearm; and
- There are "subtle" impulsive background sounds he cannot identify as gunshots with certainty, but which are "plausible" as distant gunshots.

These opinions are not reliably derived from the data and are not reliably applied to the specific factual circumstances including the unknown recording device chain, the MP3 perceptual compression, unknown microphone placement and signal processing, and a total lack of testing/validation for this case. These opinions conflict with undisputable physical evidence. They risk converting uncertain audio impressions into authoritative "science" and will confuse and mislead factfinder. The Court must exclude opinions where there is too great an analytical gap between the data and the conclusions and cannot permit expert ipse dixit to substitute for reliability. General Electric Co. v. Joiner.

Accordingly, Defendants move to exclude Dr. Maher's report and testimony in whole, or at minimum, to exclude any opinions that (a) purport to locate shots "inside the cabin," (b) assign shots to "one firearm" versus "another firearm," (c) suggest outside gunfire is "plausible," or (d) otherwise imply sequence/causation beyond what is reliably supported.

II. FACTUAL BACKGROUND (LIMITED TO THIS MOTION)

1. Plaintiff proffers Dr. Maher as an expert in “forensic audio analysis” and “audio digital signal processing.”
2. Dr. Maher’s written report (dated May 31, 2025) states he reviewed two primary audio files: (a) a “911 call center” recording and (b) a “mobile phone” recording.
3. Dr. Maher acknowledges material limitations, including that the mobile phone audio is MP3 perceptually compressed (lossy), that he does not know the recording device model or configuration, he does not know microphone placement or in-car processing (e.g., ANC/dialogue isolation), he performed no device-specific testing, and he did not visit the scene or perform recreations.
4. Dr. Maher opines that there are twenty-nine gunshots from inside the cab of Defendant Boyd’s truck, yet there were only twenty-three spent 9mm bullet casings collected by investigating officers.
5. Dr. Maher opines that it is likely that the first of seventeen shots came from the same weapon, yet no firearm involved in the shooting incident was capable of holding seventeen bullets.
6. In deposition, Dr. Maher confirmed his opinions are based solely on the acoustics in the files provided, not physical evidence, witness evidence, scene measurements, or firearm examinations.
7. Dr. Maher’s “background gunshots” proposition is expressly non-definitive and contingent: he cannot identify them as gunshots with scientific certainty and uses “plausible” language instead.

III. GOVERNING LEGAL STANDARD

Under Rule 702, SCRE, expert testimony is admissible only if it will assist the trier of fact, the witness is qualified, and the substance of the testimony is reliable—i.e., based on sufficient facts or data, the product of reliable principles and methods, and reliably applied to the case facts. Rule 702, SCRE; State v. Council; Watson v. Ford Motor Co. The reliability considerations recognized in South Carolina include factors such as prior use on similar evidence, peer review/publication, quality control, and consistency with accepted scientific principles. State v. Jones; State v. Council.

South Carolina courts impose an affirmative gatekeeping duty for all expert testimony (including experience-based or technical testimony). State v. White. That is consistent with the broader principle that reliability gatekeeping applies to all expert testimony, not only “hard science.” Kumho Tire Co. v. Carmichael.

Expert opinions connected to the facts only by assumptions or unsupported assertions are inadmissible. Graves v. CAS Medical Systems, Inc.; General Electric Co. v. Joiner. Even if testimony meets Rule 702, it must be excluded under Rule 403 if the probative value is substantially outweighed by unfair prejudice, confusion of issues, misleading the factfinder, or needless consumption of time. Rule 403, SCRE; State v. Council. South Carolina also recognizes the risk that the “expert” label itself can cause jurors to give undue weight, heightening Rule 403 concerns where the methodology is uncertain or the testimony risks improper bolstering. State v. Douglas.

IV. ARGUMENT

A. Dr. Maher’s core “inside the cabin” and “one firearm vs. another” opinions are not reliably applied to the case facts and are not supported by sufficient facts or data.

Dr. Maher's conclusions go far beyond identifying the presence of impulsive sounds. He proposes to opine on (i) where shots originated (inside the cabin), and (ii) how many firearms likely produced the recorded shots (e.g., first 17 from one firearm; shots 18–29 from another). These opinions require reliable inputs that he admittedly does not possess, including: device model and microphone configuration, microphone placement, gain control/limiting behavior, in-vehicle audio processing (ANC/dialogue isolation), encoding parameters, and any case-specific calibration/testing. He also did not visit the scene or conduct any reconstruction/exemplar testing. Under *Council and Watson*, reliability is a preliminary question for the Court, and the proponent must show the substance of the expert testimony is reliable before the factfinder hears it. *State v. Council*; *Watson v. Ford Motor Co.* Here, Dr. Maher's opinions depend on assumptions about what the recording "would" capture and what differences in waveform "mean" in the real world, despite admitted uncertainties and lack of validation. The result is an analytical gap that requires exclusion. *General Electric Co. v. Joiner*.

These reliability issues are not theoretical. Courts have excluded forensic audio/spectrographic evidence where protocol deficiencies and reliability disputes create a high risk of misleading the jury. *United States v. Angleton*. While *Angleton* is not binding on this Court, it is persuasive that courts scrutinize audio-forensic "pattern" testimony with particular care under Rules 702 and 403 where methodology and application are vulnerable to overstatement.

B. Dr. Maher's "plausible background gunshots" opinions are speculative and should be excluded under Rule 702.

Dr. Maher acknowledges he cannot identify the "subtle" impulses as gunshots "with scientific certainty," describing them only as "plausible." This testimony is inherently contingent and invites speculation (and advocacy) rather than reliable expert assistance.

South Carolina excludes expert opinions that begin with an assumption and then discount or cannot reliably account for alternative explanations, or that otherwise amount to unsupported assertions rather than reliable reasoning. Graves v. CAS Medical Systems, Inc. Where, as here, the expert cannot reliably discriminate between gunshots and other impulsive in-cabin noises (spent casings striking surfaces, glass/debris, door/console impacts, etc.), “plausible gunshots” testimony is not reliable expert evidence under Rule 702 and should be excluded.

C. Dr. Maher’s “no gunshots before the first clearly audible shot” conclusion is not reliable given admitted recording limitations and unknown in-vehicle processing variables, and it will mislead the jury.

Dr. Maher opines that there are no gunshots audible prior to a specific timestamp in the mobile phone recording. But this conclusion depends on the premise that, if a shot occurred, it would have been recorded and detectable using his methods. That premise is undermined by multiple, compounding uncertainties he conceded: MP3 perceptual encoding (lossy compression), unknown device/microphone chain, unknown in-vehicle processing (including possible ANC or speech-focused processing), and lack of calibration or testing.

Rule 702 requires the Court to ensure not only that the expert used generally recognized tools, but that they were reliably applied to the facts and data of this case. Rule 702, SCRE; State v. White; Kumho Tire Co. v. Carmichael. On this record, Dr. Maher cannot reliably convert “I did not detect” into a negative real-world proposition (“it did not occur”). The Court should exclude that overbroad conclusion, or at minimum strictly limit it to “not detectable on the provided file using the described methods.”

D. The mismatch between Dr. Maher’s “29 clearly discernible” shots and the physical casing evidence underscores the unreliability of his detection methodology and highlights a disqualifying

analytical gap under Rule 702.

Plaintiff intends to present Dr. Maher's testimony as a scientifically reliable count and segmentation of gunfire events (29 "clearly discernible" gunshots, with grouping of 17 vs. 18–29). Yet the case physical evidence reflects materially different spent casing totals recovered from the vehicles and scene (including numerous spent .45 Auto casings recovered from inside the Spivey Silverado and at least one .45 Auto casing from the roadway near the victim vehicle; and numerous 9mm casings recovered from inside the Boyd Dodge Ram, including extensive recovery from the passenger floor/console/dash areas).

This mismatch matters for admissibility because Dr. Maher's shot-counting and firearm-grouping conclusions implicitly require acceptance of two propositions that he cannot validate here:

1. The audio file provides a complete and reliably preserved record of gunshot events in the relevant window; and
2. His counting methodology reliably distinguishes gunshot discharges from other impulsive noises and correlates to real-world discharges under these conditions.

The physical casing evidence is an objective benchmark that tests whether the recording and methodology are valid as applied. The discrepancy demonstrates that at least one of the following is true:

- The recording did not capture all gunshots (due to unknown recording chain variables, in-vehicle processing, and MP3 compression);
- The methodology failed to detect and count all gunshots; or
- The methodology counted non-gunshot impulses as "gunshots."

Any of these outcomes demonstrates an analytical gap between the data and the proffered conclusions that requires exclusion under Rule 702. State v. Council; Watson v. Ford Motor

Co.; General Electric Co. v. Joiner; Graves v. CAS Medical Systems, Inc.

Accordingly, at minimum the Court should exclude: (i) any opinion that the audio contains exactly “29 gunshots” as an accurate count of discharges; (ii) any inference grouping shots by firearm (e.g., “first 17 likely one firearm”); and (iii) any negative-inference opinion that shots did not occur when not detected on the audio, given the demonstrated incompleteness/incongruence with physical evidence.

E. Rule 403 independently requires exclusion because the probative value is substantially outweighed by the danger of misleading the factfinder and unfair prejudice—particularly given the case-physical mismatch and the aura of scientific certainty.

Even if portions of Dr. Maher’s testimony have some relevance, its presentation risks substantial factfinder confusion and unfair prejudice. The factfinder may treat “audio forensic analysis” as definitive reconstruction of who shot/when/where, when Dr. Maher repeatedly disclaims source localization, device knowledge, and certainty. The factfinder may also give undue weight to technical demonstratives (spectrograms, RMS envelopes, waveform lineups) as “scientific proof,” despite acknowledged encoding distortion and unknown in-car processing. This risk is heightened where the physical casing evidence indicates a different number of discharges than the “29-shot” narrative, demonstrating the audio is not a reliable shot counter in this case.

South Carolina recognizes the risk that an “expert” designation can improperly bolster and mislead jurors, warranting careful Rule 403 scrutiny. State v. Douglas. Under Rule 403, the Court should exclude Dr. Maher’s testimony to prevent misleading the factfinder and wasting time on collateral mini-trials about compression, ANC, device chain variables, and speculative interpretations of impulse patterns. Rule 403, SCRE; State v. Council.

V. REQUESTED ORDER

Defendants respectfully request an Order:

1. Excluding Dr. Maher’s May 31, 2025 report from evidence;
2. Excluding Dr. Maher’s testimony and demonstratives in their entirety; or, alternatively,
3. At minimum, excluding any opinions that:
 - a. Any shot or set of shots originated “inside the cabin” (or in any particular location);
 - b. Any subset of shots is attributable to “one firearm” versus “another firearm” (including the “first 17 shots” vs. “shots 18–29” grouping);
 - c. Any background impulses are “plausible” gunshots from outside the vehicle;
 - d. Any statement that no shots occurred prior to the first audible shot (as opposed to the limited statement that he did not detect an audible gunshot on the provided file using these methods); and
 - e. Any opinions that the audio provides a reliable “shot count” that correlates to real-world discharges, or any inference resting on the “29-shot” count, given the mismatch with physical casing evidence.

Defendants further request a pretrial Rule 702 gatekeeping hearing.

[signatures are on the following page]

Respectfully submitted this 5th day of February, 2026.

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