

SPECIMEN — ILLUSTRATIVE DOCUMENT

This is a specimen prepared to demonstrate the Greyline Provenance reporting format. The case, the parties, the exhibits and the findings are fictitious. Hash values, filenames and technical output are illustrative and were not produced by an examination. Nothing in this document is a finding about any real person, organisation or item of media

GREYLINE INVESTIGATIONS LIMITED

Private Intelligence and Investigations

Greyline Provenance

Report on the Examination of Contested Digital Media

Field	Detail
Case reference	GIL-2026-SP-000 (specimen)
Instructing party	Instructing solicitors; firm name withheld from this copy
Instructed on behalf of	The Claimant
Matter	Commercial dispute — alleged oral variation to a supply agreement
Engagement mode	Standard
Date of instruction	11 May 2026
Usable source material received	12 May 2026
Examination carried out	12 to 14 May 2026
Date of this report	15 May 2026 (3 working days from receipt)
Report version	1.0
Author	Principal Investigator, Greyline Investigations Limited
Reviewed by	Not independently reviewed — see paragraph 69
Status	Technical advisory report. Not an expert report under CPR Part 35.
Classification	Confidential — named recipient only

CONFIDENTIALITY AND DISTRIBUTION

This report is prepared solely for the instructing party to whom it is addressed and solely for the purpose set out in the Instructions section. It may not be disclosed, quoted, reproduced in part, or relied upon by any other person without the prior written consent of Greyline Investigations Limited. Greyline accepts no duty of care or liability to any third party who obtains this report, with or without consent.

Greyline Investigations Limited — registered in England and Wales, Company No. 17121990. greylineinvestigations.co.uk

Report control

Version	Date	Author	Nature of change
0.1	14 May 2026	Principal Investigator	Working draft, not issued
1.0	15 May 2026	Principal Investigator	First issue to instructing party

Contents

- 1. Instructions and issues addressed
- 2. Scope of the examination
- 3. Summary of conclusions
- 4. Exhibit schedule
- 5. Provenance of the material
- 6. Chain of custody
- 7. Methodology
- 8. Findings
- 9. Automated detector outputs
- 10. Evaluation
- 11. Conclusions
- 12. What would change these conclusions
- 13. Limitations
- 14. Declaration
- Appendix A — Terminology scale
- Appendix B — Figure plates
- Appendix C — Metadata output
- Appendix D — Hash manifest
- Appendix E — Tools and versions
- Appendix F — Glossary
- Appendix G — Analyst qualifications and experience
- Appendix H — Literature and sources relied upon

1. Instructions and issues addressed

1. I was instructed by the instructing solicitors on 11 May 2026 by letter of instruction of the same date, acting for the Claimant in a commercial dispute concerning an alleged oral variation to a supply agreement.
2. I was provided with three items: a video file, an audio voice note, and a photograph, each said by the Claimant to have been received through a messaging application from a former director of the Defendant company, referred to in this report as Person A. The Defendant disputes that the recordings are complete and unaltered.
3. I was asked to address the following questions:
 - (i) Whether Exhibit 1 shows indicators of manipulation of its image content.
 - (ii) Whether Exhibit 2 is consistent with a single, uninterrupted recording.
 - (iii) Whether the speech in Exhibit 2 shows indicators of synthetic generation.
 - (iv) Whether any earlier appearance of Exhibit 1 or Exhibit 3 can be identified in publicly available sources.
4. I was not asked to consider, and express no view on, whether the events depicted took place, whether the persons depicted are correctly identified, or the meaning or effect of anything said.

2. Scope of the examination

5. The examination was confined to the three items listed at Section 4. No other material was examined and no device was inspected.
6. The engagement mode confirmed at scoping was Standard. This is a written assessment with reasoning and stated limitations, for the instructing party's own decision-making. It is not an expert report prepared under Part 35 of the Civil Procedure Rules and is not offered as expert evidence in any proceedings.
7. Litigation mode, under which a report is prepared to the standard required of expert evidence including a duty declaration, range of opinion and statement of truth, is available as a separate instruction. Nothing in this report should be treated as satisfying that standard.

3. Summary of conclusions

8. In summary, and subject to the Limitations at Section 13:
 - (i) The findings on Exhibit 1 are indeterminate. No positive indicator of image manipulation was identified, but the copy examined has been re-encoded by a messaging platform, and that re-encoding removes the features on which a firmer view would depend.
 - (ii) The findings on Exhibit 2 are not consistent with a single, uninterrupted recording. Two discontinuities in the background noise were identified at points where no such change would be expected in a continuous capture, and no innocent explanation examined accounts for them.
 - (iii) The findings on the question of synthetic speech are indeterminate. The recording is compressed to a degree that removes the acoustic detail on which such an assessment depends.
 - (iv) No earlier appearance of Exhibit 1 or Exhibit 3 was identified in publicly available sources. This is not a finding that no earlier appearance exists.

9. These conclusions are not a statement that any exhibit is authentic, and, save as expressly stated at (ii), are not a statement that any exhibit was manipulated. The distinction is explained at Appendix A.

4. Exhibit schedule

10. The following items were received and examined. Hash values were calculated on receipt, before examination, and recalculated on completion. Both sets matched.

Ex.	Filename as received	Format / codec	Size / duration or dimensions	SHA-256 (as received)	Received
1	VID-20260408-WA0011.mp4	MP4 (h264 + aac)	9.4 MB / 00:00:47	c1f4a9e0b7d25836af1e40c9b83d5711e6a2cf90d4b8127e3a5c6019fd7be284	12 May 2026, secure upload
2	PTT-20260408-WA0006.opus	OGG (opus)	318 KB / 00:00:39	7b30de5c19a84f2610cd7e93b5a0428fd6c1970e2b84af35719d0c6e83f4a2b1	12 May 2026, secure upload
3	IMG-20260408-WA0004.jpg	JPEG	184 KB / 1600x1200	2e9c4710bd3a58f6019e7c25a4b83df10c6b295e7a4108df3b62c95170ea8d43	12 May 2026, secure upload

11. Working copies were taken from the preservation copies. All examination was carried out on working copies. The items as received have not been altered.

5. Provenance of the material

12. The circumstances in which material is created, captured and transmitted bear directly on what can be concluded from it. The account below was given by the Claimant through the instructing solicitors and has not been independently verified.
13. The Claimant states that all three items were sent to him by Person A on 8 April 2026 through a messaging application, that he saved them from the application to a mobile device, and that he later transferred them to a laptop and from there to the secure upload provided by this firm. He states that he did not open, edit or convert the files at any point.
14. The filenames are consistent with that account. All three follow the naming convention applied by the messaging application when media is saved from a conversation, and the embedded date component of each filename corresponds to the stated date of receipt. A filename is trivially alterable and carries no evidential weight on its own; it is recorded here as consistent with the account rather than as support for it.
15. Material transmitted through a messaging platform is re-encoded by that platform. The platform discards the original compressed data, rebuilds the file at a lower bit rate, and strips or rewrites the metadata written at capture. The consequence for this examination is significant: none of the three exhibits carries capture metadata, and none is a camera original.
16. The generation of each copy examined is as follows:

Ex.	Stated route from capture to receipt	Generation assessed	Original available?
1	Captured on unidentified device; sent by messaging application; saved to handset; copied to laptop; uploaded	Re-encoded copy, at least one generation from capture	No — not offered
2	Recorded within the messaging application as a voice note; saved to handset; copied to laptop; uploaded	Application-encoded; no pre-transmission original exists on the sending device in the ordinary case	No
3	Captured on unidentified device; sent by messaging application; saved; uploaded	Re-encoded copy, at least one generation from capture	No — not offered

17. No request has been made of Person A or of the Defendant for the original files or the sending device. Whether such a request is appropriate is a matter for those instructing me; Section 12 sets out what such material would allow.

6. Chain of custody

18. The handling record is set out below. Storage between handovers was on an encrypted volume under access control limited to the author. Examination was conducted on read-only working copies.

Date and time	Ex.	From	To	Method	Purpose	Recorded by
12/05/26 09:14	1–3	Instructing solicitors	Greyline	Secure upload portal	Receipt for examination	Principal
12/05/26 09:40	1–3	Greyline	Greyline	Copy to encrypted volume	Preservation copy, set read-only	Principal
12/05/26 09:52	1–3	Greyline	Greyline	Copy from preservation	Working copies for examination	Principal
14/05/26 16:30	1–3	Greyline	Greyline	Recalculation of hashes	Integrity verification on completion	Principal

7. Methodology

19. All work was carried out by the author. No part of the examination was delegated.
20. The approach is aligned with published guidance from the European Network of Forensic Science Institutes, the Scientific Working Group on Digital Evidence, and relevant NIST publications. Alignment with published guidance is not accreditation. Greyline does not hold ISO/IEC 17025 accreditation for this work and does not claim it.
21. The sequence followed was: hash on receipt; preservation and working copies; container and metadata extraction; structural examination of the file at byte level; compression-history analysis; stream-level examination appropriate to each medium; automated classifier screening; open-source provenance searching; recalculation of hashes; and evaluation.
22. Tools and versions are at Appendix E. The unabridged extraction output on which the findings rest is at Appendix C, so that the examination can be repeated independently.
23. Two checks that produced no result are recorded rather than omitted. Sensor-pattern (PRNU) comparison was not attempted, because the capturing devices were not made available and the

comparison is meaningless without them. Electrical network frequency comparison was not attempted on Exhibit 2, because the recording is band-limited by the codec in a way that removes the relevant component, and because reference grid data for the relevant period and location is not held by this firm.

8. Findings

24. Findings are set out by analysis stream. Each states what was observed and, where relevant, what it does and does not indicate. Interpretation of the findings taken together is at Section 10.

8.1 Container and metadata

25. Exhibit 1 contains no EXIF or XMP block and no capture-time fields. The MP4 atom order is moov-before-mdat, which indicates the file was rewritten after encoding rather than written progressively by a recording device. The encoder string reads Lavf58.29.100, identifying an FFmpeg-derived encoding library. Both features are characteristic of platform re-encoding and are present in the overwhelming majority of video files transmitted through messaging applications.
26. Exhibit 2 carries a vendor string identifying the messaging application's voice-note encoder and a nominal bit rate of 16 kbit/s in a single mono channel at 16 kHz. No creation-time field is present.
27. Exhibit 3 carries no EXIF block. The JPEG quantisation tables correspond to a quality setting in common use by the messaging platform and not to any camera profile in the reference set consulted.
28. The absence of capture metadata across all three exhibits is expected given the stated route and is not itself an indicator of anything. It is, however, the reason several of the questions asked cannot be answered more firmly.

8.2 File structure

29. The byte-level structure of each file is internally consistent. Headers, indexes and trailers are complete and correctly formed, with no appended data after the end-of-file marker and no orphaned structures.
30. The Exhibit 3 thumbnail matches the main image in content and geometry. A divergence between the two can indicate that an image was altered by software that updated one and not the other; no such divergence is present here. Given that the platform regenerates both on re-encoding, this observation carries limited weight.

8.3 Compression history

31. Exhibit 3 shows block-boundary artefacts consistent with at least two rounds of JPEG compression. This is expected of an image captured and then transmitted through a platform, and is not an indicator of editing.
32. Error-level analysis of Exhibit 3 shows no localised region of divergent compression response (Figure 6). Error-level analysis is a screening technique with a well-documented tendency to produce apparent differences from ordinary variation in texture and contrast, and a negative result carries less weight than a positive one would.

8.4 Video analysis (Exhibit 1)

33. The group-of-pictures structure is regular throughout, with keyframes at a consistent interval and no irregular keyframe insertion at any point. Irregular insertion can accompany a cut in a re-encoded video; none was observed (Figure 5).
34. Frame timing is consistent across the duration. Three duplicated frames occur at approximately 00:00:12.4 (Figure 4). Frame duplication of this kind is produced routinely by frame-rate conversion during transcoding and would be expected in a file re-encoded by the platform. It coincides with no change in scene content, lighting, or audio.
35. No boundary blending, temporal flicker, or geometric inconsistency was observed around any face or object in the frame. Audio and video remain in synchronisation throughout, with no drift and no discontinuity at the point of the duplicated frames.

8.5 Audio analysis (Exhibit 2)

36. The recording carries a continuous low-level background component consistent with room tone. Two discontinuities in that component were identified: at approximately 00:00:08.4 and at approximately 00:00:22.1 (Figure 1).
37. At each point, the broadband noise floor changes level abruptly, within a single frame (Figure 2), and the spectral character of the background alters. Before 00:00:08.4 the background carries a narrow component at approximately 100 Hz that is absent between 00:00:08.4 and 00:00:22.1 and present again thereafter (Figure 3). Speech is present on both sides of each discontinuity, with no pause at either point.
38. A change of this kind in a continuous recording would ordinarily be accompanied by a corresponding change in the recorded environment — a door, a movement of the device, a change in nearby machinery. No corresponding change is audible at either point.
39. Considered against the alternatives at Section 10, the two discontinuities are consistent with the recording having been assembled from more than one segment rather than captured in a single pass.
40. No further edit points were identified. I do not express a view on what, if anything, was removed at either point, and the material does not support one.

8.6 Synthetic and generative indicators

41. No C2PA or Content Credentials manifest is present in any exhibit, and no provenance watermark of the kinds within the detection capability of the tools listed at Appendix E was identified. The overwhelming majority of legitimate media carries neither. Their absence carries no weight in either direction and is recorded only for completeness.
42. Exhibit 2 is encoded at 16 kbit/s in a 16 kHz mono channel. Assessment of whether speech is synthetically generated depends on fine spectral and prosodic detail that encoding at this rate does not preserve. No assessment of this question is available from the material provided, and any tool that offers one on a recording of this quality is offering a result its inputs do not support.
43. No artefact family associated with the current generation of video synthesis methods was identified in Exhibit 1. The re-encoding described at paragraph 27 substantially reduces the sensitivity of that examination.

8.7 Open-source provenance tracing

44. Reverse image searching was carried out on Exhibit 3 and on twelve keyframes extracted from Exhibit 1, across four search providers, on 13 and 14 May 2026. No matching or near-matching image was returned.

45. A negative result establishes only that the searched providers returned no match on those dates. It does not establish that no earlier copy exists, and it carries no weight on the question of whether either exhibit is unaltered.

9. Automated detector outputs

46. Classifier outputs are recorded below with the error rates published by their developers. A classifier output is one input among several. No conclusion in this report rests on a classifier output alone.

Tool and version	Ex.	Output	Published error rate and caveat
Image manipulation classifier v3.2	3	No region flagged	Developer reports 11–19% false negative on images below 2 MP after platform re-encoding
Video synthesis classifier v1.8	1	Below threshold	Developer reports materially degraded performance below 720p and on re-encoded input; both conditions apply here
Speech synthesis classifier v2.1	2	Inconclusive — input below minimum quality	Tool declined to score; minimum supported bit rate is above that of the exhibit

47. Detector performance degrades on compressed, re-encoded and low-resolution material, and against generation methods postdating a tool's training data. Both conditions are present here, and the outputs above should be given correspondingly little weight.

10. Evaluation

48. Every anomaly identified at Section 8 is set out below with the innocent explanation considered for it.
49. The absence of capture metadata across all three exhibits (paragraph 27) is fully explained by platform re-encoding. It is discounted as an indicator.
50. The moov-before-mdat atom order and the FFmpeg encoder string in Exhibit 1 (paragraph 24) are likewise explained by platform re-encoding, and would be present whether or not the underlying content had been altered before transmission. They are discounted.
51. The three duplicated frames in Exhibit 1 (paragraph 33) admit two explanations: frame-rate conversion during transcoding, and a removed segment. Two features favour the first. The duplication coincides with no change in scene content, lighting or audio, whereas a removed segment of any duration would ordinarily produce at least one such discontinuity. And the keyframe interval is regular across the point, whereas re-encoding after a cut commonly disturbs it. I regard transcoding as the substantially better explanation and do not treat this as an indicator of editing.
52. The double compression in Exhibit 3 (paragraph 30) is expected of any image transmitted through a platform. It is discounted.
53. The two noise-floor discontinuities in Exhibit 2 (paragraphs 35 to 37) require closer treatment. Four innocent explanations were considered.
- Codec behaviour. Opus applies discontinuous transmission and variable bit rate, which can alter the reproduction of a low-level background. Both act at points of near-silence. Speech is present on both sides of each discontinuity here, which is not where this behaviour would be expected to manifest.

- Automatic gain control. Gain adjustment produces a change in noise-floor level, but does so progressively over a period, not within a single frame, and does not remove a narrow spectral component while leaving speech unaffected.
 - A change in the recorded environment. A genuine change in the room would be expected to produce an audible event. None is present at either point.
 - Network or application interruption. A voice note is captured locally before transmission, so a network interruption would not produce a mid-recording discontinuity of this character.
54. None of the four accounts for the observation, and the disappearance and reappearance of a narrow background component across the interval between the two points is difficult to reconcile with any continuous capture. On that basis the findings at paragraphs 35 to 37 are properly stated as not consistent with a single uninterrupted recording.
55. I record that this conclusion rests on the material as received. Were an earlier-generation copy of Exhibit 2 to be produced and to show the same discontinuities, that would strengthen it; were such a copy to show a continuous background, this conclusion would require revisiting.

11. Conclusions

56. The questions put to me are answered below in the order in which they were asked. The terms used carry only the meanings at Appendix A.
57. (i) Whether Exhibit 1 shows indicators of manipulation of its image content: indeterminate. No positive indicator of manipulation was identified. The single anomaly observed is better explained by transcoding than by editing. The copy examined has been re-encoded by a messaging platform, and that re-encoding removes much of what a firmer answer would rest on. This is not a finding that Exhibit 1 is unaltered.
58. (ii) Whether Exhibit 2 is consistent with a single, uninterrupted recording: not consistent with. Two discontinuities in the background noise were identified at points where none would be expected, and no innocent explanation examined accounts for them. This is a finding about the structure of the recording. It is not a finding as to what was said, what was removed, or by whom.
59. (iii) Whether the speech in Exhibit 2 shows indicators of synthetic generation: indeterminate. The recording is compressed beyond the point at which this question can be addressed.
60. (iv) Whether any earlier appearance of Exhibit 1 or Exhibit 3 can be identified in publicly available sources: no earlier appearance was identified. This is not a finding that none exists.
61. I have not concluded that any exhibit is authentic, and, save as stated at (ii), I have not concluded that any exhibit was altered.

12. What would change these conclusions

62. The following material would permit firmer answers:
- The device on which Exhibit 1 and Exhibit 3 were captured, allowing sensor-pattern comparison — this bears directly on question (i).
 - The camera-original files for Exhibits 1 and 3, prior to platform re-encoding, restoring the capture metadata and compression history on which questions (i) and (iv) depend.
 - The sending device for Exhibit 2, or a copy of the voice note as held on it, allowing the discontinuities at paragraphs 35 to 37 to be tested against an earlier generation.

- Platform-held records obtained by disclosure or preservation request, including original transmission timestamps and message history for the relevant conversation.
63. I am willing to reconsider any conclusion in this report if further material becomes available.

13. Limitations

64. The absence of indicators of manipulation is not positive evidence that material is unaltered. A competently produced alteration may leave no detectable trace, particularly in material that has been compressed or re-encoded. Conclusion (i) should be read in that light.
65. The presence of an anomaly is not evidence of alteration. Ordinary handling — messaging applications, cloud synchronisation, format conversion, screen recording, editing for length — introduces artefacts indistinguishable from some forms of manipulation. Section 10 sets out how each anomaly identified was treated.
66. This examination addresses the integrity of the media files. It does not address whether the events depicted or described occurred, whether any person is correctly identified, or whether the material was captured in the circumstances claimed. An unaltered recording may still be staged, mislabelled, or of a different occasion.
67. The findings relate only to the three exhibits listed at Section 4, in the condition in which they were received, at the date of examination.
68. This report is provided for the decision-support purposes of the instructing party. It does not replace legal advice.

14. Declaration

69. I confirm that the examination described in this report was carried out by me. No part of it was delegated.
70. I record that this report has not been independently reviewed by a second analyst. The instructing party was informed of this before the examination began and elected to proceed.
71. I confirm that I have set out all matters within my knowledge that are material to the conclusions expressed, including matters that do not support them.
72. I confirm that I have no interest, financial or otherwise, in the outcome of any matter to which this report relates, other than the agreed professional fee for its preparation, which is not contingent on the conclusions reached or on the outcome of any proceedings.
73. I confirm that the conclusions at Section 11 are my own and represent my honest professional opinion on the material examined.

Signed	Date
	15 May 2026
Principal Investigator Greyline Investigations Limited	

Appendix A — Terminology scale

The following terms are used throughout this report and carry only the meanings set out here. This scale is fixed and is included in every Greyline Provenance report.

Term	Meaning
Consistent with	The findings are what would be expected if the proposition were true. They do not establish that it is true, and other explanations may also fit.
Not consistent with	The findings are not what would be expected if the proposition were true. This is a statement about the findings, not a finding of falsity.
Indeterminate	The material does not permit a view either way. This is a substantive finding and should not be read as a partial answer in either direction.
Camera original	A file in the state written by the capturing device, with no subsequent re-encoding.
Re-encoded copy	A file that has been decoded and re-compressed at least once after capture, typically by a messaging platform, social platform, or editing application.
Anomaly	An observation departing from what would be expected. An anomaly is not a finding of manipulation until alternative explanations have been considered and addressed.

Terms not used in Greyline Provenance reports: authentic, genuine, fake, deepfake, proves, proof, guaranteed, certain, 100%. These terms overstate what an examination of this kind can establish.

Appendix B — Figure plates

Plates are supplied with this report as a separate figure set. Each is numbered, captioned, attributed to an exhibit and referenced by number in the body. The marking on a figure identifies the point under discussion; it does not itself constitute the finding.

Figure	Exhibit	Subject	Caption as delivered
1	2	Spectrogram, full duration	Spectrogram 00:00:00 to 00:00:39, linear frequency scale to 8 kHz, 1024-point window. The two discontinuities discussed at paragraphs 35 to 37 are marked at 00:00:08.4 and 00:00:22.1.
2	2	Noise-floor level plot	Broadband level, 00:00:05 to 00:00:12, at 10 ms resolution. The transition at 00:00:08.4 occurs within a single frame.
3	2	Spectral detail, 80–120 Hz	Narrow component at approximately 100 Hz present before 00:00:08.4, absent to 00:00:22.1, present thereafter.
4	1	Frame sequence	Frames spanning 00:00:12.2 to 00:00:12.6 in order, showing the three duplicated frames with the frames either side. Scene content, lighting and audio are unchanged across the sequence.
5	1	Keyframe interval plot	Keyframe placement across the full duration, showing a regular interval across the point at paragraph 33.
6	3	Error-level analysis output	Screening output. No localised region of divergent compression response. A negative result on this technique carries less weight than a positive one would.

Appendix C — Metadata output

Unabridged extraction output, reproduced so that the examination can be repeated independently. Personal data belonging to uninvolved third parties has been redacted; every redaction is marked. Total redactions in this appendix: 0.

Exhibit 1 — ffprobe, principal fields. Unabridged output is supplied as a separate file.

Field	Value
format_name	mov,mp4,m4a,3gp,3g2,mj2
format_long_name	QuickTime / MOV
duration	47.032000
bit_rate	1598442
tags.major_brand	mp42
tags.minor_version	0
tags.compatible_brands	isommp42
tags.encoder	Lavf58.29.100
streams[0].codec_name	h264
streams[0].width x height	848 x 480
streams[0].avg_frame_rate	30000/1001
streams[1].codec_name	aac
streams[1].sample_rate	44100
streams[1].channels	2

Exhibit 2 — ffprobe, principal fields.

Field	Value
format_name	ogg
duration	39.401000
streams[0].codec_name	opus
streams[0].sample_rate	16000
streams[0].channels	1
streams[0].bit_rate	16000

Exhibit 3 — exiftool, principal fields.

Field	Value
File:FileType	JPEG

Field	Value
File:ImageWidth	1600
File:ImageHeight	1200
File:EncodingProcess	Baseline DCT, Huffman coding
File:ColorComponents	3
EXIF block	not present
XMP block	not present

Appendix D — Hash manifest

SHA-256 values calculated on receipt and again on completion. The manifest is also supplied as a separate text file so that the instructing party can verify the values independently.

Ex.	Filename	SHA-256 on receipt	SHA-256 on completion
1	VID-20260408-WA0011.mp4	c1f4a9e0b7d25836af1e40c9b83d5711e6a2cf90d4b8127e3a5c6019fd7be284	c1f4a9e0b7d25836af1e40c9b83d5711e6a2cf90
2	PTT-20260408-WA0006.opus	7b30de5c19a84f2610cd7e93b5a0428fd6c1970e2b84af35719d0c6e83f4a2b1	7b30de5c19a84f2610cd7e93b5a0428fd6c1970e
3	IMG-20260408-WA0004.jpg	2e9c4710bd3a58f6019e7c25a4b83df10c6b295e7a4108df3b62c95170ea8d43	2e9c4710bd3a58f6019e7c25a4b83df10c6b295e

All values match. SHA-256 of this report as issued in PDF is inserted at the point of issue and quoted in the delivery email.

Appendix E — Tools and versions

Tool	Version	Used for
ExifTool	12.87	Metadata extraction, all exhibits
ffprobe / ffmpeg	6.1.1	Container and stream analysis, frame extraction
MediaInfo	24.05	Container cross-check
Audacity	3.5.1	Spectral and noise-floor analysis, Exhibit 2
Sonic Visualiser	4.5.1	Spectrogram production, Exhibit 2
Image manipulation classifier	3.2	Screening, Exhibit 3
Video synthesis classifier	1.8	Screening, Exhibit 1
Speech synthesis classifier	2.1	Screening, Exhibit 2
Hash and intake tool (internal)	1.0	Hashing, preservation copies, manifest

Appendix F — Glossary

Term	Plain-English meaning
Metadata	Information stored inside a file describing the file itself — when it was made, by what device or software, and sometimes where.
Hash (SHA-256)	A fixed-length value calculated from a file's contents. Any change to the file, however small, produces a different value. Used to show a file has not altered while in our hands.
Re-encoding	Rebuilding a file in compressed form. Messaging and social platforms do this automatically, which discards data and rewrites metadata.
Atom order (moov / mdat)	The order of the index and the data inside a video file. A device writing a recording puts the data first; software rewriting the file afterwards commonly puts the index first.
Group of pictures (GOP)	The repeating pattern of full and partial frames in compressed video. Irregularity in the pattern can accompany a cut.
Noise floor	The constant low-level background sound present in any recording. Its level and character are usually stable within one continuous capture.
Error-level analysis	A screening technique that highlights areas of an image compressing differently from their surroundings. Prone to apparent differences arising from ordinary texture and contrast.
C2PA / Content Credentials	An open standard for recording a file's origin and edit history inside the file. Adoption is limited; most media carries none.
PRNU	A faint, effectively unique noise pattern left by a camera's sensor, which can link an image to a specific device where that device is available for comparison.
ENF	The small fluctuation of mains electrical frequency, sometimes captured in audio, which can be compared against grid records where those records are held.

Appendix G — Analyst qualifications and experience

This report was prepared by the Principal Investigator of Greyline Investigations Limited. The name is given in full on the copy issued to the instructing party and is withheld from this copy.

Element	Detail
Position	Principal Investigator, Greyline Investigations Limited
Academic qualification	MSc Cyber Security
Relevant background	Security operations, incident handling, and the examination of digital evidence in a commercial investigative setting
Relevant training	Structured training in digital evidence handling and media examination, listed in full on request
Professional accreditation	None held for this work. No claim is made to ISO/IEC 17025 accreditation or to membership of any forensic professional body
Court experience	None. This report is not offered as expert evidence and the author has not previously given evidence as an expert witness

This appendix is stated in these terms so that the instructing party can weigh the report accordingly. Nothing in it should be read as implying qualification, accreditation or experience beyond what is set out above.

Appendix H — Literature and sources relied upon

Every method used at Section 8 traces to a source below.

- European Network of Forensic Science Institutes — Best Practice Manual for Digital Image Authentication.
- European Network of Forensic Science Institutes — Best Practice Manual for Forensic Audio Authentication.
- Scientific Working Group on Digital Evidence — Best Practices for Digital and Multimedia Evidence Video Acquisition from Cloud Storage.
- Scientific Working Group on Digital Evidence — Best Practices for Image Authentication.
- National Institute of Standards and Technology — Guide to Integrating Forensic Techniques into Incident Response (SP 800-86), for handling and integrity practice.
- Coalition for Content Provenance and Authenticity — C2PA Specification, current version at the date of examination.
- Farid, H. — published work on double-JPEG compression and resave detection, relied on at paragraphs 30 and 31.
- Published work on GOP structure and keyframe irregularity as an indicator of re-encoding after editing, relied on at paragraphs 32 and 33.
- Published work on noise-floor and room-tone continuity in audio authentication, relied on at paragraphs 35 to 37 and at paragraph 52.
- Developer documentation and published evaluation data for each classifier at Appendix E, relied on at Section 9.

End of report. Issued under case reference GIL-2026-SP-000 with the hash manifest as a separate file. A named point of contact is available for questions on this report.