



Questioned Documents Examination

Test No. 14-521 Summary Report

This test was sent to 173 participants. Each sample pack consisted of a questioned employment offer letter provided by employer Safe Haven Home Insurance (Q1) and a photocopy of the employment offer letter made by the employee at the time it was signed (K1). Participants were requested to analyze the questioned original letter to determine if the employee's contention that the document is not genuine can be substantiated. Data were returned from 156 participants (90% response rate) and are compiled into the following tables:

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This report contains the data received from the participants in this test. Since these participants are located in many countries around the world, and it is their option how the samples are to be used (e.g., training exercise, known or blind proficiency testing, research and development of new techniques, etc.), the results compiled in the Summary Report are not intended to be an overview of the quality of work performed in the profession and cannot be interpreted as such. The Summary Comments are included for the benefit of participants to assist with maintaining or enhancing the quality of their results. These comments are not intended to reflect the general state of the art within the profession.

Participant results are reported using a randomly assigned "WebCode". This code maintains participant's anonymity, provides linking of the various report sections, and will change with every report.

Manufacturer's Information

Each sample set contained two items: Item K1, a photocopy of an employment offer letter submitted by a company employee, and Item Q1, the purported original employment offer letter submitted by the employer. The employee contended that the offer letter content, and thus the terms of his employment, were changed after he signed and returned the letter. Participants were requested to examine the documents and determine if the contention of the employee can be substantiated.

SAMPLE PREPARATION-

The papers utilized for this test were Staples 20-lb. copy paper for the employee photocopy (K1) and Staples 24-lb. multipurpose paper for the employer's letter (Q1). Two different pens were utilized to complete the signatures - employee Richard Hensen used a blue Uniball Jetstream ballpoint pen, and HR manager Samantha Hess used a black PaperMate medium ballpoint pen.

An employment offer letter with a commission percentage of 6% was produced using Microsoft Word and printed on the multipurpose paper with an HP LaserJet laser printer. The letter was signed by two individuals writing as Richard Hensen and Samantha Hess. This letter was then photocopied onto the copy paper using a Canon ImageRunner copier and identified as Item K1. The file containing the offer letter was then edited using Microsoft Word to change the commission percentage to 4%. This version was then printed on the multipurpose paper with the same HP LaserJet laser printer and identified as Item Q1.

Employee Richard Hensen's signature on the original letter was scanned into Photoshop and cropped to remove the line beneath the signature, with the exception of two points of intersection within the signature. This signature was then inserted into a blank Word document in the same general horizontal position as the original signature, and shifted slightly upwards. Using an HP Photosmart color inkjet printer, this signature was then printed onto the previously created offer letter containing the 4% commission percentage (Q1). The person writing as Samantha Hess then signed each copy in the appropriate place. Both K1 and Q1 were labeled with their item numbers in the upper, left-hand corner of each document.

SAMPLE SET ASSEMBLY: After several quality reviews were completed, each document set was packaged with pieces of chip board between the two documents and on the top and bottom of each stack. Each sample set was placed into a pre-labeled sample set envelope. Each envelope was sealed with evidence tape and initialed "CTS."

VERIFICATION-

Predistribution examiners confirmed that the evidence supported the employee's contention that the Q1 contract was not genuine. This was supported by the following observations: variation between the K1 and Q1 Samantha Hess signatures, inkjet printer ink as the source of the Q1 Richard Hensen signature, and dots within the Q1 Richard Hensen signature indicative of a previous signature line. Examiners also noted that the Q1 signature appeared to have been sourced from the signature provided on K1.

Summary Comments

Each sample set consisted of two items - a purported original employment offer letter (Q1) and a photocopy of the original letter made by the employee at the time it was signed (K1). The employee contends that the commission percentage that appears in Q1 is lower than that which was agreed upon. The document Q1 was, in fact, altered from the original letter, as represented by K1 (See Manufacturer's Information).

For question 1, "Does your examination support the employee's contention that the offer letter provided by the employer (Q1) is not genuine?", 99% of participants reported that the contention was supported ("A", 150 participants) or was probably supported ("B", 5 participants) for Q1. The remaining one participant reported that the contention was not supported ("E").

A majority of participants stated that the evidence to support their conclusions consisted of non-matching employer (Samantha Hess) signatures between the two documents, indication of inkjet printing of the employee (Richard Hensen) signature on Q1, and/or additional signature line remnants in the employee signature on Q1. Several participants also noted that there were nonmatching trash marks visible in K1 not visible in Q1, as well as overlay inconsistencies between the signatures in the two documents.

Examination Results

Does your examination support the employee's contention that the offer letter provided by the employer (Q1) is not genuine?

Response Key:

- A. Does support the contention.
- B. Probably supports the contention.
- C. Neither supports nor refutes the contention.
- D. Probably does not support the contention.
- E. Does not support the contention.

TABLE 1

WebCode	Q1	WebCode	Q1	WebCode	Q1
2N3UTK	A	7FFZMB	A	BYAZQH	A
2UVEX8	A	7NPTXK	A	C28Y29	A
2VHJ9K	A	83BGV2	A	C397U8	A
2WAT3L	A	84B3PF	A	CDH87L	A
2ZE6DU	A	8GGY9H	A	CDPBNJ	A
32JDFK	A	8HWWN7	A	CLVDFD	A
3G2HCY	A	8KHVZX	A	CM8V4A	A
3HDA4F	A	8RYNT9	A	CMEJLU	A
3K2NVB	A	8YHYZH	A	CUNHU6	B
3ND8LL	A	947XWP	A	D3QEJ3	A
3UJPAE	E	96RNN3	A	D9MR2C	A
46JDH9	A	A2JJ7U	B	DBWDR4	A
4ADCW4	A	ABN6AT	A	DK8H2M	A
4K9ULZ	A	ADC3HD	A	DQQA8A	A
4QGCH8	A	AJXZ9L	A	DQT3YG	A
64JYRN	A	AMDMMR	B	DTDMQJ	A
69JQ2R	A	ATMQQ9	A	E49J7K	A
6KLXDW	A	AXY7HQ	A	EAJ73F	A
6M3BJZ	A	B846KJ	A	EBATGJ	A
6RX6G2	A	BHHZMC	A	EBT78M	A
6UEZTM	A	BKQBJF	A	EKAJYK	A
78EE9B	A	BVLJ3H	A	ENXXPF	A

TABLE 1

WebCode	Q1	WebCode	Q1	WebCode	Q1
EQ8GPH	A	MYRHKK	A	REL6VM	A
FBNMQR	A	N79D6K	A	RLDNJH	A
FDM6KD	A	N7XRZJ	A	RMZX4X	A
FDYRVM	A	NALJGF	A	RPKTVW	A
FHRZUM	A	NHVBL4	A	RTC7XU	A
FXH6ZV	A	NJXKD3	A	RYCFK8	A
GABCDL	A	P9JCNL	A	TBLMHX	A
GD9VDY	B	PALFMA	A	TLLDYY	A
H3KJEQ	A	PGG7JY	A	TZ2Y67	A
JBVXY8	A	PKDPP4	A	U8J7HA	A
JCNZJ3	A	PMBDQT	A	U99YE8	A
JCU6E7	A	PP8RRJ	A	UP33ZN	A
JEZ3YT	A	PR828Z	A	UR9TGY	A
JGY72U	A	PXRWBP	A	V2LQ8L	A
JMNJ3H	A	QD26NY	A	VA4F6F	A
JTDXBX	A	QKRJXR	A	VJJVQN	A
JX6BKZ	A	QLQJ76	A	W7QXXP	A
K3VX4C	A	QTLNQT	A	WPBKPR	A
KE939M	A	QU3AQ2	A	WT6M9Y	A
KMM4C3	A	QVUWZD	A	WWEV4J	A
KRK23Z	A	R27BRV	A	X2GUT9	A
L39XB7	A	R2J8UE	A	XAAC2P	A
LTU7FN	A	R3WFK3	A	XCWQRK	A
M9WRBD	A	RAACNU	A	XL8HKU	A
MADJ8L	A	RACTW2	A	XQHYVD	A
MLFM29	A	RCKNQB	A	Y48R6Q	A
MYBM7Y	A	RDCZHY	A	Y4GHRV	A

TABLE 1

WebCode	Q1	WebCode	Q1	WebCode	Q1
YCBNKW	A				
YCULNV	A				
YLZJF6	A				
YRMBPJ	B				
ZBYP6Y	A				
ZJDU2K	A				
ZKJFPK	A				
ZLCMDJ	A				
ZTL69V	A				

Response Summary		Total Participants: 156
<i>Does your examination support the employee's contention that the offer letter provided by the employer (Q1) is not genuine?</i>		
Response	Q1	
A	150	
B	5	
C	0	
D	0	
E	1	

Response Key:

- A. Does support the contention.
- B. Probably supports the contention.
- C. Neither supports nor refutes the contention.
- D. Probably does not support the contention.
- E. Does not support the contention.

Methods and Observations

What methods/techniques did you utilize? What observations were made from each method/technique?

TABLE 2

WebCode	Methods/Techniques	Observations
2N3UTK	Stereomicroscope (~35x)	Q1 - Richard Hensen signature in blue ink showed multiple colors in the interior of the pen stroke, & red, blue and green pixilation "dots" along the perimeter. K1, a photocopy, no significant markings noted.
2N3UTK	Crime Lite ML 430-470 band UV range. Used with yellow fluorescence safety filter	Q1 - Paper appeared green with yellow fluorescence fibers. Paper contained 9 vertical lines not evenly spaced . Inks & pinte[sic] characters did not fluoresce. No erasures. K1 - paper appeared yellow. No fluorescence noted.
2N3UTK	Side Light	Q1 - The backside showed the pressure outline of part of the signature of Samantha Hess. K1 - No markings, indentations noted.
2N3UTK	Transmitted Light Box	Q1 - Paper appeared beige. Colored pixelation noted around perimeter of Richard Hensen signature in blue under ~10X magnification. K1 - Paper appeared light gray. No other markings noted.
2N3UTK	Transparency of K1	Overlaid on Q1. Gross margin misalignment of Samantha Hess signature noted. Complete alignment of Richard Hensen signature including spacing, height, positioning of letters above, below, & on the line.
2N3UTK	Side-by-side comparison of Samantha Hess signature on Q1 and K1	Many similar identifying characteristics noted, marked in pink on Worksheets 1 & 2. Some variations noted and marked in green on the Worksheets.
2N3UTK	ESDA - out of service	[No observations reported]
2N3UTK	No VSC (no infrared examinations)	[No observations reported]
2N3UTK	White Light	Q1 - Paper is white with black print, signature of Samantha Hess in black ink, Richard Hensen signature in blue ink. K1 - A photocopy. Paper is white, all printed and written characters in black.
2UVEX8	Microscopic	The photocopy of the employment offer letter, submitted by employer Safe Haven Home Insurance is printed with laser toner except the signature of Samantha Hess (ball point pen) and Richard Hensen (inkjet).
2UVEX8	Microscopic	The signature made by employee Richard Hensen is inkjet printed on the employment offer letter. Thus, not made by hand.
2UVEX8	Microscopic	The signatures on the photocopy and the employment offer letter does not match. Thus, the photocopy is not a direct copy of the employment offer letter.
2VHJ9K	Microscope	The Richard Hensen signature on Q1 has been printed by colored ink jet and is therefore not an original signature. The Samantha Hess signature on Q1 is original, having been made with a black ball point pen.
2VHJ9K	VSC overlay comparison	The Richard Hensen signatures on both Q1 and K1 have been derived from the same original. The Samantha Hess signature on K1 is a copy but was not derived from the original on Q1.
2WAT3L	Microscopic Analysis	Examined specimens to determine methods of preparation for the printed and written portions. The Q1 text was prepared with black toner as was the entirety of K1, while the "Samantha Hess" signature in original ink and the "Richard Hensen" signature was prepared using inkjet.

TABLE 2

WebCode	Methods/Techniques	Observations
2WAT3L	ESDA/ Side light	Examined specimens for the presence of indented writing. Nothing of significance observed.
2WAT3L	VSC 6000	Examined specimens to determine if printing/writing exhibited differing luminescent properties. The "Samantha Hess" signature exhibited luminescence.
2ZE6DU	Observation after magnifying, with white light using a video spectral comparator	Differences of employer handwriting graphism found on documents Q1 and K1 are observed under white light
2ZE6DU	Observation after magnifying, with UV light using a video spectral comparator	Examination with UV light does not reveal any scratching or erasing
2ZE6DU	Observation after magnifying, with transmitted light using a video spectral comparator	During observation in transmitted light, differences in the styling of the signature on parts Q1 and K1 are also observed.
32JDFK	Microscopic/ macroscopic	Q1-Samantha Hess signature created with a black ink pen and the Richard Hensen signature is machine generated (non-original) K1-Samantha Hess signature is not a copy of the one on Q1 and the Richard Hensen signature appears to match the one on Q1, also observed trash marks from copier
32JDFK	Comparison techniques	created transparencies of Q1 and K1, signatures of Samantha Hess do not line up but the signatures of Richard Hensen do
32JDFK	Instrumental analysis-VSC	used magnification to observe inks used on Q1 and to capture images Samantha Hess signature written in black pen ink Richard Hensen signature machine generated with color toner
3G2HCY	Microscopic/ Macroscopic	Using the microscope, toner spray was visible in and around the signature of Richard Hensen on Q1. The signature shows indications of being printed onto the document rather than written with a pen and ink. Photographs were taken.
3G2HCY	Indented Writing (ESDA)	No legible indented writing was found on either Q1 or K1. However, an irregular shaped line was found near the top of the document when examining the back of K1 and a lift was taken.
3G2HCY	Side Lighting on VSC-4	No legible indented writing was found on either Q1 or K1. However, a wavy line was seen through the "Samantha Hess" signature on K1 and a photograph was taken.
3G2HCY	Ink Examination (VSC-4)	K1 and Q1 were examined using alternate light source on the VSC-4. Nothing of note was seen.
3G2HCY	Transmitted Light	K1 and Q1 were examined using a light box. No watermarks or anything of note was seen.
3G2HCY	Transparency Overlay	A transparency was made of K1 and overlaid on top of Q1. No differences in fonts were noticed. The "Richard Hensen" signatures on K1 and Q1 appear to be identical when overlaid. The "Samantha Hess" signatures do not appear to be identical when overlaid.
3G2HCY	Signature Comparison	The "Samantha Hess" signatures were compared to determined common authorship.
3HDA4F	Visual	K1 is one color. Q1 had 3 colors - text, 1 signature is black, 1 signature is blue. K1 background is darker and has more satellites than Q1.

TABLE 2

WebCode	Methods/Techniques	Observations
3HDA4F	Microscope and Hand Lens	K1 is all toner. Q1 "Hess" signature is original black ballpoint ink. "Hensen" signature is 4 color ink jet. Rest of Q1 is toner.
3HDA4F	Comparative Exam	K1 and Q1 "Hess" signatures are different. K1 "Hess" is not a copy of the Q1 "Hess" signature. "Hensen" signatures on K1 and Q1 are derived from the same source signature. "Hensen" on Q1 is higher up off of the signature line than the K1 "Hensen" signature. Q1 "Hensen" signature has 2 black dots in the upright staffs of the "H" that correspond to where the "H" crosses the signature line in K1. Fonts, spacing, placement of the machine printed text in K1 and Q1 are the same, except for the 4% and 6% located in the third line from the top.
3HDA4F	VSC	Q1 is a different paper stock than K1
3HDA4F	ESDA	No significant indentations located on K1 and Q1.
3K2NVB	Microscopic	Observed Samantha Hess signature is an original ink entry and the Richard Hensen signature is a color copy of the photocopied signature on Exhibit K1. The black signature line from K1 is present on both vertical lines on the letter H in the Q1 Richard Hensen signature.
3K2NVB	Transparency Overlay	Transparency of Ex. K1 was superimposed onto Ex. Q1-Richard Hensen signature showing it is a copy of the same signature. This technique was also used to compare the copied employer signature on Ex. K1 with original signature on Ex. Q1-it is not a copy of that signature.
3K2NVB	Digital Imaging	Scanned Ex. Q1-Richard Hensen signature at 1600 dpi and enlarged to show red, blue, and yellow dots/planchettes are indications of the ink jet printing process.
3K2NVB	Adobe Photoshop	Overlay shows the two Richard Hensen signatures are both copies of the same signature. The two Samantha Hess signatures are not the same signature
3ND8LL	Microscopic	Founded[sic] the morphology of ink was a liquid base on signature of Mr. Richard Hensen in the employment offer letter (Q1). Founded[sic] the black line of the original document was printed on the line of signature of Mr. Richard Hensen near the intersection position with new black line in the employment offer letter (Q1). Founded[sic] the morphology of toner deposits on a detailed [sic] in the employment offer letter (Q1). Founded[sic] of the characteristic of writing with a ballpoint pen on their part of signature of human resources manager, Samantha Hess in the employment offer letter (Q1). Founded[sic] that signature of Mr. Richard Hensen have been printed before printing the other detail over it in the employment offer letter (Q1).
3ND8LL	Comparison Techinques	The documents (Q1) and (K1) can overlap completely except a part of commissions rate and a signature of human resources manager, Samantha Hess.
3ND8LL	Ultraviolet-Infrared	Showed no anti-counterfeiting techniques used in the two documents.
3UJPAE	Scientific Method	Observation, description, analysis, comparison and conclusion.
3UJPAE	Método grafométrico	Descriptive and analytical study of graphic entity; its systematic description, nomenclature and classification.
3UJPAE	Macroscopía y Microscopía	Techniques used for the general and thorough observation of the document.

TABLE 2

WebCode	Methods/Techniques	Observations
3UJPAE	Medición	Common characteristics in the whole test, writing type which can be straight[sic] or tilted; font heighth[sic].
46JDH9	Microscopic	Print processes on Q1 and K1; writing instrument(s)
46JDH9	indented writing (ESDA)	no impressions observed
46JDH9	light box/ transmitted light on VSC-6000	overlay signatures on Q1 and K1 for comparison
46JDH9	VSC-6000	paper and ink reactions under various light source + filter combinations
4ADCW4	Visual	Q1 - Signature "Samantha Hess" in ink. Q1 - Signature "Richard Hensen" Questionable.
4ADCW4	Oblique Lighting	Q1 - No indented writings
4ADCW4	ESDA	Q1 - Negative for indented writings
4ADCW4	Leica M60	Q1 - Signature "Richard Hensen" is a reproduction copy
4ADCW4	VSC 6000/ HS	Q1 - The letter typing is a machine printer copy. Q1 - Signature "Samantha Hess" is original in ink. Q1 - Signature "Richard Hensen" is a reproduction copy.
4K9ULZ	Reflected light	common survey
4K9ULZ	Transmitted light	overlapping of the signatures
4K9ULZ	Macroscope	determination of printing technology
4K9ULZ	Measurements	length of fonts, distances...
4QGCH8	Stereomicroscope	K1: All electrophotographic printing (EP) process with black toner. Q1: EP black toner, CMYK inkjet (RH sig), black ballpoint pen (SH sig)
4QGCH8	High resolution scanner + Imaging software	Overlaying of documents K1 and Q1: Not a complete overlay between documents, section alignments only. Font type and size overlay. Misalignment in Richard Hensen signatures with the position related to signature line.
4QGCH8	Microscopy (Keyence)	No fiber disturbance in the area of the % number in dispute. Black areas of the Richard Hensen signature (Q1) overlay with the intersection points of the signature line and the Richard Hensen signature (K1).
4QGCH8	Soft x-ray	Within K1 and within Q1, this method disclosed homogeneity of black toner.
64JYRN	Microscope/ Leica	Ink and handwriting characteristics, printing processes, line crossing, font styles, Items K1, Q1.
64JYRN	Oblique Lighting	Negative indented writing, Items K1, Q1.

TABLE 2

WebCode	Methods/Techniques	Observations
64JYRN	ESDA	Negative indented writing. Items K1, Q1.
64JYRN	VSC 6000	Observed line crossings, Items K1, Q1.
64JYRN	Transmitted Light	Negative watermarks. Items K1, Q1.
64JYRN	Transparency Film	Overlay of signatures and observed baseline placements.
69JQ2R	microscopic/ macroscopic techniques	No areas of paper fiber disturbance or areas of remarkable discoloration on Q1 and K1.
69JQ2R	microscopic/ macroscopic techniques	The questioned signature, "Samantha Hess", appearing on Q1 is an original ink entry; the signature, "Richard Hensen", appearing on Q1 is a machine copy of a signature.
69JQ2R	handwriting comparison	Variations were noted between the questioned original signature, "Samantha Hess", appearing on Q1 and the machine copy of the signature, "Samantha Hess", found on K1. The questioned signature, "Richard Hensen", appearing on Q1 and the signature, "Richard Hensen", found on K1 are duplications of the same signature.
69JQ2R	indented writings (oblique lighting/ESDA)	No impressions or indented writings detected through side lighting; no indented writings found during ESDA examination.
69JQ2R	comparison of fonts	No differences noted in style of font used to produce the questioned and known machine text.
6KLXDW	Microscopic - printing processes	Q1 With exception of signatures, document electrostatically printed; Hess signature is ballpoint pen ink; Hensen signature is inkjet printed K1 whole document electrostatically printed.
6KLXDW	Digital imaging and transparency overlay	Hensen signatures on Q1 & K1 overlay, showing they share a common source. Hess signatures on Q1 & K1 do not overlay, showing that K1 is not a photocopy of Q1.
6KLXDW	ESDA - indentations	Nil located
6M3BJZ	Visual and microscopic exams	Determined method(s) of production for Q1 and K1: K1 was generated with toner-based technology; Q1 text was generated with toner-based technology, with Hess signature in original ballpoint ink, & Hensen signature generated by colored ink jet printing. Calibri, size 11 font used.
6M3BJZ	Acetate grids and overlays	Use of grids showed no misalignments of text. Overlays showed signature in the name of Hensen on Q1 was superimposable onto the signature image of Hensen on K1, and therefore a "cut and paste".
6M3BJZ	Video Spectral Comparator (visible, IR, UV, etc.)	Examinations with various wavelengths showed fluorescence of Hensen signature on Q1 under IR, and differences in optical brighteners on papers used to create Q1 and K1. Transmitted light and side lighting did not provide evidence of watermarks or indented impressions.
6M3BJZ	Electrostatic Detection Apparatus	Q1 and K1 processed on both sides. No evidence of indented impressions found.
6RX6G2	Macroscopic/ Microscopic Exam	The Q1 Hensen signature is machine printed (Ink Jet). The Q1 Hess signature is an original, inked-by-hand signature.

TABLE 2

WebCode	Methods/Techniques	Observations
6RX6G2	Handwriting Comparison	Both the Q1 and K1 Hess signatures appear to be naturally written and of common authorship.
6RX6G2	Photoshop	The Q1 and K1 Hess signatures do not superimpose, but show natural variation. The Q1 and K1 Hensen signatures superimpose.
6RX6G2	ESDA	Artifacts of storage were detected in the area of the Hensen signature.
6RX6G2	VSC	Nothing of interested was noted.
6UEZTM	Unaided eye	Preliminary examination. Suggests Samantha Hess sigs different but genuine.
6UEZTM	Low power Optical Microscopy	Confirms images substance of each document and components thereof, i.e. ball-pt ink, inkjet, and dry toner. Darker blue inkjet in descending characters just above writing line.
6UEZTM	Overlaying of photocopy transparencies	Confirms Samantha Hess signatures as different examples: confirms close fit between Richard Hensen signatures.
6UEZTM	Oblique Light and Electrostatic Detection	Search for indented impressions.
78EE9B	Microscope (microscopic analysis)	Richard Hensen's signature is made by ink jet method.
78EE9B	VSC6000 (comparison analysis)	Richard Hensen's signature is made by ink jet method.
7FFZMB	Macroscopic	The Richard Hensen signature on K1 is higher above the baseline than the Richard Hensen signature on Q1. The Samantha Hess signatures are different on Q1 & K1.
7FFZMB	Microscopic	The K1 document was produced entirely via toner. The Q1 document was produced with toner except for the Samantha Hess signature which is in ballpoint pen ink & Richard Hensen signature which was produced with ink jet technology. Satellite droplets of cyan, yellow & magenta can be seen. Dark areas were noted on the inkjet produced Richard Hensen signature, these areas occur on the vertical staffs of the (H) right above the baseline. When the Q1 & K1 Richard Hensen signatures are overlayed, the baseline from the K1 signature aligns with the noted dark areas.
7FFZMB	ESDA	No indentations were revealed. (See Additional Comments)
7NPTXK	Indented writing	Negative
7NPTXK	VSC	Negative
7NPTXK	Microscopic	Richard Hensen signature on Item Q1 was prepared with an ink jet printing process
83BGV2	Macroscopic	Employer signatures and placement on K1 and Q1 are different. No font differences observed. Employee signatures on K1 and Q1 superimpose.

TABLE 2

WebCode	Methods/Techniques	Observations
83BGV2	Microscopic	Toner particles were observed throughout K1 and the body of Q1 (not including the signatures on Q1). K1 and Q1 (excluding the signatures on Q1) were produced by a laser printer/copier. The employer signature on Q1 was written with black ballpoint ink. Colour ink drops soaked into the paper fibers were observed in the employee signature on Q1. The employee signature was produced by a colour inkjet printer. No disturbed paper fibers were observed in the commission areas of either K1 or Q1.
84B3PF	Microscopic Examination	high + low power. Q-1 - Printing ink around employee signature characteristic of ink jet process. Employer signature is genuine ink. No overt alterations noted in paper. Form probably altered.
84B3PF	Photoshop	Evidence of line fragments seen in employee signature consistent with signature position noted on K-1.
8GGY9H	Visual/ ESDA (Indented writing)	Q1 Front No impressions of investigative value were found. Q1 Back Impressions of investigative value were found and revealed the "Samantha Hess" signature.
8GGY9H	Visual/ side	K1 Front and back No impressions of investigative value were found.
8GGY9H	Visual/ microscopic	Q1 Printed material-- non-impact print process-toner/laser. Original signature of "Samantha Hess" black ball point writing instrument (pen). Reproduced signature of "Richard Hensen" --non-impact print process color inkjet. No watermarks present. K1 Printed material and two reproduced signatures --non-impact print process toner/laser. No watermarks present.
8GGY9H	Transparencies	K1 and Q1 are not completely superimposable.
8GGY9H	Photoshop	Demonstrative purposes to illustrate findings.
8HVWN7	Microscopic examination using 10x loupe	Print processes on Q1 and K1 were identified. Q1 was produced by a toner print process; the HESS signature is original black, ballpoint and the inserted HENSEN signature is a reproduced image of a colour scan. K1 is a full page reproduction (photocopy using toner/laser printing).
8HVWN7	Transmitted light (lightbox)	Overlay of identical print content; the 4% (on Q1) and 6% (on K1) noticeable differences. Position change of the HENSEN signature in relation to the printed baseline also observed. Neither Q1 or K1 contained watermarks. Paper properties appeared different (flocking etc)
8HVWN7	Paper Size (rule) and Thickness (Micrometer)	Both Q1 and S1[sic] were measured using a calibrated metal rule and found to be US standard "A" letter size (ANSI). Q1 is a thicker paper averaging 101.9um while K1 averaged a thickness of 91.2um. Differences in paper stock is accounted for by background/context of case.
8HVWN7	Font Identification	Font on Q1 was compared to the printed font on K1 and both were found to be 10pt Calibri. Referring to online information sources verified that Calibri (a sans serif font) is the default font of MS Office 2007, offering some indications on date of production.
8HVWN7	Video Spectral Comparator (VSC)	Paper and printed content properties were imaged under different light filters and at various magnifications. Infrared properties of the inked entries were also imaged. Baseline remnants were visible, at magnification, in portions of the HENSEN inkjet signature image.

TABLE 2

WebCode	Methods/Techniques	Observations
8HVWN7	Oblique light / ESDA	Used Crimelite 82L and the VSC6000 for oblique. Indentations made by the original act of signing were visible behind the HESS signature on Q1. No such impressions were observed behind the printed HENSEN signature on the same document. Nil impressions by ESDA exam of Q1.
8HVWN7	Stereomicroscopy	Further confirmation of print processes responsible for Q1 and K1. The HENSEN signature on Q1 is produced in colour and colour scan artefacts are visible. This is consistent with this image having been cut and pasted into this document electronically from a colour scan.
8HVWN7	Bitmap code detection	No bitmap code (aka yellow dot pattern) was detected on Q1 or K1. This is the expected result for K1 being a black and white photocopy only.
8KHVZX	ESDA 2	Indented Writing Examinations - Negative K1. Positive Results Q1 - Rollar[sic] Impressions and reverse signature of Q1 Richard Hensen signature from front of Q1.
8KHVZX	Microscopic/ Examination	Q1 has one original structure Samantha Hess and one machine reproduction Richard Hensen. Q1 Richard Hensen signature/K1 Richard Hensen reproductions of same Richard Hensen signature. Q1 Richard Hensen signature has indications it was from K1 Richard Hensen signature or at least one generation of or the original. In the examination of H intersection with the signor[sic] line the H's staff show markings of the signor[sic] line from K1 but different signor[sic] line located on Q1.
8KHVZX	VSC 6000	Non destructive light examinations such as U/V, Infrared, Infra. Red Lum. And side lighting.
8RYNT9	Método: Observar, describir, comparar y concluir.	General and particular characteristics of the questioned document were observed, compared and registered. The findings were weighted in order to reach a conclusion.
8RYNT9	Macroscopía y microscopía.	Bases on the detailed observation of particularities, applying different magnification and illumination modes.
8YHYZH	Miscopie-MP-IR Microscope	Under 40 - 140x it was determined that colored dots indicative of a color photo copy were present. The questioned signature is not wet ink. The questioned signature is a product of either a cut & paste manipulation or mechanically reproduced using software such as photo shop. The documents, when placed on a light box and compared, show different spacing. The signature of Samantha Hess is not identical - not the same. The signature of Richard Hensen is identical.
8YHYZH	Ultraviolet ALS	[No observations reported]
8YHYZH	Infrared ALS	[No observations reported]
8YHYZH	Magnifiers	[No observations reported]
8YHYZH	Light Box	[No observations reported]
947XWP	Microscopic	Writing medium/Printing Process/Trash Marks
947XWP	ESDA	No indented writing

TABLE 2

WebCode	Methods/Techniques	Observations
947XWP	Macroscopic	Signature/Font comparison
96RNN3	Printing Process Examinations	Microscopic examinations revealed that Q1 was produced with two (2) different printing processes. The whole document was printed with toner with the exception of the Richard Hensen signature which was produced with an inkjet process. K1 was produced with a toner process.
96RNN3	Indentation Examinations	Indentation examinations were conducted on Q1 and K1 with grazing light and an ESDA2. These examinations failed to reveal any meaningful or significant impressions.
96RNN3	Handwriting Examinations	The Samantha Hess signature on Q1 is an original inked signature written in black ballpoint ink. The Samantha Hess signature on K1 is toner. Both signatures appear pictorially similar with each other. Concluded that it is highly probable that signatures were written by the same person.
96RNN3	Overlay Comparisons	The Q1 and K1 Richard Hensen signatures are both non-originals. However, these signatures precisely overlay each other and therefore share a common source. Overlays of the 4% and 6% on Q1 and K1 revealed that each of the #'s align precisely with the surrounding text.
96RNN3	Alteration/ Eradication/ Erasure Examinations	Microscopic examinations were conducted on Q1 and K1 in an effort to determine if there was any evidence of alteration by way of erasing/eradicating the percentage numbers. These exams did not reveal any paper fiber disturbance and the numbers align with surrounding text.
96RNN3	Print Defect/ Anomaly Examinations	Examinations were conducted on Q1 and K1 for physical markings or defects created from toner, ink, or a combination of both that are unique in their shape and placement with respect to each other. Q1 and K1 have dissimilar markings and/or defects and cannot be associated to each other.
96RNN3	VSC/ UV Examinations	The Q1 and K1 sheets of paper were examined with no visible watermarks observed. The two sheets of paper exhibit different responses to ultraviolet light sources and therefore cannot be associated as sharing a common source.
A2JJ7U	Microscopic	The "Samantha Hess" signature on Q1 was produced using a black ball point pen. The "Richard Hensen" signature on Q1 was produced using toner technology.
A2JJ7U	Macroscopic	The "Samantha Hess" signature on Q1 is not the same signature depicted on K1. The text and font of both letters are the same for both Q1 and K1 with the exception of the questioned "4" and "6". The "Richard Hensen" signature is the same signature on both documents.
A2JJ7U	Indented writing	Q1 was examined using oblique lighting and ESDA and no significant indentations were observed.
ABN6AT	VSC-4	Nothing of significance
ABN6AT	ESDA	Some shadows and lines of insignificance[sic]
ABN6AT	Microscopic	Ink jet spray discovered around the Richard Hensen signature indicating a computer printed signature.
ADC3HD	VISUAL ANALYSIS	Check of the correspondence between both documents. We determine that K1 is NOT a trustworthy reproduction of Q1: The signature of the employee is not original (in Q1), presents different location and the representative of the company are different.

TABLE 2

WebCode	Methods/Techniques	Observations
ADC3HD	MICROSCOPIC ANALYSIS, Microscopio estereoscópico, marca Leica, modelo S6D	Alterations: erased, added. Determination of original signature. Types of technologies of impression. Types of toner.
ADC3HD	Video-comparador espectral Foster & Freemann, VSC-2000HR	Corroboration of the visual analysis. Alterations: erased, added. Milimetric plans. Check of laces of signatures and texts. Light response of the inks (UV, IR).
ADC3HD	ESDA, marca PROJECTINA, modelo DOCUSTAT	Writing and / or indented brands.
ADC3HD	NEGATOSCOPIO	Check of laces of signatures and texts.
AJXZ9L	Initial visual review	The Richard Hensen, employee, signatures appear to be identical in the Q1 & K1 documents. The Samantha Hess, manager, signatures appear to be different between Q1 & K1.
AJXZ9L	Microscopic Examination	The Richard Hensen, employee, signature on Q1 is a color copy (observable color dot pixilation) not an original ink signature. Additionally, the Samantha Hess, manager, signature on Q1 is an original black ballpoint ink signature. Further, both the Richard Hensen and Samantha Hess signatures on K1 are black machine copies.
AJXZ9L	Video Spectral Comparator examinations	A VSC was used to capture the Richard Hensen, employee, signature on Q1 and superimpose the Richard Hensen signature on K1 to determine if the signatures are identical. The Richard Hensen signatures on Q1 & K1 are identical in all aspects; except the spatial relationship to the printed baseline. (The Q1 signature is further above the printed baseline than the K1 signature). The legs of the capital "H" in Q1, the color copy signature, contain small black dots that align with the location of the intersection of the "H" with the printed baseline in the K1 signature.
AJXZ9L	Measuring Grid	A measuring grid was used to evaluate the spatial relationship of the Richard Hensen signatures with the printed baseline in Q1 & K1. **This examination was not necessary based on the VSC findings; however, had the VSC not been available the differences of spatial relationship of the signatures with the printed baselines could be observed.
AJXZ9L	Electrostatic Detection Apparatus	The ESDA was used to determine if significant impressions were presented on Q1 or K1. No discernable impressions were developed.
AMDMMR	MICROSCOPY EXAMINATION	K1 is printed in electrophotography (toner) Q1 is printed in electrophotography (toner) for the text, Hess's signature is handwritten while Hensen's signature is printed in inkjet
AMDMMR	VSC6000	K1 is printed in electrophotography (toner) Q1 is printed in electrophotography (toner) for the text, Hess's signature is handwritten while Hensen's signature is printed in inkjet
ATMQQ9	Microscope (microscopic analysis)	The employee's signature has color half-ton dots.

TABLE 2

WebCode	Methods/Techniques	Observations
AXY7HQ	Microscopic/ Macroscopic	Used microscope and made these observations-Q1 noted that the Hess signature was an original ink signature, but the Hensen signature was not original and was printed using a machine copier/printer. Also noted that the Hensen signatures on both Q1 and K1 overlay. Concluded that this must have occurred as a result of a cut and paste procedure. Also found markings in the horizontal line from the document that the cut and paste originated from in the Q1 Hensen signature. Examination of K1 revealed no areas of concern as all was consistent with being a machine copy.
AXY7HQ	Indented Writing	No indentations were found on Q1.
B846KJ	Visual examination	Q1 : shows different colours; paper is not folded; does not bear any mark of stamping. K1 : is monochrome (black ink); paper is not folded.
B846KJ	Visual examination w/ microscope	K1 : Fully printed by a laser machine (photocopy). No evidence of montage or tampering / editing. Q1 : Offer letter text printed by a laser machine (printer). Employer's signature handwritten with a ball point pen (genuine signature). Employee's signature printed by an inkjet printer (reproduced signature).
B846KJ	Microscopic and Macoscopic[sic] comparison	Excepting the value/figure of the disputed sales commission, the lay-out of Q1 is typographically identical to that of K1 but top margins are different and left margin of K1 is not constant (diminishes from top to bottom). K1 is slightly distorted. Employer's signature on K1 is slightly different from the employer's signature on Q1 but both signature[sic] share common reference points. Employee's signature on Q1 can be superimposed over the employee's signature on K1 but the distance to the underscore is slightly different. On Q1, the employee's signature is rendered with a halftone that contains black dots where the signature would cross the underscore on K1.
BHHZMC	Light Microscopy	Upper signature clearly in Q1 from K1; not a photocopy. Lower signature appears to be a stamp but Q1 stamped further above signature line than K1.
BKQBJF	Magnifying Glasses/ Microscope	I observed that the signature's strokes of Richard Hensen on Q1, are not solid color, but a combination of multiple colored dots a result of copying using a commercial printer.
BKQBJF	Comparison Techniques	By comparing the Q1 signature to the K1 signature, I observed that they are identical and can be super imposed as a result of copying Q1 signature from K1 signature electronically.
BVLJ3H	Vaccum[sic] box	K1: Any pressing latent trace. Q1: Latent trace of the signature Lady "Samantha Hess" on the back.
BVLJ3H	VSC 6000: printing technics[sic]	K1: monochrome laser printing the entire document. Q1: The text is printed in monochrome laser. The signature of the employee "Richard Hensen" is color inkjet. The signature of lady "S. Hess" is is[sic] issued from a script writer tool.
BVLJ3H	VSC 6000: paper quality	A comparison under different light, we can see a difference in look-through paper between parts of the question Q1 and K1.
BVLJ3H	VSC 6000: superimposing	We notice that the employee's signature on the two questioned[sic] pieces is stack (match) with similarity (is exactly superimposed). We notice on piece Q1 residue of the line of the employee's <<Richard Hensen>>. We notice the the[sic] signature of Madam <<Samantha Hess>> is different on the two questioned[sic] pieces.
BVLJ3H	Examination of <<Libre[sic] Office>> text	The font used is similar to the font "Calibri" size 12 for the body text.

TABLE 2

WebCode	Methods/Techniques	Observations
BYAZQH	Electrostatic detection and examination under oblique light	No abrasion nor mechanical erasure have been revealed on Q1. Therefore, electrostatic detection on Q1's reverse, only reveals employer's signature and not employee's signature. No more indented writing has been revealed.
BYAZQH	Macroscopic examination	Texts of the offer letters K1 and Q1 are similar except in percentages. Employer's signatures on K1 and Q1 are different. Employee's signature on Q1 is the same as employee's one on K1: they superpose one together.
BYAZQH	Microscopic Examination	The text of offer letter Q1 has been produced using a laser printer. The employee's signature on Q1 has been printed using an inkjet printer. The employer's signature on Q1 has been produced with a black ballpoint pen.
C28Y29	Microscopic examination of Q-1 and K-1 using a stereomicroscope at 1.5x and 3.5x magnification	Determined the methods of production: K-1 is entirely produced using an electrostatic process with black toner (laser printer/photocopier). Q-1 is produced using several processes: The body of the letter is produced using an electrostatic process with black toner (laser printer/photocopier) while the Samantha Hess signature is original black ball point pen writing. The Richard Hensen signature is color ink jet.
C28Y29	Visual comparison of Q-1 and K-1 using a light box/transmitted light	Font style and size, content of letter, design of logo and Richard Hensen signatures are the same, excluding 4% on Q-1 and the 6% on K-1 and the Samantha Hess signatures. Q-1 and K-1 overlay exactly except the 4 and 6 and Hess signatures.
C28Y29	Oblique light exam for indented writing using the Crime-lite, ESDA2 and VSC 6000 instruments	No indented writing was observed. ESDA verification test strip yielded positive results.
C28Y29	Overlay tool using VSC6000	Confirmed overlays of letter and Hensen signatures and saved composite images to illustrate overlays. Confirmed Hess signatures did not overlay.
C28Y29	Ultraviolet light (365 nm) exam using VSC6000	No evidence of value observed.
C28Y29	Forensic handwriting comparison of Hess signatures on Q-1 and K-1	Strong agreement of individual handwriting characteristics. The finding is limited because the signatures are abbreviated and stylized. Probably of common authorship.
C28Y29	Adobe Photoshop and Microsoft Word software programs	Created handwriting comparison chart to assist in my examination and comparison of Hess signatures.
C397U8	Microscopic Exam	Process: Dry Toner; Color Ink jet; BP ink, etc.
C397U8	TW Grid & E ruler Exam	No signs of manipulation or insertion.
C397U8	Indented Writing Exam (ESDA & side lighting)	Nothing observed.
C397U8	HW Comparative Exam (Microscope & Hand Lenses)	Hensen signatures are copies from same model; Hess signatures are diff original signatures.

TABLE 2

WebCode	Methods/Techniques	Observations
CDH87L	Examination of the signatures; original vs. photocopy.	The signature of the employee, as well as the employer, were examined to determine if they were originals or machine copies. The signature of the employer, Ms. Hess, on Q-1, was an original (written with a ball point pen having black ink). However, the signature of the employee (Mr. Hensen), was a machine copy. (Color, toner technology.)
CDH87L	Examination of the signatures: consistency with the copy.	Although the signature of Mr. Hensen on the 'original' aligned with his signature on the photocopy, the signature of Ms. Hess on the 'original' did not align with hers on the copy. If the photocopy was a true copy of the original, all text and signatures would be in alignment.
CDH87L	Printing process	The copy provided by Mr. Hensen was printed entirely with toner technology. The 'original' provided by Ms. Hess (Q-1), was also printed with toner technology except for her signature which was signed with original ink.
CDPBNJ	Leica microscope - microscopic	black ink observed on "Samantha Hess" signature on Item Q1 and toner observed on "Samantha Hess" signature on Item K1. Color ink jet printer "Richard Hensen" signature on Item Q1
CDPBNJ	Leica microscope - microscopic	possible cut and paste characteristics in "Richard Hensen" signature on Item Q1. No water marks observed on Item Q1
CDPBNJ	ESDA - indented writing	Indented writing detected on front of Item Q1. Indented writing is best read as "T J re."
CDPBNJ	Overlays	"Richard Hensen" signatures on Item Q1 and Item K1 overlay
CDPBNJ	VSC 6000	No evidence of paper fiber disturbance on Item Q1
CLVFDF	Microscope	Noted the printing processes; Observed characteristics in the signature to indicate "cut & paste"; Examined the signatures to determine whether freely and naturally prepared.
CLVFDF	ESDA	Examined Q1 for indented writing.
CLVFDF	Oblique light source	Examined Q1 for indented writing
CM8V4A	Visual and Stereoscopic Microscope	Visual examination of K1 and Q1. Microscopic examination showed that the alleged signature of Richard Hensen on Q1 was printed from an ink jet or color printer type device. The signature is composed of blue and magenta dots which indicates that it was machine created.
CMEJLU	Stereomicroscope & Keyence Microscope	There were two types of print processes on the Q1, toner and ink jet. The overall Q1 document was produced on a toner process machine and the Q1 "Richard Hensen" signature was produced on an ink jet process machine, which means the signature is not an original signature. The Q1 "Samantha Hess" signature was produced with a ballpoint pen. There were dark areas on the bottom staffs of the "H", which is the approximate area of where the K1 baseline is located. This is indicative of the source baseline being removed digitally or manually to use the "cut-and-paste" method onto the Q1 document. The "Samantha Hess" signature was produced with a ballpoint pen and is an original signature. In addition, the Q1 document appears to be a black & white print out in the printed text portion. This is evident in the halftoning in black toner in the Safe Haven logo. The Q1 "Hensen" signature was produced in color ink jet as there were CMYK droplets. A CPS code was not observed on the Q1 document.

TABLE 2

WebCode	Methods/Techniques	Observations
CMEJLU	VSC, ESDA, & Oblique Lighting	No discernable markings, writing impressions, or alterations were observed on the VSC, ESDA, or with oblique lighting.
CMEJLU	Photoshop	A CPS code was not observed. The Q1 document was overlaid over K1 document. The format, font, and size were in agreement with the exception of the "4%" on Q1 and "6%" on K1, the different "Hess" signatures, and the placement of the Q1 "Hensen" signature where it sits slightly higher on the baseline than the K1 "Hensen" signature. This is more evidence that a revision was made on the Q1 document and a source "Hensen" signature that Q1 and K1 shares was placed on the Q1 with a "cut-and-paste" method.
CUNHU6	Microscopic	Q1 printed using xerographic[sic] processes, except for employee signature which has been produced using an ink jet process. Employer signature is an original ink signature written with a black ballpoint ink. K1 printed entirely using xerographic processes.
CUNHU6	EDD	No observable impressions on either Q1 nor K1.
CUNHU6	Multi-spectral	No significant observations, save for inclusions in substrate of Q1.
CUNHU6	Overlay Comparison	The employee signatures in both documents are identical, but neither are original ink handwritten signatures.
CUNHU6	Typographic	The entries in the body of Q1 appear consistent and no typographic misalignment has been observed. This would indicate the production of this document using word processing software.
D3QEJ3	Microscope	Q1: The document is laser printed with black toner; the signature of the Human Resources Manager is in ball-point ink; the signature of Richard Hensen is ink-jet printed.
D3QEJ3	Transparency comparison between K1 and Q1	The content of the two documents K1 and Q1 overlap, except for the percentage commission; the signature of the Human Resources Manager and the relative position of the signature in the name of Richard Hensen.
D3QEJ3	VSC	Overlap comparison of the 2 documents Q1 & K1 using the mix function.
D9MR2C	Video Spectral Comparator	Alternate light for printing and handwriting on item Q1 and item K1.
D9MR2C	ESDA	Indented writing on item Q1 and item K1
D9MR2C	Light Box	Overlay of handwriting on items Q1 and K1
D9MR2C	Transparencies/ Acetate	To show overlay of questioned signatures and baseline on items Q1 and K1
DBWDR4	Microscopic	Q1: Q1 was made with printer/copier based on electrophotography excluding the signatures. The signature of Ms. Hess was made with a pen and the signature of Mr. Hansen was made with an inkjet printer. In the vertical lines of the letter "H" in Mr. Hensen's signature on sample Q1, parallel breaks of black colour were observed. K1: K1 was made with printer/copier based on electrophotography. Comparing Q1 & K1: Differences in shapes between Hess' signatures in samples Q1 and K1. The signature of Hensen was a bit further off of the horizontal line on Q1 than in K1. The shapes of Hensen's signatures in Q1 and K1 were identical.

TABLE 2

WebCode	Methods/Techniques	Observations
DK8H2M	Microscopic	Black/gray hue to Hess signature color dot pattern visible around Hensen signature on Q1.
DK8H2M	Oblique Light	No indentations observed on Q1 with oblique light.
DK8H2M	Comparison by overlay using VSC 6000	Compared Q1 & K1 by overlay method. Hensen signatures similar. Hess - signatures different.
DQQA8A	Microscope with visible light	Checked Richard Hensen signature in Q1 and found that it is not original. It has been reproduced and color printed as the strokes are having dots.
DQQA8A	Oblique Light	Checked for signature impression. No impression for Richard Hensen signature. There is impression for Samantha Hess sign.
DQQA8A	Light transmission	By keeping Q1 & K1 one top of the other and transmitting light through them that Richard Hensen signature on Q1 & K1 are identical and Samantha Hess's sign has difference in size.
DQQA8A	VSC 6000	Examination with VSC clearly shows that the line under "Richard Hensen signature" is printed over the signature i.e.. The signature was printed first and the document was printed after that.
DQT3YG	microscopic, comparison techniques Docucenter	Under high magnification (x59), Q1 form is laser printed, the employee signature is ink jet coloured printed and the employer signature is handmade with a black ink ball-point. K1 form is full toner printed.
DQT3YG	Indented writing (only oblique here)	none indented writing have been found, especially in the signature zone.
DQT3YG	Superposition techniques	Making superposition of the two forms, we observe : Match on full text and logo of the forms. Match on full employee signature. No match on employer signature
DTDMQJ	Microscopic	The "Richard Hensen" on Q1 is not an original written entry. There is evidence of cut and paste as there are remnants of the baseline in the vertical lines of the "H". The "Richard Hensen" signatures on Q1 and K1 are unknown generation copies of the same original signature.
DTDMQJ	Indented Writing	Q1 and K1 were examined for indented writing using the ESDA and no indented writing images were detected.
E49J7K	Lents[sic] 20X and 10X	The singnature[sic] of the employee in the "original letter" is not originall[sic]. It is a copy printed of the signature in the photocopy submitted by the employee.
E49J7K	Lumisys[sic] STM	In the superposition of signatures we can see a perfect match between the employee signature on both letters, but not between the employer signatures. So the questioned letter is not the originall[sic].
EAJ73F	Microscopic	Q1 - printed text portion is toner: Hess signature - original black ball point ink: Hensen signature - color ink jet technology. K1 - toner technology.
EAJ73F	Indented writing exam	ESDA examination of both Q1 and K1. No indentations of evidentiary value observed on either K1 or Q1; test strip positive.
EAJ73F	Photocopier exam	Trash marks observed on both K1 and Q1; show different patterns between the 2.
EAJ73F	Watermark	No watermark observed on either K1 or Q1.

TABLE 2

WebCode	Methods/Techniques	Observations
EBATGJ	Microscopic/ Macroscopic	The text in the body of the questioned letter (Exhibit Q1) was produced with a printer using toner technology and the "Samantha Hess" signature on Exhibit Q1 is an original inked signature that appears to be naturally written; however, the questioned "Richard Hensen" signature was produced with a printer using liquid ink jet technology and is not an original inked signature.
EBATGJ	Digital image processing/ Comparison	The questioned "Richard Hensen" signature on Exhibit Q1 and the "Richard Hensen" signature on Exhibit K1 appear to originate from a common source. Please see images.
EBATGJ	Oblique Lighting and Transmitted Lighting	No indentations or evidence of alteration noted.
EBATGJ	Electrostatic Detection Examination	No handwriting indentations found on Exhibit Q1 or Exhibit K1
EBATGJ	Digital Scan	Exhibits were digitally scanned and the digital images retained.
EBT78M	Microscopic	Identification of printing techniques/methods of production. Q1: black toner, HESS signature - black ballpoint ink, HENSEN signature - coloured inkjet. K1: black toner only.
EBT78M	Photoshop Overlay - Comparison of Signatures	HESS signatures do not overlay i.e. have not originated from a common source. HENSEN signatures do overlay i.e. have originated from a common source.
EBT78M	Indentations	No extraneous indentations were detected on Q1 or K1.
EKAJYK	Microscope	Examination of printed text. Examination of signatures.
EKAJYK	Acetate Overlay	Examination of signatures.
ENXXPF	Initial Assessment	Manner of preparation of the two documents, to include use of toner technology on Item K1 and the majority of Item Q1, the use of ink jet technology in the printing of the Richard Hensen signature on Item Q1, and the original ball point writing ink of the Samantha Hess signature.
ENXXPF	Macroscopic	Observed the difference in the Samantha Hess signatures between the two documents. Also observed the difference in distance between the Richard Hensen signatures and the respective signature lines on each document.
ENXXPF	Microscopic	Observed remnants of a signature line in the Richard Hess[sic] signature on Item Q1 that was in the same location of the signature as the signature line of the Richard Hensen signature on Item K1.
ENXXPF	Alteration Methodology	Determined that the Item Q1 document is not genuine, based on the Item K1 document.
ENXXPF	Indentation Examination	No indentations observed on Items Q1 and K1.
EQ8GPH	Indented Writing (ESDA2) and oblique light	No indentations of apparent evidentiary value were developed or observed on Exhibits 1 (K1) and 2 (Q1).
EQ8GPH	Macroscopic/ microscopic examination	Exhibit 1 (K1): entire document produced using toner technology. Exhibit 2 (Q1): "Hess" signature produced using a non-aqueous based, black ink, ball point pen; "Hensen" signature produced using ink jet technology (CYMK); remaining text produced using toner technology.

TABLE 2

WebCode	Methods/Techniques	Observations
EQ8GPH	Macroscopic/ microscopic examination (cont)	Remnants[sic]/artifacts of a prior baseline visible in the right and left staffs of the "H" in "Hensen."
EQ8GPH	Analysis/ comparison of fonts	Machine generated text on Exhibits 1 (K1) and 2 (Q1) were produced using Claibri[sic] (11pt).
EQ8GPH	Ultraviolet Light box (Chromato-Vue)	Exhibits 1 (K1) and 2 (Q1) have different light reactive properties.
EQ8GPH	Adobe Photoshop CS6	The "Hensen" signatures reproduced on Exhibits 1(K1) and 2 (Q2) overlay; the ruled baselines for these two signatures do not overlay.
FBNMQR	Microscopic Observation	The signature of "Richard Hensen" on Q1 was not written by a writing tool with hand, instead, it was printed by a jet-printer in color mode.
FBNMQR	Macroscopic Comparison	The signature of "Richard Hensen" on Q1 matches that on K1, indicating they are originated from the same source.
FBNMQR	Microscopic Comparison	The two dark areas on the line of the "Richard Hensen" above the printed underline on Q1 match the crossed areas of the signature of "Richard Hensen" and printed underline on K1.
FBNMQR	Visual Spectral Observation	The spectral image of the signature of "Richard Hensen" on Q1 is different from that of "Samantha Hess" on the same document.
FBNMQR	Raman Spectral Characterization	The Raman spectra of the signature of "Richard Hensen" on Q1 agree with those of the inks printed by some jet-printers in our ink library.
FDM6KD	Stereo microscope	Determine printing processes used for maching[sic] printed text (toner); Hensen signature (inkjet), and Hess signature (ball point pen).
FDM6KD	ESDA/ oblique	Processed Q-1 for indented writing. Nothing significant was observed.
FDM6KD	Transparency film	Overlay to Q-1 and K-1 to confirm that Hensen signature is the same, and Hess signatures are different.
FDYRVM	Microscopic	#Q1 is a laser printed toner document except for the two signatures. The Samantha HESS on #Q1 signature is fluently written in black ballpoint pen ink. The Sammantha[sic] HESS signature depicted in the photocopy #K1 appears flently[sic] written and although similar pictorially to that on #Q1 has differences in the proportions of some features and is not superimposable on #Q1. Therefore the Samantha HESS signature on #Q1 is not the source of the samantha[sic] HESS signature on #K1.
FDYRVM	-	The Richard HENSEN signature on #Q1 is an inkjet printed non-original signature. It is superimposable on the Richard HENSEN signature depicted in #K1 but is positionally slightly different with respect to the guide line. In addition there are darker horizontal inkjet lines in the two descending strokes of the H corresponding in position to where these descenders intersect the guide lines on document #K1. These findings suggest that the Richard HENSEN signature on #Q1[sic] has been copied from the same document that the document #K1 has been copied from. This copy has been electronically pasted into the document #Q1 after the rest of this document had been printed since there are inkjet droplets ontop[sic] of the toner in the guide line.
FDYRVM	-	There is an obvious difference on the 3rd line in %commission per sale (4% in #Q1 and 6% in #K1).
FDYRVM	ESDA	No indendent[sic] writing impressions observed on either document #Q1 or #K1.

TABLE 2

WebCode	Methods/Techniques	Observations
FHRZUM	Macroscopic	Observed toner printing process, original ball point ink, color ink printing process
FHRZUM	VSC-6000	All of the above
FHRZUM	ESDA	No extraneous indentations found
FXH6ZV	Microscopic- examination of printing and inks	Item K1- document produced by electrostatic printing process (laser copier/printer). Observed features: granules of toner, shiny finish, toner on top of paper, no embossing. Item Q1- document produced by 3 different processes. Body of letter produced by electrostatic printing process (laser copier/printer). Observed features as above. 'Samantha Hess' signature black paste ink. 'Richard Hensen' signature produced by ink-jet printing. Observed features: ink absorbed into paper fibres, splattering of ink, comprised of droplets of ink. Observed two black sections in the lines of the vertical strokes of the 'H' close to the baseline.
FXH6ZV	Overlay Exam- using light box and VSC5000	Item Q1 and K1 'Richard Hensen' signatures overlay with each other but have different alignments with their respective baselines (i.e. have originated from the same source). Black sections observed in item Q1 'H' overlay with baseline intersection of 'H' in item K1. Item Q1 and K1 'Samantha Hess' signatures are not similar and do not overlay with each other (i.e. K1 signature is not a reproduction of Q1 signature).
FXH6ZV	Typewriter Grid Exam-	Item Q1 and K1- all other printing on these items has similar text (excluding '4' and '6' numerals regarding commission), layout, line and letter spacing and overlays with each other with some allowance for distortion due to K1 being a non-original reproduction of another document.
FXH6ZV	Indented Writing- ESDA and oblique light	Numerals '4' and '6' on items Q1 and K1 respectively, align with other text in documents. No latent impressions observed on items Q1 and K1.
GABCDL	Video Spectral Comparator superimposition	Q1 and K1 are identical except for the % commission rate and signature in the name Hess.
GABCDL	Stereomicroscope	The signature in the name Hess[sic] is not an original signature made with pen and ink but is a colour copy produced on an ink jet printer.
GD9VDY	VSC6000 (Instrumental Analysis)	The employee's signature on the document is color printed.
H3KJEQ	Microscopic/ macroscopic	K1 - complete toner document. Q1 - toner document bearing 2 signatures, the upper one is ball-point pen original ink; the lower one is produced with inkjet technology.
H3KJEQ	Indented writing (ESDA)	no relevant indented impressions noted
H3KJEQ	Soft x-ray	Toner all highly visible, over both documents. No evidence of alteration or toner erasure. Signatures on Q1 are transparent to the x-ray, those of K1 are visible as toner lines.
H3KJEQ	Signature comparison	K1:Q1 - S. Hess signatures are not the same, do not share graphical form/design. K1:Q1 - R. Hensen signatures on both originate from a common original signature, that is, both are reproductions. Evidence of darkening of inkjet printed R. Hensen (H staffs) signature suggesting where original signature crossed the signature line.

TABLE 2

WebCode	Methods/Techniques	Observations
JBVXY8	Microscopic, VSC Image Overlay	Observed that printing process for the text on Q1 is a toner technology and the printing process for the Hensen questioned signature is a color copy process. The Hess signature is an original signature executed with a black ball point pen. Comparisons of the Hensen signature found on K1 and the questioned Hensen signature appearing on Q1, using the overlay feature of the VSC4c, revealed that the two signatures super-imposed.
JCNZJ3	Microscopic Examination	It was determined that the Exhibit Q1 Richard Hensen signature is not an original signature. The Richard Hensen signature was produced using inkjet technology. The Exhibit Q1 Samantha Hess signature was an original signature produced using a black ball point pen. The body of the Exhibit Q1 letter was produced using an office machine system utilizing black toner. The entire Exhibit K1 document to include the signatures was produced using black toner. The Exhibit K1 document is not a copy of the Exhibit Q1 document. The Richard Hensen signatures found on Exhibits Q1 and K1 are direct overlays of one another. The Samantha Hess signatures found on Exhibits Q1 and K1 are not overlays of one another.
JCNZJ3	Alternate Light Sources (VSC)	Under Infrared 715 longpass the Exhibit Q1 Samantha Hess signature was not visible. Under Ultra Violet radiation at 365 nanometers the Exhibit Q1 and K1 documents reacted slightly different. Under spot 400-640 the Exhibit Q1 Samantha Hess and the Richard Hensen signatures reacted differently. The Samantha Hess signature reflected the light making the signature appear lighter and the Richard Hensen absorbed the light making the signature appear darker.
JCNZJ3	Electrostatic Detection Device (EDD)	Negative results
JCU6E7	ESDA	Indented writing.
JCU6E7	VSC	Using IRL, IRR and magnification to examine inks.
JCU6E7	MiScope/ Stereo Microscope	Magnification of details, 10X and 25X eyepieces.
JCU6E7	Transmitted light	Overlays
JCU6E7	Typography/ Typewriter grids	Horizontal spacing and alignment.
JCU6E7	Identifont	Font type and style.
JCU6E7	Process for latent prints/ DNA.	Ninhydrin and process DNA.
JEZ3YT	Microscopic	Hensen signature observed to be color inkjet printing on Q1 ; original writing for the Hess signature, and Toner printing for the remainder of the document. K1 is toner printing throughout. Q1 Hensen signature contains black printing in the region of the original baseline.
JEZ3YT	Digital Imaging	Hensen signatures from Q1 and K1 were overlaid showing no differences identifying they originate from a common source. The black printing above aligns with the baseline of the K1 signature showing the signature on Q1 is a later generation signature than the one on K1.

TABLE 2

WebCode	Methods/Techniques	Observations
JEZ3YT	Indentation Examination (electrostatic)	No meaningful impressions located.
JEZ3YT	Alteration Exam	The paper in the area of the percentages in question was microscopically examined for the presence of disturbed paper fibers. None observed.
JGY72U	VSC 6000 (Normal light-physical examination on the signatures)	Q1-Printed signature (laser jet) of Richard Hensen observed. K1-Printed signature (photocopy) of Richard Hensen observed.
JGY72U	VSC 6000 (Normal light-overlapping comparison)	Q1 and K1 overlap each other perfectly except for the signature of Samantha Hess.
JGY72U	VSC 6000 (Spectrometry-ink analysis)	Q1-The spectrum for '4' was similar with the surrounding word '%', 'c' and 'h'. K1-The spectrum for '^ [sic]' was similar with the surrounding word '%', 'c' and 'h'. The spectrum for '4' in Q1 and '6' in K1 was different.
JGY72U	VSC 6000 (Sport light-security features)	Q1-Fluorescent fibers observed. K1-No fluorescent fiber observed.
JGY72U	ESDA (Indented writing)	Q1-No indentation mark observed. K1-No indentation mark observed.
JMNJ3H	Microscopic	I observed a digital characteristics[sic] in the signature (Q1).
JMNJ3H	Comparison technique	K1 and Q1 are similar but Q1 it's a digital signature.
JTDXBX	Observation and analysis	Macro and micro analysis describing general and particular characteristics of both, support and inscriptions. It was looked for the presence of strange elements and mass loss. The system's impression characteristics were verified. Detailed observation of the documents's particularities by means of different lighting modes.[sic] Use of the VSC with different filters.
JTDXBX	Comparison	Comparison between questioned[sic] and known samples.
JTDXBX	Conclusion	Judgement emissions, evaluation of matching and no matching characteristics.
JX6BKZ	visual examination	It was noticed that in K1 it is 6% and in Q1 is 4%. It was noticed that in Q1 the employers signature is done by pen, and employee,s signature is printed. Under IK light the employer,s signature indocume dokument Q1 became invisible and employee,s signature in document Q1 is printed. [sic]
JX6BKZ	microscopic examination	[No observations reported]
JX6BKZ	VSC – 5000 Examination	[No observations reported]
K3VX4C	Indented Writing - Side light and ESDA	Negative
K3VX4C	Microscopic Examination (printing)	Item Q1 "Hensen" signature ink jet (non-original); bleeding of ink into fibers, satellite drops, C, M, K colors noted. "Hess" signature original ink signature (embossing and striations noted). Text is toner (mounding of toner particles, heat/fusing observed)

TABLE 2

WebCode	Methods/Techniques	Observations
K3VX4C	Macroscopic comparison/overlay	Samantha Hess signatures are different between items Q1 and K1 (do not overlay). Trash marks observed on items Q1 and K1 that are not consistent with each other. Text alignment/spacing inconsistencies noted in lower portion of documents (signature area). Q1/K1 font consistent.
K3VX4C	VSC examinations	No copy codes noted. Back lighting used to assist with alignment comparisons. Different reactions noted with the original Hess signature and the ink jet Hensen signature on item Q1.
KE939M	Ruler and Dial Caliper	Similarity in dimensions and thickness of paper
KE939M	Visible Light Examination	Exhibit K1 appear greyish with a little texture. Exhibit Q1 appear creamish with the presence of what looks like red security fibres
KE939M	Transmitted Light Examination	No watermarks seen on Exhibits Q1 and K1. Both sheets appear in cream colour.
KE939M	ESDA Examination	No indentations seen on either of Exhibits Q1 and K1.
KE939M	Ultra Violet Light Examination	At all wavelengths - 365, 312, 254 and 365T nm, paper fluoresce blue for both Q1 and K1.
KE939M	VSC Infrared Absorption Examination	Exhibit Q1 - Print remains visible throughout wavelength range. At 715nm, signature "Samantha Hess" disappears. At 1000nm, signature "Richard Henson[sic]" slightly visible. Exhibit K1 - Print and signatures remain visible throughout all ranges.
KE939M	VSC Infrared Luminescence Examination	Exhibits Q1 and K1 - paper only luminesces
KE939M	Microscopic Examination	Exhibit Q1 compared to Exhibit K1: slight differences in print text or letter forms, differences in alignment from left margin, slight differences in spacing between words, lines and paragraphs.
KE939M	Signature Comparison	Exhibit Q1: - Samantha Hess signature prepared using black ball-point ink. Richard Henson[sic] signature produced using blue printing ink/toner. Exhibit K1 - both signatures produced with black toner particles. Samantha Hess on Exhibit Q1 compared to that on K1: similarity in overall appearance, variations in letter forms, movement and placement, variations of the same writer. Richard Henson[sic] on Exhibit Q1 compared to that on K1: similarity in overall appearance, exact similarity in letter forms, movement and placement of the same writer. When the two signatures are overlaid with each other, the signatures line up/match up in perfect register (every letter form, tick, hook, movement) baseline does not match up.
KMM4C3	Microscopic magnification and lighting	Toner text on items Q1 and K1; inkjet Richard Hensen signature on Q1, original Samantha Hess signature on Q1 (different toner image on K1), different positioning of Richard Hensen signature with respect to the signature line between items Q1 and K1. No watermarks observed.
KMM4C3	Side lighting and ESDA	No indented writing observed.
KMM4C3	VSC 6000	Luminescent Samantha Hess signature on item Q1 using spot excitation of 400-640 nm with a 695 nm longpass filter
KRK23Z	Indented Writing (ESDA)	ESDA conducted at 0 min humidity on front and back of document. No latent writing impressions (LWI) were developed on Q1 (front). LWI were developed on Q1 (back) and appear to be the signature of Samantha Hess.

TABLE 2

WebCode	Methods/Techniques	Observations
KRK23Z	Intented[sic] Writing (Oblique Fiber Optic)	No apparent latent writing impressions developed on Q1 (front or back).
KRK23Z	VSC 6000 (Various Light Sources and Filters)	Transmitted lighting was used to view Q1 superimposed over K1. The two documents did not appear to be superimposable. The only portion that was superimposable was the signature of Richard Hensen.
KRK23Z	Microscopic (Stereo-zoom microscope with attached Canon camera)	The questioned document, Q1 appears to have been printed with toner. The questioned signature of Richard Hensen appears to have been printed with ink jet. The signature of Samantha Hess on Q1 appears to be written with black ball point ink. The known document, K1 appears to be produced with toner. The VSC6000 visual flood lighting with magnification was also used to view microscopic detail.
KRK23Z	Macroscopic	The signature of Samantha Hess on the questioned document, Q1 exhibits variation compared to the signature of Samantha Hess on the known document, K1. The signature of Richard Hensen does not appear to exhibit any variation between the two documents, Q1 and K1.
L39XB7	Microscopic	The Q1 signature is colour laser-printed.
L39XB7	Adobe Photoshop	Q1 & K1 signature blocks where superimposed, showing they are not 2 signatures, but 1. Residual underscore signature line detected in Q1, showing that a line on a generation of K1 was removed during graphic manipulation.
LTU7FN	Stereoscope microscopy and transparence[sic] film copies	1) The employee signature in Q1 is a photocopy and the employer signature is original so this document is not genuine. 2) The employee signature is identical in both document[sic] while the employer signature is different.
M9WRBD	Microscope	The "Hess" signature on Exhibit Q1 is original: the "Hensen" signature is printed (non-original) using liquid ink jet printing technology.
M9WRBD	Transmitted Light	The "Hensen" signatures on Exhibits Q1 and K1 overlay; the "Hess" signatures do not.
M9WRBD	Electrostatic Detection Apparatus (ESDA)	Negative for indentations
MADJ8L	Microscopy	Q1: inkjet product (signature). K1: toner product (signature).
MADJ8L	Examination of congruences	Q1 (signature) is congruent with K1 (signature)
MLFM29	Microscopic and Lens	[No observations reported]
MLFM29	light Direct- Trans-Obliges[sic])	[No observations reported]
MLFM29	UV	[No observations reported]
MLFM29	IR	[No observations reported]

TABLE 2

WebCode	Methods/Techniques	Observations
MYBM7Y	Microscopic Examination	The machine generated text of the document/form Q1 was produced with a laser printer (K1 may be a copy regarding the sharpness of contours). The signatures of Q1 were made with black ballpoint ink (Samantha Hess) and created with an Inkjet printer (blue colored "Richard Hensen").
MYBM7Y	Examination in the NIR-/UV- range	The questioned documents (Q1 and K1) show no different or significant results in their physical characteristics of inks and paper.
MYBM7Y	Examination on a light-table	In superposition of documents K1 on Q1 with light shining through the paper both signatures "Richard Hensen" on the documents show congruence in their positioning to the text and in their graphic shape, too. But the signatures (Samantha Hess) in the lower middle of the contract were different in the position to the text and in their individual shaping.
MYRHKK	UV (254 – 365 nm)	Q1 different from K1. The paper luminescence is different between Q1 and K1.
MYRHKK	Macroscope	Q1: The text of the letter and the logo are printed using an electro-photographic (EPG) printing system using black toner, while the Richard Hensen (RH) signature is printed by an inkjet color system. The RH signature shows black marks crossing the two vertical strokes of the signature. The distance between the RH signature and the horizontal under line is bigger than[sic] on K1. The Samanta[sic] Hess (SH) signature is an original inked signature written with a ballpoint pen using black ink. This SH signature is graphically different (not the same) as the one figuring on K1.
MYRHKK	Digital Microscope	Colored ink traces from the inkjet color system used to print the RH signature on Q1 were found on the top of the black toner used to print the Q1 letter.
N79D6K	ESDA/ Oblique Light	Q1 - Neg, K1 - Neg
N79D6K	Watermark/ Transmitted Light	Q1 - Neg, K1 - Neg
N79D6K	Macroscopic	Q1 - Samantha Hess - orig ball point pen ink. Q1 - Richard Hensen - color inkjet. Q1 - Text/graphics - Toner. K1 - Samantha Hess - Toner. K1 - Richard Hensen - Toner. K1 - Text graphics - Toner.
N79D6K	UV - 254 nm, 365 nm	Q1, K1 - Neg for Abrasions/Thinning
N79D6K	Oblique Lighting	Q1, K1 - Neg for Alterations/Abrasions
N79D6K	Visual/Photoshop CS3	Q1+K1 Richard Hensen signature superimposable. Q1+K1 signature/signature line combination not superimposable. Q1 + K1 superimposed (entire doc form font). Q1+K1 Samantha Hess signatures are different and not superimposable. Type font between Q1 + K1 consistent (similar) but further testing is needed to confirm.
N7XRZJ	macroscopic	Compared documents visually. The only difference found in the text was the 6% versus the 4%. The Samantha Hess signatures are two different signatures. The Henson[sic] signature is the same signature, but is slightly higher above the printed line on Item Q1.

TABLE 2

WebCode	Methods/Techniques	Observations
N7XRZJ	microscopic	On Item Q1, the computer generated text is all black toner. The Hess signature is black ballpoint pen ink. The Henson[sic] signature was printed using a color inkjet printer. The Henson[sic] signature was printed after the black toner signature line. There are two black dots located in the "H" of the Henson[sic] signature just above the printed baseline. On Item K1, the entire document, to include the signatures, was printed with black toner.
N7XRZJ	Photoshop	Overlaid the Q1 and K1 Henson[sic] signatures. The Henson[sic] signatures are two instances of the same signature.
N7XRZJ	Lightbox	Overlaid the the[sic] Item Q1 and K1 documents. The size of the text is slightly different. This can be attributed to Item K1 being a photocopy.
N7XRZJ	VSC	Infrared examination of Item Q1. The two black dots on the Henson[sic] signature luminesce.
N7XRZJ	ESDA/ Oblique lighting	No indentations were found on Item Q1.
NALJGF	Microscopic analysis	Q1 - the blue entry in the position "Richard Hensen" is not genuine - it is a colorful ink jet copy; Q1 - the black entry in the position "Samantha Hess" was made with use a black ball pen ink; additional marks, just like point, was disclosed on Q1 - there aren't analogical marks on K1.
NALJGF	VSC 6000 - NIR and UV analysis	No stains or mechanical signs indicated that documents were altered with use chemical or mechanical techniques.
NALJGF	VSC 6000 - mix image mode	Entries (copies) in positions "Richard Hensen" on K1 and Q1 have an identical construction - they are copies of the same entry; The entry position "Samantha Hess" on Q1 have a different construction then[sic] the copy of an analogical entry in the position "Samantha Hess" on K1; K1 and Q1 have a different topography - structure of text, margins, gaps, etc.; K1 and Q1 have the same styles of analogical fonts; K1 and Q1 have the same text except 3 verses: on the same position is "6%" on K1 and "4%" on Q1.
NHVBL4	MICROSCOPIC	Contract Q1 is printed by laser printer. Signature of Mr. Hensen on Q1 is printed by ink jet printer, which should not be in original contract.
NHVBL4	-	At the vertical lines of the letter H in signature Hensen on Q1 the black dots from previous black line for signature are visible. This indicates that signature was scanned from another document, processed by a computer and printed onto the Q1.
NHVBL4	COMPARISON (overlapping using VSC)	Overlapping signatures Hess on Q1 and K1; - Signature of Miss S. Hess on Q1 and K1 are not identical, there are differences in the shape and the position of the signature.
NHVBL4	-	Overlapping signatures Hensen on Q1 and K: - Signature of Mr. Hensen on Q1 and K1 are the same shape. - Signature of Mr. Hensen on Q1 is lgor[sic] above the black line then the signature of Mr. Hensen on document K1.
NHVBL4	-	Overlapping total contract Q1 and K1: -The text is the same, revised is only % of the commision.
NJXKD3	Light box	The printed text of the two documents Q1 and K1 were found to [sic] identical to and superimposable with each other on the content, except the printed numeral entries "4" in Q1 and "6" in K1 pertaining to the commission per sale.

TABLE 2

WebCode	Methods/Techniques	Observations
NJXKD3	Macroscopic and microscopic examination and with the aid of VSC 6000/HS	The main printed text of Q1 was found to be made up of black toner, but the signature of Samantha Hess was handwritten with black ball-point pen ink whereas the signature of the employee, Richard Hensen on it was printed with colour ink jet printing. The main text and the two signatures shown in K1 were all made up of black toner. There was no sign of alteration found amidst the printed digits "4" in Q1 and "6" in K1. The signature of "Samantha Hess" in Q1 was found to be similar to each other in respect to stroke fluency, the formation and relative alignment of strokes but not identical to and superimposable with that in K1. Whereas the signature of "Richard Hensen" in Q1 was found to be identical to and superimposable with that in K1. However, the relative positioning of the signature of "Richard Hensen" in Q1 was found to be slightly away from its reference line whereas that of the signature of "Richard Hensen" in K1 almost touched the reference line. Moreover, two darker spots were noted, one on each side on the two slanting parallel strokes of the "H-like" feature of the blue colour signature in Q1, just above and near the two intersection points of the signature with its reference line. The position of two darker spots in Q1 matched exactly with that of the corresponding intersection points of the "H-like" feature of the signature of Richard Hensen and its reference line in K1. (Please see the Illustration chart)
NJXKD3	ESDA	The printed text and the signature of "Samantha Hess" in Q1 showed white images on the ESDA lifting whereas the signature of "Richard Hensen" in Q1 was not visually found.
P9JCNL	Overlap K1 and Q1	We can find the most part of these two documents are match, but two parts are different as following: 1. 4% and 6%. 2. The signature of Samantha Hess. [Participant included images that could not be included within the report.]
P9JCNL	Microscope Observation and Overlap Comparison technique	The form of Q1 is printed by laser printer, but the signature of Richard Hensen is printed in inkjet printer. If overlap these two Richard Hensen signature on Q1 and K1, we could find the opposition[sic] of the words match. So we can get the result that the Richard Hensen signatures on Q1 is not genuine.
PALFMA	Microscope	See below [see Table 3 Conclusions]
PALFMA	Transmitted Light	See below [see Table 3 Conclusions]
PGG7JY	Macroscopic/ Comparison Techniques	(1) In "Q1", the employment contract entries were generated on a laser printer. (2) In "Q1", the commission percentage (6%) has not any evidence of addition/manipulation, so it was generated from the same file. (3) In "Q1", the employer signature is original, and comes from the same hand than "K1" but it is not identical; ergo, Q1 is not a copy of K1. (4) In "Q1", the employee signature is not original, but it was generated with an inkjet printer. (5) In "Q1", the employee signature comes from an original one that was scanned, but the forger left traces of the basal line. (6) Both "Q1" - "K1" employee signatures come from the same source[sic]. They are identical. The forger used the "K1" employee signature to make the "Q1" addition.
PKDPP4	Microscopic Examination	Printing process identification. Original pen ink identification.
PKDPP4	Electro-static examination (ESDA)	Examination for the recovery of latent/indented impressions (nil impressions recovered).
PKDPP4	Oblique light examination	Examination for indented impressions (nil impressions recovered).

TABLE 2

WebCode	Methods/Techniques	Observations
PKDPP4	Image comparison - VSC5000	Observation & superimposition examination of signatures. Observation & superimposition examination of text font, spacing alignment.
PKDPP4	Grid overlay	Observation & comparison of text spacing, size, position & alignment. Observation & comparison of signature spacing, position & alignment.
PKDPP4	Instrumental analysis - VSC5000 (Ultra-violet, visible, transmitted light sources)	Spectral observations of substrate properties.
PKDPP4	Spectral analysis - VSC5000 (Ultra-violet, infra-red, visible, transmitted light sources)	Observation & spectral analysis of ink.
PKDPP4	Microscopic & macroscopic examination	General visual observation of document.
PMBDQT	Microscopic/ Macroscopic	The K1 photocopied document printing process is toner technology. The Q1 document is composed of two print processes utilizing toner and ink jet technology. The word processed text areas of the Q1 document is toner technology.
PMBDQT	Microscopic/ Macroscopic continued	The Q1 "Samantha Hess" signature is an original writing pen ink. The Q1 "Richard Hensen" signature is not an original writing pen ink. The Q1 "Richard Hensen" signature is an image of a signature produced by ink jet technology.
PMBDQT	VSC 5000(R) Examination/ Imaging	Visual/ transmitted light examination, photo imaging and capture of Q1 and K1 document characteristics. The Q1 and K1 documents compared and super-imposed with each other. The Q1 "Samantha Hess" signature is not the source signature that appears on the K1 photocopy.
PMBDQT	VSC 5000(R) Examination/ Imaging continued	The Q1 "Richard Hensen" signature can be super-imposed over the K1 "Richard Hensen" signature. There are remnants of a source document signature line present on the lower staffs of the uppercase "H" in "Hensen" on Q1.
PMBDQT	VSC 5000(R) Examination/ Imaging continued	The exact Q1 and K1 "Richard Hensen" signature overlay with remnants of source document signature line is evidence of a "cut-and-paste."
PMBDQT	Electrostatic Detection Device	Q1 and K1 tested for latent impression evidence. Various paper transport mechanism impressions located on Q1 and K1 documents. No latent indented writing was located on Q1 and K1 documents.
PP8RRJ	Microscopic examination - Printing	Printing process determination & Examination-Q1: All printed text on Q1: Electrophotographic printing process - black dry toner; low density toner particles in non-image area; uniform throughout Q1. Printing process determination & Examination-K1: All printed text & signatures on K1: Electrophotographic printing process - black dry toner; low density toner particles in non-image area; uniform throughout K1; consistent with copying process.
PP8RRJ	Microscopic examination - Signatures	Signatures on Q1: - Samantha Hess: original, black ball point ink - Richard Hensen: non-original, produced by inkjet (CMYK) printing process. Baseline remnants (black IJ) were detected in an area corresponding to where the Richard Hensen signature & the baseline intersect on K1.
PP8RRJ	Image processing software - Image Overlay	Overlay of digital images of Richard Hensen signature on Q1 & K1: Both signatures superposed perfectly on each other - same signature Overlay of digital images of Samantha signature on Q1 & K1: The signatures do not superposed on each other - different signatures.

TABLE 2

WebCode	Methods/Techniques	Observations
PP8RRJ	Electrostatic detection device	No relevant indentations were observed on Q1 & K1.
PR828Z	Microscopic examination	Q1: Hess signature is original; Hensen signature is a color copy as color toner particles comprise the Hensen signature. The Hess signature in original black ink. Toner particles comprise machine-generated text on Q1 and K1
PR828Z	Indented writing	No discernable indentations were recovered from Q1 or K1
PR828Z	Watermark examination using light table	No discernable watermark observed on Q1 or K1
PR828Z	Comparison examination	Examination of Samantha Hess signature on Q1 to Samantha Hess signature on K1 revealed they are not the same signature, but two different signatures that possess the same combination of characteristics to indicate one writer prepared both.
PR828Z	Clear Acetate for alignment examination	Clear acetates prepared of Q1 and K1; each was used to superimpose onto the other document, i.e. Q1 acetate onto K1 and K1 acetate onto Q1. Definitive observation of misalignment of text and signatures between Q1 and K1. Q1 text is one character off (to the left).
PXRWBP	microscopic	The signature of R. Hensen on the document mark[sic] Q1 is an inkjet printed signature and not original.
QD26NY	ESDA/ Side Lighting	No indented writing of evidentiary value found.
QD26NY	Transparent Color Overlay	Q1 (blue) and K1 (red) overlays reveal the following differences Q1 text = 4% / K1 text = 6% Q1 displays slightly less line spacing beginning with the text "We would like you to start..." that continues and shrinks increasingly tighter to the bottom of the document. The Samantha Hess signatures are different - Q1 is original ink, K1 is toner. The Richard Hensen signatures are exactly the same signature. Q1 = color ink jet. K1 = black toner.
QKRJXR	Microscopic analysis	Microscopic analysis (10X-30X) indicates that Q1 Samantha Hess signature is written with a black ballpoint pen ink (original). The Q1 Richard Hensen signature is produced using color printer/copier technology. The blue Q1 Hensen is not produced with original ink. The K1 document is produced using toner technology including both the Hess and Hensen signatures.
QKRJXR	Transmitted light analysis	The Q1 and K1 Samantha Hess signatures show variation. K1 is not a copy of the Q1 signature. The K1 and Q1 Richard Hensen signatures are the same signature. K1 and Q1 are copies of the same signature.
QLQJ76	Microscopic	Item Q1. The text has visible toner particles raised on the paper surface. It has been produced on an electronic printer such as a laser printer or photocopier. The Samantha Hess signature on item Q1 has been written in black ballpoint ink. The Richard Hensen signature on item Q1 has characteristics of being printed by an inkjet printer. There are visible CYMK dots and the ink has soaked into the paper fibres. There are two small "gaps" on the downstrokes of the 'H' of the Q1 Richard Hensen signature just above the baseline. Item K1: All entries have visible toner particles raised on the surface & have been printed by an electronic printing process. It is more likely to have been produced on a photocopier as trash marks are visible.

TABLE 2

WebCode	Methods/Techniques	Observations
QLQJ76	VSC - Overlay	The Richard Hensen signatures on items Q1 & K1 correspond exactly. The overall layout of Q1 & K1 corresponds exactly with the exception of the 6% and 4% entries. The Samantha Hess signatures on Q1 & K1 are different signatures and do not correspond.
QLQJ76	Oblique Lighting	Examined Q1 by sidelight for presence of indented impressions. No indented impressions visible. Also there are no differences to the paper surface and therefore there is no evidence of abrasion.
QLQJ76	General Observations	The Samantha Hess signature on item Q1 appears fluently written.
QTLNQT	Microscopic analysis	Henson[sic] signature on Q-1 is machine produced, not ink. Hess signature on Q-1 ballpoint pen ink.
QU3AQ2	Stereomicroscope	Using the stereo-microscope Q-1 was examined at 25x magnification. The signature "Richard Henson[sic]" is a cut and paste forgery. The signature exhibits Cyan, magenta, yellow and black and was completed using a printing process. K-1 is a photocopy.
QU3AQ2	ESDA	Using the ESDA, both Q-1 and K-1 (front and back) were processed on the ESDA. No impressions or indentations were visible.
QU3AQ2	VSC 5000	Using the VSC 5000, Q-1 and K-1 were examined using flood, spot fluorescence, UV, IR and side light. Q-1 exhibits Absorption, and fluorescence. K-1 exhibits no ink differentiation.
QU3AQ2	Transparency	Transparency overlays were created from both Q-1 and K-1. The signature "Samantha Hess", Q-1 exhibits natural variation.
QVUWZD	stereo microscopic examinations.	The Richard Hensen signature on Q1 and K1 are both machine copies, Q1 being a machine color copy process. The Samantha Hess signature on Q1 is in live ink while the Samantha Hess signature on K1 was the result of a photocopy process.
QVUWZD	cut and paste/ comparisons of signatures.	The Richard Hensen signatures on Q1 and on K1 were fitted over one another and found to overlay in a precise match showing that both of these signatures came from a same source signature.
QVUWZD	Mechanical printing/ grid analysis.	No indicia that the "4%" entry on Q1 had been placed there by alteration where the "6%" had been removed from the original page. Rather with the other evidence gleaned, the entire page had been recreated.
R27BRV	Microscopic Examination	It was noted that the Q-1 & K-1 "Samantha Hess" signatures are not the same, the K-1 signature is not a photocopy of the Q-1 signature. The "Richard Hensen" signature on the Q-1 is not an original inked entry, rather a copy thereof.
R27BRV	Electrostatic Detection Apparatus (ESDA)	Nothing of evidentiary value found.
R27BRV	VSC 6000 examination	Nothing of evidentiary value found.
R2J8UE	VSC 6000H/S	The Q1 Richard Hensen signature is not an original inked signature. The Q1 Richard Hensen signature was produced via an inkjet process. The Q1 and K1 richard[sic] Hensen signatures are reproductions of the same Richard Hensen signature.
R2J8UE	ESDA	No indented writing was developed.

TABLE 2

WebCode	Methods/Techniques	Observations
R2J8UE	VSC 6000H/S	The Q1 Samantha Hess signature is an original inked signature. The Samantha Hess signature on item #K1 is not a reproduction of the original inked Samantha Hess signature on item #Q1.
R3WFK3	Macroscopic Examination	Font, spacing, formatting, and the content of the printed text in Item Q1 are consistent to Item K1 except for the percentage value on Line 3 of the first paragraph. The numeral is "4" on Item Q1 and "6" on Item K1.
R3WFK3	Microscopic Examination	"Samantha Hess" signature on Item Q1 is an original signature produced with black ballpoint ink. "Richard Hensen" signature Q1 was not an original signature; it was produced with a device using inkjet technology.
R3WFK3	Indented Impression Examination	Only faint lines developed on the reverse of Q1 and K1; the line patterns were not consistent between Q1 and K1; no other decipherable or unsourced indented impressions developed on Q1 and K1.
R3WFK3	Overlays of Q1 and K1	Printed text between Q1 and K1 were very consistent when overlaid but could not be perfectly overlaid, possible due to different printing devices or copy generation; "Richard Hensen" signature on Q1 and K1 are from a common source.
R3WFK3	Printing Process Classification	Q1 - produced from a device using toner technology, except the 2 signatures; the "Samantha Hess" signature was produced with ball ballpoint ink; the "Richard Hensen" signature was generated with a device using inkjet technology; K1 - produced with toner technology.
R3WFK3	Handwriting Examination	"Samantha Hess" signatures on Items Q1 and K1 are not the same signature; it is probably that both "Samantha Hess" signatures on Items Q1 and K1 were written by the same writer.
RAACNU	Ultraviolet	Q & K fluorescence[sic], Q-1 exhibits a line from top to bottom in middle of page.
RAACNU	Side light	Q & K show random marks some of which are in common between Q & K. No significant information
RAACNU	Crime-lite ML	Q & K - nothing observable
RAACNU	Transmitted light	Q & K - nothing observable, no watermarks or signs of erasure.
RAACNU	Transparency of Q-1	Q-1 transparency overlay of K-1 shows misalignment of "Hess" signature, variation in both "Hess" signatures observed.
RAACNU	Stereo Microscope	Random red spots observed on Q-1 on 3 noted areas. "Richard Henson[sic]" signature in blue - The lines of this signature are surrounded (Halo) by red and green dots from printing process. Nothing notable in area of "4% commission".
RACTW2	(a) Visual observation and comparison	All text are the same between Q1 and K1 excluding commission rate. But, significant differences in spacing between lines and fonts among both documents. The signature "Samantha Hess" on Q1 is original writing. Further comparison was done, the signature "Richard Hensen" on Q1 was noticed consistent with K1.
RACTW2	(b) VSC6000/ HS (Oblique lighting/ UV/ IRR/ IRL)	No evidence was given as to the erasure/ obliteration in the inking or printing on Q1 and K1.
RACTW2	(c) ESDA / Oblique lighting	No indentation or corresponding writing was found on Q1 and K1.

TABLE 2

WebCode	Methods/Techniques	Observations
RACTW2	(d) Stereomicroscopes	1) The text contents of Q1 (exclude signature) are composed by toner. 2) The text contents of K1 are composed by toner. 3) The signature "Samantha Hess" on Q1 is handwritings. 4) The signature "Richard Hensen" on Q1 reveals a combination of colorful ink droplet. 5) The signature "Samantha Hess" and "Richard Hensen" on K1 are printed by photocopier. 6) According to the characteristic of cross section by the signature "Richard Hensen" and underline, we believe the signature "Richard Hensen" is printed after the underline.
RCKNQB	Visual	The Samantha Hess signature appearing on the questioned document, item Q1, is different signature formation from the Samantha Hess signature appearing on the specimen document, item K1.
RCKNQB	Ink Examination (visual)	Black Ball point paste ink was used to create the Samantha Hess signature, item Q1.
RCKNQB	Macroscopic	The Richard HENSEN signature appearing on the questioned document, item Q1, is a non original signature created using a ink-jet printer. The printed text entries were created using an electrophotographic process.
RCKNQB	Indentation examination	No indentations were detected on the questioned document, item Q1.
RCKNQB	Visual	The Richard HENSEN signature appearing on the questioned document, item Q1, and the Richard HENSEN signature appearing on the the[sic] document, item K1, share a common source.
RCKNQB	Video Spectral Comparison	No alterations were detected under IRR, IRL UVR, UVL, Oblique light showed no paper fibre damage (erasures) or indentations.
RDCZHY	Microscopy	Signature of employee on Q1 is printed. Signature of Samantha Hess on Q1 is handwritten. Offer letter is printed with a toner based printer.
RDCZHY	3D microscopy	Signature of employee on Q1 is made by ink printing (pigment ink)
RDCZHY	Transmitted light	Signature of Samantha Hess on Q1 is not identical with the signature on K1
RDCZHY	Document examination system	No new evidence w/ influence on conclusion
RDCZHY	ESDA (Electrostatic detection apparatus)	No new evidence w/ influence on conclusion
REL6VM	Microscopic Examination	The Q1 contains a non-written signature. The blue colored signature (image) is ink-jet printed.
REL6VM	Comparison technique with VSC6000	The printed signature is fully identical with the black one on the K1.
RLDNJH	Microscopic examination/ VSC 6000	Microscopic examination of Q1 revealed that the printed content was printed with toner deposition printing method and the signature of Richard Hensen was not original but printed with an inkjet printer.
RLDNJH	Microscopic examination/ VSC 6000	Microscopic examination of K1 revealed that it is a photocopy, with all contents on it being printed with toner deposition printing method.
RLDNJH	VSC 6000 spot light	No significant finding was found.

TABLE 2

WebCode	Methods/Techniques	Observations
RLDNJH	Microscopic examination/ Side lighting	Examination of the crossing between the two legs of "R" in Richard Hensen's signature and the printed line underneath it on Q1 revealed that the black toner printed line was printed on top of the inkjet printed Richard Hensen's signature.
RLDNJH	Transmitted lighting	The signature of Samantha Hess on Q1 was not superimposed with that on K1, while the signature of Richard Hensen on Q1 was superimposed with that on K1.
RLDNJH	ESDA	No significant finding was found.
RMZX4X	Indented writing (ESDA 2)	1) No indented writings were detected on both Q1 and K1.
RMZX4X	Comparison & Macroscopic (VSC 5000)	1) The page layout including the font type and size were similar between Q1 and K1. 2) The signature of Samantha Hess on Q1 is different to that on K1. 3) The signature of Richard Hensen on Q1 is similar to that on K1 in which they are superimposable when overlapped. 4) The signature of Samantha Hess was produced by using black ballpoint ink. 5) The signature of Richard Hensen is made up of multicolour tiny dots.
RMZX4X	Microscopic (CVM 2000)	1) The signature of Samantha Hess was produced by using black ballpoint ink. 2) The signature of Richard Hensen is made up of multicolour tiny dots. 3) The black printed texts are made up of tiny black dots.
RPKTVW	Initial Assessment	Printing process on Item Q1 was all toner except for the signatures. The "Samantha Hess" signature was original black ink which was freely prepared and the "Richard Hensen" signature was printed using ink-jet technology. The printing process on Item K1 was toner. No watermarks were observed. These assessments and observations were made using a microscope and proper lighting.
RPKTVW	Alterations	Alteration exams were conducted using the VSC, microscope, proper lighting, and overlays. Observations made included difference in the "Samantha Hess" signatures, difference in the distance of the "Richard Hensen" signature from the baseline, the overlaying nature of the "Richard Hensen" signatures, the only difference in the text of the Item Q1 and K1 documents was the percentage for the commission rate.
RPKTVW	ESDA	Examination for indented writing using the electrostatic detection apparatus. Determined no indented writing was on the documents submitted.
RTC7XU	Visual & Microscopic	The questioned Richard Hensen signature on Item 2 (Q1) is a color ink jet printed signature. The Samantha Hess signature on Item 2 (Q1) is an original inked signature, i.e. black ball pen.
RTC7XU	Visual & Microscopic	The printed logo and printed text on Item 2 (Q1) is black dry toner. The printed text is comprised of clean text, probably original laser printing. Item 1 (K1) is dry black toner in its entirety. The printed text is softened as if Item 1 (K1) is a machine copy of a document.
RTC7XU	Scanned signatures on HP scanjet 7400c	Scanned Item 2 (Q1) and Item 1 (K1) signatures in full color mode at 600 ppi. Imported scanned signatures to Adobe Photoshop Version 7.0.1 to replace color, adjust transparency of Item 1 (K1) to 50% and prepare overlays of the Item 2 (Q1) and Item 1 (K1) signatures.
RTC7XU	Visual, Microscopic & use of precision ruler*	Item 1: Base of "R" from baseline-2pts or 1/2 cm. Item 2: Base of "R" from baseline-3 pts or 1 cm. Item 1: "Hensen" intersecting stroke from baseline-2 pts or 1/2 cm. Item 2: "Hensen" intersecting stroke from baseline-3 pts or 1 cm.

TABLE 2

WebCode	Methods/Techniques	Observations
RTC7XU	Precision ruler - Horizontally	Distance from printed name to the signature on both items is very close, i.e. approximately 5 1/2 cm. Length of the signature at 31 1/2 cm is also very close. The length of the printed baseline appears to be slightly longer on Item 1, i.e. 172 cm compared to 171 1/2 on Item 2.
RTC7XU	-	*NOTE: It is recognized that there may be some inherent reduction in size in the photocopy process, however, this does not account for a noticeable difference in the vertical spacing with respect to the signatures on Items 2 (Q1) and Item 1 (K1) and the signature baseline.
RTC7XU	VSC IRR, IRL & UV	Item 1 (K1) differs from Item 2 (Q1) in presence of fluorescence of the paper stock and the presence of luminescent fibers.
RTC7XU	Visual & Microscopic	The Samantha Hess signature on Item 1 (K1) is NOT a copy of the original inked signature on Item 2 Q1.
RTC7XU	Visual & Microscopic	On Item 2 (Q1) are the presence of a darker area on both vertical strokes of the "H" in Hensen above the baseline and below the crossbar and intersection with "ensen".
RYCFK8	Stereoscopic Magnification	Both signatures on the Q1 document were examined by means of 30x stereoscopic magnification.
RYCFK8	Transmitted Light (Backlighting)	The employee signatures on Q1 and K1 were placed one on the top of the other, then exposed to transmitted light, providing evidence of an exact overlay.
TBLMHX	Stereomicroscope	The Richard Hensen signature appearing on the Exhibit Q1 Item was prepared with the aid of an office machine system that utilizes full color ink jet technology. The typewriting appearing on the Exhibit Q1 item was prepared with an office machine system that utilizes dry black toner. The Samantha Hess signature appearing on the Exhibit Q1 item was prepared with a black ball point pen.
TBLMHX	Visual/ Transmitted Light	The Richard Hensen signature appearing on the Exhibit K1 item is the same signature that appears on the Exhibit Q1 item.
TBLMHX	ESDA	No evidence of significant indented writing was noted on the Exhibit Q1 item.
TLLDYY	Transmitted light box/ transparencies	Transmitted light revealed two different "Hess" signatures. Q1 and K1 toner entries and "Hensen" signature are generally consistent in size and spacing considering the small increase in size gained in photocopying. "Hensen" signature baselines, however, do not appear to match exactly.
TLLDYY	Microscopic Exam	"Hensen" signature on Item Q1 was produced by inkjet. Confirmed that it is also not positioned on the baseline exactly as the K1 signature. There is evidence of remnants of a dark line running through the lower portions of the staff of the "H".
TLLDYY	VSC - Infrared/ Infrared Luminescence	No spectral differences in the toner entries on Item Q1. Confirmation was made of dark line through lower portion of "H" in the "Hensen" signature. Images made and printed.
TLLDYY	VSC - Ultraviolet	No spectral differences in the toner entries on Item Q1.
TLLDYY	ESDA - Indentations	No decipherable characters or symbols noted in indented form on Items Q1 or K1.
TZ2Y67	Printing process exam (microscope/ VSC)	Noted that Ex. K1 was prepared using toner technology.

TABLE 2

WebCode	Methods/Techniques	Observations
TZ2Y67	Printing process exam (microscope/ VSC)	"Richard Hensen" signature on Ex. Q1 was prepared by using liquid ink jet printing technology. "Samantha Hess" signature on Ex. Q1 is an original signature (ballpoint ink), but is not the same "Samantha Hess" signature depicted in Ex. K1. Remaining printed text on Q1 is toner.
TZ2Y67	Indented writing exam (ESDA)	Negative results.
TZ2Y67	Digital microscope (Miscope)	For documentation purposes.
TZ2Y67	Scanner Photoshop, transparencies.	Made overlays using Photoshop and transparencies- placed Ex. K1 over Ex Q1 and noted alignment differences. Also noted that the "Richard Hensen" signatures in Ex. K1 and Q1 are identical, and the "Samantha Hess" signature on Ex. Q1 is not the same as on the Ex. K1.
U8J7HA	Visual	Richard Hensen sigs similar. Samantha Hess sigs different.
U8J7HA	Microscopic	toner on docs except Samantha Hess sig on Q-1
U8J7HA	Indented writing	no indented writing developed
U8J7HA	VSC 6000	Images of toner and ink on Q-1
U8J7HA	Transparent grids	no significant differences in size or alignment of 4 vs 6
U99YE8	Macroscopic inspection	The graphical signature of Samantha Hess employers on the document K1 differs from the graphic form on a document Q1. The K1 document is a photocopy of the Q1 document.
U99YE8	Microscopic analysis – Nikon Eclipse 80i microscope	Document K1: Document K1 is a copy. Document K1 was made using the laser xerographic devices, integrally. Document Q1 The carrier of the main text in document Q1 is a toner. Document was printed by a laser printer, laser copier or laser multifunction device. The signature of Samantha Hess employers on the document K1 is a manuscript form. The signature was deposited on the substrate directly by using of the black ink. The signature of Richard Hensen employee on the original document Q1 is not a manuscript form. It means that the performer signature has not been deposited on the substrate directly. The signature of Richard Hensen employee appears on the document Q1 is a copy. The carrier of the signature of Richard Hensen employee on the original document Q1 are color ink drops. The signature was made using a color inkjet printer, color multifunction device or inkjet color photocopying. The copy of the signature of Richard Hensen employee was applied after printing the main text on the original document Q1. In areas of overlap of covering agent the ink was visible. The ink was found on the surface of toner.
U99YE8	Light box / X-ray viewer	Document K1, which is a photocopy of the document Q1 has demonstrated compliance of the technical editors (style and degree of fonts, spacing of paragraphs) and the topography of the document. There is no agreement in the document K1 - in the third line of the main text reads "6%", and in a document Q1 is the "4%".

TABLE 2

WebCode	Methods/Techniques	Observations
UP33ZN	Microscopic	The original Q1 "Samantha Hess" signature is black ink. The original Q1 "Richard Hensen" signature is a reproduction of an original signature. This signature produced by ink jet technology. The "Richard Hensen" base line on Q1 (dry toner) was prepared on top of the signature. The copied K1 "Richard Hensen" and "Samantha Hess" signatures are black toner. There were areas of black toner trash marks that were found on the original Q1 document that were not found in the copied K1 document. These trash marks on the Q1 document were replicated in copies made at the Laboratory copier machine. The letter "H" in the last name "Hensen" in the signature area of the Q1 document exhibits dark areas just above the established base line to indicate the signature was cut and pasted from another document with a baseline. This measurement is consistent with the last name "Hensen" with the baseline on K1.
UP33ZN	Macroscopic	Style of characters is consistent in both the Q1 and K1 document. Observed the 4% and 6% characters in Q1 and K1. There were no other comparable letters found on Q1 and K1 with the numeral 4 and 6 for style comparison.
UP33ZN	EDD	An EDD examination of both the Q1 and K1 documents did not reveal any probative information.
UP33ZN	Transmitted Light	The "Samantha Hess" signatures are different in both Q1 and K1. The "Richard Hensen" signatures on Q1 and K1 superimpose and are produced from the same original signature.
UP33ZN	VSC	Both Q1 and K1 checked with various light sources with nothing out of the ordinary observed. The original ink signature on Q1 reacted with both IR and IRL. Nothing observed with oblique lighting.
UP33ZN	Toner Marks	Toner trash marks on the Q1 "original" document that were replicated on copies made at the Laboratory were not observed on the K1 document.
UR9TGY	Macro and microscopic examinations	In order to identify the printing process(es) in each document. K1 - all toner (Calibri 11). Q1 - text = toner (Calibri 11). Sig - Hess = ink (original). Sig Hensen = inkjet process. Hensen signatures on K1 and Q1 are superimposed. They both originate from an unknown original signature. Furthermore, portions of the original toner line, appear on the inkjet reproduction.
UR9TGY	Oblique Lighting	No indentation found
UR9TGY	VSC 6000	Use of the instrument to demonstrate the superimposition.
V2LQ8L	Método científico	Steps: Observation, description, comparison and conclusion.
V2LQ8L	Microscopía	Gramogenetic analysis of impressions and signatures.
V2LQ8L	Microespectrofotometría	Ink analysis of impressions and signatures
VA4F6F	Microscope	1. All of K1 including signatures is toner printed (black). 2. Q1 is black toner printed apart from the Hess signature which is black ballpoint pen ink and the Hensen signature which is colour inkjet printed. Random colour inkjet deposits were observed on the surface of Q1.

TABLE 2

WebCode	Methods/Techniques	Observations
VA4F6F	Macroscopic Examinations	1. Within the limitations of K1 being a reproduction, the content, font, layout and alignment of text on both Q1 and K1 correspond with the exception of the % commission entry on the third line which reads 6% on K1 and 4% on Q1. 2. The reproduction Hess signature on K1 is not a reproduction of the original ink Hess signature on Q1. 3. The toner printed Henson[sic] signature on K1 and the inkjet printed Henson[sic] signatures on Q1 are images of the same signature.
VA4F6F	ESDA	1. Q1 back - revealed image of the embossment caused by the writing of the original ballpoint pen ink Hess signature and the inkjet printed Hensen signature on the front of Q1. 2. No legible writing impressions were revealed on the front or back of K1. 3. Two sets of paper feed transportation marks were revealed on the back of Q1 - one set in the vertical direction and one set in the horizontal direction. This is what one would expect to observe on a document bearing both toner printing and inkjet printing.
VJJVQN	Microscope-Leica S8APO	K1 was produced using toner technology in its entirety. The black text on Q1 was produced using toner technology. The signature of "Samantha Hess" on Q1 was an original ballpoint signature and "Richard Hensen" was produced using ink jet technology. Using higher magnification on the Q1 signature in the name of "Richard Hess[sic]", two black sections on the staff of "H" are evident.
VJJVQN	Adobe Photoshop	The signatures and text on the documents were overlaid for a cursory examination to reveal similarities or differences in the format/layout.
VJJVQN	Natural/ Oblique/ Side Light	K1 and Q1 were viewed using natural and oblique/side light. No physical evidence of paper fiber disturbance was noted.
VJJVQN	Instrumental/ VSC/ Infrared Luminescence (IRL)	It was observed that the "Richard Hensen" signature on Q1 had two darker sections on the staff of the "H" which corresponded to the location of the signature line observed on K1.
VJJVQN	Instrumental/ VSC/ Overlay Feature	After previously noting the darker section on the "H" in the "Richard Hensen" signature on Q1, an overlay of the two "Richard Hensen" signatures was conducted. The overlays revealed that when the signatures were aligned, the signature lines were misaligned and conversely when the signature lines were overlaid precisely then the two signatures were out of alignment. The signatures originated from a common source that was not submitted to the laboratory. When the two documents were overlaid in the VSC the black body of text overlaid with the exception of the "6" on K1 and the "4" on Q1. It was observed that the signatures of "Samantha Hess" did not overlay and did not originate from the same document.
VJJVQN	Instrumental/ ESDA2	ESDA examinations were conducted on the front/back of K1 and Q1; no writing/indentations of significance were noted.
VJJVQN	Ultraviolet (UV)/ Transmitted Light	K1 and Q1 were viewed using ultraviolet (UV) and transmitted light. Both documents were optically bright and did not have a watermark. There was no evidence of staining on the documents.
W7QXXP	microscopic/ macroscopic	Q1 "Samantha Hess" signature is original ink; K1 Hess signature is black toner copy and different from Q1 signature. The Q1 Richard Hensen signature is a machine-printed signature by a color dry-toner process; stray color toner particles exist throughout the document.
W7QXXP	infrared (VSC) exam	IR at 630 source filter/780 camera filter showed differences between black toner document printing and color-toner printed signature on Q1. The sequence of application for the blue signature and the black toner document content could not be determined.

TABLE 2

WebCode	Methods/Techniques	Observations
W7QXXP	Photoshop & 600 spi scanned images Q1 & K1	Excluding 4 & 6 entries for % commission in dispute, the black toner text and logo entries of Q1 and K1 superimpose precisely.
W7QXXP	side-lighting	Side-lighting examination front and back of Q1 did not reveal any indentations.
WPBKPR	microscopic examinations	We magnificated on document and could see detail on document.
WPBKPR	comparison techniques	We compared signatures on documents (Q1, K1). so we understand[sic] R.Hense's[sic] signature are same.
WPBKPR	ink examination	We detected[sic] signatures are copy or original (K1, O1[sic]).
WPBKPR	Printing techniques	We could see the signature on Q1 (Richer[sic] Hense's[sic]) was copied with ink-jet printer.
WT6M9Y	Microscopic and lens	[No observations reported]
WT6M9Y	Direct light - Transs[sic] - Oblique	[No observations reported]
WT6M9Y	IR	[No observations reported]
WT6M9Y	UV	[No observations reported]
WWEV4J	Microscopic Examination	Printing process identification: the printed text on Q1 and the entirety of K1 were machine generated via a method consistent with a toner process. Q1 "Samantha Hess" signature in ink consistent with ballpoint pen. Q1 "Richard Hensen" signature in ink consistent with an inkjet process.
WWEV4J	Indented Impression - electrostatic detection	Examination of Q1 and K1 with the ElectroStatic Detection Apparatus (ESDA) yielded no indented writing impressions of evidentiary value.
WWEV4J	Ink and printing examinations - UV and infrared	I/R exams: printed text on Q1 and the entirety of K1 exhibit similar optical properties (consist. w/black toner). The Q1 "Richard Hensen" signature contained black ink "dots" (which luminesced under spot illum.) in "H" form approx. where the same "H" form intersects baseline on K1.
WWEV4J	Paper examinations - UV/ infrared/ E-ruler	Under UV examination, Q1 paper exhibited a brighter luminescence than K1 paper, IR (spot) exams revealed that Q1 paper contained many more luminescent fibers than K1 paper. Measurements with an E-ruler revealed no significant size or margin differences between Q1 and K1.
WWEV4J	Macro/ Microscopic examinations	Macroscopic and microscopic examinations (full spectrum light sources) of the Q1 paper surface were conducted for evidence of physical and/or chemical obliterations, additions, overprintings, or erasures. No physical alterations present, besides inkjet-printed "Richard Hensen" signature.
WWEV4J	Comparison technique - font identification	Font styles were identified and then verified by re-creating portions of text in the font style suspected, and then overlaying those documents with the questioned document. The font used for the machine printed portions of Q1 and K1 were identical, and were consistent with the font "Calibri."
WWEV4J	Comparison technique - signature examinations	The Q1 and K1 Samantha Hess signatures are different in size, and are notably different in the capital "S" and capital "H" forms. The Q1 and K1 Richard Hensen signatures are identical (superimpose). However, the Q1 signature is ~0.3 mm further above the baseline than the K1 signature.

TABLE 2

WebCode	Methods/Techniques	Observations
WWEV4J	Comparison technique - printer/ copier defects	Q1 contains a black mark at the top of the page (bottom/left of the printed logo) that does not appear on the K1 copy. This mark would have appeared in the same location on a true photocopy.
X2GUT9	Comparison Techniques (microscope/ macroscope)	The employee's signature "Richard Hensen" on the original letter (Exhibit Q1) has disclosed the absence of the significant characteristics of pen strokes. It consisted of coloured dots, indicating characteristics of an electrically produced image. Also when the same signature on Q1 was superimposed over the signature on K1: - it was an exact match (no variation - indicating an exact copy of it).
X2GUT9	Instrumental Analysis Type	No significant differences were observed between Exhibits Q1 and K1.
X2GUT9	Indented Writing electrostatic	No significant differences were observed between Exhibits Q1 and K1.
X2GUT9	Ink Examination (VIS, UV, IR)	No significant differences were observed between Exhibits Q1 and K1.
XAAC2P	Magnifying glass	Observation of the two firms[sic]
XAAC2P	Stereoscope	Expand each of the questioned signature details
XAAC2P	Spectrum comparison video VSC 600	expand, raking light, light filters questioned signature
XAAC2P	digital photographic camera	photographic documentation of the documents
XCWQRK	Visual exam	Close visual exam with the unaided naked eye with magnifying instruments (front and back of each sheet) and + - wearing gloves with documents in protective sleeve to detect evidence of stains, tears, folds, cut edges, watermarks, perforations, smudges and trash marks.
XCWQRK	Transparency overlay	Inter-comparable exam using a transparency of K1 laid over Q1 to detect variations to detect variations in wording & numbers, punctuation, spacing, margins, placement/layout/alignment and sizes.[sic]
XCWQRK	ESDA type exam	EDSA[sic] type exam for indenations of both documents.
XCWQRK	Forensic signature examination	Signature examination of the "Samantha Hess" and the "Richard Hensen" signatures for indications of falsity using the generally accepted methods and the MiScope digital microscope.
XCWQRK	Measurements of fonts and logo	Comparison of the fonts and the logo including the comparison of the margin alignment/placement on the page and color. Also comparison of line and word spacing including word-by-word and punctuation comparison.

TABLE 2

WebCode	Methods/Techniques	Observations
XL8HKU	Microscopic - Olympus SZX12- Paper, writing ink, printing processes, handwriting	Microscopic examinations revealed: Item 1 is being claimed to be a copy of the "original" document submitted as Item 2. If Item 1 is a copy of the document depicted in Item 1 [sic], the follow[sic] would exist (see italics below): 1. The original Samantha Hess signature (black ball point ink) on Item 2 would be an exact copy of the signature depicted on the original document depicted in Item 1. However, examinations revealed the copy of the Samantha Hess signature depicted on Item 1 is not an exact copy of the original Samantha Hess signature (black ball point ink) on Item 2. Forensically significant. 2. The original Richard Hensen signature on Item 2 would be an original inked signature and an exact copy of the Richard Hensen signature depicted on Item 1. The Richard Hensen signature on Item 2 is not an original inked signature but an ink jet printing process print out of the same Richard Hensen signature that is depicted on Item 1. Forensically significant. The Richard Hensen signature on Item 1 is an exact copy of the Richard Hensen signature depicted on Item 2. Not forensically significant.
XL8HKU	Electrostatic, oblique light	Indented Impression Examination / Side-light Examinations: Item 1 and Item 2: Side light examinations failed to reveal any indented impressions on the front or backsides of Item 1 or Item 2. Control +/- Okay Cascade Development Used Rh+48.2% ESDA S/N #70156. ESDA examinations failed to reveal any indented impressions on the front or backsides of Item 1 or Item 2.
XL8HKU	VSC 6000 - visual, ultraviolet, infrared	Alternate Light Source (VSC) and Microscopic Comparisons: (Microscopic and VSC 6000 Examinations) Control +/- Okay. Paper Examinations: The paper present in Item 1 (K1) and Item 2 (Q1) were examined using various light source and filter combinations. The two papers revealed differences between them (see printouts of evidence revealed during microscopic and alternate light source examinations, in case file) Comment: Employee claims to have made a copy of the "original" document and because the employer is claiming to have the actual "original" document, the papers could be different. Not forensically significant. Document (i.e. font, text size, evidence of cut and paste, other) Examinations: Text and Font: Examinations between the font and text size depicted on Item 1 (K1) to the font and text size depicted on Item 2 (Q1) failed to reveal any additional evidence of forensic significance. A layover was conducted using transparencies of the two documents. The font and text size all were the same, except for the numbers within line the third line of the first paragraph: the number "4" on Item 2 is the number "6" on Item 1. During this layover when the printed material(s) on the pages were lined up at the top margin and the left margin, the print material matches exactly in the upper left quadrant. However as the comparison of the printed material moves out towards the right and lower part of the documents, the text comparison becomes slightly out of alignment; this is expected due to copiers not producing exactly 100% copies. Forensically significant. The text on each document is placed in a slightly different place but this can be caused during the copying process because of the placement on the platen and/or how the paper is drawn up during the copying process (see measurements on copies in case file). Not forensically significant. Cut and Paste: Examinations of the two descending blue lines (blue inkjet printing process absorbed into the paper) in the "H" in Hensen revealed they are under the black signature line (black toner printing process melted on top of the paper) on the document. This is evidence that the Richard Hensen signature was placed on the document before the black signature line on Item 2. Forensically significant. The Richard Hensen signature on Item 1 is closer to the signature line than the Richard Hensen signature is to the signature line on Item 2. Forensically significant. There were not any miscellaneous marks, remnants of print, or uneven and/or staggered lines visualized around the numbers (4% and 6%) and/or around the two "copies" of the Richard Hensen signatures. Not forensically significant.

TABLE 2

WebCode	Methods/Techniques	Observations
XL8HKU	Handwriting (Signature) comparisons	<p>Item Description: One rts manila envelope containing two (2) documents and three (3) pieces of cardboard (protection of the documents: Item 1 (K1) One document said to be known: One sheet of plain white paper dated October 7, 2013 said to bear two Known signatures, one with the name Samantha Hess and one with the name Richard Hensen. The document is produced with a black toner printing process (black, shiny, granular toner melted on top of the paper). Both Known signatures appear to be naturally produced. Each of the signatures appear consistent within themselves as if they were produced by one writer; however, it is not known if one or two writers produce the signatures. Each signature contains sufficient individual handwriting characteristics for a comparison; however examinations will be limited because of only one Known comparable signature being available for each signature comparison needed (small amount of comparable writing). QUESTIONED EVIDENCE: Item 2 (Q1) One document said to be questioned: One sheet of plain white paper dated October 7, 2013 said to bear two Questioned signatures, one with the name Samantha Hess and one with the name Richard Hensen. The document itself is produced with a black toner printing process (black, shiny, granular toner melted on top of the paper). The questioned Samantha Hess signature is produced in black ball point ink (thick black ink build up behind paper fibers, striations present). The questioned Richard Hensen signature is produced in with a four color ink jet process (cyan, magenta, yellow and black ink dots absorbed into the paper, some wicking present). The Samantha Hess signature appears to have been naturally produced, however the Richard Hensen signature appears to be the same Richard Hensen signature depicted on Item 2. Additional examinations and comparisons will be conducted. Each of the signatures appear consistent within themselves as if they were produced by one writer; however, it is not known if one or two writers produce the signatures. Each signature contains sufficient individual handwriting characteristics for a comparison; however examinations will be limited because of only one Questioned signature being available for each signature comparison needed (small amount of comparable writing). Signature Examinations: Microscope used: Olympus SZX12. Item 2 (Q1): Examinations and documentation of the document in Item 2 (Q1) revealed: The Samantha Hess signature consists of an original signature (see printouts of evidence revealed during microscopic and alternate light source examinations, in case file). The Richard Hensen signature consists of a four color inkjet (cyan, yellow, magenta, and black) print out that may be from a model Richard Hensen signature or from the Richard Hensen signature depicted on Item 1 (K1) (see printouts of evidence revealed during layover examination, in case file). The blue colored ink jet Richard Hensen signature present on Item 2 (Q1) is the same signature that is present on Item 1 (K1). Therefore, the Richard Hensen depicted on Item 2 (Q1) has been produced from the same source signature as the Richard Hensen signature that consists of a black toner printing process on Item 1 (K1). (see printouts of evidence revealed during layover examination, in case file). Item 1 (K1): Examinations and documentation of the document in Item 1 (K1) revealed: The Samantha Hess signature consists of a black toner printing process (see printouts of evidence revealed during microscopic and alternate light source examinations, in case file). The Richard Hensen signature present on Item 1 (K1) is the same signature that is present on Item 2 (Q1). (see printouts of evidence revealed during layover examination, in case file). Signature Comparisons: Microscope used: Olympus SZX12 Samantha Hess vs. Samantha Hess signatures: The original Samantha Hess signature present on Item 2 (Q1) is not the same Samantha Hess signature or a digitally manipulated version of the Samantha Hess signature present on Item 1 (K1). A hand writing comparison was conducted between the two Samantha Hess signatures and it revealed it is probable the two Samantha Hess signatures</p>

TABLE 2

WebCode	Methods/Techniques	Observations
		<p>were produced by the same writer. Forensically significant. Comment: Examination limited by small amount of comparable evidence (only one Q signature and one K signature). Richard Hensen vs. Richard Hensen signatures: The two copies of the Richard Hensen signatures present on Item 1 (K1) and Item 2 (Q1) are from a similar source Richard Hensen signature. There is no conclusion if the Item 2 (Q1) Richard Hensen signature, the Item 1 (K1) Richard Hensen signature or if a Richard Hensen signature not represented in the evidence is or is not the similar source Richard Hensen signature present on Item 1(K1) or Item 2 (Q1). Not forensically significant. Comment: Examination limited because the location of the similar source Richard Hensen signature is not known. Richard Hensen vs. Samantha Hensen[sic] signature: Examinations were not conducted between the questioned Samantha Hess signature Item 2 (Q2[sic]) and the Known Richard Hensen signature Item 1 (K1) because the letters, letter combinations and names are not comparable. Examinations were not conducted between the questioned Richard Hensen signature Item 2 (Q2[sic]) and the known Samantha Hess signature Item 1 (K1) because the letters, letter combinations and names are not comparable. Comment: Examinations limited by lack of comparable evidence between questioned signatures of Richard Hensen and Samantha Hess and known signatures of Samantha Hess and Richard Hensen, respectively.</p>
XQHYVD	Microscopic/ macroscopic	The "Samantha Hess" signature on Item Q1 is original writing whereas the "Richard Hensen" signature on Item Q1 is non-original. Furthermore, all information on Q1 superimposes with that on K1, with the exception of the "4" in "4%" and the "Samantha Hess" signature.
Y48R6Q	Visual/ Microscopic	Black ink in Hess signature. Blue tone in Hensen signature.
Y48R6Q	VSC	As noted in microscopic exam
Y48R6Q	ESDA	No findings
Y4GHRV	Macroscopic exams, comparisons	Comparison of alignment features of questioned "Richard Hensen" signature, related to signature line. Comparison of "Samantha Hess" signatures. Trashmarks comparison.
Y4GHRV	Microscopic exams	Writing mediums and printing processes
Y4GHRV	Indented writing (oblique and ESDA)	No unaccounted indented writing
Y4GHRV	Alterations exams (VSC: UV, IR)	No notable observations from VSC exams
Y4GHRV	Transmitted light	No watermarks
YCBNKW	Alterations Methodology/ microscope compariso[sic]	Q1 - photocopy (toner). K1 - toner text. "Samantha Hess" - original ballpoint. "Richard Hensen" - inkjet
YCBNKW	Indented writing - oblique lighting and ESDA	negative - no indented writing observed
YCBNKW	Initial Assessment	8.5 x 11 inch paper for Q1, K1. No watermarks observed. No visible indentations observed.

TABLE 2

WebCode	Methods/Techniques	Observations
YCULNV	light penetrating method	Observing Q1 document under penetrating light, some cutting and pasting traces (the rectangular outline is barely visible around the number "4%") be found on the number "4%" in the third line of the first paragraph.
YCULNV	Microscopic techniques	By using stereomicroscope, it's easy to observe the signature of Richard Hensen in Q1 document is composed of dots. It also can be seen that the cyan, magenta, yellow, black dots are dispersed around these words.
YCULNV	Microscopic techniques	There is not dot be found on the signature of Samantha Hess in Q1 document.
YCULNV	overlapping comparison	The signature of Richard Hensen in Q1 & K1 document are the same by overlapping comparison, whereas the signature of Samantha Hess are not.
YLZJF6	Macroscopic	Q1: 4% commission rate; K1 is 6%. Hess signature on K1 is not a copy of that on Q1. Superimposable Hensen signatures on Q1 and K1 though note differences where signatures 'sit' on the printed line. With observations below, found that these are copies derived from the same original signature.
YLZJF6	Microscopic (including video spectral comparator)	Q1 Hess signature is original, black ball-pen ink. Q1 Hensen signature is colour inkjet (i.e. not original, ink signature). Q1 remaining text is black, dry toner (such as is found in laser printers). K1 is all copy - dry, black toner (as would expect in photocopy document). Also found evidence of 'cut & paste' activity when comparing the image of the signature on Q1 and the position where the signature shown on K1 crosses the printed line.
YLZJF6	Indented Impressions (oblique light, ESDA)	No decipherable impressions found.
YRMBPJ	Microscopic	Q1 - Original S. Hess sig. Ink jet sig. R. Hensen. K1 - Copy S. Hess sig. different sig than on Q1. Copy R- Hensen sig - same as Q1.
YRMBPJ	ESDA	(-) results Q1 & K1
ZBYP6Y	Oblique lighting/ ESDA 2 EDD Lifts	No indented writing was observed on Q1 or K1.
ZBYP6Y	VSC 6000	Optical difference observed under IR lighting between the toner and the signatures, and between the signatures.
ZBYP6Y	Microscope LEICA MZ 95	Microscopic detail reveals: HESS signature on Q1 was produced with a ballpoint pen. HENSEN signature on Q1 produced with a machine printer. All other text on Q1 was toner, all text on K1 was toner.
ZBYP6Y	Visual comparison	Q1 had 4% commission per sale and K1 had 6% commission per sale. Variations observed in HESS signature between Q1 and K1. HENSEN signature on Q1 was a copy of HENSEN signature on K1, differences in placement of signature along baseline between Q1 and K1.
ZJDU2K	Stereomicroscope Leyca[sic]	The direct impression of the texts was identified. The graphonomic details in SAMANTHA HESS' signature that indicate a natural inscription were ratified. It was observed a dotted outline and a two colors splash area in RICHARD HENSEN'S signature that determine a transference of image, possibly obtained from a scanner digitized signature printed with an injection printer

TABLE 2

WebCode	Methods/Techniques	Observations
ZJDU2K	VSC6000-HS (FosteryFreeman[sic])	The previous findings are corroborated valuing as a whole and in detail the texts and signatures of the contract; the characteristics of direct impression in the internal texts confirm a natural printing in SAMANTHA HESS's signature; the dotted outlines and splashed area with blue and red points in the contour of RICHARD HENSEN's signature indicate that he did not write himself a natural way in the document.
ZKJFPK	Microscopic comparison	Item "Q1" has two types of impression (toner an injection ink) and pen ink.
ZKJFPK	Instrumental analysis (VSC-6000)	Item "Q1" was found not to be consistent with item "K1".
ZLCMDJ	Visual Examination	[No observations reported]
ZLCMDJ	Microscopic Examination	[No observations reported]
ZLCMDJ	Super-imposition/ Direct comparison	The signature in the name "Richard Hensen" on Q1 is superimposeable[sic] on the signature in the name "Richard Hensen" on K1 (which we have been informed is a photocopy of the "original" contract signed by Richard Hensen)
ZLCMDJ	Method of printing	The signature in the name "Richard Hensen" on Q1 is printed and not handwritten and therefore is not an "original" signature
ZTL69V	visual, including oblique light	Single sheet for each, no folds or artifacts of folds, no fiber disturbances, no holes, no watermarks, no obvious HW impressions, K1 good copy, Q1 appears to have crisp Hess sig but Hensen signature looks fuzzy. All text, logo, letter head info alike except for 4 and 6, including fonts. Hess signatures not alike, Henson signatures alike but Q1 higher above baseline, no extraneous impressions, slight embossing of Hess sig to back, not Hensen sig.
ZTL69V	stereomicroscopic	K1 is black toner on paper. No fiber disturbances, no artifacts of possible cut and paste operation or reinsertion into a printer. Q1 text, logo, letter head info are black toner on paper. No fiber disturbances. Hess sig is original black ball point pen ink on paper. Q1 Hensen sig is not pen ink but rather is inkjet ink, with black fortification on stems of H where those stems crossed the baseline in the sig seen on K1.
ZTL69V	lightbox	Hensen signatures are overlays. Text, logo, letter head, formatting, margins, line spacing alike between Q1 and K1 except for 4 and 6.
ZTL69V	Electrostatic detection device	Many striations from prior handling, not all machine like. Q1 has HW impressions of "4" "4" "/" (arrow) "2" and three dashes. K1 has HW impressions of what appears to be the word "Glass" and two "T"s
ZTL69V	Controlled light apparatus for UV, VIS and IR light exam	No evidence of alterations. No hidden writings. K1 displays IR fluorescence in a pattern that can best be described as mimicking the adhesive and flap patterns of a large envelope. It follows the flap and tape seal present on the submitted outer envelope.

Conclusions

TABLE 3

WebCode	Conclusions
2N3UTK	It is determined that the employee's contention is correct, that the employment offer letter, Q1, provided by the employer, Safe Haven Home Insurance is not genuine.
2UVEX8	The hypothesis[sic] used are the following: Main Hypothesis: The employment offer letter, submitted by employer Safe Haven Home Insurance is genuine. Alternative Hypothesis: The employment offer letter, submitted by employer Safe Haven Home Insurance is false. The results of the examination have been tested against the main hypothesis and the alternative hypothesis. Conclusion: The results of the examination extremely[sic] strongly support that the employment offer letter is not genuine (Level -4).
2VHJ9K	There was conclusive evidence to support the proposition that the Richard Hensen signature on Q1 was not original but had been reproduced by colored ink jet printer. There was conclusive evidence to support the proposition that the Richard Hensen signatures on Q1 and K1 had been derived from the same original. The Samantha Hess signature on Q1 was the original but that on K1 had not been derived from it.
2WAT3L	The Q1 document is not genuine based on the sufficient disagreement of characteristics with the K1 document such as the different commission percent numbers in the first paragraph, the "Richard Hensen" signature on Q1 is inkjet printed and not original, and the "Samantha Hess" signatures on Q1 and K1 do not overlay.
2ZE6DU	Significant differences are observed between the two signatures on documents Q1 and K1. The letter given by the employer is not genuine. No difference should occur between the original document and its photocopy.
32JDFK	Microscopic examination of the submitted documents revealed the following: Though the signature in the name of Samantha Hess on item #2 is an original ink pen signature it is not the same signature that is on item #1. Therefore, item #1 is not a direct copy of item #2. The signature in the name of Richard Hensen on item #2 is not an original ink pen signature. The signatures in the name of Richard Hensen in items #1 and #2 match and originated from the same source signature located on a different document.
3G2HCY	Request: Inter-comparison examination and forensic analysis of Items 001-1 and 001-2 of Submission 001 in order to determine if the offer letter provided by the employer (Item 001-1) is genuine. Results: 1. Inter-comparison examination and analysis of the "Richard Hensen" signatures on Items 001-1 and 001-2 of Submission 001 revealed that the signatures are identical. Since an individual cannot sign their name exactly the same way twice, it is the opinion of the undersigned examiners that both signatures originated from the same original signature. 2. Microscopic analysis of the "Richard Hensen" signature on Item 001-1 shows the presence of toner spray. It is the opinion of the undersigned examiners that the "Richard Hensen" signature on Item 001-1 has been printed onto the document rather than written in ink. 3. Inter-comparison examination and analysis of the "Samantha Hess" signatures on Items 001-1 and 001-2 revealed similarities in individual signature characteristics and habits. Based on these similarities, it is the opinion of the undersigned examiners that it is probable that the "Samantha Hess" signatures on Items 001-1 and 001-2 share common authorship. The fact that the Item 001-2 is a photocopy, and the small number of exemplars available for examination, precludes rendering a stronger opinion at this time. Remarks: The evidence has been scanned and photocopied and is being returned with a copy of this report. An ESDA lift (containing an irregularly shaped line) was made from Item 001-1 and is being returned with a copy of this report. If original documents are obtained, and if requested, further examination by this Laboratory will be conducted. If Known handwriting exemplars are obtained, and if requested, further examination by this Laboratory will be conducted.

TABLE 3

WebCode	Conclusions
3HDA4F	The black machine printing on Item Q1 was printed using toner based technology. The Samantha Hess signature on Q1 is an original ball point pen signature. The Richard Hensen signature on Item Q1 was created using ink jet technology, and is not an original signature. Item K1 was created in its entirety using toner technology. The Samantha Hess signature on Item K1 is not a copy of the Hess signature on Item Q1. The Richard Hensen signatures on Items Q1 and K1 were generated from the same source signature. The Hensen signature on Item Q1 appears higher up off the straight signature line on Item Q1 than it does on Item K1. The down strokes of the "H" of the Hensen signature on Item Q1 contain two marks that are in the same position as where the down strokes of the "H" of the Item K1 Hensen signature intersect the straight signature line. No differences were detected between the text portions of Items Q1 and K1, except for the "4%" and "6%" discrepancy between Q1 and K1. Item Q1 is not an "original" document as it contains the non-original Richard Hensen signature. Item K1 is not a copy of Item Q1.
3K2NVB	The Richard Hensen signature on Exhibit Q1 is a color copy of the signature represented in the K1 photocopy. Therefore, the Richard Hensen signature on Exhibit Q1 is not an original signature of Richard Hensen.
3ND8LL	Found that, there is only one handwriting signature of human resources manager, Samantha Hess writing with a ballpoint pen. A signature of employee, Mr. Richard Hensen is not caused by a pen, but is usually printed with a printer, the microscopic examination founded the morphology of ink was a liquid base that dissolved and absorbed into the paper, so it should be printed with ink-jet printers. Consider carefully, then concluded that: The employment offer letter (Q1) is not a genuine documents and is not the original of photocopy of employment offer letter (K1), but the (Q1) documents forged a whole new edition by edit the commission from 6% to 4% and print by laser printer (Electro-photographic printing process) on paper (Q1) that was printed before with a signature of Mr. Richard Hensen by scanning a signature from genuine employment letter and printed with an ink-jet printer into a document at the same location, then signed by the resources manager, Samantha Hess to make the document (Q1) completely.
3UJPAE	The employer's letter (Q1) is original.
46JDH9	Based on visual and instrumental examinations of Exhibits Q-1 and K-1, the following was determined: the Samantha Hess signature on Exhibit Q-1 was written with black ballpoint ink. The "Richard Hensen" signature on Exhibit Q-1 was produced with inkjet technology. The remainder of Exhibit Q-1 was produced with toner technology. Exhibit K-1 was produced with toner technology. The "Samantha Hess" signatures on Exhibits Q-1 and K-1 do not overlay. The "Samantha Hess" signature on Exhibit K-1 is not a copy of the "Samantha Hess" signature on Exhibit Q-1. The "Richard Hensen" signatures on Exhibits Q-1 and K-1 do overlay. The "Richard Hensen" signature on Exhibits Q-1 and K-1 are copies of the same signature. No discernible indented impressions were observed on Exhibits Q-1 and K-1: The above observations support the contention Exhibit Q-1 is not the original offer letter.
4ADCW4	1. Item Q1 (typed form) has found to be consistant with a machined copy. 2. Item Q1 (signature of Samantha Hess) has found to be original & written in ink. 3. Item Q1 (signature of Richard Hensen) has found to be a reproduction copy. [sic]
4K9ULZ	K1: whole document is toner-printed, both signatures inclusive (no indications of altered percentage). Q1: toner-printed document with original signature by the employer (black ball-pen ink) and a color-toner-printed signature of the employee. The two signatures by the employer can be distinguished (no one can make his signatures two times exactly identical). The two signatures by the employee are identical (except the color) (in the sense of identity transformation). When the employee says that he made a copy of the original document after

TABLE 3

WebCode	Conclusions
	<p>he signed this document, then the employer has an original signature from the employee. In this case the employer made a second document with 4% instead of 6%. Because it's a computer-printed document, there is no difference in fonts. This second document was signed by the employer, but not by the employee. The signature of the employee was electronically copied into this second document Q1. In document Q1 the signature of the employee was copied and the signature of the employer is a handwritten signature. With a probability bordering to certainty the employee wouldn't have manipulated the document.</p>
4QGCH8	<p>The signature "Richard Hensen" on Q1 is a non-original signature and was not produced by a writing instrument. The non-original "Richard Hensen" signatures on Q1 and K1 were derived from a common source by direct or indirect means. The original signature "Samantha Hess" on Q1 is graphically different from the non-original one depicted on K1. Accordingly, K1 was not copied from Q1 and Q1 has evidence of a composite document. Note: A composite document may be produced by electronic and/or manual means, i.e. "cut-and-paste" process.</p>
64JYRN	<p>It was determined that Item Q1 is not genuine. The Item Q1 "Richard Hensen" signature is not an original signature and was prepared using color inkjet technology. This technology is available on numerous brand name copiers and printers. Item K1 and the majority of Item Q1 (excluding the original handwritten "Samantha Hess" signature and the "Richard Hensen" signature) were prepared using toner technology. This technology is available on numerous brand name copiers and printers. It was determined that the colored inkjet "Richard Hensen" signature depicted on Item Q1 originated either directly or indirectly from the Item K1 "Richard Hensen" signature, indicating that the "Richard Hensen" signature on Item K1 either in copied or original form was used to place the "Richard Hensen" signature on Q1. It was determined that the "Samantha Hess" signature on Item K1 did not originate from the original handwritten "Samantha Hess" signature on Item Q1, indicating that the "Samantha Hess" signatures on Item Q1 and Item K1 are two different signatures. In addition, the "Richard Hensen" signature on Item Q1 rests higher above the baseline than the "Richard Hensen" signature on Item K1. No indented writing or watermarks were observed on Item Q1 and Item K1. Additional assessments and observations have been made on the submitted specimens and recorded for possible future comparisons.</p>
69JQ2R	<p>No indented writings were found on Q1 and K1. Evidence was found to indicate K1 is not a reproduction of Q1. There were variations noted in the signature, "Samantha Hess", found on the machine copy submitted as K1 that were not found in the questioned signature, "Samantha Hess", submitted as the original signature on Q1. In addition, non-destructive examinations revealed that the signature, "Richard Hensen", appearing on Q1 is a machine copy of a signature. The signature, "Richard Hensen", appearing on Q1 and the signature, "Richard Hensen", found on K1 are reproductions of a signature of the same origin.</p>
6KLXDW	<p>The Samantha Hess signature on the letter Q1 is original ballpoint pen ink. However, the Richard Hensen signature on this document is non-original and has been produced using a colour inkjet printing process. Accordingly, the submitted document Q1 has not been signed by Richard Hensen. The Hess signature on the letter Q1 differs from the Hess signature on the photocopied letter K1, showing that Q1 has not been photocopied to produce K1. The Hensen signature on the letter Q1 overlays the Hensen signature on the photocopied letter K1, showing that they are both reproductions of the same original signature. The Hensen signatures on Q1 and K1 differ in their relative position to the printed line below them. The inkjet printed Hensen signature on Q1, while predominantly blue, contains two black areas in the stems of the 'H'. These correspond to the points of intersection between the Hensen signature and the line underneath it on K1. This suggests that K1 is a photocopy of the document that provided the source of the Hensen signature which has been reproduced on Q1 through a cut-and-paste manipulation.</p>

TABLE 3

WebCode	Conclusions
6M3BJZ	<p>Q1 has been eliminated as a genuine document, in that the blue-colored signature on Q1 in the name of "Richard Hensen" is not original writing and was generated using an ink jet printing process, while the remainder of the text of Q1 was generated with toner-based technology. The opinion of "elimination" is a definitive conclusion of non-genuineness with the highest degree of certainty. The signature on Q1 in the name of "Richard Hensen" is identified as a "cut and paste" signature image that at some point in time shared a common source with the signature in this name seen on K1. The opinion of "identification" is a definitive conclusion with the highest degree of certainty. No opinion is rendered regarding the identification of the subject preparing the "cut and paste" signature in the name of "Richard Hensen" on Q1. "Cut and paste" signatures, by their very nature, are non-original images and can be prepared by anyone with access to a subject's genuine signature (or copy thereof.) Q1 and K1 were processed on their front and back sides with an electrostatic detection apparatus (ESDA2). No indentations of evidentiary value were found.</p>
6RX6G2	<p>The Q1 document is not what it purports to be, I.E., an original document with two original, ink-by-hand signatures. The Hensen signature has been machine-printed on to the Q1 document.</p>
6UEZTM	<p>Observations and Conclusions. 3. The image substance of the whole of item K1 is fused toner of the sort used in many photocopiers and laser-printers. The typed text and letter head of item Q1 is also formed from fused toner but the signature in the name of Samantha Hess has been written in black, ball-point ink. That signature differs markedly from the corresponding signature visible in item K1; that and the different commission percentages show that item K1 cannot be a direct photocopy of item Q1. 4. The ink signature in the name of Samantha Hess in item Q1 has been written fluently; it shows none of the features which might be present in a free-hand forgery; it shows no sign of having been produced by tracing. The original of the signature in that name visible in the photocopy, item K1, also appears to have been written fluently. Those two signatures are similar in general appearance and in detail and they differ from each other no more than is to be expected of two signatures written by the same person. 5. The signature in the name of Richard Hensen in item Q1 is not a written signature but has been produced by a colour, inkjet printer. That signature superimposes closely on the corresponding signature in item K1. The printed signature in item Q1 is slightly higher above the signature line than is the corresponding signature in item K1. In the printed signature, each of the two descending characters has a small section that is a darker blue, just above the signature line. Those two sections correspond to where the signature in item K1 crosses the signature line. Those observations show that the printed signature in item Q1 was derived from a scan of the written signature of which that in item K1 is a photocopy. 6. Overall, my observations lead me to conclude that item Q1 is not the original letter of offer signed by Richard Henson[sic], photocopied to produce item K1, and returned to Safe Haven Home Insurance. I consider that item Q1 is a substitute for that original. It is a second printing of the original letter of offer, signed by Samantha Hess, and with a scanned image of the original Richard Hensen signature printed in the appropriate area with a colour inkjet printer. The only reason apparent for undertaking this substitution is to change the rate of commission. 7. I examined each of items K1 and Q1 for indented impressions of handwriting but found none. 8. This statement is a summary of my findings; a full record of the work done in this case is contained in my case-notes.</p>
78EE9B	<p>The offer letter provided by the employer is not genuine.</p>
7FFZMB	<p>It has been determined that the Q1 Item, submitted as an Employment Offer Letter by Safe Haven Home Insurance, is non-genuine. (see attached images). Items K1 & Q1 were processed with the ESDA for possible latent individual writing. No indentations were revealed. [Images not included]</p>

TABLE 3

WebCode	Conclusions
7NPTXK	Results of examinations: Characteristics were observed to indicate that the Item Q1 document is not the genuine document that was originally signed by Richard Hensen. It should be noted that the Richard Hensen signature appearing on Item Q1 was prepared using a color ink jet process and is not an original inked signature. Further, the Samantha Hess signatures are different on the Item Q1 and Item K1 documents. No indented writing or watermarks were observed on the submitted items.
83BGV2	1) Item Q1 has not been altered*. 2) Item K1 can be eliminated as being a copy of Item Q1.
84B3PF	Q-1 was determined to have been fabricated.
8GGY9H	The signature of "Samantha Hess" on Q1 is an original signature. It is not superimposable with K1. The signature of "Richard Hensen" on Q1 is a non-original signature--digitally manipulated. It is superimposable with K1. The examination, comparison and evaluation of the questioned document and the known document resulted in the following opinion: Q1 is non-genuine.
8HVWN7	There is evidence to show that alteration to the original letter of employment offer has occurred, thus supporting the contention made by employee HENSEN. Item Q1 is consistent with being a manipulated reproduction of K1 (the original of K1 as the source document). The signature attributed to HENSEN on Q1 (provided by the employer and purporting to be an original document) is NOT an original inked entry and has been produced by a colour print process. There are also visible remnants of a previous baseline at intersecting points in the HENSEN signature, indicative of a digital cut and paste insertion onto Q1. The HENSEN signatures on Q1 and K1 are identical, meaning a single act of writing was responsible for this signature image.
8KHVZX	Based on the side by side comparison and examination of the Q1 & K1 documents the following observation and conclusion were made: (1) The Q1 document contains one original signature of Samantha Hess and one machine reproduction of a Richard Hensen signature. Meaning Richard Hensen did not sign Q1. (2) The Q1 and K1 documents contain separate (different) Samantha Hess signatures but machine reproductions of the same Richard Hensen Signature. Which indicates if both documents purport to be original documents at least one if not both are counterfeit.
8RYNT9	The contract letter provided by the employer (Q1) dos[sic] show alterations by addition. Richard Hensen's signature was printed by meeans[sic] of a PC which renders the document not original.
8YHYZH	Therefore, it is concluded by utilizing forensic methods generally accepted in the examination of questioned documents, that the signature in question is not an authentic wet ink signature. The signature is a color copy.
947XWP	Results of Examination: Item Q1 is not genuine. The "Richard Hensen" signatures depicted on Items Q1 and K1 are images of the same signature. The Item K1 "Samantha Hess" signature is not a depiction of the Item Q1 "Samantha Hess" signature. A baseline alignment difference was observed between the Q1 and K1 "Richard Hensen" signatures. The Item Q1 printed text was prepared with a toner process. The Item Q1 "Samantha Hess" signature was prepared with a black ballpoint writing instrument. The Item Q1 "Richard Hensen" signature was prepared by a color ink jet process. The Item K1 text was prepared by a toner process. No indented writing or watermarks were observed on Items Q1 or K1.
96RNN3	It is my opinion that Q1 was produced with two different printing processes. The entire document with the exception of the Richard Hansen[sic] and Samantha Hess signature was produced with a toner process. The Richard Hensen signature on Q1 was placed on the

TABLE 3

WebCode	Conclusions
	document with an inkjet process. It is my opinion that the Richard Hensen signature on Q1 and the Richard Hensen signature on K1 share a common source. It is highly probable that the Samantha Hess signature on Q1 and K1 was written by the same person. The sheets of paper used to produce Q1 and K1 exhibit different optical responses to infrared and ultraviolet light sources, and therefore do not share a common source. The Q1 and K1 documents were examined for the presence of any indented writing, typing or other identifying impressions. There were no meaningful or significant impressions located. Q1 and K1 were examined for alterations/eradications/erasures to the "4%" entry on Q1 and the "6%" entry on K1. These examinations failed to reveal any evidence of alteration.
A2JJ7U	The "Samantha Hess" signature on Q1 is not the same "Samantha Hess" signature depicted on K1. The "Richard Hensen" signature on Q1 was produced using toner technology and is the same "Richard Hensen" signature depicted on K1. Q1 was examined for indented writing using the electrostatic detection apparatus (ESDA). No significant indentations were observed. Four ESDA lifts were created and will be returned with the submitted evidence.
ABN6AT	1. The Questioned and (reported) Known Samantha Hess signatures revealed similar individual signature characteristics and habits. Based on similar individual signature characteristics and habits, the evidence is very persuasive, yet some critical feature or quality (K1 Samantha Hess signature is a photocopy) is missing so that an identification is not in order; however, the examiner is virtually certain that the the[sic] Questioned and (reported) Known Samantha Hess signatures share common authorship. However, the signatures are not mirror images of one another which support the contention that signatures are never authored exactly the same. 2. The Questioned and (reported) Known Richard Hensen signatures were transparency copied and lay perfectly on top of one another which indicates that the Questioned and (reported) Known Richard Hensen are either representations of each other or representations of another "Richard Hensen" signature. Macroscopic examination and analysis revealed indications of printer (laser jet spray) around the Questioned Richard Hensen signature.
ADC3HD	1.- The signature of the employee which appears in Q1 IS NOT ORIGINAL (since it must be). 2.- The above mentioned signature is an impression realized with Ink-jet technology, obtained of the original signature that was appearing in the document that gave origin to K1 (it presents remains of the line pre signature of the original document). 3.- The signature of the company in Q1 is original but it differs in dimensions and morphology of which figure printed in K1 (they must coincide). 4.- 4.1.- Evidence K1: system of impression laser (photocopier - printer - fax) with dry black toner. 4.2.- Evidence Q1: system of impression: - Laser (photocopier - printer - fax) with dry black toner for all the texts and logos. - Ink-jet (tricomia) signature of the employee. - Signature of the representative of the company: manuscript.
AJXZ9L	It is my opinion the Richard Hensen, employee, signature on Q1 is a color copy reproduction of the parent of the K1 signature. Therefore, Q1 is not a genuine document but instead is a composit[sic] document with a machine transferred signature of Richard Hensen. Although, the Samantha Hess, manager, signature on Q1 is an original signature, written with a black ballpoint pen. Additionally, the entirety of K1, including the signatures, is a black machine copy document.
AMDMMR	In our report, our conclusion would be: The signature here present in the bottom and attributed to Richard Hensen in the document Q1 is printed in inkjet technology while the rest of the document is in toner except Hess's signature which is handwritten. That means that document is not a genuine with a signature that it doesn't handwritten but printed. It's a makeup which has been in different steps (at least 3). This document, Q1, is not an original document.
ATMQQ9	The offer letter submitted by employer is not original document. The employee's signature is printed in color.

TABLE 3

WebCode	Conclusions
AXY7HQ	Q1 does not contain an original Hensen signature. The Hensen signature on Q1 was placed on the document by an apparent cut and paste procedure.
B846KJ	The signature that is affixed to the bottom of the employment offer letter submitted by employer Safe Haven Home Insurance (document Q1) consists in a reproduction printed by means of a color inkjet printer whereas the rest of the letter was printed with a laser machine and signed in the name of Samantha Hess with a ball point pen. Therefore, Q1 is a montage and thus is not genuine. Besides, the comparison of Q1 with the photocopy of employment offer letter submitted by employee Richard Hensen (document K1) shows that the employee's signature reproduced on Q1 originate from the same source document as K1. In the event that a color inkjet printer or a color printed document would be discovered during the ongoing investigation, a comparison with the employee's signature reproduced on Q1 should be made.
BHHZMC	The document K1 is not a photocopy of document Q1. The upper signature in K1 is different in the first letter "a" and in the capital "H". Furthermore, the lower signature appears to be a stamp or electronic. The same defects are noticed between the two signatures. However, this lower signature in K1 is much closer to the signature line than in Q1; therefore, not a photocopy. The percentages in question in the text appear to be in line and a part of each original document and not altered from K1 to Q1. Q1 must have been a new document with the 4% figure printed, then the document signed.
BKQBJF	I conclude that the signature of Richard Hensen on the Q1, is not genuine, and a colored photocopy of his original signature on the original offer letter from which he submitted a copy.
BVLJ3H	In view of our observations, we can conclude that the questioned piece Q1 shows obvious marks of alteration. Indeed, we can consider the following alteration operating mode: - digitalization and image treatment of the employee's signature <<Richard Hensen>>, from the original employment contract - printing an employment contract modified (6% 4%) with monochromic laser. Addition of the digitalized employee's signature on the modified contract by printing color ink jet- Apending (apposition) of the authentic Madam <<Samantha Hess>>'s signature with a scriptural tool. [sic]
BYAZQH	The original offer letter Q1 provided by the employer is not genuine. The employer has modified the terms of the commission on the numeric text of the offer letter and has printed it, using a laser printer. Then, he has scanned the employee's signature from the initial offer letter and has printed it by inkjet technology, on Q1. Then, he has signed Q1, using a black ballpoint pen.
C28Y29	A visual, microscopic and instrumental examination and comparison of Q-1 and K-1 support the contention that Q-1 is not genuine. This finding is demonstrated by the fact that the Samantha Hess signatures do not overlay making evident they are not from a common source. In addition, the Richard Hensen signature on Q-1 is not original and was produced using ink jet.
C397U8	Item K1 is entirely a dry-toner copy (e.g. photocopy). Item Q1 is a dry-toner document (e.g. laser printer) bearing an original black ballpoint "Samantha Hess" signature and a blue color-inkjet "Richard Hensen" signature. There are no signs of alteration or manipulation to Item K1. Items K1 & Q1 display the same font and text arrangement, with the exception of the text entry "6%" on Item K1 which appears as "4%" on Item Q1. The "Samantha Hess" signature on Item K1 was not derived from the black ballpoint signature on Item Q1, however the "Richard Hensen" signatures on Items K1 & Q1 are derived from the same original signature (or from a copy of that signature). The blue "Richard Hensen" color-inkjet signature on Item Q1 appears to display portions of a black signature line indicating it is a copy of the original signature. Item Q1 is a fraudulent document (i.e. it is not as purported.) Further, the original document that Item K1 was copied from was not submitted for examination.

TABLE 3

WebCode	Conclusions
CDH87L	The letter in question (Q-1), was the result of a fabrication process. The commission rate of 6% was changed to 4%. The purported original signature of Mr. Hensen was a color photocopy rather than an original inked signature. After the fabrication of the 'original' (Q-1), was completed, Ms. Hess signed the document with original ink.
CDPBNJ	Evidence supports the contention that Item Q1 is not genuine. The "Samantha Hess" signatures appearing on Item Q1 and Item K1 are different. The Item Q1 signature is original writing prepared with black ink. The Item K1 signature was prepared by office equipment using toner technology. This technology is produced by numerous photocopiers, laser printers, and facsimile machines. No conclusion could be reached whether the writer of the known "Samantha Hess" signature on Item K1 prepared the questioned "Samantha Hess" signature on Item Q1 due to the presence of characteristics observed in the questioned writing that are not accounted for in the available known signature. The "Richard Hensen" signatures appearing on Item Q1 and Item K1 overlay indicating these signatures were produced from a common source. Characteristics were observed in the "Richard Hensen" signatures on Item Q1 and Item K1 that suggest they were prepared by a cut and paste process. The "Richard Hensen" signature appearing on Item Q1 was prepared by a color ink jet printing process. This process is produced by numerous ink jet printers. The "Richard Hensen" signature appearing on Item K1 was prepared by office equipment using toner technology. Indented writing of unknown value was observed on the front of Item Q1. The indented writing is best read as "T J re.." No watermarks or evidence of paper fiber disturbance was observed on Item Q1.
CLVDFD	The "Richard Hensen" signature on Item Q1 is not an original written signature and was produced by an office machine using inkjet technology. Additionally, this signature on Q1 bears characteristics indicative of a cut-and-paste or digital manipulation when compared to the corresponding K1 signature. Further, the "Samantha Hess" signature on Item Q1 is different than the "Samantha Hess" signature depicted on Item K1. These observations therefore support the contention that Item Q1 is not genuine. No indented writing, watermarks, or other physical characteristics of value were observed on Item Q1.
CM8V4A	Based upon the documents submitted, it is my professional opinion that Q1 is not a genuine document. A microscopic examination showed that the alleged signature of Richard Hensen on Q1 was composed of blue and magenta dots. The colored dots, and the formation of the dots indicate that this signature was created by a machine and not by a writing instrument (ie: pen).
CMEJLU	The questioned Q1 document was examined for its authenticity. The Q1 document is not a genuine document. The Q1 "Richard Hensen" signature was produced on an ink jet process machine and is not an original signature. Q1 and K1 "Richard Hensen" signature share the same source signature as they overlay with agreement, but does not overlay in placement on the baseline. This evidence indicates the questioned "Hensen" signature is the result of a "cut-and-paste" method on a Q1 revised document. The Q1 "Hess" signature was produced with a ballpoint writing instrument and, therefore, is an original signature on a revised document. The questioned Q1 document was processed for marking or writing impressions. No discernable results were found.
CUNHU6	Evidence exists to support the proposition that the HENSEN signature which is imaged on Q1 has been re-imaged from a separate unsourced document and is consequently non-genuine. Whilst there may theoretically exist legitimate reasons for the Q1 HENSEN signature to have been applied to the page using different print processes to the remainder of the document, the evidence is such to support the proposition that the document Q1 has been fabricated.
D3QEJ3	On examination of Q1, I found that the signature in the name of Richard Hensen was scanned and ink-jet printed and was not written in original ink. It should be noted that the content of Q1 is laser-printed and the signature in the name of Samantha Hess written in ball-point ink. On

TABLE 3

WebCode	Conclusions
	<p>comparison between Q1 and K1, I have found that the content of the documents overlap, except for the percentage commission, the signature in the name of Samantha Hess and the relative position of the signature in the name of Richard Hensen. In light of the above, I have found that Q1 is forged; it was prepared as an imitation of the document that was the source of the photocopy K1. In Q1, the percentage commission was altered, there is a new signature in the name of Samantha Hess and a transplanted signature in the name of Richard Hensen that is identical to that in K1.</p>
D9MR2C	<p>Results of examinations: Due to sufficient observed differences between item Q1 and item K1, it was determined that item Q1 is a non-genuine document. The "Samantha Hess" signature on item K1 is not an image of the "Samantha Hess" signature on item Q1. The "Richard Hensen" signature placement above the base line on item Q1 is not in agreement with the "Richard Hensen" signature placement above the base line on item K1. The "Richard Hensen" signature on items K1 and Q1 are images of the same signature. The "Richard Hensen" signature on item Q1 was prepared using an ink jet printing process. This process is available on numerous brand name printing devices. The text on items Q1 and K1 was prepared using a toner technology printing process, available on numerous brand name printing devices. No indented writing, watermarks, or other physical characteristics were observed during the examination of item Q1 which might indicate their immediate source(s). Additional assessments and observations have been made regarding the submitted items and recorded for possible future comparisons.</p>
DBWDR4	<p>It was observed that the purportedly original document Q1 was made with a printer/photocopier based on electrophotography, excluding the signatures of Mrs./Ms. Hess and Mr. Hensen. The signature of Mrs./Ms. Hess was made with a pen and the signature of Mr. Hansen[sic] was made with an inkjet printer. It is expected to find signatures of both parties to be made with a pen in original document. Differences were observed between Mrs./Ms. Hess' signatures in samples Q1 and K1. Mr. Hansen's[sic] signature in sample Q1 was made with an inkjet printer and it was observed to share identical shapes with the corresponding signature in sample K1. In the vertical lines of the letter "H" in Mr. Hensen's signature on sample Q1, parallel breaks of black colour were observed. In sample Q1, the signature of Mr. Hensen was positioned a bit further off the horizontal black line than in sample K1. It was concluded that the black colour breaks originated from the intersections of the original signature's lines with the black horizontal line. Moreover, it was concluded that Mr. Hensen's signature was copied from the original document and reproduced to sample Q1. The observations mentioned above render sample Q1 fraudulent.</p>
DK8H2M	<p>The "Samantha Hess" signature on Q1 is a ball point ink original return. The "Richard Hensen" signature on Q1 is not an original ink signature. The signature was produced by a digital process and printed using a color printer. The Q1 letter is non-genuine.</p>
DQQA8A	<p>It is concluded that the employee's contention that the offer letter provided by the employer (Q1) is not genuine, is supported.</p>
DQT3YG	<p>All techniques used in this case allow us to claim that Q1 form is not the genuine one, we can make the assumption that : The employer had scan the employee signature of the genuine form. Using digital image processing, he had cancelled all the others data and printed the signature with ink jet printing (two dark spots can bee[sic] seen under high magnification corresponding to the cross between signature and line). Then on this paper, he printed a new form changing only 6% to 4% on laser printer, keeping all the text, and finally he put his own signature on it, necessarily different from the genuine form. So that Q1 form is an assembly of the original employee signature and the whole text, except 6 changing to 4, and a new original signature of the employer.</p>

TABLE 3

WebCode	Conclusions
DTDMQJ	1. The non-handwritten entries on Exhibits 1 and 2, and the signature entries on Exhibit 1, were produced with an office machine system(s) utilizing toner technology (e.g., copier, printer). 2. The HESS signature on Exhibit 2 was produced with a ball point pen. 3. The HENSEN signature on Exhibit 2 is not an original written signature and was produced with an office machine system. 4. The HENSEN signatures on Exhibit 1 and 2 are unknown generation copies of the same original signature.
E49J7K	The document provid[sic] by the employer is not sign by the employee "Richard Hensen". It is not genuine.
EAJ73F	The font style and overall layout of the printed text on Item Q1 and K1 are consistent with each other with the exception of the percentage amounts. The "Richard Hensen" signature appearing on Item Q1 was produced by color ink jet technology. This signature, and the "Richard Hensen" signature appearing on Item K1, align with one another when they are overlaid which indicates they share a common source. Additionally, the slight deviations that exist in the natural variation of writing from one individual are not present between the "Richard Hensen" signatures depicted in Items Q1 and K1. The "Samantha Hess" signature appearing on Item Q1 consists of black ball point ink. The remaining printed text on Item Q1 and the printed text and signatures appearing on Item K1 consist of toner. The "Samantha Hess" signatures appearing on Items K1 and Q1 are not the same signature and therefore, Item Q1 was not the original item used to produce the reproduction copy of Item K1. Items Q1 and K1 were examined for indented writing impressions. No indentations of evidentiary value were observed.
EBATGJ	Exhibit Q1 and K1 were examined using microscopic techniques in conjunction with digital imaging. The results are as follows: The text in the body of the questioned letter (Exhibit Q1) was produced with a printer using toner technology and the "Samantha Hess" signature on Exhibit Q1 is an original inked signature that appears to be naturally written; however, the questioned "Richard Hensen" signature was produced with a printer using liquid ink jet technology and is not an original inked signature. If all of the conditions found on the original of Exhibit K1 are accurately reflected by the machine copy submitted for comparison, then the questioned "Richard Hensen" signature on Exhibit Q1 and the "Richard Hensen" signature on Exhibit K1 share a common source. However, it should be noted that due to the inability to examine the original of Exhibit K1, there is no way to determine whether or not the known "Richard Hensen" signature was originally written on it. Exhibit Q1 and K1 were examined for handwriting indentations using the Electrostatic Detection Apparatus (ESDA) but the results were negative in respect to handwriting indentations.
EBT78M	The HENSEN signature on Q1 is not original and has been produced using an inkjet printing process. The HESS signature on Q1 is original and has been produced using a ballpoint ink. The remainder of Q1 has been produced using a toner printing process. K1 has been produced using a toner printing process in its entirety. The HESS signatures on Q1 and K1 do not overlay and have not originated from a common source. Based on this observation, K1 is not a copy of Q1.
EKAJYK	I have examined and compared the printed texts and signatures on documents Q1 and K1. The signatures of Richard Hensen on both documents are copies. Moreover, they appear to be identical. This finding indicates that at least one of these signatures is a forgery. The "Samantha Hess" signature on Q1 is original. Her signature on K1 is a copy. In my opinion, the evidence strongly supports the proposition that Q1 is a composite document and that the original of the "Richard Hensen" signature on K1 has been added to Q1 using a cut and paste method.
ENXXPF	Based on a comparison with Item K1, it was determined that Item Q1 is not a genuine document, due to the different Samantha Hess signatures on the two items, and the difference in the distance from the Richard Hensen signatures to the signature line on the two items. The

TABLE 3

WebCode	Conclusions
	printing on Items Q1 and K1 was produced by using a toner technology, commonly available in photocopiers and computer printers. The Samantha Hess signature on Item Q1 was prepared using a black ball-point ink. The Richard Hensen signature on Item Q1 was prepared using an ink jet process, commonly available on computer printers. The Richard Hensen signatures on Items Q1 and K1 are images of the same signature.
EQ8GPH	The employee's contention that Exhibit 2 (Q1) (offer letter provided by the employer) is not genuine is supported. The "Richard Hensen" signatures reproduced on Exhibits 1 (K1) and 2 (Q1) share a common source of origin. The "Richard Hensen" signature reproduced on Exhibit 2 (Q1) contains features/characteristics indicative of a cut-and-paste manipulation (physical or digital/electronic) of a "Richard Hensen" signature from a source document not provided for examination. The source of origin of the "model" signature is assumed to be the "original[sic] document used to create Exhibit 1 (K1).
FBNMQR	The questioned offer letter (Q1) is not an original document with the signature of "Richard Hensen" printed by a jet-printer.
FDM6KD	Based on visual, microscopic, and instrumental examinations, the conclusion was reached that Exhibit Q-1 is not genuine. The digital version of Exhibit Q-1 was altered to reflect the change of commission from "6%" to "4%" then printed using the same digital signature of Richard Hensen that is on Exhibit K-1. Exhibit Q-1 was then printed out and signed again in the name Samantha Hess. Exhibits Q-1 and K-1 were examined for evidence of indented writing. No indented writing was observed.
FDYRVM	There are discrepancies between the two documents[sic] #Q1 and #K1 regarding the following: 1. non-original nature and position of the Richard HENSEN signature on #Q1. 2. non-superimposibility[sic] of the Samantha HESS signature on #Q1 with that on #K1. 3. Difference in the % commision[sic] per sale between documents #Q1 and #K1, In my opinion these findings provides strong support for the proposition that the offer document #Q1 was not the source for the photocopy document #K1.
FHRZUM	The Q1 employment offer letter is not a genuine document.
FXH6ZV	As a result of the 'Richard Hensen' signature on item Q1 being non-original and originating from the same source as the 'Richard Hensen' signature on item K1 and the original signed 'Samantha Hess' signature on item Q1 being different to the 'Samantha Hess' signature on item K1, I have formed the opinion that the questioned Q1 document is not the genuine original signed document it is purported to be. Hence, my examination supports the employee's contention that the item Q1 letter provided by the employer is not genuine.
GABCDL	I found conclusive evidence to support the view that the questioned Employment Offer Letter (Q1) is not the original letter signed by the employee, Mr Richard Hensen. The questioned Employment Offer Letter (Q1) bears a different signature of the Human Resources Manager, Samantha Hess, from that seen on the photocopy Letter (K1). Further, the signature in the name Richard Hensen on the questioned Employment Offer Letter is not an original pen and ink signature but is a colour copy produced on an ink jet printer.
GD9VDY	My examination probably supports the employee's contention.
H3KJEQ	Given the proposition that K1 represents an authentic reproduction of the original job offer letter, then Q1 is not the original, genuine job offer letter.
JBVXY8	Evidence was found that suggests the signature Richard Hensen appearing on Q1 is a machine copy using color copy technology. Additionally, evidence was found that the questioned Hensen signature appearing on Q1 and the Hensen signature found on K1 overlay with each other suggesting the[sic] both originated from the same model.

TABLE 3

WebCode	Conclusions
JCNZJ3	Physical and optical examinations were conducted on Exhibit Q1 and K1 documents. The body of the Exhibit Q1 letter and the entire Exhibit K1 letter were produced using an office machine system(s) utilizing black toner (systems of this type include photocopiers and laser printers). The Exhibit Q1 Richard Hensen signature was determined not to be an original signature. The signature was produced using inkjet technology. The Exhibit Q1 Samantha Hess signature was determined to be an original signature produced with a black ball point pen. The results of the examinations support the employee's contention that the Exhibit Q1 document provided to the employee is not a true and accurate copy of the original document.
JCU6E7	1. Exhibit Q1 was created via an electrophotographic process except for the area on the lower left hand corner containing the signature of Richard Hensen. The Hensen signature was created via an inkjet process and is not an original inked signature. The Samantha Hess signature also located in the lower left corner is an original black ball point pen inked signature which does not overlay with the signature in the photocopy in exhibit K1. a. The Richard Hensen signature was printed out on white paper; the letter was altered from 6% to 4% in the computer and printed over the top of the Richard Hensen inkjet signature and the overprinting was created via an electrophotographic process. The Samantha Hess signature was created with original black ball point pen ink. 2. Exhibit Q1 was scanned for preservation by Specialist XXXX. 3. An ESDA (ElectroStatic Detection Apparatus) examination for the detection and reading of indented writing, typing or other identifying impressions was performed on the questioned letter by Specialist XXXX. No indentations of value were found. 4. Exhibit Q1 was processed for latent prints with liquid ninhydrin by Specialist XXXX and the evidence was forwarded to the Latent Print Section for evaluation. 5. Exhibit Q1 was processed for DNA evidence by Specialist XXXX and the evidence sealed and placed into property. 6. Exhibit Q1 was examined and it was determined that the body of the letter contains a 10 point Calibri font, however, the top letterhead portion contains a 9 point Calibri font. 7. Exhibit K1 was created via an electrophotographic process in its entirety.
JEZ3YT	Microscopic and instrumental examination of the Q1 document revealed the Richard Hensen signature to be an inkjet printed signature that shares a common source with the Richard Hensen signature on K1. It is my opinion that the questioned signature on Q1 is not a genuine signature but rather the product of digital manipulation, produced after the source of the Richard Hensen signature on K1. The questioned and known documents were examined for the presence of any indented writing, typing, or other identifying impressions. These are impressions sometimes left on paper from writing, typing, or other markings done on another page while it was superimposed over the questioned material. There were no meaningful impressions located.
JGY72U	The signature of Samantha Hess on document Q1 was handwritten, however the signature of the employee (Richard Hensen) was a printed signature and not his own handwritten signature. Hence, I am of the opinion that my examination support the employee's contention that the offer letter provided by the employer Q1 is not genuine.
JMNJ3H	The signature of Richard Hensen (Q1) have digital characteristics.
JTDXBX	Richar Hensen's signature (Q1) show colored microdotss wich renders it not original.[sic] Document K1 is not a photostatic reproduction of document Q1.
JX6BKZ	[No Conclusions Reported].
K3VX4C	Based on differences observed during the comparison of the item Q1 and item K1 "Samantha Hess" signatures, the non-original nature of the "Richard Hensen" signature on item Q1, inconsistencies in the alignment of portions of the item Q1 and K1 printed text, and the presence of inconsistent extraneous toner characteristics, it was determined that the Item Q1

TABLE 3

WebCode	Conclusions
	document is not genuine.
KE939M	It has been concluded that Exhibit Q1 has been altered/not genuine.
KMM4C3	Due to sufficient disagreement with item K1, it was determined that item Q1 is not genuine. The Samantha Hess signatures on items K1 and Q1 are not the same. The Richard Hensen signature on item Q1 is an inkjet-printed image of the toner-printed signature on item K1 and is positioned higher off the signature line than on item K1. The text on items Q1 and K1 was prepared using a toner printing process, available on various brands of office machines. No indented writing or watermarks were observed on items Q1 and K1. Additional assessments and observations have been made regarding the submitted items and recorded for possible future comparisons.
KRK23Z	Based on the evidence received, it would appear that the questioned document, Q1 and the known document, K1 are not the same document.
L39XB7	1. Q1 is not an original document, but rather is a colour laser-printed copy. 2. Q1 is a fabricated document in which a generation of the K1 signature was scanned and copied into a generation of Q1, or into Q1 itself.
LTU7FN	In our opinion the employer has manipulated the employment offer letter
M9WRBD	The "Samantha Hess" signature on Exhibit Q1 is an original inked signature, but it is not the same signature as that represented on the K1 machine copy. The "Richard Hensen" signature on Exhibit Q1 is not an original signature. It has been digitally scanned, using the same source signature as that represented on Exhibit K1, and printed on Exhibit Q1 using liquid ink jet printing technology. Therefore, Exhibit Q1 is not the original document that was used to create the K1 machine copy.
MADJ8L	Q1 signature is a montage.
MLFM29	The offer Letter, submitted by employer Safe Haven Home Insurance Q1 is not genuine because the signature of Richard Hensen is a photocopy.
MYBM7Y	The results of the document examination indicates that the blue appearing signature "Richard Hensen" at the bottom of the employment contract (Q1) is no original handwritten signature. It was generated with an inkjet-printer. By this, we have basic evidence of forgery of the provided "offer letter" (Q1).
MYRHKK	The findings confirm the proposition (contention) of Mr. Richard Hensen, that the Q1 letter is not genuine.
N79D6K	3.1) Item Q1 is not an original document as the "Richard Hensen" signature entry is produced by color inkjet printing. 3.2) The entire K1 document is a product of toner printing with no original inked signature entries. 3.3) Item K1 is not a direct copy of item Q1. The following observations were noted. 3.4) The Q1 item bears an original ball point pen inked "Samantha Hess" signature entry and a non-original inkjet produced "Richard Hensen" signature entry. 3.5) The depicted "Samantha Hess" signature on K1 is not a copy of the Samantha Hess signature on item Q1. 3.6) The inkjet produced "Richard Hensen" signature on item Q1 is directly superimposable with the K1 "Richard Hensen" signature, however, the combined Q1 "Richard Hensen" signature and signature line is not superimposable with the combined K1 "Richard Hensen" signature and signature line. 3.7) The Q1 "Richard Hensen" signature entry is located slightly higher above its corresponding signature line than seen in the K1 "Richard Hensen" signature entry, which is located closer to its corresponding signature line. (see the cross stroke of letter "H" in "Hensen") 3.7.1) This indicates that the source signature for the K1 "Richard Hensen" entry, was transposed from the source for the K1 copy and transferred onto item Q1.

TABLE 3

WebCode	Conclusions
	<p>3.8) There is no indication of an alteration/obliteration to the "6%" commission entry on item K1. 3.9) There is no indication of an alteration/obliteration to the "4%" commission entry on item Q1. 3.10) Conclusion: Thus, it appears that a new employer contract was created to include the 4% commission entry and the "original[sic] "Richard Hensen" signature on the "true" employer contract (which K1 is purportedly a copy of) was transposed (most likely a digital "cut and paste") to create the resulting Q1 exhibit.</p>
N7XRZJ	<p>1. In my professional opinion, Item Q1 is not a genuine document. 2. Item Q1 is purported to be an original document. However, the Richard Henson[sic] signature on Item Q1 is not an original signature. The Hensen signature on Item Q1 was created with a color ink jet printer. The Samantha Hess signature is an original signature, which was written with a black ink ballpoint pen. The remaining text on Item Q1 consists of dry electrostatic toner, such as that used in laser printers and photocopiers. 3. The Hensen signature on Item Q1 is the same signature that appears on Item K1. In my professional opinion, Item Q1 was created through cut-and-paste manipulation. The Hensen signature used in the manipulation was taken from the original document, or a copy of the original document, from which Item K1 was copied. The Henson[sic] signatures are the same size and have precisely the same handwriting movements and features. This would not occur in two different naturally written signatures. 4. While it is often possible to determine that a document was created through cut-and-paste manipulation, it is usually not possible to determine exactly how the cut-and-paste manipulation occurred. In this case, the cut-and paste manipulation occurred in the following manner or in a very similar manner, but not necessarily in the identical order: a. The text of Item Q1 was prepared on a computer, or alternately, the previously existing computer file corresponding to Item K1 was changed to state 4% rather than 6%. The latter appears most likely. B. The text of the document was printed with a printer utilizing dry electrostatic toner, such as a laser printer. C. The original of Item K1, or a color copy of the original document, was scanned. The Henson[sic] signature was cut from the document and pasted into a blank document, or alternately, all of the information, other than the Henson[sic] signature, was cut from the document. D. Using a color ink jet printer, the document bearing the Henson[sic] signature was printed onto the document bearing the computer text. E. The Hess signature was signed using a black ink ballpoint pen. 5. In addition to the evidence described in paragraphs 2 and 3, two black dots were detected on the two vertical strokes of the "H" of the Henson[sic] signature (the signature is blue). These dots were created as a result of the cut-and-paste manipulation. When the Henson[sic] signature was copied, the computer-printed signature line, which crossed the signature, was removed; however, the two black dots are consistent with remnants of the signature line. When the signature was "pasted" during the creation of Item Q1, it was placed a little higher on the signature line than the corresponding signature on K1. This higher placement makes it possible to see the two black dots.</p>
NALJGF	<p>The document K1 is not a photocopy of the document Q1. The document Q1 is not genuine.</p>
NHVBL4	<p>Based on the results of the investigation we can conclude that the document Q1 is a forgery. The signature of Mr. Hensen on Q1 is printed by an ink jet printer. The signatures of Miss S. Hess in Q1 and in K1 are not identical shape and they are not on the same position of the contract. Signatures of Mr. Hess[sic] on Q1 and K1 are identical shape. That indicates that the contract was reprinted (the comission[sic] rate was changed in the process), the document was signed by Miss Hess. The signature of Mr. Hensen was scanned from the original contract and printed onto the Q1 using inkjet printer.</p>
NJXKD3	<p>The evidence shows that the Employment offer letter Q1 was not a genuine but a replacement of its original by printing a fresh copy of the same letter from the software with an amendment of the digit from 6 to 4 on the commission per sale. A fresh signature of Samantha Hess was appended on Q1 with ball point pen while the signature of Richard Hensen was then</p>

TABLE 3

WebCode	Conclusions
	transferred from the original of K1 onto Q1, inevitably bringing along the two inherent dark spots, resulting from the intersection of the two slanting parallel strokes of the "H-like" feature of the original signature of Richard Hensen with the reference line, through scan-and-paste manipulation process and printed with a colour ink-jet printer.
P9JCNL	After overlap K1 and Q1 letters to find the difference between these two letters. And we use Microscope to tell the making method of these two letters. We can get the result that the offer letter provided by the employer (Q1) is not genuine.
PALFMA	1. The Exhibit Description below is clarified as follows: Exhibit 1 - Machine copy of a questioned employment offer letter. Exhibit 2 - Questioned employment offer letter. 2. With the exception of the HESS signature on Exhibit 2, Exhibits 1 and 2 were produced with an office machine. 3. The HESS signature on Exhibit 2 was produced with a ball point pen. 4. The HENSEN signatures on Exhibits 1 and 2 are unknown generation copies of the same original signature.
PGG7JY	The employee's claim (Richard Hensen), regards the sales commission arranged in his employment contract with Safe Haven Home Insurance can be substantiated because the terms included in the employer contract copy come from a forgery of the original one.
PKDPP4	The "Hensen" signature appearing in document Q1 is a non-original machine generated signature which has been created using a four colour electro-photographic (toner) process. The non-original "Hensen" signatures appearing in Q1 and K1 are super-imposable and therefore have been produced from a common model. When compared, differences in the position of the Q1 and K1 "Hensen" signatures in relation to the baseline have been observed. The original "Hess" signature appearing in document Q1 is non-superimposable with the non-original "Hess" signature appearing in K1. Therefore, the original "Hess" signature appearing in Q1 is not the signature model used to generate the non-original "Hess" signature appearing in K1. When compared, differences in the spacing and position of the "Hess" signatures appearing in Q1 and K1 have been observed. As a result of this examination, it has been determined that document Q1 is not the original document model used to generate document K1 copy.
PMBDQT	The Q1 offer letter provided by the employer is not the genuine source letter of the K1 photocopy. The Q1 letter was created by two printing process methods. One print process method was the use of toner technology for the word processed text of the Q1 offer letter. The "Richard Hensen" signature on the Q1 document is not an original writing ink signature, but an image produced by ink jet technology. The "Richard Hensen" signature on Q1 is the result of a cut-and-paste. The original written Q1 "Samantha Hess" signature is not the same source signature as the photocopied K1 "Samantha Hess" signature.
PP8RRJ	As a result of my examinations and comparisons, I determined that Q1 (Employment offer letter submitted by the employer) is a composite (fabricated) document. The employee signature "Richard Hensen" on Q1 was sourced directly or indirectly to the original "Richard Hensen" signature as depicted on K1 photocopy of the employment offer letter. Note: A composite document may be produced by transferring elements (e.g. signature) from other documents into a new document by electronic and/or manual means, e.g. "cut-and-paste" process.
PR828Z	Based on the differences between Q1 and K1, it is my conclusion that Q1 is not the source of K1. The document listed as K1 is allegedly a copy of Q1. Numerous differences between the two documents provide evidence that Q1 is not the source of K1. The Samantha Hess signature on K1 is not a copy of the Q1 Samantha Hess signature; it is a different signature. The Hess signature on Q1 is an original black ink signature, but contains different letter formations than K1. The Richard Hensen signature on Q1 is not an original signature, but is a color copy of the signature on K1. Superposition of an acetate of K1 onto Q1 reflect misalignment of text and

TABLE 3

WebCode	Conclusions
	signatures. Based on these differences, evidence supports employee Richard Hensen's contention that the offer letter listed as Q1 provided by the employer is not genuine.
PXRWBP	The two mutually exclusive hypotheses, hypothesis 1 and hypothesis 2 are formulated on the basis of the question, the pre-obtained information about the case and the possibilities offered by the research. H1 Document Q1 is genuine. H2 Document Q1 is a forgery. Conclusion: H2 is true, H1 is not possible.
QD26NY	Based on the exhibits submitted it is this examiner's opinion that the Q1 document is not genuine and has been altered to reflect a change from 6% commission to 4% and a different Samantha Hess signature than the K1 exhibit. Q1 and K1 were processed for indented writing on the Electrostatic Detection Apparatus (ESDA). Nothing of evidentiary value was found.
QKRJXR	There is support for the contention that Q1 is not the original version of the employment contract. The Q1 Richard Hensen signature is not an original signature. It is a color copy of a signature.
QLQJ76	All of the text on the two documents Q1 & K1 correspond exactly with the exception of the 4% commission rate on Q1 and the 6% rate on K1. From examining the Richard Henson[sic] signature under the low power microscope it is not an original ink signature and has been machine printed. In addition, the Samantha Hess signature on item Q1 which is in original ink does not correspond to the signature on item K1. My findings support the employee's contention that the offer letter provided by the employer (item Q1) is not genuine.
QTLNQT	The Q-1 signature of Richard Henson[sic] was produced by machine (i.e., laser or inkjet printer) and is not an authentic wet ink signature of Richard Henson[sic].
QU3AQ2	It was determined the offer letter, Q-1, is not genuine. The signature Richard Hensen, appears to be a cut and paste forgery.
QVUWZD	The Q1 document exhibits evidence of having been altered. Q1 was reprinted after changing the 6% to 4% in the data file, and a color copy of the live ink Richard Hensen signature was placed onto the Q1 document, and Samantha Hess wrote her live ink signature on this Q1 document. Note that the Richard Hensen signatures on Q1 and K1 are both machine produced layovers from a common source; the live ink source signature by Richard Hensen which was not on the document produced by the company (Q1) purporting to be the original authentic document.
R27BRV	Upon completion of an examination and comparison of the exhibit and standard submitted in this case, the following observations were made: The "Samantha Hess" signatures on the Q-1 and K-1 documents are not the same, the K-1 signature is not a photocopy of the Q-1 signature. The "Richard Hensen" signature on the Q-1 exhibit is not an original inked entry, but rather an ink jet representation. Due to the aforementioned observations, it is the opinion of this examiner that the Q-1 exhibit is not the source from which the K-1 standard was made. The Q-1 exhibit has been altered and thus is not genuine. The Q-1 and K-1 documents were processed for latent writing impressions using Electrostatic Detection Apparatus (ESDA). Nothing of evidentiary value was found.
R2J8UE	Examination and comparison of questioned item #Q1 with known item #K1 resulted in the following observations/conclusions: The Richard Hensen signature on item #Q1 is NOT an original inked signature and was produced via an inkjet printing process. The questioned Richard Hensen signature on item #Q1 and the known Richard Hensen signature on item #K1 are reproductions of the same Richard Hensen signature. The Samantha Hess signature on item #K1 is NOT a reproduction of the original inked Samantha Hess signature on item #Q1. Item #Q1 was processed for indented writing. No indented writing was developed.
R3WFK3	The style of font, line spacing, formatting, and the content of the printed text in Item Q1 are

TABLE 3

WebCode	Conclusions
	<p>consistent with the printed text in Item K1 except for the percentage value on Line 3 of the first paragraph. The numeral is "4" on Item Q1 and "6" on Item K1. The printing on Item Q1, excluding the signatures, and Item K1 was produced from a device(s) using toner technology. The "Samantha Hess" signature on Item Q1 is an original signature produced with black ballpoint ink. The "Samantha Hess" signature on Item Q1 is not the same "Samantha Hess" signature that is depicted on Item K1. Based on the handwriting comparison of the two signatures, it is probable that both "Samantha Hess" signatures on Items Q1 and K1 were written by the same writer. The "Richard Hensen" signature on Item Q1 is not an original signature and was produced from a device using inkjet technology. Furthermore, the slight deviations that exist in the natural variation of writing from one individual are not present between the "Richard Hensen" signatures depicted on Items Q1 and K1. These "Richard Hensen" signatures also aligned when overlaid onto one another. Thus, the "Richard Hensen" signatures depicted on Items Q1 and K1 share a common source. Item Q1 was not the original document used to produce the reproduction copy of Item K1. Items Q1 and K1 were also examined for the presence of indented impressions. No unsourced or decipherable indented impressions developed on the lifts identified as Q1A1, Q1A2, K1A1, K1A2 in Items Q1A and K1A, which were from the front and reverse of Items Q1 and K1.</p>
RAACNU	<p>It was determined that the letter, Q-1, is not consistent with Items in K-1 and therefore is not the source from which K-1 was copied.</p>
RACTW2	<p>1. K1 is not the copy of Q1. 2. Q1 comes from the same file of K1 original draft. The first step is change the text from "6%" to "4%". The second step is to get the signature "Richard Hensen" from K1 original draft and print on Q1 by color inkjet printer, and write the signature "Samantha Hess" at the same time. So, we support the contention "Q1 is not genuine".</p>
RCKNQB	<p>It is my opinion that the questioned document, item Q1, is non-genuine.</p>
RDCZHY	<p>After the examination it is obvious that the paper handed in by the employer (Q1) is not the original offer letter. The signature of the employee was reproduced by ink printing (pigment ink) and the location of the signature doesn't correspond with the one on the copy made by the employee (K1). The signature on Q1 made by the employer (Samantha Hess) is an original however its placement is not identical with the one on the offer letter signed by the employee (see copy K1). Considering the examination results our conclusion is that the offer letter Q1 was forged in favor of the employer (6% to 4%).</p>
REL6VM	<p>The Q1 consists [sic] different text in the first paragraph (6% against the 4%). The signature of "Richard Hensen" is ink-jet printed, not written. The falsified signature is originated from the genuine document (digitalized by scanner or other equipment) which one[sic] was signed by hand(s).</p>
RLDNJH	<p>Comparison between K1 and Q1 revealed similar printed contents, with the exception of the % commission per sale in line 3 of first paragraph, 6% and 4% in K1 and Q1 respectively. Microscopic examination of the employment offer letter submitted by the employer[sic] (K1) revealed that it is a photocopy, with the entire document (including two signatures and printed content) printed with toner deposition printing method. Microscopic examination of the offer letter provided by the employer (Q1) revealed that the printed content was printed with toner deposition printing method, the signature of Samantha Hess was an original handwritten signature. However the signature of Richard Hensen on Q1 was printed with an inkjet printer. The above findings indicate that the signature of Richard Hensen on Q1 was not original. It is unlikely that an original document contained an inkjet printed signature. Furthermore, the signature of Richard Hensen on Q1 was superimposed with that on K1, indicating that the signature of Richard Hensen on Q1 was fabricated from that on the original document of K1. In view of the evidence, I am of the opinion that the offer letter provided by the employer (Q1)</p>

TABLE 3

WebCode	Conclusions
	is not genuine.
RMZX4X	Based on the examination findings, I am of the opinion that: a) The offer letter (Q1) is not a genuine document. b) The signature of Richard Hensen on Q1 was a scanned signature, originated from the original copy of K1. c) Q1 is an offer letter which was produced later whereby the scanned signature of Richard Hensen from the original copy of K1 was pasted into it. d) Q1 was produced using colour laser printing.
RPKTVW	It was determined that Item Q1 document is not genuine based on the following observations: The "Richard Hensen" signatures on Items Q1 and K1 overlay. The Item Q1 signature was printed using an ink-jet printing process and the Item K1 signature was printed using a toner printing process. The relationship between the "Richard Hensen" signature and the baseline on Items Q1 and K1 are different. The "Samantha Hess" signatures on Items Q1 and K1 do not overlay. The item Q1 signature was original ink on paper and the Item K1 signature was printed using a toner printing process. No indented writing was observed on the submitted items.
RTC7XU	Item 2 (Q1) is not an original agreement signed in ink by Richard Hensen. Item 2 (Q1) contains an ink jet reproduction of the same source Richard Hensen signature that is represented on the Item 1 (K1) machine copy. There is a strong probability that Item 2 (Q1) was re-created in a word processing program, reprinted to a laser printer, edited to add the Richard Hensen signature and then sent to a color ink jet printer, and signed Samantha Hess.
RYCFK8	The questioned employment contract (Q1) was compared to the employment contract copy (K1) provided by the employee. The contracts were found to be identical, with the exception of the human resource manager's signature, Samnatha[sic] Hess. Her signature on Q1 did not overlay with her signature on K1. These signatures were signed at different times. Furthermore, the signature on Q1 is an original signature written in black ball point pen ink. The employee signature (Richard Hensen), however, is not an original "wet ink" signature as is the Samantha Hess signature directly above it. Although the Richard Hensen signature on Q1 an K1 overlay precisely, the signature on the Q1 document was placed there by means of printer technology, probably an inkjet printer. The Q1 employment contract is not genuine, supporting the employee's contention.
TBLMHX	A microscopic examination of the Exhibit Q1 item was conducted. It has been concluded that the Richard Hensen signature appearing on the Exhibit Q1 item was prepared with the aid of an office machine system that utilizes full color ink jet technology; the typewriting was prepared with an office machine that utilizes dry black toner; and the Samantha Hess signature was prepared with a black ball point pen. Further, the Richard Hensen signature appearing on the Exhibit K1 item is the same signature that appears on the Exhibit Q-1 item. Therefore, the Richard Hensen signature on the Exhibit Q1 item was transferred from the original or copy of the Exhibit K1 item to the Exhibit Q1 item by some sort of cut and paste method of alteration. No evidence of significant indented writing was noted on the Exhibit Q1 item.
TLLDYY	The body of the Q1 letter, including signatures baseline, was produced using an electrostatic process. Item Q1 bears an original "Samantha Hess" signature in ink, however, this signature is a different signature than that appearing on the K1 toner produced copy. The machine entries on Items Q1 and K1 appear to be the same type style and size. The "Richard Hensen" signature on Item Q1 is a copy of the signature appearing on K1 and was prepared using an inkjet process. Examination of the "Richard Hensen" inkjet signature on Q1 revealed indications of a previous baseline within the lower portion of the "H" that corresponds in location to the intersection of the signature and baseline seen on K1. These characteristics are evidence of an electronic manipulation of this signature and transportation to the Q1 document. Spectral examination of the toner produced entries on Item Q1 revealed no spectral differences between

TABLE 3

WebCode	Conclusions
	them. Examination of Items Q1 and K1 for indentations revealed no decipherable marks, characters, or symbols in indented form.
TZ2Y67	The questioned "Richard Hensen" signature on exhibit Q1 is a non-original signature and was prepared by using liquid ink jet printing technology. The "Richard Hensen" signature on Exhibit Q1 is identical to the "Richard Hensen" signature on Exhibit K1. This indicates that the "Richard Hensen" signature may have been placed on the Exhibit Q1 document by transferring digitally. The remaining printed text on Exhibit Q1 was prepared by using toner technology. The questioned "Samantha Hess" signature on Exhibit Q1 is an original signature, but is not the same "Samantha Hess" signature depicted in Exhibit K1. Examination and comparison of Exhibit Q1 with Exhibit K1 also revealed numerous alignment differences in the printed text. Exhibits K1 and Q1 were examined for the presence of handwriting indentations using the Electrostatic Detection Apparatus (ESDA), but with negative results.
U8J7HA	Results and Conclusions: The evidence was evaluated visually, with the aid of transparencies, with the aid of a microscope, with the aid of a video spectral comparator, and was processed for indented writing. Item K-1, the "photocopy", shows microscopic features associated with a toner process and could have been produced on a copy machine. Item Q-1, the "original", shows microscopic features associated with a toner process for the majority of the document except for the Samantha Hess signature, which appears to be the original and written in ink. The Richard Hess[sic] signature is not an original signature; that is, it is not what it is purported to be. This signature and the Richard Hess[sic] signature on Item K-1 are too similar and share a common source. Items K-1 and Q-1 were processed for indented writing using an electrostatic detection apparatus. No indented writing was developed on either document.
U99YE8	The document Q1 is not an original document, because the signature of Richard Hensen employee is not a manuscript form. This is a copy. The examination of the Richard Hensen signature by optical microscope revealed the presence color ink drops. This means that the signature was made using a color inkjet printer, color multifunction device or inkjet color photocopying.
UP33ZN	(a) The "Richard Hensen" signature on Q1 is not an original. The signature was directly or indirectly produced from the "Richard Hensen" signature on K1. (b) The "Samantha Hess" signature on Q1 was produced from a writing instrument and is an original inked signature. The "Samantha Hess" signature on Q1 is different than the "Samantha Hess" signature that is observed on the K1 document. (c) There are indications of additional base line marks in the upper case letter "H" in the "Richard Hensen" signature on Q1 that are consistent in measurements to the "Richard Hensen" signature and base line on the K1 document. Based upon the above mentioned observations during the comparison of the Q1 document with the K1 document, it was concluded that the Q1 document was altered.
UR9TGY	On the basis of the performed examinations on documents Q1 and K1; the signature Richard Hensen on document Q1 is not a genuine signature. Evidence of a fabricated document are present.
V2LQ8L	Questioned document (Q1) is not consistent with known document (K1).
VA4F6F	K1 is a reproduction document but is not a reproduction of Q1. It is necessary, as part of the examination, to consider whether K1 is itself a reproduction of a genuine document. Within the limitations of the reproduction, I found no evidence to suggest that K1 is the product of document manipulation, however, I cannot exclude this possibility. Q1 is a composite document consisting of toner printed text, ballpoint pen ink written Hess signature and colour inkjet printed Henson[sic] signature. The presence of an inkjet printed signature is not what one would expect to observe on a genuine document that was produced in the normal course of business.

TABLE 3

WebCode	Conclusions
VJJVQN	Physical, microscopic, and instrumental examinations support the contention that the offer letter provided by the employer (Q1) is not genuine. The employer stated that Exhibit Q1 was the original offer letter; however, the "Richard Hensen" signature is not an original but rather an ink jet reproduction. The "Richard Hensen" signatures on Exhibits K1 and Q1 are in significant agreement when overlaid, thereby indicating that they originated from a common source. Furthermore, darker areas in the "Richard Hensen" signature on Exhibit Q1 closely resemble remnants of another signature line. Additionally, the signatures of "Samantha Hess" on Exhibits K1 and Q1 do not overlay and therefore did not originate from the same document. No physical evidence of any other data alterations were noted on Exhibits K1 or Q1.
W7QXXP	Features in Q1 and K1 support the contention that Q1 is an altered copy of the source document (or copy of same) that was copied to create K1. The disputed "6% commission" entry on K1 appears as "4% commission" on Q1; aside from this difference, the black toner text and logo entries of Q1 and K1 superimpose precisely, supporting the contention they are from the same source. The "Samantha Hess" Q1 signature is original black ballpoint-pen ink; this Q1 signature is not the same signature as the "Samantha Hess" facsimile signature in black toner depicted on K1. The "Richard Hensen" blue signature on Q1 is a copy of the same source signature present as a facsimile toner signature on K1. The Q1 signature was machine-printed with a color dry-toner process.
WPBKPR	We concluded Richard Hense's[sic] signature on the Q1.[sic] So, the Q1 itself, is not genuine. The signature on Q1 (Richard Hense's[sic] signature) is a copy of the signature on K1.
WT6M9Y	The offer Letter, submitted by employer Safe Haven Home Insurance Q1 is not genuine because the signature of Richard Hensen is a photocopy.
WWEV4J	Examination of the questioned document supports the contention that the document marked "Q1" is not genuine. The text on the questioned document was printed with a printing process consistent with toner. The signature of Samantha Hess was written in ink consistent with that produced by a ballpoint pen. The Q1 Richard Hensen signature was not written on the document and is identical to the K1 Richard Hensen signature. Examination with transmitted light reveals that they superimpose, however, the Q1 signature is ~0.3mm further above the printed baseline than the K1 signature. The Q1 signature of Richard Hensen was produced with a printing process consistent with 4-color inkjet. Examination with alternate light sources revealed that the Q1 Richard Hensen signature displayed black ink deposits/dots (again, consistent with an inkjet printing process) in the "H" form, approximately where the same "H" form intersects the baseline on K1. These black ink deposits luminesced under spot illumination. The Richard Hensen signature on Q1 is a "cut-and-paste" from the document that was used to create the K1 copy. No determination could be made of the "cut-and-paste" method used to create this signature on document Q1. Other notable differences between Q1 and K1 documents include the Samantha Hess signatures, which differ in size and in the capital "S" and capital "H" forms. Also, a black mark is present on Q1 at the top of the page (bottom/left of the printed logo). This mark does not appear on K1, and would have appeared in the same location on a true photocopy. Examination with the ElectroStatic Detection Apparatus (ESDA) yielded no indented writing impressions on the questioned document.
X2GUT9	It has been concluded that the employment offer letter (Exhibit Q1) is not genuine. This supports the employee's contention that the offer provided by the employer (Exhibit Q1) is not genuine.
XAAC2P	1. Signature on the questioned document does not belong to Richard Hensen. 2. Questioned signature was printed by inkjet printer.
XCWQRK	After a thorough examination and comparison of the two documents submitted (hereafter: K-1 and Q-1), and following the generally accepted forensic protocol for this type of examination,

TABLE 3

WebCode	Conclusions
	<p>the differences were noted. The following entries were observed on Q-1: 1.1 - The document bears a digital color image of the "Richard Hensen" signature in blue. 1.2 - The color of the Safe Haven Home Insurance logo is light grey. 1.3 - The commission per sale is 4%. 1.4 - The "Samantha Hess" signature is naturally written with no signs of falsity using a black ink pen. These features are not observed on the K1 document; therefore, they are significant differences.</p>
XL8HKU	<p>Results of Handwriting Examinations: Samantha Hess vs. Samantha Hess signatures: It is probable the Samantha Hess signature on Item 2 (Q1) and the Samantha Hess signature on Item 1 (K1) were produced by the same writer. (Probable did) Comment: Examinations are limited by small amount of comparable signatures. Richard Hensen vs. Richard Hensen signatures: The copy of the Richard Hensen signature depicted on Item 1 (K1) and the copy of the Richard Hensen signature depicted on Item 2 (Q1) are from a similar source Richard Hensen signature. Comment: Examinations are limited because the location of the similar source Richard Hensen signature used to produce Item 1 (K1) and/or Item 2 (Q1) is not known. Richard Hensen signatures vs. Samantha Hess signatures: Examinations were not conducted between the questioned Samantha Hess signature Item 2 (Q1) and the Known Richard Hensen signature Item 1 (K1). (No Examination) Examinations were not conducted between the questioned Richard Hensen signature Item 2 (Q1) and the known Samantha Hess signature Item 1 (K1). (No Examination) Comments: Examinations are limited because the letters, letter combinations and names are not comparable. Results of Microscopic and Alternate Light Source Examinations: Signature Examinations: The Samantha Hess signature on Item 2 (Q1) consists of an original ink signature that does not depict a copy of the Samantha Hess signature depicted on Item 1 (K1). The Samantha Hess signature depicted on Item 1 (K1) consists of a black toner printing process Samantha Hess signature. The Richard Hensen signature depicted on Item 2 (Q1) was produced with a four color inkjet (cyan, yellow, magenta, and black) printing process. The Richard Hensen signature depicted on Item 1 (K1) was produced with a black toner printing process. Examinations of the two descending blue lines depicted in the "H" in Richard Hensen signature on Item 2 (Q1) revealed they are under the black signature line on the document. This means the Richard Hensen signature was printed onto the document before the black signature line was printed onto the document. Examinations revealed the copy of the Richard Hensen signature is closer to the signature line on Item 1 (K1) than the copy of the Richard Hensen signature is to the signature line on Item 2 (Q1). Paper Examinations: Examinations of the paper included in Item 1 (K1) and Item 2 (Q1) failed to reveal any evidence of forensic significance. Text and Font Examinations: Examinations between the font and the size of the text depicted on Item 1 (K1) to the font and the size of the text depicted on Item 2 (Q1) failed to reveal any evidence of forensic significance. Results of Indented Impression Examinations: Examinations of the front and backsides of Item 1 (K1) and Item 2 (Q1) failed to reveal any indented impressions. Comments: Indented writing impressions can occur when paper is stacked or padded together and writing occurs on the top sheet(s) which leaves an indented writing impression on the sheet(s) below it.</p>
XQHYVD	<p>Item Q1 is not genuine, in the sense that a genuine document should have the original signatures of both parties.</p>
Y48R6Q	<p>Comparisons of the Q1 and K1 documents revealed the "4% commission per sale" in line three of the first paragraph of Q1 is different from the photocopied K1 document which is "6% commission per sale". Comparisons of the Samantha Hess signature on the Q1 document revealed it is a different signature than the Samantha Hess signature on the K1 document. This finding indicates this signature was most likely written by Ms. Hess; however, additional Samantha Hess signatures will be required if further comparison is considered necessary. The Richard Hensen signatures on the K1 and Q1 documents were examined and revealed they are the same signature. This signature was copied (cut and pasted) from the original offer letter (which K1 is said to be a copy of) and printed in blue on the Q1 document. These findings</p>

TABLE 3

WebCode	Conclusions
Y4GHRV	support the contention that the Q1 document is an altered reproduction of the original document which had been copied by Richard Hensen and submitted as K1.
Y4GHRV	Items Q1 and K1 were compared and it was determined that item Q1 is not genuine. Both the Q1 and K1 "Richard Henson[sic]" signatures are machine-printed, non-original signatures. The "Richard Henson[sic]" signature appearing on item Q1 was printed using an inkjet printing process. The remaining Q1 text (excluding the original "Samantha Hess" signature) was printed using a toner printing process. The entirety of item K1 (including all signatures) was printed using a toner printing process. The "Richard Hensen" signatures appearing on items Q1 and K1 share a common model. However, the K1 signature line, including the "Richard Hensen" signature, is not a direct copy of this portion of item Q1 as presented. It should also be noted that the "Samantha Hess" signature appearing on Item K1 is not a copy of the "Samantha Hess" signature appearing on item Q1. No indented writing or watermarks were observed on item Q1. Additional assessments and observations have been made and recorded for possible future comparisons.
YCBNKW	It was determined that item Q1 is not genuine due to sufficient disagreement with item K1. The following differences were observed: The "Samantha Hess" signature on item Q1 does not overlay with the "Samantha Hess" signature on item K1. The "Richard Hensen" signature on item Q1 is not an original pen ink signature and was prepared using an inkjet printing process utilized by numerous office devices. No indented writing or watermarks were observed on item Q1 which may further assist in determining its immediate origin.
YCULNV	1. Observing Q1 document under penetrating light, some cutting and pasting traces (the rectangular outline is barely visible around the number "4%") [sic] be found on the number "4%" in the third line of the first paragraph. 2. The signature of Richard Hensen in Q1 document is composed of dots under a stereomicroscope. It also can be seen that the cyan, magenta, yellow, black dots are dispersed around these words. It indicates that the signature was printed or copied. 3. In conclusion, Q1 document is not genuine.
YLZJF6	I have taken K1 to be a true copy of its original. In my opinion Q1 is not the original of the copy letter K1 and therefore Q1 is not genuine. I consider that a new version of the offer letter (Q1) has been produced with a different commission percentage and has been signed in the name of Samantha Hess. The Richard Hensen signature on Q1 is not an original, ink signature but is a copy derived from the same original signature as the copy present on K1. In my opinion this Hensen signature has been added to Q1 using an inkjet printer via some 'cut & paste' method.
YRMBPJ	Strong indications were found that Item Q1 is not the original employment contract signed by Richard Hensen and is not the source of Item K1. Significant differences were observed between the signatures of Samantha Hess and Richard Hensen on Items Q1 and K1. The Samantha Hess signature on Item Q1 is an original signature that differs from the copied Samantha Hess signature on Item K1. Also, the Richard Hensen signature on the purported original employment contract (Item Q1) is not an original signature but a machine produced signature that matches the Richard Hensen signature on Item K1. These discrepancies indicate that Item Q1 is not the original employment contract signed by Richard Hensen.
ZBYP6Y	1. The non-written text on Q1 was produced using office machine(s) toner technology. 2. The HESS signature on Q1 was produced with a ballpoint pen. 3. The HENSEN signature on Q1 was produced using a machine printer. 4. The HENSEN signatures on Q1 and K1 are unknown generation copies of the original signature.
ZJDU2K	In the document contributed since genuine Q1 the internal texts represent a type of direct impression, the SAMANTHIA HESS's signature is stamped in a natural way but the illegitimate details in the outlines of RICMARD HENSEN's signature, as plot of points, splashed with blue

TABLE 3

WebCode	Conclusions
ZKJFPK	and red points in the contour, confirm that the signature is not written of manual or natural way but it is the product of a transferred image to the document, probably using an injection printer for printing a scanner digitized signature are sufficient reason to conclude that the document Q1 is not genuine. [sic]
ZLCMDJ	The analysis supports the employee's contention that the offer letter provided by the employer[sic] "Q I" is not genuine. The signature in the name "Richard Hensen" on the questioned contract (Q1) is in the form of a printed signature and is not an "original" signature. This signature is entirely superimposeable[sic] on the signature in the name "Richard Hensen" on the known contract (K1). Our findings are such that, in our opinion, the questioned contract (Q1) is not an "original" document and the signature in the name "Richard Hensen" on the questioned contract (Q1) is a copy of the same signature which appears on the known contract (K1) which in itself is a photocopy.
ZTL69V	RESULTS OF EXAMINATION Items 1 (K1) and 2 (Q1) were both examined for evidence of alterations. Item 2, AKA Q1, was found to display an original black ball point pen signature for "Samantha Hess" which was not identical to the photocopied signature found on Item 1, AKA K1. Item 2 (Q1) was also found to have an inkjet image of a signature, not an original pen ink signature, for Richard Hensen. This image of a signature was identical to the photocopied signature except that the Item 2 inkjet signature image was slightly further above the baseline, and had black ink in the stems of the letter H at the same place where the original signature crossed the baseline. No evidence of physical alterations was found at the points where the "4%" and "6%" were located. The typed text, logo and letterhead information were the same except for the "4" and "6". Item 1 (K1) was found to consist of black toner on paper, and bore no artifacts of alterations to an original document. No trifolds or indicators of folding were found on either item. Instrumental examinations for handwriting impressions and other paper fiber disturbances were conducted, with some limited handwriting impressions being found. Item 1 (K1) showed impressions of what appears to be the word "Glass" and two words beginning with "T". Item 2 (Q1) displayed impressions of "4", "4", / (arrow) "2" and three dashes. Many other striations unrelated to handwriting appeared on both documents. If comparisons to sources are needed in the future, please contact this writer. It should be noted that Items 1 and 2 were received packaged between heavy "oaktag" paperboard, and handwriting impressions and other paper disturbances are not transmitted through such heavy material. Instrumental examinations for fluorescence features and infrared responses were conducted. Nothing indicating alterations specifically was found on either item. It is noted that Item 1 displayed infrared fluorescence in an image best described as mimicking the adhesive regions of a large envelope. Item 2 did not display those images. The importance of this image is unknown. CONCLUSION Based upon the finding of the two different signatures for Samantha Hess, and the Item 2 (Q1) inkjet image of a Richard Hensen signature which originated from the same source as that found on Item 1 (K1), the only logical conclusion is that Item 2 (Q1) is a whole page substitution with a digital cut and paste of the Richard Hensen signature image.

Additional Comments

TABLE 4

WebCode	Additional Comments
2N3UTK	Based on the examination, the Richard Hensen signature on the original employment offer letter, Q1, was electronically forged using a scanner and a computer, and the terms of employment altered.
2UVEX8	Scale of conclusions. The scale of conclusions is based on the logical approach and is constructed exclusively for evidence evaluation at [Laboratory]. Level +4 The results of the examination extremely strongly support that ...The results are extremely more probable if the main hypothesis is true compared to if the alternative hypothesis is true. Level +3 The results of the examination strongly support that ...The results are much more probable if the main hypothesis is true compared to if the alternative hypothesis is true. Level +2 The results of the examination support that ...The results are more probable if the main hypothesis is true compared to if the alternative hypothesis is true. Level +1 The results of the examination support to some extent that ...The results are somewhat more probable if the main hypothesis is true compared to if the alternative hypothesis is true. Level 0 The results of the examination support neither ... nor ...The results are equally probable if the main hypothesis is true compared to if the alternative hypothesis is true. Level -1 The results of the examination support to some extent that ... was not ...The results are somewhat more probable if the alternative hypothesis is true compared to if the main hypothesis is true. Level -2 The results of the examination support that ... was not ...The results are more probable if the alternative hypothesis is true compared to if the main hypothesis is true. Level -3 The results of the examination strongly support that ... was not ...The results are much more probable if the alternative hypothesis is true compared to if the main hypothesis is true. Level -4 The results of the examination extremely strongly support that ... was not ... The results are extremely more probable if the alternative hypothesis is true compared to if the main hypothesis is true. If one of the hypotheses can be excluded other terms are used, such as "it is", "it is not" or "it can be excluded that".
3G2HCY	I do not believe that the question ("Does your examination support the employee's contention that the offer letter provided by the employer (Q1) is not genuine?) posted to the examiner is applicable for forensic work. We only have a one paragraph scenario to base our understanding of the employee's contention with no ability to talk to the employee or employer or an investigator about the case. It is up to the examiner to employ scientific techniques as best as possible when examining the documents, but up to the investigator and/or prosecutor to apply our analysis to the facts of the case.
3K2NVB	The Richard Hensen (employee) signature on Exhibit Q1 is a copy of the Richard Hensen signature on Exhibit K1. The signature was produced using an ink-jet printing process. The Samantha Hess (employer) signature on Exhibit Q1 is not the same as the photocopied Samantha Hess signature found on Exhibit K1. Therefore, the employee's claim that the original offer letter indicating 6% commission and not 4% commission as Exhibit Q1 specifies, is supported.
3ND8LL	This report is in the condition that Mr. Richard Hensen signed their names with a pen in original of employment offer letter (K1). Not possible to make a conclusion that employment offer letter (Q1), except for the signature, was printed by using any device. Just note that was the electro-photographic printing process.
6KLXDW	A search of any computers Hess has access to could be undertaken by the Electronic Crime Lab for any evidence relating to the reproduction of the Hensen signature.
6M3BJZ	The results are opinions and interpretations formed using accepted scientific and professional practices. Gloves were worn throughout the examinations. No handwriting examination or

TABLE 4

WebCode	Additional Comments
	comparison was performed due to the limited amount of handwriting on Q1 and the fact that no known specimen writing was submitted. If handwriting examination and comparison is desired, a sufficient quantity of specimen signatures, both dictated and executed in the normal course-of-business, must be submitted. Digital images were captured and printed to demonstrate findings and are retained with the examiners notes. Four ESDA lifts are also retained with the examiner's notes.
6UEZTM	Concluding that the Samantha Hess signature on Q1 is genuine is an essential element to exclude the possibility that Q1 is a fabrication by Richard Hensen to support a "Double Bluff".
7FFZMB	This examiner accidentally exposed Q1 to water. This exposure occurred directly on top of the Samantha Hess signature. It is believed this exposure of water resulted in no indented writing from the Samantha Hess signature being discovered on the reverse at Q1.
83BGV2	* alteration = a modification to a document through physical or chemical means.
8GGY9H	It appears that a new contract was created with the 4% amount, an original signature of "Samantha Hess" and a digitally transposed signature of "Richard Hensen" from the original document of K1 (cut and paste) see page 4 of report. Q1 is not a direct copy of K1. If Q1 would have been an original (genuine) document, the entire document would have been superimposable. The evidence will be forwarded to the Quality Assurance section for safekeeping.
8HVWN7	Other observations: There are inconsistencies between documents Q1 and K1, namely the different number printed on line three of paragraph one pertaining to a sales commission percentage. Item Q1 states 4% while item K1 states 6%. Font type (Calibri) and size (10pt) remain consistent across both documents. Also, the signatures attributed to HESS show natural variation and are consistent with being naturally executed on two separate writing occasions. Therefore, the HESS signatures do NOT overlay and are not positioned the same on Q1 and K1. Please note that a Forensic Document Examiner cannot determine who altered or produced a document and it is to be noted that no comparative material was supplied for examination e.g. specimen letters of offer, paper stock, printers, pens or specimen signature samples by the respective parties.
8KHVZX	(3) There is evidence to suggest that the Richard Hensen (machine reproduced) signature located on Q1 may have come from the original or a generational copy of the Richard Hensen signature located on K1. That based on these observations it is my opinion that: (A) Evidence observed in this comparison does support the contention that the Q1 document is not genuine.
ABN6AT	All documents submitted for examination and analysis have [sic] scanned/photocopied and will be returned with a copy of this report. This report reflects the conclusions, opinions and/or interpretations of the analyst and technical reviewers as indicated by their signatures below.
ADC3HD	4.1.- The signature of the representative of the company, in spite of differing in dimensions and morphology and to that the signature located in K1 is not original, presents graphical characteristics of individuality, which make think these technical personnel about the same hand authoress.[sic] 4.2.- Hypothesis of confection of the document Q1: 1.- The same texts and logod[sic] get in a document (or the base document is modified), replacing "6%" for "4%". The above mentioned document stamps by means of laser technology. 2.- By means of digital treatment there is obtained the signature of the employee of the document who gave origin to K1. It is stamped, exclusively the signature, on the document pre printed with text and logos, with technology Ink-jet with blue tonality to feign a manuscript origin. 3.- There is signed in a manuscript way in the paragraph of the signature of the representative of the company by the same hand authoress who signed the document K1. The presented one should be the most logical sequence, though the above mentioned sequence could take place in another order.

TABLE 4

WebCode	Additional Comments
B846KJ	The text in the offer letter "Please sign the enclosed copy of this letter and return it to me..." indicates that there should have been two original offer letters, not just one. Thus, the employee should have an original exemplar. Besides, no information in the scenario are given about the way the letter was returned to the company.
BVLJ3H	Concerning the questioned piece Q1: studying the crossing lines between the ink jet employee's signature <<Richard Hensen>> and the apending laser line under thin-layer chromatography would enable us to show the printing order of elements. [sic]
C28Y29	A visual, microscopic and instrumental examination of K-1 revealed that it was produced using an electrostatic (laser printer/photocopier) process using black toner. No evidence of alteration was observed. A forensic comparative handwriting examination revealed that the Samantha Hess signatures on Q-1 and K-1 are probably of common authorship.
C397U8	Good, fair test
CUNHU6	There would appear to be no legitimate reason for the document Q1 to have been printed xerographically, with an original ink signature and a further (Questioned) signature produced via ink jet processes. Whilst again it is possible that the signature on K1 may have been re-imaged from a separate source document, the presence of multiple print processes on Q1 provides evidence against this proposition.
DQQA8A	1. The signature of Richard Hensen has been printed on Q1 first and then the document was printed after that. 2. Samantha Hess has signed this document Q1 once again using a Black inked pen.
EAJ73F	If the original Item Q1 is located, it should be submitted for examination. A handwriting examination may also be possible with the submission of known handwriting of Samantha Hess and Richard Hensen. Please contact this examiner for collection instructions.
EBATGJ	The submission of the original of Exhibit K1 may provide the basis for additional conclusions. The submitted exhibits will be returned.
ENXXPF	No indented writing, watermarks, or other physical characteristics were observed during the examinations of Items Q1 and K1 which might indicate an immediate source(s). Additional assessments and observations have been made regarding the submitted items and recorded for possible future comparisons.
JGY72U	The employee's signature on both Q1 and K1 are identical and printed. As such this indicates that both are copies of the same original signature. However, the signature of Samantha Hess (the employer) on Q1 and K1 are not identical. As such this indicate K1 is not a copy of Q1.
JTDXBX	Richard Hensen's signature in Q1 matches that in K1. Samantha Hess's signature en[sic] Q1 is an original one but doesn't[sic] match the signature in K1.
KE939M	Part of conclusion is based on the principle that no two writings will be exactly the same. However in this case, it is not possible to have two different documents Q1 and K1, having the exact same signature of Richard Henson[sic]. This contradicts the above principle. Further, on Exhibit Q1, the signature of Samantha Hess is produced using ball-point pen ink, whilst that of Richard Henson[sic] is produced using printing ink.
KRK23Z	While the known signature of Richard Hensen is superimposable on the documents Q1 and K1, as would be expected in reproductions, the signature on Q1 is an ink jet image. The signature may have been merged by photocopy or digital techniques and placed on the document, Q1. If the original letter that created K1 still exists, it should be submitted for comparison. If you would like to continue your investigation from a handwriting standpoint, it might be beneficial to obtain original known handwriting from Samantha Hess and Richard

TABLE 4

WebCode	Additional Comments
	Hensen to assess the degree of variation in each person's signatures. Additionally, known letterhead should be obtained from Safe Haven Home Insurance for comparison.
MYBM7Y	Referring to the results of the document examination, there is evidence that the entire document Q1 was newly made with an alteration of the original text "...6% commission..." as shown on the Copy (K1) into the now existing term "4% commission" on the document (Q1) provided by the employer. The signature "Samantha Hess[sic] is a genuine handwriting, but the image of the blue signature "Richard Hensen" was pasted in the fake document.
MYRHKK	The following most probable modus operandi has been used by the employer to produce Q1: 1. The original digital file of the offer letter has been modified changing the original 6% into 4%. 2. The modified letter is printed using an EPG printing system using black toner. 3. The original RH signature has been scanned from the original offer letter. 4. The printed letter, as mentioned on paragraph 2 above, is inserted into the paper tray of a color inkjet system and the RH signature is printed. 4. SH sign* the modified offer letter with a ballpoint pen using black ink. * SH may also sign the letter after step 2 above.
N79D6K	4.1) The developed ESDA lifts are being returned as item #2 for your safe keeping. 4.2) Both vertical staffs of the "H" in Hensen (located just above the existing signature line) on Q1 depict a black area which corresponds directly to the signature line intersection from item K1 ("H" and signature line intersection). [From Table 2 Observations: "Neg = Negative".]
NJXKD3	It is an interesting case-like test.
PALFMA	As a FDE I do not, and should not, "Support the Contention" of any victim/suspect on a case. My job is to report the facts of the evidence submitted for examination. To do so would show partiality and bias. Also, these exhibits should both have been listed as questioned documents. Identifying the "victim's" document as Known indicates this document is a genuine copy of the original contract. This cannot be assumed in this scenario. This test shows a lack of understanding of forensic document examination on the part of the test maker(s).
PGG7JY	The "Q1" composition order-sequency was: (1) Printing the employee signature with an inkjet printer in an empty sheet of paper. (2) Printing the (new) contract terms with a laser printer. (3) Signing[sic] the employer signature with a ball pen.
QVUWZD	K1 and Q1 are virtual layovers with the exception that the Samantha Hess signature on Richard Hensen's K1 copy is a differently executed signature than on Q1 where the Samantha Hess signature is in live ink (original ink). The other exception is, of course, that K1 shows 6% for the commission amount but Q1 shows only 4%. The two Samantha Hess signatures (on Q1 and K1) bear similarities in handwriting features that would argue (from the limited sample) that they were by a same person. Since the company produced Q1 has the live ink signature of Samantha Hess, but only a color copy of the Richard Hensen signature appearing on K1, this supports the employees contention that the letter provided by the company was not the original document signed by Richard Hensen; otherwise, along with the live ink signature of Samantha Hess on Q1, the Richard Hensen signature should also be in live ink on Q1, but rather, the Q1 Richard Hensen signature, although blue, was the result of a color machine process rather than having been written in live ink with a writing pen.
R3WFK3	The signatures on Items Q1 and K1 are suitable for a handwriting comparison to known handwriting of Samantha Hess, Richard Hensen, or other subject(s) of interest in this investigation. Contact the Forensic Document Unit for assistance prior to collecting known writing. Should the original document used to produce Item K1 be discovered during the course of the investigation, it should be submitted to the laboratory along with Item K1. Definition of Handwriting Opinion: The opinion "probably" means that the evidence contained in the handwriting points rather strongly towards the questioned and known writings having

TABLE 4

WebCode	Additional Comments
	been written by the same individual. However, it falls short of the "virtually certain" degree of confidence.
RDCZHY	Further examination/analysis would be possible. However, this would not affect the conclusion made.
REL6VM	The contract was made by the Insurance Company therefore the source file could easy[sic] modified by the company.
RPKTVW	I would have considered both documents questioned items. Selecting one of the documents as a "known" implies siding with one story over the other. As the scenario was described in the test, I had no reason to believe on[sic] person over another and to me, both items were of unknown authenticity.
RTC7XU	Item 2 (Q1) does not contain an original inked signature for Richard Hensen. The Richard Hensen signature on Item 2 (Q1) is an ink jet printed reproduction. The Richard Hensen signature on Item 2 (Q1) and Item 1 (K1) are reproductions of the same source signature. The Samantha Hess signature on Item 1 (K1) is not a copy of the original inked Samantha Hess signature on Item 2 (Q1)[sic]. Imprecise vertical alignment of the Richard Hensen signature with respect to the baseline on Item 2 (Q1) compared to Item 1 (K1) and the presence of darkened areas on both staffs of the "H" above the printed baseline and below the cross stroke and intersection with "ensen" are highly indicative of a signature that has been scanned, imported into a Photoshop program (or similar Photoshop application) to edit out a pre-existing baseline, and then reproduced on a color ink jet printer. There is more than one version of the employment offer letter from Safe [sic] Home Insurance. It would be necessary to submit the computer's hard drive to a computer forensic analyst to track any possible changes to the content of the letter.
TZ2Y67	My examination and comparison of Exhibits Q1 and K1 supports the employee's contention.
UR9TGY	It would be valuable to examine the original employment offer letter with the Hensen signature.
V2LQ8L	Richard Hansen's[sic] signature in document Q1 is a digitalized one.
VA4F6F	Forensic examinations of the hard drive of the computer used by the employers to create Q1 may provide further information. If there is a dispute as to whether or not the Hess signature on K1 was written in original form by Ms Hess, a comparative examination of this signature and known signatures of Ms Hess can be undertaken.
X2GUT9	The employee's signature "Richard Hensen" on Exhibit Q1 has disclosed the absence of the significant characteristics of pen strokes. It possessed characteristics of an electrically produced image.
XAAC2P	Employer Samantha Hess signature contains different morphology in the two documents.
XCWQRK	If you require further work on this matter or a more detailed report, please let me know.
XL8HKU	See "Comments" in "Conclusions in your report" and also "Comments" listed in explanations of observations.... Also included at the end of the Report: Interpretation: The following descriptions are meant to provide context to the opinions reached in this report. Every type of conclusion may not be applicable in every case or for every exam type. Identification (definite conclusion of identity) — this is the highest degree of confidence expressed by Forensic Document Examiners. The examiner has no reservations whatsoever, and although prohibited from using the word "fact," the examiner is certain, based on evidence revealed during the examination. Highly probable did (strong probability, very probable) — the evidence is very persuasive, yet some critical feature or quality is missing so that an identification is not in order;

TABLE 4

WebCode	Additional Comments
	<p>however, the examiner is virtually certain based on evidence revealed during the examination. Probable did — the evidence is persuasive, yet critical features or quality is missing. The examiner is certain based on evidence revealed during the examination. During examinations, features were examined of significance and are in agreement between the questioned and known evidence; however, it falls short of the highly probable degree of confidence. Indications may have (evidence to suggest) — the evidence is persuasive, however many critical features or quality are missing. During examinations, features were examined which are of significance and are in agreement between the questioned and known evidence, however, it falls very short of the highly probable degree of confidence. No conclusion (inconclusive, indeterminable) — this is the zero point of the confidence scale. It is used when there are significantly limiting factors, such as disguise in the questioned and/or known evidence or a lack of comparable features and therefore no conclusion can be reached. Indications may not have — the evidence is persuasive, however many critical features or quality are missing. During examinations, features were examined which are of significance that are not in agreement between the questioned and known evidence; however, it falls very short of the highly probable degree of elimination. Probable did not — the evidence is persuasive, yet critical features or quality is missing. The examiner is certain based on evidence revealed during the examination. During examinations, features were examined of significance that are not in agreement between the questioned and known evidence; however, it falls short of the highly probable degree of elimination. Highly probable did not (strong probability did not) — the evidence is very persuasive, yet some critical feature or quality is missing so that an elimination is not in order; however, the examiner is virtually certain based on evidence revealed during the examination. Elimination - this is the highest degree of confidence expressed by Forensic Document Examiners. The examiner has no reservations whatsoever, and although prohibited from using the word "fact," the examiner is certain, based on evidence revealed during the examination.</p>
XQHYVD	<p>If Item Q1 is non-genuine and Item K1 taken to represent the original document as it was prepared, then it is most likely that Q1 was produced by reprinting the original electronic document incorporating a scanned image of the original "Richard Hensen" signature (and depicted on K1) in order to effect a change in the commission rate from 6% to 4%. That reprinted document was then signed in the name of "Samantha Hess" using a ball point pen.</p>
YLZJF6	<p>Save function on the online proforma[sic] for submission of results has changed the spacing of my entries.</p>

RELEASE OF DATA TO ACCREDITATION BODIES

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WebCode:

for Test No. **14-521: Questioned Documents Examination**

This release page must be completed and received by **June 9, 2014** to have this participant's submitted data included in the reports forwarded to the respective Accreditation Bodies.

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