Collaborative Testing Services, Inc
FORENSIC TESTING PROGRAM

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Firearms Examination
Test No. 25-5261 Summary Report

Each participant received a sample pack containing three known test-fires and four questioned recovered items, which they were asked to determine if any of the questioned recovered items were discharged from the same firearm as the known test-fires using their existing protocols. Data were returned from 352 participants and are compiled into the following tables:

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 pack contained three known test-fires and four questioned recovered items. Participants were asked to determine if any of the questioned recovered items were discharged from the same firearm as the known test-fires.

IDENTIFICATION ITEMS: A predetermined number of batches of ammunition were discharged from the same firearm and the expended ammunition was collected. Out of each batch, the necessary numbers were selected and marked with their item numbers and sealed into their respective boxes.

ELIMINATION ITEMS: A predetermined number of batches of ammunition were discharged from the same firearm (different from the one used for the identification items) and the expended ammunition was collected. This process was repeated for each additional firearm used. Out of each batch, the necessary numbers were selected and marked with their item numbers and sealed into their respective boxes.

SAMPLE PACK ASSEMBLY: For each sample pack, identification items from the same batch, along with elimination items of the same batch, were placed into pre-labeled sample pack boxes.

VERIFICATION: During test production, 10% of the ammunition from each batch were selected and intercompared to confirm that markings were consistent. All predistribution laboratories were consistent with each other and the manufacturer's preparation information for all items.

Item	Known/ Questioned	Identification/ Elimination	Firearm	Ammunition	Ammunition Component
1	Known	Identification	Sig Sauer P365	PMC Bronze 9mm Luger 115 gr FMJ	Cartridge Casings
2	Questioned	Elimination	Taurus G2c	PMC Bronze 9mm Luger 115 gr FMJ	Cartridge Casing
3	Questioned	Elimination	Taurus G2c	PMC Bronze 9mm Luger 115 gr FMJ	Cartridge Casing
4	Questioned	Identification	Sig Sauer P365	PMC Bronze 9mm Luger 115 gr FMJ	Cartridge Casing
5	Questioned	Identification	Sig Sauer P365	PMC Bronze 9mm Luger 115 gr FMJ	Cartridge Casing

Summary Comments

This test was designed to allow participants to assess their proficiency at a firearms examination involving a comparison of recovered cartridge casings. Participants were supplied with three known test-fired cartridge casings (Item1) and four questioned recovered cartridge casings (Items 2 through 5). The cartridge casings from Items 4 and 5 were discharged from the same firearm as the Item 1 known test-fires, whereas the cartridge casings from Items 2 and 3 were discharged from a second firearm, different from the firearm used to produce the Item 1 known test-fires. Refer to the Manufacturer's Information for preparation details.

In Table 1 Examination Results, all 352 responding participants (100%) identified Items 4 and 5 as being discharged from the same firearm as the Item 1 known test-fired cartridge cases and either eliminated or reported inconclusive for Items 2 and 3.

Examination Results

Were any of the questioned recovered cartridge casings (Items 2-5) discharged from the same firearm as the known test-fired cartridge casings (Item 1)?

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
22GA7L	No	No	Yes	Yes	4FPZ2Q	No	No	Yes	Yes
26XWJR	No	No	Yes	Yes	4HEDGM	No	No	Yes	Yes
2843FZ	No	No	Yes	Yes	4PAH94	No	No	Yes	Yes
2GA2QM	No	No	Yes	Yes	4TXVAU	No	No	Yes	Yes
2GUNLY	No	No	Yes	Yes	4WDHPK	No	No	Yes	Yes
2JFMHT	No	No	Yes	Yes	4ZWCMK	No	No	Yes	Yes
2K6ZYQ	No	No	Yes	Yes	64C3PV	No	No	Yes	Yes
2MD7KR	No	No	Yes	Yes	64DYZQ	No	No	Yes	Yes
2TN2KV	No	No	Yes	Yes	6BBHLU	No	No	Yes	Yes
2WPXEW	No	No	Yes	Yes	6C88JW	No	No	Yes	Yes
2ZLQ4K	No	No	Yes	Yes	6E9A6Q	No	No	Yes	Yes
36ATKP	No	No	Yes	Yes	6ECTDN	No	No	Yes	Yes
3A6P4P	No	No	Yes	Yes	6M8NET	No	No	Yes	Yes
3D7Q8R	No	No	Yes	Yes	6VG63R	No	No	Yes	Yes
3HGQM4	No	No	Yes	Yes	7A8QFX	No	No	Yes	Yes
3R7AAP	No	No	Yes	Yes	7C369H	No	No	Yes	Yes
3VK8ER	No	No	Yes	Yes	7DU4MF	No	No	Yes	Yes
432Z4W	No	No	Yes	Yes	7GTEJF	No	No	Yes	Yes
44XH6X	No	No	Yes	Yes	7LLNMM	No	No	Yes	Yes
472C2G	No	No	Yes	Yes	7MKPTE	No	No	Yes	Yes
48G9UG	No	No	Yes	Yes	7MMAKN	No	No	Yes	Yes
49A72M	No	No	Yes	Yes	7PQ3HT	No	No	Yes	Yes
4BVAAK	No	No	Yes	Yes	7QH64M	No	No	Yes	Yes

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
7RT8PL	No	No	Yes	Yes	A723WD	No	No	Yes	Yes
7UJBHT	No	No	Yes	Yes	A8TZ6K	No	No	Yes	Yes
7VAGYJ	No	No	Yes	Yes	A9R99X	No	No	Yes	Yes
7Z9NJG	No	No	Yes	Yes	AA34XB	No	No	Yes	Yes
7ZMCHM	No	No	Yes	Yes	AA7NPK	No	No	Yes	Yes
83ABCB	No	No	Yes	Yes	AF7ACD	No	No	Yes	Yes
843AJH	No	No	Yes	Yes	AFAWPK	No	No	Yes	Yes
8B3JYN	No	No	Yes	Yes	AHX9QC	No	No	Yes	Yes
8CRXEK	No	No	Yes	Yes	ANKXBL	No	No	Yes	Yes
8DUHDL	No	No	Yes	Yes	ANLQ89	No	No	Yes	Yes
8GNGKP	No	No	Yes	Yes	AQPNFF	No	No	Yes	Yes
8JVWUG	No	No	Yes	Yes	ARGMMM	No	No	Yes	Yes
8KA9TL	No	No	Yes	Yes	B3D8BW	No	No	Yes	Yes
8KNU3M	No	No	Yes	Yes	B87EMD	No	No	Yes	Yes
8UCNCY	No	No	Yes	Yes	BE9E8F	No	No	Yes	Yes
8ZZ49J	No	No	Yes	Yes	BQKL4G	No	No	Yes	Yes
96D7VE	No	No	Yes	Yes	BTNJCN	No	No	Yes	Yes
98JQGT	No	No	Yes	Yes	BWEEJQ	No	No	Yes	Yes
9Q8BCC	No	No	Yes	Yes	BYWPAF	No	No	Yes	Yes
9QBV4L	No	No	Yes	Yes	C2GUHC	No	No	Yes	Yes
9RP2MH	No	No	Yes	Yes	C2NY4G	No	No	Yes	Yes
9TVRLK	No	No	Yes	Yes	CH68UJ	No	No	Yes	Yes
9XU3LQ	No	No	Yes	Yes	CH9P3F	No	No	Yes	Yes
9YLYBK	No	No	Yes	Yes	CH9RNE	No	No	Yes	Yes
A3H8UL	No	No	Yes	Yes	CJZPVK	No	No	Yes	Yes

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
CKX3JD	No	No	Yes	Yes	E6TEL4	No	No	Yes	Yes
CL79YM	No	No	Yes	Yes	EQR6FA	No	No	Yes	Yes
CNWG4H	Inc	Inc	Yes	Yes	ERHBRT	No	No	Yes	Yes
CT4Z8G	No	No	Yes	Yes	ERJ3MF	No	No	Yes	Yes
CT8FNN	No	No	Yes	Yes	ERMLWC	No	No	Yes	Yes
CYTHMD	No	No	Yes	Yes	ERMMGB	No	No	Yes	Yes
CZKFVK	No	No	Yes	Yes	ETWFPR	No	No	Yes	Yes
CZN2NE	No	No	Yes	Yes	EUCYCA	No	No	Yes	Yes
CZRF2F	No	No	Yes	Yes	EUDNKD	No	No	Yes	Yes
D2U3P4	No	No	Yes	Yes	EUUXDE	No	No	Yes	Yes
D38GBR	No	No	Yes	Yes	EV8D6U	No	No	Yes	Yes
D3L4ME	No	No	Yes	Yes	F3HXLB	No	No	Yes	Yes
D4NNKF	No	No	Yes	Yes	FAMVB3	No	No	Yes	Yes
D6EQNJ	No	No	Yes	Yes	FAMXZ8	No	No	Yes	Yes
D8JHHG	No	No	Yes	Yes	FBW62E	No	No	Yes	Yes
D8MZGF	No	No	Yes	Yes	FBXWX2	No	No	Yes	Yes
D9E2KH	No	No	Yes	Yes	FC9LET	No	No	Yes	Yes
D9FXQ8	No	No	Yes	Yes	FDJG37	No	No	Yes	Yes
DGCLQK	No	No	Yes	Yes	FHXECD	No	No	Yes	Yes
DH6PBE	No	No	Yes	Yes	FJCJBC	No	No	Yes	Yes
DL27RF	No	No	Yes	Yes	FK2WQ9	No	No	Yes	Yes
DQYRJH	No	No	Yes	Yes	FPYBFJ	No	No	Yes	Yes
DR9UAM	No	No	Yes	Yes	FRGVZE	No	No	Yes	Yes
DVRTJB	No	No	Yes	Yes	FTCD3F	No	No	Yes	Yes
DWKRQH	No	No	Yes	Yes	FWBRMJ	No	No	Yes	Yes

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
FWF3PH	No	No	Yes	Yes	JFF4CC	No	No	Yes	Yes
FXRNBD	No	No	Yes	Yes	JJU7RF	No	No	Yes	Yes
FY3NCD	No	No	Yes	Yes	JJXGUE	No	No	Yes	Yes
GAHVRE	No	No	Yes	Yes	JNL9VF	No	No	Yes	Yes
GQ6DG9	No	No	Yes	Yes	JP2CP8	No	No	Yes	Yes
GRXBPF	No	No	Yes	Yes	JR8Z3C	No	No	Yes	Yes
GYDRGP	No	No	Yes	Yes	JRTLNF	No	No	Yes	Yes
GZT7T6	No	No	Yes	Yes	JT4DQ6	No	No	Yes	Yes
H6H4V2	No	No	Yes	Yes	JUYRJN	No	No	Yes	Yes
H6Y3BK	No	No	Yes	Yes	JXVHJ9	No	No	Yes	Yes
H87J6A	No	No	Yes	Yes	JXX3GA	No	No	Yes	Yes
HC6P9F	No	No	Yes	Yes	JZ4NAF	No	No	Yes	Yes
J2VQUB	No	No	Yes	Yes	K32TVZ	No	No	Yes	Yes
J2YD8H	No	No	Yes	Yes	K74E2K	No	No	Yes	Yes
J38MYF	No	No	Yes	Yes	KCDME9	No	No	Yes	Yes
J77YVF	No	No	Yes	Yes	KEHKE3	No	No	Yes	Yes
J7QMBN	No	No	Yes	Yes	KFDY9M	No	No	Yes	Yes
J8L249	No	No	Yes	Yes	KNQPUE	No	No	Yes	Yes
J8LYE6	No	No	Yes	Yes	KPJM2L	No	No	Yes	Yes
J9YTU6	No	No	Yes	Yes	KT23CD	No	No	Yes	Yes
JAPX7N	No	No	Yes	Yes	KWU4B7	No	No	Yes	Yes
JARQ3B	No	No	Yes	Yes	KY4AVM	No	No	Yes	Yes
JBKCZ9	No	No	Yes	Yes	L2ARRW	No	No	Yes	Yes
JCX96D	No	No	Yes	Yes	L2AUG2	No	No	Yes	Yes
JEG9FM	No	No	Yes	Yes	L3KW3Z	No	No	Yes	Yes

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
LLR72C	No	No	Yes	Yes	MYYCXV	No	No	Yes	Yes
LRMXDE	No	No	Yes	Yes	MZ6Y49	No	No	Yes	Yes
LVJK73	No	No	Yes	Yes	N2HNA7	No	No	Yes	Yes
LWJHL6	No	No	Yes	Yes	N2LBME	No	No	Yes	Yes
LX9V23	No	No	Yes	Yes	N6Z63B	No	No	Yes	Yes
LZDGU9	No	No	Yes	Yes	NF44D7	No	No	Yes	Yes
M2YMKJ	No	No	Yes	Yes	NH72LD	No	No	Yes	Yes
M4AK38	No	No	Yes	Yes	NHBCNC	No	No	Yes	Yes
M4BG9W	No	No	Yes	Yes	NJ3E97	No	No	Yes	Yes
M67ZBX	No	No	Yes	Yes	NP6NFY	No	No	Yes	Yes
M7YXH4	No	No	Yes	Yes	NZM686	No	No	Yes	Yes
M8BT3B	No	No	Yes	Yes	NZQRKD	No	No	Yes	Yes
M8UGK6	No	No	Yes	Yes	P4HDQ7	No	No	Yes	Yes
MAUREK	No	No	Yes	Yes	P87TH2	No	No	Yes	Yes
MCP4HZ	No	No	Yes	Yes	PEZZUE	No	No	Yes	Yes
MFLUNC	No	No	Yes	Yes	PFVEMY	No	No	Yes	Yes
MHDNN2	No	No	Yes	Yes	PGNCV7	No	No	Yes	Yes
MHQFEW	No	No	Yes	Yes	PMWVX6	No	No	Yes	Yes
MJ6UZK	No	No	Yes	Yes	PPJ8YV	No	No	Yes	Yes
MJ7LV8	No	No	Yes	Yes	PVP3GB	No	No	Yes	Yes
MLQQAW	No	No	Yes	Yes	PXT4D2	No	No	Yes	Yes
MNE8J6	No	No	Yes	Yes	Q4F4EZ	No	No	Yes	Yes
MQN74E	No	No	Yes	Yes	Q76GVW	No	No	Yes	Yes
MYCZW3	No	No	Yes	Yes	Q8ZVNG	No	No	Yes	Yes
MYFMAA	No	No	Yes	Yes	QG632V	No	No	Yes	Yes

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
QHW9DF	No	No	Yes	Yes	RTXN67	No	No	Yes	Yes
QLWCA9	No	No	Yes	Yes	RWXZ27	No	No	Yes	Yes
QMUKHT	No	No	Yes	Yes	RXTH38	No	No	Yes	Yes
QNMHPY	No	No	Yes	Yes	T2JEYB	No	No	Yes	Yes
QRKWEA	No	No	Yes	Yes	T48QZ3	No	No	Yes	Yes
QRP8G9	No	No	Yes	Yes	T4PUEU	No	No	Yes	Yes
QTGB33	No	No	Yes	Yes	T6HRL2	No	No	Yes	Yes
QUF9KB	No	No	Yes	Yes	T7FZQE	No	No	Yes	Yes
QV6M4T	No	No	Yes	Yes	TB9XLW	No	No	Yes	Yes
QVLZ7W	No	No	Yes	Yes	TC2VT4	No	No	Yes	Yes
QWEYE4	No	No	Yes	Yes	TLAKDT	No	No	Yes	Yes
QWFJC4	No	No	Yes	Yes	TQ3ME9	No	No	Yes	Yes
QWGNGE	No	No	Yes	Yes	TQ8XG7	No	No	Yes	Yes
QWXKBZ	No	No	Yes	Yes	TTAZ32	No	No	Yes	Yes
QZCHEG	No	No	Yes	Yes	TWBTDY	No	No	Yes	Yes
QZDAB3	No	No	Yes	Yes	TZQFQ6	No	No	Yes	Yes
R3Y98X	No	No	Yes	Yes	U2F4NQ	No	No	Yes	Yes
R4R8F6	No	No	Yes	Yes	U3UFKA	No	No	Yes	Yes
R4T22W	No	No	Yes	Yes	U6GDTZ	No	No	Yes	Yes
R4WND4	No	No	Yes	Yes	U7CVU3	No	No	Yes	Yes
R4Y8MZ	No	No	Yes	Yes	U8NL47	No	No	Yes	Yes
R7NFUF	No	No	Yes	Yes	UBNWZ7	No	No	Yes	Yes
RDM8Y4	No	No	Yes	Yes	UBQD8D	No	No	Yes	Yes
RED937	No	No	Yes	Yes	UDCAHN	No	No	Yes	Yes
RJ79G2	No	No	Yes	Yes	UE69QV	No	No	Yes	Yes

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
UJ2MLX	No	No	Yes	Yes	XE2D82	No	No	Yes	Yes
URDUDU	No	No	Yes	Yes	XMPA6V	No	No	Yes	Yes
UREG2Z	No	No	Yes	Yes	XNJ4JR	No	No	Yes	Yes
UWKHQW	No	No	Yes	Yes	XVL68Z	No	No	Yes	Yes
UZP7AR	No	No	Yes	Yes	XWD8RV	No	No	Yes	Yes
V9W3R4	No	No	Yes	Yes	XWTNLN	No	No	Yes	Yes
VARKU6	No	No	Yes	Yes	XZR6WW	No	No	Yes	Yes
VFVPLP	No	No	Yes	Yes	Y7HGRT	No	No	Yes	Yes
VGURFZ	No	No	Yes	Yes	Y9KJHU	No	No	Yes	Yes
VHJ6VW	No	No	Yes	Yes	YMJJAX	No	No	Yes	Yes
VP423T	No	No	Yes	Yes	YRED8Y	No	No	Yes	Yes
VQCBT6	No	No	Yes	Yes	YTQAEN	No	No	Yes	Yes
VR9PFW	No	No	Yes	Yes	YU7CKW	No	No	Yes	Yes
VW2T92	No	No	Yes	Yes	YUH8LV	No	No	Yes	Yes
W2PZ3U	No	No	Yes	Yes	YWCUJT	No	No	Yes	Yes
W9948B	No	No	Yes	Yes	YZFKWZ	No	No	Yes	Yes
WCBYX7	No	No	Yes	Yes	Z3RWZU	No	No	Yes	Yes
WD8CKX	No	No	Yes	Yes	Z6KTNN	No	No	Yes	Yes
WDL2J4	No	No	Yes	Yes	Z6ZZZW	No	No	Yes	Yes
WLECVK	No	No	Yes	Yes	Z89DHY	No	No	Yes	Yes
WRNDBW	No	No	Yes	Yes	ZDC9DR	No	No	Yes	Yes
WXPRWX	No	No	Yes	Yes	ZEN3TR	No	No	Yes	Yes
WZGMKR	No	No	Yes	Yes	ZM2UJP	No	No	Yes	Yes
X4T3CV	No	No	Yes	Yes	ZQ3XDX	No	No	Yes	Yes
XD7V7Z	No	No	Yes	Yes	ZRVVK6	No	No	Yes	Yes

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
ZRXFEY	No	No	Yes	Yes					
ZT6VNQ	No	No	Yes	Yes					
ZTAB2Q	No	No	Yes	Yes					
ZUXQ7T	No	No	Yes	Yes					
ZUYNGN	No	No	Yes	Yes					
ZVU3A9	No	No	Yes	Yes					

Response Summary

Participants: **352**

Were any of the questioned recovered cartridge casings (Items 2-5) discharged from the same firearm as the known test-fired cartridge casings (Item 1)?

Responses	Item 2	Item 3	Item 4	Item 5
Yes	**0** ***(0.0%)***	**0** ***(0.0%)***	**352** ***(100.0%)***	**352** ***(100.0%)***
No	**351** ***(99.7%)***	**351** ***(99.7%)***	**0** ***(0.0%)***	**0** ***(0.0%)***
Inc	**1** ***(0.3%)***	**1** ***(0.3%)***	**0** ***(0.0%)***	**0** ***(0.0%)***

Conclusions

TABLE 2

WebCode	Conclusions
22GA7L	The below listed items were macroscopically and microscopically examined and compared with reported test fires (Lab Evidence# 001-A1) from the Sig Sauer 9mm Luger pistol. It is my opinion that the below listed items were fired by this firearm (identification). Property# Lab Evidence# Description 4 001-A4 spent PMC 9mm Luger cartridge case 5 001-A5 spent PMC 9mm Luger cartridge case The below listed items were macroscopically and microscopically examined and compared with reported test fires (Lab Evidence# 001-A1) from the Sig Sauer 9mm Luger pistol. It is my opinion that the below listed items were not fired by this firearm (elimination). The below listed cartridge cases were further macroscopically and microscopically examined and compared with each other. It is my opinion the below listed items were fired by the same unknown firearm (identification). Property# Lab Evidence# Description 2 001-A2 spent PMC 9mm Luger cartridge case 3 001-A3 spent PMC 9mm Luger cartridge case. [Participant submitted data in a format that could not be reproduced in this report.]
26XWJR	The fired cartridge cases listed as items 2, 3, 4 and 5 were compared to the test fired cartridge cases listed as item 1. The test fired cartridge cases were said to have been fired in a Sig Sauer P365 firearm that was found in the suspect's possession. As a result of this comparison, I formed the following opinions: Items 2 and 3 were not fired in the Sig Sauer P365 firearm. Items 4 and 5 were fired in the Sig Sauer P365 firearm.
2843FZ	Items 4 and 5 were fired in the same firearm as the item 1 test fires. Items 2 and 3 were fired in a second firearm.
2GA2QM	The two 9mm Luger cartridge cases (Items 4 and 5) were identified as having been fired in the same firearm as the test fires (Item 1). Agreement of the characteristics is sufficient to determine that the firearm is the source of the cartridge cases. The two 9mm Luger cartridge cases (Items 2 and 3) were excluded as having been fired in the same firearm as the test fires (Item 1). Differences were found in characteristics sufficient to eliminate the firearm as the source of the cartridge cases. However, the two 9mm Luger cartridge cases (Items 2 and 3) were identified as having been fired in the same unknown firearm. Agreement of the characteristics is sufficient to determine that the two cartridge cases were fired in the same unknown firearm.
2GUNLY	The Item 1, 2, 3, 4, and 5 PMC caliber 9mm Luger cartridge cases were microscopically examined. Items 4 and 5 were identified as having been fired in the firearm represented by the Item 1 cartridge cases based on corresponding class and individual characteristics. Items 2 and 3 were identified as having been fired in the same firearm based on corresponding class and individual characteristics. Items 2 and 3 were eliminated as having been fired in the firearm represented by the Item 1 cartridge cases due to differences in class characteristics.
2JFMHT	CONCLUSIONS: Items A-4 and A-5 were fired in the same firearm as Items A-1(a-c). Items A-2 and A-3 were fired in the same unknown firearm.
2K6ZYQ	Two of the 9mm Luger cartridge cases (items 4 and 5) recovered from the crime scene were fired in the same firearm as the three test-fired cartridge cases (Item 1). The two remaining 9mm Luger cartridge cases (items 2 and 3) recovered from the crime scene were fired in the same firearm, but were not fired in the same firearm as the three test-fired cartridge cases (Item 1).
2MD7KR	Items 4 and 5 were identified as having been fired in the exhibit Sig Sauer P365 pistol. Items 2 and 3 were eliminated as they were found not to have been fired in the exhibit Sig Sauer P365 pistol. Items 2 and 3 were identified as having been fired in the same firearm which is yet to be

TABLE 2

WebCode	Conclusions
	submitted for examination at the Ballistics Unit.
2TN2KV	Items #2 and #3 were microscopically examined and compared to Item #1 (Agency Test Fire). Based on the observed disagreement of class and individual characteristics, Items #2 and #3 are eliminated as having been fired in the same firearm as Item #1 (Agency Test Fire). Items #4 and #5 were microscopically examined and compared to Item #1 (Agency Test Fire). Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Items #4 and #5 are identified as having been fired in the same firearm as Item #1 (Agency Test Fire). The evidence will be returned to the submitter.
2WPXEW	The Items 4 and 5 cartridge cases were fired from the Item 1 pistol. The Items 2 and 3 cartridge cases were fired from the same unknown firearm.
2ZLQ4K	Comparative examinations of Items 4 and 5 (two 9mm Luger cartridge cases) against Item 1 (test fired cartridge cases) show the presence of corresponding features. This means that Items 4 and 5 are consistent with having been fired in Item 1. * Items 2 and 3 (two 9mm Luger cartridge cases) have different class characteristics from Items 1, 4, and 5. This means that Items 2 and 3 were fired in a different firearm than Items 1, 4, and 5. Comparative examinations of Item 2 against Item 3 show the presence of corresponding features. This means that Items 2 and 3 are consistent with having been fired in the same firearm. * *Source identification is reached when the discernible class and individual characteristics have corresponding detail and the examiner would not expect to see the same arrangement of details repeated in another source. This identification has been verified by a second trained examiner.
36ATKP	Microscopic examination and comparison reveal that the cartridge cases, Items 1D and 1E, were fired in the same firearm as the cartridge cases, Item 1A, based on agreement of class and individual characteristics. Microscopic examination and comparison reveal that the cartridge cases, Items 1B and 1C, were not fired in the same firearm as the cartridge cases 1A, 1D, and 1E based on disagreement of class characteristics. Microscopic examination and comparison of the cartridge cases, Items 1B and 1C, reveal that they were fired in the same firearm based on agreement of class and individual characteristics, and are consistent with being fired in taurus 9mm Pistols. This list is provided only as an investigative lead and is not intended to be an all-inclusive list.
3A6P4P	1.The cartridge cases, Exhibits 4 and 5, were identified as having been fired in the same firearm as the test fired cartridge cases, Exhibit 1. 2.The cartridge cases, Exhibits 2 and 3, were eliminated as having been fired in the same firearm as the test fired cartridge cases, Exhibit 1.
3D7Q8R	QC1 to QC2 is an Identification. In the opinion of this examiner, QC1 and QC2 were fired in the same unknown firearm. QC4 to QC3 and TC1B (QF1) is an Identification. In the opinion of this examiner, QC3 and QC4 were fired in QF1.
3HGQM4	The two (2) questioned cartridge cases, Item 4 and Item 5, were both discharged from the same firearm that discharged Item 1. The two (2) questioned cartridge cases, Item 2 and Item 3, were not discharged from the firearm that discharged Item 1, but Item 2 and Item 3 were both discharged from another firearm.
3R7AAP	Cartridge casings (2, 3) are IDENTIFIED as having been discharged from the SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Cartridge casings (4, 5) and Known test fired cartridge casings (1.1 - 1.3) are IDENTIFIED as having been discharged from the SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Cartridge casings (2, 3) are ELIMINATED as having been discharged from the same gun as cartridge casings (4, 5) and known test fired cartridge casings (1.1 - 1.3) based

TABLE 2

WebCode	Conclusions
	on the observed disagreement of class characteristics.
3VK8ER	The Exhibit 4 and 5 fired 9mm Luger caliber cartridge cases were identified as having been fired in the Exhibit 1 firearm. The Exhibit 2 and 3 fired 9mm Luger caliber cartridge cases were identified as having been fired in the same firearm. The Exhibit 2 and 3 fired 9mm Luger caliber cartridge cases were excluded as having been fired in the Exhibit 1 firearm.
432Z4W	The cartridge cases in Items 4 and 5 were fired in the same gun that fired the cartridge cases in Item 1, based on agreement observed in individual characteristics. The cartridge cases in Items 2 and 3 were not fired in the gun that fired the cartridge cases in Item 1, based on differences observed in class characteristics.
44XH6X	Items 4 and 5 were fired in the same firearm as the item 1 test fires. Items 2 and 3 were fired in a second firearm.
472C2G	Two firearms were involved in this event. Firearm A (9mm Luger caliber): The microscopic analysis of the cartridge cases (Item 4 and Item 5) recovered from the scene allow me to conclude that they were both discharged by the suspect's firearm submitted (Item 1 - SIG Sauer P365 pistol). Firearm B (9mm Luger caliber): The microscopic analysis of the cartridge cases (Item 2 and Item 3) recovered from the scene allow me to conclude that they were both discharged by a common firearm that is different from the one submitted (Item 1). Their class characteristics, based on their firing pin impressions, are too common to suggest any make and model of firearm. Both firearms in this event were not related to any pending cases in our files.
48G9UG	A test fired cartridge case from Item 1 was microscopically examined and compared with the recovered fired cartridge cases, Items 4 and 5. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Items 4 and 5 are identified as having been fired in the same firearm as the test fired cartridge cases from Item 1. A test fired cartridge case from Item 1 was microscopically examined and compared with the recovered fired cartridge cases, Items 2 and 3. Based on the observed disagreement of some class characteristics, Items 2 and 3 are eliminated as having been fired in the same firearm as the test fired cartridge cases from Item 1.
49A72M	Items 001-02 through 001-05 were examined and microscopically compared with the test fired cartridge cases in 001-01 with the following result: 001-02 and 001-03 were eliminated as having been fired in the same firearm as items in 001-01. 001-04 and 001-05 were identified as having been fired in the same firearm as items in 001-01.
4BVAAK	Items 1, 4 and 5 were identified as having been fired in the same firearm. Items 2 and Item 3 were identified as having been fired in another firearm.
4FPZ2Q	Methodology: Physical (Visual Examination). Microscopy (Comparison Microscope). Items 4 and 5, the cartridge cases, were fired in the same firearm as Items 1A, 1B and 1C, the Sig Sauer test fires, based upon corresponding class and individual microscopic characteristics. Items 2 and 3, the cartridge cases, were fired in the same firearm based upon corresponding class and individual microscopic characteristics. Items 2 and 3, the cartridge cases, were not fired in the same firearm as Items 1A, 1B and 1C, the Sig Sauer test fires, based upon different class characteristics.
4HEDGM	The result of the microscopic comparison performed between the questioned elements studied in this report (Items 2, 3, 4 and 5) and the reference bullets obtained during the tests conducted with the Sig Sauer P365 pistol under study, refered as Item 1, conclude as follows: The questioned bullets referenced as Item 4 an Item 5 were fired by the pistol under study. The questioned bullets referenced as Item 2 and Item 3 were fired by a different firearm than Sig

TABLE 2

WebCode	Conclusions
	Sauer pistol studied in this report.
4PAH94	1. The cartridges cases marked E-1 to E-3, described in Item 1, the cartridge case marked E-6, described in Item 4 and the cartridge case marked E-7, described in Item 5, are 9mm Luger caliber and were fired by the same firearm (Identification). [Initials & Date]. 2. The cartridge case marked E-4, described in Item 2 and the cartridge case marked E-5, described in Item 3, are 9mm Luger caliber and were fired by the same firearm (Identification). [Initials & Date].
4TXVAU	The results extremely strongly support that Items 4 and 5 was fired from the same firearm as Item 1.
4WDHPK	Items 1-(T1, T2, T3), 4 and 5: Items 4 and 5 were Identified to Item 1-T2. Items 1, 4 and 5 were Eliminated to Items 2, 3 based on a difference in class characteristics. Items 2, 3: The cartridge cases were Identified to each other. Items 2, 3 were Eliminated to Items 1, 4 and 5 based on a difference in class characteristics.
4ZWCMK	Items 2, 3, 4, & 5 were microscopically compared with the following results: Item 2 and item 3 were microscopically compared and determined to have agreement in class characteristics and individual characteristics in the breech face and firing pin (Gun 1). Item 4 and item 5 were microscopically compared and determined to have agreement in class characteristics and individual characteristics in the breech face and firing pin (Gun 2). Item 2 and item 3 were eliminated as having been fired in the same firearm as item 4 and item 5 due to class characteristics (Firing pin impression). Item 2 and item 3 were eliminated as having been fired in the submitted Sig Sauer P365 due to a difference in class characteristic (Firing pin impression). Item 4 and item 5 were microscopically compared to the test standards of the submitted Sig Sauer P365 and identified as having been fired by said firearm with agreement in class and individual characteristics (firing pin impression and breech face marks).
64C3PV	The two (2) fired cartridge cases, items 1.4 and 1.5, were each identified as having been fired in the Sig Sauer pistol, item 1.1, based on the agreement of all discernable class characteristics and agreement of corresponding individual microscopic markings. The two (2) fired cartridge cases, items 1.2 and 1.3, were each eliminated as having been fired in the Sig Sauer pistol, item 1.1, based on a difference in class characteristics (hemi vs hemi-chisel tip). The two (2) fired cartridge cases, items 1.2 and 1.3, were consistent in all observable class characteristics (breechface marks, caliber, and firing pin impression). While there is some agreement of microscopic markings, the markings present are insufficient for an identification. The results are inconclusive.
64DYZQ	Items 4 and 5 (two 9mm Luger caliber cartridge cases) were identified* as having been fired by the same firearm as Item 1 (three 9mm Luger caliber cartridge cases said to be test fired by a SIG Sauer Model P365 firearm). Items 2 and 3 (two 9mm Luger caliber cartridge cases) were fired by a different firearm than Item 1. Items 2 and 3 were identified* as having been fired by the same firearm. *Source identification is reached when the discernable class and individual characteristics have corresponding detail and the examiner would not expect to see the same arrangement of details repeated in another source.
6BBHLU	Submissions 1-1 through 1-4 were separated into two different groups based on differences in individual characteristics within the firing pin impression utilizing a stereo and comparison microscope to indicate separate firearms: Group 1: 1-1 and 1-2. Group 2: 1-3 and 1-4. Submission 1-1 was microscopically compared to submission 1-2 and submission 1-3 was microscopically compared to submission 1-4. Based on similar class characteristics and sufficient agreement in individual characteristics, it was determined that submissions 1-1 and 1-2 originated from the same source (source identification). Based on similar class characteristics and sufficient agreement in individual characteristics, it was determined that

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WebCode	Conclusions
	submissions 1-3 and 1-4 originated from the same source (source identification). Based on differences in individual characteristics, it was determined that submissions 1-1 and 1-2 were excluded as originating from the same source that fired submissions 1-5 through 1-7 test fires (SIG Sauer model P365) (source exclusion). Submission 1-3 was microscopically compared to submission 1-5 test fire (SIG Sauer model P365). Based on similar class characteristics and sufficient agreement in individual characteristics, it was determined that submissions 1-3 and 1-4 originated from the same source that fired submissions 1-5 through 1-7 test fires (source identification).
6C88JW	After a microscopic examination, Item 4 and Item 5 were identified as having been fired in the suspect's Sig Sauer P365 firearm based on a sufficient agreement of individual characteristics in the firing pin drag and breech face marks. Item 2 and Item 3 were eliminated as having been fired in the suspect's Sig Sauer P365 firearm due to a difference of class characteristics of the firing pin shape.
6E9A6Q	The cases labelel Item 4 and Item 5 have been fired from the seized weapon Sig Sauer P365. Moreover, the cases labeled Item 2 and Item 3 have been fired from a same handgun, different from the previous one. In conclusion, at least 2 different weapons where used on the crime scene : - the Sig Sauer P365 in which the cases from Item 4 and Item 5 where fired - a second handgun in which the cases from Item 2 and Item 3 where fired
6ECTDN	1. The cartridge cases, Items 4 and 5, were identified as having been fired in the same firearm as the test fired cartridge cases, Item 1. 2. The cartridge cases, Items 2 and 3, were not fired in the same firearm as the test fired cartridge cases, Item 1.
6M8NET	Item 001.B: (Item 2) Spent brass PMC 9mm Luger cartridge case. Laboratory Items 001.B and 001.C (Items 2 and 3) two spent brass PMC 9mm Luger cartridge cases are identified as being fired by the same firearm. Laboratory Items 001.B and 001.C (Items 2 and 3) two spent brass PMC 9mm Luger cartridge cases are eliminated as being fired by the suspect's firearm that fired Laboratory Item 001.A (Item 1) three test fires. Item 001.D: (Item 4) Spent brass PMC 9mm Luger cartridge case Laboratory Items 001.D and 001.E (Items 4 and 5) two spent brass PMC 9mm Luger cartridge cases are identified as being fired by the suspect's firearm that fired Laboratory Item 001.A (Item 1) three test fires.
6VG63R	The Item 1, Item 4, and Item 5 cartridge cases were fired by the same firearm. The Item 2 and Item 3 cartridge cases were fired by the same firearm. The Item 1, Item 4, and Item 5 cartridge cases were fired by a different firearm than the Item 2 and Item 3 cartridge cases.
7A8QFX	The cartridge cases, Lab Items 1, 4, and 5, were identified as having been fired by the same firearm based on agreement of class characteristics and corresponding individual detail using microscopic comparison. The cartridge cases, Lab Items 2 and 3, were identified as having been fired by the same firearm based on agreement of class characteristics and corresponding individual detail using microscopic comparison. The cartridge cases, Lab Items 2 and 3, were eliminated from having been fired by the same firearm as Lab Items 1, 4, and 5, based on disagreement of class characteristics using microscopic comparison.
7C369H	The two 9mm Luger cartridge cases Q3 and Q4 were identified as having been fired with the Sig-Sauer P365 9mm Luger K1 firearm. The two 9mm Luger cartridge cases Q1 and Q2 were identified as having been fired with the same unknown firearm. The two 9mm Luger cartridge cases Q1 and Q2 were excluded as having been fired with the Sig-Sauer P365 9mm Luger pistol K1 based on disagreement of class characteristics. The two 9mm Luger cartridge cases Q1 and Q2 were excluded as having been fired with the same firearm(s) as the two 9mm Luger cartridge case Q3 and Q4 based on disagreement of class characteristics.
7DU4MF	Comparative examinations of Items 4 and 5 (two 9mm Luger caliber cartridge cases) against

TABLE 2

WebCode	Conclusions
	Item 1 (three 9mm Luger caliber cartridge cases said to be test fired in a Sig Sauer Model P365 9mm Luger caliber firearm) show the presence of corresponding features. This means that Items 1, 4 and 5 are consistent with having been fired in the same firearm.* Comparative examinations of Items 2 and 3 (two 9mm Luger caliber cartridge cases) against Item 1 showed the presence of different features. This means that Items 2 and 3 were fired in a different firearm than Item 1. Comparative examinations of Item 2 against Item 3 showed the presence of corresponding features. This means that Items 2 and 3 are consistent with having been fired in the same firearm.* *Source identification is reached when the discernible class and individual characteristics have corresponding detail and the examiner would not expect to see the same arrangement of details repeated in another source. This identification has been verified by a second trained examiner.
7GTEJF	The item 1-4 and 1-5 cartridge cases are identified as having been fired in the same firearm as the item 1-1A through 1-1C cartridge cases. The item 1-2 and 1-3 cartridge cases are identified as having been fired in the same unknown firearm.
7LLNMM	Item 1 consists of three cartridge cases reported to have been test-fired in a 9mm Luger, Sig Sauer pistol, Model P365. The Item 4 and 5 are 9mm Luger cartridge cases that bear the headstamp of PMC ammunition and were identified as having been fired in the same firearm as the Item 1 test-fired cartridge cases. Items 2 and 3 are 9mm Luger cartridge cases that bear the headstamp of PMC ammunition. The Item 2 and 3 cartridge cases were identified as having been fired in the same firearm and were eliminated as having been fired in the same firearm as the Item 1 test-fired cartridge cases due to a difference in class characteristics.
7MKPTE	Test fired cartridge cases from Item 1, were microscopically examined and compared with recovered fired cartridge cases, Items 4 and 5. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Items 4 and 5 are identified as having been fired in the same firearm as the test fired cartridge cases from Item 1. A test fired cartridge case from Item 1, was microscopically examined and compared with recovered fired cartridge cases, Items 2 and 3. Based on observed disagreement of their class characteristics, Items 2 and 3 are eliminated as having been fired in the same firearm as the test fired cartridge cases from Item 1.
7MMAKN	The marks on the three reference cartridge cases left by the suspected firearm (Sig Sauer P365 Cal. 9mm Luger) have been observed and compared. Similitudes have been observed mainly on the firing pin mark, the ejector and the breech face mark. The questioned cartridge cases (Item 2,3,4,5) have been compared to the references (Item 1). The class characteristics didn't show clear discrepancy. It would be necessary to analyse the firearm in question in order to conclude that items 2 and 3 should be excluded on the basis of the shape of the firing pin marks and the firing pin aperture. Each mark has been compared at macroscopical level and no particular similitude has been observed between the questioned cartridge cases Items 2,3 and the references. To the other hand, the comparison between the Items 4, 5 and the references highlighted a high level of correspondance, mainly between the firing pin marks, the firing pin aperture and the breech face marks.These observations support extremely strongly the hypothesis of a common source between the observed marks on the Items 4, 5 and the reference samples.
7PQ3HT	Exhibits 4 and 5 (questioned recovered 9mm cartridge cases) were identified as having been fired in the same 9mm firearm as exhibit 1 (test-fired cartridge cases). Exhibits 2 and 3 (questioned recovered 9mm casings) were identified as having been fired in a second 9mm firearm. Suspect weapons are unknown at this time; however, any suspect weapons should be submitted to the laboratory for analysis.

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7QH64M	Items 1A through 1C were identified as having been fired by the same firearm based on agreement of class and individual characteristics. I Items 4 and 5 were identified as having been fired by the same firearm that fired Items 1 (A - C) based on agreement of class and individual characteristics. Items 2 and 3 were not fired by the same firearm that fired Item 1 (A - C) based on differences in class characteristics. Items 2 and 3 were identified as having been fired by the same unknown firearm based on agreement of class and individual characteristics.
7RT8PL	Microscopic examination and comparison reveal that the cartridge cases, Items 1.A and 1.C, were fired in the same firearm based on agreement of class and individual characteristics. Microscopic examination and comparison of the cartridge cases, Item 1.B, reveal that they were fired in the same firearm based on agreement of class and individual characteristics, and are consistent with being fired in Taurus 9mm pistols. This list is provided only as an investigative lead and is not intended to be an all-inclusive list. Microscopic examination and comparison reveal that the cartridge cases, Items 1.A and 1.C, were not fired in the same firearm as the cartridge cases, Item 1.B, based on disagreement of class characteristics. 1.A = Known cartridge cases 1.B = Unknowns 2, 3 1.C = Unknowns 4, 5
7UJBHT	The Items 01-01, 01-04, and 01-05 cartridge cases were identified as having been fired in the same firearm. The Items 01-02 and 01-03 cartridge cases were eliminated as having been fired in the same firearm as the Item 01-01 cartridge cases. The Items 01-02 and 01-03 cartridge cases were identified as having been fired in the same unknown firearm capable of chambering and firing a 9mm Luger caliber cartridge.
7VAGYJ	Cases no 4 and 5 come from rounds fired from seized Sig Sauer P365. Cases 2 and 3 do not.
7Z9NJG	FINDINGS & OPINIONS: Items 1-1, 1-4, and 1-5 were microscopically compared to each other and found to have areas of corresponding individual characteristics within the firing pin marks and breech face marks. The five cartridge cases were identified as having been fired in the same firearm. Items 1-2 and 1-3 were microscopically compared to each other and found to have areas of corresponding individual characteristics within the breech face impressions and firing pin impressions. The two cartridge cases were identified as having been fired in the same firearm. Items 1-1, 1-4, and 1-5 were microscopically compared to items 1-2 and 1-3 and found to have different firing pin shapes and breech face marks/impressions. The two groups of cartridge cases were eliminated as having been fired in the same firearm.
7ZMCHM	Physical and microscopic examinations and comparisons were conducted of the submitted evidence. Based upon those examinations and comparisons, it is my opinion that: a. The items 1-4 and 1-5 discharged cartridge casings were fired from the suspect's weapon that produced the item 1-1 test fires. Identification b. The items 1-2 and 1-3 discharged cartridge casings were fired from the same unknown weapon capable of chambering and firing 9mm Luger ammunition. Identification c. The items 1-2 and 1-3 discharged cartridge casings were not fired from the suspect's weapon that produced the item 1-1 test fires. Exclusion
83ABCB	Results: All items were physically examined then microscopically compared using light comparison microscopy. Items 1A,1B, 1C, 4, and 5 (cartridge cases) are identified as having been fired in the same firearm. Items 2 and 3 (cartridge cases) are identified as having been fired in the same firearm. Items 2 and 3 are eliminated as having been fired from the same firearm as items 1A, 1B, 1C, 4, and 5. There are differences in class characteristics (firing pin impression shape). Database Entry: Item 1B and item 3 were entered into the National Integrated Ballistic Information Network (NIBIN) database. An investigative lead will be sent for all possible associations. Items entered in the database are searched in [State] and [City, State] only unless requested otherwise and will remain in the database unless a request to remove the entry is received. Conclusion Scale for Microscopic Comparisons: The following descriptions

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WebCode	Conclusions
	are meant to provide context to the levels of opinions reached in this report. Identification: This is the strongest statement of association that can be expressed. An identification is made when there is agreement of all discernible class characteristics and sufficient agreement of the individual characteristics of toolmarks. When sufficient agreement exists, in part, this means the likelihood of another tool producing the same marks is so remote it is considered a practical impossibility. Elimination: This is the strongest statement of non-association that can be expressed. An elimination is made when one of the following is true: It is a physical impossibility (i.e., there is a clear demonstrative incompatibility in class characteristics) for the items to have been marked by the same tool/fired in the same firearm. Demonstrative differences in the subclass of reproducible individual characteristics. Inconclusive: An inconclusive is made when one of the following situations is true. Agreement of all discernible class characteristics and some agreement of individual characteristics, but insufficient for identification. Agreement of all discernible class characteristics without agreement or disagreement of individual characteristics due to an absence, insufficiency, or lack of reproducibility. Agreement of all discernible class characteristics and some disagreement of individual characteristics but insufficient for elimination. Agreement of all discernible class characteristics and disagreement of individual characteristics, however reproducibility or variability of individual characteristics cannot be established. Agreement of all discernible class and subclass characteristics. The individuality of the characteristics is not discernible; therefore, the items may have been fired from the same firearm or from another firearm that was machined with the same tool in the approximate same state of wear. Unsuitable: An item is considered unsuitable for comparison when it does not bear any class, subclass, and/or individual toolmarks of value for microscopic comparison. The interpretation of the data and authorization of the results were performed by the undersigned forensic analyst. Other staff members may have performed laboratory activities concerning evidence associated with this report. For a complete listing of all staff members who performed laboratory activities in this case, please contact the laboratory via the telephone number above. [Phone number not provided].
843AJH	The two cartridge cases marked #4 and #5 were compared microscopically against test cartridge cases and identified as having been discharged in Pistol #1. The two cartridge cases marked #2 and #3 were compared microscopically against each other and identified as having been discharged in the same firearm. The two cartridge cases marked #2 and #3 were compared microscopically against test cartridge cases (Pistol #1) and eliminated as having been discharged in Pistol #1.
8B3JYN	The test-fired cartridge cases in item 1 were compared to the discharged cartridge cases, items 4 and 5, using a comparison microscope. In my opinion, both cartridge cases were fired in the firearm that generated those test-fired cartridge cases due to agreement of discernible class characteristics and sufficient agreement of individual characteristics. The test-fired cartridge cases in item 1 were compared to the discharged cartridge cases, items 2 and 3, using a comparison microscope. In my opinion, both cartridge cases were eliminated from being fired in the firearm that generated those test-fired cartridge cases due to sufficient disagreement of discernible class and individual characteristics.
8CRXEK	Two of the fired cartridge cases (items 4 and 5) were fired from the same firearm that fired the test fired cartridge cases (item 1). The remaining two fired cartridge cases (items 2 and 3) were fired from a second firearm.
8DUHDL	A comparative microscopic examination was conducted between the four exhibit 9mm Luger fired cartridge cases (labelled 2, 3, 4 & 5) and test fire cartridge cases discharged in exhibit firearm Sig Sauer P365 (labelled T1-T3) revealed the exhibit fired cartridge cases had been

TABLE 2

WebCode	Conclusions
	discharged from two different firearms as follows; The exhibit fired cartridge cases labelled 4 & 5 were discharged from the exhibit firearm Sig Sauer P365 that discharged test fire cartridges cases T1-T3. The exhibit fired cartridge cases labelled 2 & 3 were discharged in the same firearm that was not submitted at the time of examination.
8GNGKP	The fired cartridge cases in Submissions #1d and #1e were microscopically compared and identified as having been fired from the firearm listed as having fired the test fired cartridge cases in Submission #1a based on sufficient agreement in individual characteristics present to conclude an identification. The fired cartridge cases in Submissions #1b and 1c were microscopically compared and identified as having been fired from the same unknown firearm based on sufficient agreement in individual characteristics present to conclude an identification. These fired cartridge cases were microscopically compared and eliminated as having been fired from the firearm listed as having fired the test fired cartridge cases in Submission #1a based on different class characteristics.
8JVWUG	Items 1, 4, 5 The cartridge cases were identified as having been fired in the same firearm. Items 2, 3 The cartridge cases were identified as having been fired in the same firearm. The cartridge cases were eliminated as having been fired in the same firearm as Items 1, 4 and 5.
8KA9TL	Item 1 consists of three (3) 9x19mm/9mm Luger cartridge cases that bear the headstamps of PMC ammunition, and were indicated as being test-fired specimens from a Sig Sauer pistol, Model P365. Item 2 through Item 5 consist of four (4) 9x19mm cartridge cases that bear the headstamps of PMC ammunition. The Item 4 and Item 5 cartridge cases were identified as having been fired in the same firearm as the Item 1 cartridge cases. The Item 2 and Item 3 cartridge cases were identified as having been fired in the same firearm, but due to a difference in class characteristics, were excluded as having been fired in the firearm that fired the Item 1, Item 4, and Item 5 cartridge cases.
8KNU3M	1. The cartridge cases marked 365TC1-TC3 (ITEM 1) and 412807/25 A4 -A5 (ITEM 4 & 5) were fired in the same firearm with serial number P365 SIG SAUER 9MM PARABELLUM. 2. The cartridge cases marked 412807/25 A2 -A3 (ITEM 2 & 3) were fired in the same firearm.
8UCNCY	THERE WAS SUFFICIENT AGREEMENT OF CLASS AND INDIVIDUAL CHARACERISTICS TO DETERMINE THAT THE CARTRIDGE CASES IN ITEM 1 HAD BEEN FIRED IN THE SAME FIREARM AS THE CARTRIDGE CASES IN ITEM 4 AND ITEM 5. THERE WAS SUFFICIENT DISAGREEMENT OF CLASS CHARACTERISTICS TO DETERMINE THAT THE CARTRIDGE CASES IN ITEM 1 HAD NOT BEEN FIRED IN THE SAME FIREARM AS THE CARTRIDGE CASES IN ITEM 2 AND ITEM 3. THERE WAS HOWEVER SUFFICIENT AGREEMENT OF CLASS AND INDIVIDUAL CHARACTERISTICS TO DETERMINE THAT THE CARTRIDGE CASE IN ITEM 2 AND THE CARTRIDGE CASE IN ITEM 3 HAD BEEN FIRED IN THE SAME FIREARM.
8ZZ49J	Based on the agreement of discernible class characteristics and sufficient matching individual detail, fired cartridge case Items 1(A-C), 4, and 5 were identified as having been fired in the same firearm. Based on the agreement of discernible class characteristics and sufficient matching individual detail, fired cartridge case Items 2 and 3 were identified as having been fired in the same firearm. Based on the significant disagreement of class characteristics, fired cartridge case Items 2 and 3 were eliminated as having been fired in the same firearm as fired cartridge case Items 1(A-C), 4, and 5.
96D7VE	Based on microscopic comparisons, in the opinion of the laboratory: Items 1-4-1 (CTS Item 4) and 1-5-1 (CTS Item 5) (cartridge cases) were identified as having been fired by the same firearm that fired item 1-1-1 (CTS Item 1) (cartridge cases). Items 1-2-1 (CTS Item 2) and 1-3-1 (CTS Item 3) (cartridge cases) were identified as having been fired by the same firearm. Based on differences in class characteristics, items 1-2-1 (CTS Item 2) and 1-3-1 (CTS Item 3)

TABLE 2

WebCode	Conclusions
	(cartridge case) were eliminated as having been fired by the same firearm that fired item 1-1-1 (CTS Item 1) (cartridge cases).
98JQGT	The cartridge cases Item 4 and Item 5 were discjarged from the suspect's firearm (Item 1). The cartridge cases Item 2 and Item 3 were discharged from second firearm.
9Q8BCC	Comparisons performed between the test fired cartridge cases (Item 1) and cartridge cases (Items 4 & 5) resulted in an identification. Comparisons performed between the test fired cartridge cases (Item 1) and cartridge cases (Items 2 & 3) resulted in an exclusion. Comparisons performed between cartridge case (Item 2) and cartridge case (Item 3) resulted in an identification.
9QBV4L	The fired 9mm Luger caliber cartridge cases, Items 4 and 5, were identified as having been fired in the same firearm that produced the test fired cartridge cases, Item 1. The fired 9mm Luger caliber cartridge cases, Items 2 and 3, were identified as having been fired in a second firearm.
9RP2MH	Items 2 and 3 were identified as having been fired by the same unknown firearm. Items 2 and 3 were eliminated as having been fired by the same firearm that fired Items 1, 4 and 5 based on differences in class characteristics. Items 4 and 5 were identified as having been fired by the same firearm that fired the submitted test fired cartridge cases Item 1.
9TVRLK	Items 2 and 3 were eliminated as having been fired in the same firearm as Items 1, 4 and 5. Items 2 and 3 were identified as having been fired in the same unknown firearm capable of chambering and firing a 9mm Luger caliber cartridge. Items 4 and 5 were identified as having been fired in the same firearm as Item 1, reportedly test fired in a Sig Sauer Model P365, 9mm Luger caliber semi-automatic pistol.
9XU3LQ	Evidence Description: Item 1 Three test fired 9mm Luger caliber cartridge cases reportedly collected from a Sig Sauer P365. Items 2-5 Four fired 9mm Luger caliber cartridge cases. Microscopic comparison Conclusions 4,5 Fired cartridge cases compared to 1 fired cartridge cases Identification 2,3 Fired cartridge cases intercompared Identification 2,3 Fired cartridge cases compared to 1 Fired cartridge cases Elimination Methods Physical, Visual, and Microscopic Examination Microscopic Comparison Verification Completed By: [Name]. Technical Review Completed By: [Name]. Evidence Disposition All items in the Evidence Description will be returned to the submitting agency unless otherwise noted.
9YLYBK	Microscopic examination and comparison reveal that the cartridge cases, Items 1.A, 1.D, and 1.E, were fired in the same firearm based on agreement of class and individual characteristics. Microscopic examination and comparison of the cartridge cases, Items 1.B and 1.C, reveal that they were fired in the same firearm based on agreement of class and individual characteristics, and are consistent with being fired in Taurus 9mm pistols. This list is provided only as an investigative lead and is not intended to be an all-inclusive list. Microscopic examination and comparison reveal that the cartridge cases, Items 1.A, 1.D and 1.E, were not fired in the same firearm as the cartridge cases, Items 1.B and 1.C, based on disagreement of class characteristics.
A3H8UL	Agreement of class and sufficient agreement of individual characteristics confirmed the 004.001 (Item 4) and 005.001 (Item 5) cartridge cases were fired in the same firearm as the 001.001 (Item 1) cartridge cases. Disagreement of class characteristics confirmed the 001.002 (Item 2) and 001.003 (Item 3) cartridge cases were not fired in the same firearm as the 001.001 (Item 1) cartridge cases.
A723WD	Items 1A – 1C The Item 1A cartridge case was used for microscopic comparison purposes. The Item 1B and 1C cartridge cases were not further examined. Items 2, 3 The cartridge cases

TABLE 2

WebCode	Conclusions
	were Identified to each other. The cartridge cases were Eliminated to Items 1A – 1C, 4, and 5 based on a difference in class characteristics. Items 4, 5 The Item 4 and 5 cartridge cases were Identified to the Item 1A cartridge case.
A8TZ6K	1-Item(4) and Item(5) fired by suspect pistol. 2-Item(2) and Item(3) fired by different pistol.
A9R99X	I concluded the following: 1. The two (2) questioned recovered cartridge cases of calibre 9mm, items 2 and 3, were both discharged in the same firearm. However, these two (2) cartridge cases were not discharged from the suspect's firearm. 2. The two (2) questioned recovered cartridge cases of calibre 9mm, items 4 and 5, were both discharged from the suspect's firearm.
AA34XB	The fired cartridge cases of items #4 and #5, were microscopically identified as having been fired in the Sig Sauer P365 firearm that fired the test-fired cartridge cases of item #1. Item #2 and item #3 were microscopically identified as having been fired in the same unknown firearm.
AA7NPK	Items 1, 4 and 5 were identified, within the limits of practical certainty1, as having been fired by the same firearm. Items 2 and 3 were identified, within the limits of practical certainty1, as having been fired by the same firearm. Two firearms are represented by Items 1 through 5 (9x19mm calibre fired cartridge cases).
AF7ACD	TEST FIRES: Items 1A-1C: The cartridge cases were used for microscopic comparison purposes. CARTRIDGE CASES: Items 2 and 3: The cartridge cases were Identified to each other. The cartridge cases were Eliminated to Items 4, 5 and the Item 1 test fires based on a difference in class characteristics. Items 4 and 5: The cartridge cases were Identified to the Item 1B test fire.
AFAWPK	Item 1 - "Three known test fired cartridge casings discharged from the suspect's firearm" (1) Item 2 - One (1) fired 9mm Luger caliber cartridge case bearing the PMC headstamp (2) Item 3 - One (1) fired 9mm Luger caliber cartridge case bearing the PMC headstamp (3) Item 4 - One (1) fired 9mm Luger caliber cartridge case bearing the PMC headstamp (4) Item 5 - One (1) fired 9mm Luger caliber cartridge case bearing the PMC headstamp (5) Examinations Performed: Items 2-5 and Item 1 known cartridge cases were microscopically examined. Items 2 and 3 were microscopically compared. Items 4, 5, and Item 1 known cartridge cases were microscopically compared. Results: Items 2 and 3 exhibit similar class characteristics. Items 2 and 3 exhibit patterns and markings that are consistent with each other. Items 4, 5, and Item 1 known cartridge cases exhibit similar class characteristics. Items 4, 5, and Item 1 known cartridge cases exhibit patterns and markings that are consistent with each other. Items 2 and 3 exhibit patterns and markings that are inconsistent with Items 4, 5, and Item 1 known cartridge cases. Conclusions: Items 2 and 3 exhibit similar class characteristics. As a result of microscopic comparison, it was concluded that Items 2 and 3 are identified as having been fired in the same unknown firearm. Items 4, 5, and Item 1 known cartridge cases exhibit similar class characteristics. As a result of microscopic comparison, it was concluded that Items 4 and 5 are identified as having been fired in the same firearm that fired the Item 1 known cartridge cases. Items 2 and 3 are eliminated as having been fired in the same firearm that fired Items 4, 5, and Item 1 known cartridge cases due to significant disagreement of discernible class characteristics. [Participant submitted data in a format that could not be reproduced in this report.]
AHX9QC	The examination of the recovered cartrige casings under a comparison microscope, allows us to conclude that the items 4 and 5 were fired form the suspect’s firearm. The examination also showed that items 2 and 3 were fired from a second firearm.

TABLE 2

WebCode	Conclusions
ANKXBL	Items 4, 5, and Item 1 test fired cartridge cases exhibit similar class characteristics. As a result of microscopic comparison, it was concluded that Items 4, 5, were identified as having been fired in the same firearm that fired Item 1 test fired cartridge cases. Items 2 and 3 exhibit similar class characteristics. As a result of microscopic comparison, it was concluded that Items 2 and 3 were identified as having been fired in the same unknown firearm. Items 2 and 3 were eliminated as having been fired in the same firearm that fired Items 4, 5, and Item 1 test fired cartridge cases due to significant disagreement of discernible class characteristics and individual characteristics.
ANLQ89	Items 1, 4, and 5: The cartridge cases were Identified as having been fired in a single firearm. Items 2 and 3: The cartridge cases were Identified as having been fired in a single firearm. They were Eliminated (based on differences in class characteristics) with respect to having been fired in the same firearm as the cartridge cases Items 1, 4, and 5.
AQPNFF	Items 4 & 5 were Identified to Item 1. Items 2 & 3 were Eliminated to Item 1. Item 2 was Identified to Item 3.
ARGMMM	The cartridge cases from the Item 4 and 5 wear similar characteristics as the 3 expended cartridge cases discharged from the suspect weapon. So the catridge cases from Item 4 and 5 were fired in the seized firearm (Item 1). On the other hand, the 2 cartridge cases from the Items 2 and 3, which wear similar characteristics, have different characteristics than those from the suspect weapon. So they weren't fired in the seized firearm. But they were fired in a same firearm. In conclusion : - Cartridge cases from Item 4 and 5 were fired in the seized firearm, as the cases from Item 1. - Cartridge cases from Item 2 and 3 were fired in a second one.
B3D8BW	The marks on the bottom of the cartridge cases, especially of the firing pin, the breechface and the ejector, of Items 4 and 5 compared to the marks on the bottom of the cartridge cases named Item 1 show significant concordance in their relative placement and their structure. Meanwhile Items 2 and 3 show a different type of firing pin to the one which left its mark on Item 1. Furthermore the marks left by the breechface on Items 2 and 3 show significant differences to the ones on Item 1.
B87EMD	The Sig Sauer pistol, Item #1, was test fired using material from the laboratory collection and was found to be operable. The reference fired cartridge cases obtained were compared to the fired 9mm caliber cartridge cases, Items #2 through #5. The following was determined: > Items #4 and #5 possessed the same class characteristics as well as sufficient agreement of individual markings to each other as well as to the test fired material from Item #1 to determine that Items #4 and #5 were fired in Item #1. > Items #2 and #3 possessed the same class characteristics as well as sufficient agreement of individual markings to each other to determine that they were fired in the same weapon. Further examination revealed that Items #2 and #3 possessed similar class characteristics but significant differing individual characteristics from Items #1, #4 and #5 to determine that Items #2 and #3 were fired in a second weapon.
BE9E8F	Through the use of microscopic comparisons, it was determined that items 4 and 5 WERE fired by the seized Sig Sauer P365 (Firearm 1). Items 2 and 3 were fired by a separate firearm (Firearm 2).
BQKL4G	Cartridge Casings (2,3) are IDENTIFIED as having been discharged from the SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Cartridge Casings (4, 5) and Known Test fired Cartridge Casings (1.1, 1.2, 1.3) are IDENTIFIED as having been discharged from the SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Cartridge Casings (2, 3) is ELIMINATED to Cartridge Casings (4, 5), and

TABLE 2

WebCode	Conclusions
	Known Test fired Cartridge Casings (1.1, 1.2, 1.3) as having been discharged from the same gun based on the observed disagreement of class characteristics.
BTNJCN	The two (2) fired cartridge cases, items 1.4 and 1.5, were each identified as having been fired in the Sig Sauer pistol, item 1.1, based on the agreement of all discernable class characteristics and agreement of corresponding individual microscopic markings. The two (2) fired cartridge cases, items 1.2 and 1.3, were each eliminated as having been fired in the Sig Sauer pistol, item 1.1, based on a difference in class characteristics (firing pin impression shape (Hemi vs Wedge)). The two (2) fired cartridge cases, items 1.2 and 1.3, were identified as having been fired in the same unknown firearm, based on the agreement of all discernable class characteristics and agreement of corresponding individual microscopic markings.
BWEEJQ	Exhibits 1.4 and 1.5 were fired by the same firearm which produced Exhibit 1.1 based on sufficient agreement of individual characteristics observed. Exhibits 1.2 and 1.3 were fired by a second unknown 9mm caliber firearm based on sufficient agreement of individual characteristics observed.
BYWPAF	The reference fired cartridge cases, specimen #1, were microscopically compared to the 9mm caliber fired cartridge cases, specimens #2 through #5. The following was determined: - Specimens #4 and #5 were fired in the Sig Sauer pistol, specimen #1. - Specimens #2 and #3 were not fired in the Sig Sauer pistol, specimen #1, due to differences in the ejector markings, aperture striations, and markings from the breech faces. Further examination revealed that specimens #2 and #3 were fired in the same weapon.
C2GUHC	In my opinion, a microscopical comparison of firing marks has shown there is sufficient agreement of class and individual characteristic markings to conclusively determine that the gun that produced the samples in test 1 was used to discharge the fired cartridge cases from test 4 and 5. Test 1 vs Test 2 & 3 In my opinion, a microscopical comparison of firing marks has shown there is some agreement of class characteristic markings, but significant disagreement of individual characteristic markings, therefore the gun that produced the samples in test 1 was not used to discharge the fired cartridge cases from test 2 and 3.
C2NY4G	In my opinion: The fired cartridge cases, Item 4 and Item 5, were discharged in the exhibit firearm, Item 1. The fired cartridge cases, Item 2 and Item 3, were discharged in the same firearm, but a different firearm to the exhibit firearm, Item 1.
CH68UJ	Conclusion: the 4 shooting element found at the crime scene characterize 4 gunshots: 2 gunshots were fired with the seazed firearm (item 1). 2 gunshots were fired with another (not seazed) firearm.
CH9P3F	the shells from 4 and 5 were fired from the same weapon as the test shells from 1. the shells in 2 and 3 were fired from different weapons compared to the test shells in 1
CH9RNE	The Questioned recovered cartridge cases, Items 2 y 3 were fired in the same firearm, but didn't fired in the Sig Sauer P365 pistol. The Questioned recovered cartridge cases, Items 4 y 5 were fired in the Sig Sauer P365 pistol.
CJZPVK	The Item #4 and #5 cartridge cases were identified as having been fired in the same firearm as the Item #1 test fired cartridge cases. Items #2 and #3 cartridge cases were identified as having been fired in the same unknown second firearm.
CKX3JD	The test fired cartridge cases (Item #1) was microscopically compared to the discharged cartridge cases (Item #4 & Item #5) and found to have sufficient agreement in class characteristics (caliber, firing pin impression shape) and individual characteristics (firing pin drag, breech face marks). The discharged cartridge cases (Item #1, Item #4, & Item #5) were IDENTIFIED as having been discharged in the same firearm. (Firearm #1) The two discharged

TABLE 2

WebCode	Conclusions
	cartridge cases (Item #2 & Item #3) were microscopically compared and found to have sufficient agreement in class characteristics (caliber, firing pin impression shape) and individual characteristics (firing pin aperture shear, firing pin impression). The two discharged cartridge cases were IDENTIFIED as having been discharged in the same firearm. (Firearm #2) The test fired cartridge cases (Item #1) was microscopically compared to the discharged cartridge case (Item #2) and found to have differences in class characteristics (firing pin shape). The two cartridge cases were ELIMINATED as having been discharged in the same firearm.
CL79YM	The three fired cartridge cases (1-01) were identified as having been fired in the same firearm based on consistent and repeatable pattern areas of marks. Two of the fired cartridge cases (1-02 and 1-03) were identified as having been fired in the same firearm due to consistent and repeatable patterns of marks; however, these two fired cartridge cases were eliminated as having been fired in the same firearm as the three fired cartridge cases submitted as test fires (1-01) due to differences in observed class characteristics. Two of the fired cartridge cases (1-04 and 1-05) were identified as having been fired in the same firearm as the three fired cartridge cases submitted as test fires (1-01) due to consistent and repeatable pattern areas of marks.
CNWG4H	Items 004 and 005 were identified as having been fired in the same firearm that fired Item 001 based on the correspondence of individual characteristics. Items 002 and 003 were identified as having been fired in the same unknown firearm based on the correspondence of individual characteristics. Items 002 and 003 could not be identified or eliminated as having been fired in same firearm that fired Items 001, 004, and 005 however, differences between the two groups indicate a different firearm was used.
CT4Z8G	Based upon similarities in class and individual (breechface marks, firing pin impression, ejector marks) characteristics, Items 4 and 5 were microscopically identified as having been fired in the firearm that fired Item 1. Based upon differences in class (firing pin impression) characteristics, Items 2 and 3 were microscopically eliminated as having been fired in the firearm that fired Item 1.
CT8FNN	Exhibits 1.2 and 1.3 were fired from the same unknown 9mm caliber firearm based on sufficient agreement of individual characteristics. Exhibits 1.4 and 1.5 were fired from the same firearm as exhibit 1.1 (known) based on sufficient agreement of individual characteristics.
CYTHMD	Item1 corresponds to reference samples of a SIG SAUIER P 365 pistol, caliber 9mm luger, seized from a suspect. Item 4 and 5 correspond to the 9 mm luger caliber, which were fired by the SIG SAUER P365 pistol seized from the suspect. Items 2 and 3 correspond to 9 mm Luger caliber, which were fired by the same same pistol of the same caliber, but different from the one seized from the suspect. Based on the above, it can be deduced that there are two 9mm Luger pistols involved in the same events, one of which was seized from the suspect.
CZKFVK	1.The items identified as ITEM 4 and ITEM 5 correspond to two fired 9mm cartridge cases of the brand El Dorado Cartridge Corporation, collected at the residence located at Calle Collinsville #5A, Fraccionamiento Los Lagos. The items labeled as ITEM 1.1, ITEM 1.2, and ITEM 1.3 correspond to three fired 9 mm cartridge cases of the brand El Dorado Cartridge Corporation, collected during the test firing of a 9 mm caliber pistol, brand SIG SAUER, model 9365 — they exhibit matching characteristics among themselves, forming Group 1. The items identified as ITEM 2 and ITEM 3 correspond to two fired 9 mm cartridge cases of the brand El Dorado Cartridge Corporation, which were fired from the same 9 mm caliber firearm, forming Group 2.
CZN2NE	Items 2 and 3 were identified as having been fired by the same unknown 9 mm caliber firearm. Items 4 and 5 were identified as having been fired by the same 9 mm caliber pistol that fired

TABLE 2

WebCode	Conclusions
	the submitted test fired cartridge cases Item 1. Items 2 and 3 were eliminated as having been fired by the same 9 mm caliber pistol that fired Items 1, 4 and 5 based on differences in class characteristics.
CZRF2F	1. Examination of Exhibit 1 revealed three fired 9mm Luger caliber cartridge cases marketed by Precision Made Cartridges (PMC). The cartridge cases of Exhibit 1 are suitable for microscopic comparison. 2. Examination of Exhibits 2 - 5 revealed each consists of one fired 9mm Luger caliber cartridge case marketed by PMC. Exhibits 2 - 5 are suitable for microscopic comparison. 3. Microscopic comparison revealed: a. Exhibits 4 and 5 were fired in the same firearm as Exhibit 1 due to sufficient agreement of individual characteristics. b. Exhibits 2 and 3 were fired in the same firearm due to sufficient agreement of individual characteristics. c. Exhibits 2 & 3 were not fired in the same firearm as Exhibits 1, 4, and 5 due to sufficient disagreement of individual characteristics. TECHNICAL NOTES: Class characteristics are defined as measurable features of a firearm/tool which indicate a restricted group source. They result from design features and are determined prior to manufacture of the firearm/tool. Individual characteristics are defined as marks produced by the random imperfections or irregularities of firearm/tool surfaces. These random imperfections or irregularities are produced incidental to manufacture and/or caused by use, corrosion, or damage, and are unique to that specific tool. Any conclusions indicating that a toolmark was made by a specific firearm/tool are not to the absolute exclusion of all other firearms/tools because it is not feasible to examine all possible firearms/tools. However, observing this amount of agreement from a different source is considered extremely remote.
D2U3P4	RESULTS: CARTRIDGE CASES: Items 1, 4, and 5: The cartridge cases Items 4 and 5 were Identified as having been fired in the same firearm as the known cartridge cases Item 1. Items 2 and 3: The cartridge cases Items 2 and 3 were Identified as having been fired in the same firearm. However, these cartridge cases were Eliminated from the cartridge cases Items 1, 4, and 5 based on a difference in class characteristics. REMARKS: The method of testing for ammunition components (that have results that fall into the range of conclusions defined below) included physical examination and microscopic comparison. Elimination results that are reported as based on a difference in class characteristics include only physical examination. Identified: Agreement of all discernible class characteristics and sufficient agreement of individual characteristics where the extent of agreement leads to the conclusion that the items were fired in/from the same firearm. Inconclusive (+): Agreement of all discernible class characteristics and some agreement of individual characteristics but insufficient for an identification. Inconclusive: Agreement of all discernible class characteristics without significant agreement or disagreement of individual characteristics; therefore, the items could neither be identified nor eliminated as having been fired in/from the same firearm. Inconclusive (-): Agreement of all discernible class characteristics and some disagreement of individual characteristics, but insufficient for an elimination. Eliminated: Significant disagreement of discernible class characteristics and/or individual characteristics leading to the conclusion that the items were not fired in/from the same firearm. No Value for Microscopic Comparison: The item was examined visually and microscopically. It lacks sufficient individual characteristics for microscopic comparison to other items. The submitted items will be transferred to the Evidence Section for return to your agency. Questions regarding this report should be addressed to: [Email].
D38GBR	The cartridge cases, Lab Items 1, 4, and 5, were identified as having been fired by the same firearm based on agreement of class characteristics and corresponding individual detail using microscopic comparison. The cartridge cases, Lab Items 2 and 3, were identified as having been fired by the same firearm based on agreement of class characteristics and corresponding

TABLE 2

WebCode	Conclusions
	individual detail using microscopic comparison. The cartridge cases, Lab Items 1, 4 and 5, were eliminated from having been fired by the same firearm as Lab Items 2 and 3 based on disagreement of class characteristics using microscopic comparison.
D3L4ME	Items 1 through 5 are 9mm Luger (9x19mm) cartridge cases bearing the headstamp of PMC ammunition. The Item 4 and 5 cartridge cases were identified as having been fired in the same firearm as Item 1. Items 2 and 3 were identified as having been fired in the same firearm, but were excluded as having been fired in the same firearm as Item 1.
D4NNKF	Cartridge Case Analysis: Methodology: Physical (Visual Examination). Microscopy (Comparison Microscopy). Items 4 and 5, the cartridge cases, were fired in the same firearm as Item 1, the test fired cartridge cases, based upon corresponding class and individual microscopic characteristics. Items 2 and 3, the cartridge cases, were fired in the same firearm based upon corresponding class and individual microscopic characteristics. Items 2 and 3, the cartridge cases, were not fired in the same firearm as Item 1, the test fired cartridge cases, based upon different class and individual microscopic characteristics.
D6EQNJ	Laboratory Items 001.B (Item 2) and 001.C (Item 3) two spent brass PMC 9mm Luger cartridge cases are identified as being fired by the same firearm. Laboratory Items 001.B (Item 2) and 001.C (Item 3) two spent brass PMC 9mm Luger cartridge cases are eliminated as being fired by the same firearm as Laboratory Items 001.D (Item 4) and 001.E (Item 5) two spent brass PMC 9mm Luger cartridge cases. Laboratory Items 001.D (Item 4) and 001.E (Item 5) two spent brass PMC 9mm Luger cartridge cases are identified as being fired by the same firearm as Laboratory Item 001.A (Item 1) three spent brass PMC 9mm Luger cartridge cases (test fires) from the suspect's firearm.
D8JHHG	The fired 9mm Luger caliber cartridge cases (Items 2-5) were examined and microscopically compared to the test fires from the Sig Sauer pistol (Item 1). The following was determined: 1. Item 4 and Item 5 were both fired in the Sig Sauer pistol. 2. Item 2 and Item 3 were not fired in the Sig Sauer pistol. Additionally, it was determined that Items 2 and 3 were both fired in the same unknown pistol capable of chambering and firing 9mm Luger caliber ammunition.
D8MZGF	Cartridge Case Analysis: Methodology: Physical (Visual Examination). Microscopy (Comparison Microscope). Items 4 and 5, the cartridge cases, were fired in the same firearm as Items 1A, 1B, and 1C, the cartridge cases, based upon corresponding class and individual microscopic characteristics. Items 2 and 3, the cartridge cases, were fired in the same firearm based corresponding class and individual microscopic characteristics. Items 2 and 3, the cartridge cases, were not fired in the same firearm as Items 1A, 1B, and 1C, the cartridge cases, based upon different class characteristics.
D9E2KH	The test-fired cartridge cases, Item 1 (reportedly test-fired from the recovered SIG Sauer P365 pistol), were compared to the four recovered cartridge cases, Items 2-5, using a comparison microscope. Based on the examination, it is my opinion that there was agreement of discernable class characteristics and sufficient agreement of individual characteristics to conclude that Items 4 and 5, were fired in the recovered SIG Sauer firearm. Based on the examination, it is my opinion that there was significant disagreement of class characteristics and/or individual characteristics, sufficient to conclude that Items 2 and 3 were not fired in the recovered SIG Sauer pistol.
D9FXQ8	Item 2 (FCC-1) & Item 3 (FCC-2) was microscopically compared to each other and were identified as having been fired in the same firearm. Firearm not submitted. Item 4 (FCC-3) & Item 5 (FCC-4) was microscopically compared to firearm, Item 1 (Pistol, P-1) and an identification was made. Item 4 (FCC-3) & Item 5 (FCC-4) was fired in firearm, Item 1 (Pistol, P-1).

TABLE 2

WebCode	Conclusions
DGCLQK	Items 2 and 3 were each compared to Items 1A, 1B, and 1C (test-fires from the Sig Sauer P365 pistol) using a comparison microscope. Significant disagreement in class and individual characteristics was observed to conclude Items 2 and 3 were not fired in Item 1 (Sig Sauer P365 pistol). Items 4 and 5 were each compared to Items 1A, 1B, and 1C (test-fires from the Sig Sauer P365 pistol) using a comparison microscope. Agreement of class and individual characteristics sufficient for identification was observed. Items 4 and 5 were fired in Item 1 (Sig Sauer P365 pistol).
DH6PBE	Microscopic examination and comparison reveal that the cartridge cases, Items 1.A and 1.B, were fired in the same firearm based on agreement of class and individual characteristics. Microscopic examination and comparison of the cartridge cases, Item 1.C, reveal that they were fired in the same firearm based on agreement of class and individual characteristics, and are consistent with being fired in Taurus 9mm pistols. This list is provided only as an investigative lead and is not intended to be an all-inclusive list. Microscopic examination and comparison reveal that the cartridge cases, Items 1.A and 1.B, were not fired in the same firearm as the cartridge cases, Item 1.C based on disagreement of class characteristics.
DL27RF	In my opinion, The fired test fired cartridge cases (1/1-3) , and the exhibit fired cartridge cases 4 and 5), were discharged in the same firearm. The exhibit fired cartridge cases 2 and 3 and were discharged in the same unknown firearm.
DQYRJH	Items 2 and 3 were identified as having been fired in the same firearm as each other but are eliminated from having been fired in the firearm associated with Item 1 based on different class characteristics. Items 4 and 5 were identified as having been fired in the firearm associated with Item 1. The identifications were confirmed by another experienced examiner.
DR9UAM	Microscopic examination and comparison reveal that the cartridge cases, Items 1.A and 1.B, were fired in the same firearm based on agreement of class and individual characteristics. Microscopic examination and comparison of the cartridge cases, Item 1.C, reveal that they were fired in the same firearm based on agreement of class and individual characteristics, and are consistent with being fired in Taurus 9mm pistols. This list is provided only as an investigative lead and is not intended to be an all-inclusive list. Microscopic examination and comparison reveal that the cartridge cases, Item 1.C, were not fired in the same firearm as the cartridge cases, Items 1.A and 1.B based on disagreement of class characteristics.
DVRTJB	The three cartridge cases item 1, known from the suspect's weapon show stable recurring systematic and individual characteristics. The cartridge cases item 4 and 5 from the crime scene has the same matching systematic and individual characteristics like the cartridge cases item 1. It is certain that these cartridge cases comes from cartridges that were fired from the seized weapon. The cartridge case item 2 has the same matching systematic and individual characteristics like the cartridge cases item 3. It is certain that these cartridge cases comes from cartridges that were fired from the seized weapon. The cartridge cases item 2 and 3 has other individual characteristics as the cartridge cases item 1, 4 and 5.
DWKRQH	3. On 2025-08-12 during the performance of my official duties I received an intact sealed evidence bag with number PA6003144014 marked inter alia CTS OTHER NUMBER: 25-5261 from Case Administration of the Ballistics Section. I opened the bag and found the following: 3.1 One (1) sealed white cardboard box, marked “2025 CTS Forensic Testing Program TEST NO. 25-5261: FIREARMS EXAMINATION Sample Pack: F1”, containing the following items: 3.1.1 One (1) sealed white cardboard box, marked “ITEM 1”, containing the following exhibits: 3.1.1.1 Three (3) 9mm Parabellum calibre fired cartridge cases marked by me “421481/25” each and “1A”, “1B” and “1C” respectively. 3.1.2 One (1) sealed white cardboard box, marked “ITEM 2”, containing the following exhibit: 3.1.2.1 One (1) 9mm

TABLE 2

WebCode	Conclusions
	Parabellum calibre fired cartridge cases marked by me "421481/25 2". 3.1.3 One (1) sealed white cardboard box, marked "ITEM 3", containing the following exhibit: 3.1.3.1 One (1) 9mm Parabellum calibre fired cartridge cases marked by me "421481/25 3". 3.1.4 One (1) sealed white cardboard box, marked "ITEM 4", containing the following exhibit: 3.1.4.1 One (1) 9mm Parabellum calibre fired cartridge cases marked by me "421481/25 4". 3.1.5 One (1) sealed white cardboard box, marked "ITEM 5", containing the following exhibit: 3.1.5.1 One (1) 9mm Parabellum calibre fired cartridge cases marked by me "421481/25 5". 4. The intention and scope of this forensic examination comprise the following: 4.1 The examination and identification of fired cartridge cases. 4.2 Microscopic individualization of fired cartridge cases. 5. I examined the fired cartridge cases mentioned in paragraphs 3.1.1.1, 3.1.2.1, 3.1.3.1, 3.1.4.1 and 3.1.5.1 and found: 5.1 The cartridge case was manufactured or designed to be fired by a centre-fire firearm. 6. I examined the fired cartridge cases mentioned in paragraphs 3.1.1.1, 3.1.2.1, 3.1.3.1, 3.1.4.1 and 3.1.5.1 and compared the individual and class characteristics markings transferred to them by firearm components during the firing process using a comparison microscope and found: 6.1 The cartridge cases mentioned in paragraphs 3.1.2.1 and 3.1.3.1 were fired in the same firearm but not as the firearm that fired the cartridge cases mentioned in paragraph 3.1.1.1. 6.2 The cartridge cases mentioned in paragraphs 3.1.4.1 and 3.1.5.1 were fired in the same firearm as the firearm that fired the cartridge cases mentioned in paragraph 3.1.1.1.
E6TEL4	Using the Bayesian approach in casework we view our findings under two hypotheses. In this test we used the following hypotheses: H1: The questioned cartridge case is fired by the submitted firearm. H2: The questioned cartridge case is fired by another firearm of the same caliber and with the same class characteristics as the submitted firearm. The likelihood ratio (LR) of the findings is expressed in the following verbal scale: Approximately equally probable (LR = 1-2). Slightly more probable (LR = 2-10). More probable (LR = 10-100). Much more probable (LR = 100-10,000). Very much more probable (LR = 10,000-1,000,000). Extremely more probable (LR = >1,000,000) Conclusions: Item 4 and 5: The findings are extremely more probable when H1 is true than when H2 is true. Item 2 and 3: Due to other class characteristics this cartridge cases are fired by another firearm then the submitted firearm.
EQR6FA	Visual and microscopic analysis of the evidence cartridge cases (Items 2 through 5) and the test fired cartridge cases from the Firearm (Item 1) were performed beginning on 07/14/2025 and concluded on the date this report was issued. The cartridge cases Q3 and Q4 (Items 4 and 5) were identified as having been fired with the Firearm K1 (Item 1). A conclusion of identification (fired) is based on an analyst's determination that all discernible class and individual characteristics agree such that the extent of agreement exceeds that which has been demonstrated by toolmarks known to have been made by different tools (Known Non-Matches) and is consistent with the agreement demonstrated by toolmarks known to have been made by the same tool (Known Matches). The cartridge cases Q1 and Q2 (Items 2 and 3) were excluded as having been fired with Firearm K1 (Item 1) based on disagreement of class characteristics. A conclusion of exclusion is based on an analyst's determination that the observed characteristics of the items in question were marked by different tools.
ERHBRT	The two cartridge cases marked #4 and #5 were compared microscopically against test cartridge case T3 and were identified as having been discharged in the Sig Sauer P365 firearm. The two cartridge cases marked #2 and #3 were compared microscopically against test cartridge case T3 and were eliminated from having been discharged in the Sig Sauer P365 firearm. The two cartridge cases marked #2 and #3 were compared microscopically against each other and were identified as having been discharged in the same firearm.
ERJ3MF	The cartridge cases marked with laboratory number 393584/25 4 and 5 (Item 4 and 5) were

TABLE 2

WebCode	Conclusions
	fired in the same and firearm that fired test cartridge cases marked TC1A to 593 TC1C (Item 1). (first firearm) The cartridge cases marked with laboratory number 393584/25 2 and 3 (Item 2 and 3) were fired in the same firearm and were not fired in the same firearm that fired test cartridge cases marked 593TC1A to 593 TC1C (Item 1) but were fired in the second firearm.
ERMLWC	1. Exhibit 1 consists of three fired 9mm Luger cartridge cases consistent with PMC marketing. 2. Exhibits 2 through 5 each consists of one fired 9mm Luger cartridge case consistent with PMC marketing. 3. Exhibit 1 (known) and Exhibits 2, 3, 4, and 5 (unknown) are suitable for microscopic comparison and were microscopically compared to each other. a. Exhibits 4 and 5 were fired in the same firearm as Exhibit 1 due to agreement of class characteristics and sufficient agreement of individual characteristics. b. Exhibit 3 was fired in the same firearm as Exhibit 2 due to agreement of class characteristics and sufficient agreement of individual characteristics. c. Exhibits 3 and 2 were not fired in the same firearm as Exhibits 1, 4, and 5 due to agreement of class characteristics and sufficient disagreement of individual characteristics. Technical Notes : Class characteristics are defined as measurable features of a firearm/tool which indicate a restricted group source. They result from design features and are determined prior to manufacture of the firearm/tool. Individual characteristics are defined as marks produced by the random imperfections or irregularities of firearm/tool surfaces. These random imperfections or irregularities are produced incidental to manufacture and/or caused by use, corrosion, or damage, and are unique to that specific tool. Any conclusions indicating that a toolmark was made by a specific firearm/tool are not to the absolute exclusion of all other firearms/tools because it is not feasible to examine all possible firearms/tools. However, observing this amount of agreement from a different source is considered extremely remote.
ERMMGB	Items 1, 4 and 5 : The Item 4 and Item 5 cartridge cases were Identified to the firearm represented by the Item 1 Test Fires. Items 2 and 3: The Item 2 and Item 3 cartridge cases were Identified to each other. The items were Eliminated to the firearm represented by the Item 1 Test Fires and Items 4 and 5 based on a difference in class characteristics.
ETWFPR	The four fired 9mm Luger caliber cartridge cases collected from the scene (Items 2, 3, 4, and 5) were examined and found to have been fired by two different firearms. The test fired cartridge cases from the Sig Sauer P365 pistol (Item 1) were compared to the fired 9mm Luger caliber cartridge cases (Items 4 and 5). These cartridge cases had the same class of firearm produced marks and sufficient individual microscopic marks to conclude an identification. The Sig Sauer pistol fired the cartridge cases (Item 4 and Item 5). The two fired 9mm Luger caliber cartridge cases (Items 2 and 3) have the same class of firearm produced marks and were compared to each other. These cartridge cases have sufficient corresponding individual marks to conclude that they were both fired by the same (unknown) firearm.
EUCYCA	Items 4 and 5 were identified as having been fired in the Item 1 Sig Sauer pistol. Items 2 and 3 were not fired in the Item 1 pistol, however they were identified as having been fired in the same unknown firearm.
EUDNKD	A microscopic examination and comparison of the evidence described above revealed the following: Cartridge casings (4,5) and Known test fired cartridge casings (1.1, 1.2, 1.3) are IDENTIFIED as having been discharged from the same gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Cartridge casings (2,3) are IDENTIFIED as having been discharged from the SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Cartridge casings (2,3) are ELIMINATED as having been discharged from the same gun as Cartridge casings (4,5) and Known test fired cartridge casings (1.1, 1.2, 1.3) based on the observed disagreement of class characteristics.

TABLE 2

WebCode	Conclusions
EUUXDE	During the comparison against the test exhibits (Item 1) and the fired cartirdge case exhibits (Items 4 and 5) I observed; Strong Corrospondence in the overall size, shape and relatice position and orientation of the firing pin impression, firing pin aperture and breechface. Strong correspondence of the visible individual characteristics and striae detail. As a result, i formed the opinion that the the exhibit fired cartridge cases (Items 4 and 5) had been discharged by the Sig Sauer P365 (Item 1)
EV8D6U	The above listed evidence was examined and compared to each other with the following results: Test fired cartridge casings (Items 1A, 1B, 1C) and discharged cartridge casings (Items 4 & 5) are identified as having been fired in the same gun based on the observed agreement of their class characteristics and sufficient agreement of individual characteristics. Discharged cartridge casings (Items 2 & 3) are identified as having been fired in a second gun based on the observed agreement of their class characteristics and sufficient agreement of individual characteristics. Test fired cartridge casings (Items 1A, 1B, 1C) / discharged cartridge casings (Items 4 & 5) are eliminated as having been fired in the same gun as discharged cartridge casings (Items 2 & 3), based on the observed disagreement of their class characteristics.
F3HXLB	Items 001-02 through 001-05 fired cartridge cases were microscopically compared to one another and to item 001-01 cartridge cases, obtained from a Sig Sauer P365, with the following results: - Items 001-04 and 001-05 were identified as having been fired in the same firearm as the item 001-01 cartridge cases. - Items 001-02 and 001-03 were identified as having been fired in the same unknown firearm. - Items 001-02 and 001-03 were eliminated as having been fired in the same firearm as the item 001-01 cartridge cases due to differences in class characteristics.
FAMVB3	Items #1.1, #1.4 and #1.5 were compared microscopically with each other. There is agreement in all discernible class characteristics and sufficient agreement in individual characteristics for identification. Items #1.4 and #1.5 were discharged by the same firearm that fired the tests from Item #1.1. Items #1.2 and #1.3 These two cartridge cases are eliminated from being fired from the same firearm as #1.1 based on differences in class characteristics. Items #1.2 and #1.3 were compared microscopically with each other. There is agreement in all discernible class characteristics and sufficient agreement in individual characteristics for identification. Items #1.2 and #1.3 were discharged by the same firearm.
FAMXZ8	The Items 2 and 3 cartridge cases were Identified to each other. The Items 2 and 3 cartridge cases were Eliminated to the Item 1 firearm based on a difference in class characteristics. The Items 4 and 5 cartridge cases were Identified to the Item 1 firearm.
FBW62E	Item 1 (three test fired 9mm Luger caliber cartridge cases said to be test fired in a Sig Sauer Model P365 9mm Luger caliber pistol) and Items 4 and 5 (two 9mm Luger caliber cartridge cases) were identified* as having been fired by the same firearm. Items 2 and 3 (two 9mm Luger cartridge cases) were identified* as having been fired by the same firearm. Items 1, 4, and 5 were fired from a different firearm than Item 2 and 3. *Source identification is reached when the discernable class and individual characteristics have corresponding detail and the examiner would not expect to see the same arrangement of details repeated in another source.
FBXWX2	RESULTS: CARTRIDGE CASES: Items 1, 4, and 5: The cartridge cases were Identified to each other. The cartridge cases were Eliminated from Items 2 and 3 based on a difference in class characteristics. Items 2 and 3: The cartridge cases were Identified to each other.
FC9LET	A. The cartridge case described in the Item 1 (E-1 to E-3), Item 4 (E-6) and the Item 5 (E-7) are 9mm Luger, and were fired by same firearm (Identification). B. The cartridge case described in the Item 2 (E-4) and the Item 3 (E-5) are 9mm Luger, and were fired by same firearm (Identification).

TABLE 2

WebCode	Conclusions
FDJG37	FIREARM A (SIG Sauer P365) The microscopic examination allows me to conclude that cartridge cases item 4 and item 5 were discharged in the submitted pistol (item 1). FIREARM B The microscopic examination allows me to conclude that cartridge cases item 2 and item 3 were discharged in a common firearm that is distinct from the one submitted (item 1). Their class characteristics are too common to suggest potential make and model for the firearm responsible of discharging them.
FHXECD	Cartridge Case Analysis: Methodology: Physical (Visual Examinatio). Microscopy (Comparison Microscop). Items 4 and 5, the cartridge cases, were fired in Item 1, the Sig Sauer pistol, based upon corresponding class and individual microscopic characteristics. Items 2 and 3, the cartridge cases, were fired in the same firearm based upon corresponding class and individual microscopic characteristics. Items 2 and 3, the cartridge cases, were not fired in Item 1, the Sig Sauer pistol, based upon different class characteristics.
FJCJBC	1. Examination of Exhibit 1 revealed three fired 9mm luger cartridge cases marketed by Precision Made Cartridges (PMC) - Poongsan Corporation, South Korea. Exhibit 1 is suitable for microscopic comparison. 2. Examination of Exhibits 2, 3, 4, and 5 revealed each contains one fired 9mm luger cartridge case marketed by Precision Made Cartridges (PMC) - Poongsan Corporation, South Korea. Exhibits 2, 3, 4, and 5 are suitable for microscopic comparison. 3. Microscopic comparison revealed the following: a. Exhibits 1, 4, and 5 were fired in the same firearm due to sufficient agreement of individual characteristics. b. Exhibits 2 and 3 were fired in the same firearm due to sufficient agreement of individual characteristics. c. Exhibits 1, 4, and 5 were not fired in the same firearm as Exhibits 2 and 3 due to sufficient disagreement of individual characteristics.
FK2WQ9	Test-fired exemplars, item ref: 1 Vs Crime Samples, item refs: 2 & 3; In my opinion, a microscopical comparison of firing marks has shown there is some agreement of class characteristic markings, but significant disagreement of individual characteristic markings, therefore the discharged cartridge cases, item refs: 2 & 3 were not fired from the recovered firearm, item ref: 1. Test-fired exemplars, item ref: 1 Vs Crime Samples, item refs: 4 & 5; In my opinion, a microscopical comparison of firing marks has shown there is sufficient agreement of class and individual characteristic markings to conclusively determine that the discharged cartridge cases, item refs: 4 & 5 were fired from the recovered firearm, item ref: 1.
FPYBFJ	1. The three 9mm Luger caliber cartridge cases (Item 01-01) were identified as having been fired in a single firearm; presumably the Sig Sauer pistol listed in the given scenario. 2. The two 9mm Luger caliber cartridge cases (Items 01-02 and 01-03) were eliminated as having been fired in the 9mm Luger caliber Sig Sauer pistol; however, they were identified as having been fired in a single unknown firearm. 3. The two 9mm Luger caliber cartridge cases (Items 01-04 and 01-05) were identified as having been fired in the 9mm Luger caliber Sig Sauer pistol.
FRGVZE	The Exhibit 1.4 and 1.5 cartridge cases were identified as having been fired in the same firearm as the Exhibit 1.1 cartridge cases. The Exhibit 1.2 and 1.3 cartridge cases were identified as having been fired in the same firearm. The Exhibit 1.2 and 1.3 cartridge cases were excluded as having been fired in the same firearm as the Exhibit 1.1 cartridge cases.
FTCD3F	Items 1, 2, 3, 4, 5: A microscopic comparison was conducted between Test cartridge Case # 1, Item 1 and Items 4 and 5. The examinations determined that Items 1, 4 and 5 were fired in the same firearm, due to a sufficient agreement between the firing pin and breech face markings. Item 2 was compared microscopically to Item 3 and were found to have sufficient agreement between firing pin and breech face markings; therefore, Items 2 and 3 were fired in the same firearm. Test Cartridge Case # 1, Item 1 was compared microscopically to Items 2 and 3 and were found to have a disagreement of individual characteristics; therefore, Items 2

TABLE 2

WebCode	Conclusions
	and 3 were not fired in the same firearm as Item 1. ..... Disposition: The above listed evidence will be held in the Firearms Section. ..... All firearm comparison examinations were conducted using the AFTE's (Association of Firearm & Tool Mark Examiners) Theory of Identification. Identifications are the opinion of a qualified examiner that two tool marks were made by the same tool based on sufficient agreement of individual characteristics. The agreement of individual characteristics is of a quantity and quality that the likelihood another (different) tool could have made the mark is so remote as to be considered a practical impossibility. All exclusions and inconclusive findings were based upon exemplars available at the time of the examinations.
FWBRMJ	The cartridge cases in Items 4 and 5 were fired in the same gun that fired the cartridge cases in Item 1, based on agreement observed in individual characteristics. The cartridge cases in Items 2 and 3 were not fired in the gun that fired the cartridge cases in Item 1, based on differences observed in class characteristics.
FWF3PH	SUMMARY: Items 001-02 and 001-03 were not fired in the firearm that reportedly produced the test fires, Items 001-01-A through 001-01-C. Items 001-04 and 001-05 were fired in the firearm that reportedly produced the test fires, Items 001-01-A through 001-01-C. EXAMINATION, RESULTS, AND CONCLUSION I was requested to compare the test fires reportedly produced from a Sig Sauer P365, 9mm Luger caliber firearm to the cartridge cases submitted in this case. The examination of the evidence in this request began on 07/31/2025. Cartridge Case Examination Items 001-01-A through 001-01-C are three test-fired cartridge cases reportedly produced from a Sig Sauer brand, model P365, 9mm Luger caliber firearm. I microscopically compared these test-fired cartridge cases to each other and determined them to be reproducible and sufficient for comparison purposes. I microscopically compared one of the test-fired cartridge cases, Item 001-01-C, to Items 001-02 through 001-05. I observed disagreement in the class characteristics to conclude that Items 001-02 and 001-03 were not fired in the firearm that reportedly produced the test fires, Items 001-01-A through 001-01-C. During my comparison, I also observed agreement of all discernable class characteristics with sufficient agreement of the individual characteristics to conclude that Items 001-04 and 001-05 were fired in the firearm that reportedly produced the test fires, Items 001-01-A through 001-01-C.
FXRNBD	The suspect's firearm was identified as having fired two of the cartridge cases (4 and 5) from the scene. The suspect's firearm was eliminated as having fired the other two cartridge cases (2 and 3) from the scene. These two cartridge cases (2 and 3) were identified as having been fired from the same unknown firearm.
FY3NCD	Items 4 and 5 were identified as having been fired by the same firearm as Item 1, reportedly a SIG SAUER model P365 firearm, based on agreement of class and individual characteristics. Items 2 and 3 were identified as having been fired by the same unknown firearm based on agreement of class and individual characteristics. Items 2 and 3 were eliminated as having been fired by the same firearm as Item 1 based on differences in class characteristics.
GAHVRE	Based on differences in class characteristics, Items 2 and 3 were EXCLUDED from being fired in the same firearm as Items 1, 4, and 5. Based on microscopic comparisons: Items 1, 4, and 5 were IDENTIFIED as having been fired in the same firearm, reportedly a Sig Sauer P365 firearm. Items 2 and 3 were IDENTIFIED as having been fired in the same unrecovered firearm.
GQ6DG9	The 9mm bullet casings found at the scene (item4 and 5) are from the same source as the three (3) bullet casings (item1), reference samples from the sig sauer P365 weapon. The 9 mm caliber casings found at the scene, item 2 and 3, are not from the same source as the three (3) casings, item 1, refernce samples from the Sig Sauer P365 firearm.

TABLE 2

WebCode	Conclusions
GRXBPF	Item #1 consists of three (3) 9mm Luger caliber fired cartridge cases, which were described as test-fired from a Sig-Sauer P365 firearm. Items #4 and #5 consist of two (2) 9mm Luger caliber fired cartridge cases, which were identified as having been fired in the same firearm as Item #1 fired cartridge cases. Items #2 and #3 are two (2) 9mm Luger caliber fired cartridge cases, which were identified as having been fired in the same firearm. However, due to differences in class characteristics, Items #2 and #3 were eliminated as having been fired in the same firearm as Items #1, #4, and #5.
GYDRGP	The 9mm shell casings from Items 4 and 5 were compared macroscopically and microscopically to the test fired shell casings from Item 1. Based on the agreement of individual characteristics and all discernible class characteristics, it was determined that the 9mm shell casings from Items 4 and 5 were fired in the same firearm as the shell casings from Item 1. (Identification) Due to differing class characteristics, the 9mm shell casings from Items 2 and 3 could not have been fired in the Sig Sauer P365. (Elimination) The shell casings from Items 2 and 3 were compared macroscopically and microscopically to each other. Although similar class characteristics were observed, a lack of individual characteristics made it unable to be determined if they were fired in the same firearm. (Inconclusive)
GZT7T6	Items 4 and 5 were microscopically examined and identified as having been fired in the Item 1 firearm based on agreement of the combination of individual characteristics and all discernible class characteristics. Items 2 and 3 were microscopically examined and identified as having been fired in the same unknown firearm based on agreement of the combination of individual characteristics and all discernible class characteristics. Items 2 and 3 were eliminated as having been fired in the Item 1 firearm due to disagreement of discernible class characteristics.
H6H4V2	The test fired cartridge case (Item 1A) and the fired cartridge cases (Items 4 & 5) were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, the cases (Items 4 & 5) are identified as having been fired in the same firearm as the test fired case (Item 1A). The test fired cartridge case (Item 1A) and the fired cartridge cases (Items 2 & 3) were microscopically examined and compared. Based on the observed disagreement of their class characteristics, the cases (Items 2 & 3) are eliminated as having been fired in the same firearm as the test fired case (Item 1A).
H6Y3BK	Items 4 and 5 were fired in the same firearm as the item 1 test fires. Items 2 and 3 were fired in a second firearm.
H87J6A	Submission F1 consists of item 1, three cartridge cases test fired from a pistol recovered from the suspect, and items 2 through 5, four cartridge cases recovered from a crime scene. The items were each identified as expended 9mm Luger cartridge cases. The item 1 cartridge cases were compared to the remaining cartridge cases; examination results are listed below. Based on correspondence of firearm-related class characteristics and significant correspondence of individualizing characteristics, I determined that the items 4 and 5 cartridge cases were fired in the same firearm used to generate the item 1 cartridge cases. Based on differences in the firearm-related class characteristics, I determined that the items 2 and 3 cartridge cases were both fired in a firearm other than that used to generate the item 1 cartridge cases. Items 2 and 3 were compared to each other. Based on correspondence of firearm-related class characteristics and significant correspondence of individualizing characteristics, I determined that the items 2 and 3 cartridge cases were fired in the same firearm. Associations and other results reported in this examination are based on the AFTE Theory of Identification and its Range of Conclusions. This basis enables opinions of common origin when unique surface contours of two tool marks are in sufficient agreement.

TABLE 2

WebCode	Conclusions
HC6P9F	Item 4 and Item 5 was microscopically identified as having been fired in the Item 1 pistol. Items 2 and 3 were microscopically identified as having been fired in the same unknown firearm; however, they were not fired in the Item 1 pistol.
J2VQUB	Physical and microscopic examinations and comparisons were conducted of all recovered evidence and the test firings. Based upon those examinations and comparisons, it is my opinion that: a. The discharged cartridge casings mentioned in Items 1-2 and 1-3 above were fired from the same unknown source weapon capable of chambering and firing 9mm Luger ammunition to exclude the suspect firearm submitted in this case. (Identification) b. The discharged cartridge casings mentioned in Items 1-4 and 1-5 above were fired from the suspect firearm submitted in this case. (Identification)
J2YD8H	Items 4 and 5 were fired in the same firearm as the item 1 test fires. Items 2 and 3 were fired in a second firearm.
J38MYF	The submitted fired cartridge cases (Items 1A through 1C, 4, and 5) were identified as having been fired in the same firearm. The submitted fired cartridge cases (Items 2 and 3) were identified as having been fired in the same unknown firearm. The submitted fired cartridge cases (Items 2 and 3) were eliminated as having been fired in the same firearm as the submitted fired cartridge cases (Items 1A through 1C) due to differences in class characteristics. The submitted fired cartridge cases (Items 2 and 3) were fired in a firearm capable of chambering and firing a 9mm Luger caliber cartridge. Due to commonly seen class characteristics, a possible firearm manufacturer was not determined.
J77YVF	The five 9mm Luger caliber cartridge cases (1, 4, 5) were identified as having been fired in the same firearm. The five 9mm Luger caliber cartridge cases (1, 4, 5) were eliminated as having been fired in the same firearm as the other two 9mm Luger caliber cartridge cases (2, 3). The two 9mm Luger caliber cartridge cases (2, 3) were identified as having been fired in the same firearm.
J7QMBN	Examined the four specimens marked #2, #3, #4, and #5. They are 9mm Luger caliber discharged cartridge cases, headstamped PMC. The two cartridge cases marked #2 and #3 were microscopically compared to each other and identified as having been discharged in the same firearm. The two cartridge cases marked #4 and #5 were microscopically compared to the test standards marked #1 and identified as having been discharged in the same firearm. The two cartridge cases marked #2 and #3 were microscopically compared to the test standards marked #1 and eliminated as having been discharged in the same firearm.
J8L249	Cartridge Casings (2, 3) are IDENTIFIED as having been discharged from the SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Cartridge Casings (4, 5) and Known Test Fired Cartridge Casings (1.1, 1.2, 1.3) are IDENTIFIED as having been discharged from the SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Cartridge Casings (2, 3) are ELIMINATED as having been discharged from the same gun as Known Test Fired Cartridge Casings (1.1, 1.2, 1.3) and Cartridge Casings (4, 5) based on the observed disagreement of class characteristics.
J8LYE6	The fired cartridge cases, Item 4 and Item 5, were identified as having been fired in the same firearm as the test fired cartridge cases, within Item 1, based on agreement of class characteristics and sufficient agreement of individual characteristics within the firing pin drag marks, firing pin impression marks and breech face impression marks. The fired cartridge cases, Item 4 and Item 5, and the test fired cartridge cases, within Item 1, were eliminated as having been fired in the same firearm as the fired cartridge cases, Item 2 and Item 3, based on disagreement of class characteristics. The fired cartridge cases, Item 2 and Item 3, were

TABLE 2

WebCode	Conclusions
	identified as having been fired in the same firearm based on agreement of class characteristics and sufficient agreement of individual characteristics within the firing pin impression marks and breech face impression marks.
J9YTU6	Visual and microscopic analysis of the evidence cartridge cases Q1-Q4 and the test fired cartridge cases from the Sig Sauer P365 9mm Luger pistol (K1) were performed beginning on July 28, 2025 and concluded on the date this report was issued. The two 9mm Luger cartridge cases Q3 and Q4 were identified as having been fired with the Sig Sauer P365 9mm Luger (K1) firearm. The two 9mm Luger cartridge cases Q1 and Q2 were identified as having been fired with the same unknown firearm. A conclusion of identification (fired) is based on an analyst's determination that all discernible class and individual characteristics agree such that the extent of agreement exceeds that which has been demonstrated by toolmarks known to have been made by different tools (Known Non-Matches) and is consistent with the agreement demonstrated by toolmarks known to have been made by the same tool (Known Matches). The two 9mm Luger cartridge cases Q1 and Q2 were excluded as having been fired with the Sig Sauer P365 9mm Luger pistol (K1) based on disagreement of class characteristics. A conclusion of exclusion is based on an analyst's determination that the observed characteristics of the items in question were marked by different tools.
JAPX7N	Examined the four specimens marked #2, #3, #4 and #5. They are 9mm Luger caliber discharged cartridge cases, headstamped PMC. The two cartridge cases marked #4 and #5 were microscopically compared to the test standards marked #1-1, #1-2, and #1-3 and identified as having been discharged in the same firearm. The two cartridge cases marked #2 and #3 were microscopically compared and identified as having been discharged in the same firearm. The two cartridge cases marked #2 and #3 were microscopically compared to the test standards marked #1-1, #1-2, and #1-3 and eliminated as having been discharged in the same firearm.
JARQ3B	The cartridge cases marked with laboratory number 393593/25 A4 and A5 (Item 4 and 5) were fired in the same and firearm that fired test cartridge cases marked 593TC1 to 593 TC3 (Item 1). (first firearm) The cartridge cases marked with laboratory number 393593/25 A2 and A3 (Item 2 and 3) were fired in the same firearm and were not fired in the same firearm that fired test cartridge cases marked 593TC1 to 593 TC3 (Item 1) but were fired in the second firearm
JBKCZ9	Cartridge casings (2, 3) are IDENTIFIED as having been discharged from the SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Cartridge casings (4, 5) and test-fired cartridge casings (1.1-1.3) are IDENTIFIED as having been discharged from the SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Cartridge casings (2, 3) are ELIMINATED as having been discharged from same gun as cartridge casings (4, 5) and test-fired cartridge casings (1.1-1.3) based on the observed disagreement of class characteristics.
JCX96D	Items 001-02 and 001-03 were identified as having been fired by the same unknown firearm based on the agreement of class characteristics and individual characteristics observed in the firing pin impression marks. Items 001-02 and 001-03 were eliminated as having been fired by the same firearm that fired Item 001-01 based on differences in class characteristics. The difference being the firing pin shapes. Items 001-04 and 001-05 were identified as having been fired from the same Sig Sauer P365 pistol that fired Item 001-01 based on the agreement of class characteristics and individual characteristics observed in the firing pin drag marks.

TABLE 2

WebCode	Conclusions
JEG9FM	Microscopic Comparison Results: The following items contained sufficient microscopic individual characteristics and were identified as having been fired in item F1-A-A (9mm Luger caliber/Sig Sauer/model P365/unknown serial number). Item F1-A-D: (1) 9mm Luger caliber fired cartridge case Item F1-A-E: (1) 9mm Luger caliber fired cartridge case The following items contained different class characteristics than item F1-A-A (9mm Luger caliber/Sig Sauer/model P365/unknown serial number) and were eliminated as having been fired in the same firearm. Item F1-A-B: (1) 9mm Luger caliber fired cartridge case Item F1-A-C: (1) 9mm Luger caliber fired cartridge case The following items exhibited the same class characteristics and contained sufficient microscopic individual characteristics and were identified as having been fired in the same unknown firearm. Item F1-A-B: (1) 9mm Luger caliber fired cartridge case Item F1-A-C: (1) 9mm Luger caliber fired cartridge case
JFF4CC	Items 4 and 5 were identified as having been fired by the same firearm that produced the test fires from Item 1 based on agreement of all discernible class characteristics and sufficient agreement of individual characteristics. Items 2 and 3 were identified as having been fired by the same unknown firearm based on agreement of all discernible class characteristics and sufficient agreement of individual characteristics. Items 2 and 3 were eliminated as having been fired by the same firearm that produced the test fires from Item 1 based on significant disagreement of class characteristics.
JJU7RF	The Items 1.4 and 1.5 fired cartridge cases were fired in the same firearm that fired the Item 1.1 test fired cartridge cases. These identifications are based on sufficient agreement of the combination of individual characteristics and all discernible class characteristics. The Items 1.2 and 1.3 fired cartridge cases were fired in the same unknown firearm. This identification is based on sufficient agreement of the combination of individual characteristics and all discernible class characteristics. The Items 1.2 and 1.3 fired cartridge cases were not fired in the same firearm that fired the Item 1.1 test fired cartridge cases. These eliminations are based on differences in class characteristics (firing pin impression shape).
JJXGUE	The Item 2 and Item 3 cartridge cases were microscopically compared. These cartridge cases have the same class of firearm produced marks and sufficient corresponding individual microscopic marks to conclude that they were fired in a single firearm. The Item 4 and Item 5 cartridge cases were microscopically intercompared with the Item 1 cartridge cases purported to have been test-fired from a seized Sig Sauer P365 pistol. These cartridge cases have the same class of firearm produced marks and sufficient corresponding individual microscopic marks to conclude that the Item 4 and Item 5 cartridge cases were fired in the aforementioned pistol used to generate the Item 1 test-fired cartridge cases.
JNL9VF	The two 9mm Luger caliber cartridge cases (4, 5) were identified as having been fired in the 9mm Luger caliber Sig Sauer model P365 pistol (1). The two 9mm Luger caliber cartridge cases (2, 3) were identified as having been fired in the same unknown firearm. The two 9mm Luger caliber cartridge cases (2, 3) were eliminated as having been fired in the same firearm as the two 9mm Luger caliber cartridge cases (4, 5) and were eliminated as having been fired in the 9mm Luger caliber Sig Sauer model P365 pistol (1).
JP2CP8	The cartridge cases in Items 001-01 through 001-05 were microscopically examined and compared with one another. Based on these microscopic examinations, the following was determined: Items 001-02 and 001-03 were eliminated as having been fired from the same firearm as the items in 001-01. Items 001-04 and 001-05 were identified as having been fired from the same firearm as the items in 001-01.
JR8Z3C	On 2025-08-12 during the performance of my official duties I received an intact sealed evidence bag with number PA6003144012 marked inter alia CTS-25-5261F from Case

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	Administration of the Ballistics Section. I opened the bag and found the following: 1.1 Three (3) 9mm Parabellum calibre fired cartridge cases marked by me "421489/25" each and "1" respectively. 1.2 Four (4) 9mm Parabellum calibre fired cartridge cases marked by me "421489/25" each and "2" to "5" respectively. 2. The intention and scope of this forensic examination comprises of the following Ballistics techniques: 2.1 The examination and identification of fired cartridge cases. 2.2 Microscopic individualization of fired cartridge cases. 3. I examined the cartridge cases mentioned in paragraphs 1.1 and 1.2 and found that they were designed and manufactured to be fired by a centre-fire firearm. 4. I examined the fired cartridge cases mentioned in paragraphs 1.1 and 1.2 and compared the individual and class characteristics markings transferred to them by firearm components during the firing process using a comparison microscope and found: 4.1 The cartridge cases marked "421489/25" each and "4" and "5" were fired in the same firearm that discharged the cartridge cases mentioned in paragraph 1.1. 4.2 The cartridge cases marked "421489/25" each and "2" and 3" were fired in a second (2nd) firearm.
JRTLNF	Exhibits 4 and 5 (questioned recovered 9mm casings) were identified as having been fired in the same firearm as exhibit 1 (known test-fired cartridge cases). Exhibits 2 and 3 (questioned recovered 9mm casings) were identified as having been fired in a second 9mm firearm. Suspect weapons are unknown at this time; however, any suspect weapon should be submitted to the laboratory for analysis.
JT4DQ6	The two fired cartridge cases, Item 4 and Item 5, were identified as having been fired from the Sig Sauer pistol, Item 1. The two fired cartridge cases, Item 2 and Item 3, were eliminated as having been fired from the Sig Sauer pistol, Item 1. Item 2 and Item 3 were identified as having been fired from the same unknown firearm.
JUYRJN	Cartridge Casings (4, 5), and Known Test Fires (1.1, 1.2, 1.3) are IDENTIFIED as having been discharged from the SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Cartridge Casings (2, 3) are IDENTIFIED as having been discharged from the SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Cartridge Casings (2, 3) are ELIMINATED as having been discharged the same gun as Cartridge Casings (4, 5) and Known Test Fires (1.1, 1.2, 1.3) based on the observed disagreement of class characteristics.
JXVHJ9	Items 2, 3, 4, and 5 are 9mm cartridge cases collected from a crime scene. Item 1 is three 9mm cartridge cases test-fired in the suspect's firearm. I examined items 1, 2, 3, 4, and 5. I eliminated the suspect's gun as the source of items 2 and 3 based on differing class characteristics. Items 2 and 3 have fully hemispherical firing pin impressions with small sized firing pin drag marks typical of standard hemispherical firing pin tips. The test fires from item 1 have semi-hemispherical firing pin impressions with firing pin drag marks approximately the diameter of the firing pin. This is typical of a firing pin with a beveled edge. I compared items 2 and 3 to each other using a comparison microscope. I observed the agreement of the following class characteristics: 9mm caliber, hemispherical firing pin impressions, circular firing pin aperture impressions, and extractor marks at ~3:00. I also observed the sufficient agreement of microscopic tool marks in the form of consecutive matching striae in the extractor marks, and impression mark defects in the firing pin impressions. Based on these observations, it is my opinion that items 2 and 3 were fired in the same gun, or a limited number of guns manufactured using the same tooling (subclass could not be eliminated as a factor). I compared items 4 and 5 to each other using a comparison microscope. I observed the agreement of the following class characteristics: 9mm caliber, semi-hemispherical firing pin impressions with firing pin drag marks the diameter of the firing pin impression, circular firing

TABLE 2

WebCode	Conclusions
	pin aperture impressions, ejector marks at ~ 8:00, and extractor marks at ~ 3:00. I also observed the sufficient agreement of microscopic tool marks in the form of breech face mark impressions. Based on these observations, it is my opinion that items 4 and 5 were fired in the same gun. I then compared item 5 to one of the test fired cartridge cases from item 1, test fires from the suspect's gun. I observed the same class characteristics as I observed on items 4 and 5. I also observed the sufficient agreement of microscopic tool marks in the form of breech face mark impressions. Based on these observations, it is my opinion that item 5 was fired in the suspect's gun. Since items 4 and 5 were also fired in the same gun, by correlation, item 4 was also fired in the suspect's gun. Associations and other results reported in this examination are based on the AFTE Theory of Identification and its Range of Conclusions. This basis enables the opinions of common origin when unique surface contours of two tool marks are in sufficient agreement.
JXX3GA	A microscopic comparison between the fired cartridge cases Item 4 and Item 5 and the test fired cartridge cases, Item 1, displayed sufficient agreement to identify them as having been discharged in the same firearm. A microscopic comparison between the fired cartridge cases Item 2 and Item 3 displayed sufficient agreement to identify them as having been discharged from a second unknown firearm. Due to differences in class characteristics these were eliminated as having been discharged from the firearm that discharged the test fired bullets.
JZ4NAF	Exhibits 4 and 5 (questioned recovered 9mm cartridge cases) were identified as having been fired in the same 9mm firearm as exhibit 1 (test-fired cartridge cases). Exhibits 2 and 3 (questioned recovered 9mm cartridge cases) were identified as having been fired in a second 9mm firearm. Suspect weapons are unknown at this time; however, any suspect weapon should be submitted to the laboratory for analysis.
K32TVZ	Item #1, Item #4, Item #5 were microscopically compared to each other and were identified as having been fired in the same firearm. Items #2 and #3 were microscopically compared to each other and were identified as having been fired in the same firearm.
K74E2K	The cartridge cases, Lab Items 1, 4, and 5, were identified as having been fired by the same firearm based on agreement of class characteristics and corresponding individual detail using microscopic comparison. The cartridge cases, Lab Items 2 and 3, were identified as having been fired by the same firearm based on agreement of class characteristics and corresponding individual detail using microscopic comparison. The cartridge cases, Lab Items 1, 4, and 5, were eliminated from having been fired by the same firearm as Lab Items 2 and 3 based on disagreement of class characteristics using microscopic comparison.
KCDME9	A microscopic comparison was conducted between test shots from the 9mm Luger calibre Sig Sauer Model P365 firearm with fired cartridge cases labelled as items 2-5. Based on the observed agreement of all discernible class characteristics and sufficient agreement of observed individual features I formed the opinion that items 4 and 5 had been fired by the Sig Sauer firearm. Based on the lack of agreement of individual features and class features I also formed the opinion that items 2 and 3 were not fired by the Sig Sauer firearm.
KEHKE3	Items 4 and 5 were identified as having been fired in the same firearm as the Item 1 test fires based upon sufficient agreement of individual characteristics. Items 2 and 3 were identified as having been fired in the same unknown firearm based upon sufficient agreement of individual characteristics. Unknown Firearm #1
KFDY9M	Cartridge casings (4, 5) and Test fires (1.1-1.3) are identified as having been discharged from the SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Cartridge casings (2, 3) are identified as having been discharged from the SAME gun based on the observed agreement of their class

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	characteristics and sufficient agreement of their individual characteristics. Cartridge casings (2, 3) are ELIMINATED as having been discharged from the same gun as Cartridge casings (4, 5) and Test fires (1.1-1.3) based on the observed disagreement of class characteristics.
KNQPUE	The two fired cartridge cases, Agency Exhibits 4 and 5, were both identified as having been fired in the same firearm as the three fired cartridge cases, Agency Exhibits 1A to 1C, reportedly a Sig Sauer Model P365 pistol. The two fired cartridge cases, Agency Exhibits 4 and 5, were both eliminated as having been fired in the same firearm as the two fired cartridge cases, Agency Exhibits 2 and 3. The two fired cartridge cases, Agency Exhibits 2 and 3, were both identified as having been fired in the same unknown firearm. The two fired cartridge cases, Agency Exhibits 2 and 3, were both eliminated as having been fired in the same firearm as the three fired cartridge cases, Agency Exhibits 1A to 1C, reportedly fired in a Sig Sauer Model P365 pistol.
KPJM2L	Items(#2~5) were microscopically examined to each other. Based on these comparative examinations and observed class and individual characteristics, it was determined that: item #2, #3 were not discharged from the same firearms(item #1) and item #3, #4 were discharged from the same firearms as the known expended cartridge cases(Item #1)
KT23CD	The cartridge cases of Exhibits 4 and 5 were identified as being fired in the same firearm that fired the known Exhibit 1 cartridge cases. The cartridge cases of Exhibits 2 and 3 were identified as being fired in the same firearm but eliminated from having been fired in the firearm that fired the known Exhibit 1 cartridge cases.
KWU4B7	[No Conclusions Reported.]
KY4AVM	I microscopically compared Items 1A, 1B, and 1C to each other. I identified Items 1A, 1B, and 1C as being fired in the same firearm based on sufficient agreement of individual characteristics within the breech face marks, firing pin impression, ejector marks, and firing pin drag marks. I microscopically compared Item 2 and Item 3 to Item 1A. Item 2 and Item 3 can be eliminated from being fired in the same firearm as Items 1A, 1B, and 1C based on different class characteristics. I microscopically compared Item 4 and Item 5 to Item 1A. I identified Item 4 and Item 5 as being fired in the same firearm as Items 1A, 1B, and 1C based on sufficient agreement of individual characteristics within the breech face marks, firing pin impression, ejector marks, and firing pin drag marks. I microscopically compared Item 2 and Item 3 to each other. I identified Item 2 and Item 3 as being fired in a second firearm based on sufficient agreement of individual characteristics within the breech face and firing pin aperture shear marks.
L2ARRW	1.1-1.3: The three 9mm Luger caliber fired cartridge cases, Items 1.1-1.3, were visually examined and microscopically compared to each other and Items 2-5. Items 2 and 3 are eliminated as having been fired in the same firearm as Items 1 (1.1-1.3) based on differences in firing pin shape and a lack of sufficient agreement of corresponding individual characteristics. Items 4-5 were identified as having been fired from the same firearm as Item 1 (1.1-1.3) based on the agreement of all discernible class characteristics and the sufficient agreement of corresponding individual characteristics.
L2AUG2	TEST FIRES : Items 1A-1C: The cartridge cases were used for microscopic comparison purposes. CARTRIDGE CASES : Items 2 and 3: The cartridge cases were Identified to eachother. The cartridge cases were Eliminated to Items 1A-1C, 4 and 5 based on a difference in class characteristics. Items 4 and 5 : The cartridge cases were Identified to Item 1C.
L3KW3Z	The Item 2 and 3 cartridge cases are eliminated as having been fired in the same firearm as the Item 1 cartridge cases. The Item 2 and 3 cartridge cases are identified as having been fired in the same unknown firearm. The Item 4 and 5 cartridge cases are identified as having been

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	fired in the same firearm as the Item 1 cartridge cases.
LLR72C	Using 3D virtual comparison microscopy and traditional comparison microscopy, Items 2 and 3 were identified as having been fired in the same unknown firearm based on agreement of the combination of individual characteristics and all discernible class characteristics. Using 3D virtual comparison microscopy and traditional comparison microscopy, Items 2 and 3 were microscopically eliminated as having been fired in the same firearm that reportedly fired the Item 1 test fires due to disagreement of discernible class characteristics. Using 3D virtual comparison microscopy and traditional comparison microscopy, Items 4 and 5 were identified as having been fired in the same firearm that reportedly fired the Item 1 test fires based on agreement of the combination of individual characteristics and all discernible class characteristics. Item 2 and the Item 1 test fires were imaged into the Integrated Ballistics Identification System (IBIS) / BrassTRAX database and any potential leads made from these entries will result in a notification. Test fires are being retained by the Firearms Identification Laboratory; all other evidence items are being returned.
LRMXDE	Items 2 and 3 were identified as having been fired by the same unknown firearm. This identification is based on the agreement of class characteristics, and individual characteristics observed in the firing pin aperture shear marks. Items 2 and 3 were eliminated as having been fired by the same firearm that fired Item 1. This elimination is based on differences in class characteristics. The difference being the firing pin shape. Items 4 and 5 were identified as having been fired by the same firearm that fired Item 1. This identification is based on the agreement of class characteristics, and individual characteristics observed in the breechface impression and firing pin drag marks.
LVJK73	RESULTS: Items 1, 4, and 5: Item 1 was Identified to Item 4. Item 1 was Identified to Item 5. Items 1, 4, and 5 were Eliminated to Items 2 and 3 based on a difference in class characteristics. Items 2 and 3: Items 2 and 3 were Identified to each other.
LWJHL6	The questioned recovered cartridge cases (Items 4 and 5) were discharged from the same firearm as the known test-fired cartridge cases (Item 1). The questioned recovered cartridge cases (Item 2 and Item 3) were discharged from the same firearm. The questioned recovered cartridge cases (Items 2 and 3) were not discharged from the same firearm as the known test-fired cartridge cases (Item 1).
LX9V23	after the examination it was declared that item 4 and 5 had similar marks as the control item whereas item 2 and item 3 were different
LZDGU9	A/The 9MM Luger caliber discharged cartridge casings mentioned in items 1-4 and 1-5 above were both fired by the same weapon that fired the tests in item 1-1, Identification. B/The 9MM Luger caliber discharged cartridge casings mentioned in items 1-2 and 1-3 above were not fired by the same weapon that fired the tests in item 1-1, Exclusion. C/The 9MM Luger caliber discharged cartridge casings mentioned in items 1-2 and 1-3 above were both fired by the same unknown weapon capable of chambering 9MM Luger caliber ammunition, Identification
M2YMKJ	Based on the agreement of individual characteristics and all discernible class characteristics, it was determined that two of the shell casings (Ex.4&5) were fired in the Sig Sauer pistol. (Identification). Based on disagreement of class characteristics, it was determined that two of the shell casings (Ex.2&3) could not have been fired in the Sig Sauer pistol. (Elimination). Based on the agreement of individual characteristics and all discernible class characteristics, it was determined that two shell casings (Ex.2&3) were fired in the same gun. (Identification).
M4AK38	Cartridge Case Analysis: Methodology: Physical (Visual Examination). Microscopy (Comparison Microscope). Items 1A, 1B, 1C, 4, and 5, the cartridge cases, were fired in the same firearm based upon corresponding class and individual microscopic characteristics. Items 2 and 3, the

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	cartridge cases, were fired in the same firearm based upon corresponding class and individual microscopic characteristics. Items 1A, 1B, 1C, 4, and 5, the cartridge cases, were not fired in the same firearm as Items 2 and 3, the cartridge cases, based upon different class characteristics.
M4BG9W	Item 1D (Item 4 cartridge case) and Item 1E (Item 5 cartridge case) are identified as having been fired in the same firearm as Items 1A1, 1A2, and 1A3 (Item 1 cartridge cases). Item 1B (Item 2 cartridge case) and Item 1C (Item 3 cartridge case) are eliminated as having been fired in the same firearm as Items 1A1, 1A2, and 1A3 (Item 1 cartridge cases), and Item 1D (Item 4 cartridge case) and Item 1E (Item 5 cartridge case). There are differences in class characteristics (firing pin shape). Item 1B (Item 2 cartridge case) is identified as having been fired in the same firearm as Item 1C (Item 3 cartridge case).
M67ZBX	Item #4 & 5 was microscopically compared to firearm, Item #1(Known) and an identification was made. Item #4 & 5 was fired in firearm, Item #1(Known). Item #2 & 3 was microscopically compared to each other and were identified as having been fired in the same firearm.
M7YXH4	Una vez realizado el cotejo microscópico entre las evidencias recuperadas en el lugar de los hechos junto a las vainillas tomadas como patrón del arma de fuego incautada al sospechoso, se determinó que las vainillas de los ítems 4 y 5 fueron percutidas por el arma de fuego tipo pistola, marca SIG SAUER, modelo P365, calibre 9 mm, incautada al sospechoso. Por otra parte, se encontró que las vainillas de los ítems 2 y 3, fueron disparadas por una misma arma de fuego, pero diferente al arma incautada al sospechoso. [Requested translation was not provided by time of publication.]
M8BT3B	The submitted fired cartridge cases, Items 4 and 5, were identified as having been fired in the same firearm as the submitted test fired cartridge cases, Items 1A, 1B, and 1C. The submitted fired cartridge cases, Items 1A, 1B, 1C, 4, and 5, were eliminated as having been fired in the same firearm as the submitted fired cartridge cases, Items 2 and 3. The submitted fired cartridge cases, Items 2 and 3, were identified as having been fired in the same firearm. A list of possible firearms which may have fired the submitted cartridge cases, Items 2 and 3, would include, but not be limited to, the following: Keltec, Ruger, Smith and Wesson, Tanfoglio, and Taurus.
M8UGK6	Items 2 and 3 were fired in the same firearm; however, they were not fired in the same firearm as Item 1. Items 4 and 5 were fired in the same firearm as Item 1.
MAUREK	Through the examinations (fired cartridge cases, microscopic and microscopic comparison) carried out, the conclusion is: 1. The fired cartridge cases marked E-1, E-2, E-3, E-6 and E-7, described in Item 1, are 9mm Luger caliber and were fired by the same firearm (Identification). 2. The fired cartridge cases marked E-4 and E-5, described in Item 1, are 9mm Luger caliber and were fired by the same firearm (Identification).
MCP4HZ	Comparative examinations of Items 4 and 5 (two 9mm Luger caliber cartridge cases) against Item 1 (cartridge cases said to be test fired from a Sig Sauer Model P365 9mm Luger caliber pistol) show the presence of corresponding features. This means that Items 4 and 5 are consistent with having been in the same firearm that fired Item 1. Comparative examinations of Items 2 and 3 (two 9mm Luger caliber cartridge cases) against Item 1 (cartridge cases said to be test fired from a Sig Sauer Model P365 9mm Luger caliber pistol) show the presence of different features. This means that the firearm the fired Item 1 did not fire Items 2 and 3. Comparative examinations of Items 2 and 3 showed the presence of corresponding features. This means that Items 2 and 3 are consistent with having been fired in the same firearm.
MFLUNC	Lab Items #1 (three test-fired PMC 9mm Luger fired cartridge cases from Sig Sauer P365

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	pistol), #2 (one PMC 9mm Luger fired cartridge case), #3 (one PMC 9mm Luger fired cartridge case), #4 (one PMC 9mm Luger fired cartridge case), and #5 (one PMC 9mm Luger fired cartridge case) were examined and microscopically compared on 7/11/2025. Based on agreement of all discernable class characteristics and sufficient agreement of individual characteristics, Lab Items #4 and #5 (two PMC 9mm Luger fired cartridge cases) were positively identified as having been fired in the same firearm as Lab Item #1 (three test-fired PMC 9mm Luger fired cartridge cases from Sig Sauer P365 pistol). Based on agreement of all discernable class characteristics and sufficient agreement of individual characteristics, Lab Items #2 and #3 (two PMC 9mm Luger fired cartridge cases) were positively identified as having been fired in the same firearm. Based on disagreement of class characteristics, Lab Items #2 and #3 (two PMC 9mm Luger fired cartridge cases) were eliminated as having been fired in the same firearm as Lab Items #1 (three test-fired PMC 9mm Luger fired cartridge cases from Sig Sauer P365 pistol), #4 (one PMC 9mm Luger fired cartridge case), and #5 (one PMC 9mm Luger fired cartridge case).
MHDNN2	Items 1, 4 and 5 The Item 4 and 5 cartridge cases were Identified to the Item 1C test fire. Items 1, 4 and 5 were Eliminated to the Item 2 and 3 cartridge cases based on a difference in class characteristics. Items 2 and 3 The cartridge cases were Identified to each other.
MHQFEW	Before examination the cartridge cases recovered from a crime scene were marked TH1 (Item 2), TH2 (Item 3), TH3 (Item 4) and TH4 (Item 5). The cartridge cases collected after test firing the suspect´s handgun were marked VH1, VH2 and VH3. These cartridge cases were compared using a Leica FSC comparison Microscope. The cartridge cases bear appropriate marks that make them suitable for comparative analysis. Identification of the firearm used, based on these marks, appears to be possible. Based on the observed differences in the individual characteristics of TH1, TH2, compared to VG1, VG2 and VG3 it is concluded that none of these questioned cartridge cases were fired with the suspect´s firearm. Based on the observed similarities in the individual characteristics of TH3 an TH4 compared to VG1, VG2 und VG3 it is concludes that these cartridge cases were fired with the suspects firearm.
MJ6UZK	A. The cartridge casings describe in the item 1 and the item 4 and 5, are 9mm Luger, were fired by same firearm (identification). B. The cartridge casings describe in the item 2 and item 3 are 9mm Luger, and were fired by same firearm (identification).
MJ7LV8	The cartridge cases in Items 1, 4 and 5 were compared microscopically with each other. They were identified as having been fired in a single firearm. The cartridge cases Items 2 and 3 were compared microscopically with each other. They were identified as having been fired in a single firearm. They were not fired in the same firearm as the cartridge cases in Items 1, 4 and 5.
MLQQAW	A test fired cartridge case from Item 1 was microscopically examined and compared with the recovered fired cartridge cases, Item 2 and Item 3. Based on the observed disagreement of their class characteristics, Item 2 and Item 3 are eliminated as having been fired in the same firearm as the test fired cartridge cases from Item 1. A test fired cartridge case from Item 1 was microscopically examined and compared with the recovered fired cartridge cases, Item 4 and Item 5. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Item 4 and Item 5 are identified as having been fired in the same firearm as the test fired cartridge cases from Item 1.
MNE8J6	Items 2 and 3: The two (2) 9 MM Luger cartridge cases were eliminated as being fired from the same firearm as Item 1; however, they were identified as being fired in the same firearm. Items 4 and 5: The two (2) 9 MM Luger cartridge cases were identified as being fired in the same firearm as Item 1.

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MQN74E	Exhibits 1.4 and 1.5 were fired from the same firearm that fired Exhibit 1.1 based on sufficient agreement of individual characteristics. Exhibits 1.2 and 1.3 were both fired from an unknown 9mm Luger caliber firearm based on sufficient agreement of individual characteristics.
MYCZW3	The cartridge cases described in item 4 and 5 were fired and extracted by the firearm a SIG SAUER pistol, model P365 corresponding to the reference samples described in item 1. These cartriged cases showed complete agreement in both class and individual characteristics, along with verified reproducibility, wich allowed for the determination of their common origin (identification). In contrast, the cartriged cases described in items 2 and 3 didi not show concordance in individual characteristics with the references samples, leading to the conclusion that they were fired and extracted by a different firearm, thereby establishing their non-common origin (elimination).
MYFMAA	Items #4 and #5 were microscopically examined and compared to Item #1 (Agency test fire). Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Items #4 and #5 are identified as having been fired in the same firearm as Item #1 (Agency test fire). Items #2 and #3 were microscopically examined and compared to Item #1 (Agency test fire). Based on the observed disagreement of individual characteristics, Items #2 and #3 are eliminated as having been fired in the same firearm as Item #1 (Agency test fire).
MYYCXV	Items #1.1.1-1.1.3, 1.4 and 1.5 have been compared microscopically with each other. Based on the agreement of all discernible class characteristics and a sufficient agreement of corresponding individual characteristics they have been identified as having been fired in the same firearm. Due to differences in class characteristics. Items #1.1.1-1.1.3, 1.4 and 1.5 have been eliminated from being fired in the same firearm as Items #1.2 and 1.3. Items #1.2 and 1.3 have been compared microscopically with each other. Based on the agreement of all discernible class characteristics and a sufficient agreement of corresponding individual characteristics they have been identified as having been fired in the same firearm.
MZ6Y49	The expended cartridge cases designated as laboratory evidence items 1.4 and 1.5 were microscopically compared to the agency provided test fired cartridge cases contained in laboratory evidence item 1.1, said to be from a Sig Sauer P365, serial number unknown with the following results. Laboratory evidence items 1.4 and 1.5 were identified as having been fired from the same firearm as the test fires said to be from a Sig Sauer pistol laboratory item 1.1. The expended cartridge cases designated as laboratory evidence items 1.2 and 1.3 were microscopically compared to the agency provided test fired cartridge cases contained in laboratory evidence item 1.1, said to be from a Sig Sauer P365, serial number unknown with the following results. Laboratory evidence items 1.2 and 1.3 were eliminated as having been fired from the same firearm as the test fires said to be from a (Sig Sauer pistol), laboratory item 1.1. The expended cartridge cases contained in laboratory evidence items 1.2 and 1.3 were microscopically compared to each other with the following results. Laboratory evidence items 1.2 and 1.3 were all identified as having been fired from the same firearm.
N2HNA7	Item 4 and Item 5, Two (2) 9mm Luger caliber discharged cartridge casings head stamped, "PMC" WERE FIRED BY the the suspect weapon (Sg Sauer P365) that produced the test fires in Item 1.
N2LBME	Items 4 and 5 were fired in the same firearm as the item 1 test fires. Items 2 and 3 were fired in a second firearm.
N6Z63B	Identification - Agreement of class and individual characteristics were observed. It is the opinion of the examiner that the observed tool marks were created by the same tool (fired in the "same firearm"). Item #1 (fired cartridge cases) to Items #4 & #5 (fired cartridge cases) -

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	IDENTIFICATION. Item #2 (fired cartridge case) to Item #3 (fired cartridge cases) - IDENTIFICATION.
NF44D7	On June 26, 2025, PT Vendor of the [Laboratory] Quality Assurance Section delivered the following to this section for examination: 1-1 Discharged Cartridge Casing(s) Three (3) (A,B,C) known test-fired cartridge casings discharged from the suspect's firearm Sig Sauer Model P365 head stamped "PMC 9mm Luger" 1-2 Discharged Cartridge Casing(s) Questioned recovered cartridge case head stamped "PMC 9mm Luger" 1-3 Discharged Cartridge Casing(s) Questioned recovered cartridge case head stamped "PMC 9mm Luger" 1-4 Discharged Cartridge Casing(s) Questioned recovered cartridge case head stamped "PMC 9mm Luger" 1-5 Discharged Cartridge Casing(s) Questioned recovered cartridge case head stamped "PMC 9mm Luger" Compared the test fires (Item 1-1 A,B,C) of the seized Sig Sauer pistol to Items 1-2 through 1-5. After physical and microscopic examination of the submitted evidence against the test fired specimens, it is my opinion that: A/ The discharged cartridge casings mentioned above as Item 1-4 and 1-5 were fired by the suspect's weapon described as a Sig Sauer model P365, semi-automatic pistol. "Identification" B/ The discharged cartridge casings mentioned above as Item 1-2 and 1-3 were both fired by the same unknown weapon capable of firing 9mm Luger caliber ammunition, not from the seized Sig Sauer pistol, due to a disagreement of markings in the areas examined. "Identification and Exclusion"
NH72LD	Items 4 and 5 were fired in the same firearm as the item 1 test fires. Items 2 and 3 were fired in a second firearm.
NHBCNC	Exhibits 4 and 5 (questioned recovered 9mm casings) were identified as having been fired in the same firearm as exhibit 1 (test-fired cartridge cases). Exhibits 2 and 3 (questioned recovered 9mm casings) were identified as having been fired in a second 9mm firearm. Suspect weapons are unknown at this time; however, any suspect weapon should be submitted for analysis.
NJ3E97	The cartridge cases (Items 2 - 5) were microscopically compared to test fired cartridge cases (Item 1). Based on agreement of discernable class characteristics and sufficient corresponding individual markings observed, the cartridge cases (Items 4- 5) were identified as having been fired in the pistol (Item 01). Because of differences observed in class and individual characteristics, the cartridge cases (Items 2-3) could not have been fired in the pistol (Item 01).
NP6NFY	The microscopic comparison of the three cartridge cases with the No. Item 1, which originate from the above-mentioned suspected weapon, showed matching class characteristics as well as matching striations with the cartridge case Items 4 and 5. This means that the seized firearm was used to fire the shot resulted in cartridge case Item 4 and 5.
NZM686	Microscopic examination and comparison reveal that the cartridge cases, Items 1.A, 1.D, and 1.E, were fired in the same firearm based on agreement of class and individual characteristics. Microscopic examination and comparison of the cartridge cases, Items 1.B and 1.C, reveal that they were fired in the same firearm based on agreement of class and individual characteristics, and are consistent with being fired in Taurus 9mm pistols. This list is provided only as an investigative lead and is not intended to be an all-inclusive list. Microscopic examination and comparison reveal that the cartridge cases, Items 1.B and 1.C, were not fired in the same firearm as the cartridge cases, Items 1.A, 1.D, and 1.E, based on disagreement of class characteristics.
NZQRKD	After a microscopic examination, Items 4 and 5, fired cartridge cases from the scene, were identified as having been fired in the suspect's Sig Sauer P365 pistol based on a sufficient agreement of individual characteristics in the firing pin impression, breech face, and firing pin drag marks. Items 2 and 3 have been eliminated as having been fired from the suspect's Sig

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	Sauer P365 pistol, based on a difference of class characteristics of the firing pin shape.
P4HDQ7	A microscopic comparison was conducted between Test cartridge cases A through C, Item 1, that were fired in the firearm, Evidence Submission 1, and Items 2, 3, 4, and 5. The examinations determined that Items 4 and 5 were fired in the firearm, Evidence Submission 1, due to a sufficient agreement between the firing pin and breech face markings. The examinations determined Items 2 and 3 were not fired in the firearm, Evidence Submission 1, due to a disagreement of individual characteristics. Items 1, 2, 3, 4, and 5 will be forwarded to the Property Custody Division.
P87TH2	Items 2 and 3 do not match item 1. Items 2 and 3 come from the same firearm.
PEZZUE	The cartridge cases, Lab Items 1, 4, and 5, were identified as having been fired by the same firearm based on agreement of class characteristics and corresponding individual detail using microscopic comparison. The cartridge cases, Lab Items 2 and 3, were identified as having been fired by the same firearm based on agreement of class characteristics and corresponding individual detail using microscopic comparison. The cartridge cases, Lab Items 1, 4, and 5, were eliminated from having been fired by the same firearm as Lab Items 2 and 3 based on disagreement of class characteristics using microscopic comparison.
PFVEMY	Visual and microscopic analyses of evidence cartridge cases Q1 through Q4 (Items 2 through 5) and test fired cartridge cases from K1 Sig Sauer pistol (Item 1) were initiated on 8/20/2025 and the results of the comparisons and evaluations are as follow: Based on agreement of discernible class characteristics and sufficient agreement of individual characteristics Q3 and Q4 (Items 4 and 5) can be identified as having been fired with K1 Sig Sauer firearm (Item 1). Q1 and Q2 (Items 2 and 3) can be identified as having been fired with the same unknown firearm and are excluded as having been fired with the same firearm as Q3 and Q4 (Items 4 and 5) and K1 Sig Sauer firearm (Item 1) due to differences in firing pin type.
PGNCV7	The cartridge cases marked with laboratory number 393549/25 A4 and A5 (Item 4 and 5) were fired in the same firearm that fired test cartridge cases marked 549TC1 to 549 TC3 (Item 1) The cartridge cases marked with laboratory number 393549/25 A2 and A3 (Item 2 and 3) were not fired in the same firearm that fired test cartridge cases marked 549TC1 to 549 TC3 (Item 1) but were fired in the second firearm
PMWVX6	As a result of physical and microscopic examination of this evidence it is my opinion that: a. Items 1-4 and 1-5 were both fired from the weapon which produced the test-fires in Item 1-1. "IDENTIFICATION." b. Items 1-2 and 1-3 were both fired from the same unknown weapon capable of chambering and firing 9mm Luger caliber ammunition. "IDENTIFICATION." This unknown weapon is NOT the same weapon mentioned in opinion "a". "EXCLUSION."
PPJ8YV	FCC 1 (Item 2) and FCC 2 (Item 3) were microscopically compared to each other and were identified as having been fired in the same firearm. This firearm has not been submitted. FCC 1 (Item 2) and FCC 2 (Item 3) were eliminated as having been fired in firearm P1 (test shots, Item #1), due to differences in class characteristics (firing pin shape). FCC 3 (Item 4) and FCC 4 (Item 5) were microscopically compared to firearm P1 (test shots, Item #1), and an identification was made. FCC 3 and 4 were fired in firearm, P1 (test shots).
PVP3GB	Identification - Agreement of class and individual characteristics were observed. It is the opinion of the examiner that the observed toolmarks were created by the same tool (Fired in the “same firearm”, “same barrel” or “submitted firearm”). 1A (#1) Firearm vs. 1D, 1E (#4 & 5) Firearm component - Identification. 1B (#2) Firearm Component vs. 1C (#3) Firearm component - Identification.
PXT4D2	Due to differences in class characteristics (firing pin impression) the Item 2 and Item 3

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	(questioned) fired cartridge cases were eliminated as having been fired in the same firearm as the Item 1 (known) fired cartridge cases. Due to sufficient agreement of class and individual characteristics it was concluded as a result of microscopic comparison that the Item 4 and Item 5 (questioned) fired cartridge cases were fired in the same firearm as the Item 1 (known) fired cartridge cases.
Q4F4EZ	1. A) Items identified as JP2 and JP3 "Evidence" cartridge cases, were fired by same firearm. B) Items identified as JP4 and JP5 "Evidence" cartridge cases, were fired by same firearm. 2.- A) Items identified as JP4 and JP5 "Evidence" cartridges case, was fired by the Sig Sauer Model P365 Pistol, based on the agreement of class and individual characteristics with the test fires from this Pistol (Items JPT1A, JP1B and JP1C). B) Items identified as JP2 and JP3 "Evidence" cartridges case, were not fired by the Sig Sauer Model P365 Pistol, based on the disagreement of individual characteristics with the test fires from this Pistol (Items JPT1A, JP1B and JP1C).
Q76GVW	The submitted cartridge cases (Items 2 and 3) were examined and microscopically compared to the test fired cartridge cases (Item 1). Based on the differences in class characteristics between the firing pin impressions, the submitted cartridge cases (Items 2 and 3) were excluded as having been fired in the firearm that fired the test fired cartridge cases (Item 1). The submitted cartridge cases (Items 4 and 5) were examined and microscopically compared to the test fired cartridge cases (Item 1). Based on similar class characteristics and sufficient agreement of the breechface marks, firing pin drag marks, and firing pin impression marks, the submitted cartridge cases (Items 4 and 5) were determined to have been fired in the same firearm as the test fired cartridge cases (Item 1).
Q8ZVNG	Cartridge Casing (2) and Cartridge Casing (3) are IDENTIFIED as having been discharged from the SAME firearm based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Cartridge Casings (4,5) are IDENTIFIED as having been discharged from the SAME firearm as Known Test Fired Cartridge Casings (1.1-1.3) based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Cartridge Casings (2,3) are ELIMINATED as having been discharged from the same firearm as Cartridge Casings (4,5) and Known Test Fired Cartridge Casings (1.1-1.3) based on the observed disagreement of class characteristics.
QG632V	The hypothesis that expended cartridge cases item 1, item 4, and item 5 were discharged from the same firearm is very strongly supported. The hypothesis that expended cartridge cases item 2 and item 3 was discharged from an other firearm is very strongly supported.
QHW9DF	In my opinion, the fired casings, Q4 and Q5, are identified as being fired from the suspects weapon, K1, based on the agreement seen in the breech face marks and the firing pin drag marks. In addition, the fired casings Q2 and Q3, are identified as both being fired from a second 9mm pistol, based on the agreement seen in the breech face and aperture shear marks.
QLWCA9	The three 9mm Luger caliber cartridge cases (item 01-01) were identified as having been fired in a single firearm, reportedly a SIG model P365 pistol. The two 9mm Luger caliber cartridge cases (items 01-02 and 01-03) were identified as having been fired in a single unknown firearm. The two 9mm Luger caliber cartridge cases (items 01-04 and 01-05) were identified as having been fired in the same firearm represented by the three 9mm Luger caliber cartridge cases (item 01-01), reportedly a SIG model P365 pistol. The five 9mm Luger caliber cartridge cases (items 01-01, 01-04, and 01-05) were eliminated from having been fired in the same firearm as the remaining two 9mm Luger caliber cartridge cases (items 01-02 and 01-03). This elimination is due to class characteristic differences.
QMUKHT	Items 1A1, 1A2, 1A3, 4 and 5 (fired cartridge cases) are identified as having been fired in the

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WebCode	Conclusions
	same firearm. Items 2 and 3 (fired cartridge cases) are identified as having been fired in the same firearm. Items 1A1, 1A2, 1A3, 4 and 5 (fired cartridge cases) are eliminated as having been fired in the same firearm as Items 2 and 3 (fired cartridge case). There are differences in class characteristics (firing pin impression).
QNMHPY	ITEM SUMMARY OF RESULTS AND INTERPRETATIONS 1.1 The expended casings were originally components of PMC brand 9mm caliber cartridges reported to have been test fired by a known 9mm caliber Sig Sauer brand pistol, model: P365. - Item 1.1 was microscopically examined and compared to Item 1.4 and Item 1.5. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Items 1.4 and 1.5 are identified as having been fired in the same firearm as Item 1.1. - Item 1.1 was microscopically examined and compared to Item 1.2 and Item 1.3. Based on the observed disagreement of class and individual characteristics, Items 1.2 and 1.3 are eliminated as having been fired in the same firearm as Item 1.1. 1.2, 1.3 The expended casings were originally components of PMC brand 9mm caliber cartridges. - Item 1.2 and Item 1.3 were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Items 1.2 and 1.3 are identified as having been fired in a second, unknown firearm. 1.4, 1.5 The expended casings were originally components of PMC brand 9mm caliber cartridges.
QRKWEA	Items 4 and 5 were identified as having been fired by the same firearm as Item 1. This identification is based on the agreement of class characteristics, and individual characteristics observed in the breechface impression and firing pin drag marks. Items 2 and 3 were eliminated as having been fired by the same firearm as Item 1. This elimination is based on differences in class characteristics. The difference being the firing pin shape. Items 2 and 3 were identified as having been fired by the same unknown firearm. This identification is based on the agreement of class characteristics, and individual characteristics observed in the firing pin aperture shear and breechface impression marks.
QRP8G9	Based on differences in class and individual characteristics observed using the stereomicroscope and the comparison microscope, the submissions were divided into the following groups to indicate the different firearms: Group 1: 001-001 and 001-002 Group 2: 001-003, 001-004, and 001-005 through 001-007 test fires Submission 001-001 was microscopically compared to submission 001-002. Based on similar class characteristics and sufficient agreement of individual characteristics, submissions 001-001 and 001-002 are determined to have originated from the same source (source identification). Submission 001-003 was microscopically compared to submission 001-004. Based on similar class characteristics and sufficient agreement of individual characteristics, submissions 001-003 and 001-004 are determined to have originated from the same source (source identification). Submission 001-001 was microscopically compared to submission 001-003. Due to differences in class characteristics and individual characteristics, submissions 001-001 and 001-002 are determined to have been excluded from having the same source as submissions 001-003 and 001-004 (source exclusion). Submission 001-003 was microscopically compared to submission 001-005 test fire (produced by CTS in a 9mm Luger Sig Sauer P365). Based on similar class characteristics and sufficient agreement of individual characteristics, submissions 001-003 and 001-004 are determined to have originated from the same source as submissions 001-005 through 001-007 test fires (produced by CTS in a 9mm Luger Sig Sauer P365) (source identification). Due to differences in class characteristics and individual characteristics, submissions 001-001 and 001-002 are determined to have been excluded from having the same source as submissions 001-005 through 001-007 test fires (produced by CTS in a 9mm Luger Sig Sauer P365) (source exclusion).

TABLE 2

WebCode	Conclusions
QTGB33	Microscopic examination and comparison reveal that the cartridge cases, Item 1.B, were fired in the firearm, Item 1.A, based on agreement of class and individual characteristics. Microscopic examination and comparison of the cartridge cases, Item 1.C, reveal that they were fired in the same firearm based on agreement of class and individual characteristics, and are consistent with being fired in Taurus 9mm pistols. This list is provided only as an investigative lead and is not intended to be an all-inclusive list. Microscopic examination and comparison reveal that the cartridge cases, Item 1.C, were not fired in the firearm, Item 1.A, based on disagreement of class characteristics.
QUF9KB	Microscopic examination and comparison reveal that the cartridge cases, Items 1.A and 1.C, were fired in the same firearm based on agreement of class and individual characteristics. Microscopic examination and comparison of the cartridge cases, Item 1.B, reveal that they were fired in the same firearm based on agreement of class and individual characteristics, and are consistent with being fired in Taurus 9mm pistols. This list is provided only as an investigative lead and is not intended to be an all-inclusive list. Microscopic examination and comparison reveal that the cartridge cases, Items 1.A and 1.C, were not fired in the same firearm as the cartridge cases, Item 1.B, based on disagreement of class characteristics.
QV6M4T	All fired evidence within this case record and test shots were physically examined then microscopically compared using light comparison microscopy. Items 4 and 5 are identified as having been fired in the same firearm as Items 1-1, 1-2 and 1-3 (submitted test shots). Items 2 and 3 (fired cartridge cases) are identified as having been fired in the same firearm. Items 2 and 3 are eliminated as having been fired in the same firearm as Items 1-1, 1-2 and 1-3 (submitted test shots), 4 and 5 (fired cartridge cases). There are differences in class characteristics (firing pin shape, hemispherical vs wedge).
QVLZ7W	Items 2 and 3 were Identified to each other. Items 2 and 3 were Eliminated to the Item 1 firearm based on a difference in class characteristics. Items 4 and 5 were Identified to the Item 1 firearm.
QWEYE4	Items #4 and #5 were fired from the from the suspect's firearm. Items #2 and #3 were not fired from the suspect's firearm.
QWFJC4	The fired cartridge cases listed as Items 2, 3, 4 & 5 were microscopically compared to the test fires listed as Item 1. RESULTS: Fired cartridge cases 4 & 5 were fired in the suspect's firearm. Fired cartridge cases 2 & 3 were not fired in the suspect's firearm. Fired cartridge cases 2 & 3 were both fired in the same unknown firearm capable of chambering and firing 9mm Luger caliber ammunition. The association(s) made in this examination is (are) based on the observation of agreement of all discernable class characteristics and sufficient agreement of individual tool mark characteristics.
QWGNGE	CARTRIDGE CASE DESCRIPTIONS: Item 1, Item 4, and Item 5 were examined and found to be five (5) discharged PMC caliber 9mm Luger cartridge cases with chisel firing pin impressions. Item 2 and Item 3 were examined and found to be two (2) discharged PMC caliber 9mm Luger cartridge cases with hemispherical firing pin impressions. CARTRIDGE CASES - MICROSCOPIC EXAMINATION: Microscopic examinations and comparisons were conducted between Items 1 through 5. Item 4 and Item 5 were identified as having been discharged within the same firearm as the Item 1 cartridge cases. Item 2 and Item 3 were identified as having been discharged within the same unknown firearm. Item 2 and Item 3 were eliminated as having been discharged within the same firearm as Items 1, 4, and 5 due to sufficient differences in class and individual characteristics.
QWXKBZ	ITEM SUMMARY OF RESULTS AND INTERPRETATIONS 1.1 - 1.5 The expended casings were originally components of PMC brand 9mm caliber cartridges. A microscopic examination and

TABLE 2

WebCode	Conclusions
	comparison revealed the following: - Items 1.1, 1.4 and 1.5 were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Items 1.4 and 1.5 are identified as having been fired from the same firearm as Item 1.1. - Item 1.3 and Item 1.2 were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Items 1.2 and 1.3 are identified as having been fired from a second firearm. - Item 1.3 and Item 1.2 were microscopically examined and compared to Items 1.1, 1.4 and 1.5. Based on the observed disagreement of class characteristics, Items 1.3 and 1.2 are eliminated as having been fired from the same firearm as Items 1.1, 1.4 and 1.5.
QZCHEG	1. The cartridge cases described in Item 1 (E-1 to E-3), cartridge cases described in Item 4 (E-6), and cartridge case described in Item 5 (E-7), are 9mm Luger caliber and were fired from the same firearm (Identification). 2. The cartridge cases described in Item 2 (E-4) and cartridge case described in Item 3 (E-5), are 9mm Luger caliber and were fired from the same firearm (Identification).
QZDAB3	I am of the opinion that: i) Item 2 and item 3 were discharged from the same firearm but not the one that fired item 1. ii) Item 4 and item 5 were discharged from the same firearm as the test-fired cartridge casings (item 1).
R3Y98X	1. The recovered cartridge casings (ítems 2 and 3) were discharged by a firearm different from the one used to discharged the known test-fired cartridge casings (item 1). 2. The recovered cartridge casings (ítems 4 and 5) were discharged by the same firearm as the one used to discharged the known test-fired cartridge casings (item 1).
R4R8F6	Item 1 consist of three known test-fired 9mm Luger cartridge cases fired in the seized Sig Sauer P365 firearm. Items 4 and 5 (recovered 9mm Luger cartridge cases) were identified as having been fired in the same firearm as Item 1 test-fired cartridge cases. Items 2 and 3 (recovered 9mm Luger cartridge cases) were eliminated as having been fired in the same firearm as Item 1 test-fired cartridge cases. Items 2 and 3 (recovered 9mm Luger cartridge cases) were identified as having been fired in the same firearm.
R4T22W	[No Conclusions Reported.]
R4WND4	Items 2 and 3 same firearm Items 4 and 5 same firearm
R4Y8MZ	1. Examination of Exhibit 1 disclosed it to be three (3) fired 9mm Luger caliber cartridge cases, bearing the PMC headstamp. Exhibit 1 was test fired from the suspect's firearm and submitted to the laboratory for comparison purposes. 1a. Due to potential subclass characteristics, the firing pin impressions of Exhibit 1 were deemed unsuitable for comparison. The remaining areas that indicate discharge in a firearm were determined to be suitable for microscopic comparison. 2. Examination of Exhibits 2 through 5 disclosed them to be four (4) fired 9mm Luger caliber cartridge cases, all bearing the PMC headstamp. Exhibits 2 through 5 determined to be suitable for microscopic comparison. 3. Due to a significant disagreement of class characteristics (firing pin impression shape and aperture), Exhibits 2 and 3 were eliminated as having been fired in the same firearm as Exhibits 1, 4, and 5. 3a. Exhibits 2 and 3 were microscopically compared to one another. Due to a sufficient agreement of individual characteristics, they were identified as having been fired in the same firearm. 4. Exhibits 1, 4, and 5 were microscopically compared to one another. As a result, the following was concluded: 4a. Due to sufficient agreement of individual characteristics, Exhibits 1, 4, and 5 were identified as having been fired in the same firearm.
R7NFUF	Cartridge Casings (2,3) are identified as having been discharged from the SAME gun based on

TABLE 2

WebCode	Conclusions
	the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Cartridge casings (4,5) and Test Fired cartridge casings (1.1-1.3) are identified as having been discharged from the SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Cartridge casings (2,3) are ELIMINATED as having been discharged from the same gun as cartridge casings (4,5) and TEST Fired cartridge casings (1.1-1.3) based on the observed disagreement of class characteristics
RDM8Y4	Items 2 and 3 are an Identification. Items 4, 5 and test fired cartridge case, Item 1a, are an Identification. Items 2 and 3 are an elimination to Items 4, 5 and Item 1a. This means Items 2 and 3 were not fired in the same firearm as Items 4 and 5 or from the submitted firearm.
RED937	Exhibits 1, 4, and 5 were identified as having been fired by the same firearm. Exhibits 2 and 3 were identified as having been fired by the same firearm, but these two cartridge cases were excluded from Exhibits 1, 4, and 5.
RJ79G2	Microscopic examination and comparison reveal that the cartridge cases, Items 1.A and 1.C, were fired in the same firearm based on agreement of class and individual characteristics. Microscopic examination and comparison of the cartridge cases, Item 1.B, reveal that they were fired in the same firearm based on agreement of class and individual characteristics, and are consistent with being fired in Taurus 9mm pistols. This list is provided only as an investigative lead and is not intended to be an all-inclusive list. Microscopic examination and comparison reveal that the cartridge cases, Items 1.A and 1.C, were not fired in the same firearm as the cartridge cases, Item 1.B based on disagreement of class characteristics.
RTXN67	Items 001-02 and 001-03 were identified as having been fired by the same unknown firearm based on the agreement of class characteristics and individual characteristics observed in the breechface impression marks. Items 001-02 and 001-03 were eliminated as having been fired by the same firearm that fired Item 001-01 based on differences in class characteristics. The difference being the firing pin shape. Items 001-04 and 001-05 were identified as having been fired by the same firearm that fired Item 001-01 based on the agreement of class characteristics and individual characteristics observed in the firing pin drag marks.
RWXZ27	Items 001-04 and 001-05 were identified as having been fired from the Sig Sauer model P365, 9mm Luger caliber pistol that fired Item 001-01 based on the agreement of class characteristics and individual characteristics observed in the breechface impression marks and firing pin drag. Items 001-02 and 001-03 were eliminated to Item 001-01 based on differences in class characteristics. The difference being the firing pin shapes. Items 001-02 and 001-03 were identified as having been fired from the same unknown firearm based on the agreement of class characteristics and individual characteristics observed in the firing pin impressions. NOTE: Identification is the opinion of an examiner that there is sufficient quality and quantity of individual microscopic markings to determine a common source. Elimination is the opinion of an examiner that there is significant disagreement of individual microscopic markings or disagreement of discernible class characteristics. These interpretations are subjective in nature and are based on the reporting examiner's training and experience.
RXTH38	Examinations showed that Item 4 (C-3) and Item 5 (C-4) were discharged within the same firearm that discharged Item 1. Examinations showed that Item 2 (C-1) and Item 3 (C-2) were not discharged within the same firearm that discharged Item 1.
T2JEYB	Items# 2 and 3 were not fired from the suspect firearm based on differences of class characteristics. Items# 2 and 3 were fired from the same firearm, based on agreement of class characteristics and individual agreement of the breech face marks. Items# 4 and 5 were fired from the suspect firearm, based on agreement of class characteristics and individual

TABLE 2

WebCode	Conclusions
	characteristics of the aperture shear marks.
T48QZ3	The cartridge cases items 2 and 3 were Eliminated from the known cartridge cases Item 1. Items 2 and 3 were Identified as having been fired in a second firearm. The cartridge cases Items 4 and 5 were Identified as having been fired in the same firearm as the known cartridge cases Item 1.
T4PUEU	Items 4 and 5 were a microscopic match to the cartridge case from item 1. Therefore, they were fired from the seized Sig Sauer P365 firearm. Items 2 and 3 did not match item 1 so they were fired from a second firearm.
T6HRL2	Items 4 and 5 were fired in the SIG/ Sauer P365 pistol Item 1. Items 2 and 3 were not fired in the pistol Item 1. Items 2 and 3 were fired in a single firearm with class characteristics common to Taurus pistols.
T7FZQE	1. The cartridge cases marked E-1 to E-3 (Item 1), the cartridge case marked E-6 (Item 4), and the cartridge case marked E-7 (Item 5), described in Exhibit 1, are 9mm Luger caliber and were fired from the same firearm (Identification). 2. The cartridge case marked E-4 (Item 2) and the cartridge case marked E-5 (Item 3), described in Exhibit 1, are 9mm Luger caliber and were fired from the same firearm (Identification).
TB9XLW	Item 1 was Identified to Items 4 and 5. Items 2 and 3 were Identified to each other. Items 2 and 3 were Eliminated to Items 1, 4, and 5 based on a difference in class characteristics.
TC2VT4	Items 2 and 3 were discharged from the same firearm, which is not the suspect's one. Items 4 and 5 were discharged from the suspect's firearm (Item 1). We can conclude that two firearms were used: The one apprehended (Item 1) and another one.
TLAKDT	Items 1, 4, 5: The Item 4 and 5 cartridge cases were Identified to one of the Item 1 cartridge cases. The cartridge cases were Eliminated to the Item 2 and 3 cartridge cases based on a difference in class characteristics. Items 2, 3: The cartridge cases were Identified to each other.
TQ3ME9	Items 4 and 5 were fired in the same firearm as the item 1 test fires. Items 2 and 3 were fired in a second firearm.
TQ8XG7	Exhibits 4 and 5 (questioned recovered 9mm casings) were identified as having been fired in the firearm that fired exhibit 1 (test-fired cartridge cases). Exhibits 2 and 3 (questioned recovered 9mm casings) were identified as having been fired in a second 9mm firearm. Suspect weapons are unknown at this time; however, any suspect weapon should be submitted to the laboratory for analysis.
TTAZ32	Items 4 and 5 were identified as having been fired by the same firearm as that which fired the test fired cartridge cases from Item 1 based on the sufficient agreement of class and individual characteristics. Items 2 and 3 were identified as having been fired by the same unknown firearm based on the sufficient agreement of class and individual characteristics and were eliminated as having been fired by the same firearm as that which fired the test fired cartridge cases from Item 1 based on the sufficient disagreement of class characteristics.
TWBTDY	1. Cartridge cases Item 4 and Item 5 recovered from crime scene, were fired with the same suspect's firearm as three known test-fired cartridge cases Item 1. 2. Cartridge cases Item 2 and Item 3 recovered from crime scene, weren't fired with the same suspect's firearm as three known test-fired cartridge cases Item 1, but with another firearm.
TZQFQ6	Results/Conclusions: 1) The Exhibit 1, 4, & 5 cartridge cases were fired in the same firearm.1 2) The Exhibit 1 cartridge cases were excluded from the Exhibit 2 & 3 cartridge cases due to differing class characteristics. 3) The Exhibit 2 & 3 cartridge cases were fired in the same firearm.1

TABLE 2

WebCode	Conclusions
U2F4NQ	Item's # 1,4,5 were fired in the same firearm. Item's 2,3 were fired in the same firearm.
U3UFKA	After microscopic comparison, it was determined that Items# 4 and 5 was fired in Item# 1 (Sig Sauer 9mm Luger pistol) based on sufficient agreement of class and individual characteristics of the breech face marks. After microscopic comparison, it was determined that Items# 2 and 3 were fired in the same unrecovered 9mm Luger firearm based on sufficient agreement of class and individual characteristics of the breech face marks.
U6GDTZ	Items 2, 3, 4, 5: A microscopic comparison was conducted between Test Cartridge Case 1, Item 1 that was fired in the recovered firearm and Items 2, 3, 4 and 5. The examinations determined Items 4 and 5 were fired in the recovered firearm, due to a sufficient agreement between the firing pin and breech face markings. The examinations determined Items 2 and 3 were not fired in the recovered firearm, due to a disagreement of individual characteristics. A microscopic comparison was conducted between Items 2 and 3. The examinations determined Items 2 and 3 were fired in the same firearm due to a sufficient agreement between the firing pin and breech face markings. Disposition: The above listed evidence will be forwarded to the Property Custody Section.
U7CVU3	Items 2 and 3 were examined and microscopically compared. Items 2 and 3 were fired in the same firearm based on the sufficient agreement of individual characteristics. Item 3 will be compared to the open case file (IBIS/NIBIN). Items 2 and 3 were not fired in the same firearm as the cartridge cases submitted under Item 1 based on different class characteristics. Items 4 and 5 were examined and microscopically compared to the cartridge cases submitted under Item 1. Items 4 and 5 were fired in the same firearm as the cartridge cases submitted under Item 1 based on the sufficient agreement of individual characteristics. The above analysis began on 07/01/2025.
U8NL47	Items 2 and 3: The cartridge cases were eliminated from Item 1 (listed as tests from the suspect's Sig Sauer pistol). These cartridge cases were identified to each other (fired in the same unknown firearm). Items 4 and 5: The cartridge cases were identified to Item 1 (listed as tests from the suspect's Sig Sauer pistol).
UBNWZ7	SUBMISSION 1-2 and 1-3: The cartridge cases were identified to each other and eliminated from the submission 1-1 test fires. SUBMISSION 1-4 and 1-5: The cartridge cases were identified to the submission 1-1 test fires.
UBQD8D	CARTRIDGE CASE DESCRIPTIONS: 1) Item 007.001 was found to be three (3) discharged PMC headstamped, caliber: 9mm Luger cartridge cases with chisel firing pin impressions. 2) Item 007.002 and Item 007.003 were found to be two (2) discharged PMC headstamped, caliber: 9mm Luger cartridge cases with hemispherical firing pin impressions. 3) Item 007.004 and Item 007.005 were found to be two (2) discharged PMC headstamped, caliber: 9mm Luger cartridge cases with chisel firing pin impressions. CARTRIDGE CASES - MICROSCOPIC EXAMINATION: 4) Microscopic examinations and comparisons were conducted with Items 007.001 through 007.005. 5) Examinations showed Item 007.004 and Item 007.005 were identified as having been discharged within the same firearm as Item 007.001. 6) Examinations showed Item 007.002 and Item 007.003 were identified as having been discharged within the same unknown firearm. 7) Examinations showed Items 007.002 and Item 007.003 were eliminated as having been discharged within the same firearm as Item 007.001, Item 007.004 and Item 007.005, due to sufficient differences in class characteristics.
UDCAHN	Items 1D and 1E (fired cartridge cases) are identified as having been fired in the same firearm as Items 1A-T1, 1A-T2, and 1A-T3 (agency fired test shots/fired cartridge cases). Items 1B and 1C (fired cartridge cases) are identified as having been fired in the same firearm. Items 1B and 1C (fired cartridge cases) are eliminated as having been fired in the same firearm as Items

TABLE 2

WebCode	Conclusions
	1A-T1, 1A-T2, 1A-T3, 1D, and 1E (agency fired test shots/fired cartridge cases). There are differences in class characteristics (firing impression shape - Hemispherical vs wedge).
UE69QV	Item #1 - (3) Test fired cartridge casings Item #2 through #5 - (4) cartridge casings Microscopic Comparison Item #1 (Test fires) against Item #4 and Item #5 - Identification Item #2 against Item #3 - Identification Item #1 (Test fires), Item #4, Item #5 against Item #2 and Item #3 - Elimination
UJ2MLX	The shell casing identified as evidence ITEM 2 recovered and in question corresponds to a 9 mm LUGER caliber. It is concluded that there is NO correspondence with ITEM 1, consisting of three shell casings fired from the confiscated Sig Sauer P365 firearm. The shell casing identified as evidence ITEM 3 recovered and questioned corresponds to a 9 mm LUGER caliber. It is concluded that there is NO correspondence with ITEM 1, consisting of three shell casings fired from the confiscated Sig Sauer P365 firearm. The shell casing identified as evidence ITEM 4 recovered and questioned corresponds to a 9 mm LUGER caliber. It is concluded that there is a match with ITEM 1, consisting of three shell casings fired from the confiscated Sig Sauer P365 firearm. The shell casing identified as evidence ITEM 5 recovered and questioned corresponds to a 9 mm LUGER caliber. It is concluded that there is a match with ITEM 1, consisting of three shell casings fired from the confiscated Sig Sauer P365 firearm.
URDUDU	The questioned cartridge case(Item 4 and Item 5) were fired from the same firearm as the known cartridge case(Item 1). The questioned cartridge case(Item 2 and Item 3) were fired from the same firearm but not the recovered firearm.
UREG2Z	The Item 4 and 5 cartridge cases were identified, within the limits of practical certainty*, as having been fired in the same firearm as the Item 1 agency generated test fires (see Notes/Remarks). The Item 2 and 3 cartridge cases were identified, within the limits of practical certainty*, as having been fired in the same firearm, which is not the firearm that generated the Item 1 agency generated test fires. There are two (2) firearms represented by the submitted cartridge cases. [See Table 3: Additional Comments for the "Notes/Remarks."]
UWKHQW	1. A microscopic comparative examination of FCC-1 (item #2) and FCC-2 (item #3) (Group A, 9mm Luger) against each other, disclosed that FCC-1 (item #2) and FCC-2 (item #3) were discharged in the same unknown firearm. 2. A microscopic comparative examination of FCC-3 (item #4) and FCC-4 (item #5) (Group B, 9mm Luger) against each other and Pistol P-1 (item #1), disclosed that FCC-3 (item #4) and FCC-4 (item #5) were discharged in Pistol P-1 (item #1).
UZP7AR	Firearm item1 fired item4 and item5. Firearm item1 did not fire item2 and item3. Item2 and item3 fired by same other firearm.
V9W3R4	Items 1 through 5 were microscopically examined and compared. Items 4 and 5 were identified as having been fired in Item 1 based on corresponding class and individual characteristics. Items 2 and 3 were identified as having been fired in the same firearm based on corresponding class and individual characteristics. Items 2 and 3 were eliminated as having been fired in Item 1 due to differences in class characteristics.
VARKU6	The cartridge cases in Items 4 and 5 were fired in the same gun that fired the cartridge cases in Item 1, based on agreement observed in individual characteristics. The cartridge cases in Items 2 and 3 were not fired in the same gun that fired the cartridge cases in Item 1, based on disagreement observed in class characteristics. The cartridge cases in Items 2 and 3 were fired in the same gun, based on agreement observed in individual characteristics.
VFVPLP	Item#2 and Item#3 were microscopically compared to each other and were identified as having been fired in the same firearm. (Firearm not submitted) Item#4 and Item#5 were

TABLE 2

WebCode	Conclusions
	microscopically compared to firearm, Item#1 and an identification was made. Item#4 and Item#5 were fired in firearm, Item#1. (Item#1 - suspects firearm)
VGURFZ	Items 2 and 3 (fired cartridge cases). Microscopic comparison of these cartridge cases and a test-fired cartridge case from the Sig Sauer pistol revealed significant differences in class of firearm-produced marks. These cartridge cases were not fired in the Sig Sauer pistol, Item 1. Microscopic comparison of these cartridge cases revealed that they have the same class of firearm-produced marks and sufficient corresponding individual marks to conclude that Items 2 and 3 were fired in the same unknown firearm. Items 4 and 5 (fired cartridge case) Microscopic comparison of these cartridge cases and a test-fired cartridge case from the Sig Sauer pistol revealed that they have the same class of firearm-produced marks and sufficient corresponding individual marks to conclude that these cartridge cases, Items 4 and 5, were fired in the Sig Sauer pistol.
VHJ6VW	Items 4 and 5 were identified as having been fired from the same firearm as Item 1. Items 2 and 3 were eliminated as having been fired from the same firearm as item 1 but were identified as having been fired from the same unknown firearm.
VP423T	Microscopic comparison examinations were conducted between QC-1, QC-2, QC-3, QC-4 and test ammunition fired in K-1, resulting in the conclusions: QC-3 and QC-4 were fired in K-1 based on an agreement of all discernable class characteristics and sufficient agreement of individual characteristics. QC-1 and QC-2 were fired in the same unknown firearm based on an agreement of all discernable class characteristics and sufficient agreement of individual characteristics. QC-1 and QC-2 were not fired in K-1 based on a difference in class characteristics.
VQCBT6	The Items 1.4 and 1.5 fired cartridge cases (CTS Items 4 and 5) were fired from the same firearm that fired the Items 1.1.1, 1.1.2, and 1.1.3 test fired cartridge cases (CTS Item 1). These identifications are based on sufficient agreement of the combination of individual characteristics and all discernible class characteristics. The Items 1.2 and 1.3 fired cartridge cases (CTS Items 2 and 3) were fired in the same unknown firearm. This identification is based on sufficient agreement of the combination of individual characteristics and all discernible class characteristics. The Items 1.2 and 1.3 fired cartridge cases (CTS Items 2 and 3) were not fired from the same firearm that fired the Items 1.1.1, 1.1.2, 1.1.3, test fired cartridge cases (CTS Item 1) and the Items 1.4, and 1.5 fired cartridge cases (CTS Items 4 and 5). These eliminations are based on differences in class characteristics (different shaped firing pin impressions - hemispherical vs wedge/chisel).
VR9PFW	Microscopic examination and comparison reveal that the cartridge cases, Items 1.A, 1.D, and 1.E, were fired in the same firearm based on agreement of class and individual characteristics. Microscopic examination and comparison reveal that the cartridge case(s), Items 1.A, 1.D, and 1.E, were not fired in the same firearm as the cartridge cases, Items 1.B and 1.C, based on disagreement of class characteristics. Microscopic examination and comparison of the cartridge cases, Items 1.B and 1.C, reveal that they were fired in the same firearm based on agreement of class and individual characteristics, and are consistent with being fired in Taurus 9mm pistols. This list is provided only as an investigative lead and is not intended to be an all-inclusive list.
VW2T92	The test fires marked #1 were examined and microscopically compared to the cartridge marked #4 and #5 with positive results (Identification). The two cartridge cases marked #4 and #5 were discharged in the same firearm as the test fires. The test fires marked #1 were examined and microscopically compared to the cartridge cases marked #2 and #3 with negative results (Elimination). The two cartridge cases marked #2 and #3 were not discharged

TABLE 2

WebCode	Conclusions
	in the same firearm as the test fires. The two cartridge cases marked #2 and #3 were examined and microscopically compared to each other with positive results (Identification). The two cartridge cases marked #2 and #3 were discharged in the same unknown firearm.
W2PZ3U	The items 4 & 5 questioned cartridge cases were identified as having been fired in the same firearm as the known cartridge cases (item 1). Because of differences in individual characteristics the items 2 & 3 questioned cartridge cases could not have been fired in the same firearm as the known cartridge cases (item 1).
W9948B	The cartridge case described in the Item 1 (E-1 al E-3) are 9mm caliber Luger and were fired by the same firearm to fired the cartridge case describe in the Items 4 (E-6) and 5 (E-7) (identification). The cartridge case described in the Item 2 (E-4) and litem 3 (E-5), were fired by the same firearm (Identification). They were not fired by the same firearm that fire the cartridge case described in the Items 4 and 5.
WCBYX7	Items 1, 4, and 5 were fired in the same firearm. Item 2 and Item 3 were fired in another firearm.
WD8CKX	As a result of physical examination and microscopic comparison of the submitted evidence and the test firings (Item 1-1), it is my opinion that: A/ Items 1-4 and 1-5 WERE BOTH FIRED from the weapon which produced the test firings (Item 1-1). "IDENTIFICATION" B/ Items 1-2 and 1-3 WERE BOTH FIRED from the same unknown weapon capable of chambering and firing 9mm Luger caliber ammunition. "IDENTIFICATION" This unknown weapon is not the same weapon that produced the test firings (Item 1-1). "EXCLUSION"
WDL2J4	After a microscopic examination, the evidence cartridge cases (Items 4 and 5) were identified as having been fired in the Sig Sauer P365 firearm, based on a sufficient agreement of individual characteristics in the breech face and firing pin drag marks. After microscopic examination, the evidence cartridge cases (Items 2 and 3) were eliminated as having been fired in the Sig Sauer P365 firearm, based on a difference of class characteristics in the firing pin shape.
WLECVK	CARTRIDGE CASES. Items 1, 4, and 5. The cartridge cases were Identified as having been fired in the same firearm. The cartridge cases were Eliminated from the cartridge cases Items 2 and 3 based on a difference in class characteristics. Items 2 and 3. The cartridge cases were Identified as having been fired in the same firearm
WRNDBW	Item 2 was eliminated from being fired from the Sig Sauer P365 firearm. Was fired from the same unidentified 9mm caliber firearm the fired Item 3. Item 3 was eliminated from being fired from the Sig Sauer P365 firearm. Was fired from the same unidentified 9mm caliber firearm the fired Item 2. Item 4 was identified as having been fired from the Sig Sauer P365 firearm. Item 5 was identified as having been fired from the Sig Sauer P365 firearm.
WXPRWX	The cartridge cases marked with laboratory number 393558/25 A4 and A5 (Item 4 and 5) were fired in the same and firearm that fired test cartridge cases marked 365TC1 to 365 TC3 (Item 1). (first firearm) The cartridge cases marked with laboratory number 393558/25 A2 and A3 (Item 2 and 3) were fired in the same firearm and were not fired in the same firearm that fired test cartridge cases marked 365TC1 to 365 TC3 (Item 1) but were fired in the second firearm.
WZGMKR	Item 4,5 cartridge cases were fired as the Item1 cartridge cases. Item 2,3 cartridge cases were different from the firearm used to fire Item 1 cartridge cases.
X4T3CV	The three (3) expended cartridge cases (0001-AA / Item 1) were reported as being fired from the same firearm. The two (2) expended cartridge cases (0001-AD / Item 4 and 0001-AE / Item 5) were microscopically compared to the three (3) expended cartridge cases (0001-AA /

TABLE 2

WebCode	Conclusions
	Item 1) with POSITIVE RESULTS. Due to the sufficient agreement of individual characteristics, the two (2) 0001-AD and 0001-AE expended cartridge cases were identified as having been fired in the same firearm as the three (3) 0001-AA expended cartridge cases. The two (2) expended cartridge cases (0001-AB / Item 2 and 0001-AC / Item 3) were microscopically compared to each other with POSITIVE RESULTS. Due to the sufficient agreement of individual characteristics, the two (2) 0001-AB and 0001-AC expended cartridge cases were identified as having been fired in the same firearm. The two (2) expended cartridge cases (0001-AB / Item 2 and 0001-AC / Item 3) were microscopically compared to the three (3) expended cartridge cases (0001-AA / Item 1) with NEGATIVE RESULTS. Due to class and individual characteristic differences, the two (2) 0001-AB and 0001-AC expended cartridge cases were eliminated as having been fired in the same firearm as the three (3) 0001-AA expended cartridge cases.
XD7V7Z	Items 4 and 5 were compared to each other and to the Item 1 test-fires from the Sig Sauer pistol. These cartridge cases have the same class of firearm produced marks and sufficient corresponding individual microscopic marks to conclude that Items 4 and 5 were fired in the same Sig Sauer pistol as Item 1. Items 2 and 3 were compared to each other and these cartridge cases have the same class of firearm produced marks and sufficient corresponding individual microscopic marks to conclude that they were fired in a single firearm. Item 2 was compared to the Item 1 test-fires from the Sig Sauer pistol and significant differences in class marks were found. Items 2 and 3 were fired in a different firearm than Item 1.
XE2D82	Items 1, 4 and 5: The Item 1, 4 and 5 cartridge cases were Identified to each other. Items 2 and 3: These cartridge cases were Identified to each other. These cartridge cases were Eliminated from the Item 1, 4 and 5 cartridge cases based on a difference in class characteristics.
XMPA6V	As a result of the comparisons, I formed the opinion that the fired cartridge cases (Items 4 and 5) had been discharged by the exhibit firearm.
XNJ4JR	The test fired 9mm caliber cartridge cases fired in the Sig Sauer, model P365 firearm, item #1, were microscopically compared to the fired 9mm caliber cartridge cases in items #2 through #5, which revealed the following results: Items #4 and #5 possessed the same class characteristics, as well as sufficient reproducing individual markings to each other and the test fired cartridge cases in item #1 and were determined to have been fired in the same weapon as item #1 (Sig Sauer model P365 firearm). Items #2 and #3 possessed similar class characteristics to the fired 9mm caliber cartridge cases in items #1, #4, and #5; however, they possessed significantly differing individual markings and were not fired in the same weapon as item #1 (Sig Sauer, model P365 firearm).
XVL68Z	Items 001-1A through 001-1C are three PMC brand 9mm Luger caliber fired cartridge cases. I microscopically compared these cartridge cases to each other and concluded these test fires have a reproducible signature that is identifiable. Items 001-2 through 001-5 are PMC brand 9mm Luger caliber fired cartridge cases. I microscopically compared these cartridge cases to each other and to a test fired cartridge case from the Sig Sauer pistol. I observed agreement of all discernable class characteristics and sufficient agreement of individual characteristics to conclude that Items 001-4 and 001-5 were fired in the Sig Sauer pistol. I observed disagreement of discernable class characteristics when comparing Items 001-2 and 001-3 to a test fired cartridge case from the Sig Sauer pistol. Therefore, Items 001-2 and 001-3 were not fired in the Sig Sauer pistol. I observed agreement of all discernable class characteristics and sufficient agreement of individual characteristics to conclude that Items 001-2 and 001-3 were fired in a single firearm.
XWD8RV	Microscopic examination and comparison reveal that the cartridge cases, Items 1.A and 1.B,

TABLE 2

WebCode	Conclusions
	were fired in the same firearm based on agreement of class and individual characteristics. Microscopic examination and comparison of the cartridge cases, Item 1.C, reveal that they were fired in the same firearm based on agreement of class and individual characteristics, and are consistent with being fired in Taurus 9mm pistols. This list is provided only as an investigative lead and is not intended to be an all-inclusive list. Microscopic examination and comparison reveal that the cartridge cases, Items 1.A and 1.B, were not fired in the same firearm as the cartridge cases, Items 1.C, based on disagreement of class characteristics.
XWTNLN	The item 4 and 5 cartridge cases are identified as having been fired in the same firearm that fired the item 1A, 1B and 1C cartridge cases. The item 2 and 3 cartridge cases are eliminated as having been fired in the same firearm that fired the item 1A, 1B and 1C cartridge cases. The item 2 and 3 cartridge cases are identified as having been fired in the same unknow firearm.
XZR6WW	IDENTIFICATION: The following items were compared and were found to show the presence of matching features. The opinion of Identification is based upon the agreement of a combination of individual characteristics and all discernible class characteristics consistent with having been fired by the same firearm. Item 1 (TF1) Item 4 Item 5 IDENTIFICATION: The following items were compared and were found to show the presence of matching features. The opinion of Identification is based upon the agreement of a combination of individual characteristics and all discernible class characteristics consistent with having been fired by the same firearm. Item 2 Item 3
Y7HGRT	The questioned recovered cartridge cases in items 4 and 5 were fired from the suspect weapon. The questioned recovered cartridge cases in items 2 and 3 were fired from the same weapon (second weapon).
Y9KJHU	Item 1 consists of three 9mm Luger (9x19mm) test-fired cartridge cases that bear the headstamp of Eldorado Cartridge Corporation (PMC) ammunition. Items 2 through 5 are four 9mm Luger cartridge cases that bear the headstamp of Eldorado Cartridge Corporation ammunition. The Item 2 and 3 cartridge cases were identified as having been fired in the same firearm. The Item 4 and 5 cartridge cases were identified as having been fired in the same firearm as the Item 1 test-fired cartridge cases. The Item 2 and 3 cartridge cases were excluded as having been fired in the same firearm as the Item 1 test-fired cartridge cases based on a difference in class characteristics.
YMJJAX	The Items 1, 4, and 5 cartridge cases were fired by the same firearm. The Items 2 and 3 cartridge cases were fired by the same firearm, but a different firearm than the Items 1, 4, and 5 cartridge cases.
YRED8Y	Examinations showed that Item 2 and Item 3 were not discharged within the same firearm as Item 1. Examinations showed that Item 4 and Item 5 were discharged within the same firearm as Item 1.
YTQAEN	Item Visual/Physical Examinations Item 1: Three (3) fired 9mm Luger caliber cartridge cases reportedly test fired in Sig-Sauer P365 firearm. Items 2 thru 5: Four (4) fired 9mm Luger caliber cartridge cases. Microscopic Comparisons The above items were compared with each other with the following results: Items 2 & 3 were fired in the same firearm (not submitted). Items 2 & 3 were not fired in the Sig-Sauer firearm (reported tests Item 1). Items 4 & 5 were fired in the Sig-Sauer firearm (reported tests Item 1).
YU7CKW	A microscopic comparison was conducted between Test cartridge case #1 through #3, Item #1 and Items #2, #3, #4 and #5. The examinations determined that Items #4 & #5 were fired in the same firearm as Item #1 due to a sufficient agreement between firing pin and breech face impressions. The examinations determined that Items #2 & #3 were not fired in the same firearm as Item #1 due to a disagreement between the firing pin and breech face

TABLE 2

WebCode	Conclusions
	impressions. A microscopic comparison was conducted between Items #2 & #3. The examinations determined that Items #2 & #3 were fired in the same firearm due to a sufficient agreement between firing pin and breech face impressions.
YUH8LV	Results: First, the shell casings obtained from the firearm confiscated by the police, identified as item #1 in its chain of custody record and marked during the inspection as CT1.1-CT1.3, DO SHOW CHARACTERISTICS of having been fired in the chamber of the same firearm that fired Clues #4 and #5. Second, the shell casings obtained from the firearm confiscated by the police, identified as item #1 in its chain of custody record and marked during the inspection as CT1.1-CT1.3, DO NOT SHOW CHARACTERISTICS of having been fired in the chamber of the same firearm that fired items #2 and #3.
YWCUJT	Cartridge Casings (4, 5) and Known Test Fires (1.1- 1.3) are IDENTIFIED as having been discharged from the SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Cartridge Casings (2, 3) are IDENTIFIED as having been discharged from the SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Cartridge Casings (2, 3) are ELIMINATED as having been discharged from the same gun as Cartridge Casings (4, 5) and Known Test Fires (1.1- 1.3) based on the observed disagreement of class characteristics.
YZFKWZ	Items 1, 2, 3, 4 and 5: Items 1, 4, and 5 were Identified to each other. Items 2 and 3 were Identified to each othe Items 1, 4, and 5 were Eliminated from Items 2 and 3 based on a difference in class characteristics.
Z3RWZU	Items 2 and 3 were fired in the same firearm. They were not fired in the pistol Item 1. Items 4 and 5 were fired in the pistol Item 1.
Z6KTNN	The two cartridge case marked #4 and #5 were compared microscopically against the three test cartridge cases marked #1 and identified as having been discharged in the submitted firearm. The two cartridge cases marked #2 and #3 were compared microscopically against the three test cartridge cases marked #1 and eliminated as having been discharged in the submitted firearm.
Z6ZZZW	The cartridge cases, Items 2 and 3, were microscopically identified as having been fired in the same firearm. The cartridge case Item 2 was not fired in the same firearm as Item 1a (test). The cartridge cases, Items 4 and 5, were microscopically identified as having been fired in the same firearm. The cartridge case Item 4 was microscopically identified as having been fired in the same firearm as Item 1a (test).
Z89DHY	Exhibits 4 and 5 (questioned recovered 9mm casings) were identified as having been fired in the same 9mm firearm as exhibit 1 (test fired cartridge cases). Exhibits 2 and 3 (questioned recovered 9mm casings) were identified as having been fired in a second 9mm firearm. Suspect weapons are unknown at this time; however, any suspect weapons should be submitted to the laboratory for analysis.
ZDC9DR	Items 4 and 5 were fired in the suspect Sig P365 pistol. Items 2 and 3 were not fired in the suspect Sig P365, but they were fired from a single firearm.
ZEN3TR	Item 1 through Item 5 consist of seven 9mm Luger (9x19mm) cartridge cases that bear the headstamp of PMC ammunition. The Item 4 and Item 5 cartridge cases were identified as having been fired in the same firearm as the Item 1 cartridge cases. The Item 2 and Item 3 cartridge cases were identified as having been fired in the same firearm. Due to a difference in class characteristics, the Item 2 and Item 3 cartridge cases were excluded as having been fired in the same firearm as the Item 1 cartridge cases.

TABLE 2

WebCode	Conclusions
ZM2UJP	Two questioned recovered cartridge casings(Item4, 5) were discharged from the same firearm as the known test-fired cartridge casings(Item1). Two other questioned recovered cartridge casings(Item2, 3) were NOT discharged from the same firearm as the known test-fired cartridge casings(Item1).
ZQ3XDX	Items 4 and 5 were discharged within the same firearm as Item 1. Items 2 and 3 were not discharged within the same firearm as Item 1.
ZRVVK6	[No Conclusions Reported.]
ZRXFEY	The Items 01-01, 01-04, and 01-05 cartridge cases were identified as having been fired in the same firearm. The Items 01-02 and 01-03 cartridge cases were eliminated as having been fired in the same firearm as the Items 01-01, 01-04, and 01-05 cartridge cases. The Items 01-02 and 01-03 cartridge cases were identified as having been fired in the same unknown firearm that is capable of chambering and firing a 9mm Luger caliber cartridge.
ZT6VNQ	Items 2 and 3 were identified as having been fired by the same unknown 9mm Luger caliber firearm. Items 2 and 3 were eliminated as having been fired by the same 9mm Luger caliber firearm as the Item 1 test fires based on differences in class characteristics. Items 4 and 5 were identified as having been fired by the same 9mm Luger caliber firearm as the Item 1 test fires. Items 4 and 5 were eliminated as having been fired by the same unknown 9mm Luger caliber firearm that fired Items 2 and 3 based on differences in class characteristics.
ZTAB2Q	1. Examination of Exhibit 1 revealed three fired 9mm Luger cartridge cases marketed by PMC. 2. Examination of Exhibits 2-5 revealed each contains one fired 9mm Luger cartridge case marketed by PMC. 3. Exhibits 1-5 are suitable for microscopic comparison. 4. Microscopic comparison revealed Exhibits 4 and 5 were fired in the same firearm as Exhibit 1 due to sufficient agreement of individual characteristics. 5. Microscopic comparison revealed Exhibits 2 and 3 were fired in the same firearm due to sufficient agreement of individual characteristics; however, they were not fired in the same firearm as Exhibits 1, 4, and 5 due to disagreement of class characteristics. TECHNICAL NOTES: Class characteristics are defined as measurable features of a firearm/tool which indicate a restricted group source. They result from design features and are determined prior to manufacture of the firearm/tool. Individual characteristics are defined as marks produced by the random imperfections or irregularities of firearm/tool surfaces. These random imperfections or irregularities are produced incidental to manufacture and/or caused by use, corrosion, or damage, and are unique to that specific tool. Any conclusions indicating that a toolmark was made by a specific firearm/tool are not to the absolute exclusion of all other firearms/tools because it is not feasible to examine all possible firearms/tools. However, observing this amount of agreement from a different source is considered extremely remote.
ZUXQ7T	Item 1 consists of three (3) 9mm Luger (9x19mm) cartridge cases submitted as having been fired from a Sig Sauer pistol, Model P365. Item 2 through Item 5 consist of four (4) 9mm Luger cartridge cases that bear the headstamp of PMC ammunition. The Item 1, Item 4, and Item 5 cartridge cases were identified as having been fired in the same firearm. The Item 2 and Item 3 cartridge cases were identified as having been fired in the same firearm, however, they were excluded as having been fired in the same firearm as the Item 1, Item 4, and Item 5 cartridge cases.
ZUYNGN	Using a microscope, I compared the firing marks made on the recovered cartridge cases items 2, 3, 4 and 5 made by the gun(s) they were discharged in, with firing marks on the cartridge cases item 1, made by the suspects Sig Sauer P365. There was significant agreement in the fine detail within the firing marks between recovered items 4 and 5, and the test-fires item 1. In my opinion, items 4 and 5 were fired by the suspects guns. Items 2 and 3 had been marked by

TABLE 2

WebCode	Conclusions
	a different gun(s) and were not discharged in the suspects firearm.
ZVU3A9	After microscopic comparison, it was determined that Items# 4 and 5 (questioned cartridge cases) were fired from the same firearm as Item #1 (test-fired cartridge cases), based on sufficient agreement of class and individual characteristics of the breech face marks. After microscopic comparison, it was determined that Items# 2 and 3 (questioned cartridge cases) were not fired from the same firearm as Item #1 (test-fired cartridge cases), based on differences of class characteristics. After microscopic comparison, it was determined that Items# 2 and 3 (questioned cartridge cases) were fired from the same firearm, based on sufficient agreement of class and individual characteristics of the breech face marks and the aperture shear marks.

Additional Comments

TABLE 3

WebCode	Additional Comments
26XWJR	A preliminary examination indicates that items 2 and 3 were likely to have been fired in the same firearm. The shape of the firing pin impression for items 2 and 3 is hemispherical. The shape of the firing pin impression for items 4 and 5 is wedge shaped. There were also differences in the firing pin aperture. This indicates different class features, hence why they were excluded. Note the firing pin from the Sig Sauer P365 pistol is likely produced by MIM, as it appears to have a seam. This was supported by information provided on the AFTE forum regarding P365 pistols. This carries a risk of subclass carryover. As such the breech face marks that were present were relied upon for this determination. The striae within these marks changed across the face of the cartridge heads and are likely produced by grinding or a similar process, where the risk of subclass is very low. These marks appeared in the same spatial relationship, relative to the firing pin impression and its drag, in all the test fires and items 4 and 5. This would indicate that these marks are firing marks and not from simply chambering into the barrel.
2K6ZYQ	Two of the 9mm Luger cartridge cases (items 4 and 5) were microscopically compared to test-fired cartridge cases (Item 1) from the suspect's firearm. Items 4 and 5 were identified as being fired in the same firearm as Item 1 based on agreement of all discernible class characteristics and sufficient corresponding individual detail observed in breechface marks. The two remaining 9mm Luger cartridge cases (items 2 and 3) were compared to each other and to Item 1. Items 2 and 3 were eliminated from being fired in the same firearm as Item 1 based on class characteristic differences observed in the shape of the firing pin impression. Items 2 and 3 were identified as being fired in the same firearm based on agreement of all discernible class characteristics and sufficient corresponding individual detail observed in breechface marks and the firing pin impression.
3D7Q8R	QC1 is item 2, QC2 is item 3, QC3 is item 4 and QC4 is item 5. Item 1 are the test fires.
3HGQM4	The packaging for the sample pack F1 that I received was sealed. Four (4) of the smaller boxes inside sample pack F1 each had transparent tape on the lid and the box to keep the lid on the box, i.e. the smaller boxes that contained Item 1, Item 2, Item 4 and Item 5. The smaller box that contained Item 3 did not have transparent tape on the lid or box, but there was discoloration on the lid and the box similar to that left by an adhesive or tape that would have been placed there and removed.
432Z4W	The cartridge cases in Items 2 and 3 were fired in the same gun, based on agreement observed in individual characteristics.
4HEDGM	The questioned bullets referenced as Item 2 an Item 3 were fired by the same weapon.
4PAH94	1. Identification: Based on the agreement of the individual characteristics observed through the microscopic comparison test. [Initials & Date].
4TXVAU	The results strongly support that Item 2 and Item 3 were fired from the same unknown firearm.
6C88JW	The identification of the cartridge cases to the firearm in this case is made to the practical, not absolute, exclusion of all other firearms. This is because it is not possible to examine all firearms in the world, a prerequisite for absolute certainty. The conclusion that sufficient agreement for identification exists between two firearm-produced toolmarks means that the likelihood another firearm could have made the questioned mark is so remote as to be considered a practical impossibility.

TABLE 3

WebCode	Additional Comments
7MMAKN	Several similitudes have been observed during the comparisons between the questioned cartridge cases Items 2 and 3. The most relevant observations been found during the comparison of the firing pin marks, the firing pin aperture and the breech face marks. Futhermore, several similarities on the manufacturing marks of the headstamps have been observed, especially between the questioned cartridge cases Items 2, 5 and the reference items 1.1. The latter would indicate that the ammunition used came from the same batch.
8KNU3M	The c/c's marked 412807/25 A4 & A5 (ITEM 4 & 5) and 365TC1 -TC3 (ITEM 1) were positive with each other---breech face marks and firing pin marks corresponds. The c/c's marked 412807/25 A2 & A3 (ITEM 2 & 3) were positive with each other---breech face marks and firing pin marks corresponds (second unknown firearm).
8ZZ49J	Noted apparent mold mark in FPI of Items 1(A-C), 4, and 5. Also noted some gross parallel markings in BFM of Items 2 and 3 that appeared to potentially be continuous. These marks may be subject to subclass characteristics, however, other markings were used in conjunction with those marks, to preclude a false identification based on potential subclass alone.
AA7NPK	LIMITATIONS: 1: Practical Certainty: Since it is not possible to collect and examine samples of all firearms, it is not possible to make an identification with absolute certainty. However, all scientific research and testing to date and the continuous inability to disprove the principles of toolmark analysis have demonstrated that firearms produce unique, identifiable characteristics which allow examiners to reliably make identifications. Firearms/Toolmark Identification is an empirical science that relies on objective observations and a subjective interpretation of microscopic marks of value.
AFAWPK	Results Definitions: Consistent: Class and individual characteristics were examined and/or compared and are in agreement. Inconsistent: Class and individual characteristics were examined and/or compared and are not in agreement. Conclusions Definitions: Identification: Agreement of all discernible class characteristics and sufficient agreement of a combination of individual characteristics where the extent of agreement exceeds that which can occur in the comparison of toolmarks made by different firearms/tools and is consistent with the agreement demonstrated by toolmarks known to have been produced by the same tool/firearm. Inconclusive: Agreement of all discernible class characteristics without agreement or disagreement of individual characteristics due to an absence, insufficiency, or lack of reproducibility. Elimination: Significant disagreement of discernible class characteristics and/or individual characteristics. Unsuitable: Unsuitable for examination. [Participant submitted data in a format that could not be reproduced in this report.]
CH68UJ	no item load
CT4Z8G	Based upon similarities in class and individual (breechface marks, shear marks) characteristics, Items 2 and 3 were microscopically identified as having been fired in the same unknown firearm.
CZKFVK	1. For the purposes of the following study, item 1 is subclassified as follows: item 1.1, item 1.2 and item 1.3.
E6TEL4	Similarities have been observed between the marks in the cartridge cases Items 2 and 3. This observation lead to an additional examination between the marks in Item 2 and 3. The findings of this examination were viewed under the following two hypotheses: H3: The questioned cartridges case are fired by one firearm. H4: The questioned cartridge cases are fired by two firearms of the same calibre and with the same class characteristics. The findings of the additional examination are minimal very much more probable when H3 is true than

TABLE 3

WebCode	Additional Comments
	when H4 is true.
ERHBRT	Examined the three specimens from CTS Test 25-5261, box #1. They are 9mm Luger caliber discharged cartridge cases, headstamped PMC. (Tests marked T1, T2, T3). Examined the specimen from CTS Test 25-5261, box #2. It is a 9mm Luger caliber discharged cartridge case, headstamped PMC. (Marked #2). Examined the specimen from CTS Test 25-5261, box #3. It is a 9mm Luger caliber discharged cartridge case, headstamped PMC. (Marked #3). Examined the specimen from CTS Test 25-5261, box #4. It is a 9mm Luger caliber discharged cartridge case, headstamped PMC. (Marked #4). Examined the specimen from CTS Test 25-5261, box #5. It is a 9mm Luger caliber discharged cartridge case, headstamped PMC. (Marked #5).
EUUXDE	I eliminated the fired cartridge cases (Items 2 and 3). These had been fired within a different gun (Gun 2)
FBXWX2	REMARKS: The method of testing for ammunition components (that have results that fall into the range of conclusions defined below) included physical examination and microscopic comparison. Elimination results that are reported as based on a difference in class characteristics include only physical examination. Identified: Agreement of all discernible class characteristics and sufficient agreement of individual characteristics where the extent of agreement leads to the conclusion that the items were fired in/from the same firearm. Inconclusive (+): Agreement of all discernible class characteristics and some agreement of individual characteristics but insufficient for an identification. Inconclusive: Agreement of all discernible class characteristics without significant agreement or disagreement of individual characteristics; therefore, the items could neither be identified nor eliminated as having been fired in/from the same firearm. Inconclusive (-): Agreement of all discernible class characteristics and some disagreement of individual characteristics, but insufficient for an elimination. Eliminated: Significant disagreement of discernible class characteristics and/or individual characteristics leading to the conclusion that the items were not fired in/from the same firearm. The submitted items will be transferred to [Name]l for return to your agency. Questions regarding this report should be addressed to: [Email].
FC9LET	Identification: Is based on in the agreement of individual characteristics observed through the microscopic comparison examination.
FJCJBC	Technical Notes: Class characteristics are defined as measurable features of a firearm/tool which indicate a restricted group source. They result from design features and are determined prior to manufacture of the firearm/tool. Individual characteristics are defined as marks produced by the random imperfections or irregularities of firearm/tool surfaces. These random imperfections or irregularities are produced incidental to manufacture and/or caused by use, corrosion, or damage, and are unique to that specific tool. Any conclusions indicating that a toolmark was made by a specific firearm/tool are not to the absolute exclusion of all other firearms/tools because it is not feasible to examine all possible firearms/tools. However, observing this amount of agreement from a different source is considered extremely remote.
FK2WQ9	Crime Sample, item ref: 2 Vs Crime Sample, item ref: 3; In my opinion, a microscopical comparison of firing marks has shown there is sufficient agreement of class and individual characteristic markings to conclusively determine that the discharged cartridge cases, item refs: 2 & 3 were fired from the same firearm. To be concise, this is a further second firearm than that of the recovered 'Sig Sauer P365' firearm, item ref: 1.
FRGVZE	1.1 testfires, and 1.2-1.5 correspond to scribed #s 1-5 respectively.

TABLE 3

WebCode	Additional Comments
FWBRMJ	The cartridge cases in Items 2 and 3 were fired in the same gun, based on agreement observed in individual characteristics.
FXRNBD	I have assumed that the possibility of subclass influence was eliminated by the makers of this proficiency.
HC6P9F	Potential subclass present on Item 2 and 3, but sufficient detail in other areas for identification to be made.
K32TVZ	Items #2 and #3 were eliminated from Items #1, #4 and #5.
KCDME9	There are indications on the firing pin impression (FPI) of potential subclass features (indications of a MIM firing pin). An assessment of the firearm would be required before forming an ID opinion based on the FPI. Nil indications of subclass with the breechface marks.
L2ARRW	Items 2-3 were microscopically compared to each other and identified as having been fired in the same firearm based on the agreement of all discernible class characteristics and the sufficient agreement of corresponding individual characteristics.
L2AUG2	REMARKS: The method of testing for ammunition components (that have results that fall into the range of conclusions defined below) included physical examination and microscopic comparison. Elimination results that are reported as based on a difference in class characteristics include only physical examination. Identified: Agreement of all discernible class characteristics and sufficient agreement of individual characteristics where the extent of agreement leads to the conclusion that the items were fired in/from the same firearm. Inconclusive (+): Agreement of all discernible class characteristics and some agreement of individual characteristics but insufficient for an identification. Inconclusive: Agreement of all discernible class characteristics without significant agreement or disagreement of individual characteristics; therefore, the items could neither be identified nor eliminated as having been fired in/from the same firearm. Inconclusive (-): Agreement of all discernible class characteristics and some disagreement of individual characteristics, but insufficient for an elimination. Eliminated: Significant disagreement of discernible class characteristics and/or individual characteristics leading to the conclusion that the items were not fired in/from the same firearm. The submitted item(s) will be transferred to the Evidence Section for return to your agency.
LVJK73	REMARKS: The method of testing for ammunition components (that have results that fall into the range of conclusions defined below) included physical examination and microscopic comparison. Elimination results that are reported as based on a difference in class characteristics include only physical examination. Identified: Agreement of all discernible class characteristics and sufficient agreement of individual characteristics where the extent of agreement leads to the conclusion that the items were fired in/from the same firearm. Inconclusive (+): Agreement of all discernible class characteristics and some agreement of individual characteristics but insufficient for an identification. Inconclusive: Agreement of all discernible class characteristics without significant agreement or disagreement of individual characteristics; therefore, the items could neither be identified nor eliminated as having been fired in/from the same firearm. Inconclusive (-): Agreement of all discernible class characteristics and some disagreement of individual characteristics, but insufficient for an elimination. Eliminated: Significant disagreement of discernible class characteristics and/or individual characteristics leading to the conclusion that the items were not fired in/from the same firearm. The submitted items will be transferred to the Evidence Section for return to your agency. Questions regarding this report should be addressed to: [Email].

TABLE 3

WebCode	Additional Comments
MAUREK	1. Identification: Based on the agreement of individual characteristics observed by microscopic comparison examination. 2. The fired cartridge cases came as one Item contents upon submission, and what was inside the container was five boxes, ID as Item 1 (3 fired cartridge cases, marked E-1, E-2, E-3), Item 2 (1 fired cartridge case, marked E-4), Item 3 (1 fired cartridge case, marked E-5), Item 4 (1 fired cartridge case, marked E-6) and Item 5 (1 fired cartridge case, marked E-7). 3. The conclusion of identification (agreement) was reached, which is based on sufficient agreements of a reproduction of patterns of individual characteristics, between the aforementioned fired cartridge cases.
MHQFEW	Based on the observed similarities in the individual characteristics of TH1, TH2, compared to each other it is concluded that these cartridge cases were fired with the same firearm.
MJ6UZK	Identification: Is based on in thee agreement of individual charscteristics observed through the microscopic comparison examination.
MNE8J6	Items 2 and 3: The two (2) 9MM Luger cartridge cases were microscopically compared with test fired cartridge cases from the Sig Sauer, model P365 pistol (Item 1). Based on differing firearm-related class characteristics: firing pin impressions, breechface marks, and ejection port marks, and differing individual marks in the firing pin aperture shear marks, Items 2 and 3 were eliminated as being fired from the same firearm as Item 1. Items 2 and 3: These cartridge cases were microscopically compared to each other. Based on discernible agreement of firearm-related class characteristics and sufficient correspondence of individualizing detail present on firing pin impression and firing pin aperture shear marks, Items 2 and 3 were identified as being fired in the same firearm. The firing pin impression and firing pin aperture shear marks were evaluated and determined to have no subclass influence. Items 4 and 5: The two (2) 9MM Luger cartridge cases were microscopically compared with test fired cartridge cases from the Sig Sauer, model P365 pistol (Item 1). Based on discernible agreement of firearm-related class characteristics and sufficient correspondence of individualizing detail present on breechface marks and chamber marks, Items 4 and 5 were identified as being fired in the same firearm as Item 1. The breechface marks and chamber marks were evaluated and determined to have no subclass influence. Associations and other results reported in this examination are based on the AFTE Theory of Identification and its Range of Conclusions. This basis enables opinions of common origin when unique surface contours of two toolmarks are in sufficient agreement.
NP6NFY	Furthermore, the microscopic comparison revealed that the cartridge cases seized at the scene of crime matched Item 2 and Item 3. They were all fired from the same but unknown firearm.
NZQRKD	The identification of the cartridge cases with the firearm in this case is made to the practical, not absolute, exclusion of all other firearms. This is because it is not possible to examine all firearms in the world, a prerequisite for absolute certainty. The conclusion that sufficient agreement for identification exists between two firearm-produced toolmarks means that the likelihood another firearm could have made the questioned mark is so remote as to be considered a practical impossibility.
PFVEMY	Should any additional firearms be recovered please submit in reference to the above case#. A conclusion of Identification (fired) is based on an analyst's independent determination that all discernible class and individual characteristics agree such that the extent of agreement exceeds that which has been demonstrated by toolmarks known to have been made by different tools (Known Non Matches) and is consistent with the agreement demonstrated by toolmarks known to have been made by the same tool (Known Matches). A conclusion of

TABLE 3

WebCode	Additional Comments
	Exclusion is based on an analyst's independent determination that the observed characteristics of the items in question were marked by different tools.
QRKWEA	The truncated appearance of the firing pin in Sig Sauer P365 pistols is a class characteristic that can be used in class eliminations. In our lab, this difference would be 'hemispherical versus hemispherical-truncated.'
QTGB33	For clarification: Item 1.A is in reference to known test fires, Item 1.B is to Items 4 and 5, Item 1.C is to Items 2 and 3.
QUF9KB	Item 1.A- CTS Item 1. Item 1.B- CTS Items 2 & 3. Item 1.C- CTS Items 4 & 5.
QV6M4T	Conclusion Scale for Microscopic Comparisons: The following descriptions are meant to provide context to the levels of opinions reached in this report. Identification: This is the strongest statement of association that can be expressed. An identification is made to a degree of practical certainty when there is agreement of all discernible class characteristics and sufficient agreement of the individual characteristics of toolmarks. When sufficient agreement exists, in part, this means the likelihood of another tool producing the same marks is so remote it is considered a practical impossibility. Elimination: This is the strongest statement of non-association that can be expressed. An elimination is made when one of the following situations is true: - It is a physical impossibility (i.e., there is a clear, demonstrable incompatibility in class characteristics) for the items to have been marked by the same tool/fired in the same firearm. - Demonstrable differences in the subclass or reproducible individual characteristics. Inconclusive: An inconclusive is made when one of the following situations is true. - Agreement of all discernible class characteristics and some agreement of individual characteristics, but insufficient for identification. - Agreement of all discernible class characteristics without agreement or disagreement of individual characteristics due to an absence, insufficiency, or lack of reproducibility. - Agreement of all discernible class characteristics and some disagreement of individual characteristics but insufficient for elimination. - Agreement of all discernible class characteristics and disagreement of individual characteristics, however reproducibility or variability of individual characteristics cannot be established. - Agreement of all discernible class and subclass characteristics. The individuality of the characteristics is not discernible; therefore, the items may have been fired from the same firearm or from another firearm that was machined with the same tool in the approximate same state of wear. Unsuitable: An item is considered unsuitable for comparison when it does not bear any class, subclass, and/or individual toolmarks of value for microscopic comparison. Items 1-1 and 2 were submitted for entry into the National Integrated Ballistic Information Network (NIBIN) database. An investigative lead will be sent for all possible associations. Items entered in the database are searched in Michigan only unless requested otherwise and will remain in the database unless a request to remove the entry is received. All submitted Items (1-1 through 5) were entered into the [Laboratory] EvoFinder database. These entries will be used in future database searches by [Laboratory] Forensic Science Division and will remain in the database unless a request to remove the entries is received. Any future identifications made to these items will be provided in a supplemental report. The interpretation of the data and authorization of the results was performed by the undersigned forensic analyst. Other staff members may have performed laboratory activities concerning evidence associated with this report. For a complete listing of all staff members who performed laboratory activities in this case, please contact the laboratory via the telephone number above. [No phone number was provided and Participant submitted data in a format that could not be reproduced in this report.]

TABLE 3

WebCode	Additional Comments
QZCHEG	1.Microscopic Comparison conducted and verified by [Name], Senior Firearms Examiner. 2.Technical Review completed by [Name], Senior Firearms Examiner.
R4Y8MZ	Technical Notes: Class Characteristics are defined as measurable of a firearm/tool which indicate a restricted group source. The result from design features and are determined prior to manufacture of the firearm/tool. Individual characteristics are defined as marks produced by the random imperfections or irregularities of firearm/tool surfaces. These random imperfections or irregularities are produced incidental to manufacture and/or caused by use, corrosion, or damage, and are unique to that specific tool. Any conclusions indicating that a toolmark was made by a specific firearm/tool are not to the absolute exclusion of all other firearms/tools because it is not feasible to examiner all possible firearms/tools. However, observing this amount of agreement from a different source is considered extremely remote.
T7FZQE	1. Identification: Based on the agreement of individual characteristics observed during the microscopic comparison examination. 2. Microscopic Comparison Verified By:[Name], Senior Firearms Examiner on July 29, 2025. 3. Technical Review By: [Name], Senior Firearms Examiner on August 12, 2025.
TB9XLW	REMARKS: The method of testing for ammunition components (that have results that fall into the range of conclusions defined below) included physical examination and microscopic comparison. Elimination results that are reported as based on a difference in class characteristics include only physical examination. Identified: Agreement of all discernible class characteristics and sufficient agreement of individual characteristics where the extent of agreement leads to the conclusion that the items were fired in/from the same firearm. Inconclusive (+): Agreement of all discernible class characteristics and some agreement of individual characteristics but insufficient for an identification. Inconclusive: Agreement of all discernible class characteristics without significant agreement or disagreement of individual characteristics; therefore, the items could neither be identified nor eliminated as having been fired in/from the same firearm. Inconclusive (-): Agreement of all discernible class characteristics and some disagreement of individual characteristics, but insufficient for an elimination. Eliminated: Significant disagreement of discernible class characteristics and/or individual characteristics leading to the conclusion that the items were not fired in/from the same firearm.
TWBTDY	Cartridge cases Item 2 and Item 3 were fired with the same firearm.
U2F4NQ	Item #1 is (3) test shots (fired cartridge cases) provided. There is no firearm. Items 2 thru 5 are fired cartridge cases.
UDCAHN	KEY: Item 1A-T1, 1A-T2, 1A-T3 is CTS Item 1. Item 1B is CTS Item 2. Item 1C is CTS Item 3. Item 1D is CTS Item 4. Item 1E is CTS Item 5.
UJ2MLX	ITEM 1, consisting of three bushings, is found to correspond with each other. The casings marked ITEM 2 and ITEM 3 are concluded to be a match and were fired from the same firearm. Therefore, ITEM 1, consisting of three spent cartridge cases from the confiscated Sig Sauer P365 firearm, is excluded.
UREG2Z	LIMITATIONS: *Practical Certainty: Since it is not possible to collect and examine samples of all firearms, it is not possible to make an identification with absolute certainty. However, all scientific research and testing to date and the continuous inability to disprove the principles of toolmark analysis have demonstrated that firearms produce unique, identifiable characteristics which allow examiners to reliably make identifications. Firearms/Toolmark Identification is an empirical science that relies on objective observations and a subjective interpretation of

TABLE 3

WebCode	Additional Comments
	microscopic marks of value. NOTES/REMARKS: Information received indicates that the Item 1 test fired cartridge cases were fired in a 9mm Luger caliber Sig Sauer model P365 semi-automatic pistol with unknown serial number.
VHJ6VW	The potential for subclass influence could not be evaluated in this case. All conclusions are reported such that it is assumed subclass is eliminated. Associations and other results reported in this examination are based on the AFTE Theory of Identification and its Range of Conclusions. This basis enables opinions of common origin when unique surface contours of two tool marks are in sufficient agreement.
WDL2J4	The identification of the cartridge cases with the firearm in this case is made to the practical, not absolute, exclusion of all other firearms. This is because it is not possible to examine all firearms in the world, a prerequisite for absolute certainty. The conclusion that sufficient agreement for identification exists between two firearm-produced toolmarks means that the likelihood another firearm could have made the questioned mark is so remote as to be considered a practical impossibility.
WZGMKR	Item 2 cartridge case was fired as the Item 3 cartridge case.
XNJ4JR	Further examination of the fired 9mm caliber cartridge cases in items #2 and #3 revealed they possessed the same class characteristics, as well as sufficient reproducing individual markings to each other and were determined to have been fired in a second 9mm caliber firearm.
XWD8RV	Item 1A = CTS knowns. Item 1B = CTS Items 4 & 5. Item 1C = CTS Items 2 & 3.

-End of Report-
(Appendix may follow)

Collaborative Testing Services ~ Forensic Testing Program

Test No. 25-5261: Firearms Examination

DATA MUST BE SUBMITTED BY **Aug. 25, 2025, 11:59 p.m. EDT** TO BE INCLUDED IN THE REPORT

Participant Code: U1234A WebCode: EKQN9A

The Accreditation Release section can be accessed by using the "Continue to Final Submission" button above. This information can be entered at any time prior to submitting to CTS.

Scenario:
Police recovered four cartridge casings from a crime scene and seized a Sig Sauer P365 firearm from a suspect's possession who was apprehended later that day. Three rounds of PMC Bronze 9mm Luger 115 grain FMJ ammunition (consistent with the cartridge casings found at the scene) were test fired with the suspect's firearm and the cartridge casings collected. Investigators are asking you to compare the recovered cartridge casings from the scene with those that were test fired from the suspect's firearm and report your findings.

Please note the following:

-Each item is in a small labeled box. It is suggested that when the items are removed from their labeled boxes, they be marked according to your laboratory procedure. However, in case the items are separated from their boxes before labeling has occurred, each item has been inscribed with its item number.

Items Submitted (Sample Pack F1):
Item 1: Three known test-fired cartridge casings discharged from the suspect's firearm.
Item 2: Questioned recovered cartridge case.
Item 3: Questioned recovered cartridge case.
Item 4: Questioned recovered cartridge case.
Item 5: Questioned recovered cartridge case.

1.) Were any of the questioned recovered cartridge casings (Items 2-5) discharged from the same firearm as the known test-fired cartridge casings (Item 1)?

Item 2	Yes ○	No ○	Inconclusive* ○
Item 3	Yes ○	No ○	Inconclusive* ○
Item 4	Yes ○	No ○	Inconclusive* ○
Item 5	Yes ○	No ○	Inconclusive* ○

*Should an item(s) be marked "Inconclusive", please document the reason in the Additional Comments section of this data sheet.

2.) What would be the wording of the Conclusions in your report?

Note: *Please use appropriate punctuation to indicate the end of sentences, sections, and statements in the free-form space below. Extra spacing and returns used for separation within your text will not transfer and may cause your information to be illegible in the Summary Report. The use of lists and tabular formats to deliver information is also cautioned against, as these do not transfer.*

3.) Additional Comments

Note: *Please use appropriate punctuation to indicate the end of sentences, sections, and statements in the free-form space below. Extra spacing and returns used for separation within your text will not transfer and may cause your information to be illegible in the Summary Report. The use of lists and tabular formats to deliver information is also cautioned against, as these do not transfer.*

Participant Code: U1234A
WebCode: EKQN9A

RELEASE OF DATA TO ACCREDITATION BODIES

The Accreditation Release is accessed by pressing the "Continue to Final Submission" button online and can be completed at any time prior to submission to CTS.

CTS submits external proficiency test data directly to ANAB and/or A2LA. Please select one of the following statements to ensure your data is handled appropriately.

- ○ This participant's data is intended for submission to ANAB and/or A2LA. (Accreditation Release section below must be completed.)
- ○ This participant's data is **not** intended for submission to ANAB and/or A2LA.

Have the laboratory's designated individual complete the following steps
only if your laboratory is accredited in this testing/calibration discipline
by one or more of the following Accreditation Bodies.

Step 1: Provide the applicable Accreditation Certificate Number(s) for your laboratory

ANAB Certificate No.

A2LA Certificate No.

Step 2: Complete the Laboratory Identifying Information in its entirety

Authorized Contact Person and Title

Laboratory Name

Location (City/State)